AutoSave Command (Tools Menu)

{button Related Topics,AL("autosave high;add-ins overview high",0,`NOT_FOUND')}  {button How To,AL("autosave how",0,`NOT_FOUND')}

Automatically saves open documents at the interval you specify.

Tip If you do not have an **AutoSave** option on the **Tools** menu, the **AutoSave** add-in has not been installed. Click the **Related Topics** button for more information.

AutoSave Dialog Box

Bearing and Azimuth Command (View Menu)

{button Related Topics,AL("bearing azimuth high",0,`NOT_FOUND')} {button How To,AL("set bearing azimuth how ",0,`NOT_FOUND')}

Allows you to determine how to display the angle for the selected element.

Tip The **Bearing and Azimuth** command is available only if you use the **Customize** command on the **Tools** menu to place it on a toolbar or menu. On the **Toolbars** tab of the **Customize** dialog box, click the **Tools** category to access the command.

 Set Bearing Dialog Box

Symbol Explorer Command (Main Toolbar)

{button Related Topics,AL("placing symbols high;Symbol Explorer high;symbols cmd;av high",0,`NOT_FOUND')}
{button How To,AL("symbols how;Symbol Explorer how",0,`NOT_FOUND')}

Activates the **Symbol Explorer** window and the **Attribute Viewer.** The **Symbol Explorer** window allows you to organize and manage documents and symbols. You can browse document directories on the computer hard drive or the network. You can also view HTML pages on the Internet, the computer hard drive, or CD-ROM drive.

Symbol Explorer Window

Delete Favorite Command (Shortcut Menu)

{button Related Topics,AL("Symbol explorer high;Symbol explorer db",0,`NOT_FOUND')}{button How To,AL("delete favorite how",0,`NOT_FOUND')}

Deletes the selected bar from the **Symbol Explorer** window and removes the item from the list of favorites.

Tip To access this command, pause the pointer over the favorite directory, HTML page, or file in the **Symbol Explorer** window and right-click.

Set Document Home Command (Shortcut Menu)

{button Related Topics,AL("Symbol Explorer db;Symbol Explorer cm;Symbol Explorer high",0,`NOT_FOUND')}
{button How To,AL("set home page for Symbol Explorer how",0,`NOT_FOUND')}

Sets the home address for the current document. When you open a document and then open the **Symbol Explorer** and click the **Home** button, the **Symbol Explorer** goes to the address that you enter here. The address can be any address that you would use in a web browser, such as Microsoft Internet Explorer or Netscape; for example, you can type http://www.ingr.com.

If you want to set the **Symbol Explorer** to always look at symbols on your computer, you can type the following syntax in the **Address** box: <application.path>\..\<path of symbols>. For example, you could enter <application.path>\..\symbols\arch.htm.

Tip To access this command, pause the pointer in the **Symbol Explorer** window and right-click.

View File Type Command (Shortcut Menu)

{button Related Topics,AL("Symbol Explorer db;Symbol Explorer cm;Symbol Explorer high",0,`NOT_FOUND')}
{button How To,AL("view documents with Symbol Explorer how",0,`NOT_FOUND')}

Filters the view in the **Symbol Explorer** window according to the document type that you select. For example, if you want to see only AutoCAD documents, you could select the AutoCAD option for **.dwg** documents. When you set this option, the **Symbol Explorer** window displays only **.dwg** documents.

Tip To access this command, pause the pointer in the **Symbol Explorer** window and right-click.

Show Favorites Command (Shortcut Menu)

{button Related Topics,AL("Symbol explorer high",0,`NOT_FOUND')}  {button How To,AL("show favorites how",0,`NOT_FOUND')}

Shows bars in the **Symbol Explorer** window that point to documents or web pages that you added to the list of favorites. When you click a bar, the **Symbol Explorer** displays the associated documents or web pages.

Tip To access this command, pause the pointer in the **Symbol Explorer** window and right-click.

Add To Favorites Command (Shortcut Menu)

{button Related Topics,AL("Symbol explorer high",0,`NOT_FOUND')} {button How To,AL("add to favorites how",0,`NOT_FOUND')}

Adds a shortcut bar to the **Symbol Explorer** window when you select a document or web page in the window. When you click this bar, the window displays the document or web page.

Tip To access this command, pause the pointer in the **Symbol Explorer** window and right-click.

Explore Elsewhere Command (Shortcut Menu)

{button Related Topics,AL("Symbol Explorer db;Symbol Explorer cm;Symbol Explorer high",0,`NOT_FOUND')}
{button How To,AL("view documents with Symbol Explorer how",0,`NOT_FOUND')}

Accesses the **Browse for Folder** dialog box so that you can locate another directory for the **Symbol Explorer** to look in. You can use the dialog box to look in directories on your hard drive or a network drive.

Tip To access this command, pause the pointer in the **Symbol Explorer** window and click the right mouse button.

Connector Command (Draw Toolbar)

{button Related Topics,AL("connector rb;connect high",0,`NOT_FOUND')} {button How To,AL("place connector how;modify connector how",0,`NOT_FOUND')}

Connects two elements together.

Using a connector, you can connect to an element by connecting to:

- Key points. Hollow gray circles indicate potential key points (such as endpoint, midpoint, and others) on an element, when the element is located by the pointer.
- Connect points. Hollow red circles indicate potential connect points on a symbol.
- Any point on an element. A solid red filled circle is displayed when the pointer locates an element at a point other than its key points.

Tip You must click the **Connector** command before you see the points for connecting on the element**.**

You can also access this command on the **Schematic** toolbar.

- Connector Ribbon Bar

Hyperlink Command (File Menu)

{button Related Topics,AL("hyperlink high",0,`NOT_FOUND')} {button How To,AL("insert hyperlink how;edit hyperlink how;delete hyperlink how;find hyperlink how",0,`NOT_FOUND')}

Adds hyperlinks to objects, symbols, text, connectors, and elements, such as lines, circles, ellipses, and groups. You can enter a link to a file or a web page on the Internet.

Add Link Command (Shortcut Menu)

{button Related Topics,AL("hyperlink high",0,`NOT_FOUND')} {button How To,AL("insert hyperlink how;find hyperlink how",0,`NOT_FOUND')}

Allows you to add a hyperlink on the **Enter Link Source** dialog box. You can enter a link to a file or a web page on the Internet. For example, you can type the following path: D:\myfile.html.

Tip To see the shortcut menu, you must first click the **Hyperlink** button on the **Main** toolbar. You can then right-click.

Exit Hyperlink Command (Shortcut Menu)

{button Related Topics,AL("hyperlink high",0,`NOT_FOUND')} {button How To,AL("insert hyperlink how;edit hyperlink how",0,`NOT_FOUND')}

Allows you to stop the **Hyperlink** command.

Tip To access this command, you must first click the **Hyperlink** button on the **Main** toolbar and then right-click.

Show Links Command (Shortcut Menu)

{button Related Topics,AL("hyperlink high",0,`NOT_FOUND')} {button How To,AL("insert hyperlink how;find hyperlink how",0,`NOT_FOUND')}

Displays all the hyperlinks in a document. When you click this command, all the elements or objects that have a hyperlink are highlighted.

Tip To access this command, you must first click the **Hyperlink** button on the **Main** toolbar and then right-click.

Edit Link Command (Shortcut Menu)

{button Related Topics,AL("hyperlink high",0,`NOT_FOUND')} {button How To,AL("insert hyperlink how;edit hyperlink how;find hyperlink how",0,`NOT_FOUND')}

Allows you to change the web addresses or paths for hyperlinks that are applied to objects, symbols, text, connectors, and elements, such as lines, circles, ellipses, and groups.

Tip To see the shortcut menu, you must first click the **Hyperlink** button on the **Main** toolbar. You can then click the right mouse button.

Remove Link Command (Shortcut Menu)

{button Related Topics,AL("hyperlink high",0,`NOT_FOUND')} {button How To,AL("insert hyperlink how;delete hyperlink how;find hyperlink how",0,`NOT_FOUND')}

Removes hyperlinks from objects, symbols, text, connectors, and elements, such as lines, circles, ellipses, and groups.

Tip To see the shortcut menu, you must first click the **Hyperlink** button on the **Main** toolbar. You can then click the right mouse button.

Follow Link Command (Shortcut Menu)

{button Related Topics,AL("hyperlink high",0,`NOT_FOUND')} {button How To,AL("insert hyperlink how;edit hyperlink how;delete hyperlink how;find hyperlink how",0,`NOT_FOUND')}

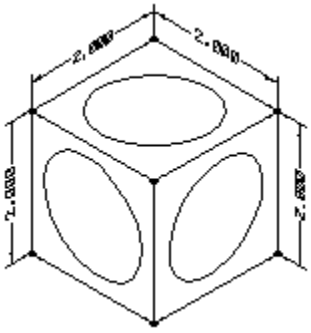
Allows you to open the web page or file at which the hyperlink is pointing.

Tip To see the shortcut menu, you must first click the **Hyperlink** button on the **Main** toolbar. You can then click the right mouse button.

Isometric Circle Command

{button Related Topics,AL("iso high",0,`NOT_FOUND')} {button How To,AL("iso circle how;add button to toolbar how",0,`NOT_FOUND')}

Allows you to draw an isometric circle. You can use this button to create 2D circles that look like 3D circles.



Tip To access this command, you must place it on a toolbar or menu with the **Customize** command on the **Tools** menu. On the **Toolbars** tab of the **Customize** dialog box, click the **Draw** category.

Isometric Circle Ribbon Bar

Isometric Line Command

{button Related Topics,AL("iso high",0,`NOT_FOUND')} {button How To,AL("iso line how;add button to toolbar how",0,`NOT_FOUND')}

Allows you to draw lines that appear at 30, 60, or 90 degrees in an isometric drawing. This button creates 2D lines that look like they are in a 3D plane.

Tip To access this command, you must place it on a toolbar or menu with the **Customize** command on the **Tools** menu. On the **Toolbars** tab of the **Customize** dialog box, click the **Draw** category.

Isometric Line Ribbon Bar

Isometric Rectangle Command

{button Related Topics,AL("iso high",0,`NOT_FOUND')} {button How To,AL("iso rectangle how;add button to toolbar how",0,`NOT_FOUND')}

Allows you to draw an isometric rectangle. You can use this button to create 2D rectangles that look like 3D rectangles.

Tip To access this command, you must place it on a toolbar or menu with the **Customize** command on the **Tools** menu. On the **Toolbars** tab of the **Customize** dialog box, click the **Draw** category.

Isometric Rectangle Ribbon Bar

Edit Text Properties Command (Shortcut Menu)

{button Related Topics,AL("labels high",0,`NOT_FOUND')}  {button How To,AL("labels how",0,`NOT_FOUND')}

Allows you to edit the properties of the text in a Smart Label.

Tip You must select a Smart Label before you can select this command on the shortcut menu.

Text Properties Dialog Box

Edit Graphic Properties Command (Shortcut Menu)

{button Related Topics,AL("labels high",0,`NOT_FOUND')}  {button How To,AL("labels how",0,`NOT_FOUND')}

Allows you to edit the properties of the elements in a Smart Label.

Tip You must select a Smart Label before you can select this command on the shortcut menu.

- Element Properties Dialog Box
- Fill Properties Dialog Box
- Balloon Properties Dialog Box
- Group Properties Dialog Box
- SmartFrame Properties Dialog Box

Move Sheet Border Command (File Menu)

{button Related Topics,AL("drawing sheets high;drawing sheets high;new sheet cmd",0,`NOT_FOUND')}
{button How To,AL("move sheet how",0,`NOT_FOUND')}

Moves the active working sheet to reposition, scale, and select paper size.

Move Sheet Dialog Box

Relationships Command (Main Toolbar)

{button Related Topics,AL("relating elements high",0,`NOT_FOUND')} {button How To,AL("display relationship toolbar how",0,`NOT_FOUND')}

Displays the **Relationship** toolbar. You can use the commands on this toolbar to create relationships between two drawing elements.

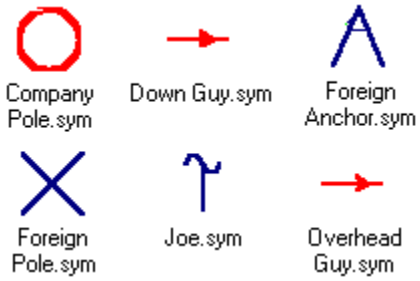
Tip To maintain the relationship between elements when you modify either one of the elements, you must set **Maintain Relationships** on the **Tools** menu.

Create Symbol Command (Draw Toolbar)

{button Related Topics,AL("symbols high;Content Explorer high",0,`NOT_FOUND')} {button How To,AL("symbols how",0,`NOT_FOUND')}

Allows you to create a symbol.

Tip This button is available only when you select elements.



Stamp Here Command (Shortcut Menu)

{button Related Topics,AL("placing symbols high;symbols cmd",0,`NOT_FOUND')} {button How To,AL("place multiple symbols how",0,`NOT_FOUND')}

Places more than one instance of a symbol as you drag a symbol into a document. This command allows you to copy a symbol quickly and easily as you place it.

Tip You can access this command by dragging a symbol into a document with the right mouse button.

Place Here Command (Shortcut Menu)

{button Related Topics,AL("placing symbols high;symbols cmd",0,`NOT_FOUND')} {button How To,AL("place multiple symbols how",0,`NOT_FOUND')}

Places one instance of a symbol as you drag a symbol into a document.

Tip You can access this command by dragging and dropping a symbol into a document with the right mouse button.

Place Doubleline Command (Draw Toolbar)

{button Related Topics,AL("freesketch high;smartsketch high;line high;dubline high",0,`NOT_FOUND')}
{button How To,AL("line how",0,`NOT_FOUND')}

Draws a doubleline or a series of connected doublelines. When you draw a series of lines, the second point of one line is the first point of the next line.

This button is most effective if you use it in a document based on one of the architectural templates in the **AEC** category.

{mci_left NOMENU,DUBLINE1.AVI}

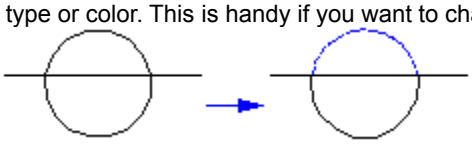
Tip This button appears on a set of fly-out buttons. If you cannot locate this button, click and hold the **Line/Arc Continuous** button on the **Draw** toolbar.

Doubleline Ribbon Bar

Segmented Style Command

{button Related Topics,AL("line high",0,`NOT_FOUND')} {button How To,AL("segmented style how;add button to toolbar how",0,`NOT_FOUND')}

Applies a line type, line weight, or color to part of an element. When you apply the line type, line weight, or color, the format extends to the next element that crosses or bounds the element to which you are applying the line type or color. This is handy if you want to change the appearance of just part of an element.



Caution If you change the size of the element, you must re-apply the line type or color with the **Segmented Style** command. The **Segmented Style** command does not recognize symbols as a bounding element.

Tip To access this command, you must place it on a toolbar or menu with the **Customize** command on the **Tools** menu. On the **Toolbars** tab of the **Customize** dialog box, click the **Draw** category.

 Line Ribbon Bar

About SmartSketch **Command (Help Menu)**

{button Related Topics,AL("help high",0,`NOT_FOUND')}  {button How To,AL("about how",0,`NOT_FOUND')}

Displays information about your copy of the software, including the version number and the copyright, legal, and licensing notices.

Add-Ins Command (Tools Menu)

{button Related Topics,AL("add-ins overview high;add-ins included high",0,`NOT_FOUND')} {button How To,AL("add-in how",0,`NOT_FOUND')}

Allows you to select add-ins that are automatically available and ready to use when you start the software. With the **Add-Ins** command, you can install or remove:

- Add-ins that come with the software.
- Add-ins that you create.

Add-Ins Available

Lists the available add-ins. You can select or clear the add-in check boxes to install or remove add-ins in the software.

Browse

Lists the available drives and directories from which you can select an add-in to install in the software

Leader Command (Dimension Toolbar)

{button Related Topics,AL(`annotations high',0,`NOT_FOUND')} {button How To,AL(`leader how',0,`NOT_FOUND')}

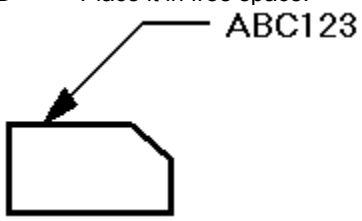
Adds a leader to an annotation or to another leader. You can place either end of the leader first: the annotation end or the terminator end.

You can attach the annotation end of a leader to one of the following:

- Text box
- Balloon
- Another leader on a dimension or annotation

You can place the terminator end of a leader in one of the following ways:

- Attach it to an element.
- Place it in free space.



- Leader Ribbon Bar

Alignment Indicator Command (Tools Menu)

{button Related Topics,AL("tools high;smartsketch high",0,`NOT_FOUND')} {button How To,AL("smartsketch how",0,`NOT_FOUND')}

Displays dashed lines to show horizontal or vertical alignment while you draw or modify elements. Alignment indicators work similarly to relationship indicators. If you click when a horizontal or vertical indicator line is displayed, the element you are drawing or modifying will be horizontally or vertically aligned with the element the indicator line leads to.

Dimension Command (Main Toolbar)

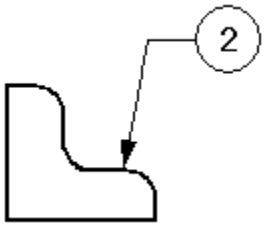
{button Related Topics,AL("annotations high",0,`NOT_FOUND')} {button How To,AL("display Dimension Toolbar how",0,`NOT_FOUND')}

Displays the **Dimension Toolbar**. You can use the commands on this toolbar to place and modify dimensions and annotations.

Balloon Command (Dimension Toolbar)

{button Related Topics,AL(`annotations high;annotations cmd',0,`NOT_FOUND')} {button How To,AL(`balloon how;insert vertex how',0,`NOT_FOUND')}

Places a balloon containing text. You can use balloons to refer to an element or a point in free space. You can set options for controlling the size and shape of the balloon, text presentation, and leader display.



Balloon Ribbon Bar

Bring to Front Command (Change Toolbar)

{button Related Topics,AL("display order high;display order cmd;",0,`NOT_FOUND')} {button How To,AL("bring to front how",0,`NOT_FOUND')}

Moves one or more selected elements or element groups to the front of the display order.

{mci_left NOMENU,BFRONT.AVI}

Tangent Command (Relationship Toolbar)

{button Related Topics,AL("draw high;relationship handles high;relating elements high",0,`NOT_FOUND')}
{button How To,AL("make tangent how",0,`NOT_FOUND')}

Makes two elements tangent. You can make two circles or arcs tangent. You can also make a circle, or an arc, and a line tangent.

{mci_left NOMENU,CHAN10C.AVI}

Relationship Handles Command (Tools Menu)

{button Related Topics,AL("draw high;relating elements high",0,`NOT_FOUND')} {button How To,AL("show relationship handle how;delete relationship handle how",0,`NOT_FOUND')}

Displays any relationship handles on elements.

Maintain Relationships Command (Tools Menu)

{button Related Topics,AL("dimensions high;relationship handles cmd;draw high;relating elements high",0,`NOT_FOUND')} {button How To,AL("maintain relationships how",0,`NOT_FOUND')}

Places relationship handles as you draw. When this option is set, the software places relationship handles for relationships that the software recognizes, and for relationships that you apply using the buttons on the **Relationship** toolbar.

Concentric Command (Relationship Toolbar)

{button Related Topics,AL("draw high;relationship handles high;relating elements high",0,`NOT_FOUND')}
{button How To,AL("make concentric how",0,`NOT_FOUND')}

Makes an arc or circle concentric with another arc or circle.

{mci_left NOMENU,CHAN1C.AVI}

Colinear Command (Relationship Toolbar)

{button Related Topics,AL("draw high;relationship handles high;relating elements high",0,`NOT_FOUND')}
{button How To,AL("make colinear how ",0,`NOT_FOUND')}

Makes two lines colinear.

{mci_left NOMENU,CHAN2C.AVI}

Equal Command (Relationship Toolbar)

{button Related Topics,AL("draw high;relationship handles high;relating elements high",0,`NOT_FOUND')}
{button How To,AL("make equal how",0,`NOT_FOUND')}

Makes elements or dimension values equal. You can make the length of lines, the radius of arcs and circles, and the values of dimensions equal.

{mci_left NOMENU,CHAN3C.AVI}

Lock Command (Relationship Toolbar)

{button Related Topics,AL("draw high;relationship handles high;relating elements high",0,`NOT_FOUND')}
{button How To,AL("lock how",0,`NOT_FOUND')}

Controls elements so they cannot be modified. When you use this button, you can lock the length, angle, radius, or position of an element. You can also lock keypoints on elements, such as endpoints of a line or the center of a circle, in their absolute positions.

{mci_left NOMENU,CHAN4C.AVI}

Horizontal/Vertical Command (Relationship Toolbar)

{button Related Topics,AL("draw high;relationship handles high;relationships high;relating elements high",0,`NOT_FOUND')} {button How To,AL("make horizontal vertical how",0,`NOT_FOUND')}

Makes a line horizontal or vertical, or horizontally or vertically aligns two key points.

{mci_left NOMENU,CHAN5C.AVI}

{mci_left NOMENU,CHAN5C_B.AVI}

Connect Command (Relationship Toolbar)

{button Related Topics,AL("draw high;relationship handles high;relating elements high",0,`NOT_FOUND')}
{button How To,AL("connect how",0,`NOT_FOUND')}

Connects two elements or key points at one point. This command also connects a key point on an element to a position that you select on another element.

{mci_left NOMENU,CHAN6C.AVI}

Parallel Command (Relationship Toolbar)

{button Related Topics,AL("draw high;relationship handles high;relating elements high",0,`NOT_FOUND')}
{button How To,AL("make parallel how",0,`NOT_FOUND')}

Makes two lines parallel.

{mci_left NOMENU,CHAN7C.AVI}

Perpendicular Command (Relationship Toolbar)

{button Related Topics,AL("relationships high;draw high;relating elements high",0,`NOT_FOUND')}
{button How To,AL("make perpendicular how",0,`NOT_FOUND')}

Makes two elements perpendicular. You can make two lines, a line and an arc, or a line and a circle perpendicular.

{mci_left NOMENU,CHAN8C.AVI}

Symmetric Command (Relationship Toolbar)

{button Related Topics,AL("draw high;relationship handles high;relating elements high",0,`NOT_FOUND')}
{button How To,AL("make symmetric how",0,`NOT_FOUND')}

Makes elements symmetric about an axis. The characteristics of the elements on each side of the axis, such as size and position, are maintained by the symmetric relationship.

{mci_left NOMENU,CHAN9C.AVI}

Change Command (Main Toolbar)

{button Related Topics,AL("relating elements high",0,`NOT_FOUND')} {button How To,AL("display change toolbar how",0,`NOT_FOUND')}

Displays the **Change** toolbar. You can use the commands on this toolbar to manipulate elements.

Chamfer Command (Draw Toolbar)

{button Related Topics,AL("draw high;freesketch high;smartsketch high;extending or trimming high",0,`NOT_FOUND')}  {button How To,AL("chamfer how;",0,`NOT_FOUND')}

Draws a chamfer, or bevel, between two linear elements. You can control the chamfer angle and the setback distances for both elements.

{mci_left NOMENU,CHMFER1C.AVI}

Chamfer Ribbon Bar

Circular Pattern Command (Change Toolbar)

{button Related Topics,AL("patterns high;pattern cmd",0,`NOT_FOUND')} {button How To,AL("circular pattern how",0,`NOT_FOUND')}

Arranges selected elements in a circular pattern on the drawing sheet.

{mci_left NOMENU,CIRCPTN1.AVI}

Circular Pattern Ribbon Bar

Close Command (File Menu)

{button Related Topics,AL("document high;document cmd",0,`NOT_FOUND')}  {button How To,AL("close document how",0,`NOT_FOUND')}

Closes the active document. If you have made changes since the document was last saved or if you have never saved a new document, you are prompted to indicate if you want to save your changes. If you do not want to save your changes, click the **No** button. If you want to save the changes, click the **Yes** button. If you do not want to close the document, click the **Cancel** button. If you click the **Yes** button, the **Save As** dialog box is displayed so that you can give the document a name and specify a directory and format to save it to.

Save As Dialog Box

Close and Return Command (File Menu)

{button Related Topics,AL("revert imag cmd",0,`NOT_FOUND')} {button How To,AL("close return imag how",0,`NOT_FOUND')}

Saves changes to the SmartSketch document, closes it, and returns to the SmartSketch environment.

Note When you use the **Close** and **Return** command, you are not asked to save the document until you exit SmartSketch.

Help Command (Main Toolbar)

{button Related Topics,AL("help high",0,`NOT_FOUND')} {button How To,AL("context help how",0,`NOT_FOUND')}

Displays context-sensitive **Help** on an item in the current window. You can use this command to get help on any item even when the item is not active. When this command is active, the pointer changes to a northwest arrow with a question mark.

Note You can press **Shift** + **F1** to get context-sensitive **Help** on an active command.

Convert Command (Symbols Shortcut Menu)

{button Related Topics,AL("symbols high",0,`NOT_FOUND')} {button How To,AL("edit symbols how",0,`NOT_FOUND')}

Converts the selected object to another file format. For example, if you select a symbol and click this command, the symbol is converted to a group of elements on the drawing sheet.

Note You must place a symbol in a document at the default scale (1:1) if you want to use the **Convert** command. If you scale the symbol, you cannot convert the symbol to individual elements.

Copy Command (Edit Menu)

{button Related Topics,AL("edit high;cutting high;link and embed high;copy high",0,`NOT_FOUND')}
{button How To,AL("copy how",0,`NOT_FOUND')}

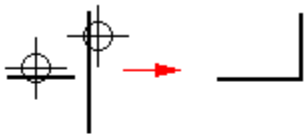
Copies selected elements and their associated relationships to the **Clipboard**. When you use this command, it replaces the previous contents of the **Clipboard** with the new contents.

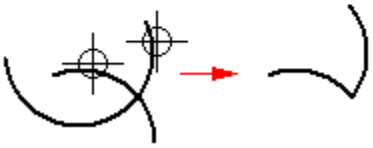
When you copy more than one element at a time, all relationships shared among the elements are also copied. However, when you copy an element that shares a relationship with an element that you are not copying, the relationship is not copied.

Trim Corner Command (Draw Toolbar)

{button Related Topics,AL("draw high;extending or trimming high",0,`NOT_FOUND')} {button How To,AL("corner trim how",0,`NOT_FOUND')}

Draws a corner by extending and/or trimming two selected open elements.





Customize Command (Tools Menu)

{button Related Topics,AL("customize high",0,`NOT_FOUND')} {button How To,AL("customize how;restore toolbar how",0,`NOT_FOUND')}

Allows you to customize toolbars or menus to fit your workflow.

Customize Dialog Box

Cut Command (Edit Menu)

{button Related Topics,AL("cutting high;select high",0,`NOT_FOUND')} {button How To,AL("cut how",0,`NOT_FOUND')}

Cuts selected elements from the document and pastes them to the **Clipboard**. The selected elements replace the previous contents of the **Clipboard**.

Arc by 3 Points Command (Draw Toolbar)

{button Related Topics,AL("arc cmd;freesketch high;smartsketch high;circle high",0,`NOT_FOUND')}
{button How To,AL("arcs how",0,`NOT_FOUND')}

Draws an arc using three points. The first point defines an end point. You can then either define a point on the arc and then the end point, or the end point and then a point on the arc. The end points are not tangent or perpendicular to other elements.

{mci_left NOMENU,ARCBY3_1.AVI}

Arc Ribbon Bar

Arc By Center Point Command (Draw Toolbar)

{button Related Topics,AL("arc cmd;freesketch high;smartsketch high;circle high",0,`NOT_FOUND')}
{button How To,AL("arcs how",0,`NOT_FOUND')}

Draws an arc using three points. The first point defines the center of the arc and the next two points define the sweep.

{mci_left NOMENU,ARCBYCEN.AVI}

Arc Ribbon Bar

Tangent Arc Command (Draw Toolbar)

{button Related Topics,AL("arc cmd;freesketch high;smartsketch high;circle high",0,`NOT_FOUND')}
{button How To,AL("arcs how",0,`NOT_FOUND')}

Draws an arc tangent or perpendicular to one or two elements. The first point defines one end of the arc. If you place the first point on a key point of an element you want the arc to be tangent or perpendicular to, then the second point defines the sweep.

{mci_left NOMENU,TANARC1.AVI}

If you place the first point in free space, then this command works like the **Arc by 3 Points** command. In this case the first point defines an end point. You can then either define a point on the arc and then the end point, or the end point and then a point on the arc.

Note While in dynamics for the second point, you can set the orientation of the arc by passing the pointer through one of the four quadrants of the first point's intent zone.

 Arc Ribbon Bar

Circle by 3 Points Command (Draw Toolbar)

{button Related Topics,AL("circle cmd;freesketch high;smartsketch high;circle high",0,`NOT_FOUND')}
{button How To,AL("circle by 3 how",0,`NOT_FOUND')}

Draws a circle using three points that define the circumference.

{mci_left NOMENU,CIRBY3.AVI}

Circle Ribbon Bar

Circle by Center Point Command (Draw Toolbar)

{button Related Topics,AL("circle cmd;freesketch high;smartsketch high;circle high",0,`NOT_FOUND')}
{button How To,AL("circle by center how;circle freesketch how",0,`NOT_FOUND')}

Draws a circle using a center point and radius.

{mci_left NOMENU,CIRBCEN.AVI}

Circle Ribbon Bar

Tangent Circle Command (Draw Toolbar)

{button Related Topics,AL("circle cmd;freesketch high;smartsketch high;circle high",0,`NOT_FOUND')}
{button How To,AL("tangent circle how;circle freesketch how",0,`NOT_FOUND')}

Draws a circle tangent to one or two elements.

{mci_left NOMENU,TANCIRC1.AVI}

Circle Ribbon Bar

Curve Command (Draw Toolbar)

{button Related Topics,AL("node;freeform high;circle high;draw high",0,`NOT_FOUND')} {button How To,AL("curve how",0,`NOT_FOUND')}

Draws a smooth, open or closed curve. A series of curves can have smooth, symmetric, and cusp nodes. The node at the start point and the node at the end point of a curve are always smooth.

{mci_left NOMENU,CURVE1.AVI}

Curve Ribbon Bar

Delete Command (Edit Menu)

{button Related Topics,AL("cutting high;select high",0,`NOT_FOUND')} {button How To,AL("delete element how",0,`NOT_FOUND')}

Deletes the selected element and any relationships and dimensions that have been placed on it. You cannot reinsert or paste elements deleted with this command. However, you can retrieve the data by immediately clicking the **Undo** command.

You can also access this command on the **Schematic** toolbar.

Ellipse by 3 Points Command (Draw Toolbar)

{button Related Topics,AL("ellipse cmd;freesketch high;smartsketch high;circle high ",0,`NOT_FOUND')}
{button How To,AL("ellipse by 3 how;ellipse freesketch how",0,`NOT_FOUND')}

Draws an ellipse using three edge points. The first two points define the length of the primary axis and the rotation angle. The last point defines the secondary axis.

{mci_left NOMENU,ELLBY3_1.AVI}

Ellipse Ribbon Bar

Ellipse by Center Point Command (Draw Toolbar)

{button Related Topics,AL("ellipse cmd;freesketch high;smartsketch high;circle high ",0,`NOT_FOUND')}
{button How To,AL("ellipse by center how;ellipse freesketch how ",0,`NOT_FOUND')}

Draws an ellipse using the center point and two edge points. The center point and the next point define half the length of the primary axis and the rotation angle. The last point defines the secondary axis.

{mci_left NOMENU,ELLBYCEN.AVI}

 Ellipse Ribbon Bar

FreeForm Command (Draw Toolbar)

{button Related Topics,AL("freeform high;draw high",0,`NOT_FOUND')} {button How To,AL("freeform how",0,`NOT_FOUND')}

Draws freeform curves, or splines.

{mci_left NOMENU,DFRFRM1C.AVI}

FreeForm Ribbon Bar

FreeSketch Command (Draw Toolbar)

{button Related topics,AL("draw high;freesketch high",0,`NOT_FOUND')} {button How To,AL("freesketch how",0,`NOT_FOUND')}

Draws lines, arcs, rectangles, and circles by converting a sketch into a precision drawing. You can specify which of these elements you want to draw using the ribbon bar.

{mci_left NOMENU,DFRSKC1C.AVI}

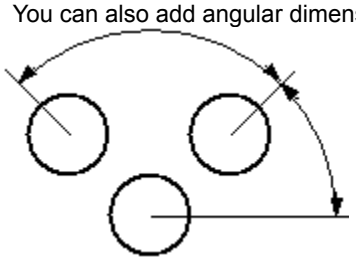
FreeSketch Ribbon Bar

Angle Between Command (Dimension Toolbar)

{button Related Topics,AL("group dimensions high;dimensions high",0,`NOT_FOUND')} {button How To,AL("add dimension how;dimension group how;place dimension between two how",0,`NOT_FOUND')}

Places a dimension that measures the angle between elements or key points. You can place angular dimensions in stacked or chained dimension groups.

You can also add angular dimensions to existing dimension groups.



Dimension Ribbon Bar

Coordinate Dimension Command (Dimension Toolbar)

{button Related Topics,AL("coordinate dimensions high;dimensions high",0,`NOT_FOUND')} {button How To,AL("add dimension to group how;place dimension group how",0,`NOT_FOUND')}

Places a dimension that measures the distance from a common origin to one or more key points or elements. The coordinate dimensions that refer to the common origin are members of a coordinate dimension group.

You can place coordinate dimensions in any order and on either side of the origin with respect to the dimension axis. You can also add additional coordinate dimensions to existing coordinate dimension groups.

{mci_left NOMENU,COORDIM1.AVI}

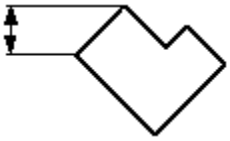
 Dimension Ribbon Bar

Axis Command (Dimension Toolbar)

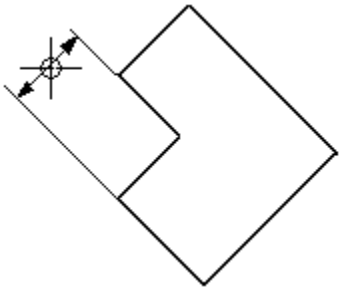
{button Related Topics,AL(`dimensions high',0,`NOT_FOUND')} {button How To,AL(`set dimension axis how;place dimension group how;place dimension between two how',0,`NOT_FOUND')}

Sets a dimension axis for a drawing. A dimension axis allows you to place dimensions that are perpendicular to or parallel to an element.

The default axis in a drawing is perpendicular or parallel to the horizontal axis of a drawing sheet. Dimensions placed along the default axis look like this:



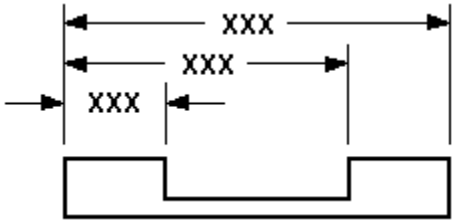
After you set a dimension axis with the **Axis** command, you can now place a dimension that runs parallel or perpendicular to the dimension axis that you have defined. To use the axis that you have just specified, you must set the type of dimension axis that you want to use on the dimension ribbon bar. You do this by clicking the **Distance Between** or **Coordinate Dimension** buttons on the **Dimension Toolbar**. Then, you click **Explicit** in the **Dimension Axis** box on the ribbon bar so that you can use the dimension axis that you set with the **Axis** command.



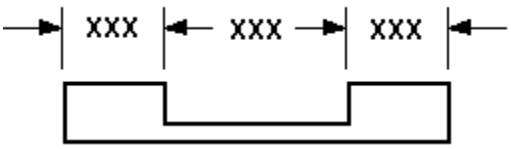
Distance Between Command (Dimension Toolbar)

{button Related Topics,AL("dimension groups high;dimension cmd;dimensions high;element properties cmd",0,`NOT_FOUND')} {button How To,AL("dimension between how;add dimension how",0,`NOT_FOUND')}

Places a linear dimension that measures the distance between elements or key points. You can place linear dimensions in stacked dimension groups.



You can place chained dimension groups.



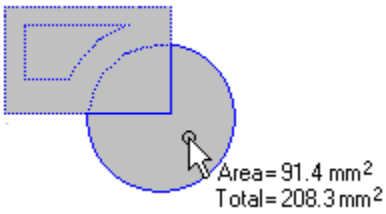
You can also add linear dimensions to existing linear dimension groups.

Dimension Ribbon Bar

Measure Area Command (Tools Menu)

{button Related Topics,AL("measure high;dimensions high",0,`NOT_FOUND')}  {button How To,AL("measure area how",0,`NOT_FOUND')}

Measures the area inside a closed boundary. You can use the **Measure Area** command when you are in the middle of another task.



The following measurements appear next to the pointer:

Area

Displays the most recently selected area of the boundary in the current units.

Total

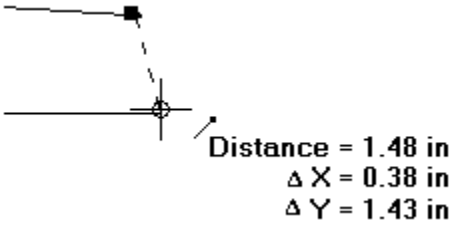
Displays the total area of all selected boundaries in the current document units. You press the Shift key to display this value.

Measure Distance Command (Tools Menu)

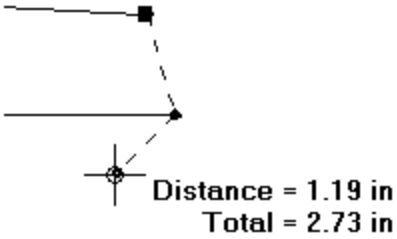
{button Related Topics,AL("measure high cmd;dimensions high",0,`NOT_FOUND')} {button How To,AL("measure distance how",0,`NOT_FOUND')}

Measures the distance between points in free space or between key points. When you are in the middle of a task, you can measure distances with the **Measure Distance** command at any time.

When you move the pointer over a key point, the distance between the current location of the pointer and the last point you clicked appears, along with the delta values. The delta values are the distances, as measured along the x and y axes.



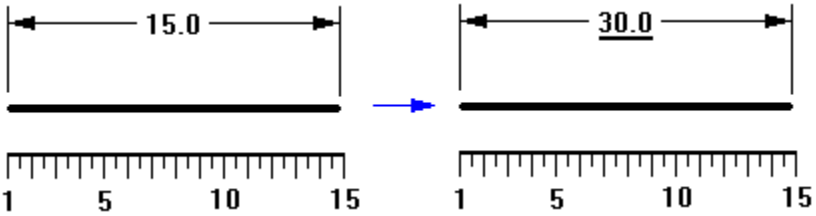
When you click a third point, the cumulative distance between the first and last point that you clicked appears next to the pointer.



Not To Scale Command (Shortcut Menu)

{button Related Topics,AL("dimension cmd;dimensions high",0,`NOT_FOUND')}{button How To,AL("return dim to actual value how",0,`NOT_FOUND')}

Returns a driven dimension to its actual value. You can use this command only on a dimensional value that has been edited. Editing a dimensional value overrides the original value and makes the dimension not-to-scale. For example, if you override the dimensional value that is 15 millimeters to be 30 millimeters, the actual size of the line that you see would still be 15 millimeters.



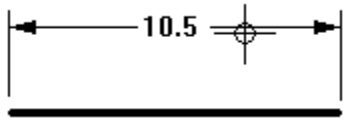
Note Before you can select this command from the shortcut menu, you must select a dimension.

SmartDimension Command (Dimension Toolbar)

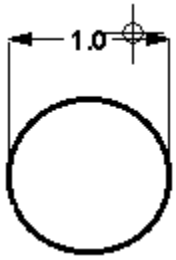
{button Related Topics,AL("dimensions high",0,`NOT_FOUND')} {button How To,AL("place dimension how",0,`NOT_FOUND')}

Places a dimension for the following:

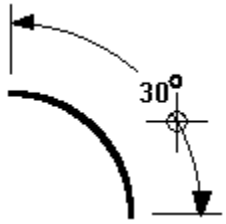
- Length and angle of a line



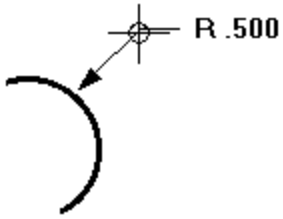
- Radius and diameter of a circle



- Length, angle, radius, and diameter of an arc



- Radius of an ellipse or curve



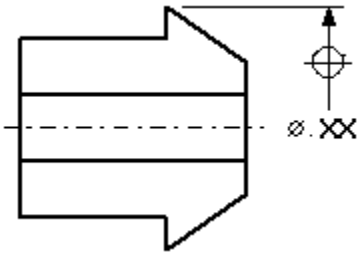
- Dimension Ribbon Bar

Symmetric Diameter Command (Dimension Toolbar)

{button Related Topics,AL("dimension groups high;dimensions high",0,`NOT_FOUND')} {button How To,AL("place symmetric diameter how;add dimension to group how",0,`NOT_FOUND')}

Places a dimension that measures the distance between a center line and another element or key point, multiplies the distance by two, and displays the value as a diameter. You can place dimensions that measure the symmetric diameter of elements in a dimension group.

You can also add additional symmetric diameter dimensions to an existing dimension group.



Dimension Ribbon Bar

Line/Arc Continuous Command (Draw Toolbar)

{button Related Topics,AL("freesketch high;smartsketch high;line high",0,`NOT_FOUND')} {button How To,AL("line how",0,`NOT_FOUND')}

Draws one line or a series of connected lines. When you draw a series of lines, the second point of one line is the first point of the next line.

{mci_left NOMENU,LINE1.AVI}

You can also draw a continuous series of lines and arcs that can be perpendicular or tangent to each other. You can create an open or closed shape by drawing lines and arcs in any combination. The last point of the line or arc is the first point of the next line or arc.

{mci_left NOMENU,DLNARC1C.AVI}

 Line Ribbon Bar

Delete Node Command (Shortcut Menu)

{button Related Topics,AL("curve cmd;freeform high",0,`NOT_FOUND')} {button How To,AL("curve how",0,`NOT_FOUND')}

Deletes a node from a curve.

Note Before you can select this command from the shortcut menu, you must locate a curve.

Curve Ribbon Bar

Insert Node Command (Shortcut Menu)

{button Related Topics,AL("curve cmd;freeform high",0,`NOT_FOUND')} {button How To,AL("curve how",0,`NOT_FOUND')}

Adds a node to a curve.

Note Before you can select this command from the shortcut menu, you must locate the curve.

Curve Ribbon Bar

Point Command

{button Related Topics,AL("freesketch high;smartsketch high;draw high;customize high ",0,`NOT_FOUND')}
{button How To,AL("point how;customize toolbar how",0,`NOT_FOUND')}

Draws a point. The point is displayed as a filled rectangle.

Note The **Point** command is available only if you use the **Customize** command to place it on a toolbar or menu.

Point Ribbon Bar

Rectangle Command (Draw Toolbar)

{button Related Topics,AL("freeform high;smartsketch high;draw high;rectangle high",0,`NOT_FOUND')}
{button How To,AL("rectangle how;rectangle freeform how",0,`NOT_FOUND')}

Draws a rectangle using three points. The first two points define the width and rotation angle of the rectangle, and the third point defines the height. You can also draw a square with this command.

{mci_left NOMENU,RECT1.AVI}

Rectangle Ribbon Bar

Drop Complex String Command (Shortcut Menu)

{button Related Topics,AL("circle high",0,`NOT_FOUND')}

Breaks a complex string of elements into individual elements, such as individual arcs, lines, and circles.

To access the **Drop Complex String** command, point to the complex string and right-click. After you select the command from the shortcut menu that appears, the complex string divides into individual elements.

Drop Line String Command (Shortcut Menu)

{button Related Topics,AL("circle high;line high",0,`NOT_FOUND')}

Divides a line string into individual line segments.

To access the **Drop Line String** command, point to line string and right click. After you select the command from the shortcut menu that appears, the line string is divided into individual line segments.

Properties Command (Edit Menu)

{button Related Topics,AL(`edit properties cmd;edit high;applying unique formats high;formatting elements high',0,`NOT_FOUND')} {button How To,AL(`format how',0,`NOT_FOUND')}

Edits the properties of a selected element, group, symbol, dimension, or annotation. If you select a group of elements, you can edit only the common properties of that group. You can also edit the properties of a border around an inserted object, called a **SmartFrame**.

Note Before you can select this command from the shortcut menu, you must locate an element and then click the right mouse button.

- Element Properties Dialog Box
- Dimension Properties Dialog Box
- Text Properties Dialog Box
- Symbol Properties Dialog Box
- Leader Properties Dialog Box
- Fill Properties Dialog Box
- Balloon Properties Dialog Box
- Group Properties Dialog Box
- SmartFrame Properties Dialog Box

Open Source Command (Shortcut Menu)

{button Related Topics,AL("variables high;variables cmd",0,`NOT_FOUND')}  {button How To,AL("variables how",0,`NOT_FOUND')}

Opens a spreadsheet in the **Variable Table** that has been linked to it with the **Paste Link** command.

Note Before you can select this command from the shortcut menu, you must select the **Variables** command on the **Tools** menu.

Paste Link Command (Shortcut Menu)

{button Related Topics,AL("variables high;variables cmd;paste link cmd",0,`NOT_FOUND')} {button How To,AL("variables how",0,`NOT_FOUND')}

Links data in a document to a cell in the **Variable Table**.

Note Before you can select this command from the shortcut menu, you must select the **Variables** command on the **Tools** menu.

Variables Command (Tools Menu)

{button Related Topics,AL("variables high;variables cmd;functions high",0,`NOT_FOUND')} {button How To,AL("variables how",0,`NOT_FOUND')}

Accesses the **Variable Table**, which operates much like a software spreadsheet. The **Variable Table** allows you to define and manipulate drawing variables and their values, as well as establish functional relationships between the design variables. For example, you can use the **Variable Table** to create expressions for dimensional values.

Variable Table

Filter Command (Shortcut Menu)

{button Related Topics,AL("variables high;variables cmd",0,`NOT_FOUND')} {button How To,AL("variables how",0,`NOT_FOUND')}

Restricts the display in the **Variable Table** to variables that you select on the **Filter** dialog box.

Note To select this command from the shortcut menu, you must first select the **Variables** command on the **Tools** menu and then pause the mouse cursor in the **Variable Table** window.

Filter Dialog Box

Exit Command (File Menu)

{button Related Topics,AL("save high",0,`NOT_FOUND')} {button How To,AL("close document how",0,`NOT_FOUND')}

Closes all open documents and exits the software. If you have made changes since the document was last saved or if you have never saved a new document, you are prompted to indicate if you want to save your changes. If you do not want to save your changes, click the **No** button. If you want to save the changes, click the **Yes** button. If you do not want to close the document, click the **Cancel** button. If you click the **Yes** button, the **Save As** dialog box is displayed so that you can give the document a name and specify a directory and format to save it to.

Save As Dialog Box

Extend to Next Command (Draw Toolbar)

{button Related Topics,AL("extending or trimming high;draw high",0,`NOT_FOUND')} {button How To,AL("extend to next how",0,`NOT_FOUND')}

Extends one or more open elements until they intersect with the nearest element in the active window. The extension direction is determined by the position where you select the element to extend. For example, if you select a horizontal line to the right of its midpoint, the line extends to the right.

{mci_left NOMENU,EXTNXT1C.AVI}

If there is no possible intersection between the element you want to extend and any other element in the view, the command does not extend the element.

Dimension Command (Format Menu)

{button Related Topics,AL("dimensions high;formatting high",0,`NOT_FOUND')} {button How To,AL("format dimension how",0,`NOT_FOUND')}

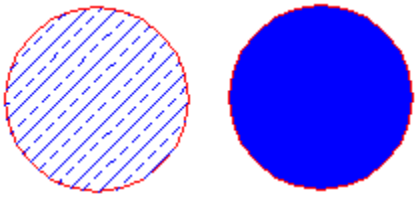
Formats a new dimension as you place it.

- Format Dimension Dialog Box

Fill Command (Draw Toolbar)

{button Related Topics,AL("fill cmd;fill high;element properties cmd",0,`NOT_FOUND')}  {button How To,AL("fill how",0,`NOT_FOUND')}

Places a fill inside a closed boundary. You can modify fill properties with the **Fill** ribbon bar.



You can also access this command on the **Schematic** toolbar.

Fill Ribbon Bar

Layers Command (Tools Menu)

{button Related Topics,AL("layers high;display manager cmd",0,`NOT_FOUND')} {button How To,AL(`layers how;filter how',0,`NOT_FOUND')}

Displays or hides layers. This command also sets the active layer and changes the layer of an element.

Note You can set display criteria for all the sheets and their associated layers in the current document with the **Display Manager** command on the **Tools** menu.

Layers Ribbon Bar

Layer Groups Command (Tools Menu)

{button Related Topics,AL("layers high;layers cmd ",0,`NOT_FOUND')}{button How To,AL(`layer groups how',0,`NOT_FOUND')}

Creates, modifies, or deletes layers and layer groups. You can only work with layers on the current working sheet.

Groups Dialog Box

Fillet Command (Draw Toolbar)

{button Related Topics,AL("draw high;extending or trimming high",0,`NOT_FOUND')} {button How To,AL("fillet how",0,`NOT_FOUND')}

Draws a fillet between two elements. The elements can be arcs, lines, circles, ellipses, or curves.

{mci_left NOMENU,FILLET1C.AVI}

Fillet Ribbon Bar

Display Manager Command (Tools Menu)

{button Related Topics,AL(`layer cmd;layers high',0,`NOT_FOUND')} {button How To,AL(`filter how;layers how',0,`NOT_FOUND')}

Specifies the way elements or objects appear in a window for all drawing sheets and their associated layers in the document.

Note You can quickly set display options for the current drawing sheet on the **Layer Display** dialog box. You can access the **Layer Display** dialog box with the **Layers** command on the **Tools** menu.

Display Manager Dialog Box

Fit Command (View Menu)

{button Related Topics,AL("views high",0,`NOT_FOUND')}  {button How To,AL("fit how",0,`NOT_FOUND')}

Fits all visible elements in the active view.

Tip You can also click the right mouse button to access the **Fit** command on the shortcut menu.

Line Command (Format Menu)

{button Related Topics,AL("styles cmd;line cmd;styles high;formatting elements",0,`NOT_FOUND')}
{button How To,AL("format line how",0,`NOT_FOUND')}

Formats a new line as you place it.

Format Line Dialog Box

Character Map Command (Tools Menu)

{button Related Topics,AL("annotations high",0,`NOT_FOUND')} {button How To,AL("insert font character into text box how;place text box how",0,`NOT_FOUND')}

Inserts a character into a text box using a different font. You can also insert special characters that do not have corresponding keys on the keyboard. You can use this command when you type or edit text in a text box.

Note If you are running Windows 95 or a higher version and this command is not available, you must install the Character Map accessory. You can add it by clicking the Control Panel icon and then the Add/Remove Programs icon. While adding the software, you can find the Character Map software in the Accessories category. For detailed instructions on how to add the Character Map accessory, see the Windows 95 on-line Help for Add/Remove Programs.

Unicode Character Map Dialog Box

Text Box Command (Format Menu)

{button Related Topics,AL("text cmd;text high;styles high;formatting elements",0,`NOT_FOUND')} {button How To,AL("text how",0,`NOT_FOUND')}

Formats a new text box as you place it.

Format Text Box Dialog Box

Grid Display Command (View Menu)

{button Related Topics,AL("view high;pinpoint high;draw high;grid cmd;grid high",0,`NOT_FOUND')}
{button How To,AL("grid how",0,`NOT_FOUND')}

Displays a grid so that you can place elements with precision. The grid is not part of the document and does not print.

{mci_left NOMENU,GRID2.AVI}

You can also access this command on the **Schematic** toolbar.

Tip You can also access the **Grid Display** command by clicking the right mouse button. You can change the grid display from static to dynamic by setting options on the **View** tab of the **Options** dialog box.

Grid Snap Command (View Menu)

{button Related Topics,AL("view high;pinpoint high;draw high;grid cmd;grid high",0,`NOT_FOUND')}
{button How To,AL("grid how",0,`NOT_FOUND')}

Aligns elements with the grid. The grid is an invisible set of lines in the document that helps you align elements. When you set the **Grid Snap** option, elements always align with the grid lines or nearest intersection of the grid lines. Grid lines do not print.

{mci_left NOMENU,GRID1.AVI}

You can also access this command on the **Schematic** toolbar.

Tip You can also access the **Grid Snap** command by clicking the right mouse button. You can change the grid display by setting options on the **View** tab of the **Options** dialog box.

Relationship and alignment indicators override the grid snap. You can suppress the indicators by holding down the **Alt** key on the keyboard.

Caution You cannot place elements with the **Pinpoint** button on the **Main** toolbar if you are using the **Grid Snap** command.

Group Command (Change Toolbar)

{button Related Topics,AL("groups high;group cmd",0,`NOT_FOUND')}{button How To,AL("group how",0,`NOT_FOUND')}

Binds elements so you can locate, select, and manipulate them as a unit. Grouped elements are usually related, such as the holes and center lines of a bolt hole pattern. When you select a group, the **Group** ribbon bar is displayed so you can edit the entire group or any of its members.

Group Ribbon Bar

Restore Command (Control Menu)

{button Related Topics,AL("ui high",0,`NOT_FOUND')}

Restores the window to its previous size and location.

Close Command (Control Menu)

{button Related Topics,AL("ui high",0,`NOT_FOUND')}

Closes the active program or document. If the open document contains unsaved changes, you will be prompted to save the changes.

Maximize Command (Control Menu)

{button Related Topics,AL("ui high",0,`NOT_FOUND')}

Enlarges the application or document window to fill the screen. Double-click the title bar to restore the window to its previous size and location.

Move Command (Control Menu)

{button Related Topics,AL("ui high",0,`NOT_FOUND')}

Allows you to use the arrow keys on the keyboard to change the location of the application or document window.

Size Command (Control Menu)

{button Related Topics,AL("ui high",0,`NOT_FOUND')}

Activates the arrow keys so that you can change the size of the application or document window.

Minimize Command (Control Menu)

{button Related Topics,AL("ui high",0,`NOT_FOUND')}

Reduces a program or window to a button on the taskbar. To restore the window to its previous size and location, click the button on the taskbar.

Next Command (Control Menu)

{button Related Topics,AL("ui high",0,`NOT_FOUND')}

Allows you to switch to the next document.

SmartSketch **Help Topics Command (Help Menu)**

{button Related Topics,AL("help high",0,`NOT_FOUND')}  {button How To,AL("topics how",0,`NOT_FOUND')}

Displays the table of contents for the SmartSketch Help topics, which include step-by-step instructions for using the software, reference information, examples of features, and technical support information. It also provides access to the Help index and full-text search.

Image Command (Insert Menu)

{button Related Topics,AL("raster high",0,`NOT_FOUND')}  {button How To,AL("insert raster image how",0,`NOT_FOUND')}

Places a raster image into a SmartSketch document.

Tip To use this command, you must first install **ImageScape LT** with **Add-Ins** on the **Tools** menu. If you do not see the add-in listed in the **Add-In Manager,** you must run Setup again and select the **Custom** installation. You can then select an option for the add-in.

Object Command (Insert Menu)

{button Related Topics,AL("importing objects high;ole high;raster high",0,`NOT_FOUND')} {button How To,AL("insert raster image how;ole how",0,`NOT_FOUND')}

Inserts objects into a document through linking and embedding. The difference between linking and embedding is how data is stored and updated. The **Object** command inserts any OLE 2.0 enabled object, such as a Word or .AVI document, or CAD document, such as a .dwg document. The inserted object can then be edited by double-clicking it.

- When you link an object to a document, the document stores information about where the object is located—the object is not stored in the document. When you embed an object in a document, a copy of the object is stored in the document.
- When you make changes to a linked object, all documents that have links to that object update. When you make changes to an embedded object, only the copy of the object that is stored in the document updates.

- Insert Object Dialog Box

SmartSketch **on the Web Command (Help Menu)**

{button Related Topics,AL("help high;internet high",0,`NOT_FOUND')} {button How To,AL("internet community how",0,`NOT_FOUND')}

Activates your World Wide Web browser and opens the SmartSketch World Wide Web page. On this page, you can access registration and support information, learning tools, and other items to help you use SmartSketch more efficiently.

Links Command (Edit Menu)

{button Related Topics,AL("links cmd;links high;ole high",0,`NOT_FOUND')} {button How To,AL("edit link how;unload how",0,`NOT_FOUND')}

Edits or updates links to objects in another document.

Links Dialog Box

Macro Command (Tools Menu)

{button Related Topics,AL("customize high",0,`NOT_FOUND')} {button How To,AL("macro how",0,`NOT_FOUND')}

Runs a macro.

Run Macro Dialog Box

Mirror Command (Change Toolbar)

{button Related Topics,AL("mirroring elements high;draw high",0,`NOT_FOUND')} {button How To,AL("mirror how",0,`NOT_FOUND')}

Mirrors one or more selected elements about a line or axis that you define. You can mirror without copying, or mirror and copy.

{mci_left NOMENU,MIRROR1C.AVI}

Mirror Ribbon Bar

Linked Object Edit Command (Edit Menu)

{button Related Topics,AL("link and embed high ",0,`NOT_FOUND')}  {button How To,AL("foreign data how ;ole how ",0,`NOT_FOUND')}

Opens the selected linked document for editing.

Linked Object Open Command (Edit Menu)

{button Related Topics,AL("link and embed high",0,`NOT_FOUND')}  {button How To,AL("foreign data how;ole how",0,`NOT_FOUND')}

Opens the selected document and activates the software used to create it.

Most Recently Used Files Command (File Menu)

{button Related Topics,AL("documents high",0,`NOT_FOUND')} {button How To,AL("open how",0,`NOT_FOUND')}

Opens one of the documents that you worked on most recently. The file names are listed near the bottom of the **File** menu. You can change the number of files listed on the menu with the **Options** command.

Move Command (Change Toolbar)

{button Related Topics,AL("moving elements high",0,`NOT_FOUND')} {button How To,AL("move element how",0,`NOT_FOUND')}

Moves elements from one location to another. You can specify the locations by clicking on the drawing sheet or by entering values in the ribbon bar. You can move one or more elements at a time, and you can move element groups.

Move Ribbon Bar

New Command (File Menu)

{button Related Topics,AL("files high;documents high;",0,`NOT_FOUND')} {button How To,AL("create document how",0,`NOT_FOUND')}

Creates a new document or template. You can use a template to create the document.

File New Dialog Box

Office Compatible Command (Help Menu)

{button Related Topics,AL("help high",0,`NOT_FOUND')}  {button How To,AL("office how",0,`NOT_FOUND')}

Displays Help topics that describe the compatibility of SmartSketch with Microsoft Office. It provides information on important Microsoft Office compatibility features, compares those features between SmartSketch and Microsoft Office, and describes how SmartSketch can be used with Microsoft Office.

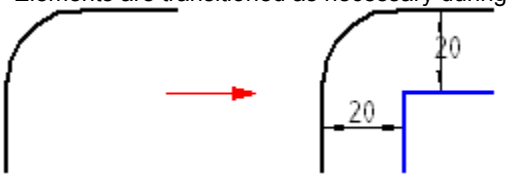
Offset Command

{button Related Topics,AL("copy high",0,`NOT_FOUND')}  {button How To,AL("offset how",0,`NOT_FOUND')}

Draws an offset copy of an element or a set of contiguous elements. This command copies elements while maintaining characteristics such as the angle of lines and the center point of arcs and circles.

Offset copies the original element at a specified distance. Offsetting outside the perimeter of the original element creates a larger element. Offsetting inside the perimeter of the original element creates a smaller element.

Elements are transitioned as necessary during the offset operation.



Offset Ribbon Bar

Open Command (File Menu)

{button Related Topics,AL("open cmd;documents high;files high",0,`NOT_FOUND')} {button How To,AL("open how;open AutoCAD or MicroStation document how",0,`NOT_FOUND')}

Opens an existing document or template in a new window.

File Open Dialog Box

Options Command (Tools Menu)

{button Related Topics,AL("customize high;ole high",0,`NOT_FOUND')} {button How To,AL("options how",0,`NOT_FOUND')}

Changes settings that control document translation, screen appearance, document location, user information, and so forth. You can set options for bringing MicroStation or AutoCAD documents into the software.

Options Dialog Box

Pan Command (View Menu)

{button Related Topics,AL("views high",0,`NOT_FOUND')}  {button How To,AL("pan views how",0,`NOT_FOUND')}

Allows you to move in any direction from a specific point in a document to see other areas of the drawing or model.

Tip You can also right click to access the **Pan** command on the shortcut menu.

Paste Command (Edit Menu)

{button Related Topics,AL("cutting high",0,`NOT_FOUND')}  {button How To,AL("paste how",0,`NOT_FOUND')}

Inserts the **Clipboard** contents at the same coordinates the elements had in the source document. The command is not available if the **Clipboard** is empty.

PinPoint Command (Tools Menu)

{button Related Topics,AL("pinpoint high;draw high",0,`NOT_FOUND')}{button How To,AL("pinpoint how",0,`NOT_FOUND')}

Helps you draw elements with precision by displaying coordinate data at the pointer. The displayed coordinates are relative to a target position that you set—you can reset the target position at any time.

Using **PinPoint**, you can draw elements at known locations on the drawing sheet, draw elements known distances apart, and so forth. You can use **PinPoint** with all drawing commands

Caution You cannot place elements with the **Pinpoint** button on the **Main** toolbar if you are using the **Grid Snap** command.

PinPoint Ribbon Bar

Position Command (Shortcut Menu)

{button Related Topics,AL("raster high",0,`NOT_FOUND')}  {button How To,AL("position how",0,`NOT_FOUND')}

Positions an image in a document. You can move, scale, rotate, and skew a source image to match a target image or vector frame. All alignment modifications are made by placing up to three source points and three target points. You can define source points by clicking and dragging or by a single click on the source image.

Note To select this command on the shortcut menu, you must first select a raster image and then click the right mouse button.

Previous Command (View Menu)

{button Related Topics,AL("views high",0,`NOT_FOUND')}  {button How To,AL("restore views how",0,`NOT_FOUND')}

Restores the previous view.

Tip You can also click the right mouse button to access the **Previous** command on the shortcut menu.

Print Command (File Menu)

{button Related Topics,AL("print high;documents high",0,`NOT_FOUND')} {button How To,AL("print how",0,`NOT_FOUND')}

Sends a copy of the active document to a specified plotter, printer, or file. Options are available for defining the printing area, range, number of copies, and other printing characteristics.

Before using this command, you must install and select a printer. For help on installing a printer, see the Windows documentation.

Print Dialog Box

Programming with SmartSketch Command (Help Menu)

{button Related Topics,AL("custom high;help high",0,`NOT_FOUND')} {button How To,AL("programming how",0,`NOT_FOUND')}

Displays **Help** topics that help you learn to customize the software using Visual Basic. The **Help** topics also provide reference information for the objects, methods, properties, and events (custom controls only) exposed by the product.

The topics include sample Visual Basic code, as well as selectable automation object models, illustrations, descriptions, and syntax details.

Properties Command (File Menu)

{button Related Topics,AL("properties cmd;file properties high",0,`NOT_FOUND')} {button How To,AL("properties how",0,`NOT_FOUND')}

Accesses general information about the current document. You can review and edit the following document information: the document summary, statistics, and **Browser** properties. If a symbol document (.sym) is open, you can review and edit the general, unit, and specific symbol properties for the document.

Properties Dialog Box

Paste Special Command (Edit Menu)

{button Related Topics,AL("ole high;copy high",0,`NOT_FOUND')} {button How To,AL("paste special how",0,`NOT_FOUND')}

Inserts the **Clipboard** contents into a document using a selected format.

Paste Special Dialog Box

Pull Up Command (Change Toolbar)

{button Related Topics,AL("display order high;display order cmd ",0,`NOT_FOUND')} {button How To,AL("pull up how;send to front how",0,`NOT_FOUND')}

Moves one or more selected elements or element groups up one position in the display order.

{mci_left NOMENU,PULLUP.AVI}

If more than one element overlaps the selected elements, the selected elements do not move all the way to the front. To quickly move elements to the front, click the **Bring To Front** button.

Push Down Command (Change Toolbar)

{button Related Topics,AL("display order high;display order cmd ",0,`NOT_FOUND')} {button How To,AL("push down how;send to back how",0,`NOT_FOUND')}

Moves one or more selected elements or element groups down one position in the display order.

{mci_left NOMENU,PUSHDOWN.AVI}

If the selected elements overlap more than one other element, the selected elements do not move all the way to the back. To quickly move elements to the back, click the **Send To Back** button.

Rectangular Pattern Command (Change Toolbar)

{button Related Topics,AL("patterns high;pattern cmd",0,`NOT_FOUND')} {button How To,AL("rectangular pattern how",0,`NOT_FOUND')}

Copies selected elements in a rectangular pattern on the drawing sheet.

{mci_left NOMENU,RECPTN1.AVI}

Rectangular Pattern Ribbon Bar

Redo Command (Edit Menu)

{button Related Topics,AL("draw high",0,`NOT_FOUND')} {button How To,AL("redo action how",0,`NOT_FOUND')}

Repeats the most recent action taken or reverses the most recent "undo". For example, **Repeat Typing** displays in the **Edit** menu if you just typed something in the document.

Note You can place the **Undo List** or **Redo List** buttons on the **Main** toolbar by clicking the **Customize** command on the **Tools** menu.

Register Command (Help Menu)

{button Related Topics,AL("help high",0,`NOT_FOUND')} {button How To,AL("register how",0,`NOT_FOUND')}

Allows you to register the software from a web page.

Redo List Command (Edit Menu)

{button Related Topics,AL("draw high;options cmd",0,`NOT_FOUND')} {button How To,AL("redo action how",0,`NOT_FOUND')}

Repeats the most recent action taken based on what you select on the list.

Note To use the **Redo List** command, you must place it on the **Main** toolbar or **Edit** menu by clicking the **Customize** command on the **Tools** menu. You must click the **Edit** category.

Revert Command (File Menu)

{button Related Topics,AL("ole high",0,`NOT_FOUND')} {button How To,AL("revert imag how",0,`NOT_FOUND')}

Closes a document opened by double-clicking on it without saving any changes to the document.

Rotate Command (Change Toolbar)

{button Related Topics,AL("rotating elements high",0,`NOT_FOUND')} {button How To,AL("rotate element how",0,`NOT_FOUND')}

Rotates one or more elements a precise distance or angle about a specified point.

{mci_left NOMENU,ROTATE1.AVI}

Rotate Ribbon Bar

Save Command (File Menu)

{button Related Topics,AL("save high;documents high",0,`NOT_FOUND')} {button How To,AL("save how",0,`NOT_FOUND')}

Saves the active document with its currently defined name, directory, and format. If you are saving the document for the first time, the **Save As** dialog box is displayed so that you can give the document a name and specify a directory and format to save it to.

Save As Dialog Box

Save As Command (File Menu)

{button Related Topics,AL("save high;documents high",0,`NOT_FOUND')} {button How To,AL("save how",0,`NOT_FOUND')}

Saves the active document to a new name, directory, and format.

Save As Dialog Box

Save As Template Command (File Menu)

{button Related Topics,AL("save high;documents high",0,`NOT_FOUND')} {button How To,AL("save how",0,`NOT_FOUND')}

Saves a document as a template. The template is stored in the **TEMPLATE** directory in the directory where you installed the software.

Save As Dialog Box

Save As Web Page Command (File Menu)

{button Related Topics,AL("save high;documents high",0,`NOT_FOUND')} {button How To,AL("save how",0,`NOT_FOUND')}

Saves the current document as a .cgm graphic embedded in an HTML document. You can view the HTML document as a web page in any Internet browser, such as Netscape Navigator™ or Internet Explorer.

This command starts a wizard that steps you through the process of saving your document as an HTML page.

 Save As Dialog Box

Scale Command (Change Toolbar)

{button Related Topics,AL("scaling elements high",0,`NOT_FOUND')}  {button How To,AL("scale how ",0,`NOT_FOUND')}

Reduces or enlarges selected elements by a scale factor that you define. The scale factor is the same along the X and Y axes. Scalable elements include framed elements, such as text boxes. You can use the **Scale** command to scale, or to simultaneously scale and copy.

Scale Ribbon Bar

Select All Command (Edit Menu)

{button Related Topics,AL("object element selection high",0,`NOT_FOUND')}  {button How To,AL("select element how ",0,`NOT_FOUND')}

Selects all visible elements in a window.

Tip You can also access this command when you position the pointer in the document and click the right mouse button.

Select Tool (Draw Toolbar)

{button Related Topics,AL("object element selection high;select cmd",0,`NOT_FOUND')} {button How To,AL("select how",0,`NOT_FOUND')}

Changes the pointer to the arrow-shaped selection cursor so that you can select, modify, and manipulate elements. The circle at the end of the pointer arrow is the locate zone.

Select Tool Ribbon Bar

Send Command (File Menu)

{button Related Topics,AL("send cmd;file high;documents high;save high",0,`NOT_FOUND')} {button How To,AL("send how",0,`NOT_FOUND')}

Activates your electronic mail application so you can send a mail message with the active document attached.

Delete Sheet Command (Edit Menu)

{button Related Topics,AL("drawing sheets high;drawing sheet tabs high",0,`NOT_FOUND')} {button How To,AL("delete drawing sheet how",0,`NOT_FOUND')}

Deletes the active drawing sheet and any other sheets whose tabs are selected.

You can delete either a working sheet or a background sheet with this command. To delete a background sheet, set the **Background Sheets** toggle on the **View** menu before selecting the **Delete Sheet** command. To delete a working sheet, clear the **Background Sheets** toggle before selecting **Delete Sheet**.

Background Sheets Command (View Menu)

{button Related Topics,AL("drawing sheets high;sheet setup cmd",0,`NOT_FOUND')} {button How To,AL("sheets how",0,`NOT_FOUND')}

Switches the view from a working sheet to the background sheet. When you set this toggle, all of the background sheets in the document are displayed as tabs at the bottom of window. All working sheet tabs are hidden. You can use a background sheet to draw graphics that you want to display on more than one drawing sheet. For example, you can draw borders and title blocks that contain your company logo, your name, and information about the drawings.

You can display background sheet graphics on any or all working sheets, using the **Sheet Setup** command.

New Sheet Command (Insert Menu)

{button Related Topics,AL("drawing sheets high;drawing sheet tabs high",0,`NOT_FOUND')} {button How To,AL("create a new drawing sheet how;change background sheet how",0,`NOT_FOUND')}

Creates a new drawing sheet in the document using the default drawing sheet settings. You can change the default settings using the **Sheet Setup** command.

You can create either a working sheet or a background sheet with this command. To create a background sheet, set the **Background Sheets** toggle on the **View** menu before selecting the **New Sheet** command. To create a working sheet, clear the **Background Sheets** toggle before selecting **New Sheet**.

Sheet Setup Dialog Box

Working Sheets Command (View Menu)

{button Related Topics,AL("drawing sheets high;drawing sheet tabs high",0,`NOT_FOUND')}  {button How To,AL("sheets how",0,`NOT_FOUND')}

Displays all working sheets in a document. If a background sheet is attached to the working sheet, the graphics on the background sheet are displayed on the working sheet. When you attach a background sheet to a working sheet, the software automatically adjusts the size and the margin of the working sheet to match the size and margin of the background sheet.

Sheet Setup Command (File Menu)

{button Related Topics,AL("drawing sheets high",0,`NOT_FOUND')}  {button How To,AL("sheets how;rename drawing sheet how",0,`NOT_FOUND')}

Defines the properties of the working sheet. You can display and modify the following properties: the name, size, and scale used in the working sheet; and the properties of the working sheet margin. You can also select the background sheet you want to use.

You can save settings only for the active working sheet. These settings can also be saved so that they are used when you add a new working sheet to the document. To display a working sheet, use the **Working Sheets** command.

Sheet Setup Dialog Box

Rename Command (Shortcut Menu)

{button Related Topics,AL("drawing sheets high;drawing sheet tabs high",0,`NOT_FOUND')} {button How To,AL("create a new drawing sheet how;rename drawing sheet how",0,`NOT_FOUND')}

Renames a sheet.

Note Before you can select this command from the shortcut menu, you must move the pointer over a drawing sheet tab.

Rename Dialog Box

Select All Sheets (Shortcut Menu)

{button Related Topics,AL("drawing sheets high",0,`NOT_FOUND')}  {button How To,AL("display sheets how",0,`NOT_FOUND')}

Selects all the drawing sheets in the document. When you select all the sheets, all elements in the document are displayed at once.

Note Before you can select this command from the shortcut menu, you must move the pointer over a drawing sheet tab.

Insert (Shortcut Menu)

{button Related Topics,AL("drawing sheets high;drawing sheet tabs high",0,`NOT_FOUND')} {button How To,AL("create new drawing sheet how;change background sheet how",0,`NOT_FOUND')}

Inserts a new drawing sheet in the document.

Note Before you can select this command from the shortcut menu, you must move the pointer over a drawing sheet tab and click the right mouse button.

SmartSketch Settings Command (Tools Menu)

{button Related Topics,AL("smartsketch high",0,`NOT_FOUND')} {button How To,AL("smartsketch how",0,`NOT_FOUND')} {button How To,AL("smartsketch ex",0,`NOT_FOUND')}

Sets up what relatinships are recognized by the software. The relationships selected on the **SmartSketch** dialog box are recognized as you draw.

SmartSketch Dialog Box

Send To Back Command (Change Toolbar)

{button Related Topics,AL("display order high;display order cmd",0,`NOT_FOUND')} {button How To,AL("send to back how",0,`NOT_FOUND')}

Moves one or more selected elements or element groups to the back of the display order.

{mci_left NOMENU,SBACK.AVI}

Style Command (Format Menu)

{button Related Topics,AL("style cmds;styles high",0,`NOT_FOUND')}  {button How To,AL("style how",0,`NOT_FOUND')}

Modifies, creates, deletes, or applies styles.

Style Dialog Box

Save Copy As Command (File Menu)

{button Related Topics,AL("save high;ole high",0,`NOT_FOUND')} {button How To,AL("save how",0,`NOT_FOUND')}

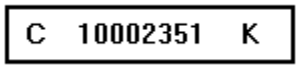
Saves the active document to a new name, directory, and format. This command appears on the **File** menu when you double-click an inserted object on the drawing sheet.

Save As Dialog Box

Text Box Command (Draw Toolbar)

{button Related Topics,AL("text cmd;annotations high",0,`NOT_FOUND')} {button How To,AL("text how",0,`NOT_FOUND')}

Places a text box in a document.



You can find this command in the following locations:

- **Draw** toolbar
- **Schematic** toolbar

- Text Box Ribbon Bar

Tip of the Day Command (Help Menu)

{button Related Topics,AL("help high",0,`NOT_FOUND')}  {button How To,AL("tip how",0,`NOT_FOUND')}

Displays tips about using features in the software. This command also offers a tip each time you start the software.

Tip of the Day Dialog Box

Toolbars Command (View Menu)

{button Related Topics,AL("views high;customize high",0,`NOT_FOUND')}  {button How To,AL("display toolbar how;customize toolbar how",0,`NOT_FOUND')}

Creates new toolbars and displays or hides selected toolbars. You can also change toolbar color schemes and button sizes.

Toolbars Dialog Box

Trim Command (Draw Toolbar)

{button Related Topics,AL("extending or trimming high",0,`NOT_FOUND')} {button How To,AL("trim how ",0,`NOT_FOUND')}

Trims open and closed elements to the closest intersection in both directions.

{mci_left NOMENU,TRIM1C.AVI}

Learning Center Command (Help Menu)

{button Related Topics,AL("help high",0,`NOT_FOUND')}  {button How To,AL("tutorials how",0,`NOT_FOUND')}

Accesses a set of multi-media tutorials to help you get up and running with the software.

Undo Command (Edit Menu)

{button Related Topics,AL("draw high;options cmd",0,`NOT_FOUND')} {button How To,AL("undo action how;undo image how",0,`NOT_FOUND')}

Reverses an action. You can change the number of actions that can be undone using the **Options** command. You then click the **General** tab on the **Options** dialog box.

Note You can place the **Undo List** or **Redo List** buttons on the **Main** toolbar by clicking the **Customize** command on the **Tools** menu.

UnGroup Command (Change Toolbar)

{button Related Topics,AL("groups high;group cmd",0,`NOT_FOUND')}{button How To,AL("group how",0,`NOT_FOUND')}

Removes elements from groups that were defined with the **Group** command. You can remove individual elements from a group.

Undo List Command (Edit Menu)

{button Related Topics,AL("draw high;options cmd",0,`NOT_FOUND')} {button How To,AL("undo action how;undo image how",0,`NOT_FOUND')}

Reverses an action based on what you select on the list.

- You can change the number of actions that can be undone using the **Options** command.
- View manipulations are not included in the action list.

Note To use the **Undo List** command, you must place it on a toolbar or menu by clicking the **Customize** command on the **Tools** menu. You must click the **Edit** category.

Update Command (File Menu)

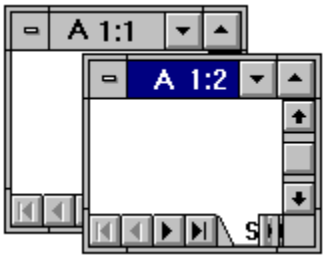
{button Related Topics,AL("save high;ole high",0,`NOT_FOUND')}  {button How To,AL("save how",0,`NOT_FOUND')}

Updates the active document with the information that you just placed in the document for the object. This command appears on the **File** menu when you double-click an inserted object in a document.

New Window Command (Window Menu)

{button Related Topics,AL("window cmd;views high",0,`NOT_FOUND')} {button How To,AL("window how",0,`NOT_FOUND')}

Opens a new window that displays the same document as the active window. The new window appears on top of all the other windows and becomes the active window. If you change the contents of the open document in one window, the other windows that contain the same document reflect the changes.



Window List Command (Window Menu)

{button Related Topics,AL("window cmd;views high",0,`NOT_FOUND')} {button How To,AL("window how",0,`NOT_FOUND')}

Displays an alphabetical list of open document windows below the commands on the **Window** menu. You can easily access another open document by clicking one of the window names on the list.

Tile Horizontal Command (Window Menu)

{button Related Topics,AL("window cmd;views high",0,`NOT_FOUND')} {button How To,AL("window how",0,`NOT_FOUND')}

Arranges windows to fit horizontally on the screen. All the windows appear at an even distance from each other on the screen.

Tile Vertical Command (Window Menu)

{button Related Topics,AL("window cmd;views high",0,`NOT_FOUND')} {button How To,AL("window how",0,`NOT_FOUND')}

Arranges windows to fit vertically on the screen. All the windows appear at an even distance from each other on the screen.

Cascade Command (Window Menu)

{button Related Topics,AL("window cmd;views high",0,`NOT_FOUND')} {button How To,AL("window how",0,`NOT_FOUND')}

Overlaps windows diagonally across the screen.

Zoom Area Command (View Menu)

{button Related Topics,AL("views high",0,`NOT_FOUND')} {button How To,AL("zoom in on area how ",0,`NOT_FOUND')}

Enlarges the display of elements in the active window.

Tips

- If you have an IntelliMouse or a three-button mouse, you can zoom an area by holding the **Ctrl** key, pressing the mouse wheel or middle mouse button, and dragging the pointer. To stop the repainting of elements in the window, press **Esc**. This feature is convenient if you are working with a large document. To refresh the window, press **F5**.
- You can also right click to access the **Zoom Area** command on the shortcut menu.

Zoom In Command (View Menu)

{button Related Topics,AL("views high",0,`NOT_FOUND')}  {button How To,AL("zoom in views how ",0,`NOT_FOUND')}

Enlarges the display of elements around a specified point in the active window.

Tips

- If you have an IntelliMouse or a three-button mouse, you can zoom in by rolling the wheel of the IntelliMouse. To stop the repainting of elements in the window, press **Esc**. This feature is convenient if you are working with a large document. To refresh the window, press **F5**.
- You can also click the right mouse button to access the **Zoom In** command on the shortcut menu.

Zoom Out Command (View Menu)

{button Related Topics,AL("views high",0,`NOT_FOUND')}  {button How To,AL("zoom out views how",0,`NOT_FOUND')}

Reduces the display of elements around a specified point in the active window.

Tips

- You can also zoom out by rolling the wheel of the IntelliMouse. To stop the repainting of elements in the window, press **Esc**. This feature is convenient if you are working with a large document. To refresh the window, press **F5**.
- You can also click the right mouse button to access the **Zoom Out** command on the shortcut menu.

Attribute Viewer

{button Related Topics,AL("av high",0,`NOT_FOUND')} {button How To,AL("attribute how",0,`NOT_FOUND')}

Displays user-defined properties and parameters of an element,symbol, or inserted document. The viewer displays two columns, one for the name of the attribute and one for the value. User-defined properties appear in plain text. Parameters appear in bold text.

You can specify user-defined properties on the **User** tab of the **Properties** dialog box for an element or symbol.

Dialog Box Options

Name

Displays the name of a user-defined property or parameter. Parameters are displayed in bold text. The Name is read-only.

Value

Displays the value of a property or parameter. Parameters are displayed in bold text. You can change the value.

AutoSave Dialog Box

{button Related Topics,AL("autosave high;autosave cmd",0,`NOT_FOUND')}  {button How To,AL("autosave how",0,`NOT_FOUND')}

AutoSave Options

Automatic Save Every __ Minutes

Automatically saves open documents at the interval you specify.

Save Options

Saves either the active document or all documents that are open.

Save Active Document Only

Saves only the active document.

The **Save As** dialog box appears if the document has not yet been saved.

Save All Open Documents

Saves all documents that are open.

The **Save As** dialog box appears for each document that has not yet been saved.

Prompt Before Saving

Displays a dialog box whenever AutoSave begins saving documents. You can click one of the following buttons to answer the dialog box question: "Save changes in <document name>?"

Save

Saves the document.

Skip

Skips to the next document. Does not save the current document. Available only when **Save All Open Documents** is selected.

Cancel

Cancels the current **AutoSave** session.

Set Bearing Dialog Box

{button Related Topics,AL("bearing azimuth high;bearing azimuth cmd",0,`NOT_FOUND')} {button How To,AL("set bearing azimuth how",0,`NOT_FOUND')}

Controls the selection of **Default**, **Bearing**, and **Azimuth** angle settings. Also controls the azimuth settings for **Base Bearing** and **Direction**.

Tip The **Bearing and Azimuth** command is available only if you use the **Customize** command on the **Tools** menu to place it on a toolbar or menu. On the **Toolbars** tab of the **Customize** dialog box, click the **Tools** category to access the command.

Dialog Box Options

Default

Sets defaults for bearing and azimuth.

Bearing

Determination of position to refer to an angle.

Azimuth

Horizontal direction expressed as an angle, progressing from a fixed point, based on a circle.

Base Bearing

Direction (North, South, East, West) bearing to refer to an angle.

Direction

Clockwise or counterclockwise indicator for the angle bearing.

Browse Dialog Box

{button Related Topics,AL("open cmd",0,`NOT_FOUND')}  {button How To,AL("open how",0,`NOT_FOUND')}

Controls how a document is opened.

Tip To get Help for various items on the dialog box, click the **Question Mark**  in the upper right corner of the dialog box and click the control that you want information about.

When you position the pointer in this dialog box and right-click, you can access a variety of standard commands that help you manage your documents more efficiently. For example, if you select a document in the list and then right-click, you can then click the **Select** command on the shortcut menu to automatically open the document. You can also create shortcuts, send the document somewhere else, and other activities.

Symbol Explorer Window

{button Related Topics,AL("placing symbols high;Symbol Explorer high;symbols cmd;Symbol Explorer cmd;attribute viewer db;av high",0,`NOT_FOUND')} {button How To,AL("symbols how;Symbol Explorer how",0,`NOT_FOUND')}

Displays files in a directory or World Wide Web pages (HTML pages). You can use the **Symbol Explorer** window just like you would the Windows Explorer or Windows Internet Explorer. You can also use the **Symbol Explorer** to drag symbols (.sym) from the **Symbol Explorer** window to the current document.

Tip Within the **Symbol Explorer** window, you can access several commands that allow you to change or filter the view in the window. For example, you can change the window to show only symbols. You can also add directories or web addresses to a list of favorites. If you want to place several copies of a symbol, you can click the **Stamp Here** command. To access these commands, place the pointer in the **Symbol Explorer** window and right-click.

Window Options

Back

Takes you backward to the previous location of the **Symbol Explorer**, either a web page or a directory path.

Forward

Takes you forward to the previous location of the **Symbol Explorer**, either a web page or a directory path.

Stop

Halts the loading of an HTML page.

Refresh

Reloads the current HTML page or directory.

Home

Takes the **Symbol Explorer** back to the home page that you set with the **Properties** command on the **File** menu. If you do not set the home page with this command, the **Symbol Explorer** opens the symbols directory associated with the template that the active document is based on.

Explore Elsewhere

Accesses the **Browse for Folder** dialog box so that you can locate another directory for the **Symbol Explorer** to look in. You can use the dialog box to look in directories on your hard drive or a network drive.

Address

Sets the current location for the **Symbol Explorer**. You can type in a directory or a World Wide Web address and then press **Enter**. Some examples of what you can type in are as follows:

http://www.ingr.com

C:\PROGRAM FILES\DRAWINGS\

Tip If you want to view an HTML page on your hard drive, you must enter the entire path and filename in the address box.

If you set the path of the **Symbol Explorer** to point to a directory, you'll see a tree view, the contents of the directory, and the **Attribute Viewer.** If you set the path to an HTML page, you'll see the contents of that page, if **Microsoft Internet Explorer 3.0** or later is loaded on the box. If **Internet Explorer** is not loaded, then the

software prompts you to load it.

Connector Ribbon Bar

{button Related Topics,AL("connector command",0,`NOT_FOUND')}  {button How To,AL("place connector how;modify connector how",0,`NOT_FOUND')}

When you click the **Connector** command on the **Draw** toolbar, you can place a connector. When you select a connector, you can change it.

Most of the options on the **Connector** ribbon bar are the same whether you are placing or modifying a connector. The only difference is when you select a connector for modification. When you modify a connector, an additional option is available to insert a segment into the selected connector. This last option is **Insert Segment Mode (Shift).**

Ribbon Box Options

Style

Sets the line style for the connector.

Line Color

Sets the line color for the connector. You can click the **More** option to define custom colors with the Colors dialog box.

Line Type

Sets the connector line type and style.

Line Width

Sets the line width for the connector.

Line Start Terminator

Sets the terminator for starting the connector.

Line End Terminator

Sets the terminator for ending the connector.

Tip Terminators are compatible with any of the linear styles.

Clearance

Specifies the amount of space that is maintained between the connector and the connected element. (Also known as range avoidance.)

Diagonal Mode (Alt)

Allows you to either place or modify a connector.

Placing a Connector

Switches the connector placement between drawing horizontal and vertical line segments or drawing diagonal line segments when you place a connector.

Tip To alternate between drawing horizontal and vertical line segments or drawing diagonal line segments, you can also press the **Alt** key.

Modifying a Connector

Inserts a vertex in a line segment of the connector when you are modifying a selected connector.

Tip This option is active only when you click the **Diagonal Mode (Alt)** button or when you press the **Alt** key.

Insert Segment Mode (Shift)

Inserts line segments into the connector. This option is available only when you are modifying a connector.

Tip This option is active when you click the **Insert Segment Mode (Shift)** button or when you press the **Shift** key.

Isometric Circle Ribbon Bar

{button Related Topics,AL("iso circle cmd;iso high",0,`NOT_FOUND')} {button How To,AL("iso circle how",0,`NOT_FOUND')}

Ribbon Bar Options

Style

Sets the drawing style.

Line Color

Sets the drawing color. You can click the **More** option to define custom colors with the Colors dialog box.

Line Type

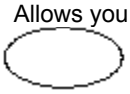
Sets the drawing line type and style.

Line Width

Sets the line width.

Top

Allows you to draw the circle on the top plane.



Right

Allows you to draw the circle on the right plane.

Left

Allows you to draw the circle on the left plane.

Diameter

Sets the diameter of the isometric circle.

Radius

Defines the radius of the isometric circle.

Isometric Line Ribbon Bar

{button Related Topics,AL("iso high;iso line cmd",0,`NOT_FOUND')}  {button How To,AL("iso line how",0,`NOT_FOUND')}

Ribbon Bar Options

Style

Sets the drawing style.

Line Color

Sets the drawing color. You can click the **More** option to define custom colors with the Colors dialog box.

Line Type

Sets the drawing line type and style.

Line Width

Sets the line width.

Length

Sets the length of the isometric line.

Angle

Sets the angle of the isometric line.

Isometric Rectangle Ribbon Bar

{button Related Topics,AL("iso high;iso rectangle cmd",0,`NOT_FOUND')} {button How To,AL("iso rectangle how",0,`NOT_FOUND')}

Ribbon Bar Options

Style

Sets the drawing style.

Line Color

Sets the drawing color. You can click the **More** option to define custom colors with the Colors dialog box.

Line Type

Sets the drawing line type and style.

Line Width

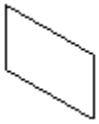
Sets the line width.

Top

Allows you to draw the rectangle on the top plane.

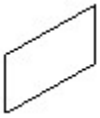
Right

Allows you to draw the rectangle on the right plane.



Left

Allows you to draw the rectangle on the left plane.



Width

Sets the width of the isometric rectangle.

Height

Sets the height of the isometric rectangle.

Move Sheet Border Dialog Box

{button Related Topics,AL("sheet setup db;move sheet setup size;sheet origin location db",0,`NOT_FOUND')}
{button How To,AL("move sheet how;setup sheet how",0,`NOT_FOUND')}

Allows you to reposition or scale a working sheet and selects paper size.

Tip When you click the settings that you want on this dialog box, you can click the **Apply** button to preview your settings. When you click the **Apply** button, the settings update the active sheet. However, the settings are not final until you click the **OK** button.

Dialog Box Options

Sheet Origin Location

Specifies the **X** and **Y** coordinates for the sheet origin. The sheet origin is the lower left corner of the drawing sheet. After setting these coordinates, click **Apply.**

Interactive Move

Allows you to use the pointer to identify a location for the lower left corner of the sheet. Selecting this option automatically attaches the drawing sheet border to the pointer. Click once and the sheet is in the location that you want. You must click the **Apply** button for your changes to start.

Caution While you are moving the sheet border with the pointer, the **Move Sheet Border** dialog box is not displayed. It appears again after you click the pointer to complete the move.

Drawing Scale

Sets options for the scale of the drawing sheet.

Scale (1:1)

Sets the drawing scale to a 1:1 ratio. This ratio means that the representation of the objects on the drawing sheet is the same size as the real-world elements contained in the document.

Select Scale

Sets the drawing scale to a standard ratio.

Tip The **Fit to Sheet** option determines a drawing sheet scale that fits the reference file within the sheet, but allows you to specify where to insert the file by clicking the drawing sheet.

The specified ratio defines the size of the drawing in relation to the size of the real-world object. For a 1:2 ratio, the 1 represents the distance of the drawing sheet and the 2 represents the real-world distance. That is, every centimeter of paper is equal to two centimeters of real-world distance. Thus, the largest real-world element that you can represent on an 21.59 x 27.94 cm drawing sheet is 43.18 x 55.88 cm.

Tip When the first value is smaller than the second value, the sheet size is usually increased. When the first number is larger than the second number, the sheet size is usually reduced.

Custom

Defines a custom or scale ratio. The first value defines the distance on the drawing sheet and the second value defines what this distance is equal to in the real world.

Sheet Size

Sets the size for the drawing sheet.

Same As Print Setup

Sets the drawing sheet size using the settings for the default system printer. For example, if the printer is set up as 27.94 x 43.18 cm paper, the drawing sheet size is set to 27.94 x 43.18 cm.

Standard

Defines the drawing sheet size from a list of standard ANSI and ISO paper sizes.

Custom

Defines the drawing sheet size according to the entered x and y values.

Previous

Clears the last set of options that you applied to the drawing sheet.

Save As Dialog Box

{button Related Topics,AL("save cmd;save copy as cmd",0,`NOT_FOUND')}  {button How To,AL("save how",0,`NOT_FOUND')}

Specifies the name of, location of, and format for a document when you save it.

Tip To get Help for various items on the dialog box, click the **Question Mark** in the upper right corner of the dialog box and click the control that you want information about.

When you position the pointer in this dialog box and right-click, you can access a variety of standard commands that help you manage your documents more efficiently. For example, if you select a document in the list and then right-click, you can then click the **Select** command on the shortcut menu to automatically open the document. You can also create shortcuts, send the document somewhere else, and other activities.

Symbol Properties Dialog Box

{button Related Topics,AL("editing symbols high;dc high;edit properties cmd;element properties cmd;av high",0,`NOT_FOUND')} {button How To,AL("edit symbol how",0,`NOT_FOUND')}

Defines the properties of a symbol.

Tabs

Info Tab

Behavior Tab

User Tab

Parametric Tab

Info Tab

{button Related Topics,AL("symbol properties db;av high",0,`NOT_FOUND')}  {button How To,AL("edit symbol how",0,`NOT_FOUND')}

Displays and allows you to set symbol placement options such as the symbol angle, layer on which you want to place the symbol, and coordinates for the symbol.

Tab Options

Name

Displays the name of the parent document of the symbol.

Layer

Specifies the layer on which you place the symbol. When you place a symbol, it is placed on the active layer.

X Origin

Specifies the X coordinate of the symbol origin.

Y Origin

Specifies the Y coordinate of the symbol origin.

Angle

Displays the current angle of the symbol. You can specify a new angle. The number of degrees increases in the counterclockwise direction. For example, 90 degrees is at the top of the screen.

Behavior Tab

{button Related Topics,AL("symbol properties db",0,`NOT_FOUND')}  {button How To,AL("edit symbol how",0,`NOT_FOUND')}

Tab Options

Insertion Type

Specifies the insertion type for a symbol. You can set the insertion type by clicking the **Options** command on the **Tools** menu and then clicking the **Symbols** tab on the **Options** dialog box. After you set an insertion type for a symbol, you cannot change the type.

Update

Displays the type of update for the link on the symbol. To change the update status of a link, click **Automatic.** To prevent updating the link, click **Frozen.** You can select **Automatic** when you want the document to automatically reflect any changes to the symbol document. You can select **Frozen** when you do not want the symbol in the current document to change at all.

Scale Factor

Specifies the scale factor that the symbol uses when you drag it into the active document. The scale factor used is relative to the model units of the symbol. For example, if you set the scale factor to 2 and the symbol has 1 cm square in model units, it displays 2 cm square when you drag it into the active document.

Lock Scale

Specifies if you can scale the symbol, after you place it in a document.

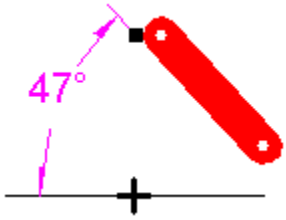
Tip You can scale a symbol by clicking the **Scale** button on the **Change** toolbar or by dragging the symbol handles.

Allow Rotation By Relationships

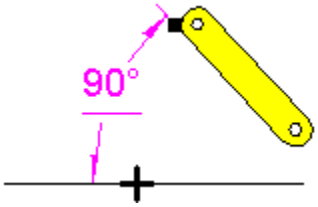
Allows a symbol to change its orientation on the drawing sheet according to the applied relationships . If you clear the check box, the symbol does not change its orientation regardless of changes to its relationships.

This check box is available only when the symbol is an open document. You can open the symbol document (.sym) with the **Open** command on the **File** menu. When you set or clear this check box and close the symbol document, the setting affects the behavior of the symbol when it is dragged from the **Symbol Explorer** onto the drawing sheet.

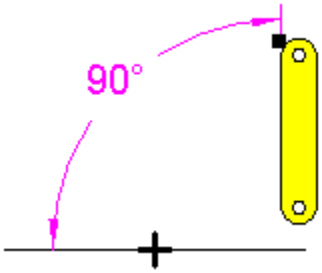
The check box is clear by default. When the check box is clear, a symbol maintains its orientation to the drawing sheet when you move the symbol or other elements that are related to it. In the following example, the line and symbol share a dimensional relationship. The lower end of the symbol is grounded in place with a lock relationship.



If you edit the dimensional value of the driving dimension between the line and symbol to modify the position of the elements, the symbol does not change its orientation on the drawing sheet. The driving dimension changes to a driven dimension that is not to scale, as indicated by the underlined dimensional value.



When you set the **Allow Rotation By Relationships** check box, the symbol changes orientation on the drawing sheet according to the applied relationships. In the example, when you edit the dimensional value of the driving dimension to change the position of the elements, the symbol changes orientation on the drawing sheet, maintaining the dimensional relationships.



Nested Display

Defines the behavior of nested symbols. The options are Public and Private. When you open a document that contains nested symbols, the public option displays these symbols, but the private option hides these symbols.

User Tab

{button Related Topics,AL("symbols high;dc high",0,`NOT_FOUND')}  {button How To,AL("edit symbol how",0,`NOT_FOUND')}

Displays and allows you to set property options for each symbol that you place. This feature provides an administrative tool for tracking property information, such as the serial number of label text, for each placement of a symbol.

Tab Options

Name

Defines a property name.

Type

Specifies the property type you want to define for the symbol property name. You can choose from character, number, money, or date.

Value

Specifies a value for the symbol. For example, you can assign a manufacturer name, a serial number, or other descriptive information as a value.

Properties

The properties table lists all the properties currently defined for the symbol.

Add

Creates an attribute for the symbol.

Delete

Deletes the attribute that you select in the **Properties** box.

Parametric Tab

{button Related Topics,AL("symbol properties db",0,`NOT_FOUND')}  {button How To,AL("edit symbol how",0,`NOT_FOUND')}

Displays information about the parameters in the symbol. The parameters that appear on this tab are the same items that appear in the **Attribute Viewer** when you select the symbol.

You can change the name of the value of the parameter, but not the name. When you change the value, you must click the **Apply** button for the change to take effect on the symbol.

Place Doubleline Ribbon Bar

{button Related Topics,AL("draw high;line cmd;dubline high;dubline cmd",0,`NOT_FOUND')} {button How To,AL("line how",0,`NOT_FOUND')}

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Style

Sets the drawing style.

Line Color

Sets the drawing color. You can click the **More** option to define custom colors with the Colors dialog box.

Line Type

Sets the drawing line type and style.

Line Width

Sets the line width.

Left Primary Line

Indicates that you are drawing the doubleline from the left side.

Right Primary Line

Indicates that you are drawing the doubleline from the right side.

Center Primary Line

Indicates that you are drawing the doubleline from the center.

Length

Sets the length of a line. This box accepts only positive values.

Angle

Sets the angle of a line. This box accepts positive or negative values. A positive value is counterclockwise from the x axis, and a negative value is clockwise from the x axis.

Thickness

Determines the thickness of the doubleline. This thickness is the distance between each of the doublelines. To change the thickness of each of the individual lines, use the **Line Width** option.

Leader Ribbon Bar

{button Related Topics,AL(`add leader cmd',0,`NOT_FOUND')} {button How To,AL(`leader how',0,`NOT_FOUND')}

Note To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Dimension Style

Lists and applies the available styles.

Break Line

Displays a horizontal break line at the annotation end of a leader.

Leader Properties Dialog Box

{button Related Topics,AL(`annotations high;element properties cmd;add leader cmd',0,`NOT_FOUND')}
{button How To,AL(`leader how',0,`NOT_FOUND')}

Edits the properties of an element to which you have added a leader using the **Add Leader** command.

Tab

Text and Leader Tab

Text and Leader Tab

{button Related Topics,AL("leader properties db;balloon properties db;feature control frame properties db;datum frame properties db;weld properties db;surface texture symbol properties db;text properties db",0,`NOT_FOUND')} {button How To,AL("format dimension how",0,`NOT_FOUND')}

Tab Options

Text

Specifies how the text appears in an annotation.

Font

Specifies the font to use for the text in the annotation.

Font Style

Specifies the font style to use, such as bold or italic, for the text in the annotation.

Font Size

Lists and applies the available text sizes.

Leader And Projection Line

Specifies how the leader and projection line are displayed.

Break Line

Displays a horizontal break line where the leader line meets the annotation text. For example, when break line is set to 1, the break line looks like the following picture.

Element Gap

Sets the distance that the projection line is set back from the element you want to attach the leader to. This value is a ratio of the font size.

Extension

Sets the distance that the leader line extends beyond the dimension. This value is a ratio of the font size.

Color

Sets the color of an annotation.

Line Width

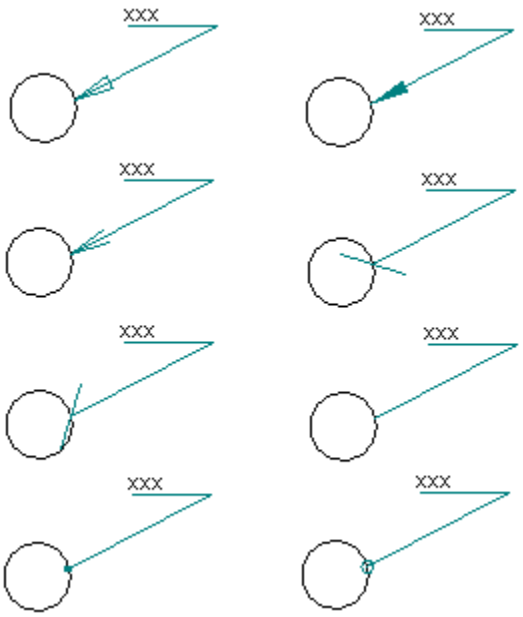
Sets the line width of all lines in an annotation.

Terminator

Specifies how the terminator is displayed on the leader.

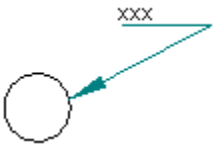
Type

Sets the terminator type. Click different parts of the following picture to find out which terminator type you want to use.



Length

Sets the length of the terminator. This value is a ratio of the font size. For example, in the following picture, the length is set to three times the size of the font.



Balloon Ribbon Bar

{button Related Topics,AL(`balloon cmd',0,`NOT_FOUND')} {button How To,AL(`balloon how;insert vertex how',0,`NOT_FOUND')}

Determines the size and shape of the balloon and the text within the balloon.

Note To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Dimension Style

Lists and applies the available styles.

Leader

Displays the leader line.

Break Line

Places a break line on the leader.

Height

Specifies the height of the balloon. The value you enter is a ratio of the text height defined in the dimension style. The actual height of the balloon is the value you enter multiplied by the dimension text height.

Text

Specifies the text you want inside the balloon.

Shape

Specifies which balloon shape you want from the list of available shapes.

Balloon Properties Dialog Box

{button Related Topics,AL(`element properties cmd',0,`NOT_FOUND')}{button How To,AL(`format dimension how;insert vertex how',0,`NOT_FOUND')}

Sets the properties of a balloon.

Tabs

General Tab

Text and Leader Tab

General Tab

{button Related Topics,AL(`balloon properties db',0,`NOT_FOUND')} {button How To,AL(`format dimension how;insert vertex how',0,`NOT_FOUND')}

Tab Options

Balloon Text

Enters text in the balloon.

Balloon Height

Specifies the height of the balloon. The value you enter is a ratio of the text height defined in the dimension style. The actual height of the balloon is the value you enter multiplied by the dimension text height.

Balloon Shape

Specifies which balloon shape you want from the list of available shapes.

Number Of Sides

Sets the number of sides of an n-sided balloon shape. You must click **N-Sides** in the **Shape** list to use this option. You can then type the value you want.

Change Source Dialog Box

{button Related Topics,AL("links cmd",0,`NOT_FOUND')}  {button How To,AL("edit link how;unload how",0,`NOT_FOUND')}

You can access the **Change Source** dialog box by pressing the **Change Source** button on the **Links** dialog box.

Note To get Help for various items on the dialog box, click the Question Mark in the upper right corner of the dialog box and click the control that you want information about.

Chamfer Ribbon Bar

{button Related Topics,AL("chamfer cmd ",0,`NOT_FOUND')} {button How To,AL("chamfer how",0,`NOT_FOUND')}

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Style

Sets the drawing style.

Line Color

Sets the drawing color. You can click the **More** option to define custom colors with the **Colors** dialog box.

Line Type

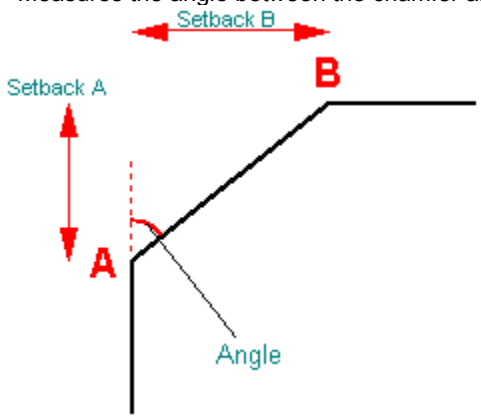
Sets the drawing line type and style.

Line Width

Sets the line width.

Angle

Measures the angle between the chamfer and the first linear element.



Setback A

Specifies the distance from the corner to the beginning of the chamfer on the first linear element you select.

Setback B

Specifies the distance from the corner to the beginning of the chamfer on the second linear element you select.

Circular Pattern Ribbon Bar

{button Related Topics,AL("circular pattern cmd",0,`NOT_FOUND')}  {button How To,AL("circular pattern how",0,`NOT_FOUND')}

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Options

Displays the **Circular Pattern Options** dialog box.

Count

Sets the number of copies in the pattern.

Rows

Sets the number of arc-shaped rows in the pattern. This option is available only when the **Rows** option on the **Circular Pattern Options** dialog box is set to **Multiple Inward** or **Multiple Outward**.

Angle

Sets the angle of the pattern. This box sets the sweep angle between pattern members when the **Pattern Control** option on the **Circular Pattern Options** dialog box is set to **Incremental Array**. This box also sets the total sweep angle when the **Pattern Control** option is set **to Fit To Arc**.

Row Spacing

Sets the distance between adjacent arc-shaped rows in the pattern, as measured from the bottom of one row to the bottom of the next. The bottom is the side closest to the center point of the circular pattern.

Circular Pattern Options Dialog Box

{button Related Topics,AL("circular pattern rb;circular pattern cmd",0,`NOT_FOUND')}  {button How To,AL("circular pattern how",0,`NOT_FOUND')}

Dialog Box Options

Pattern Control

Specifies how the pattern is constructed.

- Incremental Array—Draws a pattern with a set sweep angle between members.
- Fit To Arc—Draws a pattern by evenly spacing members along an arc.

Rows

Controls how pattern rows are arranged.

Single Row

Draws a single row of pattern members.

Multiple Inward

Draws multiple rows, each one closer to the pattern center than the last.

Multiple Outward

Draws multiple rows, each one farther away from the pattern center than the last.

Preview

Displays the range of the graphic to print on the printer paper.

Ribbon Bar

{button Related Topics,AL("draw high;groups high;smartsketch high;freesketch high;circle high;line high;rectangle high",0,`NOT_FOUND')}  {button How To,AL("draw how",0,`NOT_FOUND')}

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Style

Sets the drawing style.

Line Color

Sets the drawing color. You can click the **More** option to define custom colors with the **Colors** dialog box.

Line Type

Sets the drawing line type and style.

Line Width

Sets the line width.

Customize Dialog Box

{button Related Topics,AL("customize cmd;toolbars cmd",0,`NOT_FOUND')}  {button How To,AL("customize how ",0,`NOT_FOUND')}

Customizes toolbar buttons and menus.

Tabs

Menu Tab

Toolbars Tab

Toolbars Tab

{button Related Topics,AL("toolbars db",0,`NOT_FOUND')}  {button How To,AL("customize how",0,`NOT_FOUND')}

Adds or removes commands from toolbars.

Tab Options

Categories

Specifies the category that you want to customize.

Buttons

Specifies which button from the active category you want to add to a toolbar.

Description

Describes the selected button displayed in the **Buttons** box.

Menu Tab

{button Related Topics,AL("toolbars db",0,`NOT_FOUND')}  {button How To,AL("customize how",0,`NOT_FOUND')}

Adds or removes commands from menus or the main menu bar. You can add a command to an existing menu or build a custom menu with the commands that you want.

Tab Options

Categories

Sets the category that you want to select a command or macro from to add to the menu or main menu bar. When you select the title of a group of commands in this box, you can click the title of a command in the **Commands/Macros** box. When you select **Macros** in the **Categories** box, you can click a macro document in the **Commands/Macros** box.

Commands/Macros

Sets the command or macro that you want to add to the menu. If you select a macro, you can also click the **Browse** button and change the directory for macros. When you change the directory, the macro list in the **Commands/Macros** box displays a list of macros in the current directory.

List

Lists the menus. Double-click on a menu name to see all the commands on a menu. When you click **Add Command**, **Add Menu**, **Place Into Selected Menu**, or **Remove**, the changes show up on this list. This list also changes to allow you type in a name for the new menu that you want to add.

Place Into Selected Menu

Places a command or macro that you selected in the **Commands/Macros** box on the menu that you selected in the **List**. If you do not set this option, then the macros or commands that you are adding are placed before or after the command or menu that you selected in the **List** box.

Reset All

Restores all menus and the main menu bar to the original settings.

Add Command

Places a command on a menu or the main menu bar. This button is available only when you select a command or macro in the **Commands/Macros** box.

Add Menu

Places a menu on an existing menu or the main menu bar. When you add a menu with this option, you can add commands to the new menu later. If you add a menu to an existing menu, this creates a cascading menu. After you click this button, you can type the name that you want in the **List** box and then click away from the name to enter it.

Remove

Removes the command or menu that you selected in the **List** box.

Description

Displays a description or result of the options that you selected before you apply them to a menu.

Browse

Changes the directory for macros with the **Select Macro Directory** dialog box. The **Browse** button appears only when you click the **Macros** option in the **Categories** box. The **Select Macro Directory** dialog box changes the directory for listing macros on the **Customize** dialog box. When you change the directory and click **OK**, the **Commands/Macros** box lists the macros for the directory that you selected.

Tip To get Help for various items on the dialog box, click the **Question Mark**  in the upper right corner of the dialog box and click the control that you want information about.

When you position the pointer in this dialog box and right-click, you can access a variety of standard commands that help you manage your documents more efficiently. For example, if you select a document in the list and then

right-click, you can then click the **Select** command on the shortcut menu to automatically open the document. You can also create shortcuts, send the document somewhere else, and other activities.

Arc Ribbon Bar

{button Related Topics,AL("arc cmd;draw high",1)} {button How To,AL("arcs how",1)}

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Style

Sets the drawing style.

Line Color

Sets the drawing color. You can click the **More** option to define custom colors with the Colors dialog box.

Line Type

Sets the drawing line type and style.

Line Width

Sets the line width.

Radius

Sets the radius.

Sweep

Sets the sweep angle.

Circle Ribbon Bar

{button Related Topics,AL("draw high;circle cmd",0,`NOT_FOUND')}  {button How To,AL("circle how",0,`NOT_FOUND')}

Sets options for placing circles.

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Style

Sets the drawing style.

Line Color

Sets the drawing color. You can click the **More** option to define custom colors with the Colors dialog box.

Line Type

Sets the drawing line type and style.

Line Width

Sets the line width.

Diameter

Sets the diameter of the circle.

Radius

Sets the radius.

Curve Ribbon Bar

{button Related Topics,AL("draw high;curve cmd",0,`NOT_FOUND')} {button How To,AL("curve how",0,`NOT_FOUND')}

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Style

Sets the drawing style.

Line Color

Sets the drawing color. You can click the **More** option to define custom colors with the Colors dialog box.

Line Type

Sets the drawing line type and style.

Line Width

Sets the line width.

Open

Sets the curve type to open.

Closed

Sets the curve type to closed.

Previous Node

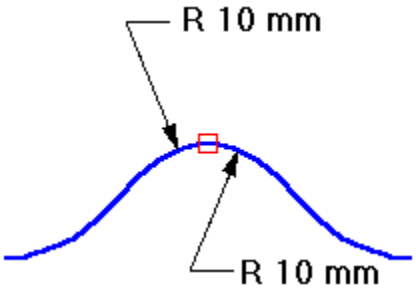
Activates the previous node on the curve. This button is available only when you have selected a curve to edit.

Next Node

Activates the next node on the curve. This button is available only when you have selected a curve to edit.

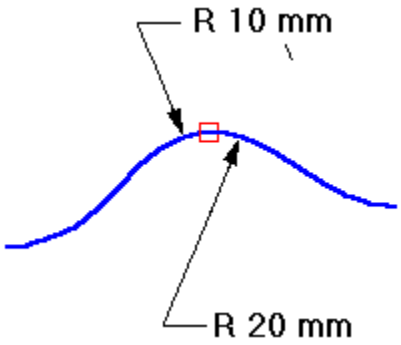
Symmetric

Gives a curve the same curvature on each side of the selected node. This button is available only when you have selected a curve to edit.



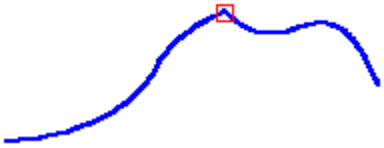
Smooth

Gives a curve a different curvature on each side of the selected node. The start point and end point of a curve is always a smooth node. This button is available only when you have selected a curve to edit.



Cusp

Makes a curve bend sharply at the selected node. This button is available only when you have selected a curve to edit.



Ellipse Ribbon Bar

{button Related Topics,AL("draw high;ellipse cmd",0,`NOT_FOUND')} {button How To,AL("ellipse how",0,`NOT_FOUND')}

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Style

Sets the drawing style.

Line Color

Sets the drawing color. You can click the **More** option to define custom colors with the Colors dialog box.

Line Type

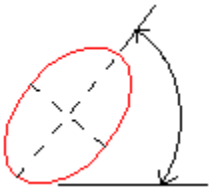
Sets the drawing line type and style.

Line Width

Sets the line width.

Primary

Sets the length of the primary axis. The ellipse orientation is based on the primary axis.



Secondary

Sets the length of the secondary axis. The secondary axis is perpendicular to the primary axis.

Rotation

Sets the angle of the primary axis of the ellipse. Zero degrees is horizontal to the x axis. The angle increases in the counterclockwise direction.

FreeForm Ribbon Bar

{button Related Topics,AL("draw high;freeform cmd",0,`NOT_FOUND')} {button How To,AL("freeform how",0,`NOT_FOUND')}

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Style

Sets the drawing style.

Line Color

Sets the drawing color. You can click the **More** option to define custom colors with the Colors dialog box.

Line Type

Sets the drawing line type and style.

Line Width

Sets the line width.

Smoothing On

Draws cusp, smooth, and symmetric curves in the precision drawing by recognizing these shapes in the rough sketch.

Smoothing Off

Draws elements that closely resemble the movements of your pointer, without smoothing them into cusp, smooth, and symmetric curves.

FreeSketch Ribbon Bar

{button Related Topics,AL("draw high;freesketch cmd ",0,`NOT_FOUND')} {button How To,AL("freesketch how ",0,`NOT_FOUND')}

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Style

Sets the drawing style.

Line Color

Sets the drawing color. You can click the **More** option to define custom colors with the Colors dialog box.

Line Type

Sets the drawing line type and style.

Line Width

Sets the line width.

Adjust On

Draws all lines recognized in the rough sketch as horizontal or vertical in the precision drawing, and draws all arcs recognized in the rough sketch as tangent in the precision drawing.

Adjust Off

Does not adjust the orientation of lines and arcs in your rough sketch.

Line

Draws lines in the precision drawing by recognizing them in the rough sketch.

Arc

Draws arcs in the precision drawing by recognizing them in the rough sketch.

Circle

Draws circles in the precision drawing by recognizing them in the rough sketch.

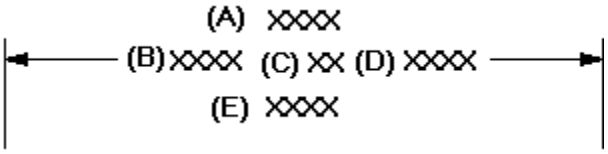
Rectangle

Draw rectangles in the precision drawing by recognizing them in the rough sketch.

Dimension Prefix Dialog Box

{button Related Topics,AL("dimension rb",0,`NOT_FOUND')} {button How To,AL("edit dimension prefix how",0,`NOT_FOUND')}

Adds prefix, suffix, superfix, and subfix text to a dimensional value. You can use this dialog box while you place or edit a dimension.



(A) Superfix
(B) Prefix
(C) Value
(D) Suffix
(E) Subfix

Dialog Box Options

Prefix

Specifies prefix information.

Suffix

Specifies suffix information.

Superfix

Specifies superfix information.

Subfix

Specifies subfix information.

Apply

Applies the prefix to the dimension.

Special Characters

Applies a font character to the dimension prefix. You can use the buttons to apply font characters, such as a diameter, counterbore, depth, and initial length.

Dimension Properties Dialog Box

{button Related Topics,AL("element properties cmd",0,`NOT_FOUND')} {button How To,AL("format dimension how",0,`NOT_FOUND')}

Sets the properties of a dimension or dimension style. You can point to a dimension and right-click to access this dialog box from the **Properties** command on the shortcut menu.

Tabs

General Tab

Units Tab

Secondary Units Tab

Text Tab

Spacing Tab

Terminator and Symbol Tab

Lines and Coordinate Tab

Lines and Coordinate Tab

{button Related Topics,AL("dimension db;dimension properties db;new dimension style db;modify dimension style db",0,`NOT_FOUND')} {button How To,AL("format dimension how",0,`NOT_FOUND')}

Tab Options

Dimension Lines

Sets options for dimension lines.

Connect

Controls if the dimension line extends between both terminators when you place the dimension text and terminators outside the projection lines.

Width

Sets the width of the dimension line.

Stack Pitch

Sets the distance between stacked dimensions. The value is a ratio of the dimension text size.

Break Line

Sets the size of the break line for the dimension line. This value is a ratio of the text size.

Coordinate

Sets options for coordinate dimensions.

Auto-Jog

Turns the jog control on or off on the **Dimension** ribbon bar. You can use this option only when you place a coordinate or radial dimension. If you set **Auto-Jog** and the distance between two dimensions is less than the value set for **Stack Pitch**, then you can place the dimension with a jog in the projection line.

Stack Pitch

Sets the distance between stacked dimensions. The value is a ratio of the dimension text size.

Common Origin

Sets the symbol type for the common origin on coordinate dimensions. You can set the symbol type to dot, circle, or none.

Text Position

Positions text in a coordinate dimension.

Projection Line

Sets options for the projection line of a dimension.

Display

Controls the display of projection lines on linear dimensions. You can set the display to none (off), origin, measurement, or origin and measurement. You can use this option to hide projection lines when they overlap and you are using a pen plotter.

Element Gap

Sets the distance that the projection line is set back from the element you want to dimension. This value is a ratio of the dimension text size.

Extension

Sets the distance that the dimension line extends beyond the dimension. This value is a ratio of the dimension text size.

Angle

Sets the slant angle of the projection lines on dimensions. This option is useful when you need to place a

dimension on isometric drawings.

Center Mark

Places a center line automatically when you dimension a nonlinear element.

Extend Center Mark

Displays projection lines on center marks.

Align Groups

Sets the length of all projection lines in a dimension group to equal the shortest projection line in the group.

General Tab

{button Related Topics,AL("dimension db;dimension properties db;new dimension style db;modify dimension style db",0,`NOT_FOUND')}  {button How To,AL("format dimension how",0,`NOT_FOUND')}

Sets general properties for dimensions.

Tab Options

Color

Sets colors for a driving, driven, or error dimension.

Driving Dimension

Sets the color used for driving dimensions.

Driven Dimension

Sets the color used for driven dimensions.

Error Dimension

Sets the color for error dimensions. Error dimensions are driving or driven dimensions that the software cannot recalculate correctly after parametric attributes on driving dimensions are changed.

Scale Mode

Sets the scale mode to automatic or manual.

Automatic

Determines a correct dimensional value based on the scale set in the drawing view.

Manual

Scales a dimensional value. The scale value determines the dimensional value.

Units Tab

{button Related Topics,AL("dimension db;dimension properties db;new dimension style db;modify dimension style db",0,`NOT_FOUND')} {button How To,AL("format dimension how",0,`NOT_FOUND')}

Sets the primary units for dimensions.

Tab Options

Linear

Specifies the unit settings for a linear dimension.

Units

Sets the primary units for linear dimensions.

Unit Label

Sets the unit label. You can type up to 20 characters for a unit label.

Subunit Label

Sets the subunit label. You can type up to 20 characters for a subunit label.

Round-Off

Sets the round-off for the value. This control is sensitive to the unit setting (decimal or fractional) and contains values as appropriate for the unit. This control is also sensitive to the dimension that you place and contains values as appropriate for the dimension.

Maximum Subunits

Sets the maximum subunits value. You can type a value up to 18. This value applies to feet and inches. For example, if you type 13, the dimension appears as 13 inches and not 1 foot and 1 inch.

Angular

Sets the units for an angular dimension.

Units

Sets the primary units for angular dimensions.

Round-Off

Sets the round-off for the value. This control is sensitive to the unit setting (decimal or fractional) and contains values as appropriate for the unit. This control is also sensitive to the dimension that you place and contains values as appropriate for the dimension.

Zeroes

Specifies if a zero is on the left or right of the decimal in a dimension.

Leading

Places a zero to the left of the decimal point if no numbers appear to the left.

Trailing

Places zeros to the right of the decimal point. The number of zeros placed is based on the active setting for **Round-Off.** For example, if the dimensional value is .5, and the round-off setting is .1234, the dimensional value appears as .5000.

Delimiter

Specifies the decimal delimiter for a dimension.

Period

Sets a period as the decimal delimiter.

Comma

Sets a comma as the decimal delimiter.

Space

Sets a space as the decimal delimiter.

Secondary Units Tab

{button Related Topics,AL("dimension db;dimension properties db;new dimension style db;modify dimension style db",0,`NOT_FOUND')} {button How To,AL(`format dimension how',0,`NOT_FOUND')}

Sets the secondary units for dimensions.

Tab Options

Linear

Specifies the unit settings for a linear dimension.

Units

Sets the secondary units in drawings with dual unit display. For example, the primary unit can be inches, while the secondary unit can be millimeters. When you place the dimension, it displays both units. The software derives the secondary unit by converting the primary unit.

Unit Label

Sets the secondary_units label in drawings with dual unit display. You can type up to 20 characters.

Subunit Label

Sets the secondary subunit label in drawings with dual unit display. You can type up to 20 characters.

Round-Off

Sets the round-off value for secondary_units in drawings with dual unit display. Click the **Secondary Units** tab to set the **Dual Unit Display** check box.

Maximum Subunits

Sets the maximum subunits used for secondary_subunits in drawings with dual unit display.

Zeroes

Specifies if a zero appears on the left or right of the decimal in a dimension.

Leading

Places a zero to the left of the decimal point if no numbers appear to the left.

Trailing

Places zeros to the right of the decimal point. The number of zeros placed is based on the active setting for **Round-Off**. For example, if the dimensional value is .5, and the round-off setting is .1234, the dimensional value appears as .5000.

Dual Unit Display

Displays secondary units for dimensions in drawings. For example, the primary unit can be inches, while the secondary unit is millimeters. Both units display when you place the dimension. The software derives the secondary unit by converting the primary unit.

Terminator And Symbol Tab

{button Related Topics,AL("dimension db;dimension properties db;new dimension style db;modify dimension style db",0,`NOT_FOUND')} {button How To,AL("format dimension how",0,`NOT_FOUND')}

Sets terminator and symbol options for dimensions.

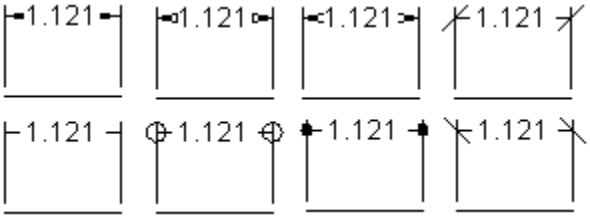
Tab Options

Terminator

Sets options for terminators.

Type

Sets the terminator type for all terminators. Click the various dimensions in the following picture to see the different types.

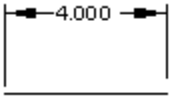


Freespace Type

Sets the terminator type for a dimension with a terminator placed in free space.

Size

Sets the size of the terminator. The value is a ratio of the dimension text size. For example, if you set the **Font Size** option on the **Text** tab to be .2 cm and the **Size** option to be 2, the terminator is twice the size of the dimension text.



Origin Type

Sets the terminator type used on the origin of a linear dimension.

Inside Limit

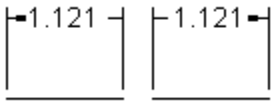
Sets the inside limit for the terminator. The value is a ratio of the dimension text size. This setting controls when the terminators appear on the outside of the projection lines according to the options that you set.

Datum Type

Sets the terminator type for datum frames. If you select **Normal**, the datum frame uses the active terminator type for dimensions. If you select **Anchor**, the datum frame uses an anchor terminator.

Display

Specifies which end of the terminator displays or if both ends display. You can set the display to none (off), origin, measurement, or both origin and measurement. The following picture shows the display when you select the **Origin** option and the **Measurement** option.



Symbol

Sets options for symbols in dimensions.

Placement

Sets the placement position for the symbol on diameter and radial dimensions and linear dimensions for an arc. You can place the symbol before or after the dimension. You can also hide the symbol.

Suppress Diameter

Suppresses the diameter symbol on diameter dimensions.

Not To Scale

Displays an underline, zigzag, or no indicator on driven dimensions with overridden values. You can use the zigzag option only on linear dimensions. You can override a driven dimension value by typing a new value in the **Edit Value** box on a dimension ribbon bar.

Arrow (Filled)

Arrow (Hollow)

Arrow (Open)

Back Slash

Blank

Circle

Dot

Slash

Text Tab

{button Related Topics,AL("dimension db;dimension properties db;new dimension style db;modify dimension style db",0,`NOT_FOUND')} {button How To,AL("format dimension how",0,`NOT_FOUND')}

Sets the text options for dimensions.

Tab Options

Text

Sets text options for a dimension.

Font

Sets the font type for the dimension text.

Font Style

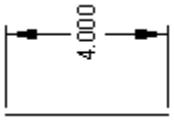
Specifies the font style to use for the text in a dimension.

Font Size

Sets the size for text in a dimension.

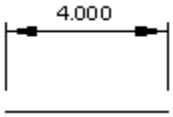
Orientation

Sets the orientation for the text on a dimension. For example, the dimension text looks like the following picture when you select **Vertical**.



Position

Sets the position where text appears in relation to the base line. The base line is an imaginary horizontal line directly under a line of text. For example, when you select **Above**, the dimension text looks like the following picture.



Tolerance Text

Sets options for text in certain types of dimensions that have related tolerances. You can set the dimension type on the dimension ribbon bar.

Size

Sets the size of the text for tolerance text. The value is a ratio of the dimension text size. For example, if you enter .5, the size of the tolerance text will be half the size of the dimension text.

Limit Arrangement

Sets the text arrangement on limit dimensions.

Spacing Tab

{button Related Topics,AL("dimension db;dimension properties db;new dimension style db;modify dimension style db",0,`NOT_FOUND')} {button How To,AL("format dimension how",0,`NOT_FOUND')}

Sets dimension spacing options. All options are a ratio of the dimension text value.

Tab Options

Text Clearance Gap

Sets the space between the text and the dimension line.

Dual Display Vertical Gap

Sets the space between the primary and secondary units when dual unit display is active. You can set the **Dual Unit Display** option on the **Secondary Units** tab so that dimensions display two units.

Line Spacing

Sets the amount of space between the superfix or subfix and the dimension text.

Dimension Above Line Gap

Sets the space between the dimension text and the dimension line.

Horizontal Tolerance Gap

Sets the space between the dimensional value and the tolerance on dimensions.

Vertical Tolerance Gap

Sets the space between the upper and lower tolerance value on dimensions.

Vertical Limits Gap

Sets the space between the upper and lower dimensional values on limit dimensions.

Symbol Gap

Sets the space between the symbol and the dimension line. You can also set the space between the symbol and the dimension text.

Prefix/Suffix Gap

Sets the amount of space between the prefix or suffix and the dimension text.

Horizontal Box Gap

Sets the space between the dimension text and the horizontal edges of the box on dimensions.

Vertical Box Gap

Sets the space between the dimension text and the vertical edges of the box on dimensions.

Dimension Ribbon Bar

{button Related Topics,AL("smartdimension cmd;distance between cmd;angle between cmd;dimension coordinate cmd;symmetric diameter cmd",0,`NOT_FOUND')} {button How To,AL("edit dimensional value how;toggle dimension how;use smartdimension how",0,`NOT_FOUND')}

Sets options for dimensions. Some options on this toolbar are not available until you select an element on the drawing sheet.

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Dimension Style

Lists and applies the available dimension styles.

Round-Off

Sets the round-off for the value. This control is sensitive to the unit setting (decimal or fractional) and contains values as appropriate for the unit. This control is also sensitive to the dimension being placed and contains values as appropriate for the dimension.

Dimension Value

Sets the dimensional value.

Driving/Driven

Toggles the selected dimension between a driving and driven state. If you want to set this option before you place a dimension, you must set the **Maintain Relationships** option on the **Tools** menu.

Auto Center Mark

Places a center line crosshair at the center of the radius of curvature being measured by the dimension.

Jog

Offsets the projection line of a coordinate or radial dimension. You can use this option to prevent the projection line that you are placing from overlapping other dimensions.

Dimension Axis

Sets the orientation of dimensions placed by the **Distance Between** or **Coordinate Dimension** button. This option is not available until you select one of those buttons. This option is not available after you select the origin element.

When you click Default, the dimensions that you place are parallel or perpendicular to the horizontal edge of the drawing sheet.

When you click Implicit, the dimensions that you place are parallel or perpendicular to the element that you are dimensioning.

When you click Explicit, the dimensions that you place are parallel or perpendicular to the element that you set the dimension axis to with the Axis button on the Dimension Toolbar. You can use Explicit when the default horizontal and vertical axes are not appropriate for the geometry that you are dimensioning.

Complement

Places an angular dimension at the 360 degree complement.

Half/Full

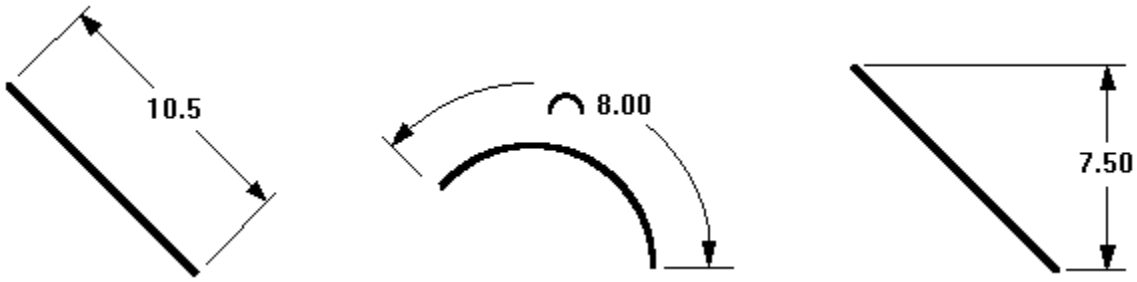
Toggles between half and full. When you toggle this option, the symmetric diameter appears as half or full.

The following options are available only if you click the SmartDimension button on the Dimension toolbar and select an element:

Length

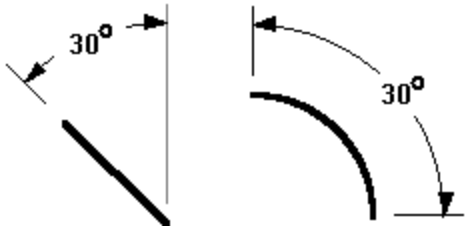
Places a linear dimension for the following:

- The length of a line
- The arc length of an arc
- The horizontal or vertical distance between the end points of a line



Angle

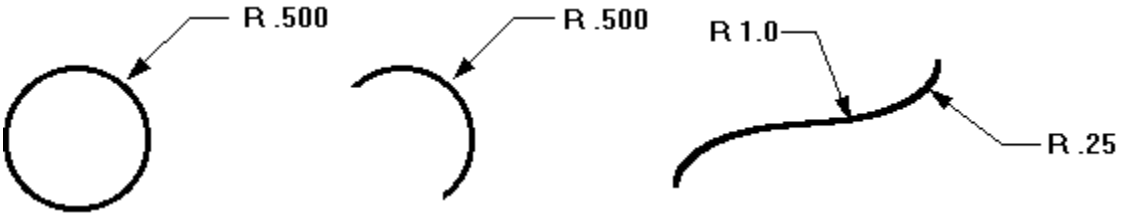
Places an angular dimension for the angle of a line or the sweep angle of an arc.



Radius

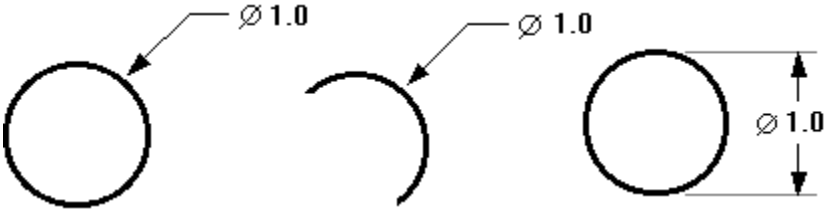
Places a radial dimension for the following:

- Arc
- Circle
- Ellipse
- Curve



Diameter

Places a diameter dimension for an arc or circle.



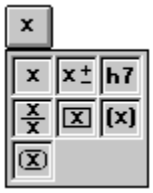
Prefix

Opens or closes the Dimension Prefix dialog box for specifying prefix, suffix, superfix, and subfix information.

Dimension Type

Specifies the dimension type and the related tolerances.

Note In the following picture, you can click each palette option to see the type of dimension and an example of what the dimension will look like.



Upper Tolerance

Sets the primary upper tolerance value. This option is available for tolerance or limits dimension types only.

Lower Tolerance

Sets the primary lower tolerance value. This option is available for tolerance or limits dimension types only.

Class

Sets the tolerance class. This option is available for the class dimension type only. You can set the deviation (letters) and the grade (numbers).

Line Ribbon Bar

{button Related Topics,AL("draw high;line cmd",0,`NOT_FOUND')}  {button How To,AL("line how",0,`NOT_FOUND')}

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Style

Sets the drawing style.

Line Color

Sets the drawing color. You can click the **More** option to define custom colors with the Colors dialog box.

Line Type

Sets the drawing line type and style.

Line Width

Sets the line width.

Line

Switches the drawing mode from line to arc.

Arc

Switches the drawing mode from arc to line.

Length

Sets the length of a line. This box accepts only positive values.

Angle

Sets the angle of a line. This box accepts positive or negative values. A positive value is counterclockwise from the x axis, and a negative value is clockwise from the x axis.

Point Ribbon Bar

{button Related Topics,AL("draw high;point cmd",0,`NOT_FOUND')}  {button How To,AL("point how",0,`NOT_FOUND')}

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Style

Sets the drawing style.

Line Color

Sets the drawing color. You can click the **More** option to define custom colors with the Colors dialog box.

Line Type

Sets the drawing line type and style.

Line Width

Sets the line width.

X

Sets a value for the x coordinate. You can use this option by itself or with the Y option.

Y

Sets a value for the y coordinate. You can use this option by itself or with the X option.

Element Properties Dialog Box

{button Related Topics,AL("element properties cmd",0,`NOT_FOUND')} {button How To,AL("format line how",0,`NOT_FOUND')}

Sets the display properties and user-defined properties for elements.

Tabs

Info Tab

Format Tab

User Tab

Format Tab

{button Related Topics,AL("line properties db",0,`NOT_FOUND')} {button How To,AL("format line how",0,`NOT_FOUND')}

Tab Options

Style

Sets the drawing style.

Color

Sets the drawing color.

Width

Sets the line width.

Type

Sets the drawing line type and style.

Info Tab

{button Related Topics,AL("line properties db",0,`NOT_FOUND')} {button How To,AL("format line how",0,`NOT_FOUND')}

The contents of this tab varies depending on whether you selected or highlighted one of the following types of elements:

- Line
- Arc
- Circle
- Curve
- Ellipse
- Point
- Fillet
- Chamfer
- Rectangle
- Connector

Line Tab Options

Type

Displays the type of the selected element. You cannot edit the type.

Sheet

Displays the name of the drawing sheet that contains the element. You cannot edit the name of the drawing sheet.

Layer

Sets the layer that contains the element.

Start Point

Sets the X and Y values for the start point of the element.

X

Sets a value for the x coordinate. You can use this option by itself or with the Y option.

Y

Sets a value for the y coordinate. You can use this option by itself or with the X option.

End Point

Sets the x and y values for the end point of an element.

X

Sets a value for the x coordinate. You can use this option by itself or with the Y option.

Y

Sets a value for the y coordinate. You can use this option by itself or with the X option.

Length

Displays the length of a curve. You cannot edit this value.

Angle

Sets the angle of a line.

Arc Tab Options

Type

Displays the type of the selected element. You cannot edit the type.

Sheet

Displays the name of the drawing sheet that contains the element. You cannot edit the name of the drawing sheet.

Layer

Sets the layer that contains the element.

Start Point

Sets the x and y values for the start point of the element.

X

Sets a value for the x coordinate. You can use this option by itself or with the Y option.

Y

Sets a value for the y coordinate. You can use this option by itself or with the X option.

Center Point

Sets the x and y values for the center point of a closed element.

X

Sets a value for the x coordinate. You can use this option by itself or with the Y option.

Y

Sets a value for the y coordinate. You can use this option by itself or with the X option.

End Point

Sets the x and y values for the end point of an element.

X

Sets a value for the x coordinate. You can use this option by itself or with the Y option.

Y

Sets a value for the y coordinate. You can use this option by itself or with the X option.

Radius

Sets the radius.

Start Angle

Displays the angle formed by the x axis and the first point of the sweep angle. Zero degrees is horizontal to the x axis.

Sweep Angle

Sets the sweep angle.

Circle Tab Options

Type

Displays the type of the selected element. You cannot edit the type.

Sheet

Displays the name of the drawing sheet that contains the element. You cannot edit the name of the drawing sheet.

Layer

Sets the layer that contains the element.

Center Point

Sets the x and y values for the center point of a closed element.

X

Sets a value for the x coordinate. You can use this option by itself or with the Y option.

Y

Sets a value for the y coordinate. You can use this option by itself or with the X option.

Radius

Sets the radius.

Diameter

Sets the diameter of the circle.

Circumference

Displays the circumference of a closed element. Although you cannot edit the circumference, the box automatically updates when you edit the geometry.

Area

Displays the area of a closed element. Although you cannot edit the area, the box automatically updates when you edit the geometry.

Curve Tab Options

Type

Displays the type of the selected element. You cannot edit the type.

Sheet

Displays the name of the drawing sheet that contains the element. You cannot edit the name of the drawing sheet.

Layer

Sets the layer that contains the element.

Curve Type

Displays the type of curve (open or closed). You cannot edit this field.

Order

Displays the number of nodes of a curve.

Vertices

Sets the coordinates of the nodes on the curve.

Nodes

Lists the nodes on a selected curve. When you select a node from the list, its x and y values are displayed so you can edit them. The node type is also displayed.

X

Sets a value for the x coordinate. You can use this option by itself or with the Y option.

Y

Sets a value for the y coordinate. You can use this option by itself or with the X option.

Length

Displays the length of a curve. You cannot edit this value.

Area

Displays the area of a closed curve. Although you cannot edit the area, the box automatically updates when you edit the geometry.

Ellipse Tab Options

Type

Displays the type of the selected element. You cannot edit the type.

Sheet

Displays the name of the drawing sheet that contains the element. You cannot edit the name of the drawing sheet.

Layer

Sets the layer that contains the element.

Center Point

Sets the x and y values for the center point of a closed element.

X

Sets a value for the x coordinate. You can use this option by itself or with the Y option.

Y

Sets a value for the y coordinate. You can use this option by itself or with the X option.

Primary Axis

Sets the length of the primary axis. The ellipse orientation is based on the primary axis.

Secondary Axis

Sets the length of the secondary axis. The secondary axis is perpendicular to the primary axis.

Rotation Angle

Sets the angle of the primary axis of the ellipse. Zero degrees is horizontal to the x axis. The angle increases in the counterclockwise direction.

Circumference

Displays the circumference of a closed element. Although you cannot edit the circumference, the box automatically updates when you edit the geometry.

Area

Displays the area of a closed element. Although you cannot edit the area, the box automatically updates when you edit the geometry.

Point Tab Options

Type

Displays the type of the selected element. You cannot edit the type.

Sheet

Displays the name of the drawing sheet that contains the element. You cannot edit the name of the drawing sheet.

Layer

Sets the layer that contains the element.

Coordinate

Sets the x and y values for an element.

X

Sets a value for the x coordinate. You can use this option by itself or with the Y option.

Y

Sets a value for the y coordinate. You can use this option by itself or with the X option.

Fillet Tab Options

Type

Displays the type of the selected element. You cannot edit the type.

Sheet

Displays the name of the drawing sheet that contains the element. You cannot edit the name of the drawing sheet.

Layer

Sets the layer that contains the element.

Radius

Specifies the radius between the two elements you want to use to create the fillet.

Chamfer Tab Options

Type

Displays the type of the selected element. You cannot edit the type.

Sheet

Displays the name of the drawing sheet that contains the element. You cannot edit the name of the drawing sheet.

Layer

Sets the layer that contains the element.

Angle

Measures the angle between the chamfer and the first linear element.

Setback A

Specifies the distance from the corner to the beginning of the chamfer on the first linear element you select.

Setback B

Specifies the distance from the corner to the beginning of the chamfer on the second linear element you select.

Rectangle Tab Options

Type

Displays the type of the selected element. You cannot edit the type.

Sheet

Displays the name of the drawing sheet that contains the element. You cannot edit the name of the drawing sheet.

Layer

Sets the layer that contains the element.

Centroid

Defines the exact center of the rectangle with X and Y coordinates.

Height

Sets the height of the rectangle or square.

Width

Sets the width of the rectangle or square.

Angle

Sets the orientation angle of the element. Zero degrees is horizontal to the x axis. The angle increases in the counterclockwise direction.

Circumference

Displays the circumference of a closed element. Although you cannot edit the circumference, the box automatically updates when you edit the geometry.

Area

Displays the area of a closed element. Although you cannot edit the area, the box automatically updates when you edit the geometry.

Connector Tab Options

Type

Displays the type of the selected element. You cannot edit the type.

Sheet

Displays the name of the drawing sheet that contains the element. You cannot edit the name of the drawing sheet.

Layer

Sets the layer that contains the element.

Start Point

Sets the x and y values for the start point of the connector.

X

Sets a value for the x coordinate. You can use this option by itself or with the Y option.

Y

Sets a value for the y coordinate. You can use this option by itself or with the X option.

End Point

Sets the x and y values for the end point of a connector.

X

Sets a value for the x coordinate. You can use this option by itself or with the Y option.

 # Vertices

Sets the number of vertices for a connector.

Rectangle Ribbon Bar

{button Related Topics,AL("draw high;rectangle cmd",0,`NOT_FOUND')} {button How To,AL("rectangle how;rectangle freeform how",0,`NOT_FOUND')}

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Style

Sets the drawing style.

Line Color

Sets the drawing color. You can click the **More** option to define custom colors with the Colors dialog box.

Line Type

Sets the drawing line type and style.

Line Width

Sets the line width.

Width

Sets the width of the rectangle or square.

Height

Sets the height of the rectangle or square.

Angle

Sets the orientation angle of the element. Zero degrees is horizontal to the x axis. The angle increases in the counterclockwise direction.

Variable Table

{button Related Topics,AL("variables high;variable cmd;variable table high;functions high;filter db ",0,`NOT_FOUND')} {button How To,AL("variables how",0,`NOT_FOUND')}

Displays, defines, and manipulates design variables and functional relationships between the variables. This table operates much like a software spreadsheet. The design variables can be dimensions in the document or variables defined with the Variable Table. The table consists of the following columns: **Type**, **Name**, **Value**, **Formula**. Each row of the table displays a variable.

Table Options

Unit Type

Specifies the unit of measure for the variable entered in the **Variable Table**. The box is located in the top left corner of the **Variable Table**. The default type is distance which means that any expression created will be a distance parameter. For example, if you want to create a variable to control an angular dimensions, you should change the unit type to angular. Then, the variable created will be an angular type, which can be used to control an angular dimensional relationship.

Enter

Accepts the edits you have made in the cell.

Cancel

Clears the contents of the cell and returns the cell to its previous value.

Filter

Access the Filter dialog box so that you can restrict the display of variables in the **Variable Table** window.

Function Wizard

Accesses the Function Wizard dialog box.

The following items describe the columns in the Variable Table:

Type

Displays the variable type, generally the type of a dimension, such as DIM, VAR, SCALAR, and so forth. DIM refers to a dimensional relationship. VAR refers to a variable that you have created. This option is read-only.

Name

Names the variable. By default, the software places the name of a dimension in this column. These names can be renamed to a more logical one, if you want. You must always name user-defined variables when you create them. A variable must be named if you want to refer to it in the **Formula** column of another row. You can change the name by editing the **Name** cell and then selecting the **Check** button at the top of the **Variable Table**.

Variable names should meet the following requirements:

- They must begin with a letter.
- They must contain only letters, numbers, and the underscore character; you cannot use punctuation characters and spaces.
- They must be forty characters or less.

Value

Displays the current value of the variable. A variable always has a value. You cannot edit the value of a variable that has formula. You can edit driving dimensions with the **Variable Table**.

Formula

Displays the function or relation that defines the value of the variable. You can enter a mathematical expression

in a cell in this column to calculate the value for a corresponding dimension. If the **Formula** cell is empty, then the variable value is independent of other variables.

When using variable names within a formula, the names are case sensitive. For example, the names var1 and Var1 reference two different variables.

If a value is defined by a formula, the formula appears in the **Formula** cell. You can enter an algebraic expression in the formula cell to define the value of the variable. The single line expression must be in standard Visual Basic syntax. The formula can include any available function. The resulting value of the formula is shown in the **Value** column of the variable.

The software provides a set of standard mathematical functions. You can also select Visual Basic functions that you wrote and saved. The functions can be typed in with the proper syntax or you can use the **Function Wizard** to select and define the inputs to the function. If the function does not contain proper syntax, the software displays a message indicating that there is an error in the formula.

Function Wizard Step 1 of 2 Dialog Box

{button Related Topics,AL("variables high;variable cmd;variable table high;functions high",0,`NOT_FOUND')}
{button How To,AL("variables how",0,`NOT_FOUND')}

Selects the function you want to enter.

Dialog Box Options

Function Category

Selects subsets of all available functions. If you click the **All in the Function Category** box, all the available functions appear. If you select any other category, only those functions that belong to that category appear.

Custom functions that you define are included under their assigned categories, or in the user-defined category if no other categories are assigned. See the alphabetical list of functions.

Function Name

Lists all built-in and custom functions that are available in the selected category. Also lists built-in and custom macro functions if a macro sheet is active. The display area describes the selected function.

Next

Moves to the next dialog box of the **Function Wizard**. You should click **Next** after you have selected the function you want to insert into the **Formula Bar** or the selected cell. After you finish typing values into the appropriate fields, the Function Wizard Step 2 Of 2 dialog box is displayed. This dialog box appears first if you are entering a math and trig function.

Note If you select a function that you defined using Visual Basic, a dialog box appears first that allows you to open the document that contains the function. After you open the document, the Function Wizard Step 2 Of 2 dialog box is displayed.

Finish

Inserts the function into the **Formula Bar**. If you do not enter an argument, the software inserts the argument names as placeholders in the formula.

Cancel

Closes the **Function Wizard** dialog box without entering anything into the **Formula Bar** or into the selected cell.

Alphabetical List of Functions

{button Related Topics,AL("variables high;variable cmd;variable table high;functions high",0,`NOT_FOUND')}
{button How To,AL("variables how",0,`NOT_FOUND')}

The following functions are available in the **Variable Table**. They are referred to as math and trig functions.

ABS	Returns the absolute value of a number
ATN	Returns the arctangent of a number
COS	Returns the cosine of a number
EXP	Returns e raised to the power of a given number
FIX	Returns the integer portion of a number.
INT	Rounds a number down to the nearest integer
LOG	Returns the natural algorithm of a number
RND	Rounds a number to a specified number of digits
SGN	Returns an integer indicating the sign of a number
SIN	Returns the sine of the given angle
SQR	Returns the square root of number.
TAN	Returns the tangent of an angle

The following functions are also available in the Variable Table.

User, Visual Basic	Relates variables through a user function, usually defined with Visual Basic.

Function Wizard Step 2 of 2 Dialog Box

{button Related Topics,AL("variables high;variable cmd;variable table high;function wizard step 1 of 2 db;functions high",0,`NOT_FOUND')} {button How To,AL("variables how",0,`NOT_FOUND')}

Enters values, references, names, formulas, and other functions into the fields. The dialog box changes according to the function you select in the **Function Wizard** Step 1 of 2 dialog box. Your entries must produce valid values for the arguments. If an argument is required for the function to be entered successfully, the word "required" appears in brackets in the display area.

Dialog Box Options

FuncName

Displays the name of the function.

FnSummary

Displays a summary of the function.

Number

Displays the number of the function.

First Arg

Displays the argument of the variable. In the **Function Wizard** Step 1 of 2 dialog box, if the selected variable is a subroutine that you defined, more than one box appears on the **Function Wizard Step 2 of 2** dialog box. The checkbox to the right of the field indicates whether the variable is an input or output argument.

Back

Moves from the current **Function Wizard** dialog box to the preceding one.

Finish

Enters the completed function in the **Variable Table**.

Filter Dialog Box

{button Related Topics,AL("variable table cmd;variable table high;filter cmd",0,`NOT_FOUND')}  {button How To,AL("variable table how",0,`NOT_FOUND')}

Controls which variables appear in the **Variable Table**.

Dialog Box Options

Type

Specifies the type of variables that are displayed in the **Variable Table**. If you click **Dimension**, then only dimension variables are displayed in the **Variable Table**; these variables directly control elements of a design. If you click **User Variables**, then only logical variables that you created are displayed. This variable type cannot directly control a design. A user variable must be set equal to a value or mathematical expression; for example, PI = 3.14159. Variables can control dimensional relationships by setting the dimensional relationship equal to the variable.

Named By

Controls the view in the **Variable Table** so that only named variables are displayed.

User

Displays only variables that you have named.

System

Displays only variables, usually the dimensions, that the software has created.

Both

Displays all variables that are named.

Graphics In

Displays variables that are associated with elements in the current document, active window, or group of elements that you have selected.

Last Selected Window

Displays variables that are associated with elements in the active window.

Select Set

Displays variables that are associated with elements in a group that you have selected in the document.

File

Displays variables that are associated with elements in the current document.

Format Dimension Dialog Box

{button Related Topics,AL("format dimension cmd",0,`NOT_FOUND')} {button How To,AL("format dimension how",0,`NOT_FOUND')}

Sets options for placing dimensions. You can access this dialog box with the **Dimension** command on the **Format** menu. You can define dimension styles with the **Style** command on the **Format** menu.

Tabs

General Tab

Units Tab

Secondary Units Tab

Text Tab

Spacing Tab

Terminator and Symbol Tab

Lines and Coordinate Tab

Colors Dialog Box

{button Related Topics,AL("fill rb;custom color name db;display manager db;custom color name db",0,`NOT_FOUND')}  {button How To,AL("create color how",0,`NOT_FOUND')}

Creates colors that you define by mixing a combination of hue, saturation, and luminosity values or red, green, and blue values. After you click the **Define Custom Colors** button, the easiest way to experiment with different colors is to drag the pointer around on the color matrix.

After you create a color and close the dialog box, the **Custom Color Name** dialog box appears, allowing you to save the custom color with a name.

To change the settings for a custom color, you can click a custom color box and then specify a different color. To define a new custom color, click an empty custom color box, specify a new color, and then click **Add To Custom Colors**.

Tip To get Help for various items on the dialog box, click the **Question Mark**  in the upper right corner of the dialog box and click the control that you want information about.

Custom Color Name Dialog Box

{button Related Topics,AL("fill rb;colors db;color db;display manager db",0,`NOT_FOUND')} {button How To,AL("create color how",0,`NOT_FOUND')}

Saves a color that you created with a name. This dialog box appears after you create a color with the **Colors** dialog box.

Dialog Box Options

Color Name

Specifies the name of the color that you created on the **Colors** dialog box. After you save the custom color with a name, the name appears on the color palette.

Fill Ribbon Bar

{button Related Topics,AL("fill cmd",0,`NOT_FOUND')}  {button How To,AL("fill how",0,`NOT_FOUND')}

Displays the active settings for a fill.

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Options

Style

Lists and applies the available styles. To define a new fill style, you can type a name in the box. The new style uses the current settings on the ribbon bar.

Pattern Color

Applies a pattern line color for pattern fills. If you select none, the background will be transparent. Filled elements cover other elements when they overlap. You can click the **More** option to define custom colors with the **Colors** dialog box.

Solid Color

Applies a system color to set the background color for the fill. If you select none, the background will be transparent. Filled elements cover other elements when they overlap. You can click the **More** option to define custom colors with the **Colors** dialog box.

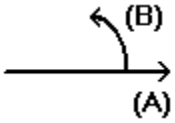
Tip The blank fill color takes on the background color of the document. This is useful for creating symbols that can cover an element on which the symbol is placed. Incorporating a fill with blank color into the symbol allows the symbol, when placed, to mask out elements such as lines or connectors that intersect the symbol.

Redo Fill

Re-applies a fill to a filled area when the boundary changes. A fill can become disabled, and change color, if you modify its boundary by drawing another element or moving part of the existing boundary. If you click **Redo Fill**, the area surrounding the fill handle is filled again.

Angle

Sets the angle of the fill in the active unit. Zero degrees is horizontal to the x axis, and the angle (A) increases in a counterclockwise direction with zero on the positive side (B) of the x axis. If you type a negative value, the software displays the equivalent positive value.



Spacing

Adjusts the spacing of the pattern lines in a fill.

Layers Ribbon Bar

{button Related Topics,AL(`layers cmd;layers high',0,`NOT_FOUND')} {button How To,AL(`filter how;layers how',0,`NOT_FOUND')}

Note To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Layer

Displays the active layer on the drawing sheet. You can change the active layer by selecting from a list of all the layers on the active sheet. Typing a new layer name creates a new layer.

Change Layer

Accesses the **Change Layer** dialog box so that you can change the layer of elements. This option is available only when you have selected a set of elements on the drawing.

Layer Status

Accesses the **Layer Display** dialog box. This dialog box has a **Layer** list that you can use to display or hide layers on the drawing sheet.

Groups Dialog Box

{button Related Topics,AL(`layer groups cmd',0,`NOT_FOUND')} {button How To,AL(`layer groups how',0,`NOT_FOUND')}

Creates, modifies, or deletes layers and layer groups. You can only work with layers for the active sheet in the active window. You cannot delete the active layer or a layer that has elements placed on it.

Dialog Box Options

Layers

Displays a list of all the layers on the current drawing sheet. so that you can create new layers. You can type the name of a layer in the **Layers** box to create a new layer. You can also add or remove layers in a layer group with the **Layers** table. When you select a group in the **Groups** table, the check boxes in the **Grouped** column of the **Layers** table indicate the status of the layers. If the check box is set, the layer is a member of the group that you selected in the **Groups** table. If the check box is cleared, the layer is not a member of the group.

Groups

Displays all layer groups for the current sheet. You can define a new group by typing a name in the **Groups** box. You can select a group from the **Groups** table to display the layers in the group in the **Groups** table. To select a group, you must click the button on the left side of the row for a group. You can use the **Description** column to add a description to the layer group. Typing a name of an existing layer group makes that group active. You can then add or remove layers in a group.

Layer Display Dialog Box

{button Related Topics,AL(`layers cmd;layers high',0,`NOT_FOUND')} {button How To,AL(`filter how;layers how',0,`NOT_FOUND')}

Sets display criteria for the layers in the current drawing sheet.

Note You can set display criteria for all the sheets in the current document with the **Display Manager** command on the **Tools** menu.

Dialog Box Options

Active Layer Only

Displays the active layer. If this option is set and the active layer changes, then the new active layer is displayed and the previous active layer is hidden.

Layers

Displays a list of layers on the active drawing sheet. Bold, black text shows that the layer is displayed on the drawing sheet. Plain, gray text shows the layer is hidden. Bold, red text preceded by a bullet shows that the layer is active.

Occupied Only

Lists only layers containing elements. Empty layers do not appear on the list.

Groups

Displays or hides the layer groups list on the dialog box. When you click this button, the dialog box displays a list of all layer groups for the active drawing sheet. You can select a group from the list to display or hide these layers on the drawing sheet.

On

Displays the layers in the selected layer group.

Off

Hides the layers in the selected layer group.

Apply

Applies the current display settings to all windows.

Change Layer Dialog Box

{button Related Topics,AL(`layers cmd',0,`NOT_FOUND')} {button How To,AL(`filter how;layers how',0,`NOT_FOUND')}

Dialog Box Options

Current Layers

Lists the layers for all the selected elements.

Change All To

Lists all the layers for the active sheet. Selecting a layer from the list changes the layer for all the elements in the selection set.

Fillet Ribbon Bar

{button Related Topics,AL("fillet cmd;extending or trimming high",0,`NOT_FOUND')} {button How To,AL("fillet how",0,`NOT_FOUND')}

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Style

Sets the drawing style.

Line Color

Sets the drawing color. You can click the **More** option to define custom colors with the **Colors** dialog box.

Line Type

Sets the drawing line type and style.

Line Width

Sets the line width.

Radius

Specifies the radius between the two elements you want to use to create the fillet.

Fill Properties Dialog Box

{button Related Topics,AL("element properties cmd",0,`NOT_FOUND')} {button How To,AL("format fill how",0,`NOT_FOUND')}

Sets the properties of a fill.

Tab

Fill Tab

Fill Tab

{button Related Topics,AL("fill properties db;new fill style db;modify fill style db",0,`NOT_FOUND')}{button How To,AL("format fill how",0,`NOT_FOUND')}

Formats a fill. This tab is available only if you have selected a fill or an element with a fill.

Tab Options

Style

Displays the name of the style applied to the element.

Solid Color

Applies a system color to set the background color for the fill. If you select none, the background will be transparent. Filled elements cover other elements when they overlap. You can click the **More** option to define custom colors with the Colors dialog box.

Pattern Color

Applies a pattern line color for pattern fills. If you select none, the background will be transparent. Filled elements cover other elements when they overlap. You can click the **More** option to define custom colors with the Colors Dialog Box.

Line Width

Sets the line width.

Pattern Spacing

Adjusts the spacing of the pattern lines in a fill.

Pattern Angle

Sets the angle of the fill in the active unit. Zero degrees is horizontal to the x axis, and the angle (A) increases in a counterclockwise direction with zero on the positive side (B) of the x axis. If you type a negative value, the software displays the equivalent positive value.

Preview

Displays the range of the graphic to print on the printer paper.

Display Manager Dialog Box

{button Related Topics,AL(`display manager cmd',0,`NOT_FOUND')} {button How To,AL(`filter how',0,`NOT_FOUND')}

Specifies the way elements or objects appear in a window for all drawing sheets and their associated layers in the document.

Note You can set display options for the current drawing sheet on the **Layer Display** dialog box. You can access the **Layer Display** dialog box with the **Layers** command on the **Tools** menu.

Tabs

Sheets Tab

Layers Tab

Sheets Tab

{button Related Topics,AL(`display manager db',0,`NOT_FOUND')} {button How To,AL(`filter how',0,`NOT_FOUND')}

Controls the way elements or objects appear on a drawing sheet.

Tab Options

Row Button

Specifies at what level you want to display or hide items. When you click a button to the left of a row, an arrow appears by that row.

Clicking this button selects the drawing sheet or element so that you can modify its display. If you select a drawing sheet, any options you set on the **Layer** tab of the **Display Manager** dialog box are applied to the sheet that you selected.

Sheets

Displays a list of sheets in the current document. An arrow appears by the active drawing sheet by default. You can control the display of each sheet by setting the options you want in the **Display**, **Lock**, **Color**, **Type**, or **Width** columns.

Display

Displays the elements listed on the **Layers** tab. If you set the box next to the element, the element is displayed in the active document (if its layer is displayed).

- A check appears in each box when you first access the **Layers** tab.
- You can set the box next to each element to display all the elements.
- On the **Layers** tab, you cannot turn the active layer off.

Lock

Locks or unlocks elements and layers in a view to control whether the software can locate them. If an element or layer is locked, you can still see it on the screen, but you cannot locate it or perform actions on it. You cannot lock the active layer.

- If the lock beside a sheet or layer appears locked, you cannot locate the element or layer in the active document or drawing sheet.
- If the lock beside a sheet or layer appears unlocked, the element or layer is not locked and you can locate it.

Color

Overrides the color for a drawing sheet or element or applies another color to an element. You can select a color from the list. You can click the **More** option to define custom colors with the Colors dialog box.

Line Type

Overrides a line type for a drawing sheet or embedded object and sets another line style for an element or linked object.

Width

Overrides a line width for all elements on a drawing sheet.

Clear

Removes all overrides from the selected row. You must select a row before you can click this button. You can clear settings from only one row at a time.

Apply

Applies the current display settings.

Layers Tab

{button Related Topics,AL(`display manager db',0,`NOT_FOUND')} {button How To,AL(`filter how;layers how',0,`NOT_FOUND')}

Controls the way layers and layer groups appear in a window.

Tab Options

Row Button

Shows the active layer. The active layer cannot be changed.

Layers

Controls the display using layers and layers groups. The **Layers** column displays an alphabetical list of layers and layer groups for the active drawing sheet.

Layer groups appear first in the list followed by individual layers. You can control the display of each layer by setting the options you want in the **Display**, **Lock**, **Color**, **Type**, or **Width** columns.

Display

Displays the elements listed on the **Layers** tab. If you set the box next to the element, the element is displayed in the active document (if its layer is displayed).

- A check appears in each box when you first access the **Layers** tab.
- You can set the box next to each element to display all the elements.
- On the **Layers** tab, you cannot turn the active layer off.

Lock

Locks or unlocks elements and layers in a view to control whether the software can locate them. If an element or layer is locked, you can still see it on the screen, but you cannot locate it or perform actions on it. You cannot lock the active layer.

- If the lock beside a sheet or layer appears locked, you cannot locate the element or layer in the active document or drawing sheet.
- If the lock beside a sheet or layer appears unlocked, the element or layer is not locked and you can locate it.

Color

Overrides the color for a layer or layer group or applies another color to an element. You can select a color from the list. You can click the **More** option to define custom colors with the Colors dialog box.

Line Type

Overrides a line type for a drawing sheet or embedded object and sets another line style for an element or linked object.

Width

Selects another line width for layer or layer group.

Clear

Removes all overrides from the selected row. You must select a row before you can click this button. You can clear settings from only one row at a time.

Apply

Applies the current display settings.

Format Line Dialog Box

{button Related Topics,AL("format line cmd",0,`NOT_FOUND')} {button How To,AL("format line how",0,`NOT_FOUND')}

Sets options for placing lines. You can access this dialog box by clicking **Line** on the **Format** menu. You define line styles by clicking **Style** on the **Format** menu.

Tabs

General Tab

Unicode Character Map Dialog Box

{button Related Topics,AL("text cmd;annotations high",0,`NOT_FOUND')} {button How To,AL("insert font character into text box how",0,`NOT_FOUND')}

Selects special characters for inserting into a text box.

Dialog Box Options

Font

Lists the available fonts.

Subset

Lists the subsets for a particular font.

Next

Displays the next subset in the **Subset** list for a font.

Previous

Displays the previous subset in the **Subset** list for a font.

Characters To Copy

Displays selected characters to copy to the **Clipboard**.

Select

Copies selected characters to the **Characters To Copy** box.

Copy

Copies the selected characters from the **Characters To Copy** box to the **Clipboard**.

Format Text Box Dialog Box

{button Related Topics,AL("text cmd",0,`NOT_FOUND')} {button How To,AL("format text how",0,`NOT_FOUND')}

Sets options for placing text boxes. You can access this dialog box by clicking **Text Box** on the **Format** menu. You define text styles by clicking **Style** on the **Format** menu.

Tab

Paragraph Tab

Group Properties Dialog Box

{button Related Topics,AL("groups high;group cmd",0,`NOT_FOUND')}{button How To,AL("group how",0,`NOT_FOUND')}

Displays the properties of the selected group.

Dialog Box Tabs

Info Tab

Group Ribbon Bar

{button Related Topics,AL("groups high;group cmd",0,`NOT_FOUND')}{button How To,AL("group how",0,`NOT_FOUND')}

Note To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Style

Sets the style for all of the elements in a group.

Color

Sets the color for all of the elements in a group.

Line Type

Sets the line types and styles for all of the elements in a group.

Width

Sets the line width for all of the elements in a group.

Name

Displays the name of the group. The software names the group when you create it.

Properties

Accesses the **Properties** dialog box for the group.

Info Tab

{button Related Topics,AL("groups high;group properties db;element properties cmd",0,`NOT_FOUND')}
{button How To,AL("group how",0,`NOT_FOUND')}

Tab Options

Type

Displays the type of the selected element. You cannot edit the type.

Sheet

Displays the name of the drawing sheet the element is on. You cannot edit the name of the drawing sheet.

Name

Displays the name of the group. The software names the group when you create it.

Number Of Items

Displays the number of elements in the group. This box updates automatically when you add elements to or delete elements from the group.

Is Nested Within Another Group

Shows whether the group is nested within another group. This box updates automatically when you nest a group with the **Group** command or ungroup a group with the **Ungroup** command.

Contains Nested Groups

Displays whether or not the selected group contains nested groups.

Closed

Shows whether the members of the group are primitive elements, such as lines, arcs, and curves; whether the end points of these elements are connected; and whether the members of the group form a closed region.

This box updates automatically when you add elements to or delete elements from the group.

End-Point Connected

Shows whether the members of the group are primitive elements, such as lines, arcs, and curves, and whether the end points of these elements are connected. This box updates automatically when you add elements to or delete elements from the group.

Tip of the Day Dialog Box

{button Related Topics,AL("tip of the day cmd",0,`NOT_FOUND')} {button How To,AL("tip how",0,`NOT_FOUND')}

Displays a tip each time you start the software. You can also activate this dialog box by choosing the **Tip of the Day** command from the **Help** menu.

Dialog Box Options

Did You Know

Displays a tip about using a feature.

More Tips

Displays a list of available tips.

Next Tip

Displays the next tip in the list.

Show Tips At Startup

Displays a tip every time you start the software. If you do not want to display tips when you start the software, clear this option.

Insert Object Dialog Box

{button Related Topics,AL("insert cmd;ole high;",0,`NOT_FOUND')}  {button How To,AL("embed object how;link object how",0,`NOT_FOUND')}

Tip To get Help for various items on the dialog box, click the **Question Mark** in the upper right corner of the dialog box and click the control that you want information about.

Links Dialog Box

{button Related Topics,AL("links high;links cmd;ole high",0,`NOT_FOUND')} {button How To,AL("link how;ole how",0,`NOT_FOUND')}

Displays information about links in a document including file name, file location, and whether the link is automatically updated.

Tip To get Help for various items on the dialog box, click the **Question Mark** in the upper right corner of the dialog box and click the control that you want information about.

Run Macro Dialog Box

{button Related Topics,AL("macro cmd",0,`NOT_FOUND')}  {button How To,AL("macro how",0,`NOT_FOUND')}

Selects the macro that you want to run.

Tip To get Help for various items on the dialog box, click the **Question Mark** in the upper right corner of the dialog box and click the control that you want information about.

When you position the pointer in this dialog box and right-click, you can access a variety of standard commands that help you manage your documents more efficiently. For example, if you select a document in the list and then right-click, you can then click the **Select** command on the shortcut menu to automatically open the document. You can also create shortcuts, send the document somewhere else, and other activities.

Mirror Ribbon Bar

{button Related Topics,AL("mirror cmd",0,`NOT_FOUND')}  {button How To,AL("mirror how",0,`NOT_FOUND')}

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Copy

Mirrors and copies the elements in the selection set.

Position Angle

Sets the angle of the mirror axis. The origin of the angle measurement is the point you clicked for the beginning of the mirror axis. Setting the position angle to 0 extends the axis horizontally to the right of the screen, 90 extends the axis vertically to the top, 180 extends the axis horizontally to the left, and 270 extends the axis vertically to the bottom.

Move Ribbon Bar

{button Related Topics,AL("move cmd",0,`NOT_FOUND')}  {button How To,AL("move element how",0,`NOT_FOUND')}

Specifies the from point and to point when you move objects or elements.

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

X

Sets a value for the x coordinate. You can use this option by itself or with the Y option.

Y

Sets a value for the y coordinate. You can use this option by itself or with the X option.

Copy

Copies the elements in the selection set.

Step Value

Increments or decrements the value displayed in the ribbon bar boxes. For example, typing a step value of 0.25 and moving the pointer away from the from point would increment the distance from 0.25 to 0.5, 0.75, and so forth.

Map Network Drive Dialog Box

{button Related Topics,AL("map network drive cmd;documents high",0,`NOT_FOUND')} {button How To,AL("set file location how",0,`NOT_FOUND')}

Connects to shared directories on the network.

Tip To get Help for various items on the dialog box, click the **Question Mark** in the upper right corner of the dialog box and click the control that you want information about.

Disconnect Network Drive Dialog Box

{button Related Topics,AL("disconnect network drive cmd",0,`NOT_FOUND')}  {button How To,AL("disconnect how",0,`NOT_FOUND')}

Disconnects your computer from a shared directory on the network.

Tip To get Help for various items on the dialog box, click the **Question Mark** in the upper right corner of the dialog box and click the control that you want information about.

File New Dialog Box

{button Related Topics,AL("new cmd;templates high",0,`NOT_FOUND')} {button How To,AL("create document how",0,`NOT_FOUND')}

Creates a new document or template. For information about each template, click the **Related Topics** button.

Dialog Box Options

Templates

Lists the templates available in the **TEMPLATE** directory that is located in the directory where you installed the software. Select the template that you want to use to create a new document or template.

Tip You can change the directory where templates are stored by selecting the **Options** command on the **Tools** menu and setting the directory that you want on the **File Locations** tab of the **Options** dialog box. If you change this setting, the **Templates** list on the **File New** dialog box displays a list of the templates in the directory that you specified.

Offset Ribbon Bar

{button Related Topics,AL("offset cmd",0,`NOT_FOUND')}  {button How To,AL("offset how;copy how",0,`NOT_FOUND')}

Ribbon Bar Options

Offset Chain

Selects a chain of continuous elements.

If this option is not selected, **Offset** selects only an individual element.

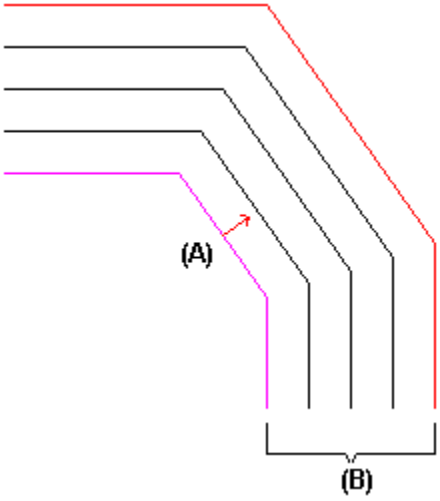
Step Distance

Sets the distance from the base element to the offset copy.

Cumulative Offset

Sets the total distance of the current offset graphic element from the original graphic element.

The following graphic illustrates the difference between step distance (A) and cumulative offset (B).



File Open Dialog Box

{button Related Topics,AL("open cmd",0,`NOT_FOUND')}  {button How To,AL("open how",0,`NOT_FOUND')}

Controls how a document is opened.

Tip To get Help for various items on the dialog box, click the **Question Mark** in the upper right corner of the dialog box and click the control that you want information about.

When you position the pointer in this dialog box and right-click, you can access a variety of standard commands that help you manage your documents more efficiently. For example, if you select a document in the list and then right-click, you can then click the **Select** command on the shortcut menu to automatically open the document. You can also create shortcuts, send the document somewhere else, and other activities.

Options Dialog Box

{button Related Topics,AL("options cmd",0,`NOT_FOUND')}  {button How To,AL("options how;ole how",0,`NOT_FOUND')}

Sets options for the current document. For example, you can set the grid display by clicking the **View** tab.

Tabs

Colors Tab

General Tab

File Locations Tab

View Tab

Symbols Tab

Reference Files Tab

Colors Tab

{button Related Topics,AL("options db",0,`NOT_FOUND')} {button How To,AL("options how",0,`NOT_FOUND')}

Controls color settings for the active document.

Tab Options

Sheet

Sets the default color of all drawing sheets in the active document.

Highlight

Sets the highlight color.

Selected Element

Sets the color of selected elements.

Disabled Elements

Sets the color of disabled elements.

Handles

Sets the color of handles when an element is selected.

Reference Files Tab

{button Related Topics,AL("options db",0,`NOT_FOUND')}  {button How To,AL("options how;ms how",0,`NOT_FOUND')}

Tab Options

Scale

Sets a scale option for importing a document.

Coincident

Brings in a reference file, also known as an inserted object, at full scale (1:1) and coincident to its original coordinate position. The setting shifts the drawing sheet to the lower left of the document graphic range and then determines a drawing sheet scale that fits the reference file within the sheet. If the current document already contains graphics, the drawing sheet shifts to include those graphics.

Note If you use the **Coincident** setting, the reference file does not appear when you drag the pointer.

Select Scale

Sets the drawing scale to a standard ratio. The specified ratio defines the size of the drawing in relation to the size of the real-world object. For a 2:1 ratio, **2** represents the size of the drawing and **1** represents the size of the real-world object.

Note The **Fit to Sheet** option determines a drawing sheet scale that fits the reference file within the sheet, but allows you to specify where to insert the file by clicking on the drawing sheet.

Custom Scale

Sets the scale that you type in the boxes for a document that you insert or drag. For example, when you type in 3 and 2 in each of the respective boxes, the scale of the foreign document is one-and-a-half times its original size.

Foreign Data Tab

{button Related Topics,AL("options db",0,`NOT_FOUND')}  {button How To,AL("options how;ms how",0,`NOT_FOUND')}

Sets options for moving information into the current document by dragging a document or by clicking one of the following commands:

- **Paste Special** command on the **Edit** menu
- **Object** command on the **Insert** menu
- **Open** command on the **File** menu.

Tab Options

Format

Sets the type of format that you can use for importing or saving a document. When you click MicroStation or AutoCAD and then click the appropriate **Options** button, you can access a specific dialog box to set options for importing or saving AutoCAD (.dxf, .dwg) or MicroStation (.dgn) documents.

Import

Sets options for importing an AutoCAD or MicroStation document.

> **File Units**
>
> Sets the units for the document you want to import. When you insert or drag a document into the drawing sheet, the software uses this setting only when the document has units assigned that the software does not recognize.
>
> **Orientation**
>
> Sets the orientation for the document that you want to import.
>
> **Options**
>
> Accesses one of the dialog boxes for importing an AutoCAD or MicroStation document.

Export

Sets options for saving a document as an AutoCAD or MicroStation document.

Options

Accesses one of the dialog boxes for exporting an AutoCAD or MicroStation document.

General Tab

{button Related Topics,AL("options db",0,`NOT_FOUND')}  {button How To,AL("options how",0,`NOT_FOUND')}

Controls settings such as the display of 3-D effects and the number of entries in the list of recently used files.

Tab Options

Update Links Automatically At Open

Updates links automatically when the document is open and this option is set.

Recently Used Files List

Sets the number of entries for the **Recent Files** area of the **File** menu when the **Recent Files** area is set.

Dimension Keyin Values Automatically

Places dimensions for recognized step values or for values you type in a ribbon bar field.

Display Unit Of Measurement Labels

Displays the units of measurement in the value field.

Undo Steps

Sets the number of operations that can be undone.

File Locations Tab

{button Related Topics,AL("options db",0,`NOT_FOUND')} {button How To,AL("options how",0,`NOT_FOUND')}

Specifies the default location for documents, templates, and other objects you create or use in the software. You can use the following types of documents:

- Documents
- User-defined templates
- Fonts
- Macros
- MicroStation references
- AutoCAD references

Tab Options

File Types

Indicates the file type for which you want to specify a location.

Location

Displays the designated location for each file type.

Modify

Accesses the **Modify Location** dialog box. The directory selected with the dialog box is displayed in the **Location** column on this tab. After you select a location, you can delete it later by selecting the location in the **Location** column and pressing **Delete**.

View Tab

{button Related Topics,AL("options db",0,`NOT_FOUND')} {button How To,AL("options how",0,`NOT_FOUND')}

Controls the appearance of the software and document window, such as the display of the graph paper, ruler, and scroll bar.

Tab Options

Display As Printed

Displays the document as it appears on paper.

Window

Controls the window display.

Status Bar

Displays the status bar of the application.

Horizontal Scroll Bar

Displays the horizontal scroll bar of the active window.

Vertical Scroll Bar

Displays the vertical scroll bar of the active window.

Sheet Tabs

Displays the drawing sheet tabs.

Grid

Allows you to set options for the grid.

Grid Display

Displays a grid so that you can place elements with precision. The grid lines are not considered part of the document and do not print.

Grid Snap

Aligns elements with the grid. The grid is an invisible set of lines in the document that helps you align elements. When you set the **Grid Snap** option, elements always align with the grid lines or nearest intersection of the grid lines.

Grid Style

Changes the format of the grid lines to either static or dynamic.

When you zoom in or out, the software dynamically generates the grid lines for a dynamic grid . You can set dynamic grid lines to appear at fine, medium, or coarse levels. The grid lines appear at common major measurement increments. A dynamic grid displays index lines that intersect with the darker, solid grid lines.

A static grid displays solid grid lines that do not move as you zoom in or out. The grid maintains a constant minimum spacing.

Grid Spacing

Sets the spacing of the major grid lines. This option is available only if you select **Static** in the **Grid Style** list box. The selected options on the **Units** tab of the **Properties** dialog box determine the units that you can enter, such as inches or centimeters.

Tip You can open the **Properties** dialog box by clicking **Properties** on the **File** menu.

Grid Index

Determines the number of index grid lines, also known as minor grid lines, to be equally spaced between the major grid lines. This option is available only if you select **Static** in the **Grid** Style list box.

Grid Density

Changes the number of dashes in the index lines, or minor grid lines, between intersections with the grid lines. This option is available only if you select **Dynamic** in the **Grid Style** list box.

Symbols Tab

{button Related Topics,AL("options db",0,`NOT_FOUND')}  {button How To,AL("options how;place symbol how",0,`NOT_FOUND')}

Determines the default actions when you drag a symbol into the document. You can override the settings on this tab when you drag a symbol. You can press **Ctrl** to embed the symbol or **Ctrl** + **Shift** to link the symbol.

Tab Options

Drag and Drop Default

Specifies actions when you drag a symbol into the document.

Embed

Sets the default action so that the symbol embeds when you drag it on the drawing sheet. Embedding the symbol means that the software places a copy of the symbol in the document. If you edit one instance of the embedded symbol in a document, all copies of that symbol within the current document reflect those changes.

Link

Sets the default action so that the symbol is linked when you drag it into the document. Linking the symbol allows you to edit the original symbol document. The symbol that you placed on the drawing sheet updates automatically. If you edit the symbol inside the active document, those changes are saved in the .sym document on your computer.

PinPoint Ribbon Bar

{button Related Topics,AL("pinpoint cmd ",0,`NOT_FOUND')} {button How To,AL("pinpoint how",0,`NOT_FOUND')}

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

On/Off (F9)

Displays or hides the **PinPoint** help lines and distance values.

Reposition Target (F12)

Attaches the target point to the pointer so that you can reposition the target point. Click where you want the target point to be.

Step

Specifies the **PinPoint** step value. The step value is an incremental distance along the **PinPoint** coordinate axes. When the distance between the target position and the current pointer location is an increment of the step value, the related coordinate value and help line become bold.

Angle

Specifies the angle of the **PinPoint** x help line relative to its default horizontal orientation. Positive values rotate the horizontal line counterclockwise. Negative values rotate the horizontal line clockwise.

X

Locks the horizontal distance between the target point and the current pointer location to the value you type.

Y

Locks the vertical distance between the target point and the current pointer location to the value you type.

Print Dialog Box

{button Related Topics,AL("print cmd",0,`NOT_FOUND')} {button How To,AL("print document how;preview document how;print to file how",0,`NOT_FOUND')}

Controls the way a document prints.

Dialog Box Options

Name

Specifies the printer that you want to use. You can select from a list of all the configured printers available for printing.

Properties

Accesses the **Printer Document Properties** dialog box.

Status

Displays the current status of the selected printer. This area is read-only.

Type

Displays the type of printer currently selected. This area is read-only.

Where

Displays the printer path or location for the currently selected printer. This area is read-only.

Comment

Displays any comments you input during printer configuration. This area is read-only.

Print To File

Prints the document to a file, instead of a printer. You specify the file's name on the **Print To File** dialog box after you set the check box and click **OK** on the **Print** dialog box. This saves a document to a file instead of routing it directly to a printer or plotter. Then, you can print from a computer that does not have the application installed or print to a printer other than the one you currently have installed.

Tip To get Help for various items on the dialog box, click the **Question Mark** in the upper right corner of the dialog box and click the control that you want information about.

When you position the pointer in this dialog box and right-click, you can access a variety of standard commands that help you manage your documents more efficiently. For example, if you select a document in the list and then right-click, you can then click the **Select** command on the shortcut menu to automatically open the document. You can also create shortcuts, send the document somewhere else, and other activities.

Print Range

Displays options for selecting the print range.

All Sheets

Prints all drawing sheets in the active document.

Selected Sheets

Prints all the sheets that you selected as a composite document, as layers all on one sheet of paper.

Sheets

Specifies the range of pages that you want to print. You can enter the starting page you want to print as the "**From**" value and the ending page you want to print as the "**To**" value. In the **Sheets** box, type a range with a hyphen between the sheet numbers. For example, to print sheets 3 through 7, type 3-7. This prints each sheet on a separate piece of paper.

Print Area

Accesses the **Print Area** dialog box. When you click this option and then click **OK** on the dialog box, a set of crosshairs appears. You drag the crosshairs to define the area that you want to print. Then, the **Print Area** dialog box automatically appears so that you can set various options for printing the area that

you selected.

Copies

Sets options for the number of copies you want to print.

Number Of Copies

Specifies the number of copies you want to print.

Collate

Organizes sheets when you print multiple copies.

Pure Black and White

Prints a black and white document.

Settings

Accesses the **Settings** dialog box.

Printer Document Properties Dialog Box

{button Related Topics,AL("print cmd;print db",0,`NOT_FOUND')} {button How To,AL("print document how;preview document how",0,`NOT_FOUND')}

Sets properties for the current printer that you selected on the **Print** dialog box. The settings available on this dialog box depend on the type of printer that you selected.

Tip To get Help for various items on the dialog box, click the **Question Mark** in the upper right corner of the dialog box and click the control that you want information about.

When you position the pointer in this dialog box and right-click, you can access a variety of standard commands that help you manage your documents more efficiently. For example, if you select a document in the list and then right-click, you can then click the **Select** command on the shortcut menu to automatically open the document. You can also create shortcuts, send the document somewhere else, and other activities.

Properties Dialog Box

{button Related Topics,AL("properties cmd",0,`NOT_FOUND')} {button How To,AL("properties how",0,`NOT_FOUND')}

Tracks information about the properties of a document.

Note You must save the document before you can access the **Statistics** and **Summary** tabs of the **Properties** dialog box. If a symbol document (.sym) is open, the only tabs that appear are the **General**, **Units**, and **Symbols** tabs.

Tabs

General Tab

Summary Tab

Statistics Tab

Units Tab

Browser Tab

Symbols Tab

Behavior Tab

General Tab

{button Related Topics,AL("properties db",0,`NOT_FOUND')} {button How To,AL("properties how",0,`NOT_FOUND')}

Displays general information about the current document.

Note If some of the following information is not available, the boxes display "Unknown."

Tab Options

Filename

Displays the name of the document.

Type

Displays the type of document. The type is based on the application used to create the document.

Location

Displays the directory containing the document.

Size

Displays the size of the document in bytes, kilobytes, and megabytes.

MS-DOS Name

Displays the name of the document as it would appear in a File Allocation Table file naming system. These types of documents have an eight-character name and three-character extension.

Created

Displays the date and time the document was created or copied.

Modified

Displays the date and time the document was last modified.

Accessed

Displays the date that the document was last opened or copied.

Attributes

Displays the attributes of the current document. These settings are read-only.

Read-Only

Indicates that the document is read-only. You cannot open a read-only file for writing. You cannot create a file with the same name as a read-only file.

Archive

Shows that the document is an archive document.

Hidden

Indicates that the document is a hidden document. You usually cannot see this document in the Windows Explorer.

System

Shows that the document is a system document. You usually cannot see this document unless you change the options in the Internet Explorer.

Browser Tab

{button Related Topics,AL("properties db",0,`NOT_FOUND')} {button How To,AL("properties how;browser how",0,`NOT_FOUND')}

Sets the home address for the active document. Every time you open this document and click the **Home** button on the **Symbol Explorer**, the **Symbol Explorer** goes to the address in the **Address** box. This tab is available only for documents that are symbols and have an .sym extension.

Tab Options

Address

Sets the home address for the current document. When you open a document and then open the **Symbol Explorer** and click the **Home** button, the **Symbol Explorer** goes to the address that you type here. You can any address that you use in a web browser, such as Microsoft Internet Explorer; for example, you can type http://www.ingr.com.

If you want to set the **Symbol Explorer** to always look at symbols on your computer, you can enter the following syntax in the Address box: <application.path>\..\<path of symbols. For example, you could enter <application.path>\..\symbols\arch.htm.

Browse

Accesses the **Modify Location** dialog box so that you can set another directory for the **Symbol Explorer** to look in. You can set the dialog box to look in directories on your computer or a network drive.

Symbol Tab

{button Related Topics,AL("properties db;av high",0,`NOT_FOUND')}  {button How To,AL("properties how;attribute how;edit symbols how ",0,`NOT_FOUND')}

Defines the symbol properties for an .sym document. With this tab, you can assign descriptive information that identifies the symbol. When you drag the symbol into a document, these values appear in the **Attribute Viewer.**

For example, if you wanted to define a bill of materials, you can assign manufacturing information on this tab for a door symbol, place the symbol in a document, and then create a report that displays the manufacturing information.

Tab Options

Name

Defines a property name.

Type

Specifies the property type you want to define for the symbol property name. You can choose from **Character, Number, Money,** or **Date.**

Value

Specifies a value for the symbol. For example, you can assign a manufacturer's name, a serial number, or other descriptive information as a value.

Properties

The properties table lists all the properties currently defined for the symbol.

Units Tab

{button Related Topics,AL("properties db",0,`NOT_FOUND')} {button How To,AL("properties how",0,`NOT_FOUND')}

Sets up units of measure and precision readout for the length, area, or angle values in a drawing.

The precision readout sets the number of significant figures to display. It sets the accuracy of the unit readout value. The precision setting does not alter the numbers that you type into the fields, only the display of the numbers in the field. Values ending in 5 are rounded up. For example, if the precision readout is .123 and you draw a line that is 2.1056 inches long, then the line value length is rounded. The length value appears as 2.106 inches long. If you are using mm as your drawing sheet units, you can have the values display in the fields as 3.5 mm or 3.50 mm.

Note When you set options on this tab for the units in a document, the settings do not affect the dimensional values for the document. You can set options for the dimensional value by selecting a dimension and clicking the **Properties** command on the **Edit** menu. You can also set the units by modifying a dimension style with the **Style** command on the **Format** menu.

Tab Options

Length Readout

Sets the unit of measure and precision readout for the length values in a document.

Angle Readout

Sets the unit of measure and precision readout for the angle values in a document.

Area Readout

Sets the unit of measure and precision readout for the area values in a document.

Summary Tab

{button Related Topics,AL("properties db",0,`NOT_FOUND')} {button How To,AL("properties how",0,`NOT_FOUND')}

Displays the title and author, if available, along with keywords and comments for the current document. The software generates the author and template information when you create, save, or print the document. You can also edit these properties, with the exception of the template, unless the document is write-protected.

Tab Options

Title

Specifies the title of the current document.

Subject

Gives a general description of the current document.

Author

Displays the name of the person who created the document.

Keywords

Displays a list of words that identify the document when you browse or search documents.

Comments

Specifies comments about the current document.

Template

Displays the name of the document template that was used to create the document.

Statistics Tab

{button Related Topics,AL("properties db",0,`NOT_FOUND')} {button How To,AL("properties how",0,`NOT_FOUND')}

Displays detailed information about the current document. The software automatically generates these properties when you create, save, or print the document.

Tab Options

Created

Displays the date and time the document was created or copied.

Creating Application

Displays the name of the application that created the document.

Modified

Displays the date and time the document was last modified.

Accessed

Displays the date that the document was last opened or copied.

Last Saved By

Displays the name of the person who last saved the document.

Saving Application

Displays the name of the application that most recently saved the document.

Currently Opened By

Displays the name of the person who has the document open.

User Tab

{button Related Topics,AL("element properties cmd;formatting elements high",0,`NOT_FOUND')} {button How To,AL("format how",0,`NOT_FOUND')}

Tab Options

Attribute Set

Names a group of attributes. You can type a name in the box and press **Enter**.

Attributes

Sets the name, type, and value of the attribute set. You can type a name in the box and press **Enter**.

Name

Sets the name of a unique attribute in the attribute set.

Type

Sets the type for the attribute, such as double, text, number, money, or date.

Value

Sets the value for the attribute. The value that you can enter is based on the type that you selected in the **Type** box.

Add

Adds an attribute to the attribute set. After you click the **Add** button, the attribute appears in the table.

Delete

Removes an attribute from the attribute set. You can select an attribute by clicking a row in the table.

Apply

Places the attribute set on the element that you selected.

Remove

Removes the attribute set from the element that you selected.

Print Area Dialog Box

{button Related Topics,AL("print cmd;print db",0,`NOT_FOUND')} {button How To,AL("print how",0,`NOT_FOUND')}

Specifies the area that you want to print.

Dialog Box Options

Scale

Controls the scale applied to the print area in a document.

Best Fit

Scales the selected drawing sheets or print area to fit the printer paper for the configured device.

Manual Scale

Specifies the scale value to apply to the print range during printing. For example, if the print range is a rectangle at 12 cm by 12 cm and you set a manual scale of 1:12, then the printed range appears as 1 cm by 1 cm on the printer paper.

If you want a 1:1 drawing of the current sheet scale, you can set the paper length to 1 and the design length to 1.

Tip If you type values in the **Paper Length** and **Design Length** boxes, the red, blue, and black boxes in the **Preview** area change to reflect the values.

Paper Length

Specifies the paper length for the document you want to print.

Design Length

Specifies a design length.

Origin

Adjusts the location of the effective print area on the printer paper.

Center

Positions the print area center to the center of the printer paper. If you do not set this option, then the paper positions at bottom left to bottom left.

X

Sets a shift in the X direction from the origin.

Y

Sets a shift in the Y direction from the origin.

Preview

Displays the range of the graphic to print on the printer paper.

XY Range

Clears the previous defined print area and prompts you to define a new print area.

Paste Special Dialog Box

{button Related Topics,AL("ole high;copy high",0,`NOT_FOUND')} {button How To,AL("paste special how",0,`NOT_FOUND')}

Inserts the **Clipboard** contents into a document using a selected format.

Tip To get Help for various items on the dialog box, click the **Question Mark** in the upper right corner of the dialog box and click the control that you want information about.

Rectangular Pattern Ribbon Bar

{button Related Topics,AL("rectangular pattern cmd",0,`NOT_FOUND')} {button How To,AL("rectangular pattern how ",0,`NOT_FOUND')}

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Options

Displays the Rectangular Pattern Options dialog box.

X Count

Sets the number of pattern members along the x axis of the pattern rectangle.

Y Count

Sets the number of pattern members along the y axis of the pattern rectangle.

X Offset

Sets the distance between adjacent rows in the pattern, measured along the x axis of the pattern rectangle.

Y Offset

Sets the distance between adjacent rows in the pattern, measured along the y axis of the pattern rectangle.

Angle

Sets the rotation angle of the pattern rectangle.

Finish

Completes the pattern. When you click this button, the pattern is created on the drawing sheet and you can select other elements.

Rectangular Pattern Options Dialog Box

{button Related Topics,AL("rectangular pattern cmd",0,`NOT_FOUND')} {button How To,AL("rectangular pattern how ",0,`NOT_FOUND')}

Dialog Box Options

Pattern Control

Specifies how the pattern is constructed.

- **Incremental Array**—Draws a pattern with a set offset between members.
- **Fit To Rectangle**—Draws a pattern by evenly spacing members along the x and y axes of the pattern rectangle.

Stagger

Controls whether pattern members are arranged in a straight matrix, or whether every other row or column is offset from its default position. Options are **None**, for a straight matrix, Rows, to offset alternate pattern rows, and **Columns**, to offset alternate pattern columns.

Stagger

Sets the row or column stagger distance to the specified distance.

Stagger Offset/2

Sets the row or column stagger distance to half the X Offset or Y Offset value.

Include Last Column

Controls whether to include the last staggered column in the pattern or to exclude the last column.

Preview

Displays the range of the graphic to print on the printer paper.

Rotate Ribbon Bar

{button Related Topics,AL("rotate cmd",0,`NOT_FOUND')}  {button How To,AL("rotate element how",0,`NOT_FOUND')}

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

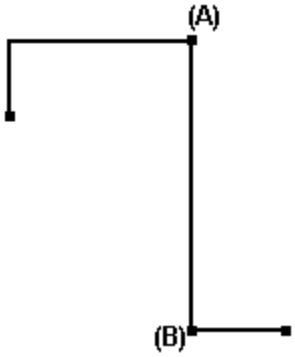
Ribbon Bar Options

Copy

Creates a copy of the element that you are rotating. If you do not want a copy of the rotated element, then clear this option.

Step Angle

Specifies the rotation step angle. The step angle specifies the increments, in degrees, that an element rotates from a temporary axis. The temporary axis is the line between the element's center of rotation (A) and the point that you rotate the element from (B).

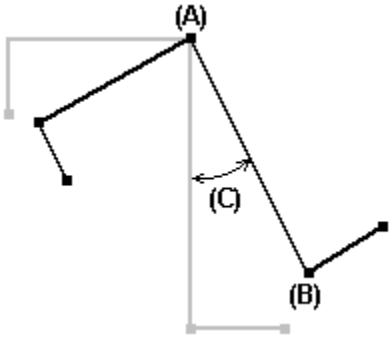


You can enter increments in the **Step Angle** box if you want to dynamically view the results of the rotation. For example, if the box is set to 30.0, the rotation is displayed in 30 degree increments. The default setting is 0 degrees so that the rotation is fully dynamic.

Rotation Angle

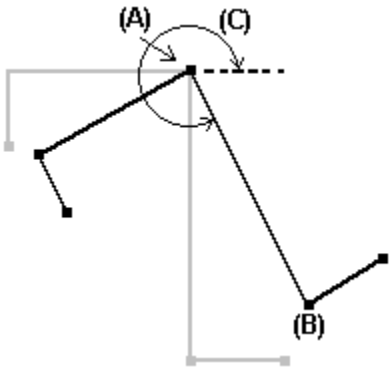
Defines the rotation angle. The rotation angle is the angle between the point that you rotate from and the point that you rotate to. In the following picture, the center of rotation (A) is shown with the point that you rotate the element from (B).

The rotation angle (C) is the angle of change between the old and new positions of the rotated element. The value is always positive.



Position Angle

Displays the angle between the horizontal axis through the center of rotation (A) and the point that you rotate from (B). Then, if you rotate the element, the position angle (C) changes to become the angle between the horizontal axis and the point that you rotate to. The position angle is always a positive value that is measured counter-clockwise from the axis.


(A)
(C)
(B)

Save As Dialog Box

{button Related Topics,AL("save cmd;save copy as cmd",0,`NOT_FOUND')}  {button How To,AL("save how",0,`NOT_FOUND')}

Specifies the name of, location of, and format for a document when you save it.

Tip To get Help for various items on the dialog box, click the **Question Mark** in the upper right corner of the dialog box and click the control that you want information about.

When you position the pointer in this dialog box and right-click, you can access a variety of standard commands that help you manage your documents more efficiently. For example, if you select a document in the list and then right-click, you can then click the **Select** command on the shortcut menu to automatically open the document. You can also create shortcuts, send the document somewhere else, and other activities.

Scale Ribbon Bar

{button Related Topics,AL("scale cmd ",0,`NOT_FOUND')}  {button How To,AL("scale how",0,`NOT_FOUND')}

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Copy

Scales and copies the elements in the selection set.

Step

Specifies the step value for the **Scale Factor**. The step value causes the **Scale Factor** to be decreased or increased in increments as you move the pointer toward or away from the scale origin. For example, if you set the step value to 0.25, the scale increases in increments of 0.25 as you move the pointer away from the scale origin.

Scale Factor

Specifies how much the software reduces or enlarges the element. A scale factor between zero and one reduces; a scale factor greater than one enlarges.

Reference

Specifies how long the dynamic line from the scale origin to the pointer has to be in order to achieve a Scale Factor of 1.

For example, if you set **Reference** to 1, for every inch you move the pointer away from the scale origin, the scale factor increases by one. If you set **Reference** to 2, for every two inches you move the pointer away from the scale origin, the scale factor increases by one.

Select Tool Ribbon Bar

{button Related Topics,AL("select tool cmd",0,`NOT_FOUND')} {button How To,AL("select how",0,`NOT_FOUND')}

The default selection ribbon bar is displayed only when nothing is selected. Once you select an object, the selection ribbon bar is replaced with a ribbon bar for editing the selected object.

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Inside

Specifies that elements inside the fence are selected.

Overlapping

Specifies that elements overlapped by the fence are selected, as well as elements inside the fence.

Top Down

Specifies that groups of elements are located as opposed to individual elements in a group.

Bottom Up

Specifies that individual elements in a group are located as opposed to the whole group.

Expand

Displays another ribbon bar depending on the items that you selected on the drawing sheet. This button appears when you select ten or more items on the drawing sheet. When you click it, another ribbon bar appears.

The options that appear depend on the types of elements that you selected. For example, if you select eleven lines, then the **Line** ribbon bar appears. If you select several types of items, then only the common properties for those types of elements appear on the **Select Tool** ribbon bar. For example, if you select nine lines and a circle, then the ribbon bar displays the **Style**, **Line Type**, **Width**, and **Color** options. For more information about the options that appear, see the **Help** topic for the selected element's ribbon bar.

If the items that you selected have no common properties, then no options will appear if you click the **Expand** button. For example, if you select a dimension and ten lines and then click the **Expand** button, a ribbon bar does not appear.

Settings Dialog Box

{button Related Topics,AL("print cmd;print db",0,`NOT_FOUND')} {button How To,AL("print how",0,`NOT_FOUND')}

Controls the print area of a selected sheet.

Dialog Box Options

Print Range

Displays the X and Y values of the part of the drawing sheet that you want to print or plot.

X

Displays a value for the range in the X direction, horizontal to the bottom of the screen, for the area that you want to print.

Y

Displays a value for the range in the Y direction, vertical to the bottom of the screen, for the area that you want to print.

Scale

Controls the scale applied to the print area in a document.

Best Fit

Scales the selected drawing sheets or print area to fit the printer paper for the configured device.

Manual Scale

Specifies the scale value to apply to the print range during printing. For example, if the print range is a rectangle at 12 cm by 12 cm and you set a manual scale of 1:12, then the printed range appears as 1 cm by 1 cm on the printer paper.

If you want a 1:1 drawing of the current sheet scale, you can set the paper length to 1 and the design length to 1.

Tip If you type values in the **Paper Length** and **Design Length** boxes, the red, blue, and black boxes in the **Preview** area change to reflect the values.

Paper Length

Specifies the paper length for the document you want to print.

Design Length

Specifies a design length.

Origin

Adjusts the location of the effective print area on the printer paper.

Center

Positions the print area center to the center of the printer paper. If you do not set this option, then the paper positions at bottom left to bottom left.

X

Sets a shift in the X direction from the origin.

Y

Sets a shift in the Y direction from the origin.

Preview

Displays the range of the graphic to print on the printer paper.

Tip If you click **Manual Scale** and enter values in the **Paper Length** and **Design Length** boxes, the red, blue, and black boxes change to reflect the values.

Effective Plotting Area

Specifies the plotting area for the document.

Properties Dialog Box

{button Related Topics,AL("element properties cmd",0,`NOT_FOUND')} {button How To,AL("embed object how;link object how",0,`NOT_FOUND')}

Sets properties for a frame, called a **SmartFrame**, that provides a border for an object when you insert or paste the object into the current document. You can scale the object by dragging one of the handles on the frame. Or, you can crop the object by pressing the **Shift** key and dragging one of the handles.

Tabs

Info Tab

Format Tab

Info Tab

{button Related Topics,AL("smartframe properties db",0,`NOT_FOUND')} {button How To,AL("embed object how;link object how",0,`NOT_FOUND')}

Provides information about frames around objects, such as raster images or drawings from other applications.

Tab Options

Type

Displays the category of the selected element. You cannot edit the type.

Origin

Specifies the coordinates, or location, of an element along the X and Y-axes.

Link:

Determines the way that the object links with a **SmartFrame.** This option is available only for linked objects.

> **As Part of the Model (Public)**
>
> Allows the linked object to publicly appear in any document that links to the current document. Therefore, if you link an object to the current drawing and then link to the current drawing from another document, the current drawing and the linked object appear in the other document. For example, this setting is useful if you link comments from a Word document to the current drawing and you want other documents to appear in the current drawing with the comments.
>
> **As Reference Only (Private)**
>
> Restricts the linked object from being displayed in any document that links to the current document. If the current drawing is linked to another document, the linked object does not appear in the other document. For example, this setting could be useful if you want to link comments from a Word document to the current drawing and you want other documents to display the drawing, but not the comments.

Scale (1:1)

Sets the drawing scale to a 1:1 ratio. This means that the representation of the objects on the drawing sheet is the same size as the real-world object being described.

Select Scale

Sets the drawing scale to a standard ratio. The specified ratio defines the size of the drawing in relation to the size of the real-world object. For a 2:1 ratio, the ‘‘2’’ represents the size of the drawing and the ‘‘1’’ represents the size of the real-world object.

Note The **Fit to Sheet** option determines a drawing sheet scale that fits the reference file within the sheet, but allows you to specify where to insert the file by clicking the drawing sheet.

Custom

Defines a custom or scale ratio. The first value defines the distance on the drawing sheet and the second value defines this distance in a real-world value.

Format Tab

{button Related Topics,AL("smartframe properties db",0,`NOT_FOUND')} {button How To,AL("embed object how;link object how",0,`NOT_FOUND')}

Allows you to format frames around objects, such as raster images or drawings from other applications.

Tab Options

Show Border

Displays the frame border around the object.

Line Width

Sets the line width.

Line Type

Overrides a line type for a drawing sheet or embedded object and sets another line style for an element or linked object.

Frame Shape

Sets the frame shape around the object.

> **Rectangular**
>
> Sets the shape as rectangular.
>
> **Elliptical**
>
> Sets the shape as an ellipse.

Sheet Setup Dialog Box

{button Related Topics,AL("drawing sheets cmd",0,`NOT_FOUND')} {button How To,AL("setup sheet how",0,`NOT_FOUND')}

Defines the properties of the active drawing sheet.

Tabs

Size and Scale Tab

Background Tab

Name Tab

Rename Dialog Box

{button Related Topics,AL("drawing sheets high;drawing sheet tabs high",0,`NOT_FOUND')} {button How To,AL("create a new drawing sheet how;change background sheet how",0,`NOT_FOUND')}

Renames a drawing sheet.

Dialog Box Options

New Name

Renames the active sheet when you type a new name.

Size and Scale Tab

{button Related Topics,AL("sheet setup db",0,`NOT_FOUND')} {button How To,AL("setup sheet how",0,`NOT_FOUND')}

Defines details for the drawing sheet size, scale, and print setup information.

Tab Options

Sheet Size

Sets the size for the drawing sheet.

Same As Print Setup

Sets the drawing sheet size using the current print setup definition. For example, if the printer is set up as 8 1/2 X 11, the drawing sheet size is set up as 8 1/2 X 11.

Standard

Defines the drawing sheet size from a list of standard ANSI and ISO paper sizes.

Custom

Defines the drawing sheet size according to the entered x and y values.

Drawing Scale

Sets options for the scale of the drawing sheet.

Scale (1:1)

Sets the drawing scale to a 1:1 ratio. As a result, the representation of the objects on the drawing sheet is the same size as the real-world object being described.

Select Scale

Sets the drawing scale to a standard ratio. The specified ratio defines the size of the drawing in relation to the size of the real-world object. For a 2:1 ratio, the **2** represents the size of the drawing and the **1** represents the size of the real-world object.

Custom

Defines a custom or scale ratio. The first value defines the distance on the drawing sheet and the second value defines what this distance is equal to in the real world.

Paper Units

Sets the paper units for the drawing sheet.

Units

Controls the display of numeric values in dialog boxes that define the size of non-scaled objects. Some examples of non-scaled object values are text height and line width. This setting does not affect dimension units.

Only value boxes use this option. For example, if you are working in feet and inches, you can specify that you want to read and enter values for text height in fractional inches. (1/8" instead of 0.00'-0.125")

Note When printing or plotting a drawing sheet, the non-scaled items appear on the printed document with the exact size that you specify.

Precision

Sets the number of significant figures to display, or the accuracy of the unit readout value. The precision setting does not change the numbers that you can type in the fields, only the display of the numbers in the field. Values ending in 5 are rounded up to the next whole number.

For example, if you set this control to .001 and you draw a line that is 2.1056 inches, then the line length value is rounded. The length value appears as 2.106 inches. If you set this control to 0.01 and you type a line length value of 3.5 mm, the length value appears as 3.50 mm.

Background Tab

{button Related Topics,AL("sheet setup db",0,`NOT_FOUND')} {button How To,AL("setup sheet how",0,`NOT_FOUND')}

Defines the color, margin settings and background sheet display information.

Tab Options

Background Sheet

Specifies the background sheet that you want to use for the working sheet. If you have not created a background sheet, this box does not display any options. You must first create a background sheet before you can select it from the list.

All graphics on the background sheet display on the working sheet. Changing the background sheet updates the size and margin settings of the working sheet to the values defined by the selected background sheet.

Show Background

Displays the background sheet graphics on the selected working sheet.

Preview

Displays the range of the graphic to print on the printer paper.

Name Tab

{button Related Topics,AL("sheet setup db",0,`NOT_FOUND')} {button How To,AL("rename drawing sheet how;setup sheet how",0,`NOT_FOUND')}

Defines the name of a drawing sheet. You can also change the name of a drawing sheet.

Tab Options

Sheet Name

Specifies a name for the drawing sheet. You can also use this box to rename a drawing sheet by selecting the sheet in the document before clicking **Sheet Setup** on the **File** menu.

SmartSketch Dialog Box

{button Related Topics,AL("smartsketch cmd",0,`NOT_FOUND')} {button How To,AL("smartsketch how",0,`NOT_FOUND')}

Customizes the operation of the software in recognizing and placing relationships. You can set pointer behavior and specify which relationships are recognized as you draw.

Tabs

Relationships Tab

Cursor Tab

Relationships Tab

{button Related Topics,AL("smartsketch db",0,`NOT_FOUND')} {button How To,AL("smartsketch how",0,`NOT_FOUND')}

Sets which relationships are recognized by the software as you draw. Set the relationships you want to recognize, and clear the relationships you do not want to recognize. Clear all relationships so that the software does not place relationship handles..

Cursor Tab

{button Related Topics,AL("smartsketch db;intent zone high",0,`NOT_FOUND')} {button How To,AL("smartsketch how",0,`NOT_FOUND')}

Tab Options

Cursor Setup

Sets the sizes of the **Locate Zone** and **Intent Zone** around the pointer.

Locate Zone

Sets the size of the locate zone radius. The locate zone is a region around the pointer.

The software recognizes relationships based on elements within the locate zone so that you do not have to move the cursor to an exact position. For example, if part of an element is within the locate zone, the software recognizes a **Point On** relationship.

The size of the locate zone is indicated by a circle around the center of the pointer crosshair. Values from 3 to 12 pixels are valid.

#Intent Zone

Sets the size of the intent zone radius. Intent zones allow drawing commands to interpret your intentions as you draw. Values from 3 to 12 pixels are valid.

Preview

Shows the size of the locate zone and the symbol for the selected relationship.

Reapply Style Dialog Box

{button Related Topics,AL("style high;styles high",0,`NOT_FOUND')}  {button How To,AL("apply style how",0,`NOT_FOUND')}

Redefines a style according to the formatting of selected element, or returns the formatting of selected element to that of the style currently applied to it.

Dialog Box Options

Style

Displays the name of the style that is currently applied to the selected element .

Do You Want To Redefine The Style Using The Selection As An Example?

Changes the formatting of the current style to the formatting applied to the element that you selected.

Do You Want To Return The Formatting Of The Selection To The Style?

Applies the formatting of the current style to the element that you selected.

Style Resources Dialog Box

{button Related Topics,AL("style cmd;style db",0,`NOT_FOUND')} {button How To,AL("style resource how",0,`NOT_FOUND')}

Lists style resource documents that are available to the current document. Resources can be any .igr document or MicroStation line style resource with an .RSC extension. The styles in the style resource document are available for use in the current document.

Dialog Box Options

Style Resource Files

Lists the style resource documents that are attached to the current document. When you attach one of these documents to a template, the styles in the document appear on the **Style** dropdown list of the ribbon bar in the current document. A style is copied into the current document from the style resource document when you select this style on the ribbon bar. A style is also copied when you apply the style to an element or annotation on the drawing sheet. For example, if you attach DIMENSION.igr to the document, the dimension styles in DIMENSION.igr appear on the dropdown list when you select a dimension on the drawing sheet of the active document. You can then apply any of the styles to the dimension. The dimension style that you applied is then copied from DIMENSION.igr into the active document when you save it.

Add

Allows you to add a style resource document to the **Style Resource Files** list with the **Add Style Resource** dialog box. This dialog box allows you to select .RSC or .igr documents and add them to the **Style Resource Files** list on the **Style Resources** dialog box.

Remove

Removes a style resource document from the **Style Resource Files** list. You must first select a document in that list.

Modify Dimension Style Dialog Box

{button Related Topics,AL(`style cmd',0,`NOT_FOUND')} {button How To,AL(`use style how',0,`NOT_FOUND')}

Modifies a dimension style.

Tabs

Name Tab

General Tab

Units Tab

Secondary Units Tab

Text Tab

Spacing Tab

Terminator and Symbol Tab

Lines and Coordinate Tab

General Tab

{button Related Topics,AL("modify line style db;new line style db",0,`NOT_FOUND')} {button How To,AL("format line how",0,`NOT_FOUND')}

Sets formats for a line.

Tab Options

Style

Displays the name of the style that is currently applied to the selected element .

Color

Sets the drawing color.

Width

Sets the line width.

Type

Defines how the line appears.

Description

Displays a description of the formatting options.

Modify Line Style Dialog Box

{button Related Topics,AL("styles db",0,`NOT_FOUND')}  {button How To,AL("use style how",0,`NOT_FOUND')}

Modifies a line style by allowing you to specify new characteristics or a dash definition.

Tabs

Name Tab

General Tab

Name Tab

{button Related Topics,AL("styles db",0,`NOT_FOUND')}  {button How To,AL("use style how",0,`NOT_FOUND')}

Names a style when you create or modify a style. This tab appears only when you click the **New** or **Modify** button on the **Styles** dialog box.

Tab Options

Name

Names the style. Style names can contain up to 253 characters (including aliases and separators) and can include any combination of characters and spaces, except the backslash character (\), semicolon (;), and braces ({ }). Style names are case sensitive.

Based On

Displays the name of the style that the current style is based on.

Description

Displays a description of the formatting options.

Modify Text Box Style Dialog Box

{button Related Topics,AL("style cmd;styles db;text cmd",0,`NOT_FOUND')} {button How To,AL("use style how",0,`NOT_FOUND')}

Modifies a style by allowing you to specify new characteristics.

Tabs

Name Tab

Paragraph Tab

Style Dialog Box

{button Related Topics,AL("style cmd",0,`NOT_FOUND')}  {button How To,AL("use style how;apply style how",0,`NOT_FOUND')}

Specifies the name of the style, the formats defined for the style, and other options for working with styles.

Note You cannot create or modify a fill style with this dialog box. To create a new fill style, you can type a name for a fill style in the **Style** box on the **Fill** ribbon bar. The new style is saved with the current settings on the Fill ribbon bar.

The sample macro, PATTERN.DLL, allows you to browse through AutoCAD .PAT files and add the patterns to the active document. You can place this macro on a toolbar or menu with the **Customize** command on the **Tools** menu; or you can access it by clicking the **Macro** command on the **Tools** menu. The PATTERN.DLL macro is located in the \Smartsketch\CUSTOM\BIN\OLESVR.

Note If you cannot find the CUSTOM directory, you must run the **Setup** program again. In the **Setup** program, you must select the **Custom** setup.

Dialog Box Options

Style Type

Specifies the style type. If you are placing a new element, you can specify the style by clicking the appropriate style type in this box and then clicking the style that you want in the **Styles** box. You can also change the style of an existing element by selecting the element and then clicking the **Styles** command on the **Format** menu to set these options.

Styles

Specifies the style. Before selecting an item on this list, you must first select the appropriate style type in the **Style Type** box.

List

Specifies which styles appear in the **Styles** list. You can list only the styles in use, styles that you defined, or all styles.

Tip The only styles that are appear in the list are styles that are saved in the current document. The styles saved in a styles resource document are not listed. However, if you click the New button, you can select a style from a style resource document to use as a base style for the new style that you are creating.

Description

Displays a description of the settings in the style.

Delete

Deletes the selected style from the document or template.

Apply

Applies the style selected in the **Styles** box to elements that you selected. Applying a new style to elements that you selected removes the current formats for the element.

New

Accesses one of the New Style dialog boxes so that you can create a new style.

Modify

Accesses one of the Modify Style dialog boxes. so that you can modify the style that you selected in the Styles list.

Resources

Allows you to add style resource documents to the current template with the Style Resources dialog box.

New Dimension Style Dialog Box

{button Related Topics,AL(`style cmd',0,`NOT_FOUND')} {button How To,AL(`use style how',0,`NOT_FOUND')}

Creates a new dimension style.

Tabs

Name Tab

General Tab

Units Tab

Secondary Units Tab

Text Tab

Spacing Tab

Terminator and Symbol Tab

Lines and Coordinate Tab

New Line Style Dialog Box

{button Related Topics,AL("styles db",0,`NOT_FOUND')}  {button How To,AL("use style how",0,`NOT_FOUND')}

Creates a line style by allowing you to specify new characteristics. You can also define a new dash definition.

Tabs

Name Tab

General Tab

New Text Box Style Dialog Box

{button Related Topics,AL("style cmd;styles db;text cmd",0,`NOT_FOUND')}  {button How To,AL("use style how",0,`NOT_FOUND')}

Specifies the name of the style, the formats defined for the style, and other characteristics.

Tabs

Name Tab

Paragraph Tab

Text Box Ribbon Bar

{button Related Topics,AL("text cmd",0,`NOT_FOUND')}  {button How To,AL("text how",0,`NOT_FOUND')}

Formats a text box.

Tip To find out the name of an option on the ribbon bar, pause the pointer over an option and read the ToolTip.

Ribbon Bar Options

Style

Lists and applies the available styles.

Font

Lists and applies the available fonts.

Font Size

Applies a text size.

Text Color

Sets the color of the font.

Bold

Makes text bold.

Italic

Italicizes text.

Underline

Underlines text.

Paragraph Alignment

Positions the paragraph to the left, center, or right of the text area edges in edit mode.

Tip You can also align the paragraph after you select text.

Border

Displays three options for setting borders. These options allow you to either display no border, display a border, or display a border with a shadow.

More

Displays more options on the ribbon bar.

Height

Sets the height of the text box.

Width

Sets the width of the text box.

Tips

- If you select text in the text box, **Height** and **Width** are not available because the text is driving the dimension.
- If you select a text box and **Height** is not available, the text is driving **Height** with the **Auto Save** option. The same is true for **Width**.
- If you place a text box with a single point, both **Height** and **Width** are not available. If you drag a text box, **Width** is not available.

Angle

Sets the angle of the text box.

Horizontal Text Orientation

Specifies that the text is oriented horizontally on or in the document.

Vertical Text Orientation

Specifies that the text is oriented vertically on or in the document.

Left To Right

Specifies that the characters in a text box are displayed from left to right, as you would see in an English paragraph.

Right To Left

Specifies that the characters in a text box are displayed from right to left, as you would see in an Arabic or Japanese paragraph.

Text Box Properties Dialog Box

{button Related Topics,AL("element properties cmd;texthand high",0,`NOT_FOUND')}  {button How To,AL("format text how",0,`NOT_FOUND')}

Formats the font, paragraph, borders, or shading of a text box.

Tabs

Info Tab

Paragraph Tab

Border and Fill Tab

Info Tab

{button Related Topics,AL("new text style db;modify text style db;text properties db;text db;paper units high;texthand high",0,`NOT_FOUND')}  {button How To,AL(`format text how',0,`NOT_FOUND')}

Tab Options

Sheet

Shows the drawing sheet for an element.

Layer

Shows the layer on which an element appears in a drawing sheet.

Origin

Specifies the coordinates, or location, of a text box along the x and y axes.

Tip All metrics on the text box are either in paper units or world units except origin. Origin is always in world units.

Width

Sets the width of the text box to either **At Least** (at least the value you specify), **Auto** (the text drives the width), or **Exactly** (exactly at the value you specify) in the **At:** field.

Height

Sets the height of the text box to either **At Least** (at least the value you specify), **Auto** (the text drives the height), or **Exactly** (exactly at the value you specify) in the **At:** field.

Angle

Sets the angle of the text box.

Tip The text box always rotates about the origin.

Text Orientation

Sets the orientation of the text either horizontally or vertically.

Units Space

Sets the text box units to either paper units or to world units.

Paper units represent units on an actual sheet of paper. Paper units are set in inches. Other units are also available.

World units indicate real world distances, but can be scaled down to fit a sheet of paper.

Text Flow

Determines the direction in which the characters are displayed in a text box.

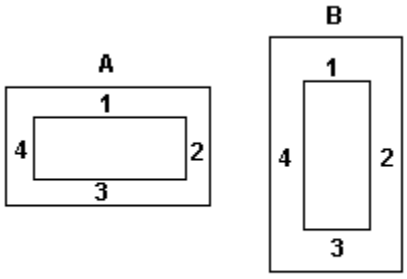
> **Left To Right**
>
> Specifies that the characters in a text box are displayed from left to right, as you would see in an English paragraph.
>
> **Right To Left**
>
> Specifies that the characters in a text box are displayed from right to left, as you would see in an Arabic or Japanese paragraph.

Justification

Specifies the placement relationship between the origin and the shape (text box) according to the horizontal and vertical components.

The inside text area is an area that the margins of the text box define. That is, margins are inside the outside edges of the text box.

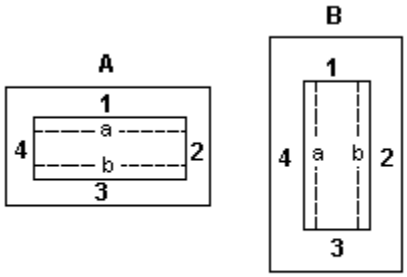
The following graphic illustrates top (1), right (2), bottom (3) and left (4) margins around the text box for horizontal justification (A) and vertical justification (B).



The maximum cap height of the first formatted text line of each line defines the text area capline, even if the line has been clipped out of the text box.

The line baseline is a font metric that describes an imaginary line for location of characters. The largest descender for any font on the line defines the baseline. Therefore, the largest descender of the fonts used on the last line defines the text area baseline, even if the line is clipped out of the text box.

The following graphic illustrates text cap area (a) and text baseline (b) for horizontal justification (A) and vertical justification (B).



You must define horizontal and vertical components together. These components apply to both single-line and multi-line text. For multi-line text, the cap height of the first line is used for the capline of the text, and the descender of the last line is used for the baseline of the text.

Horizontal

Specifies horizontal placement at six options based on shape (text box), text area, and the text within the text box at left, center, and right positions.

Vertical

Specifies vertical placement at 10 options based on shape (text box), text area, and the text within the text box.

Text Baseline—Specifies the text area baseline.

Text Top—Specifies the top of the text area, which begins at the bottom of the top margin.

Text Capline—Specifies the text area capline.

Text Half Ascender—Specifies half the distance from the text area baseline to the top of the text area.

Text Half Cap—Specifies the distance half way between the text area capline and baseline.

Text Center—Specifies the center of the text area.

Text Bottom—Specifies the bottom of the text area.

Shape Top—Specifies the top edge of the shape.

Shape Center—Specifies center of the shape.

Shape Bottom—Specifies the bottom of the shape.

Text Alignment

Specifies the placement of formatted text within the shape (text box).

You must define horizontal and vertical components together.

Horizontal

Specifies how each paragraph is aligned within the block of formatted text. Values for horizontal alignment include **Left**, **Center**, and **Right**.

If **Text Orientation** is horizontal, you modify all the paragraph alignment properties for all paragraphs within the text box. (These properties appear in the **Text Alignment** area of the Info tab.)

If **Text Orientation** is vertical, you modify the shape alignment properties. (These properties appear in the **Text Alignment** area of the Info tab.)

Vertical

Places the block of formatted text at **Top**, **Center**, **Bottom**, or **Justify** area of the text box.

If **Text Orientation** is horizontal, you modify the shape alignment properties. (These properties appear in the **Text Alignment** area of the Info tab.)

If **Text Orientation** is vertical, you modify all the paragraph alignment properties for all paragraphs within the text box. (These properties appear in the **Text Alignment** area of the Info tab.)

Horizontal Paragraph Alignment Properties

Left—Places the edge of the first line of text at the left of the text area.

Center—Places the formatted text in the center of the text area.

Right—Places the formatted text in the right of the text area**.**

Vertical Paragraph Alignment Properties

Top—Places the edge of the first line of text at the top of the text area.

Center—Places the formatted text in the center of the text area.

Bottom—Places the formatted text in the bottom of the text area**.**

Shape Alignment Properties

Positions the text within the text area.

Top—Places the edge of the first line of text at the top of the text area.

Center—Places the formatted text in the center of the text area.

Bottom—Places the formatted text in the bottom of the text area**.**

Justified—Places the first line of the first paragraph at the top of the text area.

Places the last line of the last paragraph at the bottom of the text area.

Places remaining paragraphs at equal distance between the first and last paragraphs.

Margins

Sets the distance between the edge of the shape and the edge of the text area. Margins are in the same units as the text box.

Top

Sets the distance between the top edge of the shape and the top edge of the text area.

Bottom

Sets the distance between the bottom edge of the shape and the bottom edge of the text area.

Left

Sets the distance between the left edge of the shape and the left edge of the text area.

Right

Sets the distance between the right edge of the shape and the right edge of the text area.

Border and Fill Tab

{button Related Topics,AL("new text style db;modify text style db;text properties db;text db",0,`NOT_FOUND')}
{button How To,AL("format text how;text how",0,`NOT_FOUND')}

Tab Options

Border

Specifies the appearance of a border around a text box.

Show Border

Displays the outline of the text box.

Linestyle

Sets the linestyle for the text box.

Border Color

Sets the color of the border.

Line Width

Specifies the width of the border in paper or world units of the text box.

Shadow

Places a shadow around the borders of text in a text box.

Shadow Offset

Specifies a distance to offset the shadow in paper or world units of the text box.

Fill Color

Displays the color of a solid fill on an element boundary. This value overrides the style of the fill. Transparent is the default. When you set the fill color to transparent, no fill is visible on the boundary. You can also apply a fill color option with a fill pattern. Filled elements always cover other elements when they overlap. A fill color always appears behind the fill pattern when you apply both to the same boundary.

Paragraph Tab

{button Related Topics,AL("new text style db;modify text style db;text properties db;text db",0,`NOT_FOUND')}
{button How To,AL("format text how",0,`NOT_FOUND')}

Tab Options

Text Style

Displays the style for a text box.

Font

Lists and applies the available fonts.

Font Size

Applies a text size.

Font Style

Lists the available font styles.

Underline

Underlines text.

Language

Lists and applies a language for text in a text box. If you use text characters from more than one language in a text box, the option you specify in this box determines the way the lines wrap in the paragraph.

Units Space

Sets the paragraph to paper units or to world units. You can change this control only when you are creating new styles from the **Format Styles** dialog box. When you view this control from the **Properties** dialog box, it is read-only. You can change the control from the **Info** tab because all paragraphs contained within a text box must exist in the same units.

Text Color

Sets the color of the font.

Spacing

Determines the amount of space between lines and paragraphs in a text box.

Text Alignment

Specifies alignment for each paragraph within the block of formatted text. Values for horizontal alignment include **Left**, **Center**, and **Right**.

If **Text Orientation** is horizontal, you modify all the paragraph alignment properties for all paragraphs within the text box. (These properties appear in the **Text Alignment** area of the Info tab.)

If **Text Orientation** is vertical, you modify the shape alignment properties. (These properties appear in the **Text Alignment** area of the Info tab.

Paragraph

Specifies the amount of space before and after paragraphs. No spacing exists before the first paragraph and or after the last paragraph.

> **Before**
>
> Adds space before a paragraph. This value is set in the current working units, not in points.
>
> **After**
>
> Adds space after a paragraph. This value is set in the current working units, not in points. You can set the units with the **Units** command on the **Format** menu.

Line

Lists and applies the amount of vertical space between lines of text.

- Single sets the line spacing for each line to display the largest font in the line.
- 1.5 sets the line space for the line to one-and-a-half that of single lines.
- Double sets the line spacing for the line to twice that of single lines.

Toolbars Dialog Box

{button Related Topics,AL("customize db",0,`NOT_FOUND')} {button How To,AL("customize toolbar how;toolbars how",0,`NOT_FOUND')}

Sets options for displaying, hiding, or changing toolbars.

Dialog Box Options

Toolbars

Lists the available toolbars. You can select the box next to the toolbar you want to display, hide, or change.

Toolbar Name

Displays the name of the toolbar that you have selected.

New

Accesses the New Toolbar dialog box.

Customize

Adds buttons to or removes buttons from built-in toolbars with the Customize dialog box.

Reset

Resets the selected toolbar to the original icons.

Color Buttons

Adds color to the toolbar buttons. If this option is cleared, toolbar buttons are black and white.

Large Buttons

Enlarges toolbar buttons so that they are easier to see.

Show ToolTips

Displays on-screen descriptions of a toolbar button when the pointer pauses over it.

New Toolbar Dialog Box

{button Related Topics,AL("toolbars db",0,`NOT_FOUND')}  {button How To,AL("customize toolbar how;toolbars how",0,`NOT_FOUND')}

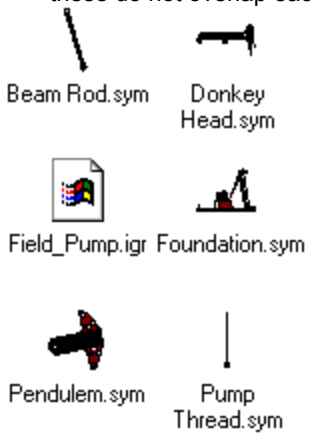
Names a toolbar that you selected on the **Toolbars** dialog box. You can type the name of the new toolbar in the box.

Example: Create a Kinematics Animation

1. Click **File > New.**
2. Select the **Mechanical Imperial** template.

   Note Selecting the **Mechanical Imperial** template creates a document with a C-wide sheet and a 1:1 scale.
3. On the **Main** toolbar, click the **Symbol Explorer** button.

4. Browse to the directory with the field pump symbols.
5. From the **Symbol Explorer**, drag the foundation symbol in the lower left area of the document.
6. From the **Symbol Explorer**, drag the pendulum, donkey head, beam rod, and pump thread symbols so that these do not overlap each other or the foundation.



To connect the parts

1. On the **Tools** menu, set the **Maintain Relationships** option. Your action confirms that the relationships are maintained when you move parts of the drawing.
2. On the **Relationship** toolbar, click the **Lock** button.

3. To lock the foundation, select one of the end points of the line on the lower right side. This action keeps the foundation stationary when you attach the other components or animate the movement.

   {mci_left NOMENU,ANIMAT4.AVI}

To connect the pendulum to the motor on the foundation

1. On the **Relationship** toolbar, click the **Concentric** button.

2. Select the circle on the left end of the pendulum arm as the first element.
3. Select the small circle on the motor as the next element. The pendulum moves so that the circles align and are concentric.

   {mci_left NOMENU,ANIMAT5.AVI}

   Tip The pendulum appears on top of the motor and the foundation. If the pendulum does not do this, select the pendulum with the **Select** tool on the **Draw** toolbar. You can then click the **Bring To Front** button on the **Change** toolbar. This action ensures that the pendulum is on top of the motor and foundation.

To connect the donkey head to the top of the foundation

1. On the **Relationship** toolbar, click the **Concentric** button.
2. Select the circle at the center of the donkey head for the first element.
3. Select the circle at the top of the A-frame of the foundation symbol for the second element. The donkey head moves so it appears balanced on top of the A-frame and the circles align.

   {mci_left NOMENU,ANIMAT6.AVI}

To connect the beam rod to the pendulum

1. On the **Relationship** toolbar, click the **Concentric** button.
2. Select the lower circle on the beam rod for the first element.
3. Select the right-most circle on the pendulum arm for the second element. This circle is almost centered on the pendulum. The rod moves and connects with the pendulum.

   {mci_left NOMENU,ANIMAT7.AVI}

To connect the beam rod to the donkey head

1. On the **Relationship** toolbar, click the **Concentric** button.
2. Select the circle on top of the beam rod for the first element.
3. Select the circle on the left side of the donkey head for the second element.
4. The pendulum, donkey head, and beam rod now move so that the connections are complete.

   Tip The beam rod appears on top of the pendulum. Otherwise, click the **Select Tool** on the **Draw** toolbar. You can then click the **Bring To Front** button on the **Change** toolbar. This action ensures that the beam rod appears on top of the other parts.

   {mci_left NOMENU,ANIMT8.AVI}

To connect the pump thread to the donkey head

1. On the **Relationship** toolbar, click the **Connect** button.

2. Click the top of the line on the pump thread.
3. For the second element, select the endpoint of the small line embedded along the right edge of the donkey head. The thread moves and attaches to the head.

   Tip You can zoom on the edge of the head to find this line, because it is very small. On the **Main** toolbar, click the **Zoom Area** button.

   {mci_left NOMENU,ANIMAT9.AVI}

To place a dimension on the pendulum for controlling the rotation angle

1. Click **Tools > SmartSketch Settings**.
2. On the **Relationships** tab of the **SmartSketch** dialog box, ensure the **Midpoint** check box is set.
3. On the **Dimension** toolbar, click the **Angle Between** button to place the dimension. The dimension is driving, so it appears in black.

   Tip To select the circle on the pendulum where it connects to the motor, zoom in close enough to see the entire pendulum in full view. On the **Main** toolbar, click the **Zoom Area** button.

   Caution You must select the right circle to ensure that a driving dimension is placed. If you use the wrong circle, the dimension will be a driven dimension, shown as green. If this should occur, delete the dimension and try again.
4. Pass the pointer over the circle where the pendulum connects to the motor. You see three ellipses appear next to the pointer.
5. Click to see a box. This is **PickQuick**. The box has two numbers. This **PickQuick** box indicates how many elements you can select at this location in the window. In this case, you can select only two elements.
6. Click the number 2 square.

   Tip You can see three squares in the **PickQuick** box, depending on the zoom distance when you see the ellipses. If you see more than two squares, dismiss the **PickQuick** box by selecting the X in the upper right, and then zoom in closer and try again. On the **Main** toolbar, click **Zoom Area**. After you can see only two numbered squares in the **PickQuick** box, select the number two square. This action selects the circle associated with box number two as the first point of the dimension.

   Tip If **PickQuick** does not appear, you can also click the **Bring To Front** button and click the motor symbol to bring it to the front to try the previous steps. You need to click the **Send To Back** button after you complete the steps to bring the pendulum back to the front.
7. Pass the pointer over the line on the right end of the pendulum and move slowly toward the mid-point of the line.

When you see the midpoint indicator, click for the second point of the dimension. Place the dimension to the right of the pendulum. Location is not important. This dimension drives the animation of the pump.

{mci_left NOMENU,ANIMAT10.AVI}

To drive the model

- After you place the dimension, you can select the dimension with the **Select Tool** and change the value in the ribbon bar. When the dimension changes, the angle of the pendulum changes and all of the other parts change accordingly.

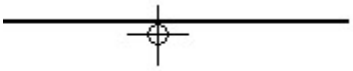
{mci_left NOMENU,ANIMAT11.AVI}

{button Related Topics,AL("animate high;symbols high",0,`NOT_FOUND')}

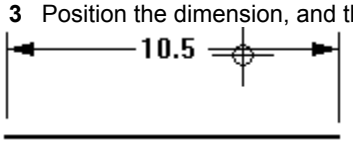
Example: Dimension the Length of a Line

1 On the **Dimension** toolbar, click the **SmartDimension** button.

2 Click a line. **SmartDimension** dynamically displays a linear dimension.



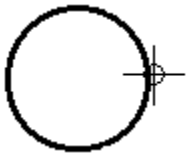
3 Position the dimension, and then click to place it.



Example: Dimension the Diameter of a Circle

1 On the **Dimension** toolbar, click the **SmartDimension** button.

2 Click a circle. **SmartDimension** dynamically displays a diameter dimension.



3 Position the dimension, and then click to place it.

Example: Measure the Length of a Line

Even when you are in the middle of a task, you can measure distances with the **Measure Distance** command. For example, consider the following workflow.

1 On the **Draw** toolbar, select the **Line/Arc Continuous** button and draw a line.

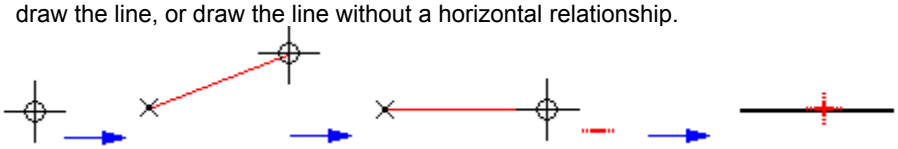
2 On the **Tools** menu, click the **Measure Distance** command and measure a distance.

Note You do not need to exit the **Line/Arc Continuous** command before measuring a distance.

3 To exit the **Measure Distance** command, click the right mouse button. The **Line/Arc Continuous** command is still active—you can pick up where you left off and continue using the **Line/Arc Continuous** command.

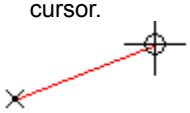
Example: Draw a Horizontal Line

You can use relationships to draw a line that is exactly horizontal. You can apply a horizontal relationship as you draw the line, or draw the line without a horizontal relationship.



1. Click **Tools > SmartSketch Settings**.
2. On the **Relationships** tab, set the **Horizontal Or Vertical** option, and then click **OK**.
3. On the **Draw** toolbar, click the **Line/Arc Continuous** button.
4. Click where you want to place the first end point of the line, anywhere in the application window.

5. Move the pointer around in the window. Notice that the dynamic line display always extends from the end point you just placed to the current cursor position. You may also see relationship indicators displayed at the cursor.



6. Move the pointer to make the dynamic line approximately horizontal.
7. When the horizontal relationship indicator is displayed at the pointer, click to place the second end point.

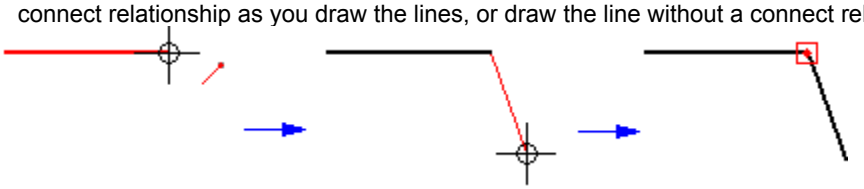
If the **Maintain Relationships** option on the **Tools** menu is set, the software places a horizontal relationship handle on the new line.

If you do not want to place a horizontal relationship, you can follow the same procedure with the **Maintain Relationships** option cleared. The line will still be exactly horizontal when you draw it.

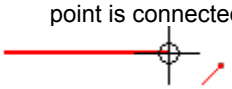
Note Relationship handles can be displayed or hidden with the **Relationship Handles** button on the **Relationship** toolbar.

Example: Draw a Line

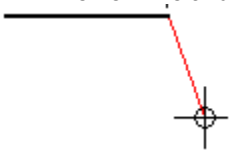
You can use relationships to connect an element you are drawing with an existing element. You can apply a connect relationship as you draw the lines, or draw the line without a connect relationship.



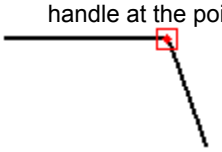
1. Click **Tools > SmartSketch Settings**.
2. On the **Relationships** tab, set the **End Point** option, and then click **OK**.
3. On the **Draw** toolbar, click the **Line/Arc Continuous** button.
4. Move the pointer to the end of a line in the application window. The software displays the **End Point** relationship indicator at the cursor.
5. While the software displays the relationship indicator, click to place the first end point of the new line. This end point is connected to the end point of the previous line.



6. Click where you want to place the second end point of the new line.
7. The new line and the previous line have connected end points.



If the **Maintain Relationships** option on the **Tools** menu is set, the software places a connect relationship handle at the point where the two lines connect.



If you do not want to place a connect relationship, you can follow the same procedure with the **Maintain Relationships** option cleared. The end points of the two lines will still be exactly coincident when you draw them.

Note Relationship handles can be displayed or hidden with the **Relationship Handles** button on the **Relationship** toolbar.

Example: Draw a Line

You can use **PinPoint** to draw a line starting at a specific x and y distance from a known position in your drawing.

1. On the **Main** toolbar, click the **PinPoint** button.

2. Click where you want the target point to be.
3. Change the step value in the **PinPoint Ribbon Bar** if it is not already set to a value that is appropriate for the operation.
4. On the **Draw** toolbar, click the **Line/Arc Continuous** button.

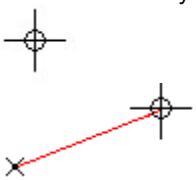
5. Move the pointer around on the drawing sheet. **PinPoint** displays at the cursor its current *x* and *y* positions in relation to the target point.
6. Click when the pointer is positioned where you want the line to begin.
7. Click where you want the second point of the line to be, or type the length and/or angle on the **Line/Arc Continuous** ribbon bar and then click to draw the line.

{button Related Topics,AL("pinpoint cmd;line cmd",0,`NOT_FOUND')}

Example: Draw a Line

1 On the **Draw** toolbar, click the **Line/Arc Continuous** button.

2 Click where you want a new line to begin.



3 Move the pointer around on the drawing sheet. Notice that the line follows the movement of the cursor. At the same time, the pointer recognizes any relationships it encounters, such as a horizontal relationship. When the cursor finds a relationship, a relationship indicator appears at the pointer.

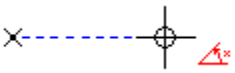
4 Click to place the end point of the line according to the displayed relationships.

Example: Draw an Arc

1 On the **Draw** toolbar, click the **Arc By Center Point** button.

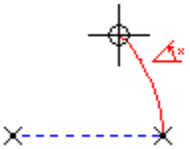
2 Click where you want to place the center point.

3 Move the pointer horizontally, to a position where the software recognizes step angle alignment with the center point.



4 Click where you want the sweep to begin.

5 Move the pointer to a position where the software identifies the step angle you want to use for the sweep.



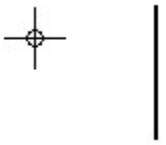
6 While the step angle relationship indicator is displayed at the pointer, click to define the end of the sweep.

Example: Case Where a Relationship Is Not Maintained

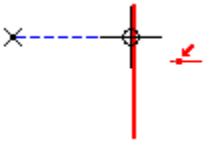
Relationships cannot be maintained in certain cases, as in the following example.

1. On the **Draw** toolbar, click the **Arc By 3 Points** button.

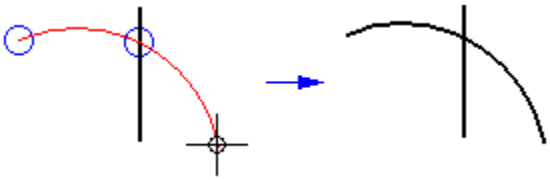
2. Click where you want the sweep of the arc to begin.



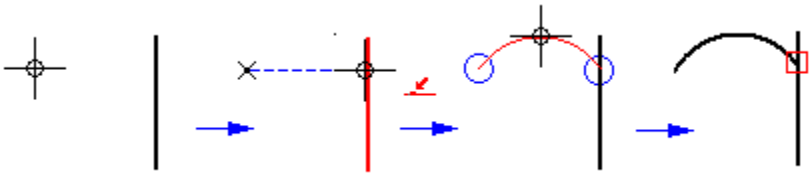
3. Move the cursor to a position where the software recognizes a point on element relationship with a line on the drawing sheet.



4. When the **Point On** relationship indicator is displayed at the pointer, click to define the second input point for the arc.
5. Move the cursor past the line and click. The position of this input point defines it as the end of the sweep, making the point in the middle a key point that cannot have relationships. The software recognizes this, and does not maintain the point on element relationship.



If the third input point for the arc had been between the first two points, then it would have been interpreted as the arc midpoint, making the second input point one end of the arc sweep. In this case, the point would have been constrainable, and the software would have maintained the point on element relationship.

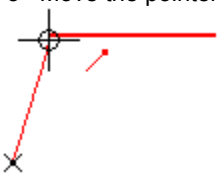


Example: Connect Points While Drawing a Line

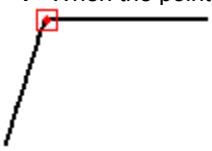
1 On the **Draw** toolbar, click the **Line/Arc Continuous** button.

2 Click where you want the line to begin.

3 Move the pointer to a position where the software recognizes the end point of a line on the drawing sheet.



4 When the point on relationship indicator is displayed at the pointer, click to define the end of the line.

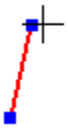


If the **Maintain Relationships** option is set, the software places a connect relationship handle where the two lines meet.

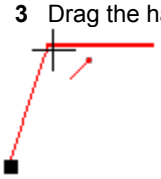
Example: Connect Points While Modifying a Line

1 Select the line you want to modify.

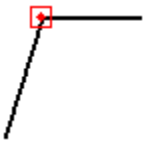
2 Position the **Select Tool** over the handle at the end of the line you want to modify. The pointer changes to a plus (+) shape to indicate that you have located the handle.



3 Drag the handle to a position where the software recognizes the end point of another line on the drawing sheet.



4 Release the mouse button to place the end point of the line you are modifying at the end point of the stationary line.

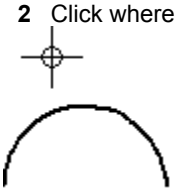


If the **Maintain Relationships** option is set, the software places a connect relationship handle where the two lines meet.

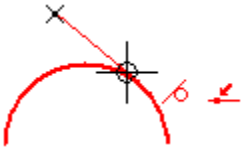
Example: Establish More Than One Relationship

1 On the **Draw** toolbar, click the **Line/Arc Continuous** button.

2 Click where you want the line to begin.



3 Move the pointer to recognize point on element and tangent relationships with a circle on the drawing sheet.



4 While the point on element and tangent relationship indicators are displayed at the pointer, click to define the end point of the line.

If the **Maintain Relationships** option is set, the software places a relationship handle for each recognized relationship.

Example: Formatting a New Drawing

You can use styles to make new drawings conform to your company's standards. For example, the software provides line styles with names such as **Normal**. You have decided to apply the **Normal** style to hidden lines. The **Normal** style has a line type that looks like a dashed line.

Your company standard may require that a hidden line look like a dotted line.

To change the **Normal** line style to conform to your company's standards, you can follow these steps:

1. Click **Format > Style**.
2. On the **Style** dialog box, click the line style type in the **Style Type** box.
3. In the **Styles** list box, click the **Normal** line style.
4. Click **Modify** to access the **Modify Line Style** dialog box.
5. On the **General** tab, in the **Type** box, select the line type that looks like a dotted line.

All the lines that you draw while the **Normal** style is selected on the ribbon bar will conform to your company's standards: hidden lines will appear as dotted lines. You can save the style to a template with the **Style** command on the **Format** menu. This allows you to use the style again in other drawings.

Example: Formatting an Existing Drawing

You can use styles to make existing drawings conform to your company's standards. Suppose you receive a drawing from another company, and all the hidden lines are continuous.

Your company standard indicates that hidden lines should be a line type that is dashed. You have been using a line style, called Dashed, to conform to the standards used by your company.

To change the hidden lines in the drawing quickly and efficiently, you can follow these steps:

1. Open the drawing that you received from the other company.
2. Select all the lines that you want to change.
3. On the ribbon bar, select **Dashed in the Style** list box to change all the lines that you have selected. All the lines now appear as dashed lines, instead of continuous lines.

active style

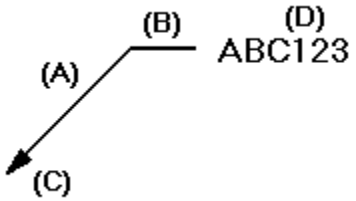
The style that is used when you draw an element or copy it. You can change the active style to one of the styles listed in the Style box on the ribbon bar.

angular dimension

A dimension that measures the sweep angle of an arc, the angle between an origin and a line, the angle between two lines, or the angle among three key points.

annotation

Text, graphics, or symbols that give you more information about a drawing.



(A) Leader line
(B) Break line
(C) Terminator
(D) Annotation

aspect ratio

The ratio of width to height of geometry.

associative

A condition in which an element is related to another element.

associative dimension

A dimension that is updated when the measurement of the element it refers to changes.

associativity

The concept that embraces all techniques for capturing design intent, including variational design, parametric design, and feature-based modeling.

background sheet

A component of a drawing sheet. The background sheet is used for graphics that you want to display on more than one drawing, such as a border, title block, logo, or raster background picture (watermark). A background sheet can be displayed and printed along with any working sheet it is attached to.

balloon

A type of annotation that consists of a closed shape that contains text. A balloon defines individual parts in assemblies and field notes on drawings.

baseline

1 The area between a line and text.

2 The process that freezes a document from any further modification. When you baseline a document, you also freeze any documents that are linked to the baselined document.

callout

A type of annotation that consists of a text box with a leader.

center point

The middle of a circle or arc.

centerline

An annotation on a mechanical drawing that marks the center position of a hole or other feature on a part.

chained dimension group

A series of dimensions that are arranged in a straight line. A chained dimension group measures locations from element to element.

chamfer

A corner that has been cut at an angle.

closed curve

A curve whose end points meet. A closed curve encloses an area.

closed element

An element whose end points meet. A closed element encloses an area.

coincident relationship

A relationship that specifies that two points have the same location.

colinear relationship

A relationship that ensures that a set of identified points or lines lie in a straight line.

command

A tool designed to complete a single task, such as create an arc or a line.

compound document

A document that contains files with various formats. For example, a document composed of AutoCAD and MicroStation documents.

container

A document that contains documents created with other applications. Through OLE you can access the application that created the document and link and embed a document created by another application.

cross hatching

An annotation on a drawing that designates the fill area of a model; a fill.

coordinate dimension group

A group of dimensions that measure locations from a common origin.

curve

An element type that is not linear.

cusp node

A type of vertex on a curve. A curve with a cusp node bends sharply at the node. A handle can be attached to a cusp node for editing.

design data

Real world objects that you draw in a computer drawing. Typically these items must be scaled in the drawing sheet.

diameter dimension

A dimension that measures the diameter of a circle or arc.

dimension

A control that assigns and maintains a dimensional value to an individual element or establishes a dimensional relationship among multiple elements. A label with text, lines, and arrows graphically represents a dimension.

dimension axis

An axis for dimension orientation that you define by selecting a line. You can place linear dimensions that run parallel or perpendicular to the axis. By default, dimensions are placed horizontally or vertically.

dimension group

A series of dimensions. You can place a chained dimension group, a coordinate dimension group, or a stacked dimension group.

dimensional value

The text that indicates the value of a dimensional measurement, such as distance, length, or angle.

display filter

A tool that allows you to display selected layers in a drawing.

document data

Annotations, such as dimensions, text boxes, callouts, balloons, and centerlines, that are used to describe design data.

drawing sheet

The area of the application window that you draw in. There are two types of drawing sheets: working sheets and background sheets. Both types of sheets display a border, called a sheet outline, that shows the size, orientation, and printable region of the current sheet.

drawing sheet tab

Drawing sheet tabs are located at the bottom of the drawing sheets in your document. There is a drawing sheet tab for each drawing sheet.

The drawing sheet tabs allow you to change the active drawing sheet, create new drawing sheets, delete drawing sheets, and copy drawing sheets.

drawing tool

A tool that helps in the process of creating, modifying, or manipulating elements. For example, PinPoint and SmartSketch.

drawing view

A 2-D representation of a 3-D part or assembly. You can manipulate drawing views to display the part or assembly on a drawing sheet at a specified scale and orientation.

driven dimension

A dimension with a value that depends on the value of other dimensions or elements.

driving dimension

A dimension with a value that controls the size, orientation, or location of an element.

edge point

A location on the boundary of an element. For example, edge points can be used to define the circumference of a circle.

element

A simple, selectable unit in a drawing. You can select geometric elements, dimensions, annotations, objects placed in the drawing through OLE, and so forth. The type of element that can be selected is determined by command context.

embed

A method for inserting information from a source document into the active document. Once embedded, the information becomes part of the active document; if changes are made to the source document, the updates are not reflected in the active document.

end point

The end of an element.

equation

The algebraic relationship between dimensions and/or numeric properties.

file locking

The ability to prevent updates to a document.

fill

A pattern or solid color placed inside a closed boundary.

free space

An area that is not on or inside an element or object on a drawing sheet.

FreeForm

A drawing tool that allows you to use the mouse to sketch curves. As you press and hold the mouse button and drag the pointer across the drawing sheet, a rough sketch of your design appears. When you release the mouse button, the software turns your sketch into smooth curves.

FreeSketch

A drawing tool that allows you to use the mouse to sketch lines, arcs, circles, and rectangles. As you press and hold the mouse button and drag the pointer across the drawing sheet, a rough sketch of your design appears. When you release the mouse button, the software recognizes the shapes in your sketch and turns them into a precise drawing.

from point

The starting point for an action. For example, when you rotate elements, the from point determines where you want the rotation to begin.

geometric element

A point, line, arc, circle, or other simple geometry unit.

group

A collection of objects that you can manipulate as a single item.

handle

Solid or hollow squares that are displayed at significant positions on a geometric element when you select the element. You can manipulate an element with a handle.

help lines

The dashed coordinate axes displayed by PinPoint. The help lines extend from the target point to the current pointer location. They are dynamically updated as you move the cursor. You can turn the help line display on or off.

horizontal relationship

A relationship that specifies that the end points of a line, or two key points, are level with each other along the *x* axis.

image

A raster image, which can be a **.TIFF, .GIF, .JFIF, .BMP, .COT, .CIT,** or **.RLE** document.

intent zone

A quadrant divided into four pie-shaped wedges that determines the behavior of an element's relationship to either a circle or arc. Intent zones allow you to specify where you want to draw an element in relation to an arc or circle. For example, as you draw an arc, you can change the arc's direction by moving the cursor to a different position within the intent zone. You can define the size of the intent zone by specifying the number of pixels in it.

key point

A recognizable point on an element. Key points include vertices, mid points, center points, and so forth.

layer

A logical grouping of elements or objects on a drawing sheet. You can have several layers in a drawing sheet.

linear dimension

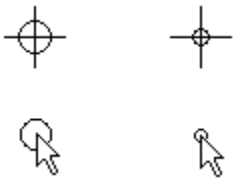
A dimension that measures the linear distance between two or more elements, the length of a line, or the arc length of an arc.

link

The connection between an inserted image or object, known as the source document, and the active document. Changes made in the source document are reflected in the active document when the active document is updated.

locate zone

A circular area at the center of the crosshair cursor or at the end of the arrow cursor. The locate zone specifies how close the cursor must be to an element you want to recognize or select. You can define the size of the locate zone with the **SmartSketch** command on the **Tools** menu.



lock

A relationship that makes the position of an element or key point, or the value of a driving dimension, stationary.

macro

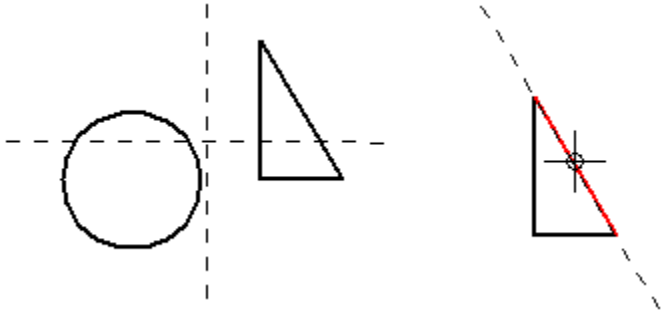
A sequence of actions or commands that can be named and stored. When you run the macro, the software performs the actions or runs the commands. You can create the macros in Visual Basic or other OLE-aware programming applications. Some of the OLE-aware programming applications are VBA (inside of Excel), Visual C++ Delphi, Visual Basic, and so forth.

midpoint

The middle point of an element.

mirror axis

The line about which the selection set is mirrored. When you select the Mirror command, the software displays horizontal and vertical mirror axes that go through the center of the selection set. You can display other mirror axes by locating linear elements.



modification

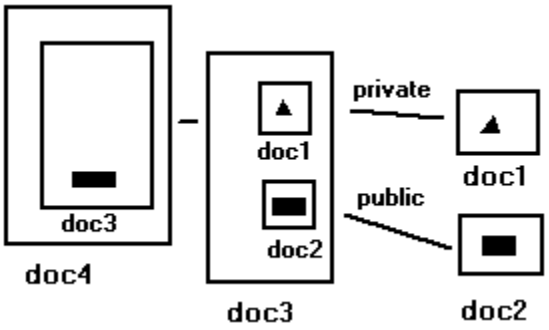
The act of changing the size, position, or orientation of an element by modifying the element or its handles.

pointer

The screen device that you use to select elements, commands, and other items in the software.

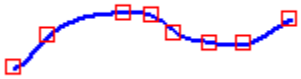
nested symbol

A symbol that is placed into a document which is then placed as a symbol in another document. Symbols that are public display across different documents. Symbols that are private only display in the first document.



node

A vertex on a curve. An exterior node has one handle, and an interior node has two handles. A curve can have one or more smooth, cusp, or symmetric nodes. The type of node a curve has affects how you modify the curve.



object

1 Information that can be linked or embedded into an OLE-compliant product.

2 A group of elements that represent a real-world object. An object can also be made up of a single element.

OLE

The way Microsoft uses the Common Object Modeler (COM). It is a mechanism to make data work independently.

open curve

A curve whose end points do not meet.

open element

An element whose end points do not meet.

parallel relationship

A relationship that specifies that the orientation of one line is identical to that of another line.

perpendicular relationship

A relationship that specifies that the orientation of a line or end point of an arc is at a right angle to the orientation of another line, arc, circle, or curve.

PickQuick

An automatic software tool that allows you to select an element when several elements overlap. When you place the pointer over a set of overlapping elements, three small circles appear at the bottom right of the cursor. When you click, a small toolbar with the number of selectable elements appears. You can move the pointer over the numbers; and, when the element that you want highlights, you can click on the corresponding number to select it.

PinPoint

A tool that allows you to place, move, and modify elements with precision, relative to a reference point.

precision input

The method of defining the position of a point in space by using precise coordinates or by using a value to describe the point's position from the coordinates of another point.

primary axis

The axis that defines the rotation angle of the ellipse. Zero degrees is horizontal to the *x* axis; the angle increases in the counterclockwise direction. The primary axis is defined first and can be shorter than the secondary axis.

property

A unique characteristic of an element, object, symbol, or document. You can display document properties in the **Windows Explorer** or by clicking **Properties** on the **File** menu or **Edit** menu.

Properties for elements or objects have three different types, as defined on the **Properties** dialog box:

- Style properties, as specified on the **Format** tab. Style properties affect the format of the element.
- Size properties, as specified on the **Info**. Size properties affect characteristics of the element, such as the length.
- User-defined properties, as created on the **User** tab. User-defined properties are usually in the form of a text notation, such as cost, manufacturer, and so forth You can change user-defined properties, but these changes have no affect on the appearance of the element or object.

For example, a valve symbol's style properties can include color, line style, and width. Other user-defined properties stored with the symbol can include the manufacturer, cost, or material. User-defined properties are displayed in the **Attribute Viewer** when you select the valve symbol.

radial dimension

A dimension that measures the radius of an arc, circle, ellipse, or curve.

reference file

Any file not native to SmartSketch that is linked or embedded and used for reference information. You click **Insert > Object** to link or embed a reference file, or you can drag or drop it with Windows Explorer.

relationship

A condition that exists for an individual element or between elements. You can establish relationships as you place new elements or between elements already on the drawing sheet. If **Maintain Relationships** is set, then the relationship controls the modification behavior of the related elements. For example, if two lines have a parallel relationship, they remain parallel when one of the lines is moved.

SmartSketch recognizes potential relationships as you draw. Relationship handles are placed on related elements to represent maintained relationships.

relationship handle

A graphic used to represent a geometric relationship between elements, key points, and dimensions, or between key points and elements. The relationship handle shows that the designated relationship is being maintained.

Command	Relationship Handle
Colinear	
Connect	
Concentric	
Equal	
Horizontal/Vertical	
Tangent	
Symmetric	
Parallel	
Perpendicular	
Lock	

relationship indicator

A graphic that is displayed at the pointer when the software recognizes a SmartSketch relationship.

Relationship	Relationship Indicator
Endpoint	
Midpoint	
Intersection	
Horizontal	
Vertical	
Point On Element	
Perpendicular	
Parallel	

Tangent 

Center 

rotation angle

The angle between 0—180 degrees that an element is rotated in either direction. Zero degrees is horizontal to the x axis; the angle increases in the counterclockwise direction.

rotation angle

The angle at which the rectangle is oriented. Zero degrees is defined by the positional angle. The angle increases in the counterclockwise direction.

rotation axis

A temporary line that shows the rotation angle with respect to the rotation reference axis. Zero degrees is defined by the positional angle; the angle increases in the counterclockwise direction.

rotation reference axis

A temporary line defined by the center of rotation and the rotation from point. Zero degrees is horizontal; the angle increases in the counterclockwise direction. The rotation angle is measured from this line.

scale origin

The starting point from which an object is scaled along the x and y axes.

secondary axis

The axis that is perpendicular to the primary axis of an ellipse. The secondary axis is defined after the primary axis and can be longer than the primary axis.

Select Tool

A tool that allows you to select elements before you run a command on them.

selection set

A single selected object or a group of selected objects.

share embed

A document copied directly into a drawing. When you embed the same document more than once in the same document, the document elements are copied each time. When you share embed the same document more than once in the same document, the documents are not copied each time. Instead, the other documents reference the initial placement of the document.

shortcut menu

A menu that gives you quick access to commands that are related to the item you are working with. The commands available on the shortcut menu depend upon the selected element or active command. To activate the shortcut menu, click the right mouse button.

sketch

The process of creating a rough drawing that approximates the size or shape of a real-world object.

smooth node

A type of vertex on a curve. A curve with a smooth node has a different curvature on each side of the node. The start point and end point of a curve is always a smooth node. A handle can be attached to a smooth node for editing.

source document

A document that provides data, graphics, or other information to another document through a link.

stacked dimension group

A series of individual dimensions that are arranged at different levels from the smallest value to the largest. A stacked dimension group measures locations from a common origin.

style

1. The appearance of geometry and annotations on the drawing sheet. For example, an element's color and line weight, the font used in a text box, and so forth.
2. A collection of formats or properties that you name and store as a group. When you apply a style to a selected item, the software applies all the formats or properties in the style to the element. The style types include: fill, dimension, line, and text.

sweep angle

The angle that defines the length of an arc.

symbol

A document placed in a drawing. You can override and edit the properties and style of the symbol. A document can be linked, or embedded.

symmetric node

A type of vertex on a curve. A curve with a symmetric node has the same curvature on each side of the node. A handle can be attached to a symmetric node for editing.

tangent relationship

A relationship between an arc or circle and another geometric element. The elements share a common point that is not intersecting.

target point

The origin for coordinate measurements displayed by PinPoint. You can position the target point anywhere on the drawing sheet.

template

A default set of properties that defines what a new document will look like. You can use a template to set standards for a group of users or to define your own preferences.

terminator

A graphic symbol, such as an arrow or dot, placed at the end of a leader.

text box

A rectangular element that contains text or symbols; you can place text boxes on drawing sheets.

to point

The ending point for an action. For example, when you rotate elements, the to point determines where you want the rotation to stop.

toolbar

Toolbars are graphic menus with buttons that allow you to quickly access commands. You can define custom toolbars or use the toolbars delivered with the software.

tools

A set of commands that can be activated from a menu, toolbar, or keyboard shortcut. Tools are self-contained, designed for specific tasks, and can be used in any compatible environment.

user property

A unique characteristic of an element or object in a file. You can assign unique values to an element or object with the Properties command on the Edit menu.

variable

A value that can be referenced and changed.

vertex

The highest point or apex of a figure, the intersection of lines or curves, or the end point of an element.

vertical relationship

A relationship that specifies that the end points of a line, or two key points, are level with each other along the *y* axis.

window

An area defined by a standard border and buttons that is used to display information in an application.

wireframe element

A 2-D, graphic representation of simple geometry; wireframe elements include points, lines, circles, arcs, conic curves, freeform curves, and composite curves.

working sheet

A component of a drawing sheet. The working sheet is where you create design data and document data. You can apply a scale to document and design data and attach a background sheet to the working sheet.

style type

A type of style that is based on the type of element that the style affects. The style types include: fill, dimension, line, and text.

style resource document

Any .igr or .RSC document that contains styles native to that document. A template or document can reference several style resource documents. These styles are copied into the current document when the styles are actually applied to elements or annotations in the document.

attribute

A user-defined property or parameter assigned to an element, object, or document. A parameter refers to variables in a symbol document that drive dimensional values. You can display attributes with the **Attribute Viewer.**

parameter

An attribute assigned to an element or object, usually a numerical value representing a dimension. A parameter is a mechanism to change a property. A parameter refers to variables in a symbol document that drive dimensional values. Parameters appear as bold characters in the **Attribute Viewer**.

Smart Label

A label that is associated to the attributes on an element or object. Smart Labels are created with the tools on the **Symbol Authoring Tools** toolbar.

bearing

A determination of position to refer to an angle

azimuth

A horizontal direction expressed as an angle, progressing from a fixed point, based on a circle.

base bearing

Direction (North, South, East, West) bearing to refer to an angle.

direction

Clockwise or counterclockwise indicator for the angle bearing.

isometric drawing

A drawing represented as the object or element is actually projected on a plane of projection: a 3D drawing represented in 2D.

parametric symbol

A symbol that contains geometry constrained together using relationships, with driving dimensions that are defined as adjustable parameters.

user-defined property

A type of property created on the **User** tab of the **Properties** dialog box for the element or object. User-defined properties are usually in the form of a text notation, such as cost, manufacturer, and so forth You can change user-defined properties, but these changes have no affect on the appearance of the element or object.

For example, user-defined properties stored with a valve symbol can include the manufacturer, cost, or material. User-defined properties are displayed in the **Attribute Viewer** when you select the valve symbol.

hyperlink

Colored and underlined text or a graphic that you click to go to a file, a location in a file, an HTML page on the World Wide Web, or an HTML page on an intranet. Hyperlinks can also go to Gopher, telnet, newsgroup, and FTP sites.

Draw an Arc

What Do You Want To Do?

- Draw an arc by defining its center point and sweep.
- Draw an arc by defining three points of its sweep.
- Draw an arc tangent to one or two elements.

Draw a Circle

What Do You Want To Do?

- Draw a circle by defining its center point and radius.
- Draw a circle by defining three points on its circumference.
- Draw a circle tangent to one or two elements.

Draw or Modify a Curve

What Do You Want To Do?

- ☐ Draw a curve.
- ☐ Insert a node into a curve.
- ☐ Change the curve type.
- ☐ Change the node type.
- ☐ Delete a node from a curve.

Draw an Ellipse

What Do You Want To Do?

- Draw an ellipse by defining its center point and axes.
- Draw an ellipse by defining its axes.

Draw with FreeSketch and FreeForm

What Do You Want To Do?

- Draw lines, arcs, circles, and rectangles.
- Draw connected lines and arcs.
- Draw a line.
- Draw an arc.
- Draw a circle.
- Draw a rectangle or square.
- Draw curves.

Draw a Line

What Do You Want To Do?

- Draw a line.
- Draw connected Lines and Arcs.

Display the Attribute Viewer

1 Select an object or element.

2 On the **Main** toolbar, click the **Symbol Explorer** button. If the selected item has assigned attributes, the **Attribute Viewer** opens and displays the properties and parameters.

Tips

- If the **Symbol Explorer** window is open, you can display or hide the **Attribute Viewer.** To display or hide the viewer, place the pointer over a toolbar at the top of the document window and right-click. On the shortcut menu, select or clear the **Attribute Viewer** command.
- You can drag the splitter bar between the **Symbol Explorer** and the **Attribute Viewer** to display or hide the viewer.
- If you close the **Attribute Viewer,** you can open it again by pausing the pointer in the toolbar area, right-clicking, and clicking **Attribute Viewer** on the shortcut menu.

{button Related Topics,AL("av high;attribute cmd;attribute viewer db;symbol explorer high",0,`NOT_FOUND')}

Move the Attribute Viewer

- Drag the title of the **Attribute Viewer** to move the viewer.

  You can dock or undock the viewer inside the **Symbol Explorer** and place the viewer at a different location.

Tips

- To resize the **Attribute Viewer** like any document window, you can double-click the title bar of the viewer to undock it. Then, you can drag the sides of the viewer to resize.
- The position of the **Attribute Viewer** does not stay the same if you close the software and then start it again. The viewer appears docked in the default position inside the **Symbol Explorer.**

{button Related Topics,AL("av high;attribute cmd;symbol explorer high",0,`NOT_FOUND')}

Edit Cells in the Attribute Viewer

1 Click a cell in the **Attribute Viewer**.

2 Type new information or change existing information.

Tips

- You can delete text in the **Attribute Viewer** by pressing **Delete** on the keyboard.
- Double-click to highlight the whole word.
- Drag to highlight the word.
- You can resize cells in the viewer by using the splitter bar between each cell at the top of the viewer.

{button Related Topics,AL("av high;attribute cmd;symbol explorer high",0,`NOT_FOUND')}

Edit Attributes

1 Select a symbol, object, or element.

2 On the **Main** toolbar, click the **Symbol Explorer** button.

3 If the item that you selected has attributes, the **Attribute Viewer** appears in the **Symbol Explorer** window.

Tips

- You can use the **Attribute Viewer** to view a symbol's user properties and parameters. These properties include the dimensions of the symbol and other items. To open the **Attribute Viewer**, double-click a symbol. You can also select a symbol and then click the **Symbol Explorer** button on the **Main** toolbar.

  In the **Attribute Viewer,** the user properties appear in plain text. The parameters appear in bold text. You cannot edit the names of the parameters in the **Name** column. To change the values, click in the **Value** column, type the information that you want, and press Enter.
- If the **Symbol Explorer** window is open, you can display or hide the **Attribute Viewer.** To display or hide the viewer, point to a toolbar at the top of the document window and right-click. On the shortcut menu, select or clear the **Attribute Viewer** command.
- You can drag the splitter bar between the **Symbol Explorer** and the **Attribute Viewer** to display or hide the viewer.
- You can edit the parameters of a parametric symbol to automatically change the dimensions of the symbol.

{button Related Topics,AL("av high;attribute cmd;symbol explorer high;scale symbol how",0,`NOT_FOUND')}

Setting AutoSave Options

Tip You must install the **AutoSave** add-in with the **Add-Ins** command on the **Tools** menu before you set AutoSave options.

1. Click **Tools > AutoSave**.
2. Select the options you want from the **AutoSave** dialog box.
3. Click **OK**.

{button Related Topics,AL("autosave high;autosave cmd;autosave db",0,`NOT_FOUND')}

Set Bearing and Azimuth

1 On the **Main** toolbar, click the **Bearing and Azimuth** button.

Tip The **Bearing and Azimuth** command is available only if you use the **Customize** command to place it on a toolbar or menu.

2 Click **Default**,**Bearing**, or **Azimuth** to select the orientation for the drawing or element.

3 When you select **Azimuth**, you can change the current settings of **Base Bearing** and **Direction**.

{button Related Topics,AL("bearing azimuth high;bearing azimuth cmd;set bearing dialog ",0,`NOT_FOUND')}

View a Web Page with the Symbol Explorer

1 On the **Main** toolbar, click the **Symbol Explorer** button. The **Symbol Explorer** opens on the right of the main window.

2 At the top of the **Symbol Explorer**, in the **Address Box**, type the name of the HTTP address and press **Enter**. For example, you could type the following: http://www.ingr.com. The World Wide Web page appears inside the **Symbol Explorer**.

Tip If you cannot see the entire Web page, you can double-click the bar at the top of the **Symbol Explorer** to undock it. You can then resize the **Symbol Explorer** window so that you can see the entire page.

Tips

- You can use many of the same tools to view web pages that are available in the Windows Internet Explorer. For example, if you click the **Back** button at the top of the **Symbol Explorer**, the **Symbol Explorer** returns to the previous page.
- If you open or create a document while the **Symbol Explorer** is open, you must click the **Home** button to display the symbols directory associated with the current document.

{button Related Topics,AL("Symbol Explorer db;Symbol Explorer cmd;Symbol Explorer high",0,`NOT_FOUND')}

View Documents with the Symbol Explorer

1 On the **Main** toolbar, click the **Symbol Explorer** button. The **Symbol Explorer** opens on the right of the main window.

2 At the top of the **Symbol Explorer**, in the **Address Box**, type the name of the directory to go to and press **Enter**. For example, you could type the following: **C:\DRAWING FILES.**

Note You can also change the directory by clicking the **Browse** button at the top of the **Symbol Explorer** to display the **Modify Location** dialog box. You can then enter another directory for the **Symbol Explorer** to look in.

Tips

- You can filter the view of documents in the **Symbol Explorer.** If you want to view just one type of document, such as symbols, pause the pointer in the **Symbol Explorer** window and right-click. On the shortcut menu, click **View,** and then **File Type.**
- If you double-click a document in the **Symbol Explorer**, the software that created the document opens and displays the document. For example, if you double-click the **SYMBOL.sym** document, the software opens and displays the **SYMBOL.sym** document. Or, if you double-click a document with an .htm extension, the Microsoft Internet Explorer opens.
- If you open or create a document while the **Symbol Explorer** is open, you must click the **Home** button to display the symbols directory associated with the current document.
- You can filter the view in the **Symbol Explorer** window to display only certain types of documents, such as MicroStation, AutoCAD, or other types. You can click the **View File Type** command on the shortcut menu in the **Symbol Explorer** window.

  For example, to display only AutoCAD documents, you can select the AutoCAD option for .dwg documents. When you set this option, the **Symbol Explorer** window displays only .dwg documents.
- If you set the path of the **Symbol Explorer** to a directory, you can see a tree view, a shell view, and the **Attribute Viewer.** If you set the path to an HTML page, you can see the symbols of that page in the style of the Microsoft Internet Explorer 4.01 or earlier, if that version is installed. If Microsoft Internet Explorer is not installed, the software prompts you to install it.

{button Related Topics,AL("Symbol Explorer db;Symbol Explorer cm;Symbol Explorer high;view file type cmd",0,`NOT_FOUND')}

Close the Symbol Explorer

- On the **Main** toolbar, click the **Symbol Explorer** button.

Tips

- You can also close the **Symbol Explorer** by clicking the **Toolbars** command on the **View** menu. On the **Toolbars** dialog box, you should clear the **Symbol Explorer** check box.

{button Related Topics,AL("Symbol Explorer db;Symbol Explorer cm;Symbol Explorer high",0,`NOT_FOUND')}

Open Documents from the Symbol Explorer

1 On the **Main** toolbar, click the **Symbol Explorer** button. The **Symbol Explorer** opens on the right side of the main window.

2 At the top of the **Symbol Explorer**, in the **Address Box**, type the name of the directory that you want to go to and press **Enter**. For example, you could type the following: **C:\PROGRAM FILES\DRAWINGS\.**

Note You can also change the directory by clicking the **Browse** button at the top of the **Symbol Explorer** to display the **Modify Location** dialog box. You can then enter another directory for the **Symbol Explorer** to look in.

3 Double-click a document in the **Symbol Explorer**. The software that created the document opens and displays the document. For example, if you double-click on the SYMBOL.sym document, the software opens and displays the SYMBOL.sym document. Or, if you double-click a document with an .htm extension, the Microsoft Internet Explorer opens.

Tips

- If you double-click on a directory in the **Symbol Explorer**, a separate window for the **Windows Explorer** opens. You must click the **Browse** button to select a new directory for the **Symbol Explorer**.
- You can drag any document that supports OLE 2.0 from the **Symbol Explorer** to the drawing sheet.
- If you set the path of the **Symbol Explorer** to a directory, you can see a tree view, a shell view, and the **Attribute Viewer.** If you set the path to an HTML page, you can see the symbols of that page in the style of the Microsoft Internet Explorer 4.01 or earlier, if that version is installed. If Microsoft Internet Explorer is not installed, then the software prompts you to install it.

{button Related Topics,AL("Symbol Explorer db;Symbol Explorer cm;Symbol Explorer high",0,`NOT_FOUND')}

Set the Home Page for the Symbol Explorer

1. Click **File > Properties**.
2. On the **Behavior** tab of the **Properties** dialog box, type the HTTP address of the home page that you want for the **Symbol Explorer**. In the **Symbol Explorer**, when you click the **Home** button, the **Symbol Explorer** displays the Web page for the address that you typed.

   Note The address that you enter on the **Behavior** tab of the **Properties** dialog box is saved with the current template and document.

Tips

- You can also set the home page while the **Symbol Explorer** is open. In the **Symbol Explorer** window, right-click and, on the shortcut menu, select the **Set Document Home** command.
- If you do not set the home page for the **Symbol Explorer**, the **Symbol Explorer** displays the symbol directory that is associated with the template that the active document is based on.
- If you open or create a document while the **Symbol Explorer** is open, you must click the **Home** button to display the symbols directory associated with the current document.
- If you want to set the **Symbol Explorer** to always look at symbols on your computer, you can type the following syntax in the Address box: <application.path>\..\<path of symbols. For example, you could enter <application.path>\..\symbols\arch.htm.

{button Related Topics,AL("Symbol Explorer db;Symbol Explorer cmd;Symbol Explorer high;file properties db;file properties cmd;set document home cmd",0,`NOT_FOUND')}

Move the Symbol Explorer

1 On the **Main** toolbar, click the **Symbol Explorer** button. The **Symbol Explorer** opens on the right of the main window.

2 Double-click the bar at the top of the **Symbol Explorer** to display it as a separate window from the main window. You can now drag the **Symbol Explorer** and relocate it. You can also resize the **Symbol Explorer** window.

Tips

- If the **Symbol Explorer** is displayed as a separate window from the main window, double-click the bar at the top to make it part of the main window again. You can dock the **Symbol Explorer** at any place in the window.
- If you resize the **Symbol Explorer** and the double-click it to make it part of the main window, the **Symbol Explorer** size remains the same.

{button Related Topics,AL("Symbol Explorer db;Symbol Explorer cmd;Symbol Explorer high",0,`NOT_FOUND')}

Show a List of Favorites in the Symbol Explorer

1 On the **Main** toolbar, click the **Symbol Explorer** button. The **Symbol Explorer** appears on the right of the main window.

3 In the **Symbol Explorer** window, on the shortcut menu, click the **Show Favorites** command. A bar appears at the top of the bottom pane. You can click one of these bars to go to a favorite document or directory.

{button Related Topics,AL("Symbol explorer cmd;show favorites cmd",0,`NOT_FOUND')}

Add to the Favorites List in the Symbol Explorer

1 On the **Main** toolbar, click the **Symbol Explorer** button. The **Symbol Explorer** opens on the right of the main window.

2 In the **Symbol Explorer** window, select the directory or document that you want to add to a list of favorites.

3 In the **Symbol Explorer** window, right-click and then click the **Add To Favorites** command.

A bar appears at the top of the bottom pane. You can click this bar to go to a favorite document or directory.

{button Related Topics,AL("Symbol explorer cmd;add favorites cmd",0,`NOT_FOUND')}

Delete From a List of Favorites in the Symbol Explorer

1 On the **Main** toolbar, click the **Symbol Explorer** button. The **Symbol Explorer** opens on the right of the main window.

2 In the **Symbol Explorer** window, select the bar in the bottom pane that you want to delete.

Tip You can also select a favorite directory, HTML page, or file in the **Symbol Explorer** window.

3 Right-click, and, then on the shortcut menu, click the **Delete Favorite** command.

{button Related Topics,AL("Symbol explorer cmd;delete favorite cmd",0,`NOT_FOUND')}

Place a Connector

1. On the **Draw** toolbar, click the **Connector** button.

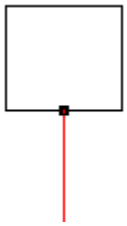
2. Click to begin drawing the connector or move the pointer over the element to highlight the potential key points or connect points.

   The connect points appear as red circles with Xs. The keypoints appear as gray circles with Xs. The active point along the element is a filled red circle. You can connect to any point on the element.

   Tip If you press the **Alt** key while drawing a connector, the connector attaches to a connect point at any angle.

3. After you select a starting point, the direction in which you move from that point determines the angle at which the connector is drawn.

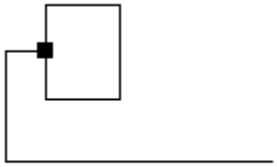
   The following picture shows that the pointer has been moved away from the initial point in a downward direction.



Tips

- You can generate two or more line segments with each click. When the pointer crosses the current line segment, the software automatically generates another segment.

  The following graphic shows a connector with three line segments although you clicked only once.



- To switch between drawing horizontal and vertical line segments or drawing diagonal line segments, click **Diagonal Mode (Alt)**.
- If the element itself is rotated, the takeoff angle is adjusted appropriately so that the connector is perpendicular to the element.
- If you are connecting to a symbol, the connect point may have a pre-defined angle to which the connector must connect.

To create a connector path

- After you select a point to move from, you can click points to force a connector to go to a certain path.

To end the connector

You can end a connector in the following ways:

- After you place one or more connector line segments, right click to end the connector.
- To attach the connector to another element, move the pointer over the element to display the potential connect points. However, you can connect to any point on the element.

  When the point closest to the pointer is highlighted, you can click to define the end of the connector. The pointer snaps to connect points.

Tips

- The software calculates the angle for the ending the connection point, based on how you approach the element.
- If the calculated angle is not correct when you move the pointer away from the point, you can move the pointer back over the point and try again.
- As you drag connected elements or symbols, the connections are maintained.

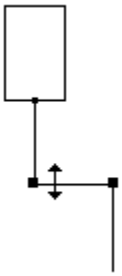
{button Related Topics,AL("connector command;connector rb;connect points high;connect points how;place connector how ",0,`NOT_FOUND')}

Modify a Connector

To modify a connector, select the connector, using the **Select Tool.** You can then change the connector in several ways.

To move a line segment

To move a line segment, first move the pointer over a horizontal line segment or a vertical line segment. Then click the segment and drag it to the location you want.



To insert a vertex

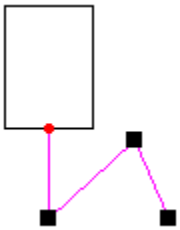
To insert a vertex, first click the **Diagonal Mode (Alt)** button on the ribbon bar, or press the **Alt** key.

Move the pointer over a horizontal line segment or a vertical line segment to which you want to add the vertex, and drag the segment to a new location.

The pointer changes to a directional arrow.

As you drag the segment, the software inserts a vertex.

In the following graphic a vertex has been inserted in a horizontal line segment.



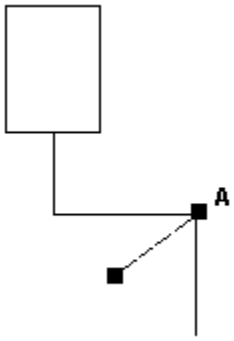
To move a vertex

To move a vertex, move the pointer over the vertex. Then drag the vertex to move it.

Tips

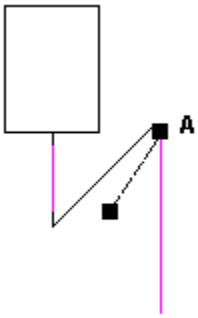
When Diagonal mode is not active, you can move the vertex only in a horizontal or vertical direction.

The following graphic shows that moving the vertex (A) results in line segments that are horizontal or vertical.



When Diagonal mode is active, you can move the vertex in any direction. This action means that connector line segments are not limited to horizontal or vertical orientation.

The following graphic shows that moving the vertex (A) results in line segments that are no longer horizontal or vertical.



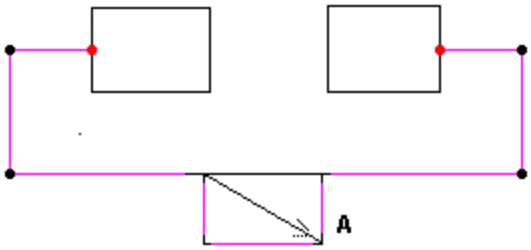
To insert a line segment

- To insert a line segment into the connector, click the **Insert Segment Mode (Shift)** button on the ribbon bar, or press the **Shift** key.

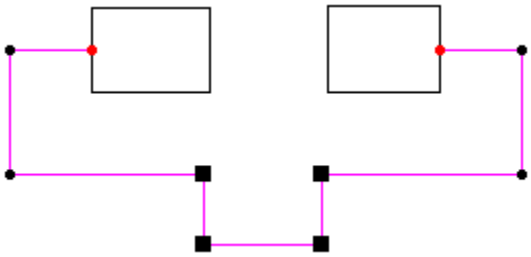
  The pointer changes to a directional arrow when the command is in Insert Segment mode, and the pointer is positioned over a connector segment.

- Drag the pointer diagonally to define the shape of the segment.

  The following graphic shows the connector dynamics display as you drag the pointer (A).



When you release the drag, the segment is inserted as part of the connector.



To move an element with a connector

- To move an element that is connected, select the element with the connector and move it.

  The connector moves with the element.

  Tip To find out how to move an element, click the **Related Topics** button.

To modify end points

You modify end points to move a connector from one connect point to another or to move a connector point to another location.

- To move a connector, first select the connector. Then click the connector and drag it to a connect point or another location.

  Tip After you connect a point, you can drag it to another connect point.

{button Related Topics,AL("connector command;connector rb;connect points high;connect points how;move element how;place connector how ",0,`NOT_FOUND')}

Format a Connector

To format a connector

1 Select a connector.

2 On the **Connector** ribbon bar, set the options you want.

Tips

- On the shortcut menu, click **Properties**. Then, on the **Element Properties** dialog box, set the options you want.
- You can also format a connector before you attach it by setting options on the ribbon bar.
- Changing the current style settings on the ribbon bar or **Properties** dialog box overrides the line style formats.
- To change a line style, click the **Style** list on the ribbon bar, and select a style.
- To change clearance, type a value in the **Clearance** box on the ribbon bar.

{button Related Topics,AL("connect high;connector command;connector rb ",0,`NOT_FOUND')}

Format a Fill

1 Select a fill.

2 On the **Fill** ribbon bar, click the settings that you want to update the fill.

Tips

- You can format a fill before you place it by setting options on the ribbon bar or the **Properties** command on the **Edit** menu.
- You can apply several formats at once by clicking a new fill style in the **Style** list box on the ribbon bar.
- You cannot modify an existing fill style, but you can create a new fill style by typing a new name in the **Style** list box on the **Fill** ribbon bar. The new style uses the settings on the ribbon bar as the formats for the style.
- If you want to copy a fill style from document to another, just create a fill, apply a style, and then copy the fill to a new document. The fill style appears in a dropdown list on the **Fill** ribbon bar in the new document.
- The blank color on the **Fill** ribbon bar takes on the background color of the document. This is useful for creating symbols that can cover an element on which the symbol is placed. Incorporating a fill with blank color into the symbol allows the symbol, when placed, to mask out elements such as lines or connectors that intersect the symbol.

{button Related Topics,AL("fill cmd;style cmd;element properties cmd;formatting elements high",0,`NOT_FOUND')}

Format a Geometric Element

1 Select a geometric element, such as a line, arc, or circle.

2 Do one of the following:

- On the ribbon bar, set the options you want.
- On the shortcut menu, click **Properties**. Then, on the **Element Properties** dialog box, set the options you want.

Tips

- You can also format an element before you draw it by clicking the **Line/Arc Continuous** command on the **Format** menu or by setting options on the ribbon bar.
- Changing the current style settings on the ribbon bar or **Properties** dialog box overrides the line style formats.
- You can change the definition of a line style with the **Style** dialog box.

{button Related Topics,AL("line cmd format menu;style cmd;element properties cmd;formatting elements high;line properties db",0,`NOT_FOUND')}

Draw a Flowchart

1. Click **File > New.**
2. Select one of the **Technical Drawing** templates in the **General Diagramming** category on which to base your new document.
3. On the **Draw** toolbar, click the **Line/Arc Continuous** button.

4. On the **Line** ribbon bar, in the **Style** box, click the special style that you want to create lines with arrows. These styles include **Flow Arrow, Open Flow Arrow,** and **Bi-directional Flow Arrow.**
5. On the **Main** toolbar, click the **Symbol Explorer** button.

6. In the **Symbol Explorer,** drag symbols that you want to use to create your flowchart.

{button Related Topics,AL("flowchart high;line cmd;symbol cmd",0,`NOT_FOUND')}

Format a Text Box

1 Select a text box.

2 Do one of the following:

- On the ribbon bar, set the options you want. To apply several formats at once, click a style on the ribbon bar.
- On the shortcut menu, click **Properties**. Then, on the **Text Box Properties** dialog box, set the options you want.

Tips

- You can format a text box before you place it by using the **Text Box** command on the **Format** menu or by setting options on the ribbon bar.
- To format a group of text boxes quickly and easily, select several text boxes and apply a text style by clicking a style on the ribbon bar. You can modify a text style with the Style command on the Format menu.
- If you apply a text style, you can override the formats of the style by setting options on the ribbon bar or **Text Box Properties** dialog box.
- To apply a border to a text box, you click an option on the ribbon bar. To change the settings for the border, you must select the text and then set options with the **Properties** command on the shortcut menu.

{button Related Topics,AL("text db;text high;text cmd format menu;element properties cmd;formatting elements;test properties db;test rb",0,`NOT_FOUND')}

Add Your Own Tutorials

1 Create a text file called ADDTUTOR.TXT in one of the following formats:

- The following format adds a root level topic:

  root:K::Additional Tutorials:1:

  root 'Identifies this as a root level topic.
  : 'A delimiter.
  K 'Identifies the directory of the additional tutorial relative to the tutorials directory in the software.
  : 'A delimiter.
  : 'A delimiter.
  Additional Tutorials - The topic title that is displayed.
  : 'A delimiter.
  1 'Represents a Book icon.
  : 'A delimiter.

- The following format adds a sub-root level topic.

  subroot:K:K:Creating a Schematic drawing:5:Full

  subroot - Identifies this as a subroot level topic.
  : 'A delimiter.
  K 'Identifies this topic as a relative topic to the root topic.
  : 'A delimiter.
  K 'Identifies the directory of the additional tutorial relative to the tutorials directory in the software.
  : 'A delimiter.
  Creating a Schematic drawing 'The topic title that is displayed.
  : 'A delimiter.
  5 'Represents a Page icon.
  Full 'Identifies the use of an AVI for the Show Me button and also indicates to play entire movie.

- The following format adds a root level topic.

  sub:K:K:First step:5:0;19

  sub 'Identifies this as a sub level topic.
  : 'A delimiter.
  K 'Identifies this topic as a relative topic to the subroot topic.
  : 'A delimiter.
  K 'Identifies the directory of the additional tutorial relative to the tutorials directory in the software.
  : 'A delimiter.
  First step 'The topic title that is displayed.
  : 'A delimiter.
  5 'Represents a Page icon.
  0;19 'Identifies the use of an AVI for the Show Me button and also indicates to play entire movie.

{button Related Topics,AL("help high;adding tutorials high",0,`NOT_FOUND')}

Insert a Hyperlink

1. On the **Main** toolbar, click the **Hyperlink** button.

   Tip You can also select this command from the **Insert** menu. You can press the E**s**c key on the keyboard to stop the command. For more information about the command, you can read the software prompts in the lower left of the window.

2. Click the object or element to insert a hyperlink.
3. On the **Enter Link Source** dialog box, in the box, type the address () or file path (file:D:\…).

   Tip You can also link to files on the intranet or your computer. For example, you can type the following path: D:\MYFILE.htm.

4. Click the **Apply** button to create the link.

Tips

- You cannot add hyperlinks to dimensions, elements contained in nested symbols, or fills.
- You can add up to five hyperlinks, URL addresses, or file paths to an element or object. If you add more than one hyperlink, you must choose a link as the default.
- If the hyperlink points to a SmartSketch document, then SmartSketch opens the document. The browser opens all other documents.

{button Related Topics,AL("hyperlink high;hyperlink cmd;edit hyperlink how",0,`NOT_FOUND')}

Edit a Hyperlink

1. On the **Main** toolbar, click the **Hyperlink** button.

   Tip You can also select this command from the **Insert** menu. You can press the **Esc** key on the keyboard to stop the command.

2. Pause the pointer over the object or element with a hyperlink.

   Tip The pointer changes to a hand icon if a hyperlink exists.

3. On the shortcut menu, click **Edit Link**.

   Tip Right-click to display the shortcut menu. On the shortcut menu, you can also use the **Add Link, Remove Link,** and **Follow Link** commands to modify the hyperlink.

4. On the **Select Link To Edit** dialog box, click the hyperlink to edit.
5. Click **Edit**.
6. On the **Enter Link Source** dialog box, type your changes to the hyperlink.
7. Click **Apply**.

{button Related Topics,AL("hyperlink high;hyperlink cmd;edit hyperlink cmd",0,`NOT_FOUND')}

Delete a Hyperlink

1. On the **Main** toolbar, click the **Hyperlink** button.

   Tip You can also select this command from the **Insert** menu. You can press the **Esc** key on the keyboard to stop the command.
2. Pause the pointer over the object or element with a hyperlink.

   Tip The pointer changes to a hand icon if a hyperlink exists.
3. On the shortcut menu, click **Remove Link**.
4. On the **Select Link To Remove** dialog box, click the hyperlink that you want to remove.
5. Click **Remove**.

{button Related Topics,AL("hyperlink high;hyperlink cmd;remove hyperlink cmd",0,`NOT_FOUND')}

Follow a Hyperlink

1. On the **Main** toolbar, click the **Hyperlink** button.

   Tip You can also select this command from the **Insert** menu. You can press the **Esc** key on the keyboard to stop the command.

2. Pause the pointer over the object or element with a hyperlink.

   Tip The pointer changes to a hand icon if a hyperlink exists. You can also click **Show Links** on the shortcut menu. All the elements or objects with hyperlinks highlight.

3. On the shortcut menu, click **Follow Link**.

   Tip To see the shortcut menu, right-click as you highlight the element or object. This action displays other commands in addition to **Follow Link,** such as **Add Link, Edit Link,** and **Remove Link.**

4. Click the hyperlink that you want to follow.

Tips

- You can also click the element to follow the hyperlink, without accessing the command on the shortcut menu.
- If the hyperlink points to a SmartSketch document, then SmartSketch opens the document. The browser opens all other documents.

{button Related Topics,AL("hyperlink high;hyperlink cmd;follow hyperlink cmd;show hyperlink cmd",0,`NOT_FOUND')}

Draw an Isometric Circle

Tip To access this command, you must place the command on a toolbar or menu with the **Customize** command on the **Tools** menu. On the **Toolbars** tab of the **Customize** dialog box, click the **Draw** category.

How?

1. Click the **Isometric Circle** button.
2. Click a point to define the center point of the isometric circle.
3. Click a second point to complete the circle.

   Caution You cannot drag the pointer to draw the circle.

Tips

- You can set the plane on which to place the circle by setting options on the ribbon bar.

{button Related Topics,AL("iso high;iso circle cmd;iso circle rib",0,`NOT_FOUND')}

Draw an Isometric Line

Tip To access this command, you must place it on a toolbar or menu with the **Customize** command on the **Tools** menu. On the **Toolbars** tab of the **Customize** dialog box, click the **Draw** category.

How?

1 Click the **Isometric Line** button.

2 Click a point to start the line.

3 Click a point to complete the line.

Caution You cannot drag the pointer to draw the line.

Tips

You can set the angle for placing the line by setting options on the ribbon bar.

{button Related Topics,AL("iso line cmd;iso high;iso line rib",0,`NOT_FOUND')}

Draw an Isometric Rectangle

Tip To access this command, you must place it on a toolbar or menu with the **Customize** command on the **Tools** menu. On the **Toolbars** tab of the **Customize** dialog box, click the **Draw** category.

How?

1. Click the **Isometric Rectangle** button.

   Caution To confirm that the isometric rectangle consists of lines that remain connected when you move them, turn on the **Maintain Relationships** option on the **Tools** menu. If this option is not on, the **Isometric Rectangle** button creates a rectangle composed of four separate lines that do not stay connected when you move each line.
2. Click a point to start defining the rectangle base.
3. Click a second point to complete the rectangle base.
4. Click a third point to complete the rectangle.

   Caution You cannot drag the pointer to draw the rectangle.

Tips

To set the plane on which to place the rectangle, you can set options on the ribbon bar.

{button Related Topics,AL("iso high;iso rectangle cmd;iso rectangle rib",0,`NOT_FOUND')}

Move a Label

- If a text label or Smart Label is associated with an element or object, drag the element or object. The label moves with the element or object.
- If a label is not associated with an element or object, drag the label.

{button Related Topics,AL("labels high",0,`NOT_FOUND')}

Place a Smart Label

1 On the **Main** toolbar, click the **Symbol Explorer** button.

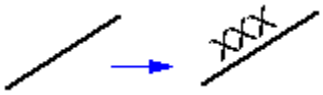
2 Browse to the directory.

3 Drag the Smart Label into the document. If you place the Smart Label near an element in the document, the Smart Label is associated with that element.

{button Related Topics,AL("labels high",0,`NOT_FOUND')}

Create a Text Label

1. Double-click an element or object. A small, blinking pointer appears below the element or object. For a closed element, the pointer appears in the center of that element
2. Type the text in the label.
3. Click outside the label to complete it. The text label rotates to align with the element or object to which it is associated.



Tips

- You can edit a text label like a text box.

{button Related Topics,AL("labels high",0,`NOT_FOUND')}

Make a Label Non-Associative

1 Select a text label or Smart Label that is associated with an element or object.

2 Right-click and select **Drop Association**. The label now moves independently of the element or object to which it was attached.

{button Related Topics,AL("labels high",0,`NOT_FOUND')}

Edit a Text Label

1. Double-click the label.
2. Type the text in the label.
3. Click a point outside the label to complete the operation. The text label rotates to align with the element or object to which it is associated.

Tips

- You can format a text label like a text box. Select the label and right-click. On the shortcut menu, click the **Edit Text Properties** command.

{button Related Topics,AL("labels high",0,`NOT_FOUND')}

Edit a Smart Label

1 Double-click an element or object.

2 In the **Attribute Viewer,** type the values that you want for the label.

Tips

- You can edit the properties or parameters of a Smart Label.
- You can also edit the properties of the elements or text in the Smart Label. Select the Smart Label and then click **Edit Graphic Properties** or **Edit Text Properties** on the shortcut menu.
- If you place a symbol with a Smart Label in a document, you cannot select or open the Smart Label to edit it like most symbols. You must create a new Smart Label.

{button Related Topics,AL("labels high;edit graphic properties cmd;edit text properties cmd",0,`NOT_FOUND')}

Move Sheet Border

1 Click **File > Move Sheet Border.**

2 Specify the options to move, scale, and select the paper size for the sheet.

Tips

- To access the **Move Sheet Border** dialog box, right-click in the active working sheet.
- When you open a foreign data file and the software creates the graphic objects relative to their original X, Y positions, the objects often position off the existing sheet.
- Your changes to the sheet scale and size appear in the **Sheet Setup** dialog box.
- When you click the settings that you want on the **Move Sheet Border** dialog box, you can click the **Apply** button to preview your settings. When you click the **Apply** button, the settings apply to the active sheet. However, the settings are not final until you click the **OK** button.

{button Related Topics,AL("drawing sheets high",0,`NOT_FOUND')}

Print Several Documents Simultaneously

Caution The command line that you type to print several documents simultaneously uses the options that you set in the software, except for printer selection and the number of copies. Before you begin, review the options on the **Print** dialog box. On that dialog box, click the **Settings** button to review the options on the **Settings** dialog box.

1. On the **Windows Taskbar,** in the **Programs** menu, click **MS-DOS Prompt**.
2. In the DOS Window, type a command line with the following syntax:

   smartsketch.exe<space>-p<space>-q<space><printer path><space>-c<space><integer for number of copies><space><document path><space><document path><space><document path, and so forth>

   Example smartsketch.exe –p –q \\print1\laserjet –c 2 "c:\temp\first file.igr" c:\temp\second_file.igr

   Tip Spaces separate the document paths. If the filename contains a space, you must use double quotes.
3. Press **Enter** to print the documents.

Tips

- You can use the command line locally or remotely when the Windows NT Server Resource Kit is installed. You can print from local and network printers and plotters.
- You can also print multiple documents with an asterisk (*) in the file name as a wildcard.
- The software is compatible with AIM—PWV (Asset and Information Management—Print Without View).

{button Related Topics,AL("print high",0,`NOT_FOUND')}

Display the Relationship Toolbar

- On the **Relationship** toolbar, click **Main > Relationships**.

{button Related Topics,AL("relationship cmd ",0,`NOT_FOUND')}

Edit Symbol Properties

1. Click a symbol in a drawing.
2. Click **Edit > Properties**.
3. On the **Properties** dialog box, set the options you want to use.

Tips

You can use the **Attribute Viewer** to view user properties and parameters of a symbol. These properties include the dimensions and other items. To open the **Attribute Viewer**, double-click a symbol. You can also select a symbol and then click the **Symbol Explorer** button on the **Main** toolbar.

In the **Attribute Viewer,** the user properties appear in plain text. The parameters appear in bold text. You cannot edit the names of the parameters in the **Name** column. To change the values, click the **Value** column, type the information that you want, and press **Enter.**

{button Related Topics,AL("editing symbols high;symbols cmd;element properties cmd;av high",0,`NOT_FOUND')}

Manipulate a Symbol

1 Click a symbol in the document.

2 Use any element manipulation command like **Move**, **Copy**, or **Scale** to manipulate the symbol in the drawing.

Tips

- You can edit a symbol by selecting the symbol and clicking **Open** on the shortcut menu.
- You can manipulate only the symbol, not its individual elements. You can convert the symbol to individual elements on the drawing sheet by selecting the symbol and clicking the **Convert** command on the shortcut menu.
- You can change the size of a symbol by selecting the symbol and then dragging one of the handles.

  Note If you cannot scale the symbol with this procedure, select the symbol and click the **Properties** command on the shortcut menu. Then, on the **Behavior** tab of the **Symbol Properties** dialog box, clear the **Lock Scale** option.

{button Related Topics,AL("manipulating symbols high;symbol handles high;symbols cmd",0,`NOT_FOUND')}

Mirror a Symbol

1. Select a symbol in the document.
2. Click the mirror handle that appears as a green plus sign at the top right of the symbol's range box.
3. Drag the mirror handle in the direction that you want to mirror the symbol.
   {mci_left NOMENU,MIRRORSYM1.AVI}

{button Related Topics,AL("mirroring symbols high;symbols cmd",0,`NOT_FOUND')}

Scale a Symbol

1. Click a symbol in the document.
2. Drag one of the scale handles that appears as a black box on each corner of the symbol range box.

{mci_left NOMENU,SCALESYM1.AVI}

Tips

- You can scale a part of a parametric symbol. Drag one of the standard parameter handles. These handles appear as black boxes in the middle of each side of the symbol range box. Note that only one dimension of the symbol changes. For example, if you click the lower parametric handle on a box, only the height changes, not the width.

{mci_left NOMENU,PARASYM1.AVI}

- You can also change the size of a parametric symbol by selecting it and changing the values in the **Attribute Viewer.**
- You can also change the size of a parametric symbol by selecting it and right-clicking. On the **Parametrics** tab of the **Symbol Properties** dialog box, enter the value that you want and click the **Apply** button.

{button Related Topics,AL("scaling symbols high;symbols cmd",0,`NOT_FOUND')}

Attach a Connector to a Symbol

1. Open a document.
2. Place a symbol in the document.

How?

3. On the **Draw** toolbar, click the **Connector** button.

4. Click to start the connector.
5. Pass the pointer over the target symbol.

   Tip The connector can attach at keypoints on the symbol or predefined connect points. The connect points appear as red circles with Xs. The keypoints appear as gray circles with Xs.
6. Click the symbol to place the connector.

   Tip The connector attaches to the connect point that is nearest to the point that you clicked. Otherwise, the connector attaches to a keypoint or any point along the elements in the symbol.

   {mci_left NOMENU,CONNPTSYM1.AVI}

Tips

- A connector can attach to a symbol in several different places:
- On a keypoint, represented by gray circles with Xs.
- On a connect point, represented by red circles with Xs.
- Anywhere along an element, such a line or circle, represented by a red dot following the pointer.

{button Related Topics,AL("connectors and symbols high;manipulating symbols high;symbol handles high;symbols cmd;modify connector how;connector cmd",0,`NOT_FOUND')}

Place Copies of a Symbol

1. On the **Main** toolbar, click the **Symbol Explorer** button. The **Symbol Explorer** automatically displays the symbol library associated with the template or document.

Caution For some documents, you need to click the **Home** button in the **Symbol Explorer.** You can edit the **Home** value by clicking the **Browser** tab of the **File Properties** dialog box.

2. In the **Symbol Explorer** window, go to the directory that contains the symbols that you want.
3. Select a symbol while pressing the right mouse button.
4. While pressing the right mouse button, drag the symbol into the document.
5. On the shortcut menu, click **Stamp Here.**
6. Click a point in the document to place the symbol
7. Click another point in the document to place a copy of the symbol. You can click as many points as you want to place multiple copies of the same symbol.

Tips

If you decide that you do not want to place several copies of a symbol, you can click **Place Here** on the shortcut menu. This places one instance of the symbol.

{button Related Topics,AL("placing symbols high;symbols cmd",0,`NOT_FOUND')}

Unlock a Symbol From an Element

1. Select the symbol.
2. Click the green lock handle to unlock the symbol.
3. Drag the symbol away from the element.

{mci_left NOMENU,UNLOCK2.AVI}

Tips

If you want to unlock the symbol from the element, you can select the symbol and click the lock handle to unlock it. You can then move the symbol away from the target element.

At this point, if you want to associate the symbol and target element again, you can click the lock handle again. The symbol stays in the new position, but is now associated to the target element again. If you select another element or command after unlocking the symbol and moving it, you cannot re-establish the association with the target element.

{button Related Topics,AL("symbol handles high",0,`NOT_FOUND')}

Associate a Symbol with an Element

- Drag the symbol to a position near the target element. The symbol automatically aligns itself with the element.

  The symbol is now associated with the element. If you move the element, the symbol moves along the element.

  If you move the symbol, it moves along the element, but not away from it.

  {mci_left NOMENU,UNLOCK1.AVI}

Tips

- If you want to unlock the symbol from the element, you can select the symbol and click the lock handle to unlock it. You can then move the symbol away from the target element.

  {mci_left NOMENU,UNLOCK2.AVI}

  At this point, if you want to associate the symbol and target element again, you can click the lock handle again. The symbol stays in the new position, but is now associated to the target element again. If you select another element or command after unlocking the symbol and moving it, you cannot re-establish the association with the target element.

{button Related Topics,AL("symbol handles high",0,`NOT_FOUND')}

Attach a Symbol to Another Symbol with Drop Points

- Using a drag point, drag a symbol to another symbol. The available drop points appear as red dots.

{mci_left NOMENU,DROPPTSYM1.AVI}

{button Related Topics,AL("symbols high;place symbol how",0,`NOT_FOUND')}

Create a Symbol

1 On the **Draw** toolbar, click the **Create Symbol** button.

2 Select a set of elements on the drawing sheet.

Tip When creating a symbol using different elements, press the **Ctrl** key while choosing elements with the **Select** tool.

3 Click a point on the drawing sheet to define the origin of the symbol.

Caution The **Save As** dialog box automatically appears at this point. You do not need to use the **Save As** command on the **File** menu to open this dialog box.

4 On the **Save As** dialog box, select the directory where you want to save the symbol.

5 Type the name that you want for the symbol. The software saves the document with an .sym extension.

{button Related Topics,AL("creating symbols high;Symbol Explorer high;symbols cmd;create parametric symbol how",0,`NOT_FOUND')}

Place a Symbol

Tip Before you place a symbol, you can set an option to link or embed the symbol with the **Options** command on the **Tools** menu.

1. On the **Main** toolbar, click the **Symbol Explorer** button. The **Symbol Explorer** automatically displays the symbol library associated with the template or document.

Caution For some documents, you might need to click the **Home** button in the **Symbol Explorer.** The **Home** path is stored on the **Browser** tab of the **File Properties** dialog box.

2. In the **Symbol Explorer** window, go to the directory that contains the symbols that you want.
3. Drag the symbol from the **Symbol Explorer** window into the active document.

Tips

- You can filter the view of documents in the **Symbol Explorer.** If you want to view just one type of document, such as symbols, pause the pointer in the **Symbol Explorer** window and right-click. On the shortcut menu, click **View,** then click **File Type.**
- If you use a certain symbol library for many different documents, you can access the library quickly by adding it to your list of favorites in the **Symbol Explorer.** Position the pointer in the **Symbol Explorer** window, right-click, and click the **Add To Favorites** command.
- To place several copies of a symbol, you can click the **Stamp Here** command on the shortcut menu. For more information on how to use this command, click the **Related Topics** button.
- You can also place a symbol by dragging it from the **Windows Explorer.** You can set the default option to link or embed the symbol when you drag it with the **Options** command on the **Tools** menu. You set the option on the **Symbol** tab of the **Options** dialog box.
- If you press **Ctrl** while you drag a symbol, the symbol is embedded. If you press **Ctrl** + **Shift**, the symbol is linked.

Note Pressing the keys overrides the option that you set for dragging symbols on the Options dialog box.

- Sometimes when you place a symbol that contains dimensions in a document, the dimensions are not displayed. This behavior depends on what options were set when the symbol was created. However, if you open the symbol to edit it, the dimensions appear.
- If you open or create a document while the **Symbol Explorer** is open, you must click the **Home** button to display the symbol directory associated with the current document or template.

{button Related Topics,AL("placing symbols high;symbols cmd;place multiple symbols how;manipulating symbols high",0,`NOT_FOUND')}

Edit a Symbol

The way that you edit a symbol depends on if the symbol is linked or embedded. You can determine whether to link or embed the symbol by setting an option with the **Options** command on the **Tools** menu before you place the symbol on the drawing sheet.

To Edit a Symbol Document Directly

1. Click **File > Open.**
2. Select the symbol document that you want to edit. The document has an .sym extension.
3. Edit the symbol.
4. Click **File > Save**.

   Caution You cannot edit the connect points, drag points, handles, or other properties of a symbol directly.

   Tip If you want to quickly edit a symbol, you can open the **Symbol Explorer** and double-click any symbol to for editing.

To Edit an Embedded Symbol

1. Select the symbol.
2. Click **Open** on the shortcut menu.
3. Edit the symbol.
4. Click **File > Update**. The software changes the symbol in the current document.
5. Click **File > Close** to close the symbol document and return to the document that contains the symbol.

   Tip If you change a linked symbol, the software also records those changes in the source document on your computer and the instance of the symbol in the current document.

To Edit Elements in a Symbol

If you want to edit individual elements of a symbol, you must convert the symbol to elements in the current document.

1. Select the symbol on the drawing sheet.
2. On the shortcut menu, click **Convert** to convert the symbol to a group of elements.

   Tip You must insert a symbol at the default scale (1:1) if you want to use the **Convert** command. If you scale the symbol, you cannot convert the symbol to individual elements.
3. On the **Change** toolbar, click the **Ungroup** button to separate the elements so that you can edit them individually. You can now edit the symbol elements just like ones that you created with one of the drawing commands.

Tips

- If a symbol containing a Smart Label is placed into a document, you cannot select the Smart Label and open it to edit it like most symbols. You must create a new Smart Label.

{button Related Topics,AL("editing symbols high;symbols cmd;file properties cmd;convert cmd;ungroup cmd",0,`NOT_FOUND')}

Open a Symbol Library

Before you place a symbol on the drawing sheet, you can set an option to link or embed the symbol with the **Options** command on the **Tools** menu. On the **Options** dialog box, click the **Symbols** tab to set the option.

Before you open a symbol library, you must either have installed the needed symbols or place the CD-ROM for installing the software in the appropriate drive.

1. Click **File > Open.**
2. Select a template or create a document.

   Tip For example, if you want to open a symbol library of architectural symbols, you can click an architectural template to create a document based on that template.
3. On the **Main** toolbar, click the **Symbol Explorer** button. The **Symbol Explorer** automatically displays the symbols library associated with the template.

4. Drag the symbols from the **Symbol Explorer** window into the document.

Tips

- If you open or create a document while the **Symbol Explorer** is open, you must click the **Home** button to display the symbol directory associated with the current document or template.
- You can also use links from a web page to navigate in a symbol library. Sometimes a web page appears depending on the template for the current document.

{button Related Topics,AL("placing symbols high;Symbol Explorer high;Symbol Explorer cmd",0,`NOT_FOUND')}

Rotate a Symbol

1 Select a symbol in the document.

2 On the **Change** toolbar, click the **Rotate** button.

Tips

- You can also rotate a symbol about its center with the appropriate handle. Click the green circle at the right of the range box for the symbol. Drag the rotate handle closer to or further from the center of the range box for the symbol.

{mci_left NOMENU,ROTATESYM1.AVI}

- Select the symbol and press the left or right arrow keys to rotate the symbol in predefined increments. The rotation angle can vary depending on how you created the symbol.

{button Related Topics,AL("rotating symbols high;symbols cmd",0,`NOT_FOUND')}

Draw a Doubleline

1 On the **Draw** toolbar, click the **Place Doubleline** button.

2 Click the point to begin the doubleline.

3 Click the point to end the doubleline. This action defines the length and rotation angle of the doubleline.

4 Do one of the following:

- Right-click to end the doubleline.
- To draw a series of connected doublelines, click the points to end each doubleline segment, and then right-click.

Tip If you close the shape, the command restarts so you begin drawing again.

{mci_left NOMENU,DUBLINE1.AVI}

Tips

- The **Pinpoint** command in conjunction with the **Place Doubleline** command allows you to place the doubleline relative to a known point.
- You can use driven dimensions to determine distances between doubleline elements.
- Instead of clicking to draw the end points, you can type values on the ribbon bar to place precise lines. You can also use a combination of graphic and ribbon bar input.
- You can press the **Esc** key to end a doubleline or a doubleline segment.
- If the **Maintain Relationships** option is set, **SmartSketch** creates relationships between the endpoints of the lines.
- If the **Maintain Relationships** option is set, you can use the Selection tool to select portions of the drawing to be moved while the relationships are maintained.
- When you use the **SmartSketch Point On** option, you can draw a doubleline tangent to two curved elements. First, click the curved element, then move the pointer through the tangent intent zone on the first element. Use **SmartSketch** to establish a tangent relationship to the other element.

Tip If you do not use the tangent intent zone, the line connects to the elements, but is not tangent to them.

- You can use **SmartSketch** to make an end point of a doubleline tangent or perpendicular to the key point or end point of another element.
- You can use the options on the ribbon bar and the commands on the shortcut menu to edit a doubleline.

{button Related Topics,AL("dubline high;dubline cmd;dubline rb;smartsketch high",0,`NOT_FOUND')}

Place a Doubleline Precisely

1 On the **Tools** menu, set the **Pinpoint** option on.

Tip You can click the **Reposition Target** button on the **Pinpoint** toolbar or press **F12** key to change the location of the target point to the current position.

2 On the **Draw** toolbar, click the **Place Doubleline** button.

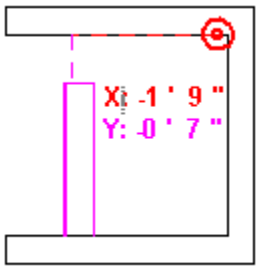
3 Click a point to start the doubleline.

4 Click a point to end the doubleline. This action defines the length and rotation angle of the doubleline.

5 To end the doubleline, right-click.

6 Pause over the doubleline, and press the F12 key to reposition the target point and to precisely determine the starting point of the next doubleline.

7 Place the second doubleline relative to a known point on the first one.



Tips

- You can also press the **F9** key to set **Pinpoint** on or off.
- Instead of clicking to draw the end points, you can type values on the ribbon bar. You can also use a combination of graphic and ribbon bar input.
- You can press the **Esc** key to end a doubleline or a doubleline segment.
- If the **Maintain Relationships** option is set, **SmartSketch** creates relationships between the endpoints of the lines.
- You can use **SmartSketch** to create an end point of a doubleline tangent or perpendicular to the key point or end point of another element.
- You can use the options on the ribbon bar and the commands on the shortcut menu to edit a doubleline.

{button Related Topics,AL("dubline high;dubline cmd;pinpoint high;pinpoint cmd;draw with pinpoint how;dubline rb;doubleline how;smartsketch high",0,`NOT_FOUND')}

Create a Symbol Report

Caution You must have Microsoft® Excel™ 97 or later installed on your computer.

1. Open the **Symbol Explorer.**
2. Drag symbols from one of the following directories into the document:
   - <drive letter>:\PROGRAM FILES\SMARTSKETCH\SYMBOLS\PROCESS\PFD (INTERGRAPH).
   - <drive letter>:\PROGRAM FILES\SMARTSKETCH\SYMBOLS\PROCESS\P&ID (INTERGRAPH).
   - <drive letter>:\PROGRAM FILES\SMARTSKETCH\SYMBOLS\DIAGRAMMING\NETWORK.
3. In the **Symbol Explorer,** browse to one of the following directories, depending on the symbols you placed in the document:
   - <drive letter>:\PROGRAM FILES\SMARTSKETCH\SYMBOLS\PROCESS\PFD (INTERGRAPH)\REPORTS.
   - <drive letter>:\PROGRAM FILES\SMARTSKETCH\SYMBOLS\PROCESS\P&ID (INTERGRAPH)\REPORTS.
   - <drive letter>:\PROGRAM FILES\SMARTSKETCH\SYMBOLS\DIAGRAMMING\NETWORK\REPORTS.
4. Drag a * REPORT.sym document into the document.

   The software prompts you to update the report and, if you click **OK,** the software creates the report automatically.

{button Related Topics,AL("reports high;symbols high;attributes high",0,`NOT_FOUND')}

Update a Symbol Report

Caution You must have Microsoft® Excel™ 97 or later installed on your computer.

Double-click the report to update it.

{button Related Topics,AL("reports high;symbols high;attributes high;create report how",0,`NOT_FOUND')}

Format Part of an Element

Tip To access this command, you must place it on a toolbar or menu with the **Customize** command on the **Tools** menu. On the **Toolbars** tab of the **Customize** dialog box, click the **Draw** category.

How?

1. Click the **Segmented Style** button.
2. On the ribbon bar, click the style or colors that you want to apply to part of an element.
3. Click the element to which you want to apply the style. The format extends to the next element that crosses or bounds the element to which you are applying the line type or color.

Tips

- The **Segmented Style** button does not recognize symbols as a bounding element.
- If you change the size of the element, you must re-apply the line type or color with the **Segmented Style** button.

{button Related Topics,AL("segmented style cmd",0,`NOT_FOUND')}

Install or Remove an Add-In

1 Click **Tools > Add-Ins**.

2 To install an add-in, select the associated check box.

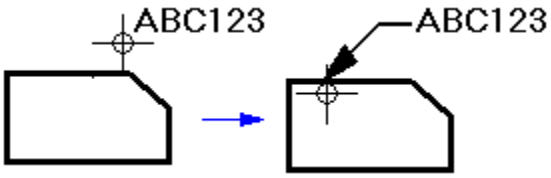
Tip The add-ins you install are active until you remove them.

Tips

- To remove, clear the check box associated with the add-in. The software removes the add-ins the next time you start this application.
- If the add-in you want to install is not listed in the **Add-Ins** dialog box, choose the **Browse** button and locate the drive, directory, and filename for the add-in.

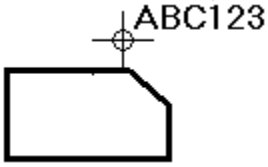
{button Related Topics,AL("add-ins cmd;add-ins overview high",0,`NOT_FOUND')}

Add a Leader

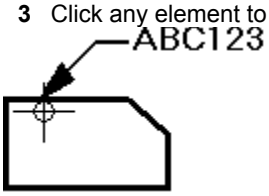


1 Click **Label > Leader**.

2 Click a text box, callout, or another leader to place the annotation end of the leader.



3 Click any element to place the terminator end of the leader, or click in free space.



Tips

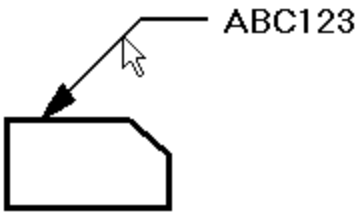
- You can place either end of a leader first.
- After you place one end of the leader, the command only allows you to select an element that is valid for placing the other end of the leader. For example, if you add the annotation end of the leader to a text box, the command then allows you to select only elements that are valid for placing the terminator end of a leader. You could select a circle, but not another text box.
- If you want to add a leader to a balloon, you can set an option on the **Balloon** ribbon bar. To select an existing balloon, you must click the leader of the balloon.

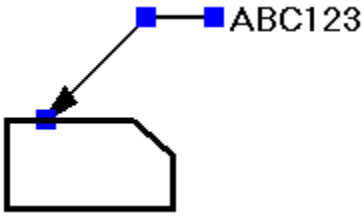
{button Related Topics,AL("add leader cmd;annotations high;add leader rb",0,`NOT_FOUND')}

Move an Annotation

1 Select an annotation to display its handles. As you move the pointer over the parts of the annotation, the cursor changes to show whether you are on a part of the annotation or a handle.

Note To select a balloon, you must click the leader of the balloon. You can move only a balloon with a jog in its leader line.



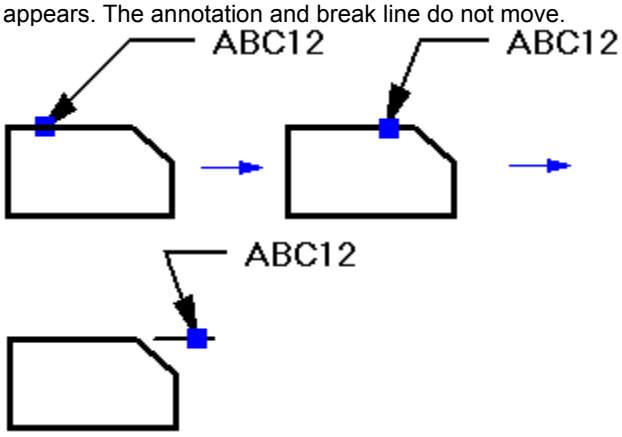


2 Click a handle and drag the leader or annotation to its new location.

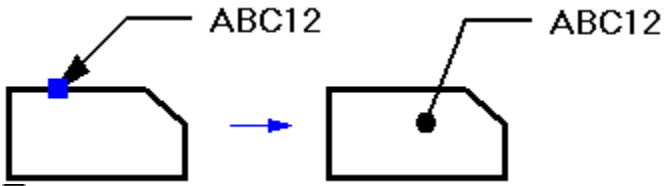
The previous procedure describes the general steps you can use to move an annotation. The following descriptions explain how to move specific parts of an annotation.

To move a terminator

- When a terminator is connected to an element, drag the terminator handle to a new location along the element. If you drag the handle off the end of an open element, such as a line, an extension line automatically appears. The annotation and break line do not move.



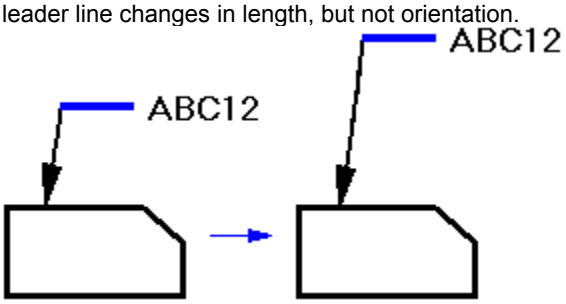
- When a terminator is connected to an element, disconnect the terminator by holding the Alt key while you drag the terminator handle. The terminator type automatically changes to the active setting for a terminator in free space.



- To reconnect a terminator to an element, drag the terminator handle to an element. The terminator type automatically changes to the active setting for a terminator connected to an element.

To move a leader line

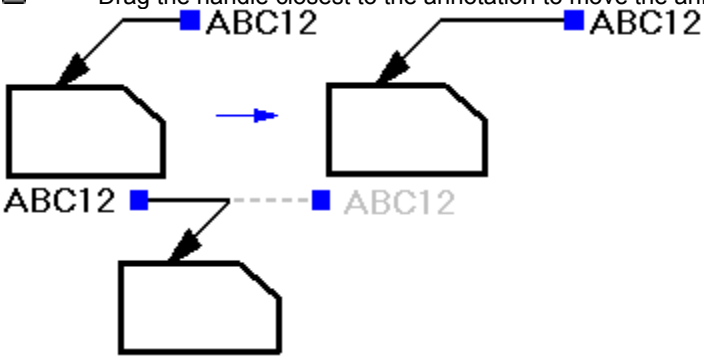
- Click a leader line and then drag the break line of a leader. The break line and annotation move and the leader line changes in length, but not orientation.



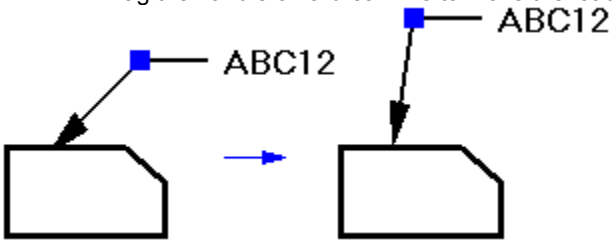
- If a leader was placed with the Leader command, you can move the leader away from the annotation and attach it to another annotation or element. Click the leader line and then drag the handle to the annotation or leader that you want to connect to.

To move a handle

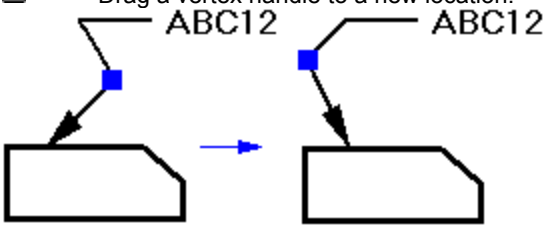
- Click a leader line and do one of the following:
- Drag the handle closest to the annotation to move the annotation.



- Drag the handle on a break line to move the leader line and annotation.

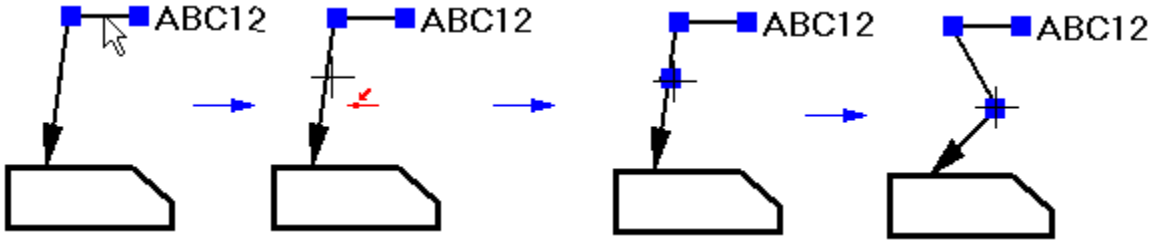


- Drag a vertex handle to a new location.

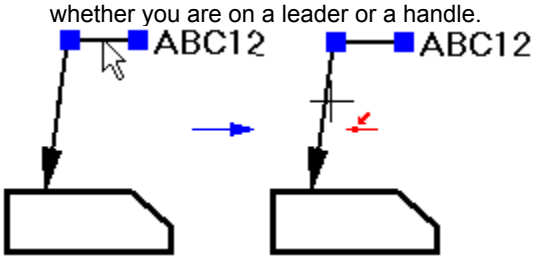


{button Related Topics,AL("annotations high;add leader cmd;add leader rb",0,`NOT_FOUND')}

Insert a Vertex in a Leader

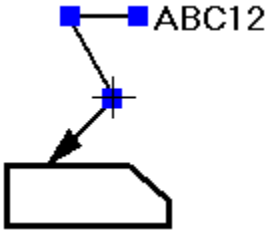


1 Select a leader to display its handles. As you move the pointer over the leader, the cursor changes to show whether you are on a leader or a handle.

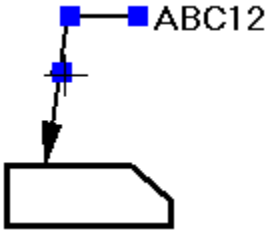


2 Position the pointer over the leader where you want to insert a vertex.

3 Hold the **Alt** key and click.



4 Drag the handle to position the new vertex.



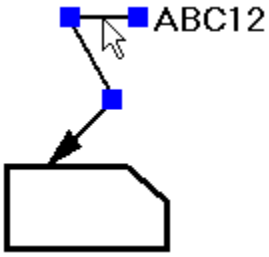
Tips

- You cannot insert a vertex on the horizontal break line of a leader.

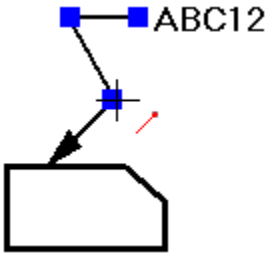
{button Related Topics,AL("annotations high;add leader cmd",0,`NOT_FOUND')}

Delete a Vertex from a Leader

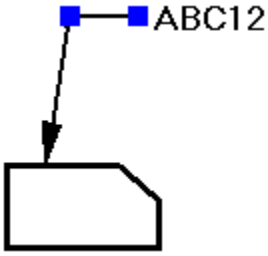
1 Select the leader that has the vertex you want to delete. This displays its handles. As you move the pointer over the leader, the cursor changes to show whether you are on a leader or a handle.



2 Position the pointer over the vertex you want to delete.



3 Hold the **Alt** key and click the handle on the vertex.



{button Related Topics,AL("annotations high;add leader cmd",0,`NOT_FOUND')}

Display the Dimension Toolbar

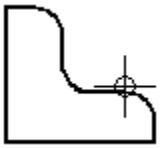
- On the **Main** toolbar, click **Dimension.**

{button Related Topics,AL("annotations high;label cmd",0,`NOT_FOUND')}

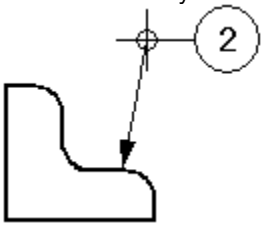
Place a Balloon

1. Click **Label > Balloon**.

2. On the ribbon bar, set the options you want. In the **Balloon Text** box, type the text you want to appear in the balloon.
3. To place a balloon with a leader, click where you want to place the terminator end of the leader. The terminator end can be on an element or a point in free space.



4. Click where you want to place the balloon end of the leader.



Tips

- To place a balloon without a leader, click on an element that you want to attach the balloon to. You can also click a point in free space.

{button Related Topics,AL(`annotations high;balloon cmd;balloon rb;insert vertex how',0,`NOT_FOUND')}

Display or Hide Relationship Handles

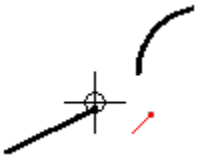
- On the **Relationship** toolbar, click the **Relationship Handles** button.

{button Related Topics,AL("relating elements high;relationship handles cmd;draw high",0,`NOT_FOUND')}

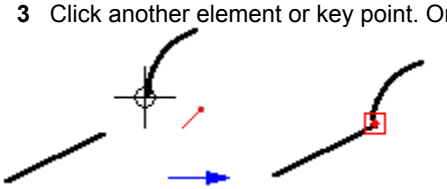
Connect Elements

1 On the **Relationship** toolbar, click the **Connect** button.

2 Click an element at a key point.



3 Click another element or key point. One element moves to connect the elements.



Tips

- The order in which you select the elements might determine which element moves to a new location.

{button Related Topics,AL("relating elements high;connect cmd;relationships high;relationship handles;draw high",0,`NOT_FOUND')}

Make Elements Symmetric About an Axis

1. On the **Relationship** toolbar, click the **Symmetric** button.

2. Click a line that you want to use as a symmetry axis.
3. Click an element.
4. Click another element. The two elements become symmetrical about the axis.

{mci_left NOMENU,CHAN9C.AVI}

Tips

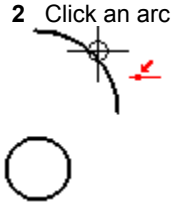
The order in which you select the elements might determine which element moves to a new location.

{button Related Topics,AL("relating elements high;symmetric cmd;relationship handles;relationships high;draw high",0,`NOT_FOUND')}

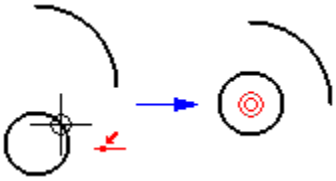
Make Elements Concentric

1 On the **Relationship** toolbar, click the **Concentric** button.

2 Click an arc or circle.



3 Click another arc or circle. One element moves to make the two elements concentric.



Tips

- The order in which you select the elements might determine which element moves to a new location.

{button Related Topics,AL("relating elements high;concentric cmd;relationships high;relationship handles;draw high",0,`NOT_FOUND')}

Maintain Relationships

Click **Tools > Maintain Relationships**.

When **Maintain Relationships** is set and you apply relationships to new or existing elements, the software places relationship handles. on the elements. Elements that share relationships are associative; when you move an element, the other elements on the drawing sheet move according to the relationships they have with the element that you moved. Click the **Related Topics** button for more information about relationships.

{button Related Topics,AL("relating elements high;maintain relationships cmd;draw high;relationship handles high;smartsketch",0,`NOT_FOUND')}

Delete a Relationship

Note If the relationship handles are hidden, click the **Relationship Handles** button on the **Relationship** toolbar to display them.

1 Select a relationship handle.

2 Press the **Delete** key.

Make Elements Parallel

1. On the **Relationship** toolbar, click the **Parallel** button.

2. Click a line.
3. Click another line. One line moves to make the two lines parallel.

{mci_left NOMENU,CHAN7C.AVI}

Tips

- The order in which you select the elements might determine which element moves to a new location.

{button Related Topics,AL("relating elements high;parallel cmd;relationships high;relationship handles;draw high",0,`NOT_FOUND')}

Lock an Element or Key Point

1 On the **Relationship** toolbar, click the **Lock** button.

2 Click an element or key point to lock the element and prevent it from being modified.

{mci_left NOMENU,CHAN4C.AVI}

{button Related Topics,AL("relating elements high;lock cmd;relationship handles;draw high",0,`NOT_FOUND')}

Make Elements Equal

1. On the **Relationship** toolbar, click the **Equal** button.

2. Click an element.
3. Click another element. The elements become equal.

{mci_left NOMENU,CHAN3C.AVI}

Tips

- You can make the following elements equal: two lines, two arcs, two circles, and an arc and a circle.
- You cannot make a line equal to an arc or circle.

{button Related Topics,AL("relating elements high;equal cmd;relationships high;relationship handles;draw high",0,`NOT_FOUND')}

Make Elements or Key Points Horizontal or Vertical

1 On the **Relationship** toolbar, click the **Horizontal/Vertical** button.

2 Do one of the following:

- To make a line horizontal or vertical, click the line.

  {mci_left NOMENU,CHAN5C.AVI}

- To make two key points horizontal or vertical, click a key point, and then click another key point.

  {mci_left NOMENU,CHAN5C_B.AVI}

Tips

- The current orientation of the line determines how it is positioned after you select it. For example, if a line is closer to a horizontal orientation than a vertical orientation, the line becomes horizontal.

{button Related Topics,AL("relating elements high;horizontal/vertical cmd;draw high;relationships high;relationship handles",0,`NOT_FOUND')}

Make Elements Colinear

1. On the **Relationship** toolbar, click the **Colinear** button.

2. Click a line, and then click another line. One line moves to become colinear with the other.

   {mci_left NOMENU,CHAN2C.AVI}

Tips

- The order in which you select the elements might determine which element moves to a new location.

{button Related Topics,AL("relating elements high;colinear cmd;relationships high;relationship handles;draw high",0,`NOT_FOUND')}

Make Elements Perpendicular

1. On the **Relationship** toolbar, click the **Perpendicular** button.

2. Click a line.
3. Click a line, arc, or circle. One line moves to make the two elements perpendicular.

   {mci_left NOMENU,CHAN8C.AVI}

Tips

The order in which you select the elements might determine which element moves to a new location.

{button Related Topics,AL("relating elements high;perpendicular cmd;relationships high;relationship handles;draw high",0,`NOT_FOUND')}

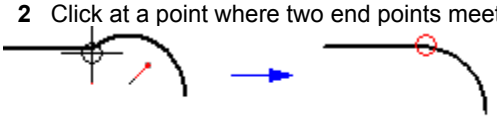
Make Elements Tangent

You can make two elements tangent.

To make elements tangent where their end points meet

1 On the **Relationship** toolbar, click the **Tangent** button.

2 Click at a point where two end points meet. The elements are adjusted to make the two elements tangent.



To make elements tangent that are not connected at an end point

1 On the **Relationship** toolbar, click the **Tangent** button.

2 Click an element.

3 Click another element.

One element moves to make the two elements tangent.

{mci_left NOMENU,CHAN10C.AVI}

Tips

- The order in which you select the elements might determine which element moves to a new location.

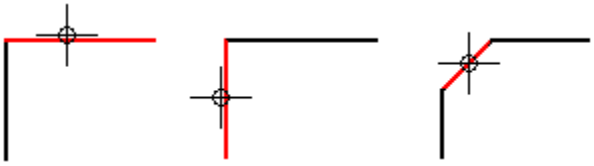
{button Related Topics,AL("relating elements high;tangent cmd;relationships high;relationship handles;draw high",0,`NOT_FOUND')}

Display the Change Toolbar

- On the **Main** toolbar, click the **Change** button.

{button Related Topics,AL("manipulate high;change cmd",0,`NOT_FOUND')}

Draw a Chamfer



Note You can draw a chamfer only between linear elements.

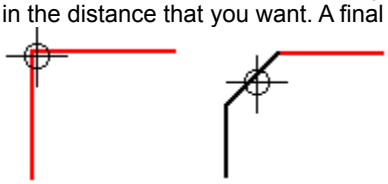
1. On the **Draw** toolbar, click the **Chamfer** button.
2. On the ribbon bar, type a distance value in the **Setback A** box. The first linear element will be set back this distance from the corner.
3. Do one of the following:
   - To define the setback distance for the second linear element, type a value in the **Setback B** box on the ribbon bar.
   - To define the chamfer angle, type a value in the **Angle** box on the ribbon bar.
4. Click the linear element to which you want to apply the **Setback A** value.
5. Click the linear element to which you want to apply the **Setback B** value or the chamfer angle value.

   Note The lines that you select do not need to intersect, but they cannot be parallel.
6. Click to draw the chamfer.

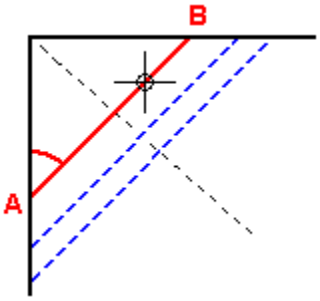
   {mci_left NOMENU,CHMFER1C.AVI}

Tips

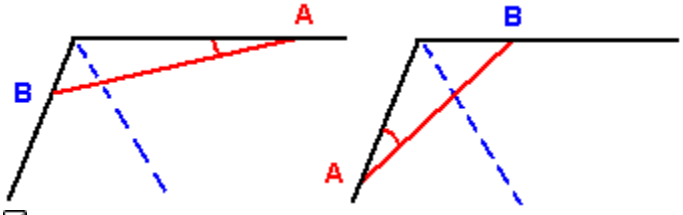
- When two lines intersect, you can draw a chamfer simply by clicking the corner and then moving the pointer in the distance that you want. A final click on the drawing sheet places the chamfer.



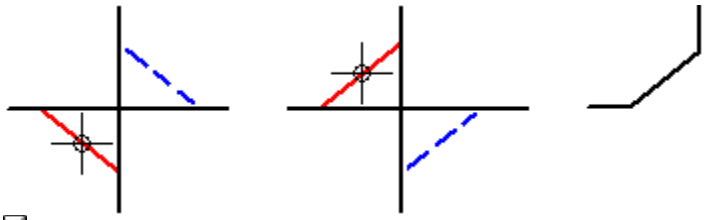
- You can draw a chamfer with equal chamfer angles. Click the two linear elements you want to use. When the chamfer is displayed dynamically, move the pointer until the setback distance you want to use is displayed, then click.



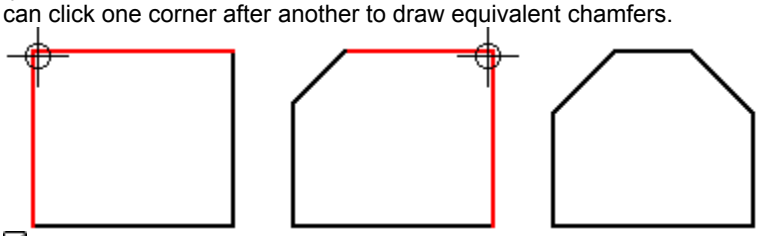
- You can switch the setback values for the linear elements. After you click the linear elements you want to use, move the mouse cursor to one side or the other of the temporary line display, then click.



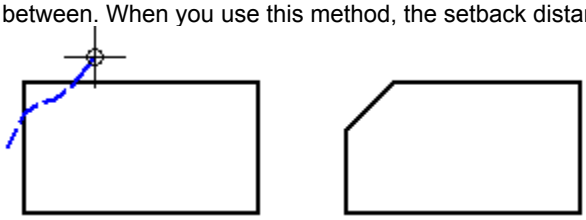
- When the elements you want to use cross each other, you can draw the chamfer in any of the quadrants. The software trims the remaining elements at the end points of the chamfer.



You can easily draw more than one 45 degree chamfer with the same setback distance. On the ribbon bar, type a value in the **Setback A** or **Setback B** box. The value in the setback box is active until you change it, so you can click one corner after another to draw equivalent chamfers.



You can draw a chamfer by dragging the pointer over the two elements that you want to draw the chamfer between. When you use this method, the setback distance and angle boxes on the ribbon bar are not active.



{button Related Topics,AL("chamfer cmd;chamfer rb",0,`NOT_FOUND')}

Draw a Circular Pattern

{mci_left NOMENU,CIRCPTN1.AVI}

1 Select one or more elements to pattern.

2 On the **Change** toolbar, click the **Circular Pattern** button.

3 Click where you want the center of the circular pattern to be.

4 Use the ribbon bar boxes and the **Circular Pattern Options** dialog box to define other characteristics of the pattern, such as the number of pattern members and rows.

5 To finish creating the pattern, click the **Finish** button on the ribbon bar.

Tips

- If you do not like the results of the pattern, you can click the **Undo** button on the **Main** toolbar.

{button Related Topics,AL("circular pattern rb;circular pattern cmd;circular pattern db;rectangular pattern db;select high;patterns high",1)}

Close a Document

1 Click **File > Close**.

2 If you have made changes since the document was last saved or if you have never saved a new document, you are prompted to indicate if you want to save your changes. Do one of the following:

- If you do not want to save your changes, click the **No** button.
- If you want to save the changes, click the **Yes** button. If you click the **Yes** button, the **Save As** dialog box is displayed so that you can give the document a name and specify a directory and format to save it to.
- If you do not want to close the document, click the **Cancel** button.

{button Related Topics,AL("document high;close cmd;save as db",0,`NOT_FOUND')}

Close an Object's Document and Save the Changes

The **Close** and **Return** command is available only after you double-click an object and edit it.

- Click **File > Close > Return**. The changes you made to the object are saved to memory.

Tips

- When you use the **Close** and **Return** command, you are not asked to save the document until you exit SmartSketch.
- You can use the **Revert** command to close the document without saving your changes.

{button Related Topics,AL("revert imag cmd",0,`NOT_FOUND')}

Copy an Element

1. Select an element.
2. On the **Main** toolbar, click the **Copy** button.

Tips

- After you copy an element and its relationships, they are placed on the **Clipboard**. You can then use the **Paste** command to paste them into the current document, or into other documents.
- When you paste the element, it is pasted on top of the element you copied. To see the pasted element, you must drag it.

{button Related Topics,AL("copy high;working with microsoft office high;copy cmd",0,`NOT_FOUND')}

Create a Document

1 On the **Main** toolbar, click the **New** button.

2 On the **File New** dialog box, click the **Document** option.

3 In the **Templates** list, select the template you want to use to create the document.

Tips

- If you want to create a template, you can simply save the document to the TEMPLATE directory located in the directory where you installed the software. A different filename extension is not needed.
- You can change the directory where templates are saved by selecting the **Options** command on the **Tools** menu and setting the directory that you want on the **File Locations** tab of the **Options** dialog box.

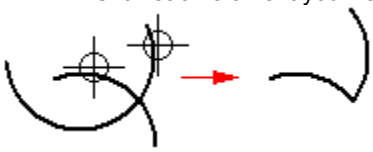
{button Related Topics,AL("new cmd;documents high",0,`NOT_FOUND')}

Draw a Corner by Trimming and Extending Elements

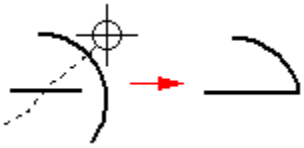
1 On the **Draw** toolbar, click the **Trim Corner** button.

2 Do one of the following:

- Click each element you want to trim or extend.



- Drag the pointer over one or more elements, then release the mouse button. The parts of the element over which you dragged the mouse remain—other parts are trimmed or extended as necessary.



Note You can draw only one corner at a time by dragging the pointer.

{button Related Topics,AL("corner trim cmd;extending or trimming high",0,`NOT_FOUND')}

Customize the Software with the Options Command

You can use the **Options** command on the **Tools** menu to customize the software. You can change such things as the screen appearance, document location, and display colors.

1 Click **Tools > Options**.

2 On the **Options** dialog box, select the tab containing the information you want to customize.

3 Use the controls on the **Options** dialog box to make the appropriate changes.

{button Related Topics,AL("options cmd",0,`NOT_FOUND')}

Add a Button to a Toolbar

1 Click **Tools > Customize**.

2 On the **Toolbars** tab, click the category that contains the command you want to add.

3 Drag the command button from the **Buttons** display area to the toolbar.

{button Related Topics,AL("customize high;customize cmd;customize db",0,`NOT_FOUND')}

Create a New Toolbar

1. Click **View > Toolbars**.
2. On the **Toolbars** dialog box, click the **New** button.
3. On the **New Toolbars** dialog box, type the name of the new toolbar. When you click **OK**, the **Customize** dialog box appears so that you can add buttons to the new toolbar.
4. On the **Toolbars** tab, click the category that contains the command you want to add.
5. Drag the command button from the **Buttons** display area to the toolbar.

   Tip When you create a new toolbar, the changes that you made appear only if a document is open.

{button Related Topics,AL("customize high;customize cmd;customize db",0,`NOT_FOUND')}

Delete a Command From a Menu

1. Click **Tools > Customize**.
2. On the **Menu** tab, double-click a menu in the **List** box. The **List** box expands to show the commands on the existing menu.
3. Click the name of an existing menu or command that you want to remove from the menu or the main menu bar.
4. Click the **Remove** button.

   Tip When you delete a command from a menu, the changes that you made appear only if a document is open.

{button Related Topics,AL("customize high;customize cmd;customize db",0,`NOT_FOUND')}

Remove a Command from a Toolbar

1 Click **Tools > Customize**.

2 On the **Toolbars** tab, drag the button you want to remove from the toolbar and drop it outside the toolbar boundary.

Tip When you remove commands from the toolbars, the changes that you made appear only if a document is open.

{button Related Topics,AL("customize high;customize cmd;customize db",0,`NOT_FOUND')}

Create a New Menu

1 Click **Tools > Customize**.

2 On the **Menu** tab, click the command category that you want in the **Categories** box.

3 In the **List** box, click the name of an existing menu.

4 Click the **Add Menu** button. The new menu is added after the existing menu.

Tip If you want to add a menu to an existing menu, set the **Place Into Selected Menu** check box before you click the **Add Menu** button. You can add commands to the new menu later to create a cascading menu.

5 In the **List** box, type the name of the menu and click anywhere away from the name to enter it.

Tip When you create menus, the changes that you made appear only if a document is open.

Add a Command to a Menu

1. Click **Tools > Customize**.
2. On the **Menu** tab, click the command category that you want in the **Categories** box.
3. In the **Commands/Macros** box, click the name of the command that you want to add.
4. In the **List** box, double-click the name of an existing menu that you want to add a command to. The **List** box expands to show the commands on the existing menu.
5. Click the name of the command that you want the new command to appear after.
6. Set the **Place Into Selected Menu** check box.

   Caution If you want to add the new command to the main menu bar, do not set the **Place Into Selected Menu** check box. The name of the new command will be added to the main menu bar after the existing menu that you selected in the **List** box.
7. Click the **Add Command** button. The new command is added after the existing command.

   Tip When you add buttons to the menus, the changes that you made appear only if a document is open.

{button Related Topics,AL("customize high;customize cmd;customize db",0,`NOT_FOUND')}

Restore All Built-in Menus to the Original Settings

1 Click **Tools > Customize**.

2 On the **Menu** tab, click the **Reset All** button.

Tips

If you remove the **Customize** command from the **Tools** menu, you can restore it by positioning the pointer over a toolbar and, on the shortcut menu, clicking the **Customize** command.

{button Related Topics,AL("customize high;customize cmd;customize db",0,`NOT_FOUND')}

Cut an Element

1. Select an element.
2. On the **Main** toolbar, click the **Cut** button.

Tips

- After you cut an element and its relationships from a document, they are placed on the **Clipboard**. You can then use the **Paste** command to paste them into the current document, or into other documents.
- When relationships exist between elements, cutting the elements from a document deletes the relationships. If there is a relationship between a selected element and an unselected element, you can do one of the following:
  - Cut and paste only the selected element.
  - Cut and paste both elements and their relationship.
  - Cut and paste only the selected element and the relationship, then reconnect the relationship to another element.

{button Related Topics,AL("cutting high;cut cmd;edit high;paste cmd;delete cmd",0,`NOT_FOUND')}

Delete an Element

1 Select an element.

2 Click **Edit > Delete** or press **Delete**.

Note When you delete an element and its relationships, the relationships are not pasted to the **Clipboard** and cannot be reinserted. However, you can restore an element and its relationships by immediately using the **Undo** command.

{button Related Topics,AL("cutting high;delete high;element high;edit high;cut cmd;delete cmd",0,`NOT_FOUND')}

Edit a Dimension Prefix

1. Select a dimension.
2. On the ribbon bar, click the **Prefix** button.

3. On the **Dimension Prefix** dialog box, type the characters that you want to appear as prefix, superfix, suffix, and subfix information in the appropriate boxes.

   Note While you type information in one of the boxes, you can also click a symbol at the top of the dialog box to add symbols to the prefix, superfix, suffix, and subfix information.
4. Click **Apply** to change the dimension that you selected.

Tips

- You can also use the **Dimension Prefix** dialog box while you place a dimension.
- You can change the prefix or suffix gap by selecting a dimension. Then, you can click **Properties** on the **Edit** menu. On the **Spacing** tab of the **Dimension Properties** dialog box, change the prefix or suffix gap. You can also set the superfix or subfix gap on this tab.

{button Related Topics,AL("dimension prefix db;dimensions high",0,`NOT_FOUND')}

Change a Driven Dimension to a Driving Dimension

1. On the **Tools** menu, set the **Maintain Relationships** command.
2. Select the driven dimension you want to change.
3. On the ribbon bar, click the **Toggle Driving** button. The color of the dimension changes to indicate a driving dimension.

Tips

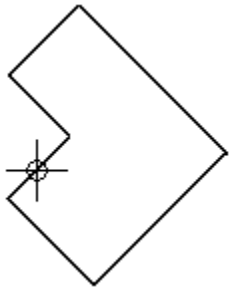
- To place a driving dimension, you must set **Maintain Relationships** on the **Tools** menu, select an element, and then click a dimension command on the **Dimension** toolbar; the dimension that you place by default is a driving dimension.
- To change a driving dimension to a driven dimension, select a driving dimension and click the **Driving/Driven** button.
- To set the colors for driving and driven dimensions, select the dimension and click **Properties** on the shortcut menu. Then set the options you want on the **Properties** dialog box.

{button Related Topics,AL("dimension cmd;dimension cmds;dimensions high",0,`NOT_FOUND')}

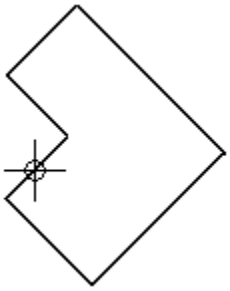
Set a Dimension Axis

1. On the **Dimension** toolbar, click the **Axis** button.

2. Click an element to which you want the dimension axis to be parallel or perpendicular.



3. Click to place a dimension axis. You can now place a dimension that runs parallel or perpendicular to the dimension axis that you have defined.



4. To use the dimension axis that you set with the **Axis** button, click the **Distance Between** or **Coordinate Dimension** buttons on the **Dimension** toolbar.
5. On the ribbon bar, set **Explicit** in the **Dimension Axis** box. After you define the dimension axis, you can place dimensions that run parallel to or perpendicular to the dimension axis.

{button Related Topics,AL("dimension axis cmd;group dimensions high;dimensions high",0,`NOT_FOUND')}

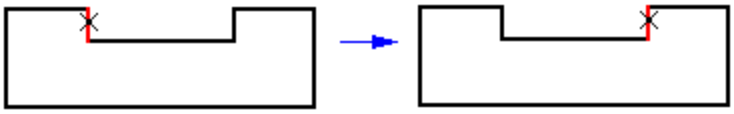
Place a Dimension Group

{mci_left NOMENU,COORDIM1.AVI}

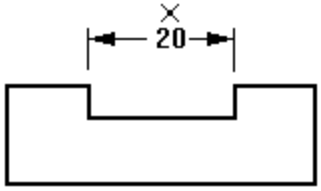
1 On the **Dimension** toolbar, click one of the following buttons:

- **Distance Between**
- **Angle Between**
- **Symmetric Diameter**
- **Coordinate Dimension**

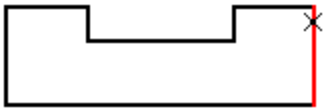
2 Click an element that you want to measure.



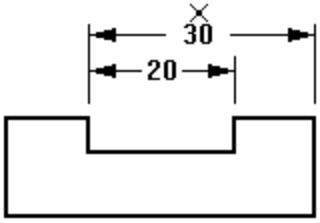
3 Click to place the dimension.



4 Click another element that you want to measure.

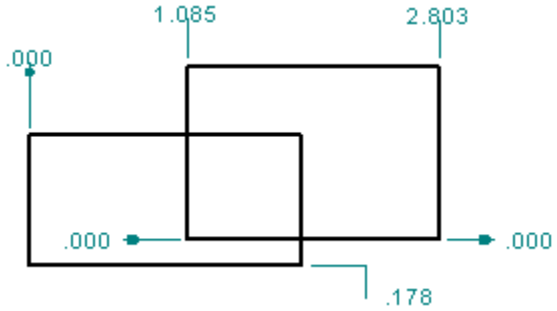


5 Click to place the dimension in the dimension group.



Tips

- The first dimension that you place in a dimension group is the origin dimension.
- The **Coordinate Dimension** button places coordinate dimensions. Coordinate dimensions can only be placed in a group. You can place coordinate dimensions in any order and on any side of the elements that you want to dimension.



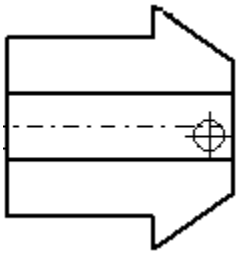
{button Related Topics,AL("dimension distance between cmd;dimension angle between cmd;dimension symmetric diameter cmd;dimension coordinate cmd;dimension groups high;dimensions

```
high",0,`NOT_FOUND')}
```

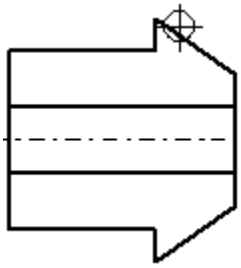
Place a Symmetric Diameter Dimension

1 On the **Dimension** toolbar, click the **Symmetric Diameter** button.

2 Click an element or key point. This element or key point is the origin.

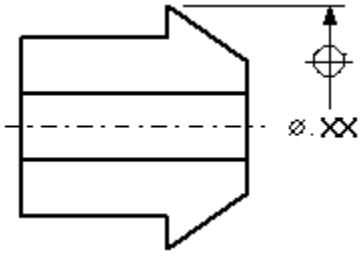


3 Click an element to measure or a key point to measure to.



4 Move the pointer where you want to place the dimension. The dimension dynamically follows the movement of the pointer.

5 Click to place the dimension.



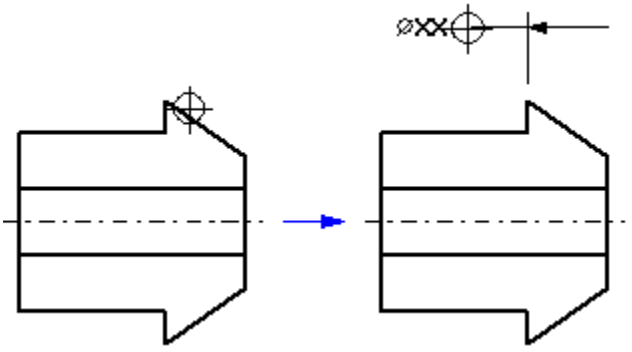
6 To place another dimension, click another element to measure or key point to measure to.

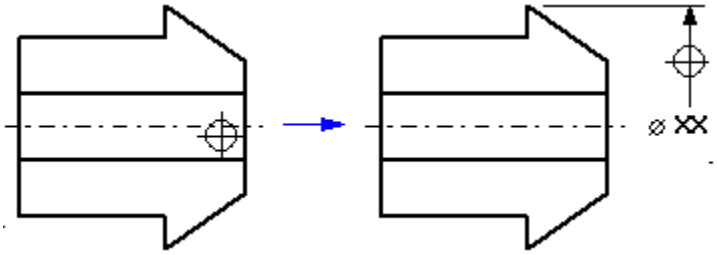
Note The origin element for this dimension is the first element or key point that you selected.

7 Click to place the dimension.

Tips

- To use a different origin element for additional dimensions, right-click to resume editing.
- After you click the two elements that you want to dimension between, the dimension changes depending on where you move the cursor.





Turn on the **Half** option on the ribbon, and the dimensions appear as half. Turn off the **Half** option on the ribbon, and the dimensions appear as full.

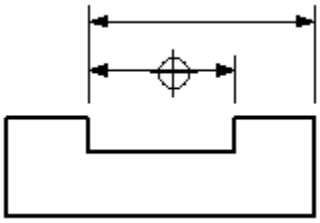
{button Related Topics,AL("symmetric diameter cmd;dimension groups high;dimensions high",0,`NOT_FOUND')}

Add a Dimension to a Dimension Group

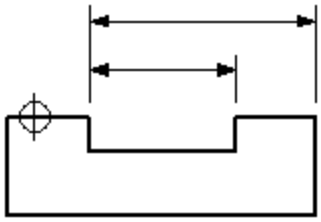
1 On the **Dimension** toolbar, click one of the following buttons:

- **Distance Between**
- **Angle Between**
- **Symmetric Diameter**
- **Coordinate Dimension**

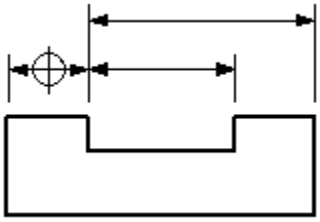
2 Click a dimension in a dimension group.



3 Click the element that the dimension measures.



4 Click a point for the dimension. This action adds the dimension to the dimension group.



Tips

- If you change a dimension group, the group updates automatically.
- If you delete a dimension from the middle of a chained dimension group, the group splits into two groups.
- If you place a dimension group using the **Axis** button and then delete the first or middle dimension from the group, this action deletes all the dimensions after the removed dimension.

{button Related Topics,AL("dimension distance between cmd;dimension angle between cmd;dimension symmetric diameter cmd;dimension coordinate cmd;dimension groups high;dimensions high",0,`NOT_FOUND')}

Place a Driving Dimension

1. On the **Tools** menu, set the **Maintain Relationships** option.
2. Select an element.
3. On the **Dimension** toolbar, click one of the following commands:

- **SmartDimension**
- **Distance Between**
- **Angle Between**

The dimensions that you place will be driving dimensions by default.

Tips

- To change a driving dimension to a driven dimension, select a driving dimension and, on the ribbon bar, click the **Driving/Driven** button.
- To set the colors for driving and driven dimensions, select the dimension and click **Properties** on the shortcut menu. Then set the options you want on the **Properties** dialog box.

{button Related Topics,AL("dimension cmd;dimensions high",0,`NOT_FOUND')}

Place a Linear, Angular, or Radial Dimension

You can place the following types of dimensions with **SmartDimension**:

- Linear dimension
- Angular dimension
- Radial dimension
- Diameter dimension

1 On the **Dimension** toolbar, click the **SmartDimension** button.

2 Click an element.

Tip The command determines the type of dimension to place, depending on the type of element you select, and displays the dimension dynamically so you can position it.

3 Position the dimension, and then click a point to place it.

Tips

- The **SmartDimension** command automatically determines the type of dimension to place based on the element that you select, such as linear, radial, or angular. However, you can specify a different dimension type. For example, if you click the **SmartDimension** button and then select a circle, the **Diameter** button on the ribbon bar is active; you then place a diameter dimension. If you want to place a radial dimension instead, you can click the **Radial** button on the ribbon bar before you click to place the dimension.
- To place a driving dimension, you must set **Maintain Relationships** on the **Tools** menu, select an element, and then click a dimension command on the **Dimension** toolbar; the dimension that you place is a driving dimension by default.
- You can change a dimension to driving or driven by selecting it and then clicking the **Driving/Driven** button on the ribbon bar.
- To place a linear dimension between the end points of a line, you must press the **Shift** key.

{button Related Topics,AL("linear dimensions high;smartdimension cmd;dimensions high",0,`NOT_FOUND')}
{button Show Me,AL("dimension length of line ex;dimension diameter of circle ex",0,`NOT_FOUND')}

Set the Dimension Units

1. Select a dimension.
2. On the shortcut menu, click **Properties**.
3. On the **Dimension Properties** dialog box, click the **Units** tab.
4. Set the options you want to use for the dimension unit.

Tips

- You can set the dimension units for a dimension that you are about to place using the **Dimension** command on the **Format** menu.
- You can save the dimension unit settings in a dimension style using the **Style** command on the **Format** menu.

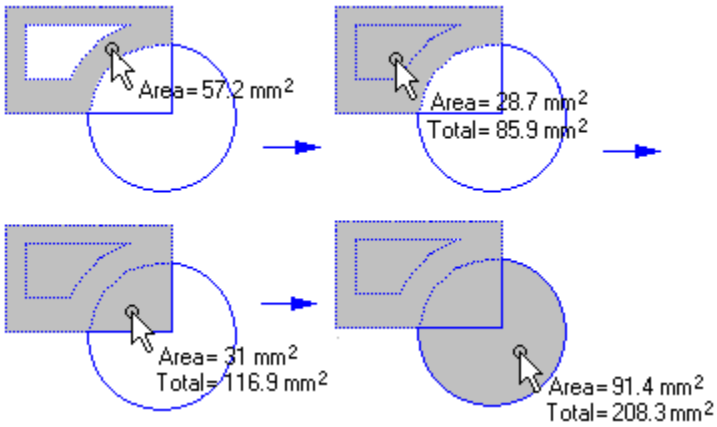
{button Related Topics,AL("dimensions high;dimension cmd;dimension properties db;properties cmd",0,`NOT_FOUND')}

Measure an Area

1 On the **Dimension** toolbar, click the **Measure Area** button.

2 Click inside a closed boundary to measure its area.

The area measurement for the closed boundary appears next to the pointer. The measured area appears as a gray fill.



Note As you click points, press the **Shift** key to display the total area by the pointer.

Tips

- If you are measuring multiple areas and want to clear a measurement, click inside one of the filled, closed boundaries that you have measured while pressing the **Shift** key.
- When you are drawing elements or modifying a drawing, you can measure an area with the **Measure Area** button at any time.
- You can press the **Tab** key to move between the area and total area. You can also press **Ctrl + C** to copy the value to the Clipboard. You can then press **Ctrl + V** to paste the value to a text box or ribbon bar field.

{button Related Topics,AL("measure area cmd;measure area rb;measure high",0,`NOT_FOUND')}

Return Dimension Text to the Actual Value of the Element

When you override the value of a driven dimension by editing the dimensional value, the resulting dimension is not-to-scale. For example, if you override the dimensional value of 15 millimeters to 30 millimeters, the actual size of the visible line remains 15 millimeters. Only the dimension text is changed; the line remains unchanged.

1. Select a driven dimension.

   Note A color that you set with the **Style** command on the **Format** menu indicates a driven dimension. You can also set the color by selecting a dimension and clicking the **Properties** command on the **Edit** menu.

2. On the ribbon bar, delete the dimensional value from the **Value** box and type a new value.

Tips

- Another way to return a dimension to its actual value is to select a dimension and use the **Not to Scale** command on the shortcut menu.
- You can show dimensions that are not-to-scale by using the **Styles** command on the **Format** menu. This option places a zig-zag or straight line under the dimensional values that are not-to-scale.
- To return the dimensional value to the value of the element it actually measures, delete all the characters from the **Value** box on the ribbon bar. You can also select a dimension and clear the **Not To Scale** option on the shortcut menu.

{button Related Topics,AL("override dimension value how;not to scale cmd;dimensions high",0,`NOT_FOUND')}

Move a Dimension

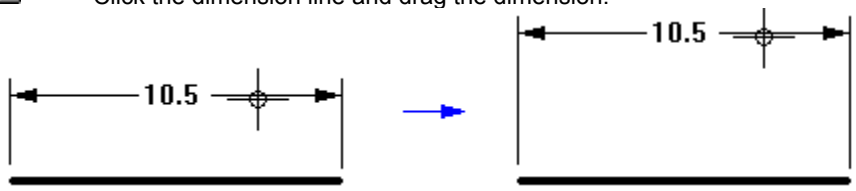
1 Click part of the dimension that you want to move.

2 Drag the dimension to a new location.

The previous procedure describes the general steps you can use to move a dimension. The following descriptions explain how to move specific parts of a dimension.

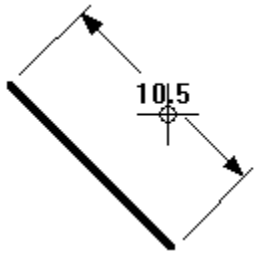
To move the dimension line

- Click the dimension line and drag the dimension.



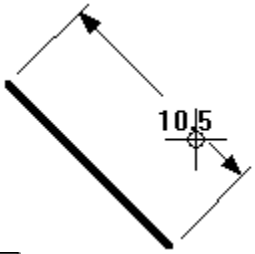
To move the dimension text

1 Click the dimension text. Drag the dimension to one of the following positions:

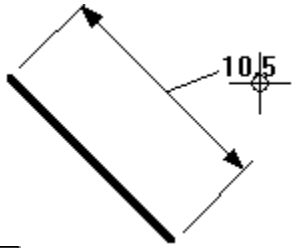


2 Drag the dimension to one of the following positions:

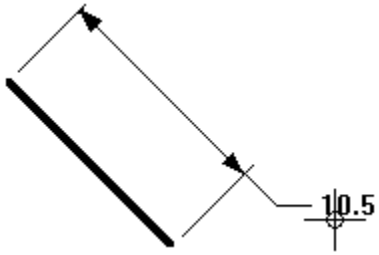
- Along the dimension line



- Outside of the dimension line

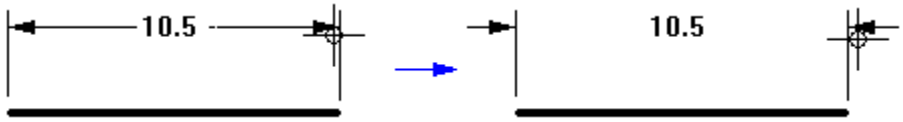


- Outside of the projection line



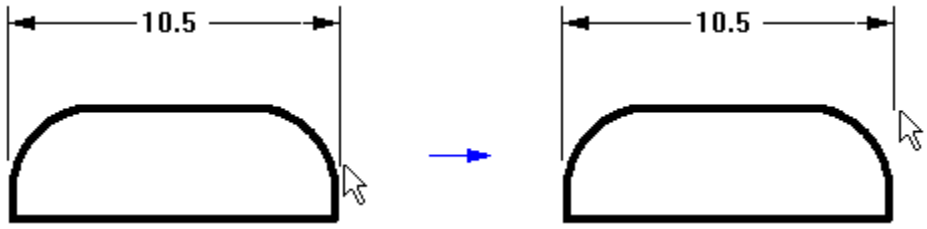
To move the terminator

Click the terminator and drag it.



To move the projection line

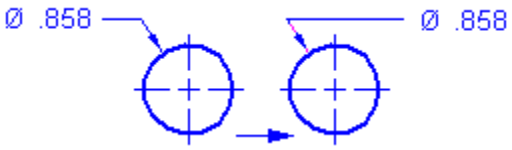
Click the projection line and drag it.



Note You can lengthen or shorten the projection line.

To move the leader break line

For radial dimensions, you can move the break line of the leader line. Click the dimension text. Then, drag the text while pressing the **Shift** key.



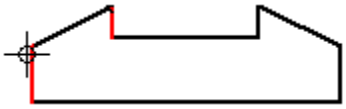
{button Related Topics,AL("dimensions high;dimension types high",0,`NOT_FOUND')}

Place a Dimension Between Two Elements or Key Points

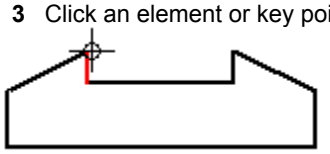
1 On the **Dimension** toolbar, click one of the following buttons.

- **Distance Between**
- **Angle Between**

2 Click an element or key point to identify the origin element.

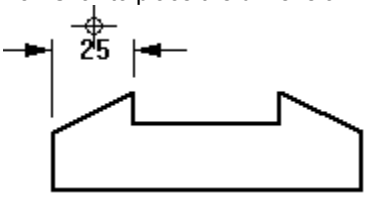


3 Click an element or key point to measure to.



4 Move the pointer where you want to place the dimension. The dimension dynamically follows the movement of the pointer.

5 Click to place the dimension.



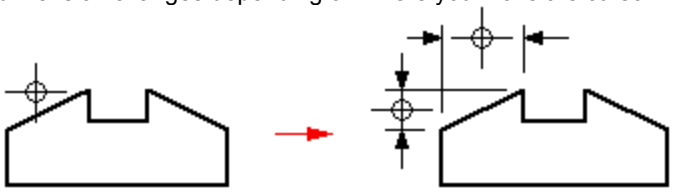
6 If you want to place another dimension, click another element or key point to select the next measurement element.

Note The origin element for this dimension is the element that you selected in step 2.

7 Click to place the next dimension.

Tips

- After placing several dimensions, if you want to use a different origin element for additional dimensions, click the right mouse button to start over.
- After you click the two elements that you want to place the dimension between, the orientation of the dimension changes depending on where you move the cursor.



- Before you place a dimension between two elements or keypoints, you can use the **Axis** command to set the orientation of the dimension axis on the drawing sheet. You can use the new dimension axis, rather than the default axis of the drawing sheet, while you are using the **Distance Between** command. After you define the dimension axis, you can place dimensions that run parallel to or perpendicular to the dimension axis. Click the **Related Topics** button for more information.

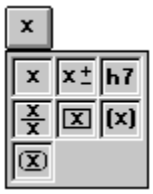
{button Related Topics,AL("dimension between cmd;dimension angle between cmd;dimensions high;set dimension axis how",0,`NOT_FOUND')}

Set the Dimension Type

Dimension types control how the dimension displays. You can set the dimension type before or after you place a dimension.

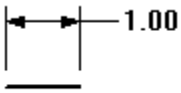
On the ribbon bar, on the **Dimension Type** list, click one of the options on the palette to set the dimension type.

Note In the following picture, you can click each palette option to see the type of dimension and an example of what the dimension will look like.



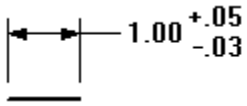
{button Related Topics,AL("dimensions high;smartdimension rb",0,`NOT_FOUND') }

Nominal



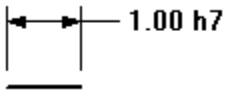
Shows the dimension based on the current active parameters.

Tolerance



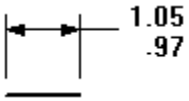
Shows the dimension along with the variance allowed.

Class



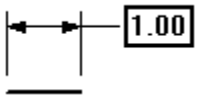
Shows the dimension along with the user-defined class.

Limit



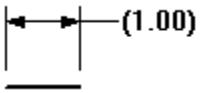
Shows the upper and lower dimensions based on the user-defined tolerances.

Basic



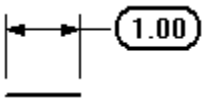
Shows a dimension with a border.

Reference



Shows the dimension within parentheses.

Inspection

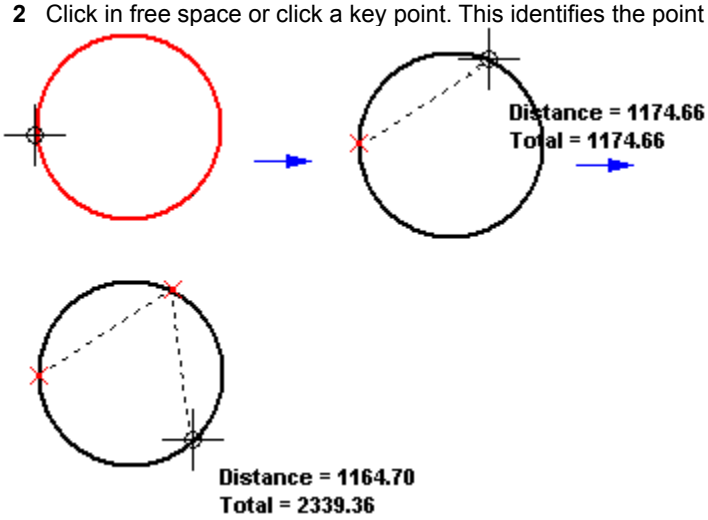


Shows the dimension inside a balloon.

Measure a Distance

1 On the **Dimension** toolbar, click the **Measure Distance** button.

2 Click in free space or click a key point. This identifies the point to measure from.



3 Click a point to measure to. The distance between the two points appears next to the pointer.

4 Click another point to measure to. The distance between the last two points and the distance between the first point and the last point appear next to the pointer.

Tips

When you move the pointer over a key point, the distance between the current location of the pointer and the last point you clicked appears, along with the delta values. The delta values are the distances, as measured along the X and Y axes.

When you click a third point, the cumulative distance between the first and last point that you clicked appears next to the pointer.

When you are in the middle of a task, you can use the **Measure Distance** command at any time.

You can press the **Tab** key to move between the distance and total distance. You can also press **Ctrl + C** to copy the value to the Clipboard. You can then press **Ctrl + V** to paste the value to a text box or ribbon bar field.

{button Related Topics,AL("measure distance cmd;measure high",0,`NOT_FOUND')}

Draw Connected Lines and Arcs

1. On the **Draw** toolbar, click the **Line/Arc Continuous** button.

   This command starts in line mode by default. If you want to start by drawing an arc, press the **A** key.
2. Click the location to begin the line or arc.
3. Click the location to end the line or arc. You can use intent zones to specify if you want to draw a tangent or perpendicular arc.
4. If you are drawing an arc, click a point on the arc to define the radius.

   Note After you draw an arc, the command switches back to line mode automatically. You can switch back to arc mode if you want to draw another arc.
5. Continue drawing lines or arcs, pressing the **A** key to switch to arc mode and the **L** key to switch to line mode.
6. Right-click to finish.

   Note If you close the shape, the command restarts so you begin drawing again.

   {mci_left NOMENU,DLNARC1C.AVI}

Tips

- Instead of pressing **L** or **A** to switch modes, you can use the **Line** or **Arc** mode buttons on the ribbon bar.
- You can make the first line or arc tangent or perpendicular to an element. First, move the pointer to the element you want to be tangent to. When the software recognizes a **Point On** relationship, click. Then use the intent zones to indicate if you want the line to be tangent or perpendicular.
- Instead of clicking locations on the drawing sheet, you can type values on the ribbon bar. You can also use a combination of graphic and ribbon bar input.
- Using the ribbon bar boxes to type values does not affect the setting of the **Line** or **Arc** mode buttons.

{button Related Topics,AL("line arc cmd ;line cmd;arc cmd;smartsketch high;draw high;intent zones high ",0,`NOT_FOUND')}

Draw Connected Lines and Arcs with FreeSketch

1. On the **Draw** toolbar, click the **FreeSketch** button.
2. On the ribbon bar, set the line and arc **Element Type** buttons and clear the other **Element Type** buttons.
3. Drag to draw a line or arc. When you stop moving the pointer, do not release the mouse button.
4. Drag to draw a series of line segments and arcs, continuing to hold the mouse button as you draw each line and arc.

   Note If you release the mouse button while you are drawing, you can start drawing at the last end point you entered. Confirm that the **End Point** option is set on the **SmartSketch** dialog box.
5. When you have finished, release the mouse button.

Tips

- The **Adjust** option allows the software to adjust the geometry you draw.
- When the **Adjust** option is set, the software interprets the exact movements of your cursor.
- When the **Adjust** option is cleared, the software interprets the lines as horizontal or vertical and the arcs as tangent to the connected elements. If the **Maintain Relationships** option is set, the software places relationship handles.
- The software recognizes relationships at the start point and end point of the line. If the **Maintain Relationships** option is set, the software places relationship handles.
- You can use the boxes on the ribbon bar and the commands on the shortcut menu to edit a line or an arc.

{button Related Topics,AL("line cmd;freesketch cmd;arc cmd;draw high;smartsketch high",0,`NOT_FOUND')}

Send an Element to the Back of the Display Order

1. Select one or more elements.
2. On the **Change** toolbar, click the **Send To Back** button.

Tips

- When you select a single element, the element moves to the back of the display.

  {mci_left NOMENU,SBACK.AVI}
- When you send more than one element or an element group to the back of the display order, the elements retain their display order within the selection set or group.

{button Related Topics,AL("display order high;bring to front how;bring to front cmd;send to back cmd;push down cmd;pull up cmd",0,`NOT_FOUND')}

Pull an Element Up in the Display Order

1 Select one or more elements.

2 On the **Change** toolbar, click the **Pull Up** button.

{mci_left NOMENU,PULLUP.AVI}

Tips

- When you pull more than one element or an element group up one position in the display order, the elements retain their display order within the selection set or group.

{button Related Topics,AL("display order high;pull up cmd;push down cmd;push down how;bring to front cmd;send to back cmd",0,`NOT_FOUND')}

Push an Element Down in the Display Order

1. Select one or more elements.
2. On the **Change** toolbar, click the **Push Down** button.

{mci_left NOMENU,PUSHDOWN.AVI}

Tips

When you push more than one element or an element group down one position in the display order, the elements retain their display order within the selection set or group.

{button Related Topics,AL("display order high;push down cmd;pull up cmd;pull up how;send to back cmd;bring to front cmd",0,`NOT_FOUND')}

Bring an Element to the Front of the Display Order

1 Select one or more elements.

2 On the **Change** toolbar, click the **Bring To Front** button.

Tips

- When you select a single element, the element moves to the front of the display.

  {mci_left NOMENU,BFRONT.AVI}

- When you bring more than one element or an element group to the front of the display order, the elements retain their display order within the selection set or group.

{button Related Topics,AL("display order high;send to back how;send to back cmd;bring to front cmd;pull up cmd;push down cmd",0,`NOT_FOUND')}

Draw a Circle with FreeSketch

Note The **Point On** or **End Point** options on the **SmartSketch** dialog box must be set to draw circles that are tangent to other elements.

1 On the **Draw** toolbar, click the **FreeSketch** button.

2 On the ribbon bar, set the **Circle** element type button and clear the other element type buttons.

3 Drag to sketch the shape of the circle or the diameter of the circle.

Tips

- The **Adjust** option allows the software to adjust the geometry you draw.
- When the **Adjust** option is off, the software interprets the exact movements of your cursor.
- When the **Adjust** option is on, the software interprets your cursor movements as a circle.
- If the **Maintain Relationships** option is set, the software places relationship handles.
- You can use the options on the ribbon bar and the commands on the shortcut menu to edit a circle.

{button Related Topics,AL("circle cmd;freesketch cmd;circle high",0,`NOT_FOUND')}

Draw a Circle Tangent to One or Two Elements

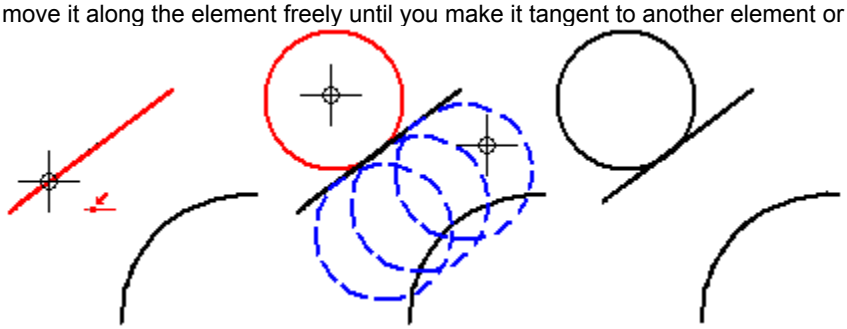
Note You must set the **Point On Element** or **End Point** on the **SmartSketch** dialog box to draw circles that are tangent to other elements.

1. On the **Draw** toolbar, click the **Tangent Circle** button.
2. Move the pointer along an element until the software recognizes a point on element relationship or a key point.
3. Click to make the circle tangent.

   {mci_left NOMENU,TANCIRC1.AVI}
4. Do one of the following to define the radius:
   - Move the pointer until the circle is in the position that you want, and then click.
   - Move the pointer until the software recognizes a tangent or key point relationship with another element, and then click.

Tips

- Instead of clicking to define the radius, you can type values in the ribbon bar. You can also use a combination of graphic and ribbon bar input.
- Instead of clicking several different points to draw a circle, you can draw a diagonal line, and the software automatically changes it to a circle.
- You can define the radius first to make a circle tangent to the first element, but not fixed in one position on it.
- After you type a value in the **Diameter** or **Radius** box, move the pointer along the element until the software recognizes a point on element relationship, and then click. The circle is then displayed dynamically, and you can move it along the element freely until you make it tangent to another element or key point.



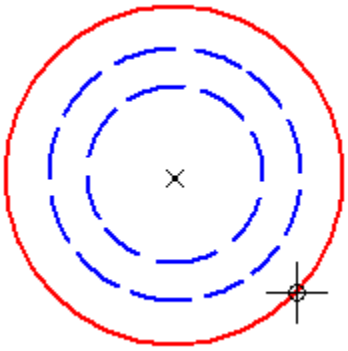
- If you use the **Tangent Circle** command when the **Point On** and **End Point** options on the **SmartSketch** dialog box are not set, you can draw a non-tangent circle by clicking two points that represent the diameter.
- If the **Maintain Relationships** option is set, the software places relationship handles.
- You can use the options on the ribbon bar and the commands on the shortcut menu to edit a circle.

{button Related Topics,AL("tangent circle cmd;circle rb;circle high;smartsketch high",0,`NOT_FOUND')}

Draw a Circle by Center Point

{mci_left NOMENU,CIRBCEN.AVI}

1. On the **Draw** toolbar, click the **Circle By Center** button.
2. Click the location where you want the center point.
3. Click to define the radius.



Tips

- Instead of clicking to define the radius, you can type values on the ribbon bar. You can also use a combination of graphic and ribbon bar input.
- Instead of clicking several different points to draw a circle, you can draw a diagonal line and the software automatically changes it to a circle.
- If the **Maintain Relationships** option is set, SmartSketch places relationship handles.
- You can use the options on the ribbon bar and the commands on the shortcut menu to edit a circle.

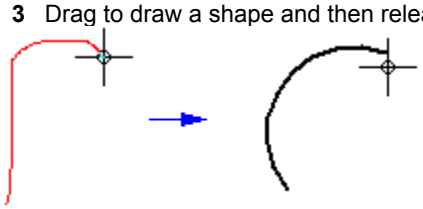
{button Related Topics,AL("circle by center cmd;circle rb;circle high",0,`NOT_FOUND')}

Draw with FreeSketch

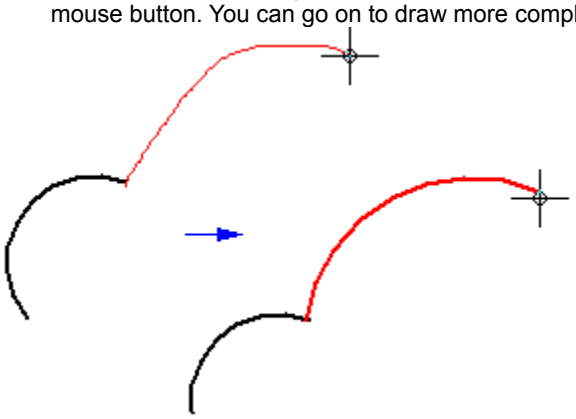
1 On the **Draw** toolbar, click the **FreeSketch** button.

2 On the ribbon bar, set the element type buttons for the types of shapes you want to draw.

3 Drag to draw a shape and then release the mouse button.



FreeSketch interprets your sketch and places arcs, lines, circles, and rectangles when you release the mouse button. You can go on to draw more complex drawings with the **FreeSketch** button.

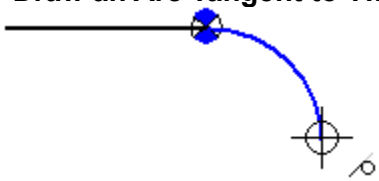


Tips

- The **Adjust** option allows the software to adjust the geometry you draw.
- When the **Adjust** option is off, the software interprets the exact movements of your cursor.
- When the **Adjust** option is on, the software interprets lines as horizontal or vertical and arcs as tangent to the connected elements.
- The software recognizes relationships at the start points and end points of elements. If the **Maintain Relationships** option is set, the software places relationship handles.
- You can use the **End Point** on the **SmartSketch** dialog box to begin or end your drawing using the end point or key point of an element, and the **Point On** option to begin or end your drawing at any point on an element.
- You can set any combination of element type buttons to specify if you want to draw lines, arcs, circles, and rectangles or any combination.
- You can use the options on the ribbon bar and the commands on the shortcut menu to edit geometry that you have drawn with **FreeSketch**.

{button Related Topics,AL("freesketch cmd;circle high;freesketch high;smartsketch high ",0,`NOT_FOUND')}

Draw an Arc Tangent to Two Elements



Note You must set the **Point On** or **End Point** on the **SmartSketch** dialog box to draw arcs that are tangent to other elements. You must set the **SmartSketch Tangent** option on the **SmartSketch** dialog box to draw an arc tangent to two elements. You can set these options by clicking the **SmartSketch Settings** command on the **Tools** menu.

1. On the **Draw** toolbar, click the **Tangent Arc** button.
2. Click an element to which you want the new arc to be tangent. You can click the end point of a line or curved element, or any point on the element.
3. Move the pointer through one of the intent zones displayed at the position you just clicked.

   If the command dynamics show an arc perpendicular to the existing element, move the pointer back to the intent zones and exit through a different quadrant.
4. When the command dynamics show an arc that is tangent to the first element, move the pointer to a position where the software recognizes the tangent relationship with another element and then click.

   {mci_left NOMENU,TANARC2.AVI}

Tips

- Instead of clicking to define the radius and sweep of the arc, you can type values on the ribbon bar. You can also use a combination of graphic and ribbon bar input.
- If the **Maintain Relationships** option on the **SmartSketch** dialog box is set, the software places relationship handles.
- You can use the options on the ribbon bar and the commands on the shortcut menu to edit an arc.

{button Related Topics,AL("tangent arc cmd;arc rb;circle high ",0,`NOT_FOUND')}

Draw an Arc with FreeSketch

Note You must set the **Point On** or **End Point** options on the **SmartSketch** dialog box to draw arcs that are tangent to other elements. You can set these options by clicking the **SmartSketch Settings** command on the **Tools** menu.

1 On the **Draw** toolbar, click the **FreeSketch** button.

2 On the ribbon bar, set the **Arc** element type button and clear the other element type buttons.

3 Drag to draw an arc.

Tips

- The **Adjust** option allows the software to adjust the geometry you draw.
- When the **Adjust** option is off, the software interprets the exact movements of your cursor.
- When the **Adjust** option is on, the software interprets arcs as tangent to the connected elements. If the **Maintain Relationships** option is set, the software places relationship handles.
- The software recognizes relationships at the start point and end point of the arc. If the **Maintain Relationships** option is set, the software places relationship handles.
- When you set the **Line** and **Arc** element type buttons, you can draw connected lines and arcs.
- You can use the options on the ribbon bar and the commands on the shortcut menu to edit an arc.

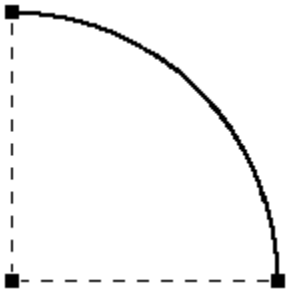
{button Related Topics,AL("freesketch cmd;circle high;freesketch high;smartsketch high",0,`NOT_FOUND')}

Draw an Arc by Center Point

{mci_left NOMENU,ARCBYCEN.AVI}

1. On the **Draw** toolbar, click the **Arc by Center Point** button.
2. Click the point where you want the center point.
3. Click where you want to begin and end the sweep of the arc.

   Note You can change the arc direction by moving the pointer.



Tips

- Instead of clicking to define the radius, you can type a value on the ribbon bar. You can also use a combination of graphic and ribbon bar input.
- Instead of clicking several different points to draw an arc, you can draw a diagonal line and the software automatically changes it to an arc.
- If the **Maintain Relationships** option is set, SmartSketch places relationship handles.
- You can use the boxes on the ribbon bar and the commands on the shortcut menu to edit an arc.

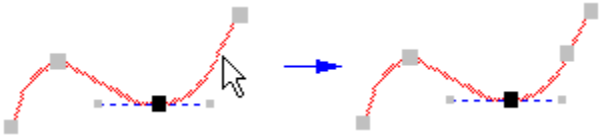
{button Related Topics,AL("arc by center cmd;arc rb;circle high;intent zones high ",0,`NOT_FOUND')}

Insert a Node into a Curve

1 Locate the curve and right-click to display the shortcut menu.

2 On the shortcut menu, click **Insert Node**.

3 Position the cursor at the location to add a node.



4 Click to insert the node.

Tips

- You can use the **Delete Node** command on the shortcut menu to delete nodes from a curve.

{button Related Topics,AL("curve cmd;curve rb;draw curve how;circle high",0,`NOT_FOUND')}

Change the Node Type

1. Select the curve.
2. Select the node you want to change.
3. On the ribbon bar, click the button for the node type you want to change the node to: **Smooth**, **Symmetric**, or **Cusp**.

Tips

- You can use the arrows on the ribbon bar to select a node.
- You can use the **Insert Node** command on the shortcut menu to add nodes to a curve.
- You can use the **Delete Node** command on the shortcut menu to delete nodes from a curve.

{button Related Topics,AL("curve cmd;curve rb;draw curve how",0,`NOT_FOUND')}

Change the Curve Type

1 Select the curve.

2 Do one of the following:

- To change an open curve to a closed curve, set the **Curve Type** box on the ribbon bar to **Closed**.
- To change a closed curve to an open curve, select the node you want to open, and then set the **Curve Type** box on the ribbon bar to **Open**.

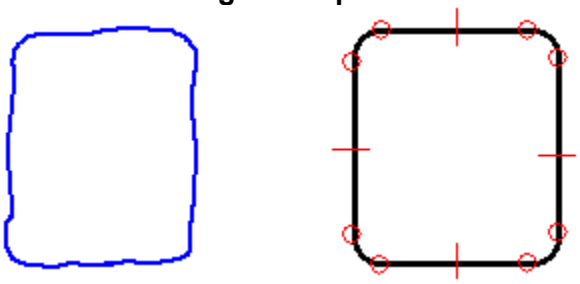
If you do not select a node, the software opens the curve at the node that was automatically activated when you selected the curve.

Tips

- You can use the arrows on the ribbon bar to select a node.
- You can use the **Insert Node** command on the shortcut menu to add nodes to a curve.
- You can use the **Delete Node** command on the shortcut menu to delete nodes from a curve.

{button Related Topics,AL("curve cmd;curve rb;draw curve how;circle high",0,`NOT_FOUND')}

Draw a Rectangle or Square with FreeSketch



1 On the **Draw** toolbar, click the **FreeSketch** button.

2 On the ribbon bar, set the rectangle **Element Type** button and clear the other **Element Type** buttons.

3 Drag the pointer to sketch the diagonal of the rectangle.

Tips

- The **Adjust** option allows the software to adjust the geometry you draw.
- When the **Adjust** option is off, the software interprets the exact movements of your cursor.
- When the **Adjust** option is on, the software interprets the diagonal as a rectangle or square.
- You can use the buttons on the ribbon bar and shortcut menu to edit a rectangle or square.

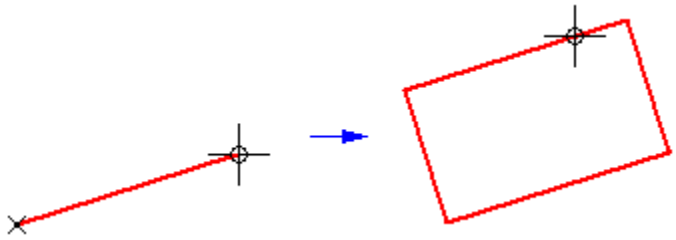
{button Related Topics,AL("rectangle cmd;freesketch cmd;freeform high",0,`NOT_FOUND')}

Draw a Rectangle or Square

{mci_left NOMENU,RECT1.AVI}

1 On the **Draw** toolbar, click the **Rectangle** button.

2 Click the location for one corner of the rectangle or square.



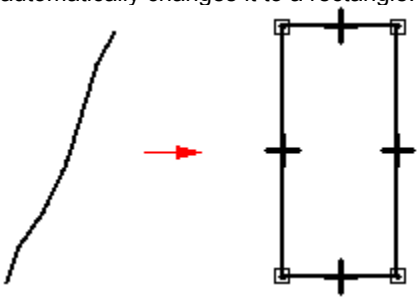
3 Click to define the rotation angle and the width of the rectangle or square.

4 Do one of the following:

- To draw a rectangle, click to define the height.
- To draw a square, hold the **Shift** key, and then click. The command automatically makes the height equal to the width.

Tips

- Instead of clicking to draw the rectangle or square, you can type values in the **Width**, **Height**, and **Angle** boxes on the ribbon bar. You can also use a combination of graphic and ribbon bar input.
- Instead of clicking several different points to draw a rectangle, you can draw a diagonal line and the software automatically changes it to a rectangle.



- You can use the options on the ribbon bar and the commands on the shortcut menu to edit a rectangle or square.
- If you place dimensions on a rectangle, they are always driven dimensions.
- You cannot ungroup a rectangle into individual lines.

{button Related Topics,AL("rectangle cmd;rectangle high ",0,`NOT_FOUND')}

Draw a Curve with FreeForm

1 On the **Draw** toolbar, click the **FreeForm** button.

2 Drag to draw a curve.

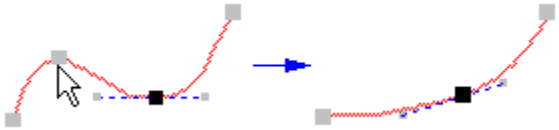
Tips

- The **Smooth** option allows the software to adjust the geometry you draw.
- When the **Smooth** option is off, the software interprets the exact movements of your cursor.
- When the **Smooth** option is on, the software creates smooth, symmetric, or cusp curves.
- You can use relationships to draw a curve that is tangent or perpendicular at its start point and end point.

  If the **Maintain Relationships** option is set, the software places relationship handles.
- You can begin or end your drawing using the end point or key point of an element.
- You can use the **Insert Node** command on the shortcut menu to add nodes to a curve.
- You can use the **Delete Node** command on the shortcut menu to delete nodes from a curve.
- You can use the options on the ribbon bar and the commands on the shortcut menu to edit a curve.

{button Related Topics,AL("draw curve cmd;freeform cmd;draw high;curve how ;smartsketch high;freeform high",0,`NOT_FOUND')}

Delete a Node from a Curve



1 Locate the curve and right-click to display the shortcut menu.
2 On the shortcut menu, click **Delete Node**.
3 Select the node you want to delete.

Tips

- You can use the arrows on the ribbon bar to select a node.
- You can use the **Insert Node** command on the shortcut menu to add nodes to a curve.

{button Related Topics,AL("curve cmd;curve rb;draw curve how;circle high",0,`NOT_FOUND')}

Draw a Line

{mci_left NOMENU,LINE1.AVI}

1 On the **Draw** toolbar, click the **Line/Arc Continuous** button.

2 Click the point where you want the line to begin.

3 Click the point where you want the line to end. This action defines the length and rotation angle of the line.

4 Do one of the following:

- Right-click to end the line.
- To draw a series of connected lines, click at the point where you want each line segment to end, and then right-click.

Note If you close the shape, the command restarts so you begin drawing again.

Tips

- Instead of clicking to draw the end points, you can type values on the ribbon bar. You can also use a combination of graphic and ribbon bar input.
- Instead of clicking several different points to draw a line, you can drag the pointer to draw a line.
- You can press the **Esc** key to end a line or a line segment.
- If the **Maintain Relationships** option is set, the software places relationship handles.
- When you use the **Point On** option on the **SmartSketch** dialog box, you can draw a line tangent to two curved elements. First, click the curved element, then move the pointer through the tangent intent zone on the first element. Use the **SmartSketch** dialog box options to establish a tangent relationship to the other element.

Note If you do not use the tangent intent zone, the line connects to the elements, but is not tangent to them.

- You can use relationships to make an end point of a line tangent or perpendicular to the key point or end point of another element.
- You can use the options on the ribbon bar and the commands on the shortcut menu to edit a line.

{button Related Topics,AL("line high;line cmd;line rb;smartsketch high ",0,`NOT_FOUND')}

Draw a Line with FreeSketch

1 On the **Draw** toolbar, click the **FreeSketch** button.

2 On the ribbon bar, set the **Line** element type button and clear the other element type buttons.

3 Drag to draw a line or a series of connected lines.

Tips

- The **Adjust** option allows the software to adjust the geometry you draw.
- When the **Adjust** option is off, the software interprets the exact movements of your cursor.
- When the **Adjust** option is on, the software interprets the lines as horizontal or vertical when you finish drawing. If the **Maintain Relationships** option is set, the software places relationship handles.
- The software recognizes relationships at the start point and end point of the line. If the **Maintain Relationships** option is set, the software places relationship handles.
- When you set the **Line** and **Arc** element type buttons, you can draw connected lines and arcs.
- You can use the options on the ribbon bar and the commands on the shortcut menu to edit a line.

{button Related Topics,AL("freesketch high;freesketch rb;freesketch cmd;smartsketch high",0,`NOT_FOUND')}

Draw an Arc by Defining Three Points

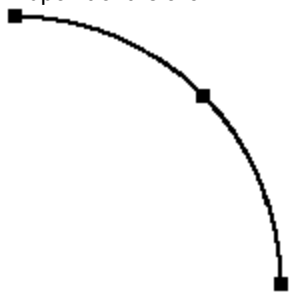
{mci_left NOMENU,ARCBY3_1.AVI}

1. On the **Draw** toolbar, click the **Arc by 3 Points** button.

2. Click the location to begin the sweep of the arc.

3. Do one of the following:

- Click the location that you want as midpoint of the arc, and then click the location that you want to end the sweep of the arc.
- Click the location that you want to end the sweep of the arc, and then click the location that you want as midpoint of the arc.



Note Use the intent zones at the first and second points to specify if the third point is between the first two or beyond one of the first two.

Tips

- Instead of clicking to define the sweep and the midpoint, you can type values on the ribbon bar. You can also use a combination of graphic and ribbon bar input.
- Instead of clicking several different points to draw an arc, you can draw a diagonal line and the software automatically changes it to an arc.
- If the **Maintain Relationships** option is set, the software places relationship handles.
- You can use the options on the ribbon bar and the commands on the shortcut menu to edit an arc.

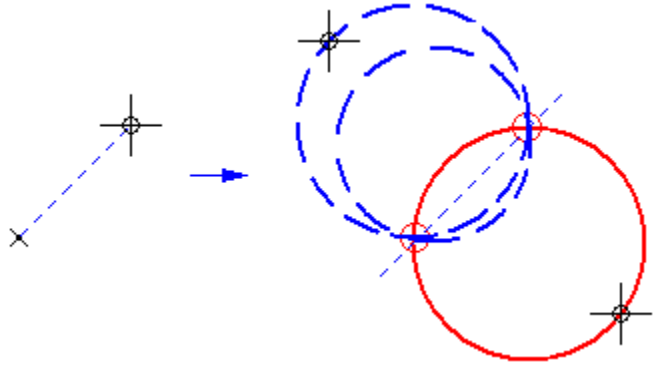
{button Related Topics,AL("arc by 3 points cmd;arc rb;circle high;intent zones high ",0,`NOT_FOUND')}

Draw a Circle by Defining 3 Points

{mci_left NOMENU,CIRBY3.AVI}

1 On the **Draw** toolbar, click the **Circle By 3 Points** button.

2 Click three points on the circumference of the circle.



Tips

- Instead of clicking several different points to draw a circle, you can draw a diagonal line and the software automatically changes it to a circle.
- Instead of clicking to define the circumference of the circle, you can type values on the ribbon bar. You can also use a combination of graphic and ribbon bar input.
- If the **Maintain Relationships** option is set, SmartSketch places relationship handles.
- You can use the options on the ribbon bar and the commands on the shortcut menu to edit a circle.

{button Related Topics,AL("circle by 3 points cmd;circle rb;circle high;intent zones high",0,`NOT_FOUND')}

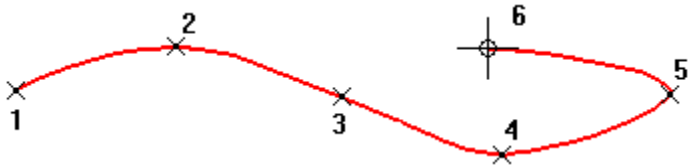
Draw a Curve

{mci_left NOMENU,CURVE1.AVI}

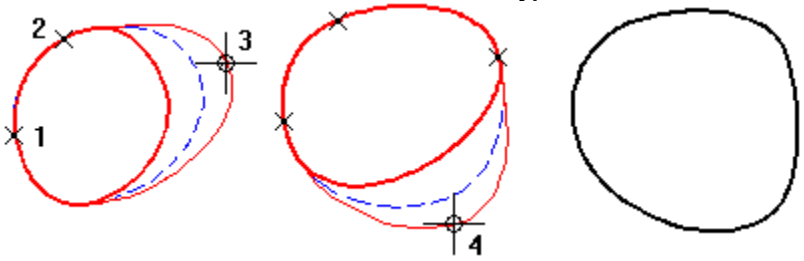
1 On the **Draw** toolbar, click the **Curve** button.

2 Do one of the following:

- To draw an open curve, set the **Curve Type** box on the ribbon bar to **Open**.



- To draw a closed curve, set the **Curve Type** box on the ribbon bar to **Closed**.



3 Click three or more points on the drawing sheet. These points represent nodes on the curve.

Note You must place at least three points to draw a curve.

4 Right-click to end the curve.

Tips

- You can drag the pointer to draw the shape of a curve. Instead of clicking several different points to draw a curve, you can draw a diagonal line and the software automatically changes it to a curve.
- The nodes at the start point and end point of a curve are always smooth.
- You can use the **Insert Node** command on the shortcut menu to add nodes to a curve.
- You can use the **Delete Node** command on the shortcut menu to delete nodes from a curve.
- You can use the options on the ribbon bar and the commands on the shortcut menu to edit a curve.

{button Related Topics,AL("draw curve cmd;curve rb;circle high;curve how",0,`NOT_FOUND')}

Draw a Point

Note The **Point** command is available only if you use the **Customize** command to place it on a toolbar or menu.

1 On your customized toolbar, click the **Point** button.

2 Click to place a point.

Tips

- Instead of clicking to place the point, you can type values in the coordinate boxes on the ribbon bar. You can also use a combination of graphic and ribbon bar input.
- The coordinate origin is located at the bottom left corner of the window.
- You can use the options on the ribbon bar and the commands on the shortcut menu to edit a point.

{button Related Topics,AL("point cmd;draw high;customize toolbar how ",0,`NOT_FOUND')}

Draw an Ellipse by Center Point

1. On the **Draw** toolbar, click the **Ellipse by Center** button.

2. Click the location for the center of the primary axis.
3. Click the location to end the primary axis. This action defines the length of the primary axis and the rotation angle.
4. Click a location on one side of the primary axis. This action defines the secondary axis.

   Note The primary axis can be shorter than the secondary axis.

   {mci_left NOMENU,ELLBYCEN.AVI}

Tips

- Instead of clicking to define the axes and rotation angle of the ellipse, you can type values on the ribbon bar. You can also use a combination of graphic and ribbon bar input.
- Instead of clicking several different points to draw an ellipse, you can draw a diagonal line and the software automatically changes it to an ellipse.
- If the **Maintain Relationships** option is set, **SmartSketch** places relationship handles.
- You can use the options on the ribbon bar and the commands on the shortcut menu to edit an ellipse.

{button Related Topics,AL("ellipse by center cmd;circle high",0,`NOT_FOUND')}

Draw an Ellipse by Defining 3 Points

{mci_left NOMENU,ELLBY3_1.AVI}

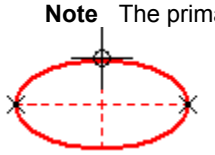
1 On the **Draw** toolbar, click the **Ellipse By 3 Points** button.

2 Click the location to begin the primary axis.

3 Click the location to end the primary axis. This action defines the length of the primary axis and the rotation angle.

4 Click a location on one side of the primary axis. This action defines the secondary axis.

Note The primary axis can be shorter than the secondary axis.



Tips

- Instead of clicking to define the primary and secondary axes of an ellipse, you can type values on the ribbon bar. You can also use a combination of graphic and ribbon bar input.
- Instead of clicking several different points to draw an ellipse, you can draw a diagonal line, and the software automatically changes it to an ellipse.
- If the **Maintain Relationships** option is set, the software places relationship handles.
- You can use the options on the ribbon bar and the commands on the shortcut menu to edit an ellipse.

{button Related Topics,AL("ellipse by 3 points cmd;circle high ",0,`NOT_FOUND')}

Edit a Link

1. Click **Edit > Links**.
2. On the **Links** dialog box, click the link you want to edit.
3. If the link does not appear in the list, click the **Change Source** button and use the **Change Source** dialog box to search for the link you want to edit.
4. Click the **Open Source** button.
5. Make the changes you want in the source file.
6. Click **File > Save** to save the changes in the source file.

{button Related Topics,AL("ole high;documents high",0,`NOT_FOUND')}

Create a Variable Using a Function or Subroutine

1. Click **Tools > Variables**.
2. In the **Variable Table**, in the **Unit Type** list, select the unit type. This is the unit type for the variables value. The default type is **Distance**.

   Note To store a value without units, select Scalar from the list.
3. In the **Name** column, click an empty cell.
4. Type a name for the variable that you want to create. Press **Enter**.
5. In the same row, in the **Formula** column, click a cell.
6. Click the **Function Wizard** button.
7. Click the function that you want in the **Function Wizard** dialog box.
8. Enter the appropriate values in the dialog box. The **Function Wizard** dialog box displays the available functions and appropriate input. For example, if the variables Var1 and Var2 already exist, some valid formulas using functions are as follows:

   Sqr(Var1) * Sin(Var2)

   Sqr(Var1^2 + Var2^2)

   Note References to existing variables in a formula are case-sensitive. For example, if you create the variable Var1, you cannot reference it using var1.

Tips

- You can write external functions and subroutines in BASIC and use them as variable formulas. You can write these functions in Visual Basic, or any text editor, and save them in a .BAS file. The **Function Wizard** steps you through the process of selecting the BASIC module, the specific function, and the necessary input and output.
- If you type a function and you cannot remember the argument list, press **Ctrl** + A after you have typed the equal sign, function name, and opening parenthesis. This activates the **Function Wizard** with the function already selected for you.
- You can also enter expressions with functions directly in the cell in the **Formula** column.

{button Related Topics,AL("variables cmd;Variable Table ",0,`NOT_FOUND')}

Edit an Existing Variable

1. In the document, select the dimensions that you want to appear in the **Variable Table.**
2. Click **Tools > Variables**.
3. The **Variable Table** automatically displays the dimensions that are selected in the document. To see other dimensions and variables, click the **Filter** button on the **Variable Table** window.

   Note To access **Filters** on the shortcut menu, put the mouse cursor in the white area of the **Variable Table** and click the right mouse button.
4. On the **Filter** dialog box, set the following options to specify which variables or dimensions are displayed in the **Variable Table**. For example, to see all the dimensions and variables in the **Variable Table**, set the following options:

   - In the **Type** box, select **Dimensions** and **User Variables.**
   - In the **Named By** box, select **Both**.
   - In the **Graphics In** box, select **File**.

   Note When you click **OK**, the settings are saved, so the next time you use the **Filter** button, the last settings are used. A convenient method of limiting the number of variables and dimensions displayed is to name the ones you use frequently. Then, on the **Filter** dialog box, in the **Named By** box, click **Users** to display the named variables and dimensions.
5. Once a variable is displayed in the **Variable Table**, you can change any of its attributes, except its type and the unit type. On the **Variable Table**, in the **Value** column of a variable, enter a new value to change the variable.
6. In the **Formula** column, click the cell and use one of several methods to create a new formula.

{button How?,AL("create variable how",0,`NOT_FOUND')}

{button Related Topics,AL("variables cmd;variable table;create variable how",0,`NOT_FOUND')}

Edit a Formula Containing a Function

1. Click **Tools > Variables**.
2. In the **Variable Table**, click a cell that contains a formula that has a function.
3. Select a function that you want to replace.
4. Click the **Function Wizard** button. The **Function Wizard** dialog box displays the function you selected.
5. Type a new function to replace the existing function.
6. Click **Next**.
7. Click the **Finish** button to replace the function in the formula.

{button Related Topics,AL("variable table high;variables high;function wizard db",0,`NOT_FOUND')}

Create a Variable with a Value or Expression

1. Click **Tools > Variables**.
2. In the **Variable Table**, in the **Unit Type** list, select the unit type for the variables value. The default type is **Distance**, which means that any expression created will be for a distance. For example, if you want to create a variable to control an angular dimension, you must select **Angular**.

   Note To store a value without units, select **Scalar** from the list.
3. In the **Name** column, click an empty cell.
4. Type a name for the variable that you want to create. Press **Enter**.
5. In the same row, in the **Formula** column, do one of the following:

- Type the value that you want for the variable.
- Type a simple expression for the variable. A simple expression consists of using basic mathematical operators to set up an equation using values and other variables. For example, if variables Var1 and Var2 already exist, you can type the following formulas when creating a new variable:

  Var1 * Var2

  Var1 / 3.0

  (Var2 + 5.0) * Var1

  Var2 ^ 2

  Note References to existing variables in a formula are case-sensitive. For example, if you create the variable Var1, you cannot reference it using var1.

6. Click the **Enter** button to create the variable.

{button Related Topics,AL("variables cmd;Variable Table ",0,`NOT_FOUND')}

Format a Column

1 Click **Tools > Variables**.

2 Drag the appropriate grid lines to adjust the column width.

{button Related Topics,AL("variable table high;variables high",0,`NOT_FOUND')}

Insert a Function Into a Formula

1. Click **Tools > Variables**.
2. In the **Variable Table**, click the function cell in which you want to enter the formula.
3. Click the **Function Wizard** button.
4. Click the function category and the function name.
5. Click the **Next** button. The **Function Wizard** dialog box displays the arguments for the function.
6. Type the values for the arguments.
7. Click the **Finish** button to enter the completed function into your formula.

Tips

- You can enter values, references, names, formulas, and other functions into the boxes on the **Function Wizard** dialog box. These entries must produce valid values for the argument.
- If an argument is required, the word "required" appears in the display area on the **Function Wizard Step 2 of 2** dialog box.

{button Related Topics,AL("variable table high;variables high;function wizard db",0,`NOT_FOUND')}

Create a Variable with a Link to a Spreadsheet

You can use Microsoft Excel to link a variable to a spreadsheet. Besides Excel, you can use other spreadsheet software that can link or embed objects. Before you can link a variable to a spreadsheet, you must first create the variables you want in the design document. Click the **Related Topics** button for more information about how to create a variable.

1. In another application, such as Excel, open the document that contains the spreadsheet you want to link to. The spreadsheet should contain the appropriate values for dimensional relationships.

   Note You can edit this link with the **Links** command on the **Edit** menu.

2. Open the design document that you want to link to and, on the **Tools** menu, click **Variables**. Arrange the windows of the spreadsheet document and the **Variable Table** in the design document so that you can see the appropriate cells in both documents.
3. In the spreadsheet, select the cell that you want to link to. It can be a single cell or two adjacent cells, where the first cell contains the value and the second cell contains the units.

	A	B
1	3.75	in

4. Copy the selected cells. For example, if you are using Excel, click **Copy** on the **Edit** menu.
5. In the **Variable Table**, in the **Formula** column, click the cell of the variable that you want to link the spreadsheet to.
6. On the shortcut menu, click **Paste Link**.

   Note To access the shortcut menu, put the mouse cursor in the white area of the **Variable Table** and click the right mouse button.

7. Select the **Enter** button to accept the value you pasted. When you edit the value in the spreadsheet, the variable in the **Variable Table** updates as well. For example, when you link the dimensions in the design document to an Excel spreadsheet, you can change the dimensions of the design by editing the corresponding values in the Excel spreadsheet. The design document automatically updates.

Tips

- You can edit the links with the **Edit Links** command on the shortcut menu.

Extend an Element

1 On the **Draw** toolbar, click the **Extend to Next** button.

2 Do one of the following:

- To extend one element at a time, click each element near the end you want to extend.

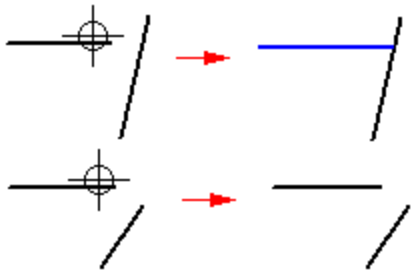
{mci_left NOMENU,EXTNXT1C.AVI}

- To extend more than one element at the same time, drag the pointer over the elements near the end you want to extend. When you release the mouse button, all the elements are extended.

{mci_left NOMENU,EXTNXT1C_B.AVI}

Tips

- Before you select an element to extend, you can use PickQuick to see the possible extensions. When you move the pointer over elements, **PickQuick** displays the extension that will be drawn if you click.



- If an element does not extend in the direction you want it to, move your pointer closer to the end of the element you want to extend.

{button Related Topics,AL("extend to next cmd",0,`NOT_FOUND')}

Format a Dimension or Annotation

1 Select a dimension or annotation.

2 On the shortcut menu, click **Properties**.

3 On the **Properties** dialog box, set the options you want.

Tip For more information about the options, click the **Related Topics** button.

Tips

- You can format a dimension or annotation before you place it by using the **Dimension** command on the **Format** menu, or by setting options on the ribbon bar.
- You can also set formatting options on the **Dimension** ribbon bar.
- You can also change a dimension style with the **Style** command on the **Format** menu. Dimension styles apply to dimensions and all annotations, except text boxes and callouts.
- If you want to format an existing balloon, you must click to select the leader line of the balloon. Then, you can change the formats of the balloon.

{button Related Topics,AL("dimension db;dimensions high;dimension cmd;element properties cmd;formatting elements",0,`NOT_FOUND')}

Create a Fill Color

When you change a fill by setting options on the ribbon bar, you can create custom colors for the fill.

1. Select a fill.
2. On the **Fill** ribbon bar, click **Solid Color** or **Pattern Color**.
3. At the bottom of the palette, click **More**.
4. On the **Colors** dialog box, click **Define Custom Colors** and set the options you want to create a new color.
5. Click **Add to Custom Colors**.
6. On the **Custom Color Name** dialog box, type the name that you want for the color you created. This name appears on the palettes for **Solid Color** or **Pattern Color** on the **Fill** ribbon bar.

{button Related Topics,AL("fill cmd;fill rb;colors db;custom color name db",0,`NOT_FOUND')}

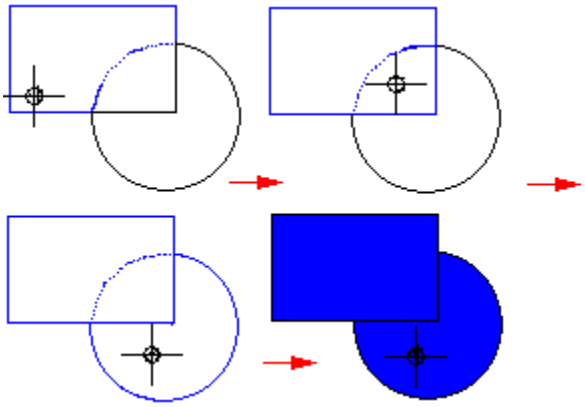
Place a Fill

You can place a fill only inside a closed boundary.

1 On the **Draw** toolbar, click the **Fill** button.

2 On the **Fill** ribbon bar, click the settings you want.

3 Click inside one or more closed boundaries that you want to fill.



Tips

- When you change a filled boundary by drawing another element, the fill does not automatically update to fit the new boundary. You can refill the new boundary by selecting the fill handle, then clicking **Redo Fill** on the ribbon bar to apply the fill to the new boundary. You can also refill an area by dragging the handle to the new area.
- To fill a boundary quickly, you can zoom in on it first using the **Zoom Area** command on the **View** menu.
- You cannot modify an existing fill style, but you can create a new fill style by typing a new name in the **Style** box on the **Fill** ribbon bar. The new style uses the settings on the ribbon bar as the formats for the style.

{button Related Topics,AL("fill cmd;fill high;refill how",0,`NOT_FOUND')}

Refill a Modified Boundary

When you change a filled boundary by drawing another element, the fill does not automatically update to fit the new boundary.

1. Select the fill handle inside the fill.
2. On the **Fill** ribbon bar, click **Redo Fill** to apply the fill to the new boundary.

Tips

- You can also refill an area by dragging the fill handle to the new area.

{button Related Topics,AL("fill cmd;fill high;refill cmd",0,`NOT_FOUND')}

Create a Layer

1 On the **Main** toolbar, click **Layers**.

2 On the **Layers** ribbon bar, type the name of the new layer in the **Layer** box and press **Enter**.

Tips

- You can also create a layer with the **Layer Groups** command on the **Tools** menu. On the **Groups** dialog box, you type the name of a new layer in the **Layers** box and press **Enter**. The name of the new layer is displayed at the bottom of the **Layers** table.
- You cannot give the same name to two layers on the same drawing sheet.
- You can create as many layers on a drawing sheet as you need.

{button Related Topics,AL(`layers high;layers cmd;layer groups cmd',0,`NOT_FOUND')}

Change the Name of a Layer or Layer Group

1. Click **Tools > Layer Groups.**
2. On the **Groups** dialog box, click a group in the **Groups** table.

   Note You should click directly on the **Group** name to change it. The name then highlights and a blinking pointer appears, allowing you to type the new name.
3. Do one of the following:

- To change the name of a group, type the new name and press **Enter**.
- To change the name of a layer, click the name of the layer you want to change in the **Layers** table. Then, type a new name and press **Enter**.

{button Related Topics,AL("layers high;layer groups cmd;layer groups db",0,`NOT_FOUND')}

Display or Hide Layers

1. On the **Main** toolbar, click **Layers**.

2. On the **Layers** ribbon bar, click the **Layer Status** button. On the **Layer Display** dialog box, the layers that appear in bold text are displayed on the current drawing sheet. The layers that appear in gray text are hidden. The layer that appears in red text is the active layer.
3. Click a layer name to display or hide the layer on the drawing sheet.
4. Click the **Apply** button.

Tips

If you want to display or hide layers for drawing sheets other than the current sheet, you can use the **Display Manager** command on the **Tools** menu. On the **Display Manager** dialog box, on the **Sheets** tab, click the sheet you want. Then, on the **Layers** tab, in the **Layers** column, click the layers you want to display or hide. These settings override the settings on the **Layer Display** dialog box.

{button Related Topics,AL(`layers high;layers cmd;layer groups cmd',0,`NOT_FOUND')}

Change the Layer of an Element

An element can be assigned to only one layer.

1. Select the elements whose layer you want to change.
2. On the **Main** toolbar, click **Layers**.

3. On the **Layers** ribbon bar, click the **Change Layer** button.
4. On the **Change Layer** dialog box, in the **Change All To** list, click the layer to change the elements to.

Tips

- You can also change the layer of an element by selecting the element and clicking **Properties** on the **Edit** menu.

{button Related Topics,AL(`layers high;display manager db;display manager cmd;layers cmd',0,`NOT_FOUND')}

Change the Active Layer

1. On the **Main** toolbar, click **Layers**.

2. On the **Layers** ribbon bar, type or select the name of another layer in the **Layer** box.

Tips

- If you type the name of a layer that does not exist, a new layer is created.

{button Related Topics,AL(`layers high;display manager db;display manager cmd;layers cmd',0,`NOT_FOUND')}

Create a Layer Group

1 Click **Tools > Layer Groups**.

2 On the **Groups** dialog box, in the **Groups** box, type the name of the new group and press **Enter**.

3 In the **Layers** table, in the **Grouped** column, click each box to include the layers in the group.

Tips

- In the **Grouped** column, if the check box beside the layer name already has a check mark, the layer is a member of the current layer group.
- You cannot give the same name to two layers on the same drawing sheet.

{button Related Topics,AL("layers high;layer groups cmd;layer groups db",0,`NOT_FOUND')}

Modify Layers in a Layer Group

1 Click **Tools > Layer Groups**.

2 On the **Groups** dialog box, in the **Groups** table, select the group you want to change by clicking the button on the left side of the row. In the **Layers** table, if the check box by the layer name is set, the layer is in the layer group.

3 In the **Layers** table, set or clear the check box of each layer to add or remove it from the layer group.

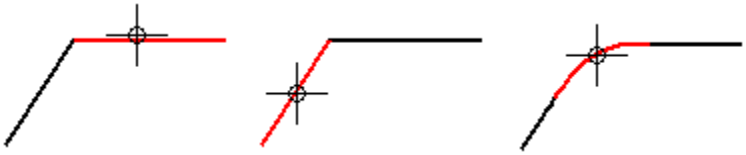
{button Related Topics,AL("layers high;layer groups cmd;layer groups db",0,`NOT_FOUND')}

Delete a Layer Group

1 Click **Tools > Layer Groups**.
2 On the **Groups** dialog box, in the **Groups** table, click on the layer group you want to delete.
3 Press the **Delete** key.

{button Related Topics,AL("layers high;layer groups cmd;layer groups db",0,`NOT_FOUND')}

Draw a Fillet



1. On the **Draw** toolbar, click the **Fillet** button.
2. On the ribbon bar, type a radius in the **Radius** box.
3. Click one of the elements that you want to draw the fillet between. You can draw a fillet between arcs, lines, circles, ellipses, and curves.
4. Click the other element.
5. Click to draw the fillet.

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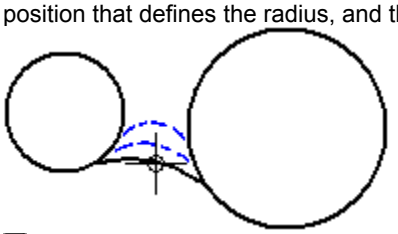
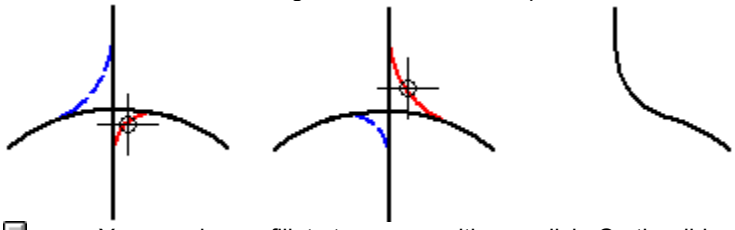
Tips

- You can draw a fillet without typing a radius. Click the two elements you want to use, move the cursor to a position that defines the radius, and then click.

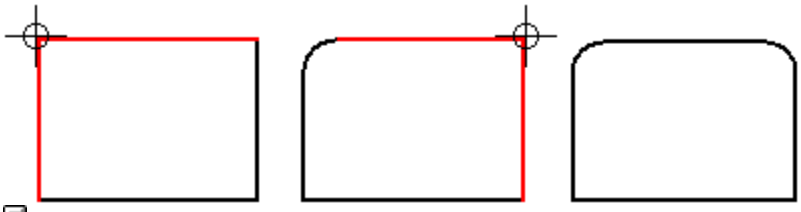


- When the elements you want to use cross each other, you can draw a fillet at any of the quadrants. The software trims the remaining elements at the end points of the fillet.

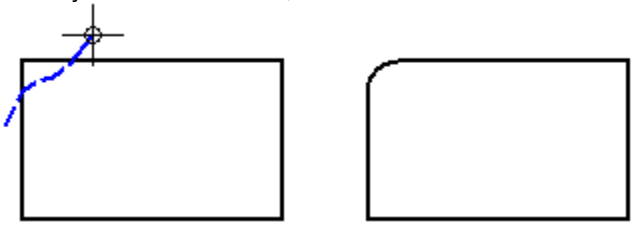


- You can draw a fillet at a corner with one click. On the ribbon bar, type a value in the **Radius** box. Position the pointer over a corner, then click.

  The value in the **Radius** box is active until you change it, so you can click one corner after another to draw fillets with the same radius.



- You can draw a fillet by dragging the pointer over the two elements that you want to draw the fillet between. When you use this method, the **Radius** box on the ribbon bar is not active.



{button Related Topics,AL("fillet cmd;fillet rb;extending or trimming high",0,`NOT_FOUND')}

Control the Display of Elements in a Window

1. Click **Tools > Display Manager**.
2. On the **Sheets** tab, set the options you want to use for displaying elements in a window. The color, line type, and width settings are applied to all the elements on the sheet.

   Note To set the display for a specific layer on a sheet, select the sheet on the **Sheets** tab. The layers that are in that sheet are displayed on the **Layers** tab. You can specify display settings for each layer in a sheet by clicking the **Layers** tab and setting the options you want.

Tips

If you want to quickly display or hide layers for the current drawing sheet, you can click **Layers** on the **Tools** menu. Then, on the **Layers** ribbon bar, you can click the **Layer Status** button to display or hide layers.

{button Related Topics,AL(`display manager cmd;display manager db;layers high',0,`NOT_FOUND')}

Create a Color for Displaying Sheets or Layers

When you use the **Display Manager** to control the way elements or objects appear in window, you can create custom colors for the display of sheets or layers.

1. Click **Tools > Display Manager**.
2. On the **Display Manager** dialog box, click the row of the layer or sheet you want to change the color of.
3. Click the cell in the **Color** column.
4. At the bottom of the palette, click **More**.
5. On the **Colors** dialog box, click **Define Custom Colors** and set the options you want to create a new color.
6. Click **Add to Custom Colors**.
7. On the **Custom Color Name** dialog box, type the name that you want for the color you created. This name appears on the palette that you access when you click a cell in the **Color** column.

{button Related Topics,AL("display manager cmd;display manager db;colors db;custom color name db",0,`NOT_FOUND')}

Fit All Elements in the Active View

- On the **Main** toolbar, click **Fit**.

Tips

- You can hold the **Shift** key as you click the **Fit** command to fit the view to the document.
- If you have a Microsoft IntelliMouse, you can press **Shift** and click the mouse wheel to fit the view.

{button Related Topics,AL("views high;fit cmd",0,`NOT_FOUND')}

Insert a Font Character into a Text Box

1. On the **Draw** toolbar, click the **Text Box** button and place a text box.

2. On the **Dimension** toolbar, click the **Character Map** button.

3. On the font character chart, click the character you want to insert.
4. Click **Select**.
5. Continue to click the characters you want, clicking **Select** after you click each character.
6. On the **Unicode Character Map** dialog box, click **Copy** to copy the characters to the Clipboard.
7. Click inside the text box where you want to paste the characters.
8. On the keyboard**,** press **Ctrl-V** to paste.

{button Related Topics,AL("font character cmd;character map cmd;text how",0,`NOT_FOUND')}

Use Function Keys

Certain function keys work only when the appropriate command is active. For instance, **F9** through **F12** are only available when you use the **PinPoint** command.

The following table shows the function keys that you can use in the software:

	Function Key	Shift + Function Key	Ctrl + Function Key	Alt + Function Key
F1	Help	Help		
F2				
F3				
F4			Close File	Exit
F5	Update Active View			Previous Zoom Level
F6				
F7			Paste From Clipboard	
F8				
F9	Toggle PinPoint Display		Cut to Clipboard	
F10	PinPoint Lock X axis	Select First Menu Item		
F11	PinPoint Lock Y axis			
F12	Reset PinPoint Home			
ESC	Causes the **Select Tool** to be selected.			

Place Elements With a Grid

{mci_left NOMENU,GRID1.AVI}

1 Click **View > Grid Display**.

Tip This step is optional. You do not have to display the grid in order to align elements with it.

2 On the **View** menu, select the **Grid Snap** option.

3 Place the elements that you want with the grid.

Caution You cannot place elements with the **Pinpoint** button on the **Main** toolbar if you are using the **Grid Snap** command.

Tips

- You can change the grid display by setting options on the **View** tab of the **Options** dialog box.
- A set of red crosshairs appears at the pointer showing where an element's points are placed when you click. Elements align with the grid lines or nearest intersection of the grid lines.
- Grid snap does not work while you identify elements that are aligned along grid lines. To override this, press the **Alt** key while identifying these elements.
- Relationship and alignment indicators override the grid snap. You can suppress the indicators by pressing the **Alt** key.

{button Related Topics,AL("grid cmd;grid high",0,`NOT_FOUND')}

Group or Ungroup Elements

Grouping elements allows you to work with them as a unit. The elements must reside in the same document and drawing sheet.

To group elements

1. Select two or more elements.

   Note You cannot select an element that is already a member of a group.

2. On the **Change** toolbar, click the **Group** button.

To ungroup elements

1. Select a group.
2. On the **Change** toolbar, click the **Ungroup** button.

To remove one element from a group

1. Use **PickQuick** to select the element you want to remove from the group.
2. On the **Change** toolbar, click the **Ungroup** button.

Tips

- You can nest groups by selecting two or more groups. You can then ungroup the entire group or any of its members.
- You can select a group and other elements and use the **Group** button to group them.
- You can perform tasks on all members of a group by selecting the group and then selecting the command or ribbon bar option you want to use.
- You can use **PickQuick** to select and edit one or more members of a group.
- You can use the bottom-up selection method, instead of **PickQuick**, to select individual group members. Set the **Bottom Up** button on the **Select** tool ribbon bar.
- You can use the **Properties** dialog box to find out if an element is part of a group. Select the element and then, on the shortcut menu, click **Properties**.

{button Related Topics,AL("groups high;group cmd;group properties db;group rb;ungroup cmd;select high",0,`NOT_FOUND')}

Display Frequently Asked Questions

1 Click **Help > SmartSketch on the Web**.

2 Follow the instructions on the HTML page to navigate within the site and to leave the site.

3 Return to the SmartSketch product at any time by clicking the SmartSketch icon on the bottom of your screen.

{button Related Topics,AL("faq cmd;help high",0,`NOT_FOUND')}

Access Online Tutorials

1 Click **Help > Tutorials.**

2 Follow the instructions on the **Learning Center** to navigate within the site and to leave the site.

3 Return to the product at anytime by clicking the SmartSketch icon on the bottom of your screen.

{button Related Topics,AL("online tutorials cmd;help high",0,`NOT_FOUND')}

Access Technical Documents

1 Click **Help > SmartSketch on the Web.**

2 Follow the instructions on the web page to navigate within the site and to leave the site.

3 Return to the SmartSketch product at anytime by clicking the SmartSketch icon on the bottom of your screen.

{button Related Topics,AL("tech doc cmd;help high",0,`NOT_FOUND')}

Open Product News

1 Click **Help > SmartSketch on the Web**.

2 Follow the instructions on the web page to navigate within the site and to leave the site.

3 Return to the SmartSketch product at anytime by clicking the SmartSketch icon on the bottom of your screen.

{button Related Topics,AL("product news cmd;help high",0,`NOT_FOUND')}

Send Feedback

1 Click **Help > SmartSketch on the Web.**

2 Follow the instructions on the web page to supply the necessary information.

3 Return to the SmartSketch product at anytime by clicking the SmartSketch icon on the bottom of your screen.

Register the Software

1 Click **Help > Register.**

2 Follow the instructions on the web page.

3 Return to the software at anytime by clicking the icon for the software at the bottom of your screen.

{button Related Topics,AL("register cmd;help high",0,`NOT_FOUND')}

Open Intergraph Home Page

1 Click **Help > SmartSketch on the Web**.

2 Follow the instructions on the web page to navigate within the site and to leave the site.

3 Return to the SmartSketch product at anytime by clicking the SmartSketch icon on the bottom of your screen.

Access the Getting Started Guide

- Browse to the Getting Started Guide directory on the CD (CD-ROM drive:\SmartSketch\Getting Started Guide).

Tip You can print out the Getting Started portable document format (pdf files).

Display the Tip of the Day

- Click **Help > Tip of the Day**.

Tips

- If you want to turn off **Tip of the Day**, set the check box on the **Tip of the Day** dialog box that appears when you start the software.

  To turn **Tip of the Day** back on, you can click the **Tip of the Day** command on the **Help** menu. Then, on the **Tip of the Day** dialog box, set the **Show Tips at Startup** check box.

Display SmartSketch **Help Topics**

Click **Help >** SmartSketch **Help Topics.**

{button Related Topics,AL("help topics cmd;help high ",0,`NOT_FOUND')}

Turn the Tip of the Day On or Off

- You can turn off **Tip of the Day** by clicking the **Tip of the Day** command on the **Help** menu. Then, you clear the **Show Tips at Startup** check box.
- To turn on **Tip of the Day**, you can click the **Tip of the Day** command on the **Help** menu. Then, on the **Tip of the Day** dialog box, set the **Show Tips at Startup** check box.

{button Related Topics,AL("tip of the day cmd;help high ",0,`NOT_FOUND')}

Display Context-Sensitive Help

1. On the **Main** toolbar, click the **Help** button. The pointer changes to a northwest arrow with a question mark.

2. Click an item on the SmartSketch window.

Tip

- You can also press **Shift** + **F1** to activate the **Help** command and then click an item on the window.
- To get Help for options on certain dialog boxes, such as the **Insert Object** or **New** dialog boxes, you can click the Question Mark in the upper right corner of the dialog box, and click the option for which you want information. Or, you can position the pointer over the option, and right-click for Help.

{button Related Topics,AL("context help cmd;help high",0,`NOT_FOUND')}

Display Information about SmartSketch

- Click **Help > About** SmartSketch.

{button Related Topics,AL("about cmd;help high ",0,`NOT_FOUND')}

Display Office Compatible Help Topics

- Click **Help > Office Compatible**.

{button Related Topics,AL("office cmd;help high ",0,`NOT_FOUND')}

Display Help for Programming with SmartSketch

- Click **Help > Programming with** SmartSketch.

{button Related Topics,AL("programming cmd;help high ",0,`NOT_FOUND')}

Open the SmartSketch Home Page

1 Click **Help >** SmartSketch **on the Web**.

2 Follow the instructions on the SmartSketch web page to navigate within the site and to leave the site.

3 Return to the SmartSketch product at anytime by clicking the SmartSketch icon on the bottom of your screen.

{button Related Topics,AL("product home page cmd;help high",0,`NOT_FOUND')}

Access Online Support

1 Click **Help > SmartSketch on the Web**.

2 Follow the instructions on the web page to navigate within the site and to leave the site.

3 Return to the SmartSketch product at anytime by clicking the SmartSketch icon on the bottom of your screen.

{button Related Topics,AL("online support cmd;help high",0,`NOT_FOUND')}

Insert a Raster Image

To insert a raster image, you must first install **ImageScape LT** with the **Add-Ins** command on the **Tools** menu. If you do not see the add-in listed in the **Add-In Manager,** you must run Setup again and select the **Custom** installation. You can then select an option for the add-in.

1 Click **Insert > Image**.

2 In the **Look In** field, select the directory containing the raster image you want to insert.

3 In the **File Name** field, type the name of the raster image or select it from the list of raster images.

Tips

- You can only link an image; you cannot embed one.

{button Related Topics,AL("raster high;insert image cmd",0,`NOT_FOUND')}

Exclude Universal Scrolling with the IntelliMouse

1. Click **Start > Settings > Control Panel**.
2. Select the **Mouse** icon.
3. On the **Mouse Properties** dialog box, click the **Wheel** tab.
4. In the **Universal Scrolling** area of the dialog box, click **Exceptions**.
5. On the **Exceptions for Universal Scrolling** dialog box, click **Add**.
6. On the **Add Exception for Universal Scrolling** dialog box, click to open the Program Files folder. Next, click **SmartSketch > Program > draft.exe**. Then click **Open**.
7. Accept the new settings.

{button Related Topics,AL("intellimouse high",0,`NOT_FOUND')}

Access the SmartSketch World Wide Web Page

Click **Help >** SmartSketch **on the Web** to go to the SmartSketch World Wide Web page. On this page, you can access a variety of tools to help you learn and use SmartSketch more efficiently.

{button Related Topics,AL("internet community cmd;help high",0,`NOT_FOUND')}

Open a SmartSketch Document Inside the Internet Explorer

1. In the **Internet Explorer,** click **File > Open**.
2. On the dialog box, select the SmartSketch document that you want to open inside the Internet Explorer. Because SmartSketch is an ActiveX document, its toolbars and menus appear inside the Internet Explorer, along with the contents of the document that you selected.

Tips

- You can also drag a SmartSketch document from the **Windows Explorer** to the **Internet Explorer.** The document automatically opens inside the Explorer.

{button Related Topics,AL("internet high",0,`NOT_FOUND')}

Run a Macro

1 Click **Tools > Macro**.

2 On the **Run Macro** dialog box, click the macro you want to run.

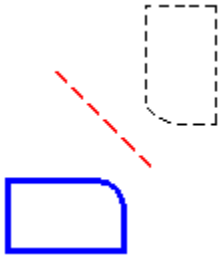
3 Click the **Run** button.

Tips

- You can create macros with any programming tool that supports OLE automation, such as **Microsoft Visual Basic**.

{button Related Topics,AL(`macro cmd;customize high',0,`NOT_FOUND')}

Mirror an Element



You can mirror elements by defining a mirror axis or by using a linear element as a mirror axis. You can also mirror and copy elements.

To mirror about an existing mirror axis or linear element

1. Select one or more elements.
2. On the **Change** toolbar, click the **Mirror** button.

3. If you want to copy the mirrored elements, click the **Copy** button on the ribbon bar.
4. Locate a mirror axis. The mirrored elements are displayed dynamically on the other side of the mirror axis.

   Note If you locate a linear element, the element can be part of the selection set or separate from the selection set.

   {mci_left NOMENU,MIRROR1C.AVI}
5. Position the pointer so that the mirrored elements are where you want them, then click.

To mirror about a mirror axis that you define

1. Select one or more elements.
2. On the **Change** toolbar, click the **Mirror** button.
3. If you want to copy the mirrored elements, click the **Copy** button on the ribbon bar.
4. Define one end of the mirror axis by click in free space or by clicking a key point. The software displays the mirror axis and mirrored elements dynamically.

   {mci_left NOMENU,MIRROR1C_B.AVI}
5. Move the pointer until the mirror axis and the mirrored elements where you want them to be, then click.

Tips

- If the **Maintain Relationships** option is set, the software places a symmetric relationship when you mirror and copy elements. The mirror axis is used as the symmetry axis.
- Relationships within the selection set are copied to the mirrored elements if they are still applicable.
- You can click the **Mirror** command before you select elements to mirror.
- Instead of using the **Copy** button on the ribbon bar to mirror and copy, you can hold the **Ctrl** key while you click to position the elements.
- Instead of positioning the mirror axis dynamically, you can use the **Position Angle** box on the ribbon bar.
- You can use relationship indicators to define a mirror axis.
- You can use other view manipulation commands, such as **Zoom** and **Pan**, while you are using the **Mirror** command.

  When you finish manipulating the view, the software returns you to the **Mirror** command at the point where you left off.

{button Related Topics,AL("mirror cmd;mirroring elements high;mirror rb;mirror how",0,`NOT_FOUND')}

Set File Locations

1. Click **Tools > Options**.
2. On the **Options** dialog box, click the **File Locations** tab.
3. Select one of the file types in the list.
4. Click the **Modify** button and, on the **Modify Location** dialog box, select the directory where you want the software to look for the file type.

Tips

- You can set the software to look for files on another machine. To connect to another machine, click the **Network** button on the **Modify Location** dialog box to access the **Map Network Drive** dialog box.

{button Related Topics,AL("modify location db;options cmd;map db",0,`NOT_FOUND')}

Move an Element

1. Select one or more elements.
2. On the **Change** toolbar, click the **Move** button.

3. If you want to copy the elements, click the **Copy** button on the ribbon bar.
4. Click to define the from point.
5. Click to define the to point. After the elements move, the relationships with other elements are not maintained.

Tips

- You can click the **Move** command before you select elements to move.
- You can use drag to move elements. Select the elements, then drag them to their new location and drop.
- Instead of using the **Copy** button on the ribbon bar to copy elements, you can hold the **Ctrl** key while you click to position the elements.
- You can use the ribbon bar boxes to specify the to point. The values are relative distances along the x and y axes—you must click to specify which quadrant you want to move or copy the selection set to.
- When you move or copy elements, the to point becomes the next from point.
- Relationships within the select set are maintained if they are still applicable after the elements have been moved or copied.
- You can use other view manipulation commands, such as **Zoom**, **Fit**, and **Pan**, while you are using the **Move** command.

  When you finish manipulating the view, the software returns you to the **Move** command at the point where you left off.

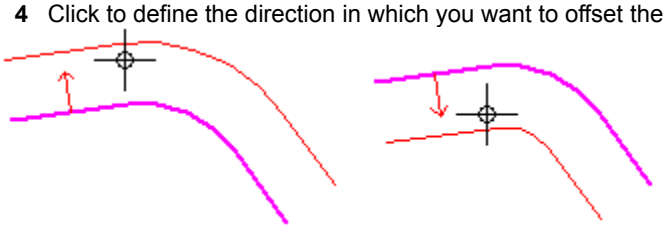
{button Related Topics,AL("moving elements high;move cmd;move rb;move how",0,`NOT_FOUND')}

Offset Elements

You can select elements to be offset before you select the **Offset** command. Or you can select the **Offset** command before you select the elements.

{mci_left NOMENU,OFFSET1C.AVI}

1. On the **Change** toolbar, click the **Offset** button.
2. Click the element or elements that you want to offset.
3. In the **Step Distance** box on the ribbon bar, type the distance that you want to offset the selected elements.
4. Click to define the direction in which you want to offset the elements.



Tips

- If the Change toolbar is not displayed, click the **Change** button on the **Main** toolbar.
- To select a chain of connected elements, select the **Offset Chain** button.

{button Related Topics,AL("offset cmd;offset rb",0,`NOT_FOUND')}

Embed an Object

To Embed a New Object

1. Click **Insert > Object**.
2. On the **Insert Object** dialog box, click the **Create New** option.
3. In the **Object Type** box, click the type that describes the software in which you want to create the object, and then click the OK button.

   The contents of the list depend on which applications installed on your computer support linking and embedding.
4. To return to SmartSketch, do one of the following:

- If the object was created in another application that is in a separate window, click **Exit** or **Update** on the **File** menu in that application. If a message appears asking if you want to update the document, click the **Yes** button.
- If the software temporarily replaces some of the SmartSketch menus and toolbars, click anywhere outside the embedded object.

5. When you return to SmartSketch, a box the size of the object appears beside the pointer. You can click on the drawing sheet to place the object that you edited or created.

   Note While the box appears beside the pointer, if you hit **ESCAPE**, the object will be placed at the default location. You can set the default location with the **Options** command on the **Tools** menu. You enter the location on the **File Locations** tab of the **Options** dialog box.

To Embed an Existing Object

1. Click **Insert > Object**.
2. On the **Insert Object** dialog box, click the **Create From File** option.
3. In the **File Name** box, type or click the name of the object you want to embed, and then click the **OK** button.

   Note If you do not see the file that you want to embed, click a different drive or volume, directory or folder.
4. A box the size of the object appears beside the pointer. You can click on the drawing sheet to place the object that you edited or created.

   Note While the box appears beside the pointer, if you hit **ESCAPE**, the object will be placed at the default location. You can set the default location with the **Options** command on the **Tools** menu. You enter the location on the **File Locations** tab of the **Options** dialog box.

Tips

- If you are working in the source software, you can embed an existing object with the **Paste Special** command on the **Edit** menu.
- You can also embed an object by dragging and dropping a document from the Windows Explorer into a SmartSketch document.
- If you insert a SmartSketch document into the current document, the terminators, spaces, text, and styles appear in paper units relative to the source document. The dimension lines and extension lines scale as though they are in real-world units. This behavior can cause the dimensions and text to appear very large or small in the container document.

{button Related Topics,AL("object cmd;ole high;paste special cmd",0,`NOT_FOUND')}

Break a Link

1. Click **Edit > Links**.
2. In the **Source File** box, click the link or links you want to break.
3. Click the **Break Link** button. When the software asks you to confirm that you want to break the link, click the **Yes** button.
4. Click the **Close** button.

{button Related Topics,AL("links cmd;ole high;links db",0,`NOT_FOUND')}

Change a Link

1 Click **Edit > Links**.

2 Click the link you want to change.

Note To click multiple links, hold down **Ctrl** while you click on each link.

3 Click the **Change Source** button.

4 In the **File Name** box, type or click the name of the file to which you want to change the link.

Tips

- If you do not see the file you want to open, click a different drive, directory, or folder.
- If you have other links to the same source file, make sure you change all links from the previous source file to the new source file.

{button Related Topics,AL("links cmd;ole high",0,`NOT_FOUND')}

Link an Object

Make sure that you save the source document before you link the information.

To create a link to another document

1. In the software in which the information you want to link was created, open the source document and then select the information that you want to link.
2. Click **Edit > Copy**.
3. Switch to the SmartSketch document.
4. Click **Edit > Paste Special**.
5. Click the **Paste Link** option.

   Note This option is available only if the software that created the document supports OLE.
6. Under As, click the option you want.

To create a link to another document without leaving the software

1. Click **Insert > Object**.
2. Click the **Create From File** option.
3. In the **File Name** box, type or select the name and directory path of the document to which you want to link.
4. Click the **Link To File** check box.

   Note With this procedure, you can create a link only to an entire document; you cannot link to a selection in a document.

Tips

- SmartSketch creates links as automatic links by default. SmartSketch updates automatic links each time you open the document and each time the data in the source document changes, whereas it updates manual links only when you specify. To change the way SmartSketch updates links, see **Update a Link**.
- You can also link information by dragging and dropping a document from the **Windows Explorer** or SmartSketch **Explorer** onto the drawing sheet. You must press the **Ctrl** + **Shift** keys while dragging and dropping to link the information. If you do not press a key, the information will be embedded.
- If you insert an .igr or .sym document into the document, the terminators, spaces, text, and styles appear in paper units relative to the source document. The dimension lines and extension lines scale as though they are in real-world units. This behavior can cause the dimensions and text to appear very large or small in the container document.

{button Related Topics,AL("links cmd;links db;ole high;object cmd;copy cmd;paste special cmd;update link how",0,`NOT_FOUND')}

Edit an Embedded Object with the Source Software

1. Double-click the embedded object.
2. Edit the object.
3. Do one of the following:

- If you are editing the object in a separate application window, click either **Exit** or **Update** on the **File** menu to return to **SmartSketch**.
- If you are editing the object in software that temporarily replaces the **SmartSketch** menus and toolbars, click anywhere outside the embedded object to return to **SmartSketch**.

{button Related Topics,AL("links cmd;ole high;object cmd;copy cmd;paste special cmd",0,`NOT_FOUND')}

Open a Document

To Open a Document without Leaving the Software

1. On the **Main** toolbar, click the **Open** button.

2. Select the directory containing the document you want to open.
3. Type the name of the document or select it from the list of documents.
4. On the **File Open** dialog box, click **OK**.

To Drag and Drop a Document

1. Open the Windows Explorer and select the document that you want.
2. Drag the document into the current document.

Tips

- You can open one of the last documents you worked on by selecting from the list at the bottom of the **File** menu.
- In the **File Open** dialog box, you can double-click the document name for the document to open the document.
- If you do not see the document you want to open, make sure the drive, directory, and type are correct.
- If you do not know the location of the document, you can look for the document. On the **Windows Taskbar**, click the **Start** button and then click the **Find** command.

{button Related Topics,AL("open high;documents high",0,`NOT_FOUND')}

Paste an Element

You can place elements on the **Clipboard** with the **Copy** or **Cut** command, then paste the elements into the current document or another document.

1. Open the document in which you want to paste the contents of the **Clipboard**.
2. On the **Main** toolbar, click the **Paste** button.

Tip You can also click the right mouse button and click the **Paste** command.

Tips

- The contents of the **Clipboard** remain unchanged until you use the **Copy** or **Cut** command again.
- You cannot run the **Paste** command if the **Clipboard** is empty.
- You can use the **Undo** command to reverse the results of the **Paste** command.
- Pasted text and elements remain selected after you use the **Paste** command.

{button Related Topics,AL("paste cmd;copy cmd;cut cmd;edit high",0,`NOT_FOUND')}

Draw with PinPoint

{mci_left NOMENU,PPOINT.AVI}

1. On the **Main** toolbar, click the **PinPoint** button.

2. Click where you want the target point to be.

   {mci_left NOMENU,PINPNT1.AVI}

3. Run any drawing command. As you move the pointer, **PinPoint** displays the coordinates of the current mouse location in relation to the target point. To provide precision input to the current command, click when the coordinate display indicates that the cursor is in the correct position or type coordinate values in the X and Y ribbon bar boxes.

   {mci_left NOMENU,PINPNT2.AVI}

   Caution You cannot place elements with the **Pinpoint** button on the **Main** toolbar if you are using the **Grid Snap** command.

Tips

- When the pointer reaches a distance from the target point that is a multiple of the **Step Value** set on the ribbon bar, the related coordinate value and help line become bold.
- If you know the exact x and y distances from the target point that you want to use as command input, you can type the values in the X and Y ribbon bar boxes.
- You can type a known x or y value into the X or Y ribbon bar box to lock one axis position, then graphically define the coordinate for the other axis.
- You can move the target point at any time. Click the **Reposition** button on the ribbon bar, then click where you want the target point to be.
- You can re-orient the **PinPoint** x axis. Type a positive value in the **Angle** box on the **PinPoint** ribbon bar to rotate the axis counterclockwise, or a negative value to rotate the axis clockwise.

{button Related Topics,AL("pinpoint cmd;pinpoint high",0,`NOT_FOUND')}  {button Show Me,AL("pinpoint line ex",0,`NOT_FOUND')}

Re-Orient PinPoint

The default PinPoint orientation is with the **PinPoint** x axis horizontal. To re-orient the **PinPoint** x axis, type an angle in the ribbon bar **Angle** box. A positive value rotates the horizontal axis counterclockwise. A negative value rotates the axis clockwise. The y axis is automatically repositioned to remain perpendicular to the x axis.

{button Related Topics,AL("pinpoint high;pinpoint how",0,`NOT_FOUND')}

Reposition the PinPoint Target Point

Do one of the following:

- On the **PinPoint** ribbon bar, click the **Reposition** button. The target point is attached to the pointer. Click where you want the target point to be.
- Press the **F12** button on the keyboard. The target point moves to the current cursor location.

{button Related Topics,AL("pinpoint cmd;pinpoint high",0,`NOT_FOUND')}

Move an Element Precisely

You can use **PinPoint** with the **Select Tool** to move an element a precise distance in X and Y relative to a known position in your drawing.

1. On the **Draw** toolbar, click the **Select Tool** button.

2. On the **Main** toolbar, click the **PinPoint** button.

3. Click the location that you want for the **PinPoint** target point to be.
4. Using the **Select** tool, point to the element that you want to move. Relationship indicators appear next to the pointer to indicate keypoints on the element.
5. When the relationship indicators identify the key point you want, drag the element. **PinPoint** displays the distance between the cursor and the reference point as you drag.
6. Release the mouse button when the element is where you want it.

{button Related Topics,AL("pinpoint high;pinpoint how;select high ",0,`NOT_FOUND')}

Position an Image

After you insert a raster image into a document, you can use the **Position** command to align the image with a vector element or a group of elements. You can move, scale, rotate, and skew a source image to match a target image or vector frame. All alignment modifications are made by placing up to three source points and three target points. You can define source points by clicking and dragging or by a single click on the source image.

To use the **Position** command, select an image and then click **Position** on the shortcut menu.

Defining Source and Target Points by Clicking and Dragging

Clicking and dragging produces an outline of the source image that contains a crosshair, representing the source image being dragged to the target image. The target image can be an actual image, a vector element, or nothing at all. The second point entered on the source image enables you to scale and rotate the image by clicking and dragging. The third point enables you to skew the image by clicking and dragging. The third point is also the "end point."

During a drag operation, you can hold down the **Shift** key to restrict movement to 45 degree increments for placing the second target point. You can also hold down the **Ctrl** key to restrict movement for placing the second target point.

Position an image by drag:

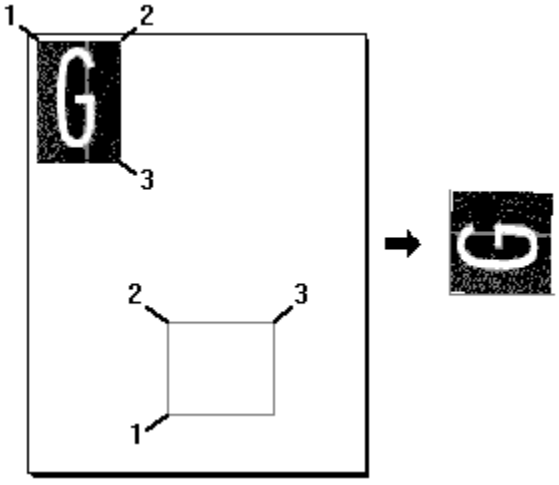
1. Click on the image for source point one.
2. Drag the displayed outline to the appropriate position and release the mouse button at target point one.
3. Click on the image again for source point two.
4. Drag the mouse to scale and rotate the image to the appropriate angle and release the mouse for target point two.
5. Click on the image again for source point three.
6. Drag the mouse to skew the image to register it appropriately and release the mouse for target point three.

Defining Source and Target Points Using a Single Click

When you define source points using single clicks, you must also use single clicks to define the target points. Depending on where the source and target points are placed, you can use this method to move, scale, rotate, and skew the source image to match a target image. When you use single clicks, the image is not moved into position until the third target point is defined or you double-click to exit the command.

Position an Image by a single click:

1. Click on the source image for source point one.
2. Click on the target image for target point one.
3. Click on the source image again for source point two.
4. Click another area on the target area for target point two.
5. Click a third area on the source image for source point three.
6. Click a third area on the target image for target point three.



Tips

- You can hold down the **Shift** key and click to restrict the second target point movement to 45 degree increments.
- You can hold down the **Ctrl** key and click to restrict the second target point movement to 30 degree increments.
- You can hold down the **Alt** key to place the target point in any direction.
- You can hold down the **Shift** + **Alt** keys to restrict the third target point movement to 45 degree increments.
- You can hold down the **Ctrl** + **Alt** keys to restrict the third target point movement to 30 degree increments.

{button Related Topics,AL("position cmd",0,`NOT_FOUND')}

Set Printing Options

1 On the **Main** toolbar, click the **Print** button.

2 Do one of the following:

To print	Do this
A selected area of a sheet	Under **Print Range**, click **Print Area** and then click the **OK** button. A set of crosshairs appears that you can drag to define the area. The **Print Area** dialog box automatically appears so that you can set options for printing the area.
A range of continuous sheets	In the **Sheets** box, type a range with a hyphen between the sheet numbers. For example, to print sheets 3 through 7, type 3-7. This prints each sheet on a separate piece of paper.
Non–continuous sheets	In the **Sheets** box, type the sheet numbers, separated by commas. For example, to print pages 1 and 6, type 1,6.
Selected sheets	In the document, select the sheets you want to print; then, on the **Print** dialog box, click the **Selected Sheets** option. This prints the selected sheets as a composite drawing, like layers on a single sheet of paper. The software uses the scale, paper size, and orientation of the active sheet for printing the final document.
An entire document	Click the **All Sheets** option. This is recommended only when all the sheets have the same orientation and paper size.
Multiple copies of the entire document	In the **Number of Copies** box, type or select a number of copies. To sort the sheets by sheet number, select the **Collate Copies** check box.

Tips

- When you select several sheets and then click the **Selected Sheets** option on the **Print** dialog box, all the selected sheets are printed as one composite drawing, like layers on top of one another.
- You can set other options for the printer by clicking the **Properties** button or the **Settings** button on the **Print** dialog box. You can set the paper size, source, and orientation.
- Click the **Sheet Setup** command on the **File** menu to specify the drawing sheet size and scale.

{button Related Topics,AL("print cmds;print how;set printing options how;print high;drawing sheet manipulation how ",0,`NOT_FOUND')}

Print an Area of a Drawing Sheet

Because the available fonts available on the selected printer affect both display and printing, select the printer to use before you begin working on a document.

Before you can print for the first time, you must connect the printer to the computer or network, install a printer driver, and select the printer to print the document. For more information about installing a printer, see the printer documentation. To set options for an installed printer, click **Print** on the **File** menu, and then click the **Properties** button.

1. On the **Main** toolbar, click the **Print** button.

2. On the **Print** dialog box in the **Name** box, select the printer you want to use.
3. In the **Number Of Copies** box, type the number of copies you want.
4. In the **Print Range** box, click the **Print Area** option and click **OK**.
5. When a set of crosshairs appears, drag them to define the area that you want to print.
6. On the **Print Area** dialog box, set the options to print the area that you selected.

Tips

- You can set other options for the printer by clicking the **Properties** or **Settings** buttons on the **Print** dialog box. You can set the paper size, source, and orientation.
- When you select several sheets and then click the **Selected Sheets** option on the **Print** dialog box, all the selected sheets print as one composite drawing, like layers on top of one another. The software uses the scale, paper size, and orientation of the active sheet for printing the final document.
- Click the **Sheet Setup** command on the **File** menu to specify the drawing sheet size and scale.
- Saving your document before you print it is a good idea. This way, if a printer error or other problem occurs, you will not lose any work completed since the last time you saved the document.
- You can display the document as it will be printed. Click the **Options** command on **Tools** menu. Then, on the **View** tab, click the **Display As Printed** check box.

{button Related Topics,AL("print cmds;print cmd;set printing options how;print high;drawing sheet manipulation how",0,`NOT_FOUND')}

View the Properties of a Document

1. Click **File > Properties**.
2. On the **Properties** dialog box, click the tab that contains the information you want to see.

   Note You must save the document before you can set or view the document statistics or summary information on the **Statistics** and **Summary** tabs of the **Properties** dialog box.

Tips

- The **Properties** dialog box displays information about the current condition of the active document. If the document has unsaved changes, you must save the document to update the property information.

Set the Unit of Measure

1 Click **File > Properties**.

2 On the **Properties** dialog box, click the **Units** tab. You can set the units for the length, area, or angle of a drawing.

Note This setting does not set units for dimensions on the drawing sheet. To set the units for dimensions, click the **Style** command on the **Format** menu and set the units for a dimension style. Or, you can click the **Properties** command on the **Edit** menu and set the units for dimensions that you are about to place.

3 On the **Units** tab, set the options you want.

{button Related Topics,AL("properties db;unit readout db;properties cmd;measure high",0,`NOT_FOUND')}

Set Document Properties

1 Click **File > Properties**.

2 On the **Properties** dialog box, set the options that you want, such as summary information or keywords.

Tips

- You must save the document before you can set or view the document statistics or summary information on the **Statistics** and **Summary** tabs of the **Properties** dialog box.

{button Related Topics,AL("document properties high;properties cmd;file properties db",0,`NOT_FOUND')}

Print a Document

Because the fonts available on the selected printer affect both display and printing, select the printer you will use before you begin working on a document.

Before you can print for the first time, you must connect the printer to the computer or network, install a printer driver, and select the printer you will use to print the document. For more information about how to install a printer, see the printer's documentation. To set options for an installed printer, click **Print** on the **File** menu and then click the **Properties** button.

1. Click **Main > Print** button.

2. On the **Print** dialog box, in the **Name** box, select the printer you want to use.
3. In the **Number Of Copies** box, type the number of copies you want.
4. In the **Print range** box, specify the range of pages you want to print.

Tips

- You can set other options for the printer by clicking the **Properties** button or the **Settings** button on the **Print** dialog box.
- It is a good idea to save your document before you print it. This way, if a printer error or other problem occurs, you will not lose any work completed since the last time you saved the document.
- You can display the document as it will be printed. Click the **Options** command on **Tools** menu. Then, on the **View** tab, click the **Display As Printed** check box.

{button Related Topics,AL("print cmds;print how",0,`NOT_FOUND')}

Print to a File

1 On the **Main** toolbar, click the **Print** button.

2 On the **Print** dialog box, set the **Print to file** option.

3 Click the **OK** button.

4 On the **Print to file** dialog box, type the name of the file and select the directory that you want to print to.

{button Related Topics,AL("print cmds;print how",0,`NOT_FOUND')}

Paste an Element with a Different Format

1. Cut or copy the element you want to paste.
2. Click **Edit > Paste Special**.
3. To embed the information, click the **Paste** option.
4. To link the information, click the **Paste Link** option.
5. In the **As** box, select the format that you want to use to paste the information
6. To paste the information into the lower left corner of the current document, click **OK**.

Tips

- The contents of the **Clipboard** remain unchanged until you use the **Paste Special** command again.
- You cannot run the **Paste Special** command if the **Clipboard** is empty.
- If you select an element as the insertion point and that element cannot be replaced, the **Clipboard** contents are not pasted at the insertion point.
- You can use the **Undo** command to reverse the results of the **Paste Special** command.
- You can use the **Repeat** command to repeatedly paste the contents of the **Clipboard** at the insertion point.
- If the **Clipboard** contains data, and you have selected data in the document, the software replaces the selected data with the contents of the **Clipboard**.
- Pasted text and elements remain selected after you use the **Paste Special** command.

{button Related Topics,AL("paste special cmd",0,`NOT_FOUND')}

Draw a Rectangular Pattern

{mci_left NOMENU,RECPTN1.AVI}

1 Select one or more elements to pattern.

2 On the **Change** toolbar, click the **Rectangular Pattern** button.

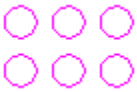
3 To define a rectangular area for the pattern, click the **Pattern Options** button on the ribbon bar.

4 On the **Rectangular Pattern Options** dialog box, set the **Fit to Rectangle** option.

Note Use the ribbon bar boxes and the **Rectangular Pattern Options** dialog box to define other characteristics of the pattern, such as the number of pattern members and rows.

5 On the drawing sheet, click to identify one corner of the pattern and click to identify the opposite corner of the pattern.

6 To finish creating the pattern, click the **Finish** button on the ribbon bar.



Tips

- If you do not like the results of the pattern, you can click the **Undo** button on the **Main** toolbar.

{button Related Topics,AL("circular pattern rb;rectangular pattern rb;rectangular pattern cmd;rectangular pattern db;select high;patterns high",0,`NOT_FOUND')}

Redo Actions

Do one of the following:

- To redo the most recent action, on the **Main** toolbar, click the **Redo** button.
- To redo more than one action, click the down arrow next to the **Redo** button on the **Main** toolbar, and select the actions you want to undo or redo.

Note You can do this action only if you have placed the **Redo List** button on the **Main** toolbar. You can place the button by clicking the **Customize** command on the **Tools** menu.

{button Related Topics,AL("edit high;redo cmd;draw high",0,`NOT_FOUND')}

Repeat a Command

- Click **Edit > Repeat**.

{button Related Topics,AL("repeat cmd;draw high",0,`NOT_FOUND')}

Restore a Customized Toolbar to Default Settings

If you customize a toolbar, you can restore the toolbar to the original settings.

1. Click **View > Toolbars**.
2. In the **Toolbars** dialog box, select the toolbar you want to restore.
3. Click the **Reset** button.
4. Select the **OK** button.

{button Related Topics,AL("customize how;customize cmd",0,`NOT_FOUND')}

Close a Document Without Saving Changes

Note The **Revert** command is available after you select a document by double-clicking it.

- Click **File > Revert**.

  Note The changes you made to the document are not saved.

Tips

- You can use the **Close and Return** command to save any changes you made to the document.

Set an Option on a Ribbon Bar

When you start a command, the software often provides a ribbon bar. The ribbon bar contains option buttons, check boxes, text boxes, and list boxes that you can use to tell the software how you want to complete a task.

To set an option

- Enter the information you want the command to use.

To select or clear an option

Do one of the following:

- Click the option button, check box, or list item.
- Click the down arrow to display a list and then click the item you want.

{button Related Topics,AL("ui high;ribbon bars high",0,`NOT_FOUND')}

Rotate an Element

1. Select one or more elements.
2. On the **Change** toolbar, click the **Rotate** button.

3. If you want to copy the rotated elements, click the **Copy** button on the ribbon bar.
4. Click where you want the center of rotation to be. The software dynamically displays a reference axis for the rotation.
5. Click to define the other end of the reference axis. The software dynamically displays the rotation axis and elements being rotated. The location and position of the reference axis defines the rotation from point.
6. Position the elements where you want them and then click to define the rotation to point.

{mci_left NOMENU,ROTATE.AVI}

Tips

- To rotate by increments, type a value in the **Step Angle** box on the ribbon bar.
- You can click the **Rotate** command before you select elements to rotate.
- You can use relationship indicators to define the rotation from and to points.
- Instead of using the **Copy** button on the ribbon bar to copy the rotated elements, you can hold the **Ctrl** key while you click to define the to point.
- Relationships between elements within the selection set are maintained if the relationships still apply after the elements have been rotated.
- You can use other view manipulation commands, such as **Zoom** and **Pan**, while you are using the **Rotate** command.

  When you finish manipulating the view, the software returns you to the **Rotate** command at the point where you left off.

{button Related Topics,AL("rotating elements high;rotate cmd;rotate how;rotate rb",0,`NOT_FOUND')}

Save a Document

If you save a document that has not previously been saved, the software automatically prompts you to indicate if you want to save the changes.

To save the active document

1. Click **File > Save**.
2. If you have made changes since the document was last saved or if you have never saved the active document, you are prompted to indicate if you want to save your changes. Do one of the following:

- If you do not want to save your changes, click the **No** button.
- If you want to save the changes, click the **Yes** button. If you click the **Yes** button, the **Save As** dialog box is displayed so that you can give the document a name and specify a directory and format to save it to.
- If you do not want to close the document, click the **Cancel** button.

To save a document in a different format

1. Click **File > Save As**.
2. Select the drive and directory for the new document.
3. In the **File Name** box, type a new name for the document.
4. In the **Save As Type** box, select the document format you want to use.

To save a document that was created in a different format

1. Click **File > Save As**.
2. Select the drive and directory for the new document.
3. In the **File Name** box, type a new name for the document.
4. In the **Save As Type** box, select the document format you want to use.

Tips

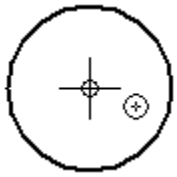
- If the active document is read-only, you can save changes only by saving the document with a new name.
- You can save a document to .cgm or .HTML format if you want to make the document available for viewing on the Internet. You can use the **Save As Web Page** command on the File menu.
- You can also save a document as a template with the **Save As Template** command on the **File** menu.

{button Related Topics,AL("save cmds;document high;save high",0,`NOT_FOUND')}

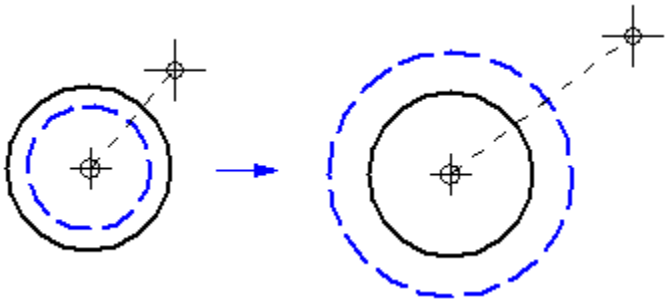
Scale an Element

1. Select one or more elements.
2. On the **Change** toolbar, click the **Scale** button.

3. If you want to copy the scaled elements, click the **Copy** button on the ribbon bar.
4. Click where you want the scale origin to be. The software displays a crosshair at the scale origin, and dynamically displays a line between the scale origin and the pointer.



5. Move the pointer until the elements are the size you want and then click.



Tips

- Relationships within the selection set are maintained if the relationships are still applicable after the elements have been scaled.
- You can click the **Scale** command before you select elements to scale.
- Instead of clicking to define the new scale, you can use the **Scale Factor** box on the ribbon bar.
- Instead of using the **Copy** button on the ribbon bar to scale and copy, you can hold the **Ctrl** key while you click to define the new scale.
- You can use relationship indicators with this command.
- You can use the **Step** box on the ribbon bar to make the **Scale Factor** increase or decrease incrementally as you move the mouse.
- You can use the **Reference** box on the ribbon bar to change how the command dynamics correspond to the **Scale Factor**.
- To change the overall size of the graphics with respect to the paper size, use **Sheet Setup** on the **File** menu.

{button Related Topics,AL("scaling elements high;scale cmd;scale how;scale rb",0,`NOT_FOUND')}

Fit a Sketch Drawn in Real-World Units on the Drawing Sheet

1. Click **File > Sheet Setup**.
2. On the **Size** and Scale tab of the **Sheet Setup** dialog box, select the sheet size that you want. After you close the dialog box, the correct sheet size is displayed.
3. Draw the elements that you want using real-world units. Do not worry if the elements do not fit on the sheet.
4. On the **File** menu, click **Sheet Setup** to check the ratio of the sheet size to the overall drawing size.
5. On the **Sheet Setup** dialog box, on the **Size** and **Scale** tab, click the **Custom** radio button. You should use the ratio of the drawing to the drawing sheet to determine the custom scale for the drawing sheet. After you close the dialog box, the drawing scales to the scale that you selected. All dimensions appear in real-world units.

   Caution If you insert an **.igr** or **.sym** document into the drawing sheet, the terminators, spaces, text, and styles appear in paper units relative to the source document. The dimension lines and extension lines scale as though they are in real-world units. This behavior can cause the dimensions and text to appear very large or small in the container document.

Tips

If you use the **Scale** button on the **Change** toolbar to scale the drawing, the dimensions are scaled to compensate for the change in size. The **Scale** button changes the size of one set of geometry to another set of geometry in the document. To change the overall size of the graphics with respect to the paper size, use **Sheet Setup** on the **File** menu.

{button Related Topics,AL("sheet setup cmd;sheets high;paper high",0,`NOT_FOUND')}

Scale an Inserted Object Back to Its Original Model Size

When you insert an AutoCAD or MicroStation document into a drawing sheet with the **Object** command on the Insert menu, the object is automatically scaled to fit the print area of the drawing sheet. The print area size changes depending on the selected working sheet. In some cases, you might want to work in model space and not paper space.

1. Click **Insert > Object** to insert an AutoCAD or MicroStation object.
2. Highlight the inserted object with the **Select** tool.
3. On the shortcut menu, click **Properties**.
4. On the **Properties** dialog box, on the Info tab, click the Scale (1:1) radio button. After you close the dialog box, the inserted object changes back to the original model size.

Tips

- If an inserted object was scaled before bringing it into the drawing sheet, you might need to adjust the scale on the **Properties** dialog box to get the results you want.
- After inserting an AutoCAD or MicroStation document, if you have not performed any other actions, you can click **Undo** on the **Edit** menu to change the object back to the original model size.

{button Related Topics,AL("object cmd;properties cmd",0,`NOT_FOUND')}

Scale an Element with Its Handles

You can use handles to scale framed elements such as text boxes, symbols, and linked or embedded objects.

1. Select an element.
2. Position the pointer over one of its handles.
3. Drag the handle to scale the element or object.

Tips

- You can also click the **Scale** button on the **Change** toolbar to scale the drawing; the dimensions are scaled to compensate for the change in size. The **Scale** button changes the size of one set of geometry to another set of geometry in the document. To change the overall size of the graphics with respect to the paper size, use **Sheet Setup** on the File menu.
- Relationships within the selection set are maintained if the relationships are still applicable after the elements have been scaled.

{button Related Topics,AL("scaling elements high;scale cmd;scale how;scale rb",0,`NOT_FOUND')}

Open an OLE Object for Editing

1 Select an OLE object.

2 Do one of the following:

- If the object is linked, click the right mouse button to display the shortcut menu and click **Open** to open the application the object was created in.
- If the object is embedded, double-click the object to edit it.

{button Related Topics,AL("object element selection high;ole high;select cmd",0,`NOT_FOUND')}

Copy an Element with the Select Tool

1. On the **Draw** toolbar, click the **Select Tool** button.

2. Select one or more elements.
3. Position the pointer over the element, but not over any of the element's handles. The pointer changes to show that the element can now be copied.
4. Hold the **Ctrl** key and drag the copy to its new location.

{button Related Topics,AL("object element selection high;select cmd;copy cmd;copy high",0,`NOT_FOUND')}

Select an Element

1 On the **Main** toolbar, click the **Select Tool** button.

2 Do one of the following:

- To select one element, click it.
- To select more than one element hold the **Shift** or **Ctrl** key and click each element.
- To select more than one element at once, drag to fence the objects.
- To select one of several overlapping elements, use **PickQuick**.

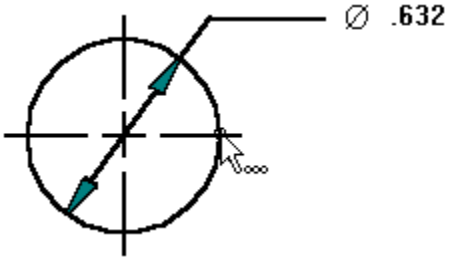
Tip You can also click the right mouse button and click the **Select All** command.

To select an element with PickQuick

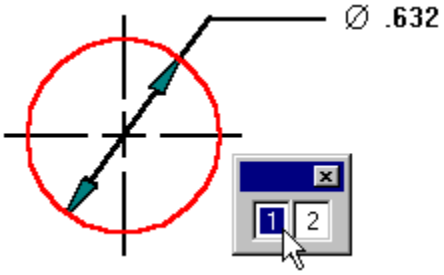
PickQuick helps you to select elements that overlap each other.

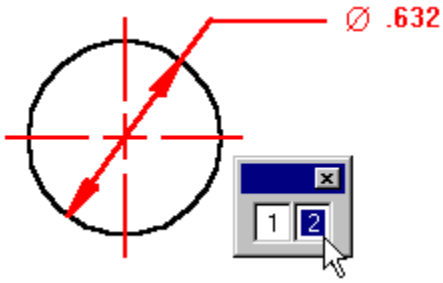
1 Position the pointer over the element you want to select and pause the pointer there.

2 When the cursor changes to an ellipsis (three dots), click. The software displays the **PickQuick** toolbar near the cursor, with a button for each selectable element.



3 Move the cursor over the **PickQuick** buttons, without clicking, to highlight the corresponding elements.





4 When the element you want to select is highlighted, click the corresponding button on the **PickQuick** toolbar.

To clear a selection

- Do one of the following:
- Click in free space.
- Click the right mouse button in free space.
- Select another element without holding the **Shift** or **Ctrl** key.
- To clear the selection of one element and leave other elements selected, click the element while holding the **Shift** key.

Tips

- When the **Select Tool** is active, selectable elements highlight as you pass the pointer over them. When the element you want to select is highlighted, click to select it.
- You can use the ribbon bar buttons to set element selection options.
- You can change the element highlight and selection colors with the **Options** command on the **Tools** menu.

{button Related Topics,AL("object element selection high;select cmd",0,`NOT_FOUND')}

Modify an Element with the Select Tool

1. On the **Draw** toolbar, click the **Select Tool** button.
2. Select an element.
3. Position the pointer over one of the element's handles. The pointer changes to show that the element can now be modified.
4. Drag the element handle to reposition it. You can use relationships to position the handle precisely.

Tips

- To retain the angle or aspect ratio of the element you are modifying, hold the **Shift** key while you drag the element's handle.
- To suspend the effect of relationship handles so that you can modify the element more freely, hold the **Alt** key while you drag the handle. The software maintains relationships as appropriate for the modified element.

{button Related Topics,AL("object element selection high;select cmd;modify cmd;smartsketch cmd",0,`NOT_FOUND')}

Move an Element with the Select Tool

1. On the Main toolbar, click the **Select Tool** button.
2. Position the pointer over the element, but not over any of the element's handles.
3. Drag the element to its new position.

To move an element with precision

1. On the **Main** toolbar, click the **Select Tool** button.
2. Position the pointer over the element you want to move, at a location where the software recognizes a key point.
3. Begin to drag the element.
4. Release the element when the software recognizes the key point of another element, or a relationship between the element you are moving and another element.

Tips

- If you want to move a selected element, make sure to position the pointer away from any of the element's handles. Dragging a handle modifies the element instead of moving it.

Send a Document to Others

1 **Open** the document you want to send.
2 Click **File > Send**.
3 Select the recipients using your electronic mail application's dialog box.
4 Type the subject and the accompanying message.
5 Send the message with the document attached.

{button Related Topics,AL("send cmd;documents high;documents routing;save high",0,`NOT_FOUND')}

Set an Option on a Dialog Box

To select a dialog box tab

- In the dialog box, click the tab that contains the options you want.

To set an option

- Enter the information you want the command to use and press Enter.

To select or clear an option

Do one of the following:

- Click the option button, check box, or list item.
- Click the down arrow to display a list, and then click the item you want.

Display Background Sheets

Click **View > Background Sheets**.

{button Related Topics,AL("drawing sheets high;background sheets cmd;sheet setup cmd ",0,`NOT_FOUND')}

Create a Background Sheet

1. Click **View > Background Sheets**.
2. Click **Insert > New Sheet**. The background sheet is created using the default drawing sheet settings.
3. Click **File > Sheet Setup**.
4. On the **Sheet Setup** dialog box, set the options you want.
5. On the new background sheet, draw any graphics, such as title blocks and borders, that you want to appear on your working sheets.
6. Click **View > Working Sheets**.
7. Click **File > Sheet Setup**.
8. On the **Sheet Setup** dialog box, click the **Background** tab.
9. Click the **Background Sheet** list box and select the name of the background sheet you just created to attach the new background sheet to the working sheet.

Tips

You can double-click any tab to access the **Sheet Setup** dialog box. You can also access the **Sheet Setup** dialog box by moving the pointer over a drawing sheet tab, clicking the right mouse button to activate the shortcut menu, and clicking the **Sheet Setup** command.

{button Related Topics,AL("drawing sheets high;background sheets cmd ;new sheet cmd;working sheet cmd",0,`NOT_FOUND')}

Delete a Drawing Sheet

1 Click **Edit > Delete Sheet.**

2 Confirm the selection.

Tips

- The **Delete Sheet** command deletes the active drawing sheet and any drawing sheets whose drawing sheet tabs are selected.

{button Related Topics,AL("drawing sheets high;delete sheet cmd ",0,`NOT_FOUND')}

Create a New Drawing Sheet

- Click **Insert > New Sheet**. The new sheet is inserted after the active drawing sheet.

Tips

- You can attach a background sheet to any drawing sheet using the **Sheet Setup** command on the **File** menu. Click the **Background** tab on the **Sheet Setup** dialog box to find the background sheet settings.

{button Related Topics,AL("drawing sheets high;new sheet cmd ",0,`NOT_FOUND')}

Change the Background Sheet

1. Click **File > Sheet Setup**.
2. On the **Sheet Setup** dialog box, click the **Background** tab.
3. Select a new background sheet from the list.

   Note If a background sheet has not been created, the list does not display any options.

Tips

- When you change the background sheet, the size and margins of your working sheet equal the settings of the selected background sheet.
- You can double-click any tab to access the **Sheet Setup** dialog box. You can also access the **Sheet Setup** dialog box by moving the pointer over a drawing sheet tab, clicking the right mouse button to activate the shortcut menu, and clicking the **Sheet Setup** command.

{button Related Topics,AL("drawing sheets high;sheet setup cmd ",0,`NOT_FOUND')}

Activate a Drawing Sheet

- Click the tab of the drawing sheet you want to activate.

Tips

- You can display a shortcut menu available by clicking the right mouse button while the cursor is over a drawing sheet tab.
- You can double-click any tab to access the **Sheet Setup** dialog box. You can also access the **Sheet Setup** dialog box by moving the pointer over a drawing sheet tab, clicking the right mouse button to activate the shortcut menu, and clicking the **Sheet Setup** command.

{button Related Topics,AL("drawing sheets high",0,`NOT_FOUND')}

Set Up a Drawing Sheet

1 Click **File > Sheet Setup**.

2 On the **Sheet Setup** dialog box, set the options you want.

Note If you want to set up a background sheet, click the **Background** tab and set the options you want.

Tips

- You can save the sheet setup as a default using the **Save Defaults** button on the **Sheet Setup** dialog box. The current settings will then be used as the default settings for any new drawing sheets you create in the document.
- You can set up options for an existing drawing sheet by double-clicking any tab to access the **Sheet Setup** dialog box. You can also access the **Sheet Setup** dialog box by moving the pointer over a drawing sheet tab, clicking the right mouse button to activate the shortcut menu, and clicking the **Sheet Setup** command.

{button Related Topics,AL("drawing sheets high;drawing sheet tabs high;sheet setup cmd",0,`NOT_FOUND')}

Rename a Drawing Sheet

1 On the drawing sheet, click the tab of the sheet you want to rename.

2 Click **File > Sheet Setup**.

3 On the **Sheet Setup** dialog box, click the **Name** tab and type a new name for the sheet you selected.

Tips

- You can also rename a drawing sheet with the **Rename** command on the shortcut menu. You can get the shortcut menu by moving the pointer over a drawing sheet tab and clicking the right mouse button.

{button Related Topics,AL("sheet setup db;rename sheets cmd;sheet setup cmd",0,`NOT_FOUND')}

Select and Manipulate Drawing Sheets

To display or manipulate a drawing sheet, you must click a drawing sheet tab. Drawing sheet tabs are displayed at the bottom of the work space. There is a tab for each drawing sheet in your document.

To select a drawing sheet

- Click a drawing sheet tab at the bottom of the drawing sheet. The drawing sheet is displayed and the name of the drawing sheet appears in bold. This drawing sheet becomes the working sheet.

To select several drawing sheets

- Press and hold **Ctrl** and click one or more tabs.

  Note To de-select several drawing sheets, press and hold **Ctrl** and click one or more current drawing sheet tabs.

To select a range of drawing sheets

- Click the first tab in the range, hold **Shift**, and then click the last tab in the range.

  Note To de-select all of the drawing sheets in a range, click any tab that is not part of the range.

To select all drawing sheets at once

- On the shortcut menu, click **Select All Sheets**.

  Note To access this command, you must hold the pointer over one of the drawing sheet tabs and click the right mouse button.

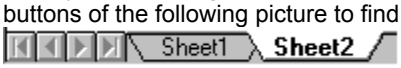
Tips

- When you select several sheets and then click the **Selected Sheets** option on the **Print** dialog box, all the selected sheets are printed as one composite drawing, like layers on top of one another. The software uses the scale, paper size, and orientation of the active sheet for printing the final document.

{button Related Topics,AL("drawing sheets high;documents high;sheet setup db;scroll tabs how",0,`NOT_FOUND')}

Scroll Through Drawing Sheet Tabs

On the current drawing sheet, click a scroll button next to the drawing sheet tabs. Clicking a scroll button displays the drawing sheet tabs so that you can access them easily and select a drawing sheet. Click the scroll buttons of the following picture to find out what each button does:



Note Clicking a scroll button does not display a different drawing sheet. If the document has only a few drawing sheets, the scroll buttons might not be available.

{button Related Topics,AL("drawing sheets high;documents high;sheet setup db;display sheets how",0,`NOT_FOUND')}

Scrolls to the first tab.

Scrolls to the previous tab. You can also scroll through several tabs by holding **Shift** and clicking this button.

Scrolls to the next tab. You can also scroll through several tabs by holding **Shift** and clicking this button.

Scrolls to the last tab.

Draw with Relationships

1. Set the **SmartSketch** options so that the software recognizes the relationships you want to use. You can set the options with the **SmartSketch Settings** command on the **Tools** menu.
2. On the **Draw** toolbar, click a drawing command button.
3. Move the pointer around on the drawing sheet to find relationships.
4. Click when the software recognizes a relationship you want to use for the element you are drawing. When you click with a relationship indicator displayed at the pointer, the relationship is established in the drawing.

Tips

- If the **Maintain Relationships** option is set, the software places relationship handles as you draw. These relationships are maintained when you modify the drawing.

{button Related Topics,AL("smartsketch high;smartsketch cmd;relationships high;maintain relationships cmd",0,`NOT_FOUND')} {button Show Me,AL("draw a line ex;draw an arc ex;smartsketch ex",0,`NOT_FOUND')}

Establish a Relationship with the SmartSketch Command

1 Click **Tools > Maintain Relationships**.

2 Draw as usual. The software automatically establishes recognized relationships. For each relationship, a relationship handle is placed on the related elements.

Tips

- Relationships cannot be established in certain cases.

{button Related Topics,AL("smartsketch high;smartsketch cmd;relationships high;maintain relationships cmd ",0,`NOT_FOUND')} {button Show Me,AL("connect points while placing line ex;connect points while modifying line ex;establish multiple relationships ex;case where relationship not maintained ex ",0,`NOT_FOUND')}

Suspend Relationships

1 Hold the **Alt** key on the keyboard. The software does not recognize any relationships while you hold this key.

2 Release the **Alt** key to re-activate the software's ability to recognize relationships.

{button Related Topics,AL("smartsketch high;smartsketch cmd",0,`NOT_FOUND')}

Apply a Style

1. Select the element you want to format.
2. Click **Format > Style**.
3. On the **Style** dialog box, in the **Styles** list, click the style you want to apply.
4. Click the **Apply** button.

Tips

- If you have formatted an element with the **Properties** command or by setting options on the active ribbon bar, these formats are removed when you apply a style.

{button Related Topics,AL("style cmd;styles high;styles db;reapply style db",0,`NOT_FOUND')}

Rename a Style

1 Click **Format > Style**.
2 On the **Style** dialog box, in the **Style Types** field, click the style type you want.
3 In the **Style** box, click the style you want to rename.
4 Click the **Modify** button.
5 In the **Name** box, type the new name for the style.

{button Related Topics,AL("styles db;styles high",0,`NOT_FOUND')}

Apply a Style to a Group of Elements

1. Select two or more elements.
2. Click **Format > Style**.
3. On the **Style** dialog box, in the **Style Type** box, click the style type that you want.

   Note If you have selected several elements from different style types, the **Style Type** box is blank.
4. In the **Style** box, click the style that you want to apply to the elements.
5. Click **Apply** to change all the elements that you selected.

Tips

- If you select different types of elements, you can apply a style only to the elements that are in the style type that you selected on the **Style** dialog box.

  For example, if you select several lines and dimensions on a drawing, you can apply a line style only to the lines. You cannot apply a line style to the dimensions.

{button Related Topics,AL("style cmd;style db;styles high",0,`NOT_FOUND')}

Delete a Style

1 Click **Format > Style**.
2 On the **Style** dialog box, in the **Style Types** field, click the style type you want.
3 In the **Style** box, click the style you want to delete.
4 Click the **Delete** button.
5 Confirm that you want to delete the style.

{button Related Topics,AL("styles db;styles high",0,`NOT_FOUND')}

Create a Style Using a Formatted Element

1. Select an element.
2. Apply the formats you want to save as a style by setting the options you want on the ribbon bar.
3. On the ribbon bar, click the **Style** box to select the current style name of the element.
4. Type a new name to create a style using the formats applied to the element.
5. Press the **Enter** key.

   Note If you create a new style using the **Style** box on the ribbon bar, you cannot base the new style on any other style.

{button Related Topics,AL("styles high;reapply style db",0,`NOT_FOUND')}

Create a Style with the Style Command

1. Click **Format > Style**.
2. On the **Style** dialog box, in the **Style Types** field, click the style type you want.
3. Click the **New** button to open a dialog box based upon the style type you clicked.
4. On the **Name** tab, in the **Name** box, type a name for the new style.
5. To base the style on an existing style, click a style from the list in the **Based On** field.
6. Click the other tabs on the dialog box and set the options you want to apply to the new style.

{button Related Topics,AL("style cmd;styles high;new dimension style db;new line style db;new fill style db;new text style db;new view style db",0,`NOT_FOUND')}

Save a Style to a Template

1 Open a document template.
2 Click **Format > Style**.
3 On the **Style** dialog box, select the style you want to save to the template of the active document.
4 Click the **New** or **Modify** button.
5 On the dialog box that appears, on the **Name** tab, click the **Save To Template** check box.

{button Related Topics,AL("style cmd;styles cmd;styles high",0,`NOT_FOUND')}

Change the Formats of a Style

1. Click **Format > Style**.
2. On the **Style** dialog box, in the **Style Types** field, click the style type you want.
3. In the **Style** box, click the style you want to change.
4. Click the **Modify** button to open a dialog box based upon the style type you clicked.
5. To base the style on an existing style, click a style from the list in the **Based On** field.
6. Click the other tabs on the dialog box and set the options you want to modify.

   After you close the dialog box, the software updates all elements formatted with the modified style throughout the document.

Tips

- If an element has a style, you can override the style by editing the element's properties with the Properties command on the **Edit** menu.
- You can remove style overrides by re-applying a style.
- You can modify one or more styles with the **Style** command on the **Format** menu.

{button Related Topics,AL("style cmd;styles high;modify dimension style db;modify line style db;modify text style db;modify fill style db;modify view style db;reapply style style db",0,`NOT_FOUND')}

Create a Template

1. Click **File > New**.
2. On the **File New** dialog box, click the **Template** option.
3. Click **OK** to open the template.
4. Complete any changes to the template.
5. Click **File > Save As**.
6. In the **Save In** box, specify the directory in which to save the new template.
7. In the **File Name** box, type a unique name for the new template. The template will be saved in the **TEMPLATE** directory located in the directory where you installed the software.

   Note You can use the extension .igr. A different one is not needed.

Tips

- You can change the default directory where templates are saved by selecting the **Options** command on the **Tools** menu and setting the directory that you want on the **File Locations** tab of the **Options** dialog box.

{button Related Topics,AL("templates cmd;templates high;style resource how",0,`NOT_FOUND')}

Add Styles to the Current Document

You can reference a style resource document from any template or document.

1. Click **File > Open** and open the document that you want to add a style resource document to.
2. Click **Format > Style**.
3. On the **Style** dialog box, click the **Resources** button.
4. On the **Style Resources** dialog box, click the **Add** button.
5. On the **Add Style Resources** dialog box, select the name of the style resources document that you want to add to the template.
6. Click **OK** on each dialog box.
7. When you close the document, click **OK** when you are prompted to indicate whether you want to save changes to document.

   The styles in the style resource document are referenced from the template or document that you just saved. If you open a document that references a style resource document, the styles in the style resource document will be available on the **Styles** list of the current document's ribbon bar. If you open a document that is based on a template with references to style resource documents, the styles will also be available in the same manner. You can then apply the styles in the style resource document to elements or annotations in the current document.

   Note The line styles are copied from the style resource document into the current document. The font styles are not copied. So, if you want another person to be able to view the same fonts in the document and that person's system does not have the same fonts installed, you should give that person a copy of the template along with the document.

Tips

- Sometimes you might attach several style resource documents that contain styles with duplicate names. In these cases, the style in the style resource document that is listed first in the **Style Resources** list takes precedence and will be listed on the ribbon bar of the active document.

{button Related Topics,AL("styles high;style cmd;style resource db;add style resource db",0,`NOT_FOUND')}

Place a Text Box

1 On the **Draw** toolbar, click the **Text Box** button.

2 To place a text box, drag to define the location and size of the text box. To see the text box, begin typing text.

When you place text by this method, the width measures exactly between the two points. Text is wrapped, if necessary.

The height measures at least the height between the two points. If necessary, the height of the text box increases to fit all of the text.

Tips

- To place a text box, you can also click a point, and begin typing text.

  When you place text by this method, the height and width are set to **Auto** mode. The size of the text increases automatically to contain all of the text. The text does not wrap.
- You can also place a text box by double-clicking any element. A blinking pointer appears below or in the center of the element.
- You can press **Enter** to create a new line in a text box.
- When you are in edit mode, a border appears around the text box.
- To place a callout, you can add a leader to the text box with the **Leader** command on the **Dimension** toolbar.

{button Related Topics,AL("text box cmd;text rb;annotations high;texthand high",0,`NOT_FOUND')}

Delete Text in a Text Box

1 Select the text that you want to delete in the text box.

2 Press the **Delete** key.

{button Related Topics,AL("text box cmd;text rb;annotations high",0,`NOT_FOUND')}

Move a Text Box

- Drag the text box to the location that you want.

Tips

- If handles of the text box are displayed, drag the highlighted border of the text box (or anywhere inside of the text box) to move it—dragging one of the solid square handles resizes it.

{button Related Topics,AL("text box cmd;text rb;annotations high;texthand high",0,`NOT_FOUND')}

Resize a Text Box

1 Click a text box to display its handles.

2 Drag a handle until the text box is the size you want.

Tip You cannot drag hollow handles.

{button Related Topics,AL("text box cmd;text rb;annotations high;texthand high",0,`NOT_FOUND')}

Apply a Border to a Text Box

1. Select the text box to which you want to apply a border.
2. On the shortcut menu, click **Properties**.
3. On the **Border and Fill** tab of the **Text Box Properties** dialog box, set the options for the type of border that you want.

Tips

- You can also apply a border by selecting a text box and clicking the **Border** button on the ribbon bar.
- To see a text box border that is greater than 2 mm, set **Display As Printed** on the **View** tab of the **Options** dialog box.

{button Related Topics,AL("text box cmd;text rb;text properties db;annotations high",0,`NOT_FOUND')}

Edit a Text Box

1 Select the text box that you want to edit.
2 Double-click the box.
3 Point to the location to edit the text and type the text that you want.

{button Related Topics,AL("text box cmd;text rb;annotations high",0,`NOT_FOUND')}

Trim an Element

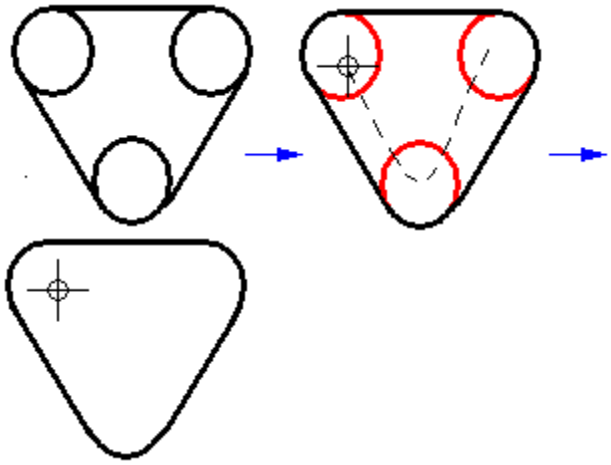
1 On the **Draw** toolbar, click the **Trim** button.

2 Do one of the following:

- To trim one element at a time, click each element you want to trim.

{mci_left NOMENU,TRIM1C.AVI}

- To trim more than one element at the same time, drag the pointer over the elements. When you release the mouse button, all the elements are trimmed.



Tips

- Before you click an element to trim, you can use **PickQuick** to see which portion of the element will be trimmed. When you move the pointer over the elements, **PickQuick** highlights the portion of the element that will be trimmed if you click.
- If you trim an element that does not intersect any other elements, the command trims the entire element, effectively deleting the element.

{button Related Topics,AL("trim cmd;extending or trimming high",0,`NOT_FOUND')}

Start the Tutorials

- Click **Help > Learning Center.**

{button Related Topics,AL("help high;tutorials cmd",0,`NOT_FOUND')}

Undo Actions

Do one of the following:

- To undo the most recent action, on the **Main** toolbar, click the **Undo** button.
- To undo more than one action, click the down arrow next to the **Undo** button on the **Main** toolbar, and select the actions you want to undo.

Note You can do this action only if you have placed the **Undo List** button on the **Main** toolbar. You can place the button by clicking the **Customize** command on the **Tools** menu.

Tips

- You cannot restore broken links with the **Undo** command.

{button Related Topics,AL("edit high;undo cmd;draw high",0,`NOT_FOUND')}

Restore a View

- Click **View > Previous**.

Tips

- You can also press **Alt** and click the Microsoft IntelliMouse wheel to restore the view.
- To stop the repainting of elements in the window, press **ESC**. This is convenient if you are working with a large document. To refresh the window, press <**F5**>.

{button Related Topics,AL("views high;previous view cmd",0,`NOT_FOUND')}

Zoom Out

1 On the **Main** toolbar, click **Zoom Out**.

2 Click the view.

Tips

- You can drag to dynamically zoom out of the view.
- When you roll the Microsoft IntelliMouse wheel backward, the view zooms out at the current pointer location.
- To go back to the previous view, click **Previous** on the **View** menu.
- To stop the repainting of elements in the window, press **ESC**. This is convenient if you are working with a large document. To refresh the window, press <**F5**>.
- To exit the command, click the right mouse button or press **ESC**.

{button Related Topics,AL("views high;zoom out cmd;zoom in on area how;zoom in views how;area cmd",0,`NOT_FOUND')}

Pan a View

1 On the **Main** toolbar, click **Pan**.

2 Click in the view you want to pan.

3 Click in the view again to show how far you want to pan.

Tips

- You can also drag the pointer to pan the view.
- When you drag the Microsoft IntelliMouse wheel, the view pans. When you press and drag the mouse wheel and move the pointer from one location to another, the view pans from one location to another.
- To go back to the previous view, click **Previous** on the **View** menu.
- To stop the repainting of elements in the window, press **ESC**. This is convenient if you are working with a large document. To refresh the window, press <**F5**>.
- To exit the command, click the right mouse button or press **ESC**.

{button Related Topics,AL("views high;pan cmd",0,`NOT_FOUND')}

Zoom Area

1. On the **Main** toolbar, click **Zoom Area**.

2. On the drawing sheet, drag around the area that you want to zoom in on. The view zooms in on the area you fenced with the pointer.

Tips

- When you roll the Microsoft IntelliMouse wheel forward, the view zooms in at the current pointer location. You can also press **Ctrl** and drag the mouse wheel to zoom an area or window.
- To go back to the previous view, click **Previous** on the **View** menu.
- To stop the repainting of elements in the window, press **ESC**. This is convenient if you are working with a large document. To refresh the window, press <**F5**>.
- To exit the command, click the right mouse button or press **ESC**.

{button Related Topics,AL("views high;area cmd;zoom out cmd;zoom in views how;zoom out views how",0,`NOT_FOUND')}

Zoom In

1 On the **Main** toolbar, click **Zoom In**.

2 Click the view.

Tips

- You can drag to dynamically zoom in the view.
- When you roll the Microsoft IntelliMouse wheel forward, the view zooms in at the current pointer location.
- To go back to the previous view, click **Previous** on the **View** menu.
- To stop the repainting of elements in the window, press **ESC**. This is convenient if you are working with a large document. To refresh the window, press <**F5**>.
- To exit the command, click the right mouse button or press **ESC**.

{button Related Topics,AL("views high;zoom out cmd;zoom in on area how;zoom out views how;area cmd",0,`NOT_FOUND')}

Switch to Another Open Document

Do one of the following:

- If you can see a portion of the document that you want to switch to, click its window.
- On the **Window** menu, click the document you want to work in. The document is displayed on top of other open documents.

{button Related Topics,AL("window cmd",0,`NOT_FOUND')}

Mechanism Modeling

{button Related Topics,AL("symbols high",0,`NOT_FOUND')} {button How To,AL("symbols how",0,`NOT_FOUND')} {button Show Me,AL("animate ex",0,`NOT_FOUND')}

You can use mechanism modeling to check for clearances on moving parts. Mechanism modeling is a set of elements that are related to each other so that one group of geometry moves relative to another when the dimensions change. You can use any kind of elements for mechanism modeling, but symbols are the easiest elements to use.

Symbols are easy to use because they act as one piece of geometry when you want to reposition them. For example, if you draw four lines that form a rectangle, you might want to connect the lines so that the rectangle has predictable behavior when rotated by a dimensional change. To do this, you must connect every line. The length of each line, the connections of the end points, and the angle between each line and its adjacent line must be defined as shown in the picture.

{mci_left NOMENU,ANIMAT1.AVI}

If the same four lines were constructed and made into a symbol, the orientation and length of each line would always remain constant regardless of the orientation of the symbol. No relationships or dimensions for the geometry making up the symbol would be necessary as shown in the picture. If you change the angle from 90 degrees to 45 degrees, the geometry stays together with the symbol as a rigid body.

{mci_left NOMENU,ANIMAT2.AVI}

The easiest way to create a mechanism is to use rigid body symbols and constrain the symbols to move like you want. Symbols can have two behaviors: rotating and non-rotating. The default behavior, non-rotating, means that the symbol cannot be rotated. The other behavior, rotating, allows rotation by relationships. This allows the symbol to rotate.

Example

The field pump mechanism serves as a good example of a kinematics animation. The mechanism is made up of five symbols and only one dimension to control the mechanism movement. If you select the dimension and change the value of the dimension from 12 degree to 60 degrees, all the geometry moves together. The other symbols that are connected to each other move to their proper position based on the angle applied and relationships to the symbols and the behavior applied to each symbol.

{mci_left NOMENU,ANIMAT11.AVI}

Adding Text to Documents

{button Related Topics,AL("engineering fonts high;vector fonts high;labels high;annotations high ",0,`NOT_FOUND')} {button How To,AL("create text box how;balloon how;leader how;labels how",0,`NOT_FOUND')}

You can add text to documents using two different types of tools:

- Annotations, such as text boxes and balloons.
- Labels, such as text labels and Smart Labels.

Click the **Related Topics** button for more information about each of these tools.

Attributes

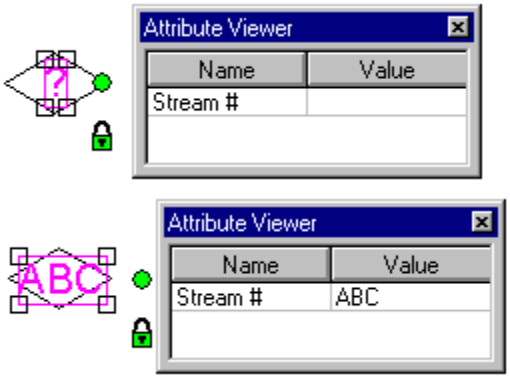
{button Related Topics,AL("formatting elements high;symbols high",0,`NOT_FOUND')}  {button How To,AL("attribute how;edit symbols how",0,`NOT_FOUND')}

Attributes can help you work more efficiently by allowing you to enter and edit values for a symbol, object, or element. Attributes can include such items as the manufacturer, price, and other data. Attributes include user-defined properties and parameters.

A user-defined property is an attribute assigned to an element or object that defines a characteristic about that element or object. A property is usually in the form of a text notation, such as cost, weight, color, and so forth. You can change user-defined properties, but these changes have no affect on the appearance of the element or object.

A parameter is a mechanism to change a property. A parameter is an attribute assigned to an element or object, usually a numerical value representing a dimension. Parameters are usually used in symbols to resize the length or width of a symbol.

The **Attribute Viewer** displays the user-defined properties and parameters for a selected item. The viewer also allows you to edit the values of the properties or parameters.



Tip User-defined properties also appear on the **User** tab of the **Properties** dialog box. Parameters appear only in the **Attribute Viewer.**

You cannot edit the names of attributes; you can edit only their values. The viewer displays two columns, one for the name of the attribute and one for the value. User-defined properties appear in plain text. Parameters appear in bold text.

When editing attributes, you can only work on one element or object at a time. When more than one item in the document is selected, no attributes are displayed in the **Attribute Viewer.**

Saving a Document Automatically

{button Related Topics,AL("autosave cmd;autosave db;add-ins overview high;save cmd",0,`NOT_FOUND')}
{button How To,AL("autosave how",0,`NOT_FOUND')}

You can set option to automatically save open documents at the interval that you specify. This safety feature prevents you from losing work in case of an unexpected system shutdown. You can set several options for **AutoSave**, including how often to save, which documents to save, and whether to be prompted for each save. You can use **AutoSave** when you have one or more documents open.

Caution If the **AutoSave** option does not appear on the **Tools** menu, you must install it by clicking **Add-Ins** on the **Tools** menu.

Bearing and Azimuth

{button Related Topics,AL("bearing azimuth cmd",0,`NOT_FOUND')}  {button How To,AL("set bearing azimuth how",0,`NOT_FOUND')}

You may want to orient your drawing in an environment with a specific bearing and azimuth. This tool may be useful for applications such as civil engineering.

Tip The **Bearing and Azimuth** command is available only if you use the **Customize** command on the **Tools** menu to place it on a toolbar or menu. On the **Toolbars** tab of the **Customize** dialog box, click the **Tools** category to access the command.

The Symbol Explorer

{button Related Topics,AL("Symbol Explorer cmd;symbols high;av high;symbol explorer db",0,`NOT_FOUND')}
{button How To,AL("Symbol Explorer how;attributes how",0,`NOT_FOUND')}

You can use the **Symbol Explorer** to drag symbols from a directory to the current document. You can also use the **Symbol Explorer** to view document directories on your computer or a network drive. The **Symbol Explorer** can also display HTML pages on the World Wide Web or your computer.

When you click the **Symbol Explorer** button on the **Main** toolbar, the **Symbol Explorer** is displayed on the right side of the main window. The buttons on the **Symbol Explorer** are similar to the ones in the Windows Explorer. For example, you can click a **Favorites** button to go to one of your favorite web sites.

If you set the path of the **Symbol Explorer** to point to a directory, you see a tree view, the contents of the directory, and the **Attribute Viewer.** If you set the path to an HTML page, you see the contents of that page, if **Microsoft Internet Explorer 3.0** or later is installed. If **Internet Explorer** is not installed, then the software prompts you to install it.

Placing Symbols

The main use of the **Symbol Explorer** is to drag symbols from a directory to the current document. The **Symbol Explorer** acts much like the **Windows Explorer.** To view symbols, you can type the name of the directory in the **Address Box** at the top of the **Symbol Explorer**; or you can click the **Explore Elsewhere** button and set the directory path that the **Symbol Explorer** looks in.

If you click the **Home** button at the top of the **Symbol Explorer**, it displays the home page for the symbols that are associated with the template on which the active document is based. You can override this property by setting a new address with the **Properties** command on the **File** menu. On the **Properties** dialog box, you click the **Browser** tab to set the option.

After the **Symbol Explorer** displays the symbols, you can drag a symbol from the **Symbol Explorer** to the current document.

Displaying HTML Pages

The **Symbol Explorer** can display HTML pages on the World Wide Web or your computer. To view an HTML page in the **Symbol Explorer**, you must enter the entire directory path and filename in the **Address Box** at the top of the **Symbol Explorer**.

To view HTML pages on the World Wide Web, you must type the HTTP address in the **Address Box** at the top of the **Symbol Explorer**. When you do this, the **Symbol Explorer** displays the HTML page of the address you entered. The **Symbol Explorer** can display any web site that you have permissions to access.

Caution HTML pages appear only if **Microsoft Internet Explorer 3.0** or later is installed.

Searching Document Directories

You can view the Symbols of any directory on your computer or the network with the **Symbol Explorer**. You can type the path of the directory in the **Address Box**; or you can click the **Browse** button and set the directory path on the dialog box.

After the **Symbol Explorer** displays the symbols of the directory that you want, you can double-click any document, much like the Windows Explorer, and the software that created the document opens and displays the document for editing.

You can drag any document created by software that supports OLE 2.0 into the current document. These documents can include .igr, .dgn, .dwg, and .dxf types.

Symbol Explorer Settings

When you set options for the **Symbol Explorer**, the current document stores and uses these the next time you open the document. You can define a different home page for each document in the **Symbol Explorer** with the **Properties** command on the **File** menu.

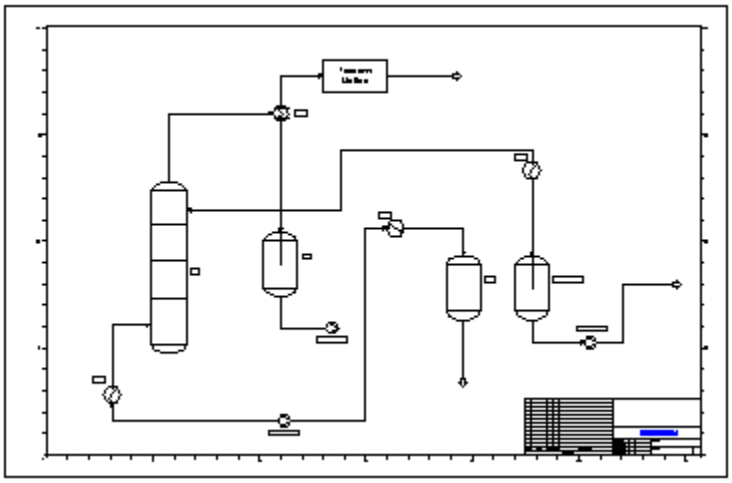
On the **Properties** dialog box, you click the **Browser** tab to set the option. When you set the address for the home page on the **Properties** dialog box, the **Symbol Explorer** goes to that address when you click the **Home** button at the top of the **Symbol Explorer**.

Tip The address can be a directory on a local or network drive or an HTTP address to a web page.

Connecting Elements

{button Related Topics,AL("connector command;connector rb",0,`NOT_FOUND')} {button How To,AL("place connector how;modify connector how",0,`NOT_FOUND')}

You can use a connector to join two elements together. The **Connector** button on the **Schematic** toolbar or Draw toolbar provides a convenient way to draw schematic diagrams and other types of drawings.



The **Connector** button allows you to place connectors anywhere you need. You can connect lines, circles, symbols, or points in free space.

{mci_left NOMENU,CONNPTSYM1.AVI}

When you point to an element or symbol, the connect points appear as red circles with Xs. The keypoints appear as gray circles with Xs.

You can also modify the connector after you place it by inserting or moving a line segment, inserting or moving a vertex, or moving an element with a connector.

There are special connector styles that you can use in the diagram. On the Connector ribbon bar, you can click the style that you want in the **Style** box. You can then draw a connector that displays the line style that you selected. For example, in documents based on the Process Block Diagram template, you can select **Future** and **Phantom** in the **Line Style** box on the ribbon bar. When you select **Future** and draw a connector, the connector appears as a dashed line.

When you select **Phantom** and draw a connector, it appears grayed out; the connector is highlighted when you point to it.

Besides line styles, you can also select line start and line end terminators on the Connector ribbon bar. The following connectors display some of the different types of terminators that you can apply.

Formatting Overview

{button Related Topics,AL("applying unique formats high;styles high;fill high;av high",0,`NOT_FOUND')}
{button How To,AL("format how",0,`NOT_FOUND')}

The software provides several different methods for formatting one or more geometric elements, such as lines, arcs, and circles. You can also format dimensions, annotations, and fills.

Styles

To make elements that are the same type look alike, you can use styles to apply several formats at once. Styles are a collection of formats that are saved under a name. Styles allow you to save several formats so you can use them again and again. Using styles guarantees consistency in a drawing.

To make an element look unique, you can select it and then format it directly. Formatting a few elements at a time takes more time than applying styles, but gives you greater flexibility.

The software provides fills that you can apply to closed boundaries. A fill floods a closed boundary with a solid color or pattern.

Besides fills, the software provides line types such as continuous, dash, chain, continuous chain, double chain, dot, and end gap. New line types can be created through Visual Basic automation.

The software provides several other tools for consistent drawings. You can save styles and background sheets in a template so that you can use them in other drawings.

Properties and Parameters

You can edit the properties of an element, symbol, or object by selecting it and then changing properties on the ribbon bar. You can also right click and select the **Properties** command on the shortcut menu.

A property unique characteristic of an element, object, symbol, or document. You can display document properties in the **Windows Explorer** or by clicking **Properties** on the **File** menu or **Edit** menu.

Properties for elements or objects have three different types, as defined on the **Properties** dialog box:

- Style properties, as specified on the **Format** tab. Style properties affect the format of the element.
- Size properties, as specified on the **Info**. Size properties affect characteristics of the element, such as the length.
- User-defined properties, as created on the **User** tab. User-defined properties are usually in the form of a text notation, such as cost, manufacturer, and so forth You can change user-defined properties, but these changes have no affect on the appearance of the element or object.

For example, a valve symbol's style properties can include color, line style, and width. Other user-defined properties stored with the symbol can include the manufacturer, cost, or material. User-defined properties are displayed in the **Attribute Viewer** when you select the valve symbol.

Adding Your Own Tutorials

{button Related Topics,AL("help high",0,`NOT_FOUND')}  {button How To,AL("add tutorial how",0,`NOT_FOUND')}

If you want to customize the learning tools in SmartSketch, you can add your own tutorials to the files that are automatically delivered with the software. You might want to develop your own macro using the SmartSketch type library and then explain how to use the macro.

When you add tutorials, you must list the titles of each tutorial in a text file and create the content of the tutorial in HTML.

After you add your own tutorials, they appear in the **SmartSketch Learning Center Window.**

Isometric Drawings

{button Related Topics,AL("draw high;iso circle cmd;iso rectangle cmd;iso line cmd",0,`NOT_FOUND')}
{button How To,AL("iso how",0,`NOT_FOUND')}

If you want to create 2D drawings that represent 3D elements, such as cubes, you can create an isometric drawing. An isometric drawing is not a true 3D drawing, because you cannot view the drawing in perspective or from another angle. However, you can create a 3D effect by aligning the elements and objects in a drawing along three major axes.

The software supplies several tools to create these types of documents:

- **Isometric Rectangle** button
- **Isometric Circle** button
- **Isometric Line** button
- **Segmented Styles** button

Tip To access these commands, you must place them on a toolbar or menu with the **Customize** command on the **Tools** menu. On the **Toolbars** tab of the **Customize** dialog box, click the **Draw** category.

You can also access dimension styles that you configure to appear at an angle for isometric drawings. These styles are available for any type of dimension, except for chained dimensions and angular dimensions. You can create a document based on one of the **Technical Drawing** templates and access these dimension styles.

Special fonts for isometric drawings are also available in any template. These fonts are displayed at an angle. The fonts are stored in a resource file in the following location: <Drive Letter>:\PROGRAM FILES\SMARTSKETCH\TEMPLATE\STYLES\ISOFONTS.RSC. You must set the location for these fonts on the **File Locations** tab of the **Options** dialog box.

Labels

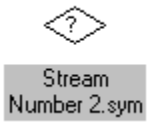
{button Related Topics,AL("label cmd;annotations high",0,`NOT_FOUND')}  {button How To,AL("labels how;text how",0,`NOT_FOUND')}

Technical drawings often have many labels that display important information about the objects or elements in the document. There are two types of labels: text labels and Smart Labels.

Tip For more information about adding associative text to a document, click the **Related Topics** button or **How To** buttons.

Text labels are associated with an element or object. If you move the element or object, the text label moves with it. You can create text labels in a document by double-clicking an element or object. A text label appears near the element so that you can type text. The default position of the label is bottom center on all elements, except for closed elements, such as a circle or rectangle. The default position on closed elements is the center of the element. When you enter the text that you want, the text label orients itself with the element.

Another kind of label, a Smart Label, can be associated to an object or element's text attributes. A Smart Label is often distinguished by a question mark in the display.



A Smart Label displays the attributes of the element or object as text in the document. You can drag Smart Labels from the **Symbol Explorer** into the current document. Smart Labels have an .sym extension. As you change an element's or object's attributes in the **Attribute Viewer** or the **Properties** dialog box, the Smart Label's text displays those changes.

If an element or object has no attributes, and you drag a Smart Label to it, the element or object picks up the attributes of the Smart Label. For example, you might want to assign attributes to a valve, such as pressure and material type. If the Smart Label has the pressure and material type defined, and the valve does not, the Smart Label's pressure and material type are copied to the valve.

If an element already has values assigned to its attributes, a Smart Label placed on the element displays the values that are already assigned to the element. The values for the Smart Label are erased. For example, if the valve already has values for pressure and material type attributes, the values of those attributes override any values for a Smart Label placed on the valve.

A Smart Label can contain graphics, such as a circle, ellipse, parametric symbol, and so forth.

Tip Not all Smart Labels assume the text attributes of an element or object. Some Smart Labels contain shapes that grow automatically if you add text to the Smart Label.

Smart Labels

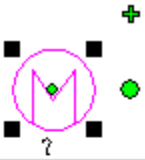
{button Related Topics,AL("label cmd;reports high",0,`NOT_FOUND')} {button How To,AL("labels how;text how",0,`NOT_FOUND')}

Technical drawings often have many labels that display important information about the objects or elements in the document. There are two types of labels: text labels and Smart Labels.

A Smart Label is associated to an object or element's text attributes. A Smart Label sometimes displays a question mark, indicating that you can edit the text in the question mark position.

A Smart Label displays the attributes of the element or object as text in the document. You can drag Smart Labels from the **Symbol Explorer** into the current document. Smart Labels have an .sym extension. As you change an element's or object's attributes in the **Attribute Viewer** or the **Properties** dialog box, the Smart Label's text displays those changes.

If an element or object has no attributes, and you drag a Smart Label to it, the element or object picks up the attributes of the Smart Label. For example, you might want to assign attributes to a heat exchanger, such as pressure and material type. If the Smart Label has the pressure and material type defined, and the heat exchanger does not, the Smart Label's pressure and material type are copied to the heat exchanger.



Attribute Viewer

Name	Value
Class	Heat Transfer Equipment Group
Type	Shell and Tube Exchanger
Code	1C3A02
Name	Generic 2 - Shell & Tube
Tag	?
Operating Duty Mwatts	
Max Process Mwatts	
Max Process Pressure	
Min Process Pressure	
Max Process Temp	
Min Process Temp	
Remarks	

If an element already has values assigned to its attributes, a Smart Label placed on the element displays the values that are already assigned to the element. The values for the Smart Label are erased. For example, if the heat exchanger already has values for pressure and material type attributes, the values of those attributes override any values for a Smart Label placed on the heat exchanger.

Tip Not all Smart Labels assume the text attributes of an element or object. Some Smart Labels contain shapes that grow automatically if you add text to the Smart Label.

There are no related Help topics. You must install the appropriate add-in by clicking Add-in on the Tools menu.

Scaling Symbols

{button Related Topics,AL("symbols cmd;symbol label how;Symbol Explorer high;animate high;labels high;symbol overview high ",0,`NOT_FOUND')} {button How To,AL("scale symbol how",0,`NOT_FOUND')}

You can use scale handles on a symbol to resize it. Four black scale handles are displayed on the corners of the range box of a symbol. You can drag any of the four handles up or down.

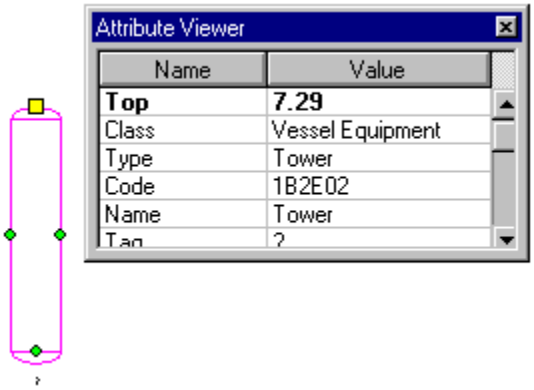
{mci_left NOMENU,SCALESYM1.AVI}

You can also change the size of the symbol by clicking the **Scale** button on the **Change** toolbar.

You can modify different parts of some symbols with parametric handles. Standard parameter handles represent up to four driving dimensions that have been applied to the graphics in a symbol. The four standard positions where parameter handles can appear are top center, bottom center, left center, and right center of a symbol's range box. Dragging a parameter handle changes the value of the dimension by the length readout precision set on the **Units** tab of the **Properties** dialog box when the symbol is created.

{mci_left NOMENU,PARASYM1.AVI}

You can also scale a parametric symbol by selecting the symbol and then editing the values in the **Attribute Viewer.** The **Attribute Viewer** automatically appears when you select the symbol. For example, if you select the Para Tower symbol, you can change the **Top** attribute from 7.29 to 9.00 so that the height of the symbol increases.



Mirroring Symbols

{button Related Topics,AL("symbols cmd;symbol label how;Symbol Explorer high;animate high;labels high;symbol overview high ",0,`NOT_FOUND')}  {button How To,AL("mirror symbol how",0,`NOT_FOUND')}

You can use mirror handles to mirror a symbol about its center. The mirror handle appears at the right center of a symbol's range box. Dragging the mirror handle across the center of a symbol's range box causes the symbol to mirror about its center in dynamics. A center line for the X and Y axis appears through the range box of the symbol. The axes appear as solid when the pointer crosses one or both axes.

{mci_left NOMENU,MIRRORSYM1.AVI}

When you manipulate a symbol, you see the same behaviors unique to that symbol that existed when you placed the symbol in the document.

Connectors and Symbols

{button Related Topics,AL("symbols cmd;symbol label how;Symbol Explorer high;animate high;labels high;symbol overview high ",0,`NOT_FOUND')}  {button How To,AL("connector to symbol how",0,`NOT_FOUND')}

Some symbols are created with connect points. When you attach a connector to a connect point, the connector automatically attaches to the point at a predefined angle. Otherwise, the connector locates and attaches to a keypoint or point along any elements in the symbol.

The connect points appear as red circles with Xs. The keypoints appear as gray circles with Xs.

{mci_left NOMENU,CONNPTSYM1.AVI}

Tip If you press the **Alt** key while drawing a connector, the connector attaches to a connect point at any angle.

Symbols Overview

{button Related Topics,AL("symbols cmd;symbol label how;Symbol Explorer high;animate high;labels high;symbols high",0,`NOT_FOUND')}  {button How To,AL("symbols how",0,`NOT_FOUND')}

Symbols increase drawing productivity because they allow you to access existing graphic data quickly and easily. With a symbol, you can place graphic information repeatedly without re-creating it. Symbols save you time by eliminating the need to re-create information, as well as help you maintain accurate graphic data throughout a project. Symbols are contained in documents with an .sym extension.

Parametric symbols are also available. You can modify these symbols by changing a parameter value.

Click the **Related Topics** button for more information about placing, creating, editing, manipulating, and rotating symbols.

Creating Symbols

{button Related Topics,AL("symbols cmd;symbol label how;Symbol Explorer high;animate high;labels high;symbol overview high",0,`NOT_FOUND')}  {button How To,AL("create symbol how",0,`NOT_FOUND')}

A symbol is a document with an **.sym** extension. You can create a symbol by selecting any geometry and clicking the **Create Symbol** button on the **Draw** toolbar. You must then define the origin by clicking the point that you want in the select set. After defining the origin, you can save the select set as a symbol with the **Save As** dialog box.

Symbols that you create display the following default behaviors:

- 90 degree rotation angles
- Automatic alignment with a target element or object when the symbol is placed in a document
- Automatic association with a target element or object.

Rotating Symbols

{button Related Topics,AL("symbols cmd;symbol label how;Symbol Explorer high;animate high;labels high;symbol overview high",0,`NOT_FOUND')} {button How To,AL("rotate symbol how",0,`NOT_FOUND')}

You can rotate a symbol by using one of the following methods:

- Clicking the **Rotate** button.
- Selecting the symbol's rotate handle to turn it.
- Using a rotation angle.
- Using relationships applied to the symbol.

Rotate Button

To rotate a symbol, you can select the symbol and click the **Rotate** button on the **Change** toolbar.

Rotate Handles

You can also rotate a symbol about its center with the appropriate handle. The rotate handle appears as a green circle to the right of the symbol. Dragging the rotate handle closer to the center of a symbol's range box causes the symbol to rotate at larger angles. Dragging the rotate handle further away from a symbol's center causes the symbol to rotate at smaller angles.

{mci_left NOMENU,ROTATESYM1.AVI}

Rotation Angle

You can also rotate a symbol by the rotation angle. When you drag a symbol or align it to an element, you can press the left or right arrow keys on the keyboard. This rotates the symbol in 15 degree increments by default. Some symbols are designed to rotate at different increments.

If the symbol is created with a rotation angle other than zero, you can rotate it by the defined step angle using the left and right arrow keys.

Relationships

By default, when you rotate a symbol, it maintains its orientation on the drawing sheet. In the following example, the line and symbol share a dimensional relationship. The lower end of the symbol is set in place with a lock relationship. When you edit the dimensional value of the driving dimension, the symbol does not change its orientation. The driving dimension changes to a driven dimension that is not to scale.

-
-

You can also allow symbols to change orientation on the drawing sheet according to the relationships applied to them. This is handy if you want to change the orientation of whole sets of geometry with one driving dimension or relationship. In the example, when you edit the driving dimension between the line and symbol, the symbol changes orientation on the drawing sheet, maintaining the relationships applied to it.

-

For a symbol to rotate according to the relationships applied to it, you must first set an option by opening the symbol document (.sym) directly. You can open the document with the **Open** command on the **File** menu. Then, you must click the **Properties** command on the **File** menu. On the **Behavior** tab, you must set the **Allow Rotation By Relationships** check box. After saving and closing the symbol document, you can drag the symbol into a document.

You can create kinematics animations by editing dimensional relationships between elements and symbols. For more information about kinematics animation, click the **Related Topics** button and select the **Mechanism Modeling** topic.

Editing Symbols

{button Related Topics,AL("symbols cmd;symbol label how;Symbol Explorer high;animate high;labels high;symbol overview high ",0,`NOT_FOUND')}  {button How To,AL("edit symbol how",0,`NOT_FOUND')}

To edit a symbol, you should select it and click **Open** on the shortcut menu.

Tip To display the shortcut menu, you can highlight a symbol with the pointer and then click the right mouse button.

For some special symbols, you can also edit the properties and parameters to change the symbol. When you drag these special symbols into a document, the **Attribute Viewer** automatically displays the properties and parameters. The properties are in plain text. The parameters are identified with bold text. You cannot edit the names of the parameters.

Tip If the **Symbol Explorer** is closed, you can also access the properties and parameters of a symbol by selecting it and clicking the **Symbol Explorer** button.

Editing Embedded or Linked Symbols

If the symbol is linked, you can open the symbol and edit it. The symbol that you placed on the drawing sheet updates automatically. Those same changes are saved in the .sym document on the hard drive.

You can also edit the symbol while viewing the other drawing graphics by using the **Object Edit** command on the **Edit** menu. As you edit, all graphics except the symbol become disabled until you finish editing the symbol. When you want to stop editing, you can click **Update** on the **File** menu to update the document that contains the symbol and then click **Close** to close the symbol document.

Embedding the symbol means that a copy of the symbol was placed in the document. If you edit one instance of the embedded symbol in a document, all copies of that symbol within the current document reflect those changes.

Tip Before placing a symbol, you can set an option to link or embed the symbol when you drag the symbol into the document. You can do this by clicking the **Options** command on the **Tools** menu and then setting the option you want on the **Symbols** tab.

Editing Parts of a Symbol

To edit parts of a symbol as individual elements on the drawing sheet, you can convert the symbol to a group of individual graphics. To do this, you place the symbol on a drawing sheet, select it, and then click the **Convert** command on the shortcut menu to convert the symbol into an element group. To ungroup the elements so that you can edit them individually, you can click the **Ungroup** button on the **Change** toolbar. You can now edit the individual elements.

Tip You must place a symbol in a document at the default scale (1:1) if you want to use the **Convert** command. If you scale the symbol, you cannot convert the symbol to individual elements.

Symbol Labels

To create a label, you can double-click the symbol. A blinking pointer appears below the symbol so that you can start typing the text that you want.

Formatting a Symbol

You can change the attributes of a symbol with the **Attribute Viewer** or the **Parameters** tab on the **Properties** dialog box. You can change the value of the symbol attribute, but you cannot change the name of the attribute or add an attribute.

Manipulating Symbols

{button Related Topics,AL("symbols cmd;symbol label how;Symbol Explorer high;animate high;labels high;symbol overview high;symbol behavior high",0,`NOT_FOUND')}  {button How To,AL("manipulate symbol how",0,`NOT_FOUND')}

You can manipulate a symbol just like you would manipulate other graphics. For example, you can edit symbol properties, apply relationships, move it, or copy it. When you manipulate a symbol, it behaves as a single unit. You can view properties for the symbol in the **Attribute Viewer** that appears at the bottom of the **Symbol Explorer.**

You can click any part of a symbol to move it around in a document.

Some symbols are created with drag points that appear as green dots on the symbol. When you move the symbol around in the document, the pointer automatically attaches to the drag point that you used most recently. You can change drag points by pressing the Up and Down arrow keys on the keyboard.

{mci_left NOMENU,DRAGPOINT1.AVI}

If you drag a symbol on an element in the document, the symbol is automatically associated with that element. When the element moves, the symbol moves with it. You must click one of the green drag points on the symbol and then move the symbol to the element.

Tip Some symbols cannot be associated with an element depending on what options were set when the symbol was created.

Aligning a Symbol with an Element

Many symbols align automatically with elements in the document.

{mci_left NOMENU,SYMALIGN1.AVI}

When associated with an element, these symbols display a green lock handle. When the element moves, the symbol moves with it.

{mci_left NOMENU,UNLOCK1.AVI}

You can click the lock handle to free the symbol from the associated element. When you unlock the handle, you can move the symbol away from the element. If you move the element, the symbols stays in its original position.

{mci_left NOMENU,UNLOCK2.AVI}

You can use the lock behavior in many ways. For example, you can ensure that a door symbol moves with the wall to which it is attached if the lock handle on the door symbol is locked. If you want to move the wall, and not the door, you must click the lock handle on the symbol to unlock the door symbol from the wall. The door now remains in its current position when you drag the wall away from it.

Aligning a Symbol with Another Symbol

Some symbols can be placed only on other symbols. These symbols are created with drop points that allow you to align the symbol to a precise point on another symbol. You cannot place a symbol with drop points on an element, such as line, arc, or circle.

When a symbol has drop points, red dots appear to indicate the drop points defined on the symbol. These drop points let you know where you can place the symbol on the target symbol. When you click a drag point on a symbol and drag it over another symbol, the drop points appear as red dots. A bull's eye appears when the drag point and drop point are exactly aligned. You can then attach the symbol to the other with precision.

{mci_left NOMENU,DROPPTSYM1.AVI}

Placing Symbols

{button Related Topics,AL("symbols cmd;symbol label how;Symbol Explorer high;animate high;labels high;symbol overview high;symbols handles high",0,`NOT_FOUND')} {button How To,AL("place symbol how",0,`NOT_FOUND')}

To place a symbol, you can drag the symbol from the **Symbol Explorer** or **Windows Explorer** into the current document.

Symbol Libraries

After starting the software, you can open a template or document. For most standard templates, the **Symbol Explorer** automatically opens and displays a default directory for all the symbols that would be appropriate to use with that template. For example, templates in the **Process** category point to directories with process diagram symbols.

Tip To open the **Symbol Explorer,** you can also click the **Symbol Explorer** button on the **Main** toolbar. You might need to click the **Home** button in the **Symbol Explorer.** The **Home** path is stored on the **Browser** tab of the **File Properties** dialog box.

Dragging a Symbol

When you click a symbol in the **Symbol Explorer** to drag it into a document, the pointer attaches to the origin of the symbol by default to drag it in. At that instance, the origin is the drag point.

{mci_left NOMENU,PLACESYM1.AVI}

Some symbols contain more than one drag point. These appear as green dots on the symbol. These drag points are useful if you want to place a symbol using a particular part of the symbol. You can change to another drag point by pressing the Up and Down arrow keys on the keyboard.

By default, every element in a symbol does not appear when you place the symbol in a document. For example, if you place a symbol that contains dimensions in a document, the dimensions are not displayed.

Discovering Symbol Behavior and Handles

{button Related Topics,AL("symbols cmd;symbol label how;Symbol Explorer high;animate high;labels high;symbol overview high;placing symbols high",0,`NOT_FOUND')}  {button How To,AL("symbols how",0,`NOT_FOUND')}

Symbols can display different types of behavior depending on how the symbol was created. When you drag a symbol into a document, you can check out different characteristics of the symbol to see what it can do.

Depending on how the symbol was created, some symbols automatically ungroup into individual elements in the document when you place the symbol. For example, if you place a symbol that contains a circle and a rectangle in a document, the symbol immediately ungroups. The parts of the symbol, the circle and rectangle, act as a separate circle and rectangle, not a symbol.

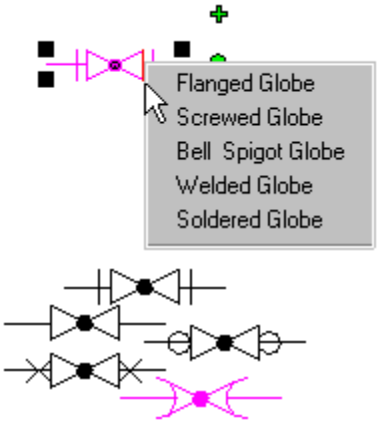
Labels

Some symbols have a label that appears as a question mark under the symbol. To change the text in the label, you can double-click the question mark. When the **Attribute Viewer** appears, you can then edit the text in the **Value** column and press **Enter.**

Commands on the Shortcut Menu

While the symbol is selected, right-click and look at the shortcut menu. Some symbols have special commands on the shortcut menu that run custom processes for the symbol. If the shortcut menu has a **Help** command, you can access a Help file that displays special information about the symbol.

Commands on the shortcut menu can also activate different representations of the same symbol. For example, you can access different representations of the same valve symbol, with a flanged globe, a welded globe, and so forth.



Drop Points

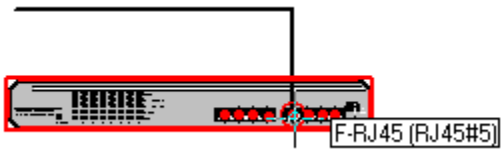
You can move the symbol around in the document with the **Select Tool.** You can discover special behaviors by dragging the symbol over an element or another symbol.

Some symbols automatically connect to other symbols. These symbols were created with drop points for symbol-to-symbol connections. When you click a drag point on a symbol and drag it over another symbol, the drop points appear as red dots. A bull's eye appears when you exactly align the drag point and drop point. You can then attach the symbol to the other at a precision point.

{mci_left NOMENU,DROPPTSYM1.AVI}

ToolTips

If you pass the pointer over the drop points on a symbol, you might see ToolTips. These ToolTips display special information about different parts or points on the symbol. For example, the serial number for networking diagramming equipment can appear in a ToolTip.



Custom Processes

Some symbols actually run special processes when you drag them, double-click them, or perform other actions. If you select the symbol and click the right mouse button, you might also see special custom commands for the symbol on the shortcut menu.

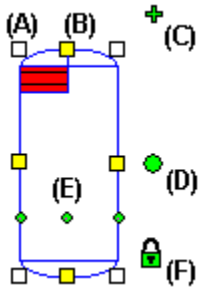
Displaying Attributes on an Element

Some symbols can display attributes that are assigned to an element. When you drag the symbol to the element with attributes, the symbol automatically displays the values of those attributes.

Handles

When you select a symbol, different handles appear on the symbol.

Some symbols have several different kinds of handles:



- Black boxes on the outside corners of the range box lines represent scale handles (A). You can drag a scale handle to resize the entire symbol.
- Yellow boxes in the middle of the range box lines represent standard parametric handles (B). You can drag a parametric handle to resize part of the symbol.
- A green plus sign represents a mirror handle (C). You can drag a mirror handle to create a copy of the symbol directly horizontal or vertical to the original symbol.
- A large green circle represents a rotate handle (D). You can drag this handle to rotate the entire symbol. Specific increments are displayed by the pointer while you rotate the symbol.
- A series of small green circles represents drag points (E). You can use these points to attach the symbol at a precise point to another symbol or element.
- A small green lock represents a lock handle (F). You can click the lock handle to unlock the symbol. Unlocking allows you to move a symbol away from the element to which the symbol was associated.

Tip A lock handle appears only if you drag the symbol to an element with one of the drag points on the symbol.

For more information about the way these handles work, click the **Related Topics** button.

HVAC Templates Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;open how;document how",0,`NOT_FOUND')}

You use these precision templates to produce HVAC designs and drawings according to accepted industry standards.

- HVAC (Imperial)—This template has imperial units in feet and inches, ANSI and Architectural sheet sizes and borders, and Architectural fill styles. It provides symbols based on ASHRAE and ISO standards for residential and commercial designs.
- HVAC (Metric)—This template has metric units in meters and centimeters, ISO standard Architectural sheet sizes and borders, and Architectural fill styles. It provides symbols based on ASHRAE and ISO standards for residential and commercial designs.

The ANSI, DIN, BSI, ISO, and JIS dimensioning standards are also available in these templates. When you open these templates, the **Draw** toolbar appears, containing tools to help you create precision drawings.

Production Drafting Workflow for Double Line Duct Layout

You can produce full sets of production drawings according to the AIA standards.

Tip To produce a fairly complex production drawing, you should set **Maintain Relationships** off.

1. Set up the sheet.

   Select an appropriate sheet size and scale that allow you to draw the design. The default scale is 1/4" = 1', which is appropriate for the average plan on a D-Size sheet.

2. Reference a floor plan or open one.

   Reference a floor plan by using the **Object** command on the **Insert** menu or by dragging and dropping in the reference file. Or click **File** on the **Open** menu to open (translate) the file.

   Tip Any MicroStation, AutoCAD, dxf, or igr document can be a reference file.

3. Place duct symbols.

   Using the **Symbol Explorer,** select the Double Line Duct folder from the HVAC folder in the tree view. Drag the duct symbols over the reference file, connecting one to another. Use the bold parameters that appear in the **Attribute Viewer** to change the size of the duct.

   Tip You can use two methods to place multiple copies of the same symbol:

   - Holding down the right mouse button, drag the symbol into the template. When you release the right mouse button to place the symbol, you are prompted with two options. Click **Stamp Here**, and use the left mouse button to place multiple copies of the symbol.
   - Press the **Ctrl** key on the keyboard as you drag in a symbol with the left mouse button. Place the first instance of the symbol while holding down the **Ctrl** key. Once you have placed the first symbol, you can release the **Ctrl** key and use the left mouse button to place multiple copies of the symbol.

4. Annotate the drawing.

   Use text and dimensioning commands to annotate the drawing. Text is entered in paper units regardless of the sheet scale. To label double line ducts, use the labels that automatically appear on symbols when you double-click them.

5. Select a border or create one.

   The HVAC templates are delivered with ten border sizes.

   Select the borders with the **Sheet Setup** command on the **File** menu so that they appear in the current design. On the **Background** tab, select the background sheet to display with the working sheet. Use the **Select Tool** to position the graphics appropriately in the border.

   Note The borders were designed from guidelines from the Construction Specifications Institute (CSI).

The following symbol sets aid in production drafting.

Content	Description
HVAC (Intergraph)	HVAC symbols designed to best fit Double Line Duct and Single Line Duct Layout workflows. Several of these symbols are designed with special behaviors and parametric properties.

HVAC (ASHRAE)	HVAC symbols designed to ASHRAE standards.

Landscape Templates Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;open how;document how",0,`NOT_FOUND')}

Use these precision templates to produce landscape designs and drawings according to accepted industry standards.

- Landscape (Imperial)—This template has imperial units in feet and inches, ANSI and architectural sheet sizes and borders, and architectural fill styles. It provides symbols based AIA standards for residential and commercial designs.
- Landscape (Metric)—This template has metric units in meters and centimeters, ISO standard architectural sheet sizes and borders, and architectural fill styles. It provides symbols based on AIA standards for residential and commercial designs.

The ANSI, DIN, BSI, ISO, and JIS dimensioning standards are also available in these two templates. When you open these templates, the **Draw** toolbar appears, containing tools to help you create precision drawings.

Production Drafting Workflow for Landscape Designs

You can produce full sets of production drawings according to the AIA standards.

Tip To produce a fairly complex production drawing, you should set **Maintain Relationships** off.

1. Set up the sheet.

   Choose an appropriate sheet size and scale for the design. The default scale is ¼ inches = 1 foot, which is appropriate for the average plan on a D Size sheet.

2. Reference a floor plan or open one.

   Reference a floor plan by using the **Object** command on the **Insert** menu or by dragging and dropping in the reference file. Or use the **Open** command on the **File** menu to open (translate) the file.

   Tip Any MicroStation, AutoCAD, dxf, or igr document can be a reference file.

3. Create a foot print.

   If you reference the plan, using the drawing tools on the **Draw** tool bar, you can trace the outer perimeter of the reference plan to create the outline shape of the building. Either delete or move the reference file to a layer and turn it off.

4. Place symbols.

   Drag the landscape symbols into the document in the appropriate positions.

   You can use two methods to place multiple copies of the same symbol:

   - Holding down the right mouse button, drag the symbol into the template. When you release the right mouse button to place the symbol, you are prompted with two options. Click **Stamp Here**, and use the left mouse button to place multiple copies of the symbol.
   - Press the **Ctrl** key on the keyboard as you drag in a symbol with the left mouse button. Place the first instance of the symbol while holding down the **Ctrl** key. Once you have placed the first symbol, you can release the **Ctrl** key and use the left mouse button to place multiple copies of the symbol.

5. Annotate the drawing

   Use text and dimensioning to annotate the drawing. Text is entered in paper units regardless of the sheet scale. To label landscape symbols, use the labels that automatically appear on symbols when you double-click them.

6. Select a border or create one.

   The Landscape templates are delivered with ten border sizes.

   Select the borders with the **Sheet Setup** command so that they appear in the current design. On the **Background** tab, select the background sheet to display with the working sheet.

   You should use the **Select Tool** to position the graphics appropriately in the border.

   Note The borders were designed from guidelines from the Construction Specifications Institute (CSI).

The following symbol sets aid in production drafting.

Content	Description
Elevations Symbols	Provide AIA and Intergraph standard elevation symbols for commercial and

	residential Landscape design.
Plan Symbols	Provide AIA and Intergraph standard plan symbols for commercial and residential Landscape design.

Flowchart Templates Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;document how",0,`NOT_FOUND')}

You use these templates to produce flowcharts and diagrams.

- Imperial Template—This template has imperial units in decimal inches, ANSI sheet sizes, ANSI dimensioning and Arial text.
- Metric Template—This template has metric units in millimeters, ISO sheet sizes, ISO dimensioning, and Arial text.

Flowchart, Audit, Dataflow, and TQM symbols are available in the **Symbol Explorer** for these templates. The **Schematic** toolbar containing tools to create flowcharts and diagrams appears on the left of the drawing window.

Setting Up a Flowchart

Tip You can create flowcharts and diagrams with **Maintain Relationships** set on or off.

1. Set up the sheet.

   Select an appropriate sheet size and scale that allow enough paper space to draw. The default scale is 1:1.

2. Prepare to draw.

   Set the drawing aids to your preferences. Use the **SmartSketch Settings, Grid Display,** and **Grid Snap** commands.

   For more grid options, click the **View** tab after you click the **Options** command on the **Tools** menu to set the grid style to either dynamic or static, and set the static grid to the preferred grid spacing.

- These settings provide visual feedback to you to improve the workflow while you draw. To create clean diagrams, use **Grid Snap** with a static grid displayed.
- Placing symbols and connectors on a static grid produces high quality results.
- You can set grid display and snap by right clicking.

Drawing a Simple Flowchart and Diagram

1. Drag symbols from the **Symbol Explorer**.
2. Use the **Connector** command to connect symbols.
3. Double-click each symbol to add text.

Drawing an Optimal Flowchart and Diagram

1. Place flowchart and diagram symbols by dragging from the **Symbol Explorer**.

   While dragging a symbol for placement, use the left/right arrow keys on the keyboard to rotate the symbol dynamically before placement.

   Use the up/down arrow keys to select different drag points on the symbol before placement. If you press the **Alt** key during symbol placement, the alignment indicators are temporarily disabled, allowing symbol placement with grid snap or visual alignment.

   You can use two methods to place multiple copies of the same symbol:

- Holding down the right mouse button, drag the symbol into the template. When you release the right mouse button to place the symbol, you are prompted with two options. Click **Stamp Here**, and use the left mouse button to place multiple copies of the symbol.
- Press the **Ctrl** key on the keyboard as you drag in a symbol with the left mouse button. Place the first instance of the symbol while holding down the **Ctrl** key. Once you have placed the first symbol, you can release the **Ctrl** key and use the left mouse button to place multiple copies of the symbol.

2. Connect the symbols by using the **Connector** command.

   When drawing connectors, you should set **Clearance**. Type the minimum distance from the symbols that you would like the first turn in the connectors to occur. This action allows you to control the visual consistency of connectors that make right-angle turns just before they attach to a symbol.

   When you draw a connector to a symbol, approach the symbol from the direction you want the connector placed. As the pointer intent zone nears the symbol, suggested targets for the connector appear.

   The connector end point can be located on a target or any other symbol geometry. If you press the **Alt** key while drawing a connector, the diagonal drawing mode will be temporarily activated, allowing the connector to be drawn at any angle with or without grid snap.

3. Double-click symbols to place text in the center of the symbols.

   The active text settings in the file are used. To highlight existing text for properties editing or moving, pause

the pointer over text until the PickQuick indicator appears.

Then click and select the numbered box that represents the text. Right-click on the highlighted text to edit properties. To move the highlighted text, click the green lock to unlock.

Then with the pointer drag the text to a new position. Note that text is entered in paper units regardless of the sheet scale.

4 Finish the diagram.

Use color to modify the symbols and connectors to enhance the drawing.

The following symbol sets are provided to aid in drawing diagrams.

Content	Description
\Program Files\ SmartSketch \Symbols\Diagramming \Flowchart	Flowchart, Audit, Dataflow, and TQM symbols. You can double-click these symbols to place text. These symbols also have special behaviors for enhanced placement and modification.

Workflow Diagram Templates Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;open how;document how",0,`NOT_FOUND')}

You use these templates to produce workflow diagrams.

- Imperial Template—This template has imperial units in decimal inches, ANSI sheet sizes, ANSI dimensioning, and Arial text.
- Metric Template—This template has metric units in millimeters, ISO sheet sizes, ISO dimensioning, and Arial text.

Work flow symbols are available in the **Symbol Explorer** for these templates. The **Schematic** toolbar containing tools to create workflow diagrams appears on the left of the drawing window.

Schematic Workflow

Tip You can create workflow diagrams with **Maintain Relationships** set on or off.

1. Set up the sheet.

   Select an appropriate sheet size and scale that allow enough paper space to draw. The default scale is 1:1.

2. Prepare to draw.

   Set the drawing aids to your preferences. Use the **SmartSketch Settings**, **Grid Display,** and **Grid Snap** commands.

   For more grid settings, click the **View** tab after you click the **Options** command on the **Tools** menu to set the grid style to either dynamic or static, and set the static grid to the preferred grid spacing.

- These settings provide visual feedback to you to improve the workflow while you draw. To create clean diagrams, use **Grid Snap** with a static grid displayed.
- Placing symbols and connectors on a static grid produces high quality results.
- You can set grid display and snap by right clicking.

Drawing a Simple Workflow Diagram

1. Drag symbols from the **Symbol Explorer**.
2. Use the **Connector** command to connect symbols.
3. Double-click each symbol to add text.

Drawing an Optimal Workflow Diagram

1. Place symbols.

   Place symbols by using the pointer to drag symbols from the **Symbol Explorer**.

   While dragging a symbol, use the left/right arrow keys on the keyboard to rotate the symbol dynamically before placement.

   Use the up/down arrow keys to select different drag points on the symbol before placement.

   If you press the **Alt** key during symbol placement, the alignment indicators are temporarily disabled, allowing you to place a symbol using the **Grid Snap** command or visual alignment.

   You can use two methods to place multiple copies of the same symbol:

- Holding down the right mouse button, drag the symbol into the template. When you release the right mouse button to place the symbol, you are prompted with two options. Click **Stamp Here**, and use the left mouse button to place multiple copies of the symbol.
- Press the **Ctrl** key on the keyboard as you drag in a symbol with the left mouse button. Place the first instance of the symbol while holding down the **Ctrl** key. Once you have placed the first symbol, you can release the **Ctrl** key and use the left mouse button to place multiple copies of the symbol.

2. Connect the symbols.

   Use the **Connector** command. When you draw a connector that is not straight, you should set **Clearance** on the ribbon bar to the minimum distance from the symbol where the first turn in the connector occurs.

   When you draw a connector to a symbol, approach the symbol from the direction you want the connector placed. As the pointer intent zone nears the symbol, suggested targets for the connector appear.

   If you press the **Alt** key while drawing a connector, the diagonal mode is temporarily invoked and the alignment indicators are temporarily disabled, allowing the connector to be drawn with or without grid snap.

3. Place text.

Double-click symbols to edit text labels at the bottom of the symbols. To highlight existing text for properties editing or moving, pause the pointer over text until the PickQuick indicator appears. Then click and select the numbered box that represents the text. Right-click on the highlighted text to edit properties.

To move the highlighted text, click the green lock to unlock. Move the text to a new position. Note that text is entered in paper units regardless of the sheet scale.

4 Finish the diagram.

Use color to modify the symbols and connectors to enhance the drawing.

The following symbol sets aid in drawing workflow diagrams.

Content	Description
\Program Files\ SmartSketch \Symbols\Diagramming \Workflow Diagram	Workflow Diagram symbols. These symbols have special behaviors for enhanced placement and modification.

PFD and P&ID Templates Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;open how;document how",0,`NOT_FOUND')}

You use these schematic templates to produce process flow diagrams according to accepted industry standards.

- PFD (Intergraph) Template—This template is set up to be a schematic template to create process flow diagrams. The default symbol set is a subset of the Intergraph SP2D symbol set. The delivered set draws most PFDs. If you need other Intergraph symbols, you can copy them from the P&ID (Intergraph) symbol set.
- PFD ANSI Template—This template is set up to be a schematic template to create process flow diagrams based on ANSI Process Flow Standards. ASA Z32.2.3-1949.
- PFD ISO Template—This template is set up to be a schematic template to create process flow diagrams based on ISO Process Flow Standards. (General Rules—Flow Diagrams for Process Plants - ISO 10628)
- P&ID (Intergraph) Template—This template is set up to be a schematic template to create process flow diagrams and P&ID diagrams. The symbol set is the Intergraph SP2D symbol set, consisting of approximately 1000 symbols. You can reconfigure the symbol locations and directories to your specification for easy location.

PFD and P&ID Workflow

Tip You should create schematic drawings with **Maintain Relationships** cleared.

1. Set up the sheet.

   Select an appropriate sheet size and scale that allow you to draw the schematic drawing. The default scale is 1:1, which is appropriate for the symbol sizes.

2. Place symbols.

   Drag in the major components of the PFD and place them at locations on the sheet.

   These components usually include vessels, pumps, and heat exchangers.

   You can use two methods to place multiple copies of the same symbol:

   - Holding down the right mouse button, drag the symbol into the template. When you release the right mouse button to place the symbol, you are prompted with two options. Click **Stamp Here**, and use the left mouse button to place multiple copies of the symbol.
   - Press the **Ctrl** key on the keyboard as you drag in a symbol with the left mouse button. Place the first instance of the symbol while holding down the **Ctrl** key. Once you have placed the first symbol, you can release the **Ctrl** key and use the left mouse button to place multiple copies of the symbol.

3. Enter attribute information for the individual components.

   To enter data in the attributes, select the symbol and add the information in the **Attribute Viewer**.

4. Attach nozzles to major equipment.

   Nozzles are automatically aligned and can be placed anywhere on the major equipment.

5. From the **Schematic** toolbar select the **Connector** command.

   Connect the major components together at the locations you want on each symbol.

   - Each symbol has predefined connect points; however, the connector can connect to any graphic location on the symbol.
   - The connector routes itself away from the original symbol and toward the target symbol.
   - You can attach connectors to connectors.
   - A connector being placed or modified can have its starting or ending point anywhere along another connector.

6. Set connector flow direction at any time.

   There are two methods to set the flow direction:

   - When you place the connector, you can use the options on the connector toolbar to select the starting and ending terminator for the connector.
   - You can drag an arrowhead symbol from the browser and connect it to the end of the connector.

7. Drag inline symbol components such as valves onto the connectors.

   The valve symbols have automated aligning turned on. This means that the valve automatically aligns to the direction of the connector.

   Note that the valve is placed on top of the connector and hides the portion of the connector that the valve covers.

8. To associate a text box with a symbol that does not already have associated text.

Double-click the symbol.

Then, type in text.

- Moving the symbol causes the text to move and maintain its relative location to the symbol.
- If a symbol already has associated text, double-clicking the symbol allows you to edit the text.

9 After you have placed components and connectors, you can modify the symbols and/or connectors by selecting and dragging them to a new location.

- You can select and drag multiple symbols to a new location.
- You can select and modify single connectors.
- You can adjust segments of connectors to new locations or move and reattach endpoints.

The following symbol sets aid in schematic drawings of PFDs and P&IDs.

Content	Description
P&ID (Intergraph)	Intergraph Symbol set containing symbols needed for creating PFDs, P&IDs, and Material Handling drawings.
PFD (Intergraph)	Symbol set that is a subset of the P&ID (Intergraph) set. Symbols are adequate to create most PFDs. Other symbols from P&ID or other symbol sets can be copied to the PFD directory and are displayed for selection.
PFD (ISO Standard)	Symbol set based on the ISO 10628 standard. General rules for flow diagrams for process plants.
PFD (ANSI)	Symbol set based on ASA Z32.2.3-1949 ASME Y32.2.2.3 Graphical symbols for pipe fittings, valves and piping.

Ortho Piping Template Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;open how;document how",0,`NOT_FOUND')}

You use this precision template to produce orthographic piping drawings, using common sized components and pipes.

- Ortho Piping Template—This template has imperial units in feet and inches, with a precision of 1/32”. The sheet scale is set to 1/2” = 1’.

ANSI, ISO, DIN, BSI, and JIS dimensioning standards are available in the template. The default dimension type is ANSI. When you open this template, the **Draw** toolbar appears, containing tools to help you create precision drawings.

Ortho Piping Workflow 1 (Small Layouts)

- You can create small layouts with **Maintain Relationships** set on.
- Select **Midpoint** from the **SmartSketch Settings** options.

1 Set up the sheet.

Select an appropriate sheet size. The default scale is 1/2” = 1’.

2 From the Symbol Explorer, select the size of piping to be placed. A list of folders containing appropriate components for that size of pipe is displayed.

3 Place a line.

On the Draw toolbar, click Line/Arc Continuous. On the ribbon bar, select the appropriate line style. Click to place the line.

4 Drag one of the piping components into the document close to the end of the pipe where it is placed. Example 150# Gate Valve with flanges. If the orientation of the valve is not correct relative to the pipe, use the left or right arrow keys to rotate as needed. Click the symbol.

5 To display the Relationships toolbar, click Relationships on the Main toolbar

6 On the Relationships toolbar, click Connect.

7 Identify the center on one end of the valve as the first point to connect to. You can see the midpoint indicator as the pointer moves over the center of the end of the valve.

8 Identify the end of the line placed previously as the other end to connect. The valve moves to the end of the pipe. If Maintain Relationships is set on, the valve remains connected when modifications are made.

9 Place another line from the other end of the valve. Select the midpoint of the end of the valve from which to start. Place the line an approximate length.

10 From the 4” Els directory select the 90 degree elbow and drag it into the file. Use the rotate keys to rotate to a correct orientation. Connect the midpoint of the elbow to the end point of the 4” line.

11 Repeat the process as needed until the layout is complete.

12 Place dimensions between key components of the layout.

Note Workflow method 1 is recommended for small layouts because the constraints needed to handle a large piping layout may make the system too slow for practical use.

Ortho Piping Workflow 2 (Large Layouts)

- You should create large piping layouts with **Maintain Relationships** set off.
- Be sure to select **Midpoint** from the **SmartSketch Settings** options.

1 To set up the sheet, select an appropriate sheet size and scale that allow you to draw the piping layout. The default scale is 1/2” = 1’.

2 From the **Symbol Explorer**, select the size of components to be placed. A list of folders containing appropriate components for that size of pipe is displayed.

3 On the **Draw** toolbar, click **Line/Arc Continuous**. Draw a single line, centerline, layout of the piping system to be drawn. Placing centerlines on a different layer is recommended.

4 From the **Symbol Explorer**, select the proper sized components to be placed, and drag the components onto the line.

5 When the components are placed in their proper locations, turn off the centerline layer.

6 Select the **Place Doubleline** command, a flyout on the **Line/Arc Continuous** command. Set the placement option on the toolbar to **Center Primary Line**; then select a width.

7 Use relationship indicators to locate the midpoint of one of the components, and click the left mouse button. Use

midpoint to locate the end of the next component that has been placed, and click the right mouse button. A doubleline representing the size of the pipe is placed.

8 Continue connecting components in this manner until all components are connected.

Note To show pipes crossing, the doubleline representing the pipe on top can be filled or patterned with a blank color. The pipe that is to be displayed below can be selected and pushed to the bottom in the display. To select and push the pipe to the bottom, click **Send to Back** on the **Change** toolbar.

Tip You can place pipes using the method in Workflow 1 with the **Line/Arc Continuous** command instead of using the **Place Doubleline** command.

The following symbol sets aid in Ortho Piping layouts.

Content	Description
Orthographic Piping Symbols Sizes 1,2,3,4,6,8,10,12 Inches	Each Size contains the following: 150# Valves 300# Valves Actuators Annotation Els Olet Reducers Welds 1 and 2 Inch sizes also include 600# and 800# valves.

Control Loop Template Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;open how;document how",0,`NOT_FOUND')}

You use this schematic template to produce control loop diagrams using Intergraph supplied symbols according to accepted industry standards.

- Imperial Template—This template defaults to a B size sheet. The sheet background consists of two sections divided into two categories. The main sections are Field and I/O Building.
  - The Field section is divided into Instrument and Junction Box categories.
  - The I/O Building is divided into Termination Rack and I/O Cabinet categories.

Tip If you need a different configuration for the background, click **Background Sheets** on the **View** menu, and select a sheet and modify as needed. Then click **Working Sheets** on the **View** menu. The working sheet displays the changes that were made in the background sheet.

Control Loop Workflow

Tip You should create schematic drawings with **Maintain Relationships** cleared.

1. Set up the sheet.

   Select an appropriate sheet size. The default sheet size is B with a scale of 1:1.

2. Place symbols.

   The **Symbol Explorer** defaults to the Control Loop symbol set. The set is divided into logical components such as controllers, recorder, terminal strips, transmitters and others. Select a component and drag it to the location you want.

   Tip A typical configuration might be as follows: Field—Instrument—Thermocouple, Junction Box- 3 Wire Terminal Strip; I/O Building—Termination Rack—3 Wire Terminal Strip w/ground and I/O Cabinet—Electrical Recorder.

3. Click **Connector** and connect the components together as you want.

   Connect points have been placed on each component where typical connections can be made.

4. Edit attributes.

   Some components have attributes associated with them that change the text associated with them. Select the component, and change the attributes you want to change in the **Symbol Explorer**. The text labels are updated to display the input values.

The following symbol sets to aid in control loop diagramming.

Content	Description
Control Loop Diagrams	Control Loop symbols categorized into the following groupings: Controllers, Flow Elements, Indicators, Positioners, Recorders, Switches, Temperature Elements, Terminal Strips, Transmitters and Valves.

Atlas Mapping Templates Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;open how;document how",0,`NOT_FOUND')}

You use these templates to produce maps.

- Imperial Template—This template has imperial units in decimal inches, ANSI sheet sizes, ANSI dimensioning, and Arial text.
- Metric Template—This template has metric units in millimeters, ISO sheet sizes, ISO dimensioning, and Arial text.

Atlas Map symbols for the United States are available in the **Symbol Explorer** for these templates. The **Draw** toolbar containing tools to create maps appears on the left of the drawing window.

Mapping Workflow

Tip You can create maps with **Maintain Relationships** set on or off.

1. Set up the sheet.

   Select an appropriate sheet size. The default scale is 1:1.

2. Draw the map.

   Place map symbols by using the mouse to drag from the **Symbol Explorer**. While dragging a symbol for placement, use the left/right arrow keys on the keyboard to rotate the symbol dynamically before placement.

   Use the up/down arrow keys to select different drag points on the symbol before placement. If you press the **Alt** key during symbol placement, the alignment indicators are temporarily disabled, allowing symbol placement with grid snap or visual alignment.

   You can use two methods to place multiple copies of the same symbol:

   - Holding down the right mouse button, drag the symbol into the template. When you release the right mouse button to place the symbol, you are prompted with two options. Click **Stamp Here**, and use the left mouse button to place multiple copies of the symbol.
   - Press the **Ctrl** key on the keyboard as you drag in a symbol with the left mouse button. Place the first instance of the symbol while holding down the **Ctrl** key. Once you have placed the first symbol, you can release the **Ctrl** key and use the left mouse button to place multiple copies of the symbol.

   When you drag and pause a symbol over an existing map symbol drop point, a tool tip appears, identifying the state to be placed adjacently. Dropping the symbol on the drop point ensures that the state boundaries match perfectly.

3. Place text.

   Double-click symbols to place text in the center of the symbol. The active text settings in the file are used.

   To highlight existing text for properties editing or moving, pause the pointer over text until the PickQuick indicator appears. Then click and select the numbered box that represents the text. Right-click on the highlighted text to edit properties.

   To move the highlighted text, click the green lock to unlock. Move the text to a new position. Note that text is entered in paper units regardless of the sheet scale.

4. Finish the drawing.

   Finish the map by drawing details, adding text, or modifying the symbols to enhance the map.

The following symbol sets aid in drawing maps.

Content	Description
\Program Files\ SmartSketch \Symbols\Diagramming \Atlas Map\US States	United States Map symbols. These symbols have drag points as well as special behaviors for enhanced placement and modification.

Templates Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;open how;;document how",0,`NOT_FOUND')}

A template is used as a starting point in creating a document. A template is a file that provides tools such as text, formats, geometry, dimensions, units of measurement, toolbars, and styles that are used to produce a new document that uses a specified format.

The template that you use depends on the type of information you want to put in the document. For example, if you want to create a drawing that contains a schematic of an electrical component, you can use an electrical schematic template.

When you base a document on a particular template, that template automatically points to the symbols that you would most likely use for that type of document. The **Symbol Explorer** displays the appropriate symbol set for the task.

When you select a specific template, tools are available that allow you to create either a schematic diagram or a precision drawing.

Schematic diagrams are primarily created using symbols, connectors, and text at a 1:1 scale. Schematic diagrams do not represent a logical flow. The **Schematic** toolbar is available when you select a template designed to create a schematic diagram.

Precision drawings represent physical elements such as lines, arcs, curves, and rectangles that you draw precisely with the **Draw** toolbar. Precision drawings are created at real-world scale, and you can maintain relationships between elements in precision drawings.

Directional Mapping Templates Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;open how;document how",0,`NOT_FOUND')}

You use these templates to produce directional maps.

- Imperial Template—This template has imperial units in decimal inches, ANSI sheet sizes, ANSI dimensioning, and Arial text.
- Metric Template—This template has metric units in millimeters, ISO sheet sizes, ISO dimensioning, and Arial text.

Directional Map symbols are available in the **Symbol Explorer** for these templates. The **Draw** toolbar containing tools to create maps appears on the left of the drawing window.

Directional Mapping Workflow

Tip You can create maps with **Maintain Relationships** set on or off.

1. Set up the sheet.

   Select an appropriate sheet size. The default scale is 1:1.

2. Draw a directional map.

   Draw transportation routes, first using the **Line/Arc Continuous** command or the **Curve** command. Select the command from the **Draw** toolbar. Select a linestyle such as Rural Road or Railroad.

   - When you use the **Line/Arc Continuous** command, click **A** on the keyboard to draw an arc. To turn line mode back on, click **L** on the keyboard.
   - When you use the **Curve** command, press the left mouse button as you draw.
   - You can label transportation routes by double-clicking the line and typing the name of the road or railroad. The text automatically aligns to linear elements.

3. Place symbols.

   Place directional map symbols to represent landmarks by dragging from the **Symbol Explorer**.

   While dragging a symbol, use the left/right arrow keys on the keyboard to rotate the symbol dynamically before placement. Use the up/down arrow keys to select different drag points on the symbol before placement. If you press the **Alt** key during symbol placement, the alignment indicators are temporarily disabled, allowing symbol placement with grid snap or visual alignment.

   You can use two methods to place multiple copies of the same symbol:

   - Holding down the right mouse button, drag the symbol into the template. When you release the right mouse button to place the symbol, you are prompted with two options. Click **Stamp Here**, and use the left mouse button to place multiple copies of the symbol.
   - Press the **Ctrl** key on the keyboard as you drag in a symbol with the left mouse button. Place the first instance of the symbol while holding down the **Ctrl** key. Once you have placed the first symbol, you can release the **Ctrl** key and use the left mouse button to place multiple copies of the symbol.

4. Place text.

   Double-click symbols or lines to place text.

   The active text settings in the file are used. To highlight existing text for repositioning or editing text properties or moving properties, pause the pointer over text until the PickQuick indicator appears. Then click and select the numbered box that represents the text.

   Right-click the highlighted text to edit properties.

   To move the highlighted text, click the green lock to unlock. Move the text to a new position. Note that text is entered in paper units regardless of the sheet scale.

5. Finish the map.

   Draw details and modify the color or linestyles of the symbols to enhance the map.

The following symbol sets aid in drawing directional maps.

Content	Description
\Program Files\ SmartSketch \Symbols\Diagramming \Directional Map	Directional Map symbols have special behaviors for enhanced placement and modification.

Architectural Templates Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;document how",0,`NOT_FOUND')}

You use these precision templates to produce architectural designs and drawings according to accepted industry standards.

- Architectural (Imperial)—This template has imperial units in feet and inches, ANSI and architectural sheet sizes and borders, architectural fill styles, and provides symbols based on AIA standards for residential and commercial designs.
- Architectural (Metric)—This template has metric units in meters and centimeters, ISO standard architectural sheet sizes and borders, architectural fill styles, and provides symbols based on AIA standards for residential and commercial designs.

The ANSI, DIN, BSI, ISO, and JIS dimensioning standards are also available in these templates. When you open these templates, the **Draw** toolbar appears, containing tools to help you create precision drawings.

Production Drafting Workflow for Floor Plans

You can produce full sets of production drawings according to the AIA standards.

1. Set up the sheet.

   Select an appropriate sheet size and scale that allow you to draw the design. The default scale is 1/4" = 1', which is appropriate for the average plan on a D-Size sheet.

2. Select a border or create one.

   The Architectural templates are delivered with ten border sizes. Select the borders from the **Sheet Setup** command on the **File** menu so that they appear in the current design. On the **Background** tab, select the background sheet to display with the working sheet. Use the **Select Tool** to position the graphics appropriately in the border.

   Note The borders were designed from guidelines from the Construction Specifications Institute (CSI).

3. From the **View** tab on the **Options** dialog box, set the grid settings to **Grid style** to **Static**, **Grid spacing** to **1**, and **Grid index** to **1**.

4. Draw the perimeter walls.

   Workflow A: Draw the approximate perimeter walls of the floor plan, using the **Place Doubleline** and **SmartSketch** commands. Use the **Trim**, **Trim to Corner**, and **Extend to Next** commands for any intersection cleanup between elements where walls overlap or do not intersect cleanly.

   Workflow B: Verify on the **Tools** menu that **Maintain Relationships** is set on. Draw the approximate perimeter walls of the floor plan, using the **Place Doubleline**, **SmartSketch Settings**, and **PinPoint** commands. Then adjust the distance between walls (doubleline graphics) using the **Select Tool** on the **Draw** toolbar to make precision distances with the **PinPoint** command. Use the **Trim**, **Trim Corner**, and **Extend to Next** commands for any intersection cleanup between elements.

   - Short cut keys **F9** and **F12** for **PinPoint** are useful when you draw walls.
   - Avoid trimming for openings, doors, or windows.
   - Press and hold the **Shift** key while using the **Place Doubleline** command; this action prevents a beginning or end cap from being placed. (Pressing and holding the **Shift** key while using the **Place Doubleline** command is useful for tracing.)

5. Draw the interior walls.

   Using the same techniques and commands you used to draw the perimeter walls, add the appropriate interior walls and adjust accordingly.

6. Place door and window symbols.

   Using the **Symbol Explorer**, select the **Doors** folder from the **Plan** Symbols folder in the tree view. Drag the door symbols onto the represented wall elements, and use the bold parameters that appear in the Attribute Viewer to change the size of the door and the handles that appear to orient the door to the position you want. Repeat the same steps you used to place doors for placing windows and all other types of symbols.

   You can use two methods to place multiple copies of the same symbol:

   - Holding down the right mouse button, drag the symbol into the template. When you release the right mouse button to place the symbol, you are prompted with two options. Click **Stamp Here**, and use the left mouse button to place multiple copies of the symbol.
   - Press the **Ctrl** key on the keyboard as you drag in a symbol with the left mouse button. Place the first instance of the symbol while holding down the **Ctrl** key. Once you have placed the first symbol, you can release the

Ctrl key and use the left mouse button to place multiple copies of the symbol.

7 Annotate the drawing.

Use text and dimensioning commands to annotate the drawing. Text is entered in paper units regardless of the sheet scale. To label windows and doors, use the labels that automatically appear on symbols when you double-click them. Or use labels provided in the Label directory in the Plan Symbols directory.

The following symbol sets aid in production drafting.

Content	Description
Elevation Symbols	Symbols of typical elevation view content based on AIA standards and other common designs.
Plan Symbols	Symbols of typical plan view content based on AIA standards and other common designs. Some symbols such as doors and windows can be modified by parameters that appear when the symbols are placed.

Basic Diagramming Templates Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;document how",0,`NOT_FOUND')}

You use these templates to produce business diagrams.

- Imperial Template—This template has imperial units in decimal inches, ANSI sheet sizes, ANSI dimensioning and ANSI text.
- Metric Template—This template has metric units in millimeters, ISO sheet sizes, ISO dimensioning, and ISO text.

Basic diagramming symbols are available in the **Symbol Explorer** for these templates. The **Schematic** toolbar containing tools to create diagrams appears on the left of the drawing window.

Setting Up a Basic Diagram

Tip You can create business diagrams with **Maintain Relationships** set on or off.

1. Set up the sheet.

   Select an appropriate sheet size and scale that allow enough paper space to draw. The default scale is 1:1.

2. Prepare to draw.

   Set the drawing aids to your preferences. Use the **SmartSketch Settings, Grid Display,** and **Grid Snap** commands.

   For more grid options click the **View** tab on the **Options** dialog box to set the grid style to either dynamic or static, and set the static grid to the preferred grid spacing.

- These settings provide visual feedback to you to improve the workflow while you draw. To create clean diagrams, use **Grid Snap** with a static grid displayed.
- Placing symbols and connectors on a static grid produces high quality results.
- You can set grid display and snap by right clicking.

Simple Diagramming Workflow

1. Drag symbols from the **Symbol Explorer**.
2. Use the **Connector** command to connect symbols.
3. Double-click each symbol to add text.

Optimal Diagramming Workflow

1. Place basic diagramming symbols by using the mouse to drag from the **Symbol Explorer**.

   While dragging a symbol, use the left/right arrow keys on the keyboard to rotate the symbol dynamically during placement.

   Use the up/down arrow keys to select different drag points on the symbol before placement.

   If you press the **Alt** key during symbol placement, the alignment indicators are temporarily disabled, allowing you to place a symbol using grid snap or visual alignment.

   You can use two methods to place multiple copies of the same symbol:

- Holding down the right mouse button, drag the symbol into the template. When you release the right mouse button to place the symbol, you are prompted with two options. Click **Stamp Here**, and use the left mouse button to place multiple copies of the symbol.
- Press the **Ctrl** key on the keyboard as you drag in a symbol with the left mouse button. Place the first instance of the symbol while holding down the **Ctrl** key. Once you have placed the first symbol, you can release the **Ctrl** key and use the left mouse button to place multiple copies of the symbol.

2. Connect the symbols by using the **Connector** command.

   When drawing connectors, you should set **Clearance**. Type the minimum distance from the symbols that you would like the first turn in the connectors to occur. This action allows you to control the visual consistency of connectors that make right-angle turns just before they attach to a symbol.

   When you draw a connector to a symbol, approach the symbol from the direction you want the connector placed. As the pointer intent zone nears the symbol, suggested targets for the connector appear.

   The connector end point can be located on a target or any other symbol geometry.

   If you press the **Alt** key while drawing a connector, the diagonal drawing mode will be temporarily activated, allowing the connector to be drawn at any angle with or without grid snap.

3. Place text.

Double-click symbols to place text in the center of the symbol.

The active text settings in the file are used.

To highlight existing text for properties editing or moving, pause the pointer over text until the PickQuick indicator appears. Then click and select the numbered box that represents the text.

Right-click on the highlighted text to edit properties.

To move the highlighted text, click the green lock to unlock. Move the text to a new position. Note that text is entered in paper units regardless of the sheet scale.

4 Finish the diagram.

Use color to modify the symbols and connectors to enhance the drawing.

The following symbol sets are aid in drawing diagrams.

Content	Description
\Program Files\ SmartSketch \Symbols\Diagramming \Basic	Common business diagramming symbols. You can double-click these symbols to place text. These symbols also have special behaviors for enhanced placement and modification.

Site Templates Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;open how;document how",0,`NOT_FOUND')}

You use these precision templates to produce site designs and drawings according to accepted industry standards.

- Site (Imperial)—This template has imperial units in feet and inches, ANSI and architectural sheet sizes and borders, and architectural fill styles. It also provides symbols based on AIA standards for residential and commercial designs.
- Site (Metric)—This template has metric units in meters and centimeters, ISO standard architectural sheet sizes and borders, and architectural fill styles. It also provides symbols based on AIA standards for residential and commercial designs.

The ANSI, DIN, BSI, ISO, and JIS dimensioning standards are also available in these two templates. When you open these templates, the **Draw** toolbar appears, containing tools to help you create precision drawings.

Production Drafting Workflow for Site Designs

You can produce full sets of production drawings according to the AIA standards.

Tip To produce a fairly complex production drawing, you should set **Maintain Relationships** off.

1. Set up the sheet.

   Select an appropriate sheet size. The default scale is 1/4" = 1', which is appropriate for the average plan on a D-Size sheet.

2. Reference a floor plan or open one.

   Reference a floor plan by using the **Object** command on the **Insert** menu or by dragging and dropping in the reference file. Or click the **Open** command to open (translate) the file.

   Tip Any MicroStation, AutoCAD, dxf, or igr document can be a reference file.

3. Create a foot print.

   If you reference the plan, using the drawing tools on the **Draw** toolbar, you can trace the outer perimeter of the reference plan to create the outline shape of the building. Either delete or move the reference file to a layer and turn it off.

4. Place symbols.

   Drag the landscape symbols into the document in the appropriate positions.

   You can use two methods to place multiple copies of the same symbol:

   - Holding down the right mouse button, drag the symbol into the template. When you release the right mouse button to place the symbol, you are prompted with two options. Click **Stamp Here**, and use the left mouse button to place multiple copies of the symbol.
   - Press the **Ctrl** key on the keyboard as you drag in a symbol with the left mouse button. Place the first instance of the symbol while holding down the **Ctrl** key. Once you have placed the first symbol, you can release the **Ctrl** key and use the left mouse button to place multiple copies of the symbol.

5. Annotate the drawing.

   Use text and dimensioning to annotate the drawing. Text is entered in paper units regardless of the sheet scale. To label site symbols, use the labels that automatically appear on symbols when you double-click them.

6. Select a border or create one.

   The Site templates are delivered with ten border sizes. Select the borders with the **Sheet Setup** command so that they appear in the current design. On the **Background** tab of the **Sheet Setup** dialog box, select the background sheet to display with the working sheet. You should use the **Select Tool** to position the graphics appropriately in the border.

   Note The borders were designed from guidelines from the Construction Specifications Institute (CSI).

The following symbol sets aid in production drafting.

Content	Description
Elevations Symbols	Provide AIA and Intergraph standard elevation symbols for commercial and residential Site design.
Plan Symbols	Provide AIA and Intergraph standard

plan symbols for commercial and residential Site design.

Plot Plan Templates Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;open how;document how",0,`NOT_FOUND')}

You use these precision templates to produce plot plan and equipment layout drawings.

- Plot Plan (Imperial) Template—This template has imperial units in decimal inches, ANSI sheet sizes and borders.
- Plot Plan (Metric) Template—This template has metric units in millimeters, ISO sheet sizes and borders, and implements the ISO dimensioning.

The DIN, BSI, and JIS dimensioning standards are also available in these two templates. When you open these templates, the **Draw** toolbar appears, containing tools to help you create precision drawings.

Plot Plan Workflow

You can draw plot plans associatively or non-associatively. The default behavior is non-associative. To draw the plot plan associatively, set **Maintain Relationships** on.

1. Set up the sheet.

   Select an appropriate sheet size. The default sheet scale is 1 in:100 ft. for imperial and 1mm:1000mm for metric.
2. Sketch the layout.

   Draw the geometry for roads, buildings or equipment, using the tools from the **Draw** toolbar and **SmartSketch Settings**. As you draw, relationships are established that capture your design intent. As an example, with **Maintain Relationships** set on, the software remembers when you draw a line horizontally, vertically, or parallel to another line and maintains that information when you modify the drawing.
3. Drag any symbols that are needed for the drawing.

   You can place symbols precisely, relative to other components using **PinPoint** or the precision **Move** command.
4. Dimension the part.

   Use **SmartDimension** and the other dimensioning tools to dimension the layout. If **Maintain Relationships** is set on, these dimensions are driving dimensions that can be changed to iterate your design. Redundant dimensions are shown through the driven elements.
5. Finish the drawing.

   Select individual dimensions and change the values to iterate your design.

The following symbol sets aid in construction of plot plan drawings.

Content	Description
Plot Plan	Assorted symbols to aid in the construction of Plot Plans. Symbols include direction arrow, buildings, vessels, tanks, vehicles, and others. Some of the symbols are parametric and can be changed in the content explorer.

Process Block Diagramming Templates Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;open how;document how",0,`NOT_FOUND')}

You use these templates to produce process block diagrams.

- Imperial Template—This template has imperial units in decimal inches, ANSI sheet sizes, ANSI dimensioning and ANSI text.
- Metric Template—This template has metric units in millimeters, ISO sheet sizes, ISO dimensioning, and ISO text.

Basic Diagramming symbols are available in the **Symbol Explorer** for these two templates. The **Schematic** toolbar containing tools to create diagrams appears on the left of the drawing window.

Setting Up a Process Block Diagram

Tip You can create block diagrams with **Maintain Relationships** set on or off. It is suggested that you accept the default, **Maintain Relationships** set off.

1. Set up the sheet.

   Choose an appropriate sheet size and scale that allow enough paper space to draw. The default scale is 1:1.

2. Prepare to draw.

   Set the drawing aids to your preferences. Use the **SmartSketch Settings**, **Grid Display,** and **Grid Snap** commands. For more grid options, click the **View** tab on the **Options** dialog box to set the grid style to either dynamic or static, and set the static grid to the preferred grid spacing.

- These settings provide visual feedback to you to improve the workflow while you draw. To create clean diagrams, use **Grid Snap** with a static grid displayed.
- Placing symbols and connectors on a static grid produces high quality results.
- You can set grid display and snap by right clicking.

Drawing a Simple Diagram

1. Drag symbols from the **Symbol Explorer**.
2. Use the **Connector** command to connect symbols.
3. Double-click each symbol to add text.

Drawing an Optimal Diagram

1. Place basic diagramming symbols by using the pointer to drag from the **Symbol Explorer**.

   Place multiple copies of a symbol by using the right mouse button to drag and by selecting the **Stamp Here** option.

   While dragging a symbol for placement, use the left/right arrow keys on the keyboard to rotate the symbol dynamically before placement. Use the up/down arrow keys to select different drag points on the symbol before placement.

   If you press the **Alt** key during symbol placement, the alignment indicators are temporarily disabled, allowing symbol placement with grid snap or visual alignment.

2. Connect the symbols by using the **Connector** command.

   When you draw a connector that is not straight, you should set **Clearance:** to the minimum distance from the symbol so that the first turn in the connector appears.

   When you draw a connector to a symbol, approach the symbol from the direction you want the connector placed. As the pointer intent zone nears the symbol, suggested targets for the connector appear.

   The connector end point can be located on a target or any other symbol geometry. If you press the **Alt** key while drawing a connector, the alignment indicators are temporarily be disabled, allowing the connector to be drawn with or without grid snap.

3. Double-click symbols to place text in the center of the symbol.

   The active text settings in the file are used. To highlight existing text for properties editing or moving, pause the pointer over text until the PickQuick indicator appears.

   Then click and select the numbered box that represents the text. Right-click on the highlighted text to edit properties.

   To move the highlighted text, click the green lock to unlock. Then with the pointer drag the text to a new position. Note that text is entered in paper units regardless of the sheet scale.

4 Finish the diagram.

Use fills and modify the elements in symbols and connectors to enhance the drawing.

The following symbol sets aid in drawing diagrams.

Content	Description
Process Block Diagrams	Common Basic diagramming symbols. You can double-click these symbols to place text. These symbols also have special behaviors for enhanced placement and modification.

Technical Drawing Templates Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;open how;document how",0,`NOT_FOUND')}

You use these templates to produce technical drawings, sketches, and illustrations.

- Imperial Template—This template has imperial units in decimal inches, ANSI sheet sizes, ANSI dimensioning and ANSI text.
- Metric Template—This template has metric units in millimeters, ISO sheet sizes, ISO dimensioning, and ISO text.

A set of simple drawing elements is also available in the **Symbol Explorer** for these templates. The **Draw** toolbar containing tools to create precision drawings appears on the left of the drawing window.

Drawing/Sketching Workflow

Tip You can create technical drawings with **Maintain Relationships** set on or off.

1. Set up the sheet.

   Select an appropriate sheet size and scale that allow you to enough paper space to draw. The default scale is 1:1.

2. Draw elements.

   Use the tools on the **Draw** toolbar and the **SmartSketch Settings** command or drag symbols available in the **Symbol Explorer**.

   Place multiple copies of symbols by using the right mouse button to drag and by selecting the **Stamp Here** option, or by pressing the **Ctrl** key while dragging a symbol from the **Symbol Explorer**.

   If **Maintain Relationships** is set on, relationships between drawn objects are established. As an example the system remembers when you draw a line horizontally, vertically, or parallel to another line and maintains that information when you modify the drawing.

   You can use the **Trim**, **Extend to Next**, and **Fillet** commands to efficiently modify drawn geometry.

3. Annotate the drawing.

   Use text, dimensioning, and labels to annotate the drawing. Double-clicking on any drawn object (except fills, dimensions, and leaders) creates an associative text box. Note that text is entered in paper units regardless of the sheet scale.

4. Finish the drawing.

   Use patterns and fills and modify the symbols to enhance the drawing.

The following symbol sets aid in production drafting.

Content	Description
\ProgramFiles\ SmartSketch\Symbols\ Drawing	Commonly drawn elements such as line, rectangle, ellipse, circle, and others are provided to quickly begin a drawing. These symbols become drawing elements when placed so they are easily edited along with drawn elements.

ActiveCGM®

{button Related Topics,AL("save high;documents high;save as HTML cmd",0,`NOT_FOUND')}  {button How To,AL("save how",0,`NOT_FOUND')}

If you want to place a SmartSketch document on an HTML page for viewing on the Web, you can save the document to .cgm format. Computer Graphic Metafile (cgm), a standard file format for vector and raster data, is an ideal format for publishing 2D vector drawings on the Web. This format requires little storage space, displays quickly in a web browser, and has the ability to zoom and display more detail. cgm documents can also contain embedded hotspots, hyperlinks, and database links, allowing you to access information outside the document instantly.

You can save a document as a .cgm graphic embedded in a web page with the **Save As Web Page** command on the **File** menu. You can also save to .cgm with the **Save As** command.

Definition of cgm

cgm supports the definition of graphic objects bound to non-graphic attributes. The cgm file format is defined by ANSI/ISO 8632-1992 (American National Standards Institute/International Standards Organization) and MIL-STD-2301 (Military Standard). cgm is the international standard that defines a hybrid (raster, vector, and text) graphics format. Definition of graphical objects is supported at any arbitrary level of abstraction through a tagging mechanism similar to SGML and HTML.

Definition of ActiveCGM

ActiveCGM® technology converts 2D design files, such as construction drawings, into cgm files to link non-graphical data into graphical elements. For example, you can navigate an intelligent drawing using a Web browser. ActiveCGM provides rapid, accurate, enterprise-wide access and display of graphic information. It allows hyperlinking of vector and raster graphics defined in the Version 4.0 Computer Graphics Metafile format. ActiveCGM products based on ActiveCGM technology support zooming, panning, magnification, navigation of cgm graphics.

Drawing Doublelines

{button Related Topics,AL("draw high;line cmd;dubline cmd",0,`NOT_FOUND')} {button How To,AL("dubline how",0,`NOT_FOUND')}

You can use the **Place Doubleline** command to place a doubleline as you draw and clean corners as you place the lines. This command is very useful in drawing an architectural floor plan for a house or a factory.

Place Doubleline also miters joints and trims as it you draw. It puts endcaps on single lines.

On the **Place Doubleline** toolbar, you can define the thickness of the doubleline and whether you draw the doubleline from the left, right, or center.

Reports

{button Related Topics,AL("symbols high;attributes high",0,`NOT_FOUND')} {button How To,AL("report how",0,`NOT_FOUND')}

The software delivers some reports that you can update automatically when you add symbols to a document. The reports work with symbols that have specific attributes assigned to them. You must have Microsoft® Excel™ 97 or later installed on your computer. The software includes several sample reports.

When you open a template, that specific template displays a default directory of symbols in the **Symbol Explorer.** You can find reports in the Reports directory of the default symbol directory. Examples that you can drag into your document include the following reports:

- Network Reports—In the Network template, you can drag in reports listing network equipment contacts and reports inventorying equipment.
- Process Reports—In the Process Flow template, you can drag in heat exchanger, pump and tower equipment reports and a stream report.

The software prompts you to update the report when you add it to a document. After you add more symbols to the document, you can update the existing report by double-clicking it.

Adding Additional Tools to the Software

{button Related Topics,AL("add-ins included high;add-ins cmd",0,`NOT_FOUND')} {button How To,AL("add-in how",0,`NOT_FOUND')}

Add-ins are commands or functions that add special capabilities the software. To install an add-in, choose the **Add-Ins** command from the **Tools** menu. After you install an add-in, its commands or functions become an integrated part of the software until you remove the add-in.

Annotations

{button Related Topics,AL("text cmd;leader cmd;engineering fonts high;vector fonts high;texthand high;Dimensions high",0,`NOT_FOUND')} {button How To,AL("create text box how;balloon how;leader how;Dimensions how",0,`NOT_FOUND')}

An essential part of the drawing process is adding text, notes, and annotations. Annotations are text and graphics that give information about a drawing. You can add this information quickly and easily with the text and annotation commands in the software.

To place annotations in a document, you can click one of the following buttons:

- **Text Box** button on the **Draw** toolbar
- **Balloon** button on the **Dimension** toolbar

Tip For more information about adding associative text to a document, click the **Related Topics** button or **How To** button.

Annotations with Leaders

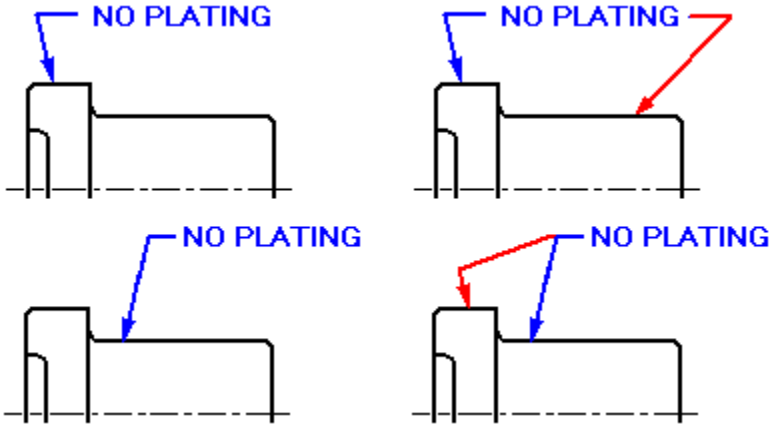
When you create a balloon, you can place it with a leader by setting options on the ribbon bar. The leader can point to another element or be placed in free space. Annotations with leaders have the following components:

(A) Leader line
(B) Break line
(C) Terminator
(D) Annotation

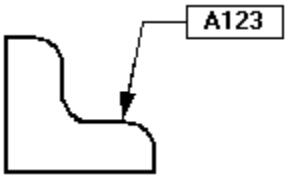
You can manipulate the annotation by selecting the leader and moving parts of it. You can control the display of a leader break line and terminator and insert or delete vertices on a leader.

Adding Leaders

You can add a leader to an annotation with the **Leader** command. An annotation can have more than one leader. The terminator end of the annotation can point to an element or be placed in free space. The annotation end of a new leader must connect to an annotation or the leader on an annotation.



You can create a callout by placing a text box and adding a leader to it with the **Leader** command.

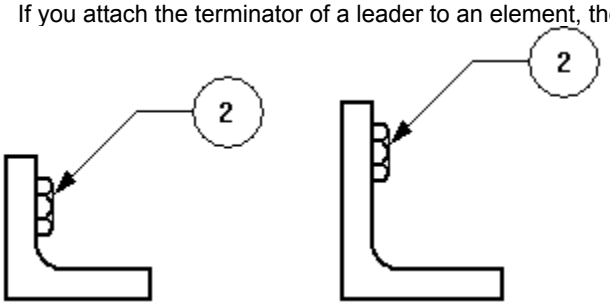


Annotations and Associations

Annotations can be associative or non-associative. An associative annotation moves when its associated

element moves. Text boxes differ from the other annotations in that they are always non-associative.

If you attach the terminator of a leader to an element, the annotation moves with the element.



If you point the terminator of a leader to free space, the annotation is not associative to any element in the drawing. To make an annotation associative, you can select the terminator of the leader and drag it to an element.

Formatting Annotations

You can format an annotation several ways. If you want several annotations to look the same, you can apply a style by selecting it on the ribbon bar. You can apply dimension styles to balloons, but not text boxes. You can apply text styles to text boxes.

Tip If you want to format an existing balloon, you must click the balloon leader to select the balloon. Then, you can change the formats of the balloon.

If you want annotations to look unique, you can select an annotation and edit its properties with the ribbon bar or the **Properties** command on the **Edit** menu.

Moving Elements

{button Related Topics,AL("draw high;relationships high;change cmd;move cmd",0,`NOT_FOUND')}
{button How To,AL("move how",0,`NOT_FOUND')}

You can move elements on the drawing sheet with one of several methods:

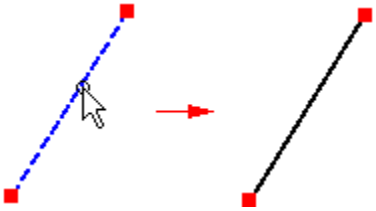
- Dragging elements with the **Select Tool.**
- Specifying precision points with the **Move** button on the **Change** toolbar.

Tip You can also click the **Scale** and **Rotate** buttons on the **Change** toolbar to move elements.

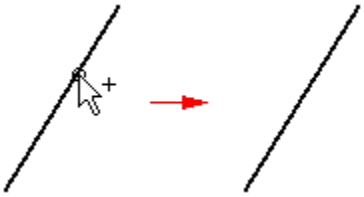
Using the Select Tool

To move an element, you must first select it with the **Select Tool** on the **Draw** toolbar. You can drag the selected element to move it without changing its shape.

Tip The element's handles do not need to be displayed for you to move it. If they are displayed, and you want to move the element and not modify it, position the pointer so it is not over a handle.



You can move an element with precision if you use the relationships indicators.



When you modify a drawing, elements with maintained relationships automatically update to honor the relationship. For example, if you move an element that shares a maintained parallel relationship with another element, the other element moves as needed to remain parallel. If a line and an arc share a maintained tangent relationship, they remain tangent when either is modified.

Moving Elements by Specifying Precision Points

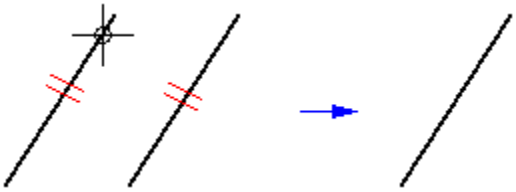
You can move a line that shares a tangent relationship with an arc if you select the line and click the **Move** button on the **Change** toolbar. As you move the line, the line moves without maintaining the relationship with the arc. You can then specify a from point and a to point by clicking on the drawing sheet or by entering values in the ribbon bar. You can move any element by specifying precision points with the **Move** button.

Cutting or Deleting Elements

{button Related Topics,AL("cut cmd;delete cmd",0,`NOT_FOUND')}  {button How To,AL("cut how;delete how",0,`NOT_FOUND')}

You can delete elements by selecting them and clicking the **Cut** button on the **Main** toolbar or by pressing **Delete**. Clicking the **Cut** button allows you to paste the element in another location. Pressing **Delete** removes the element permanently.

Relationships that are no longer applicable after you delete an element are automatically deleted. For example, if you delete one of a pair of parallel lines, the parallel relationship is deleted from the remaining line.



Copying Elements

{button Related Topics,AL("draw high;relationships high;copy cmd;select cmd;offset cmd",0,`NOT_FOUND')}
{button How To,AL("copy how",0,`NOT_FOUND')}

You can copy any element, dimension, or object by selecting it and using the **Copy** button on the **Main** toolbar. Copying places the selected item on the **Clipboard**. When you click the **Paste** button on the **Main** toolbar, the item is placed on the drawing sheet.

You can also copy an element with the **Select Tool.** You click the **Select Tool** on the **Draw** toolbar, select the element, and press **Ctrl** as you drag the element across the drawing sheet. You can also copy several selected elements in the same manner.

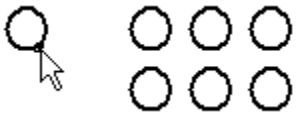
When you copy elements that have relationships, the relationships are copied and retained when possible. For example, if you make a copy of two related lines, the relationship is also copied. However, if you copy one of two lines that are related to each other, the relationship is not copied.

Tip You can also click the **Offset**, **Move**, **Scale**, and **Rotate** buttons on the **Change** toolbar to create copies.

Creating Patterns

{button Related Topics,AL("rectangular pattern cmd;circular pattern cmd",0,`NOT_FOUND')}  {button How To,AL("circular pattern how;rectangular pattern how",0,`NOT_FOUND')}

Patterns are useful if you want to create several elements quickly that are the same without using several commands. You can create patterns by selecting one or more elements and making several copies of it with the **Rectangular Pattern** or **Circular Pattern** button on the **Change** toolbar.

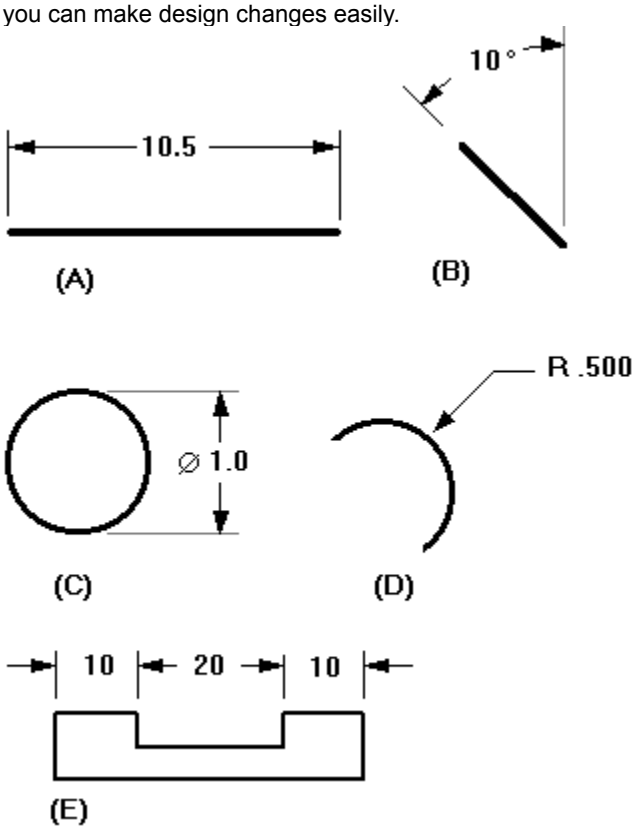


To modify individual members of the pattern, you can select an individual member of the pattern and change it the way you would any other element.

Dimensions Overview

{button Related Topics,AL("dimension types high;relationships high;smartdimension cmd;dimension groups high",0,`NOT_FOUND')} {button How To,AL("dimension how;create variable with value how",0,`NOT_FOUND')}

Dimensions supply information about the size, location, and orientation of elements, such as the length of a line, the distance between points, or the angle of a line. Dimensions are associative to the elements they refer to, so you can make design changes easily.



You can use the commands on the **Dimension** toolbar to place the following types of dimensions:

(A) Linear dimensions
(B) Angular dimensions
(C) Diameter dimensions
(D) Radial dimensions
(E) Dimension groups

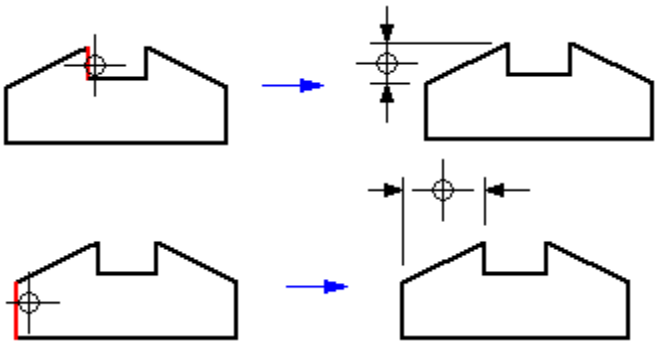
Dimension commands on the **Dimension** toolbar have a ribbon bar that sets options for placing the dimension. When you select a dimension in the drawing, the same ribbon bar options appear. You can use the options to change the selected dimension.

Placing Dimensions

To dimension elements, you can use a dimension command on the **Dimension** toolbar, such as **SmartDimension**, and then select the elements you want to dimension.

As you place dimensions, the software shows a temporary, dynamic display of the dimension you are placing. This temporary display shows what the new dimension will look like if you click at the current pointer position. The dimension orientation changes depending on where you move the pointer.

For example, when you click **Distance Between** on the **Dimension** toolbar and select an origin element and an element to measure to, the dimension dynamically adjusts its orientation depending on where you position your pointer.



Because you can dynamically control the orientation of a dimension during placement, you can place dimensions quickly and efficiently without having to use several commands. Each of the dimension commands uses placement dynamics that allow you to control how the dimension will look before you place it.

Placing Dimensions with the Dimension Axis

The **Axis** button on the **Dimension** toolbar sets the orientation of the dimension axis on the drawing sheet. You can use the new dimension axis, rather than the default axis of the drawing sheet, while you are using the **Distance Between** or **Coordinate Dimension** command. You must set the **Explicit** option on the **Dimension** ribbon bar to place dimensions that are perpendicular or parallel to new dimension axis.

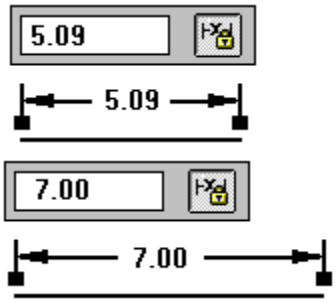
Dimensioning While You Draw

To dimension elements as you draw them, you can set **Dimension Keyin Values Automatically** with the **Options** command on the **Tools** menu. Although placing dimensions as you draw is convenient, it might be necessary to delete unneeded dimensions when you have finished your design.

Note Dimensions placed with this option are only driven dimensions.

Using Dimensions to Drive Elements

You can place a dimension that controls the size or location of the element to which it refers. This type of dimension is known as a driving dimension. If you use the ribbon bar to change the dimensional value of a driving dimension, the element updates.



Dimensions that are not driving dimensions are called driven dimensions. The value of a driven dimension is controlled by the element it refers to. If the element changes, the dimensional value updates.

Because both driving and driven dimensions are associative to the element they refer to, you can change the design more easily without having to delete and re-apply elements or dimensions when you update the design.

If you want to create a driving dimension, you must first set the **Maintain Relationships** command on the **Tools** menu. When you are placing dimensions, an option on the ribbon bar allows you to specify whether a dimension is driving or driven. A driving dimension and a driven dimension are distinguished by color. There are different colors for driving dimensions and driven dimensions in a dimension style.

Not-to-Scale Dimensions

You can override the value of a driven dimension by editing its dimensional value. This makes the dimension not-to-scale. For example, if you override the dimensional value that is 15 millimeters to be 30 millimeters, the actual size of the line that you see would still be 15 millimeters.

Formatting Dimensions

If you want two or more dimensions to look the same, you can select the dimensions and apply a style with the ribbon bar. If you want to format dimensions so that they look unique, you can select a dimension and edit its formats on the ribbon bar or with the **Properties** command on the **Edit** menu.

Using Expressions in Dimensions

There are many instances when the dimensions of individual features in a design are related. For example, the bend radius used to manufacture a sheet metal part is usually a function of the stock thickness. You can define and automate these types of design relationships with expressions. You can select a dimension and then use the Variables command on the Tools menu to enter a formula. When the formula is solved, the dimensional value changes to the value that the formula calculates.

You might want to use dimensions with expressions for the following purposes:

- Drive a dimension by another dimension; Dimension A = Dimension B
- Drive a dimension by a formula; Dimension A = pi * 3.5
- Drive a dimension by a formula and another dimension; Dimension A = pi * Dimension B

Setting or Modifying Units of Measure

To set the units of measure for a dimension, you can use the **Properties** command on the **Edit** menu. To set the units of measure for a document, you can click the **Properties** command on the **File** menu and then click the **Units** tab.

Types of Dimensions

{button Related Topics,AL("dimension distance between cmd;dimension length of cmd;smartdimension cmd",0,`NOT_FOUND')} {button How To,AL("place dimension how;modify dimension how;use smartdimension how",0,`NOT_FOUND')}

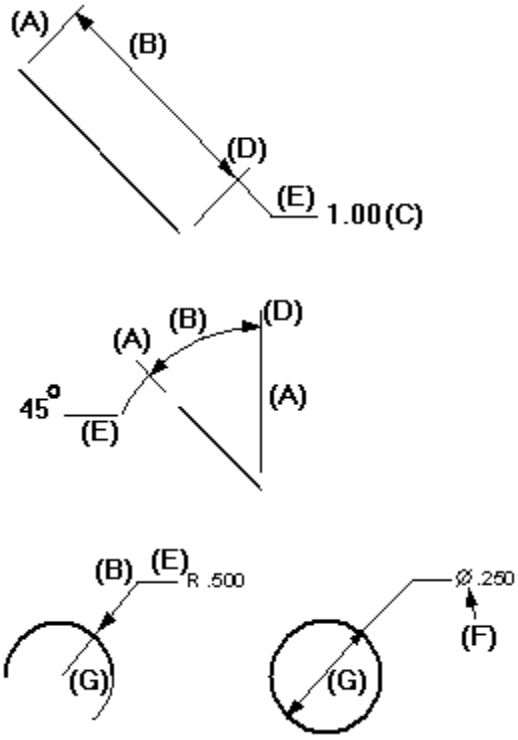
A linear dimension measures the length of a line or the distance between two points or elements. You can place linear dimensions with the **Distance Between** and **SmartDimension** commands.

An angular dimension measures the angle of a line, the sweep angle of an arc, or the angle between two or more lines or points. You can place angular dimensions with the **Angle Between** and **SmartDimension** commands.

A radial dimension measures the radius of elements, such as arcs, circles, ellipses, or curves. You can place a radial dimension with the **SmartDimension** command.

A diameter dimension measures the diameter of elements, such as circles and ellipses. You can place a diameter dimension with the **SmartDimension** command.

The components of a dimension are as follows:



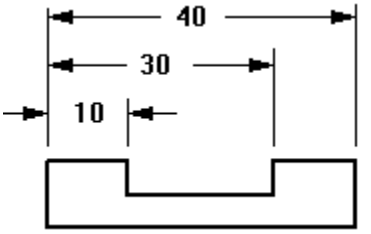
(A)	Projection line	(E)	Break line
(B)	Dimension line	(F)	Symbol
(C)	Dimensional value	(G)	Connect line
(D)	Terminator		

Dimension Groups

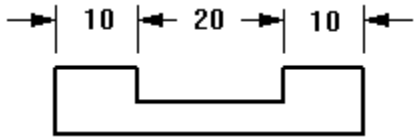
{button Related Topics,AL(`dimension distance between cmd;dimension angle between cmd;dimensions high;symmetric diameter cmd;dimension coordinate cmd',0,`NOT_FOUND')} {button How To,AL(`place dimension group how;add dimension to group how;place symmetric diameter how',0,`NOT_FOUND')}

You can place dimensions in dimension groups with several commands. This makes the dimensions easier to manipulate on the drawing sheet. All members of a stacked or chained dimension group share the same dimension axis.

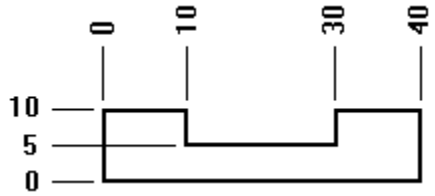
- Stacked dimension group



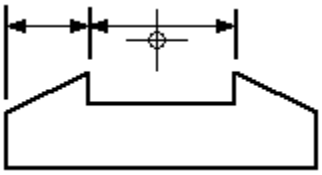
- Chained dimension group



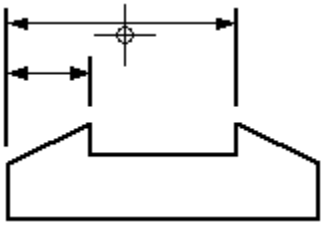
A coordinate dimension group is another type of dimension group. Coordinate dimensions measure the position of key points or elements from a common origin. All the dimensions within the group measure from a common origin. You should use coordinate dimensions when you want to dimension elements in relation to a common origin or zero point.



When you are placing dimension groups with the **Distance Between** or **Angle Between** commands, the cursor position determines what type of dimension group will be placed. After you place the first dimension in a group and click the second element you want to measure, if the cursor is below the first dimension, then the dimension group will be a chained group.



If the cursor is above the first dimension, then the dimension group will be a stacked group.



You can place dimension groups with the following buttons on the **Dimension** toolbar:

- **Distance Between**
-

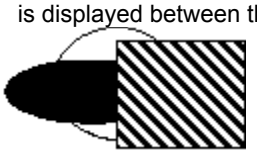
- **Angle Between**
- **Symmetric Diameter**
- **Coordinate Dimension**

Element Display Priority

{button Related Topics,AL("select high;pull up cmd;push down cmd;send back cmd;bring to front",0,`NOT_FOUND')}  {button How To,AL("display order how",0,`NOT_FOUND')}

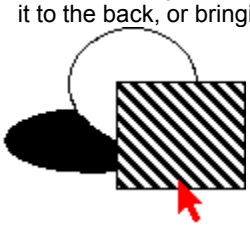
When 2-D elements overlap, their display priority determines which is in front. The first element you draw is displayed behind all other elements—it has the lowest display priority. A newly created element is displayed in front of all other elements—it has the highest display priority.

For example, if you draw a circle, then an ellipse, and then a rectangle, the circle is displayed in back. The ellipse is displayed between the circle and the rectangle, and the rectangle is displayed in front.



Changing the Element Display Priority

You can change an element's display priority by pulling it up one position, pushing it down one position, sending it to the back, or bringing it to the front. One click on the striped box changes the display priority.



You can change the display priority of a group the same way. The display priority of elements within the group does not change.

Drawing Basic Elements

{button Related Topics,AL("groups high;smartsketch high;freesketch high;circle high;line high;rectangle high",0,`NOT_FOUND')} {button How To,AL("draw how",0,`NOT_FOUND')}

An element is any line, circle, or other part of the drawing. The **Draw** toolbar on the left side of the drawing sheet contains most of the buttons that you can use to draw any type of basic geometric element—freeform shapes, lines, arcs, circles, and so forth.

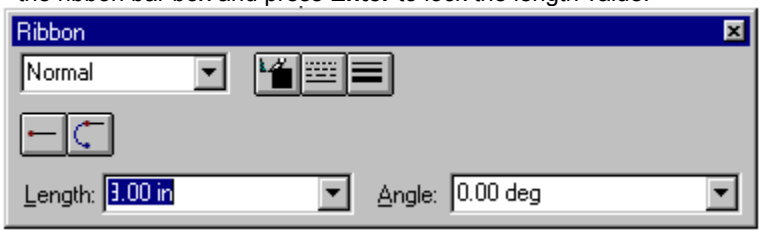
You can place most basic elements with just a few clicks. For example, if you want to place a line, you can click the **Line/Arc Continuous** button on the **Draw** toolbar. Then, you click two points to indicate where to start and finish the line. If you do not want to place another line, you click the right mouse button to end the operation.

Tip Clicking the right mouse button ends most operations in the software.

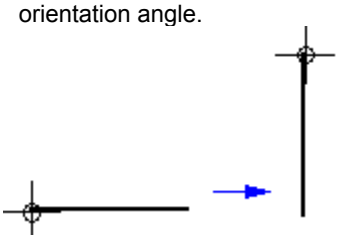
You can also place the line by clicking the **Line/Arc Continuous** button and then clicking and dragging the pointer. When you release the mouse, the line appears on the drawing sheet. With this method, you drag the cursor as if it were a pen. You can draw most elements, such as rectangles, circles, and arcs, with this method, sometimes called mouse-down drawing. The mouse-down method is typically used to place most elements in conceptual sketching and modification.

If you want to place a precise line, you can click the **Line/Arc Continuous** button, type values into the ribbon bar that appears, and then press **Enter**. You can then click on the drawing sheet to place the line. This method, sometimes called mouse-up drawing, is typically used for precision placement and when you want to draw elements that are related to each other.

In some cases, you might want to click points on the drawing sheet and type values in the ribbon bar to place an element. For example, you can click the **Line/Arc Continuous** button and then type 3.0 in the **Length** box on the ribbon bar box and press **Enter** to lock the length value.



When a line that is three inches long appears next to the pointer, you can click anywhere on the drawing sheet to indicate where to place one end of the line. Then, you move the line around and click again to set the line's orientation angle.



If you do not like the results of what you drew, you can click the **Undo** button on the **Main** toolbar. If you want to repeat an action, you click the **Redo** button on the **Main** toolbar.

Drawing Lines

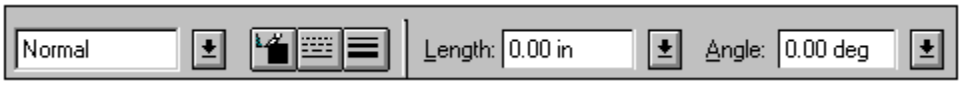
{button Related Topics,AL("draw high;line cmd",0,`NOT_FOUND')}  {button How To,AL("line how",0,`NOT_FOUND')}

If you want to place a line, you click the **Line/Arc Continuous** button on the **Draw** toolbar. Then, you click a point on the drawing sheet to indicate where to start the line. You click a second point to indicate where to end the line. If you do not want to place another line, you click the right mouse button to end the operation.

You can also place the line by clicking the **Line/Arc Continuous** button and then clicking and dragging the pointer. When you release the mouse, the line appears on the drawing sheet.

If you want to place a precise line, you can click the **Line/Arc Continuous** button, type values into the ribbon bar that appears, and then press **Enter**. You then click on the drawing sheet to place the line.

You can also use a combination of clicks and ribbon bar input to place the line. For example, you can type a line length in the ribbon bar box to lock the length value and then set the line's orientation angle graphically. You can set the color and line type by clicking a style in the **Style** list box.



Drawing Circles, Arcs, and Ellipses

{button Related Topics,AL("circle cmd;arc cmd;ellipses cmd;draw high",0,`NOT_FOUND')} {button How To,AL("circle how;arcs how;ellipses how",0,`NOT_FOUND')}

If you want to draw a circle, you can click the **Circle By Center Point** button on the **Draw** toolbar. Then, you click a point to define the center of the circle. To place the circle, you click a second point to define the distance of the circle radius from the first point. You can use other commands on the **Draw** toolbar to place arcs, ellipses, and other types of circles.

Besides clicking the pointer, you can also place circles by clicking the **Circle By Center Point** button and then holding the mouse button down and drawing freehand. After you close the loop, the circle appears.

You can also place a precise circle by clicking the **Circle By Center Point** button and then typing values into the ribbon bar. After you press **Enter**, a circle appears around the pointer. You can then place the defined circle by clicking the point you want on the drawing sheet.

Drawing Squares and Rectangles

{button Related Topics,AL("draw high;rectangle cmd",0,`NOT_FOUND')} {button How To,AL("rectangle how",0,`NOT_FOUND')}

To draw a rectangle or square, you click the **Rectangle** button on the **Draw** toolbar. Then, you click two different points to define the rectangle. If you want to precisely define the dimensions of the square, you can type values into the ribbon bar and press **Enter**.

If you place dimensions on a rectangle, these are always driven dimensions. This means that if you edit the dimensional value of the dimension, the rectangle does not change. You need to edit the values on the rectangle ribbon bar to change the rectangle. Also, you cannot ungroup a rectangle into individual lines.

Tip If you want to place a rectangle that has driving dimensions, you need to place four separate lines in the shape of a rectangle by selecting the **Line/Arc Continuous** button on the **Draw** toolbar.

Drawing FreeForm Shapes

{button Related Topics,AL("draw high;freesketch cmd;freeform cmd",0,`NOT_FOUND')} {button How To,AL("freesketch how;freeform how",0,`NOT_FOUND')}

As you draw, you can place precisely defined lines, arcs, and circles by clicking and typing values in the ribbon bar. You can also use tools to quickly sketch a design and let the software convert it into a precision drawing.

FreeSketch and **FreeForm** allow you to quickly place fluid lines and let the software convert these into precision shapes. **FreeSketch** draws lines, arcs, circles, and rectangles, and **FreeForm** draws curves (splines).

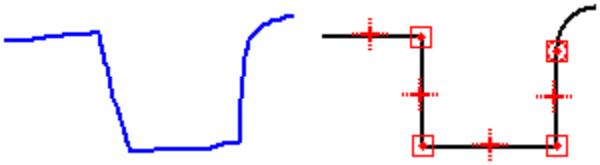
You can begin sketching anywhere on the drawing sheet. You can draw in free space or use key points or end points of elements as reference points.

How FreeSketch and FreeForm Work

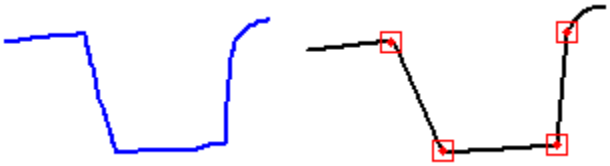
As you drag the pointer, a rough sketch of your design appears. When you release the pointer, the software recognizes the shapes in your sketch and turns the sketch into a precise drawing. You can control the accuracy of the shape recognition using the ribbon bar options.

FreeSketch and FreeForm Options

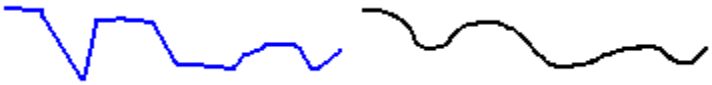
The **FreeSketch Adjust** options control how closely **FreeSketch** interprets mouse movements. When **Adjust On** is set, the software interprets all lines as either horizontal or vertical, and all arcs as tangent. The first figure shows how the software interprets a rough sketch when **Adjust On** is set.



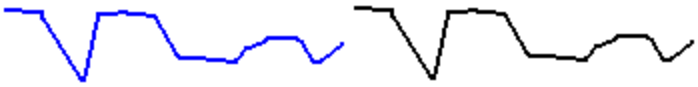
The next figure shows how the software interprets a rough sketch when **Adjust Off** is set.



The **FreeForm Smoothing** options controls how closely the software interprets mouse movements when drawing curves. The first figure shows how FreeForm interprets a rough sketch when **Smoothing On** is set.



The next figure shows how the software interprets a rough sketch when **Smoothing Off** is set.



Variables

{button Related Topics,AL("variables cmd;variable table db;using variables high;arguments high",0,`NOT_FOUND')} {button How To,AL("variables how",0,`NOT_FOUND')} {button Show Me,AL("using variables ex",0,`NOT_FOUND')}

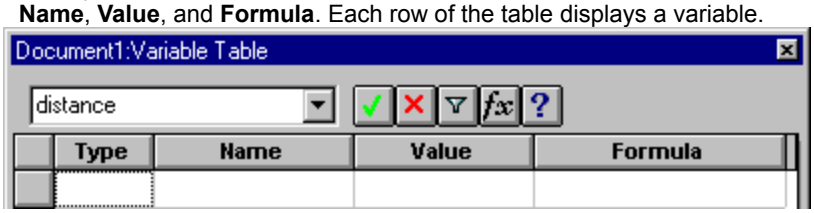
You can use the Variable Table to define and edit functional relationships between the dimensions of a design in a familiar spreadsheet format. The **Variable Table** is accessed with the **Variables** command on the **Tools** menu. There are two types of variables: dimensions displayed in the design and variables you create directly in the **Variable Table**. Dimension variables directly control elements of a design. A user variable must be set equal to a value or mathematical expression; for example, PI = 3.14159.

You can use variables to do the following:

- Drive a dimension with another dimension; Dimension A = Dimension B
- Define a constant; pi=3.14
- Drive a dimension with a formula; Dimension A = pi * 3.5
- Drive a dimension with a formula and another dimension; Dimension A = pi * Dimension B
- Drive a dimension with a formula that includes a function; Dimension A = Dimension B + cos(Dimension C)
- Drive a dimension with a value from a spreadsheet, such as a Microsoft Excel document, by copying the value from the spreadsheet into the Variable Table. Besides Excel, you can use any other spreadsheet software that can link or embed objects.
- Drive a dimension with a value from a spreadsheet, such as a Microsoft Excel document, by copying the value from the spreadsheet into the **Variable Table**. Besides Excel, you can use any other spreadsheet software that can link or embed objects.

Accessing the Variable Table

Once you select the **Variables** command on the **Tools** menu, a table appears with the following columns: **Type**, **Name**, **Value**, and **Formula**. Each row of the table displays a variable.



Entering Data into the Variable Table

When you open the **Variable Table** in the document, all the dimensional values for the dimensions on the drawing sheet appear in the columns. The name that appears in the **Name** column is automatically generated by the software. You can change the name to something more logical if you want.

Restricting the Display of Variables

You can restrict the display of variables in the table with the **Filter** button on the **Variable Table** window:

- You can display only the variables for dimensions that the software created.
- You can also display variables that are associated with elements in the current document or the active window
- You can also display a set of elements that you have selected in the document.

Creating Expressions

The system provides a set of standard mathematical functions. The functions can be typed in with the proper syntax or you can use the **Function Wizard** to select and define the function. The **Function Wizard** is convenient when you forget the proper syntax for a math function. You start the **Function Wizard** by clicking the **Fx** button in the **Variable Table**. The function is written in the **Formula** column of the selected row.

Examples

Suppose you draw a sheet metal bracket and you want to build a relationship between the bend radius and stock thickness. You can use a formula in the **Variable Table** to build and manage this relationship. The following example illustrates how the **Variable Table** would look if you built a relationship that changes the bend radius when the stock thickness changes.

Type	Name	Value	Formula

Variable	Stock_thickness	.25	
Dimension	Bend_radius	.375	1.5 * stock_thickness

Here are some more examples of how you might set up the Variable Table:

Type	**Name**	**Value**	**Formula**
Variable	c	2.0 kg	
Variable	d	10.0 rad	@c:\bearing.xls!sheet1!R6C3
Variable	e	20 mm	@c:\bearing.xls!sheet1R!6C3

Argument Conventions

The following argument conventions are used in the **Variable Table**:

- In the syntax line, required arguments are bold and optional arguments are not.
- Argument names should follow the rules for Visual Basic.
- In the text where functions and arguments are defined, required and optional arguments are not bold. Use the format in the syntax line to determine whether an argument is required or optional.

Example: Using Variables to Calculate Dimensional Values

You can use the **Variable Table** to create expressions that change dimensions in the drawing when you change the expressions.

1. Open a drawing document.
2. On the **Tools** menu, click the **Variables** command. The Variable Table appears in a window.
3. On the **Variable Table** window, click the **Filter** button and define which variables you want to display in the **Variable Table**. For example, on the **Filter** dialog box, if you select **Dimensions in Type** and then select **Window**, this displays all the dimensions that appear in the active window.
4. In the **Variable Table**, click the **Formula** cell that displays the dimension that you want to edit and type an arithmetic expression to calculate the value of the dimension: V681/2. When you type an entry in the cell, the entry also appears in the **Formula Bar**.

Type	Name	Value	Formula
Dimension	V680	4.25 mm	V681/2
Dimension	V681	3.00 mm	

5. On the **Formula Bar**, click the **Enter** button or press **Enter** to calculate the result of the expression. In this example, when V681 is modified, V680 is automatically updated to reflect the relationship.

Type	Name	Value	Formula
Dimension	V680	1.50 mm	V681/2
Dimension	V681	3.00 mm	

Example: Creating a Variable with an External Function or Subroutine

The following example uses a following function and subroutine written in BASIC. They are stored in a document called FUNCTIONS.BAS. To see the syntax of the function and subroutine, click the **Function** button.

{button Function,PI(`',`EX_FUNCTION')}

In FUNCTIONS.BAS, the function **AddTwo** takes two numbers as input, adds them, and outputs a single value. A function can take any number of arguments as input, but can only output a single value. When using a function as the formula of a variable, the result of the function is the value of the variable. The input to the function can be specific value or other variables.

The subroutine **Normalize** takes three values as input and outputs three values. Output variables need to be specified by using the **ByRef** keyword. Using **ByRef** specifies that the variable is being passed in as reference and can be modified by the subroutine. Since a subroutine can have multiple output values, it can be used as the formula for several variables.

To use the document FUNCTIONS.BAS in a Variable Table, you can take the following steps:

1 On the **Tools** menu, click **Variables**.

2 In the **Variable Table**, in the Unit Type list, select Distance.

3 In appropriate cells, type the following entries to create three input variables.

Type	Name	Value	Formula
Var	Var1	5.50 in	
Var	Var2	3.25 in	
Var	Var3	7.80 in	

4 In appropriate cells, type three more entries to create three output variables with any value: X, Y, and Z.

Type	Name	Value	Formula
Var	Var1	5.50 in	
Var	Var2	3.25 in	
Var	Var3	7.80 in	
Var	X	0.00 in	
Var	Y	0.00 in	
Var	Z	0.00 in	

5 Select any of the output variables (X, Y, or Z) and click the **Fx** button to start the **Function Wizard**.

6 On the **Function Wizard** - Step 1 of 2 dialog box, in the **Function Category** list, select **User Defined**.

7 On the Open dialog box, select the functions.bas document to open it.

8 On the **Function Wizard** - Step 1 of 2 dialog box, in the **Function Category** box, click **Visual Basic**. In the **Function Name** box, click **Functions.Normalize** to select the function that you want to use from the functions.bas document.

9 Click **Next**.

10 On the **Function Wizard** - Step 2 of 2 dialog box, type the entries shown to specify the value or variable that is to be used as input for each input argument and the variable to be used for each output argument.

In this box	Type this
InX As Double	Var1
InY As Double	Var2
InZ As Double	Var3
ByRef OutX As Double	X
ByRef OutY As Double	Y
ByRef OutZ As Double	Z

11 Click **Finish**.

The result within the **Variable Table** is shown below. The function is assigned as the formula to all of the variable that were specified to be output of the function. If any of the input values, (Var1, Var2, or Var3), change, the function is automatically run and the output variables are updated.

Type	Name	Value	Formula

Var	Var1	5.50 in	
Var	Var2	3.25	
Var	Var3	7.80	
Var	X	0.55	Functions.Normalize(Var1, Var2,Var3,X,Y,Z)
Var	Y	0.32	Functions.Normalize(Var1, Var2,Var3,X,Y,Z)
Var	Z	0.77	Functions.Normalize(Var1, Var2,Var3,X,Y,Z)

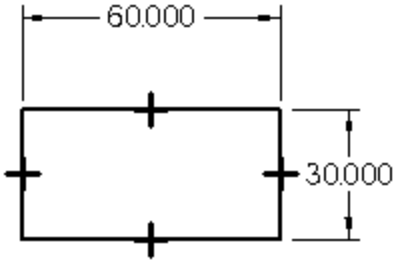
Function and Subroutine in FUNCTIONS.BAS

```
Function AddTwo(InOne As Double, InTwo As Double) As Double
    AddTwo = InOne + InTwo
End Function


Sub Normalize(InX As Double, InY As Double, InZ As Double, ByRef OutX As Double, ByRef OutY As Double,
ByRef OutZ As Double)
    Dim Dist As Double
    Dist = InX * InX + InY * InY + InZ * InZ
    Dist = Sqr(Dist)
    OutX = InX / Dist
    OutY = InY / Dist
    OutZ = InZ / Dist


End Sub
```

Example: Linking Variables to a Spreadsheet

Before you can link a variable to a spreadsheet, you must first create the variables you want in the design document. You can link to a spreadsheet created in Microsoft Excel or other spreadsheet software that can link or embed objects.

1 In the current document, create a rectangle and dimensions as shown.



2 On the **Tools** menu, click **Variables** to display the dimensions you defined.

Type	Name	Value	Formula
Dim	_V112	30.00 mm	
Dim	_V114	60.00 mm	

Note Although the values that appear in the **Name** column are automatically generated by the software, you can edit the names.

3 In Excel, create and save a document that contains the spreadsheet you want to link to. The spreadsheet should contain the appropriate values for dimensional relationships as follows:

	A	B
1	height	35
2	width	65

4 Arrange the windows of the Excel document and the SmartSketch document so that you can see the appropriate cells in both documents.

5 In the Excel document, select the cell that you want to link to.

6 On the **Edit** menu, click **Copy** to copy the selected cells.

7 Click on the SmartSketch document so that it becomes the active document.

8 In the **Variable Table**, in the **Formula** column, click the cell of the variable that you want to link the spreadsheet to.

9 On the shortcut menu, click **Paste Link**.

Note To access the shortcut menu, put the mouse cursor in the white area of the **Variable Table** and click the right mouse button.

10 Click the **Enter** button to accept the value you pasted.

11 Repeat the previous steps as needed for the other values. The resulting **Variable Table** should update as follows:

Type	Name	Value	Formula
Dim	_V112	35.00 mm	@C:\variable\part1.xls!Sheet!R1C2
Dim	_V114	65.00 mm	@C:\variable\part1.xls!SheetR2C2

When you edit the value in the Excel document, the variable in the **Variable Table** updates as well. When you link the dimensions in the SmartSketch document to the Excel document, you can change the dimensions of the SmartSketch document by editing the corresponding values in the Excel document. The SmartSketch document automatically updates.

The Web browser cannot start

You cannot view this information if you do not have Web browser software. To load a Web browser, you can run **Setup** again and choose an option to load Internet Explorer from the CD-ROM that came with your software. Then, you can click the link in the **Read Me Help** document again to activate the Internet Explorer and view the HTML page.

The Web browser cannot start

You cannot view this information for one of the following reasons:

- You do not have Web browser software. To load a Web browser, you can run **Setup** again and choose an option to load Internet Explorer from the CD-ROM that came with your software. Then, you can click the link in **the Read Me Help** document again to activate the Internet Explorer and view the HTML page.
- You do not have an Internet connection. To get a connection, you can call an Internet service provider.
- Your modem is not connected to the Internet. You should connect first and then click the link again to view this information.

Cannot start e-mail

If you do not have e-mail software loaded or do not have a connection to the Internet, you cannot click this button to send e-mail messages. To obtain a connection to the Internet, you should contact a local Internet provider.

If your e-mail software does not start, you can follow the instructions, To Create Your Own Request, in the E-mail Help topic.

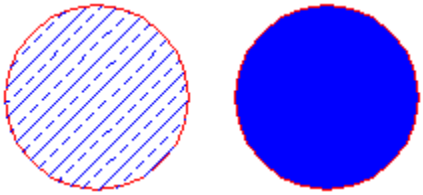
SBL2.HLP cannot start

If you loaded on-line Help to your hard drive, open the Windows Explorer and double-click on this document: \ PROGRAM FILES\Smartsketch\PROGRAM\RESDLLS\009\SBL2.HLP. If you did not load Help to your hard drive, you can double-click the SBL2.HLP document from the software CD-ROM.

Applying Colors and Patterns to Closed Boundaries

{button Related Topics,AL(`fill cmd;formatting elements high',0,`NOT_FOUND')} {button How To,AL(`fill how',0,`NOT_FOUND')}

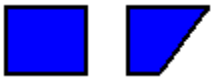
You can fill a boundary with a pattern or a solid color using the **Fill** command on the **Draw** toolbar. A fill is like other elements in that you can format it and move it around, but the fill is always associated with a boundary. The boundary can be made up of more than one element. The following figure shows a pattern fill and solid fill.



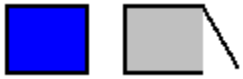
The software provides styles for fills for various engineering standards, such as ANSI, ISO, and AIA.

Modifying Fills

A fill is associative, which means it maintains its original orientation to an element regardless of the way you manipulate the element. For example, if you move the boundary, the fill moves with it. If you change the boundary, the fill changes to conform to the new boundary area.



A fill can exist only inside a closed boundary. If you drag a fill to another region, the fill assumes the shape of the region where you dragged it. If you open a closed boundary, the fill changes color to indicate that it is disabled. If you close the boundary again, the fill changes color to show that it is now active.



Formatting Fills

Formatting a fill is similar to applying formats to an element. You can apply unique formats to fills with the **Properties** command on the **Edit** menu or by setting options on the ribbon bar. To make several fills look the same, you can apply a fill style by selecting the style on the ribbon bar.

Tip The blank color on the **Fill** ribbon bar takes on the background color of the document. This is useful for creating symbols that can cover an element on which the symbol is placed. Incorporating a fill with blank color into the symbol allows the symbol, when placed, to mask out elements such as lines or connectors that intersect the symbol.

You cannot modify an existing fill style, but you can create a new fill style by typing a new name in the **Style** box on the **Fill** ribbon bar. The new style uses the settings on the ribbon bar as the formats for the style.

Tip If you want to copy a fill style from document to another, just create a fill, apply a style, and then copy the fill to a new document. The fill style appears in a dropdown list on the **Fill** ribbon bar in the new document.

Using Layers to Arrange Elements

{button Related Topics,AL(`display manager cmd;layers cmd',0,`NOT_FOUND')} {button How To,AL(`layers how;filter how',0,`NOT_FOUND')}

Layers and display settings can help you group elements so that you can manipulate them more easily on a drawing sheet. Layers and display settings also make it easier to keep track of different types of elements. Each drawing sheet in a document can contain several layers.

When you draw an element, it is assigned to the active layer. To see which layer is active, or to change the active layer, you can use the **Layers** button on the **Main** toolbar.

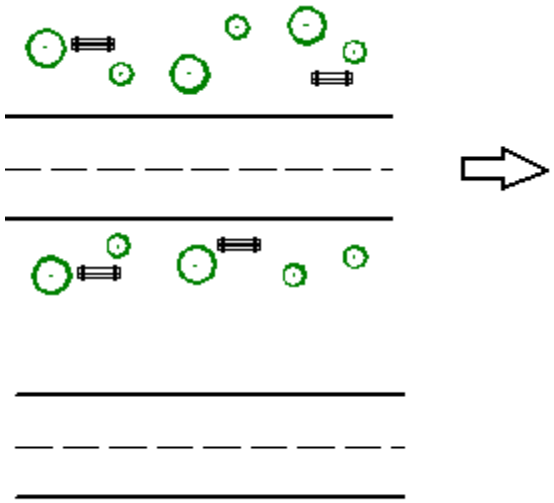
Controlling the Display of Elements and Objects

After assigning an element or object to a layer, you can set display criteria to control the way items appear in a window with the **Display Manager** command on the **Tools** menu. With this command, you can set display criteria for any sheet and its associated layers in the current document. The display settings can include the color or line type and line width of elements or objects.

Tip If two windows are open for the same document, the display settings that you select with the **Display Manager** dialog box affect every window view of the drawing sheet.

Displaying Layers

To view elements on specific layers, you can turn on one or more layers with the **Layers** button. When you turn layers off, you cannot see the elements assigned to the layers on the drawing sheet. For example, you can assign lines to one layer and closed elements to another layer. Then, if you turn off the layer for closed elements and turn on the layer for lines, you see only lines on the drawing sheet.



You can still see relationships between elements that are assigned to different layers on a drawing sheet. For example, suppose a line and a circle are tangent and they are assigned to different layers. If the line's layer is displayed and the circle's layer is hidden, you can still see the tangent relationship handle on the line. If the line's layer is hidden as well, the tangent relationship handle is hidden.

With the **Display Manager** command on the **Tools** menu, you can control the way elements appear on sheets or layers by changing settings, such as the line type or color. You can also create custom colors for the display.

Layers and Layer Groups

While layers provide a way to control the display of elements on a drawing sheet, layer groups give you another way to control the display of elements on drawing sheets. You can use the **Layer Groups** command on the **Tools** menu to define layer groups.

Creating New Layers

You can create new layers with the **Layer Groups** command or by typing a new layer name on the ribbon bar.

You cannot give the same name to two layers on the same drawing sheet.

Assigning Elements to Layers

Although you can assign an element to only one layer, you can change the layer to which an element is assigned. You can find out which layer an element is assigned to by selecting it and using the **Properties** command on the **Edit** menu.

Applying Unique Formats

{button Related Topics,AL("format cmd;styles high;element properties cmd;format painter high;edit properties cmd",0,`NOT_FOUND')} {button How To,AL("format how",0,`NOT_FOUND')}

At times, you may want to make geometric elements, dimensions, fills, or annotations look different from other ones on the drawing. To do this, you can edit the formats of the element directly. When you do this, the formats are applied only to the selected element or the one you are about to draw. This overrides whatever settings are applied to it by the style, without changing the style.

Formatting Individual Elements

Before you place or draw an element, you can set unique formats with the ribbon bar, without changing the style. The commands on the **Format** menu, except for the **Style** command, can also be used to set an element's formats before you place or draw it.

For example, if you click the **Text Box** command, a style appears in the **Style** box on the ribbon bar. The style contains a format for bold fonts. If you turn off the **Bold** option on the ribbon bar, the text box that you place will not display bold text.

You can also apply unique formats to an existing element, dimension, fill, or annotation. You can select the element and then edit the formats with the ribbon bar or the **Properties** command on the **Edit** menu.

For example, if you select a text box that has a style that displays borders, you can remove the borders with the **Properties** command on the **Edit** menu. Since you are changing the element's format, and not its style, the style of the text box still contains borders. If you apply this style to any other text box, it will still display borders.

Formatting More Than One Element

You can change the format of more than one element at a time by selecting the elements and formatting them the same way you would format an individual element. However, all the elements that you select must be of the same type. For example, if you select several text boxes, you can apply settings to all of them at once. You cannot apply the same settings to a dimension and a text box by selecting both of them at once.

Placing Elements with a Grid

{button Related Topics,AL("view high;pinpoint high;draw high;grid cmd;grid high",0,`NOT_FOUND')}
{button How To,AL("grid how",0,`NOT_FOUND')}

The grid and its grid lines allow you to place elements in the document by aligning them with the grid lines or nearest intersection of the grid lines. You can use the grid if you want the elements to line up at regular intervals in the document.

The grid is an invisible set of lines in the document. When you set the **Grid Snap** option on the **View** menu, elements always align with the grid lines or nearest intersection of the grid lines. You can view the grid by clicking the **Grid Display** option on the **View** menu. The grid lines do not print.

{mci_left NOMENU,GRID1.AVI}

You can change the display of the grid from static to dynamic by setting options on the **View** tab of the **Options** dialog box.

When you zoom in or out, the grid lines for a dynamic grid are generated dynamically. You can set dynamic grid lines to appear at fine, medium, or coarse levels. The grid lines appear at common major measurement increments. A dynamic grid displays index lines that intersect with the darker, solid grid lines.

A static grid displays solid grid lines that do not move as you zoom in or out. You can set up the increment settings on the **View** tab of the **Options** dialog box.

Element Groups

{button Related Topics,AL("draw high;moving elements high;group cmd;ungroup cmd",0,`NOT_FOUND')}
{button How To,AL("group how",0,`NOT_FOUND')}

A group is a set of elements that you have selected. The set behaves like any other select set. Grouping elements allows you to work with them as a unit. For example, you could place the holes and center lines of a bolt hole pattern into a group. This would allow you to move, copy, or delete the entire pattern at once, as if it were a single element.

The following list describes some of the properties of groups:

- An element can be a member of only one group.
- Grouped elements must reside in the same document and be on the same drawing sheet.
- Any locatable element can be grouped.
- Any combination of elements, such as lines, text, circles, and so forth, can be grouped.

You can use the **Group** command to nest two or more entire groups within a larger group, or you can nest individual elements and groups within a larger group.

Once elements are grouped, you can use the **Ungroup** command to ungroup all of the elements at the same time. You can also use the **Ungroup** command and **PickQuick** to remove one or more elements from a group.

Selecting Groups and Members of Groups

The options on the **Select Tool** ribbon bar allow you to select an entire group or individual members of a group. If you set the bottom-up option, you can select individual members. If you select the top down option, you can select all the members.

You can also use **PickQuick** to select one or more group members or an entire group.

Performing Tasks on Groups

Once you select a group, you can use a command or ribbon bar option on all of its members. For example, when you move, copy, or delete a group, all of its members are moved, copied, or deleted. You can move or apply relationships to a member of a group and the changes do not affect the position of the other members of the group.

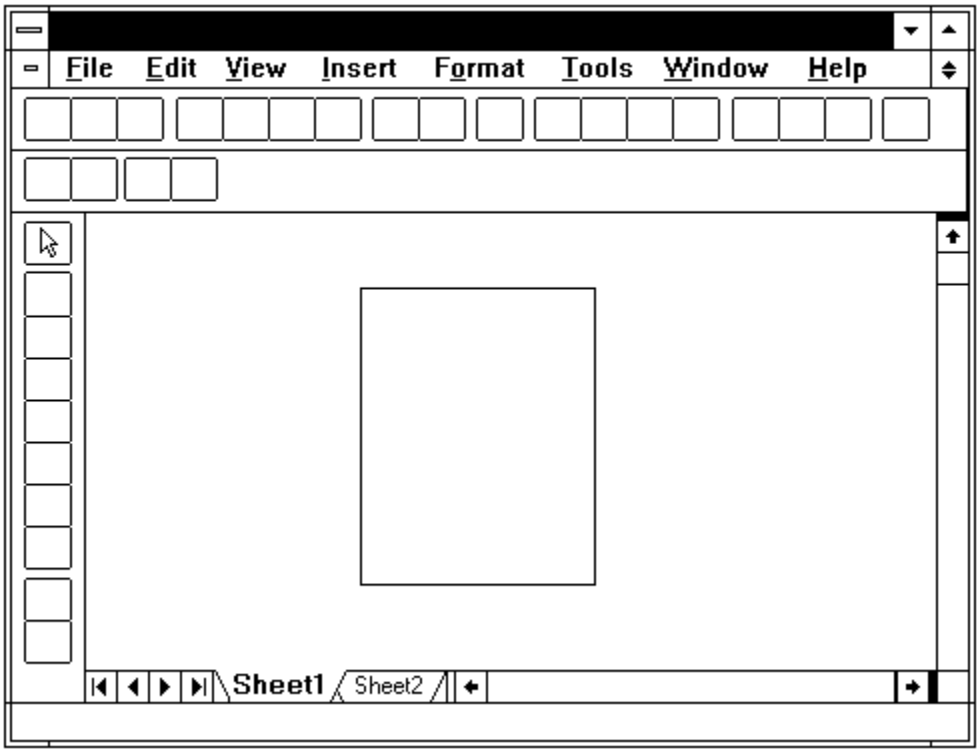
When you copy an entire group, all of its members are copied, including nested groups. The software creates a new group that contains all of the members of the original group. When you copy one member of a group, only that member is copied.

If you use **PickQuick** to select a member of a group, you can perform tasks on the member individually, without affecting other members.

Exploring the Window with Your Mouse

{button Related Topics,AL("label cmd;change cmd;ribbon bars high;intellimouse high;gui cmd",0,`NOT_FOUND')}
{button How To,AL("ui how;select how",0,`NOT_FOUND')}

The window consists of several components. Click a part of the following window to get information about the components.



Using the Mouse

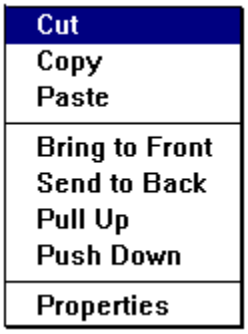
You can use the Microsoft IntelliMouse™ or the middle button of a three-button mouse with the software so that you can manipulate different views of the drawing sheet faster and more efficiently. For more information, click the **Related Topics** button.

You can use the left mouse button to do the following:

- Select multiple elements by dragging to fence them.
- Drag a selected element.
- Click or drag to draw an element.
- Select a menu or toolbar command.
- Double-click to activate an embedded or linked object.

You can use the right mouse button to do the following:

- Restart a command.
- Display a shortcut menu. Shortcut menus are context-sensitive. The commands on the menu depend upon your mouse location and which elements, if any, are selected.



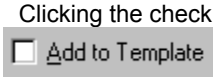
You can also use the mouse to locate objects. As you move the pointer around on the drawing sheet, objects under the mouse change to a highlight color to indicate that they have been located. When you move the mouse away from a highlighted object, the object returns to its original color.

Using Ribbon Bars and Dialog Boxes

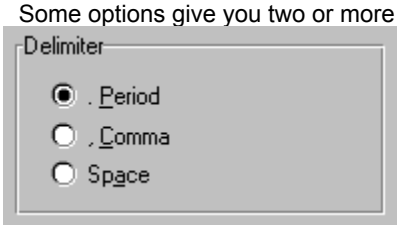
Because the software is Office-Compatible, you will find the ribbon bars and dialog boxes work just like those in Windows. A unique ribbon bar appears when you click a specific command or when you select an element. These ribbon bars help you control various settings for the active command. You can place a ribbon bar only at the top or the bottom of the window. You can drag a ribbon bar to the top or the bottom, but not to the sides, of the window The following figure shows a ribbon bar.

Ribbon bars and dialog boxes contain one or more of the following tools:

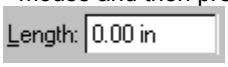
A check box sets or clears an option. When you click the check box, an X appears to show that the option is set. Clicking the check box again clears it.



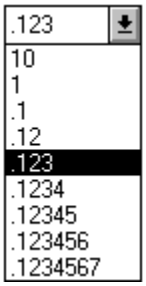
Some options give you two or more choices. You can click an option to activate it.



A box accepts a value when you type it and press Tab or Enter. You can edit the text by highlighting it with the mouse and then pressing Backspace or Delete.



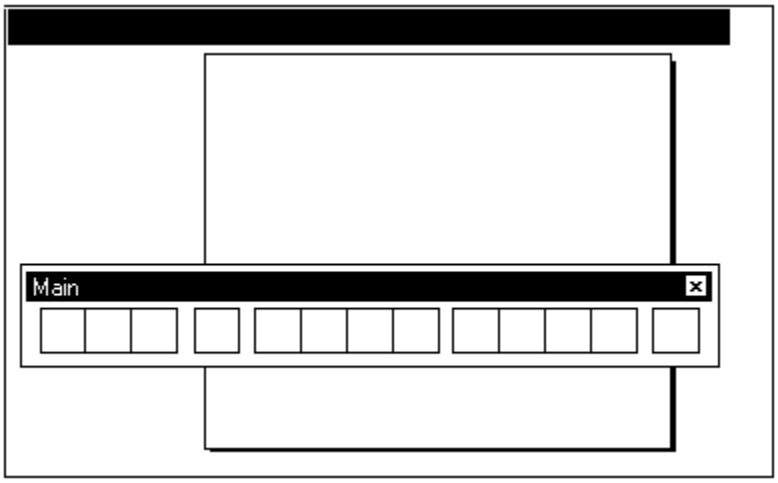
A drop-down list box gives you several options to select from. In some cases, you can also type a value in the field.



A list box allows you to select an item from a list. You can scroll through the list using the scroll bar and double-click an item. Or, you can click an option on the list and then click the **OK** button on the dialog box.

Using Toolbars

The toolbars give you quick access to commands. You can place a toolbar anywhere within the application window, either docked at the top, bottom, right, or left, or floating anywhere in your workspace.



On a toolbar, some command buttons display fly-outs when you click and hold the command button. Fly-outs access commands that are closely associated with the button that you clicked. These types of buttons have a small black arrow in the bottom right corner.

Arranging Your Work Space

You can arrange the workspace in several ways:

- Move windows around on the screen.
- Display, hide, or customize toolbars using the **Toolbars** command on the **View** menu or the buttons on the **Main** toolbar.
- Move a ribbon bar to the top or bottom of the drawing sheet.
- Set viewing options for the active window by clicking **Options** on the **Tools** menu and setting the options you want on the dialog box.

Menu Bar

The menu bar contains the names of all the menus. You can click a menu name to display a list of commands.

Main Toolbar

The **Main** toolbar has many of the commands you will use to perform common Windows functions. The toolbar also contains commands that you can use frequently.

Ribbon Bar

The ribbon bar is a dynamic toolbar that displays different options depending on which command you are using. The options on each ribbon bar operate much like the options on standard Windows dialog boxes.

Vertical Scroll Bar

The vertical scroll bar allows you to pan the active window from side to side.

Drawing Sheet

The large portion of the window is the drawing sheet.

Horizontal Scroll Bar

The horizontal scroll bar allows you to pan the active window from top to bottom.

Tabs

The tabs allow you to display a sheet in your drawing when you click the tab you want. The name of the active sheet is bold.

Tab Scrolling Buttons

Tab scrolling buttons scroll through the sheets in your drawing.

Draw Toolbar

The **Draw** toolbar contains many of the commands you can use to draw elements.

The **Select Tool** button is at the top of the **Draw** toolbar. The **Select Tool** allows you to select elements on the drawing sheet.

Control Menu

The Control menu accesses standard Windows commands for minimizing, maximizing, and switching between applications.

Title Bar

The title bar displays the name of the active document. You can also use the title bar to move the window around on the screen.

Maximize, Minimize Buttons

The maximize and minimize buttons expand the document window or collapse the document window to an icon.

Status Bar

The status bar shows information and messages at the bottom of the window. Some of the information is about what a particular command does or what action you should take.

Sheet Outline

The sheet outline shows the orientation of the drawing sheet and the printable region of the sheet.

User Assistance

{button Related Topics,AL("help cmd",0,`NOT_FOUND')}  {button How To,AL("topics how;examples how;about how;jump how;office how;programming how;tip how;tutorials how;context help how;internet community how",0,`NOT_FOUND')}

SmartSketch user assistance supplies command information as you perform tasks. You can access different kinds of information any time you are running the software. This information could include reference topics, narrative descriptions, or instructional material.

In addition, SmartSketch provides several learning tools that you can activate from the on-line Help menu. You can also find on-line Help and other learning tools in the SmartSketch program menu on the Taskbar.

SmartSketch offers the following important user assistance features:

On-line Help

- Complete command descriptions give you more information. When you click the Help button or press **Shift + F1,** the pointer changes to a northwest arrow with a question mark. You can then get context-sensitive Help for any command by clicking the toolbar button or by clicking the menu command at the top of the window.
- To get Help for options on certain dialog boxes, such as the **Insert Object** dialog box, you can click the Question Mark
- in the upper right corner of the dialog box and click the item for which you want information. Or, you can position the pointer over the item and right-click to get on-line reference information.
- A structured table of contents, an index, and full-text search capabilities provide easy access to Help topics. Press F1 any time you need on-line Help during a design session. When a command is active, the Help topic for that command appears. If no command is active, then the table of contents for the Help topics appears.

  You can also access the table of contents by clicking SmartSketch Help Topics on the Help menu.

Learning Tools

- To learn to use SmartSketch more efficiently, explore the Tutorials available on the Help menu.
- To access the World Wide Web for more support tools for SmartSketch more efficiently, click **SmartSketch on the Web** from the **Help** menu. These commands activate your World Wide Web browser and put you directly on the web page for SmartSketch. On this page, you can access registration and support information and more learning tools.
- Every time you activate SmartSketch, a **Tip of the Day** dialog box displays a helpful tip. You can use the **More Tips** button on the dialog box, or the **Tip of the Day** command on the **Help** menu, to display more tips.
- You can use the **About SmartSketch** command on the **Help** menu to see your software version and license information.

User Interface Features

- ToolTips help you find command names. When you pause the pointer on the command button on the toolbar, a yellow label displays the command's name.
- Brief command descriptions show you the basic function of a command. When you point the pointer at the command button on the toolbar, the description appears in the Status Bar at the bottom of the window. Also, messages that explain your actions for each step of the command appear in the Status Bar.

Microsoft IntelliMouse Pointing Device

{button Related Topics,AL("views high;ms oc high",0,`NOT_FOUND')} {button How To,AL("view how;window how;views how;exclude universal scrolling how",0,`NOT_FOUND')}

You can use the Microsoft IntelliMouse® with the software so that you can manipulate different views of the document faster and more efficiently.

Caution The newest version of Microsoft IntelliPoint Drivers (2.2) supports universal scrolling. Universal scrolling allows you to scroll up and down in any window that displays scroll bars by using the wheel button on the IntelliMouse. Universal scrolling prohibits the recognition of the scrolling behavior defined for the software. You must, therefore, identify the name of the software and any other applications as exceptions to universal scrolling.

How?

When you do this:	The view does this:
Rotate the wheel button forward	Zooms in at the current pointer location
Rotate the wheel button backwards	Zooms out at the current pointer location
Drag the wheel button	Pans from one location to another
Press **Ctrl** and drag the wheel button	Zooms the area of the window that you defined by dragging the pointer
Press **Shift** and click the wheel button	Fits the graphics on the document to the window
Press **Alt** and click the wheel button	Restores the previous view

Tip You can perform any of these actions with a three-button mouse; you click the middle mouse button, instead of the wheel button. No action occurs when you click the wheel button just one time.

How Linking Works

{button Related Topics,AL("documents high;open cmd;paste special cmd;insert object cmd",0,`NOT_FOUND')}
{button How To,AL("open how;ole how",0,`NOT_FOUND')}

Suppose you are sketching a drawing with SmartSketch and you want to include it in an engineering change request that was created in Word. You are going to update the drawing several times and want the change request to reflect the latest updates. A good way to keep the updates current is to link the drawing to the Word document and then periodically update the link.

When you link to another document, the destination document stores the information from the source document in a field code. You can then see the linked information in the destination document.

Creating a Link

You can create links between documents as easily as you cut and paste information. To create a link to an entire document, you can insert information into the destination document with the **Object** command on the **Insert** menu. This is convenient when you do not want to switch away from the document in which you are currently working.

You can also link information by dragging and dropping the document from the **Windows Explorer** or the software's **Explorer** into a SmartSketch document. You must press the **Ctrl** + **Shift** keys while dragging and dropping the document. If you do not press the keys, the document is embedded.

To create a link to just part of a document, you can copy the information in the source document and then use the **Paste Special** command in the destination document to create the link. You must save the document before the link is established. The software that created both documents must support OLE.

Reconnecting or Changing a Link

When you move a document around or rename the source document, the links in the destination document are sometimes broken. To reconnect the link to the source document or change the link to another document, you can click the **Links** command on the **Edit** menu.

Updating a Link

Suppose you linked revision notes in a Word document to your SmartSketch drawing. You have revised your notes in Word since you first created the link. You must now update the link in the SmartSketch document so that it displays the latest revisions to your notes. You can specify whether the updates happen automatically when you change the Word notes or if you must manually update the link in the SmartSketch document. First, click the **Links** command on the **Edit** menu and then, on the **Links** dialog box, select the link you want to set. You can then click the **Automatic** or **Manual** option. With **Automatic** set, SmartSketch updates the links every time you open the document. With **Manual** set, SmartSketch updates the links only when you click the **Update Now** button on the **Links** dialog box.

Editing Linked Information

The best way to edit linked information is to change it in the source document, not in the destination document where the information is displayed. To edit the linked information, double-click on the linked object.

Breaking a Link

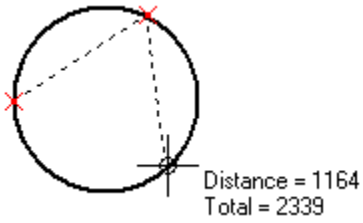
If you do not need to automatically update the information displayed in the destination document, you can break the link with the **Links** command on the **Edit** menu. Once the link is broken, the information still appears in the destination document, but you cannot update the information or reconnect the link. You must create a new link instead.

Measuring Distances and Areas

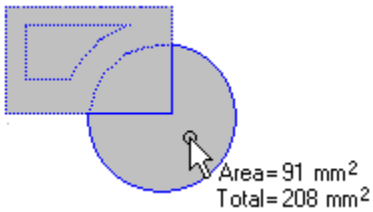
{button Related Topics,AL("measure distance cmd;measure area cmd;dimensions high;document properties high",0,`NOT_FOUND')} {button How To,AL("measure distance how;measure area how",0,`NOT_FOUND')} {button Show Me,AL("measuring distance ex",0,`NOT_FOUND')}

You can also measure the length of a line or the diameter of a circle by selecting the element and looking at the value on the ribbon bar. For more detailed work, the software provides commands for measuring distances or areas in a drawing. Even when you are in the middle of a task, you can measure distances or areas with these commands.

- The **Measure Distance** command measures the distance between points on elements and points in free space.



- The **Measure Area** command measures the area inside one or more closed boundaries.

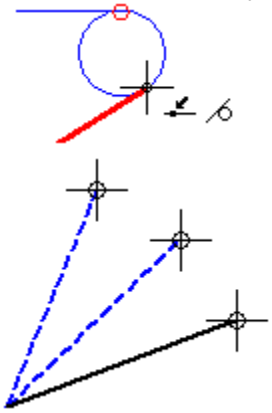


The distances are shown using the current units of measure for the document. To set the units for measuring distances or areas, you can use the **Properties** command on the **File** menu.

Using Feedback from the Pointer as You Draw

{button Related Topics,AL("draw high;smartsketch cmd",0,`NOT_FOUND')} {button How To,AL("smartsketch how;maintain relationships how",0,`NOT_FOUND')} {button Show Me,AL("draw horizontal line smartsketch ex;draw line connected to another line smartsketch ex",0,`NOT_FOUND')}

As you move the pointer, the software automatically updates values in the ribbon bar, giving you constant feedback on the size and position of the element you are drawing. As you draw, the software shows a temporary, dynamic display of the element you are drawing by the pointer—this feedback is called a relationship indicator. This temporary display shows the look of the elements if you place the element at the current location.



The software gives you more information about the element that you are drawing by displaying relationships between the temporary, dynamic element and the following items:

- Other elements in the drawing
- Horizontal and vertical orientations
- Origin of the element that you are drawing

When the software recognizes a relationship, it displays a relationship indicator at the pointer. As you move the pointer, the software updates the indicator to show new relationships. If a relationship indicator appears by the pointer when you click to draw the element, the software applies that relationship to the element.

Relationship	Relationship Indicator
End point	
Midpoint	
Intersection	
Horizontal	
Vertical	
Point On Element	
Perpendicular	
Parallel	
Tangent	
Center	

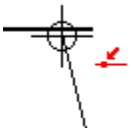
For example, if the horizontal relationship indicator appears when you click to place the second end point of a line, then the line is exactly horizontal.

Relationships

You can set the types of relationships you want the software to recognize with the **SmartSketch Settings** command on the **Tools** menu. The software can recognize one or two relationships at a time. When the software recognizes two relationships, it displays both relationship indicators at the cursor.

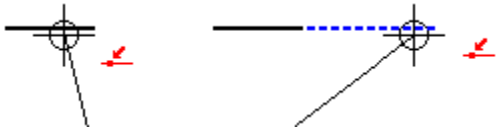
Locate Zone

You do not have to move the pointer to an exact position for the software to recognize a relationship. The software recognizes relationships for any element within the locate zone of the pointer. The circle around the pointer crosshair or at the end of the pointer arrow indicates the locate zone. You can change the size of the locate zone with the **SmartSketch Settings** command on the **Tools** menu.



Infinite Elements

The software recognizes the Point On Element relationship for lines and arcs as if these elements were infinite. In the following example, the software recognizes a Point On Element relationship when you position the pointer directly over an element and also when you move the pointer off the element.



Intent Zones

{button Related Topics,AL("draw high;select high;smartsketch cmd",0,`NOT_FOUND')}  {button How To,AL("select element how;draw arcs by three points how ;tangent arcs how ;line how ",0,`NOT_FOUND')}

As you draw and modify elements, small quadrants called intent zones appear next to the pointer. The software uses intent zones to interpret your intentions as you draw. Intent zones allow you to draw and modify elements many ways using few commands. You do not need to select a different command for every type of element.

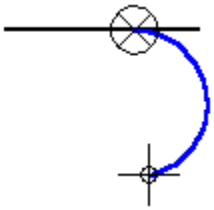
How Intent Zones Work

When you click to begin drawing certain elements, the software divides the region around the clicked position into intent zones. By moving the pointer into one of these intent zones on the way to your next click location, you can tell the software what you want to do next.

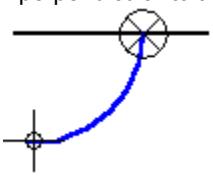
The last intent zone you move the pointer into is the active zone. To change the active intent zone, move the mouse cursor into the zone you want to use, then move it to the position where you want to click next. You can change the size of the intent zones with the **SmartSketch Settings** command on the **Tools** menu.

Drawing Tangent or Perpendicular Arcs

You can use intent zones to change the result of the **Tangent Arc** command. To draw an arc tangent to a line, first click a point on the line to place the first end point of the arc. Then move the pointer through the tangent intent zone and click to place the second end point of the arc.



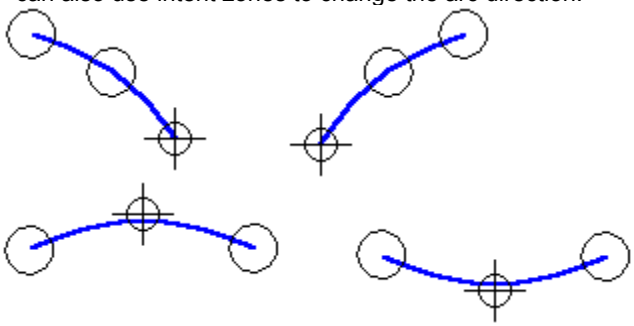
If you want to draw a perpendicular arc instead, you can move the pointer back into the intent zone region and out through the perpendicular zone before clicking to place the second end point of the arc. The arc is then perpendicular to the line.



You can also use intent zones to define the arc direction.

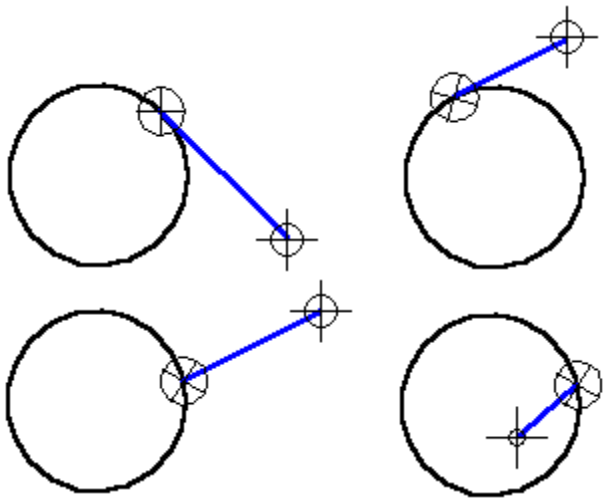
Drawing Arcs by Three Points

When you use the **Arc by 3 Points** command, intent zones allow you to input the three points in any order. You can also use intent zones to change the arc direction.



Drawing Lines Tangent or Connected to Curved Elements

Using intent zones with the **Line/Arc Continuous** command, you can draw a line tangent to a circle or arc. Or you can draw a line that is connected to the circle or arc, but not tangent to it.



Using Relationships as You Draw

{button Related Topics,AL("draw high;smartsketch cmd;smartsketch high;freesketch high;intent zones high;pinpoint high",0,`NOT_FOUND')} {button How To,AL("draw how;maintain relationships how",0,`NOT_FOUND')} {button Show Me,AL("draw horizontal line smartsketch ex;draw line connected to another line smartsketch ex",0,`NOT_FOUND')}

You can use relationships to capture and remember your design intent as your sketch. You can make your drawings associative by applying those relationships—or you can sketch designs that do not use relationships.

How Relationships Affect a Drawing

You can move and change an element that does not use relationships in various ways without affecting other parts of the design. For example, when no relationships exist between two lines, you can move and change each line without affecting the other.

{mci_left NOMENU,RELWORK1.AVI}

When you modify a part of a drawing that has a relationship to another part of the drawing, the other part updates automatically. For example, if you apply a perpendicular relationship between the two lines and move one line, the other line moves with it. The software remembers the relationship between these two elements and always maintains the perpendicular relationship between the lines. You can manipulate either of the two lines and the software will move or modify the line automatically to maintain the relationship.

{mci_left NOMENU,RELWORK2.AVI}

Applying and maintaining relationships in the design simplifies changes to the design later. In the following drawing, all the relationships were automatically established as the design took shape on the drawing sheet. If you want to change the design, you simply modify one segment of it and all the relationships are maintained.

{mci_left NOMENU,RELPART3.AVI}

Applying and Maintaining Relationships

You can place elements that are related to each other as you draw. First, you must set the **Maintain Relationships** option on the **Tools** menu. Then, as you click commands on the **Draw** toolbar and place lines, arcs, and circles, you should watch the relationship indicators that appear by the pointer. When a relationship indicator appears by the pointer, you can click to apply that relationship to the element that you are drawing.

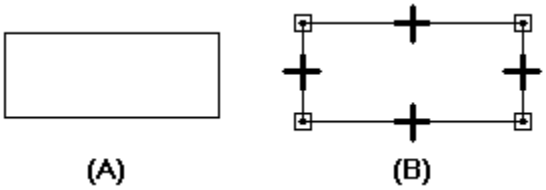
Visualizing Maintained Relationships.

When you apply relationships, relationship handles appear on the related elements. The handles are symbols that show how elements are related. You can display or hide the relationship handles in your drawings by setting or clearing the **Relationship Handles** option on the **Tools** menu.

Relationship	Relationship Handle
Colinear	
Connect	
Concentric	
Equal	
Horizontal/Vertical	
Tangent	
Symmetric	
Parallel	
Perpendicular	

Lock 

For example, the following four lines appear with relationship handles (A) turned off and with relationship handles (B) displayed.



Applying Relationships to Existing Geometry

You can apply relationships to geometry after you place it with the buttons on the **Relationship** toolbar. These buttons include parallel, tangent, connect, and so on. You can use relationships created with these buttons if you set the **Maintain Relationships** option on the **Tools** menu.

Removing Relationships

You can quit using all the relationships that you have applied to the drawing if you clear the **Maintain Relationships** option. You can also remove individual relationships by selecting a relationship handle and deleting it. Clearing the **Relationship Handles** option on the **Tools** menu hides the handles, but the relationships are still maintained and used in the design.

When to Maintain Relationships

Maintaining relationships makes designing more productive and revisions much easier. However, relationships can slow drawing and changes on large data sets. You should decide whether to use relationships depending on the speed of your computer and the importance of easy revision.

For conceptual sketching and diagrams, you might want to use relationships by setting the **Maintain Relationships** option. This method allows you to quickly get your ideas on paper and revise them easily using direct modification and driving dimensions. The kinds of projects in which you might want to use relationships include mechanical concepts, architectural details, layouts, and schematic diagrams.

When to Design Without Relationships

For more complex projects where you initially need to draw with precision, you should not use relationships in the document. You can then draw with precision by using the PinPoint tool and entering values on ribbon bars. You can still use relationships within symbols. The kinds of projects in which you might want to draw without relationships include multiple-view drawings, floor plans, maps, and detailed designs.

Note If you switch between using relationships and not using them while you draw, you can receive confusing results.

There are no related Help topics

Working with Microsoft Office Documents

{button Related Topics,AL("solid edge high;documents high;open cmd;paste special cmd;insert object cmd;link and embed high",0,`NOT_FOUND')} {button How To,AL("open how;ole how",0,`NOT_FOUND')}

SmartSketch is fully compatible with Microsoft Office software. You can transfer text, numbers, sound bites, or intelligent graphics between documents that were created with SmartSketch and other Microsoft Office applications. You can move whole documents around or just parts of a document that you selected. The information that you move is called an object.

For example, you can use Microsoft Word to create a materials report and then display the report in your SmartSketch document. You can also link a Microsoft Excel spreadsheet to the Variable Table in a SmartSketch document. You can then use the value in the spreadsheet to control the dimensions in the SmartSketch drawing. You can even create a document that contains a drawing created by SmartSketch, notes from Microsoft Word, and a spreadsheet created by Excel.

You can move information around with one of many methods:

- Cutting and pasting deletes data from one location and places it in another location.
- Copying and pasting duplicates the information and places it into a new location. The original information does not change.
- Linking stores data in one location and places a copy in another location. When you change the original data, the copied data automatically updates.
- Embedding copies information and stores the information in another document that was created in a different application. If you change the copied information, the original information does not change.

Cutting or Copying and Pasting

You can move information between documents or between locations in the same document with several different methods. The easiest way is to use the **Cut**, **Copy**, and **Paste** commands on the **Edit** menu in any Office-compatible software. You can also insert an entire document into another document with the **Object** command on the **Insert** menu.

You can also move information between SmartSketch and other Office software by selecting the information in a document or a document in the Windows Explorer and dragging it to another location or another document. With drag, you simply select the information that you want to move, hold the left mouse button, and drag the document to a location inside SmartSketch or another Office application. To finish the operation, you release the left mouse button.

If you want to copy the information, and not move it, you should press the **Alt** key while using drag. When you drop the information, a shortcut menu appears beside the cursor. The options on the shortcut menu allow you to select how you want to place the information in the destination document, such as pasting, linking, and so forth.

If the software that you are copying or pasting to cannot edit the information, it will automatically store, or embed, the information in the document. You can then edit the embedded information with the software that created it. If you cannot edit the information, the information is displayed as a static picture.

Linking or Embedding

An object is data from one application that is inserted in a document that was created with a different application. You can link or embed information between documents that were created with SmartSketch and Microsoft Office software. Object linking and embedding (OLE) is a way of linking and embedding information.

Linking stores data in one location and places a copy in another location. Linked data is stored in the source document where it was created. The document that displays the linked or embedded information is called the destination document. When you paste the information in the destination document with the **Link** option set, a reference point, or field, is inserted into the destination document. This field displays the information that you pasted. When you change the original data, the pasted data automatically updates. You can edit the linked information by opening the source document. You can insert linked information with the **Paste Special** command on the **Edit** menu. You can link an entire document to another document by inserting the information with the **Object** command on the **Insert** menu.

Embedding copies data in one document and stores the information in another document. If you change the copied data, the original information does not change. Embedded information is stored in the destination document. You can embed information with the **Paste Special** command on the **Edit** menu. You can embed an entire document inside another document by inserting the information with the **Object** command on the **Insert** menu.

When Do I Link or Embed?

If you want to keep the document's size small, then you should link the data to another document. Linked information increases the document's size only by the size of the displayed image, not by the size of the data itself. Linking is also useful when you want to share information in many different places and have that information update automatically. For example, if you wanted to display a SmartSketch drawing in several different reports that you created in Word, you could link the drawing inside the documents that contained the reports. Then, later, you could update the drawing by editing the SmartSketch drawing. Each report would automatically display the results of the drawing updates.

If the document's size is not an important factor, then you might want to use embedding. Embedded objects make the file size larger. Embedding is useful when the person viewing the document with the information does not have access to the software that created the information. The person can still view the information if it is embedded in the document. For example, if you wanted to send out several drawings for review, you could embed each SmartSketch drawing into a Word document and mail the Word document to each reviewer.

Embedded information is also a good choice if the information does not need updating frequently. If you want to embed an object or edit an embedded object, you must have access to the software that created it.

For more information about linking and embedding, click the **Related Topics** button.

How Embedding Works

{button Related Topics,AL("documents high;open cmd;paste special cmd;insert object cmd",0,`NOT_FOUND')}
{button How To,AL("open how;ole how",0,`NOT_FOUND')}

Embedding means that you store information in a document as an object. The object becomes part of the document. When you double-click an embedded object in SmartSketch, this opens the software in which the object was created so that you can edit it. When you go back to SmartSketch, the object updates automatically with the changes that you made.

You can embed existing information or create a new object and then embed it. When you embed objects, the size of the document increases. However, other users can view the object's information without having to access the software that created the object. This is useful when you need to send the same information to several different people who might not have the same software that you do.

Embedding an Object

Suppose you want to use Word to add comments to a SmartSketch sketch. First, you click the **Object** command on the **Insert** menu. On the dialog box, click the **Create New** option and then click Microsoft Word in the list. After you click **OK**, Word opens so that you can edit the object. If Word is already open, the new document creates a new window in Word. After you type your notes, you click the **Update** command on the **File** menu in Word. You should then switch back to the SmartSketch document. A box the size of the object appears beside the pointer. You can then click on the drawing sheet to place the Word object and display your notes on the drawing sheet. You can use this same process with any documents created with Office-compatible or OLE-aware software.

If you want to insert some notes that you already had in a Word document, you can use the **Object** command on the **Insert** menu. On the dialog box, you should select the **Create From File** option and then enter the name of the Word document to insert the entire document into the SmartSketch document.

Tip If you want to embed the object, you should make sure the **Link** check box is not set.

You can also embed information that you copied from another document. Copy the information and then switch to the SmartSketch document. Use the **Paste Special** command to paste the information as an embedded object.

If you want to use a mouse to embed objects, you can select the information in the source software and then drag it into another document. You can also drag the document that you want to embed from the Windows Explorer or SmartSketch **Explorer** into a SmartSketch document. The object is placed with the mouse drop point at the center of the object's range box.

When dropping SmartSketch documents, you can place the object coincident with the coordinate system of the container document. To do this, you select the **Coincident** option on the **Reference Files** tab of the **Options** dialog box.

Editing an Embedded Object

To edit an embedded object, you can double-click the object to open the software that created the object. The menus and toolbars of the current software are temporarily replaced by the menus and toolbars of the software that just opened.

Tip The software that created both documents must support OLE.

You can also click commands on the shortcut menu to activate the software that created the object. To get the shortcut menu, select the embedded object and click the right mouse button.

Setting Up Documents and Using Templates

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;open how;open AutoCAD or MicroStation document how;document how",0,`NOT_FOUND')}

You can create new documents in the following ways:

- Open the software, which uses NORMAL.igr as a starting template, and create a new document.
- Use the **New** command and choose the template you want to use to create the document.

When you start the software, a new, blank document opens. You can format each new document you create or use a pre-formatted template as a starting point for a new document. You can work in the blank or pre-formatted document and save the changes when you are finished.

When you create a document, the document is displayed on your screen. You can use the commands on toolbars and in menus to add information to your document, and you can use edit commands to modify the information in your document.

Any changes you make are temporarily stored in memory. You have to save the document to preserve the changes to your document. You can also save documents in a specific format.

Using Templates as a Starting Point

Regardless of the method you use to create a document, a template is used as a starting point in creating the document. A template is a file that provides tools such as text, formats, geometry, dimensions, units of measurement, and styles that will be used to produce a new document that uses a specified format. You can also edit the property set of the template to include default values for some of the properties as well as the additional custom properties you need to manage your documents.

The template that you use depends on the type of information you want to put in the document. For example, you would use an electrical schematic template to create a drawing that contains a schematic of an electrical component.

Opening Existing Documents

The **Open** command on the **File** menu opens existing documents. The software keeps track of the documents you worked on last. These documents are listed at the bottom of the **File** menu. To open one of these documents, you can choose it from the list. The **Options** command on the **Tools** menu allows you to set the number of entries displayed in the list.

Setting Up Properties for a Document

Once you create a new document or open an existing one, you might want to set document properties so that you can easily find the document later. You might also want to set up the units of measure that the document will use. With document properties, you can store document information with the document itself, instead of in a separate database. To set the properties, you can click the **Properties** command on the **File** menu.

With the **Properties** command, you can view, edit, and store properties for a document. Document properties can include the title, the author, and keywords that identify important information. These properties also can include document statistics, such as document size and the date that a document was created and last modified. Some properties are updated automatically by the software, such as the date the document was last modified.

Setting the Document's Units of Measure

The unit of measure settings for a document are stored as a property. If you set the units of measure, all the measurements in the drawing are affected. For example, if you set the length unit of measure to inches, then all the measurements in the drawing display in inches.

You can set units of measure in both English and metric units for values such as length, area, or angles. You can change the unit of measure at any time while you are drawing, and the document still retains complete accuracy of the measurements in the drawing.

The precision readout sets the number of significant figures to display. It sets the accuracy of the unit readout value. The precision setting does not alter the numbers that you type into the fields, only the display of the numbers in the field. Values ending in 5 are rounded up. For example, if the precision readout is .123 and you draw a line that is 2.1056 inches long, then the line value length is rounded. The length value appears as 2.106 inches long. If you are using mm as your drawing sheet units, you can have the values display in the fields as 3.5 mm or 3.50 mm.

Tip When you set the units of measure for a document, the settings do not affect the dimensional values for the document. You can set units for the dimensional values with the **Dimension Properties** dialog box. You can access this dialog box by selecting a dimension and then clicking the **Properties** command on the shortcut menu. You can also set the dimension units by editing a dimension style with the **Dimension** command on the **Format** menu.

Saving a Document as a Template

Sometimes you might want to make a copy of the same document as a starting point for creating other documents. In these cases, you can create a template to use as a starting point for many different drawings. A template is a collection of settings that you use over and over in different drawings. The settings might include drawing sheet settings, scales, actual elements that you draw, and a background sheet.

To create a template, just save the current document with the **Save As Template** command on the **File** menu. This command saves the document in the **TEMPLATE** directory located in the directory where you installed the software. A different file extension in the name of the document is not necessary. To base new documents on the template, choose the **New** command on the **File** menu and select the template from the list. You can also open the template and save the document under another name.

Tip You can change the directory where templates are saved by selecting the **Options** command on the **Tools** menu and setting the directory that you want on the **File Locations** tab of the **Options** dialog box.

Working with Several Open Documents

Several documents can remain open in the same session. You can use the **Cut**, **Copy**, and **Paste** commands to move or copy information between the documents or within one open document. You can use commands on the Window menu to arrange all the open documents so that you can view them easily.

You can also use the **Object** command on the **Insert** menu to import objects, such as drawings, spreadsheets, or text created in other software, into an open document. You can link or embed the imported objects. You can also drag information from another document into an open document.

Paper and Model Units

{button Related Topics,AL("drawing sheets high;dimensions high;annotations high",0,`NOT_FOUND')}
{button How To,AL("setup sheet how",0,`NOT_FOUND')}

Each document has both paper and model units. Paper units represent units on an actual sheet of paper. Model units indicate real-world distances and can fit a sheet of paper.

The paper units manage the printable size of dimensions, annotations, and styles. The paper units always appear at a 1:1 scale. The model units represent the scaleable geometry in its real-world size. Both paper and model unit elements are displayed at the same time.

Because the drawing sheet dimensions, annotations, and styles use paper units by default, scaling issues can arise as you set the sheet scale for the model unit geometry.

Dimension text and annotations do not scale when you use the **Scale** command on the **Change** toolbar; the scale of dimension text and annotations is based on the sheet size that you select with the **Sheet Setup** command on the File menu.

Tip If you insert an .igr or .sym document into the drawing sheet with the **Object** command, the terminators, spaces, text, and styles appear in paper units relative to the source document. The dimension lines and extension lines scale as though they are in real-world units. This behavior can cause the dimensions and text to appear very large or small in the container document.

You can set or change the size for dimension text and annotations by clicking the **Style** command on the **Format** menu. On the **Style** dialog box, you select the type of style you want to set or modify (dimension or text), and then click the **New** or **Modify** button to set the font size for dimension text or a text box. Changing the font size of dimension-text style or a text-box style changes only the dimension text or annotations with the modified style applied to them.

You can also set the font size for individual dimension text or annotations by overriding the style that you applied. You do this by selecting the dimension or text box and editing its properties with the **Properties** command on the shortcut menu or from the **Edit** menu.

You can adjust how the model units fit within the printable sheet area by clicking the **Sheet Setup** command on the **File** menu. On the **Size and Scale** tab, you can select a scale setting by clicking an item on the **Select Scale** dropdown list. The value that you select causes the model to resize within the printable area, but neither the paper unit information (dimensions and annotations) or model unit information is scaled.

Placing Elements in Precise Locations

{button Related Topics,AL("pinpoint cmd;draw high;grid cmd;grid high",0,`NOT_FOUND')} {button How To,AL("pinpoint how;grid how",0,`NOT_FOUND')}

PinPoint is a tool that helps you draw and modify elements relative to known positions in a drawing. You can place a target point and then the software dynamically displays the horizontal and vertical distance between the cursor and the target point. You can use **PinPoint** with all element drawing commands. You can run **PinPoint** from the **Tools** menu or the **Main** toolbar.

How PinPoint Works

PinPoint allows you to provide coordinate input to commands as you draw. The x and y coordinates are relative to a target point that you can position anywhere in the window. You can change the location of the target point at any time by clicking the **Reposition Target** button on the ribbon bar and then clicking a new position in the window.

As you move the pointer around, **PinPoint** dynamically displays the horizontal and vertical distance between the cursor position and the target point. Help lines show the **PinPoint** x and y axes and the **PinPoint** orientation.

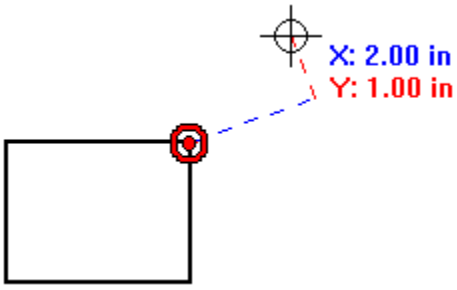
{mci_left NOMENU,PPOINT.AVI}

Locking and Freeing Values

You can lock the x coordinate or the y coordinate using the X and Y boxes on the ribbon bar. When one coordinate value is locked, you can position the other coordinate by clicking a position in the window. Or you can set both values using the ribbon bar boxes. If you want to free the dynamics for a locked value, you can clear the value box by double-clicking in the box and pressing the **Backspace** or **Delete** key.

PinPoint Orientation

In its default orientation, **PinPoint's** x axis is horizontal. You can re-orient the x axis to any angle by setting the angle on the **PinPoint** ribbon bar. The figure shows the **PinPoint** angle set to 20 degrees.



Printing Documents

{button Related Topics,AL("files high;print cmd",0,`NOT_FOUND')}  {button How To,AL("print how",0,`NOT_FOUND')}

You can print your documents on many different devices ranging from dot matrix printers to high-end laser printers. Except for the color settings and a few special effects, your drawing prints exactly as it appears on the drawing sheet.

Preparing to Print

The printer you use affects the way the current document prints and displays text on the screen. Before you print a document, you must install and select the printer that you want to use. For more information about installation, see your printer documentation.

Before you print, you will want to choose a printer and the settings for it. To do this, click the **Print** command on the **File** menu and then click the printer that you want to use. You can set properties for the printer by clicking the **Properties** button. To set the print range and scale, click the **Settings** button.

Printing a Document

As you work on a document, you might need to send a copy of it to a specified printer, plotter, or file. You can click the **Print** command on the **File** menu to do the following:

- Print an entire document or specific sheets from a document.
- Print a draft copy of a document.
- Set printing options, such as the range of sheets or number of copies to print.

The software supports WSYWIG plotting, using standard Windows NT plotting capabilities. The software also supports pen plotters, subject to the limitations of the device driver. Elements appear the same on the screen and in the printed document.

However, the fonts that you choose can affect the match between what you see on the screen and what appears on the printed page. Three kinds of fonts affect your work: scalable fonts, printer fonts, and screen fonts. Use scalable fonts, such as TrueType® fonts, to confirm that what you see on the screen is what appears on the printed page. If you use printer fonts, you must have a corresponding screen font and font size to display each font on the screen. If each screen font you use has a matching printer font, the screen display of the document will closely match the printed document.

Printing Part of a Document

You can print selected sheets in a document or a selected area. This practice is handy if you are working on a complex drawing and you want to print only certain parts to proof them.

To print selected sheets, you should first select sheets in the document to make them active. To do this, you can click the drawing sheet tabs of the sheets that you want while pressing **Ctrl**. Then, you select the **Print** command on the **File** menu and click the **Selected Sheets** option on the dialog box.

When you select several sheets and then click the **Selected Sheets** option on the **Print** dialog box, all the selected sheets are printed as one composite drawing, like layers on top of one another. The software uses the scale, paper size, and orientation of the active sheet for printing the final document.

To print a selected area, you should first select the drawing sheets that you want to print. Then, you select the **Print** command on the **File** menu and click the **Print Area** option on the dialog box. After you click the **OK** button, a set of crosshairs appears. You drag over the area that you want to print. The **Print Area** dialog box then automatically appears and allows you to set options for printing the selected area.

Printing Time

Required time for printing varies by document. Expect longer print times when you have drawings that contain a large number of the following items:

- Curved elements
- Many fills that have complex colors, patterns, or textures
- Large bitmaps
- Links to various documents

The type of printer that you have also affects the printing time. PostScript® printers print faster than LaserJet printers because they can calculate faster. Some older versions of PostScript printers are slower when compared to the newer ones. The type of controller boards and the amount of RAM in the printer also affect your printing

times.

Working with Raster Images

{button Related Topics,AL("save image as cmd;rectangle select cmd;paint color cmd;erase color cmd;control brightness cmd;invert raster cmd;fill area cmd;insert image cmd",0,`NOT_FOUND')} {button How To,AL("insert raster image how",0,`NOT_FOUND')}

Images created by lines of pixels are called raster images, and the code that represents the pixels in the raster image is called raster data. The format of the raster data in the document determines how the pixels are arranged when the image is displayed. You can edit raster data

Differences Between Raster Data and Vector Data

Raster data is unintelligent. A line segment in a raster image cannot be manipulated as a line segment. Rather, it must be manipulated as the collection of pixels that form the line segment.

A vector data document is a collection of coherent, geometric elements. Vector data is intelligent. A line segment in a vector file can be manipulated as a line segment.

A vector data object is an indivisible entity. A raster image, by contrast, is composed of pixels, arranged to give the appearance of lines, shapes, and characters. When zoomed out, a raster image appears as contiguous lines and shapes. However, if you zoom in, it becomes apparent that a raster image consists of individual foreground pixels, represented as small squares on the screen.

Displaying Raster Images

ImageScape™ LT allows you to display and manipulate raster images along with the vector data on the drawing sheet. When you save the current document, which contains vector graphics, you can save a link to a raster image along with it.

This structure can be useful in many ways. For example, if a shopping center is planned for a piece of property, and proposals are sought for the design of the shopping center, an aerial photograph may be taken of the property. The photograph can then be converted into a raster image. Proposals can be submitted as vector documents that each contain a link to the original raster image. In this way, different proposals for the shopping center can be easily evaluated, with each proposal starting from the same raster image of the property.

Inserting an Image

To insert a raster image, you must first install **ImageScape LT** with the **Add-Ins** command on the **Tools** menu. If you do not see the add-in listed in the **Add-In Manager,** you must run Setup again and select the **Custom** installation. You can then select an option for the add-in.

After installing **ImageScape LT**, you can then insert the raster image with the Image command on the **Insert** menu. You can only link the image; you cannot embed it. To edit various properties of the image border, you can select the image and click the **Properties** command on the shortcut menu.

Use the **Position** command to move, scale, rotate, and skew a source image to match a target image or vector frame. All alignment modifications are made by placing up to three source points and three target points. You can define source points by clicking and dragging or by a single click on the source image.

Expanding the Raster Capabilities

You can expand the capabilities of the software with another Intergraph product called **ImageScape™**. **ImageScape** allows efficient and productive use of scanned drawings, aerial photographs, and rendered images. With **ImageScape**, you can do the following:

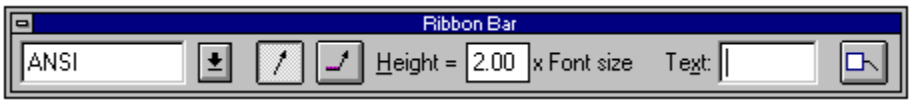
- Clean up and modify scanned drawings, maps, and images.
- Revise old scanned drawings with powerful drawing tools in the software.
- Display raster or vector data transparently over an image backdrop.
- Place images in a precise position.
- Warp images or scanned drawings to correct for geometric distortions in the original image.
- Produce and print hybrid raster or vector drawings for more effective presentations and proposals.

Ribbon Bars

{button Related Topics,AL("ui high;application overview high;help high",0,`NOT_FOUND')} {button How To,AL("ui how",0,`NOT_FOUND')}

Ribbon bars help you control various settings for the active command. A unique ribbon bar appears when you select the command or when you select an element. You can use the same ribbon bar for creating an element or modifying it. For example, if you place a line or select an existing line to modify it, the same ribbon bar is active.

The options on a ribbon bar work like options on dialog boxes. Any options that you set affect the active command. For example, after you click the **Balloon** button on the **Dimension** toolbar, before you place a balloon, you can set a style for it on the ribbon bar.



You can drag a ribbon bar to the top or the bottom, but not to the sides, of the drawing sheet.

Saving Documents

{button Related Topics,AL("documents high;files high",0,`NOT_FOUND')}  {button How To,AL("open how;save how;send how",0,`NOT_FOUND')}

When you first save a new document, the software provides a default name and directory location. You can give the document a meaningful name and specify where you want to store the document on the disk.

When you open an existing document, the software copies the document from the disk and displays it on the screen. As you work, the changes you make to the document are displayed on your screen. To preserve these changes, you must save the document. When you save the document with the **Save** command, the changes are copied to the document on the disk.

Tip You can quickly save changes to an open document by clicking the **Save** button on the **Main** toolbar.

After you have saved a document, it remains displayed on the screen. You can use the **Close** command to close the document and clear it from your screen, or you can use the **Exit** command to close the document and exit the software.

Saving a Copy

If you need to make a copy of your work, you can click the **Save As** command on the **File** menu. You should type a different name for the document in the **Save As** dialog box.

Saving a Document as a Template

Sometimes you might want to make a copy of the same document as a starting point for creating other documents. In these cases, you can create a template to use as a starting point for many different drawings. A template is a collection of settings that you use over and over in different drawings. The settings might include drawing sheet settings, scales, actual elements that you draw, and a background sheet.

To create a template, just save the current document with the **Save As Template** command on the **File** menu. This command saves the document in the **TEMPLATE** directory located in the directory where you installed the software. A different file extension in the name of the document is not necessary. To base new documents on the template, choose the **New** command on the **File** menu and select the template from the list. You can also open the template and save the document under another name.

Tip You can change the directory where templates are saved by selecting the **Options** command on the **Tools** menu and setting the directory that you want on the **File Locations** tab of the **Options** dialog box.

Saving Documents to cgm Format

The Computer Graphics Metafile (.cgm) provides an efficient way to make information available on the Internet. You can use the **Save As** command to save documents in .cgm format. Once in .cgm format, you can place the graphics on a web page (.html or .htm) and view them with browsers such as the Internet Explorer or Netscape Navigator.

cgm is an efficient format for publishing 2D vector drawings on the Web because it takes up little storage space, renders quickly, and has the ability to zoom and achieve more detail. These types of drawings can contain embedded hyperlinks, allowing quick access to information outside the drawing.

Saving Documents to HTML Format

In addition to the cgm format, you can use the **Save As Web Page** command to save documents in .html format. This command saves the document in an HTML document; the graphics in the document are embedded in the HTML as .cgm graphics. You can then view the document with browsers such as the Internet Explorer or Netscape Navigator.

Closing a Document

If you want to close a document without saving your work, click the **Close** command on the **File** menu and then, when prompted to save your work, click the **No** button. If you want to save your work, you can click the **Yes** button instead. If you decide not to close the document at all, you can click the **Cancel** button.

Sending a Document to Others

After you finish drawing a sketch or adding notes to it, you can send the document to other users by clicking the **Send** command on the **File** menu. An e-mail message appears, allowing you to attach the drawing to the message. You can also embed or link the drawing to a Word document and send the document in e-mail to other users.

Selecting Elements

{button Related Topics,AL("select cmd",0,`NOT_FOUND')}  {button How To,AL("select how",0,`NOT_FOUND')}

To select an element, you must use the **Select Tool** at the top of the **Draw** toolbar. You can select lines, arcs, or annotations, such as dimensions or fills. You can also select element groups, embedded or linked objects, symbols, or handles on elements that indicate relationships.

Selecting Single Elements

To select an element, you can click the **Select Tool** on the **Draw** toolbar.

When you click the **Select Tool** button, the pointer changes to an arrow with a locate zone indicator at the end. As you move the pointer, any element that the locate zone passes over is displayed in the highlight color. When an element is highlighted, you can click to select it.

When you select an individual element, the following things happen:

- The element changes to the selection color. You can change the selection color with the **Options** command on the **Tools** menu.
- The element's handles are displayed. Handles are solid squares at significant positions on a selected element, such as end points and center points. Handles allow you to directly modify the element—drag a handle to change the element's shape. Although you can select more than one element at a time, only one element can have handles at a time.
- The element's important properties are displayed on a ribbon bar.
- If the element is linked or embedded into the current document, selecting it allows you to double-click it for editing.

When you select multiple elements or grouped elements, they change to the selection color.

Selecting Multiple Elements

You can select more than one element at a time by clicking the **Select Tool** and then holding the **Shift** or **Ctrl** key as you click the elements you want to select. Or, you can click the **Select Tool** and then drag the mouse to fence elements.

You can use the ribbon bar to select whether you want only elements completely enclosed by the fence to be selected or any element that is partly enclosed by the fence. Many manipulation commands, like delete, move, copy, and rotate, act upon all elements in the selection set.

Selecting an Element That Overlaps Other Elements

If you want to select an element that overlaps other elements, and you cannot highlight the element you want by moving the cursor over it, you can use a tool called **PickQuick**. To use it, you should move the pointer over the elements and pause the mouse. When the software displays an ellipsis, or three small circles, by the pointer, you can click the left or right mouse button to display a small toolbar that shows the number of selectable elements. You can move the pointer over the numbers; and, when the element that you want highlights, you can click on the corresponding number to select it.

Deselecting Elements

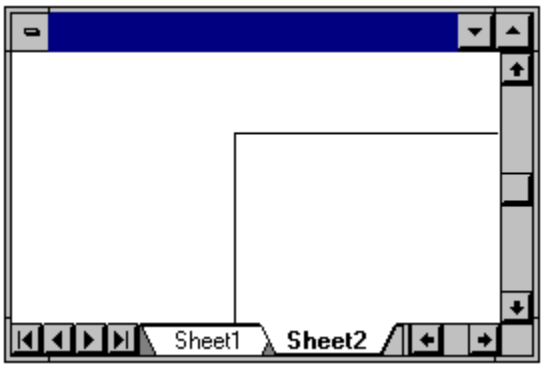
To deselect an element or group of elements, you can click any point on the drawing sheet.

Managing Multi-sheet Documents

{button Related Topics,AL("sheets cmd;drawing sheet tabs high;document management high;paper units high;title block high",0,`NOT_FOUND')}  {button How To,AL("sheets how;title block how",0,`NOT_FOUND')}

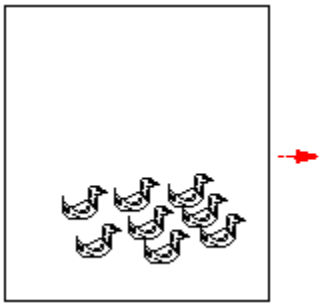
Drawing sheets are similar to pages in a notebook. You can place different sketches or drawings on different drawing sheets in the document. For example, you can draw one idea for a design on one drawing sheet and another idea on another drawing sheet. Both drawings are saved in the same document. There is no limit to the number of sheets you can have in a document.

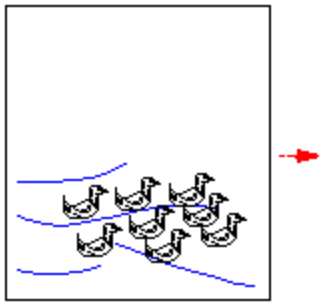
When you create a new document, a default sheet appears with a border and a title box. You can modify the default settings with the **Sheet Setup** command on the **File** menu. For example, you might want to give a specific name to a sheet by setting options with this command. If you want to insert new sheets, click the **New Sheet** command on the **Insert** menu.

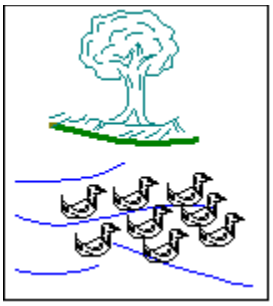


Sheets essentially act like separate drawings. Individual sheets can have different scales and sheet borders. If you want to be able to locate or use relationships between elements, you should place the elements on the same sheet.

You can display a number of drawing sheets on top of each other and simultaneously view the drawings on all of the drawing sheets, much as you would view a stack of transparencies.

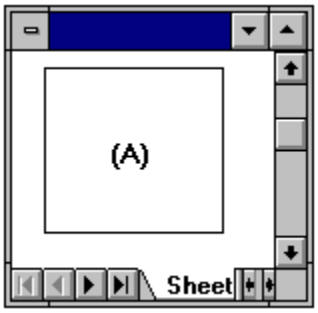






Areas of a Drawing Sheet

A drawing sheet has two areas that affect the way you work. The sheet outline (A) shows the orientation of the sheet and the default print region of the sheet. You can change the size and orientation of the sheet outline with the **Sheet Setup** command on the **File** menu.



You can draw new elements on the sheet outline or outside the borders of the outline. All new graphics that you create are placed on the active drawing sheet.

Setting Up a Drawing Sheet

You can set up a drawing sheet with the **Sheet Setup** command on the **File** menu. The sheet where you will create most of your graphics is called a working sheet. In a document, you can create as many working sheets as you need to plan your project. A working sheet can have a single background sheet attached to it.

Choosing a Sheet Size

You can modify a drawing sheet's characteristics, such as the size and scale of the sheet, with the **Sheet Setup** command on the **File** menu. On the **Sheet Setup** dialog box, you can click the **Size and Scale** tab and select a standard sheet size or set a custom size. The dialog box also allows you to set the defaults for all new working sheets created in the document. You can do this by setting the options you want and then clicking the **Save** as **Default** button.

Drawing Sheet Scale

Drawing sheets allow you to use a specified scale as you draw. When you specify the scale with the **Sheet Setup** command on the **File** menu, everything on the drawing sheet is scaled except for dimensions and annotations. For example, if the scale is one inch to ten inches and you place a line 30 inches long, the line is three inches long in proportion to the drawing sheet and three inches long when printed. However, a dimension measures the length of the line as 30 inches.

The dimension and annotation sizes in your working sheets are independent of the drawing view scale. For example, when you define the height and size of dimension text, these values specify how you want the dimensions to appear when you print the drawing.

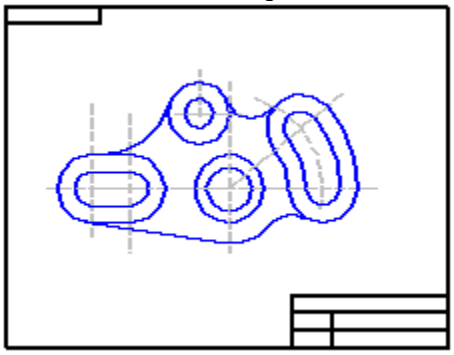
The graphics on the attached background sheet are displayed at a 1:1 scale. They are not affected by the scale set with the **Sheet Setup** command on the **File** menu.

Manipulating Drawing Sheets

At the bottom of the drawing sheet, you can see drawing sheet tabs that allow you to manipulate and display the drawing sheets in your document. When you open a document or create a new one, the tabs are displayed at the bottom of the work space. There is a tab for each drawing sheet in your document.

Attaching a Background Sheet

After you set up the drawing sheet, you might want to attach a background sheet. A background sheet is used as a backdrop to the working sheet. For example, you can add borders to a drawing, draw a title block, insert a raster image, or draw geometry. You can make one background sheet and attach the same background sheet to several different drawing sheets.



When you attach a background sheet to a working sheet with the Sheet Setup command, the items on the background sheet are displayed and printed. The size of the working sheet is automatically set to the size of the background sheet you attach. This is so the paper sizes and graphics on both sheets line up.

Background sheets allow you to customize your borders and title blocks so that they match your company's standards and requirements. You can use the background sheet delivered in a template or design your own background sheet. You can create tailor-made background sheets by adding your company's logo, creating any other graphics that you need, and using various styles and options. A typical customization scheme would be to have a different background sheet for each standard-sized drawing (A, B, C, D; or A0, A1, A2, A3, A4).

Sheets and Document Templates

You can re-use your sheets by creating and saving them in a document template. When you create a new document based on a template, all of the drawing sheets that are part of the template are copied into your new document.

Applying Formats with Styles

{button Related Topics,AL("templates high;style cmd;applying unique formats high;formatting elements high",0,`NOT_FOUND')} {button How To,AL("style how;format painter how;style resource how",0,`NOT_FOUND')} {button Show Me,AL("formatting new drawing ex;formatting existing drawing ex",0,`NOT_FOUND')}

If you want elements that are the same type to look alike, you should use styles, a collection of formats that can be applied to the following items:

- Geometric elements
- Dimensions
- Annotations
- Fills

Using styles ensures consistency. If you place or draw one or more elements, the formats in the style are applied directly to the elements. You do not have to spend time formatting as you draw. You can apply the formats in each style again and again.

The software provides styles that you can apply to elements so that they conform to an engineering standard, such as ISO or ANSI.

Managing Styles

Using the **Style** command on the **Format** menu, you can create several styles so that elements in a drawing appear the way you want. You can use or modify the styles delivered with the software, or you can set up new ones that conform to your unique requirements. One or more styles can be stored in a template so that you can use them in other drawings.

The software divides styles into types, such as text, dimension, line, and fill. A style type contains one or more styles. You can create styles for each style type.

When you create a new document based on a template, the template is copied. The copy includes any styles that are in the template. Fonts are never copied into a document. If you want someone to view the fonts, and that person's system does not have the same fonts installed, you should give that person the fonts along with the document.

Including Styles from Other Documents in a Template

If you want to make styles from other documents available in the current document, you can reference the styles with style resource documents. You can reference a style resource document from the active template or document by clicking the **Resources** button on the **Styles** dialog box. The **Style Resources** dialog box allows you to add style resource documents to the current template or document. Style resource documents can be any .igr document or .RSC line style file that contains styles native to that document.

If you create a document based on a template, any style resource documents attached to the template are attached to the new document as well. When you reference a style resource document from the current document or template, the styles in the resource document are added to the **Style** dropdown list on the active document's ribbon bar. When you apply one of the line, dimension, or fill styles to an element on the drawing sheet, the style is copied from the style resource document to the current document. The fonts are added to the dropdown list on the ribbon bar as well, but are not copied into the current document.

Applying Styles

The style type determines what type of item to which you can apply a style. A text style can be applied to text within a text box. A fill style can be applied to a fill. A line style can be applied to any geometric element such as a line, arc, circle, or ellipse. A dimension style can be applied to a dimension or balloon.

When you place dimensions or annotations, or draw elements, the formats from their default styles are applied automatically. For example, if you click **SmartDimension** on the **Dimension** toolbar, the ANSI style appears on the ribbon bar. Each dimension that you place receives the ANSI style. To apply a different style, you can change the style name on the ribbon bar before or after you draw or place an element.

Applying Styles to More Than One Element

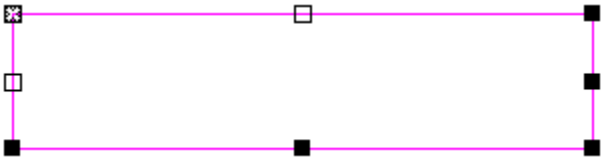
Selecting more than one element and then applying the same style to them removes any previous formats—the elements now all have the same formats from the style that you applied. To do this, you must select elements that are in the same style type, such as text, dimension, fill, or line. For example, you cannot apply a line style to a dimension.

Text Box Handles

{button Related Topics,AL("text properties db;text info tab;annotations high",0,`NOT_FOUND')} {button How To,AL("create text box how;move text box how;resize text box how ",0,`NOT_FOUND')}

Text box handles manipulate the origin or the size of the text box while maintaining the relationship between origin and justification.

Handles on text boxes appear as an X square, a hollow square, or a solid square.



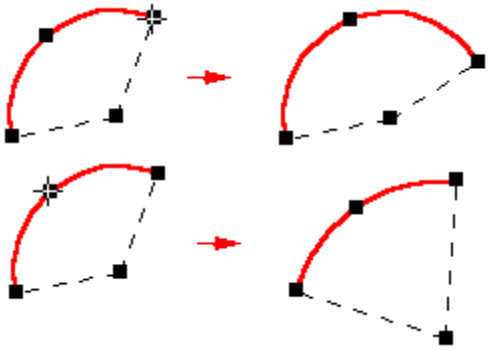
- An X handle indicates the origin of the text box. Selecting an X handle modifies the origin.
- If you select a hollow handle, you move the text box; therefore, you are moving the origin of the text box.
- You select a solid handle to modify the text box along at least one axis. You do not modify the origin.

Changing the Shape of an Element

{button Related Topics,AL("draw high;relationships high;change cmd",0,`NOT_FOUND')} {button How To,AL("manipulate how;modify how;select how",0,`NOT_FOUND')}

You can change the size, position, or orientation of an element with your pointer. When you select an element with the **Select Tool**, its handles are displayed at key positions.

You can change the shape of a selected element by dragging one of its handles. The first figure shows the effect of dragging an end point handle. The second figure shows the effect of dragging the mid point handle.



Scaling Elements

{button Related Topics,AL("draw high;relationships high;scale cmd",0,`NOT_FOUND')}  {button How To,AL("scale how ",0,`NOT_FOUND')}

The **Scale** command on the **Change** toolbar reduces or enlarges selected elements by a scale factor that you define. The scale factor is the same along the x and y axes. Scalable elements include framed elements, such as text boxes. You cannot use the **Scale** command to scale or scale and copy elements in a drawing view because a scale factor has already been applied to the drawing view.

Relationships within the selection set are maintained if the relationships are still applicable after the elements have been scaled. If not, the relationships are deleted.

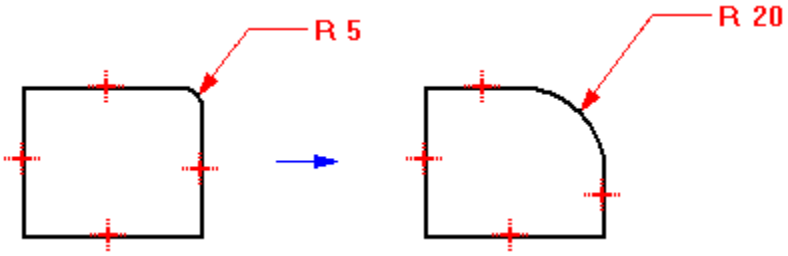
To define the new scale, you can click points on the drawing sheet or you can type a value in the **Scale Factor** box on the ribbon bar. You can also use the **Step** box on the ribbon bar to make the **Scale Factor** increase or decrease incrementally as you move the mouse.

Using Dimensions to Change Existing Elements

{button Related Topics,AL("draw high;relationships high;dimensions high",0,`NOT_FOUND')} {button How To,AL("driving dimension how",0,`NOT_FOUND')}

You can change dimensions on the drawing sheet to change existing elements. Driving dimensions are relationships that allow you to maintain characteristics such as the size, orientation, and position of elements. When you place a driving dimension on or between elements, you can change the measured elements by editing their dimensional values—you do not have to delete or redraw elements at different sizes.

For example, dimensioning the radius of an arc maintains its size. Editing the value of the radius dimension changes its size.



To create dimensional relationships, select a dimension command and click the elements you want to relate.

Tip You must set the **Maintain Relationships** option on the **Tools** menu before drawing the elements or applying your dimensions.

Applying Relationships to Change Existing Elements

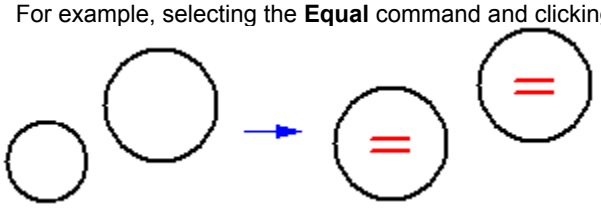
{button Related Topics,AL("draw high;relationships high;change cmd",0,`NOT_FOUND')} {button How To,AL("relationship how",0,`NOT_FOUND')}

You can apply relationships as you draw and place elements by using the relationship indicators that appear by the pointer. You can also apply relationships to elements that you have already placed on the drawing sheet.

Applying Relationships to Existing Elements

To apply relationships to elements that you have already placed on the drawing sheet, click a button on the **Relationship** toolbar and then select the elements you want to relate. When you apply a relationship between elements, the elements are modified to reflect the relationship. If **Maintain Relationships** is set when you use the commands on the **Relationship** toolbar to add relationships to your drawing, the added relationships will be maintained.

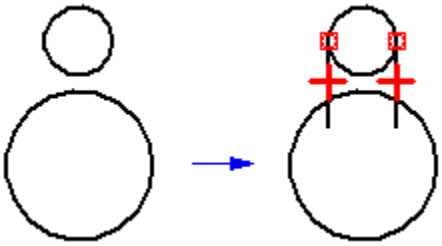
For example, selecting the **Equal** command and clicking two circles makes the circles equal in size.



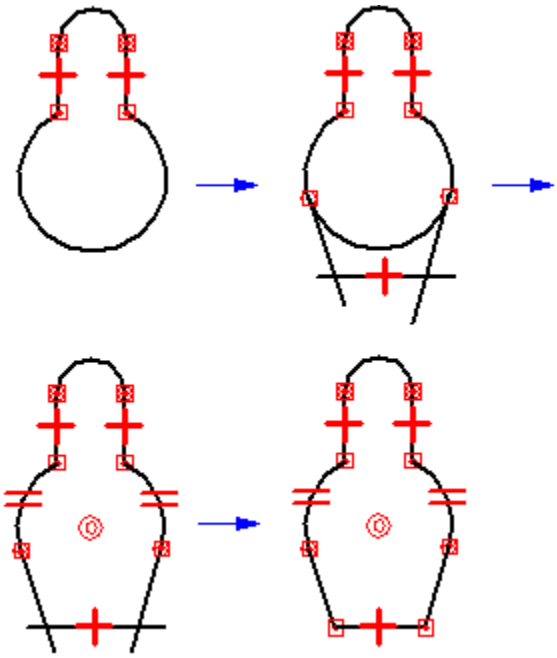
If a line and arc are not tangent, applying a tangent relationship modifies one or both elements to make them tangent.

When you use commands on the **Relationship** toolbar, the software allows you to select only elements that are valid input for that command. For example, when you use the **Concentric** command, the command allows you to select only circles, arcs, and ellipses.

Perhaps you begin designing with a few key design parameters. You would usually draw known elements in relation to one another and then draw additional elements to fill in the blanks.



As you draw and add elements to the drawing, the relationships are maintained and additional relationships are applied.



Modifying Elements That Share Relationships

If two elements share a relationship, the relationship is maintained when you modify either one of the elements. For example, if you move a circle that has a tangent relationship with a line, the line also moves. The elements remain tangent.

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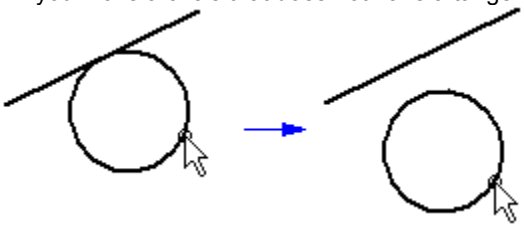
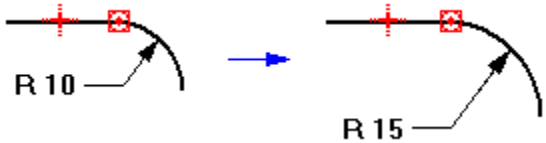
If you move a circle that does not have a tangent relationship with a line, the line does not move.



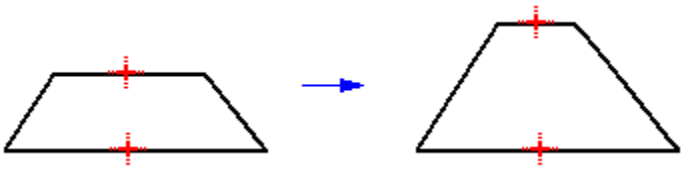
Other elements that share relationships maintain them in the following ways:

- If a line and an arc share a tangent relationship, they remain tangent when either is modified.

- If a line and arc share a connect relationship, they remain connected when either is modified.



- If two lines are horizontal, they remain horizontal even if you change the position and length of one of the lines.



Deleting Relationships

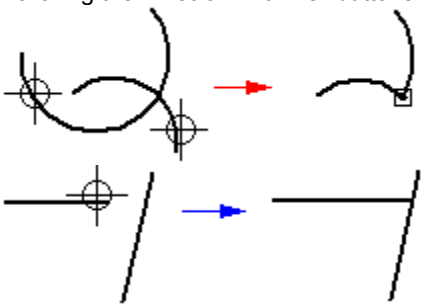
You can delete a relationship as you would delete any other element. You select a relationship handle, and then select the **Delete** command. Relationships are automatically deleted when their deletion is necessary to allow a modification to occur. For example, if you rotate an element that has a horizontal relationship applied to it, the relationship is automatically deleted.

If you want to change an element by adding or removing a relationship, and the element does not change the way you expect, it may be controlled by a driving dimension. You can toggle the dimension from driving to driven, then make the change.

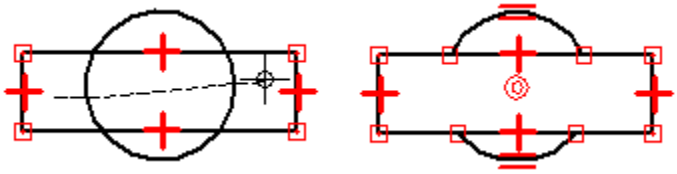
Extending or Trimming Elements

{button Related Topics,AL("draw high;relationships high;change cmd;trim cmd;extend cmd;chamfer cmd;fillet cmd",0,`NOT_FOUND')} {button How To,AL("extend how;trim how;chamfer how;fillet how",0,`NOT_FOUND')}

You can trim or extend elements with buttons on the **Draw** toolbar. You can also add fillets or chamfers by clicking the **Fillet** or **Chamfer** buttons on the **Draw** toolbar.

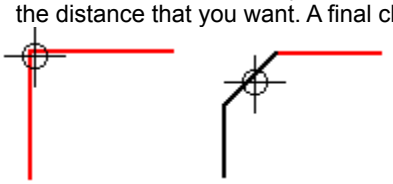


Relationships are added or removed as necessary when you trim or extend an element. For example, if you trim part of a circle and more than one arc remains, concentric and equal relationships are applied between the remaining arcs.



You can also draw a chamfer on two different elements with the **Chamfer** button on the **Draw** toolbar. The elements must be linear, but do not have to intersect. The elements cannot be parallel to each other.

When two lines intersect, you can draw a chamfer simply by clicking the corner and then moving the pointer in the distance that you want. A final click on the drawing sheet places the chamfer (B).



To place a fillet, you can click the **Fillet** button on the **Draw** toolbar and then select the elements you want to modify. As with any command, you can use a combination of clicks and ribbon bar input.

Rotating Elements

{button Related Topics,AL("draw high;relationships high;rotate cmd",0,`NOT_FOUND')}  {button How To,AL("rotate element how",0,`NOT_FOUND')}

With the **Rotate** button on the **Change** toolbar, you can rotate one or more elements a precise angle about a specified point.

{mci_left NOMENU,ROTATE1.AVI}

You can first select the element and then click the **Rotate** button or you can click the button and then the element.

As you click to define the reference points for the rotation, the software dynamically displays a reference axis for the rotation. If you want to define a precise location for the rotation, you can enter values in the ribbon bar. You can enter increments in the **Step Angle** box if you want to dynamically view the results of the rotation. For example, if the box is set to 30.0, the rotation is displayed in 30 degree increments. The default setting is 0 degrees so that the rotation is fully dynamic.

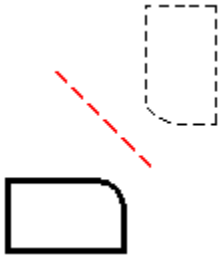
The **Rotation Angle** box on the ribbon bar displays the angle of change between the old and new positions with a positive value. The **Position Angle** box displays an absolute angle of the new position of the rotation. You can type values in both of these boxes and preview the results. You then click to complete the rotation of the element.

By default, a copy is made of the element when you rotate it. If you do not want a copy, you should clear the **Copy** option on the ribbon bar.

Mirroring Elements

{button Related Topics,AL("draw high;mirror cmd",0,`NOT_FOUND')}  {button How To,AL("mirror how",0,`NOT_FOUND')}

To mirror an element, you can click the **Mirror** button on the **Change** toolbar. The software mirrors one or more selected elements about a line or axis that you define. You can mirror with or without making a copy.



Viewing Your Work

{button Related Topics,AL("drawing sheets high;layers high;intellimouse high;grid high",0,`NOT_FOUND')}
{button How To,AL("view how;window how;views how;create layer how;sheet setup how;filter how",0,`NOT_FOUND')}

You can manipulate windows and views to affect how you see a document on the computer screen. A window can be compared to a camera. When you look through a camera, you see a view of a real-world object. When you look through a window on the computer screen, you see a view of the objects in the document. In both cases, you can change the view by zooming in and out, and focusing on different parts of the document. You can also use the Microsoft IntelliMouse to zoom or pan views.

Windows

When you start the software, the application window displays a blank document. You can use commands on the **File** menu to create a new document or open an existing one.

With the commands on the **Window** menu, you can create and arrange new windows that allow you to see more than one section of a document or more than one document. You can minimize open windows and display them as icons in the application work space.

Views

Views are what you see in software windows. With the view commands, you can do the following:

- Use the **Zoom Area** command to set the zoom area to see more detail in the document.
- Use the **Zoom In** command to enlarge the display of elements around a specified point in the document.
- Use the **Zoom Out** command to reduce the display of elements around a specified point in the document.
- Use the **Pan** command to position another part of the document in the center of a view, fit all of the document in a view, or identify the area of the document you want to see.
- Use the **Fit** command to restore the previous view of the document.
- Use the **Previous** command to restore the previous view.
- Use the **Toolbars** command to display or hide toolbars in the application window.

Drawing Sheets

With drawing sheets, you can place different drawings on different sheets in a document. Working sheets are the drawing sheets on which you place most of your graphics. Background sheets are drawing sheets that allow you to define and display the border of a drawing sheet.

Layers

Within each drawing sheet, you can place several layers so that you can group elements. Layers allow you to keep track of elements in the document and manipulate them more easily. You can also specify the way you want elements to be displayed in a window.

Click the **Related Topics** button for more information about drawing sheets and layers.

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Updated March, 1999.

Document No. DDGL562A0

Add-Ins Included with the Software

{button Related Topics,AL("add-ins overview high;add-ins cmd",0,`NOT_FOUND')} {button How To,AL("add-in how",0,`NOT_FOUND')}

The following add-in is included with the software and is located in the \Addins directory or one of its subdirectories. If you cannot locate the add-in on your hard disk or network drive, you can select the **Macro Library** option or other add-in option in the Setup program to install this add-in.

Add-in	Description
Auto Save	Automatically saves open documents at the interval you specify.

Hyperlinks

{button Related Topics,AL("hyperlink cmd;internet high",0,`NOT_FOUND')} {button How To,AL("hyperlink how",0,`NOT_FOUND')}

You may want to link an element or object in a document to other documents, such as a web page. The **Hyperlink** button on the **Main** toolbar is used to create, edit and follow hyperlink addresses attached to objects in a document.

Using the Internet and Intranet

{button Related Topics,AL("internet community cmd;browser high;symbols high;hyperlink high;cgm high",0,`NOT_FOUND')} {button How To,AL("internet community how;browser how",0,`NOT_FOUND')}

SmartSketch is an excellent tool for publishing on the Internet. While you work on a document in the software, you can access the Internet and Intranet, which allows you to share design information within and across organizational boundaries.

Viewing the Web

You can view the World Wide Web from within SmartSketch with a special tool called the **Symbol Explorer**. The **Symbol Explorer** is available only if you have installed Internet Explorer 3.0 or later. After you click the **Symbol Explorer** button on the **Main** toolbar, the **Symbol Explorer** appears on the right of document window. You can type the URL or directory path of an HTML page in the **Address** Box and press **Enter** to view the HTML page.

Accessing the Internet Without Leaving SmartSketch

If you want to access the Internet, you must first be connected to the Internet with a modem. Then, you can access the Internet without leaving SmartSketch by clicking the **SmartSketch on the Web** command on the **Help** menu.

Tip The **SmartSketch on the Web** command displays in your system default web browser. If you do not have a web browser, you can install Internet Explorer. **SmartSketch on the Web** works with any web browser, but you do get extra settings and hot links by using Internet Explorer.

From the **SmartSketch on the Web** web pages, you can access a myriad of tools to help you use SmartSketch more efficiently, keep up-to-date on product happenings, view a Web gallery of SmartSketch drawings, and contact Intergraph.

You can also access information from your computer or from the SmartSketch CD. So, you do not have to connect to the Internet to use the **SmartSketch on the Web**. Some of the types of information you can access locally are tutorials, gallery documents, and a symbol library.

Publishing Customer Drawings on the SmartSketch Web Gallery

The **SmartSketch on the Web** HTML page also has links to a **Web Gallery** that displays a collection of customer drawings produced with SmartSketch. The **Web Gallery** shows drawings from each industry: mechanical, civil, utilities, and so forth.

You can submit your own drawings to the **Web Gallery** by following the instructions on the Web Gallery HTML page. Just follow the links from the **SmartSketch on the Web** page.

This component is not available in SmartSketch® LE. It is, however, available in SmartSketch®, the full product.

SmartSketch LE Overview

SmartSketch® LE is a technical drawing and diagramming product. It is the baseline for a line of add-ins and solutions for the technical drawing, CAD, and professional/business diagramming marketplace. SmartSketch® LE is a limited edition of the full product. It gives you the power to create quick sketches, engineering designs, production drawings, schematics, business diagrams, and more.

- Industry solution templates with over 1,000 symbols
- Sketch ideas spontaneously and accurately, instantly transforming them into precise CAD geometry
- What-if scenarios and testing real-world models reduce prototyping time
- Add text and spreadsheets from Word, Excel, and PowerPoint; integrate with popular databases

Industry Solutions

Get a quick start in projects with workflow templates tailored to different industries including:

- Electrical Schematics
- Business Diagrams: Workflow Diagramming, Basic Diagramming, Office Layout, Flowcharts, Organization Charts, Network Diagrams, Atlas Mapping, and Directional Mapping
- Network Diagram
- Technical Drawing
- Mechanical: Mechanical Drawings (ANSI & ISO)

Customization

{button Related Topics,AL("customize cmd;toolbars cmd",0,`NOT_FOUND')}  {button How To,AL("macro how;customize how",0,`NOT_FOUND')} {button Show Me,AL("customizing ex",0,`NOT_FOUND')}

Customization allows you to modify and enhance the software to meet your specific needs. You can use your favorite standard Windows programming tools and languages that are OLE-aware, such as Microsoft Visual Basic. There are several ways to customize the software:

- You can add built-in commands or macros to the toolbars and menus in the software.
- You can go a step further and create your own macros in Visual Basic or other OLE-aware programming applications. Macros can automate a series of tasks and speed up your work.

Customizing with Built-In Commands

You can add built-in commands or macros to the toolbars and menus in the software. For example, the **Text Box** button is on the **Dimension** toolbar. If you use the **Text Box** button more frequently than any other button on the toolbar, you could add the **Text Box** button to the **Main** toolbar. If you want to offset elements, you can add an **Offset** button to any toolbar that you want.

You can also add button commands to a menu or a menu command to a toolbar. For example, you can place the **Sheet Setup** command on the **Main** toolbar as a button.

To add a button to a toolbar or a command to a menu, you click the **Customize** command on the **Tools** menu. From there, you can click the **Menu** or **Toolbars** tab and click the options that you want.

If you want to create a new toolbar that does not exist in the software, you can start by clicking the **Toolbars** command on the **View** menu. You then click the **New** button and type the name of the new toolbar on the **New Toolbar** dialog box. After you click **OK**, the **Customize** dialog box automatically appears so that you can add buttons to the new toolbar.

Tip When you add commands or buttons to the menus or toolbars in the software, the changes that you made appear only if a document is open.

Customizing with Macros

Not only can you add built-in commands or buttons to the software, you can also create your own macros that can be added to the menus and toolbars in the same manner. The **Customize** command on the **Tools** menu allows you to add macros to software's standard menus and toolbars. You can also run the macros directly by clicking the **Macro** command on the **Tools** menu and selecting the macro.

Example: Customizing a Toolbar

With the **Extend to Next** button on the **Draw** toolbar, you can extend one line to the next line. This command is easy and intuitive to use. However, sometimes you might want to extend a line a specific distance that does not depend on the location of another element.

1. In the document, place two lines that are not connected, but are perpendicular.
2. On the **Tools** menu, click **Customize**.
3. On the **Customize** dialog box, click the **Toolbars** tab.
4. In the **Categories** box, click **Macros**.
5. Click the **Browse** button.
6. On the **Select Macro Directory** dialog box, click EXTEND.EXE in the \PROGRAM FILES\SMARTSKETCH\CUSTOM\BIN\OLESVR directory.

   Note If you cannot find the **Custom** directory, you must run the **Setup** program again and select the **Custom** option.
7. Click **OK**.
8. On the **Customize** dialog box, in the **Macros** box, drag the EXTEND.EXE filename out of the dialog box.
9. On the **Custom Button** dialog box, in the **Buttons** box, click the yellow happy face button.
10. Click the **Assign** button.
11. The new button appears on a separate floating toolbar. Drag this toolbar over to the top of the window and place it beside the **Main** toolbar.
12. On the new toolbar, click the happy face button.
13. On the **Extend by Distance** dialog box, in the **Distance** box, type **10** and press **Enter**. The dialog box automatically converts whatever you type into the units of measure that are set for the current document. You can set the units with the **Properties** command on the **File** menu.
14. In the document, drag the mouse over the line that you want to extend. A preview of what the line will look like shows up in a red color.
15. Click the line to set the distance.
16. On the **Extend by Distance** dialog box, click **Close**.

Organizational Chart Templates Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;open how;document how",0,`NOT_FOUND')}

You use these templates to produce organizational charts.

- Imperial Template—This template has imperial units in decimal inches, ANSI sheet sizes, ANSI dimensioning, and Arial text.
- Metric Template—This template has metric units in millimeters, ISO sheet sizes, ISO dimensioning, and Arial text.

Org Chart symbols are available in the **Symbol Explorer** for these templates. The **Schematic** toolbar containing tools to create organizational charts appears on the left of the drawing window.

Organizational Chart Workflow

Tip You can create organizational charts with **Maintain Relationships** set on or off.

1. Set up the sheet.

   Select an appropriate sheet size and scale that allow enough paper space to draw. The default scale is 1:1.

2. Prepare to draw.

   Set the drawing aids to your preferences. Use the **SmartSketch Settings**, **Grid Display,** and **Grid Snap** commands. For more grid options, click the **View** tab after you click the **Options** command on the **Tools** menu to set the grid style to either dynamic or static, and set the static grid to the preferred grid spacing.

- These settings provide visual feedback to you to improve the workflow while you draw. To create clean diagrams, use **Grid Snap** with a static grid displayed.
- Placing symbols and connectors on a static grid produces high quality results.
- You can set grid display and snap by right clicking.

Simple Workflow Diagram

1. Drag symbols from the **Symbol Explorer**.
2. Use the **Connector** command to connect symbols.
3. Double-click each symbol to add text.

Optimal Workflow Diagram

1. Place Org Chart symbols by dragging them from the **Symbol Explorer**.

   While dragging a symbol for placement, use the left/right arrow keys on the keyboard to rotate the symbol dynamically before placement. Use the up/down arrow keys to select different drag points on the symbol before placement.

   If you press the **Alt** key during symbol placement, the alignment indicators are temporarily disabled, allowing symbol placement with grid snap or visual alignment.

   These symbols automatically expand to the size of the text. You can also size them by using the yellow handles.

   Tip You can use two methods to place multiple copies of the same symbol:

- Holding down the right mouse button, drag the symbol into the template. When you release the right mouse button to place the symbol, you are prompted with two options. Click **Stamp Here**, and use the left mouse button to place multiple copies of the symbol.
- Press the **Ctrl** key on the keyboard as you drag in a symbol with the left mouse button. Place the first instance of the symbol while holding down the **Ctrl** key. Once you have placed the first symbol, you can release the **Ctrl** key and use the left mouse button to place multiple copies of the symbol.

2. Connect the symbols by using the **Connector** command.

   When you draw a connector that is not straight, you should set **Clearance:** to the minimum distance from the symbol where the first turn in the connector appears.

   When you draw a connector to a symbol, approach the symbol from the direction you want the connector placed. As the pointer intent zone nears the symbol, suggested targets for the connector appear.

   The connector end point can be located on a target or any other symbol geometry. If you press the **Alt** key while drawing a connector, the diagonal mode is temporarily invoked and the alignment indicators are temporarily disabled, allowing the connector to be drawn with or without grid snap.

3. Double-click symbols to place text in the center of the symbol.

The active text settings in the file are used. To highlight existing text for editing properties, pause the pointer over text until the PickQuick indicator appears.

Then click and select the numbered box that represents the text. Right-click the highlighted text to edit properties.

Note that text is entered in paper units regardless of the sheet scale.

4 Finish the organizational chart.

Use color to modify the symbols and use connectors to enhance the drawing.

The following symbol sets aid in drawing organizational charts.

Content	Description
\Program Files\ SmartSketch \Symbols\Diagramming \Org Chart	Organizational Chart symbols. You can double-click these symbols to place text. These symbols also have special behaviors for enhanced placement and modification.

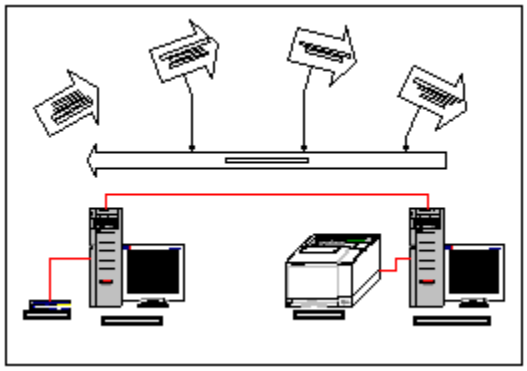
Drawing Diagrams

{button Related Topics,AL("draw high;templates high;symbols high;connectors high;grid high;reports high",0,`NOT_FOUND')} {button How To,AL("flowchart how;symbols how;connectors how;grids how;report how",0,`NOT_FOUND')}

You can create diagrams quickly and easily with the software. To do this, you can use the following tools:

- Industry solution templates
- Symbols
- Connectors
- Annotations

Tip You can learn how to draw a diagram with a tutorial in the **Learning Center.** Click the **Help** menu and then click **Learning Center.**



Templates

When you first open the software, you can select a template based on the industry solution that you need. The best templates to select for drawing diagrams are in the General Diagramming template folder. For example, you can select the **Network Diagram (Imperial)** template.

When you open the **Network Diagram (Imperial)** template, the **Schematic** toolbar automatically displays the buttons that you would need most often to create a diagram. These commands include **Connector, Grid Display, Grid Snap, Text Box,** and others.

Tip You can still draw lines, circles, and so forth with buttons on the **Draw** toolbar. To display the **Draw** toolbar, you can click **Toolbars** on the **View** menu.

Connectors

The **Connector** button on the **Schematic** toolbar allows you to place connectors anywhere you need. You can connect lines, circles, symbols, or points in free space.

There are special connector styles that you can use in the diagram. Some examples in the Network Diagram template include **Thick, Normal,** and **Dashed.** On the Connector ribbon bar, you can click the style that you want in the **Style** box.

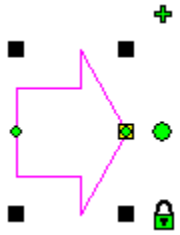
On the Connector ribbon bar, you can also select the line start and line end terminators that you want. The following connectors display some of the different types of terminators that you can apply.

Symbols

The template automatically displays the symbols that you need for a diagram in the **Symbol Explorer.** For example, the Network Diagram template offers you many kinds of symbols to include modems, servers, annotation, and others.

To place these symbols, you can drag them from the **Symbol Explorer** into the document.

You can manipulate symbols with special handles that appear when you select the symbol. Some symbols have several different kinds of handles:



- Black boxes on the outside corners of the range box lines represent scale handles (A). You can drag a scale handle to resize the entire symbol.
- Yellow boxes in the middle of the range box lines represent standard parametric handles (B). You can drag a parametric handle to resize part of the symbol.
- A green plus sign represents a mirror handle (C). You can drag a mirror handle to create a copy of the symbol directly horizontal or vertical to the original symbol.
- A large green circle represents a rotate handle (D). You can drag this handle to rotate the entire symbol. Specific increments are displayed by the pointer while you rotate the symbol.
- A series of small green circles represents drag points (E). You can use these points to attach the symbol at a precise point to another symbol or element.
- A small green lock represents a lock handle (F). You can click the lock handle to unlock the symbol. Unlocking allows you to move a symbol away from the element to which the symbol was associated.

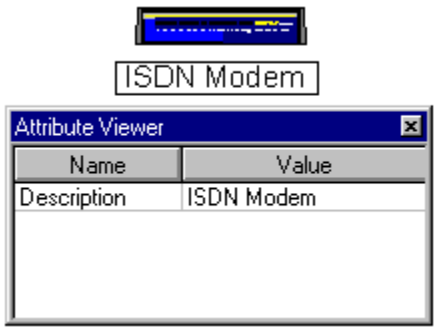
Tip A lock handle appears only if you drag the symbol to an element with one of the drag points on the symbol.

Text and Labels

You can also drag labels from the **Symbol Explorer.** For example, the Network Diagram template offers a collection of Smart Labels in the \Modems folder.

Some Smart Labels display a question mark in the **Symbol Explorer.** You can also double-click on some Smart Labels and edit the text.

Smart Labels can assume the attributes of the element or symbol that you drag the Smart Label to. You can edit the attributes of the Smart Label in the **Attribute Viewer.**



If you want to quickly add text that is associated to an element, you can double-click any element in the diagram.

A text label appears in the center or below the element. When you type in text and press **Enter,** the text label orients itself with the element. When you move the element, the text label moves with it.

Tip To add text that is not associated to an element, you can click the **Text Box** button on the **Schematic** toolbar.

Grids

You can use a grid view and grid snap to place the items in your diagram at precise intervals. You can view the grid by clicking the **Grid Display** option on the **View** menu. When you set the **Grid Snap** option on the **View** menu, elements always align with the grid lines or nearest intersection of the grid lines.

Mechanical Templates Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high;dimensions high ",0,`NOT_FOUND')} {button How To,AL("properties how;open how;document how",0,`NOT_FOUND')}

- ANSI Template—This template has imperial units in decimal inches, ANSI sheet sizes and borders, and implements the ANSI Y14.5 dimensioning standard.
- ISO Template—This template has metric units in millimeters, ISO sheet sizes and borders, and implements the ISO dimensioning standard.

The DIN, BSI, and JIS dimensioning standards are also available in these two templates.

When you open these templates, the Draw toolbar appears, containing tools to help you create precision drawings.

Part Design Workflow

Tip You should design individual parts with **Maintain Relationships** turned on.

1. Set up the sheet.

   Select an appropriate sheet size. The default scale is 1:1, which is appropriate for small parts.
2. Sketch the part.

   Draw the elements, using the tools from the **Draw** toolbar and the **SmartSketch Settings** command. As you draw, relationships are established that capture your design intent.

   Tip As an example the system remembers when you draw a line horizontally, vertically, or parallel to another line and maintains that information when you modify the drawing. You do not need to give much attention to the exact size of the part; it is often easier to dimension the part and change the dimensions later.
3. Dimension the part.

   Use **SmartDimension** and the other dimensioning tools to dimension the part. These dimensions drive dimensions that can be changed to iterate your design. Redundant dimensions are shown through the driven elements.
4. Refine the drawing.

   Select individual dimensions and change the values to iterate your design.

   If you plan to use the part in a mechanism or assembly, then select all of the geometry and create a symbol with an appropriate name.

Mechanism Modeling Workflow

- You can design mechanisms, using rigid body symbols.
- You should set **Maintain Relationships** on in the mechanism file.

1. Prepare the parts.

   You must save each part in the mechanism as a symbol and turn **Allow Rotation by Relationships** on, using the Symbol Authoring tools, so the parts can act as a rigid body in the mechanism.
2. Start a new drawing.

   You should create the mechanism in a new drawing with an appropriate sheet scale for the whole mechanism. Set the symbol browser to the location of the components.
3. Drag the parts.

   Drag the parts into their rough location on the sheet, but do not give much attention to precision placement or orientation.
4. Connect the parts.

   Use the tools on the **Relationship** toolbar to establish the relationships between the parts in the mechanism. **Connect** allows you to connect a specific location on one part to a specific location on another part. Use relationship indicators to determine the connection type, such as end point to center point or end point to midpoint. You can also use specific tools to establish other relationships, such as tangent, parallel, perpendicular, colinear, concentric, and others.
5. Create driving dimensions.

   Use **SmartDimension** or other dimensioning tools to establish the controlling dimensions for the mechanism.
6. Move the mechanism.

   Select a driving dimension and change the value to move the mechanism into a specific configuration.

Production Drafting Workflow

You can produce full sets of production drawings according to the ANSI standards.

Tip To produce a fairly complex production drawing, set **Maintain Relationships** off.

1. Set up the sheet.

   Choose an appropriate sheet size and scale that allow you to draw the part. The default scale is 1:1, which is appropriate for small parts on an A-Size sheet.

2. Draw the views.

   Draw a principle view of the part using the draw tools (with precision key-in values on the ribbon bar), **SmartSketch Settings**, and **PinPoint**. Draw other views using **SmartSketch Settings** to align key edges from each view.

3. Annotate the drawing.

   Use the text and dimensioning to annotate the drawing. Note that text is entered in paper units regardless of the sheet scale.

Electrical Templates Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;open how;document how",0,`NOT_FOUND')}

You use these schematic templates to produce electrical drawings according to accepted industry standards.

- Imperial Template—This template is defined with ANSI sheet sizes and borders. The default sheet size is C with a 1:1 scale.
- Metric Template—This template is defined with ISO sheet sizes and borders. The default sheet size is A1 with a 1:1 scale.

Both templates point to the electrical symbol sets. The electrical symbols include main classifications of the following: Fundamental Items, Logic Gates, Semiconductors, Switches, Terminals and Connectors, Transformers and Inductors, and Transmission Path.

Tip You should design schematic drawings with **Maintain Relationships** set off (default setting).

Electrical Workflow 1

1. Set up the sheet.

   Select an appropriate sheet size and scale.
2. Place an initial symbol correctly rotated.
3. Route a connector from that symbol to form a rough outline of the circuit.
4. From the **Symbol Explorer**, select the type of symbol or component needed, and drag the component onto the sheet and over the connector.

   The connector is highlighted when the pointer moves over the element. Most of the components automatically align to the connector.

   Drop the symbol, and it is placed, associated to the connector. Or, if the orientation of the symbol is not correct, use the left or right arrows to rotate the symbol to a new orientation. When the symbol is dropped, it maintains the orientation.
5. Enter any attribute information that you want in the **Attribute Viewer**.

   When the information is changed in the viewer, the text information on the symbol also changes. If you do not want the attribute text, you can select the text box and delete text from the symbol.
6. Continue adding or modifying connectors and adding components until the circuit is complete.

Electrical Workflow 2

1. Set up the sheet.

   Select an appropriate sheet size and scale.
2. From the **Symbol Explorer**, drag the component onto the sheet to the location you want.

   Or, if the orientation of the symbol is not correct, use the left or right arrows to rotate the symbol to a new orientation. When the symbol is dropped, it maintains the orientation.
3. Enter any attribute information that you want in the **Attribute Viewer**.

   When the information is changed in the viewer, the text information on the symbol also changes. If you do not want the attribute text, you can select the text box and delete text from the symbol.
4. Continue dragging and dropping components as needed to complete the circuit.
5. Using the **Connector** command, connect the individual components.
6. Continue adding components and connecting them together until the circuit is complete.

Differences in Workflow 1 and 2

- Workflow 1 places the symbol or component on the connector or wire. It does not break the wire. It only masks out the connector beneath it. In this case the components are glued to the connector. To modify the circuit in such a case, you move the connector, and the symbols follow it to the new location.
- Workflow 2 places a connector or wire between the components that are placed. Workflow 2 is more of a real-world flow. In this case, you can select and move the components, and the connector or wires move to adjust to the new component location.
- You can combine the workflows. You must, however, remember which is the parent and which is the child when you combine the two.

The following symbol sets aid in electrical schematic creation.

Content	Description
Electrical Symbols	Fundamental Items
	Logic Gates
	Semiconductors
	Diodes
	Thyristors
	Transistors
	Switches
	Terminal & Connectors
	Transformers & Inductors
	Transmission Path

Network Diagram Templates Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;open how;document how",0,`NOT_FOUND')}

You use these templates to produce network diagrams.

- Imperial Template—This template has imperial units in decimal inches, ANSI sheet sizes, ANSI dimensioning, and ANSI text.
- Metric Template—This template has metric units in millimeters, ISO sheet sizes, ISO dimensioning, and ISO text.

Network Diagram symbols are available in the **Symbol Explorer** for these templates. The **Schematic** toolbar containing tools to create network diagrams appears on the left of the drawing window.

Network Diagram Workflow

Tip You can create network diagrams with **Maintain Relationships** set on or off.

1. Set up the sheet.

   Select an appropriate sheet size. The network symbols are accurately scaled to 1/10th of their true size so you should leave the sheet scale at 1:1, the default.

2. Prepare to draw.

   Set the drawing aids to your preferences. Use the **SmartSketch Settings, Grid Display,** and **Grid Snap** commands. For more grid options click the **View** tab after you click **Options** on the **Tools** menu to set the grid style to either dynamic or static. Set the static grid to the preferred grid spacing.

   These settings provide visual feedback to you to improve the workflow while you draw.

Simple Network Diagram

1. Drag symbols from the **Symbol Explorer**.
2. Use the **Connector** command to connect symbols.
3. Double-click each symbol to add text.

Optimal Network Diagram

1. Place network diagram symbols by dragging from the **Symbol Explorer**.

   While dragging a symbol, use the left/right arrow keys on the keyboard to rotate the symbol dynamically before placement. Use the up/down arrow keys to select different drag points on the symbol before placement.

   If you press the **Alt** key during symbol placement, the alignment indicators are temporarily disabled, allowing symbol placement with grid snap or visual alignment.

   You can use two methods to place multiple copies of the same symbol:

   - Holding down the right mouse button, drag the symbol into the template. When you release the right mouse button to place the symbol, you are prompted with two options. Click **Stamp Here**, and use the left mouse button to place multiple copies of the symbol.
   - Press the **Ctrl** key on the keyboard as you drag in a symbol with the left mouse button. Place the first instance of the symbol while holding down the **Ctrl** key. Once you have placed the first symbol, you can release the **Ctrl** key and use the left mouse button to place multiple copies of the symbol.

   Some network symbols mount into the rack or chassis symbols when you drag the symbol into a rack or chassis. When you pause over a drop point in a chassis or rack, a tool tip appears; for example, **Attach Module**.

   When you move a symbol, all associated symbols follow. To independently move an associated symbol, select the symbol and click the green lock. This frees the symbol from the element. A symbol is not associated to an element if a green lock is not displayed when you select the symbol.

2. Add attributes to the network symbols by selecting the symbol and editing fields in the **Attribute Viewer**.
3. Connect the symbols by using the **Connector** command or by dragging in Cable symbols and then connecting the endpoints to network symbols. The result is a symbolized connector with attribution.

   When drawing connectors, you should set **Clearance**. Type the minimum distance from the symbols that you would like the first turn in the connectors to occur. This action allows you to control the visual consistency of connectors that make right-angle turns just before they attach to a symbol.

   When you draw a connector to a symbol, approach the symbol from the direction you want the connector

placed. As the pointer intent zone nears the symbol, suggested targets for the connector appear. The connector end point can be placed on a target or any of the symbol vector geometry. If you press the **Alt** key while drawing a connector, the diagonal mode is temporarily invoked and the alignment indicators are temporarily disabled.

Note the connect points display a tool tip when the connector end point is drawn or modified over a port on the network symbol.

You can edit attribute information on the connector and the network symbols in the **Attribute Viewer**.

Smart Labels are provided for network symbols and cables. These Smart Labels appear in the **Symbol Explorer** in the network symbol directories. When you drag a network Smart Label over the drag point (usually the lower left corner) of a network symbol, the label associates to the symbol and accesses the symbol attribute information.

The description attribute data is displayed in the label. The cable labels display the type and the speed-type of the cable.

4 Place text.

Double-click on the symbols to place text below the symbol or connector. The active text settings in the file are used.

Right click on text to edit properties.

To move the text, select and highlight the text.

Click the green lock to unlock; then with the pointer, drag the text to a new position. Note that text is entered in paper units regardless of the sheet scale.

The following symbol sets aid in drawing diagrams.

Content	Description
\Program Files\ SmartSketch \Symbols\Diagramming \Network Diagram	Network diagram symbols that include Cables, Chassis, Cards, Modules, Input-Output Devices, Intelligent Network Devices, Network Accessories, Non-intelligent Network Devices, Physical Plant, and Servers and Storage devices. These symbols have attribution and special behaviors for enhanced placement and modification.

Office Layout Templates Overview

{button Related Topics,AL("properties cmd;properties db;document cmd;drawing sheet high;paper high;styles high",0,`NOT_FOUND')} {button How To,AL("properties how;open how;document how",0,`NOT_FOUND')}

You use these templates to produce Office Layout drawings.

- Imperial Template—This template has imperial units in decimal inches, ANSI sheet sizes, ASA dimensioning, and Architectural text.
- Metric Template—This template has metric units in millimeters, ISO sheet sizes, ISO dimensioning, and ISO text.

Office layout symbols are available in the **Symbol Explorer** for these templates. The **Draw** toolbar containing tools to create office layout drawings appears on the left of the drawing window.

Office Layout Workflow

Tip You should create office layout drawings with **Maintain Relationships** set on.

1. Set up the sheet.

   Select an appropriate sheet size and scale that allow you to draw the design. The default scale is 1/4" = 1' for the Imperial template and 1:50 for the Metric template.

2. Prepare to draw.

   Set the drawing aids to your preferences. Use the **SmartSketch Settings, Grid Display,** and **Grid Snap** commands.

   For more grid options, click the **View** tab on the **Options** dialog box to set the grid style to either dynamic or static, and set the static grid to the preferred grid spacing.

   - These settings provide visual feedback to you to improve the workflow while you draw. To create clean diagrams, use **Grid Snap** with a static grid displayed.
   - Placing symbols and connectors on a static grid produces high quality results.
   - You can set grid display and snap by right clicking.

   Note You can begin by drawing the office walls or by referencing or opening a floor plan drawing.

3. Draw walls.

   Click the **Place Doubleline** command on the **Draw** toolbar and set the thickness of the walls to be drawn in the ribbon bar.

   Click the appropriate button on the ribbon bar to indicate whether you draw from the center of the wall or one of the edges (primary line buttons).

   Draw the walls first.

   Next use the **Trim**, **Trim Corner**, and **Extend to Next** commands for any intersection cleanup.

   - If you press the **Alt** key while drawing, the alignment indicators are temporarily disabled.
   - When you draw the walls, you may want to select a neutral gray for the line color. After you draw the walls, you can avoid cleaning the intersections by color filling the walls with a solid fill of the same neutral gray color.
   - Use the door and window symbols to complete the floor plan. These symbols automatically align to the wall and can be mirrored, scaled and rotated after placement.

   Note You can also use the **Place Doubleline** command for drawing office partitions, along-wall working surfaces, counter tops, work benches, stockroom shelves, custom bookcases, custom desks, and cat walks. If you press and hold the **Shift** key when you draw with the **Place Doubleline** command, the end caps do not automatically merge into another section of doubleline. This feature is useful for drawing partitions perpendicular to walls. You can use the **Fillet** command to round the corners of counter tops.

4. Reference or open an existing floor plan.

   Reference a floor plan by using **Object** command on the **Insert** menu or by dragging the existing file into the drawing window. Or click the **Open** command on the **File** menu to open an existing floor plan file.

5. Place office layout symbols.

   Drag symbols from the **Symbol Explorer**. While dragging a symbol, use the left/right arrow keys on the keyboard to rotate the symbol dynamically before placement. Use the up/down arrow keys to select different drag points on the symbol before placement.

   If you press the **Alt** key during symbol placement, the alignment indicators are temporarily disabled, allowing symbol placement with grid snap or visual alignment.

   Office Layout symbols can be physically associated to walls or other symbols. When you move a symbol or a

wall, all associated symbols follow.

To independently move an associated symbol, select the symbol and click the green lock to unlock the association. A symbol is not associated if a green lock is not displayed when the symbol is selected.

You can use two methods to place multiple copies of the same symbol:

- Holding down the right mouse button, drag the symbol into the template. When you release the right mouse button to place the symbol, you are prompted with two options. Click **Stamp Here**, and use the left mouse button to place multiple copies of the symbol.
- Press the **Ctrl** key on the keyboard as you drag in a symbol with the left mouse button. Place the first instance of the symbol while holding down the **Ctrl** key. Once you have placed the first symbol, you can release the **Ctrl** key and use the left mouse button to place multiple copies of the symbol.

6 Annotate the drawing.

Use text and dimensioning commands to annotate the drawing. To label, double-click symbols, walls, or other drawn elements. The active text settings in the file are used for labels that you double-click.

To edit existing text properties, right-click text and select properties from the pop-up menu. To move text, click to select; then click the green lock to unlock.

Move by dragging the text to a new position. Note that text is entered in paper units regardless of the sheet scale.

7 Finish the drawing.

Change the color of symbols to enhance furniture or identify existing and new equipment. You can also use connectors to enhance the drawing by adding communication and computer networking lines.

The following symbol sets aid in creating office layout drawings.

Content	Description
\Program Files\ SmartSketch \Symbols\Diagramming \Office Layout	Office Layout symbols have special behaviors for enhanced placement and modification.

Engineering Fonts

{button Related Topics,AL(`annotations high;text cmd',0,`NOT_FOUND')} {button How To,AL(`text how',0,`NOT_FOUND')}

The engineering fonts delivered with the software contain industry-specific fonts, special characters, and symbols that you can use to annotate engineering drawings. These fonts include degree symbols, diameter symbols, and other special characters and symbols that are not usually included in a typical word processing package.

Your choice of font should be based on the industry for which you are creating engineering drawings.

The software provides TrueType® fonts; with TrueType fonts, what you see on the screen is what appears on the printed page. The screen display of the document closely matches the printed document.