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## Introducing 3D-Win

3D-Win is a powerful stand-alone application for viewing three-dimensional AutoCAD drawings and Mechanical Desktop models. It is especially designed for dual-screen CAD solutions, where you can work with AutoCAD on one screen and 3D-Win on the other.

With 3D-Win you can ...

- load an AutoCAD model very quickly and display it as a wireframe or with flat or gouraud shading,
- automatically transfer changes to AutoCAD models (Hot Link feature),
- use the mouse to dynamically change the 3D view of your model and export the view back to AutoCAD,
- change material properties of your objects,
- select objects by clicking anywhere on their surfaces, and export 3D-Win's selection set to AutoCAD,
- easily create animations with the mouse,
- define a Walk-around or a Walk-through as animation,
- replay and save your animation or create AVI files from it.

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{button ,AL(`topic\_howto',1,"")} Instructions

## Getting started

- 1 Click the 3D-Win icon in the Diamond program group to start 3D-Win. If AutoCAD is not running, the [Get Model command](#) and all other commands of the [AutoCAD pull-down menu](#) are disabled.
- 2 Start AutoCAD. When AutoCAD is running, these commands are now enabled.
- 3 Load a drawing in AutoCAD (preferably 3D, for example, SEXTANT.DWG),. or create a drawing yourself (for example, command \_sphere).
- 4 Switch to 3D-Win.
- 5 Execute the [Get Model command](#) to transfer the model data from AutoCAD to 3D-Win.
- 6 Activate the Gouraud mode (see [Gouraud command](#)) to see the model gouraud-shaded.
- 7 Hold down the right mouse button and move the mouse to change the view of the model dynamically.

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{button ,AL(`topic\_howto',1,"")} Related topics

### 3D-Win's window components

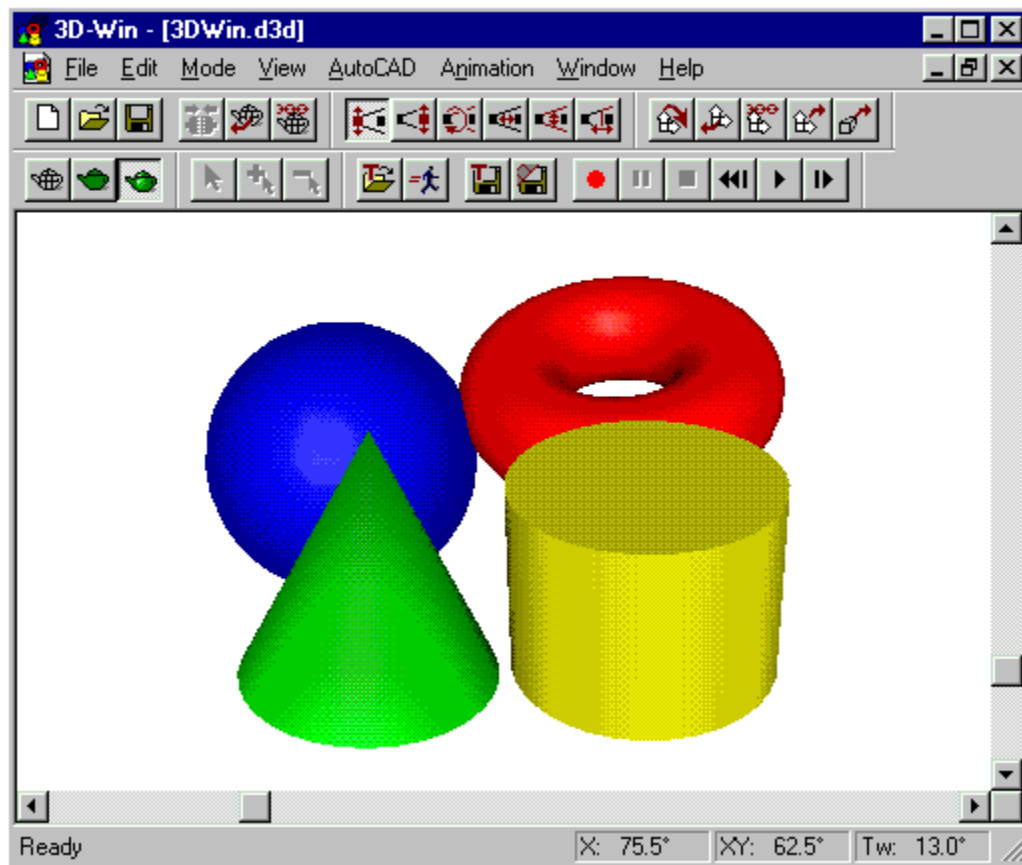
Figure 1 shows the 3D-Win screen.

The screen consists of the following components:  
Menu bar   Toolbars   Scroll bars   Status bar

#### Notes

- Click on a window component in Figure1 for more help.

**Figure 1**   **3D-Win in action**



## **Commands**

[File menu](#)

[Edit menu](#)

[Mode menu](#)

[View menu](#)

[AutoCAD menu](#)

[Animation menu](#)

[Window menu](#)

[Help menu](#)

## File menu commands

The File menu offers the following commands:

<u>N</u> <b>ew</b>	Creates a new model..
<u>O</u> <b>pen</b>	Opens an existing model.
<u>C</u> <b>lose</b>	Closes the active model.
<u>S</u> <b>ave</b>	Saves the active model.
<u>S</u> <b>ave As</b>	Saves the active model to a specified file name.
<u>E</u> <b>xport Materials</b>	Saves the current material library into a material library file.
<u>I</u> <b>mport Materials</b>	Merges materials from a material library file into current material library.
<u>D</u> <b>elete all Materials</b>	Deletes all materials in the current material library.
<u>P</u> <b>references</b>	Configures 3D-Win.
<u>E</u> <b>xit</b>	Exits 3D-Win.


### New command (File menu)

Use this command to create a new model in 3D-Win.

You can open an existing model with the [Open command](#).

#### Shortcuts

Keys: Ctrl+N

Toolbar: 


### Open command (File menu)

Use this command to open an existing model. You can have several models open at once. Use the Window menu to switch between the various open models. See [Window 1, 2, ... command](#).

You can create new models with the [New command](#).

#### Shortcuts

Keys: Ctrl+O

Toolbar: 

### Close command (File menu)


Use this command to close all windows containing the active model. 3D-Win prompts you to save changes to your model before you close it. If you close a model without saving, you lose all changes made since the last time you saved it. Before closing an untitled model, 3D-Win displays the **Save As** dialog box so that you can name and save the model.

### **Save command (File menu)**

Use this command to save the active model to its current name and directory. When you save a model for the first time, 3D-Win displays the **Save As** dialog box so you can name your model. If you want to change the name and directory of an existing model before you save it, choose the Save As command.

### **Shortcuts**

Keys: Ctrl+S

Toolbar: 

### **Save As command (File menu)**

Use this command to save and name the active model. 3D-Win displays the **Save As** dialog box so you can specify a name for your model.

To save a model with its existing name and directory, use the Save command.

### **Export Materials command (File menu)**

Use this command to save the materials of your current material library. 3D-Win displays the [Save As](#) dialog box so you can specify a name for your material library.

To load materials from a material library file use the [Import Materials command](#).

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{button ,AL(`topic\_material',1,"")} Related topics



### **Import Materials command (File menu)**

Use this command to load materials from a material library file. The materials will be merged into your current material library.

To save the materials of your current material library use the [Export Materials command](#).

---

{button ,AL(`topic\_material',1,"")} Related topics

### **Delete all Materials command (File menu)**

Use this command to delete all materials of your current material library.

To load materials from a material library file use the [Import Materials command](#); to save the materials of your current material library use the [Export Materials command](#).

---

{button ,AL(`topic\_material',1,"")} Related topics

**Preferences command (File menu)**

Use this command to configure 3D-Win. In the Preferences dialog box you can modify global parameters.

**1, 2, 3, 4 command (File menu)**

Use the numbers and filenames listed at the bottom of the File menu to open the last four models you opened. Select the number corresponding to the model you want to open.

## Exit command (File menu)

Use this command to end your 3D-Win session. You can also use the Close command on the application's control menu. 3D-Win prompts you to save models with unsaved changes.

## Shortcuts

Keys: ALT+F4

## Edit menu commands

The Edit menu offers the following commands:

<u>Invert Selection</u>	Inverts current selection set.
<u>Clear Selection</u>	Clears current selection set.
<u>Set Target</u>	Defines a new target point.
<u>Hide</u>	Hides selected entities.
<u>Show All</u>	Shows all hidden entities.
<u>Layer</u>	Displays the <b>Switch layer</b> dialog box.
<u>Material</u>	Assigns new material features to the selected colour.
<u>Reset Materials</u>	Clears the material table and resets all materials to AutoCAD defaults.

## Invert Selection command (Edit menu)

Use this command to invert the current selection set. Bounding boxes around the selected entities indicate the current selection.

## Shortcuts

Mouse: Hold down the Ctrl key and click with the left mouse button on the background of the scene.

---

{button ,AL(`topic\_select',1,"")} Related topics

## Clear Selection command (Edit menu)

Use this command to clear the current selection set. Bounding boxes around the selected entities indicate the current selection.

### Note:

- This command is inactive when no entities are selected.

### Shortcuts

Keys: Esc

Mouse: Click with left mouse button on the background of the scene.

---

{button ,AL(`topic\_select',1,"")} Related topics

### **Set Target command (Edit menu)**

Use this command to specify the center of the selected entity as the new target point. Bounding boxes around the selected entities indicate the current selection.

**Note:**

- This command is inactive when no entities are selected.

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{button ,AL(`topic\_view;topic\_select',1,"")} Related topics

### **Hide command (Edit menu)**

Use this command to hide the selected entities. To undo this command use the [Show all command](#). Bounding boxes around the selected entities indicate the current selection.

**Note:**

- This command is inactive when no entities are selected.

---

{button ,AL(`topic\_select',1,"")} Related topics



### **Show All command (Edit menu)**

Use this command to unhide all hidden entities. To hide entities use the [Hide command](#).

**Note:**

- This command is inactive when there are no hidden entities.

---

{button ,AL(`topic\_select',1,"")} Related topics

**Layer command (Edit menu)**

Use this command to switch layers on or off. To toggle the status of a layer, 3D-Win displays the Switch layer dialog box.

### **Material command (Edit menu)**

Use this command to change the material properties of the selected entity. For defining or selecting your material, 3D-Win displays the [Choose Material dialog box](#).

#### **Notes**

- The modifications apply to the material; so all entities with this material will be affected.
- This command is inactive when no entities are selected.

---

{button ,AL(`topic\_material;topic\_select',1,"")} Related topics

## **Reset Materials command (Edit menu)**

Use this command to reset all materials to AutoCAD default. To change material properties use the [Material command](#).

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{button ,AL(`topic\_material',1,"")} Related topics

## Mode menu commands

The Mode menu offers the following commands:

<u>Camera</u>	Rotates camera around target.
<u>Target</u>	Rotates target around camera.
<u>Twist</u>	Rotates camera around line of sight.
<u>Distance</u>	Changes camera distance.
<u>Zoom</u>	Changes camera focal length.
<u>Clip</u>	Clips view volume.


### Camera command (Mode menu)

Use this command to activate the **Camera** mode. The checkmark in front of this menu item indicates that the Camera mode is active.

If this mode is active...

- The scroll bars change the camera's viewing angle of the target.
- The horizontal scroll bar changes the camera's viewing angle in the XY plane relative to the X axis (from -180 to 180 degrees). An angle of 0 degrees corresponds to looking down the X axis toward the origin.
- The vertical scroll bar changes the camera's viewing angle above or below the XY plane. An angle of 90 degrees corresponds to looking down from above, and an angle of -90 degrees corresponds to looking up from below. An angle of 0 degrees means that the camera is in the XY plane.

### Shortcuts

Toolbar: 

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{button ,AL(`topic\_view;topic\_mode',1,"")} Related topics

## Target command (Mode menu)

Use this command to activate the **Target** mode. A check mark in front of this menu item indicates that the Target mode is active.

If this mode is active...

- The scroll bars move the target around the camera.
- The horizontal scroll bar changes the target's position at an angle in the XY plane relative to the X axis (-180 degrees to 180 degrees). An angle of 0 degrees means you look down the X axis toward the origin.
- The vertical scroll bar changes the target's position at an angle above or below the XY plane. An angle of 90 degrees corresponds to looking down from above, and an angle of -90 corresponds to looking up from below. A target angle of 0 degrees means that the target is in the XY plane.

## Shortcuts

Toolbar:



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{button ,AL(` topic\_view;topic\_mode',1,"")} Related topics

### **Twist command (Mode menu)**

Use this command to activate the **Twist** mode. A checkmark in front of this menu item indicates that the Twist mode is active.

If this mode is active...

- The horizontal scroll bar twists or tilts the view around the line of sight. This angle measures counterclockwise from -180 to 180 degrees.
- The vertical scroll bar is inactive.

### **Shortcuts**

Toolbar:



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{button ,AL(`topic\_view;topic\_mode',1,"")} Related topics

## Distance command (Mode menu)

Use this command to activate the **Distance** mode. A checkmark in front of this menu item indicates that the Distance mode is active.

If this mode is active...

- The horizontal scroll bar moves the camera in or out along the line of sight relative to the target.
- The vertical scroll bar is inactive.

If you select the **Distance** command when the **Distance** mode is already active, it will reset the horizontal scroll bar.

### Shortcuts

Toolbar:



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{button ,AL(`topic\_view;topic\_mode',1,"")} Related topics



## Zoom command (Mode menu)

Use this command to activate the **Zoom** mode. A checkmark in front of this menu item indicates that the Zoom mode is active.

If this mode is active...

- The horizontal scroll bar decreases or increases the focal length of the camera.
- The vertical scroll bar is inactive.

If you select the **Zoom** command when the **Zoom** mode is already active, it will reset the horizontal scroll bar.

## Shortcuts

Toolbar:



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{button ,AL(`topic\_view;topic\_mode',1,"")} Related topics

## Clip command (Mode menu)

Use this command to activate the **Clip** mode. A check mark in front of this menu item indicates that this mode is active.

If this mode is activated...

- The horizontal scroll bar clips the view, hiding those portions of the drawing that are in front of the front clipping plane. The front clipping plane is an invisible wall that you can position between the camera and target, perpendicular to the line of sight. The clip ratio ranges from 0.0 (whole drawing hidden) to 1.0 (nothing hidden).
- The vertical scroll bar is inactive.

You can use this command to set a new target point.

## Shortcuts

Toolbar:



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{button ,AL(`topic\_view;topic\_mode',1,"")} Related topics

## View menu commands

The View menu offers the following commands:


<u>Wireframe</u>	Displays model in wireframe.
<u>Flat</u>	Displays model with flat shading.
<u>Gouraud</u>	Displays model with gouraud shading.
<u>Rotate in Wireframe</u>	Rotates model in wireframe.
<u>Default Lighting</u>	Uses default lighting (infinite distance white light).
<u>Initial View</u>	Restores initial view.

### Wireframe command (View menu)

Use this command to activate the **Wireframe** mode. A check mark in front of this menu item indicates that the Wireframe mode is active.

If this mode is active, the object is represented by line segments only.

### Shortcuts

Toolbar: 

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{button ,AL(` topic\_style',1,"")} Related topics

### Flat command (View menu)

Use this command to activate the **Flat shading** mode. A check mark in front of this menu item indicates the Flat mode is active.

**Flat shading** refers to coloring a primitive with a single, uniform color all over, rather than smoothly interpolating colors across the primitive (see the [Gouraud command](#)).

### Shortcuts

Toolbar:



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{button ,AL(`topic\_style',1,"")} Related topics

## Gouraud command (View menu)

Use this command to activate the **Gouraud shading** mode. A checkmark in front of this menu item indicates that the Gouraud mode is active.

**Gouraud shading** refers to smoothly interpolating colors across a primitive, rather than coloring a primitive with a single, uniform color all over (see the [Flat command](#)).

### Shortcuts

Toolbar:



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{button ,AL(`topic\_style',1,"")} Related topics

### Rotate in Wireframe command (View menu)

Use this command to enable or disable the **Rotate in Wireframe** function. A checkmark in front of this menu item indicates that the Rotate in Wireframe function is active.

If this function is active, the object is displayed in **wireframe mode** while you are changing the view...

- by moving the mouse with the right mouse button held down.
- by moving one of the scroll bars.

After you release the mouse button, the object will be displayed again in the active mode.

#### **Note:**

- Rotation in **wireframe mode** can be significantly faster, especially for objects represented by isolines in **wireframe mode**.

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{button ,AL(`topic\_style',1,"")} Related topics

### **Default Lighting command (View menu)**

Use this command to activate the **Default Lighting** mode. A checkmark in front of this menu item indicates that the Default Lighting mode is active.

If this mode is active, a single white spotlight illuminates the scene, except for the ambient light. The position of this light always corresponds to the position of the camera (a so-called **helmet light**).

**Note:**

- The **Default Lighting** mode is active by default if no other lighting is defined for the model (drawing).

## Initial View command (View menu)

Use this command to restore the initial view of the model.

The initial view is the view which is set after loading a model from a file (see [Open command](#)) or from AutoCAD (see [Get Model command](#)).

### Shortcuts

Toolbar:



---

{button ,AL(` topic\_view;topic\_style',1,"")} Related topics



## AutoCAD menu commands

The AutoCAD menu offers the following commands:

<a href="#">Connect</a>	Connects AutoCAD to the current model.
<a href="#">Get Model</a>	Reads current AutoCAD model data.
<a href="#">Get View</a>	Gets AutoCAD's current view.
<a href="#">Export ortho. view</a>	Exports viewing parameters to AutoCAD (orthographic).
<a href="#">Export persp. view</a>	Exports viewing parameters to AutoCAD (perspective).
<a href="#">Select</a>	Turns the entities selected in 3D-Win into AutoCAD selection set.
<a href="#">Unselect</a>	Removes 3D-Win's selected entities from AutoCAD's selection set.
<a href="#">Add Selection</a>	Adds 3D-Win's selected entities to AutoCAD's selection set.
<a href="#">Get Selection</a>	Retrieves AutoCAD's current selection set.
<a href="#">Hot Link</a>	Hotlink to AutoCAD database.
<a href="#">Hot View</a>	Exports current view immediately to AutoCAD.


### Connect command (AutoCAD menu)

Use this command to connect the active model to AutoCAD.

#### Notes:

- You can connect only one model to AutoCAD, even if several models are open.
- If the [Get Model command](#) is enabled, the active model is already connected to AutoCAD.
- If AutoCAD is not running, the [Get Model command](#) and the [Connect command](#) are disabled.

#### Shortcuts

Toolbar: 

### Get Model command (AutoCAD menu)


Use this command to get the current model (drawing) from AutoCAD.

**Important:** If you have selected entities in AutoCAD, only the selected entities are read-in.

#### Notes:

- If AutoCAD is not running, this command is disabled.
- Enable the [Hot Link function](#) if you want to transfer all AutoCAD modifications to 3D-Win automatically.

#### Shortcuts

Toolbar: 

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{button ,AL(` topic\_start',1,"")} Related topics

## Get View command (AutoCAD menu)

Use this command to get AutoCAD's current view.

### Note:

- If AutoCAD is not running, this command is disabled.

### Shortcuts

Toolbar:



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{button ,AL(`topic\_view',1,"")} Related topics

## Export ortho. view command (AutoCAD menu)

Use this command to export 3D-Win's current view to AutoCAD. In AutoCAD the [parallel projection](#) view will be set. To set a [perspective view](#) in AutoCAD use the [Export persp. view command](#).

### Notes:

- If AutoCAD is not running, this command is disabled.
- If you want to export 3D-Win's view automatically to AutoCAD, enable the [Hot View function](#).

### Shortcuts

Toolbar:



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{button ,AL(`topic\_view',1,"")} Related topics

### Export persp. view command (AutoCAD menu)

Use this command to export 3D-Win's current view to AutoCAD. In AutoCAD the **perspective view** will be set. To set a **parallel projection** view in AutoCAD use the [Export ortho. view command](#).

#### Note:

- If AutoCAD is not running, this command is disabled.

#### Shortcuts

Toolbar:



---

{button ,AL(`topic\_view',1,"")} Related topics

## Select command (AutoCAD menu)

Use this command to export 3D-Win's selection set to AutoCAD. To add 3D-Win's selected entities to AutoCAD's current selection set, use the [Add Selection command](#). To remove 3D-Win's selected entities from AutoCAD's current selection set, use the [Unselect command](#).

### Notes:

- This command doesn't work transparently, i.e. while you are executing a command in AutoCAD.
- Bounding boxes around the selected entities indicate the current selection set.
- If AutoCAD is not running, this command is disabled.

### Shortcuts

Toolbar:



---

{button ,AL(`topic\_select',1,"")} Related topics

## Unselect command (AutoCAD menu)

Use this command to remove 3D-Win's selected entities from AutoCAD's current selection set. To make 3D-Win's selected entities to AutoCAD's new current selection set, use the [Select command](#). To add 3D-Win's selected entities to AutoCAD's current selection set, use the [Add Selection command](#).

### Notes:

- This command doesn't work transparently, i.e. while you are executing a command in AutoCAD.
- Bounding boxes around the selected entities indicate the current selection set.
- If AutoCAD is not running, this command is disabled.

### Shortcuts

Toolbar:



---

{button ,AL(`topic\_select',1,"")} Related topics

## Add Selection command (AutoCAD menu)

Use this command to add 3D-Win's selected entities to AutoCAD's current selection set. To make 3D-Win's selected entities to AutoCAD's new current selection set, use the [Select command](#). To remove 3D-Win's selected entities from AutoCAD's current selection set, use the [Unselect command](#).

### Notes:

- This command doesn't work transparently, i.e. while you are executing a command in AutoCAD.
- Bounding boxes around the selected entities indicate the current selection set.
- If AutoCAD is not running, this command is disabled.

### Shortcuts

Toolbar:



---

{button ,AL(`topic\_select',1,"")} Related topics

## Get Selection command (AutoCAD menu)

Use this command to retrieve AutoCAD's current selection set.

### Notes:

- Bounding boxes around the selected entities indicate the current selection set.
- If AutoCAD is not running, this command is disabled.

---

{button ,AL(`topic\_select',1,"")} Related topics



### Hot Link command (AutoCAD menu)


Use this command to enable or disable the [Hot Link](#) function. A checkmark in front of this menu item indicates that the Hot Link function is active.

If this function is active, all modifications of the AutoCAD model (drawing) will automatically be transferred to 3D-Win (see also: [Get Model command](#)).

#### Note:

- If AutoCAD is not running, this command is disabled.

#### Shortcuts

Toolbar: 

### Hot View command (AutoCAD menu)


Use this command to enable or disable the [Hot View](#) function. A checkmark in front of this menu item indicates that the Hot View function is active.

If this function is active, 3D-Win's view is automatically exported to AutoCAD (see also: [Export ortho. view command](#)).

#### Note:

- If AutoCAD is not running, this command is disabled.

#### Shortcuts

Toolbar: 

---

{button ,AL(`topic\_view',1,"")} Related topics

## Animation menu commands

The Animation menu offers the following commands:

<u>Open</u>	Loads animation from a TEACH file.
<u>Save</u>	Saves current animation in a TEACH file.
<u>Save as AVI</u>	Saves current animation as AVI file.
<u>Walk</u>	Defines a Walk as animation.
<u>Record</u>	Starts recording.
<u>Pause</u>	Pauses recording.
<u>Stop</u>	Stops recording.
<u>Rewind</u>	Rewinds to first recorded view.
<u>Play</u>	Plays recorded animation.
<u>Step Forward</u>	Plays one frame of animation.

### Open command (Animation menu)

Use this command to load an animation from a [TEACH file](#).

For more information on animations, see [How to create, play and save animations?](#).

### Shortcuts

Toolbar:



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{button ,AL(` topic\_animation',1,"")} Related topics

## Save command (Animation menu)

Use this command to save your current animation as a TEACH file. 3D-Win displays the **Save As** dialog box so you can name your animation.

To create an animation, see the Record command and/or the Walk command.

For more information on animations, see How to create, play and save animations?.

### Note:

- This command is only active if you have recorded or defined an animation.

### Shortcuts

Toolbar:



---

{button ,AL(`topic\_animation',1,"")} Related topics

## Save as AVI command (Animation menu)

Use this command to save your current animation as an **AVI file**. 3D-Win displays the **Save As** dialog box so you can name your animation. Also, you need to choose a video compressor for your **AVI file**

To create an animation, see the [Record command](#) and/or the [Walk command](#).


To specify the resolution of the **AVI file**, use the [Preferences command](#) which displays the [Preferences dialog box](#).

For more information on animations, see [How to create, play and save animations?](#).

### Notes.

- To replay your **AVI file** you may use, for example, Microsoft's **Media Player** (mplayer.exe).
- This command is only active if you have recorded or defined an animation.

### Shortcuts

Toolbar: 

---

{button ,AL(`topic\_animation',1,"")} Related topics

## Walk command (Animation menu)

Use this command to define a Walk as animation. 3D-Win displays the [Walk dialog box](#) where you can define the required parameters.

For a detailed description, see [How to define a Walk as animation?](#).

For more information on animations, see [How to create, play and save animations?](#).

### Note:

- The Walk will be your current animation, that is, your previously recorded animation will be lost.

### Shortcuts

Toolbar:



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{button ,AL(`topic\_animation',1,"")} Related topics

## Record command (Animation menu)


Use this command to start recording an animation. All subsequent changes of the view will be written into the current animation. To stop recording use the [Stop command](#); to replay the animation use the [Play command](#).

For more information on animations, see [How to create, play and save animations?](#).

### Note:

- Your previously recorded animation will be lost when executing this command.

### Shortcuts

Toolbar: 

---

{button ,AL(`topic\_animation',1,"")} Related topics

## Pause command (Animation menu)

Use this command to pause while recording an animation. To continue recording use this command again; to stop recording, use the [Stop command](#).

For more information on animations, see [How to create, play and save animations?](#).

### Note:

- This command is only active when an animation is being recorded.

### Shortcuts

Toolbar:



---

{button ,AL(`topic\_animation',1,"")} Related topics

## Stop command (Animation menu)

Use this command to stop recording an animation. To start recording use the [Record command](#).

For more information on animations, see [How to create, play and save animations?](#).

### Note:

- This command is only active when an animation is being recorded.

### Shortcuts

Toolbar:



---

{button ,AL(`topic\_animation',1,"")} Related topics



## **Rewind command (Animation menu)**

Use this command to return to the first view of the current animation.

For more information on animations, see [How to create, play and save animations?](#).

### **Note:**

- This command is only active if you have recorded or defined an animation.

### **Shortcuts**

Toolbar:



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{button ,AL(`topic\_animation',1,"")} Related topics

## **Play command (Animation menu)**

Use this command to replay the current animation.

For more information on animations, see [How to create, play and save animations?](#).

### **Note:**

- This command is only active if you have recorded or defined an animation.

### **Shortcuts**

Toolbar:



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{button ,AL(`topic\_animation',1,"")} Related topics

## Step Forward command (Animation menu)

Use this command to set the next view of the current animation.

For more information on animations, see [How to create, play and save animations?](#).

### Note:

- This command is only active if you have recorded or defined an animation.

### Shortcuts

Toolbar:



---

{button ,AL(`topic\_animation',1,"")} Related topics

## **Window menu commands**

The Window menu offers the following commands:

<u>Toolbars</u>	Shows or hides the specified toolbar.
<u>Status Bar</u>	Shows or hides the status bar.
<u>New Window</u>	Opens another window for the active model.
<u>Cascade</u>	Arranges windows so they overlap.
<u>Tile</u>	Arranges windows as non-overlapping tiles.
<u>Arrange Icons</u>	Arranges icons at the bottom of the window.

### **Toolbars command (Window menu)**

Use this command to display and hide the specified Toolbar, which includes buttons for some of the most common commands in 3D-Win, such as File Open. A checkmark next to the menu item indicates that the specified Toolbar is displayed.

See Toolbar for help on using the toolbar.

**Status Bar command (Window menu)**

Use this command to display and hide the Status Bar. A checkmark next to the menu item indicates that the Status Bar is displayed.

See [Status Bar](#) for help on using the status bar.

**New Window command (Window menu)**

Use this command to open a new window with the same contents as the active window. You can open multiple model windows to display different parts or views of a model at the same time. If you change the contents in one window, all other windows containing the same model reflect those changes. A new window becomes the active window and is displayed on top of the open windows.

**Cascade command (Window menu)**

Use this command to arrange multiple open windows overlapped.

**Tile command (Window menu)**

Use this command to arrange multiple open windows next to each other.



**Arrange Icons command (Window menu)**

Use this command to arrange the icons for minimized windows at the bottom of the main window. If there is an open model window at the bottom of the main window, then some or all of the icons may be hidden underneath it.

**1, 2, ... command (Window menu)**

3D-Win displays a list of currently open model windows at the bottom of the Window menu. A checkmark appears in front of the model name of the active window. Choose a model from this list to make its window active.

## Help menu commands

The Help menu offers the following commands:

<u>Help topics</u>	Displays the <b>Help topics</b> dialog box.
<u>About 3D-Win</u>	Displays program information, version number and copyright.

### Help topics command (Help menu)

Use this command to display the **Help topics** dialog box. From the **Help topics** dialog box, you can access step-by-step instructions for using 3D-Win and various types of reference information.

If Help is open, you can click the Help topics button whenever you want to return to the **Help topics** dialog box.

### Shortcuts

Keys: F1

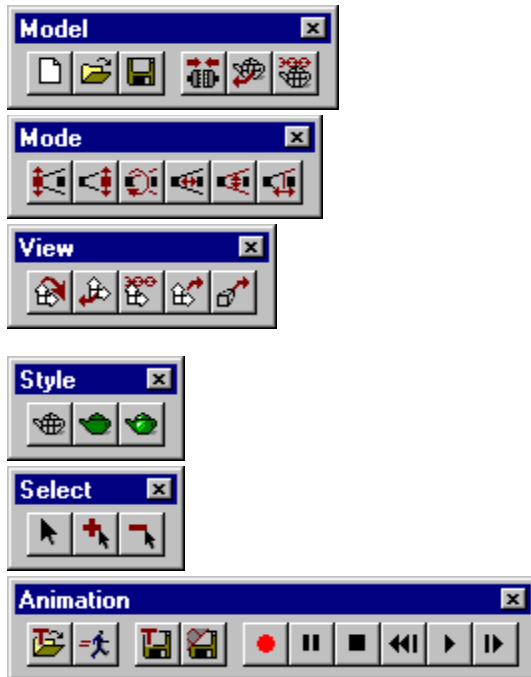
### About 3D-Win command (Help menu)

Use this command to display the copyright notice and version number of your copy of 3D-Win.

## Toolbar buttons

Figure 2 shows the toolbar buttons available in 3D-Win, divided into six toolbars. Each toolbar can be attached, or **docked**, to any side of the 3D-Win main window, or it can be **floated** in its own mini-frame window.

**Figure 2** Toolbars



### Note:

- Click on a tool button to get more help on the corresponding command.

## Dialog boxes

3D-Win contains the following dialog boxes:

<b>Dialog box</b>	<b>Available by command</b>
<u>Preferences</u>	<u>Preferences (File menu)</u>
<u>Choose Material</u>	<u>Material (Edit menu)</u>
<u>Switch Layer</u>	<u>Layer (Edit menu)</u>
<u>Walk</u>	<u>Walk (Animation menu)</u>
<u>About 3D-Win</u>	<u>About 3D-Win (Help menu)</u>

### Preferences dialog box

Use this dialog box to change global parameters of 3D-Win. This dialog box is available from the Preferences command.

Figure 3 shows the dialog box which contains the following sections:

- **Dynamic Rendering Break**

Defines the parameters for the dynamic rendering break, allowing you to change the view dynamically with the mouse, even with a large model.

- Break after <n> milliseconds  
Defines the time after which the calculation of the next view will be interrupted. Only those parts of the model calculated from this point will be displayed. This allows better control with the mouse.
- Check time when <n> vertices processed  
To avoid excessive time checking, the time for rendering break is only checked for every <n> processed vertices of the model.
- Default setting  
Click on this button to restore the default values (100 ms and 100 vertices).

- **AVI File format**

Defines the resolution of an AVI file (in pixel) which you can create with the Save as AVI command.

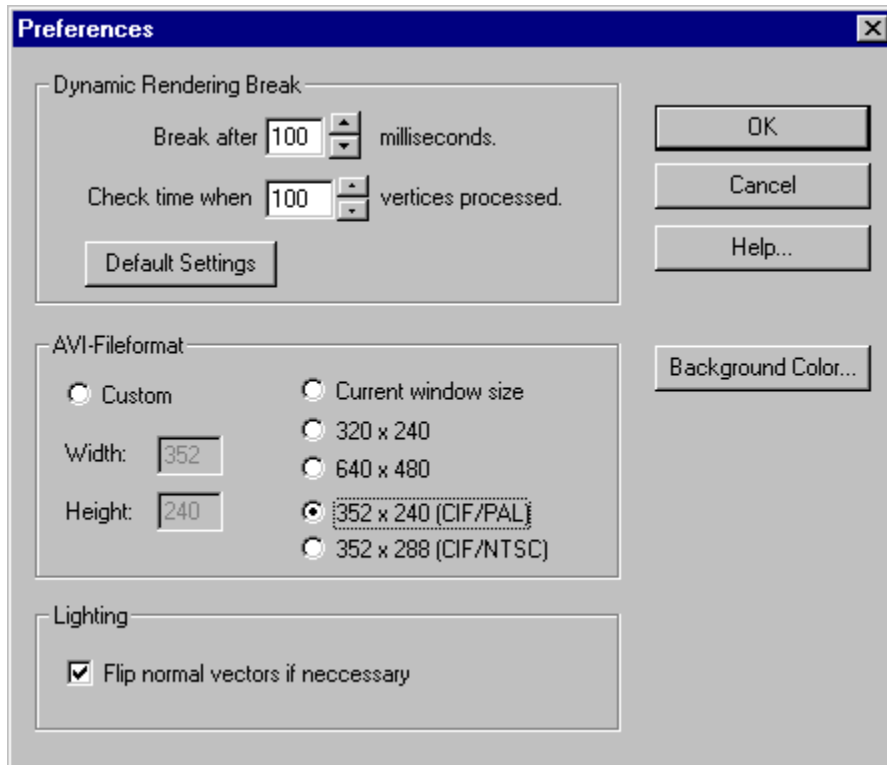
- **Lighting**

- Flip normal vectors if necessary  
Orients the surface normals so that they are always toward the camera. The purpose of this is to illuminate all surfaces. Use this flag if your model has objects containing faces with mixed orientations.

- **Background Color**

3D-Win displays a **Color dialog box** so you can select a color for the background of the model window. Default is the system window color.

**Figure 3** Preferences dialog box



## Choose material dialog box

Use this dialog box to change the material properties of the selected entity and get a preview of the new material properties. If the selected entity is a block that contains more than one material, you can choose the desired material in the Material Preview window.

**Important:** The modifications apply for all entities to which the selected material has been assigned.

This dialog box is available from the [Material command](#).

[Figure 4](#) shows the dialog box with the following sections:

- **Color selection**

Use this section to define the different colors of the material.

There are radio buttons for the four different color components of the material. For each color component you can...

- select a pre-defined color, or
- define a color by clicking in the color matrix and using the slider at the right of the color matrix to adjust the luminance, or
- enter values directly either for Hue/Sat/Lum or Red/Green/Blue.

The four colors that define a material are:

- Diffuse  
Plays the most important role in how you perceive the color of an object. It is most intense where the light falls perpendicular to the surface.
- Ambient  
Affects the overall color of an object. It's most noticeable where the object does not receive direct illumination.
- Specular  
The specular color produces highlights. To control the size of the highlight use the [Shininess section](#).
- Emission  
When you specify an emission color, the object seems to send out light of that color (like a lamp).

- **Material Preview**

In this window you get a preview of how the material will look. As in the model window, you can change the view by moving the mouse with the right mouse button held down.

- **Material Library**

Instead of defining a material in the [Colour Selection section](#), you can choose a material from your material library.

- **Shininess**

The shininess factor controls the size of a highlight (if a specular color is defined).

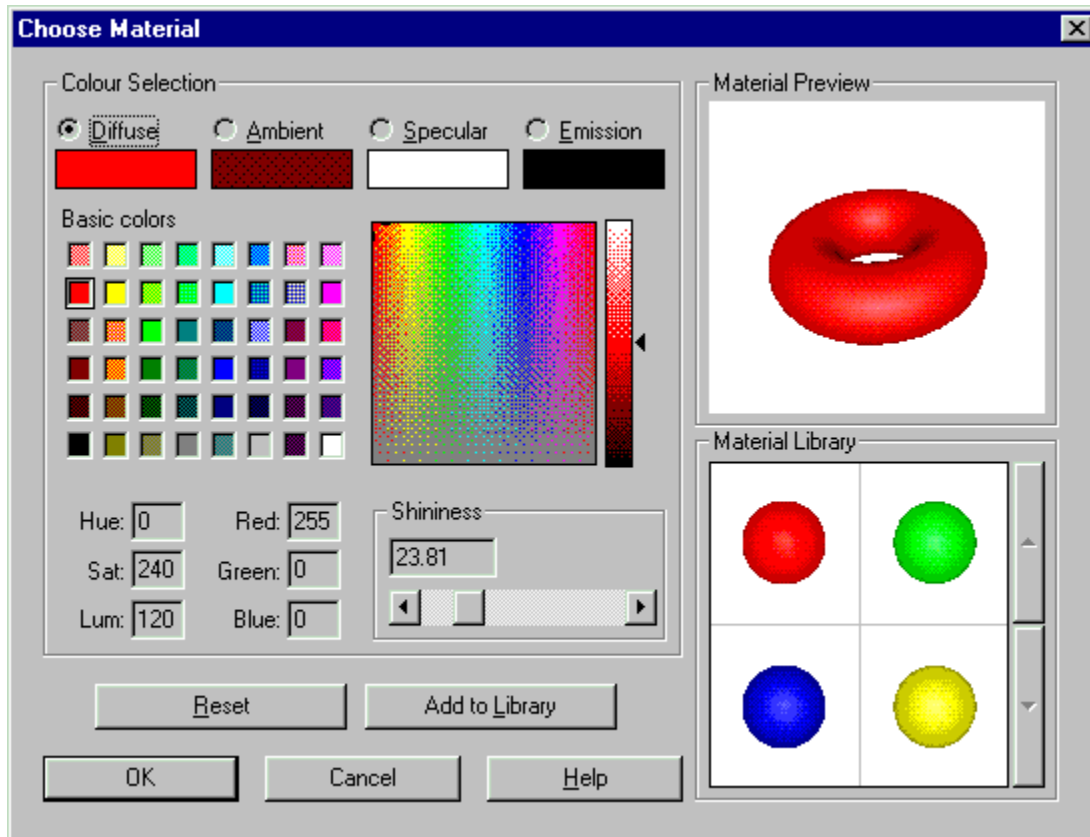
- **Reset**

Resets the material to the AutoCAD default.

- **Add to Library**

Adds your newly defined material to your material library. You can always access these materials quickly in the [Material Library section](#).

Figure 4 Choose material dialog box





## Switch layer dialog box

Use this dialog box (available from the Layer command) to enable or disable layers of the model.

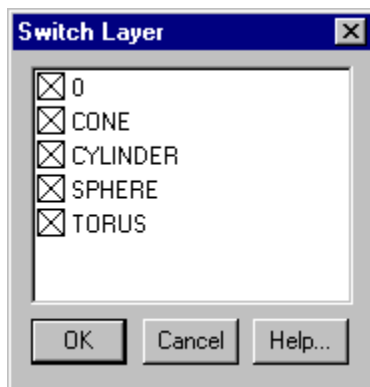
The dialog box lists all drawing layers and their ON/OFF status (checkbox marked = ON). To toggle the status of a layer simply click on its checkbox. Watch the model window to see the effect of the changes.

When finished, click on the **OK** button to confirm the changes. If you want to discard the changes click on the **Cancel** button.

### Note:

- The changes only apply to 3D-Win and are not transferred to AutoCAD.

**Figure 5** Switch layer dialog box



## Walk dialog box

Use this dialog box (available from the [Walk command](#)) to define a **Walk** around or through your object. The walk will become your current animation, which you can

- replay using the [Play command](#),
- save to disk using the [Save command](#), or
- use to create an AVI file with the [Save as AVI command](#).

[Figure 6](#) shows the dialog box which contains the following sections:

- **Name**

First you must name your **Walk**. Enter a name or select a previously defined **Walk** from the drop-down list.

- **Parameters**

- Steps

Determines the number of frames in the animation. This value is set by 3D-Win when you have defined the Camera polyline. You can decrease this value later.

- Steps per arc

Using arc segments within 2D polylines (don't use arcs directly) are very helpful to get a smooth animation. This value determines the number of frames per arc segment.

- Walk-around/Walk-through

Use the radio buttons to specify whether you want a **Walk-around** or a **Walk-Through** for your animation.

For a **Walk-Around** select a 2D/3D polyline for the camera and a 2D/3D polyline or a point for the target. The camera and the target will walk along these polylines, i.e., the camera position of the first frame is defined by the first vertex of the camera polyline, the camera position of the second frame is defined by the second vertex, and so on; the same applies for the target position and the target polyline. If your target is a point, the target will remain fixed for the whole animation.

For a **Walk-Through** select a 2D/3D polyline for the camera. Both camera and target will walk along this polyline, i.e., the camera position of the first frame is defined by the first vertex of the polyline, the camera position of the second frame is defined by the second vertex, and so on. The target position of the first frame is defined by the second vertex of the polyline, the target position for the second frame is defined by the third vertex, and so on.

- **Set**

- Camera

Click this button to select the camera polyline. 3D-Win will automatically switch to AutoCAD where you must pick a previously drawn polyline (\_pline, \_3dpoly). This polyline will define the camera movement during the animation.

- Target

Click this button to select the target polyline or point. 3D-Win will automatically switch to AutoCAD where you must pick a previously drawn polyline (\_pline, \_3dpoly). This polyline or point will define the target position(s) during the animation.

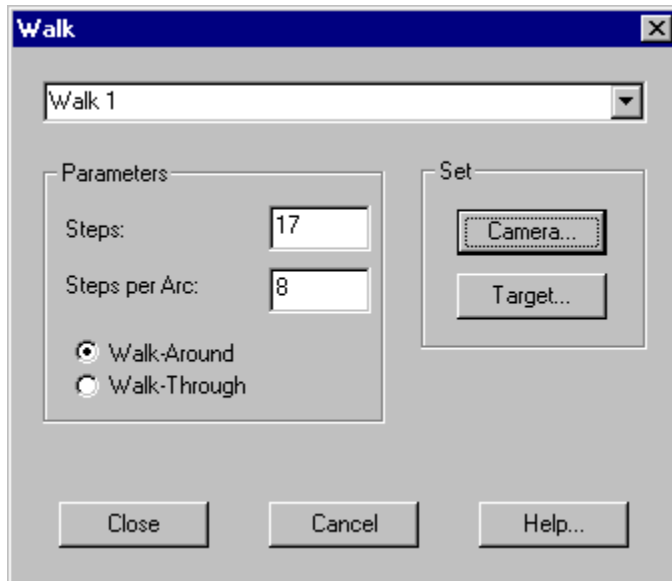
### Notes:

- The Walk will replace 3D-Win's current animation; a previously recorded animation will be lost.
- Walk definitions are automatically stored with the document.

---

{button ,AL('topic\_walk;topic\_animation',1,"")} Related topics

**Figure 6 Walk dialog box**



### **About 3D-Win dialog box**

This dialog box displays the copyright notice and version number of your copy of 3D-Win and is available from the [About 3D-Win command](#).

## How to select entities?

Use the left mouse button to select or unselect entities. Bounding boxes around the selected entities indicate the current selection set.

- Click on an entity to select it.
- To add an entity to 3D-Win's selection set or to unselect an entity, click on it while pressing the Control key.
- To clear 3D-Win's selection set, click on the background of the model window, or use the Clear Selection command, or press the Esc key.
- To invert 3D-Win's selection set, click on the background of the model window while pressing the Control key, or use the Invert Selection command.

---

{button ,AL(`topic\_select',1,"")} Related topics

## How to change the view?

To change the 3D view of the model

- move the mouse with the right mouse button pressed, or
- use the scroll bars in conjunction with the available modes Camera, Target, Distance, Zoom, Twist and Clip.

---

{button ,AL(`topic\_view',1,"")} Related topics

## How to set a new target point?

Either select an object and use the Set Target command to define the center of this entity as the new target point, or ...

- 1 Use the Clip command to activate the **Clip** mode.
- 2 Move the clipping plane to your desired target point.
- 3 Hold down the Control key and click with right mouse button on the new target point.
- 4 Move the clipping plane back to the camera (value 1.00).

---

{button ,AL(`topic\_view',1,"")} Related topics

## How to change material settings?

- 1 Select an entity and use the Material command to display the Material dialog box.
- 2 If the selected entity is a block with different materials, click in the **Material Preview** window to select the material which you want to edit.
- 3 Click on the **Diffuse** radio button.
- 4 Choose a color from the color matrix and use the vertical slider on the right side of the color matrix to adjust the luminance of the color. Watch the changes in the **Material Preview** window. You can change the view with the mouse (hold down the right mouse button).
- 5 Click on the **Ambient** radio button and repeat step 4.
- 6 If you want a material with shininess, click on the **Specular** radio button, repeat step 4, adjust the size of the highlight with the scroll bar for **Shininess**. Watch the result in Material Preview window.
- 7 Click the **Add to Library** button to add your material to 3D-Win's material library.
- 8 Click the **OK** button.
- 9 To keep the changes for the next session, save your model using the Save command. Load your model with the Open command before using the Get Model command.

---

{button ,AL(`topic\_material',1,"")} Related topics



## How to create, replay and save animations?

### To create an animation

- Use the [Record command](#) to start recording an animation.
- Move the mouse with the right button held down to change the view dynamically.
- Use the [Pause command](#) to interrupt the recording.
- Move the mouse with right button held down to set a different view.
- Use the [Pause command](#) to continue recording.
- Now use the [scroll bars](#) and change the view several times.
- Use the [Stop command](#) to stop recording.

You can also create an animation using the [Walk command](#).

### To replay an animation

- Use the [Play command](#) to replay an animation.
- Press the Esc key to cancel the replay.
- Use the [Step Forward command](#) to display the next view of the animation.
- Use the [Rewind command](#) to display the first view of the animation.

### To save an animation

- Use the [Save command](#) to save the animation as a [TEACH file](#). With the [Open command](#) you can load this animation in a later session.
- Use the [Save as AVI](#) to create an [AVI file](#) from your animation. Use the [Preferences command](#) to set the resolution of the [AVI file](#). To replay your [AVI file](#) use, for example, Microsoft's [Media Player](#) (mplayer.exe).

---

{button ,AL(` topic\_animation',1,"")} Related topics

## How to define a Walk as animation?

Use the [Walk command](#) to display the [Walk dialog box](#).

### To define a Walk-Around

- Enter a name for the Walk definition.
- Click on the [Walk-Around](#) radio button.
- Switch to AutoCAD and insert a 2D or 3D polyline in your drawing to define your camera movement for the animation. Use arc segments within a 2D polyline to get a smooth animation.
- Insert a point or a polyline in your drawing to define your target position(s) for the animation.
- Switch back to 3D-Win.
- Enter a value for [Steps per Arc](#) if you have used arc segment(s) within your polyline(s).
- Click on the [Camera](#) button and select your polyline for the camera.
- Click on the [Target](#) button and select your point or polyline for the target.

### To define a Walk-Through

- Enter a name for the Walk definition.
- Click on the [Walk-Through](#) radio button.
- Switch to AutoCAD and insert a 2D- or 3D-polyline in your drawing to become your camera movement for the animation. Use arc segments within a 2D polyline to get a smooth animation.
- Switch back to 3D-Win.
- Enter a value for [Steps per Arc](#) if you have used arc segment(s) within your polyline.
- Click on the [Camera](#) button and select your polyline for the camera.

### To select a previously defined Walk

- Select a [Walk](#) from the drop-down list at the top of the the [Walk dialog box](#).

Click the [OK](#) button to confirm the Walk definition, and use the [Play command](#) to execute it.

---

{button ,AL(`topic\_animation',1,"")} Related topics

## How to keep the 3D-Win window on top?

Pull down the Control menu (also called System menu) and click on the menu item **Always on top**. A checkmark in front of the menu item indicates that this mode is active.



## What is a TEACH file?

The Record command enables you to protocol various actions conducted in the 3D-Win window (camera movements) in an editable ASCII file. The TEACH file can be replayed in the 3D-Win window using the Play command.

You can easily modify your animation, for example, change the viewing angle, by altering a single parameter in the ASCII file - even after the animation has been recorded.

## Syntax of the TEACH file

Seven parameters are simultaneously set in order to set up the view:

```
#_X_Y_Z_Theta_Phi_Distance_Twist
```

Parameters:

X, Y, Z	Target point (X , Y and Z coordinates).
Theta	Angle above or below the XY plane (Theta).
Phi	Angle in the XY plane relative to the X axis (Phi).
Distance	Distance between camera and target point.
Twist	Angle of the camera position relative to the X axis

## Example of an TEACH file

```
#_-0.035_2.406_3.714_32.000_172.500_106.000_34.000  
#_-0.035_2.406_3.714_32.500_171.500_106.000_33.500  
#_-0.035_2.406_3.714_31.500_156.000_106.000_24.500  
...  
#_-0.035_2.406_3.714_-28.500_147.000_106.000_45.000  
#_-0.035_2.406_3.714_-28.500_147.500_106.000_46.000  
#_-0.035_2.406_3.714_-30.500_147.500_106.000_49.000
```

---

{button ,AL(`topic\_animation',1,"")} Related topics

## Scroll bars

Change the view of your model with the scroll bars displayed at the right and bottom edges of the model window. Which parameters of the view are set with the scroll bars depends on the active mode. You may also use the mouse to change the view of the model.

---

{button ,AL(`topic\_mode',1,"")} Related topics

## Status bar

The status bar is displayed at the bottom of the 3D-Win window. To display or hide the status bar, use the Status Bar command.

The left area of the status bar displays

- a brief description of menu items when you use the arrow keys to navigate through menus
- a brief description for each toolbar button when the mouse cursor is moved over the button

The right areas of the status bar display the values for various view parameters. Which parameters are displayed depends on the active mode.

---

{button ,AL(`topic\_mode',1,"")} Related topics

