**Valve Builder**

Creates different combinations of valve shapes. Drag the Valve Builder shortcut shape and drop it on the drawing page to open the Valve Builder. For more information, click Help in the Valve Builder dialog box.

**Valves**

To specify a valve type, right-click the shape. To connect other shapes, glue an endpoint on this shape to a connection point on the other shapes. Control handles provide other shape actions. To see what a control handle
on a selected shape does, pause the pointer over the handle.

**Valves**

To connect this shape to other shapes, glue an endpoint on a 1-D shape to a connection point on this shape. To add text, select the shape, then type. Control handles provide other shape actions. To see what a control handle
on a selected shape does, pause the pointer over the handle.

**Valves**

To specify a non-adjustable valve and, on some valves, whether the valve is typically open or closed, right-click the shape. To connect other shapes, glue an endpoint on this shape to a connection point on the other shapes. Control handles provide other shape actions. To see what a control handle on a selected shape does, pause the pointer over the handle.

**3-position Valves**

To add extensions or indicate an infinite number of intermediate positions, right-click the shape. To change or retract an extension line, drag the control handle . To switch sides or switch between pneumatic and hydraulic, right-click the shape.
To choose a flow path for the center of the valve, right-click the shape, choose Select Center, choose a flow path, then click OK. To connect this shape to other shapes, glue an endpoint on a 1-D shape to a connection point on this shape.
To add valve controls, right-click the shape, then choose Add Controls. In the group window, glue endpoints on Valve Control shapes to connection points on the ends of the valve, then click the close box.

**2-position Valves**

To add extensions or indicate an infinite number of intermediate positions, right-click the shape. To switch sides or switch between pneumatic and hydraulic, right-click the shape. To change or retract an extension line, drag the control handle . To change arrow direction, right-click the shape. To connect this shape to other shapes, glue an endpoint on a 1-D shape to a connection point
on this shape.
To add valve controls, right-click the valve, then choose Add Controls. In the group window, glue endpoints on Valve Control shapes to connection points on the ends of the valve, then click the close box.

**Quick Exhaust**

To connect other shapes, glue an endpoint on this shape to a connection point on the other shapes. To add text, select the shape, then type.

**Energy Converters**

To specify a converter type (pneumatic-hydraulic or hydraulic-pneumatic, actuator or transformer), right-click the shape. To connect this shape to other shapes, glue an endpoint on a 1-D shape to a connection point on this shape. To replace existing text in the Actuator/Intensifier shape, subselect the text, then type. Control handles provide other shape actions. To see what a control handle on a selected shape does, pause the pointer over the handle.

**Fluid Power Equipment**

To connect this shape to other shapes, glue an endpoint on a 1-D shape to a connection point on this shape. To add text, select the shape, then type. Control handles provide other shape actions. To see what a control handle
on a selected shape does, pause the pointer over the handle.

**Fluid Power Equipment**

To specify an equipment type, right-click the shape. (Note: Not all fluid power equipment shapes have alternate types.) To connect other shapes, glue an endpoint on this shape to a connection point  on the other shapes. To resize a shape, drag a selection handle. Control handles provide other shape actions. To see what a control handle
 on a selected shape does, pause the pointer over the handle.

**Fluid Power Equipment**

To specify an equipment option on some equipment shapes, right-click the shape. To connect this shape to other shapes, glue an endpoint on a 1-D shape to a connection point on this shape.

**Pump/Motor**

To specify pneumatic or hydraulic and pump or motor, right-click the shape. To set shape properties, such as displacement or flow direction, right-click the shape. To connect this shape to other shapes, glue an endpoint on this shape to a connection point on the other shapes. To resize a shape, drag a selection handle. Control handles provide other shape actions. To see what a control handle on a selected shape does, pause the pointer over the handle.

**Gear**

Dashed lines represent the outside, root, and pitch circles of a gear. Solid lines represent the web and hub circles (if applicable). The selection rectangle on this shape corresponds to the pitch circle (the imaginary circle along which two gears mesh) making it easy to join gear shapes accurately in a drawing. To resize a circle, drag its control handle . To hide a circle, drag its control handle to the center of the shape. To resize the shape proportionally, drag any selection handle.

**Arc Tangents**

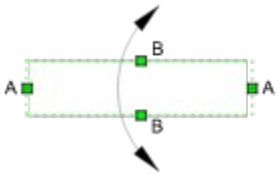
Represents two circular arcs connected by tangent lines extending between the tops and bottoms of each circle. To resize a circle, drag its control handle . To quickly draw belt systems, resize the circles of several Arc Tangents shapes and then glue the endpoints on one shape to the endpoints on another. To connect this shape to other shapes, glue an endpoint on a 1-D shape to a connection point on this shape.

**Pneumatic/Hydraulic Cylinders**

To specify pneumatic or hydraulic cylinders and other options, right-click the shape. To connect this shape to other shapes, glue an endpoint on a 1-D shape to a connection point on this shape. Control handles provide other shape actions. To see what a control handle on a selected shape does, pause the pointer over the handle.

**Functional Elements**

To specify a variation on the shape, right-click the shape. (Note that not all functional elements have variations).




A Glue to connection points on other shapes.
B Drag to resize the shape.

**Functional Elements**

To specify an element type, right-click the shape. (Note that not all functional elements have variations). To resize an element, drag a selection handle. To add text, select the shape, then type. Control handles provide other shape actions. To see what a control handle  on a selected shape does, pause the pointer over the handle.

**Empty Valves**

To show extension lines for extra valves or choose a finite or infinite number of intermediate positions, right-click the shape. To connect this shape to other shapes, glue an endpoint on a 1-D shape to a connection point on this shape.
To add valve flow paths and controls, right-click the shape, then choose Assemble Valves. In the group window, drag valve flow path and valve control shapes onto the empty valve. When you are satisfied with the results, click the close box.

**Junction Dot**

To add text, select the shape, then type. To move the text, drag the control handle .

**Valve Controls**

To specify the type of control on some valve controls, right-click the shape. On valve controls with variability arrows, to vary the angle of the arrow relative to the shape's endpoints, right-click the shape. To connect other shapes, glue an endpoint on a valve control to a connection point on the other shapes. To add valve controls to empty valves, right-click an empty valve shape, then choose Assemble Valve. Drag a valve control shape into the group window, then click the window's close box.

**Arrows**

To represent fluid flow direction or variable rotation, position this shape above other shapes. To change the direction of the Arrow and Curved Arrow shapes, right-click the shape. To set the angle for the Variable Arrow shape, right-click the shape. To indicate pneumatic or hydraulic on the arrow, right-click the shape. To change arrow length, drag an endpoint. The arrowhead's size changes along with the arrow's length.

**Valve Flow Paths**

To connect this shape to other shapes, glue an endpoint on a 1-D shape to a connection point on this shape.
To add valve flow paths to empty valves, right-click an Empty Valve shape, then choose Assemble Valve. Drag valve flow paths onto the Empty Valve in the group window, then click the window's close box.

**Fluid Flow**

To specify a hydraulic or pneumatic type, right-click the shape. To connect this shape to other shapes, glue an endpoint on a 1-D shape to a connection point on this shape. To add text, select the shape, then type. Control handles provide other shape actions. To see what a control handle on a selected shape does, pause the pointer over the handle.

**Valve Flow Paths**

To specify the type of valve flow path or change the number of arrows, right-click the shape. To connect this shape to other shapes, glue an endpoint on a 1-D shape to a connection point on this shape.
To add valve flow paths to empty valves, right-click an empty valve shape, then choose Assemble Valve. Drag valve flow paths onto the empty valve in the group window, then click the window's close box.

**Restriction**

To resize the shape, drag an endpoint. To add text, select the shape, then type. To move the text, drag the control handle . To connect other shapes, glue an endpoint on this shape to a connection point on the other shapes.

**Connections**

On some connections, to specify connection type, right-click the shape. To resize a connection, drag a selection handle. Control handles provide other shape actions. To see what a control handle  on a selected shape does, pause the pointer over the handle. To connect other shapes, glue an endpoint on this shape to a connection point
 on the other shapes.