VicBlocks 3D

3D Block Library for AutoCAD*

Victaulic Piping System
A 3D CAD Index of couplings, fittings and valves

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3D Blocks Library for AutoCAD*

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Introduction

What is Vic Blocks 3D?

Designed specifically for AutoCAD users, Vic Blocks 3D is a dimensionally accurate, three-dimensional block library of the Victaulic product line. It was developed to assist with Victaulic piping system layouts. Drawn at full size, each component is stored on a master sheet, and named according to a convention that represents a nominal pipe size with its metric equivalent (a reducing size if applicable) and the Victaulic product style, series or part number.

Designed to be used with AutoCAD's DesignCenter each symbol contains a preview and a description. Common insertion points have been placed in each block and nodes are provided on all connection points for ease of location and placement. Each coupling block contains two (2) nodes that represent the gap takeout that occurs when a coupling connects two (2) grooved piping components (fittings, valves and/or pipe). By using the nodes within the blocks in conjunction with the AutoCAD OSNAPs, the AutoCAD user can determine cut lengths for drawing bill of materials.

Components are inserted by using the AutoCAD DesignCenter. Once inserted into a drawing, the Victaulic component symbol can be easily manipulated by using common AutoCAD editing commands. If using AutoCAD R2004 and later versions, the end user will be able to create custom "Tool Palettes" with the included block files. Pipe is placed using predefined AutoCAD MLINES (AutoCAD Release 2004 and up). In AutoCAD LT versions 2004 and up, pipe is drawn using the AutoCAD DLINE command. See AutoCAD's **Help** menu for more on Tool palettes.

Block-Naming Convention

The Vic Blocks 3D file name consists of three parts; a generic description, the size and the Victaulic product style, series or part number. The file names have been created to help determine the appropriate block for insertion. A few examples of generic descriptions are; valve, elbow, cplg (coupling). Metric equivalents are also added in the naming convention, new for this release. These coincide with the imperial nominal measurements and are in parenthesis following a nominal imperial size. The Victaulic product style, series or part number follows next. An example of this naming convention is shown in Fig. 1.
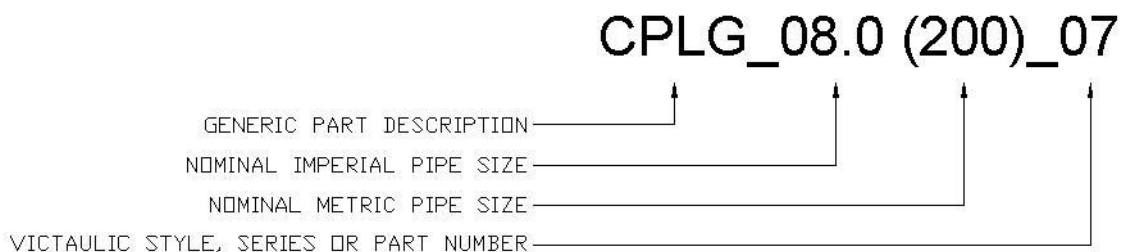
CPLG_08.0 (200)_07

GENERIC PART DESCRIPTION ————————
NOMINAL IMPERIAL PIPE SIZE ————————
NOMINAL METRIC PIPE SIZE ————————
VICTAULIC STYLE, SERIES OR PART NUMBER ————————

Fig. 1

The file name may contain letters to represent an OD size. If the file name contains an "X" after the size, this indicates an OD size (i.e. **CAP_03.0X (76.1)_60.dwg** would be a **#60 3" OD Cap**). The metric designation on OD size fittings is the actual metric size, as metric fittings do not have nominal OD sizes. Elbows contain a degree field in the file name. The file name (**ELBOW_90_06.0 (150)_10.dwg**); is an example of a **#10 6" 90-Degree Elbow.**

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Instructions

Installation:

1) Download the Vic Blocks 3D zip.

2) Extract the files to the structure listed below.

C:\Program Files

Follow the install instructions as required.

In AutoCAD set a support search path to the newly placed files. Click on the **Tools** pull down menu and select **Options...** Under the **Files** tab, click on the plus (**+**) to open the Support File Search Path. Click the **Add...** button and type in the following: **C:\Program Files\VB3D_Complete** and press the **Enter** key. Click the **Apply** button and select **OK** to close the dialog box.

3) Start AutoCAD and load the DesignCenter by finding the **Tools** pull down menu and selecting **DesignCenter** (Fig. 2). You can also access this by pressing **CTRL+2**.

4) After DesignCenter opens, change the view to a file tree by locating and selecting the **Folders** menu tab in the DesignCenter (Fig. 3).

5) Select the **VB3D_Complete** folder and find the appropriate module of Victaulic fittings that you would like to open. Here you will find the master sheet drawings.
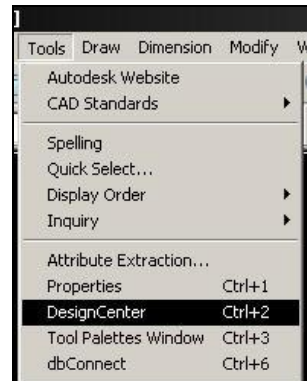
6) You are now ready to start placing Victaulic components on a drawing. Please review the information sheets provided with this package for more about Vic Blocks 3D.

7) To Load the Pipe Menu:
Launch AutoCAD, go to the **Tools** pull down menu and select **Customize Menus...**(Fig. 4) On the **Menu Groups** tab click **Browse...** Next locate and select the **VicPipe.mns** menu file in the **Menus** folder (located in C:\Program Files\VB3D_Cmplete 3D, where C:\ is the drive in which VB3D_Complete was installed) and click **Open**. Next, click the **Load** button. The menu group will appear in the **Menu Groups:** area. Next, select the **Menu Bar** tab. Under Menu Groups, select **Vic_Pipe**. In the **Menus** area, select VB3D_Complete. In the **Menu Bar** area and choose where you want the
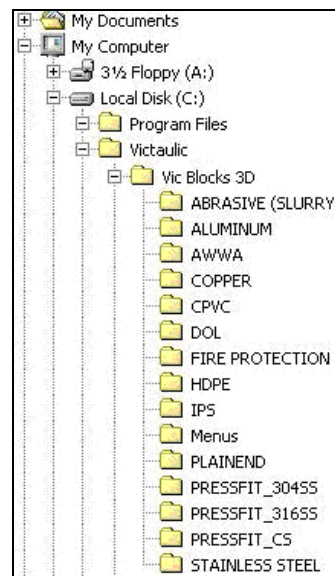

Fig. 2

Fig. 3

menu to be placed (The menu will be placed before the highlighted item). Click **Insert**, and then **Close** (Fig. 5). Refer to page 6 for placing pipe.

Vic Blocks 3D
Instructions

Fig. 4
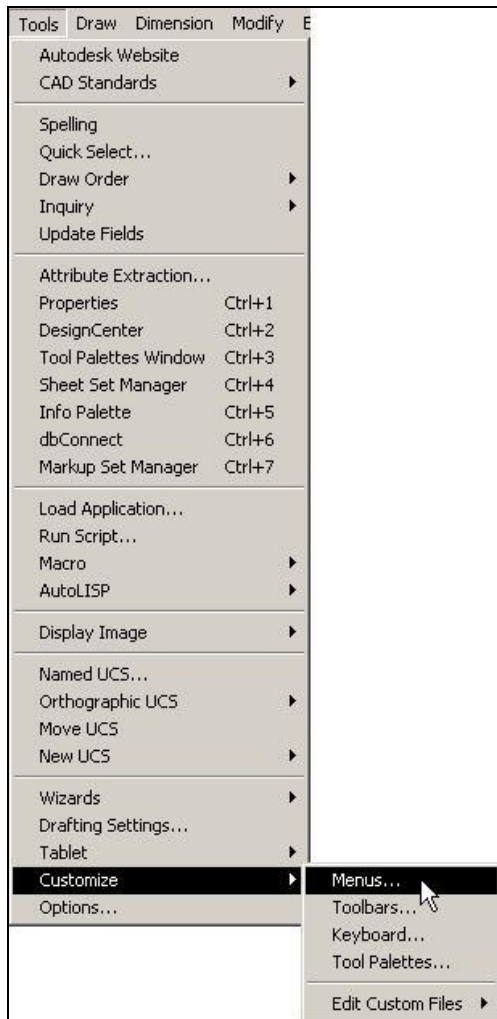

Fig. 5

Notes:

Vic Blocks 3D master sheet drawings are compatible for Versions 2007 and newer.

Placing Pipe:

Using the menu supplied by Victaulic (loaded in step 7 of the Installation Instructions on page 5), select the Vic Blocks 3D pull-down menu, and then choose the type of pipe you would like to place (IPS, AWWA, or Copper), then choose the size. Using AutoCAD's O-snap commands, select your Start point, and then select your End point. The pipe will then be placed.

NOTE: 14" and above IPS pipe is available under an additional fly-out above 1/2" pipe selection.
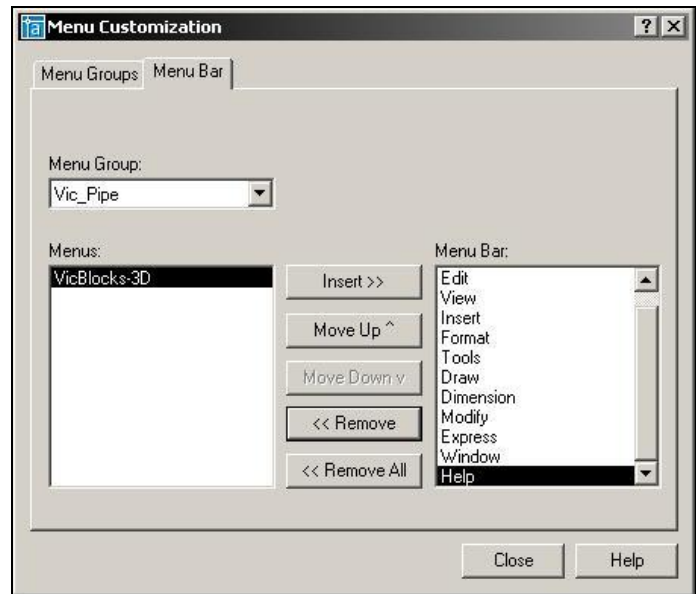
Vic Blocks 3D
Information

Placing Components with DesignCenter

Right clicking in the DesignCenter will bring up the **View toolbar.** For ease of placement, the view of DesignCenter should be set to display the **Tree**, **Preview** and **Description.** In the **View** fly out, **Large** should be selected to see thumbnail previews of the actual blocks, see Fig 6.

Select the appropriate module and then select the drawing that contains the item you are looking for (Fig. 7). Expand the drawing to show the seven (7) tabs of available information: Blocks; Dimstyles; Layers; Layouts; Linetypes; Textstyles and Xrefs. Selecting **Blocks** will show all of the available blocks in a particular master sheet.

Fig. 6
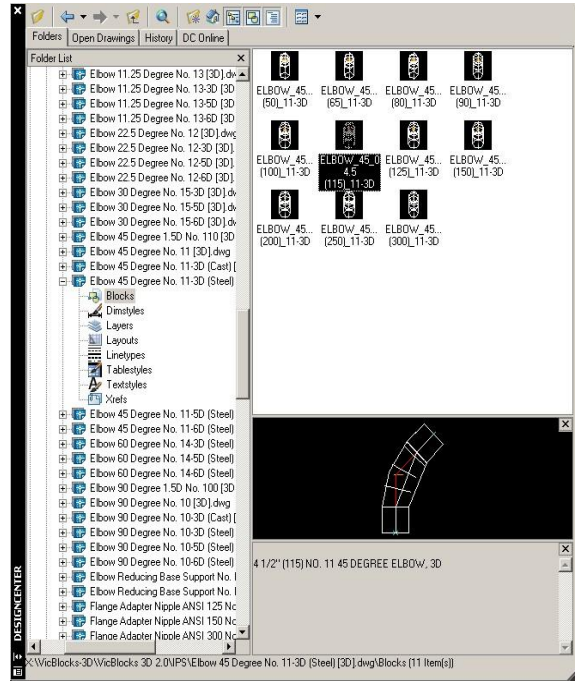
Fig. 7

There are two (2) ways to insert the desired block. You can "drag and drop" the block into the drawing or double-click the block to bring up the **Block Insertion** dialog box (Fig. 8).
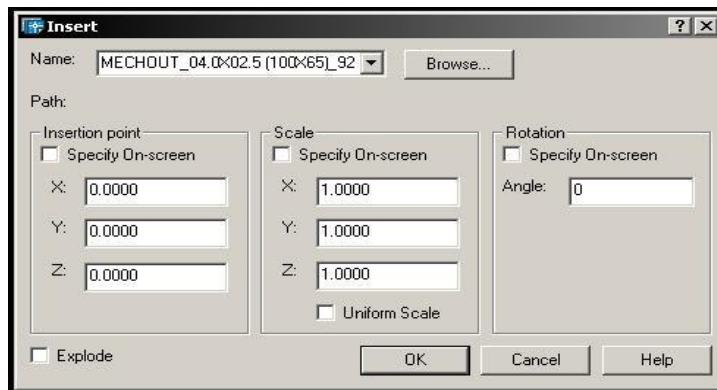
Fig. 8

Once the components are placed in the drawing, use standard AutoCAD editing tools to manipulate the components.

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Block Orientation

The Block files were drawn, and will be inserted with the flow of the pipe going in the positive-Z direction. Before placing the fitting, the UCS must be orientated so that the positive-Z direction is going with the flow of the pipe. See Figures 9, 10, 11 & 12 below for a few examples. For a complete list of examples, see the index sheets starting on Page 12.
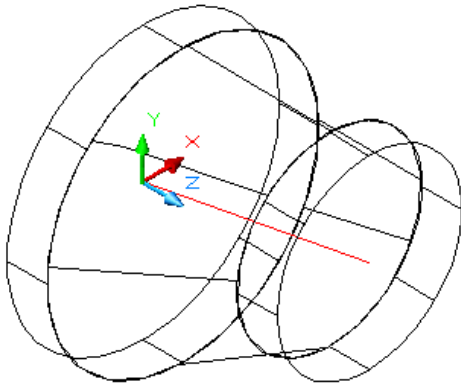
Fig. 9
(Eccentric Reducer, Flat on top)
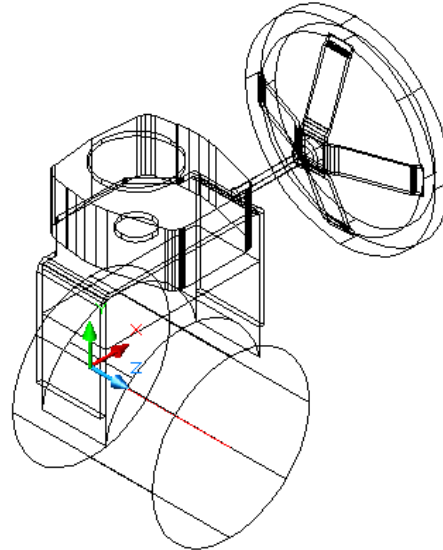
Fig. 10
(Butterfly Valve)
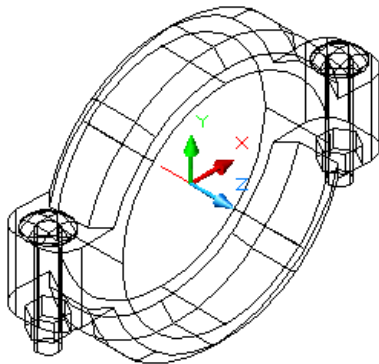
Fig. 11
(Coupling)
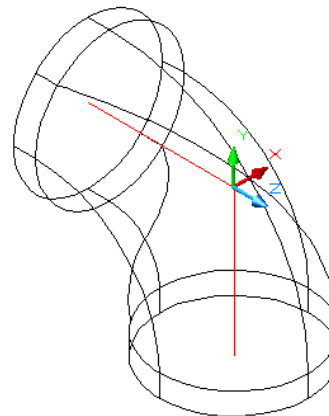
Fig. 12
(Elbow)

Vic Blocks 3D
Information

Vic Blocks 3D Structure:

The blocks in this software contain simple geometric shapes drawn to represent Victaulic couplings, fittings and valves. There are three main layers that make up the blocks: Layer "0", Layer "CL" and Layer "Nodes". These can all be turned off and on inside of AutoCAD at the user's discretion by using the Layer Manager. Some components have more than three layers. Rigid couplings contain a "CPLG-FILL" layer that can be shown to differentiate between a rigid and flexible coupling. An example of a rigid coupling and the two display modes is shown below (Fig. 13). The Insertion Point of the block is not always a visible attribute, but it can be "Snapped" to if needed. Snapping refers to AutoCAD's OSNAP menu. The blocks provided in this software contain Nodes for ease of fitting placement and pipe routing. The fittings and valves have nodes on their endpoints, where as couplings contain two (2) nodes that represent the gap takeout required (some couplings do not contain a gap. In these cases there is only one (1) node). Node size and appearance can be controlled by way of the AutoCAD PDSIZE and PDMODE commands. PDMODE should be set to (3) and PDSIZE set at (1). By using these nodes, along with AutoCAD dimensioning within a piping system layout, accurate pipe cut lengths can be determined for use in a bill of material. For more information on PDSIZE and PDMODE, please see the AutoCAD **Help** pull down menu or the **?** icon.

CPLG_FILL OFF   CPLG_FILL ON
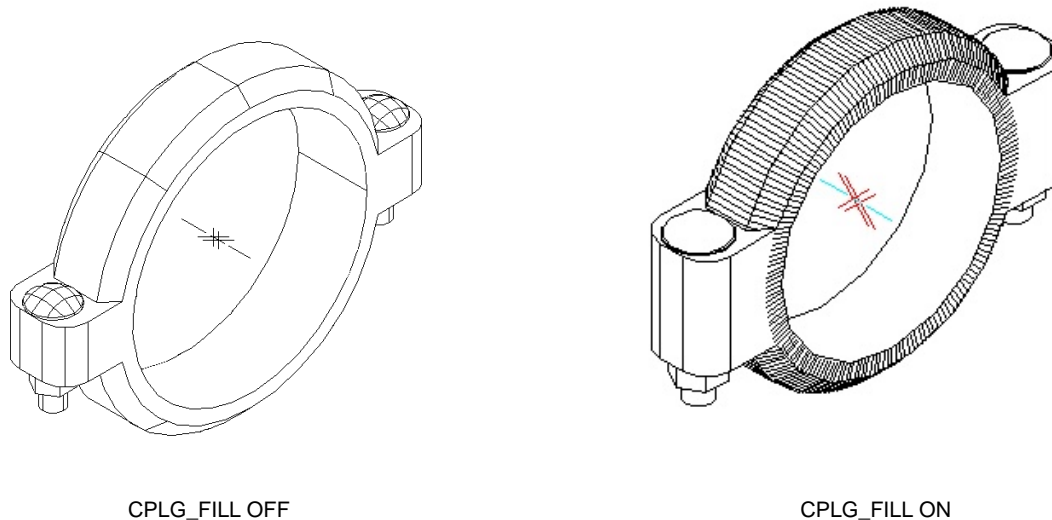
Fig. 13
Isometric view of a Victaulic coupling with PDMODE set to 3

Vic Blocks 3D
Reference Sheets

Sample Drawing:

Vic Blocks 3D was used to draw the Victaulic components in the drawing shown below.

Mechanical T's & Crosses

Mechanical T's and Crosses are designed to be placed in halves. This allows multiple combinations to be created by the end user, yet does not take up an excessive amount of file space. You will see in the following illustration that using three (3) blocks from Vic Blocks 2D five (5) coupling combinations have been created. The insertion points are at the centerline of the pipe. To place a mechanical coupling simply select one of the halves desired, place it in the layout and select the next half and place that at the node of the previously inserted coupling half. There are three styles shown, a threaded outlet, a grooved outlet and a base.

MECHOUT_04.0X01.25 (100X32)_920NT_S

INSERTION POINT

MECHOUT_04.0X01.25 (100X32)_920NG_S

INSERTION POINT

MECHOUTBASE_04.0 (100)_920N_S
4" OUTLET BASE

INSERTION POINT

THREADED OUTLET

GROOVED OUTLET

GROOVED X GROOVED OUTLET

GROOVED X THREADED OUTLET

THREADED X THREADED OUTLET
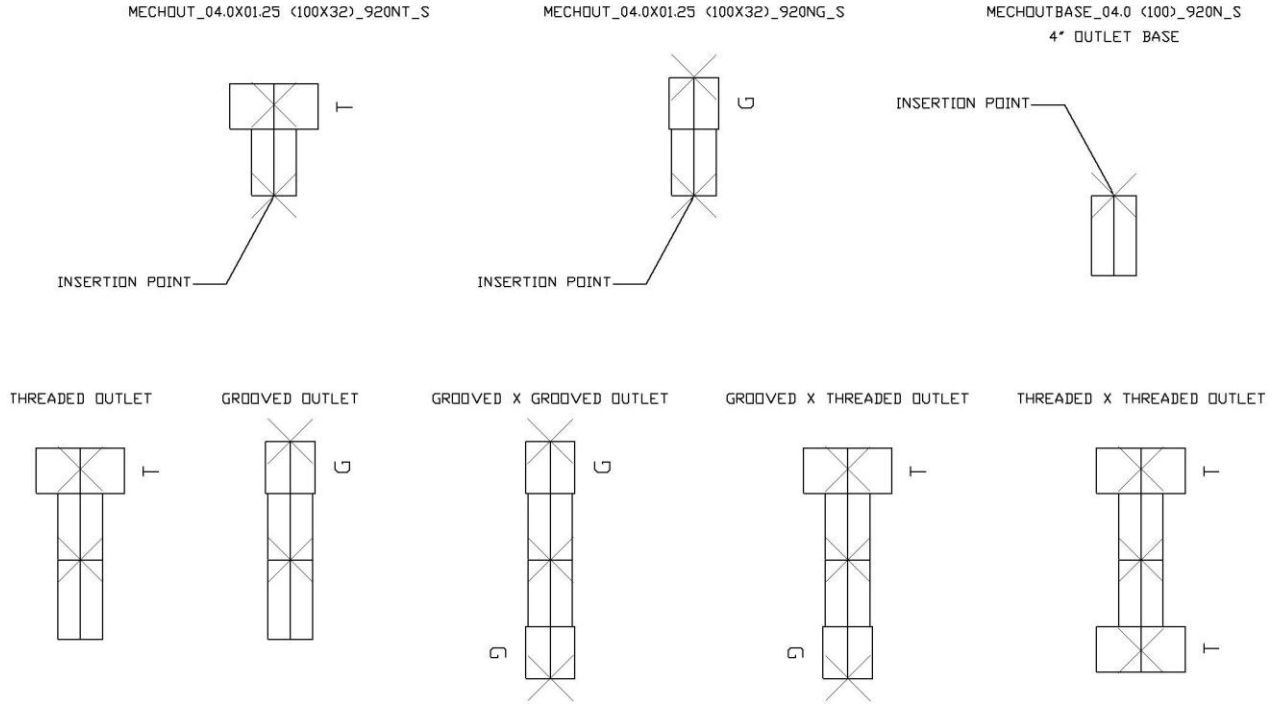
The following sheets show <u>select</u> couplings and fittings, their respective views and insertion points. While these are shown, it is not representative of the complete Vic Blocks 3D catalog and should only be used for reference. Please see your Vic Blocks 3D CD for the complete catalog. This will serve as a reference to the available Victaulic main line piping components included in this package and their orientation with reference to the UCS.
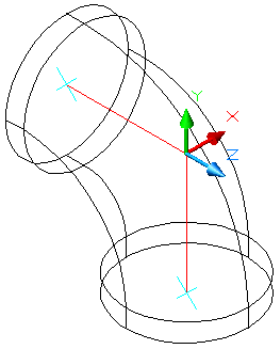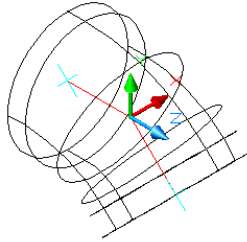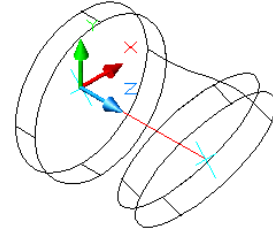
45 Degree Elbow

22 ½ Degree Gooseneck Elbow

90 Degree Elbow

11 ¼ Degree Elbow

Cap
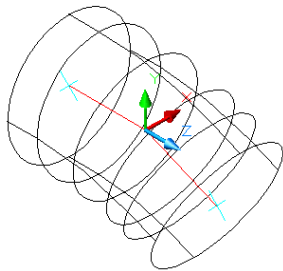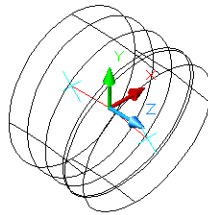
22 ½ Degree Elbow
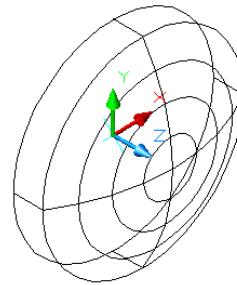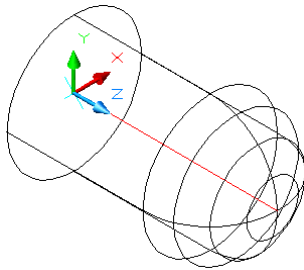
Bull Plug
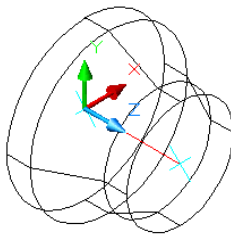
Concentric Reducer
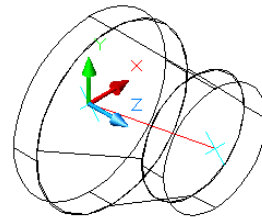
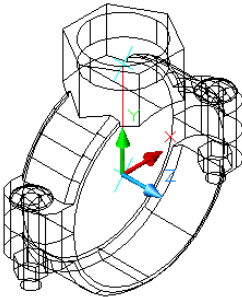Eccentric Reducer
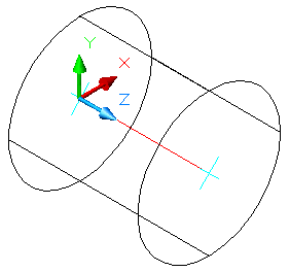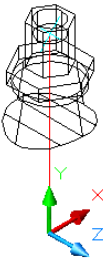
Nipple

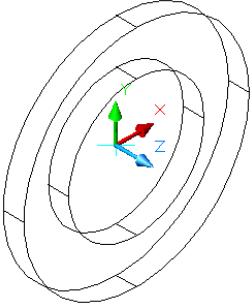Tee
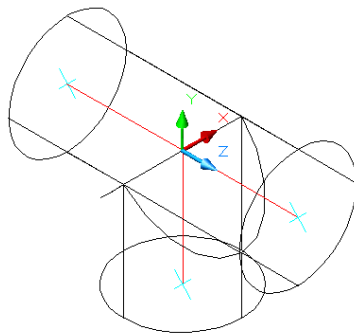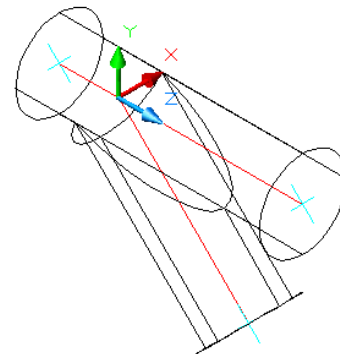
Lateral

VigBlocks 3D
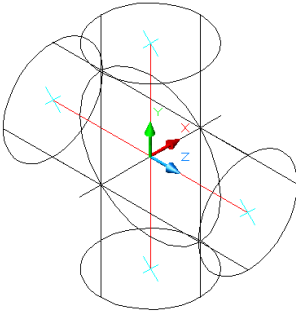
Cross
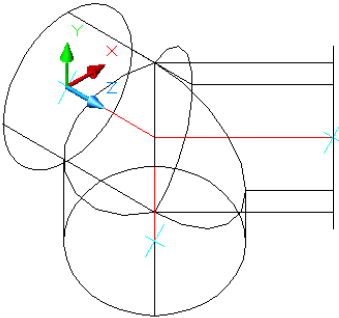
Wye
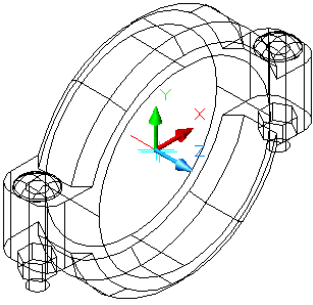
Coupling
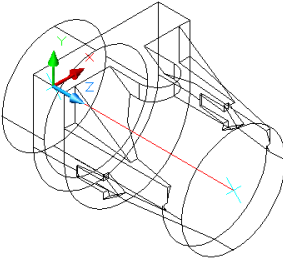
Check Valve
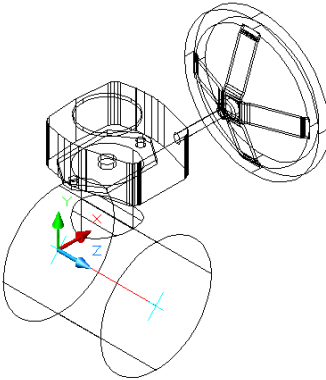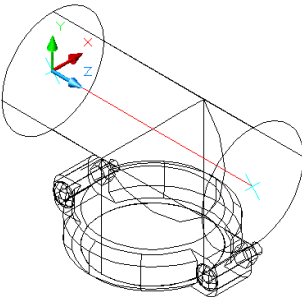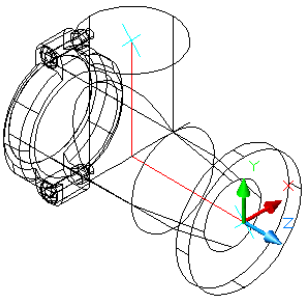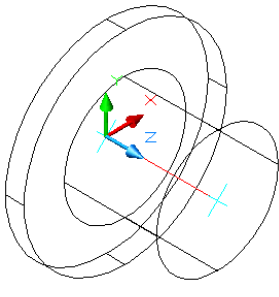
Valve
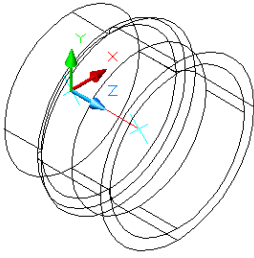
Female Threaded Adapter

Mechanical Tee

Vic-Let

Flange Adapter

Strainer

Suction Diffuser

Flange Adapter Nipple

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