5.2 Creating Dynamic Block Definitions

You can create new dynamic block definitions from scratch or modify an existing block to make it a dynamic block. Either way, dynamic blocks are created in the Block Editor. **I**t is here that you add actions and parameters that turn a conventional block into a dynamic block. When you start the *Home* tab> Block panel or double-click on an existing dynamic block, the Edit Definition dialog box opens, as shown in Figure 5-14. If you right-click on an existing dynamic block and select **Block Editor**, it will open the block directly in the Block Editor.

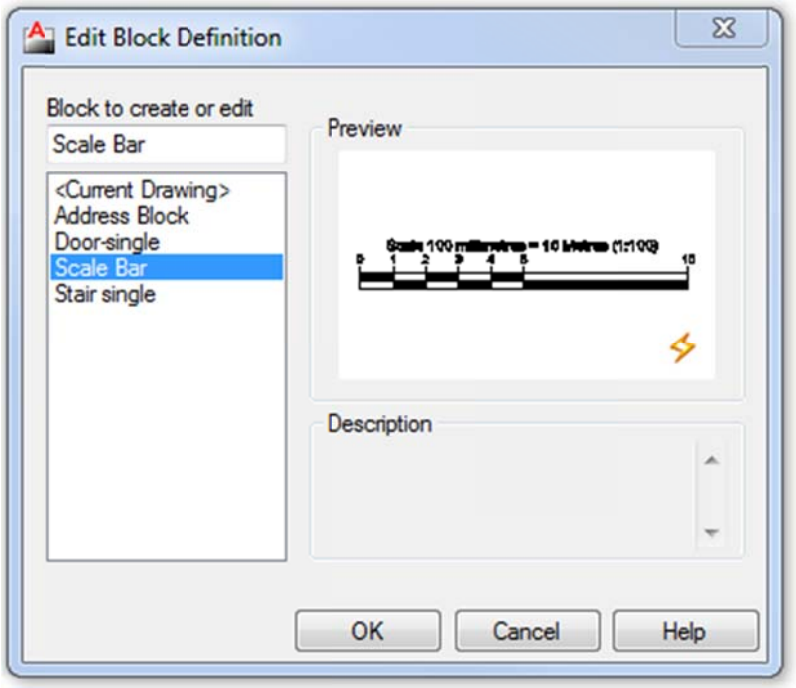


Figure 5-14

Block Editor

Ribbon:	***Home* tab>Block panel** or ***Insert* tab>Block Panel**
Command prompt:	**bedit**

How to: Creating a Dynamic Block from Scratch

1. Start the **Block Editor** command.

2. In the Edit Block Definition dialog box, type a name for the new block.

3. Click OK. The *Block Editor* contextual tab opens without any objects.

4. Draw objects for the block using the regular drawing and editing tools.

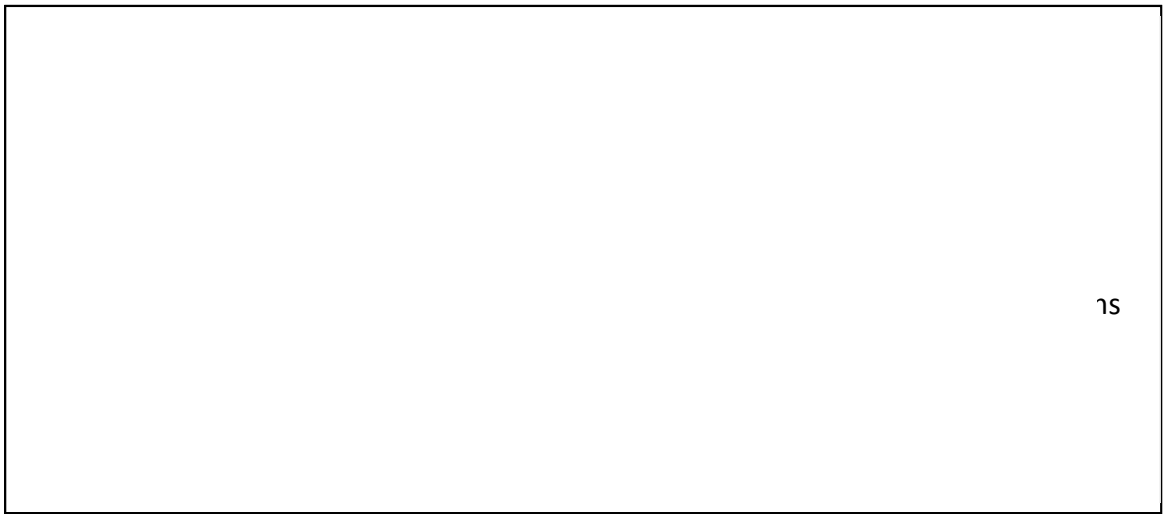
5. Add parameters and actions as needed.

6. Click (Close Block Editor) to create the block.

- Alternatively, you can click (Create) in the *Home* tab> Block panel or *Insert* tab> Block panel and select objects you have already drawn. In the Block definition dialog box, select the option **Open in block editor** option. When you click OK the block objects are opened in the *Block Editor* contextual tab, in which you can add the dynamic parameters and actions.

Turning a Conventional Block into a Dynamic Block

To modify an existing block, double-click on the block, which opens the Edit Block Definition dialog box. Select the block to edit from the list and click OK. This will bring you into the *Block Editor* mode, where you can add the dynamic parameters and actions.



5.3 Dynamic Block Authoring Tools

In the *Block Editor* contextual tab, you can add *parameters* and *actions* to objects in the block to make the block dynamic. The *Block Editor* contextual tab is shown in Figure 5-15.

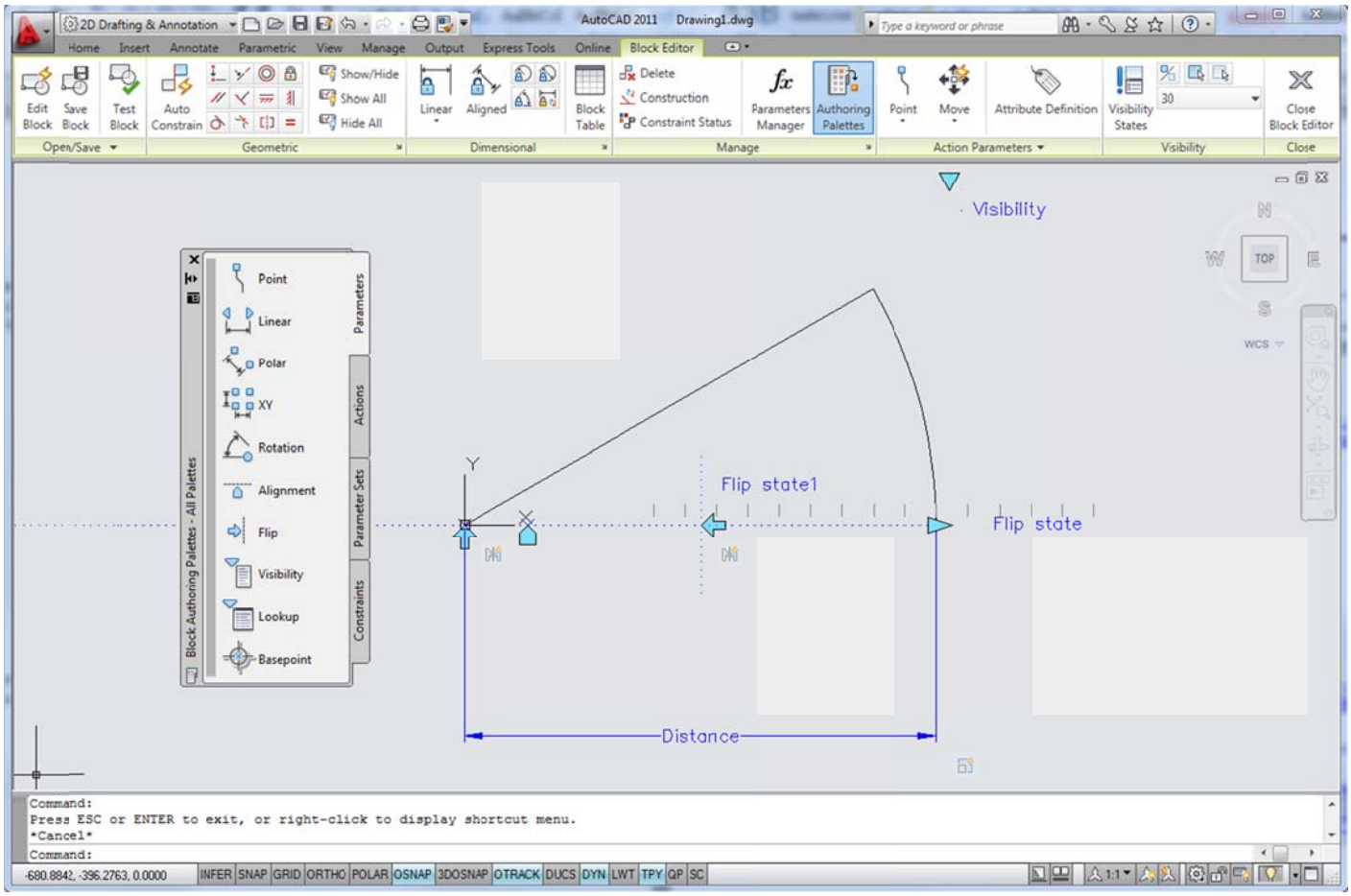


Figure 5-15

Think of *parameters* as dimensions that control the block geometry. For example, in a bolt block, you would add a linear parameter to define the length to be able to adjust the length of the bolt.

Actions are added to parameters so that you can modify the parameter in the completed block. In the bolt example, the linear parameter specifies a dimension you want to control. You add a stretch action to that parameter so that you are able to stretch the bolt to the required length.

- At least one parameter must be specified in a dynamic block. In most cases it will have both a parameter and an action associated with the parameter.

- You can also use regular drawing and editing tools in the *Block Editor* contextual tab, to modify the block geometry as needed, including geometrical and dimensional constraints.

Block Editor Contextual Tab

The *Block Editor* contextual tab, as shown in Figure 5-16, contains tools for creating blocks, saving blocks, adding constraints, and adding various parameters and actions.

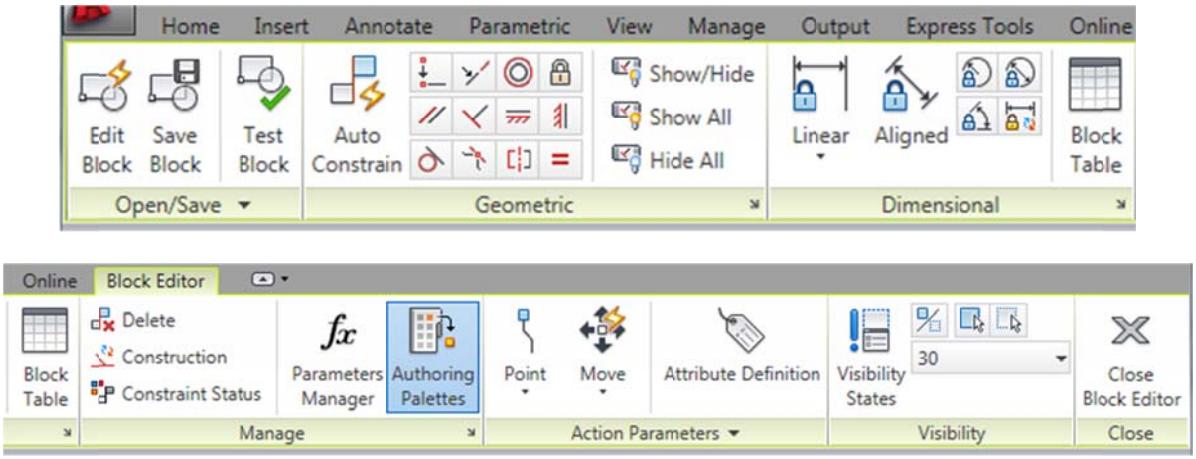


Figure -16

The panels in the *Block Editor* contextual tab, as shown in Figure 5-16, contains tools for creating and saving blocks, adding constraints, adding various parameters and actions.

- **Open/Save panel:** Includes commands to open a new or existing block, save the current block, or test the actions of the current block.
- **Geometric & Dimensional panels:** Include commands to apply geometrical or dimensional constraints to the current block (the same method used in a standard drawing).
- **Manage panel:** Includes visibility commands to apply geometrical or dimensional constraints to the current block (the same methods used in a standard drawing).
- **Action Parameters panel:** Enables you to add parameters and actions to the dynamic block.
- Only one block can be open in the *Block Editor* contextual tab at a time.
- Other tools in the *Block Editor* contextual tab control the Visibility Parameters.
- The Block Authoring Palettes for adding parameters and actions is open by default in the *Block Editor* contextual tab.

The Block Editor Settings dialog box shown in Figure 5-17, enables you to control all of the settings (including application of colours to objects) for the Block Editor environment. To open the Block Editor Settings dialog box, click the arrow in the bottom right corner of the manage panel in the *Block Editor* contextual tab.

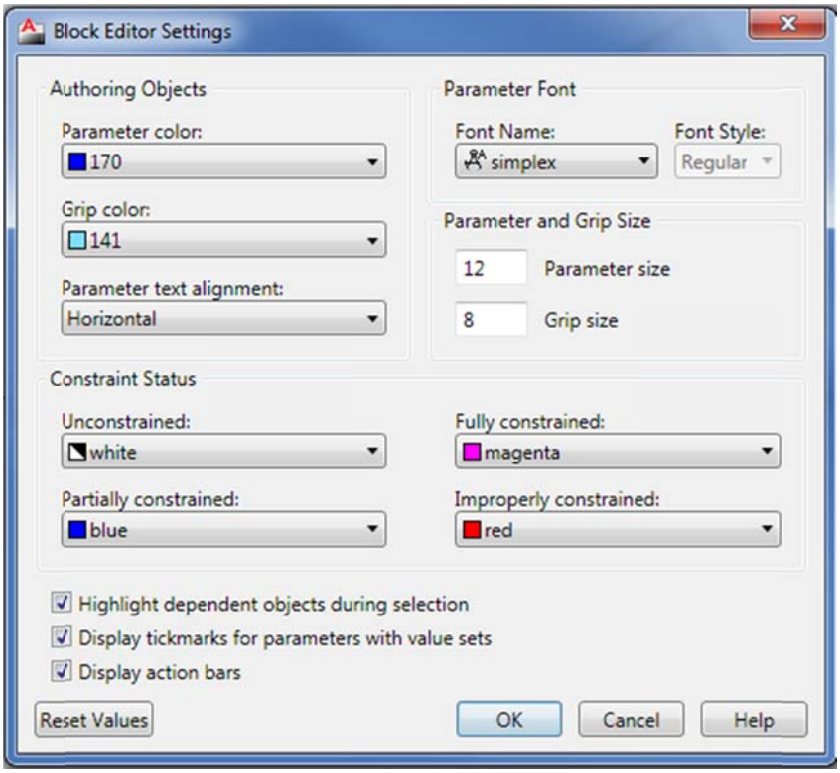


Figure 5-17

Parameters

Parameters are the first addition you make to dynamic blocks. They define aspects of the geometry that you want to control with actions. The parameters palette is shown in Figure 5-18.

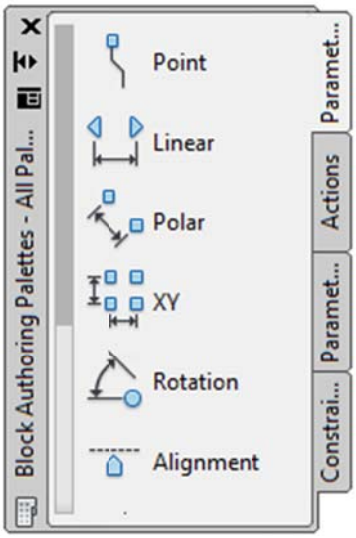


Figure 5-18

	**Point**	Displays an X, Y coordinate position in the drawing.
	**Linear Parameter**	Displays the distance between two points. Only the distance, not the angle, can be changed.
	**Polar Parameter**	Displays the distance between two points and an angle value. Both the distance and the angle can be changed.
	**XY Parameter**	Displays a pair of dimensions, horizontal and vertical, from the specified base point.
	**Rotation Parameter**	Defines an **angle** option.
	**Alignment Parameter**	Forces the entire block to rotate at an angle defined by another object in the drawing. This parameter does not need an action specified with it.
	**Flip Parameter**	Describes a line across which the block or selected objects can be mirrored. You also need to associate a flip action with it.
	**Visibility Parameter**	Controls the visibility of objects in the block. It will automatically create a list of the visibility states that you define for the block. This parameter does not need an action specified with it.
	**Lookup Parameter**	Creates a list of options stored in a table that can be selected by you. Typically this can hold various sizes related to other parameters and actions.
	**Basepoint Parameter**	Creates a base point that is relative to the block geometry. It can be included in an action selection set but cannot be associated with an action.