Object Selection Filters

The **FILTER** command allows you to create a selection set according to a specific list of property criteria. You can create filter lists at any time, and filter lists are selectable at any Select objects: prompt. Access the **FILTER** command to display the **Object Selection Filters** dialog box, shown in **Figure 13A-1**. The list box displays current filter list data. Use the **Select Filter** area to specify filter criteria. Use the **Named Filters** area to save filters for future use.

Entering Filter Data

Use the **Select Filter** area to enter filter data. Select an option from the drop-down list to enable specific filter characteristics. **Figure 13A-2** shows the options available to filter using the **Arc**, **Arc Center**, or **Arc Radius** option. Notice that the settings are specific to the geometry of the selected filter.

The **Select…** button is enabled for many filter settings, including layer, linetype, and color. Pick the **Select…** button to display the appropriate dialog box. For example, if you select the **Color** filter, pick the **Select…** button to display the **Select Color** dialog box. Once you select a filter and specify appropriate values, pick the **Add to List:** button to add the filter to the filter list at the top of the dialog box.

Figure 13A-1.
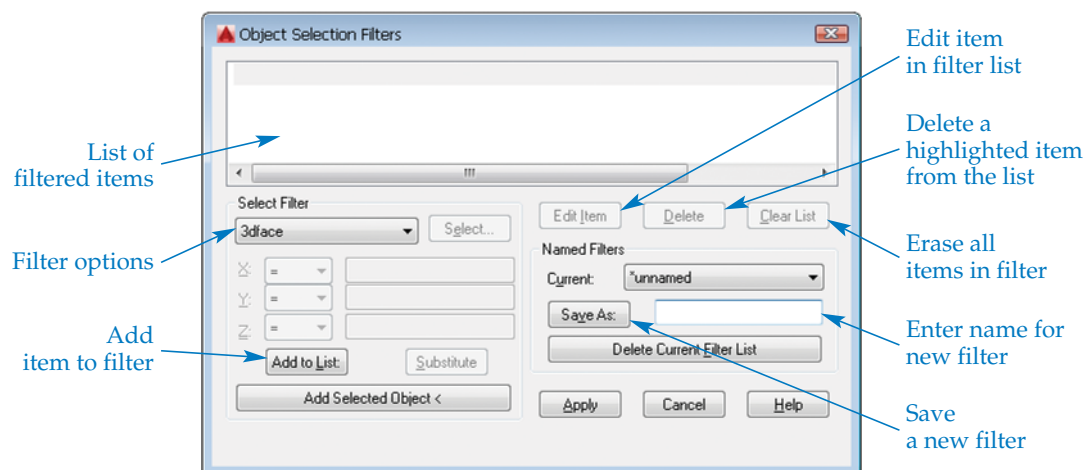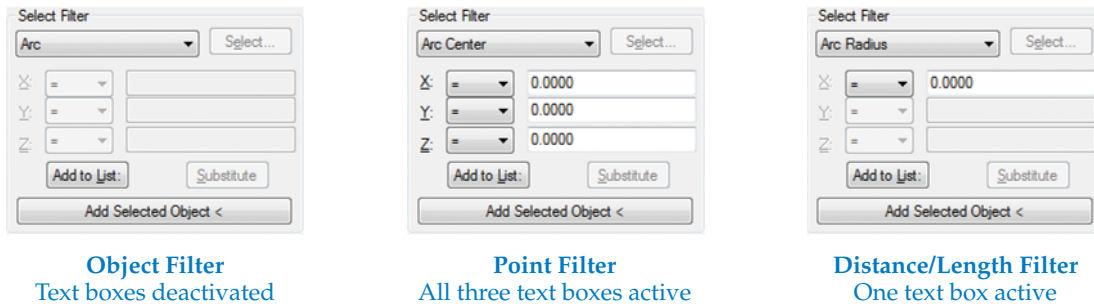The **Object Selection Filters** dialog box.

List of filtered items

Filter options

Add item to filter

Edit item in filter list

Delete a highlighted item from the list

Erase all items in filter

Enter name for new filter

Save a new filter

Figure 13A-2.
Examples of filter items with the **X:**, **Y:**, and **Z:** text boxes enabled as required.

| **Object Filter** | **Point Filter** | **Distance/Length Filter** |
| Text boxes deactivated | All three text boxes active | One text box active |

To use an existing object as a basis for a filter list, pick the **Add Selected Object** button. The **Object Selection Filters** dialog box temporarily closes, allowing you to select an object. The dialog box reappears after you make the selection. The filter list now includes information about the selected object.

To remove an item from the filter list, highlight the item and pick the **Delete** button. To clear the entire list and start over, pick the **Clear List** button. To edit an item in the list, highlight the item and pick the **Edit Item** button.

Basic Filter Data Applications

To introduce applications of selection filters, the following example creates a basic filter list that selects only circle objects. Access the **FILTER** command to display the **Object Selection Filters** dialog box. In the **Select Filter** area, pick the drop-down list to see the selection filter options. Select **Circle** from the list and then pick the **Add to List:** button to add Object = Circle to the filter list. The filter name indicates that only circle objects will be selected. See **Figure 13A-3**.

To use the selection filter, pick the **Apply** button. The dialog box closes, and the Applying filter to selection prompt tells you that the filter is active. The Select objects: prompt follows, allowing you to select objects. **Figure 13A-4** shows a selection window around a group of lines, arcs, and circles. The current filter selects only circle objects. All other object types are filtered out of the selection. AutoCAD reports the number of objects found. In this example, 5 found appears, followed by the Select objects: prompt. To exit the filtered selection, press [Enter] at the Select objects: prompt. The message Exiting filtered selection appears, and the selected objects are displayed with grips.

Figure 13A-3.
An example of creating a filter to select only circles.

Selection set criteria

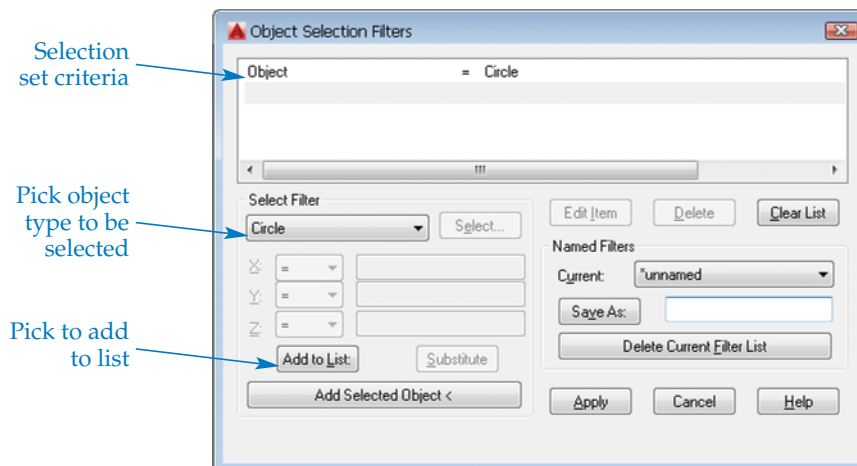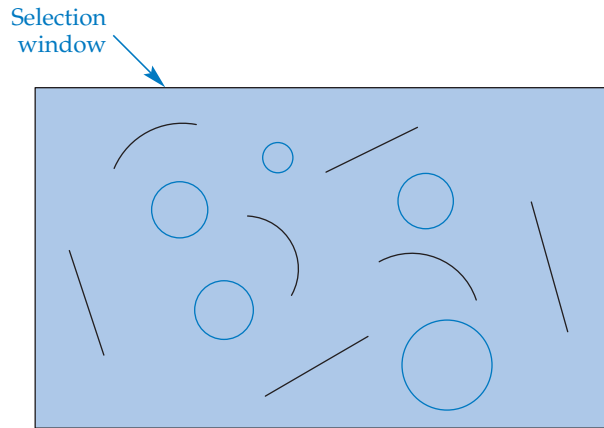Pick object type to be selected

Pick to add to list

Figure 13A-4.
All objects are filtered out except for the circles.

You can expand filter lists to select only objects that have specific properties. The next example creates a filter list that selects only line objects that have a CENTER line-type. Access the **FILTER** command to display the **Object Selection Filters** dialog box. Pick the **Clear List** button to clear the list box and start a new filter list. In the **Select Filter** area, select **Line** from the drop-down list. Then pick the **Add to List:** button to add Object = Line to the filter list. The filter name indicates that only line objects will be selected. Select **Linetype** in the drop-down list and pick the **Select…** button to display the **Select Linetype(s)** dialog box. Select the CENTER linetype and pick the **OK** button. Pick the **Add to List:** button to create the filter shown in **Figure 13A-5**.

By adding more filters to the filter list, you can make a filter extremely specific when needed. You can use filters for a specific location or a specific text string to help select items in very large, complex drawings.

Figure 13A-5.
Creating a filter to select only line objects with the CENTER linetype.
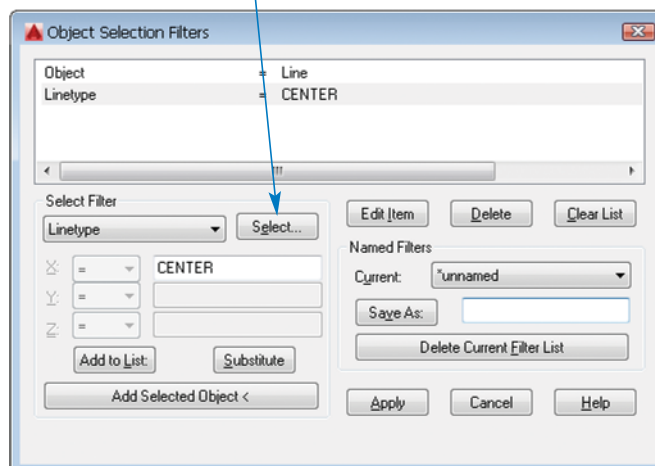
Working with Relative Operators

Relative operator relationships include equality, inequality, greater than, less than, and combinations such as "greater than or equal to" and "less than or equal to." A relative operator flyout precedes each text box in the **Select Filter** area. The default operator is "equal to." Select an appropriate relative operator for each data field.

For example, to use a relative operator to select all arcs that have a radius of 2.5 or greater, set the filter specification to **Arc Radius** and enter 2.5 in the text box. Then select the "greater than or equal to" symbol (>=) in the relative operator flyout. See **Figure 13A-6**. The chart in **Figure 13A-7** shows the relative operator functions.

Editing the Filter List

To correct an accidental entry or incorrect filter specification, highlight the item in the filter list and pick the **Edit Item** button. The values for the selected specification appear in the **Select Filter** area, allowing you to make changes. Change the values as necessary. Pick the **Substitute** button when you are finished. The highlighted item is substituted for the original filter specification. Be sure to pick **Substitute** and not **Add to List:**; otherwise, you will create two different values for the same filter specification in the filter list.

To remove an item from the filter list, highlight it and select the **Delete** button. You can only delete one filter specification at a time using this method. To remove all of the current specifications and start over, pick the **Clear List** button.

Figure 13A-6.
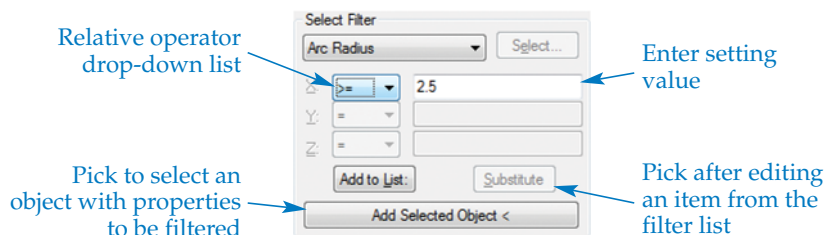Filtering using the greater than or equal to relative operator.

Figure 13A-7.
Relative operators available for filtering.

Symbol	Meaning
=	Equal to
!=	Not equal to
<	Less than
<=	Less than or equal to
>	Greater than
>=	Greater than or equal to
*	Equal to any value

Creating Named Filters

Complex filter lists can be time-consuming to develop. AutoCAD provides the option of naming and saving filter lists for future use. The **Named Filters** area of the **Object Selection Filters** dialog box allows you to create and manage named filters. After you build and test the filter list, pick in the text box to the right of the **Save As:** button to name and save the list. Type a descriptive name up to 18 characters long in the text box. Pick the **Save As:** button to save the named filter. Named filters are stored in a file named filter.nfl and are available until deleted.

To delete a saved filter, make the filter current by picking its name in the **Current:** drop-down list. Then pick the **Delete Current Filter List** button.

Using Filters While Drawing

Filters can increase productivity, but you must learn to recognize situations when filters are appropriate. For example, use a filter to change all of the text inside the flow-chart shown in **Figure 13A-8** to a new layer with a different color for plotting. Access the **FILTER** command to open the **Object Selection Filters** dialog box. Pick the **Add Selected Object** button to return to the drawing and pick a text element in any one of the boxes. The dialog box returns and displays the characteristics of the selected text. Highlight characteristics to exclude, such as **Text Position**, and pick the **Delete** button. See **Figure 13A-9**. The **Text Position** filter is unnecessary because it limits the selection to text in that exact location.

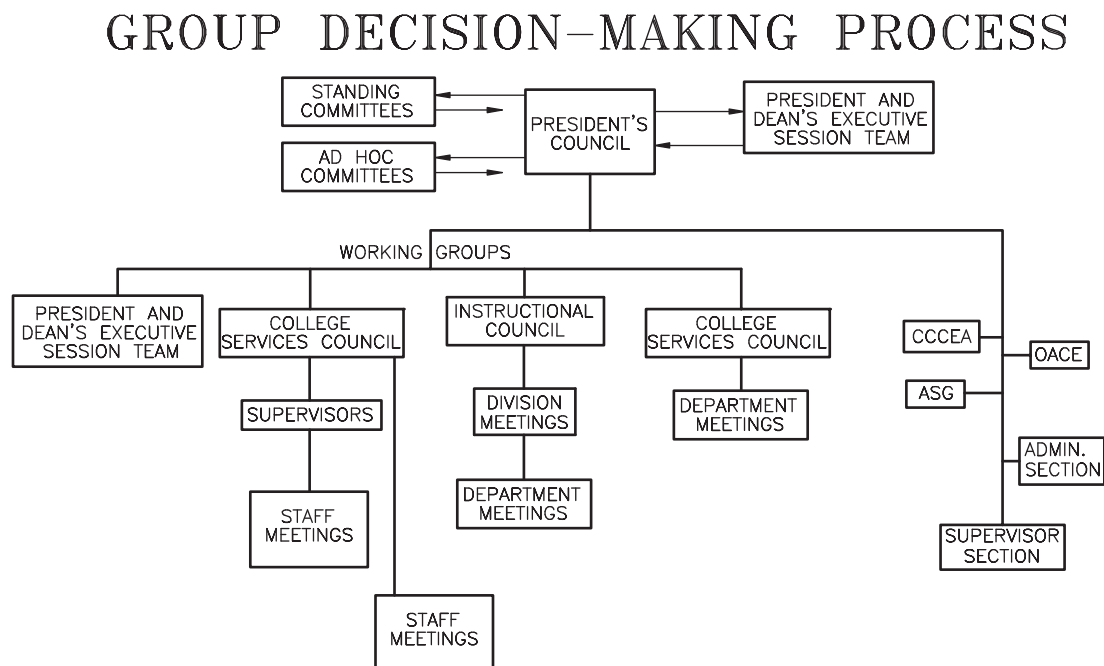**Figure 13A-8.**
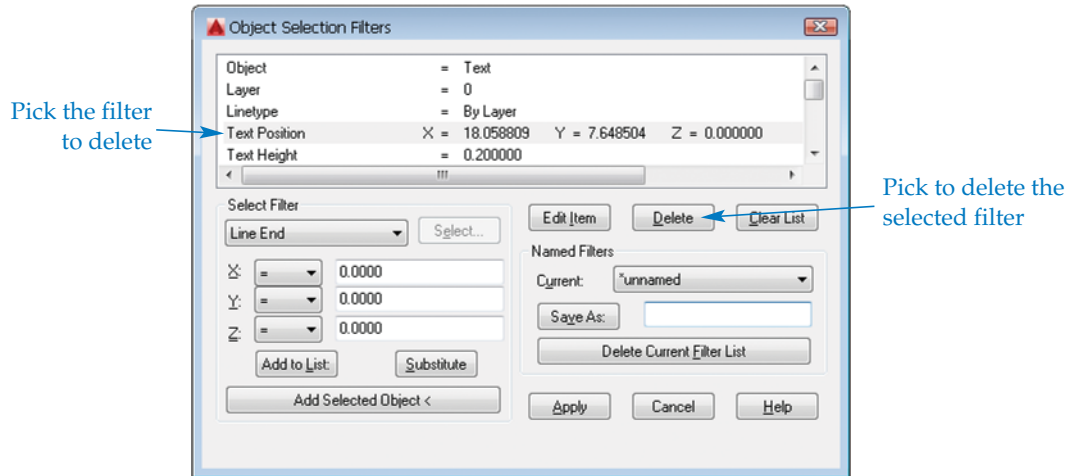Original flowchart requiring modification.

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Figure 13A-9.
Deleting selection filters that are too specific.

Pick the filter to delete

Pick to delete the selected filter

Enter a filter name, such as TEXT, in the **Save As:** text box and pick the **Save As:** button. TEXT becomes the current filter name. Pick the **Apply** button to return to the drawing and select objects. Use the **All** option to select all objects in the drawing. The text within the flowchart becomes highlighted. Press [Enter] to exit. All text is selected and displays grips. Finally, use the **Properties** palette or another editing method to modify the selected text. See **Figure 13A-10**.

Figure 13A-10.
Revised flowchart. All text in the flowchart now appears in color.

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