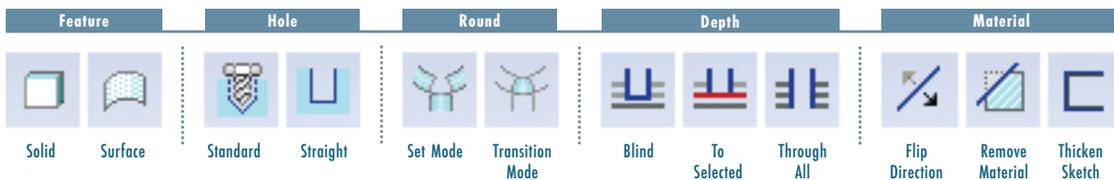
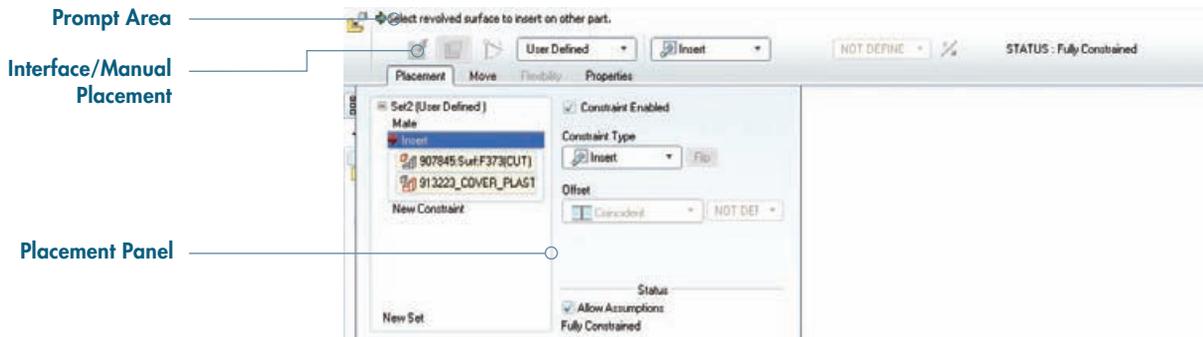


### Common Dashboard Controls



### Dashboard Example: Component Placement



# MAKING SELECTIONS

## ASSEMBLY MODE SELECTIONS

### System Color Assignments

Cyan		<b>Preselection Highlight</b> Item will be added to or removed from the set of selected items
Red		<b>Selected Geometry</b> Items currently selected
Yellow		<b>Preview Geometry</b> Results of the current operation when complete

### Making Selections

#### Mouse Controls

Highlight Geometry	»	 Over Geometry
Query to Next Item	»	 Until Highlighted
Select Highlighted Geometry	»	
Add or Remove Items from Selection	»	<b>CTRL</b> + 
Construct Chains or Surface Sets	»	<b>SHIFT</b> + 
Clear Selection	»	 On Background

## DRAWING MODE SELECTIONS

### Default Selection

- Items relevant to the current tab are selectable
- Example: With the Layout tab active, annotations cannot be selected

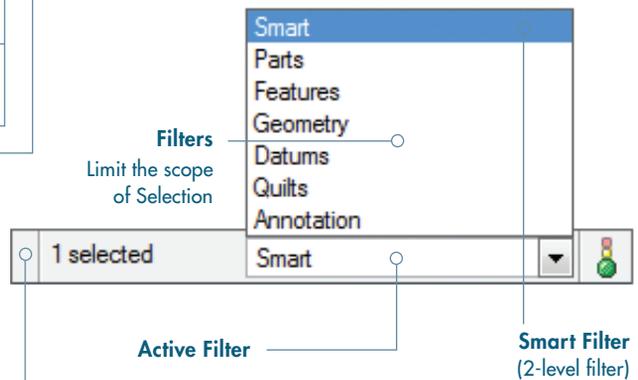


### Alternate Selection

- ALT + Left-click (select any entities in the graphics window)
- Example: With Layout tab active, use ALT + Left-click to select annotations



## USING FILTERS



**Filters**  
Limit the scope of Selection

**Active Filter**

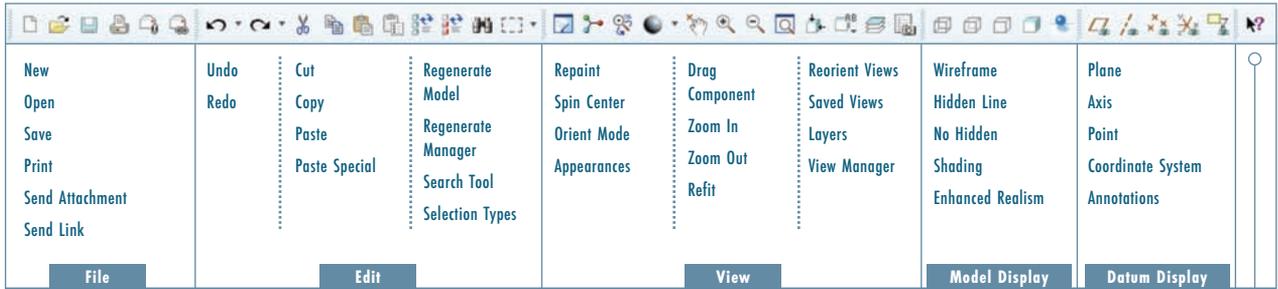
**Smart Filter (2-level filter)**

**TIP:**  
Double-click to view items in Selection list

**EXAMPLE:** Select a Feature first, then select Geometry (Surface/Edge/Vertex) from the Feature

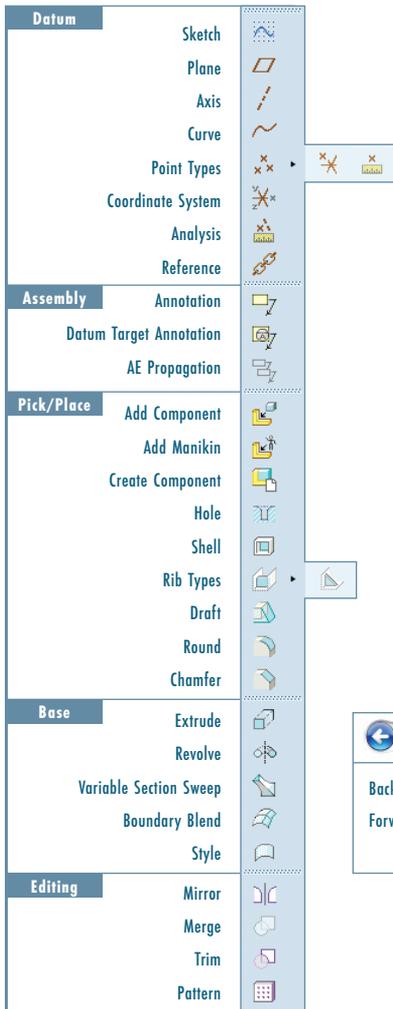
# Pro/ENGINEER® ICON GUIDE

## Main Toolbar

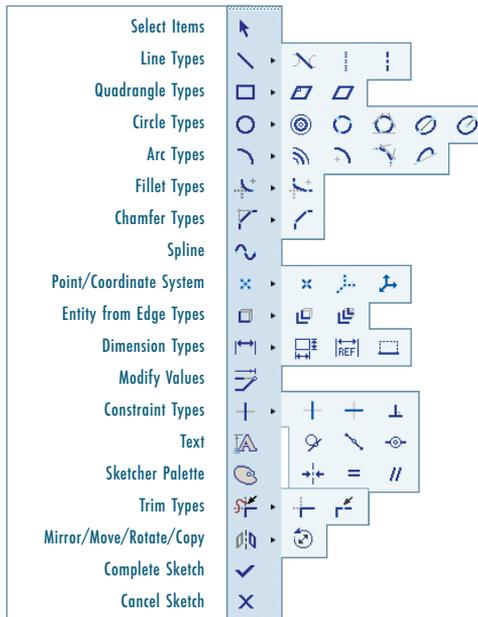


Context-Sensitive Help

## Feature Creation Toolbar



## Sketcher Toolbar



## Keyboard Shortcuts

Regenerate	CTRL+G
New File	CTRL+N
Open File	CTRL+O
Save File	CTRL+S
Find	CTRL+F
Delete	DEL
Copy	CTRL+C
Paste	CTRL+V
Undo	CTRL+Z
Redo	CTRL+Y
Repaint	CTRL+R
Standard View	CTRL+D

Copy/Paste Shortcuts are also available in Assembly Mode.

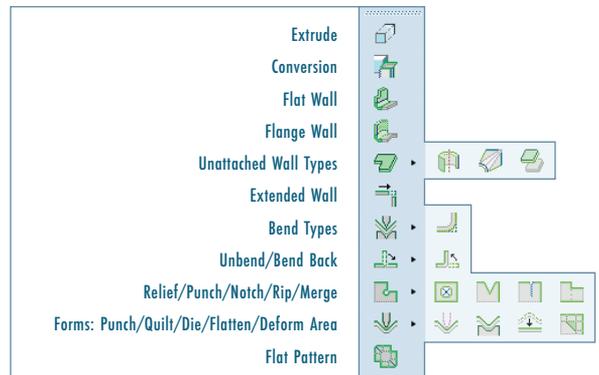
## Browser Controls



## Navigator Tabs



## Sheetmetal Toolbar



# ADVANCED SELECTION: Chain and Surface Set Construction

## DEFINITIONS

### General Definitions

#### Chain

A collection of adjacent edges and curves that share common endpoints. Chains can be open-ended or closed-loop, but they are always defined by two ends.

#### Surface Set

A collection of surface patches from solids or quilts. The patches do not need to be adjacent.

### Methods of Construction

#### Individual

Constructed by selecting individual entities (edges, curves, or surface patches) one at a time. This is also called the One-by-One method.

#### Rule-Based

Constructed by first selecting an anchor entity (edge, curve, or surface patch), and then automatically selecting its neighbors (a range of additional edges, curves, or surface patches) based on a rule. This is also called the Anchor/Neighbor method.

## CONSTRUCTING CHAINS

### Multiple Chains

1. Construct initial chain
2. Hold CTRL
3. Select an edge for new chain
4. Release CTRL down
5. Hold down SHIFT
6. Complete new chain from selected edge

## CONSTRUCTING CHAINS

### Individual Chains

#### One-by-One

To select adjacent edges one at a time along a continuous path:

1. Select an edge
2. Hold down SHIFT
3. Select adjacent edges
4. Release SHIFT

### Rule-Based Chains

#### Tangent

To select all the edges that are tangent to an anchor edge:

1. Select an edge
2. Hold down SHIFT
3. Highlight Tangent chain (Query may be required)
4. Select Tangent chain
5. Release SHIFT

#### Boundary

To select the outermost boundary edges of a quilt:

1. Select a one-sided edge of a quilt
2. Hold down SHIFT
3. Highlight Boundary chain (Query may be required)
4. Select Boundary chain
5. Release SHIFT

#### Surface Loop

To select a loop of edges on a surface patch:

1. Select an edge
2. Hold down SHIFT
3. Highlight Surface chain (Query may be required)
4. Select Surface loop
5. Release SHIFT

## CONSTRUCTING SURFACE SETS

### Individual Surface Sets

#### Single Surfaces

To select multiple surface patches from solids or quilts one at a time:

1. Select a surface patch
2. Hold down CTRL
3. Select additional patches (Query may be required)
4. Release CTRL

### Rule-Based Surface Sets

#### Solid Surfaces

To select all the surface patches of solid geometry in a model:

1. Select a surface patch on solid geometry
2. Right-click and select Solid Surfaces

#### Quilt Surfaces

To select all the surface patches of a quilt:

1. Select a surface feature
2. Select the corresponding quilt

#### Loop Surfaces

To select all the surface patches that are adjacent to the edges of a surface patch:

1. Select a surface patch
2. Hold down SHIFT
3. Place the pointer over an edge of the patch to highlight the Loop Surfaces
4. Select the Loop Surfaces (the initial surface patch is de-selected)
5. Release SHIFT

### Excluding Surface Patches from Surface Sets

To exclude surface patches during or after construction of a surface set:

1. Construct a surface set
2. Hold down CTRL
3. Highlight a patch from the surface set
4. Select the patch to de-select it
5. Release CTRL

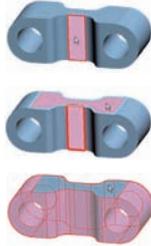
## CONSTRUCTING SURFACE SETS

### Rule-Based Surface Sets

#### Seed and Boundary Surfaces

To select all surface patches, from a Seed surface patch up to a set of Boundary surface patches:

1. Select the Seed surface patch
2. Hold down SHIFT
3. Select one or more surface patches to be used as boundaries
4. Release SHIFT (all surfaces from the Seed up to the Boundaries are selected)



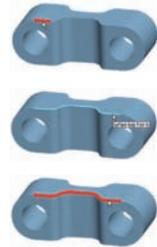
## CONSTRUCTING CHAINS

### Rule-Based Chains

#### From-To

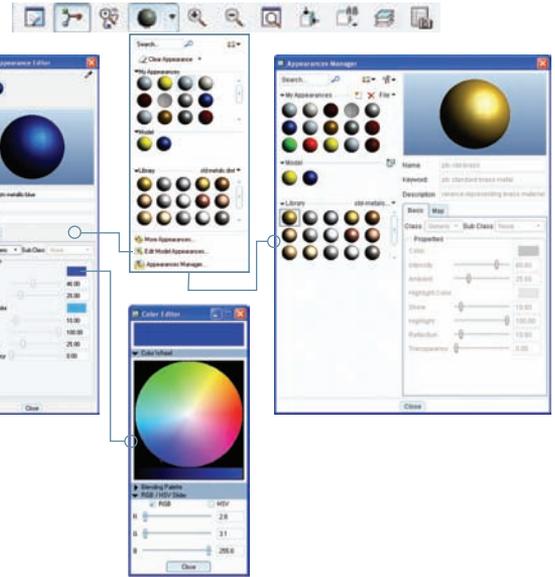
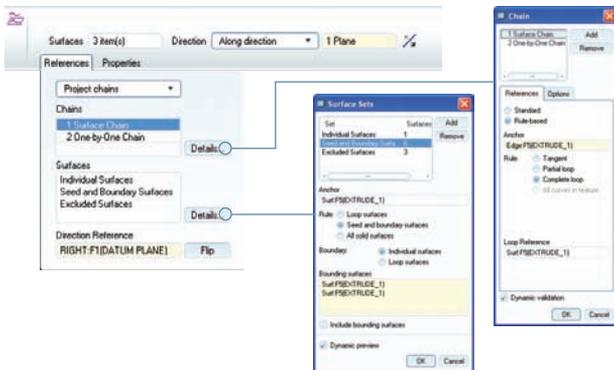
To select a range of edges from a surface patch or a quilt:

1. Select the From edge
2. Hold down SHIFT
3. Query to highlight the desired From-To chain
4. Select From-To chain
5. Release SHIFT



## CONSTRUCTING CHAINS AND SURFACE SETS USING DIALOG BOXES

To explicitly construct and edit Chains and Surface Sets, click Details next to a collector:



## CHANGING MODEL APPEARANCE

### Assign Appearances

#### Object-Action

1. Select Surface/Quilt/Intent Surface/Part
2. Select Appearances button pull-down
3. Select/create desired appearance

#### Action-Object

1. Select Appearance button pull-down
2. Select/create desired appearance
3. Select Surface/Quilt/Intent Surface/Part

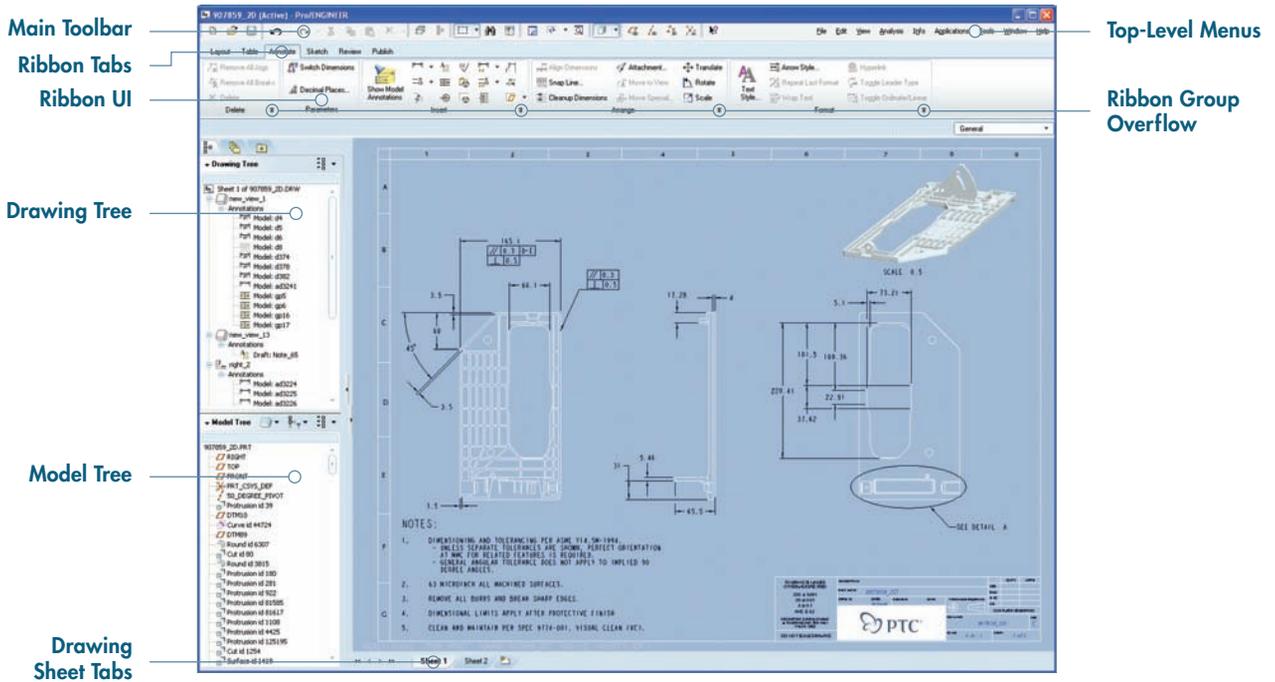
### Edit Appearances in the Current Model

1. Select Edit Model Appearances from the Appearance pull-down menu
2. Adjust appearance attributes using draggers
3. Select Map tab to map images and textures
  -  To edit texture placement, select surface using color-picker

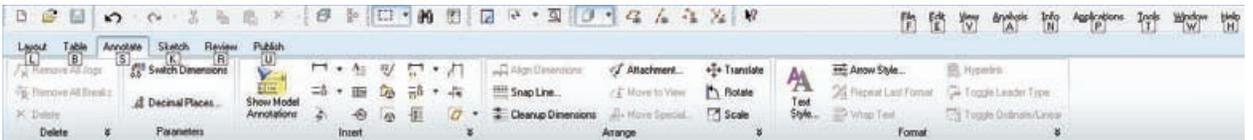
### Manage Appearances

- Build a custom library of appearances
- Include pre-defined plastics or metals library appearances
- Edit/create/delete appearances in the custom library palette
- Define/save/retrieve custom appearance (\*.dmt) files

# DRAWING MODE



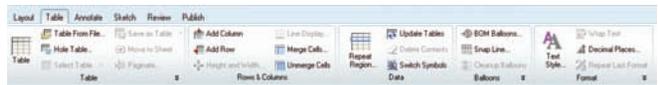
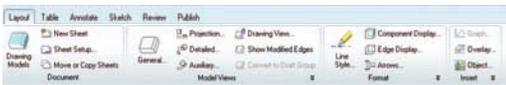
## KEY TIPS



Press ALT key to display Key Tips for Ribbon Tabs & Top Menu Items  
Key Tips are displayed for the selected tab (see tab at right)



## RIBBON TABS



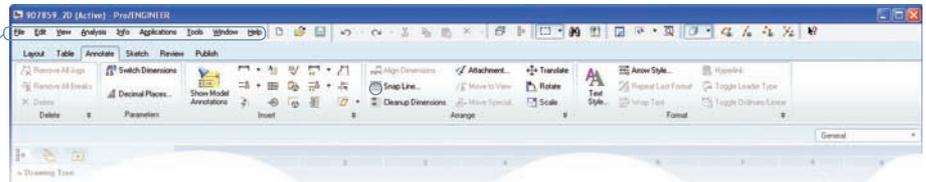
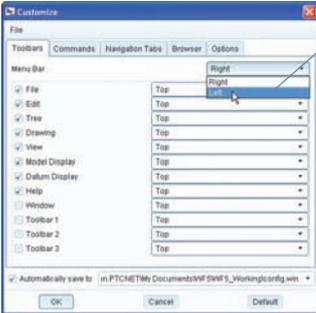
## CUSTOMIZING THE RIBBON



### Group Collapse Priority

To exchange priority between two groups, drag the number from one group and drop it onto another group. Lower numbers indicate higher priority (i.e. groups that will be collapsed last).

### Arrange Ribbon Group Overflow Area



The location of the Menu Bar and Toolbars can be customized

## Customizing Ribbon Commands

To Open Customize Dialog



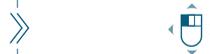
To Move Buttons within a Ribbon Group



To Exchange Collapse Priority between Groups



To Move Buttons between Overflow Area and Ribbon Group



To Hide the Ribbon Completely



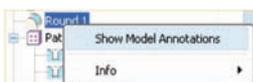
## SHOWING MODEL ANNOTATIONS

### Action-Object

1.  Select Show Model Annotations
2. Select a feature, view or model
3. Select an annotation in the dialog or in the graphics window
4. Select Apply or OK from the dialog box

### Object-Action

1. Select the model, feature or view
2. Right-click Show Model Annotations

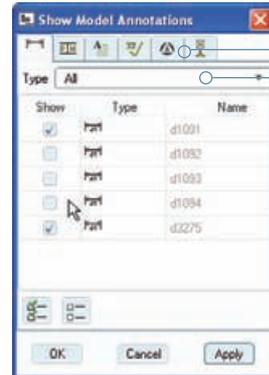
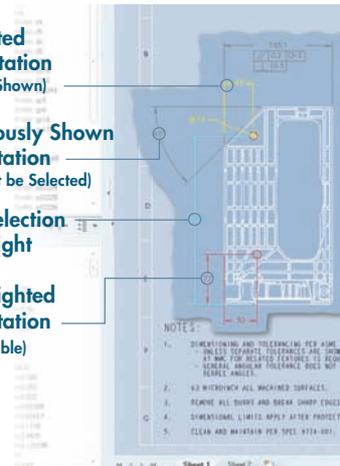


Selected Annotation (To be Shown)

Previously Shown Annotation (Cannot be Selected)

Pre-selection Highlight

Highlighted Annotation (Selectable)



Types of Model Annotations  
Annotation Subtypes

### Annotation Preview List

# ORIENTING THE MODEL

## DYNAMIC VIEWING

3D Mode	
Hold down the key and button. Drag the mouse.	
SPIN	
PAN	SHIFT + 
ZOOM	CTRL + 
TURN	CTRL + 
2D Mode	
PAN	
ZOOM	CTRL + 
2D and 3D Modes	
Hold down the key and roll the mouse wheel.	
ZOOM	
FINE ZOOM	SHIFT + 
COARSE ZOOM	CTRL + 



### Using the Spin Center

Click the icon in the Main Toolbar to enable the Spin Center

- Enabled – The model spins about the location of the spin center
- Disabled – The model spins about the location of the mouse pointer



### Using Orient Mode

Click the icon in the Main Toolbar to enable Orient mode

- Provides enhanced Spin/Pan/Zoom Control
- Disables selection and highlighting
- Right-click to access additional orient options
- Use the shortcut: CTRL + SHIFT + Middle-click



### Using Component Drag Mode in an Assembly

Click the icon in the Main Toolbar to enable Component Drag mode

- Allows movement of components based on their kinematic constraints or connections
- Click a location on a component, move the mouse, click again to stop motion
- Middle-click to disable Component Drag mode
- Use the shortcut: CTRL + ALT + Left Mouse and drag

## COMPONENT PLACEMENT CONTROLS

Allows reorientation of components during placement

COMPONENT DRAG	CTRL + ALT + 
SPIN	CTRL + ALT + 
MOVE	CTRL + ALT + 

### Object Mode

Provides enhanced Spin/Pan/Zoom Control:

1. Enable Orient mode
2. Right-click to enable Orient Object mode
3. Use Dynamic Viewing controls to orient the component
4. Right-click and select Exit Orient mode