Navigation Tabs

Browser Controls

Sash Controls

Navigator Window

Browser Window

Graphics Window

Dashboard Example: Component Placement

Placement Tab
- Constraint Sets
- Offset Option
- Enable/Disable Constraint

Component Dashboard
- Contains Most Commonly Used Options

Component Controls
- Display in Separate Window
- Display in Same Window
- Pause/Resume
- Complete Component
- Cancel Component

Interface/Manual Placement

Prompt Area

Selection Status

Selection Filter

Regenerate Status
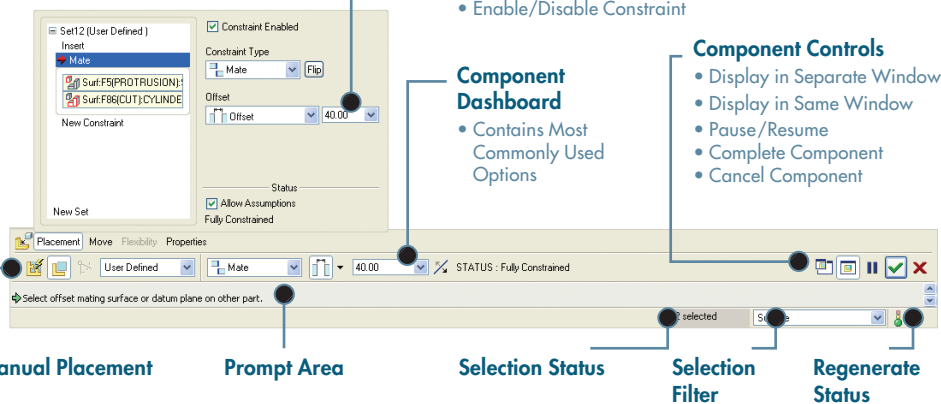
Common Dashboard Controls

Feature		Hole		Round		Depth			Material		
Solid	Surface	Standard	Straight	Set Mode	Transition Mode	Blind	To Selected	Through All	Change Depth	Remove Material	Thicken Sketch

Pro/ENGINEER ICON GUIDE

Main Toolbar

Undo	Cut	Regenerate Model	Repaint	Drag Component	Reorient View	Wireframe	Plane
Redo	Copy	Regeneration manager	Spin Center	Zoom In	Saved Views	Hidden line	Axis
	Paste	Search Tool	Orient Mode	Zoom Out	Layers	No Hidden	Point
	Paste Special	Selection Types		Refit	View Manager	Shading	Coordinate System

Edit **View** **Model Display** **Datum Display**

Navigator Tabs

Model Tree	Favorites
Folder Browser	Connections

Browser Controls

Back	Refresh	Print
Forward	Home	Save
Stop	History	

Drawing Toolbar

Set Drawing Model	Snap Lines	Align Dimensions
Update Views	Show and Erase	Cleanup Dimensions
Drawing View	Standard Dimension	Note
Lock View Movement		

Hyperlink	Standard Symbol	Table
Repeat Formatting	Custom Symbol	Update Table
Geometric Tolerance	Move Special	Cleanup Balloons
		Change Sheet

Sketcher Toolbar

- Select Items
- Sketch Setup
- Specify References
- Sketcher Palette
- Line Types
- Rectangle
- Circle Types
- Arc Types
- Fillet Types
- Spline
- Point / Csys
- Entity from Edge Types
- Dimension
- Modify Values
- Constraints
- Text
- Trim Types
- Mirror / Move-Scale-Rotate
- Complete Sketch
- Cancel Sketch

Sheetmetal Toolbar

- Extrude
- Conversion
- Flat Wall
- Flange Wall
- Unattached Flat Wall Types
- Extended Wall
- Bend Types
- Unbend/Bend Back
- Relief/Punch/Notch/Rip/Merge
- Form/Flatten Form/Deform Area
- Flat Pattern

Keyboard Shortcuts

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

Feature Creation Toolbar

Datum
- Sketch
- Plane
- Axis
- Curve
- Point Types
- Coordinate System
- Analysis
- Datum Reference
- Annotation

Assembly
- Add Component
- Create Component

Pick / Place
- Hole
- Shell
- Rib
- Draft
- Round
- Chamfer

Base
- Extrude
- Revolve
- Variable Section Sweep
- Boundary Blend
- Style

Editing
- Mirror
- Merge
- Trim
- Pattern

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

COMPONENT PLACEMENT CONTROLS
Allows reorientation of components during placement

COMPONENT DRAG	**CTRL** + **ALT** +
SPIN	**CTRL** + **ALT** +
PAN	**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
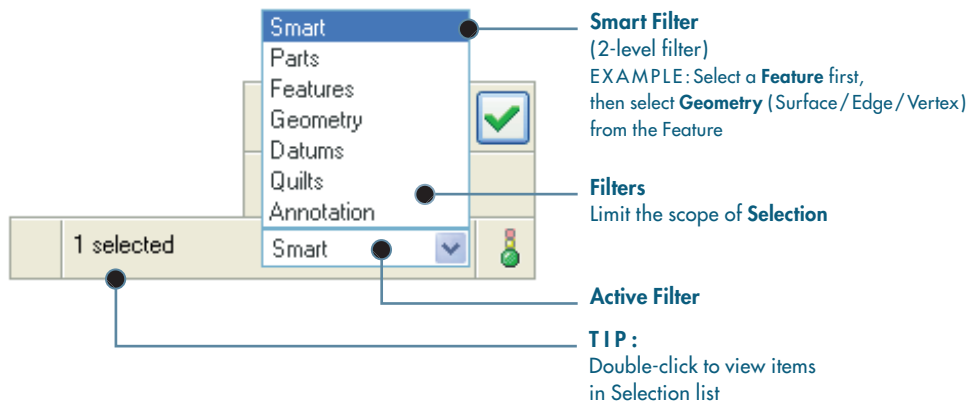4 Right-click and select Exit Orient mode

MAKING SELECTIONS

System Color Assignments

Cyan		**Preselection Highlight** Item will be added to or removed from the set of selected items
Red		**Selected Geometry** Items currently selected
Yellow		**Preview Geometry** 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	»	**CTRL** +
Construct Chains of Surface Sets	»	**SHIFT** +
Clear Selection	»	On Background

USING FILTERS

Smart
Parts
Features
Geometry
Datums
Quilts
Annotation

Smart

1 selected

Smart Filter
(2-level filter)
EXAMPLE: Select a **Feature** first,
then select **Geometry** (Surface / Edge / Vertex)
from the Feature

Filters
Limit the scope of **Selection**

Active Filter

TIP:
Double-click to view items
in Selection list

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

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 the edge again   **4** Select adjacent edges   **5** Release SHIFT

Rule-Based Chains

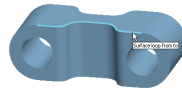| **Tangent**	**Boundary**	**Surface Loop**
To select all the edges that are tangent to an anchor edge:	To select the outermost boundary edges of a quilt:	To select a loop of edges on a surface patch:
1 Select an edge	**1** Select a one-sided edge of a quilt	**1** Select an edge
2 Hold down SHIFT	**2** Hold down SHIFT	**2** Hold down SHIFT
3 Highlight **Tangent** chain (Query may be required)	**3** Highlight **Boundary** chain (Query may be required)	**3** Highlight **Surface** chain (Query may be required)
4 Select tangent chain	**4** Select boundary chain	**4** Select surface loop
5 Release SHIFT	**5** Release SHIFT	**5** Release SHIFT

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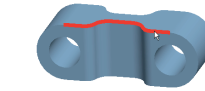To select a range of edges from a surface patch or a quilt:

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

Multiple Chains

1 Construct initial chain   **2** Hold down CTRL   **3** Select an edge for new chain

4 Release CTRL   **5** Hold down SHIFT   **6** Complete new chain from selected edge

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)
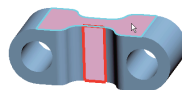
5 Release SHIFT

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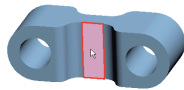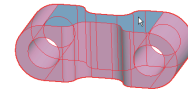

1 Select the **Seed** surface patch   **2** Hold down SHIFT   **3** Select one or more surface patches to be used as boundaries   **4** Release SHIFT (All surfaces from the Seed up to the Boundaries are selected)

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
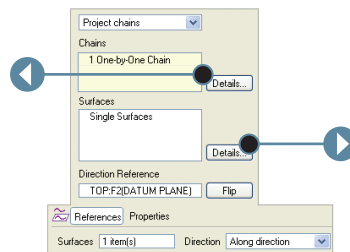
5 Release CTRL

CONSTRUCTING CHAINS AND SURFACE SETS USING DIALOG BOXES

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

Chain Dialog Box
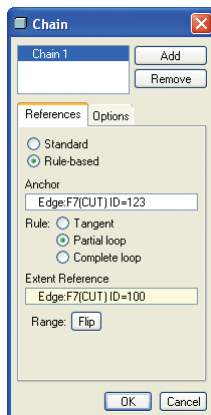
Dashboard Collector

Surface Set Dialog Box