

NX 9.0

for Engineers and Designers

CADCIM Technologies

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DEDICATION

*To teachers, who make it possible to disseminate knowledge
to enlighten the young and curious minds
of our future generations*

*To students, who are dedicated to learning new technologies
and making the world a better place to live in*

THANKS

*To the faculty and students of the MET department of
Purdue University Calumet for their cooperation*

To employees of CADCIM Technologies for their valuable help

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Table of Contents

Dedication	iii
Preface	xvii

Chapter 1: Introduction to NX 9.0

Introduction to NX 9.0	1-2
System Requirements	1-4
Getting Started with NX	1-4
Important Terms and Definitions	1-6
Understanding the Functions of the Mouse Buttons	1-10
Quick Access Toolbar	1-11
Ribbon ^{New}	1-11
Status Bar	1-16
Hot Keys	1-17
Color Scheme	1-17
Dialog Boxes in NX	1-17
Selecting Objects	1-18
Deselecting Objects	1-19
Selecting Objects Using the QuickPick Dialog Box	1-19
Self-Evaluation Test	1-19

Chapter 2: Drawing Sketches for Solid Models

Introduction	2-2
Starting NX 9.0	2-3
Starting a New Document in NX 9.0	2-4
Invoking Different NX Environments	2-7
Creating Three Fixed Datum Planes (XC-YC, YC-ZC, XC-ZC)	2-7
Displaying the WCS (Work Coordinate System)	2-8
Creating Sketches	2-9
Creating Sketches in the Modeling Environment	2-9
Creating Sketches in the Sketching Environment	2-15
Sketching Tools	2-15
Drawing Sketches Using the Profile Tool	2-15
Using Help Lines to Locate Points	2-19
Drawing Individual Lines	2-19
Drawing Arcs	2-20
Drawing Circles	2-21
Drawing Rectangles	2-23
Placing Points	2-24
Drawing Ellipses or Elliptical Arcs	2-28

Drawing Conics	2-29
Drawing Studio Splines	2-31
Filleting Sketched Entities	2-33
The Drawing Display Tools	2-35
Fitting Entities in the Current Display	2-35
Zooming an Area	2-35
Dynamic Zooming	2-36
Panning Drawings	2-36
Fitting View to Selection	2-37
Restoring the Original Orientation of the Sketching Plane	2-37
Setting Selection Filters in the Sketch in Task Environment	2-37
Selecting Objects	2-39
Deselecting Objects	2-39
Using Snap Points Options While Sketching	2-39
Deleting Sketched Entities	2-40
Exiting the Sketch Environment	2-40
Tutorial 1	2-41
Tutorial 2	2-44
Tutorial 3	2-50
Self-Evaluation Test	2-54
Review Questions	2-54
Exercise 1	2-55
Exercise 2	2-56

Chapter 3: Adding Geometric and Dimensional Constraints to Sketches

Constraining Sketches	3-2
Concept of Constrained Sketches	3-2
Under-Constrain	3-2
Fully-Constrain	3-2
Over-Constrain	3-2
Degree of Freedom Arrows	3-3
Dimensioning Sketches ^{Enhanced}	3-4
Locking the Automatically Applied Dimensions	3-5
Applying Dimensions by Using the Rapid Dimensions Tool	3-5
Applying Linear Dimensions ^{New}	3-6
Applying Radial Dimensions	3-8
Applying Angular Dimensions	3-9
Applying Perimeter Dimensions	3-9
Editing the Dimension Value and Other Parameters	3-10
Animating a Fully-Constrained Sketch	3-10
Measuring the Distance Value between Objects in a Sketch	3-11
Measuring the Distance between Two Objects in a Sketch	3-12
Measuring the Projected Distance between Two Objects	3-13
Measuring the Screen Distance between Two Objects	3-13
Measuring the Length of an Arc or a Line	3-14

Measuring the Angle between Entities	3-14
Measuring the Angle Value Using the By Objects Option	3-14
Measuring the Angle Value Using the By 3 Points Option	3-16
Measuring the Angle Value Using the By Screen Points Option	3-16
Geometric Constraints	3-16
Applying Additional Constraints Individually	3-17
Applying Symmetry Constraint	3-23
Applying Automatic Constraints to a Sketch	3-23
Controlling Inferred Constraints Settings	3-25
Showing All Constraints in a Sketch	3-26
Showing/Removing Constraints	3-27
Converting a Sketch Entity or Dimension into a Reference Entity or Reference Dimension	3-29
Tutorial 1	3-30
Tutorial 2	3-36
Tutorial 3	3-39
Self-Evaluation Test	3-43
Review Questions	3-44
Exercise 1	3-45
Exercise 2	3-45

Chapter 4: Editing, Extruding, and Revolving Sketches

Editing Sketches	4-2
Trimming Sketched Entities	4-2
Extending Sketched Entities	4-3
Creating a Corner between Sketched Entities	4-4
Moving Sketched Entities by Using the Move Curve Tool	New 4-5
Offsetting Sketched Entities by Using Offset Move Curve	New 4-11
Modifying Entities by Using the Resize Curve Tool	New 4-12
Deleting Sketched Entities by Using Delete Curve Tool	New 4-14
Offsetting Sketched Entities	4-15
Mirroring Sketched Entities	4-17
Creating a Linear Sketch Pattern	4-19
Creating a Circular Sketch Pattern	4-20
Creating a General Sketch Pattern	4-21
Transforming Sketched Entities	4-21
Editing Sketched Entities by Dragging	4-25
Exiting the Sketch Environment	4-26
Changing the View of the Sketch	4-26
Creating Base Features by Extruding	4-26
Extrude Dialog Box Options	4-27
Creating Solid Revolved Bodies	4-35
Copying, Moving, and Rotating Objects	Enhanced 4-40
Hiding Entities	4-45
Showing Hidden Entities	4-45

Hiding All Entities Using a Single Tool	4-46
Rotating the View of a Model in 3D Space	4-47
Setting Display Modes	4-47
Tutorial 1	4-48
Tutorial 2	4-51
Tutorial 3	4-55
Self-Evaluation Test	4-58
Review Questions	4-58
Exercise 1	4-59
Exercise 2	4-60

Chapter 5: Working with Datum Planes, Coordinate Systems, and Datum Axes

Additional Sketching and Reference Planes	5-2
Types of Datum Planes	5-3
Creating Three Fixed (Principle) Datum Planes	5-3
Creating Relative Datum Planes	5-3
Creating Datum Coordinate Systems	5-9
Creating Fixed and Relative Datum Axes	5-14
Other Extrusion Options	5-17
Specifying the Boolean Operation	5-17
Specifying Other Extrusion Termination Options	5-20
Projecting External Elements	5-22
Tutorial 1	5-24
Tutorial 2	5-29
Tutorial 3	5-33
Self-Evaluation Test	5-37
Review Questions	5-38
Exercise 1	5-39
Exercise 2	5-40
Exercise 3	5-41

Chapter 6: Advanced Modeling Tools-I

Advanced Modeling Tools	6-2
Creating Holes by Using the Hole Tool	6-2
Creating General Holes	6-3
Creating Drill Size Hole	6-4
Creating Screw Clearance Hole	6-5
Creating Threaded Hole	6-6
Creating Hole Series	6-6
Creating Grooves	6-8
Creating Rectangular Grooves	6-8
Creating Ball End Grooves	6-10
Creating U Grooves	6-11
Creating Slots	6-13
Creating Rectangular Slots	6-13

Creating Ball-End Slots	6-15
Creating U-Slots	6-17
Creating T-Slots	6-19
Creating Dove-Tail Slots	6-20
Creating Ribs <i>New</i>	6-22
Creating Chamfers	6-25
Creating a Chamfer Feature Using the Symmetric Method	6-26
Creating a Chamfer Feature Using the Asymmetric Method	6-28
Creating a Chamfer Feature Using the Offset and Angle Method	6-28
Creating an Edge Blend <i>Enhanced</i>	6-29
Tutorial 1	6-35
Tutorial 2	6-43
Self-Evaluation Test	6-50
Review Questions	6-51
Exercise 1	6-52
Exercise 2	6-53
Exercise 3	6-54

Chapter 7: Advanced Modeling Tools-II

Advanced Modeling Tools	7-2
Pattern Feature Tool <i>Enhanced</i>	7-2
Creating Linear Pattern	7-2
Creating Circular Pattern	7-8
Creating Polygon Pattern	7-12
Creating Spiral Pattern	7-13
Creating a Pattern Along a Curve	7-15
Creating a General Pattern	7-16
Creating a Reference Pattern	7-17
Creating a Helix Pattern	7-17
Creating a Fill Pattern	7-20
Mirror Feature Tool	7-22
Mirror Face Tool <i>New</i>	7-24
Mirror Geometry Tool <i>New</i>	7-25
Sweeping Sketches Along the Guide Curves	7-25
Creating Swept Features	7-27
Creating Tubes or Cables	7-30
Creating Threads	7-31
Creating Symbolic Threads	7-32
Creating Detailed Threads	7-35
Creating Shell Features	7-36
Shelling the Entire Solid Body	7-38

Tutorial 1	7-38
Tutorial 2	7-42
Tutorial 3	7-45
Tutorial 4	7-50
Self-Evaluation Test	7-56
Review Questions	7-57
Exercise 1	7-58
Exercise 2	7-59

Chapter 8: Editing Features and Advanced Modeling Tools-III

Editing Features	8-2
Editing a Hole Feature	8-2
Editing the Positioning of a Groove Feature	8-2
Editing the Positioning of a Slot Feature	8-3
Editing the Parameters of Features	8-3
Editing the Parameters of Features with Rollback	8-3
Editing Sketches of the Sketch-based Features	8-4
Reordering Features	8-4
Advanced Modeling Tools	8-4
Creating Boss Features	8-4
Creating Pocket Features	8-5
Creating Pad Features	8-9
Creating Drafts	8-12
Tutorial 1	8-15
Tutorial 2	8-20
Tutorial 3	8-27
Self-Evaluation Test	8-35
Review Questions	8-36
Exercise 1	8-37
Exercise 2	8-38
Exercise 3	8-39

Chapter 9: Assembly Modeling-I

The Assembly Environment	9-2
Invoking the Assembly Environment	9-2
Invoking the Assembly Environment Using the New Dialog Box	9-2
Invoking the Assembly Environment in the Current Part File	9-3
Types of Assembly Design Approaches	9-3
Creating Bottom-up Assemblies	9-4
Placing Components in the Assembly Environment	9-4
Changing the Reference Set of a Component	9-7
Applying Assembly Constraints to Components	9-7
Points to Remember while Assembling Components	9-18
Creating a Pattern Component in an Assembly	9-18
Replacing a Component in an Assembly	9-20

Moving a Component in an Assembly	9-22
Mirroring a Component in an Assembly	9-26
Modifying a Component in the Assembly File	9-29
Tutorial 1	9-30
Tutorial 2	9-44
Self-Evaluation Test	9-56
Review Questions	9-57
Exercise 1	9-58
Exercise 2	9-60
Exercise 3	9-63
Exercise 4	9-66

Chapter 10: Assembly Modeling-II

The Top-down Assembly Design Approach	10-2
Creating Components Using the Top-down Assembly Design Approach	10-2
Creating Subassemblies	10-4
Editing Assembly Constraints	10-5
Checking the Interference between the Components of an Assembly	10-6
Checking Interference Using the Simple Interference Tool	10-6
Checking Interference Between the Assembly Components <i>Enhanced</i>	10-8
Checking Interference and Clearance, and Analyzing Cross-sections of Components Using the View Section Tool	10-13
Creating Exploded Views of an Assembly	10-18
Exploding Views Automatically	10-19
Exploding Views Manually	10-21
Tutorial 1	10-23
Tutorial 2	10-26
Tutorial 3	10-31
Tutorial 4	10-37
Self-Evaluation Test	10-42
Review Questions	10-43
Exercise 1	10-43
Exercise 2	10-48
Exercise 3	10-55

Chapter 11: Surface Modeling

Introduction to Surface Modeling	11-2
Invoking the Shape Studio Environment	11-2
Creating an Extruded Surface	11-3
Creating a Revolved Surface	11-3
Creating a Ruled Surface	11-4
Creating a Surface Using the Through Curves Tool	11-6
Creating a Surface Using the Through Curve Mesh Tool	11-7
Creating a Surface Using the Four Point Surface Tool	11-10
Creating a Swoop Surface	11-11
Creating Planar Surfaces from 2D Sketches and Edges of Solid or Surface	11-13
Creating a Transition Surface Using the Transition Tool	11-14

Creating an N-Sided Surface	11-16
Creating a Silhouette Flange Surface	11-19
Extending a Surface Using the Law Extension Tool	11-23
Creating a Surface Offset Using the Offset Surface Tool	11-27
Trimming and Extending a Surface Using the Trim and Extend Tool	11-28
Trimming a Sheet by Using the Trimmed Sheet Tool	11-29
Creating a Surface Using the Studio Surface Tool	11-31
Creating a Surface between Two Walls Using the Styled Blend Tool	11-34
Creating Surfaces Using the Styled Sweep Tool	11-39
Sewing Individual Surfaces into a Single Surface	11-40
Adding Thickness to a Surface	11-41
Adding Drafts	11-42
Tutorial 1	11-44
Tutorial 2	11-49
Self-Evaluation Test	11-57
Review Questions	11-58
Exercise 1	11-59
Exercise 2	11-60

Chapter 12: Advanced Surface Modeling

Creating Curves from Bodies	12-2
Creating Intersection Curves	12-2
Creating Section Curves	12-3
Creating Extract Curves	12-8
Creating Isoparametric Curves	12-10
Projecting Curves	12-11
Advanced Surface Modeling Tools	12-15
Creating Dart Features	12-15
Creating Emboss Body on a Sheet or Solid Body	12-17
Creating Face Blend Features	12-18
Creating Soft Blend Features	12-22
Creating Bridge Features	12-25
Tutorial 1	12-27
Tutorial 2	12-38
Tutorial 3	12-48
Self-Evaluation Test	12-59
Review Questions	12-60
Exercise 1	12-61
Exercise 2	12-62

Chapter 13: Generating, Editing, and Dimensioning the Drawing Views

The Drafting Environment	13-2
Invoking the Drafting Environment	13-2
Invoking the Drafting Environment Using the Drawing Template from the New Dialog Box	13-2
Invoking the Drafting Environment in the Current Part File	13-4

Editing the Drawing Sheet Parameters in the Drafting Environment	13-6
Invoking the Drafting Tools	13-6
Types of Drawing Views in NX	13-6
Base View	13-6
Projected View	13-7
Detail View	13-7
Section View	13-7
Auxiliary View	13-7
Half-Section View	13-7
Revolved Section View	13-7
Break-Out Section View	13-7
Broken View	13-7
Generating Drawing Views	13-8
Generating Views Using the View Creation Wizard Tool	13-8
Generating the Base View	13-13
Generating the Orthographic Drawing Views Using the Projected View Tool	13-16
Generating the Detail View Using the Detail View Tool	13-17
Generating Section Views Using the Section View Tool	13-20
Generating the Half Section View Using the Half Section View Tool	13-25
Generating the Revolved Section View	13-26
Generating the Break-Out Section View	Enhanced 13-27
Generating the Broken View	13-28
Manipulating the Drawing Views	13-30
Moving the Drawing Views Using the Move/Copy View Tool	New 13-30
Aligning the Drawing Views Using the Align View Tool	13-31
View Boundary	13-34
Editing the Section Line Using the Edit Section Line Tool	New 13-35
Section in View Tool	New 13-35
Displaying the Model Using the Display Sheet Tool	13-37
Inserting a Drawing Sheet Using the New Sheet Tool	13-37
Modifying the Properties of a Generated Drawing View	13-38
Modifying the Scale Value of the Drawing View	13-38
Adding Dimensions to the Drawing Views	Enhanced 13-40
Retrieving Dimensions from the Model	13-40
Adding Dimensions to the Drawing View	13-40
Generating Exploded Views of an Assembly	13-44
Creating Parts List and Associative Balloons	13-45
Creating a Parts List for an Assembly	13-45
Creating Associative Balloons	13-45
Creating a Tabular Note (Title Block)	13-47
Adding Multiline Text to a Drawing Sheet	13-49
Printing Tools	13-49
Print	13-50
Plot	13-51
Tutorial 1	13-51
Tutorial 2	13-57

Tutorial 3	13-62
Self-Evaluation Test	13-69
Review Questions	13-70
Exercise 1	13-71
Exercise 2	13-71

Chapter 14: Synchronous Modeling

Introduction	14-2
Move Face	14-2
Move Edge	New 14-5
Pull Face	14-7
Offset Region	14-9
Offset Edge	New 14-10
Replace Face	14-11
Resize Blend	14-12
Reorder Blend	14-13
Resize Chamfer	14-14
Label Chamfer	14-14
Label Notch Blend	14-15
Resize Face	14-15
Delete Face	14-16
Copy Face	14-18
Cut Face	14-19
Paste Face	14-20
Mirror Face	14-21
Pattern Face	14-21
Make Coplanar	14-22
Make Coaxial	14-23
Make Tangent	14-24
Make Symmetric	14-25
Make Parallel	14-26
Make Perpendicular	14-27
Make Fixed	14-29
Make Offset	14-29
Show Related Face	14-30
Linear Dimension	14-31
Angular Dimension	14-33
Radial Dimension	14-34
Shell Body	14-36
Shell Face	14-37
Change Shell Thickness	14-38
Group Face	14-39
Edit Cross Section in History Free Mode	14-40
Edit Cross Section in History Mode	14-41
Tutorial 1	14-42

Tutorial 2	14-48
Self-Evaluation Test	14-57
Review Questions	14-58
Exercise 1	14-59
Exercise 2	14-60

Chapter 15: Sheet Metal Design

The Sheet Metal Module	15-2
Setting the Sheet Metal Part Properties	15-4
Creating the Base Feature	15-8
Adding Flanges to a Sheet Metal Part	15-9
Creating Contour Flanges	15-15
Creating Lofted Flanges	15-16
Adding a Jog to the Sheet	15-17
Bending the Sheet Metal Part	15-18
Unbending the Sheet Metal Part	15-19
Rebending the Sheet Metal Part	15-19
Filleting or Chamfering Corners	15-20
Closing the Corners of a Sheet Metal Part	15-20
Creating Dimples in a Sheet Metal Part	15-24
Creating Louvers in a Sheet Metal Part	15-27
Creating Drawn Cutouts in a Sheet Metal Part	15-29
Creating Beads in a Sheet Metal Part	15-29
Adding Gussets to a Sheet Metal part	15-32
Adding Hems	15-36
Creating a Sheet Metal Part Using Solid Body	15-39
Converting a Solid Part into a Sheet Metal Part	15-40
Ripping the Corners of a Solid Part	15-41
Creating the Flat Pattern of a Sheet Metal Part	15-41
Creating the Flat Pattern	15-41
Creating the Flat Solid	15-42
Exporting a Flat Pattern	15-43
Tutorial 1	15-43
Tutorial 2	15-53
Self-Evaluation Test	15-58
Review Questions	15-59
Exercise 1	15-60
Exercise 2	15-61



Preface

NX 9.0

NX 9.0, a product of SIEMENS Corp., is one of the world's leading CAD/CAM/CAE packages. Being a solid modeling tool, it not only unites 3D parametric features with 2D tools, but also addresses every design-through-manufacturing process. Besides providing an insight into the design content, the package promotes collaboration between companies and provides them an edge over their competitors.

In addition to creating solid models and assemblies, the 2D drawing views can also be generated easily in the **Drafting** environment of NX. The drawing views that can be generated include orthographic, section, auxiliary, isometric, and detail views. The model dimensions and reference dimensions in the drawing views can also be generated. The bidirectionally associative nature of this software ensures that the modifications made in the model are reflected in the drawing views and vice-versa. In NX, you can create sketches directly in the Modeling environment.

The **NX 9.0 for Designers** textbook has been written with the intention of helping the readers effectively use the solid modeling tools in NX. The mechanical engineering industry examples and tutorials used in this book ensure that the users can relate the knowledge of this book with the actual mechanical industry designs. The main features of this textbook are as follows:

- **Tutorial Approach**

The author has adopted the tutorial point-of-view and the learn-by-doing theme throughout the textbook. This approach guides the users through the process of creating the models in the tutorials.

- **Real-World Projects as Tutorials**

The author has used about 50 real-world mechanical engineering projects as tutorials in this book. This enables the readers to relate the tutorials to the models in the mechanical engineering industry. In addition, there are about 32 exercises that are also based on the real-world mechanical engineering projects.

- **Tips and Notes**

The additional information related to various topics is provided to the users in the form of tips and notes.

- **Learning Objectives**

The first page of every chapter summarizes the topics that are covered in that chapter.

- **Self-Evaluation Test, Review Questions, and Exercises**

Every chapter ends with a Self-Evaluation Test so that the users can assess their knowledge of the chapter. The answers to the Self-Evaluation test are given at the end of the chapter. Also, the Review Questions and Exercises are given at the end of each chapter and they can be used by the Instructors as test questions and exercises.

- **Heavily Illustrated Text**

The text in this book is heavily illustrated with about 1100 line diagrams and screen capture images.

Formatting Conventions Used in the Textbook

Please refer to the following list for the formatting conventions used in this textbook.

- Names of tools, buttons, options, groups, and toolbars, are written in boldface. Example: The **Extrude** tool, the **OK** button, the **Feature** group, and so on.
- Names of dialog boxes, drop-downs, drop-down lists, list boxes, areas, edit boxes, check boxes, and radio buttons are written in boldface. Example: The **Edge Blend** dialog box, the **Surface** drop-down of **Create** group, the **Type** drop-down list of **Shell** dialog box, the **Distance** edit box of **Extrude** dialog box, the **Symmetric** check box in **Pattern Feature** dialog box, the **Plain** radio button of the **Edit Background** dialog box, and so on.
- Values entered in edit boxes are written in boldface. Example: Enter **5** in the **Pitch Distance** edit box.
- Names and paths of the files saved are italicized. Example: *c03tut03.prt*, *C:\NX_9.0\c03*, and so on.
- The methods of invoking a tool/option from the **Menu**, **Ribbon**, are enclosed in a shaded box.

Ribbon:	Home > Standard > New
Menu:	File > New

Naming Conventions Used in the Textbook

Button

The item in a dialog box that has a 3D shape like a button is also termed as **Button**. For example, **OK** button, **Cancel** button, **Apply** button, and so on. Refer to Figure 1 given next for the terminology used for the components in a dialog box.

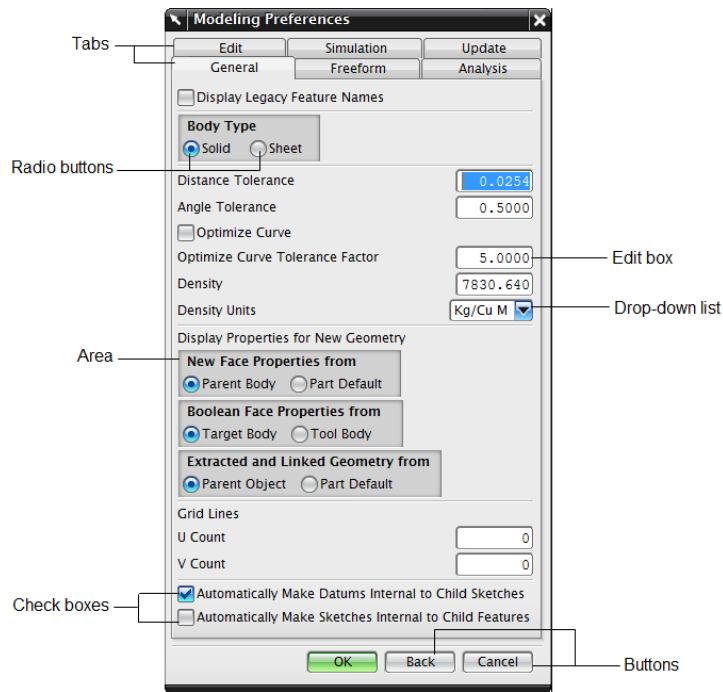


Figure 1 The components in a dialog box

Drop-down

A drop-down is the one in which a set of common tools are grouped together. You can identify a drop-down with a down arrow on it. These drop-downs are given a name based on the tools grouped in them. For example, **Design Feature** drop-down, **Mesh Surface** drop-down, and so on; refer to Figure 2.

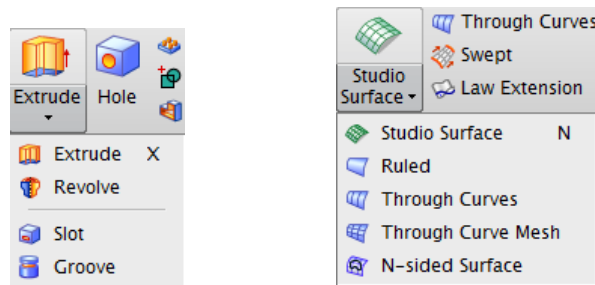


Figure 2 The Design Feature and Mesh Surface drop-downs

Gallery

A gallery is the one in which a set of common tools are grouped together. For example, **Detail Feature** gallery of the **More** gallery; refer to Figure 3.

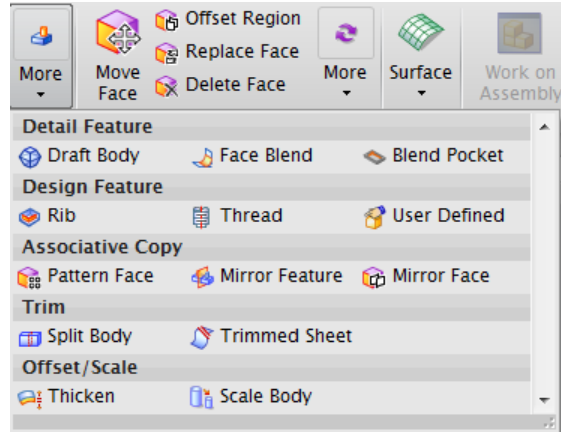


Figure 3 The *Detail Feature* gallery of the *More* gallery

Drop-down List

A drop-down list is the one in which a set of options are grouped together. You can set various parameters using these options. You can identify a drop-down list with a down arrow on it. For example, **Boolean** drop-down list, **Layout** drop-down list, and so on; refer to Figure 4.

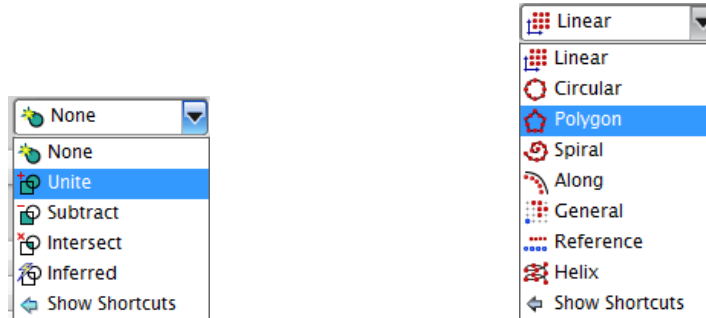


Figure 4 The *Boolean* and *Layout* drop-down lists

Options

Options are the items that are available in shortcut menu, drop-down list, dialog boxes, and so on. For example, choose the **Fit** option from the shortcut menu displayed on right-clicking in the drawing area; choose the **Faces** option from the **Type** drop-down list; refer to Figure 5.

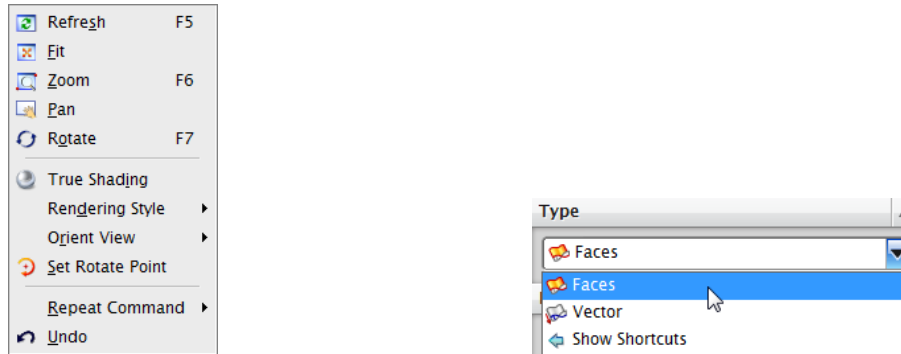


Figure 5 Options in the shortcut menu and the *Type* drop-down list

Symbols Used in the Textbook



Note

The author has provided additional information related to various topics in the form of notes.



Tip

The author has provided a lot of useful information to the users about the topic being discussed in the form of tips.



New

This icon indicates that the command or tool being discussed is new.



Enhanced

This icon indicates that the command or tool being discussed is enhanced.

Free Companion Website

It has been our constant endeavor to provide you the best textbooks and services at affordable price. In this endeavor, we have come out with a Free companion website that will facilitate the process of teaching and learning of NX 9.0. If you purchase this textbook, you will get access to the companion website.

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