



One Key Shortcuts

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NOTE: To enable the use of multi-character command aliases in Inventor, make sure the "Use default multi-character Command Aliases" option is checked. To access this, select Tools tab ▶ Options panel ▶ Customize, and click the Keyboard tab.



- = **EQUAL** / Constrains curves to equal radius or length.
- ; GROUNDED WORK POINT / Creates a grounded work point and activates the 3D Move/Rotate tool.
- / WORK AXIS / Creates a new work axis.
-] WORK PLANE / Creates a new work plane.
- . WORK POINT / Creates a new work point.

- DELETE
 - **DELETE** / Removes the selected item from the model or drawing.
- **END ZOOM SELECTED** / Zooms in on a specifically selected item.
- **ESC** CANCEL / Closes the active tool.
- **HOME ZOOM ALL** / Zooms to the extents of all objects in the graphics window.
- PAGE UP
 - LOOK AT / Looks at a selected entity.

Assembly

ALT-DRAG MOUSE

MATE CONSTRAINT / Applies a mate constraint.

CTRL-H

REPLACE COMPONENT / Replaces one assembly component with another component.

SHIFT-TAB

PROMOTE / Removes a part from a subassembly and makes it an individual part in the parent assembly.

Drawing Manager

CTRL-SHIFT-N

NEW SHEET / Inserts a new drawing sheet.

CTRL-SHIFT-T

LEADER TEXT / Adds notes with leader lines to a drawing.

General

CTRL-A

SELECT ALL / Selects everything on the screen.

CTRL-C

COPY / Copies selected items.

CTRL-F

FIND / Presents the Find Part Sketches dialog box in part files; opens the Find Assembly Components dialog box in assembly files.

CTRL-N

NEW / Displays the New File dialog box.

CTRL-O

OPEN / Displays the Open dialog box, to open an existing file.

CTRL-P

PRINT / Displays the Print dialog box.

CTRL-S

SAVE / Displays the Save As dialog box.

CTRL-V

PASTE / Pastes a cut or copied item from one location to another.

CTRL-X

CUT / Cuts selected items.

CTRL-Y

REDO / Redoes previously undone commands.

CTRL-Z

UNDO / Undoes the effects of commands.

DELETE

DELETE / Removes the selected item from the model or drawing.

QUIT EXIT / Quits the application; prompts to save documents.

SHIFT-RIGHT MOUSE CLICK

SELECT / Activates the select command menu.

Part

CTRL-SHIFT-K

CHAMFER / Activates the Chamfer tool.

CTRL-SHIFT-L

LOFT / Activates the Loft tool.

CTRL-SHIFT-M

MIRROR / Activates the Mirror tool.

Placed Features

CTRL-SHIFT-O

CIRCULAR PATTERN / Opens the Circular Pattern dialog box.

CTRL-SHIFT-R

RECTANGULAR PATTERN / Opens the Rectangular Pattern dialog box.

CTRL-SHIFT-S

SWEEP / Activates the Sweep tool.

Sketch

- EQUAL / Constrains curves to equal radius or length.
- F7 SLICE GRAPHICS / Slices away temporarily the portion of the model that obscures the plane.
- F8 SHOW ALL CONSTRAINTS / Displays all constraints.
- F9 HIDE ALL CONSTRAINTS / Hides All constraints

Tools

ALT-F8

MACROS / Opens the Macros dialog box.

ALT-F11

VISUAL BASIC EDITOR / Launches the Microsoft Visual Basic Editor.

ESC CANCEL / Closes the active tool.

F1 HELP / Opens the Inventor help files.

View

- ALT-. USER WORK POINTS VISIBILITY / Makes work points visible.
- ALT-] USER WORK PLANE VISIBILITY / Makes work planes visible.
- ALT-/ USER WORK AXES VISIBILITY / Makes work axes visible.
- CTRL-. ORIGIN POINTS VISIBILITY / Makes the default origin points visible.

CTRL-1

ORIGIN PLANE VISIBILITY / Makes the default origin planes visible.

CTRL-/

ORIGIN AXES VISIBILITY / Makes the default origin axes visible.

CTRL-0 TOGGLE SCREEN / Toggles screen.

CTRL-SHIFT-E

DEGREES OF FREEDOM / Displays degrees of freedom.

CTRL-SHIFT-Q

IMATE GLYPH / Activates the iMate Glyph tool.

CTRL-W

STEERING WHEELS / Displays the Steering Wheel view tool.

- **END ZOOM SELECTED** / Zooms in on a specifically selected item.
- F2 PAN / Views areas of the graphics window. (You must hold the [F2] key down.)
- F3 ZOOM SELECTED / Realtime zoom in and out of the graphics window. (You must hold the [F3] key down.)
- F4 ROTATE / Rotates objects in the graphics window.

- F5 PREVIOUS VIEW / Returns to the last display.
- F6 HOME VIEW / Rotates objects in the graphics window into an isometric orientation.
- F10 SKETCH VISIBILITY / Makes sketches visible.
- **HOME ZOOM ALL** / Zooms to the extents of all objects in the graphics window.

PAGE UP

LOOK AT / Looks at a selected entity.

SHIFT-F3

ZOOM WINDOW / Zooms to the area you define with a window.

SHIFT-F5

NEXT VIEW / Advances to the next view.

SHIFT-MIDDLE MOUSE CLICK
ROTATE / Rotates a model.

Work Features

- ; GROUNDED WORK POINT / Creates a grounded work point and activates the 3D Move/Rotate tool.
- WORK AXIS / Creates a new work axis.
-] WORK PLANE / Creates a new work plane.
- . WORK POINT / Creates a new work point.



Annotation

- BA AUTO BALLOON / Creates one or more item balloons used to identify components in drawing views.
- CAT CATERPILLAR / Adds a weld caterpillar annotation.
- CB CENTERLINE BISECTOR / Adds a centerline bisector.
- **CL CENTERLINE** / Adds a centerline.
- CM CENTER MARK / Adds a center mark.
- **DI DATUM IDENTIFIER SYMBOL** / Adds a datum identifier symbol.
- EF END FILL / Adds a weld end fill annotation in a drawing view or on a 3D weld bead to represent the hatched or filled region indicating the end of a weld bead.
- F FEATURE CONTROL FRAME / Places a feature control frame in drawing files.
- FI FEATURE IDENTIFIER SYMBOL / Adds a feature identifier symbol.
- HTF HOLE TABLE-FEATURES / Selects feature set (all punch center instances from a single feature).
- HTS HOLE TABLE-SELECTION / Selects recovered punch centers individually.
- HTV HOLE TABLE-VIEW / Adds a hole table to a view.
- LE LEADER TEXT / Adds notes with leader lines to a drawing.
- PL PARTS LIST / Creates a parts list.
- RT REVISION TAG / Adds revision tags to a drawing.

- RTB REVISION TABLE / Creates a revision table.
- ST SURFACE TEXTURE SYMBOL / Adds a surface texture symbol.
- SY SYMBOLS / Adds sketched symbols to a drawing sheet.
- T TEXT / Activates the text tool in a drawing file
- TB TABLE / Creates a table.
- WS WELDING SYMBOL / Provides annotation and acts as a grouping mechanism by referencing multiple beads with a single welding symbol.

Assembly

- C CONSTRAINTS / Adds an assembly constraint.
- **CO COPY COMPONENTS** / Creates a copy of the component.
- G ROTATE COMPONENT / Activates the Rotate tool.
- IA ANALYZE INTERFERENCE / Analyzes assemblies for interference.
- MI MIRROR COMPONENTS / Creates a mirror component.
- N CREATE COMPONENT / Displays the Create In-Place Component dialog box.
- P PLACE COMPONENT / Places a component in the current assembly.

- PC PATTERN COMPONENT / Selects one or more components to include in the pattern.
- RA REPLACE ALL / Replaces all occurrences of the component in the current assembly.
- V MOVE COMPONENT / Activates the Move Component command.

Cable & Harness

- AR AUTOMATIC ROUTE / Automatically routes one or more selected wires into segments based on the shortest path through the network and the segment opening that is closest to the wire start and endpoints.
- BR CHECK BEND RADIUS / Checks for bends that do not meet the specified minimum bend radius on segments, and routed and unrouted wires and cables in the active harness assembly.
- BS BROKEN SKETCH ENTITY / Sets the start point and endpoint for the length to remove from the cable, wire, or segment.
- CA CONNECTOR AUTHORING / Adds Cable and Harness-specific data to complete the definition of connectors for use in Cable and Harness.
- CC CREATE CABLE / Creates a cable containing multiple wires that are connected or terminated to selected pins within a harness assembly.

Cable & Harness

- CF CREATE FOLD / Creates fold.
- CR CREATE RIBBON CABLE / Creates a ribbon cable between a start and end connector.
- CS CREATE SEGMENT / Creates a harness segment.
- CV PLACE CONNECTOR VIEWS / Places connector views
- **CW CREATE WIRE** / Creates a wire between selected pins within a harness assembly.
- **E EDIT** / Edits nailboard sketch.
- EH EXPORT HARNESS DATA / Exports harness data.
- F FAN IN / Collapses wire stubs on top of one another to reduce the detail or clutter in nailboard documentation.
- FO FAN OUT / Equally distributes wire stubs about the endpoint of a segment using the specified angle and sorting direction.
- HA CREATE HARNESS / Adds the harness subassembly to an assembly file with the specified name and location, and displays the Cable and Harness tab.
- HD HARNESS DIMENSION / Adds a driven, aligned dimension between 2 points.
- HP HARNESS PROPERTIES / Custom properties of harness components.
- IH IMPORT HARNESS DATA / Imports harness data.

- L CABLE & HARNESS LIBRARY / Adds new library definitions, and modifies, copies, and deletes existing library definitions for harness objects such as wires, cables, raw ribbon cables, and virtual parts.
- NB NAILBOARD / Specifies the harness assembly and setup to create or edit a nailboard view.
- P PIVOT / Fixes segment points so you can drag the selected segment relative to that fixed point.*
- P PLACE PIN / Places a pin.*
- PD PROPERTY DISPLAY / Displays properties for the selected objects.
- PG PLACE PIN GROUP / Automatically places multiple pins with the specified naming, configuration, and orientation on a part.
- RG REPORT / Process reports for the active harness assembly.
- RH REVIEW HARNESS DATA / Reviews harness data.
- RT ROUTE / Routes cables and wires manually.
- **RW RECONNECT WIRE PINS** / Reconnects wire pins.
- SP CREATE SPLICE / Creates a splice.
- TB TABLE / Creates a table.
- U UNROUTE / Unroutes selected wires from selected segments.
- V ASSIGN VIRTUAL PARTS / Assigns virtual parts.

Dimension

- BD BASELINE DIMENSION / Adds baseline dimensions.
- BN BEND NOTES / Creates or edits a bend note.
- CN CHAMFER NOTE / Adds a chamfer note to a drawing view.
- D GENERAL DIMENSION / Adds a dimension to a sketch or drawing.
- HN HOLE/THREAD NOTES / Adds a hole or thread note with a leader line.
- O ORDINATE DIMENSION SET / Activates the Ordinate Dimension Set command.
- OD ORDINATE DIMENSION / Adds an ordinate dimension.
- PN PUNCH NOTES / Creates a punch note.

Drawing Manager

- AV AUXILIARY VIEW / Places an auxiliary view by projecting from an edge or line in a parent view.
- B BALLOON, BOM / Activates the Balloon tool or displays the BOM Properties dialog box, depending on the work environment.
- BV BASE VIEW / Creates a base view.
- BRV BREAK / Creates a broken, foreshortened view.
- BO BREAK OUT / Removes a defined area of material to expose obscured parts or features in an existing drawing view.
- CR CROP / Use to set boundary type and visibility of crop cut lines for crop operations.
- DV DETAIL VIEW / Provides circular and rectangular shapes of detail profile.
- PV PROJECTED VIEW / Creates a projected view.
- RD RETRIEVE DIMENSIONS / Retrieves model dimensions in a drawing.
- SV SECTION VIEW / Creates a section view.

Dynamic Simulation

- AVI PUBLISH MOVIE / Creates AVI animation.
- CC CONVERT ASSEMBLY CONSTRAINTS / Converts assembly constraints.
- **CSA PUBLISH TO STUDIO /** Creates studio animation.
- DM DYNAMIC MOTION / Dynamic part motion.
- F FORCE / Applies force on the selected objects.
- FEA EXPORT TO FEA / Exports to FEA.
- J INSERT JOINT / Inserts joint.
- MS MECHANISM STATUS AND REDUNDANCIES / Provides model status information and guides you through the process of repairing redundant constraints.
- OG OUTPUT GRAPHER / Displays graphs and numerical values of all the input and output variables in a simulation during and after the simulation completes.
- **RF REFERENCE FRAME** / Creates a Reference Frame from the input provided.
- SET DYNAMIC SIMULATION SETTINGS / Sets options that apply to the entire Dynamic Simulation session.
- TO TORQUE / Applies torque on the selected objects.
- TR TRACE / Creates the absolute or relative kinematic values (trajectory, velocity, and acceleration) of one or more points placed anywhere on a component.
- UF UNKNOWN FORCE / Calculates the required force, torque, or jack to keep a mechanism in static equilibrium for a given position

Frame Analysis

- A ANIMATE RESULTS / Animates the selected simulation results.
- AM AXIAL MOMENT / Adds an axial moment.
- B PROBE / Displays the simulation results for a specific point on the model.
- BC BOUNDARY CONDITIONS / Toggles display of all boundary conditions.
- BD BEAM DETAIL / Displays detailed results (diagrams, tables) for the selected beams of a structure.
- BM BENDING MOMENT / Applies the bending moment to the selected beam.
- C CREATE SIMULATION / Creates a simulation.
- CB COLOR BAR / Edits color bar.
- CL CONTINUOUS LOAD / Applies and distributes uniform load along the beam you select.
- D DIAGRAM / Adds custom user diagram.
- **EX EXPORT** / Exports to robot structural analysis.
- F FORCE / Applies a force of the specified magnitude to the selected faces, edges, or vertices.
- FL FLOATING PINNED CONSTRAINT / Adds floating pinned constraint.
- LB BEAM LABELS / Toggles display of beam labels.

Frame Analysis

LN **NODE LABELS** / Toggles display of node labels. PROBE LABELS / Toggles visibility of probe LP labels. LS LOCAL SYSTEMS / Toggles display of beam local systems. LV LOAD VALUES / Toggles display of load values. **BEAM MATERIALS** / Enables you to MA change the material of the beam. MO **MOMENT** / Applies the general moment to the selected beam. Ν NO SHADING / Turns off the Shaded Results display. **BEAM PROPERTIES** / Provides physical Р and engineering properties of a frame member, and enables you to customize the data. PINNED CONSTRAINT / Applies pinned PN constraint when no displacement and free rotation is allowed on beam or node. R **REPORT** / Generates a report. RE **RELEASE** / Assigns a release of specified degrees of freedom to a selected beam in a structure. RL RIGID LINK / Enables you to define a rigid link between selected nodes in a frame structure. S **SIMULATE** / Runs a simulation. X FIXED CONSTRAINT / Applies a fixed constraint on selected faces, edges, or

vertices.

Mold Design

- 2D 2D DRAWING / Creates one or more drawing documents.
- AM ANIMATE RESULTS / Animates the selected simulation results.
- AO ADJUST ORIENTATION / Prompts the Adjust Orientation dialog box.
- AP ADJUST POSITION / Prompts the Adjust Position dialog box.
- AR AUTO RUNNER SKETCH / Creates an auto runner sketch.
- AU MOLD BASE AUTHOR / Assigns component attributes before inserting a user defined mold base.
- BC BRIDGE CURVE / Connects curves by G2 continuity.
- BL MOLD BOOLEAN / Integrates the interference checking function and the Boolean calculation.
- **BR BOUNDED RUNOFF SURFACE** / Creates a runoff surface.
- CC COOLING CHANNEL CHECK / Checks cooling channels for safety, interference, and distance between cooling system segments.*
- CC PLACE CORE AND CAVITY / Places or deletes imported core and cavity.*
- CD CORE/CAVITY / Core/Cavity design and analysis environment.
- CH COOLING CHANNEL / Creates a cooling channel.*

- CH CREATE HEEL / Creates one or more heels on an insert.*
- CI CREATE INSERT / Creates an insert.
- CM COMBINE CORES AND CAVITIES /
 Creates, edits, or deletes a combined core
 or cavity.
- CP PLACE CORE PIN / Places a core pin into a mold.
- CS COOLING COMPONENT / Specifies the components that conduct the coolant through the cooling channels.
- CW COLD WELL / Defines the cold wells that are at the end of the sprue or on a runner.
- DW DEFINE WORKPIECE SETTING / Enables you to generate a rectangular or cylindrical workpiece, which is the precondition for generating the core and cavity.
- EJ EJECTOR / Creates an ejector pin to eject a plastic part.
- **EM EDIT MOLDABLE PART /** Edits a moldable part.
- ES USE EXISTING SURFACE / Creates, edits, or deletes the existing patching or runoff surface.

Mold Design

ET	EXTEND RUNOFF SURFACE / Extends runoff surface.	PH	CREATE PLANAR PITCH / Creates planar pitch.
F	FINISH CORE/CAVITY / Activates core and cavity environment.	PI	PLACE INSERT / Places a previously generated insert in the mold assembly.
GC	GENERATE CORE AND CAVITY / Creates the required files for the core and cavity.	PP	PLASTIC PART/ Places one or more parts into a Mold Design project.
GP	GATE LOCATION / Sets gate locations.	PR	SET PLOT PROPERTY / Sets plot property.
GT	GATE / Adds a gate.	PS	CREATE PATCHING SURFACE / Creates patching surface.*
JM	JOB MANAGER / Monitors the progress of analyses and, if necessary, stops an analysis.	PS	MOLD PROCESS SETTINGS / Opens mold process settings.*
LA	LIFTER / Places a lifter assembly into the mold so the mold can open and close smoothly.	PT	PATTERN / Duplicates one plastic part and arranges the resulting occurrences in a rectangular, circular, or variable pattern.
LR	LOCATING RING / Creates a locating ring.	RN	RUNNER / Creates a runner.
MB	MOLD BASE / Provides the tools to create a mold base.	RR	RADIATE RUNOFF SURFACE / Creates, edits, or deletes a radiated runoff surface.
MF	MOLD FILL ANALYSIS / Predicts the thermoplastic polymer flow inside the	RS	CREATE RUNOFF SURFACE / Creates a runoff surface.
MP	mold during the filling phase. PART PROCESS SETTINGS / Determines the optimum mold temperature, melt temperature, and injection time based on the selected material and part geometry.	SA	SLIDER / Creates a standard slider.
		SB	SPRUE BUSHING / Creates a custom or vendor sprue bushing.
		SK	MOLD SHRINKAGE / Estimates the
MS	MANUAL SKETCH / Activates the sketch environment of a part where you can draw an insert sketch.		percentage of shrinkage that occurs based on the mold dimensions.*
		SK	PART SHRINKAGE / Estimates the
NM	CREATE MOLD DESIGN / Creates mold design.		percentage of shrinkage on an individual part.*
PF	PART FILL ANALYSIS / Reveals information about the flow of polymer through parts.	SL	LOCK SET / Creates a side lock or an interlock.

- SM SELECT MATERIAL / Selects material.
- SP SECONDARY SPRUE / Provides the means to add a new secondary sprue to the mold design and to edit, delete, and adjust the dimensions of the secondary sprue.
- UM USER MOLD BASE / Places a user-defined mold base.
- WP WORKPIECE POCKET / Creates pockets for a rectangular workpiece.

Part

- 1 TOGGLE SMOOTH / Activates the toggle smooth command.
- **E EDIT FORM** / Edits an existing form to add, remove, or modify controls.

Placed Features

- CH CHAMFER / Creates a chamfer.
- **DE DIRECT EDIT** / Allows you to make quick edits to existing solids.
- EF END FILL / Adds a weld end fill annotation in a drawing view or on a 3D weld bead to represent the hatched or filled region indicating the end of a weld bead.
- F FILLET / Creates a fillet in part and assembly files.
- GW GROOVE WELD / Creates a groove weld feature in a weldment assembly that connects two face sets with a solid weld head
- MI MIRROR / Creates a mirror feature.
- Q CREATE IMATE / Displays the Create iMate dialog box, for developing iMates.
- RP RECTANGULAR PATTERN / Creates rectangular pattern of feature.
- S 2D SKETCH / Activates the 2D Sketch command.
- S3 NEW SKETCH / Activates the 3D Sketch command.
- SH SHELL / Removes material from a part interior, creating a hollow cavity with walls of a specified thickness.
- TH THREAD / Creates threads in holes or on shafts, studs, or bolts.
- W FILLET / Activates the Fillet tool.
- WS WELDING SYMBOL / Provides annotation and acts as a grouping mechanism by referencing multiple beads with a single welding symbol.

Presentation

- CV CREATE VIEW / Adds a new presentation view.
- T TWEAK COMPONENTS / Tweaks components in a presentation.

Sheet Metal

- BE BEND / Creates a bend.
- CC CORNER CHAMFER / Activates the corner chamfer command.
- **CF CONTOUR FLANGE** / Creates a contour flange.
- CR CORNER ROUND / Adds fillets or rounds to one or more corners of a sheet metal part.
- **CS** CORNER SEAM / Defines the corner seams you add to sheet metal faces.
- **FA FACE** / Creates a sheet metal face.
- FO FOLD / Defines the fold in a sheet metal face along a sketched line that terminates at face edges.
- **HEM** / Creates a folded hem along sheet metal edges.
- PT PUNCHTOOL / Defines the punch of a 3D shape into a sheet metal face.
- ST SHEET METAL DEFAULTS / Changes the options and parameters for the active sheet metal part from those options defined by the selected Sheet Metal Rule.

Sketch

- A BASELINE SET, ANIMATE, ARC /
 Activates the Baseline Set, Animate, or Arc
 tool, depending on the work environment.
- A3 THREE POINT ARC / Draws a three-point arc using dynamic input.
- AD AUTO DIMENSION / Prompts the Auto Dimension dialog box.
- BE BEND / Creates a bend.
- CE CENTER POINT CIRCLE / Draws a center point circle using dynamic input.
- CH CHAMFER / Creates a chamfer.
- CP CIRCULAR PATTERN / Creates circular pattern of sketch geometry.
- EL ELLIPSE / Creates an ellipse with a center point, a major axis, and a minor axis that you define.
- **EX EXTEND** / Makes surfaces larger in one or more directions.
- FI FILLET / Adds fillets or rounds to one or more edges of a part, between two face sets, or between three adjacent face sets.
- H FILL/HATCH SKETCH REGION / Hatches or color fills an enclosed boundary in a drawing sketch.
- VERTICAL / Activates the vertical constraint tool.
- L LINE / Creates a line or arc.
- MI MIRROR / Mirrors sketch geometry about a selected plane.

Sketch

- MO MOVE / Moves selected sketch geometry from point to point, or move a copy of the geometry.
- O OFFSET / Duplicates selected sketch geometry, and positions it an offset distance from the original.
- PO POINT, CENTER POINT / Sketches points and center points.
- POL POLYGON / Creates polygon shapes.
- **REC** TWO POINT RECTANGLE / Draws a two-point rectangle using dynamic input.
- **REC3** THREE POINT RECTANGLE / Draws a three-point rectangle using dynamic input.
- RO ROTATE COMPONENT / Activates the Rotate Component command.
- RP RECTANGULAR PATTERN / Creates rectangular pattern of sketch geometry.
- SP SPLINE / Creates a spline.
- TC TANGENT CIRCLE / Creates circle tangent to three lines.
- X TRIM / Activates the Trim command.

Sketch Features

- BP BEND PART / Bends a portion of a part.
- **E EXTRUDE** / Extrudes a profile.
- H HOLE / Creates a hole in a feature.
- LO LOFT / Creates lofted features or bodies by blending multiple profiles into smooth shapes between the profiles or part faces.
- **R REVOLVE** / Revolves a sketch.
- **SW SWEEP** / Creates a sweep feature.

Stress Analysis

- A ANIMATE RESULTS / Animates the selected simulation results.
- AC AUTOMATIC CONTACTS / Compares automatic contacts.
- BC BOUNDARY CONDITIONS / Toggles display of all boundary conditions.
- BE BEARING LOAD / Applies a bearing load to a full or partial cylindrical surface.
- BO BODY LOAD / Defines angular velocity or angular or linear acceleration for the model.
- **CC COLOR BAR** / Displays the Color Bar settings dialog box where you adjust the color bar display parameters.
- CF FIXED CONSTRAINT / Applies a fixed constraint on selected faces, edges, or vertices.

- CP CONVERGENCE PLOT / Displays the plot within a dialog box.*
- CP PIN CONSTRAINT / Sets the pinned constraint origin and offset.*
- CS FRICTIONLESS CONSTRAINT / Applies a frictionless constraint on selected faces.
- CT CONTOUR SHADING / Displays color changes using a strict banding between colors.
- FO FORCE LOAD / Applies a force of the specified magnitude to the selected faces, edges, or vertices.
- GR GRAVITY LOAD / Creates a gravity load.
- MAT ASSIGN MATERIALS / Opens the assign materials dialogue box to assign materials to a component.
- MAX MAXIMUM RESULT / Turns on and off the display of the point of maximum result in the mode.
- MC MANUAL CONTACT / Adds manual contact conditions to selected geometry elements.
- MIN MINIMUM RESULT / Turns on and off the display of the point of minimum result in the model.
- ML LOCAL MESH CONTROL / Adds a local mesh control.
- MO MOMENT LOAD / Applies a load of the specified magnitude around the axis and perpendicular to the face.
- MS MESH SETTINGS / Specifies the mesh sizing and coarseness.

Stress Analysis

- MV MESH VIEW / Displays the element mesh used in the solution with the result contours. Also displays the mesh over the undeformed model.
- N CREATE SIMULATION / Creates new simulation.
- NP NO SHADING / Turns off the Shaded Results display.
- P PROBE / Activates the Probe command. You place probes as needed in areas of interest to display the stress values for that point.
- PL PROBE LABELS / Toggles the visibility of probe labels.
- PR PRESSURE LOAD / Pressure load.
- R REPORT / Generates a report.
- RF REMOTE FORCE LOAD / Applies a force of the specified magnitude to the selected face.
- S SIMULATE / Runs a simulation.
- SC RESULT DISPLACEMENT SCALE / Adjusts displacement scale.
- SET STRESS ANALYSIS SETTINGS / Activates the stress analysis settings dialog box.
- SM SMOOTH SHADING / Displays color changes using a blended transition.
- SS SAME SCALE / Maintains the same scale while viewing different results.
- T PARAMETRIC TABLE / Accesses the parametric table to specify design constraints and parameter ranges.

Tools

- LA EDIT LAYERS / Specifies a layer name and attributes for common display properties of drawing objects.
- M MEASURE DISTANCE / Opens the Measure Distance window.
- OP APPLICATION OPTIONS / Opens the Application Options settings.
- **SE EDIT STYLES** / Style and Standard Editor.

Tube & Pipe

- AT TUBE & PIPE AUTHORING / Authors an iPart or a normal part for publishing to the Content Center Library.
- **CF CONNECT FITTINGS** / Connects existing fittings.
- DR DERIVED MOTION / Creates or edits a derived route.
- ES EDIT BASE SKETCH / Edits the base 3D sketch.
- HL HOSE LENGTH / Edits hose length by changing end tangency weights.
- IG INCLUDE GEOMETRY / Introduces reference geometry to the route sketch.
- IN INSERT NODE / Inserts route node into segment.
- IO ISOGEN OUTPUT / Saves a file with a specified name and ISOGEN file type.

- MN MOVE NODE / Drags node to a new location.
- MS MOVE SEGMENT / Drags segment to a new location.
- NR NEW ROUTE / Adds new rigid piping and bent tubing routes to a pipe run.
- PF PLACE FITTING / Picks up a fitting from your project work space to place into the active run.
- PR CREATE PIPE RUN / Creates pipe run.*
- PR POPULATE ROUTE / Populates route.*
- RT ROUTE / Starts or continues route definition.
- ST TUBE AND PIPE STYLES / Copies and modifies existing style definitions and delete styles you no longer use.
- WT GROUNDED WORK POINT / Grounded Work Point.

View

- ORBIT FREE ORBIT / Rotates a model about the center of the screen or about axes in model space.
- PAN PAN / Pans the view.
- VC VIEWCUBE / Toggles the view of the ViewCube.
- Z ZOOM WINDOW / Zooms in on a specified area.

