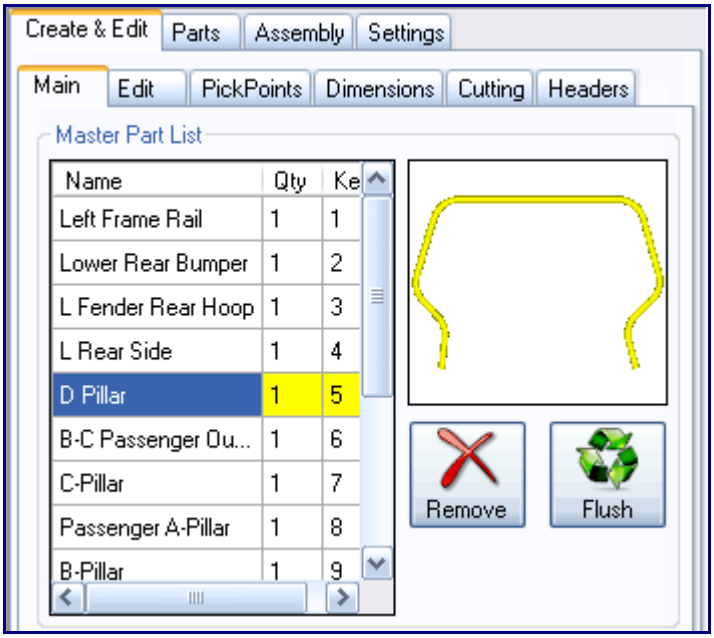
Master Part List (Main)

Master Part List



Description

The Master Part List is a list of all parts that have been added to the current Assembly project.

How-To

Select a part in the list to view a preview of it. The Qty (Quantity) column displays the number of times that the part is used in the current Assembly project. To remove a part from the list, click the Remove button. To remove all unused parts from the Master Part List, click the Flush button.

Add Part (Main)

Add Part

Description

The Add Part area contains the functions available for adding parts into an Assembly project.

How-To

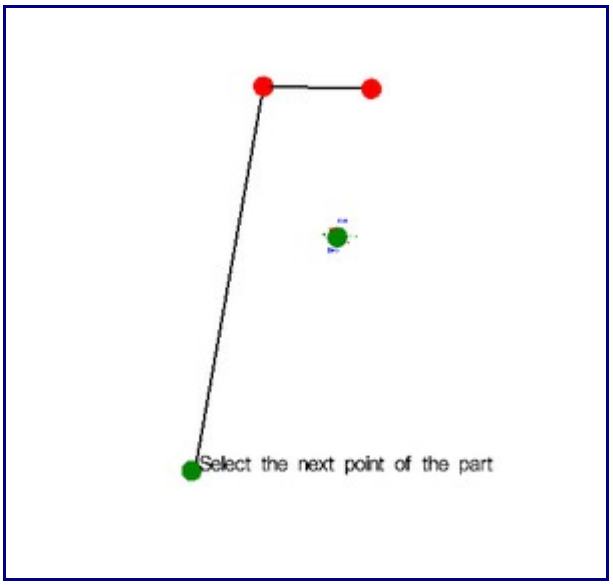
Paste Part

The Paste Part button can be used to place parts that appear in the Master Part List into the display window. Select a part from the Master Part List, click the Paste Part button, and click a PickPoint in the display window to place the part there, with the anchor point of the part centered on the PickPoint that you selected.

Straight Part

Click the Straight Part button and click any two PickPoints in the display window to create a straight tube between the two PickPoints.

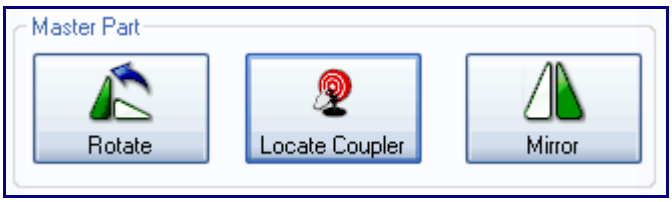
Bent Part



To create a new bent part, click the Bent Part button. In the Number of Bends window that appears, enter the number of bends that the part will have and click the OK button. To create the part, you must select the endpoints and the apex of each bend. Click a PickPoint to set it as the first endpoint of the part. Click the apex point of each bend, in order. Click the last endpoint to finish the part. You can not create a bend that is 180° or more by using the Bent Part tool. In order to create such a bend, you would need to create two separate parts.

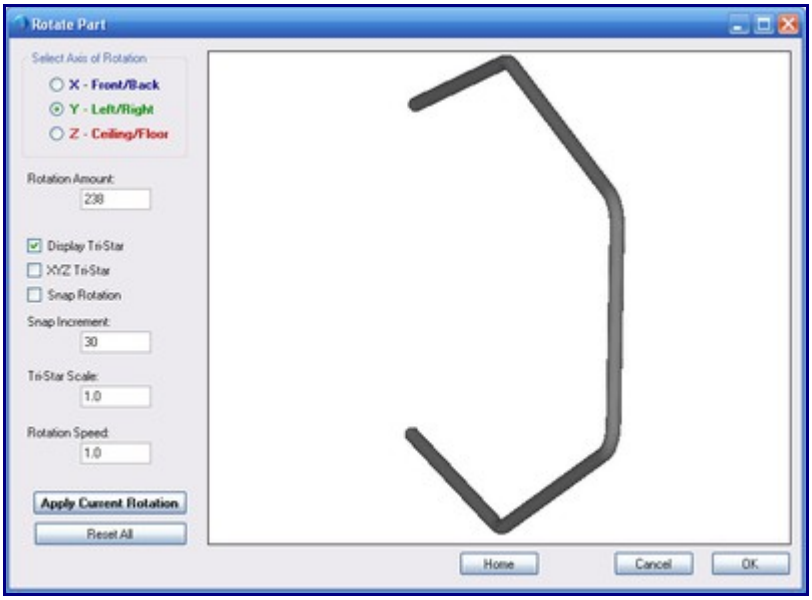
Master Part (Main)

Master Part



Functions

Rotate



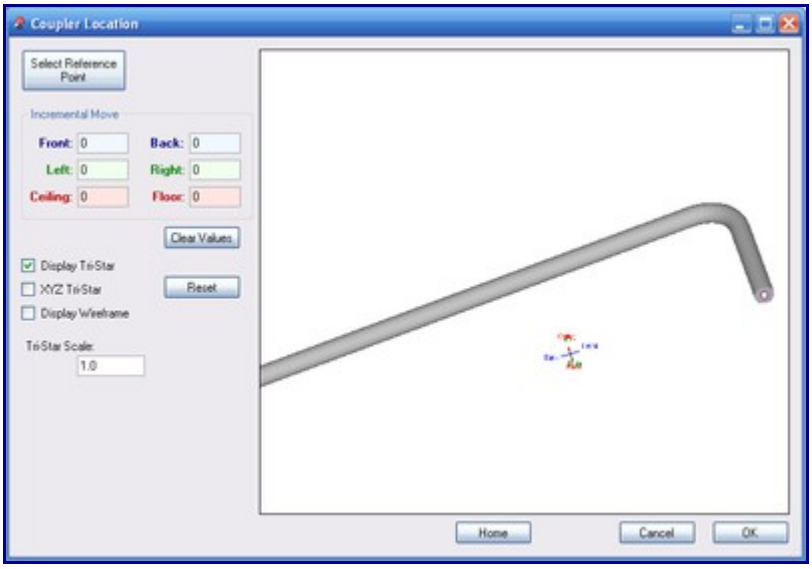
Description

Creates a rotated version of an existing part which can be placed into the Assembly project.

How-To

Select a part from the Master Part List and click the Rotate button. Select an axis to rotate the part around in the Select Axis of Rotation area. Enter an amount to rotate the part in the Rotation Amount field, or left click on the part and drag the cursor left or right to rotate the part. To hide the Tri-Star, uncheck the Display Tri-Star checkbox. To change the names of the axis on the Tri-Star to X,Y, and Z, check the XYZ Tri-Star checkbox. Enter a value in the Snap Increment field and check the Snap Rotation checkbox in order to use snap rotation. Snap rotation will rotate a part by the amount in the Snap Increment field when the part is rotated using the left mouse button. To change the size of the Tri-Star, enter a scale factor into the Tri-Star Scale field. To change the amount that the part is rotated when not using snap rotation, enter an amount in the Rotation Speed field. By default, the rotation speed will be 1, meaning the part will be rotated one degree at a time. Entering a decimal will allow the part to be rotated by smaller increments. Whenever you rotate a part in a certain axis, you must click the Apply Current Rotation button before rotating the part in another axis. To reset the orientation of the part, click the Reset All button. To return the display to the home position without changing the rotation of the object, click the Home button. After all rotations have been applied, click the OK button.

Locate Coupler



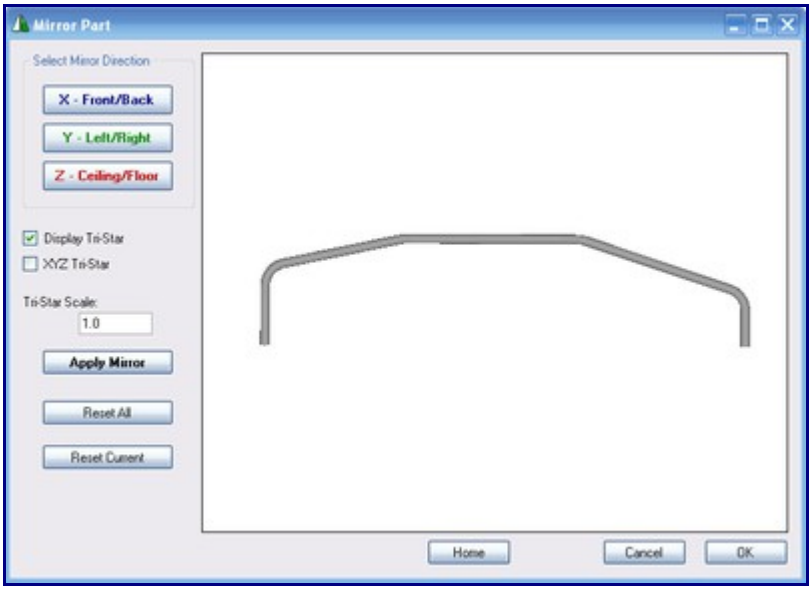
Description

Allows the user to move the coupler (the anchor point of the part).

How-To

Select a part in the Master Part List and click the Locate Coupler button. The Coupler Location window will appear. Click the Select Reference Point and click a PickPoint in the Coupler Location window display area. To move the point, use the Incremental Move fields. To set all fields to 0 in the Incremental Move area, click the Clear Values button. Click the Reset button to reset the coupler to its original location. To toggle the display of the Tri-Star use the Display Tri-Star checkbox. To Switch the names of the Tri-Star axis to X,Y, and Z, use the XYZ Tri-Star checkbox. To toggle between viewing a shaded and wireframe version of the part, use the Display Wireframe checkbox. Enter a scale factor in the Tri-Star Scale field to change the size of the Tri-Star.

Mirror



Description

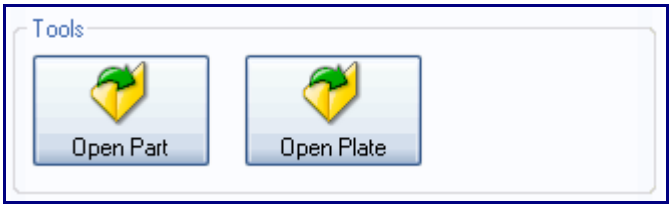
Creates a new version of a part which can be mirrored.

How-To

Select a part from the Master Part List and click the Mirror button. The Mirror Part window will appear. In the Select Mirror Direction area, select an axis to mirror the part across. After a part has been mirrored, you must click Apply Mirror before mirroring the part again. Click Reset Current to revert the part to the last time you clicked the Apply Mirror button. Click Reset All to reset the part to its original orientation. Click the home button to set the display to the home view. Click OK to create the mirrored part.

Tools (Main)

Tools



Description

Allows parts and plates to be loaded into the Assembly project.

How-To

To open a part, click the Open Part button and find the Bend-Tech Part file using the browser. To open a plate, click the Open Plate button and find the Bend-Tech Plate file using the browser.

Die and Material (Main)

Die and Material

Description

The Die and Material area can be used to select a Die and Material to be used when placing new parts.

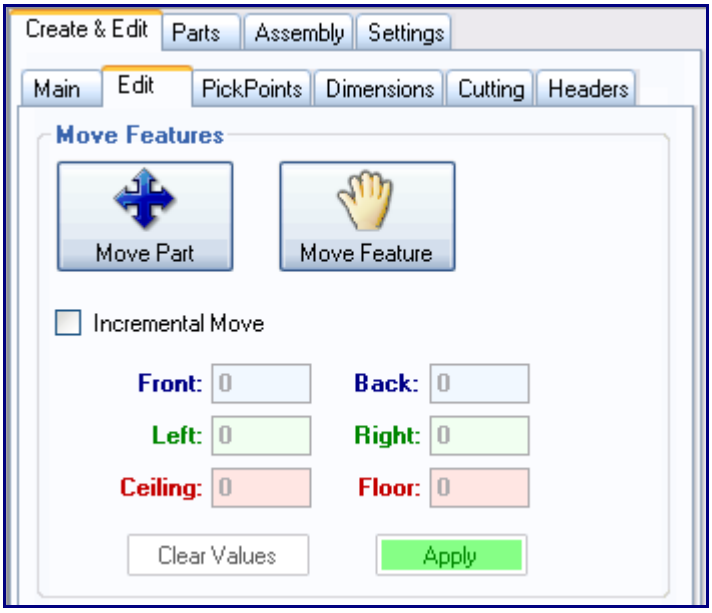
How-To

To select a die, use the Die for new Parts drop down menu and pick a die. To select a material, use the Material for new Parts drop down menu and pick a material.

Edit (Create & Edit)

Functions

Move Features



Description

Moves a part or a single feature of a part.

How-To

Move Part

To move a part, click the Move Part button and click on a PickPoint of a part. If Incremental Move is not checked, you will be asked to choose which PickPoint will be the anchor point. You will then be able to click any PickPoint to place the part there, with its anchor point centered on the point you select. If Incremental Move is checked, you will only have to click the part you are moving once. You will then be able to enter values into the Front, Back, Left, Right, Ceiling, and Floor fields in order to move the part in that direction by that value. To reset all fields to 0, click the Clear Values button. To move the part to the new location, click the Apply button.

Move Feature

To move a single feature of a part, click the Move Feature button. Click a part and select a feature to move. If Incremental Move is checked, enter values into the Front, Back, Left, Right, Ceiling, and Floor fields and click the Apply button. If Incremental Move is not checked, click a PickPoint to move the feature there.

Remove (Edit)

Remove

Description

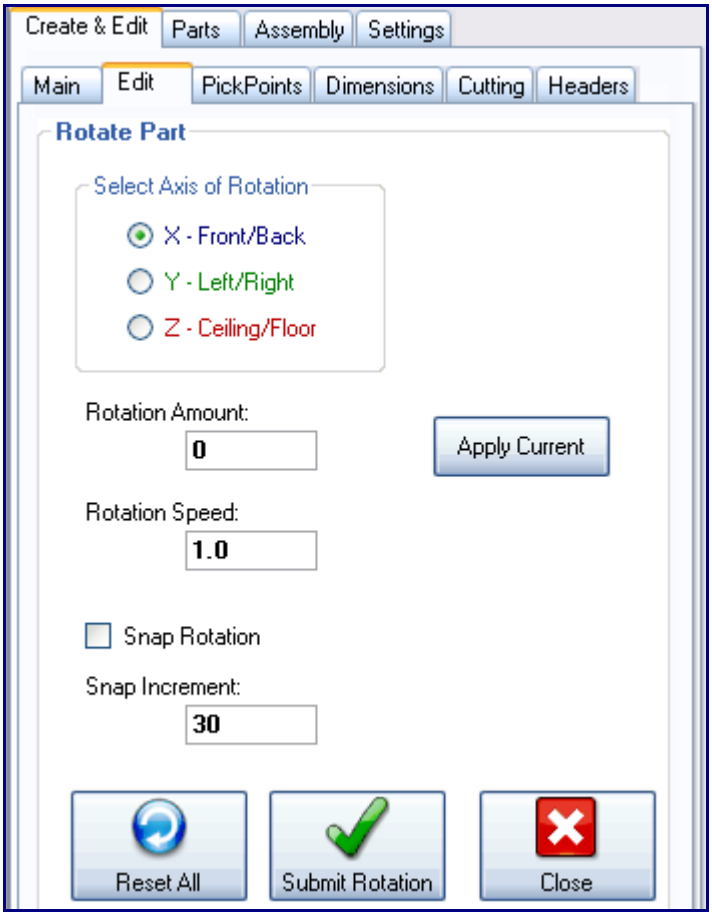
Removes parts from an Assembly project.

How-To

Click the Remove button and select all of the parts that you would like to remove in the Remove Parts list. An "X" should appear in the Delete column next to the parts that you select. Click the Remove Selected button to remove the parts. Click the Close button to return to the Edit tab.

Rotate (Edit)

Rotate



Description

Rotates a part.

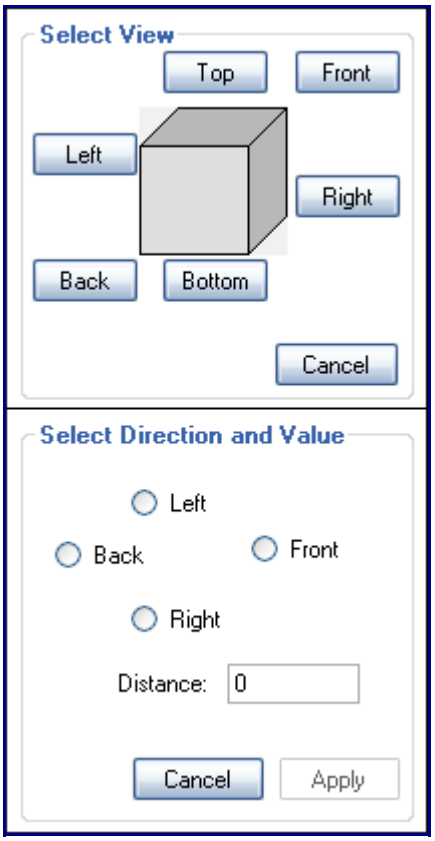
How-To

Click the Rotate button and click a part. Click a PickPoint to set it as the center of rotation. Select an axis to rotate the part around in the Select Axis of Rotation area. You can either left click and drag to

rotate or enter a rotation amount in the Rotation Amount field. If clicking and dragging, you can either rotate by whatever increment is in the Rotation Speed field (this value can be changed to rotate by larger or smaller increments) or you can check the Snap Rotation box and enter a value in the Snap Rotation field to use snap rotation. Snap rotation will rotate the part in increments of whatever is entered in the Snap Increment field when the user left clicks and drags the cursor over the display window. If rotating an object in more than one axis, make sure to click the Apply Current button before switching axis. To reset the object to its original orientation, click the Reset All button. To finish and save the current rotation to the part, click the Submit Rotation button.

Stretch (Edit)

Stretch



Description

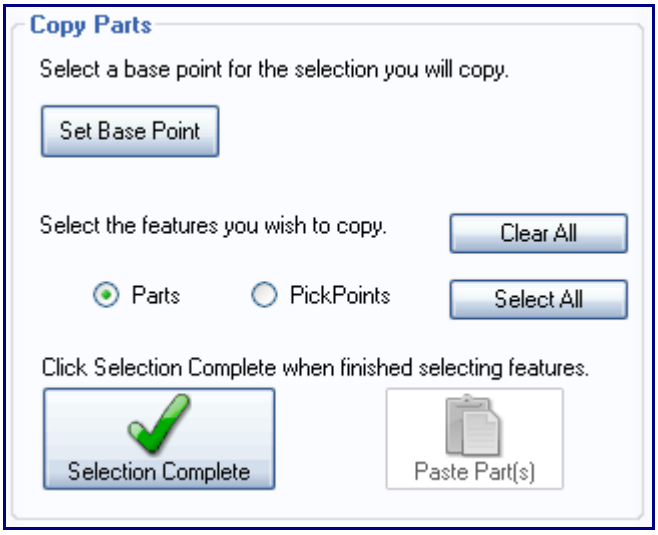
Moves a selection of PickPoints in a specified direction, adjusting all parts to compensate.

How-To

Click the Stretch button. You will be prompted to select a view. Select the PickPoints that will be stretched by clicking on any two spots on the display in order to draw a selection rectangle between them. Select a direction and enter the amount that the selected PickPoints should be moved in the Distance field. Click the Apply button to apply the stretch.

Copy Parts (Edit)

Copy Parts



Description

Copies a selection and allows it to be pasted back into the Assembly project.

How-To

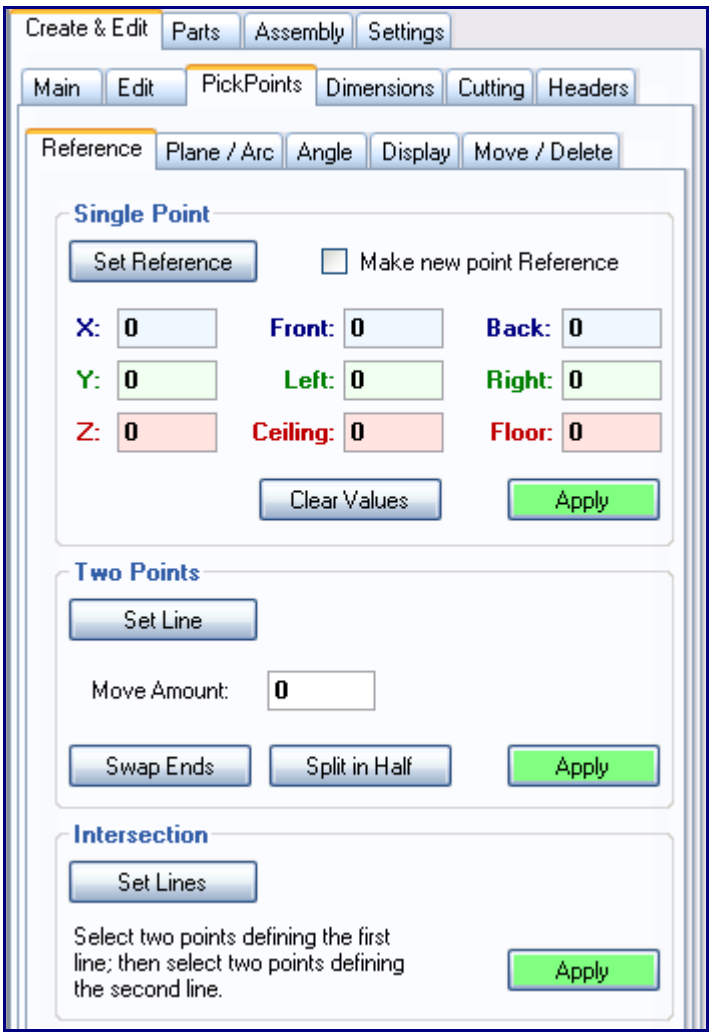
Click the Set Base Point button and click a PickPoint to set it as the anchor point of the selection. To select parts, make sure Parts is selected and click on any part that you want to copy. To select PickPoints, make sure PickPoints is selected and select any PickPoints that you want to copy. To Select the entire Assembly project, click the Select All button. To unselect everything, click the Clear All button. To save the Selection click the Selection Complete button. To paste the selection, click the Paste Part(s) button and click on a PickPoint to place the selection at that point.

PickPoints (Create & Edit)

Functions

Reference (PicPoints)

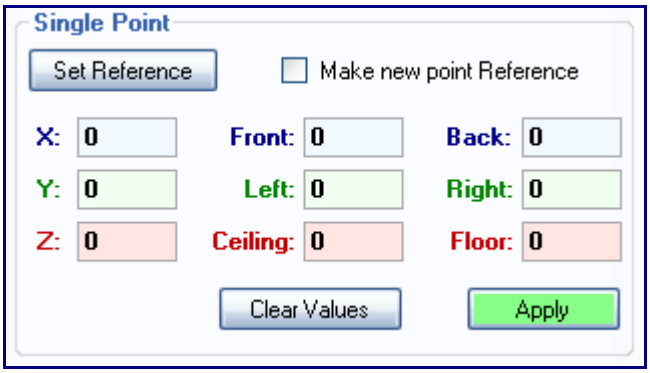
Reference



Functions

Single Point (PickPoints)

Single Point



Description

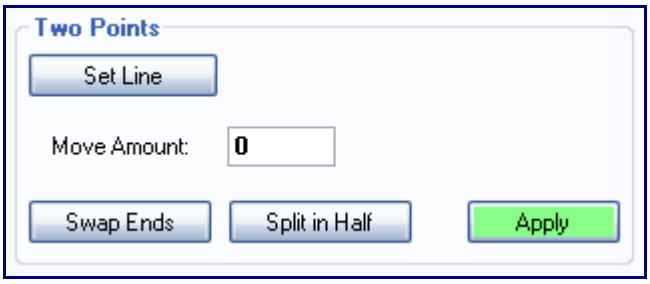
Creates a PickPoint by using another PickPoint as a reference point.

How-To

Click the Set Reference button and click a PickPoint to set it as the reference point. Use the fields in the Single Point area to enter the incremental distance from the Reference point that the new point will be. Click the Apply button to create the PickPoint. To reset all fields in the Single Point area to 0, click the Clear Values button. If the Make new point Reference box is checked, each new PickPoint that you create using the Single Point feature will automatically be set as the reference point.

Two Points (PickPoints)

Two Points



Description

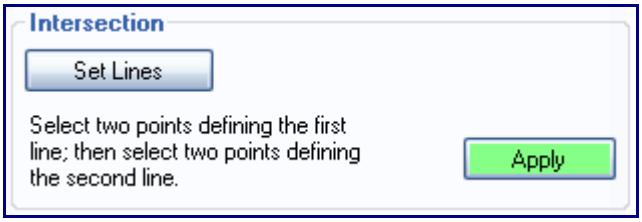
Creates a PickPoint that is aligned with two other PickPoints.

How-To

Click the Set Line button and click two PickPoints. In the Move Amount field, enter the distance from the first PickPoint that the new PickPoint should be. To measure the Move Amount distance from the other point, click the Swap Ends button. To set the new point directly in between the reference points click the Split in Half button. To place the point, click the Apply button.

Intersection (PickPoints)

Intersection



Description

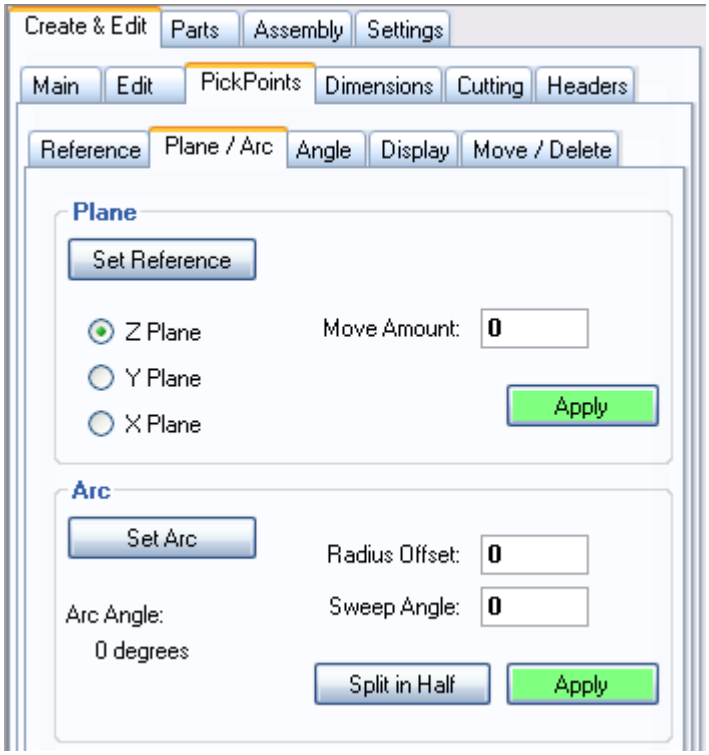
Creates a point at the intersection of two user defined lines.

How-To

Click the Set Lines button and click the start point and end point of the first line. Click the start and end point of the second line. Click the Apply button to place a PickPoint at the intersection of the two lines.

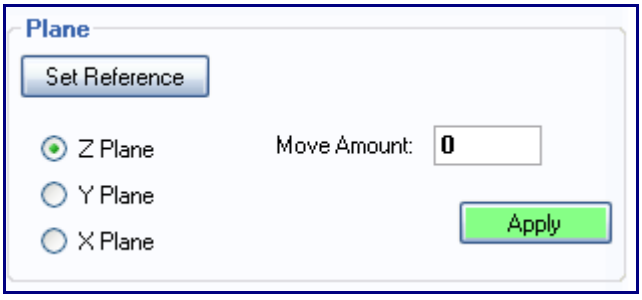
Plane / Arc (PickPoints)

Plane / Arc



Plane (PickPoints)

Intersection



Description

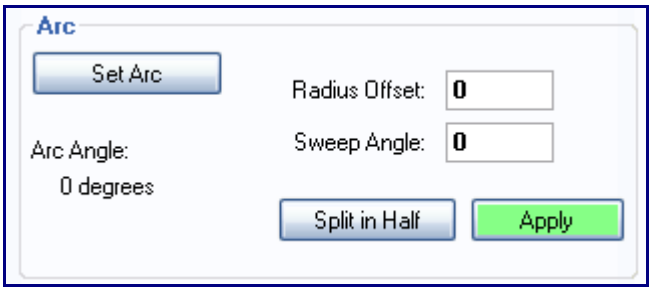
Creates a point by using a line and a plane for reference.

How-To

Click the Set Reference button and click a PickPoint to set it as the center of the plane. Select which axis the plane should lie on. Click two PickPoints to set them as the start and end points of the line. The new PickPoint will be at the intersection of the line and the plane. To move the new PickPoint up or down along the line, enter a value in the Move Amount field. Click the Apply button to place the new point.

Arc (PickPoints)

Arc



Description

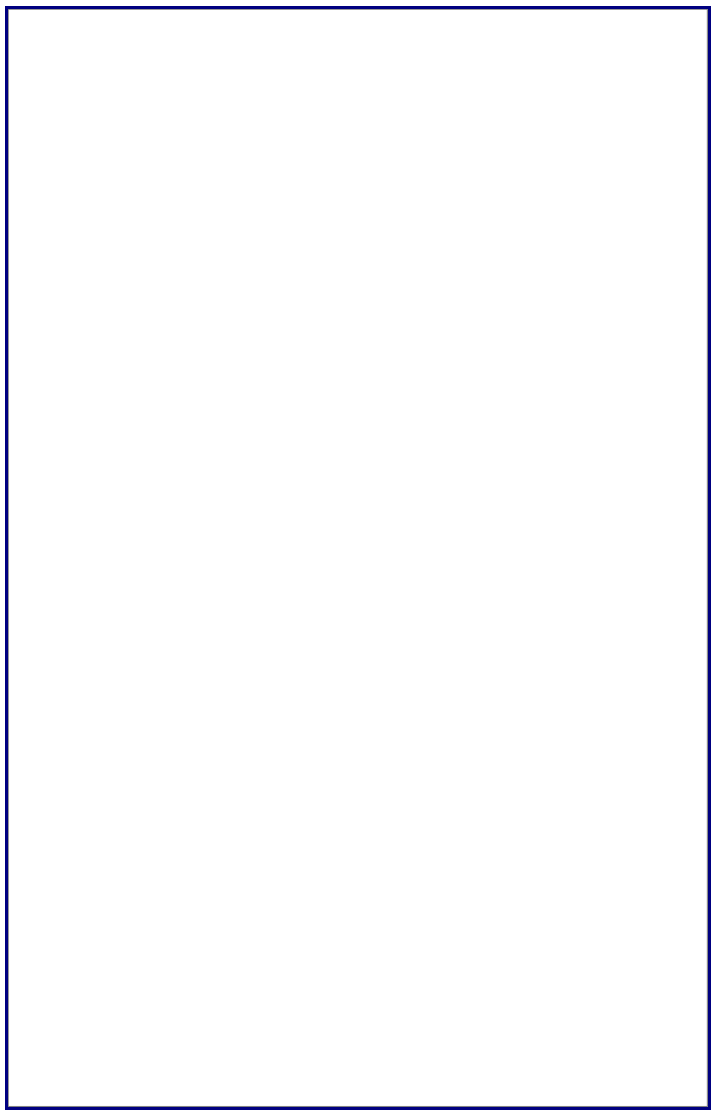
Creates a PickPoint by using an arc as reference.

How-To

Click the Set Arc button and click on an arc to select it. The angle of the arc should appear under Arc Angle in the Arc area. Enter the angle along the arc that the new point should be in the Sweep Angle field. To set a point above or below the selected arc, enter a value in the Radius Offset field. Negative values will cause the PickPoint to be inside the arc. Click the Split in Half button to set the PickPoint halfway across the arc. Click the Apply button to place the PickPoint.

Angle (PickPoints)

Angle



Description

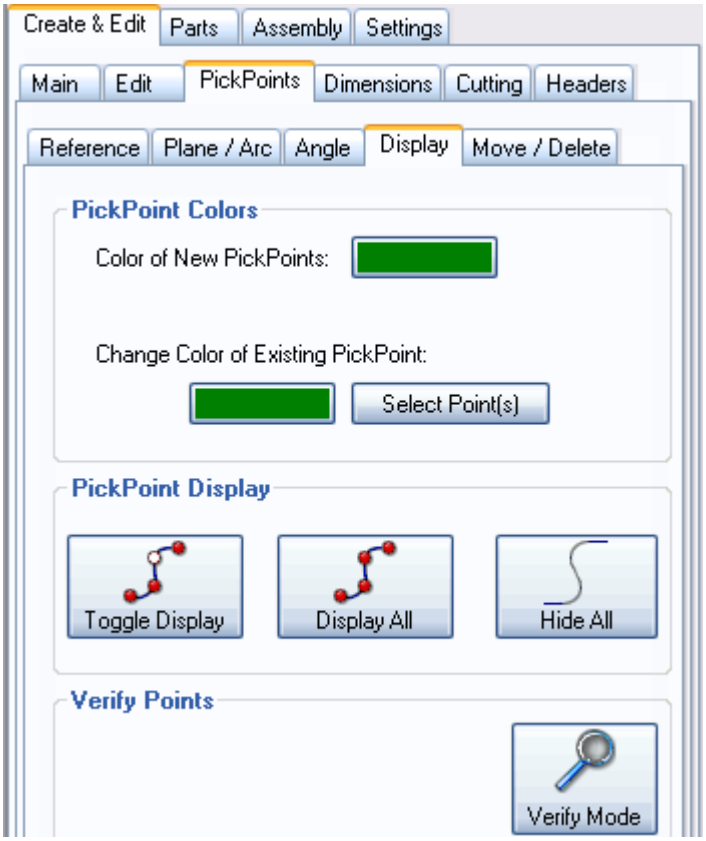
Creates a PickPoint that is at a specified angle and distance from another PickPoint.

How-To

Click the Set Reference button and click on a PickPoint to set it as the reference point. Use the Tri-Globe to select the direction of the new point. Enter an angle, using the Tri-Globe to determine which direction 0° and 90° are. Enter the distance from the reference point that the new point should be in the Length field. Click the Apply button to place the PickPoint. Alternatively, you can leave the Length and Angle field at 0 and use the two fields below the Length field to enter the distance from the reference point. Use the Hide PickPoints checkbox to toggle the display of all PickPoints that aren't being used by the Angle function.

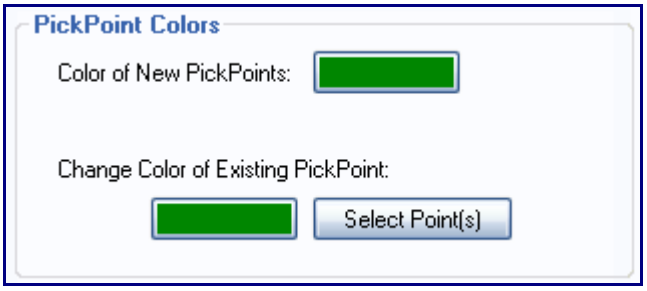
Display (PickPoints)

Display



PickPoint Colors (PickPoints)

PickPoint Colors



Description

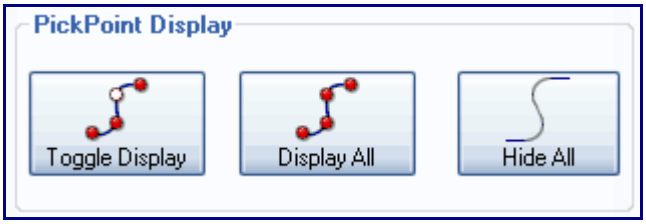
Changes the color of new or existing PickPoints.

How-To

To set the color of all new PickPoints, click the colored box next to "Color of New PickPoints:" and use the windows color selection tool to select a new color. To set the color of existing PickPoints, click the colored box next to "Change Color of Existing PickPoint:" and use the windows color selection tool to select a new color. Click the Select Point(s) button and click on a PickPoint to change its color.

PickPoint Display (PickPoints)

PickPoint Display



Description

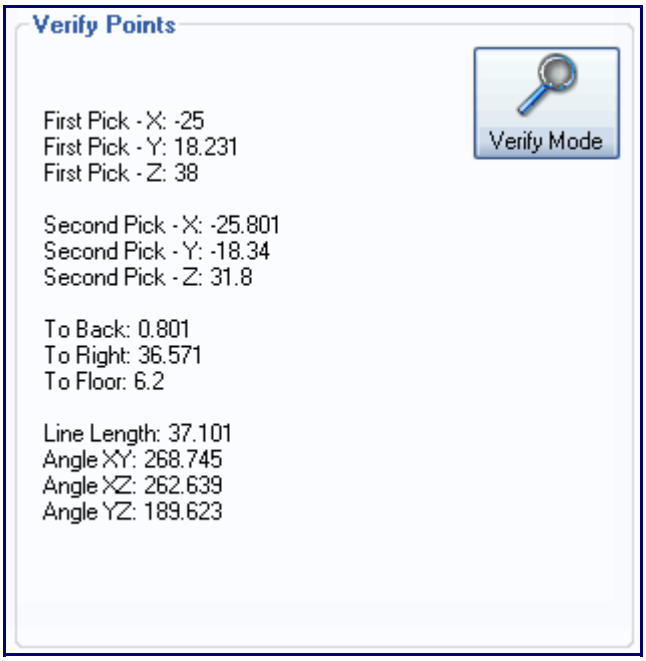
Displays or hides PickPoints.

How-To

Click the Toggle Display button and click a PickPoint to toggle if it is displayed or hidden. Click The Display All button to display all PickPoints. Click the Hide All button to hide all PickPoints.

Verify Points (PickPoints)

Verify Points



Description

Displays the coordinates of up to two PickPoints and their distance from each other.

How-To

Click the Verify Mode button and click on a PickPoint. Information on that PickPoint will be displayed. Click on a second PickPoint to see information on both PickPoints and their distance from each other.

Move / Delete (PickPoints)

Move / Delete

Functions

Delete Points (PickPoints)

Delete Points

Description

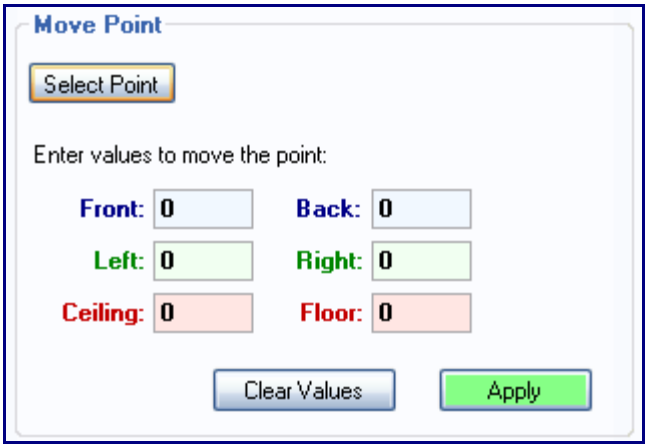
Deletes a PickPoint.

How-To

Click the Delete Point button and click on a PickPoint to delete it.

Move Point (PickPoints)

Move Point



Description

Moves a PickPoint.

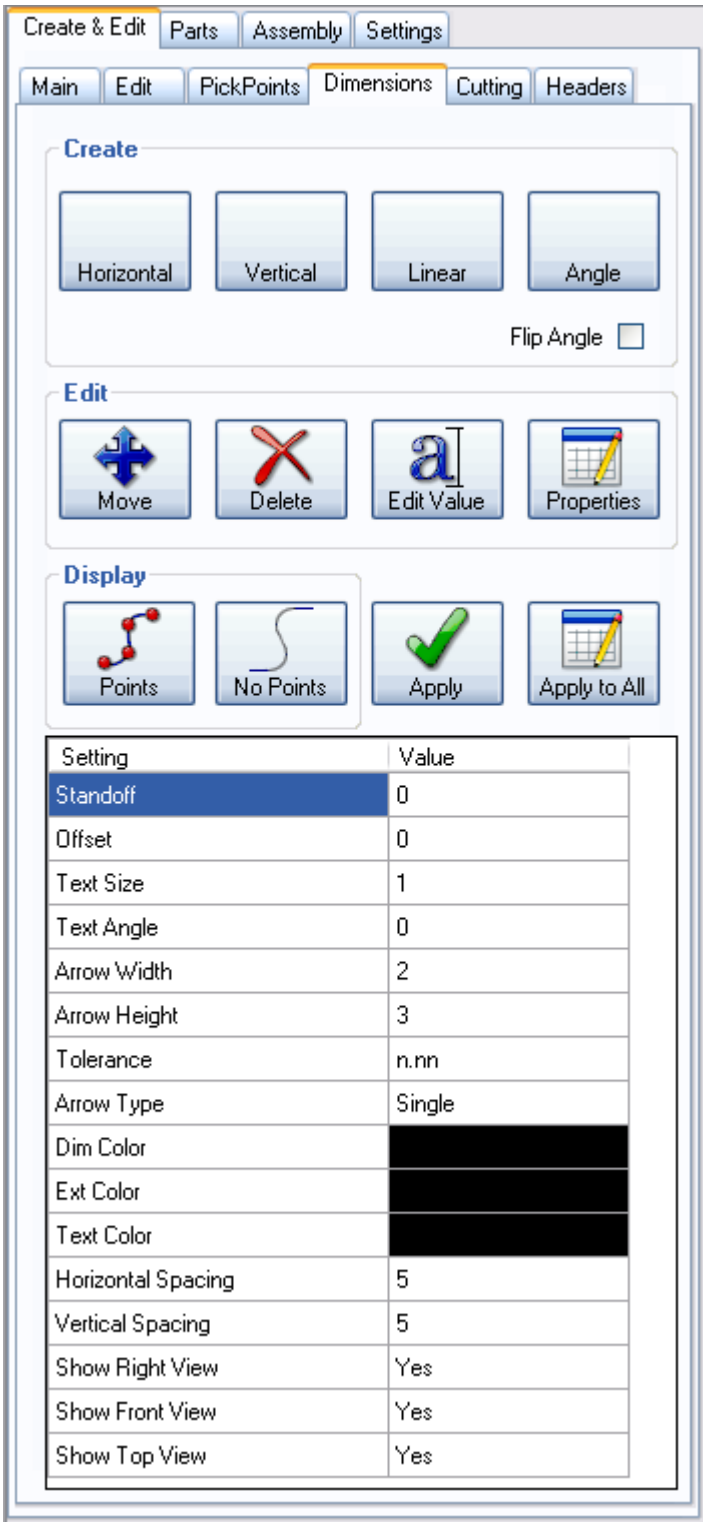
How-To

Click the Select Point button and click a PickPoint. Use the Front, Back, Left, Right, Ceiling, and Floor buttons to enter a new location for the point (the points current location is the reference point). Click The Apply button to place the point. To clear all fields in the Move Point area click the Clear Values button.

Dimensions (Create & Edit)

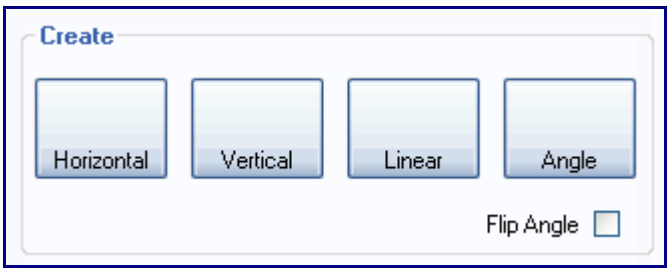
Dimensions

Functions



Create (Dimensions)

Create



Description

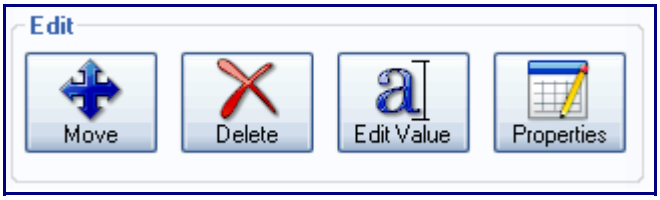
Measures a distance or angle and places that value on a moveable dimension line.

How-To

Click on the button that corresponds to the type of dimension you would like to create. Horizontal will measure the horizontal distance between two points and create a Horizontal dimension marker. Vertical will measure the vertical distance between two points and Linear will measure the linear distance. To use any of these dimensions, just click the desired dimension button and click on two PickPoints. To measure an angle, click the Angle button and click the start and end points of two intersecting lines. To reverse the angle, click the Flip Angle checkbox.

Edit (Dimensions)

Edit



Description

The Edit area contains tools that can be used to edit previously placed dimensions.

How-To

Move

Click the Move button to display a PickPoint next to each dimension. Click on a dimension's PickPoint to move it.

Delete

Click the Delete button and click on a dimension's PickPoint to delete that dimension.

Edit Value

Click the Edit Value button and click on a dimension's PickPoint to edit its value. Type in a new value

and click OK. This will only change the displayed value. The dimension itself will still be the same.

Properties

Click the Properties button and click a dimension's PickPoint to edit its settings. Make changes to the Settings area as desired and click the Apply button to save the changes.

Display (Dimensions)

Display

Description

Allows the display of PickPoints while in the Dimensions tab to be toggled on and off.

How-To

To hide all PickPoints while working in the Dimensions tab, click the No Points button. To show all PickPoints, click the Points button.

Settings (Dimensions)

Settings

Setting	Value
Standoff	0
Offset	0
Text Size	1
Text Angle	0
Arrow Width	2
Arrow Height	3
Tolerance	n.nn
Arrow Type	Single
Dim Color	
Ext Color	
Text Color	
Horizontal Spacing	5
Vertical Spacing	5
Show Right View	Yes
Show Front View	Yes
Show Top View	Yes

Description

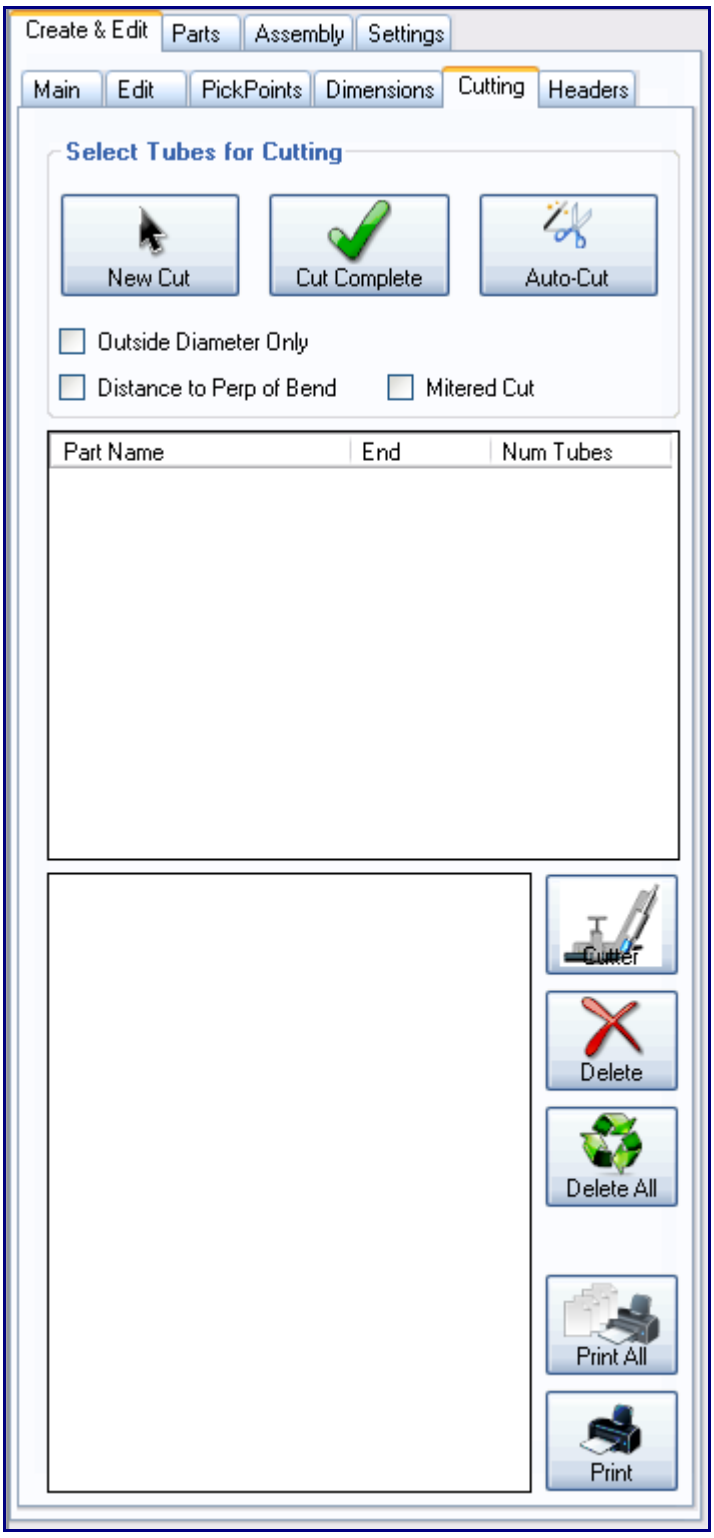
The Settings area can be used to adjust various elements of how dimensions are displayed.

Settings

- Standoff
- Offset
- Text Size
- Text Angle
- Arrow Width
- Arrow Height
- Tolerance
- Arrow Type
- Dim Color
- Ext Color
- Text Color
- Horizontal Spacing
- Vertical Spacing
- Show Right View
- Show Front View
- Show Top View

Cutting (Create & Edit)

Cutting



Description

The Cutting tab contains the tools necessary for adding cuts to the ends of parts. Wrappers can be printed which, when wrapped around the end of a tube, mark where the tube needs to be cut.

How-To

Click the New Cut button and click a part. Click a second part that the first part will be cut to fit against. Click the Cut Complete button. The cut should appear in the list of cuts on the Cutting tab. Click the Auto-Cut button to let the software attempt to generate all cuts in the assembly project. If the Outside Diameter Only box is checked, the software will not display the inside diameter cut line for each cut. If Mitered Cut is checked, all cuts will be calculated as straight mitered cuts. If you are using a hole saw to cut your tubes leave Mitered Cut unchecked.

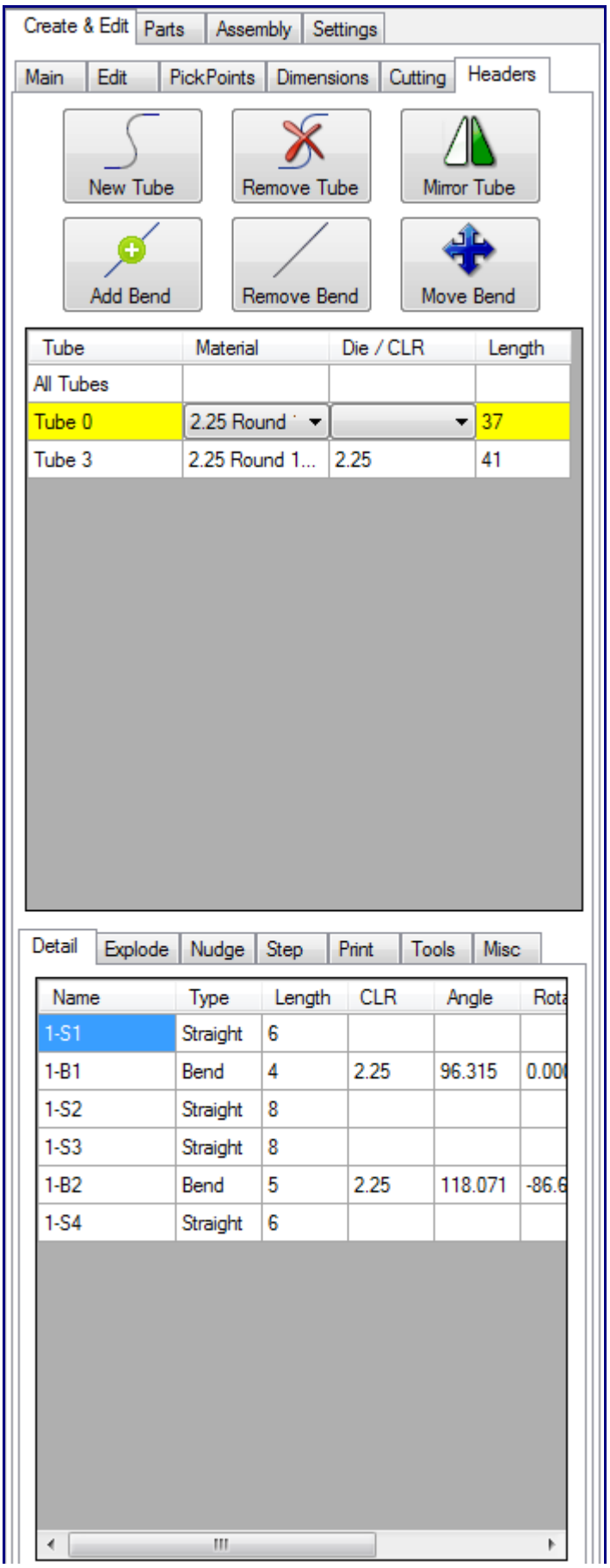
On each wrapper, there is a red line with a number on it. This line is used for lining up a wrapper on a tube. The number is the distance from the end of the tube that the red line should be. If Distance to Perp of Bend is checked, the red line will instead display the distance to the tangent of the nearest bend combined with the outside radius of the bend.

In the middle of the Cutting tab, there is a list of all cuts in the current Assembly project. Click on one to see a preview of the wrapper. Click the Cutter button to see information on the cut and information on making the cut with a hole saw if available. Click Delete to remove the cut from the tube, or click Delete All to remove all cuts from the Assembly project. Click Print to print the currently selected wrapper, or click Print All to print out all wrappers for the entire Assembly project.

Headers (Create & Edit)

Headers

Description


Create & Edit
Parts
Assembly
Settings
Main
Edit
PickPoints
Dimensions
Cutting
Headers
New Tube
Remove Tube
Mirror Tube
Add Bend
Remove Bend
Move Bend
Tube
Material
Die / CLR
Length
All Tubes
Tube 0
2.25 Round
37
Tube 3
2.25 Round 1...
2.25
41
Detail
Explode
Nudge
Step
Print
Tools
Misc
Name
Type
Length
CLR
Angle
Rota
1-S1
Straight
6
1-B1
Bend
4
2.25
96.315
0.00
1-S2
Straight
8
1-S3
Straight
8
1-B2
Bend
5
2.25
118.071
-86.6
1-S4
Straight
6

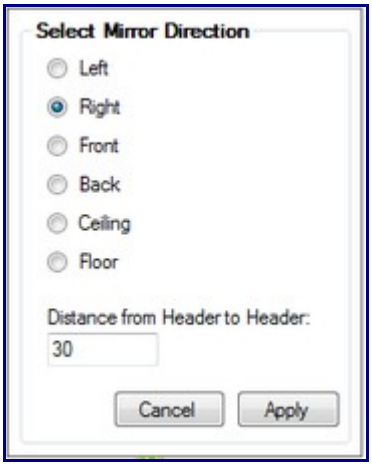
In the Headers tab, header tubes can be created and edited.

How-To

New Tube: To add a tube to the header design, click the 'New Tube' button. Once clicked, select the PickPoint at the header end of the tube, then the first tangent point of the bend straight off the header point, then the last tangent point before the collector/end of the tube, and then the collector/end of the tube.

Remove Tube: To remove a tube from the header design, click the 'Remove Tube' button and select the blue PickPoint on tube to remove.

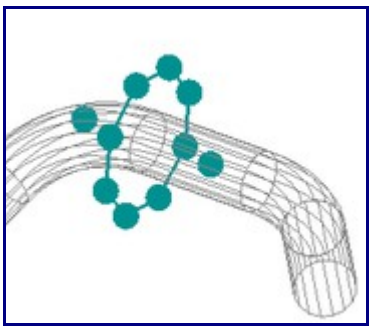
Mirror Tube: To mirror a tube, click the 'Mirror Tube' button. Once clicked, each bend on each tube will have its own blue PickPoint. Click on a PickPoint to select the part that will be mirrored. Once selected, a menu will appear in the top left corner of the screen. A direction and distance must be chosen. Click a circle next to a direction, enter how far apart the mirrored tubes should be, and click 'Apply' to place the mirrored tube.



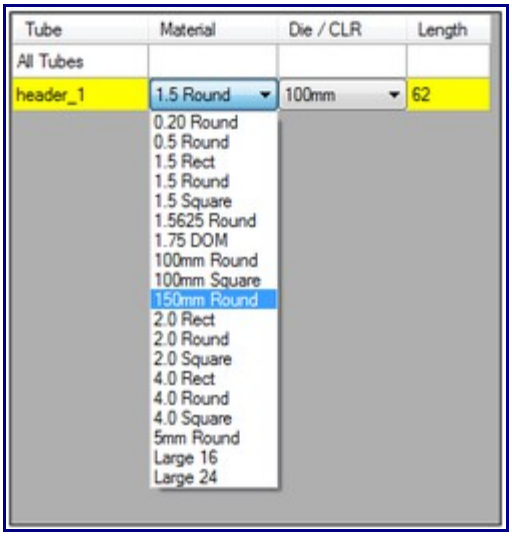
Add Bend: To add a bend to a header tube, click the 'Add Bend' button and click on a blue PickPoint on an available straight section. The start and end straight sections cannot have bends added to them. Once a section is chosen, a bend will be added.

Remove Bend: To remove a bend from a tube, click the 'Remove Bend' button and select the PickPoint on the bend to delete it.

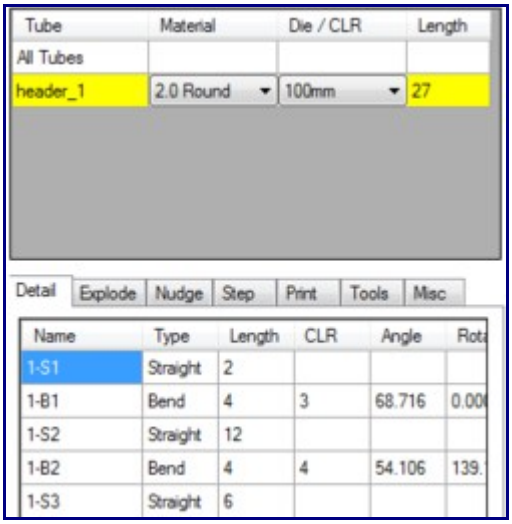
Move Bend: To adjust the location of a bend, click the 'Move Bend' button and select a blue PickPoint on a bend. Once clicked, a ring and a front and back set of teal PickPoints will appear around the chosen bend. Each of these PickPoints represent a direction to move the bend. Click on a PickPoint and move the cursor about to adjust the location of the bend. Using this function is just a quick way to adjust a bend, but for more accurate/specific move amounts use the options in the Nudge tab.



Tube List:Below the buttons in the Header tab, the list of header tubes is shown. The given name, material, Die used for the bends, material, and total length of the tube is shown in this chart. To change the material and/or die, select the tube by clicking on it. Once selected, the material and die cells will be shown as drop down menus. To change either of them, click on the drop down menu and select a new option from the list.

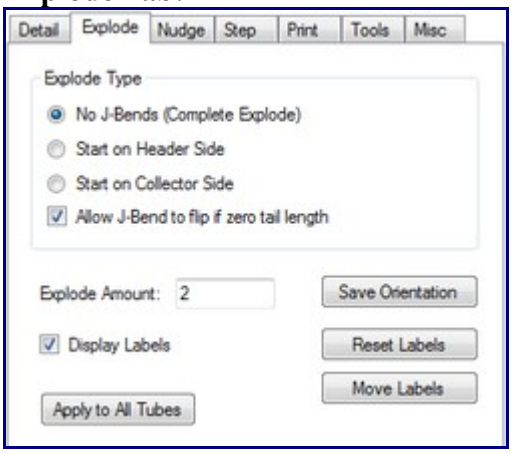


Detail Tab:



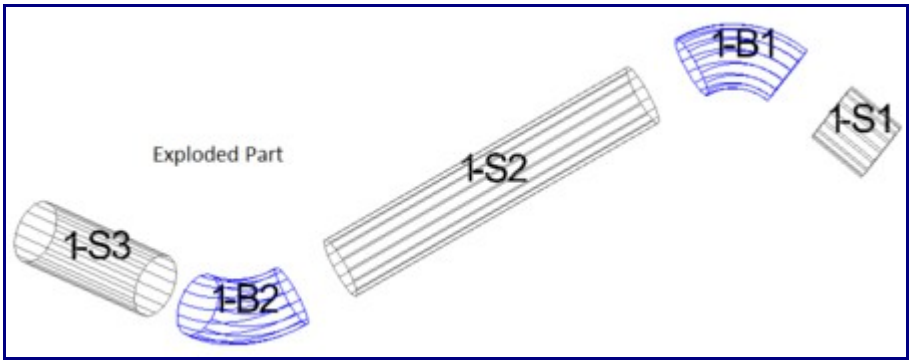
In the Detail tab, the information of the tube that is currently selected/highlighted in the tube list will be shown. Each bend and straight will have its own row. In the Name column, each straight and bend will be given a name based on which part and which section it belongs to. The first number is the part the section is located on followed by a hyphen then either S or B (straight or bend) and lastly the order number of the section. For example, 1-B3 is the third bend on the first tube. The Type column states whether the section is a bend or straight, the Length column states the length of the section, the CLR column gives the centerline radius of the bend, the Angle column shows the angle of the bend, the Rotation column states the rotation amount needed for the bend, the Diameter column shows the diameter of the material used for the tube, and the Material column states the material used for the tube.

Explode Tab:

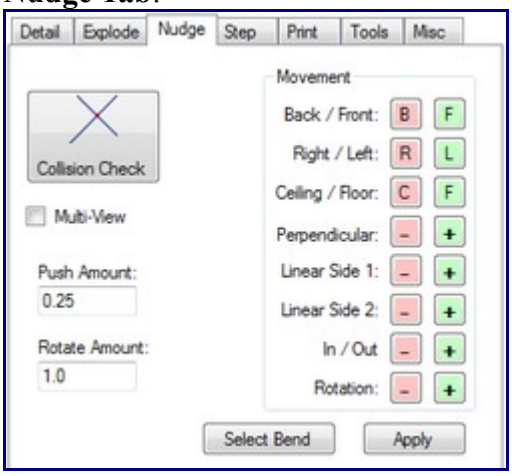


In the Explode tab, tubes can be exploded/broken apart to show each section (See the diagram below for an example of this). While 'All Tubes' is selected in the Tube List, all of the header tubes will be shown while using the Explode function. Otherwise, whichever tube is selected/highlighted will be the only tube shown. Under Explode Type, the explode type can be chosen. Click the circle next to 'No J-Bends (Complete Explode)' to have the part completely exploded into arcs and straight sections. Click the circle next to 'Start on Header Side' to have the part exploded into straight sections and J-bends with the short end starting at the header end of the tube. Click the circle next to 'Start on Collector Side' to have the part explode into straight sections and J-Bends with the short end starting at the collector end of the tube. Check the box next to 'Allow J-Bend to flip if zero tail length' to let J-Bends automatically flip which direction they face if necessary. Enter how much distance to have between each section in the field next to 'Explode Amount'. Check the box next to 'Display Labels' to have each section labeled with the same name it was given in the Detail tab. Click the 'Apply to All Tubes' button to have all the chosen settings applied to all of the header tubes in the list. Click 'Save Orientation' to have the current view (rotation/move) of the part(s) saved. Once saved, any time the Explode tab is accessed while in same session and part file, the view will be set back to the chosen orientation. To relocate any of the labels shown on each section, click the 'Move Labels' button. Once clicked, select a label by clicking on the light blue PickPoint shown next to the section name. After clicking, the label will be connected to the cursor. Place the label in a new location by clicking on the new place. Click the 'Reset Labels' to

reset the labels back to their original locations.

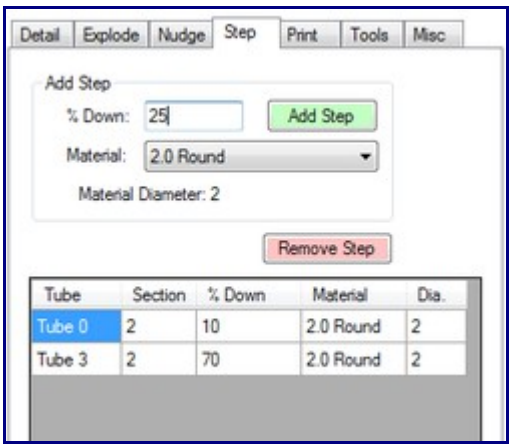


Nudge Tab:

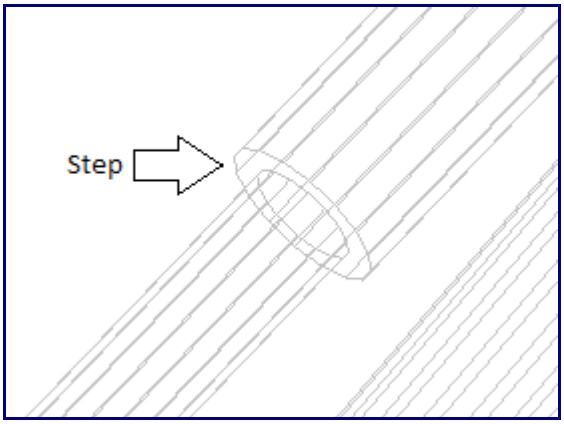


In the Nudge tab, bends can be pushed and rotated a given amount and direction. Check the box next to 'Multi View' to have the screen broken into quarters and each a different view of the tube(s). To nudge a bend, first enter a push and/or rotate amount into the 'Push Amount' and/or 'Rotate Amount fields. Click 'Select Bend' to choose the bend to move. Once clicked, each bend will have its own blue PickPoint. Click on a bend's PickPoint to select it. Once selected, it can be nudged using the buttons below the 'Movement' heading. If the chosen bend is the first or last bend on the tube, it can only be adjusted using the 'Linear Side 1' adjustment buttons. Once the bend has been adjusted properly, click the 'Apply' button to save the adjustments. Click the 'Collision Check' button to check for any collisions between the all tubes in the current assembly. If any collisions are present, they will be indicated by a red point.

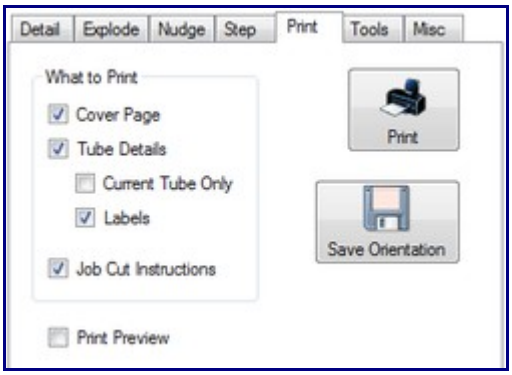
Step Tab:



In the Step tab, steps/changes in material can be added to tubes. Steps are either an increase or decrease in material diameter at a given point on the tube. After the chosen point, the rest of the part will be changed to the selected new material. See image below for an example. To add a step, first enter how far down the straight the step should be located in the '% Down' field. The location is chosen by giving a percentage. For example, if 50 is entered, the step will be start at the halfway point of the section. Choose the material that the part will switch to at the step location by clicking the drop down menu next to 'Material' and selecting a material from the list. Once a material has been selected, the diameter of the material will be shown below the material drop down menu next to 'Material Diameter'. Once the proper location and material have been chosen, click the 'Add Step' button and click the blue PickPoint on the straight section that the step will start on. Once step(s) have been added, each will be shown in the chart at the bottom of the Step tab. Each entry will show which tube the step was added to, which section on the tube, the location of the step, the name of the material used after the step, and the diameter of the material after the step. To remove a step, first click the 'Remove Step' button then click on the blue PickPoint on the step to delete it.

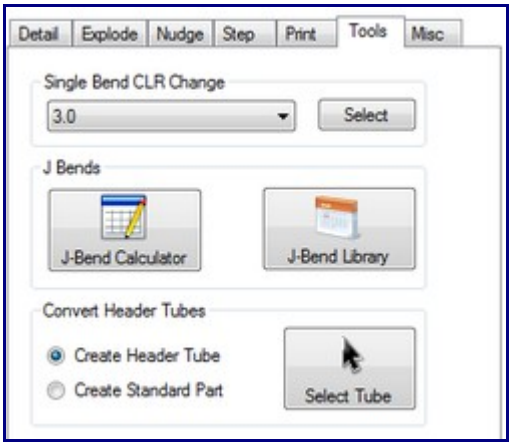


Print Tab:



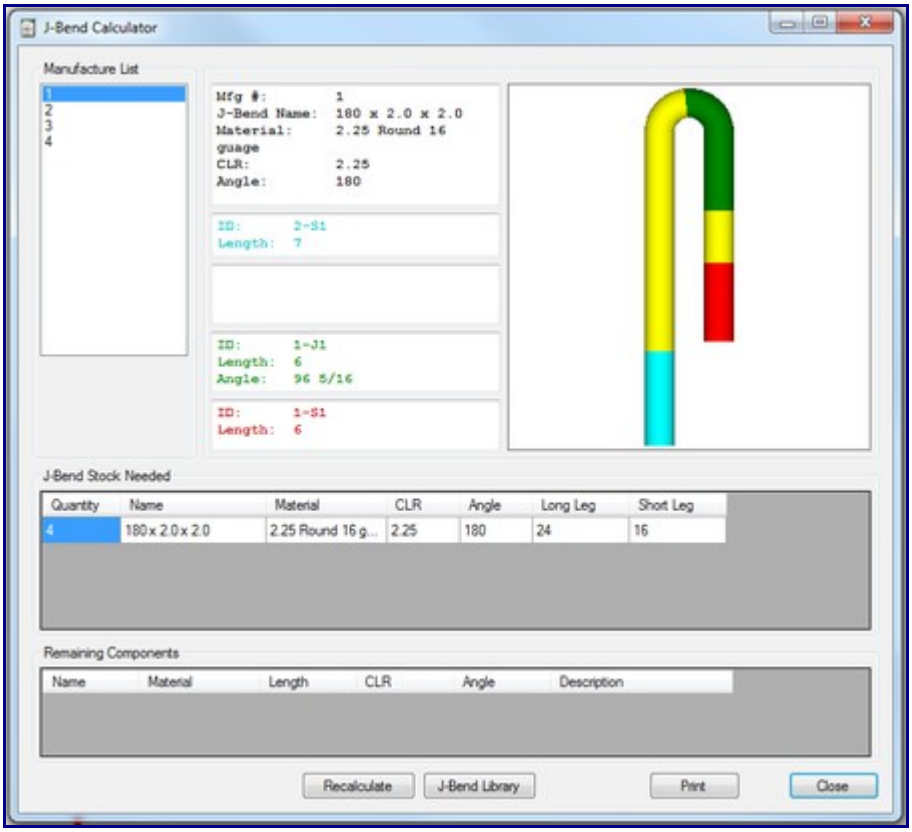
In the Print tab, the setup sheet for the current header can be customized and printed. Under 'What to Print', options specific to the header setup sheet can be chosen. Check the box next to 'Cover Page' to print out a cover sheet with basic information about the part with the setup sheet. Check the box next to 'Tube Details' to have chart containing details about each tube. Check the box next to 'Current Tube Only' to only print tube details for the tube that is currently highlighted in the list of tubes. Check the box next to 'Labels' to have each section of the tube labeled in any images of the part on the setup sheet. Check the box next to 'Job Cut Instructions' to have the instructions on how to create the header (Shown under the Tools tab - J-Bend Calculator option) included on the setup sheet. Check the box next to 'Print Preview' to show a print preview page before finalizing the printing of a setup sheet. Click the 'Print' button to print out a setup sheet with the chosen options on it (If 'Print Preview' is checked, a preview of the setup sheet will be shown after 'Print' is clicked in the Print menu). Click the 'Save Orientation' button to save the current view (rotation/move) of the part. Note: The current view of the part will be used as the orientation for any images included on the setup sheet. Once saved, any time the Print tab is accessed while in same session and part file, the view will be set back to the chosen orientation.

Tools Tab:



In the Tools tab, single bends can have different die applied to them, the J-Bend Library and cutting instructions can be accessed, and Header/Standard tubes can be chosen. To apply a new die to a certain bend, click the drop down menu below 'Single Bend CLR Change' and select a die from the list. Once a die has been chosen, click the 'Select' button next to the drop down menu. Each bend will how have its own blue PickPoint. Click on a PickPoint to assign the chosen die to the bend. Below 'J Bends' click the 'J-Bend Library' button to access the J-Bend Library to either view, edit, add, or remove J-bends from the library. Below 'Convert Header Tubes' tubes in the assembly can be either selected to use as header tubes or reset to standard parts (not included in the header). To convert a tube to a header tube, click the circle next to 'Create Header Tube', click the 'Select Tube' button and click on a blue PickPoint on the tube that will be converted to a header tube. To convert a header tube back to a standard part, click the 'Create Standard Part', click the 'Select Tube' button and click on a blue PickPoint on the tube.

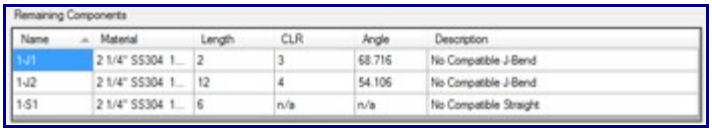
- J-Bend Calculator: Click the 'J-Bend Calculator' button to open the J-Bend cut instructions menu.



In this window, the cut instructions to create the header is shown. For this to work properly, the J-Bend Library must have J-Bends made of the same material(s) and CLR(s) as the header tubes and need to have the correct lengths.

Below 'Manufacture List' a list of each J-bend needed is shown. To view which sections that J-bend will be used for, click on a number in the list to select it. The selected J-bend's details, cut instructions, and a preview of the bend will be shown to the right. The color of the text indicates which section of the J-bend it's referring to. For example, if the text is red, that information is for the section of the J-bend that is highlighted in red in the preview panel.

Below 'J-Bend Stock Needed', a list of all the J-bends used for the header is shown. The amount used, the name of the J-bend, the material of the J-bend, the CLR, angle, and short and long leg lengths are given here.



Below 'Remaining Components', any sections of the header that could not be created are shown. The name of the section, it's material, length, CLR, angle, and a description of why it could not be created are shown.

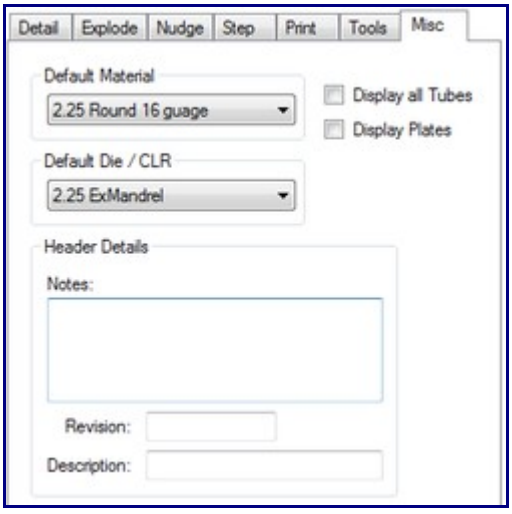
Click the 'Recalculate' button to reassess the cut instructions to attempt to get successful cut instructions after adding new J-bends to the J-Bend Library.

Click the 'J-Bend Library' to open the J-Bend Library. Once opened, J-bends can be edited or added if necessary.

Click 'Print' to print out a customized Job Cut Instructions sheet.

Click 'Close' to exit the J-Bend Calculator.

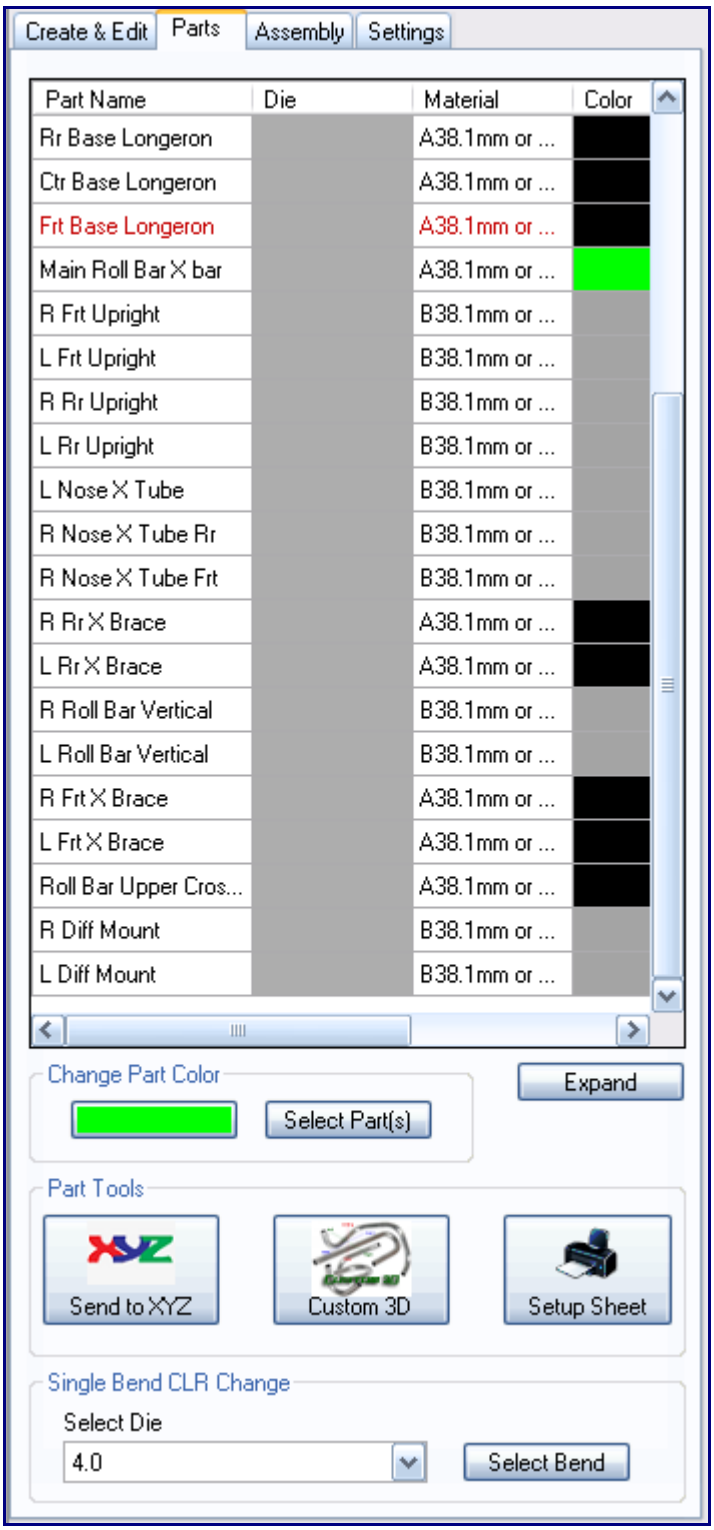
Misc Tab:



In the Misc tab, default materials and Dies can be set, display options can be chosen, and notes can be added to the header design. For both Default Material and Default Die/CLR, these selections will apply to any new tubes that are added to the current assembly using the 'New Tube' button at the top of the Headers tab. These defaults will need to be selected to create any new tubes. To select a default material, click the drop down menu below 'Default Material' and select an option from the list. To set a default Die/CLR, click the drop down menu below 'Default Die/CLR' and select a die from the list. Check the box next to 'Display All Tubes' to show all non-header and header tubes in the part display to the right. Check the box next to 'Display Plates' to show all plates along with the header tubes in the part display to the right. Below 'Header Details', notes, revision information, and a description of the header can be added. Anything entered here will be included on the header setup sheet that can be printed under the Print tab. To add notes, revisions, or a description, click in the appropriate text field and type.

Parts (Assembly)

Parts



Description

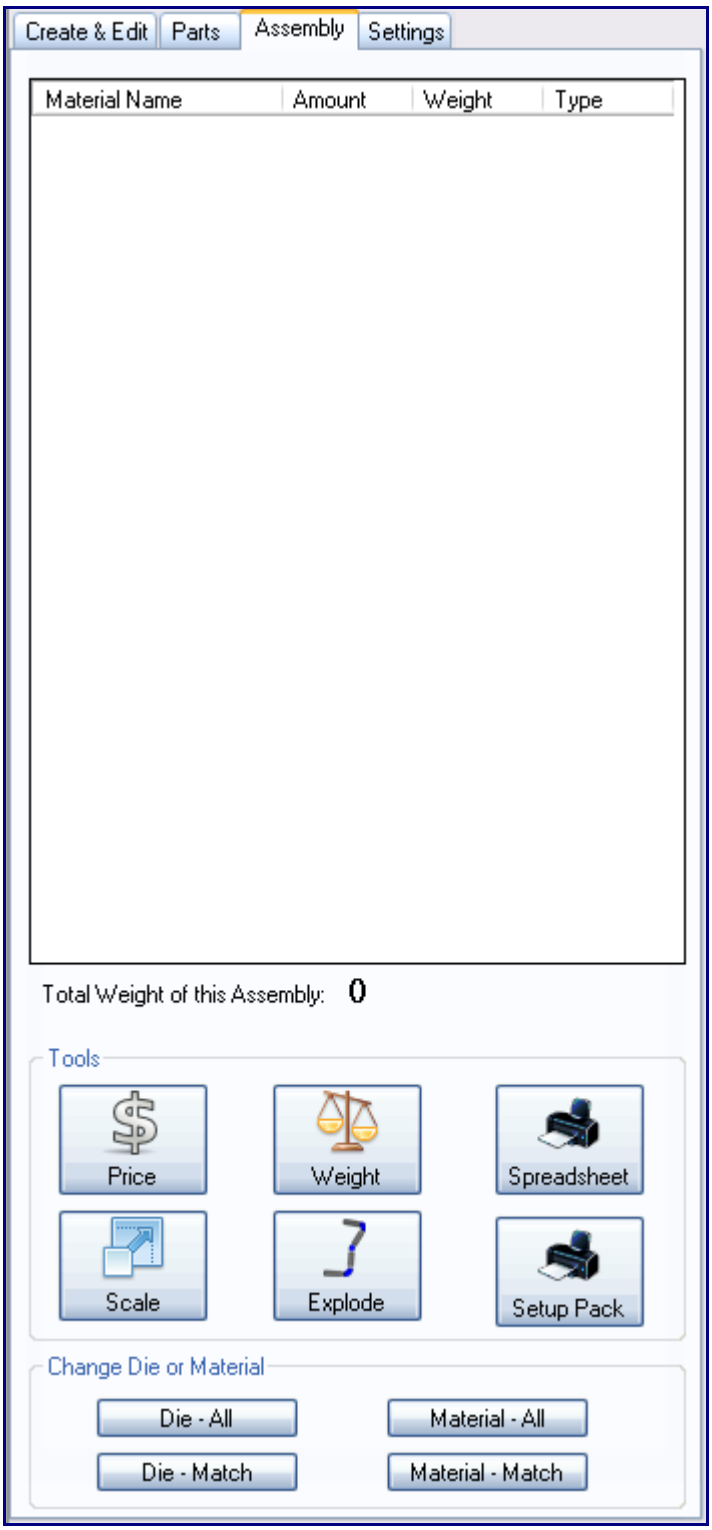
The Parts tab contains a list of all parts in the current Assembly project and tools that can be used to edit them.

How-To

Click on a part in the part list to select it. Use the drop down menu in the Die column to change the die for that part or use the drop down in the Material column to change the material. Click on the colored box in the Color column to change the parts color using the Color tool. Click the Expand button to see a full screen version of the part list. In the Change Part Color area there are two buttons. The left one can be clicked to open the Color selection tool. The right button will cause any part that you click in the display window to change to the color that is assigned to the left button. In the Part Tools area, click Send to XYZ to edit the part using the XYZ interface. Click Custom 3D to edit the part using the Custom 3D interface. Click the Setup Sheet button to print a setup sheet for the currently selected part. To change the die of a single bend, select a die in the Select Die drop down menu in the Single Bend CLR Change area. Click the Select Bend button and click on a bend PickPoint in the display window to change the die.

Assembly (Assembly)

Assembly



Description

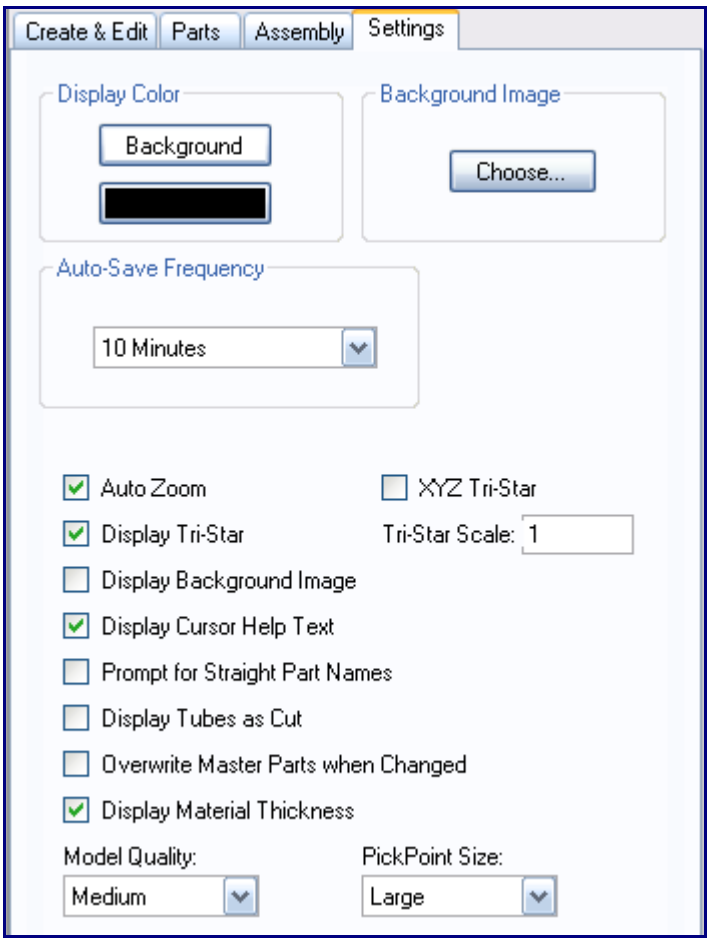
The Assembly area contains a list of all materials used in an Assembly project and information on their weight and price.

How-To

- **Price**: Click the Price button to see an estimate of the cost of the current Assembly project. In order to use the Price tool, you must setup the Price Settings. Go to the Tools tab of the main menu bar and click on Pricing Settings. The Price Settings window will appear. Go to the Pricing Settings page for information on setting Price Settings.
- **Weight**: The weight of the Assembly project is displayed just below the material list. Click the Weight button to refresh this value. The Weight tool is only accurate if you have assigned weights to all materials in a project.
- **Spreadsheet**: Clicking the Spreadsheet button will print a spreadsheet which contains a list of all parts and materials used by an Assembly project.
- **Scale**: Click the Scale button and click a PickPoint to open the Scale Assembly window. Enter the amount that the Parts, Material Size, and Bend Radii should be scaled. Enter the scale amount as a percent (100 means no change, while 50 would be half the size and 200 would be double).
- **Explode**: Click the Explode button, click a PickPoint, and enter an explode factor to explode an Assembly project. Exploding an Assembly will move all parts away from each other so that they can be viewed separately.
- **Setup Pack**: Click the Setup Pack button to open the Print Assembly Setup Pack. Select which features you would like to include and select Portrait or Landscape from the Default Orientation area. Click OK to print the setup pack.
- **Die - All**: Click Die - All to open the Change All Dies window. Select a die from the Die drop down menu and click OK to change all dies in the project to the die you selected.
- **Die - Match**: Click Die - Match to open the Change Matching Die window. Select a die that you want to change in the Change this Die drop down menu and select the die to change that die to in the To this Die drop down menu. All instances of the die that is selected in the Change this Die field will be replaced with the die in the To this Die field. Click the OK button to apply the change.
- **Material - All**: Click Material - All to open the Change All Material window. Select a material from the Material drop down menu and click OK to change all materials in the project to the material you selected.
- **Material - Match**: Click Material - Match to open the Change Matching Material window. Select a material that you want to change in the Change this Material drop down menu and select the material to change that material to in the To this Material drop down menu. All instances of the material that is selected in the Change this Material field will be replaced with the material in the To this Material field. Click the OK button to apply the change.

Settings (Assembly)

Settings



Description

The Settings tab contains various settings and options that can be used to customize the Assembly interface.

How-To

- **Display Color**: The Display Color area has two buttons. The top button can be used to change the background color, while the bottom button can be used to change the color of text. Click either button and use the Color tool to select a color.
- **Background Image**: Click the Choose button and use the browser to find a Bitmap image. The image will be displayed as a static background image. The Display Background Image checkbox must be checked in order to use a background image.
- **Auto-Save Frequency**: Use the drop down menu to choose how often the program auto-saves the current project.
- **Auto Zoom**: If you are creating a new entity that extends beyond the screen and Auto Zoom is checked, the screen will automatically zoom out to fit the entity on the screen.
- **Display Tri-Star**: Use the Display Tri-Star checkbox to toggle the Tri-Star on or off.
- **Display Background Image**: If you have a background image selected, checking the Display Background Image checkbox will display it.
- **Display Cursor Help Text**: When the cursor is moved over certain items, help text will appear

that describes how to use the item. To turn this off, uncheck the Display Cursor Help Text checkbox.

- **Prompt for Straight Part Names**: When a straight part is created, it will automatically be given a generic name. To have Bend-Tech prompt you to enter a name for each new straight part, check the Prompt for Straight Part Names checkbox.
- **Display Tubes as Cut**: Checking the Display Tubes as Cut checkbox will cause all tubes with cuts applied to them to actually have the specified cuts shown in the display window. Unchecking this box will improve performance.
- **Overwrite Master Parts when Changed**: When you make changes to a part, a new version of the part will be created with the changes applied and the old version will remain untouched. If the Overwrite Master Parts when Changed checkbox is checked, the master parts in the Master Part List will be directly edited, and new versions of the part will not be created automatically.
- **Display Material Thickness**: Use the Display Material Thickness checkbox to toggle whether the inside of the tube is rendered as being hollow or not. Unchecking this checkbox will improve performance.
- **Model Quality**: Use the Model Quality drop down menu to change the quality of the models in the display window.
- **PickPoint Size**: Use the PickPoint size drop down menu to change the size of all PickPoints in the Assembly project.

Tool Bar (Assembly)

Tool Bar

Description

The Tool Bar is the row of buttons just below the Main Menu Bar.

How-To

- **New Part**: Opens a new part file.
- **New Assembly**: Opens a new Assembly file.
- **New Plate**: Opens a new plate (sheet metal) file.
- **Open Part**: Opens a browser where an existing part file can be selected and opened.
- **Open Assembly**: Opens a browser where an existing Assembly project can be selected and opened.
- **Open Plate**: Opens a browser where an existing plate file can be selected and opened.
- **Save**: Saves the current project.
- **Print**: Prints the display window.
- **Print Preview**: Shows a preview of the display window.
- **Import a part from Solidworks**: Opens the Import Part screen, where a part can be imported from Solidworks and defined.
- **Display Mode**: Display Mode can either be clicked like a button to toggle between line, wireframe, and shaded versions of the Assembly project, or a Display Mode can be selected from the drop down menu by clicking the down arrow to the right of the Display Mode button.
- **PickPoint Display**: Click PickPoint Display to toggle the display of PickPoints on or off.

- **Projections**: Click on the Projections button to reveal the Projections window. Each button in the Planar and Isometric areas represents a predefined viewing angle that you can switch to. To save the current view so that you can switch back to it later, Click one of the Click to Set buttons in the Custom area. To clear a Custom view Click Clear and click on the custom button that you want to clear, or click Clear All to clear all custom views.
- **Home**: Returns the display window to the home view.
- **Zoom Fit**: Zooms the display in or out to fit the current project.