



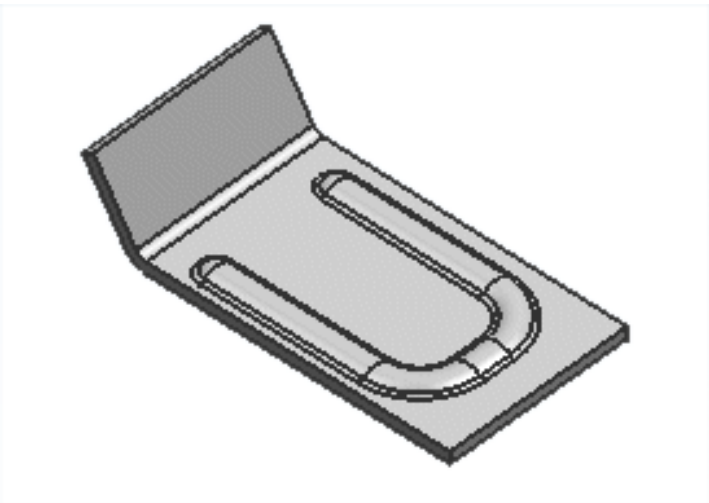
Bead overview

Overview

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Bead constructs a bead feature on a sheet metal part. Beads are often used to stiffen sheet metal parts. You can specify the shape of the bead cross section and the type of end condition treatment you want. For example, you can specify whether the bead shape is circular, U-shaped, or V-shaped. You can also specify whether the ends of the bead are formed, lanced, or punched. Beads can't be flattened.



Where do I find it?

Application	NX Sheet Metal
Toolbar	NX Sheet Metal→Punch list  →Bead
Menu	Insert→Punch→Bead



Create a bead

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1. Click **Bead** .
2. Select the profile plane.
3. Create a profile for the **Bead**. The profile can be open or closed.

Multiple elements in the profile must be tangent continuous. You can also construct a single **Bead** feature using multiple, separate profiles. Each profile must be a continuous set of tangent elements, but the profiles can cross each other. The radius of any arcs in the profile must be more than half the width of the bead itself.

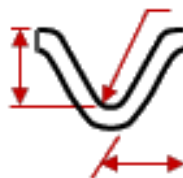
4. Choose a bead cross-section type and specify dimensions for it. The icons in the dialog indicate how the dimensions are measured:
 - For **Circular**: **Depth** and **Radius**. (**Depth** must be less than **Radius**.)



- For **U-Shaped**: **Depth**, **Width**, and **Angle**.



- For **V-Shaped**: **Depth**, **Radius**, and **Angle**.



5. Choose a treatment option for the ends of the bead:

- **Formed** (the default)



- **Lanced**



- **Punched**



6. Specify rounding options.

7. Click **OK** to complete the **Bead** feature.



Bead options

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Bead Properties

Cross Section

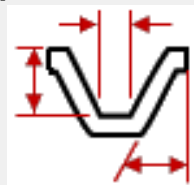
Specifies the type of bead:

- **Circular** creates a bead in a half-circle



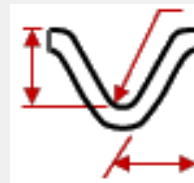
shape.

- **U-Shaped** creates a bead with a flat bottom and angled



sides.

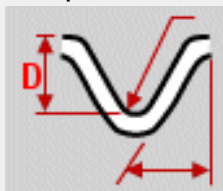
- **V-Shaped** creates an arc-shaped bead with an inside radius



that you can modify.

Depth

Specifies the extent of the bead. The bitmap image for each type shows how the depth is measured. In this figure, D indicates the



depth.

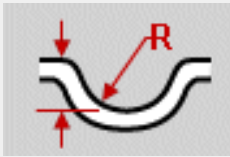
Reverse Direction



Changes the direction of the bead in relation to the base part.

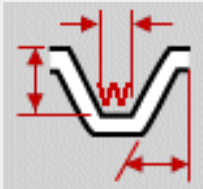
Radius (Circular and U-Shaped only)

The radius of the curve on the inside of the bead. R = radius (**Circular** bead in this case)



Width

The width at the bottom inside of the **U-Shaped** bead as shown here.
W = width



Angle (U-Shaped only)

Specifies the taper angle for the bead. (The angle is measured relative to the default sidewall angle of 90 degrees.) In this figure, A = angle



End Condition

Controls the shape of the ends of the bead.



• **Formed** creates ends that are rounded.



• **Lanced** creates ends that are cut.



• **Punched** creates ends that are cut with a relief. If you select this options, you must specify the extent of the relief by supplying a value for **Punched Width**.

Rounding

Round Bead Edges

Lets you supply values for the bead's die and punch radii. Not recommended when using the bead to construct a pattern feature that contains a large number of beads.

Die Radius

Specifies the radius value at the top of the bead.

Punch Radius

Punch Radius specifies the radius value at the bottom of the bead. Only available for **U-Shaped**.