



Tech Spot

THE NEXT GENERATION OF PRESS BRAKE TOOLING

By Lauren Duensing

Rotational dies increase productivity, reduce costs

January 2006- Fabricators are continually searching for innovative ways to meet the challenges presented by the increasingly difficult part configurations they are asked to produce. Whether the problem is related to flange length, die marking or to the distortion of holes or slots in the bend area, Fab Supply Inc. provides the solution with its line of Rolla-V dies.

Rolla-V dies eliminate the majority of the problems that occur when metal is formed over traditional V dies. "This typically results in significant cost savings, due to the elimination of costly secondary operations and a reduction in scrap rates," says John Wold, president. Billed as the patented forming technology for perfect bends, the Rolla-V dies are available in four sizes—three fixed and one adjustable—giving the line its versatility. The sizes 1, 2 and 3 Rolla-Vs are solid-body tools that are capable of producing a variety of bend angles in material thicknesses of up to 0.098 in., 0.156 in. and 0.315 in., respectively. The No. 4 Rolla-V (shown in photo) is an adjustable tool that can be used to form any material thickness up to 11/4 in. plate from 1 degree to 180 degrees.



Unique forming action

The Rolla-V die enables the forming of parts that would be impossible over traditional V dies. Prior to bending, the workpiece is placed on top of the rotors. The top tool then contacts the workpiece, clamping it firmly in place on the forming surface of the rotors. As increased pressure is applied by the upper tool, the rotors turn, pushing the workpiece up and folding it around the punch tip. This rotary forming action also reduces the required bending pressure, enabling low-tonnage machines to form thicknesses normally outside their range.

“Since the rotors’ contact surfaces are many times wider than those of a V die’s lead-in radii, and because the relative movement (draw) between the workpiece and the bottom die is negligible, die marking is eliminated,” says Wold. “The same principles also explain the Rolla-V’s ability to consistently form materials with irregular thicknesses such as tread or diamond plate and to produce extremely short or tapered flanges with minimal flaring,” he notes. “Because the Rolla-V supports the material in the bend area from the underside during forming, areas that have been weakened by holes or slots cannot bend prematurely. They are forced to remain on plane with the solid sections of the part, which eliminates both the distortion of cutout features and the need for post-form machining.”

Reducing costs

This cost savings related to the Rolla-V dies is realized not only in the elimination of secondary operations, but also in the reduction of large die inventories. Since each Rolla-V die can form a wide range of material thicknesses and angles, die changes are either eliminated or significantly reduced. Because there is little or no movement between the workpiece and the rotors, tool life is extended.

This static contact also significantly reduces the chance for cross-metal contamination, which is a concern when forming stainless steel.

The Rolla-V dies can stand up to demanding applications, as well. Rolla-V sizes 1 and 2 are widely used in the appliance, food service, medical equipment and electronics industries. The No. 3 and No. 4 Rolla-Vs are used extensively in heavier applications such as agricultural equipment and truck manufacturing, ship building and heavy equipment manufacturing. **FFJ**