

# The **CUTTING** **EDGE**

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Voice of the  
**IADD**   
INTERNATIONAL ASSOCIATION  
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*"Industry Unity is the Surest Path to Individual Success"*

## To Notch or Not to Notch

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Notched curved rule has obviously been around a lot longer than the no notch version. Possibly this is because, in the early days of rotary diemaking, no one believed it would be possible to curve full diameters of steel rule without the use of notches (giving the bent steel a "place to go"). Or, even if it were possible, it was assumed that the stress and strain of such curving would be evident on both the cutting edge and the bottom edge of the rule. With advances in technology, the potential problems of curving without notches have been solved and the result is a consistent, uniform, minimally stressed curved rule. Following is a comparison of the two products, based on our experiences in the diemaking arena.

Notched rule is obviously more flexible than no notch rule, so that when it is inserted into the dieboard, we start at one end of the rule and begin "seating" the rule as we go around the cylinder. With the more flexible notched rule, the diameter of the rule will often begin to spread or expand, often allowing the rule to "sit up" anywhere along the radius. Ideally, the inside diameter of the rule should fit like a "second skin" around the cylinder. If this is not accomplished in the diemaker's shop, then the rule must actually seat itself on the diecutter's drum. When this happens, it is often followed by an abundance of rule breakage, because the rule has been made to "bounce" up and down on the cylinder, constantly and repeatedly. With each bounce, the rule can become a bit weaker until, like bending a paper clip back and forth, the material finally breaks.

When we notch for bridging, using the conventionally notched rule, more times than not, we end up with "over bridged" rule, again making the steel potentially weaker and more likely to break or crack.

When making slots with notched rule, we may by chance hit on solid steel or a notched area. This inconsis-

tency can result in the crown of a slot being less than fully round, as it should be, and this can cause an appearance of distortion in the slot.

I am sure we have all been told that dies should be press ready when delivered to the converter and should be expected to run effectively, with little or no problems. Some of the conditions described above might certainly make that aim hard to achieve. Notched curved rules are certainly the most commonly used in the industry today, but we believe no notch rule should be given an equal opportunity to show what it can do in comparison.

So, now let's talk about how no notch curved rules react in similar situations to those described above. No notch rule is obviously stronger than notched rule, for

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the simple reason that it is one continuous, unbroken piece of steel. No notch rule is more like a “formed” piece of steel than a “bent” piece of steel. It is more prone to staying where it is put because it has less “memory” of its original shape. The very accurate and consistent inside diameter it creates is more likely to remain constant when this rule is inserted into the dieboard, so that it stays like the “second skin” we referred to previously, which is exactly what we are trying to accomplish.

Inserting no notch rule into the die is done very much the same way as it is with notched rule, and an experienced knifing person will have little difficulty in using the no notch rule because of this fact. I have heard people debate this statement, but I have seen good diemakers prove it is true day in and day out for many years.

The marking of the bridges on no notch can be effectively done with a caliper without the “over bridging” that so often occurs with standard notched rules. Another way to indicate bridges on no notch is to mark the end of the die as to the desired locations of the bridges. The rule is then held on the side of the die and the bridges are marked.

Slots made with no notch rule consistently have the correct radius on the slot crown, look more professional and are also stronger and less likely to break.

Recently, I have learned about a new automatic bender for processing curved rotary rules. This machine is being introduced by Adams Technologies at the IADD Odyssey show in May in Chicago. Adams has shown a strong interest in no notch curved rule, has tested it and even featured it in one of their recent newsletters. They seem optimistic that this innovative type of curved rule may run more effectively than conventional rules on their new equipment.

It is my opinion that this new equipment is the last piece necessary to round out the full automation of rotary rule diemaking. This machine would very effectively process no notch curved rule and allow the placing of the bridges automatically, saving considerable time, while additionally improving accuracy. Also, keep in mind that any rule, cut, crease or perf, can be made in the no notch method.

In closing, I would like to say that we here at Parkway Steel Rule Dies have been using no notch curved rule almost exclusively for over 15 years now. We estimate that we have used well over 250,000 feet of it. No rule is perfect for every application, but we strongly feel that the no notch helps us to consistently meet or exceed our customer’s expectations toward obtaining the best possible rotary dies, allowing them to run longer, faster and with fewer problems. Customers don’t always pat you on the back when you introduce them to a new product, but they certainly seem to appreciate when their dies run better and last longer. No notch may increase its importance even further with the introduction of automatic processors for curved rules.

I guess some people might complain about the loss of repair work that we have experienced since we began using no notch, but I believe that we, like most good diemakers, would much rather build a new die, than to fix an old one that has broken down prematurely because of avoidable problems.

Problems are like fires—they have to be put out and quickly. We have found that with no notch curved rule, we make better dies and both our customers and we have fewer fires to put out. ¶

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