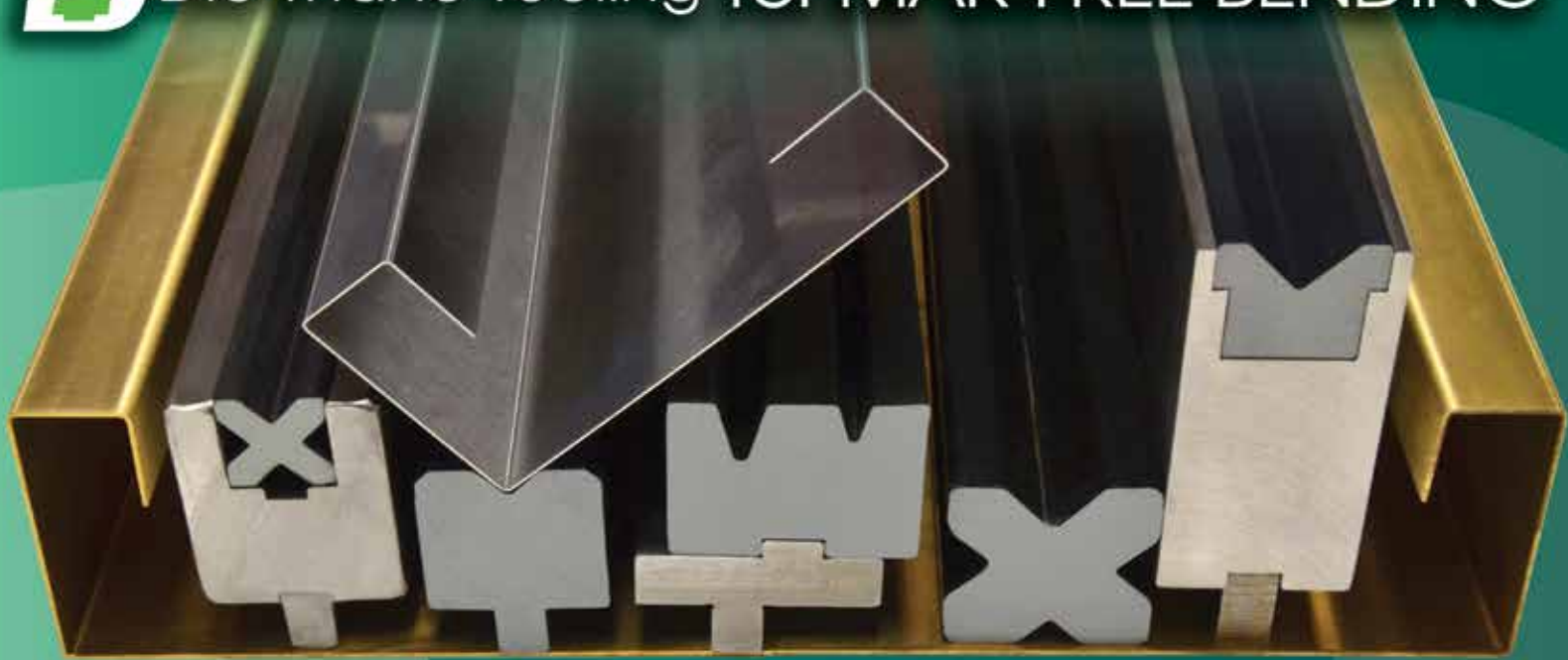
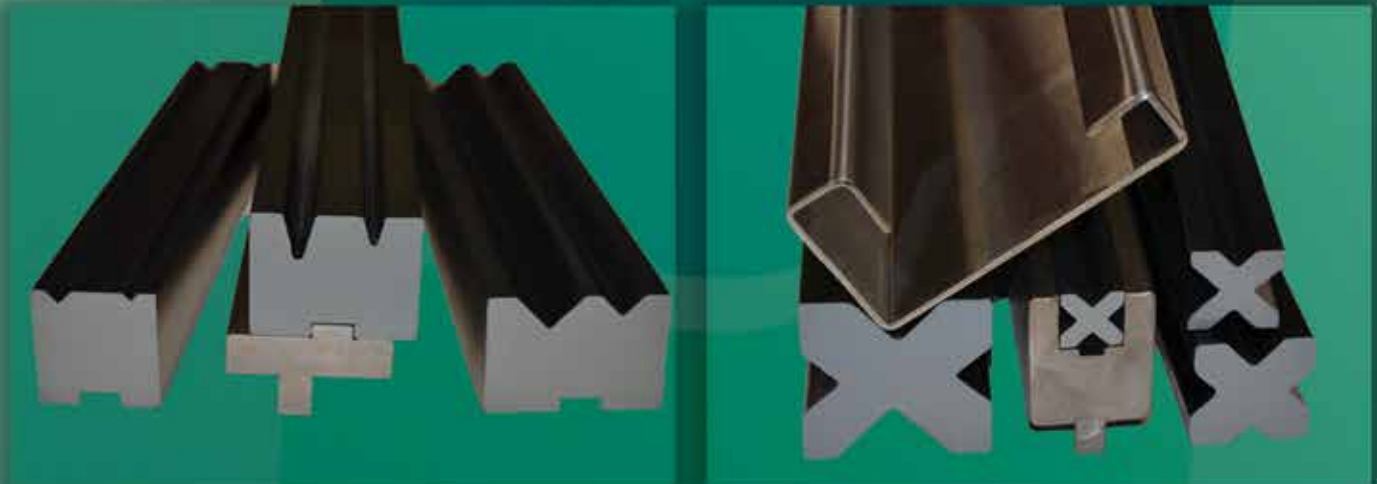




Die-Thane Tooling for MAR-FREE BENDING



Hard Urethane Tooling for High Volume 90° Bends



POLYURETHANE PRODUCTS CORPORATION

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Die-Thane is the trade name for a family of high performance Urethane Elastomers Developed specifically for sheet metal fabrication and tooling applications.

Made of the hardest grade of Die-Thane, the non-deflecting type of tooling are molded to the shape of the die. (Such as V-Dies, Four Way Dies, Wiper Dies, etc.).

This tooling is used for air-bending only. Coining is not recommended

- **Completely Mar-Free Bending – will not leave die marks**
- **This is the most economical method of producing right, and acute angle bends in pre-polished, pre-painted or other pre-finished materials.**
- **Light Weight! The Die-thane tooling has a weight of 14% of it's steel counterparts allowing for easy loading and unloading of press Brake by hand, NO FORKLIFTS OR CRANES NECESSARY**
- **Minimized Setup Time, Minimal to no shimming is necessary.**
- **Features excellent resilience and strength – 10's of thousands of hits!**

Die-Thane's Salient Features:

- Molded to shape, Die-Thane V-Dies, 2-V Dies, Four-Way Dies and Acute Angle Dies function similar to steel tooling. The sheet metal is formed by air-bending. With the Die-Thane V-Dies, 2-V Dies and 4-Way Dies, bottoming or coining is not recommended. With Acute angle inserts that are used in steel holders, cautious bottoming is possible.
- Since this type of tooling is made of the hardest grade Die-Thane, the resiliency is low. But the memory is still good.
- Even though the hardness of the Die-Thane is high, the formed parts, will not have any die marks.
- Life expectancy is high.

Die-Thane's Advantages:

- This is the most economical method of producing large numbers of right angle bends in pre-polished, prepainted or other pre-finished metals.
- Lighter weight than conventional steel dies.
- Very good accuracy.
- Less set-up time.
- No shimming is necessary for accurate bends.



Die-Thane V-Dies or Urethane V-Dies are molded to shape, using the hard grade high performance Urethane compound DT-5. They are designed for air-bending 90 degree bends or acute angle bends.

Product Features

- Scratch Free bending for polished and pre-finished surfaces.
- Very Good Accuracy - cautious coining is possible.
- Light Weight - 14% of steel tool weight.
- Less Setup Time - minimal or no shimming.
- Will not damage press bed.
- More economical than steel dies.

Lengths:

- 1/4" to 1": - 8'
- 2": - 6'

*Available in one foot increments, up to the above length. For longer bends, butt square ends together

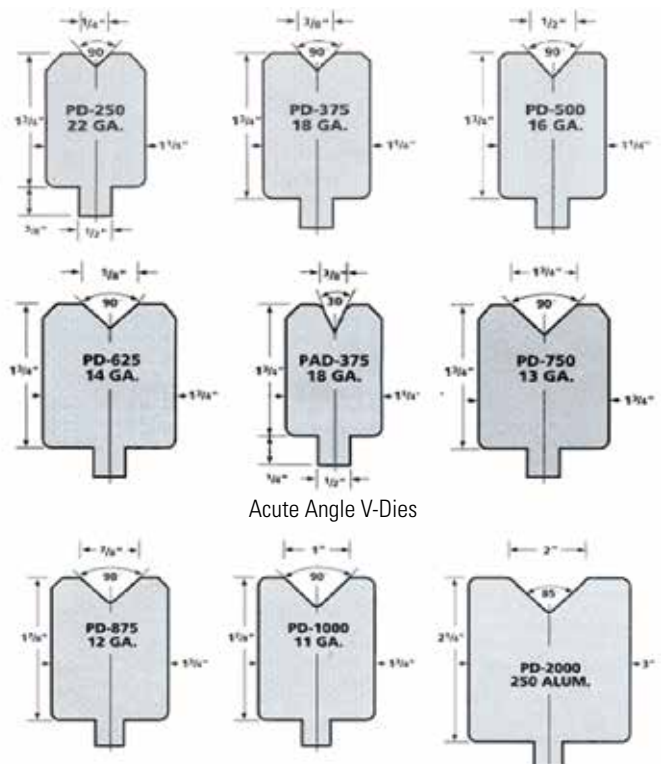
Box-Forming Urethane V-Die

Used with a steel 30-60 forming punch, deep boxes can be formed without hitting the ram.



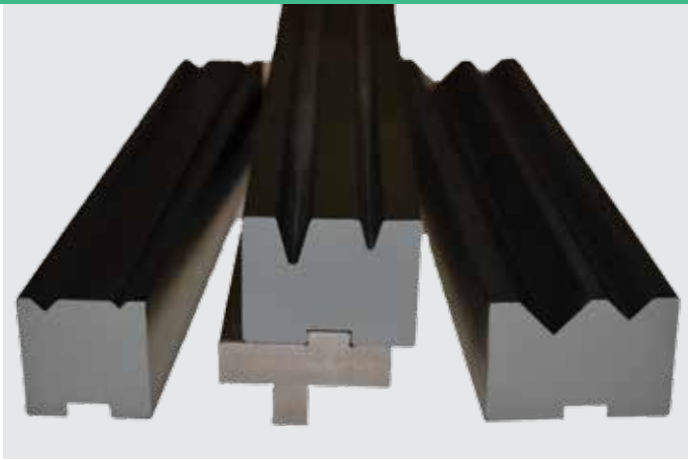
Available Sizes

PPC CATALOG NO.	V-OPENING (INCHES)	WIDTH (INCHES)	HEIGHT (INCHES)	ANGLE A
PD-250	1/4	1 1/4	1 3/4	90°
PD-375	3/8	1 1/4	1 3/4	90°
PD-500	1/2	1 1/4	1 3/4	90°
PD-625	5/8	1 3/4	1 3/4	90°
PD-750	3/4	1 3/4	1 3/4	90°
PD-875	7/8	1 3/4	1 7/8	90°
PD-1000	1	1 3/4	1 7/8	90°
PD-1500	1 1/2	2 1/2	2 1/4	85°
PD-2000*	2	3	2 1/4	85°
PAD-250	1/4	1-1/4	1 3/4	30°
PAD-375	3/8	1-1/4	1 3/4	30°
PAD-500	1/2	1-1/4	1 3/4	30°
PAD-625	5/8	1-3/4	1 7/8	30°

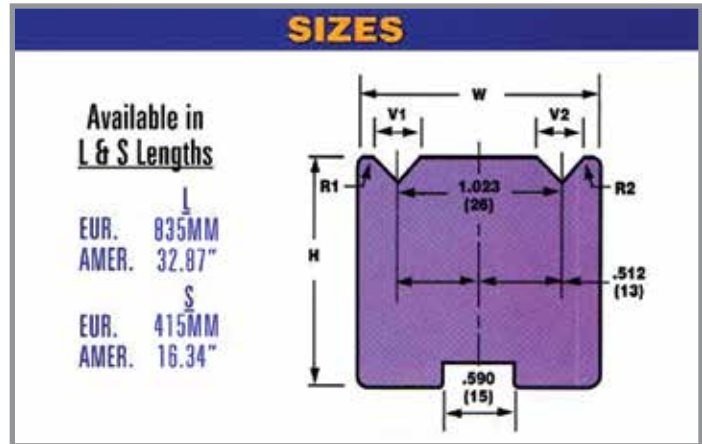


Acute Angle V-Dies

Gauges noted are for M.S. and aluminum. For S.S. use next larger size opening.

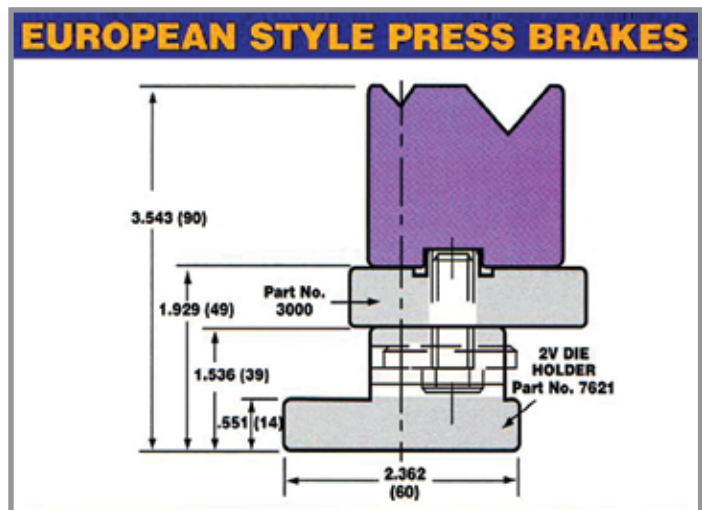
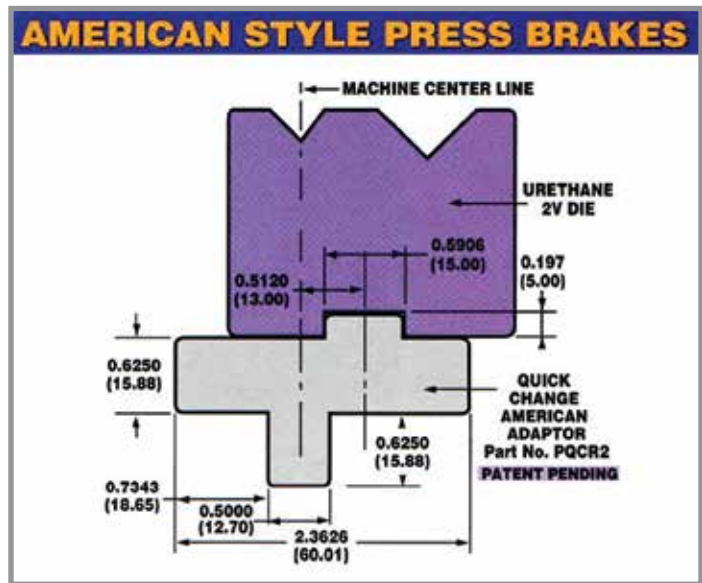


For American and European Style Press Brakes



Product Features

- Made of a hard, tooling grade Urethane for SCRATCH-FREE bending of sheet metal.
- Just drop it on a Quick Change Die Rail and changing sizes of V-Dies will be a snap. Turn it around for a different size V-opening or drop in a new die. No need for alignment or shimming.
- Save Time and Money in forming pre-finished sheet metal as compared to using plastic film die covers.
- For European Style Machines, the 2-V Die can be used with a quick change rail, mounted on a 2-V Die holder.
- For American Style Machines, the 2-V Die can be used with a special rail (UST Part Number PQCR2).
- The 2-V Dies are designed for Air bending only. The heights are the same as comparable Steel V Dies. The overall width are slightly more than steel 2-V Dies.



CAT. #	V-OPENINGS V1 / V2	ANGLE OF V	WIDTH OF W	RADI OF R1 / R2	HEIGHT (H)
	INCH / MM	DEGREES	INCH / MM	MM	INCH / MM
7101U	.236-.394 / 6-10	90	1.968 / 50	0.4 / 0.6	1.811 / 45
7102U	.315-.472 / 8-12	90	1.968 / 50	0.5 / 0.8	1.811 / 45
7104U	.551-.709 / 14-18	88	2.362 / 60	0.5 / 0.5	1.811 / 45
7105U	.472-.787 / 12-20	88	2.362 / 60	0.5 / 0.5	1.811 / 45
7106U	.630-.984 / 20-25	88	2.362 / 60	0.8 / 0.8	1.811 / 45
ACUTE ANGLE 2-V DIES					
7321U	.315-.473 / 8-12	30	2.362 / 60	1.0 / 1.0	1.969 / 45



Four-way Dies are made of the hardest grade of Die-Thane. These are designed to be used in a steel holder.

Product Features

- Four-way Dies are the most economical way of bending 90° bends in pre-polished or pre-coated metals.
- Acute-Angle Dies are used for bending the first hit of a hemming bend or for air bending any angle (up to 30° included angle).
- Hemming Die Pad is used for 2 hit single set-up hemming.

Four-Way Dies (FIGURE 1)

URETHANE V-DIES			STEEL HOLDER	
PART #	V-OPENINGS (IN)	BLOCK SIZE (IN)	W X H (IN)	PART #
FW 2538	1/4, 3/8, 1/4, 3/8	1 X 1	2 X 2	SH1010
FW 5050	1/2, 1/2, 1/2, 1/2	1 X 1	2 X 2	SH1010
FW 6310	5/8, 3/4, 7/8, 1	1-1/2 X 1-1/2	2-1/2 X 2	SH1515
FW 6210	5/8, 3/4, 7/8, 1	2 X 2	3 X 3	SH3030
FW 1120	1-1/8, 1-1/4, 1-1/2, 2	3 X 3	4 X 4	SH4040

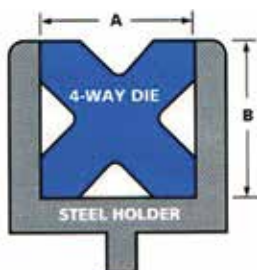


FIGURE 1

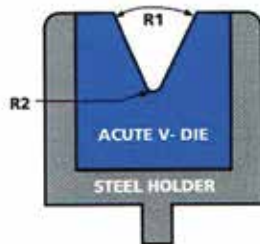


FIGURE 2

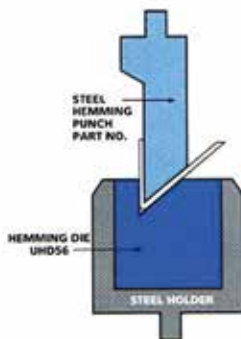
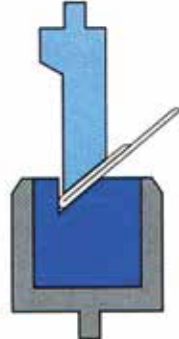


FIGURE 3



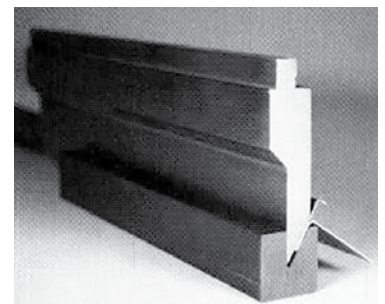
Acute Angle V-Dies (FIGURE 2)

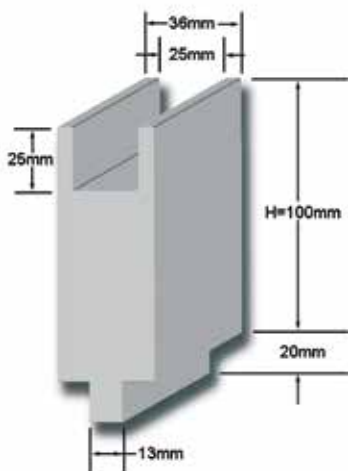
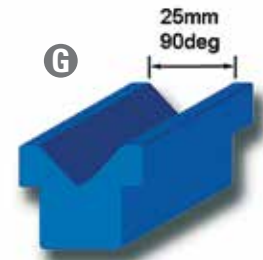
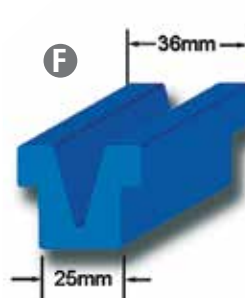
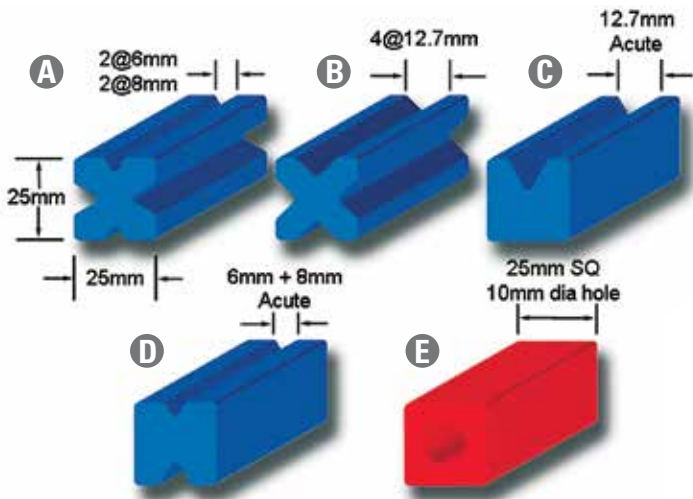
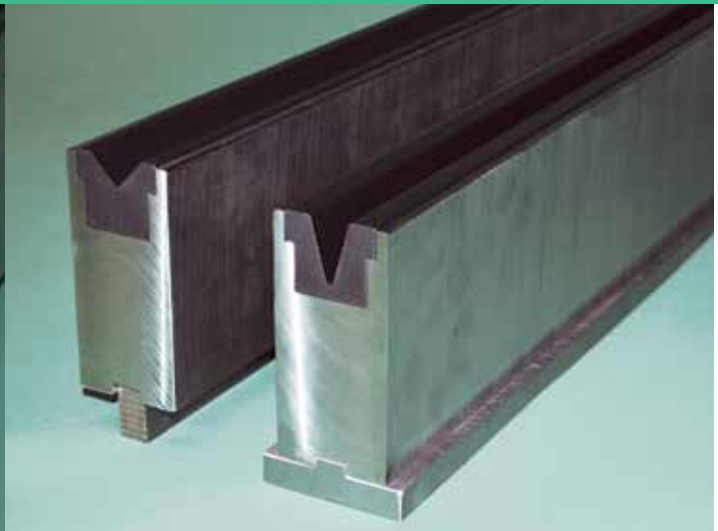
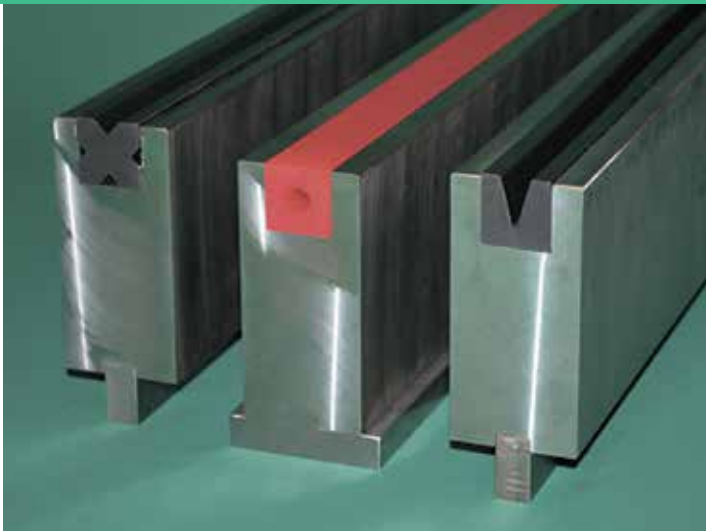
URETHANE V-DIES					STEEL HOLDER	
PART #	SIZE A X B	ANGLE	R1 (IN)	R2 (IN)	SIZE W X H	PART #
PAC2538	1 X 1	30°	3/64	3/64	2 X 2	SH1010
PAC50	1 X 1	30°	3/64	3/64	2 X 2	SH1010
PAC100	1 1/2 X 1 1/2	34°	5/32	3/32	2 1/2 X 2	SH1515

Hemming Die (FIGURE 3)

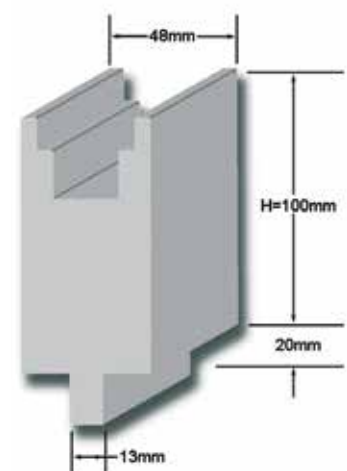
For Hemming in two strokes on 18 Ga. and lighter M.S. using a steel Hemming Punch.

With the first hit, a 30° angle bend is made, then the part is pulled up and tilted. The Slanted side of the punch will then flatten the hem.





Urethane Pads				Steel Holder (Retainer)		
PAGE ITEM	PART NUMBER	SIZE W x H	ANGLES DEGREES	PAGE ITEM	PART NUMBER	SIZE W x H
A	FW2538	25 x 25	90	1	SH1010T75	38 x 75mm
B	FW5050	25 x 25	90	2	SH1010T100	38 x 100mm
C	PAC50	25 x 25	90	3	SH1512T100	50 x 100mm
D	PAC2538	25 x 25	90			
E	POD110	25 x 25	-			
F	PT1512AC62	38 x 31	30			
G	PT1512R10	38 x 31	85			



Blue color : Molded to shape POLYURETHANE- 75D duro

Red color: Flexible forming pad POLYURETHANE -90A duro

Scratch Free Bends

The most economical press brake forming method, for polished stainless steel, Aluminum and Pre-finished surfaces (Painted, vinyl coated surfaces). Triangular shaped pads are used on steel V-dies. Bending start at the line of contact of Punch & sheet metal, and tangentially moves outwards. There is no sliding or dragging of sheet metal, as in steel dies.

Precise Bends

Bends precisely conform to the sharpness or radius and angle of the punch, with minimum or no spring back. Forming starts from the point of contact, with no blank slippage. Forming of blanks with cut-outs or uneven ends are possible. On very long bends with close tolerances, as long as the punch is precise, accurate bends can be made. (We have customers that have used the V-pads for making 16' long bends with good results). Even on older machines with uneven or non-parallel beds, and rams, precise bends are possible without shimming.

Short Flanges

"Short Bend Legs" (bend legs of three to four times metal thickness) are possible.

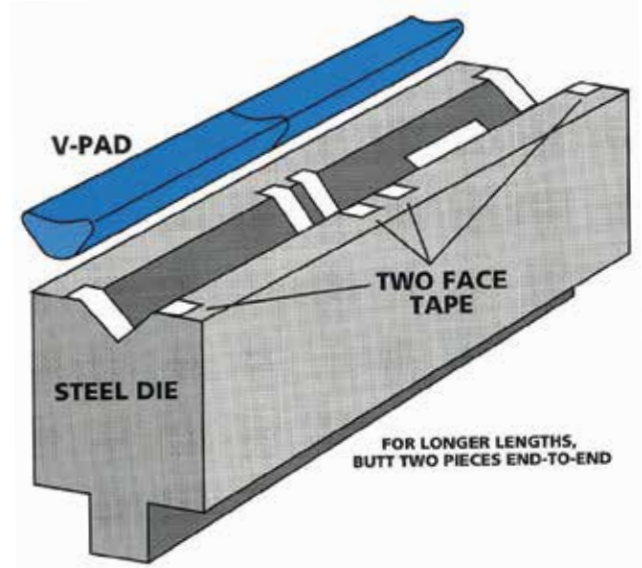
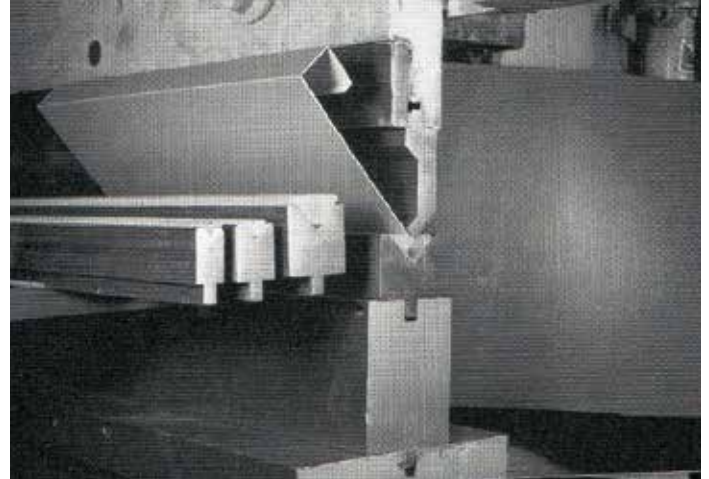
Easy To Install and Use

Existing steel punches, and dies (1/2", 1", 2" openings, 85° or 90°) can be used. Set up is simple. Just place the V-pads in the corresponding size to steel V-dies, and without the need for extensive die alignment or shimming, you are set to go. For bends longer than the V-pad length, just butt them end to end, making sure that the ends are square and prevent lateral movements by using double faced tape. Depth of punch penetration, into the V-pad should be at least as possible to make a given bend, for maximizing the pad life.

Never penetrate more than half the pad height. Width of punch penetration, into the V-pad should be limited to half the pad width.



The new design of 2" pad with a molded hole reduces tonnage. Ideal for radius bends of up to 1/4"R.



Gauge of Metal

FOR PRESS BRAKE FORMING: Maximum recommended gauges for M.S. and Aluminum
 1/2" pad: 18 Ga., 1" Pad: 16 Ga., 2" Pad: 14 Ga.
 For Stainless Steel: Use the next lower Gauge.

Tonnage

(Approximate tons per foot length for V-bends):
 20 Ga. -4 tons, 16 Ga. -6 tons, 14 Ga. -9 tons.

Lengths

PV-200 = 4', PV-200H = 4'; PV-05 & pv-100 = 96". For longer lengths, butt them end-to-end and use double face tape under the pad.

CUSTOM TOOLING IS OUR SPECIALTY

We can manufacture **STEEL PRESS BRAKE DIES** up to 30' in Length

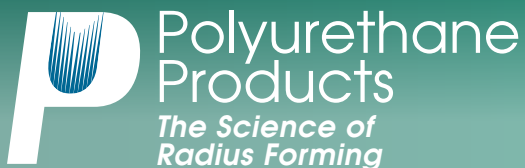


One **SUCCESS STORY** of **SMART PAD SYSTEM**:



- The U-troughs shown on the left are made of 3/16" or 1/4" thick Stainless Steel.
- The old process was to bump multiple 5 degree hits to create the 180 degree bend. This was time consuming & in-consistant.
- New process is to form the U-bend in 3-5 hits using the SMART PAD SYSTEM, as compared to the old method with 37 hits & chatter marks.
- Customer is totally satisfied with the quality of the bend and savings on production time and fitting time.

This customer has several sizes of steel radius punches from PRESS BRAKE TOOLING CORP. (our sister company) and a set-up of URETHANE SMART PAD SYSTEM by POLYURETHANE PRODUCTS CORP...with the single source responsibility of Application Engineering.



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