Press Brake Tooling
Engineered for High Performance

High Performance Press Brake Tooling

PRESS BRAKE TOOLING CORPORATION
Addison, IL USA

Essentials of J.I.T Manufacturing

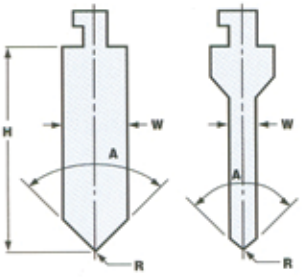
- In sheet metal fabrication, JIT ***begins*** with the reduction of set-up time. Quick Tool Changes will be mandatory.
- **Precision Ground Press Brake Toolings** are available in 2 grades of steel:
  I.H.: Working surfaces are induction hardened to 50-56 HRC.
  T.H.: The whole tool is through hardened to 45-50 HRC for High Strength.

Advantages of Precision Ground Press Brake Tooling

- **Critical Dimensions** are precision ground to within ±.0008".
- **Fixed Reference Center-line** assures accurate alignment of sectionalized tooling.
- **Convenient Lengths** of 36", 18" and sectionalized 36" lengths enable one man set-ups, improve efficiency and reduce handling injuries.
- **Smart Tooling,** with optimal versatility and quality.

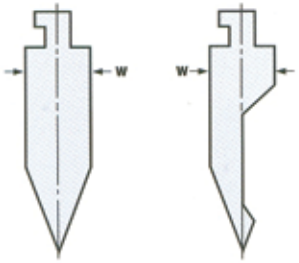
General Purpose Tooling

85°, 88°, 90° Punches



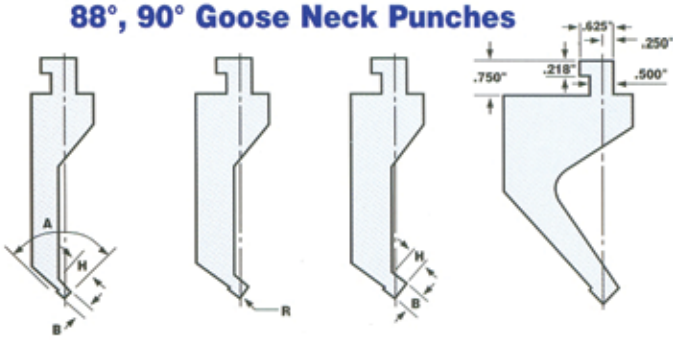
P1000-05 P625-625A

Acute Angle Punches



PAP1-2 PAGN

88°, 90° Goose Neck Punches



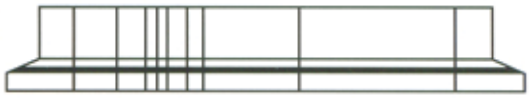
PGN22 PGN18 PGN14 PGN16A-16B

Part No.	H	W	A	R	Capacity
P1000	3.779"	1.0"	90°	0.015"	22-16 ga.
P1001	3.779"	1.0"	90°	0.031"	16-14 ga.
P1002	3.779"	1.0"	88°	0.062"	14-12 ga.
P1003	3.779"	1.0"	88°	0.093"	11-10 ga.
P1004	3.779"	1.0"	85°	0.125"	10 ga.
P1005	3.779"	1.0"	85°	0.187"	10 ga.
Narrow Punches					
P625	3.779"	0.5"	90°	0.015"	22-16 ga.
P625A	3.779"	0.5"	88°	0.015"	22-16 ga.
Acute Angle Punches					
PAP1	3.779"	1.0"	28°	0.031"	22-16 ga.
PAP2	3.779"	1.25"	30°	0.093"	14-11 ga.
PAGN	5.125"	1.25"	28°	0.031"	22-16 ga.

Part No.	H	A	R	Capacity	Nose (B X H)
PGN22	3.779"	90°	0.015"	20 ga.	1/4" X 7/16"
PGN18	3.779"	90°	0.015"	18 ga.	3/8" X 9/16"
PGN14	3.779"	90°	0.031"	14 ga.	1/2" X 5/8"
PGN16A	3.779"	90°	0.031"	16 ga.	7/16" X taper
PGN16B	3.779"	88°	0.031"	16 ga.	7/16" X taper

Sectionalized Punches

The tools will be sectioned in 10 pieces.

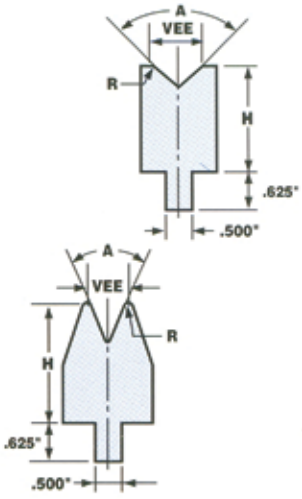


In inches (4 + 3 + 2 + 1/2 + 1/2 + 1 + 3/4 + 8 + 12 + 4)=35 3/4"

Acute Angle Lower Dies

Designed for the air bending of virtually any angle from acute to obtuse.

Code	H	A	R	Capacity	Vee
PD3025	1.937"	30°	.045"	20 ga.	1/4"
PD3037	1.937"	30°	.045"	18 ga.	3/8"
PD3050	1.937"	30°	.045"	16 ga.	1/2"
PD3062	1.937"	30°	.060"	14 ga.	5/8"
PD3487	1.937"	34°	.090"	12 ga.	7/8"
PD34100	1.937"	34°	.090"	11 ga.	1"



88° and 90° Lower Dies

Designed for the ultimate in precision bending. Suitable for air bending or bottom bending.

Code	H	A	R	Capacity	Vee
PD9025	1.937"	90°	.032"	20 ga.	1/4"
PD8837	1.937"	88°	.045"	18 ga.	3/8"
PD9037	1.937"	90°	.045"	18 ga.	3/8"
PD8850	1.937"	88°	.060"	16 ga.	1/2"
PD9050	1.937"	90°	.060"	16 ga.	1/2"
PD8862	1.937"	88°	.075"	14 ga.	5/8"
PD8875	1.937"	88°	.150"	13 ga.	3/4"
PD8887	1.937"	88°	.150"	12 ga.	7/8"
PD8810	1.937"	88°	.150"	11 ga.	1"

Features of QUICK CHANGE TOOLING:

- Quick Change Tooling is simply **Smart.**
- With the promotion of J.I.T. MANUFACTURING, an average lot size in a sheet metal fabricating shop is 50 pcs.

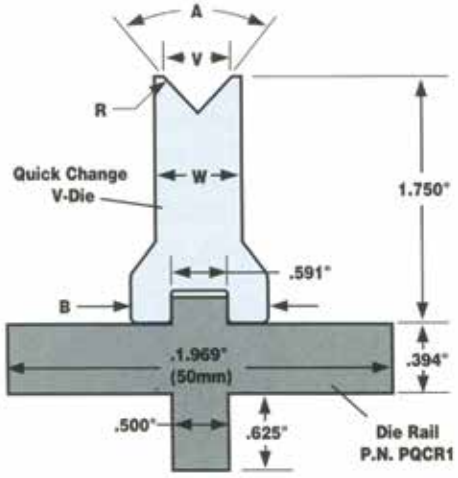
Minimization of set-up times will be a crucial part of success
Consider the following shop rates and the costs of set-up times:

Hourly Shop Rate	Set-Up Time (mins)	Cost Per Set-Up	Cost Per Year 2 Set-Ups/Day	Cost Per Year 4 Set-Ups/Day	Cost Per Year 6 Set-Ups/Day	Cost Per Year 8 Set-Ups/Day
$60.00	15	$15.00	$7800.00	$15,600.00	$23,400.00	$31,200.00
$60.00	30	$30.00	$15,600.00	$31,200.00	$46,800.00	$62,400.00

The Pay-off on the Tooling is phenomenal

Quick Change V-Dies:

Precision ground V-Dies are designed to fit in Precision ground rails



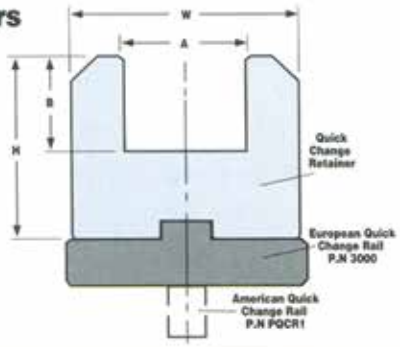
Part No.	V-Opening	A-Angle	R-Radius	W	B
PQC250	.250"	88°	.030"	.625"	1.125"
PQC375	.375"	88°	.045"	.625"	1.125"
PQC500	.500"	88°	.060"	.750"	1.125"
PQC625	.625"	88°	.078"	.875"	1.125"
PQC750	.750"	88°	.150"	1.000"	1.125"
PQC875	.875"	88°	.150"	1.125"	1.125"
PQC1000	1.000"	85°	.150"	1.250"	1.375"
PQC250A	.250"	30°	.045"	.625"	1.125"
PQC375A	.375"	30°	.045"	.625"	1.125"
PQC500A	.500"	30°	.045"	.750"	1.125"
PQC625A	.625"	30°	.060"	.875"	1.125"
PQC875A	.875"	32°	.090"	1.875"*	1.875"*
PQC1000A	1.000"	34°	.090"	1.875"*	1.875"*

***Note: Height=2.375"**

Quick Change Dies For Scratch-free Bending:

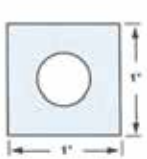
Precision ground Quick Change Retainers are used with Molded Die-Thane 4-Way & Acute Angle inserts or softer pads

Retainers

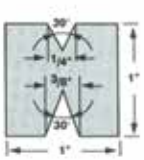


Part No.	A	B	W	H	Length
QCSH1010-E	1.00 (25.4mm)	1.00 (25.4mm)	1.811 (46mm)	1.811 (46mm)	32.87 (835mm)
QCSH1010-A	1.00 (25.4mm)	1.00 (25.4mm)	1.811 (46mm)	1.811 (46mm)	36.00 (914.4mm)
QCSH1515-E	1.50 (38.1mm)	1.50 (38.1mm)	2.36 (60mm)	2.36 (60mm)	32.87 (835mm)
QCSH1515-A	1.50 (38.1mm)	1.50 (38.1mm)	2.36 (60mm)	2.36 (60mm)	36.00 (914.4mm)

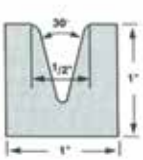
Die Thane Inserts



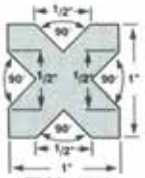
POD110
Die-Thane Poly-Die
16 Ga. & 1/4"R



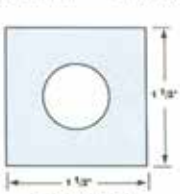
PAC2538
Acute V-Die
22 Ga., 18 Ga.



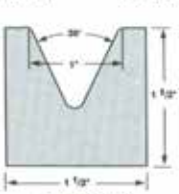
PAC50
Acute V-Die
16 Ga. M.S.



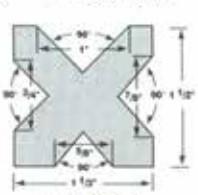
FW5050
Four-Way Die
16 Ga. M.S.



POD115
Die-Thane Poly-Die
14 Ga. & 3/8"R



PAC100
Acute Angle V-Die
12 Ga. M.S.



FW6310
Four-Way Die
14, 13, 12, 11 Ga.

Quality Steels:

All of our general purpose tooling are made of pre-hardened chrome-carbon die steel, having an excellent combination of strength, wear-resistance and toughness, heat treated to a mean 255-285 brinnell hardness (24-31 Rockwell "C"). throughout.

How to Order:

General Purpose Dies:

1. Specify catalog numbers
2. Specify gauge to be formed, and die opening
3. Specify length required.
   Unless otherwise specified, standard tolerance on lengths: +2" –0".
4. Special finishing if required.
5. Surface hardening, if required.

Special Tooling:

1. Submit drawing or sample of finished part.
2. Specify gauge and type of material to be formed. When special alloys or materials are involved, we will need "tryout" materials.
3. Give model, capacity, make, die space, stroke, ram and adjustment of press brake.
4. Advise us of any special adaptors or filler blocks.
5. State anticipated production requirements.

Safety Tongue:

1. Standard tongue is 1/2" wide x 5/8" high. "Safety" or "Hook" tongues are recommended where weight of punch is great, or when the punch is to be used in sections, or when stripping pressures would create downward pull such as in channel forming.

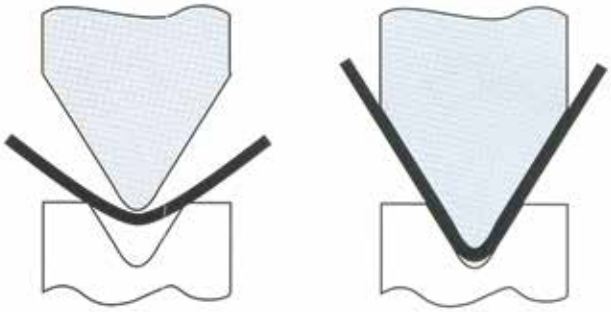
Air Bending Dies:

Air bending dies are made at a more acute angle than the angle to be formed with the only contact between the dies and material occurring at the tip of the male punch and the inside edges of the female die. The material is formed rather than "coined" or bottomed".

Most of our air bending dies are made with an included angle of 85°, when forming 90° flanges in mild steel, the material's natural springback achieves the 90° angle. To form angles greater than the dies included angle, the ram is adjusted for less die penetration.

Bottoming Dies:

Bottoming is used when high accuracy and sharp corners are needed. This process requires three to five times the pressure used in air bending. Since more tonnage is needed, bottoming dies are seldom used on steel heavier than 12 gauge. Bottoming dies have an included angle of 90° and lower die capacities are based on eight times the material thickness. For tighter radii and less springback, the die opening is five times the material thickness.



Safety Warning:

The punches and dies illustrated in this catalog are general purpose and special applications tooling, for use in standard make press brakes that have regular mounting provisions.

It is the responsibility of the user to make sure that the proper application with due regard to safety in operation is followed. Safety and industrial standards must be considered to insure that the point of operation protection is effective.

Our dies are never to be used in any equipment without some means provided for preventing hands or other parts of the body from entering or remaining in the die space at any time.

We do everything possible to supply dies to produce material that fits specifications. Since the actual use is beyond our control, it is the user's responsibility to assure safety compliance.

When using brake die tooling compliance with all safety requirements is outlined by the American National Standards Institute bulleting A.N.S., 11-3 as well as other local, state, and federal standards which may apply. For a copy of ANSI D11-3 please contact : American National Standards Institute, Inc. 1430 Roadway, New York New York 10018.

PRELIMINARY STEPS (before insertion or removal of dies)

1. Bring ram to DOWN stroke position.
2. If motor is on, shut it **OFF**
3. **STOP** flywheel or allow it to coast to a complete stop before performing any work.
4. **SHUT OFF** stroking controls.
   If they are electrical, turn them off.
   If they are foot pedal type, remove pedal and lock the treadle system.

DIE INSERTION (after following "Preliminary Steps" above)

NEVER PLACE HANDS BETWEEN DIES WHEN INSERTING DIES. When using bending type dies which are equipped with tongues, insert them from the side of the machine.

Loosen all ram clamps and die holder set screw.

First insert the lower die approximately its full length allowing it to remain extended past the end of the bed by several inches.

Check the distance remaining between the ram and the lower die to determine if the upper die can be properly inserted. Adjust the shut height as required so the distance remaining will permit placement of the upper die on the lower die, with the tongue of the upper die almost fully but loosely engaged into the ram clamp.

The upper die can now be carried by a double sling and set to rest on the extended portion of the lower die with tongue into the slot.

After this alignment and partial insertion of the upper die has been made, relocate the sling at the extended end to support the upper die, Push the upper die in to line up with the lower die. Now push the set of dies to the center of the machine for balanced machine loading.

Run the adjustment down so that the dies "kiss", but do not "stall-out" the adjustment motor. This will force the upper tongue into full engagement.

Tighten the ram clamps and the set screws in the lower holder. Run up the adjustment to accommodate at least twice the stock thickness.

Start the flywheel and cycle the brake to the top of its stroke.

DIE REMOVAL (after following "Preliminary Steps")

NEVER PLACE HANDS BETWEEN DIES WHEN REMOVING DIES. Check remaining distance between upper and lower die.

Run adjustment of ram down to reduce this clearance to several thousandths.

Unclamp upper ram clamps and the lower die holder set screws.

Adjust ram upward slightly and check to be certain that the upper die will remain resting in lower die. If it does not, the ram clamps may require further loosening. When a hook tongue is used be certain it is not hanging from the hook.

If further adjustment is required to permit removal, adjust ram upward so that the die is loose but well confined.

With the upper die tongue partially disengaged and guided in the loose end ram clamp, push both upper and lower die a short distance out of the end of machine. Push with the hands placed on end of dies, never between.

Push upper die over table or into double sling with part of the die remaining in ram.

Secure die from falling from table or reposition each sling to allow complete removal of die without falling.

If both dies are removed together and stored as a set, it is advisable to use a sling to prevent falling of upper die from lower die. As a precaution, use steel band loops around the set, or straps to hold them in engagement.

DIE SETTING (Conventional Bending Dies)

Insert a sample sheet and form a part. Readjust the ram as required.

Approach the setting slowly. It may be necessary to form several sample sheets before making an acceptable part.

This procedure will avoid the possibility of adjusting dies too close, resulting in overloading the machine and avoiding the possibility of jamming the machine on bottom stroke.

Over-adjustment of the ram is to be avoided.

Where deflection becomes a problem, the dies should be shimmed to compensate for machine deflection or crowned toward the center of the machine.

It is not necessarily true that bringing the adjustment down might improve the part.

If the die is already bottoming out in some places, additional adjustments will merely increase the deflection of the machine and may make the part worse rather than improve the part.

TONNAGE REQUIREMENTS.

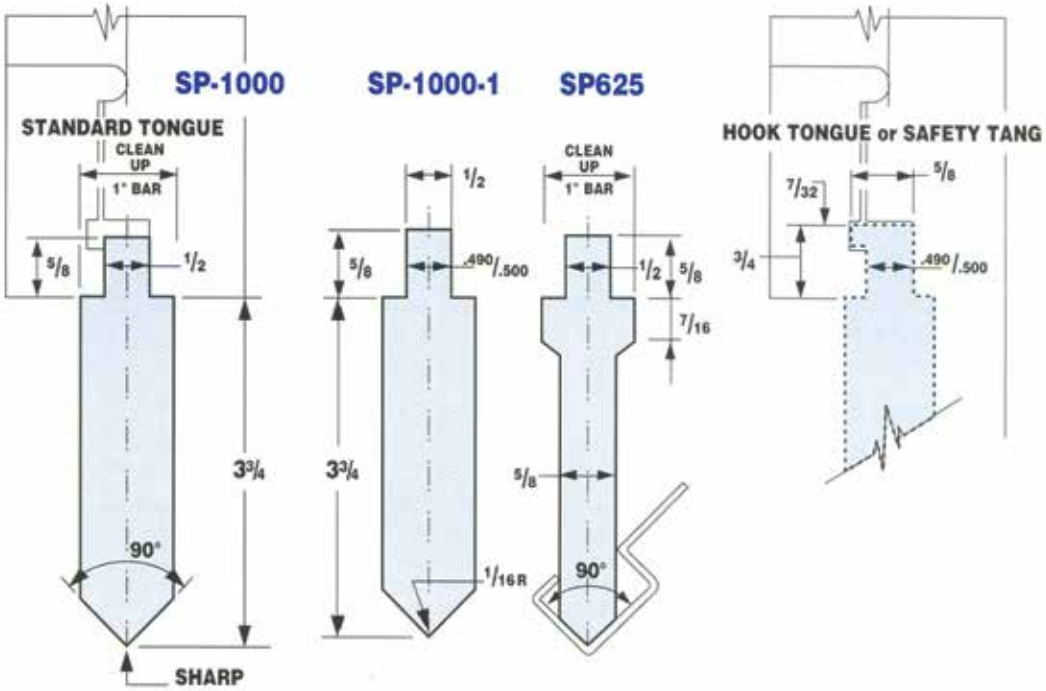
The tonnage requirement is determined by the quality of the bend and whether it is a true air bend or whether some die bottoming takes place.

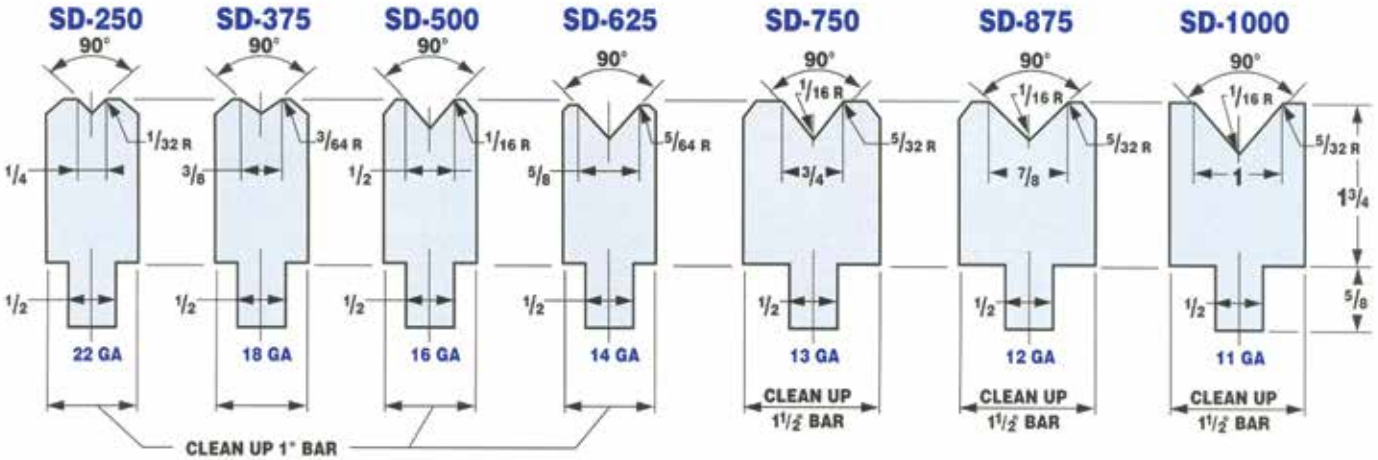
To the extent that bottoming takes place, the tonnage will increase correspondingly. Bottoming tonnages can be quite high. Accurate determination of bottoming tonnage can only be done by instrumentation and measurement.

Increased tonnage always results in increased frame deflection or "gapping".

Standard and Hook Tongues or Safety Tangs:

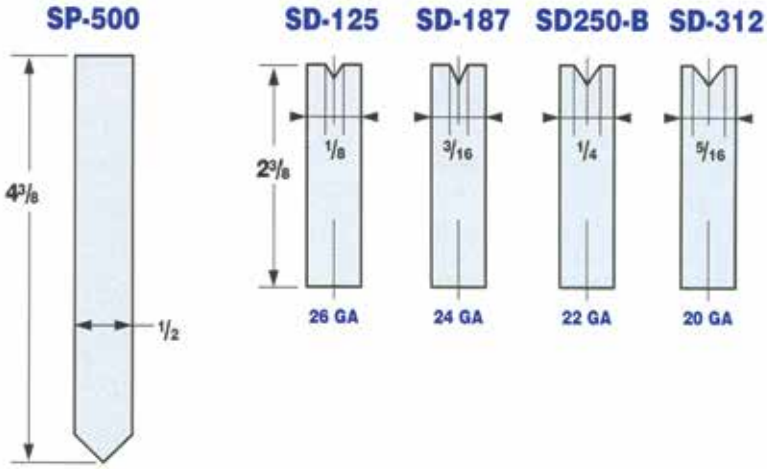
The dimensions shown on the following illustrations are considered standard. Hook Tongue or Safety Tang is safer to use if the punch is to be used in sections where weight or dimensions of punch are great, or where stripping pressure would create an extreme downward pull as in the case of a channel forming die.

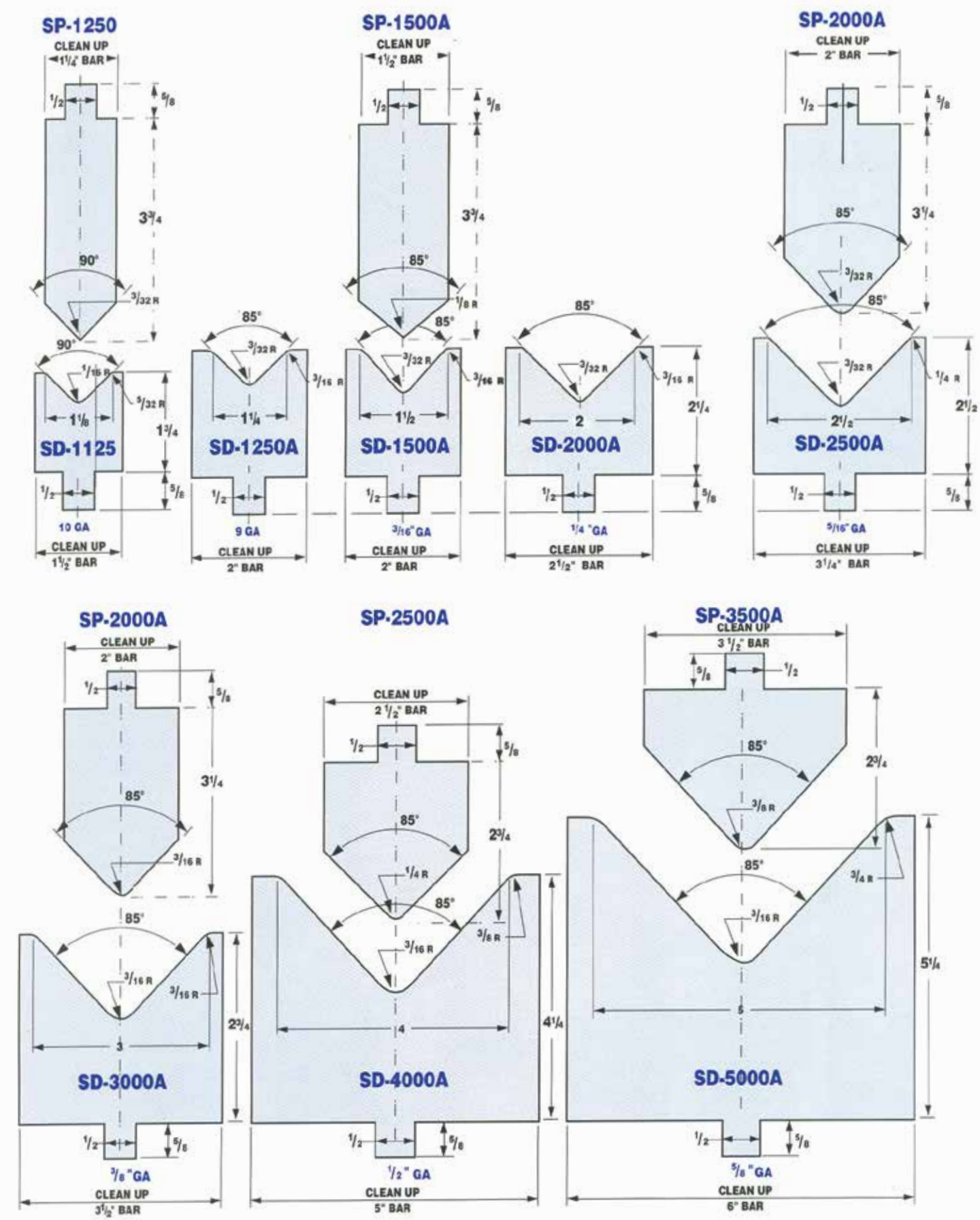




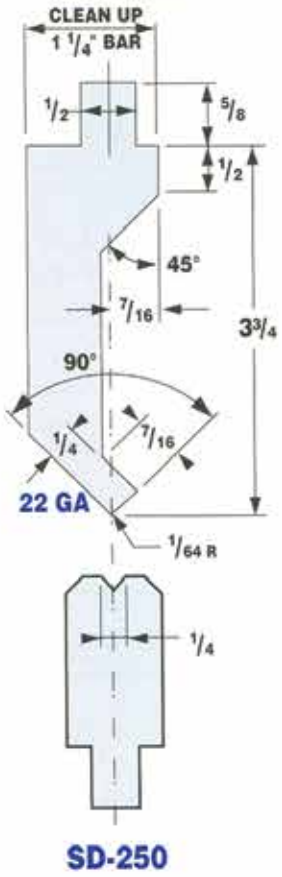
SP-500 Punch and SD-125 Die:

We do not recommend these for high production or where punch is cut into sections, but it is an economical die set for light sheet metal.

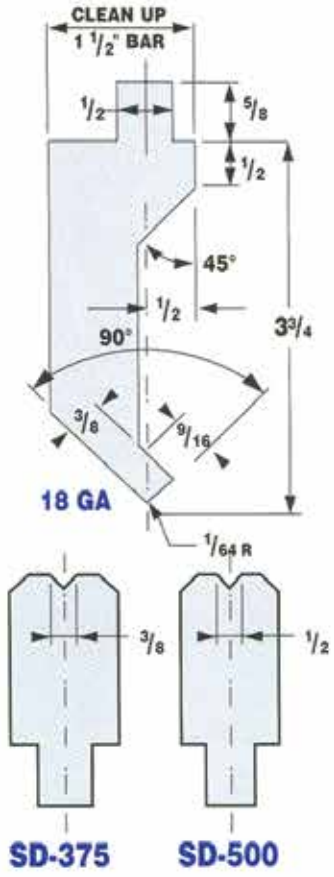



SP-1250
CLEAN UP
1¼" BAR
90°
3¾
SD-1125
10 GA
CLEAN UP
1½" BAR
SD-1250A
9 GA
CLEAN UP
2" BAR
SP-1500A
CLEAN UP
1½" BAR
85°
3¾
SD-1500A
3/16" GA
CLEAN UP
2" BAR
SD-2000A
1/4 "GA
CLEAN UP
2½" BAR
SP-2000A
CLEAN UP
2" BAR
SD-2500A
5/16" GA
CLEAN UP
3¼" BAR
SP-2000A
CLEAN UP
2" BAR
3¼
SD-3000A
3/8 "GA
CLEAN UP
3½" BAR
SP-2500A
CLEAN UP
2½" BAR
2¾
SD-4000A
1/2 " GA
CLEAN UP
5" BAR
SP-3500A
CLEAN UP
3½" BAR
2¾
SD-5000A
5/8 "GA
CLEAN UP
6" BAR

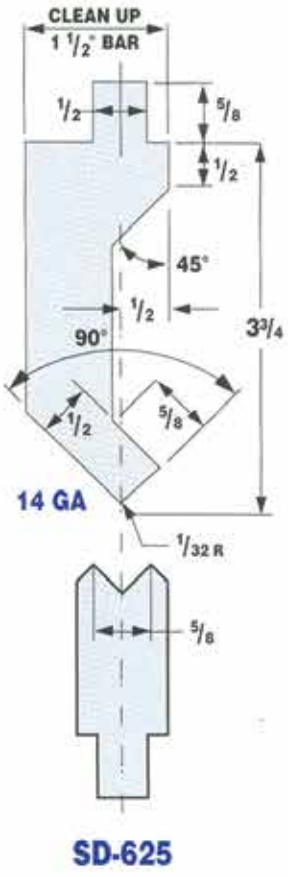
SGNP-22



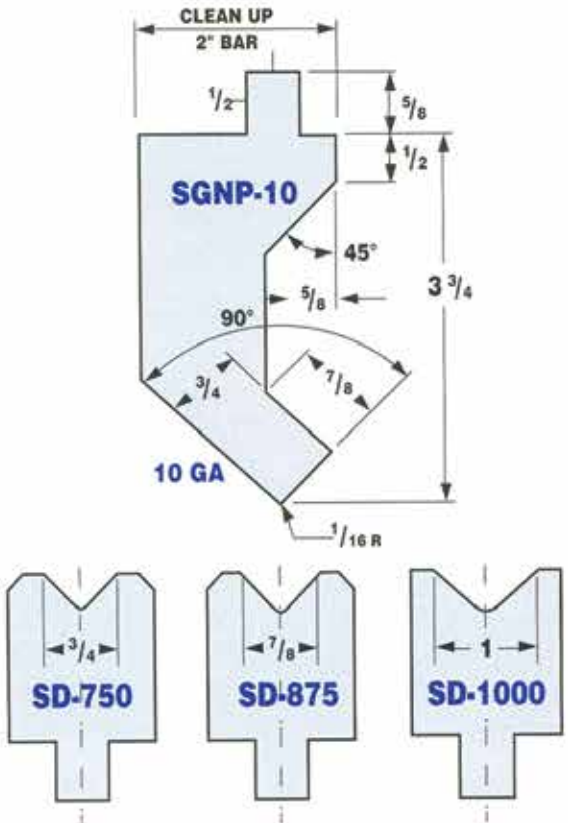
SGNP-18



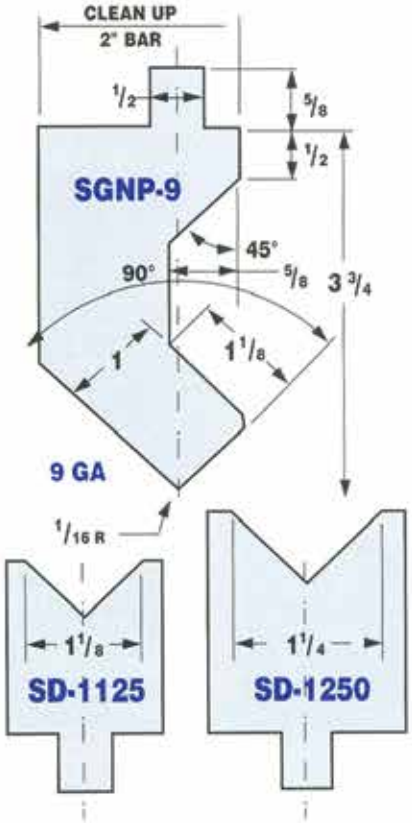
SGNP-14

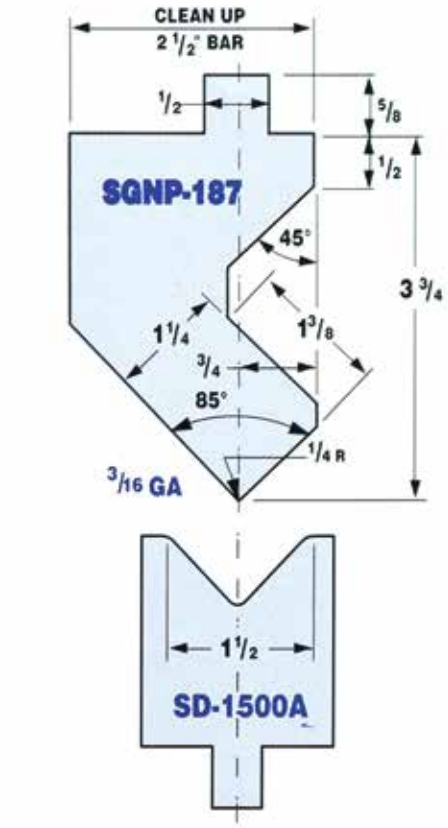


SGNP-10

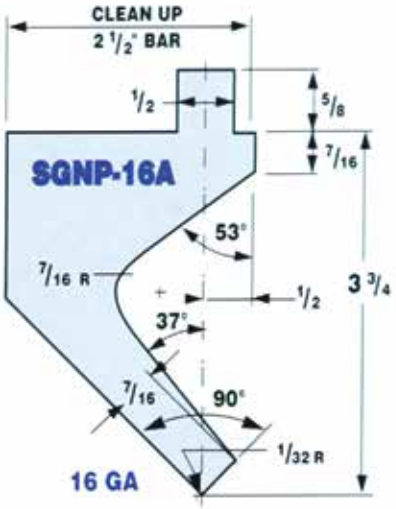


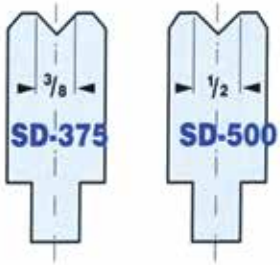
SGNP-9

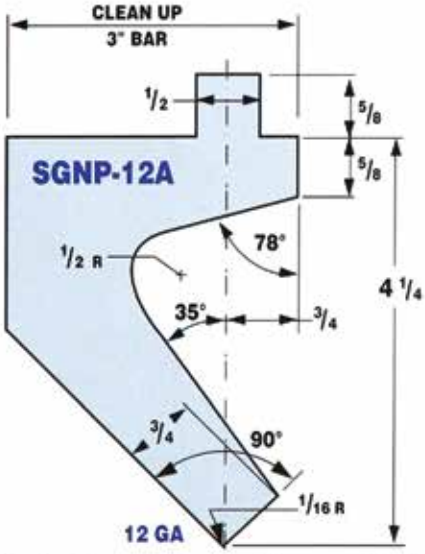


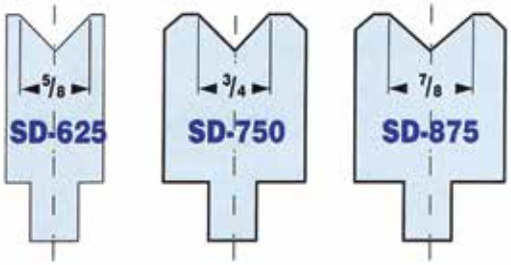

CLEAN UP
2 1/2" BAR
1/2
5/8
1/2
SGNP-187
45°
3 3/4
1 1/4
1 3/8
3/4
85°
1/4 R
3/16 GA

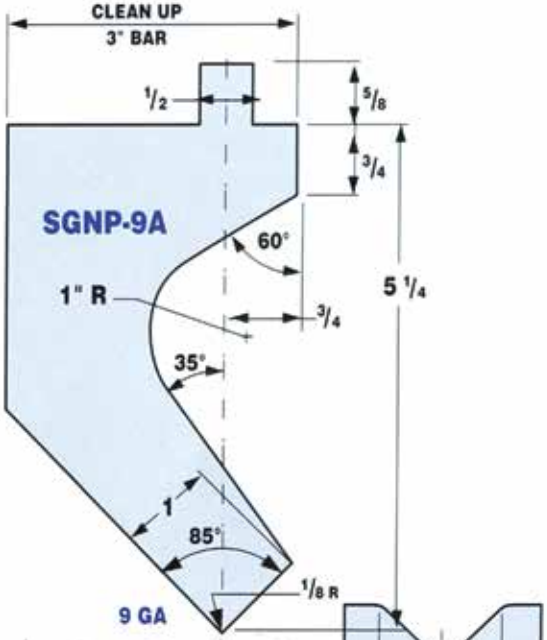
1 1/2
SD-1500A

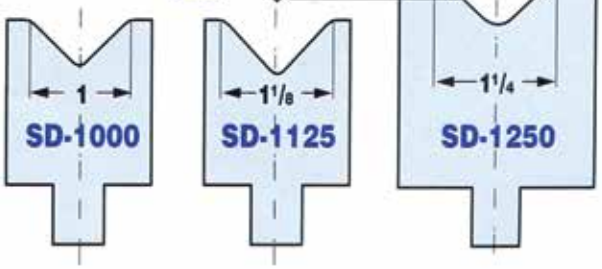

CLEAN UP
2 1/2" BAR
1/2
5/8
7/16
SGNP-16A
53°
7/16 R
1/2
3 3/4
37°
7/16
90°
1/32 R
16 GA


3/8
SD-375
1/2
SD-500

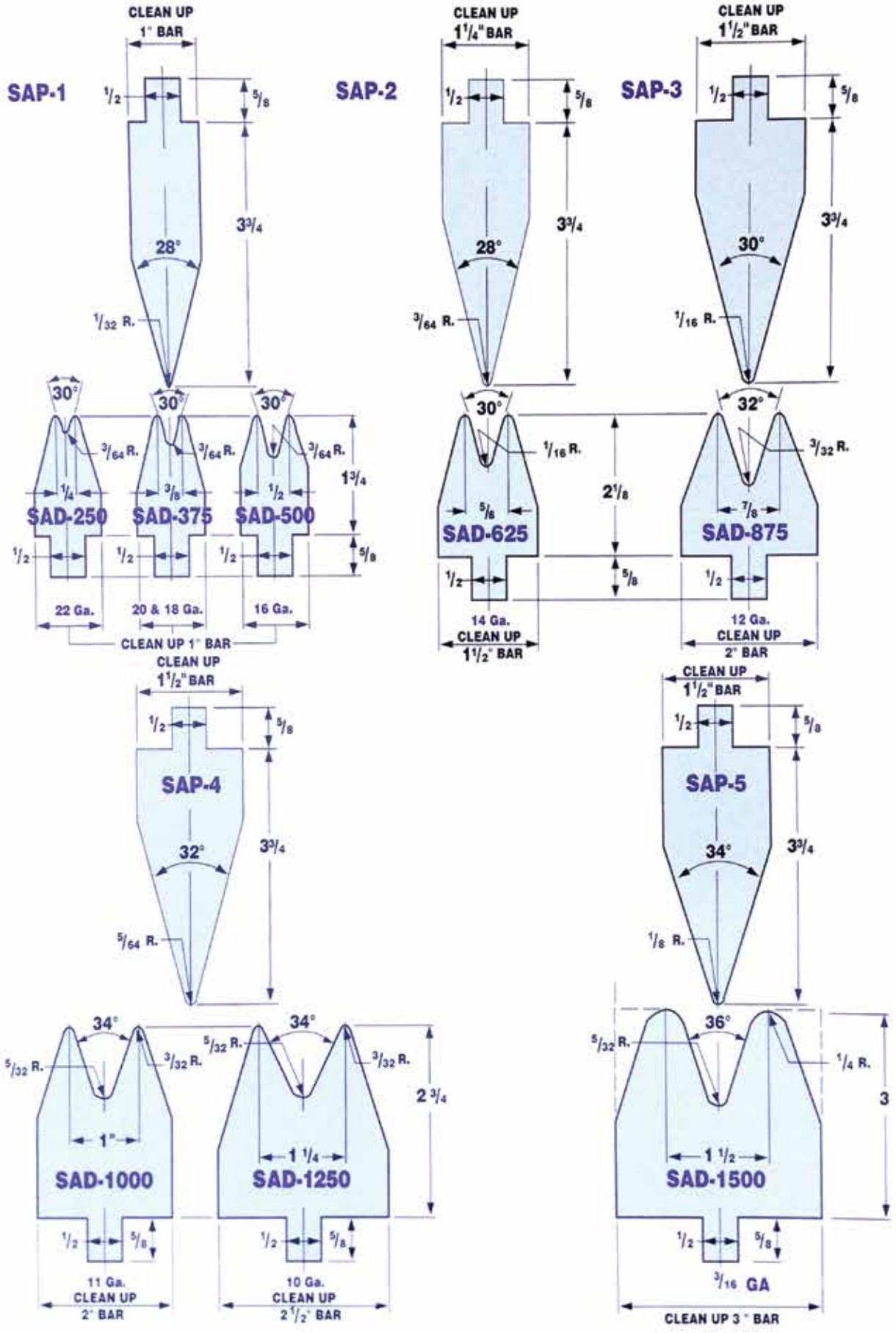

CLEAN UP
3" BAR
1/2
5/8
5/8
SGNP-12A
78°
1/2 R
4 1/4
35°
3/4
3/4
90°
1/16 R
12 GA

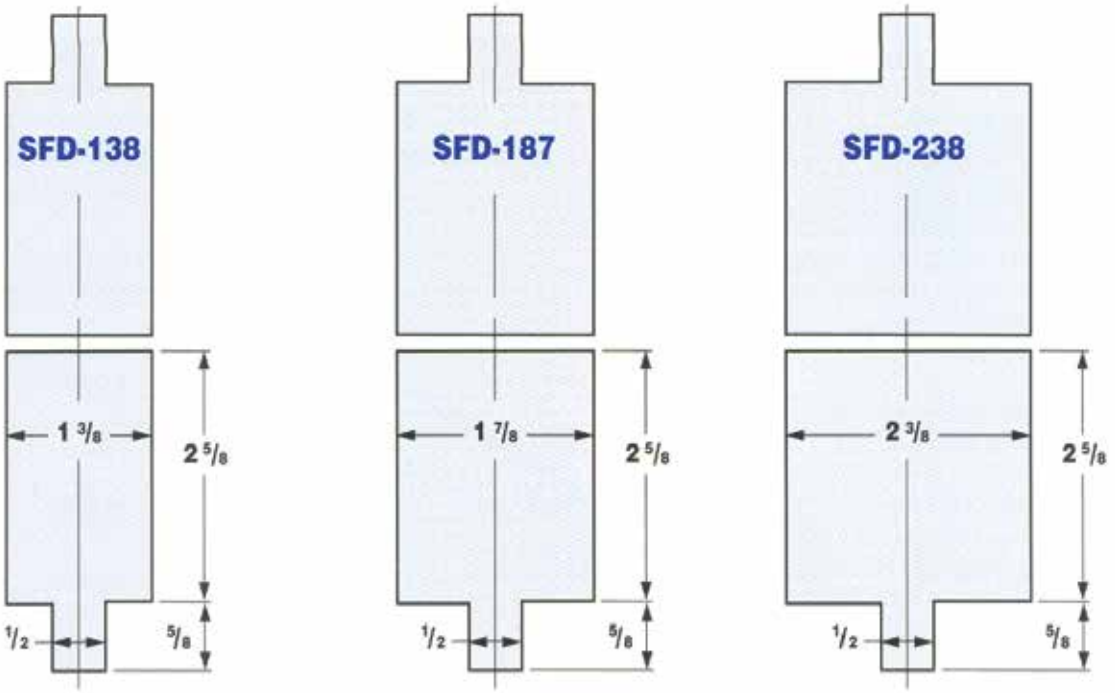

5/8
SD-625
3/4
SD-750
7/8
SD-875

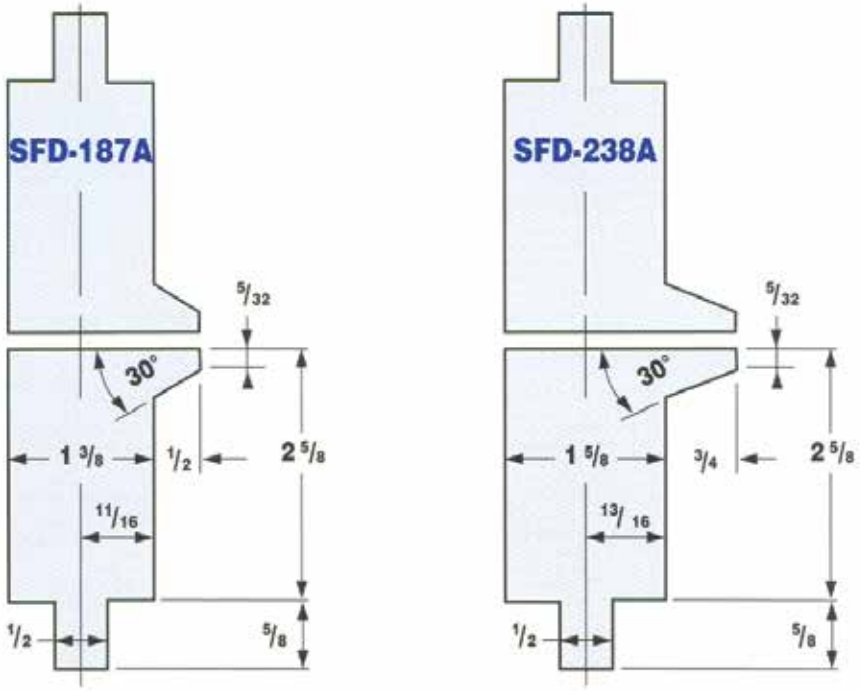

CLEAN UP
3" BAR
1/2
5/8
3/4
SGNP-9A
60°
1" R
5 1/4
3/4
35°
1
85°
1/8 R
9 GA


1
SD-1000
1 1/8
SD-1125
1 1/4
SD-1250

30° Forming Punches & Dies




SFD-138
1 3/8
2 5/8
1/2
5/8
SFD-187
1 7/8
2 5/8
1/2
5/8
SFD-238
2 3/8
2 5/8
1/2
5/8


SFD-187A
5/32
30°
1 3/8
1/2
2 5/8
11/16
1/2
5/8
SFD-238A
5/32
30°
1 5/8
3/4
2 5/8
13/16
1/2
5/8

Measuring:

The size of an offset is always measured from the inside to outside of the sheet.

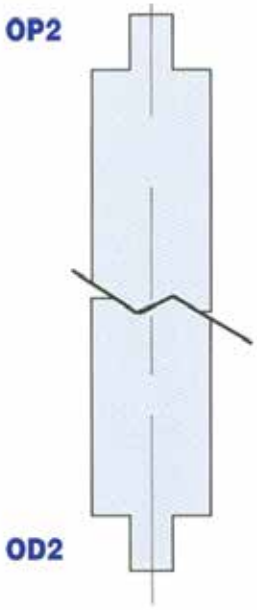
The tonnage required for an offset bend is about three times that of a single bend (with the ratio of offset to stock thickness at about 6:1). Where the ratio is less than 6:1, considerably higher tonnage would be required.

For forming offsets equal to thickness, on light gauge metals, the bent angle would be over 90°.

For forming offsets having a ratio of 10 times metal thickness, the die opening becomes quite large and there will be bulging or thickening of the metal at the radius. Reducing of this bulging is possible by coining. Normally, offset dies should be limited to a maximum of 1 1/4".

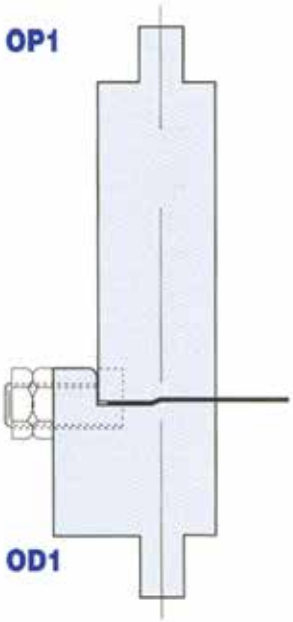
135° Offset Die Set:

For situations where enough tonnage is not available for forming sharper offsets. Available in different sizes. Can be used for different gauges, limited only by the capacity of the machine.



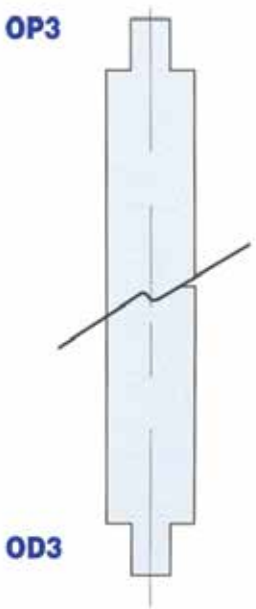
Metal Thickness Offeset Die Set:

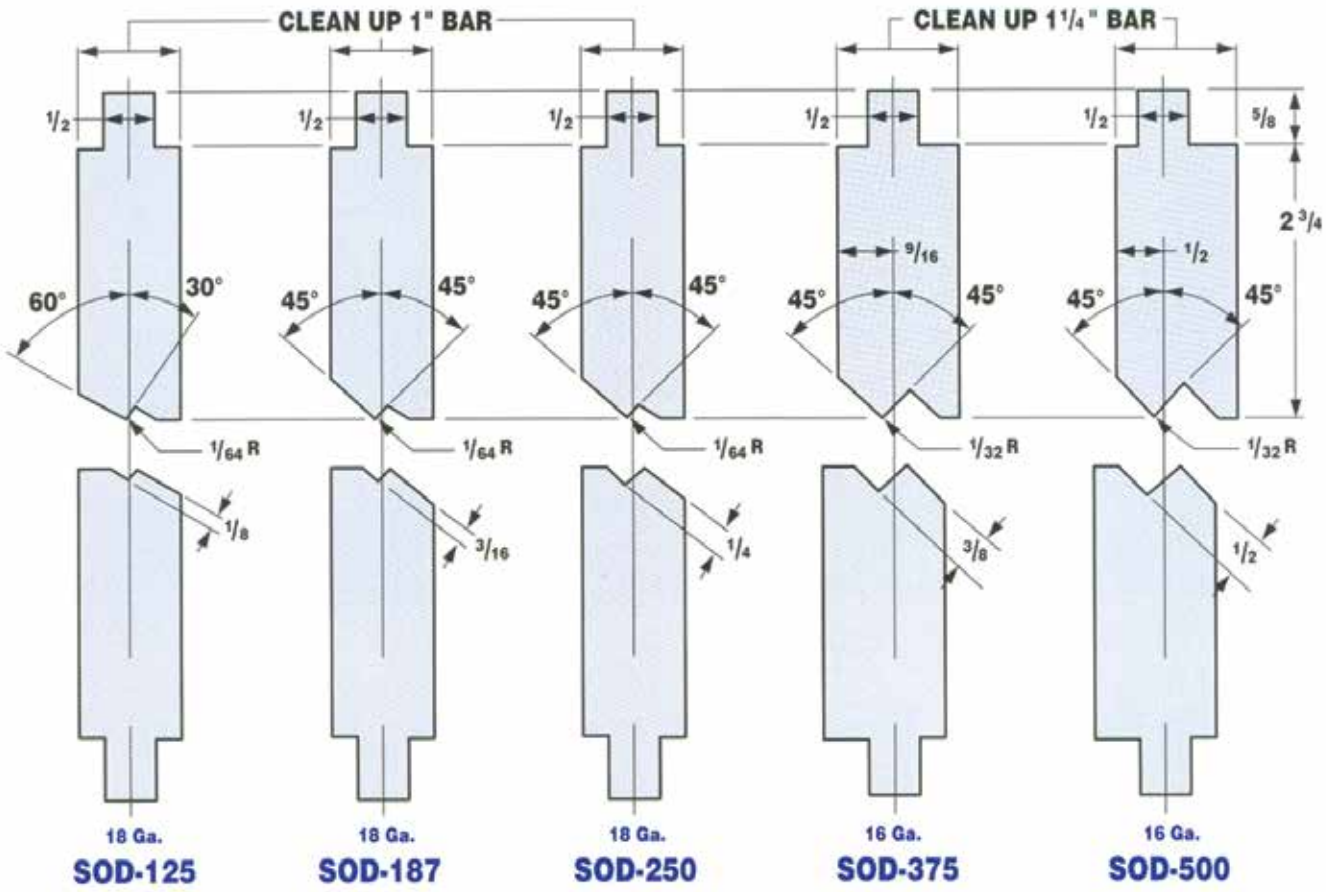
Recommended for metal thicknesses up to 14 GA. (for spot welded flush lap joints)

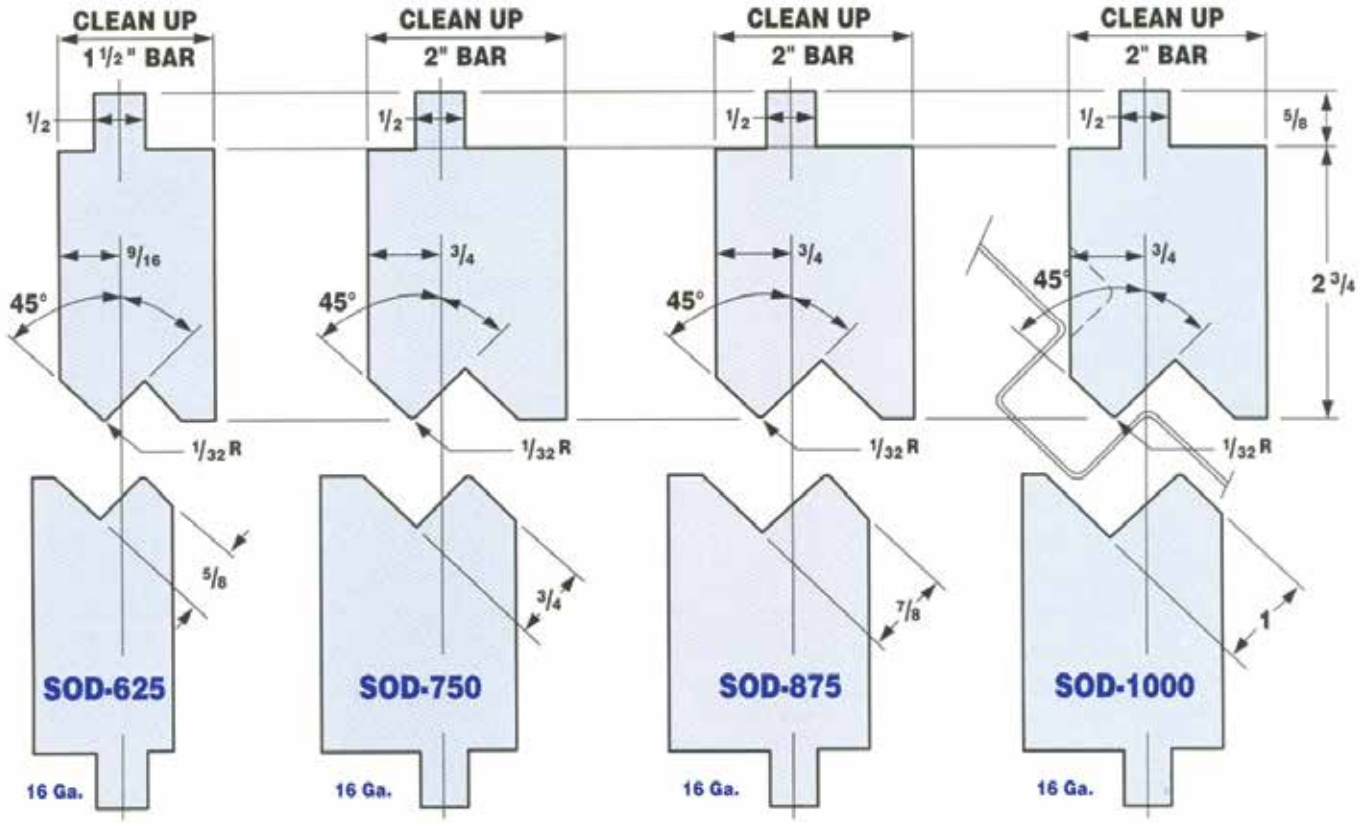


Small Offset Die Set:

For forming sharp offsets of 1/16" to 3/16" in light gauge metals of up to 18GA. Can be used in situations where the offset is far from the edge of sheet, where a heeled type offset die cannot be used.

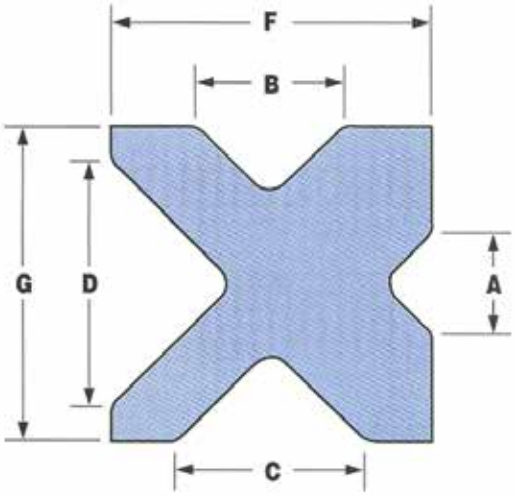



CLEAN UP 1" BAR
CLEAN UP 1 1/4" BAR
1/2
5/8
2 3/4
9/16
60°
30°
45°
1/64 R
1/32 R
1/8
3/16
1/4
3/8
18 Ga.
16 Ga.
SOD-125
SOD-187
SOD-250
SOD-375
SOD-500


CLEAN UP
1 1/2" BAR
CLEAN UP
2" BAR
CLEAN UP
2" BAR
CLEAN UP
2" BAR
1/2
5/8
2 3/4
9/16
3/4
45°
1/32 R
5/8
3/4
7/8
1
16 Ga.
SOD-625
SOD-750
SOD-875
SOD-1000

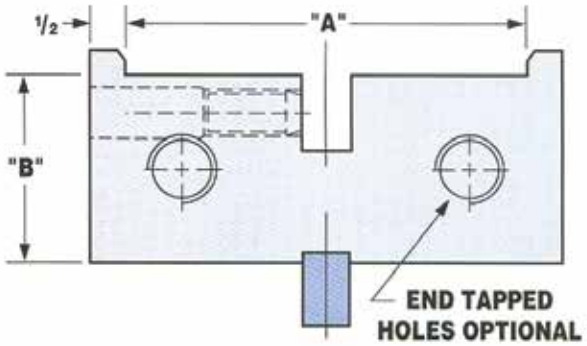
4-Way Dies:

Catalog Number	Block Size GXF	4-die Openings			
		A	B	C	D
SFW214	2.25	.50	.75	1.00	1.25
SFW234	2.75	.625	.875	1.125	1.50
SFW314	3.25	.75	1.00	1.50	2.00
SFW334	3.75	.875	1.125	2.00	2.50
SFW414	4.25	1.00	1.50	2.00	3.00
SFW434	4.75	1.00	1.25	2.50	3.00
SFW514	5.25	1.125	1.50	3.00	3.50
SFW534	5.75	1.25	2.00	3.00	4.00
SFW634	6.75	1.50	2.50	3.50	5.00
SFW734	7.75	2.00	3.00	3.50	6.00
SFW1000	10.00	2.50	3.50	4.00	8.00
SFW1200	12.00	3.00	4.00	5.00	10.00



Combination Die Holders for Three and 4-Way Dies

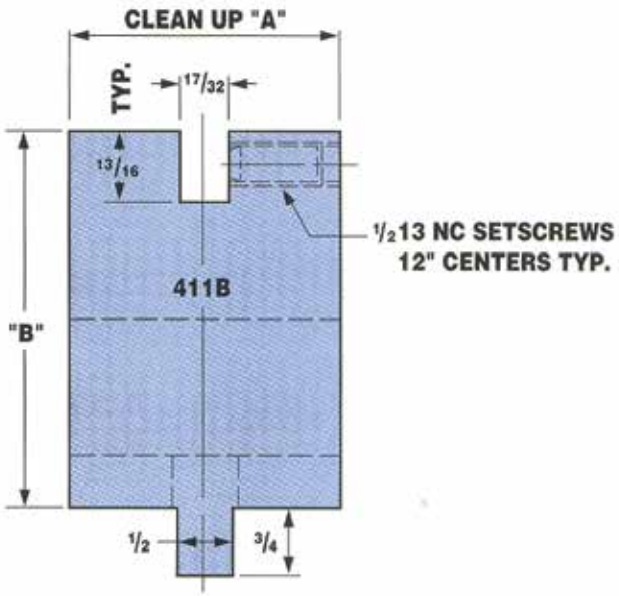
Number	A	B	Number	A	B
CDHBA	2 1/4	3 1/4	CDHBK	4 3/4	3 1/4
CDHBB	2 1/4	4 3/4	CDHBL	4 3/4	4 3/4
CDHBC	2 3/4	3 1/4	CDHBM	5 1/4	3 1/4
CDHBD	2 3/4	4 3/4	CDHBN	5 1/4	4 3/4
CDHBE	3 1/4	3 1/4	CDHBO	5 3/4	3 1/4
CDHBF	3 1/4	4 3/4	CDHBP	5 3/4	4 3/4
CDHBG	3 3/4	3 1/4	CDHBQ	6 3/4	3 1/4
CDHBH	3 3/4	4 3/4	CDHBR	7 3/4	3 1/4
CDHBI	4 1/4	3 1/4	CDHBS	10	3 1/4
CDHBJ	4 1/4	4 3/4	CDHBT	12	3 1/4

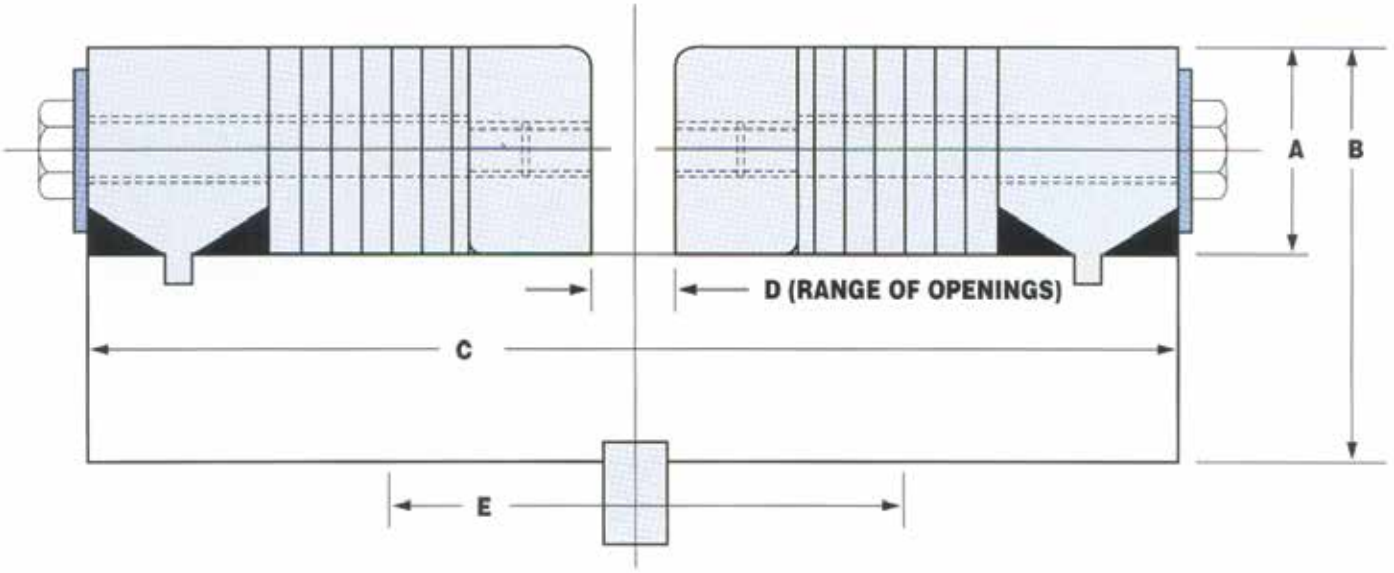


Conventional Die Holders

Number	A	B	Number	A	B
SDHBA	2	1 1/2	SDHBJ	3	5
SDHBB	2	2	SDHBK	4	2
SDHBC	2	3	SDHBL	4	3
SDHBD	2	4	SDHBM	4	4
SDHBE	2	5	SDHBN	4	5
SDHBF	3	1 1/2	SDHBO	5	2
SDHBG	3	2	SDHBP	5	3
SDHBH	3	3	SDHBQ	5	4
SDHBI	3	4	SDHBR	5	5

All die holders can be furnished in any length up to 24ft. in mild steel or prehardened brake die steel.





Adjustable Female Dies: *(Air Forming)*

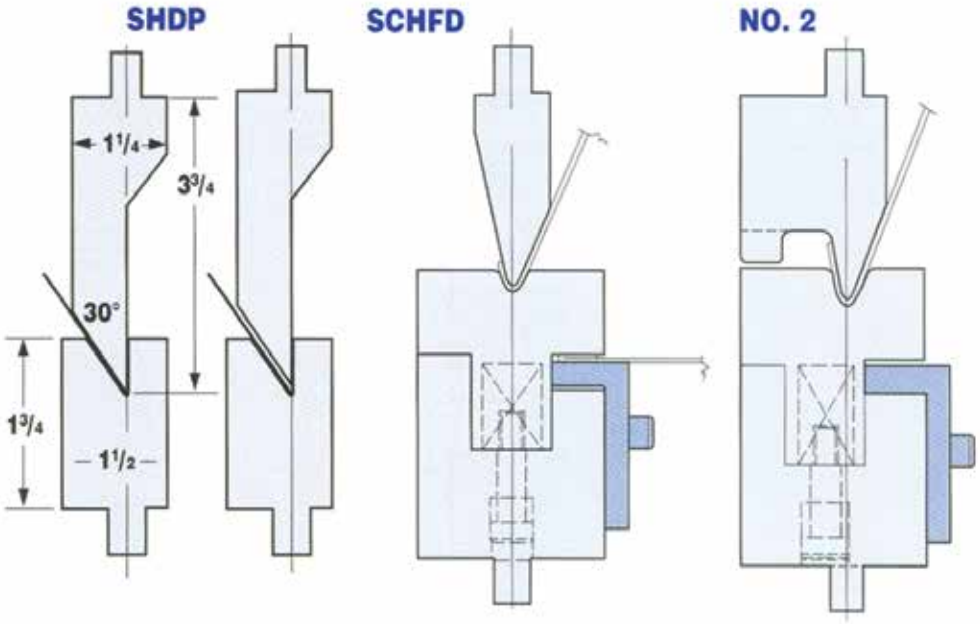
Considered to be one of the most versatile tools for air bending. Openings can be adjusted from 1/4" to 15". Slotted spacers provide easy adjustment. Lengths up to 20 feet.

Die No.	A	B	C	D	E
AFD-1	1 5/8	2 7/8	8	1/4–3 1/2	3 1/8
AFD-2	2 1/4	4 1/8	12	1/2–5	5
AFD-3	2 7/8	5 3/4	16 1/4	3–8	8
AFD-4	3 1/4	7	19 1/2	4–10	10
AFD-5	4 1/4	10	20 1/2	5–12	12
AFD-6	6 3/4	10 1/2	28	8–15	15

Hemming Dies: *(combination Hemming and Flattening Dies)*

For Hemming in two strokes, with one handling. For 18 GA and lighter. This die is also available in urethane for scratch-free forming applications.

SCHFD is a three high hemming die set recommended for 18 gauge and lighter mild steel. Shimming under adjustable angle on lower section will produce an open or closed hem. Number 2 is shown with equalizing back heel for higher production and heavier material.



Box Forming Dies:

Box forming requires a high male punch and a low female die, and the forming should be done in a 90° die. The average machine has a 12 inch die space, and with the die mounted directly on the bed, is capable of forming a box approximately 6 1/2" deep. When a box deeper than 6 1/2" must be formed, a 90° die machined on a 60°-30°angle may be used on a 16 GA material and lighter. However, this is not looked upon favorably as a means of producing boxes because of difficulty encountered in gauging the bends. A set of dies so machined will produce a box approximately 7 1/4" deep.

If boxes having a depth greater than 7 1/4" must be formed, the machine must have a shut height or die space greater than standard. For each inch of added shut height, approximately 5/8" may be added to the depth of the box.

NOTE: In forming a box, where four sides are bent up. The punch must be high enough so that when making the last two bends, the preformed sides do not strike the ram.

Standard 90° Punch

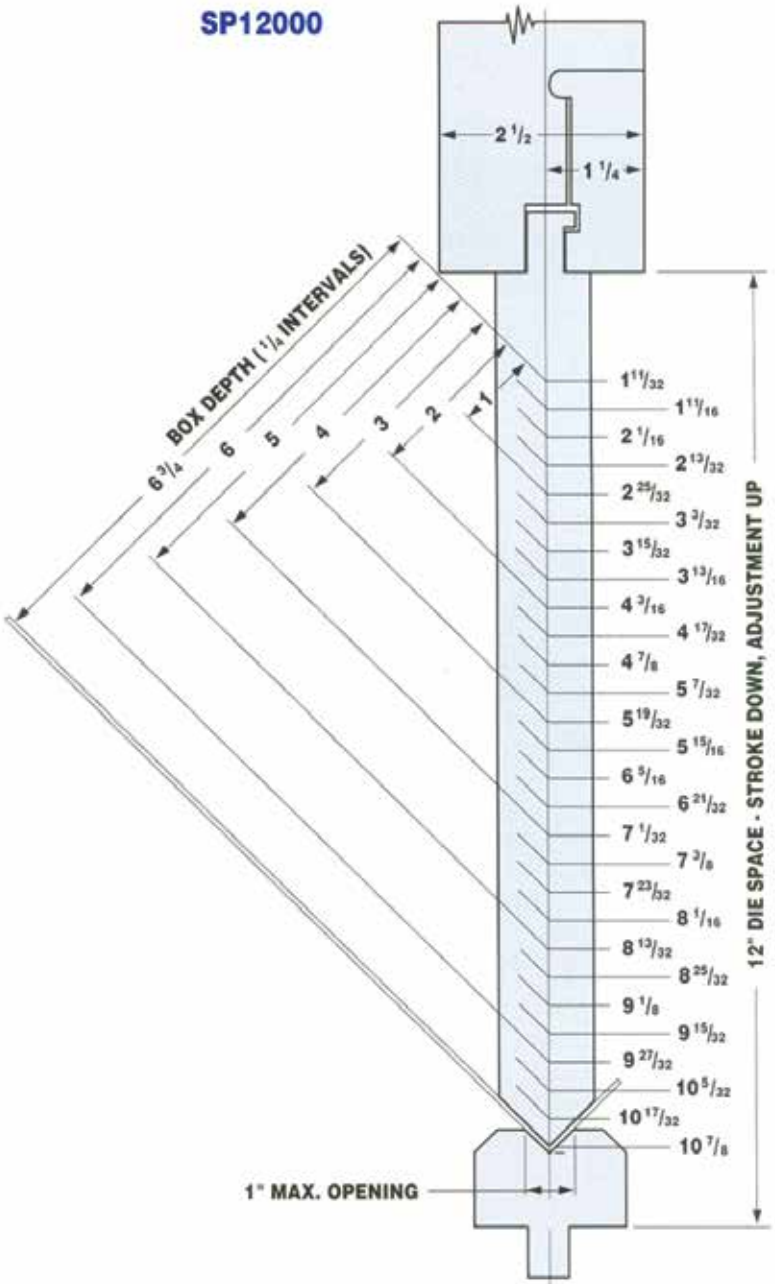
30°–60° Punch

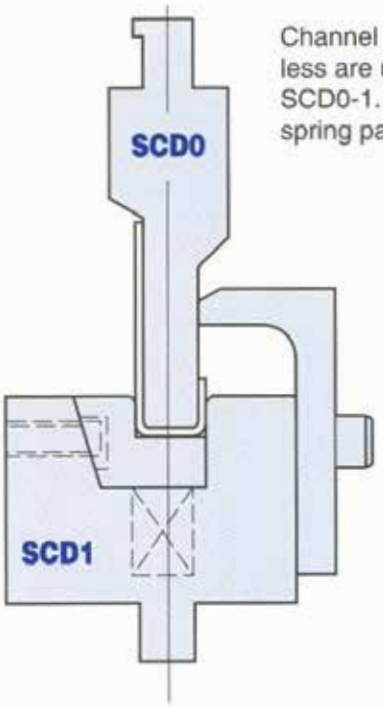
Punch Height for Box Forming

(for ram thickness = 2 1/2")

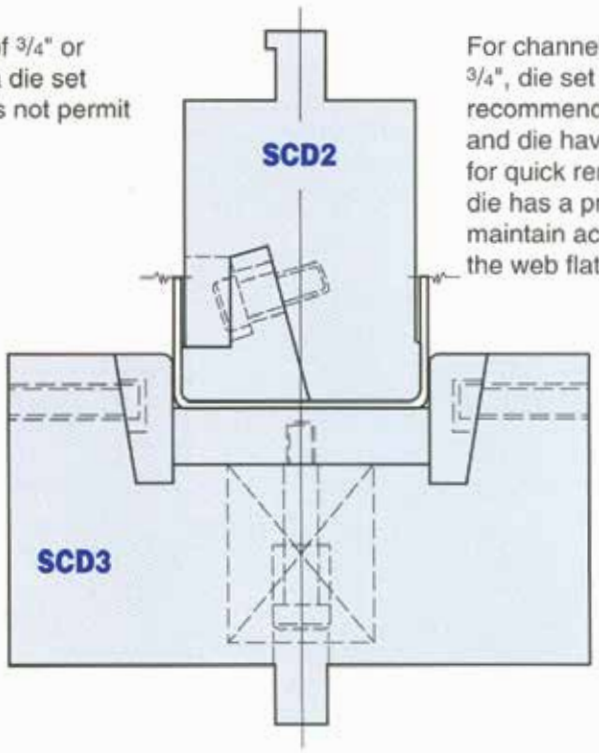
Depth of Box to be Formed	Min.Height of Std 90° Punch	Min. Height of 30° –60° Punch
1	2 3/4	1 15/16
1 1/2	3 15/32	2 33/64
2	4 11/64	3 3/32
2 1/2	4 57/64	4 3/64
3	5 37/64	4 1/4
3 1/2	6 19/64	4 53/64
4	7	5 13/32
4 1/2	7 23/32	5 63/64
5	8 13/32	6 9/16
5 1/2	9 7/64	7 9/64
6	9 53/64	7 23/32
6 1/2	10 17/32	8 19/64
7	11 15/64	8 7/8
7 1/2	11 61/64	9 29/64
8	12 21/32	10 1/32
8 1/2	13 3/8	10 39/64
9	14 1/16	11 3/16
9 1/2	14 49/64	11 49/64
10	15 31/64	12 11/32

SP12000



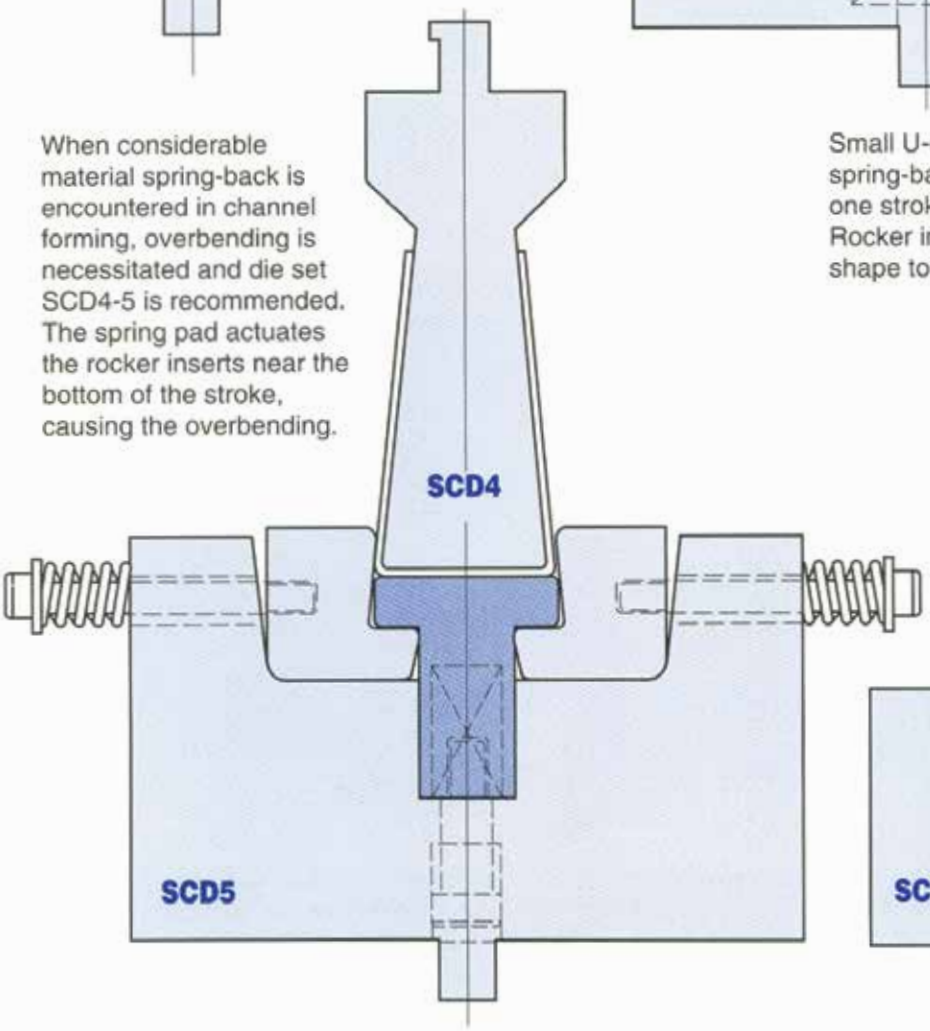


Channel with a web width of 3/4" or less are usually formed in a die set SCD0-1. Width of web does not permit spring pad in the die.

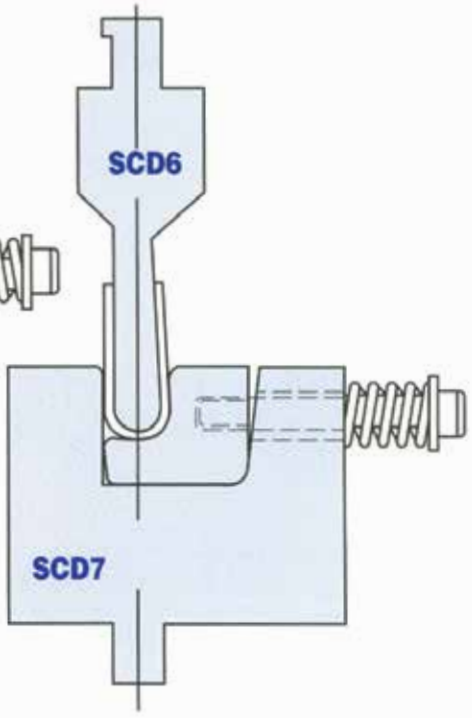


For channels with web over 3/4", die set SCD2-3 is recommended. Both punch and die have release wedges for quick removal of part. The die has a pressure pad to help maintain accuracy and keep the web flat.

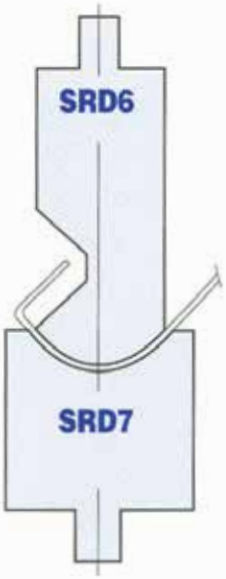
When considerable material spring-back is encountered in channel forming, overbending is necessitated and die set SCD4-5 is recommended. The spring pad actuates the rocker inserts near the bottom of the stroke, causing the overbending.



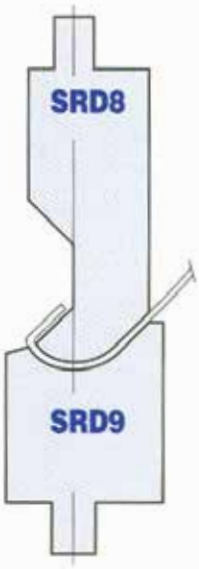
Small U-channel with little spring-back can be formed in one stroke in die set SCD6-7. Rocker insert overbends shape to allow for spring-back.



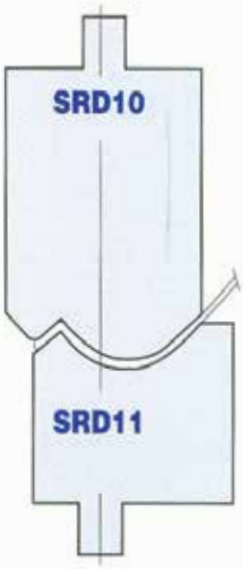
Forming a radius on a sheet having a preformed return flange is accomplished by die set SRD6-7 provided there is a short flat distance between return flange and end of radius.

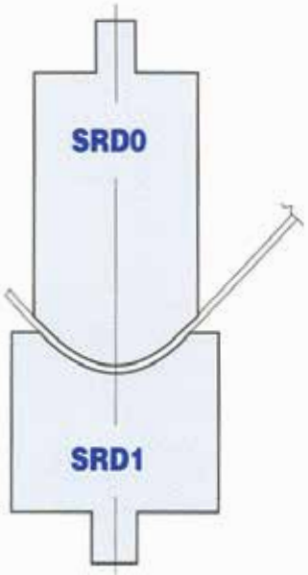


If return flange falls on end of radius, die set SRD8-9 must be used and return flange must be preformed to an angle less than 90°.

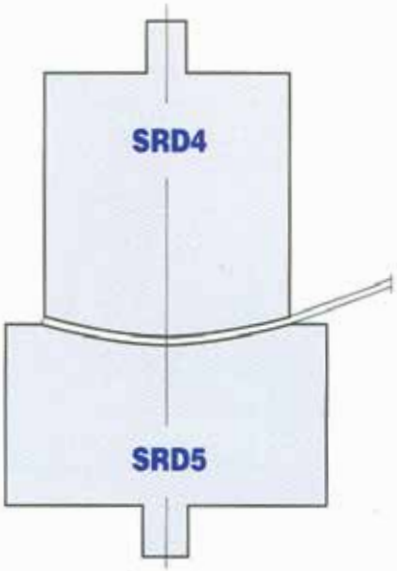


Out turned flanges on radius bends can be formed with radius in one stroke if spring back is not too great.

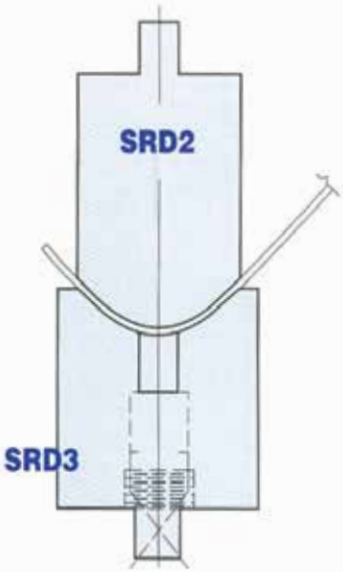




Dies SRD0-1 are a form fitting radius die set with spring back allowance built in. It is recommended for only one type and gauge of material for only one type and gauge of material for true accuracy.

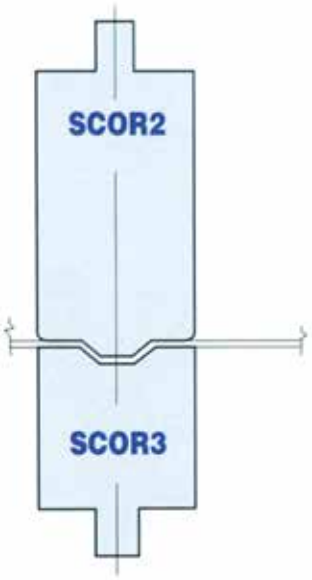


Die set SRD4-5 is used to radius the edge of a sheet prior to a rolling operation, thus eliminating the flat ends normally encountered.

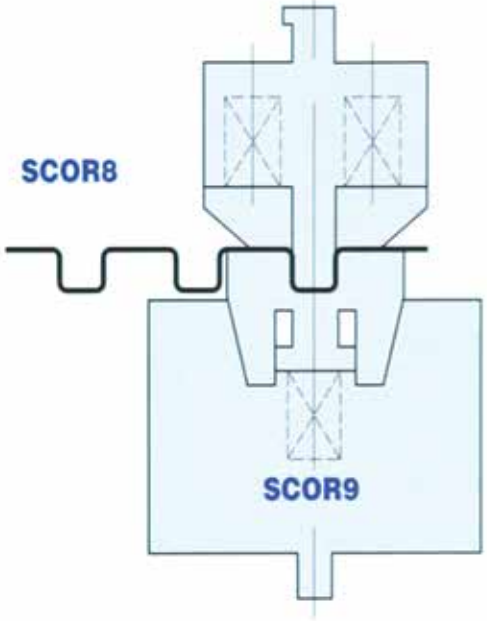


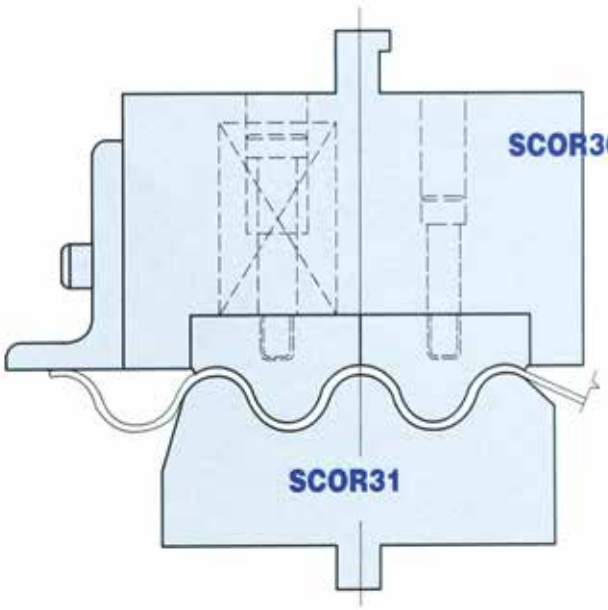
On light gauges, where kinking is a problem, die set SRD2-3 is recommended. The spring pad will prevent initial break-down of stock.

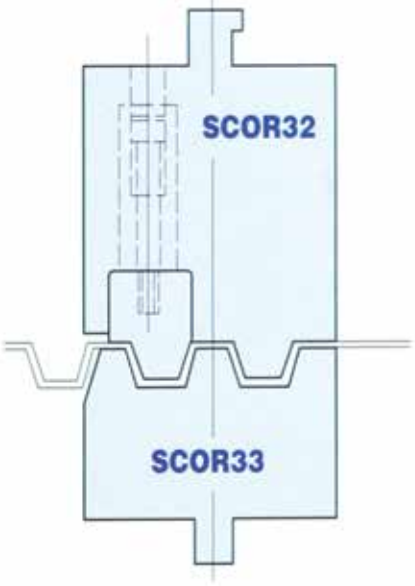
Small open hat channels can be produced in die set SCOR2-3. Depth of channel must be shallow to avoid trapping excess stock between punch and die and cause irregularities of shape.



To form accurate corrugations in light gauge materials, die SCOR8-9 can be used. Spring pressure pads assure positive stripping and release wedges prevent marring of the formed material.



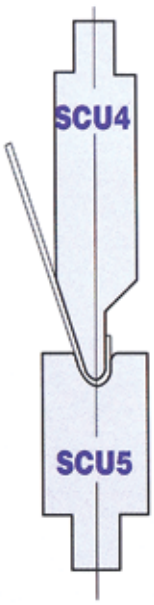


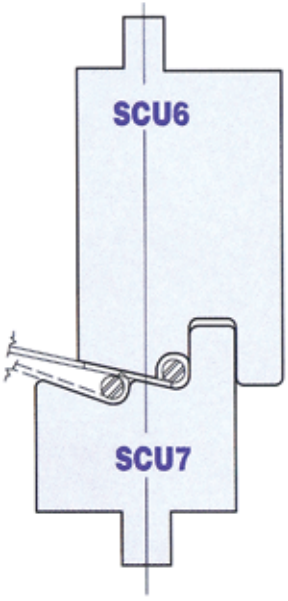


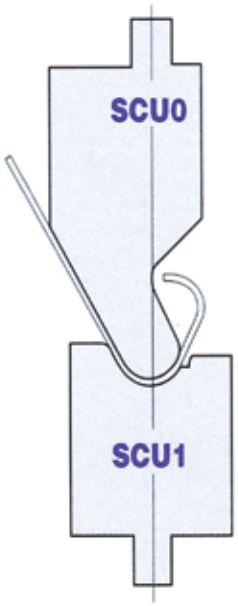
For high production continuous corrugating and where consistent accuracy is necessary, die sets SCOR32-33 and SCOR30-31 are recommended. Die set SCOR30-31 is for continuous radius corrugating and die set SCOR32-33 for continuous angular corrugating. After the first operation, the spring loaded pad locates the sheet and the dies become self gauging.

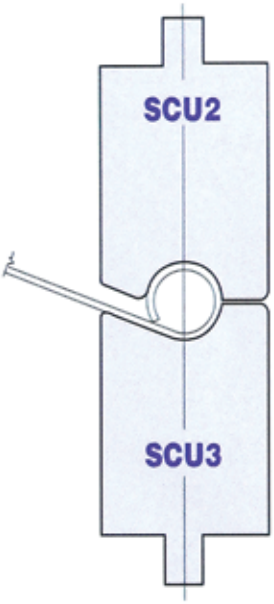
Die set SCU4-5 and SCU6-7 form a curl over a wire core or mandrel in three operations. There will be a slight flat on curl along the closing edge for both types shown on this page.

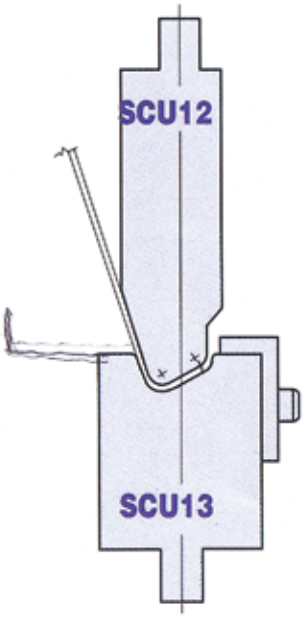
Closed curls of 1/2" inside diameter and larger be produced in die set SCU0-1 and SCU2-3 in three strokes. Open curls up to 200 degrees can be produced in die set SCU0-1 alone, in 2 operations.

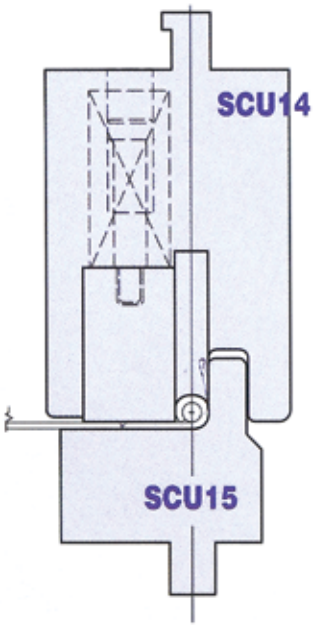


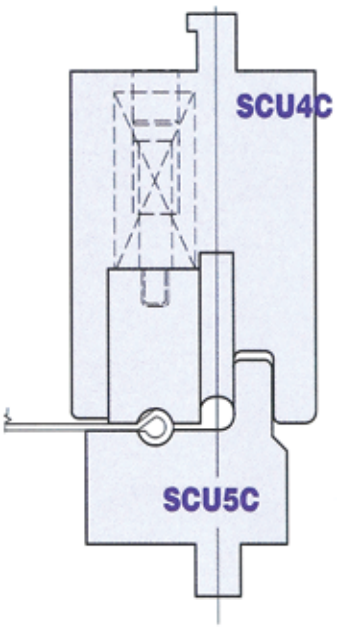






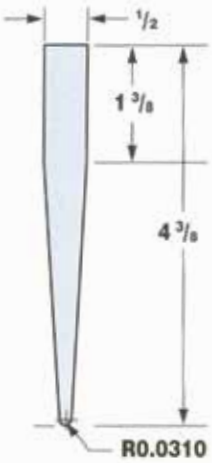






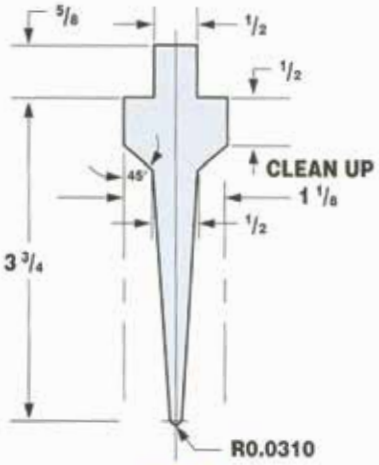
Die sets SCU12-13 and SCU14-15 produce the tightest and roundest curl that can be formed in two strokes within the range of 3/16" to 3/4" inside diameter. Dies can be mounted side by side for progressive forming if press has sufficient length. In forming heavy gauge material, it is advisable to add a tool steel insert.

Die set SCU4C-5C produces an on-center curl in an extra stroke. Roundness of on-center curl becomes somewhat distorted unless a mandrel is used in last operation.



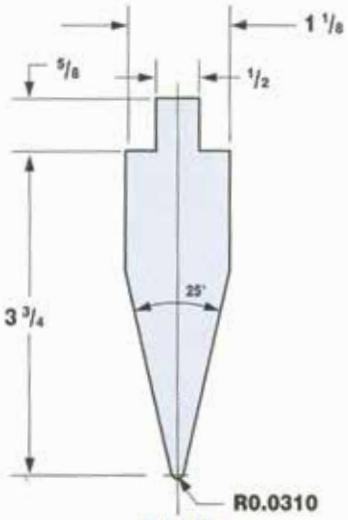
P100

Part No.	Radius(R)
P101	.062
P102	.093
P103	.125
P104	.156
P105	.187
P106	.218
P107	.250



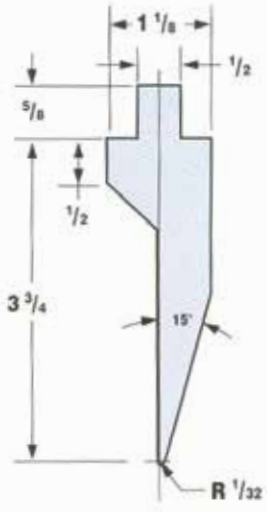
P110

Part No.	Radius(R)
P111	.062
P112	.093
P113	.125
P114	.156
P115	.187
P116	.218
P117	.250



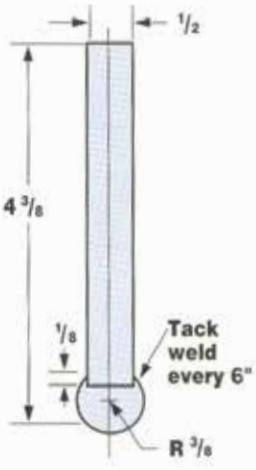
P140

PTC Part No.	Steel Bar Width	Included Angle	Forming Radius
P140	1 1/8"	25°	.031
P141	1 1/8"	24°	.062
P142	1 1/8"	23°	.092
P143	1 1/8"	21°	.125
P144	1 1/8"	20°	.156
P145	1 1/8"	18°	.187
P146	1 1/8"	16°	.218
P147	1 1/8"	14°	.250
P148	1 1/8"	11°	.312
P149	1 1/8"	6°	.375
P150	1 1/4"		.437
P151	1 1/4"		.500
P152	1 1/2"		.562
P153	1 1/2"		.625
P154	2"		.750



P180

Part No.	Radius(R)
P180	.031
P181	.062
P182	.093
P183	.125
P184	.156
P185	.187
P186	.218
P187	.250

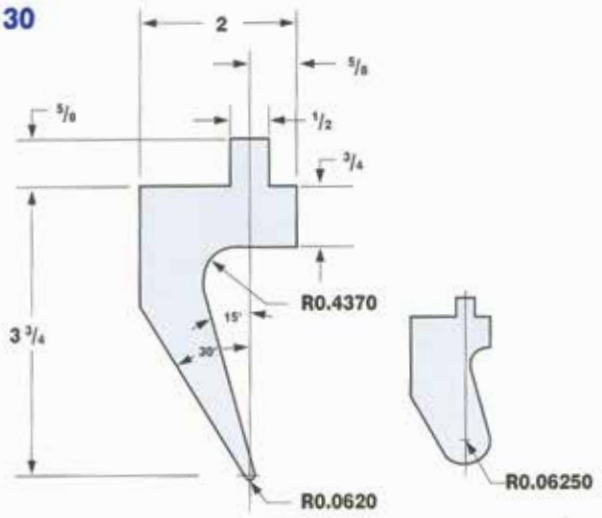


P120

Part No.	Radius(R)
P120	.375
P121	.437
P122	.500
P123	.562
P124	.625
P125	.750
P126	.875
P127	1.00

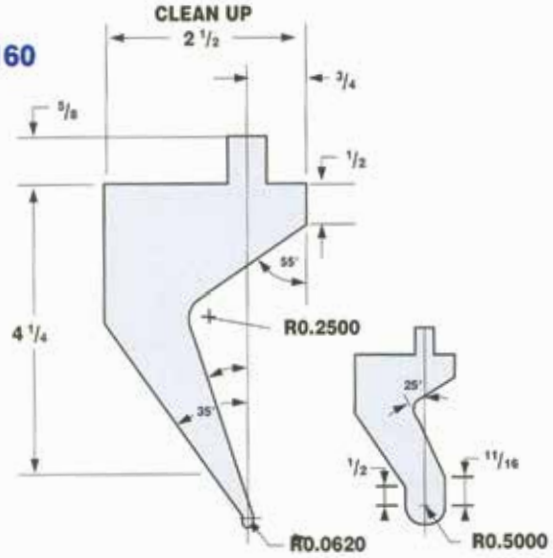
Aircraft Type Gooseneck Punches

P130



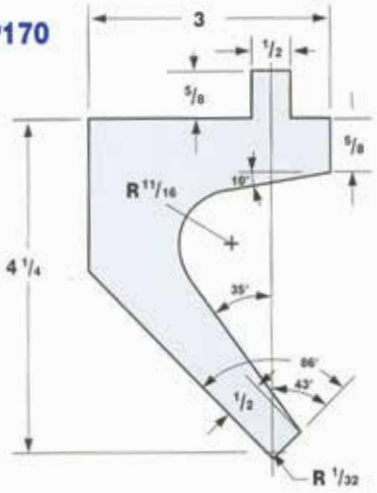
PTC Part No.	Forming Radius
P130	.062
P131	.093
P132	.125
P133	.156
P134	.187
P135	.218
P136	.250
P137	.312
P138	.375
P139A	.437
P139B	.500
P139C	.625

P160

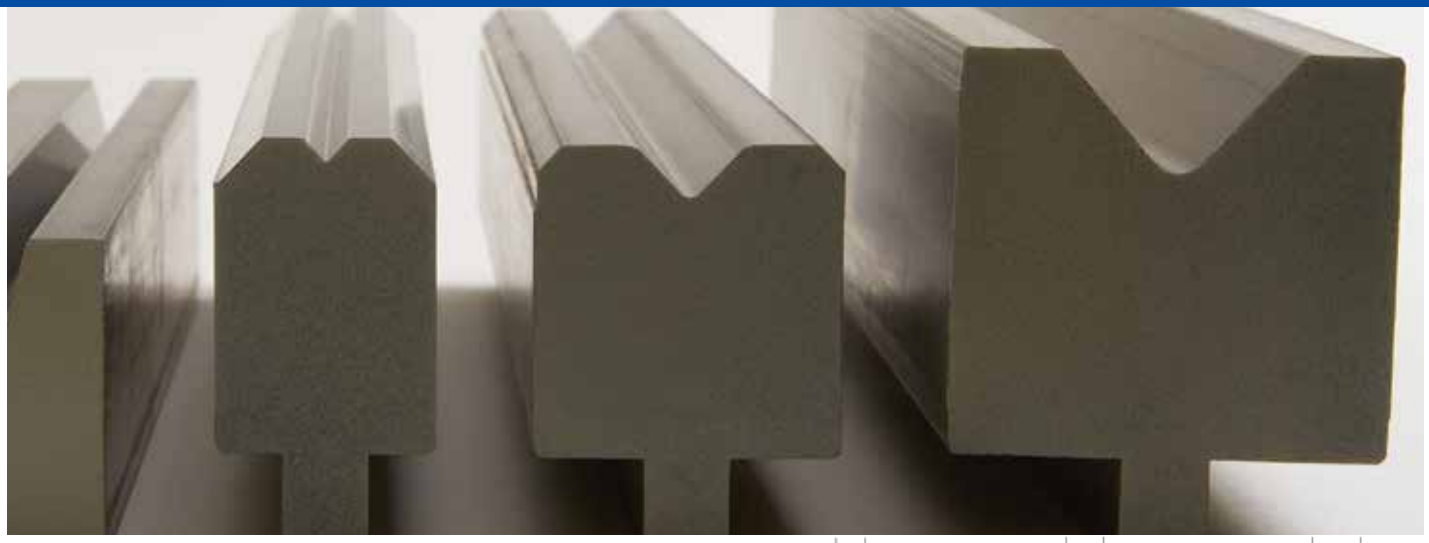


PTC Part No.	Forming Radius
P160	.062
P161	.093
P162	.125
P163	.156
P164	.187
P165	.218
P166	.250
P167	.375
P168	.500

P170



PTC Part No.	Forming Radius
P170	.031
P171	.062
P172	.093
P173	.125
P174	.156
P175	.187
P176	.218
P177	.250



Die-Thane V-Dies or Urethane V-Dies are molded to shape, using the hard grade high performance Urethane compound DT-15. They are designed for air-bending 90 degree bends or acute angle bends.

Product Features

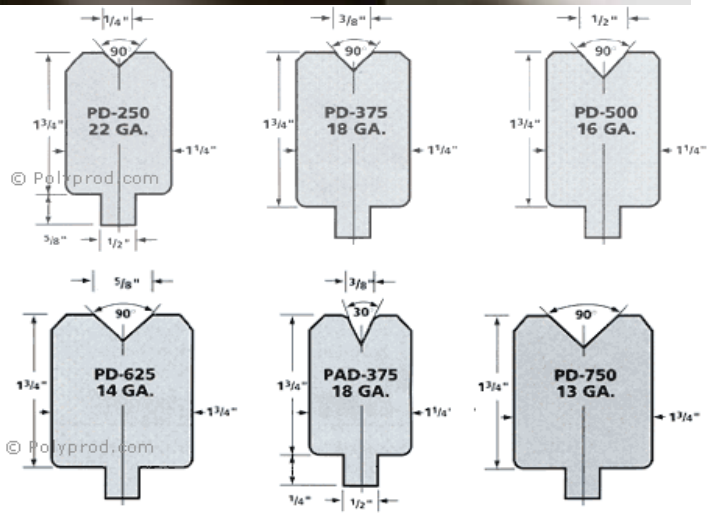
- Scratch Free bending for polished and pre-finished surfaces.
- Very Good Accuracy - cautious coining is possible.
- Light Weight - 14% of steel tool weight.
- Less Setup Time - minimal or no shimming.
- Will not damage press bed.
- More economical than steel dies.

Lengths:

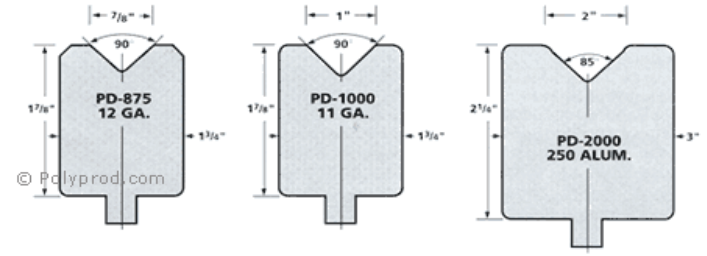
1/4" to 1": -8'

2": -6'

*Available in one foot increments, up to 6 ft. length. For longer bends, but square ends



Acute Angle V-Dies

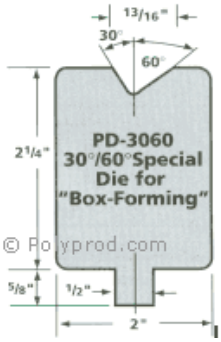


Gauges noted are for M.S. and aluminum. For S.S. use next larger size opening.

Box-Forming Urethane V-Die

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°

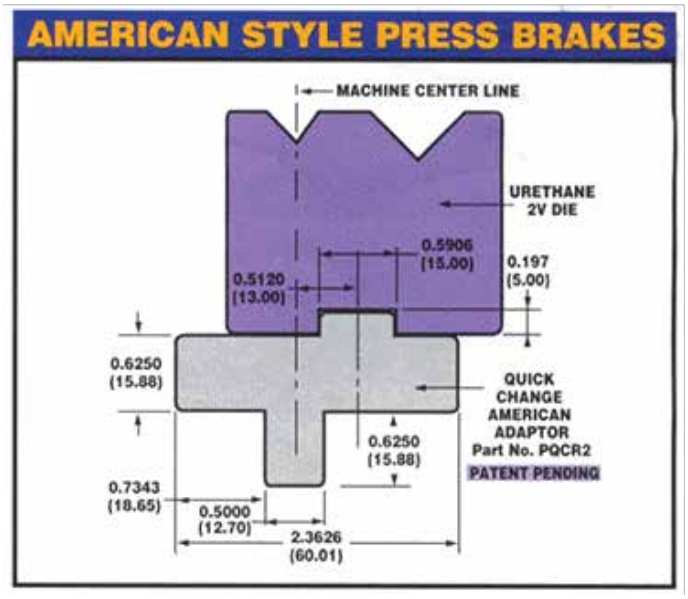
Used with a steel 30-60 forming punch, deep boxes can be formed without hitting the ram.

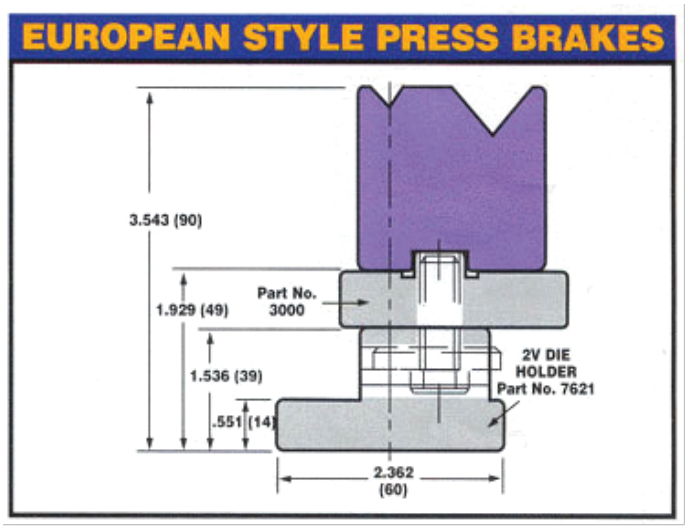


For American and European Style Press Brakes

Product Features

- Made of a very 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 2V Dies are designed for Air bending only. The heights are the same as comparable Steel V Dies.





Part Number	V-Openings V1 / V2		Angle of V Degrees	Width (W)		Radii R1 / R2	Height (H)	
	Inch	mm		Inch	mm	mm	Inch	mm
7101U	.236/.394	6/10	90	1.968	50	0.4 / 0.6	1.811	46
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
7321U	.315/.473	8/12	30	2.362	60	1.0 / 1.0	1.969	45

Urethane 2-V Dies are available in 6 different combinations of V-Openings.

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 die.

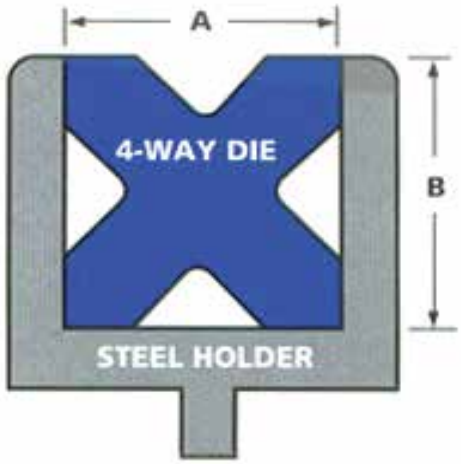


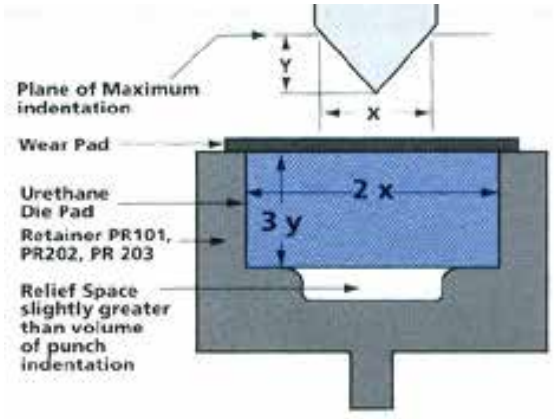
FIGURE 1

URETHANE V-DIES			STEEL HOLDER	
PART NUMBER:	V-Openings (INCHES)	BLOCK SIZE (INCHES)	W X H (INCHES)	PART NUMBER
FW2538	1/4, 3/8 1/4, 3/8	1 X 1	2 X 2	SH1010
FW5050	1/2,1/2 1/2,1/2	1 X 1	2 X 2	SH1010
FW6210	5/8, 3/4 7/8, 1	2 X 2	3 X 3	SH3030
FW1120	1 1/8, 1 1/4 1 1/2, 2	3 X 3	4 X 4	SH404
FW6310	5/8, 3/4 7/8,1	1 1/2 X 1 1/2	2 1/2 X 2	SH1515

Die-thane die pads function as universal female dies. The same bottom die can be used with a variety of materials, gauges, and punches to form different shapes, radii and angles.

Product Features

- Wear pads are used to prevent cutting by the sheet metal or punch, thus prolonging pad life.



Die Pads

Available as squares and rectangles in several grades. Available in 48" lengths. Pads must be used in retainers for optimum life. Retainers must have relief below pads.

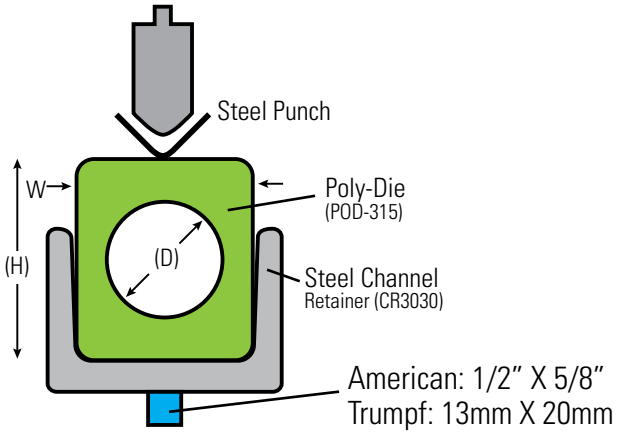
Die Blocks

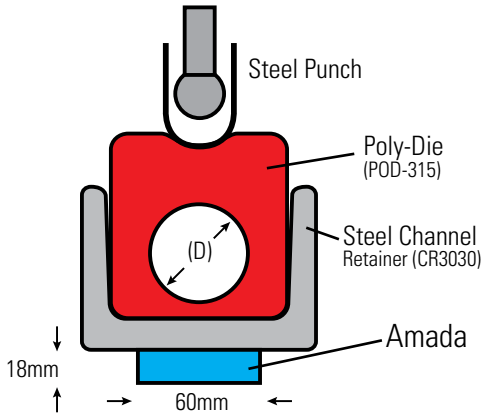
Pads cut to 2" lengths are butted end to end in a retainer. Under load, these blocks function the same way as a single pad. Damaged portion of the pad can be re-placed economically.

Wafer Pads

4 sheets (1/4" or 1/2" thick) are stacked on top of each other. Ideal for light gauge metals (up to 16 Ga. M.S.) Wafers enable deeper penetration such as in U-forming.

PPC DIE-THANE GRADE	DIE PAD SIZE (HEIGHT X WIDTH)											
	1 X 1(INCH) METAL GAUGE)				2 X 2 (INCH) METAL GAUGE)				2 X 3 (INCH) METAL GAUGE			
	20	16	14	11	20	16	14	11	20	16	14	11
DT-25	4	6	9	21	3	5	7	14	3	4	6	11
DT-15	6	8	12	25	5	7	11	21	5	7	9	15
DT-35	2	4	7	15	3	4	7	13	3	4	6	10





PODs for Radius V-Bends

- PODs are square or Rectanglular shaped Pads, with a Flat top. Designed for bending sharp or radiused V-bends.
- A molded hole through the full length of the pad provide for stress relief and require lower tonnage.
- PODs are designed to fit in standard ASTM Steel C-Channels, to function as holders or Retainers.

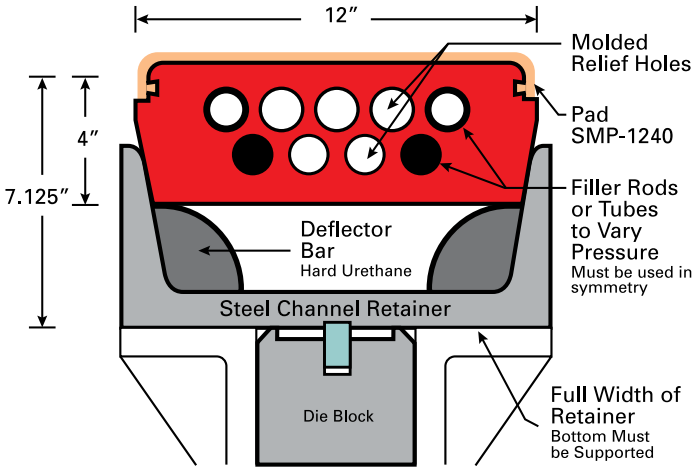
PART NUMBER	PAD WIDTH	PAD HEIGHT	HOLE DIA.	# OF FORMING SURFACES	GAUGE CAP FOR 90-V	SIZE FOR 90-Radius	RETAINER PART #
POD-112	2.25"	2.25"	1.0"dia	4	12 ga.	3/8" R	CR2222
POD-312	3.0"	3.0"	1.25"dia	4	10 ga.	1/2" R	CR3030
POD-315	3.0"	3.0"	1.50"dia	4	12 ga.	5/8" R	CR3030
POD-320	3.0"	3.0"	2.0"dia	4	14 ga.	3/4" R	CR3030
POD-415	5.0"	4.0"	1.50"dia	2	7 ga.	3/4" R	CR4050
POD-420	5.0"	4.0"	2.0"dia	2	10 ga.	1" R	CR3030
POD-430	5.0"	4.0"	3.0"oval	2	12 ga.	1-1/2" R	CR4050
POD-640	6.0"	5.0"	4.0"oval	2	12 ga.	2" R	CR5060
POD-650	6.0"	5.0"	5.0"oval	2	16 ga.	2-1/2" R	CR5060

PUDs for Radius U-Bends

- PUDs are square or Rectanglular shaped Pads with a molded U-Shaped top surface to enable 180 degrees U-Bends in one hit.
- PUDs are designed to fit in standard ASTM Steel C-Channels, to function as holders or Retainers.

PART NUMBER	PAD WIDTH	PAD HEIGHT	HOLE DIA.	# OF FORMING SURFACES	GAUGE CAP FOR 180-U	SIZE FOR U 180-Radius	RETAINER PART #
PUD-0612	2.25"	2.25"	1.0"dia	1	18 ga.	1/16, 1/8"R	CR2222
PUD-1825	2.25"	2.25"	1.25"dia	1	18 ga.	1/16, 1/4"R	CR2222
PUD-112	2.25"	2.25"	1.50"dia	1	16 ga.	3/8" R	CR2222
PUD-312	3.0"	3.0"	1.25"sq	1	16 ga.	1/2" R	CR3030
PUD-415	5.0"	5.0"	1.50"sq	1	14 ga.	3/4" R	CR4050
PUD-420	5.0"	5.0"	2.0"sq	1	14 ga.	1" R	CR4050
PUD-640	6.0"	5.0"	3.0"oval	1	16 ga.	1-1/2" R	CR5060

To illustrate the versatility of this unique SMART PAD SYSTEM, we are using 5 different punches from 3/4"R (18mm R) to 8"R (200 mm R) to bend 1/8" thick (3mm) polished Aluminum into 5 different radii, using the same bottom die... SMP-1240. There is no other tooling system that can be as versatile and produce such high quality mar-free products. We've designed & built hundreds of punches & dies over the last 30 years.



	Min R	Min R	Bump Form
SMP 1240	1" R^X 90°	4" R^X 90°	Any Radius

SMP1240 Smart Pad System™:

Designed to bend any radius from 1" (25mm) to 4" (100mm), 90°in one hit or bump form any radiused shape.

Limitations :

Minimum radius = 1" (25mm), Minimum punch width = 2" (50mm)
Maximum punch width = 8" (200mm)
Maximum depth of punch penetration = 3" (75mm)
Maximum Gauge = 10ga. (3 mm) M.S., 14ga. (2mm) S.S
(with caution, we have bent 1/4" [6 mm] thick S.S. To 8" R)

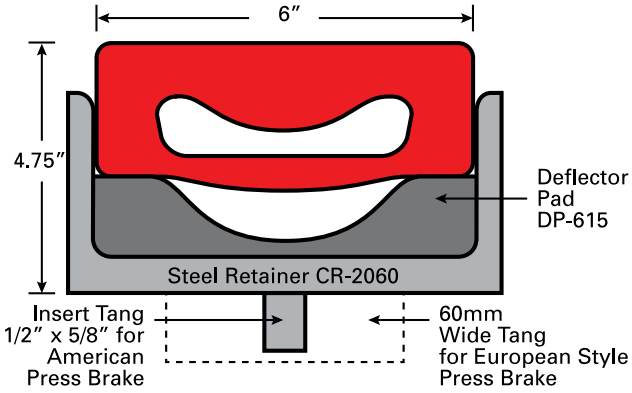
Rad ii & Gauge:

Minimum radius = 1" (25mm), 10 ga. (3mm) M.S.
Maximum radius = 4" (100mm),10 ga. (3mm) M.S.-90° bend in one hit.

Bump Form:

Any radius without exceeding 3" (75 mm) depth of penetration.
(Minium distance to start of radius bend = 1" (25mm).

Wear pad is made one grade harder than the main pad & is replaceable.



	Min R	Min R	Bump Form
SMP 640	1/2" R	2" R	Any Radius

SMP620N Smart Pad System™:

Designed to bend any radius from 1/2"(12mm) to 2"(50mm), 90° in one hit or bump form any radiused shape.

Limitations :

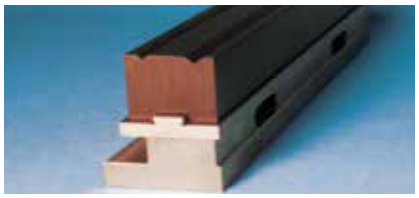
Maximum punch width = 3" (75mm)
Maximum depth of punch penetration = 1-1/4" (32mm)
Minimum radius = 1/2" (12mm)
Minimum punch width = 1-1/2" (38mm)

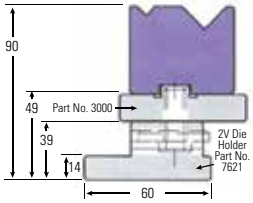
Bending Capacity:

Minimum radius = 1" (25mm), 10 ga. (3mm) M.S.
Minium distance to start of radius bend = 1" (25mm).

Wear pad is made one grade harder than the main pad & is replaceable.

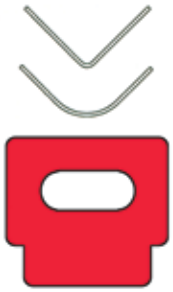
- Made of a very hard tooling grade Urethane for SCRATCH-FREE bending of sheet metal
- Just drop onto a Quick Change Die Rail and changing sizes of V-Dies will be a snap, with automatic alignment.
- Turn it around for a different size V-openning or drop in a new die. No need for alignment or shimming.
- 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.
- The 2V Dies are designed for Air bending only. The heights are the same as comparable steel V Dies





PART NUMBER	V-OPENINGS (V1/V2) mm	ANGLE OF V DEGREES	WIDTH (w) mm	RADII (R1/R2) mm	HEIGHT (h) mm
7101U	6/10	90	50	0.4/0.6	46
7102U	8/12	90	50	0.5/0.8	45
7104U	14/18	88	60	0.5/0.5	46
7105U	12/20	88	60	0.5/0.5	46
7106U	20/25	88	60	0.8/0.8	45
7321U	8/12	30	60	1.0/1.0	45

Quick Change Urethane Poly-Dies:



POD Type Pads

Designed for Sharp V-Bends, as well as radius V-bends or for bump forming any radius shape of up to 2" R.

EUROPEAN or AMADA STYLE	POD32EL	835 mm long
	POD32ES	415 mm long
AMERICAN STYLE	POD32AL	36" long
	POD32AS	18" long
TRUMPF STYLE	POD32TL	36" long
	POD32TS	18" long

PUD Type Pads

Have a molded U-shaped groove on the top surface, with radius equal to the outside radius of the part being bent. Spring-back allowance must be made in determining the size of the punch. For one-hit U-bends, overbend up to 20° is possible.

EUROPEAN or AMADA STYLE	-25R	6.3mm (1/4")
	PUD32E-38R	9.5mm (3/8")
	PUD32E-50R	12.7mm (1/2")
	PUD32E-75R	19.0mm (3/4")
AMERICAN STYLE	PUD32A-25R	6.3mm (1/4")
	PUD32A-38R	9.5mm (3/8")
	PUD32A-50R	12.7mm (1/2")
	PUD32A-75R	19.0mm (3/4")
TRUMPF STYLE	PUD32T-25R	6.3mm (1/4")
	PUD32T-38R	9.5mm (3/8")
	PUD32T-50R	12.7mm (1/2")
	PUD32T-75R	19.0mm (3/4")

PBN Type Pads

Designed for to form a full 180° bend bull nose bend in 2 hits, without the sheet metal touching the ram. As shown:

The first hit forms about a 100° arc. By positioning the sheet metal so that there is a 10° overlap between the first hit and the second hit, a perfect blend between the 2 hits is obtained, without any bend lines or die marks. If the sheet metal is too springy It may be necessary to make more than 3 hits to get a 180° bend.

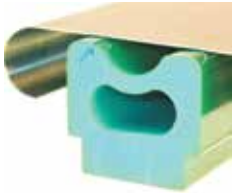
EUROPEAN or AMADA STYLE	PBN32E-75R	3/4" radius
AMERICAN STYLE	PBN32A-75R	3/4" radius
TRUMPF STYLE	PBN32T-75R	3/4" radius

The American Style:

Molded ½" wide x 5/8" tang
TRUMPF Style:
13mm x 20mm tang
Standard lengths:
36"(914mm) & 18"(457mm)

The European Style:

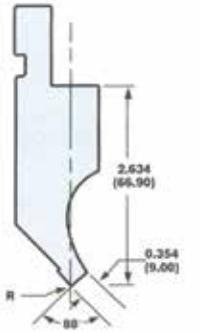
Molded 60mm wide tang
Standard lengths:
835mm and 415 mm.



For European Style Press Brakes

Standard Punch

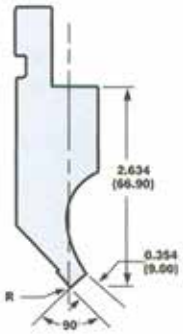
4002 R=.008" (0.2mm)
4008 R=.030" (0.8mm)
4015 R=.060" (1.5mm)
4023 R=.090" (2.3mm)
4030 R=.120" (3.0mm)



Max Tons: 30/Foot 100/Meter

Standard Punch

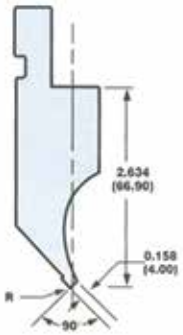
4102 R=.008" (0.2mm)
4108 R=.030" (0.8mm)
4115 R=.060" (1.5mm)
4123 R=.090" (2.3mm)
4130 R=.120" (3.0mm)



Max Tons: 30/Foot 100/Meter

With Thin Tip

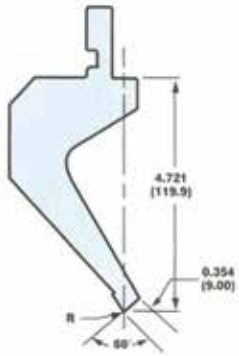
4202 R=.008" (0.2mm)



Max Tons: 6/Foot 20/Meter

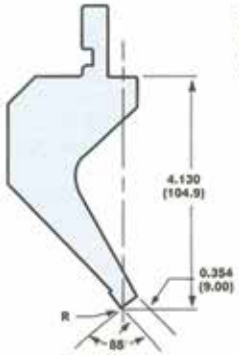
Gooseneck Punch

4302 R=.008" (0.2mm)
4308 R=.030" (0.8mm)



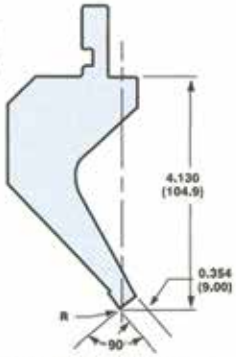
Max Tons: 15/Foot 50/Meter

4402 R=.008" (0.2mm)
4408 R=.030" (0.8mm)
4415 R=.060" (1.5mm)
4430 R=.120" (3.0mm)



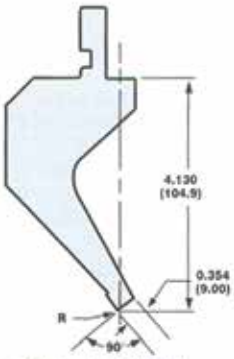
Max Tons: 15/Foot 50/Meter

4502 R=.008" (0.2mm)



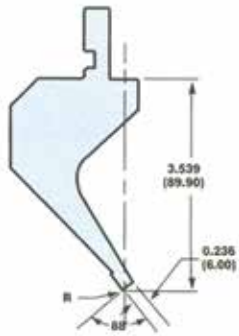
Max Tons: 15/Foot 50/Meter

4602 R=.008" (0.2mm)
4608 R=.030" (0.8mm)
4615 R=.060" (1.5mm)
4630 R=.120" (3.0mm)



Max Tons: 15/Foot 50/Meter

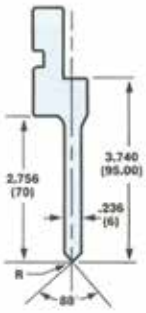
4702 R=.008" (0.2mm)
4708 R=.030" (0.8mm)



Max Tons: 15/Foot 50/Meter

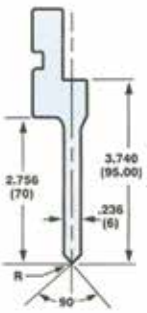
Thin Tip

4802 R=.008" (0.2mm)



Max Tons: 15/Foot 50/Meter

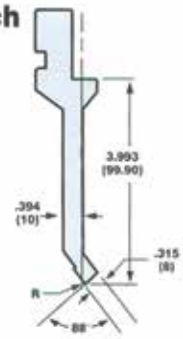
4902 R=.008" (0.2mm)



Max Tons: 15/Foot 50/Meter

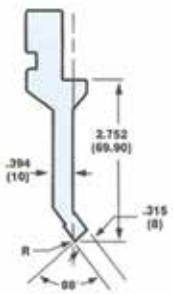
Sash Punch

5002 R=.008" (0.2mm)



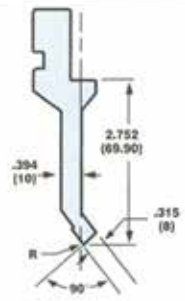
Max Tons: 10/Foot 30/Meter

5102 R=.008" (0.2mm)



Max Tons: 9/Foot 27/Meter

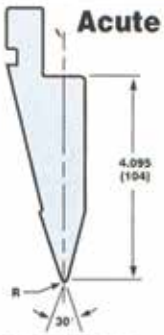
5202 R=.008" (0.2mm)



Max Tons: 30/Foot 100/Meter

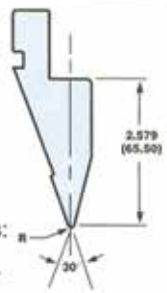
Acute Punches

5308 R=.030" (0.8mm)
5315 R=.060" (1.5mm)
5330 R=.120" (3.0mm)



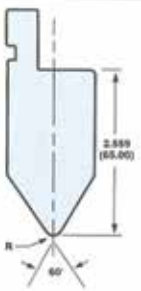
Max Tons: 30/Foot 100/Meter

5408 R=.030" (0.8mm)



Max Tons: 30/Foot 100/Meter

5548 R=.188" (4.8mm)
5560 R=.236" (6.0mm)



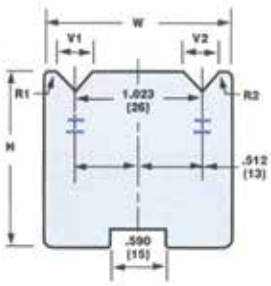
Max Tons: 30/Foot 100/Meter

All Punches Are Available In Lengths: L (Long): 32.875" (835mm); S (Short): 16.339" (415mm); X (Sectionalized) 32.875" (835mm)
Note: Tons Shown Are For L & S. For Sectionalized, Tonnage Is 50%.

For European Style Press Brakes

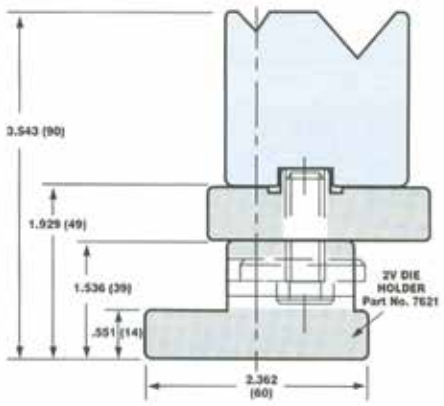
Quick Change 2-V Dies

Cat. No.	V-Openings V1/V2 Inch mm	Angle of V Deg.	Width (W) Inch mm	Max. Tons per Ft./Mtr	Radii R1/R2 mm	Height (H) Inch mm
7100	.157/.276 4/7	90	1.358 34.5	18 60	0.4 0.4	1.811 46
7101	.236/.394 6/10	90	1.457 37	21 70	0.4 0.6	1.811 46
7102	.315/.472 8/12	90	1.535 39	24 80	0.5 0.8	1.811 46
7103	.551/.709 14/18	90	1.772 45	17 57	0.5 0.5	1.811 46
7104	.551/.709 14/18	88	1.772 45	30 100	0.5 0.5	1.811 46
7105	.472/.787 12/20	88	1.791 45.5	30 100	0.5 0.5	1.811 46
7106	.630/.984 16/25	88	1.969 50	21 70	0.8 0.8	1.811 46
Quick Change 2V Dies with Large Shoulder Radii:						
7210	.236/.294 6/10	90	1.575 40	24 80	1.5 2.5	1.811 46
7211	.472/.788 12/20	88	1.969 50	30 100	3.0 4.0	1.811 46
Quick Change Acute Angle 2V Dies:						
7320	.236/.394 6/10	30	1.969 50	9 30	1.0 1.0	1.969 50
7321	.315/.473 8/12	30	2.303 58.5	9 30	1.0 1.0	1.969 50



Available In
L, S & X Lengths

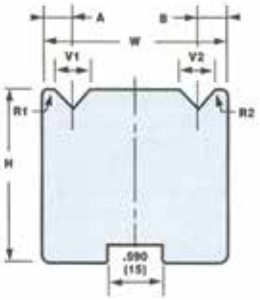
Quick Change Dies Set-Up



Sectionalized 2-V Dies

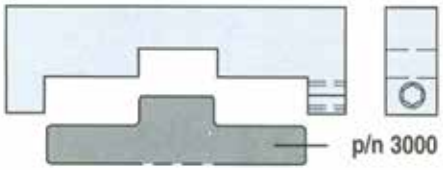
Cat. No.	V-Openings V1/V2 Inch mm	Angle of V Deg.	Width (W) Inch mm	Max. Tons per Ft./Mtr	Edge To Center Distance A B
7450	.157/.276 4/7	90	1.969 50	18 60	.138(3.5) .197(5)
7451	.236/.394 6/10	90	1.969 50	21 70	.177(4.5) .256(6.5)
7452	.315/.472 8/12	90	1.969 50	21 70	.217(5.5) .295(7.5)
7453	.551/.709 14/18	90	1.969 50	30 100	.335(8.5) .413(10.5)
7454	.551/.709 14/18	88	1.969 50	30 100	.335(8.5) .413(10.5)
7455	.472/.787 12/20	88	1.969 50	30 100	.295(7.5) .472 (12)
7456	.630/.984 16/25	88	1.969 50	30 100	.374(9.5) .571(14.5)
Sectionalized 2V Dies with Large Shoulder Radii:					
7470	.236/.294 6/10	90	2.165 55	24 80	.236(6) .394(10)
7471	.472/.788 12/20	88	2.165 55	30 100	.394(10) .591(15)

Note: "H" same as Q.C. Dies above.



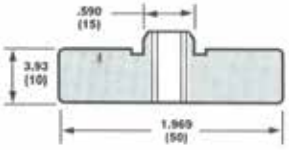
Available In
Sectionalized Lengths

2-V Die Rail Clamp
9601



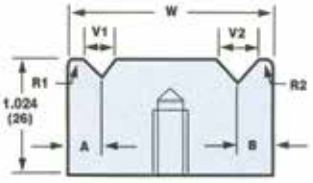
p/n 3000

2V Die Rail
p/n 3000



Standard 2-V Dies

Cat. No.	V-Openings V1/V2 Inch mm	Angle of V Deg.	Width (W) Inch mm	Max. Tons per Ft./Mtr
7430	.157/.276 4/7	90	1.969 50	18 60
7431	.236/.394 6/10	90	1.969 50	21 70
7432	.315/.472 8/12	90	1.969 50	21 70
7433	.551/.709 14/18	90	1.969 50	30 100
7434	.551/.709 14/18	88	1.969 50	30 100
7435	.472/.787 12/20	88	1.969 50	30 100
7436	.630/.984 16/25	88	1.969 50	30 100
3370	.315/.472 8/12	30	2.362 60	9 30
Sectionalized 2V Dies with Large Shoulder Radii:				
7440	.236/.394 6/10	90	2.165 55	24 80
7441	.472/.788 12/20	88	2.165 55	30 100

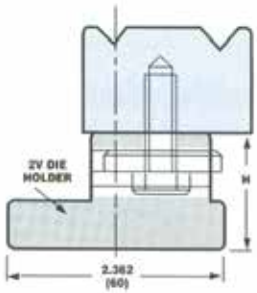


Available Lengths:
L & S

2V Die Holders:

Part No.	Height
7621	1.536" (39mm)
7622	1.772" (45mm)
7623	2.953" (75mm)

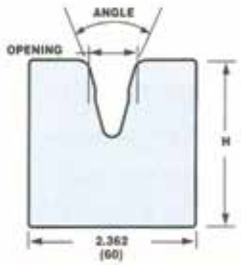
2V Die Set Up



Tool Lengths: Please add the following suffixes to designate different lengths: **L=Long (835mm); S=Short (415mm); X=Sectionalized. i.e. 7403L, 7440S, 7320X...etc.**

Sectionalized Lengths: 3.397" (100mm) LEFT EAR, 3.397" (100mm) RIGHT EAR, .394" (10mm), .591" (15mm), .787" (20mm) 1.575" (40mm), 1.969 (50mm), 7.874" (200mm), 11.811" (300mm). Total 835mm (32.875")

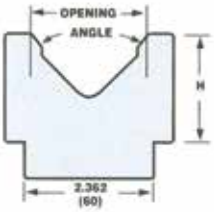
For European Style Press Brakes



Large 1V Dies

Part No.	Opening Inch	Opening mm	Angle	Height (H) Inch	Height (H) mm
7800	.709	(19)	30	2.362	(60)
7801	.984	(25)	30	2.559	(65)
7802	1.260	(32)	45	2.362	(60)
7803	1.575	(40)	45	3.150	(80)

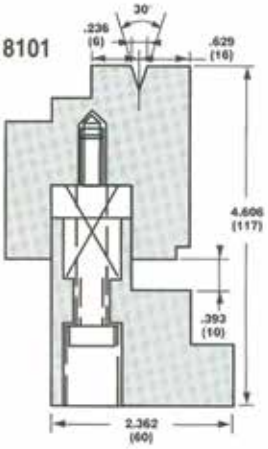
Part No.	Opening Inch	Opening mm	Angle	Height (H) Inch	Height (H) mm
7900	1.260	(32)	85	2.362	(60)
7901	1.575	(40)	85	2.362	(60)
7902	1.968	(50)	85	2.362	(60)
7903	2.480	(63)	85	2.953	(75)
7904	3.150	(80)	85	3.740	(95)
7905	3.937	(100)	85	4.331	(110)



Combination Hemming & Flattening Dies

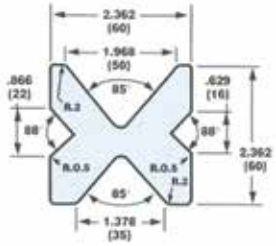
Part No.	Opening Inch	Opening mm
8101	.236	(6mm)
8102	.315	(8mm)
8103	.394	(10mm)

8101

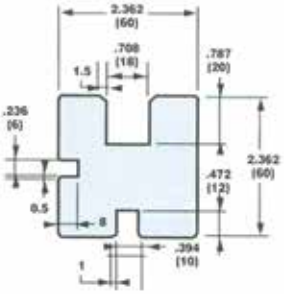


Four-Way Dies

2009



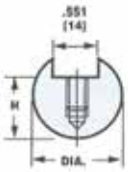
2008



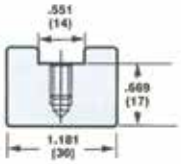
Radius & Flattening Punch Inserts & Holders

Part No.	Diameter Inch	Diameter mm	Height Inch	Height mm
6109	.750	(19)	.630	(16)
6110	.787	(10)	.630	(16)
6112	1.000	(25.4)	.866	(22)
6115	1.181	(30)	.787	(20)
6116	1.250	(31.8)	.787	(20)
6117	1.378	(35)	.866	(22)
6119	1.5	(38.1)	.945	(24)
6120	1.575	(40)	.945	(24)
6122	1.75	(44.4	1.063	(27)
6125	1.969	(50)	1.142	(29)
6126	2.000	(50.8)	1.142	(29)
6130	2.362	(60)	1.339	(34)

Radius Punch

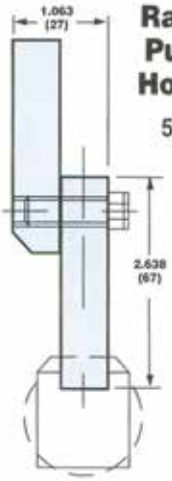


Flattening Punch Insert



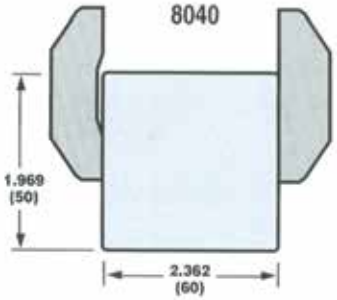
Radius Punch Holder:

5600

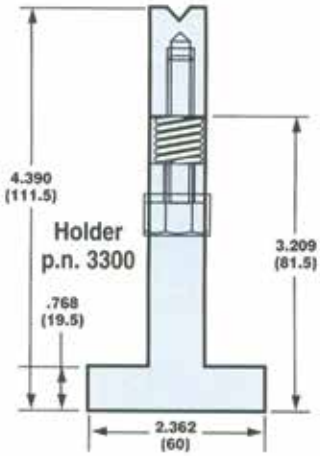


Large 1-V, & 4-Way Die Holder

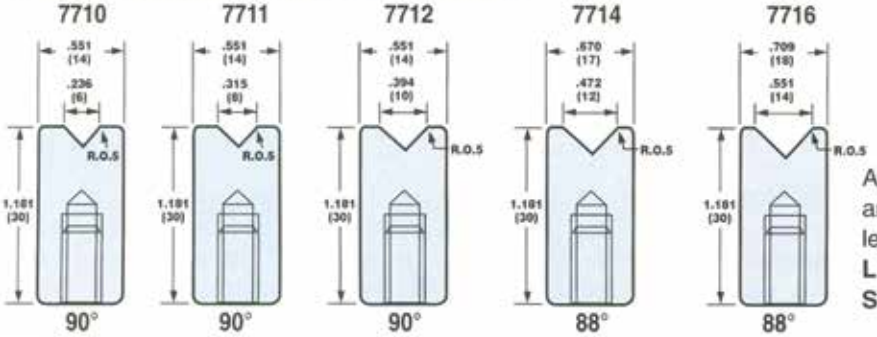
8040



Set-Up



Low Profile Narrow V-Dies



All Tools on this page are available only in lengths:
L (32.875", 835mm) &
S (16.339", 415mm)

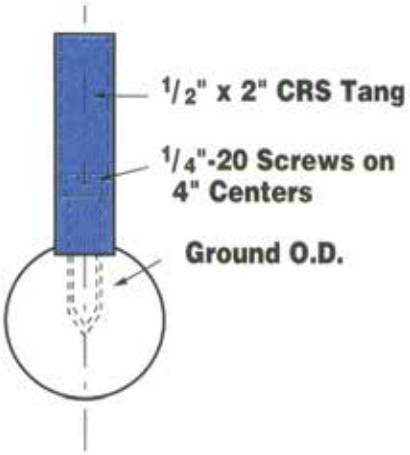
In this series of radius forming punches, a variety of radius forming inserts are used with a standard Tang.

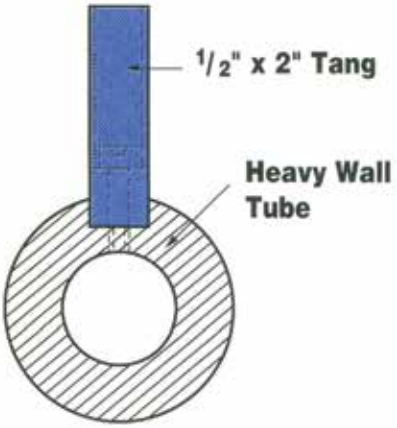
Unlike in Air Craft radius forming punch no.s P120-127, these punches are bolted on to the tongue by means of 1/4"-20 S.H.C.S.

Up to 2" the radius inserts are made of solid centerless ground, 1045 Carbon steel. Over 2", the inserts are made of heavy wall tubing (approx. 1/2" wall), with a ground finish on O.D.

Both types of inserts are grooved to position the Tang.

PTC Catalog No.	Dia.
GSP 750	.750"
GSP 875	.875"
GSP 1000	1.000"
GSP 1125	1.125"
GSP 1250	1.250"
GSP 1500	1.500"
GSP 1750	1.750"
GSP 2000	2.000"
GSP 2500	2.500"
GSP 2750	2.750"
GSP 3000	3.000"
GSP 3500	3.500"
GSP 3750	3.750"
GSP 4000	4.000"





Precision Ground Radius Forming Punches & Holders

Holders are precision ground, with mounting slots.

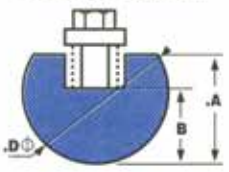
Inserts are precision ground with slots which slip-fit on to the holder, and tightened with nuts. Precision ground finish of all components enable interchangeability.

Available in 36", 18" lengths

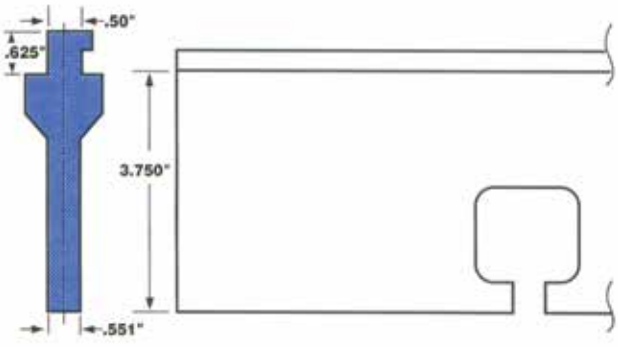
Radius Inserts

Cat. No.	Dia.	A	B
RR750	.750"	.630	.630
RR875	.875"	.630	.630
RR1000	1.000"	.866	.866
RR1125	1.125"	1.063	.787
RR1250	1.250"	1.063	.787
RR1500	1.500"	1.339	.945
RR1750	1.750"	1.457	1.063
RR2000	2.000"	1.535	1.142

Radius Insert



Punch Holder For Radius Insert
Catalog No. 5601



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. and a set-up of URETHANE SMART PAD SYSTEM by POLYURETHANE PRODUCTS CORP...with the single source responsibility of Application Engineering.

Press Brake
Tooling
Engineered for High Performance

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