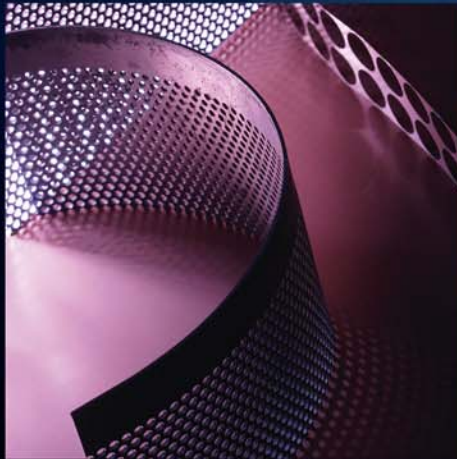


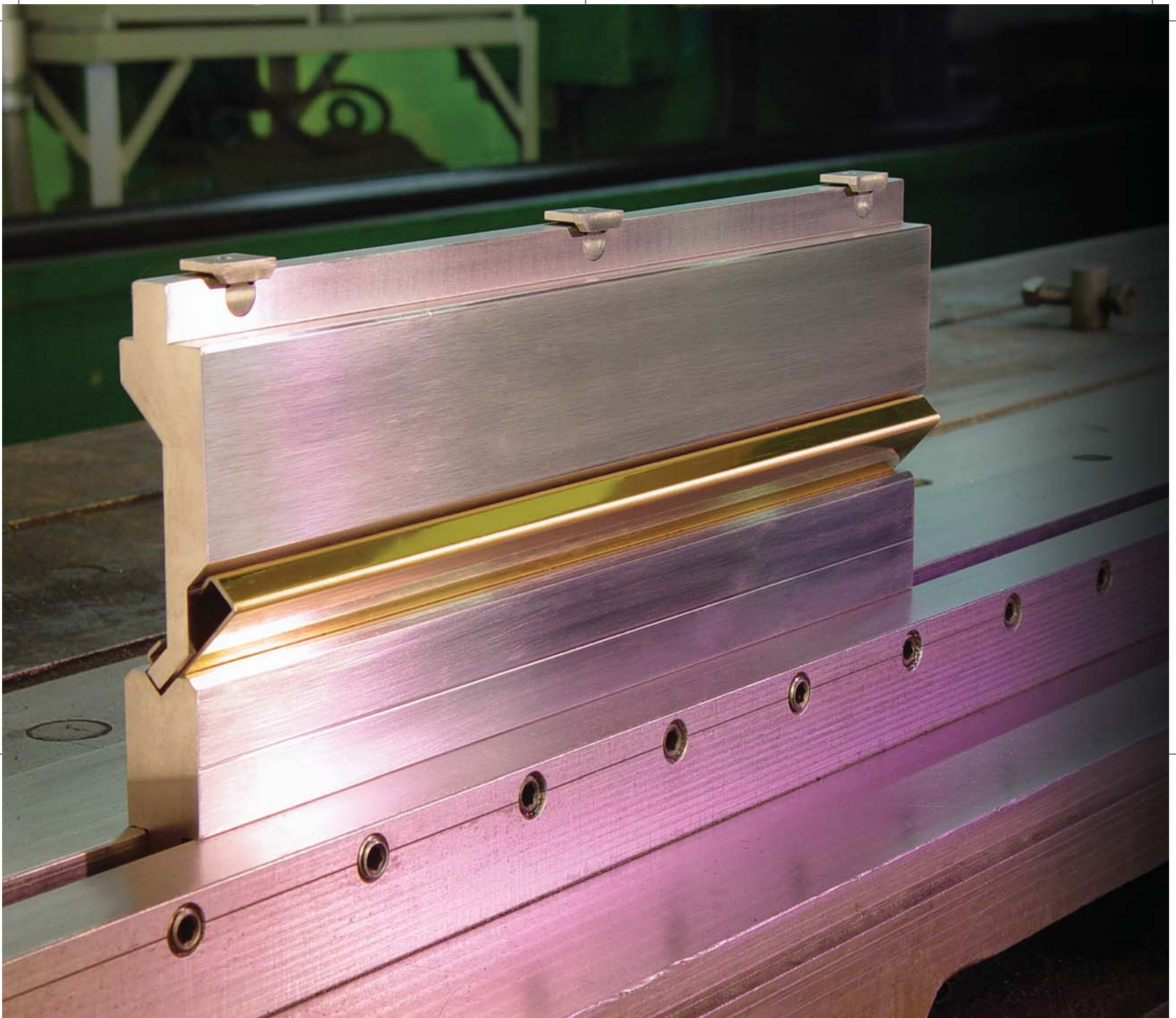
SPECIFIC



PRESS BRAKE DIES, INC.



MAKE YOUR PRESS BRAKE A PRECISION TOOL



Specific® Press Brake Dies provides Standard Style (American), European-style and custom configured press brake tooling with a difference... high precision at reasonable prices.

To exceed our customers' expectations for value, we look to manufacturing processes – our own as well as those of our customers – with a commitment to making both as productive as possible.

Take our 42' planer for example. It is the industry's largest, providing Specific with increased levels of accuracy and output. It's that kind of productivity, plus applications expertise, knowledge of materials, and uncompromising quality control that enable us to provide optimum new tooling value to our customers.

And, Specific services and programs such as **Die Refurbishing**, **Contour Modification** and **Segment Programs** – plus proprietary accessories like our **Ø-DFLX™ Compensation Holder*** and **SAFE-SERT™ Retrofit Safety Tongue Inserts*** – enable our customers to make the most of their investment in existing tooling. Random drop packages are also offered

We invite you to review this catalog. To discuss your particular application, or for an estimate, please contact Specific Press Brake Dies at **708.478.1776** or e-mail **sales@specificmfg.com**. We'll work closely with you and do everything we can to make it affordable to...

Make your press brake a precision tool.

* Patented



Table of Contents

Specification Standards/How to Order	Page 2
Order Form	Page 3
Service Center/Safe-Sert	Page 4
Ø-DFLX Series	Page 5
New Standard Tang Sleeve/Die Lifter Series	Page 6
Wila Style Tooling/European Style Tooling	Page 7
90° Forming Punches & Dies	Pages 8 - 9
90° Airform Punches & Dies	Pages 8 - 9
Gooseneck Punches	Pages 10 - 11
Offset Dies	Pages 12 - 13
30° Forming Punches & Dies	Pages 14 - 15
Flattening Dies	Pages 14 - 15
Multi-Vee Block Dies/Adjustable Air-Forming Die	Page 16
Ram Adapters & Die Holders	Page 17
Rotary Bender	Page 18
Pivot Form Vee Dies	Page 19
Box Forming Dies	Page 20
Tipped Angle Die Sets	Page 21
Rib Forming & Radius Forming Dies	Page 22
Special Offset Dies	Page 23
Curling Dies	Page 24
Wiping Dies	Page 25
Standing Seam & Hemming Dies	Pages 26 - 27
Channel Dies	Pages 28 - 29
Offset Joggle Dies	Page 30
Useful Forming Information	Page 31
Tonnage Chart	Page 32



PRESS BRAKE DIES, INC.

9439 Enterprise Drive

Mokena, Illinois 60448

708.478.1776 voice

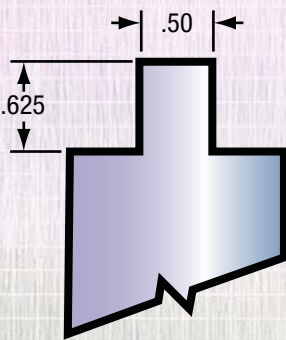
708.478.8771 fax

www.specificbrakedies.com

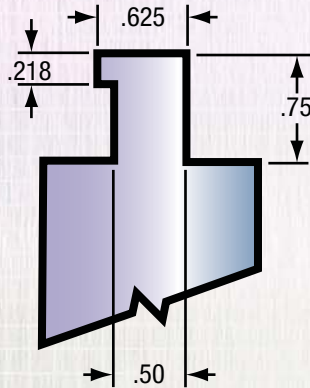
e-mail: sales@specificmfg.com

See Page 3 for Ordering Information

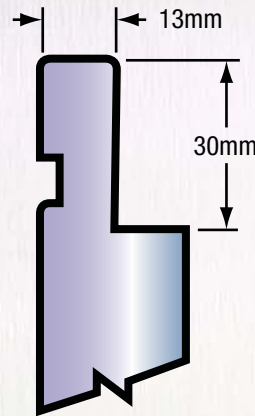
STANDARD DIMENSIONS



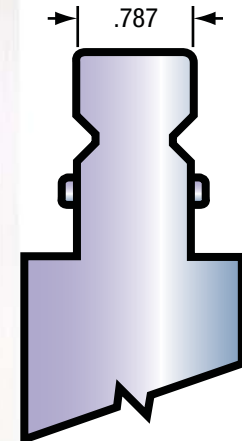
Standard Style Tongue



Safety Style Tongue



European Style Tongue



Wila Style Tongue

Available in both shoulder and tang mount styles

Press Brake Information

Machine Number

Hydro/Mech./Other

Tonnage Rating

Rated Bending Capacity

Length Of Bend

Max. Between Housings

Stroke

Ram Adjustment

Shut Height (Ram down, Adjust up)

Height Of Holders

Other Features

Die Steel:

All Specific Press Brake Dies are made from prehardened die steel hardened to a mean 265 Brinell hardness, which is standard in this industry for application unless otherwise indicated.

Reconditioning:

We realize the importance in your concern to keep your production facility operating. Resurfacing of your existing dies can be scheduled to take priority into our production... Notify Us Promptly.

How To Order

General Purpose Dies:

- 1 - Specify punch and dies by catalog no.
- 2 - Gauge material being formed
- 3 - Exact length required
- 4 - Special modification (if any)

Special Design Dies:

- 1 - Submit a detailed blueprint, sketch or sample part
- 2 - Gauge material being formed
- 3 - Approximate production requirement

We may require sample material when your order is placed in order to try-out in our plant.

CUSTOM DIE ORDER FORM



PRESS BRAKE DIES, INC.
 708.478.1776 voice
 708.478.8771 fax
 www.specificbrakedies.com

your company name	
address	
state	zip code
phone	fax
contact	title
date	best time to call

- 1 Complete the customer information section above or visit our website to complete the form.
- 2 Find the typical bend cross-section configuration that most closely resembles your requirements.
- 3 In the blanks keyed to each cross-section feature, write-in the dimensions and radii of your application. (Remember to write-in the length of your part, and complete the material and press information section)
- 4 Check a box in the Die Set Options section, below.
- 5 Photocopy this page and fax back to us at: **708.478.8771** along with any other supporting documentation you think might be relevant.
- 6 We'll forward a quote back to you, ASAP (If you can't find a typical bend cross-section close to your requirement, just fax your own drawing, or give us a call)

Example of Completed Die Specification Request

A=	126"
F=	6"
F2=	4.5"
H=	3"
R=	1/4"
R2=	1/2"
Length=	25"

Die set Options

- | | |
|-----------------------------------|---------------------------------------|
| <input type="checkbox"/> Hardened | <input type="checkbox"/> Polished |
| <input type="checkbox"/> Saw Cut | <input type="checkbox"/> Cut & Milled |

Typical Bend Cross Sections

F= _____ RF= _____ Length= _____ 	ID= _____ F= _____ Length= _____
A= _____ R= _____ F= _____ Length= _____ F2= _____ 	A= _____ H= _____ F= _____ R= _____ F2= _____ R2= _____ Length= _____
A= _____ H= _____ F= _____ R= _____ F2= _____ R2= _____ Length= _____ 	A= _____ H= _____ F= _____ R= _____ F2= _____ R2= _____ Length= _____
A= _____ W= _____ F= _____ Length= _____ R= _____ S= _____ 	A= _____ RF= _____ F= _____ Length= _____ H= _____ R= _____
A= _____ H= _____ F= _____ R= _____ F2= _____ R2= _____ F2= _____ Length= _____ 	A= _____ R= _____ F= _____ R2= _____ F2= _____ R3= _____ RF= _____ Length= _____

Material Thickness _____ Type Of Material _____

Part Length _____ (Note: All flat dimensions are outside dimensions)

Make Of Press _____

Tonnage _____ Hydraulic Mechanical

SERVICE CENTER

Get the most out of your tooling dollars with Specific PRESS BRAKE DIE SERVICE CENTER™

Die Refurbishing/Hardening

Instead of discarding used dies, do what many of America's leading fabricators do: Let Specific take your worn, bent, chipped, gouged and corroded dies – and refurbish and flame-harden them to mar-free, like-new specs.

We've got the expertise and the equipment – including our 42' planer, the industry's largest – to make refurbishing faster and far less expensive than purchasing new. And, in most cases, we can provide same-day service.

Contour Modification

Modify forming surfaces to new specifications. More economical and faster than ordering new.

Segment Program

Convert existing dies to segments – or manufacture custom segments. Add length to existing dies. Add versatility in setting-up brakes to different lengths.

SAFE-SERT Installation

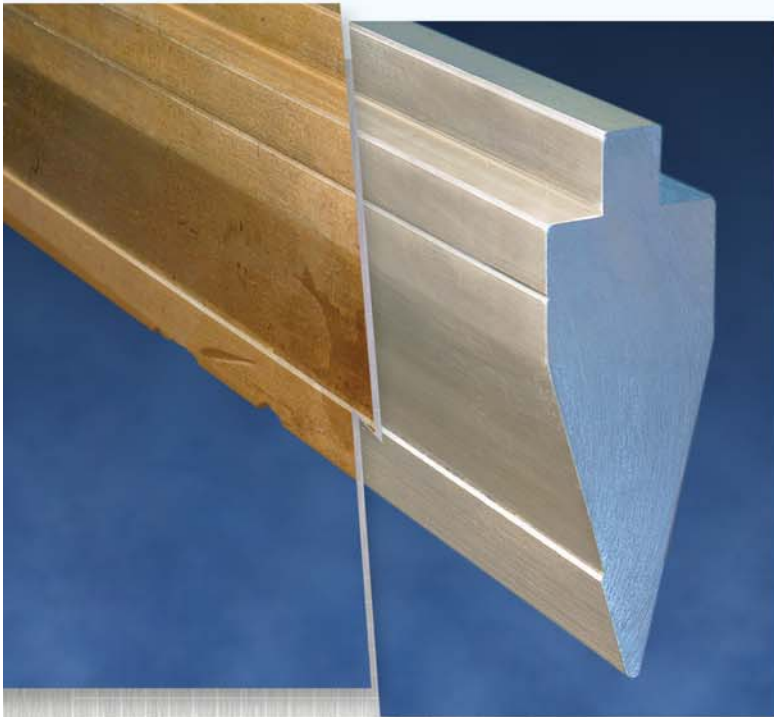
Specific SAFE-SERT™ inserts can retro-fit any standard-tongue press brake die – converting it to a safety-tongue configuration. Return your tool to Specific Press Brake Dies for retrofitting.

SAFE-SERT™

Specific® SAFE-SERT™ inserts can retro-fit and convert any standard-tongue press brake die to a safety-tongue configuration.

SAFE-SERT fittings (Patent Pending) insert flush into holes machined in the side of the tongue and tangential to its top edge. Only the profile of each SAFE-SERT's safety tab protrudes from the tongue to engage the press clamp. Each SAFE-SERT is friction-secured with a countersunk Allen head screw.

The machined through-holes allow SAFE-SERTs to be switched to either side for use on reversible gooseneck configurations. SAFE-SERTs can be installed in tooling segments as short as 1" to help prevent drop-outs.



Return your tool for retro-fitting.

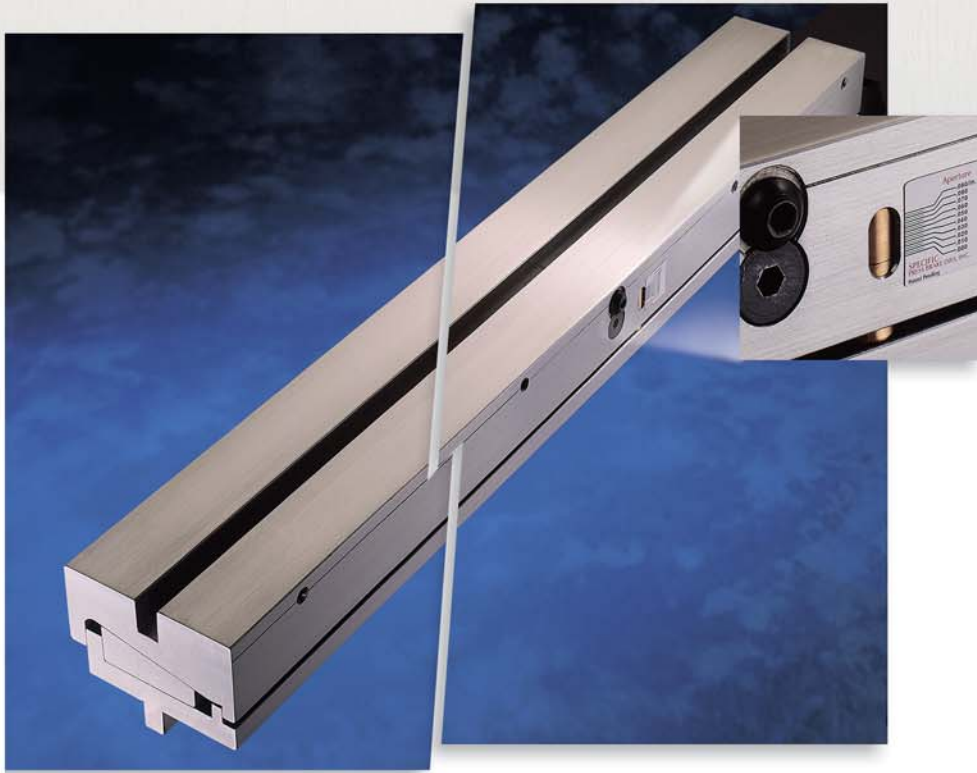
LOW COST... FAST TURNAROUND

- Refurbish Press Brake Dies... run "like new" at a fraction of the cost
- Recontour existing dies to new profiles
- Convert dies to die segments for versatile set-up
- Retro-fit safety-tongues



- Add safety profiles to any size tool
- Eliminate drop-outs on short segments
- Enables reversal of gooseneck profiles

COMPENSATION HOLDER



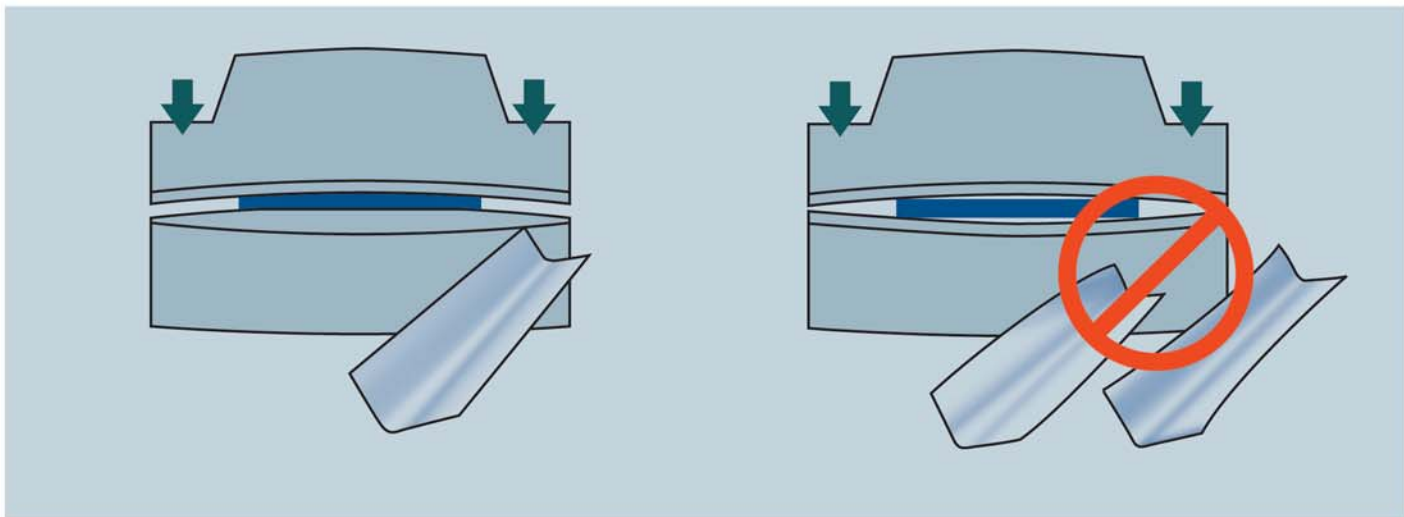
The Specific Press Brake Ø-DFLX™ Deflection Compensation Holder is a single central-point adjustment device to compensate for elastic deformation of the press brake when under bending load.

Fast, easy, accurate crowning adjustment over the full length of the die. Makes set-up quick and flexible – helps profitably meet the demands of today's sheet metal industry:

- Shorter production runs
- Faster turnaround times
- The need to manufacture in a variety of dimensions, bent angles, materials, thicknesses and detail geometry

This high-precision fixture features:

- Eliminates shimming
- Easy, single central-point adjustment
- Integrated, aperture read-out gauge
- Reliable, single-wedge design
- Top-cap eliminates infiltration of abrasive particles when running materials that generate slag, galvanic debris, etc.
- Requires virtually no training
- Low-profile design consumes minimal die "open space"
- Helps ensure constant, accurate angle bending for the highest quality production



“NEW STANDARD” (WILA) TANG SLEEVE

The Specific Press Brake “New standard” (Wila) Tang Sleeve allows endless forming possibilities in your Wila style press. The sleeve enables American style tooling to be adapted to run in a Wila style press brake.

The Wila Tange Sleeve offers:

- convert American tooling to a “New Standard” style Tooling
- no need for an adapter that consumes shut height
- allows use of existing special applications
- lower cost tooling

Notes:

Punch shoulders must be a minimum of 7/16”
Not to be considered Precision Tooling
Shoulder mount style only



DIE LIFTER SERIES

Keep production rolling with Specific Press Brake Die Lifter Series. The Die Lifter Series is designed to minimize effort when installing and removing tools into your press brake. Be sure to consider Die Lifters when purchasing a new die holder or a large die. We can also install Die Lifters into your existing holders and dies.

The Die Lifter Series offers:

- easy installation and removal of tools
- reduces setup and teardown time
- quick and easy installation
- durable design
- can be installed into new and existing tooling



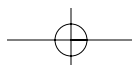
WILA "NEW STANDARD" STYLE TOOLING



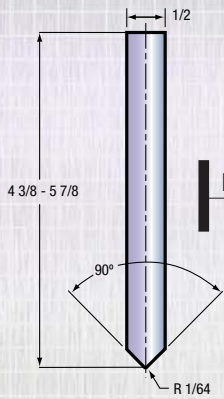
In addition to American Style Tooling, all of the standard and special applications seen in this catalog can be made with Wila's "New Standard" and European style mounting tongues. The Wila "New Standard" mounting tongues are equipped with safety pins and can be shoulder or tang mounted styles. The European style mounting tongues can be made with the optional safety slot and the quick release feature. This allows tooling to be supplied in up to 24' long solid lengths, or sectionalized to any needed length. This also allows special applications to be run in your Wila or European style press brake that might have not been possible in the past.

EUROPEAN STYLE TOOLING

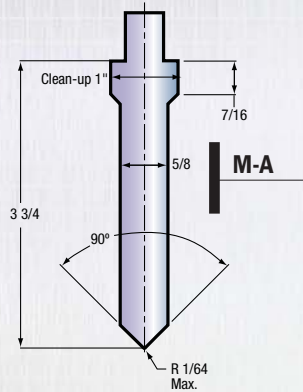




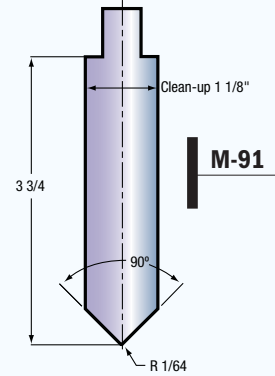
90° Forming Punches & Dies



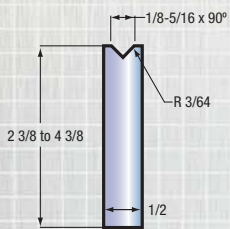
NP-12



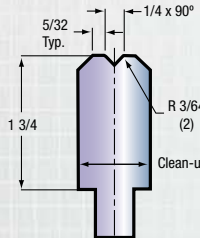
M-A



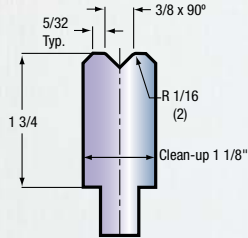
M-91



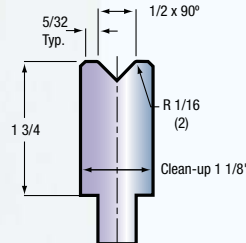
ND-12



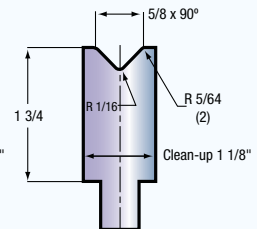
F-1/4"
22 Gauge



F-3/8"
18 Gauge

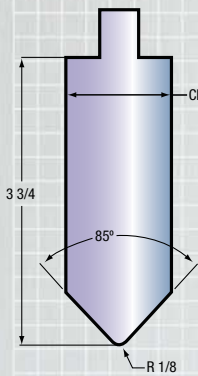


F-1/2"
16 Gauge

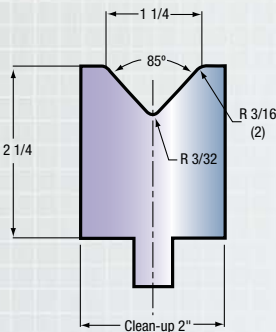


F-5/8"
14 Gauge

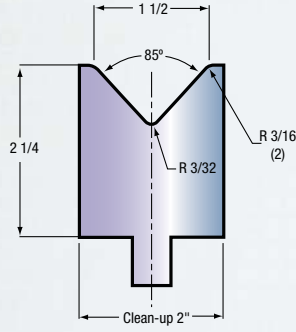
90° Air Forming Punches & Dies



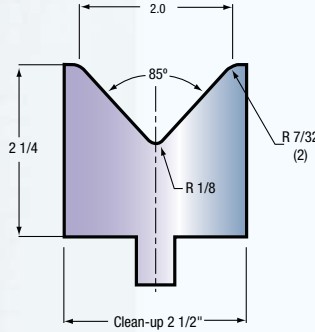
M-8A
1/4" Capacity



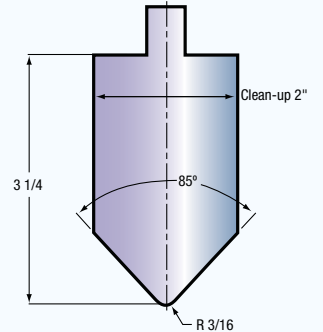
F-1-1/4"
9 Gauge



F-1-1/2"
3/16" Capacity



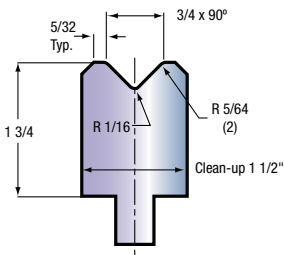
F-2"
1/4" Capacity



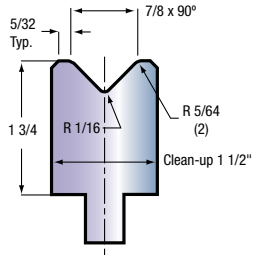
M-8B"
3/8" Capacity



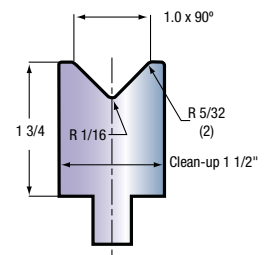
90° PUNCHES & DIES



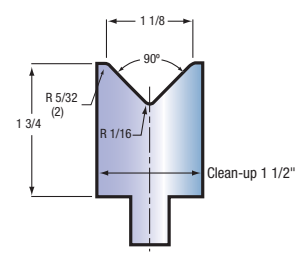
F-3/4"
 13 Gauge



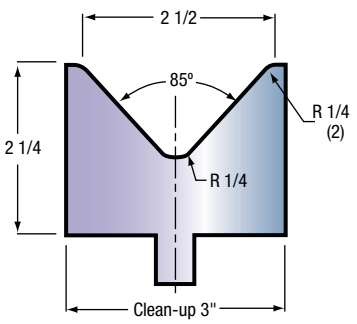
F-7/8"
 12 Gauge



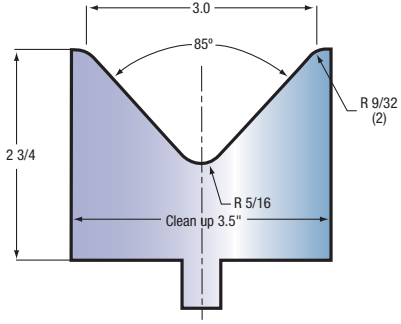
F-1"
 11 Gauge



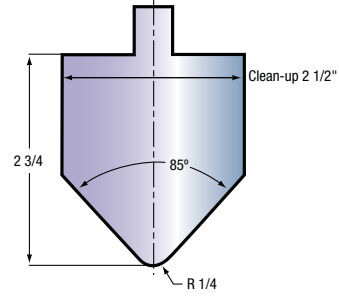
F-1-1/8"
 10 Gauge



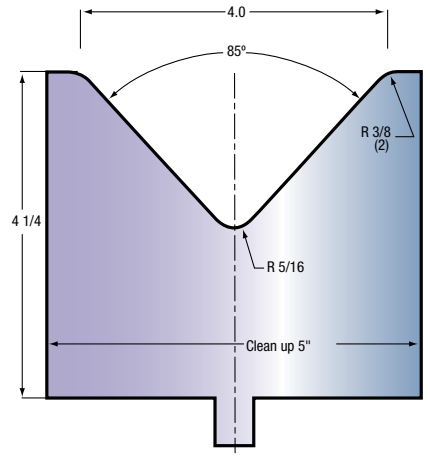
F-2-1/2"
 5/16" Capacity



F-3
 3/8" Capacity

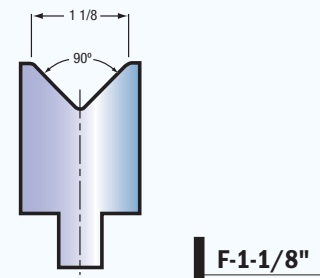
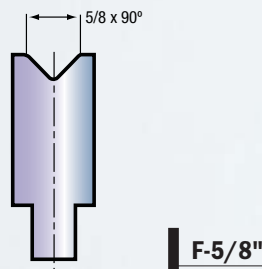
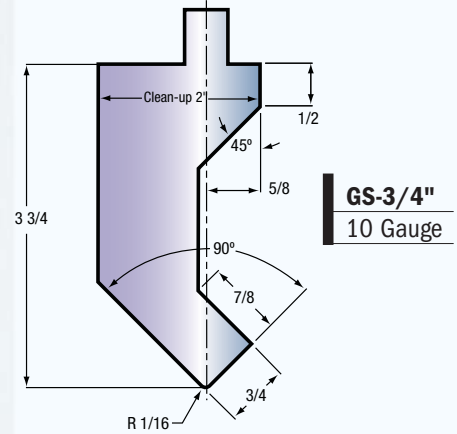
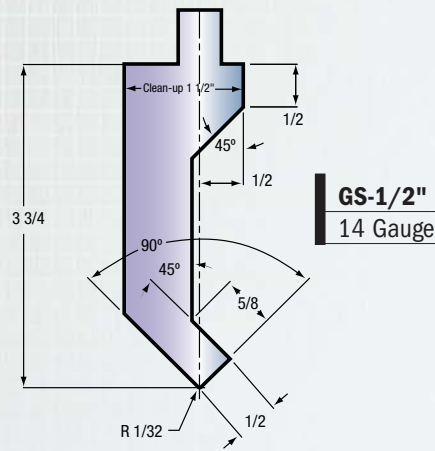
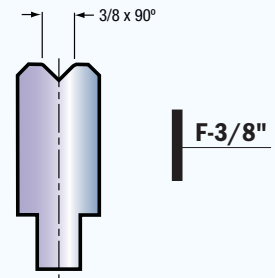
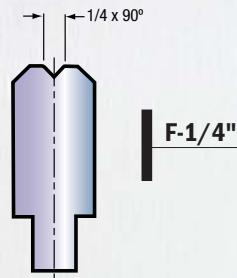
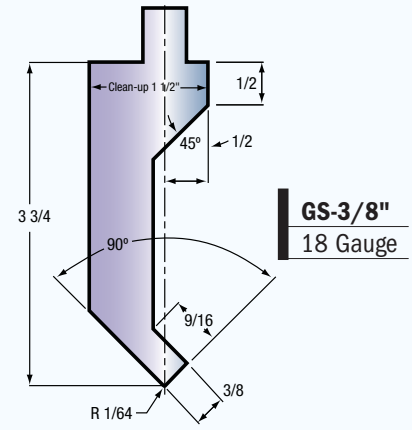
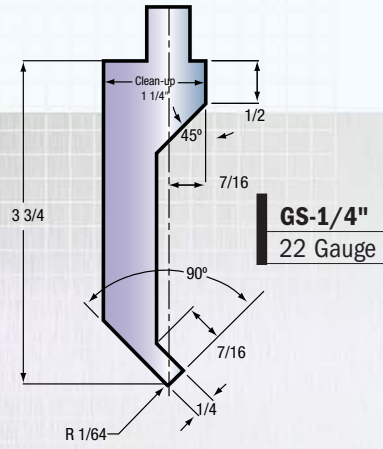


M-8C
 1/2" Capacity



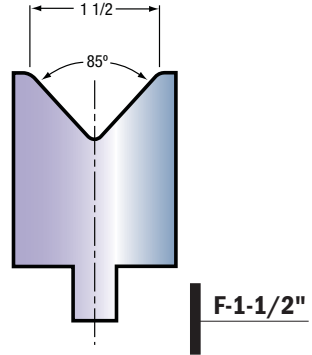
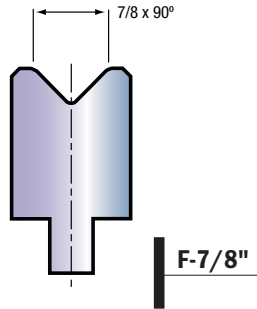
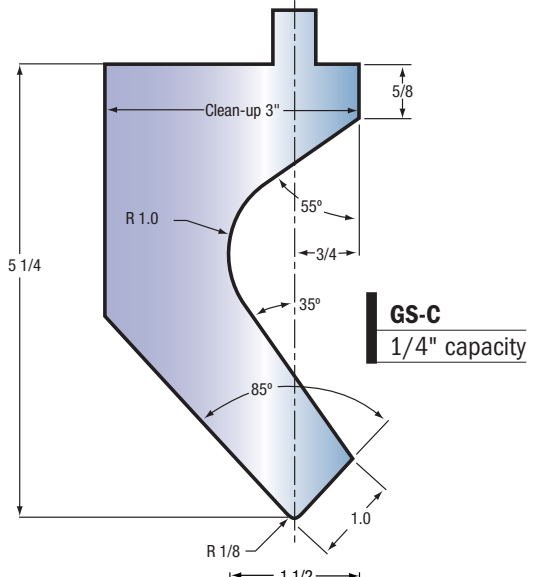
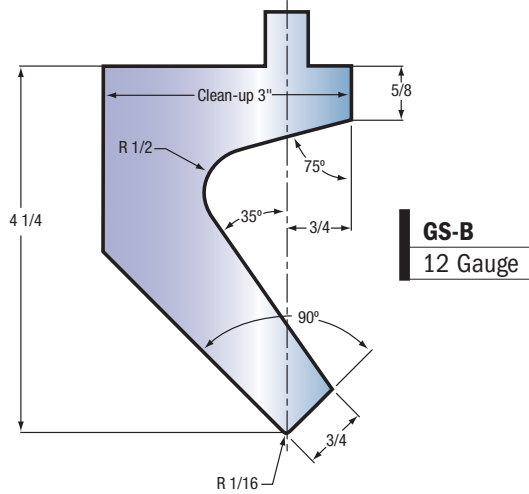
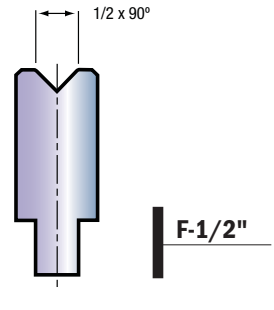
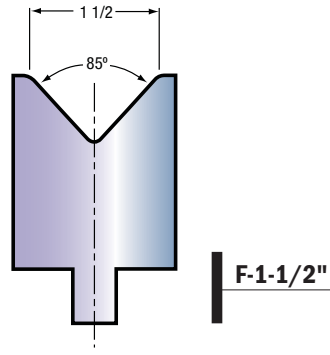
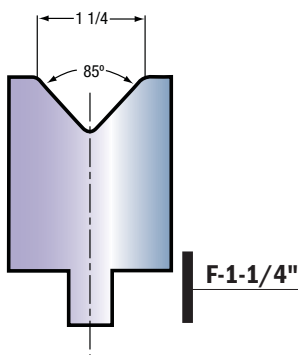
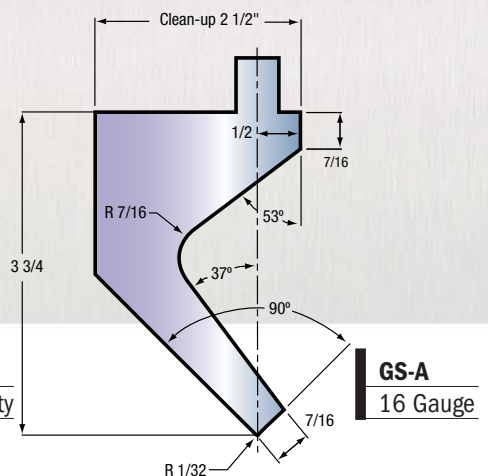
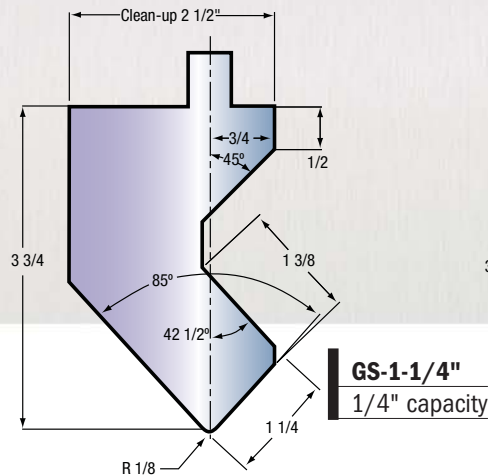
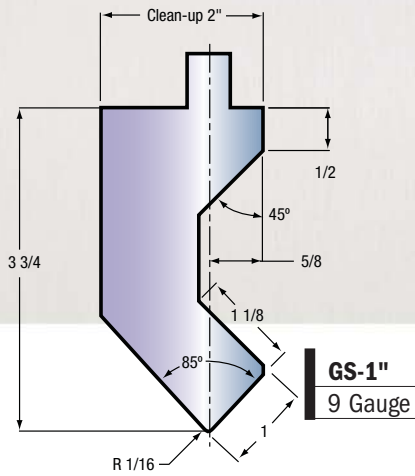
F-4"
 1/2" Capacity

GOOSENECK PUNCHES

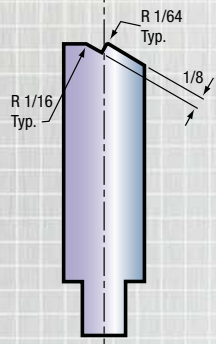
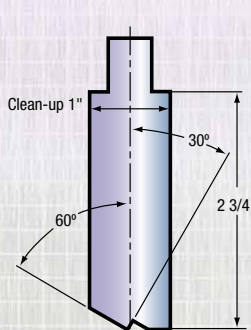


Gooseneck punches offer the benefit of clearance for a return flange as in a two stroke channel forming operation.

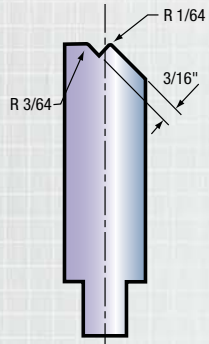
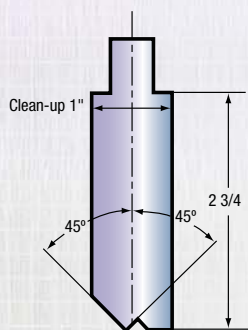
Dies are shown only to be suggestive of typical set-ups; see pages 6 - 7 for complete die specifications.



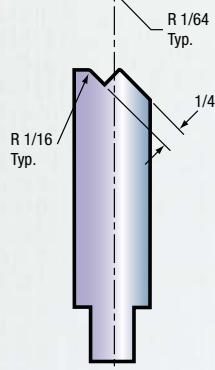
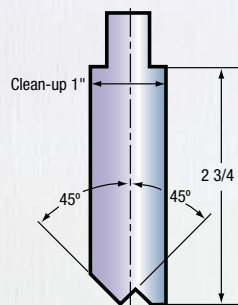
OFFSET DIES



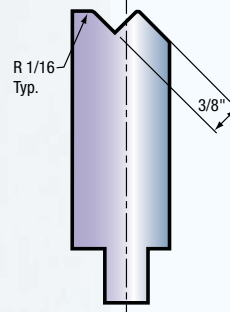
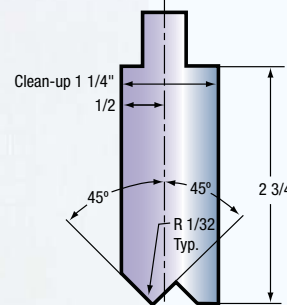
OS-1/8"
18 Gauge



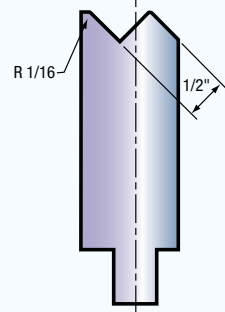
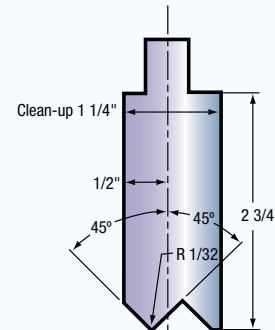
OS-3/16"
18 Gauge



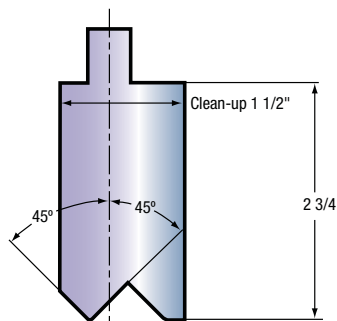
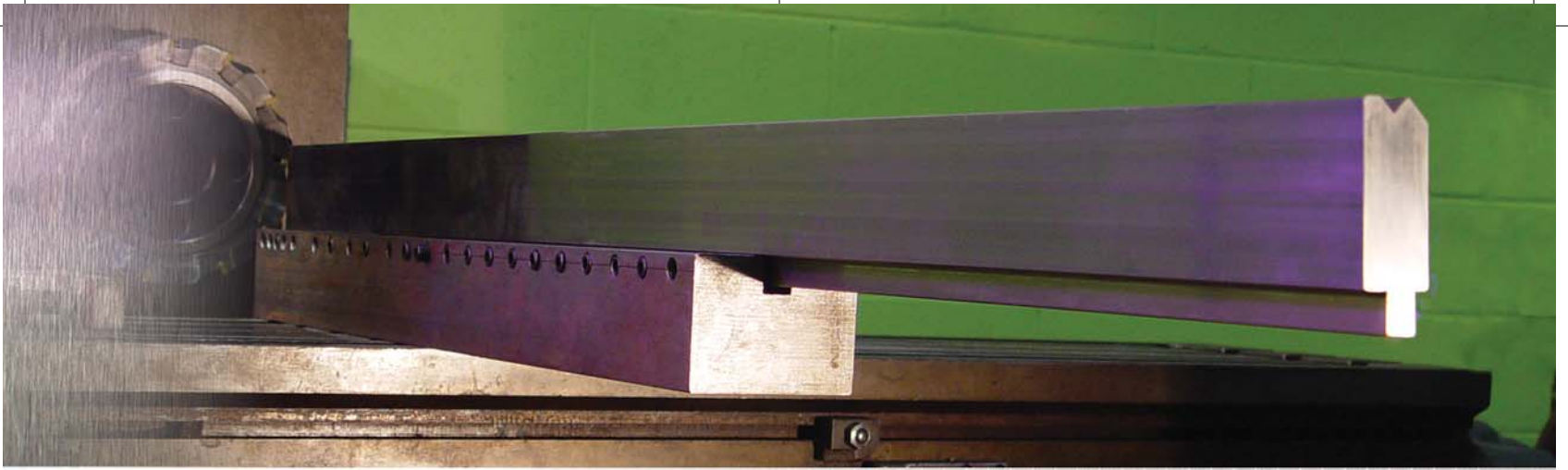
OS-1/4"
18 Gauge



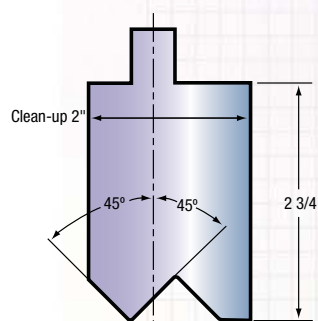
OS-3/8"
18 Gauge



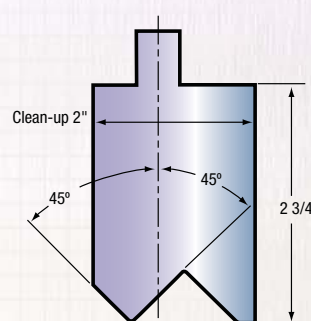
OS-1/2"
18 Gauge



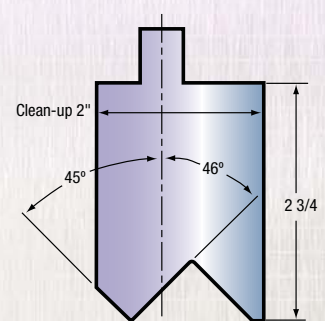
OS-5/8"
16 Gauge



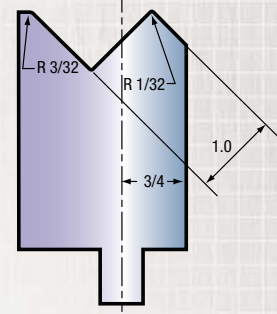
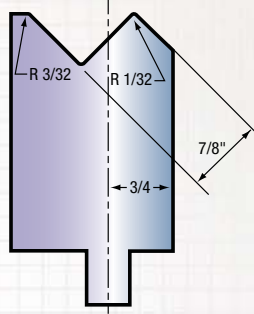
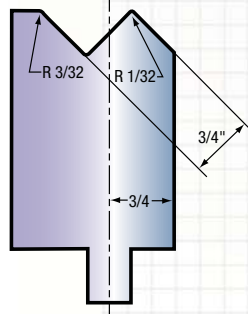
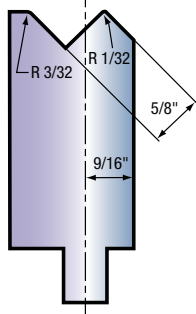
OS-3/4"
16 Gauge

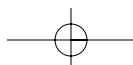


OS-7/8"
16 Gauge

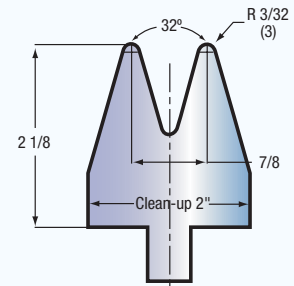
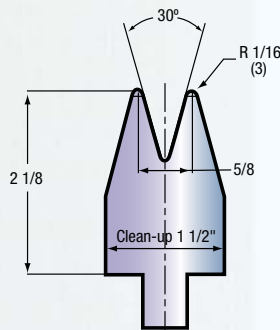
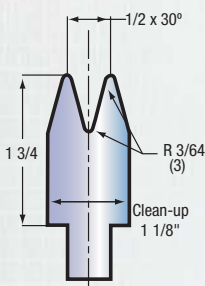
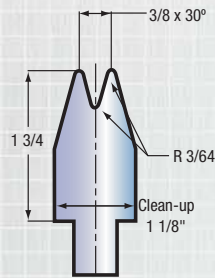
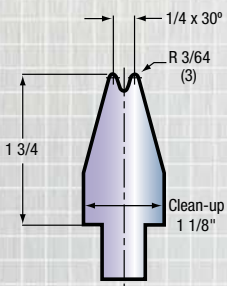
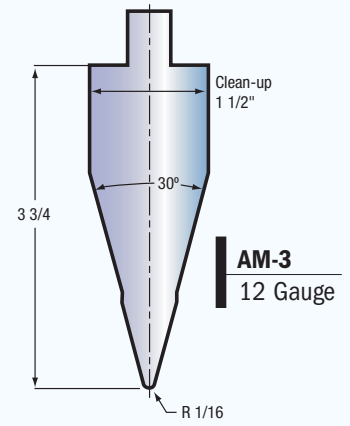
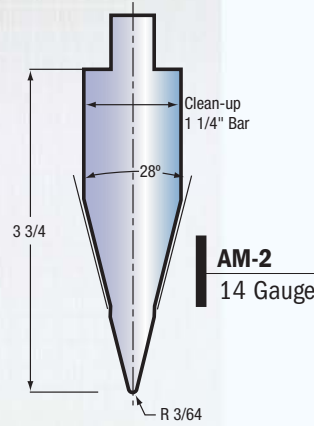
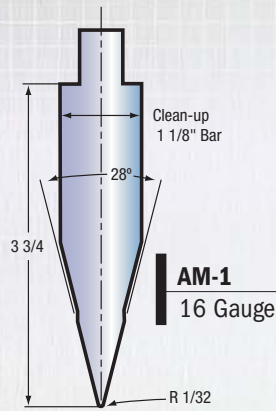


OS-1"
16 Gauge

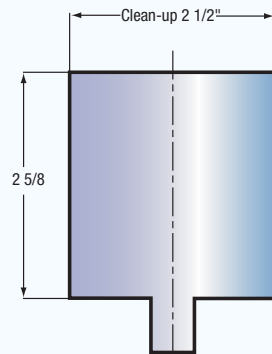
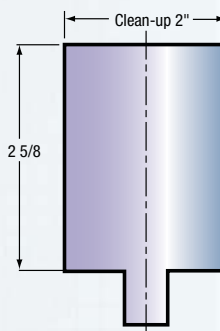
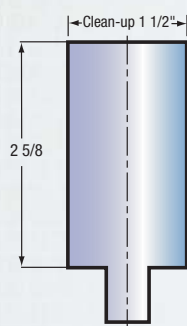




30° Forming Punches & Dies

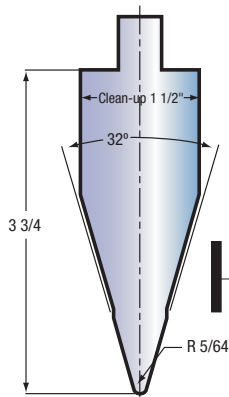


Flattening Dies

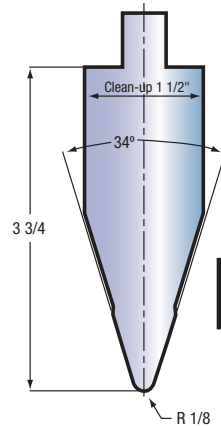


30° FORMING PUNCHES AND DIES

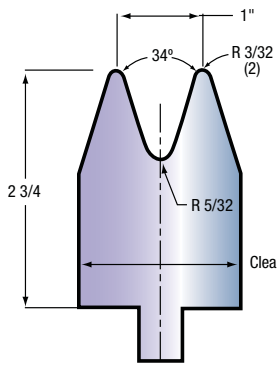
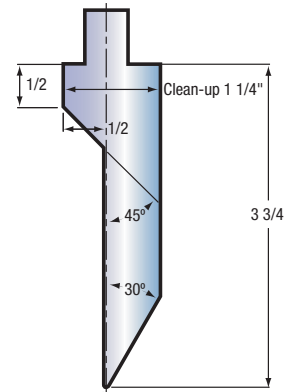
FLATTENING DIES



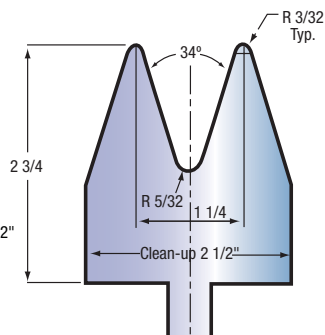
AM-4
9 Gauge



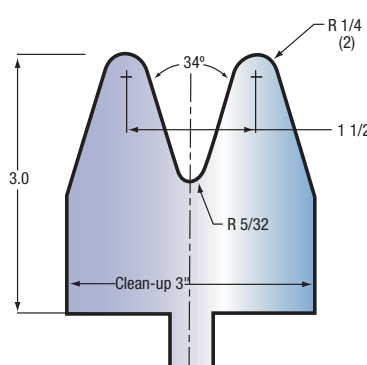
AM-5
3/16" Capacity



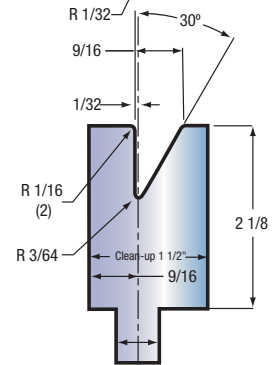
AF-1"
11 Gauge



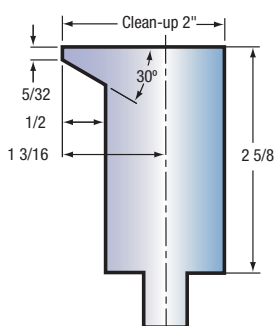
AF-1-1/4"
9 Gauge



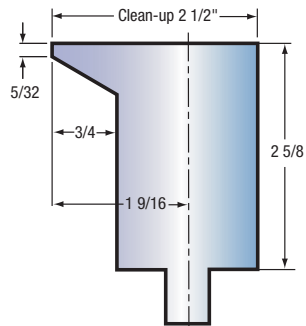
AF-1-1/2"
3/16" Capacity



AM-F
20 Gauge

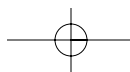


180-Y



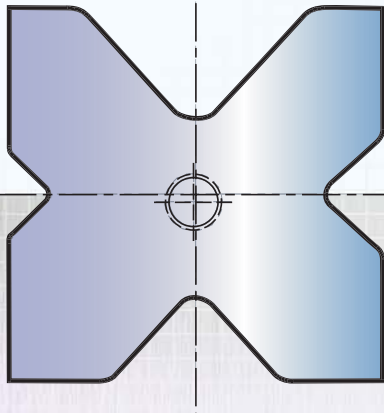
180-Z





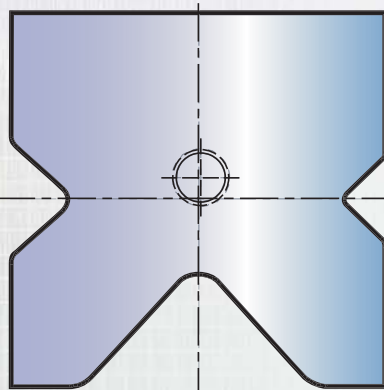
MULTI-VEE BLOCK DIES

4-Way Dies



Die No.	Block Size	4 Die Openings			
2-2MV4	2.250	0.500	0.750	1.000	1.250
2-7MV4	2.750	0.625	0.875	1.125	1.500
3-2MV4	3.250	0.750	1.000	1.500	2.000
3-7MV4	3.750	0.875	1.125	2.000	2.500
4-2MV4	4.250	1.000	1.500	2.000	3.000
4-7MV4	4.750	1.000	1.250	2.500	3.000
5-2MV4	5.250	1.000	2.000	3.000	4.000
5-7MV4	5.750	1.250	2.000	3.000	4.000
6-7MV4	6.750	1.500	2.500	3.500	5.000
7-7MV4	7.750	2.000	3.000	3.500	6.000
10MV4	10.00	2.500	3.500	4.000	8.000
12MV4	12.00	3.000	4.000	5.000	10.00

3-Way Dies



Die No.	Block Size	3 Die Openings		
2-2MV3	2.250	0.500	0.750	1.000
2-7MV3	2.750	0.750	1.125	1.500
3-2MV3	3.250	1.000	1.500	2.000
3-7MV3	3.750	1.125	2.000	2.500
4-2MV3	4.250	1.000	2.000	3.000
4-7MV3	4.750	1.250	2.000	3.000
5-2MV3	5.250	2.000	3.000	4.000
5-7MV3	5.750	1.500	2.500	4.000
6-7MV3	6.750	1.500	3.000	5.000
7-7MV3	7.750	2.000	3.500	6.000
10MV3	10.00	2.500	4.000	8.000
12MV3	12.00	3.000	6.000	10.00

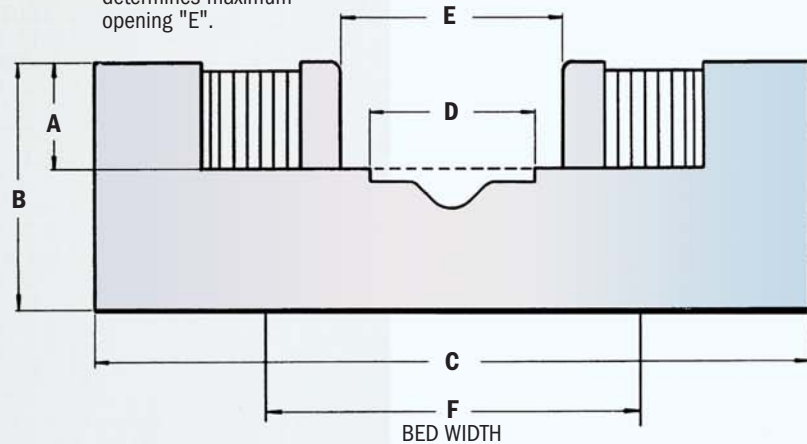
ADJUSTABLE AIR-FORMING DIE

ADJ-77

Considered the most versatile air forming component to complement a press brake. From general forming, to bumping radii.

Die No.	A	B	C	D	E	F
ADJ-77-1	1-5/8	2-7/8	8	NONE	1/4 - 3-1/2	3-1/8
ADJ-77-2	2-1/4	4-1/8	12	NONE	1/2 - 5	5
ADJ-77-3	2-7/8	5-3/4	16-1/4	3-1/4	3 - 8	8
ADJ-77-4	3-1/4	7	19-1/2	4-1/4	5 - 10	10
ADJ-77-5	4-1/4	10	20-1/2	5-1/4	5 - 12	12
ADJ-77-6	6-3/4	10-1/2	28	7-3/4	8 - 15	15

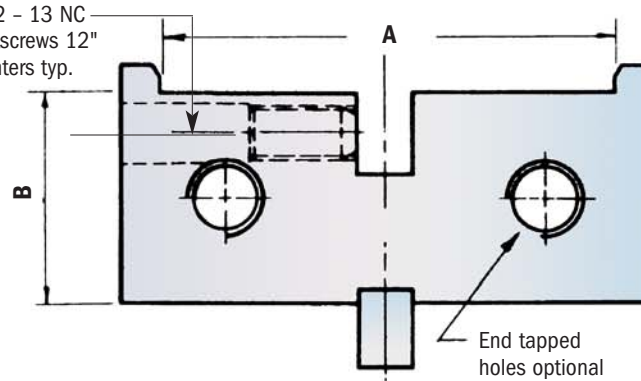
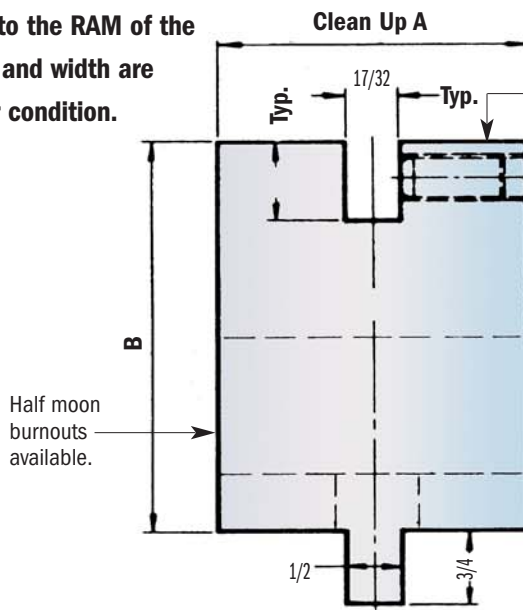
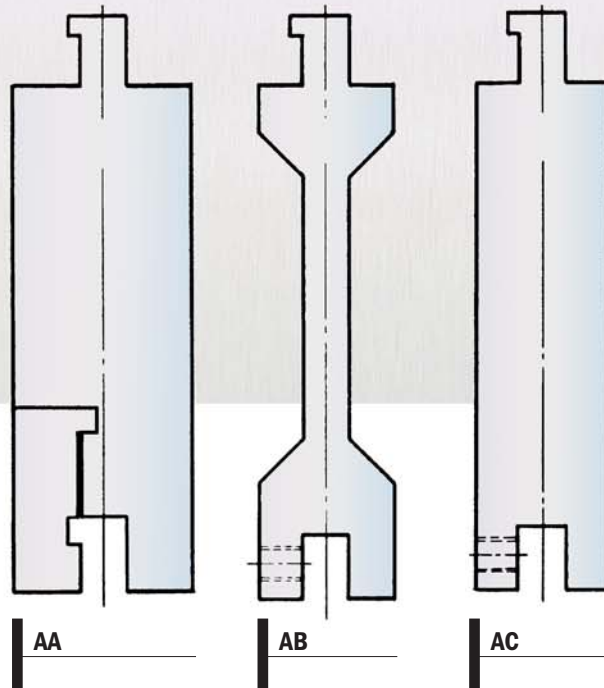
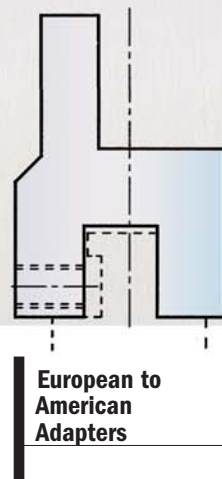
Width of press bed "F" determines maximum opening "E".



RAM ADAPTERS AND DIE HOLDERS

It is sometimes necessary to fill die space if RAM adjustment is insufficient or if application exists.

In either case, RAM adapters are mounted to the RAM of the press. Height and width are suited to your condition.

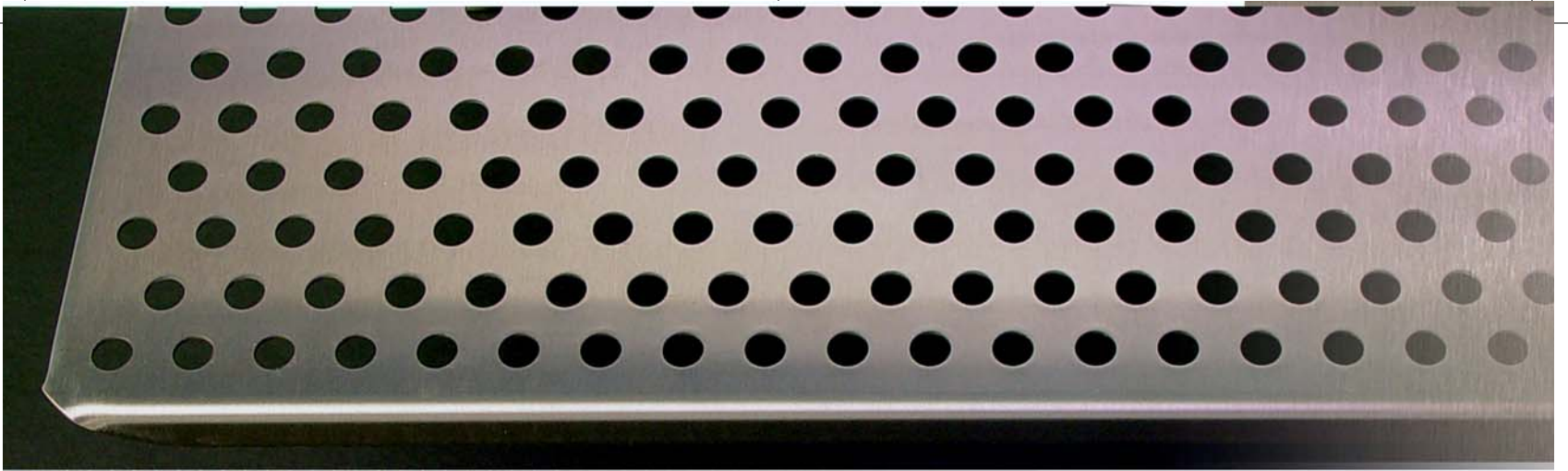


Series 200		
Number	A	B
200A	2	1-1/2
200B	2	2
200C	2	3
200D	2	4
200E	2	5
200F	3	1-1/2
200G	3	2
200H	3	3
200I	3	4
200J	3	5
200K	4	2
200L	4	3
200M	4	4
200N	4	5
200O	5	2
200P	5	3
200Q	5	4
200R	5	5

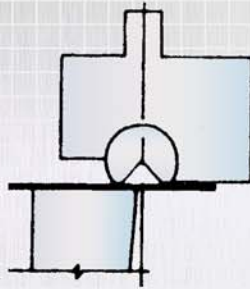
Series 600		
Number	A	B
600A	2-1/4	3-1/2
600B	2-1/4	4-3/4
600C	2-3/4	3-1/2
600D	2-3/4	4-3/4
600E	3-1/4	3-1/2
600F	3-1/4	4-3/4
600G	3-3/4	3-1/2
600H	3-3/4	4-3/4
600I	4-1/4	3-1/2
600J	4-1/4	4-3/4
600K	4-3/4	3-1/2
600L	4-3/4	4-3/4
600M	5-1/4	3-1/2
600N	5-1/4	4-3/4
600O	5-3/4	3-1/2
600P	5-3/4	4-3/4
600Q	6-3/4	3-1/2
600R	7-3/4	3-1/4
600S	10	3-1/2
600T	12	3-3/4



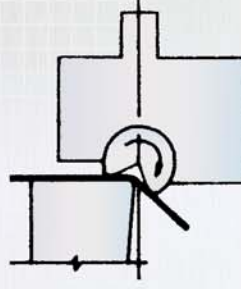
Any die holder 4" high or over can be furnished with half moon burnouts for mounting.



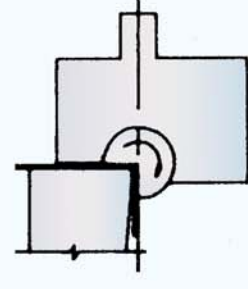
ROTARY BENDER



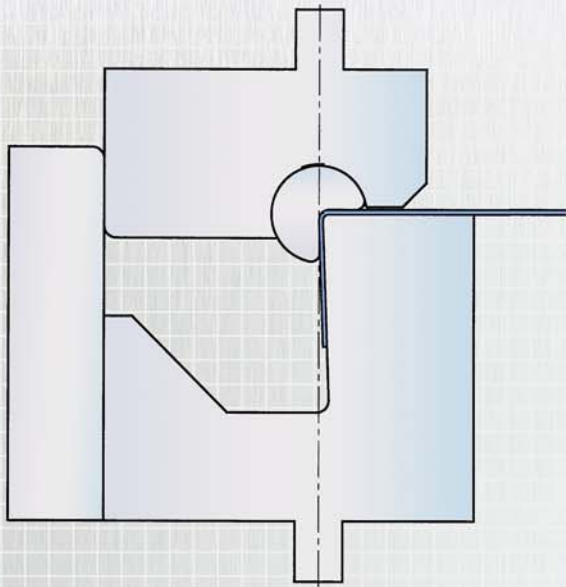
First Pressure



Midway



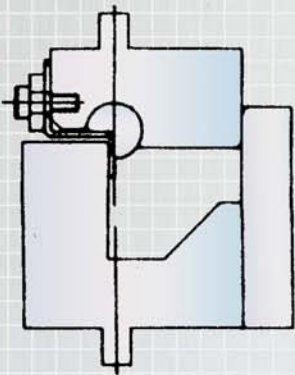
Close



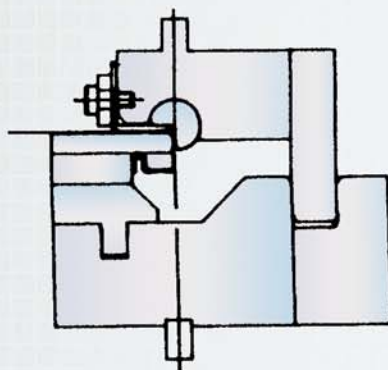
Rotary Benders

	Rocker Diameter	Range of Material	Min. & Max. Flange Length-OD
PCM-1	1"	22 - 14 Ga. (.030 - .075)	7/16" - 2"
PCM-15	1-1/2"	13 - 11 Ga. (.089 - .120)	5/8" - 2"
PCM-2	2"	10 - 8 Ga. (.134 - .164)	13/16" - 2"

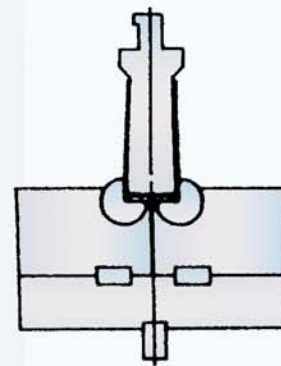
Typical Rotary Bender Applications



90° Degree Bends



Return Bends



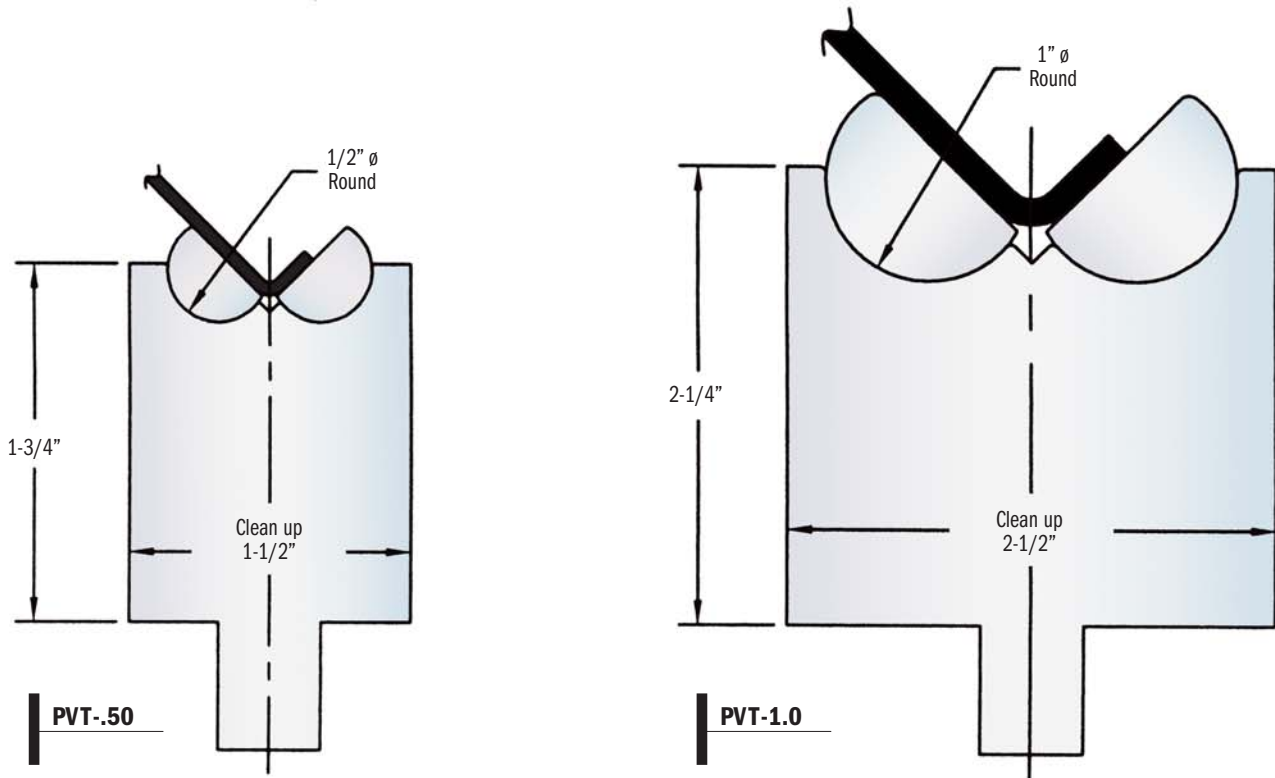
Channel Bends

PIVOT FORM VEE DIE

The Pivot Form Vee Die is designed to offer a wide variety of benefits compared to a conventional die:

- Each die is able to form a wide variety of material thicknesses.
- Ability to form short flanges.
- Minimize marking on parts.
- Minimize distortion of holes and slots near bend line.

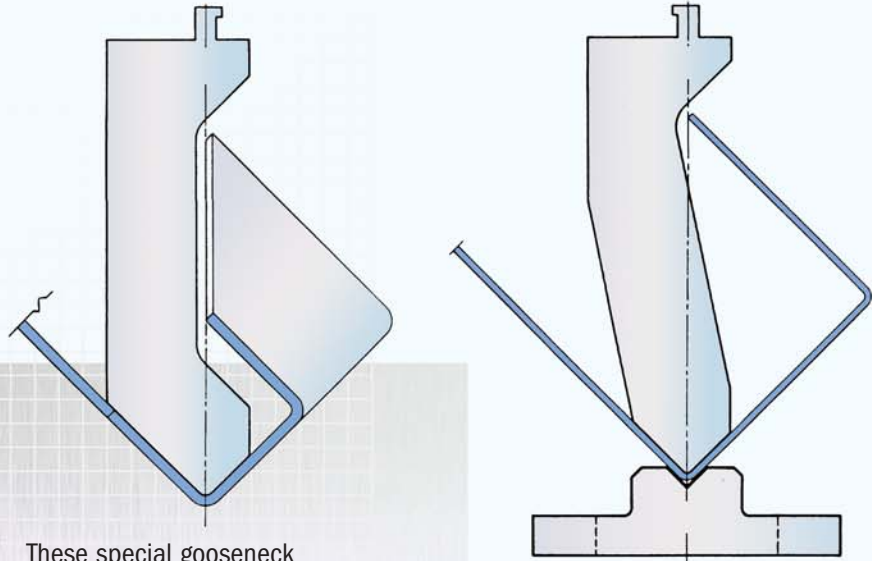
The Retractable Vee Die can be designed to fit any press brake.



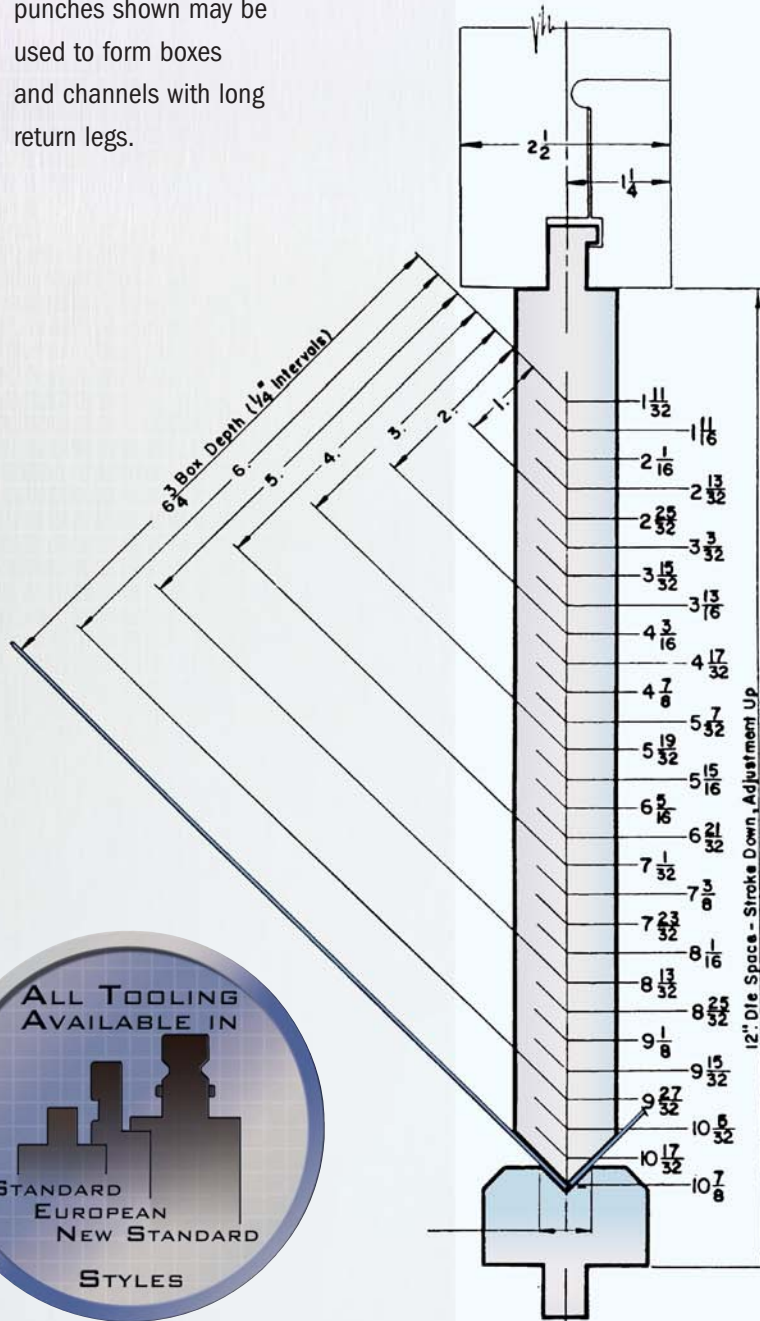
Pivot Form Vee Dies

	Diameter Rounds	Max. Material Thickness	Min. Outside Flange	Max. Outside Radius
PVT-.50	1/2"	.10"	.27"	.20"
PVT-1.0	1"	.187"	.54"	.45"

BOX FORMING DIES



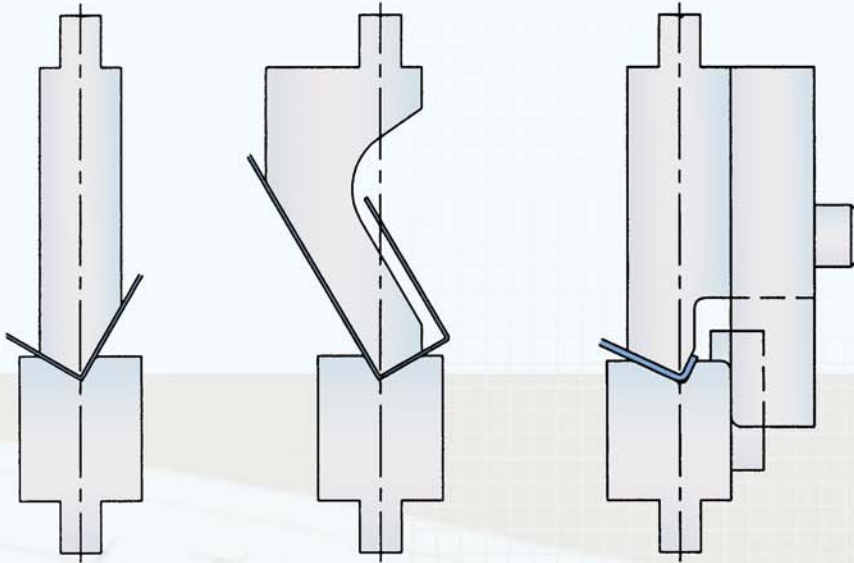
These special gooseneck punches shown may be used to form boxes and channels with long return legs.



Box Forming

In forming a box, where 4 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.





TA-22

The tipped forming angle minimizes sheet whip up and provides ram clearance on deep channels.

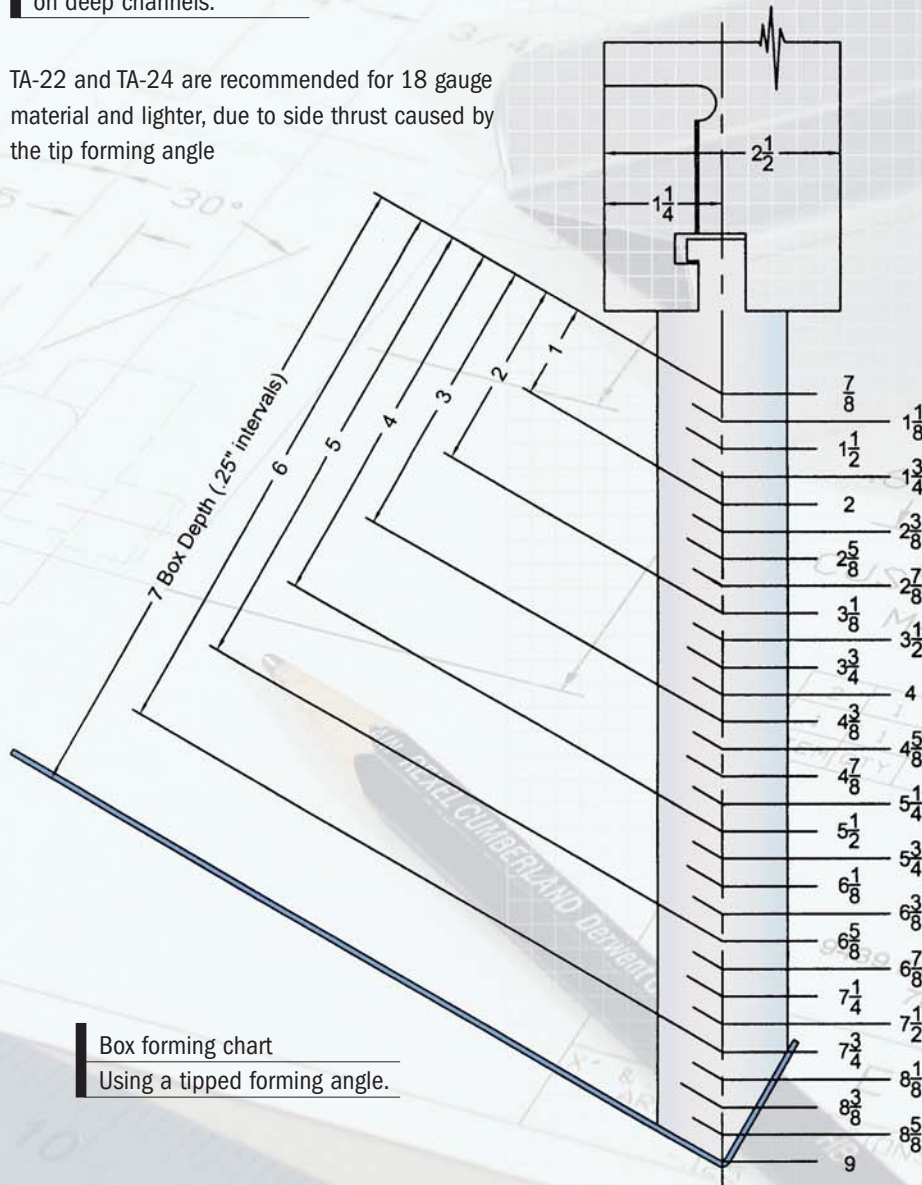
TA-24

The tipped angle gooseneck allows deeper channels to be formed

TA-26

Allows shorter flanges to be formed that wouldn't be possible in conventional tools

TA-22 and TA-24 are recommended for 18 gauge material and lighter, due to side thrust caused by the tip forming angle



Box forming chart
Using a tipped forming angle.

TIPPED ANGLE DIE SETS

SCAL 2.00 R.031 TYP

CUSTOMER PART NUMBER: MATERIAL: 16GA. C.R.S.

1/2 x 2 1/2 x 120 1/2" MATERIAL: 1/8 x 4 1/2 x 120 1/2"

SPECIFIC

PRESS BRAKE DIES, INC.

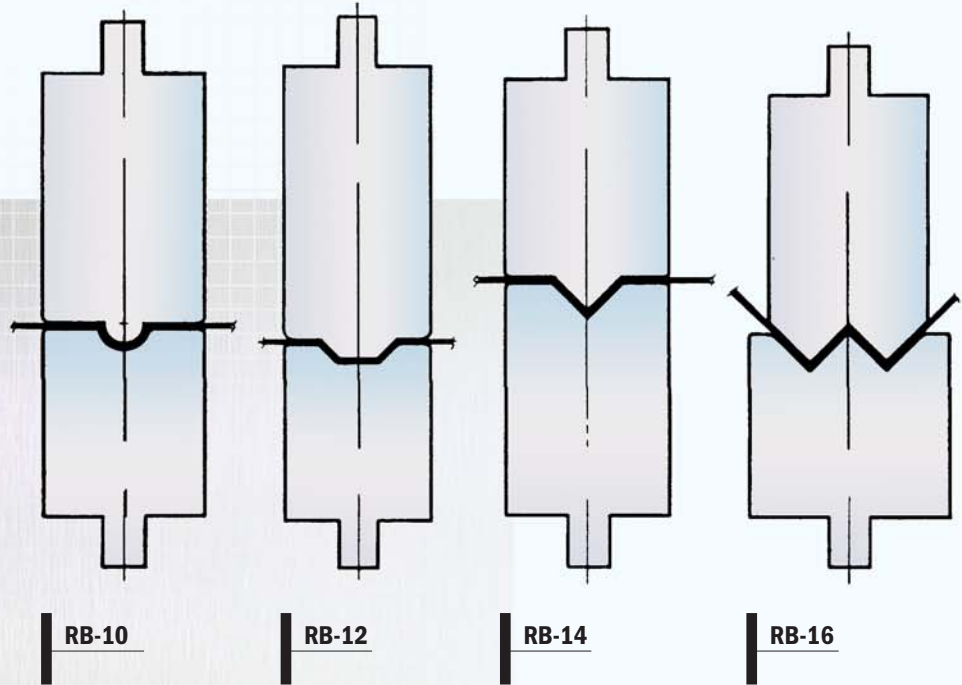
ENTERPRISE DRIVE MOKENA, IL 60448

708-478-1776 FAX 708-478-8771

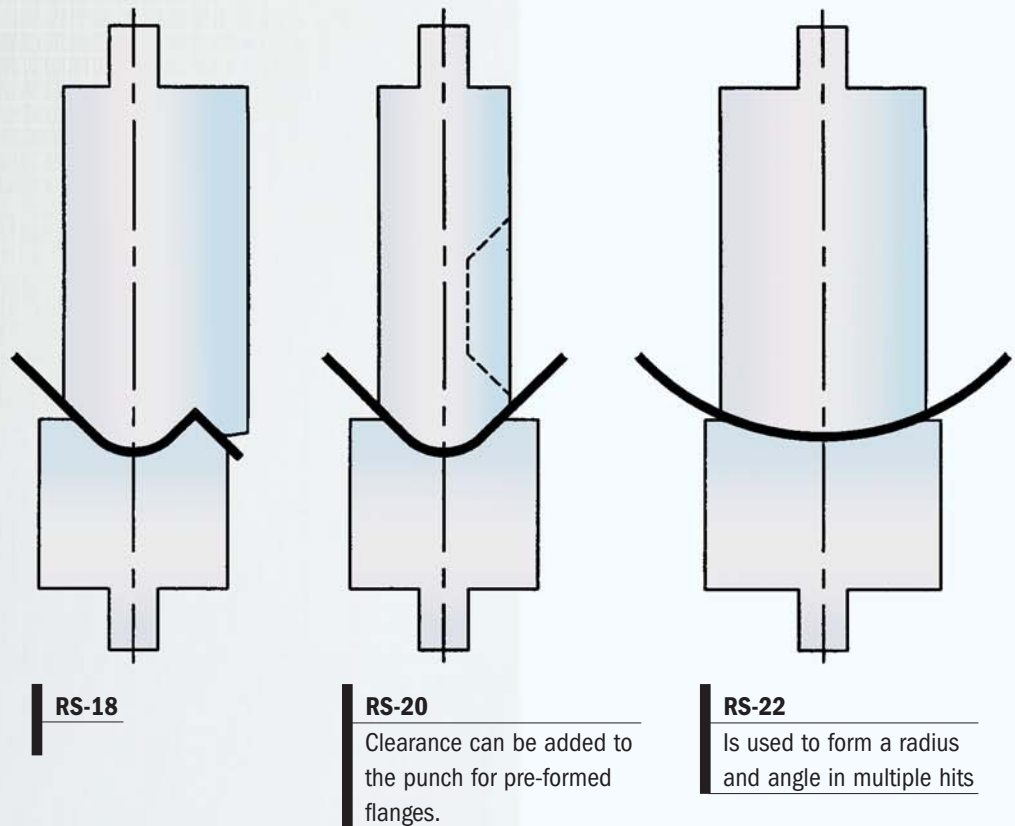
www.specificbrakedies.com

T METAL FAB.

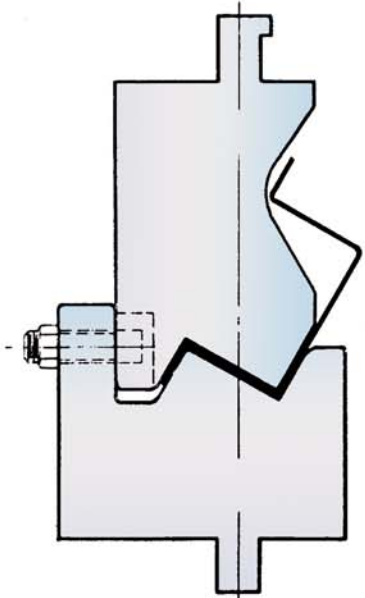
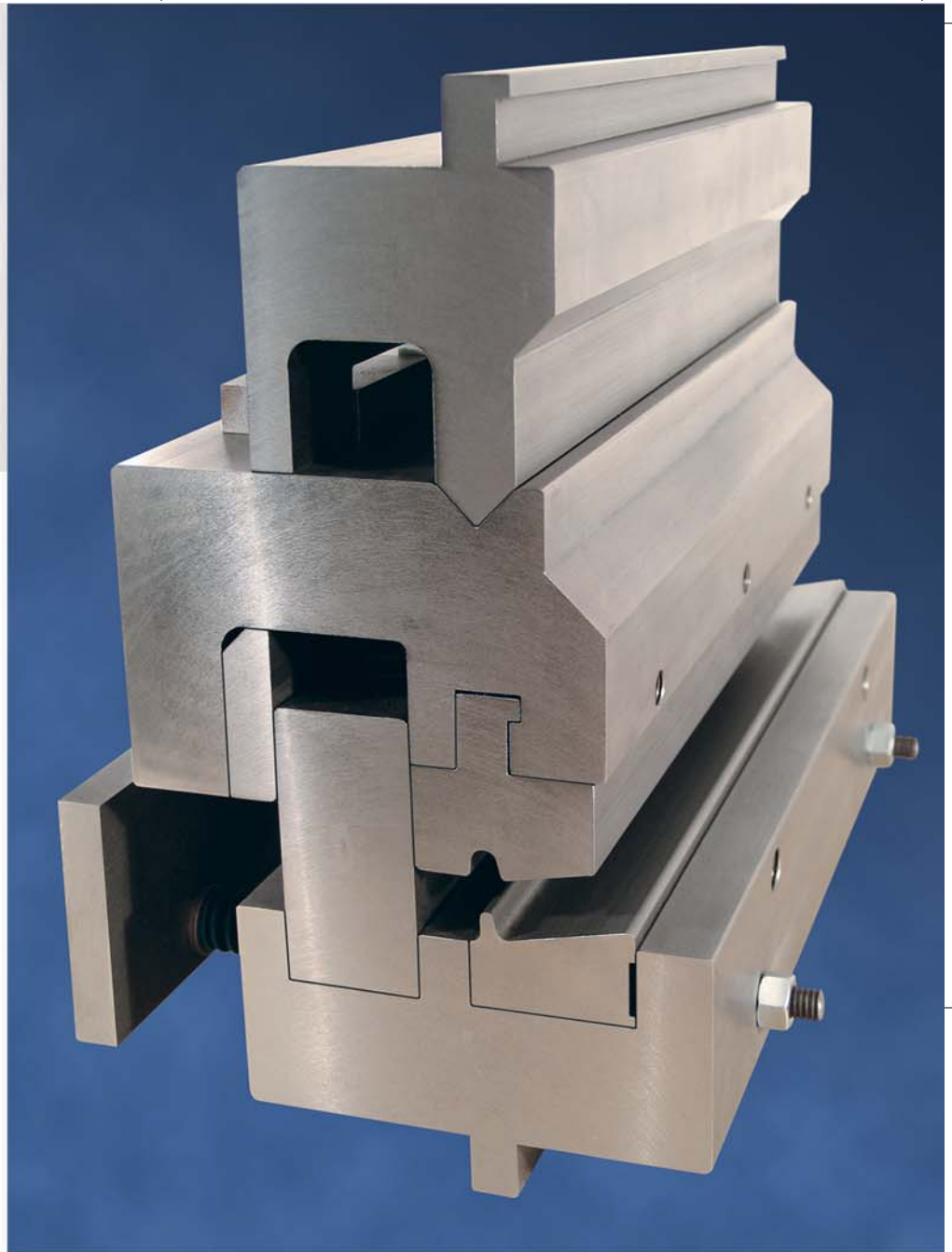
RIB FORMING DIES



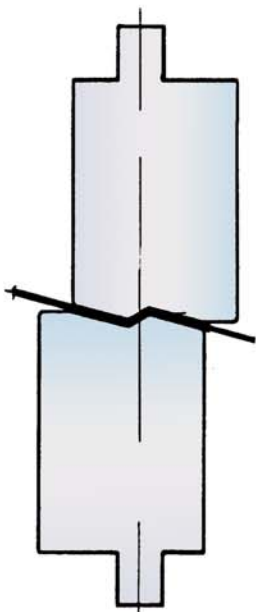
RADIUS FORMING DIES



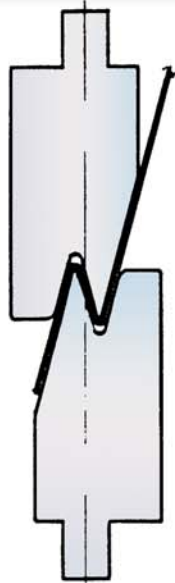
SPECIAL OFFSET DIES



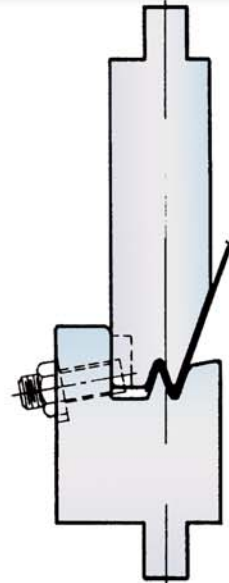
S0-26



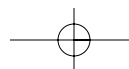
S0-28



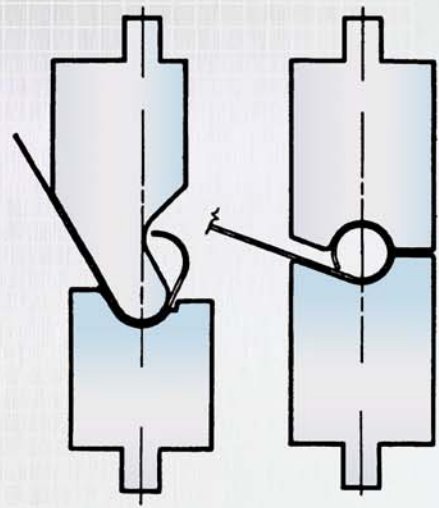
S0-30



S0-32



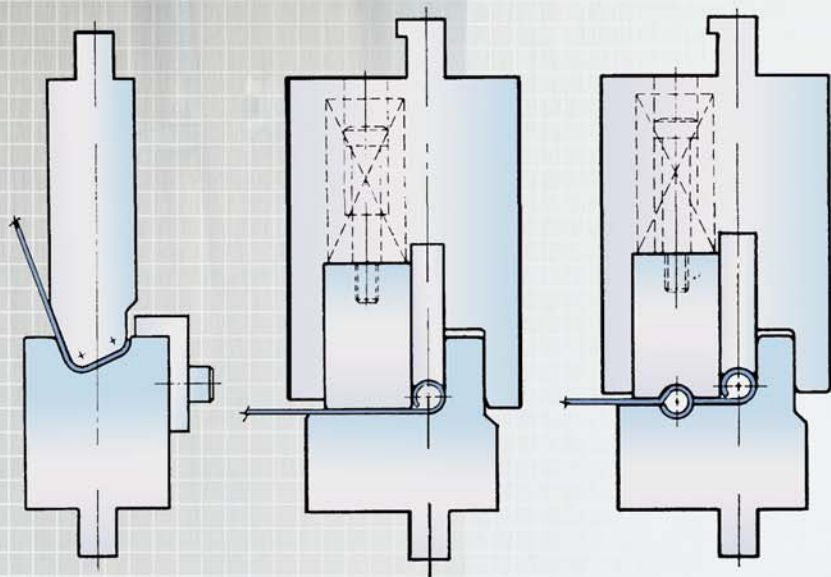
CURLING DIES



CRL-11

CRL-22

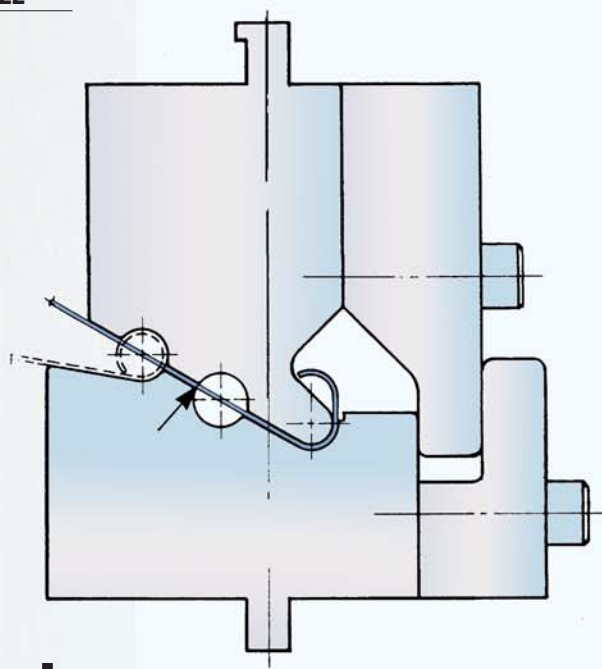
SET CRL-11&22	Curls of 3/8" dia. and larger are for regular edge beading
SET CRL-33&44	Produce the tightest and roundest curl that can be formed in two strokes
SET CRL-55	Used in place of CRL-44 with on center curl in three strokes



CRL-33
1st Operation

CRL-44
2nd Operation

CRL-55
3rd Operation

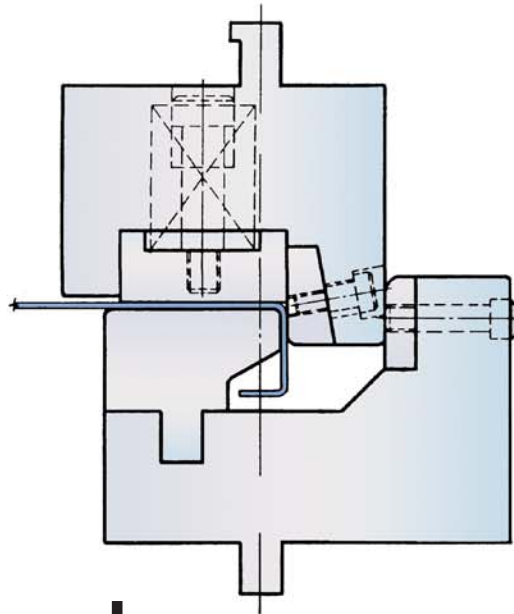


CRL-66
Forms a complete off center curl in 3 operations. Whip up minimal due to slight angle involved on the first two operations. Optional on center curl in 4 strokes

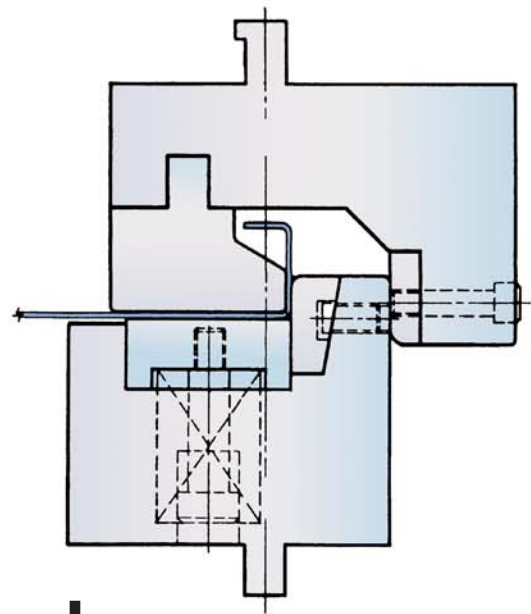


WIPING DIES

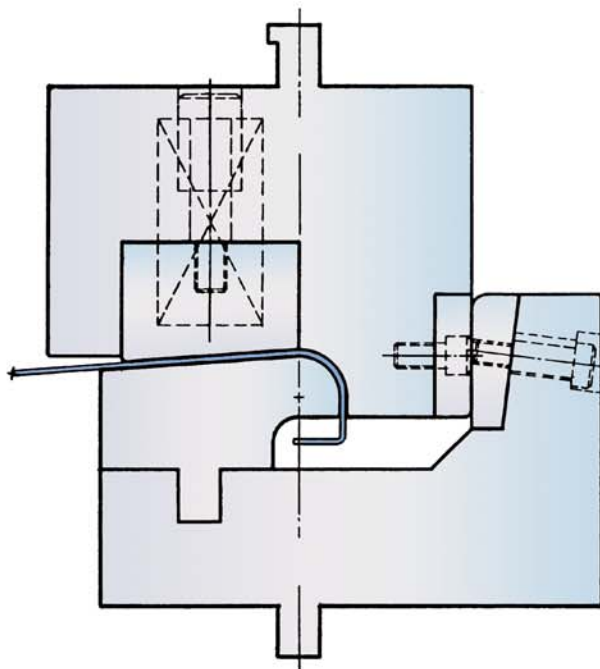
All of these die sets are used in high production flanging operations. Material whip up on the operator is non-existent. Capacity for illustrated sets - 16 Gauge.



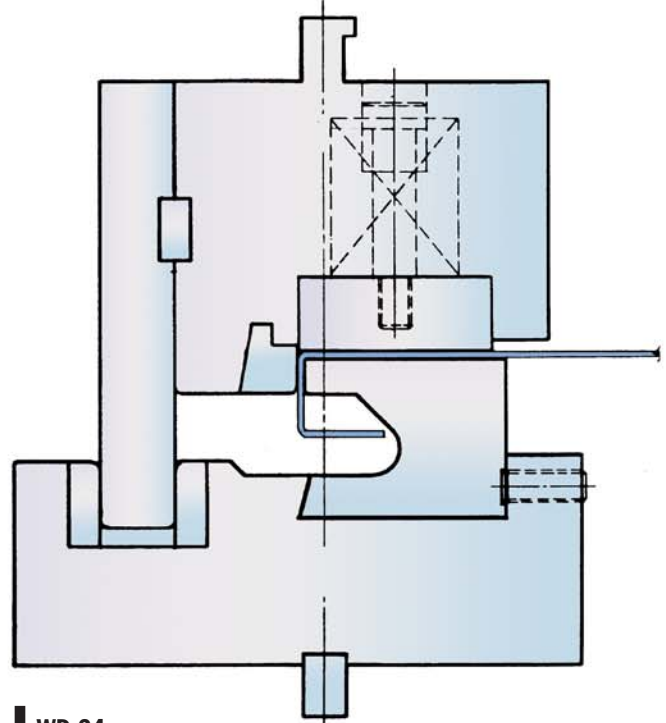
WD-01



WD-02



WD-23

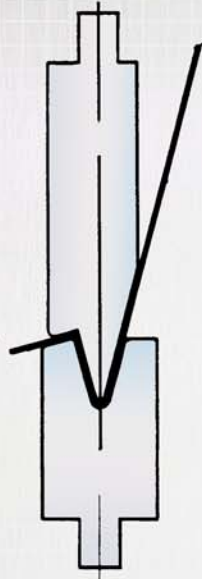


WD-24

STANDING SEAM & HEMMING DIES

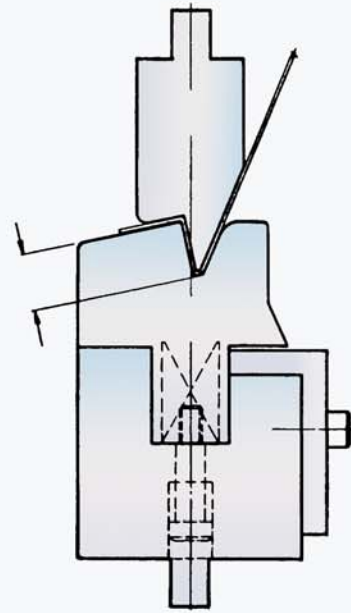
SS-9

Flattening die required to close hem in second operation.



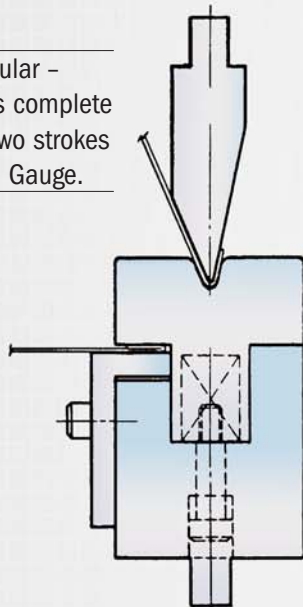
SS-18

Common standing seam in two operations.



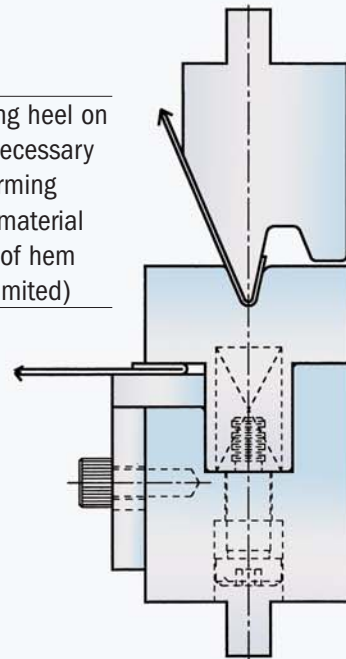
HM-01

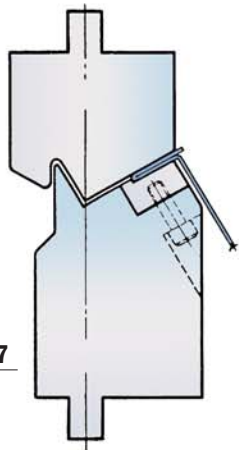
Very popular - produces complete hem in two strokes up to 16 Gauge.



HM-02

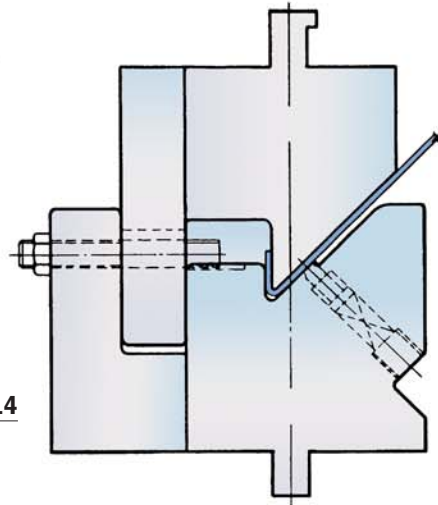
Stabilizing heel on punch necessary when forming heavier material (Length of hem will be limited)



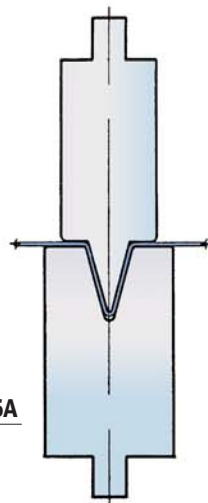


SET SS-27

These sets form an open hem in one handling (2 strokes). These types of die sets are suitable for 14 Gauge mild steel or less.

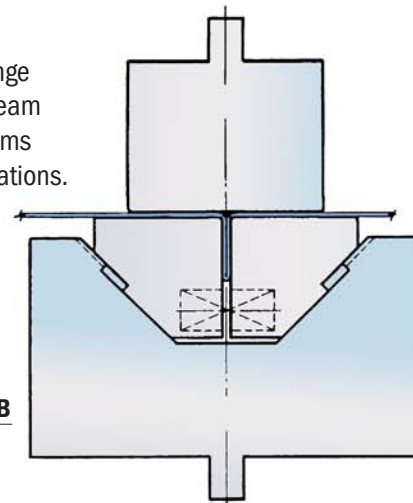


SET HM-14



SET SS-45A

Double Flange Standing Seam Die sets forms in two operations.

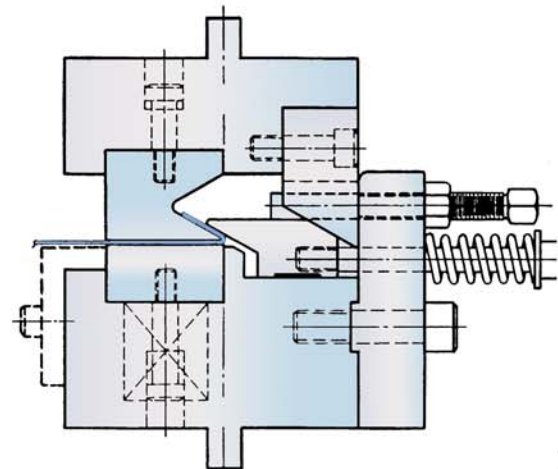


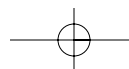
SET SS-45B



SET HM-22

For high production in hemming wide sheets with no whip up. Recommended for 20 Gauge or lighter.

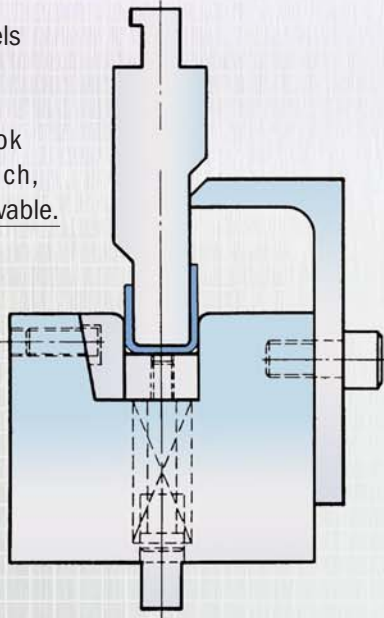




CHANNEL DIES

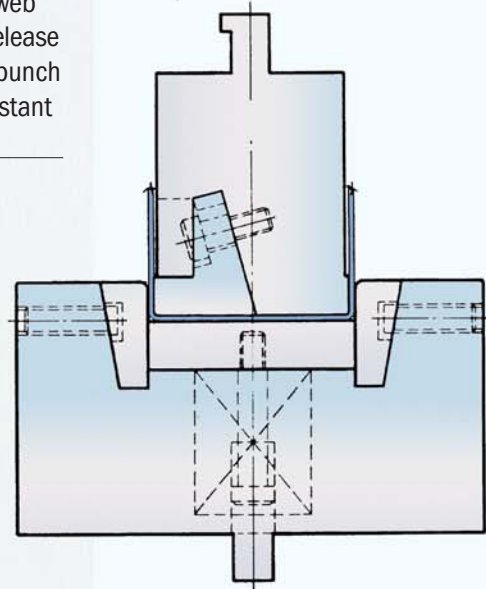
SET CHN-1

Used to form flat bottomed channels in one stroke. Release wedge on die, and hook stripper on punch, makes part removable.



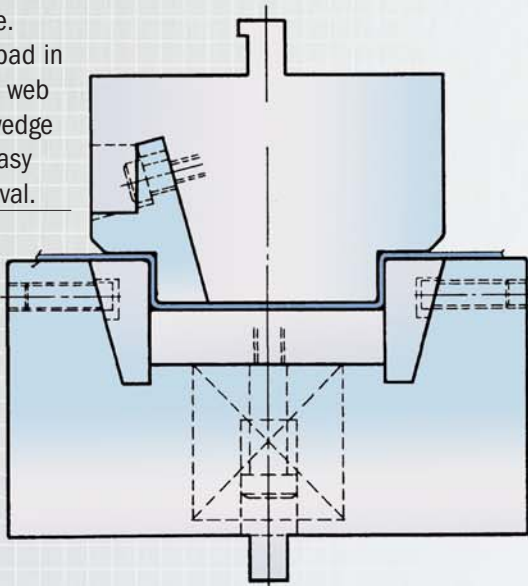
SET CHN-2

Recommended for channels with a web over 3/4" wide. Release wedges on both punch and die insure instant removal of part.



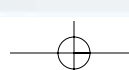
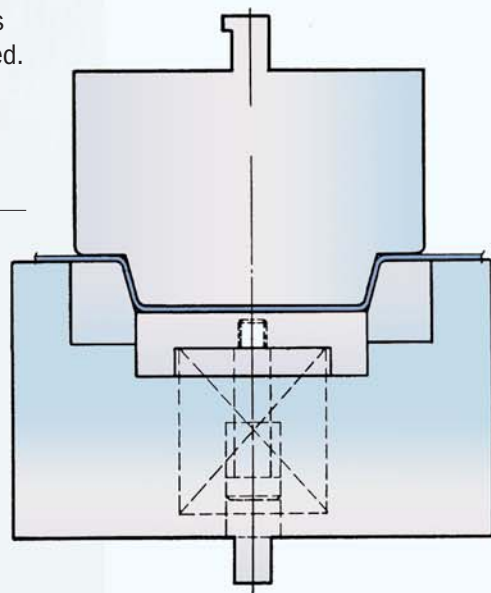
SET HCD-3

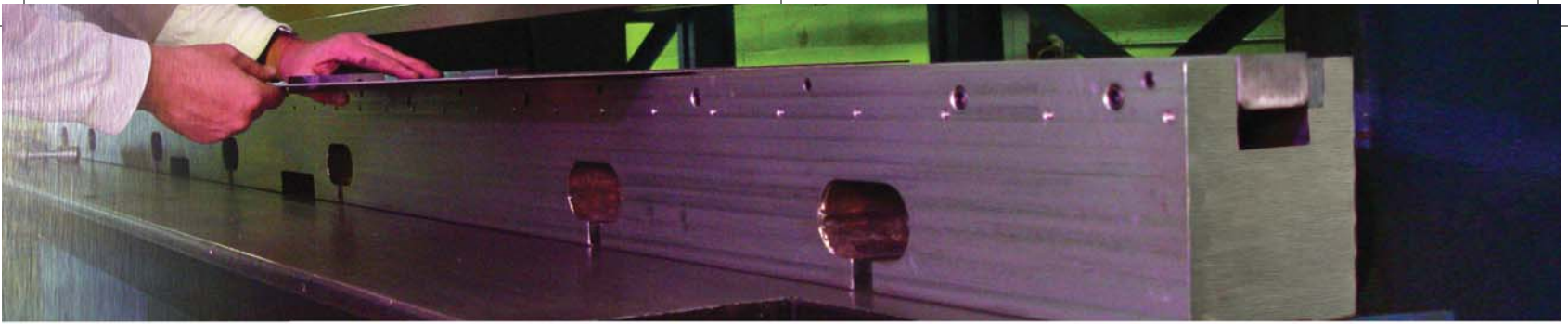
Forms four right angle bends in one stroke. Pressure pad in die keeps web flat and wedge permits easy part removal.



SET HCD-4

By tapering sides of a hat channel, press tonnage is greatly decreased. Pressure pad assures flatness of web and ejection of part.

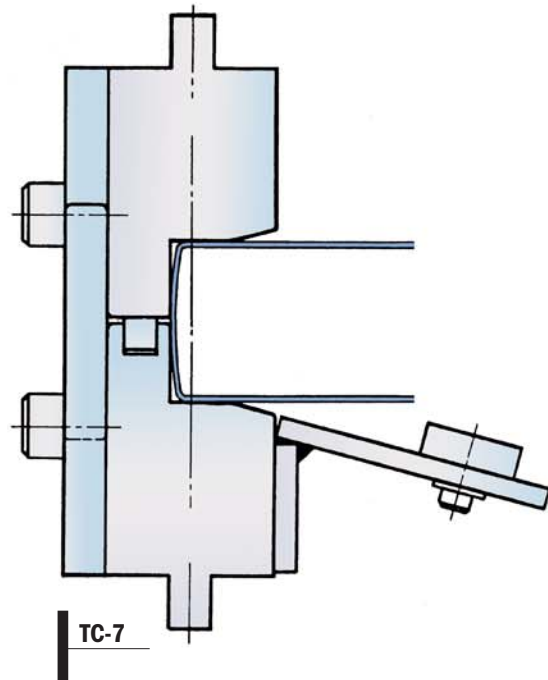
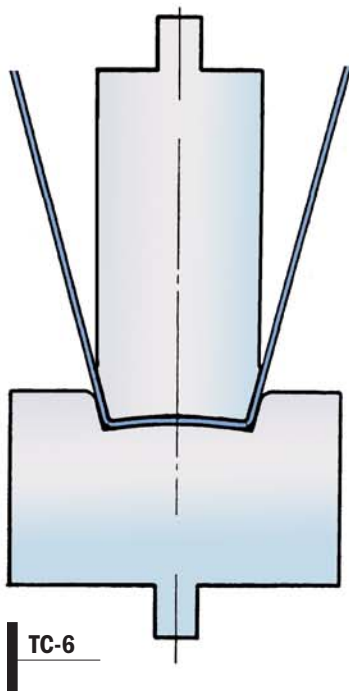
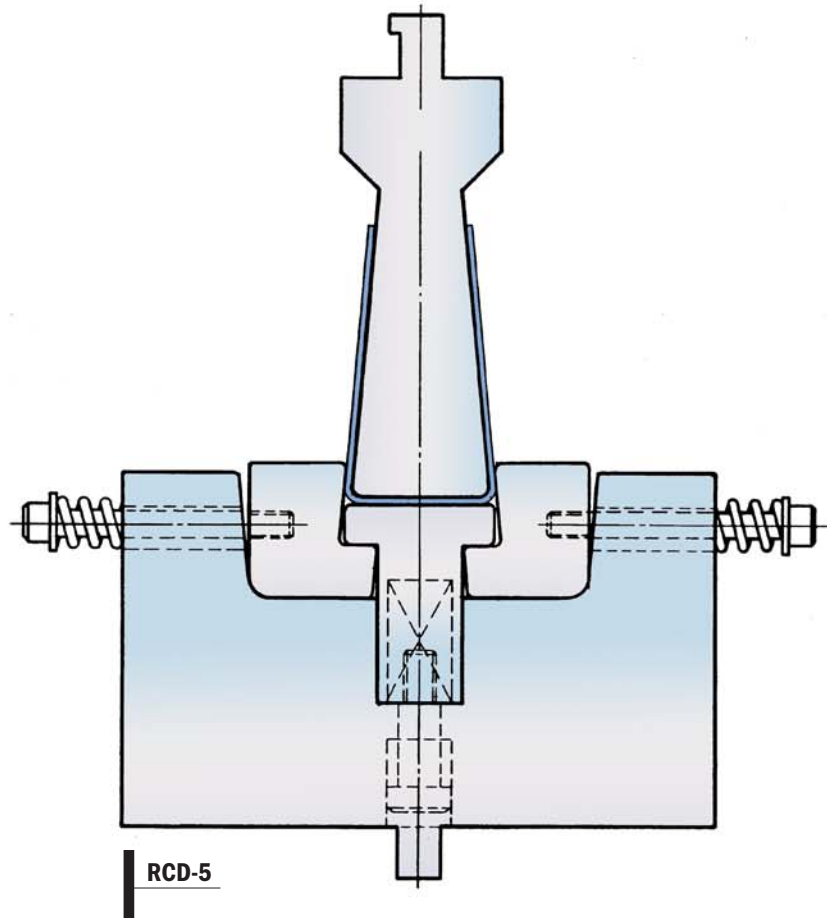




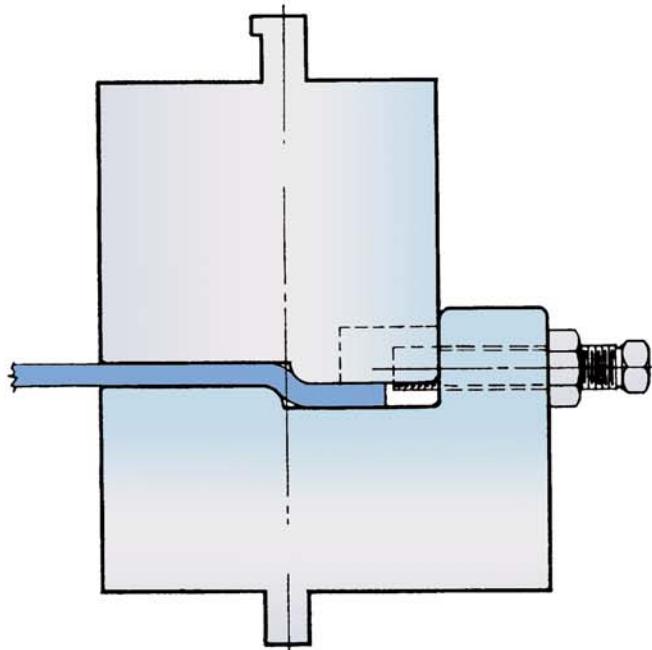
CHANNEL DIES

At times when material has a high memory value or when an excessive inside radii is required, Set RCD-5 is recommended.

Making rectangular tubes, sets TC-6 and TC-7 are suggested in combination.

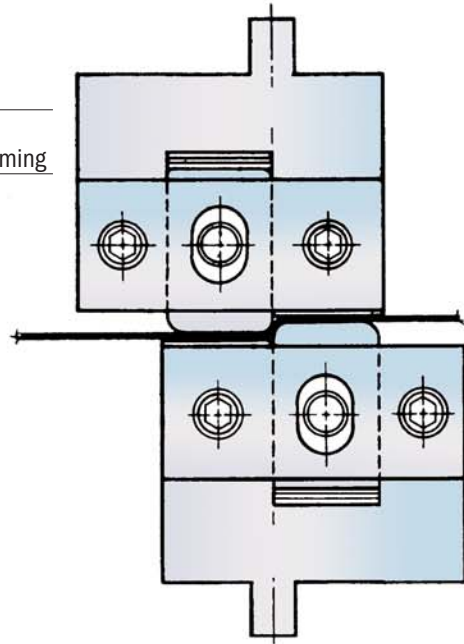


OFFSET & JOGGLE DIES

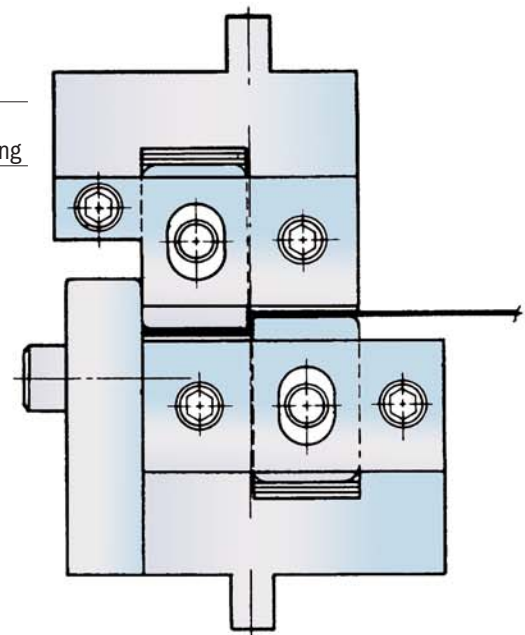


SET JGL-1
For material
thickness offsets

SET JGL-2
Adjustable to
5/16" by shimming

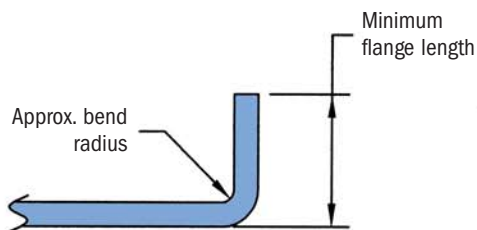
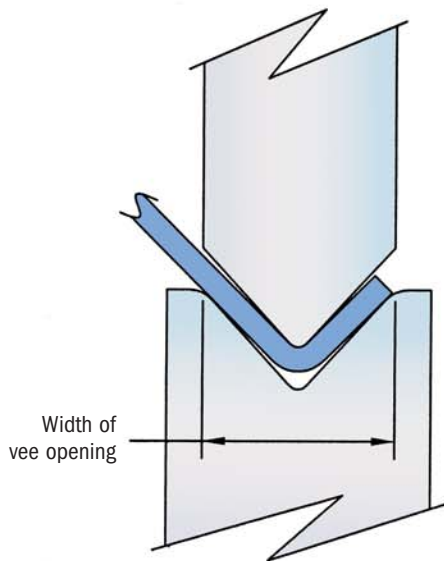


SET JGL-3
Adjustable to
5/16" by shimming



USEFUL FORMING INFORMATION

The chart gives you the minimum flange length for each vee opening, and the approx. bend radius when air bending over a particular vee opening.



Vee Opening	Minimum Flange	Approx. Bend Radius
.156	.125	.024
.25	.188	.039
.375	.281	.058
.500	.344	.078
.625	.437	.097
.75	.562	.117
.875	.656	.136
1.00	.687	.156
1.125	.812	.175
1.25	.875	.195
1.500	1.125	.234
2.00	1.375	.312
2.500	1.750	.390
3.00	2.188	.468
4.00	2.687	.625
5.00	3.500	.780
6.00	4.500	.936
8.00	5.500	1.25
10.00	6.875	1.56

See chart on following page for tonnage calculations

TONNAGE CHART

WIDTH OF FEMALE VEE DIE OPENING

Approximate tons per lineal foot of forming based on Air Bending 90° bend in mild steel.















MATERIAL THICKNESS		1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1-1/8	1-1/4	1-1/2	2	2-1/2	3	3-1/2	4	5	6	7	8	10	12	14	15	20	24	30
Gauge	Dec.	2.5	3.5	6.0	5.3	3.7	2.8	2.2	1.7																				
20	.0360	1.1	1.2																										
18	.0478	2.1	1.7	1.3																									
16	.0598	5.3	3.7	2.8	5.5	4.6	3.5	3.0	2.5	2.1																			
14	.0747																												
13	.0897						6.4	5.5	4.3	3.6	3.2	2.8																	
12	.1046						9.2	6.9	6.0	5.0	4.3	3.9	3.1																
11	.1196							10.1	8.0	7.0	6.1	5.3	4.3	2.9															
10	.1345								10.3	8.7	7.8	6.9	5.7	3.9															
9	.1495									11.9	9.8	8.8	7.0	5.0	3.7														
3/16	.1870									21.5	16.9	13.9	11.2	8.3	6.7	4.9													
1/4	.2500											27.5	22.1	15.0	11.6	9.6	7.9	6.7											
5/16	.3120												39.2	26.5	19.3	15.0	12.5	10.4	7.7										
3/8	.3750													42.7	31.2	23.8	19.5	16.3	12.4	9.6									
7/16	.4380														45.5	35.2	28.5	24.4	17.4	15.0	11.5								
1/2	.5000															48.5	39.5	33.2	24.6	19.5	16.1	13.4							
5/8	.6250																57.9	42.8	33.1	27.3	23.3	17.0							
3/4	.7500																	68.7	53.5	43.6	36.5	27.1	21.0						
7/8	.8750																		81	64	53	39.5	31.4						
1	1.000																				91	76	56	44					
1-1/4	1.250																					98	76	62	51	38			
1-1/2	1.500																						118.5	97.5	81	60	47		
1-3/4	1.750																							144	119	88	69	51	
2	2.000																								165	122	97	71	
2-1/2	2.500																										215	169	125
3	3.000																											266	197

When using material over 1/2", it is usual practice to have die opening 10 times the metal thickness.

The shaded figures represent ideal conditions for right angle bending: punch with radius equal to metal thickness and die opening, approximately eight times the metal thickness. Resulting bend has inside radius approximately equal to metal thickness. Bending pressure required for other metals as compared to 60,000 P.S.I. tensile mild steel on chart.

Soft Brass	50% of pressure listed
Soft Aluminum	50% of pressure listed
Aluminum Alloy (heat treated)	Same as steel
Stainless Steel	50% more than steel
Chrome Molybdenum	100% more than steel

PRESS BRAKE - MULTIPLE BEND ALLOWANCES RULE OF THUMB

Shape	Description	Air Form	Bottoming
	Vee Die	60	150
	Wiping	-	250
	Offset	150	300/600
	Mat'l. Thk. Offset	300	600
	Channel	225	300
	Vee Rib	200	600
	W Die	300	600
	Open Hat Channel	300	450
	Square Hat Channel	-	600
	Preform Curl	-	300
	Preform Curl	-	200
	Close Curl	-	300
	Radius	-	180/300
	Hem	150	420
Shape Considerations		Large Radii Angle Variation Concave or Convex Sides	Mat'l. Thick Radii Min. Angle Variation Maintain Flatness

NOTES

Formula for making multiple bends on press brake. Shape as shown in mild steel with radii equal the metal thickness unless otherwise noted.

Multiply metal thickness by factor = tons per foot

Stainless Steel

(18-8 annealed) Type 304 1.55

Aluminum

3303-H14 (1/2 hard) .35

5052-H34 (1/2 hard) .65

6061-T6 .75

Brass

70/30 (1/2 hard) 1.10

Safety Warning

It is the responsibility of the owner 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 point of operation protection is effective.

We do everything possible to supply dies to produce material that fits specifications. However, there is no possible way we can control how the dies are actually used.

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

Safety requirements are outlined by the American National Standards Institute Bulletin A.N.S.I. #B-11-3, as well as other local, state and federal standards which may apply.

For further safety information and a copy of A.N.S.I. #B-11-3 write to:

American National Standards Institute, Inc.
1430 Broadway
New York, NY 10018.

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