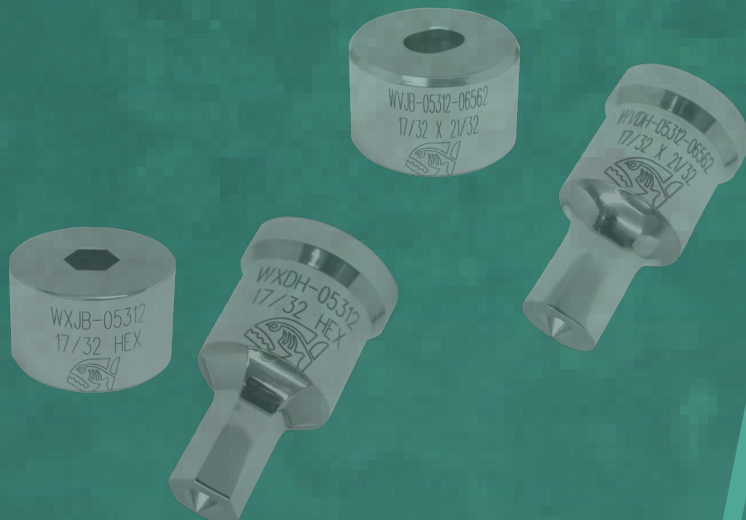
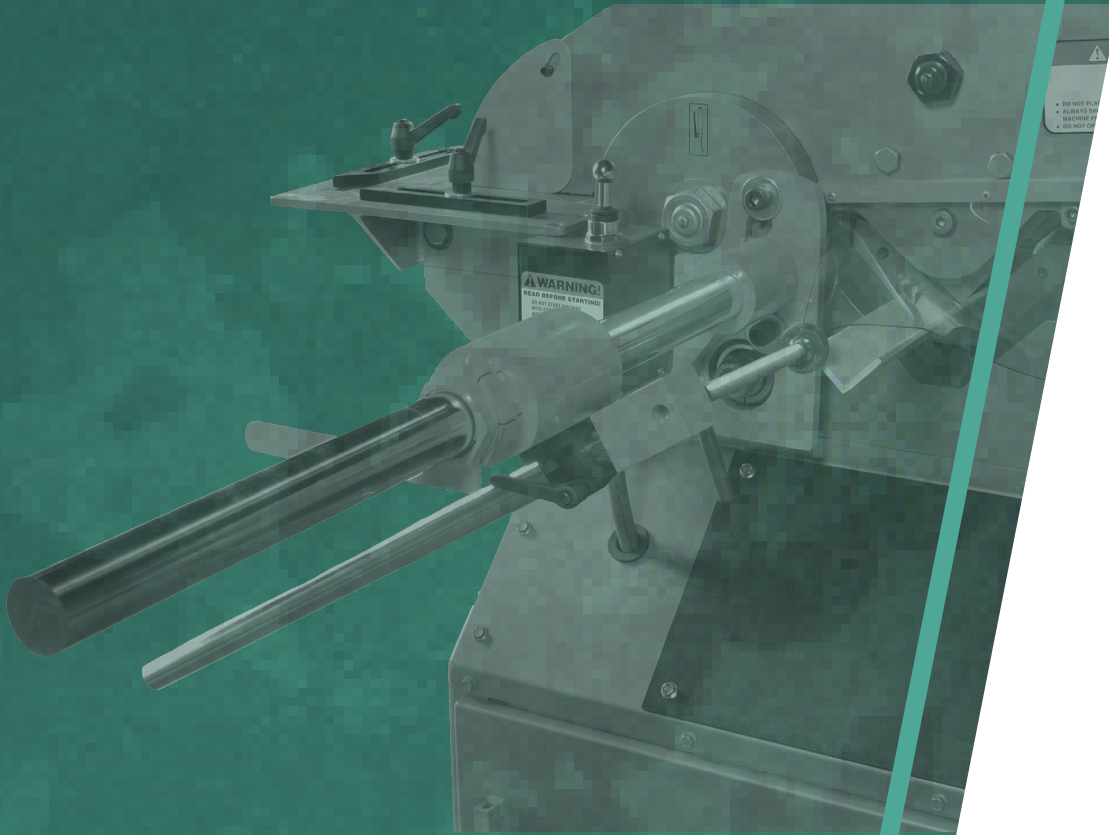
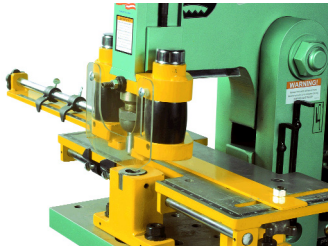


PIRANHA IRONWORKER

ATTACHMENTS AND TOOLING



OPTIONAL TOOLING TO ENHANCE YOUR PIRANHA'S VERSATILITY



QUICKSET TABLE ATTACHMENT

- ▲ Unit includes plate and angle-gauging guide bar.
- ▲ Chrome-plated guide bar rods are made from 3/4" 1050 round bar, induction-hardened to RC 63-65.
- ▲ Gauging table mounts on machine platen table without removing punch attachment or die block.
- ▲ Table and guide bar have measuring rules.
- ▲ Table has recessed scale.
- ▲ All models include two left-hand stops on the table and three stops on the guide bar.
- ▲ Table extensions are available in 5' and 10' lengths for the left or right sides.

* See specifications for number of plate guide bar stops. Additional stops can be ordered.

*Not for use with oversize die blocks.

MODEL	A	B	C	D	PLATE GUIDE BAR # FLIP STOPS
P50*	24"	3"	12"	6"	3
P65	24"	6"	12"	6"	3
P90**	36"	8"	18"	5-3/4"	4
P110	36"	10"	18"	6"	4
P140	36"	10"	18"	9"	4
PII88	36"	7"	18"	5-1/2"	4
PII140	48"	18"	18"	9"	6
SEP-120	48"	18"	18"	9"	6

* Above Serial number 13,001 on P-50

** Above Serial number 3,001 on P-90

A - Minimum 1-1/2"

B - Minimum 1/2"

From either end
of the material

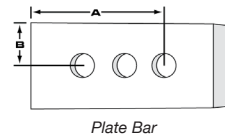
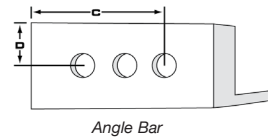


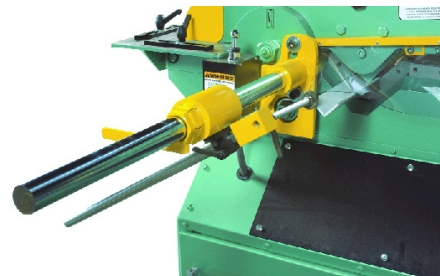
Plate Bar



Angle Bar

MANUAL BACKGAUGE

- ▲ Bolts on with no machining required.
- ▲ Easy access of sheared material.
- ▲ Backgauge material stop allows for fine length adjustment.
- ▲ Backgauge carriage utilizes a compression sleeve for positive locking and no marring of the gauge bar.
- ▲ Chromed, 2" diameter, solid gauge bar allows easy gauge adjustment, provides rigidity and resists corrosion.
- ▲ Accommodates angle, plate and round bar shear sections.



AUTO CYCLE BACKGAUGE

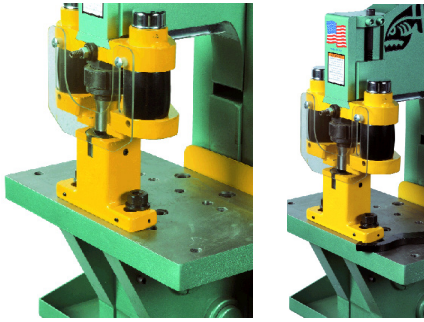
- ▲ Incorporates all features of the mechanical backgauge.
- ▲ May be purchased with new machine or as an option for field installation on existing machines.*
- ▲ Utilizes existing limit switches for stroke control.
- ▲ Dedicated power switch and run light standard.

* Field installation requires minor modifications to electrical components.



SPECIFICATIONS

- ▲ Backgauge lengths are available in 3-, 6-, 9- and 12-foot lengths.
- ▲ 9- and 12-foot lengths include leg support.

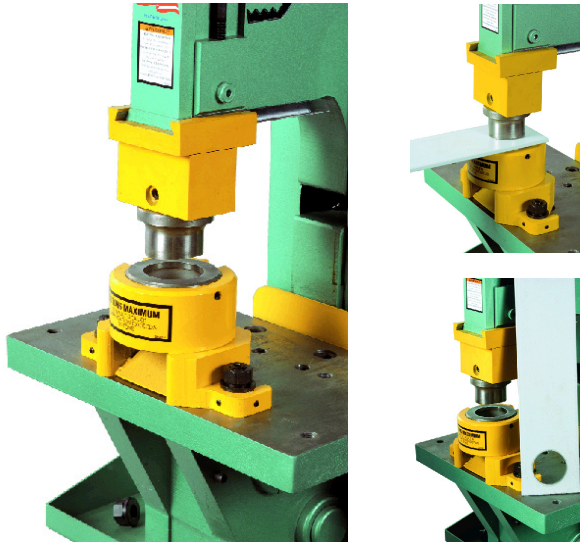


1-9/16" OVERSIZE PUNCH ATTACHMENT

- ▲ Mounts in place of standard punch holder and die block.
- ▲ Use same stripper action as standard punch attachment.

SPECIFICATIONS

- ▲ Use figure EF punches and figure JF dies.
- ▲ Allows punching up to a 1-9/16" hole within the capacity limits of the machine.
- ▲ Available for P50 and P65.



OVERSIZE PUNCH ATTACHMENT

- ▲ Mounts in place of the standard punch holder and die block.
- ▲ Punch holder can accommodate all standard 28XX punches. The size is limited to the capacity of the machine.

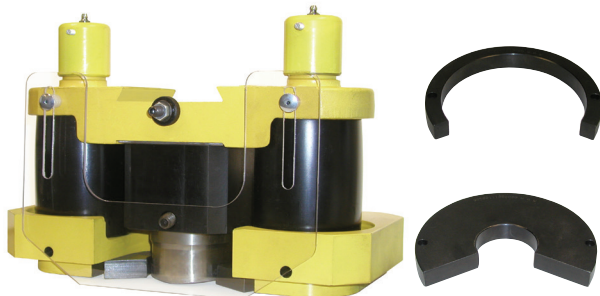
SPECIFICATIONS

Four die blocks are available for most models:

MAXIMUM PUNCH DIAMETER	DIE OUTSIDE DIAMETER
2"	2-3/4"
3"	3-3/4"
4"	4-3/4"
5"	5-3/4"

Notes: A material stripper is NOT furnished with these attachments.

Standard 28XX tooling is for 50-ton and lighter applications. For applications greater than 50 tons, a heavy-duty punch is required. Contact factory for information.

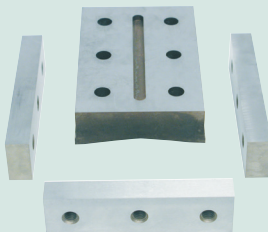


P65, P90, P110, P140 28XX OVERSIZED HEAVY DUTY STRIPPING ATTACHMENT

Max. punch diameter on P50 is 3".
Max. punch diameter on P90, P110, P140 is 5".

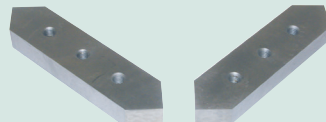
GENUINE PIRANHA PARTS

UPPER COPER

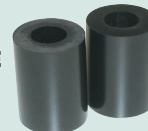


LOWER COPER SIDE

LOWER COPER END



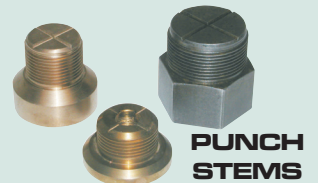
URETHANE STRIPPERS



LOWER ANGLE BLADE



COUPLING NUT



PUNCH STEMS

FILTER ELEMENT



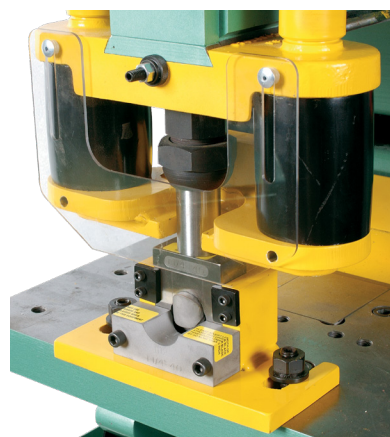
PIPE/TUBE NOTCHING ATTACHMENT

- ▲ Mounts easily to platen.
- ▲ Spring-loaded return.
- ▲ Standard base die accommodates several die sizes.
- ▲ Perfect for hand-rail fabrication.

SPECIFICATIONS

- ▲ Pipe: 3/4" through 2" diameter for schedule 40 wall thickness.
- ▲ For larger sizes, tubing and other schedules of pipe, please contact the factory for information.

Notes: A striker (mounted in the standard punch attachment) will be required to actuate this attachment. Contact the factory for any special notching applications.

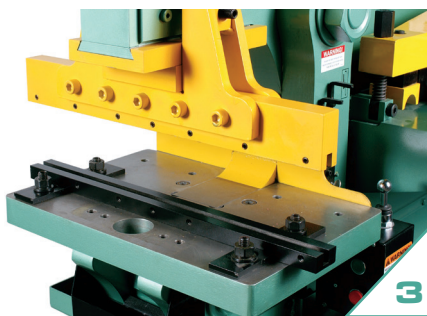


BENDING ATTACHMENTS

- ▲ Designed to increase productivity on punch end of machine.
- ▲ Use dovetail mounting system for quick and easy installation.

SPECIFICATIONS

- 8", 12", 14" versions are all mounted parallel to the beam allowing unlimited throat depth and also include a 4-way bending die (the P90, P110, and P140 models have 7/8", 1-1/2", 2" and 3" V openings - for bending up to 3/8" plate and P65 has 7/8", 1-1/8", 1-1/2" and 2" V openings - for bending up to 1/4" plate).
- 24" version mounts perpendicular to the beam and includes a 4-way bending die with openings of 7/8", 1-1/8", 1-1/2" and 2" for bending up to 1/4" plate.
- 24" Press brake tooling holders available for some models and allow use of standard American tang press brake tooling (Tang 1/2" wide by 5/8" tall) - (tooling available separately from press brake tooling vendors).
- P50 model has available bolt-on 6" bending attachment (runs parallel) and 12" bending attachment (runs perpendicular).
- PII88 and PI140 models have available 18", 24", 36" and 48" for bending up to 1/4" plate (these all run perpendicular).



CHANNEL PUNCH DIE BLOCK

- Each model uses standard punch holder and material stripper.
- Channel die block mounts in place of the standard die block.

SPECIFICATIONS

- Channel die block uses figure JB dies.
- Die is flush with front of channel die block.
- Standard channel die block is designed to punch a hole in the leg of a 3" through 6" standard weight channel.
- 50-ton punching capacity for all models.

Note: The machine stroke control must be used with this option.



CHANNEL SHEAR

- Channel shear bolts to worktable and attaches to dovetail slide or punch ram in place of standard punch holder.
- This channel shear is a sectional shear for standard weight channel, and removes a 1/2" slug during cut. Slug must be removed after each cut on all models.
- Adjustment for channel size is accomplished by using a pinned block and adjustment knob. Material is secured by quick release locking handle.

Note: The machine stroke control must be used with this option.



CHANNEL SHEAR IN ANGLE SECTION

- Channel Shear kits contain size specific channel shear blades and a hold down block.
- These replace the standard angle knives and angle block and allow you to shear channel without slug loss in the angle section of the machine.
- Available for the P65 for these sizes of channel :
 - C3 x 4.1#
 - C4 x 5.4#
- Available for the P110 or P140 for these sizes of channel :
 - C4 x 5.4#
 - C5 x 6.7#
 - C6 x 8.2#



ROLLER FEED TABLES

- Roller feed tables accommodate the bar, plate and angle shearing sections of the machine, making material feeding fast and easy.
- Roller feed table assemblies are available in 5' increments and are adjustable to allow for variances in floor height and machine type.
- Can be bolted together to make up longer lengths.

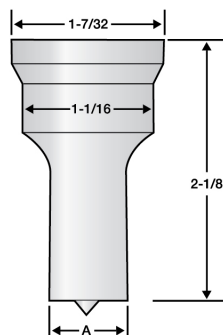
Please note that the roller feed table can be positioned away from the machine for better work space accessibility.



PIRANHA STANDARD PUNCHES & DIES

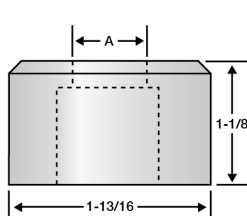
DIMENSIONS & SPECIFICATIONS

STANDARD FOR P50 and P65



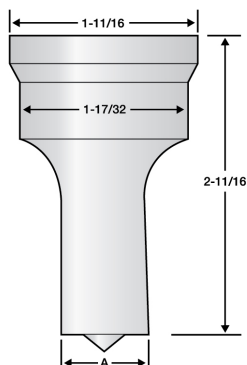
No. DH
"A" 1/8 to 1-1/8 Dia.

Existing P-36 and P-50 machines will require a larger coupling nut to accept 1-1/16" to 1-1/8" diameter tooling.

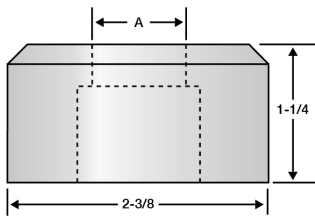


No. JB
"A" 9/64 to 1-3/16 Dia.

STANDARD FOR P90, P110, P140 & P1188, P1140

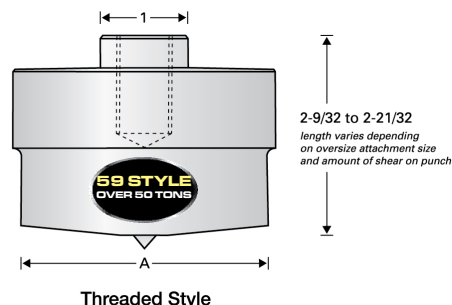


No. EF
"A" 1/8 to 1-9/16 Dia.

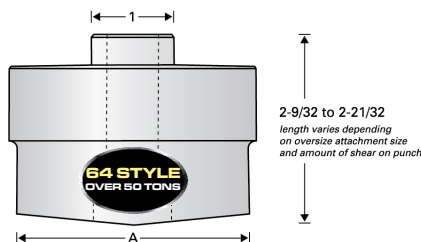


No. JF
"A" 7/32 to 1-5/8 Dia.

HEAVY DUTY PUNCHES



Threaded Style



Bolt On Style
(Minimum size = 1.970 dia. or min. width of shape)



PIRANHA PUNCH LUBE

Piranha Punch Lube is an extreme pressure, heavy-duty lubricant for metal bending, shaping, and punching. It effectively prevents scoring and galling problems by reducing the heat produced from the punching and stripping process.



Piranha Tool School Tip
Attachments are available
for optional punch sizes.

GENUINE PIRANHA PARTS & TOOLING

Get the most from your Piranha Ironworker by using genuine Piranha Ironworker tooling and replacement parts. All tooling available in inch and metric.

Place your order today. Call 800.338.5471 or email tooling@piranhafab.com.

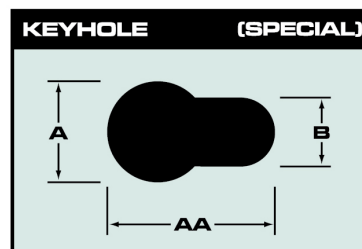
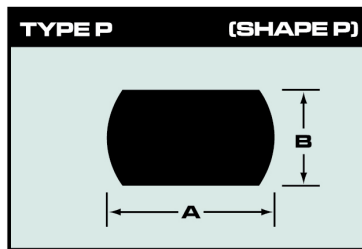
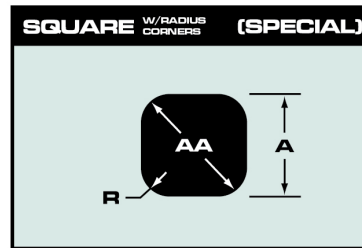
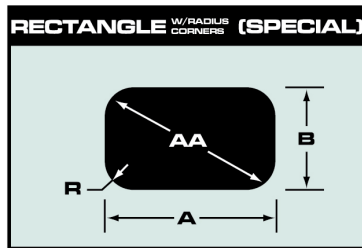
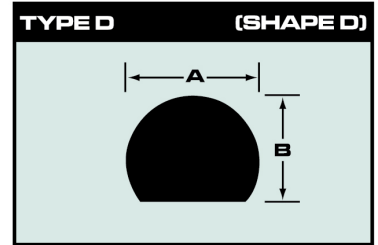
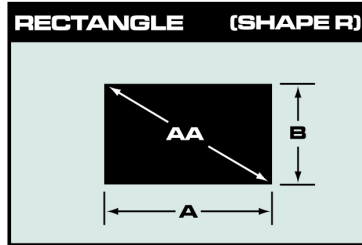
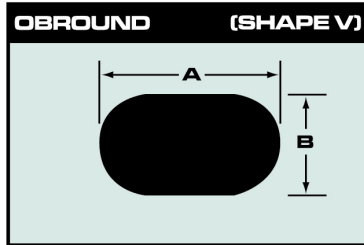
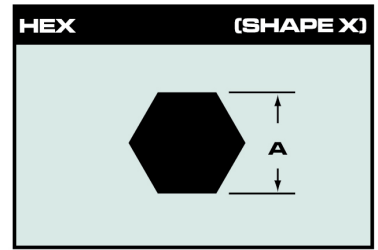
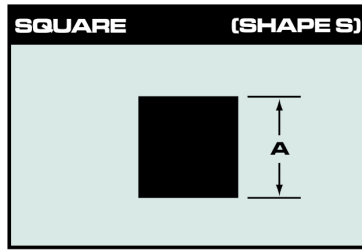
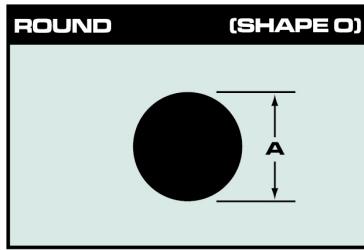
For fastest order processing, have your Piranha model, serial number, material thickness and hole size(s) ready.

Convenient payment via Visa, Mastercard and American Express.

POLICIES

Returns — Prior to returning goods, approval must be received from the Tooling Service Department, 800.338.5471. Tools authorized for return are to be shipped pre-paid. Credit will not be allowed on damaged or used tooling.

Specials — Non-standard punches and dies are non-cancellable and non-returnable.



All punches in this catalog can be made in any shape.

Shown above are a few of the most commonly used shapes.

Please call 800.338.5471 or email tooling@piranhafab.com with your inquiries.

PIRANHA ROUND TOOLING



STOCK ROUND PUNCHES

SIZE	DH	EF
1/8	•	
5/32	•	•
3/16	•	•
7/32	•	•
1/4	•	•
9/32	•	•
5/16	•	•
11/32	•	•
3/8	•	•
13/32	•	•
7/16	•	•
15/32	•	•
1/2	•	•
17/32	•	•
9/16	•	•
19/32	•	•
5/8	•	•
21/32	•	•
11/16	•	•
23/32	•	•
3/4	•	•
25/32	•	•
13/16	•	•
27/32	•	•
7/8	•	•
29/32	•	•
15/16	•	•
31/32	•	•
1	•	•
1-1/32	•	•
1-1/16	•	•
1-3/32	•	•
1-1/8	•	•
1-5/32	•	•
1-3/16	•	•
1-7/32	•	•
1-1/4	•	•
1-9/32	•	•
1-5/16	•	•
1-11/32	•	•
1-3/8	•	•
1-13/32	•	•
1-7/16	•	•
1-15/32	•	•
1-1/2	•	•
1-17/32	•	•
1-9/16	•	•

STOCK ROUND DIES

SIZE	JB	JF
5/32	•	
3/16	•	•
7/32	•	•
1/4	•	•
9/32	•	•
5/16	•	•
11/32	•	•
3/8	•	•
13/32	•	•
7/16	•	•
15/32	•	•
1/2	•	•
17/32	•	•
9/16	•	•
19/32	•	•
5/8	•	•
21/32	•	•
11/16	•	•
23/32	•	•
3/4	•	•
25/32	•	•
13/16	•	•
27/32	•	•
7/8	•	•
29/32	•	•
15/16	•	•
31/32	•	•
1	•	•
1-1/32	•	•
1-1/16	•	•
1-3/32	•	•
1-1/8	•	•
1-5/32	•	•
1-3/16	•	•
1-7/32	•	•
1-1/4	•	•
1-9/32	•	•
1-5/16	•	•
1-11/32	•	•
1-3/8	•	•
1-13/32	•	•
1-7/16	•	•
1-15/32	•	•
1-1/2	•	•
1-17/32	•	•
1-9/16	•	•
1-19/32	•	•
1-5/8	•	•

TOOL KITS

8204-93IW0-00900 DH/JB Tool Kit

Includes the following round punches:

1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16

Includes the following round dies:

9/32, 11/32, 13/32, 15/32, 17/32, 5/8, 11/16, 3/4, 13/16, 7/8

8204-94IW0-00900 DH/JB Tool Kit

Includes the following round punches:

1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16

Includes the following round dies:

9/32, 11/32, 13/32, 15/32, 17/32, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8

8204-95IW0-00900 EF/JF Tool Kit

Includes the following round punches:

1/2, 9/16, 5/8, 11/16, 3/4, 13/16, 15/16, 1, 1-1/16, 1-3/16

Includes the following round dies:

9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 1-1/32, 1-3/32, 1-5/32, 1-9/32

CLEARANCE CHART

For A-36 and Mild Steel Plate:

Material Thickness Clearance

16 ga. thru 5/32" 1/64"

3/16" thru 5/16" 1/32"

11/32" thru 1/2" 1/16"

17/32" thru 3/4" 3/32"

WARNING

The user is responsible for set-up and use of the machinery and tooling in accordance with all OSHA laws and ANSI B11.5 standards. Extreme pressures can be generated in metal punching. Approved guards and safety glasses should be used at all times. Operators should be trained on set-up and machine operation and safety procedures should be enforced.

• Same-Day Shipment Sizes

PIRANHA SQUARE & HEXAGON TOOLING



STOCK SQUARE
PUNCHES DIES

SIZE	DH	EF	JB	JF
7/32	•			
1/4	•		•	
9/32	•		•	
5/16	•	•	•	
11/32	•	•	•	•
3/8	•	•	•	•
13/32	•	•	•	•
7/16	•	•	•	•
15/32	•	•	•	•
1/2	•	•	•	•
17/32	•	•	•	•
9/16	•	•	•	•
19/32	•	•	•	•
5/8	•	•	•	•
21/32	•	•	•	•
11/16	•	•	•	•
23/32	•	•	•	•
3/4	•	•	•	•
25/32	•	•	•	•
13/16	•	•	•	•
27/32		•	•	•
7/8		•	•	•
29/32		•		•
15/16		•		•
31/32		•		•
1		•		•
1-1/32		•		•
1-1/16		•		•
1-3/32				•
1-1/8				•

• Same-Day Shipment Sizes



STOCK HEXAGON
PUNCHES DIES

SIZE	DH	EF	JB	JF
11/32	•	•		
3/8	•	•	•	•
13/32	•	•	•	•
7/16	•	•	•	•
15/32	•	•	•	•
1/2	•	•	•	•
17/32	•	•	•	•
9/16	•	•	•	•
19/32	•	•	•	•
5/8	•	•	•	•
21/32	•	•	•	•
11/16	•	•	•	•
23/32	•	•	•	•
3/4	•	•	•	•
25/32	•	•	•	•
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27/32		•	•	•
7/8		•	•	•
29/32		•		•
15/16		•		•
31/32		•		•
1		•		•
1-1/32		•		•
1-1/16		•		•
1-3/32		•		•
1-1/8		•		•
1-5/32		•		•
1-3/16		•		•
1-7/32		•		•
1-1/4		•		•
1-9/32				•
1-5/16				•

• Same-Day Shipment Sizes

Note: Hexagon punch and die sizes are measured from flat to flat.

PIRANHA OBROUND TOOLING

Please note:

Obround punches are stocked without v-groove in the head. V-groove is available upon request.

Obround dies are stocked without locators, but are available upon request.



STOCK OBROUND PUNCHES

SIZE	DH	EF	SIZE	DH	EF
3/16 x 3/4	•		17/32 x 1	•	•
3/16 x 1	•	•	17/32 x 1-1/4		•
7/32 x 7/16	•	•	17/32 x 1-1/2		•
7/32 x 1	•	•	9/16 x 3/4	•	•
1/4 x 1/2	•	•	9/16 x 1	•	•
1/4 x 3/4	•	•	9/16 x 1-1/16	•	•
1/4 x 1	•	•	9/16 x 1-1/8	•	•
9/32 x 9/16	•	•	9/16 x 1-1/4		•
9/32 x 3/4	•	•	9/16 x 1-1/2		•
9/32 x 1	•	•	5/8 x 1	•	•
5/16 x 1/2	•	•	5/8 x 1-1/4		•
5/16 x 5/8	•	•	5/8 x 1-1/2		•
5/16 x 3/4	•	•	11/16 x 1	•	•
5/16 x 1	•	•	11/16 x 1-1/16	•	•
5/16 x 1-1/16	•	•	11/16 x 1-1/8	•	
5/16 x 1-1/4		•	11/16 x 1-1/4		•
5/16 x 1-1/2		•	11/16 x 1-1/2		•
11/32 x 11/16	•	•	3/4 x 1	•	•
11/32 x 1	•	•	3/4 x 1-1/4		•
3/8 x 1/2	•	•	3/4 x 1-1/2		•
3/8 x 3/4	•	•	13/16 x 1	•	•
3/8 x 1	•	•	13/16 x 1-1/16	•	•
3/8 x 1-1/4		•	13/16 x 1-1/8	•	•
3/8 x 1-1/2		•	13/16 x 1-1/4		•
13/32 x 13/16	•	•	13/16 x 1-1/2		•
13/32 x 1	•	•	7/8 x 1-1/4		•
13/32 x 1-1/4		•	7/8 x 1-1/2		•
7/16 x 9/16	•		15/16 x 1-1/16	•	•
7/16 x 3/4	•	•	15/16 x 1-1/8	•	•
7/16 x 7/8	•	•	15/16 x 1-1/4		•
7/16 x 1	•	•	15/16 x 1-1/2		•
7/16 x 1-1/16	•	•	15/16 x 1-9/16		•
7/16 x 1-1/4		•	1 x 1-1/4		•
7/16 x 1-1/2		•	1 x 1-1/2		•
15/32 x 1	•	•	1 x 1-9/16		•
1/2 x 3/4	•	•	1-1/16 x 1-1/4		•
1/2 x 1	•	•	1-1/16 x 1-5/16		•
1/2 x 1-1/16	•	•	1-1/16 x 1-1/2		•
1/2 x 1-1/4		•	1-1/16 x 1-9/16		•
1/2 x 1-1/2		•	1-1/8 x 1-1/2		•

• Same-Day Shipment Sizes

STOCK OBROUND DIES

Size	JB	JF
7/32 x 25/32	•	
7/32 x 1-1/32	•	•
15/64 x 29/64	•	
1/4 x 15/32	•	
1/4 x 1-1/32	•	•
9/32 x 17/32	•	•
9/32 x 25/32	•	•
9/32 x 1-1/32	•	•
5/16 x 19/32	•	•
5/16 x 25/32	•	•
5/16 x 1-1/32	•	•
11/32 x 17/32	•	•
11/32 x 21/32	•	•
11/32 x 25/32	•	•
11/32 x 1-1/32	•	•
11/32 x 1-3/32	•	•
11/32 x 1-9/32		•
11/32 x 1-17/32		•
3/8 x 23/32	•	•
3/8 x 1-1/32	•	•
3/8 x 1-5/16		•
13/32 x 17/32	•	•
13/32 x 25/32	•	•
13/32 x 1-1/32	•	•
13/32 x 1-9/32		•
13/32 x 1-17/32		•
7/16 x 27/32	•	•
7/16 x 1-1/32	•	•
7/16 x 1-9/32		•
7/16 x 1-5/16		•
15/32 x 19/32	•	•
15/32 x 25/32	•	•
15/32 x 29/32	•	•
15/32 x 1-1/32	•	•
15/32 x 1-3/32	•	•
15/32 x 1-9/32		•
15/32 x 1-17/32		•
1/2 x 1-1/32	•	•
1/2 x 1-1/16	•	•
1/2 x 1-5/16		•
17/32 x 25/32	•	•
17/32 x 1-1/32	•	•
17/32 x 1-3/32	•	

Size	JB	JF
17/32 x 1-9/32		•
17/32 x 1-17/32		•
9/16 x 13/16	•	•
9/16 x 1-1/32	•	•
9/16 x 1-1/16	•	•
9/16 x 1-1/8	•	•
9/16 x 1-3/16	•	•
9/16 x 1-9/32		•
9/16 x 1-5/16		•
9/16 x 1-17/32		•
9/16 x 1-9/16		•
19/32 x 25/32	•	•
19/32 x 1-1/32	•	•
19/32 x 1-3/32	•	•
19/32 x 1-5/32	•	•
19/32 x 1-9/32		•
19/32 x 1-17/32		•
5/8 x 13/16	•	•
5/8 x 1-1/16	•	•
5/8 x 1-1/8	•	•
5/8 x 1-3/16	•	•
5/8 x 1-5/16		•
5/8 x 1-9/16		•
21/32 x 1-1/32	•	•
21/32 x 1-9/32		•
21/32 x 1-17/32		•
11/16 x 1-1/16	•	•
11/16 x 1-5/16		•
11/16 x 1-9/16		•
23/32 x 1-1/32	•	•
23/32 x 1-3/32	•	•
23/32 x 1-5/32	•	•
23/32 x 1-9/32		•
23/32 x 1-17/32		•
3/4 x 1-1/16	•	•
3/4 x 1-1/8	•	•
3/4 x 1-3/16	•	•
3/4 x 1-5/16		•
3/4 x 1-9/16		•
25/32 x 1-1/32	•	•
25/32 x 1-9/32		•
25/32 x 1-17/32		
13/16 x 1-1/16	•	•

Size	JB	JF
13/16 x 1-5/16		•
13/16 x 1-9/16		•
27/32 x 1-1/32	•	•
27/32 x 1-3/32	•	•
27/32 x 1-5/32	•	•
27/32 x 1-9/32		•
27/32 x 1-17/32		•
7/8 x 1-1/16	•	•
7/8 x 1-1/8	•	•
7/8 x 1-3/16	•	•
7/8 x 1-5/16		•
7/8 x 1-9/16		•
29/32 x 1-9/32		•
29/32 x 1-17/32		•
15/16 x 1-5/16		•
15/16 x 1-9/16		•
31/32 x 1-3/32	•	•
31/32 x 1-5/32	•	•
31/32 x 1-9/32		•
31/32 x 1-17/32		•
1 x 1-1/8	•	•
1 x 1-3/16	•	•
1 x 1-5/16		•
1 x 1-9/16		•
1 x 1-5/8		•
1-1/32 x 1-9/32		•
1-1/32 x 1-17/32		•
1-1/32 x 1-19/32		•
1-1/16 x 1-5/16		•
1-1/16 x 1-9/16		•
1-1/16 x 1-5/8		•
1-3/32 x 1-9/32		•
1-3/32 x 1-11/32		•
1-3/32 x 1-17/32		•
1-1/8 x 1-5/16		•
1-1/8 x 1-3/8		•
1-1/8 x 1-9/16		•
1-1/8 x 1-5/8		•
1-5/32 x 1-17/32		•
1-3/16 x 1-9/16		•

• Same-Day Shipment Sizes

PIRANHA ECCENTRIC DIES

STOCK ROUND OFFSET DIES

SIZE	JB	JF
9/32	•	•
5/16	•	•
11/32	•	•
3/8	•	•
13/32	•	•
7/16	•	•
15/32	•	•
1/2	•	•
17/32	•	•
9/16	•	•
19/32	•	•
5/8	•	•
21/32	•	•
11/16	•	•
23/32	•	•
3/4	•	•
25/32	•	•
13/16	•	•
27/32	•	•
7/8	•	•
29/32	•	•
15/16	•	•
31/32	•	•
1	•	•
1-1/32	•	•
1-1/16	•	•
1-3/32	•	•
1-1/8	•	•

• Same-Day
Shipment Sizes

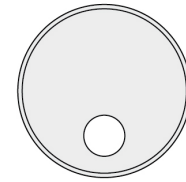
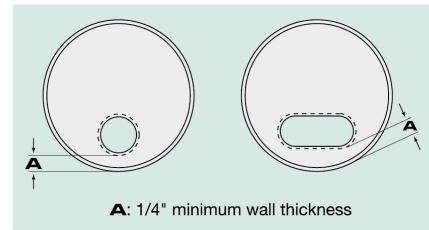
STOCK OBOUND OFFSET DIES

SIZE	JB	JF
13/32 x 25/32	•	•
13/32 x 1-1/32	•	•
15/32 x 25/32	•	•
15/32 x 1-1/32	•	•
17/32 x 1-1/32	•	•
19/32 x 25/32	•	•
19/32 x 1-1/32	•	•
23/32 x 1-1/32	•	•
27/32 x 1-1/32	•	•

Eccentric Dies

Offset dies are made with at least a 1/4" wall thickness.

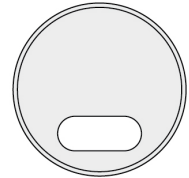
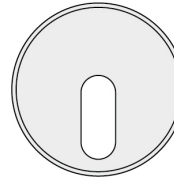
Please specify location of whistle notch if required. Stock dies do not have whistle notch.



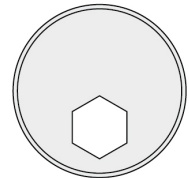
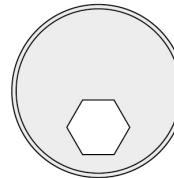
ROUND

POSITION A

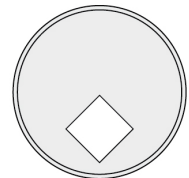
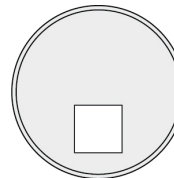
POSITION B



OBOUND



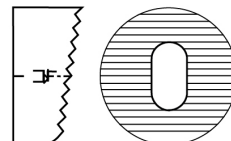
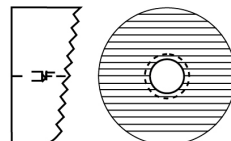
HEXAGON



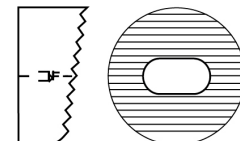
SQUARE

Bevel Serrated Dies

Bevel serrated dies are available upon request. Please specify die style, shape, orientation of shape to bevel and size.



Parallel
to Bevel

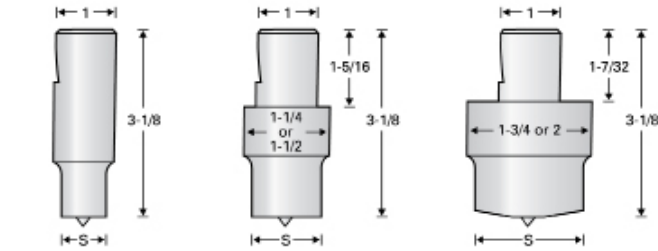


Perpendicular
to Bevel

PIRANHA OVERSIZE TOOLING

DIMENSIONS & SPECIFICATIONS

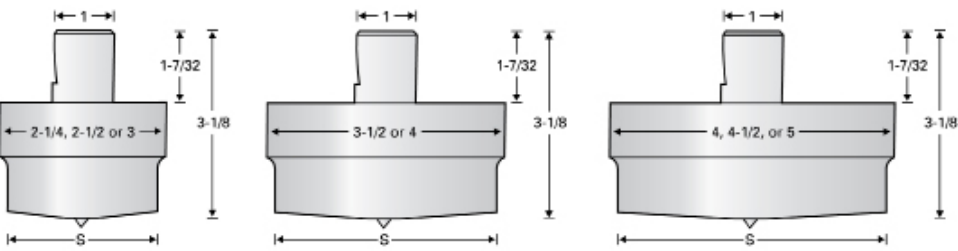
28XX round and shaped punches and dies for Piranha Ironworker oversize attachments.



Sizes .062 to 1.000 Dia.

Sizes 1.001 to 1.453 Dia.

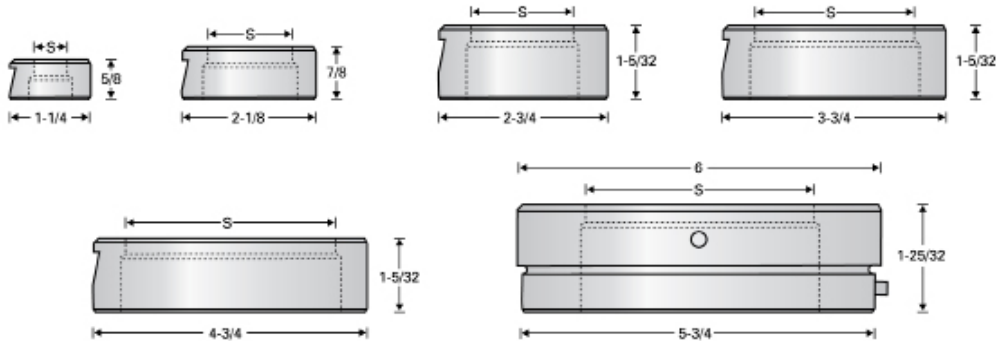
Sizes 1.454 to 1.969 Dia.



Sizes 1.970 to 2.969 Dia.

Sizes 2.970 to 3.969 Dia.

Sizes 3.970 to 5.000 Dia.



28XX oversize punches are available up to 5.000" in diameter.

All round punches through 1.453" diameter (or equivalent size shape) are flat-faced, with a center point on the punch face. Larger punches are standard with 1/8" housetop shear and center point. Other shear types are available at customer request.

Please specify the size of the oversize attachment when ordering.

28XX PUNCHES & DIES—STANDARD SHAPES

ROUND



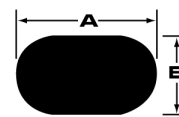
PUNCH (6301-) SIZE "A"	DIE (6302-) SIZE "A"	DIE O.D.
.50 - .172	Thru .209	1-1/4
.173 - .812	.210 - .824	1-1/4
.813 - 1.000	.825 - 1.068	2-1/8
1.001 - 1.453	1.069 - 1.465	2-1/8
1.454 - 2.000	1.466 - 2.012	2-3/4
2.001 - 2.500	2.013 - 2.537	3-3/4
2.501 - 3.000	2.538 - 3.012	3-3/4
3.001 - 3.500	3.013 - 3.537	4-3/4
3.501 - 4.000	3.538 - 4.012	4-3/4
4.001 - 4.500	4.013 - 4.537	5-3/4
4.501 - 5.000	4.538 - 5.012	5-3/4

SQUARE



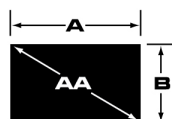
PUNCH (6311-) SIZE "A"	DIE (6312-) SIZE "A"	DIE O.D.
.125 - .500	Thru .512	1-1/4
.501 - .688	.513 - .724	2-1/8
.689 - 1.000	.725 - 1.012	2-1/8
1.001 - 1.406	1.013 - 1.418	2-3/4
1.407 - 1.766	1.419 - 1.778	3-3/4
1.767 - 2.125	1.779 - 2.137	3-3/4
2.126 - 2.469	2.138 - 2.481	4-3/4
2.470 - 2.812	2.482 - 2.824	4-3/4
2.813 - 3.156	2.825 - 3.168	5-3/4
3.157 - 3.500	3.169 - 3.512	5-3/4

OBROUND



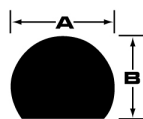
PUNCH (6321-) SIZE "A"	DIE (6322-) SIZE "A"	DIE O.D.
.125 - .812	Thru .824	1-1/4
.813 - 1.000	.825 - 1.068	2-1/8
1.001 - 1.453	1.069 - 1.465	2-1/8
1.454 - 2.000	1.466 - 2.012	2-3/4
2.001 - 2.500	2.013 - 2.537	3-3/4
2.501 - 3.000	2.538 - 3.012	3-3/4
3.001 - 3.500	3.013 - 3.537	4-3/4
3.501 - 4.000	3.538 - 4.012	4-3/4
4.001 - 4.500	4.013 - 4.537	5-3/4
4.501 - 5.000	4.538 - 5.012	5-3/4

RECTANGLE



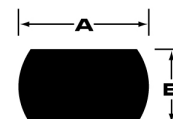
PUNCH (6331-) SIZE "AA"	DIE (6332-) SIZE "AA"	DIE O.D.
.125 - .750	Thru .762	1-1/4
.751 - .999	.763 - 1.068	2-1/8
1.000 - 1.438	1.069 - 1.450	2-1/8
1.439 - 2.000	1.451 - 2.012	2-3/4
2.001 - 2.500	2.013 - 2.537	3-3/4
2.501 - 3.000	2.538 - 3.012	3-3/4
3.001 - 3.500	3.013 - 3.537	4-3/4
3.501 - 4.000	3.538 - 4.012	4-3/4
4.001 - 4.500	4.013 - 4.537	5-3/4
4.501 - 5.000	4.538 - 5.012	5-3/4

TYPE D



PUNCH (6361-) SIZE "A"	DIE (6362-) SIZE "A"	DIE O.D.
.125 - .812	Thru .824	1-1/4
.813 - .999	.825 - 1.068	2-1/8
1.000 - 1.453	1.069 - 1.465	2-1/8
1.454 - 2.000	1.466 - 2.012	2-3/4
2.001 - 2.500	2.013 - 2.537	3-3/4
2.501 - 3.000	2.538 - 3.012	3-3/4

TYPE P



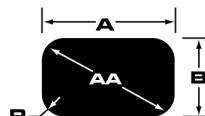
PUNCH (6351-) SIZE "A"	DIE (6352-) SIZE "A"	DIE O.D.
.125 - .812	Thru .824	1-1/4
.813 - .999	.825 - 1.068	2-1/8
1.000 - 1.453	1.069 - 1.465	2-1/8
1.454 - 2.000	1.466 - 2.012	2-3/4
2.001 - 2.500	2.013 - 2.537	3-3/4
2.501 - 3.000	2.538 - 3.012	3-3/4

HEX



PUNCH (6341-) SIZE "A"	DIE (6342-) SIZE "A"	DIE O.D.
.125 - .688	Thru .700	1-1/4
.689 - 1.250	.701 - 1.262	2-1/8
1.251 - 1.719	1.263 - 1.731	2-3/4
1.720 - 2.594	1.732 - 2.606	3-3/4

RECTANGLE W/RADIUS CORNERS



PUNCH (8XXX-) SIZE "AA"	DIE (8XXX-) O.D.
Thru .812	1-1/4
.813 - 1.453	2-1/8
1.454 - 2.000	2-3/4
2.001 - 3.000	3-3/4
3.001 - 4.000	4-3/4
4.001 - 5.000	5-3/4

SQUARE W/RADIUS CORNERS



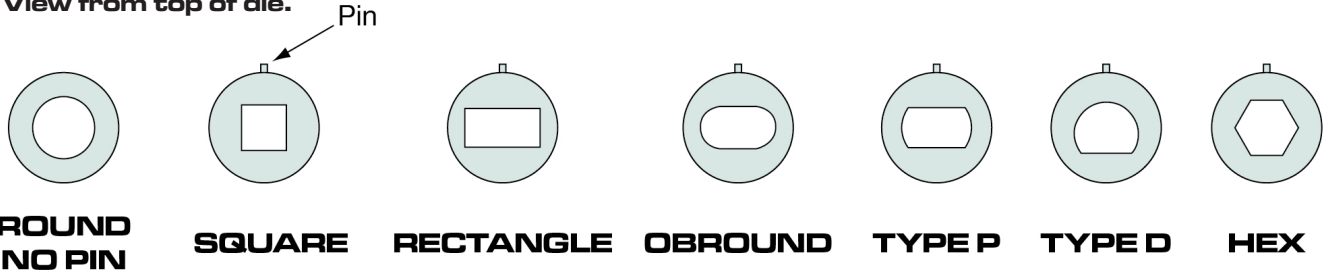
PUNCH (8XXX-) SIZE "AA"	DIE (8XXX-) O.D.
Thru .812	1-1/4
.813 - 1.453	2-1/8
1.454 - 2.000	2-3/4
2.001 - 3.000	3-3/4
3.001 - 4.000	4-3/4
4.001 - 5.000	5-3/4

ORIENTATIONS AND PIN LOCATIONS

All shaped 28XX oversize punches and dies are pinned for 0° and 90° positioning. Pin locations are shown for standard shapes. Other pin locations may be specified, at additional cost, when ordering. Use the three step procedure shown here to determine the proper degree of location for a custom pin location.

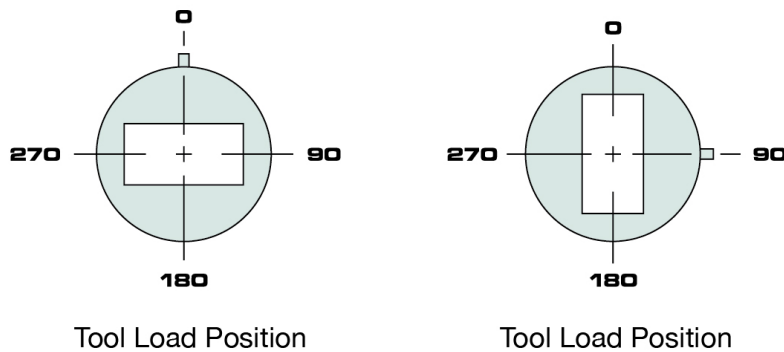
PIN LOCATIONS FOR STANDARD SHAPES

View from top of die.



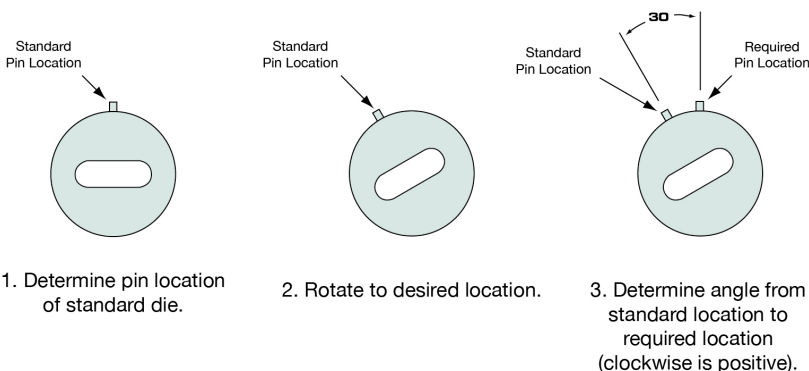
STANDARD SHAPED DIES ORIENTATIONS IN MACHINE

View from top of die.



DETERMINING CUSTOM PIN LOCATION

View from top of die.



CALCULATING PUNCHING FORCE REQUIREMENTS

To determine the punching force needed to punch a single hole with a flat faced punch:

- Calculate the Hole Perimeter using the formulas on page 15.
- Find the Material Shear Strength on the table on page 15.
- Then use the following equation:

Flat Face Punching Force (lbs) = Punch Perimeter (inches) x Material Thickness (inches) x Material Shear Strength (lbs/in²)

To change from pounds of punching force to tons of punching force use the following equation: tons = lbs/2000

Example: To punch a 1/4" square hole in 3/16" stainless steel:
4(1/4") x 3/16" x 70,000 lbs/in² = 13,125 lbs (6.56 tons) of punching force.

Single Hole Punching — When using a press for single round hole punching, refer to the chart above to determine the amount of force required to punch a given hole. This chart is based on punching mild steel—50,000 PSI shear strength using flat face punches only.

Example: To punch a 15/16" diameter hole through 10 gauge mild steel, the required punching force is 9.9 tons.

Note: The required force to punch a hole is reduced when the punch has shear. To find actual punching force needed (for round holes only) find the shear factor and use the following formula:

Actual Punching Force with Shear (lbs or tons) = Flat Face Punching Force (lbs or tons) x Shear Factor

28XX™ oversize punches
up thru 1.453" diameter have no shear;
1.454" thru 5.000" diameter have 1/8" housetop shear.*

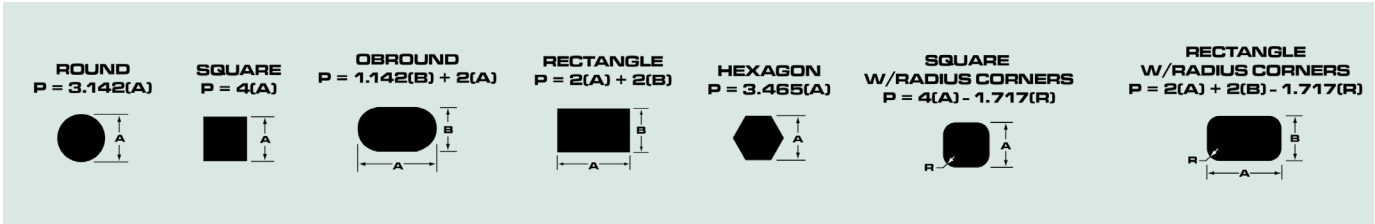
*Other shear sizes and types are available.

THICKNESS	1/8" Shear Factor
.135" (3.4 mm)	.55
.187" (5.0 mm)	.64
.250" (6.0 mm)	.74
.313" (8.0 mm)	.84
.375" (10.0 mm)	.95
.500" (12.0 mm)	1.00
.625" (16.0 mm)	1.00
.750" (18.0 mm)	1.00
.875" (22.0 mm)	1.00
1.00" (25.0 mm)	1.00

PUNCHING FORCE REQUIREMENTS FOR ROUND HOLES IN MILD STEEL (65,000 PSI TENSILE STRENGTH)

HOLE DIA (INCHES)	20 GA 0.0359	18 GA 0.0478	16 GA 0.0598	14 GA 0.0747	12 GA 0.1046	11 GA 0.1196	10 GA 0.1345	3/16 0.1875	1/4 0.2500	5/16 0.3125	3/8 0.3750	1/2 0.5000	5/8 0.6250	3/4 0.7500	7/8 0.8750	1 1.000
1/8	0.35	0.47	0.59	0.73	1.0	1.2										
3/16	0.53	0.70	0.88	1.1	1.5	1.8	2.0	2.8								
1/4	0.70	0.94	1.2	1.5	2.1	2.3	2.6	3.7	4.9							
5/16	0.88	1.2	1.5	1.8	2.6	2.9	3.3	4.6	6.1	7.7						
3/8	1.06	1.4	1.8	2.2	3.1	3.5	4.0	5.5	7.4	9.2	11.0					
7/16	1.23	1.6	2.1	2.6	3.6	4.1	4.6	6.4	8.6	10.7	12.9	17.2				
1/2	1.41	1.9	2.3	2.9	4.1	4.7	5.3	7.4	9.8	12.3	14.7	19.6				
9/16	1.59	2.1	2.6	3.3	4.6	5.3	5.9	8.3	11.0	13.8	16.6	22.1	27.6			
5/8	1.76	2.3	2.9	3.7	5.1	5.0	6.6	9.2	12.3	15.3	18.4	24.5	30.7			
11/16	1.94	2.6	3.2	4.0	5.6	6.5	7.3	10.1	13.5	16.9	20.2	27.0	33.7	40.5		
3/4	2.11	2.8	3.5	4.4	6.2	7.0	7.9	11.0	14.7	18.4	22.1	29.5	36.8	44.2		
13/16	2.29	3.1	3.8	4.8	6.7	7.6	8.6	12.0	16.0	19.9	23.9	31.9	39.9	47.9	55.8	
7/8	2.47	3.3	4.1	5.1	7.2	8.2	9.2	12.9	17.2	21.5	25.8	34.4	43.0	51.5	60.1	68.7
15/16	2.64	3.5	4.4	5.5	7.7	8.8	9.9	13.8	18.4	23.0	27.6	36.8	46.0	55.2	64.4	73.6
1.00	2.82	3.8	4.7	5.9	8.2	9.4	10.6	14.7	19.6	24.5	29.5	39.3	49.1	58.9	68.7	78.5
1.50	4.23	5.6	7.0	8.8	12.3	14.1	15.8	22.1	29.5	36.8	44.2	58.9	73.6	88.4	103	118
2.00	5.64	7.5	9.4	11.7	16.4	18.8	21.1	19.5	39.3	49.1	58.9	78.5	98.2	118	137	157
2.50	7.05	9.4	11.7	14.7	20.5	23.5	26.4	36.8	49.1	61.4	73.6	98.2	123	147	172	196
3.00	8.46	11.3	14.1	17.6	24.6	28.2	31.7	44.2	58.9	73.6	88.4	118	147	177	206	236
3.50	9.87	13.1	16.4	20.5	28.8	32.9	37.0	51.5	68.7	85.9	103	137	172	206	241	275
4.00	11.28	15.0	18.8	23.5	32.9	37.6	42.3	58.9	78.5	98.2	118	157	196	236	275	314
4.50	12.69	16.9	21.1	26.4	37.0	42.3	47.5	66.3	88.4	110	133	177	221	265	309	353
5.00	14.10	18.8	23.5	29.3	41.1	47.0	52.8	73.6	98.2	123	147	196	245	295	344	393

FORMULAS FOR CALCULATING THE PERIMETER OF STANDARD SHAPES



AVERAGE SHEAR STRENGTH OF MATERIALS (POUNDS PER SQUARE INCH)

MATERIAL	SHEAR STRENGTH (PSI)	CHART MULTIPLIER
Steel		
Mild Steel	50,000	1.00
Boiler Plate	55,000	1.10
Cold Drawn	60,000	1.20
40-50 Carbon	74,000	1.48
Structural A-36	60,000	1.20
Structural EX-TEN		
(ASTM-A572) - Grade 42	50,000	1.00
Grade 45	50,000	1.00
Grade 50	55,000	1.10
Grade 55	60,000	1.20
Grade 60	65,000	1.30
Grade 65	70,000	1.40
Structural COR-TEN		
(ASTM-A242)	60,000	1.20
Cold Rolled C-1018	60,000	1.20
Hot Rolled C-1050	125,000	2.50
Hot Rolled C-1095	125,000	2.50
Hot Rolled C-1095 Annealed	90,000	1.80
Stainless 302 Annealed	70,000	1.40
Stainless 304 Cold Rolled	70,000	1.40
Stainless 316 Cold Rolled	70,000	1.40
Steel, Abrasion Resisting	110,000	2.20
ASTM A656 - Grade 80	85,000	1.70

MATERIAL	SHEAR STRENGTH (PSI)	CHART MULTIPLIER
Aluminum		
1100-0	9,500	.19
1100-H14	11,000	.22
3003-H14	14,000	.28
2024-T4	44,000	.88
5005-H18	19,000	.38
6063-T5	18,000	.36
6061-T4	24,000	.48
6061-T6	29,000	.58
7075-T6	54,000	1.08
Brass		
Rolled Sheet (Soft)	42,000	.84
1/2 Hard	56,000	1.12
Hard	68,000	1.36
Copper		
1/4 Hard	29,000	.58
Hard	43,000	.86

Chart Multiplier

For piercing materials with a different shear strength than 50,000 psi it is necessary to use a multiplier for calculating the proper amount of force required to punch the hole.

Example: To pierce a 15/16" diameter hole through 10 gage stainless steel (70,000 psi shear strength) the force required (from the table on page 15) is 9.9 tons. The multiplier is 1.4—therefore, 9.9 tons x 1.4 = 13.9 tons actual force.

These are average values only. Actual shear strength can be higher depending on actual tensile and yield strengths of material batch.

Consult Piranha engineers with any questions.

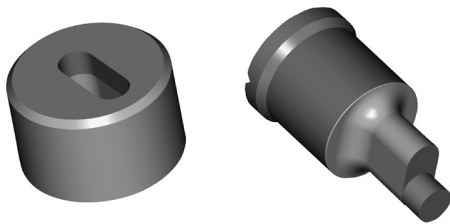
Calculate your own tonnage requirements or call a Piranha Service Representative.

PIRANHA SPECIAL TOOLING

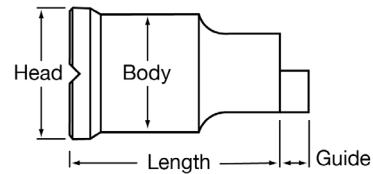
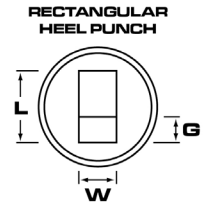
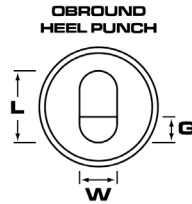
EXPAND YOUR METAL FABRICATING CAPABILITIES

Get greater productivity from your Piranha through the use of special tooling. Our design engineering department has a thorough understanding of your machine's capabilities for special parts fabrication. We can assist you with tooling to precisely fit your Piranha machine and maximize its capabilities.

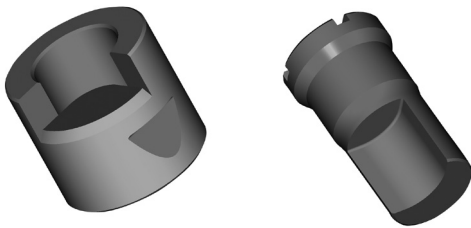
RIPPING AND HEEL PUNCHES



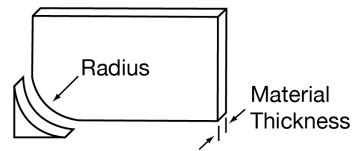
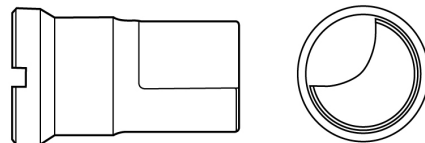
When ordering, please provide shape, material thickness and the dimensions shown. Guide should be 1/8" to 1/4" greater than material thickness.



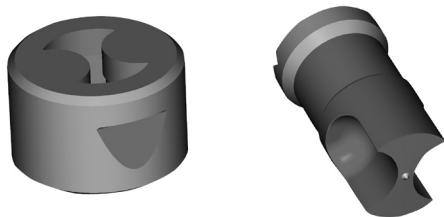
CORNER ROUNDING PUNCH & DIE



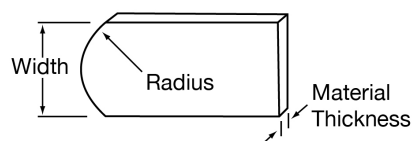
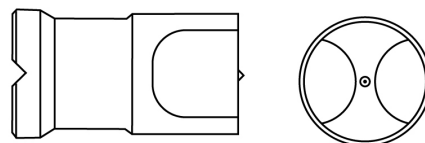
When ordering, please provide corner radius and material thickness. Minimum radius is 1/8". Maximum material thickness is 3/8".



TRIM & PART (LATTICE BAR) PUNCH & DIE

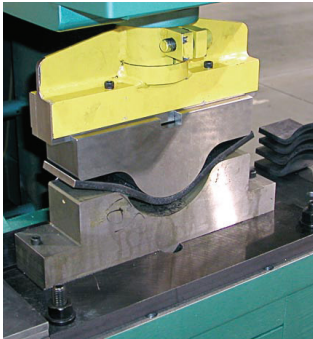


Trim and Part tooling produces end radii on flat bar stock. When ordering please provide radius, material thickness and width. Maximum material thickness is 3/8".

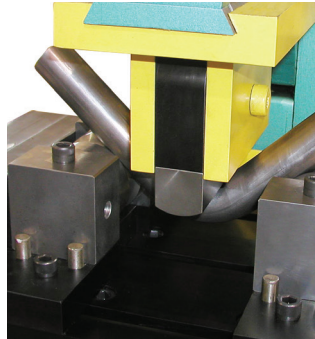


PIRANHA SPECIAL TOOLING

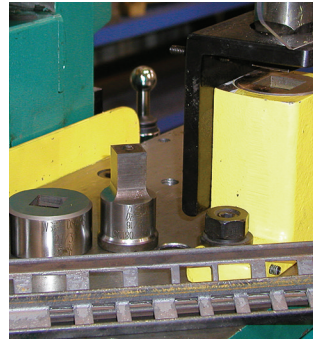
**EXPLORE YOUR METAL FABRICATING POSSIBILITIES
EXTEND YOUR METAL FABRICATING POTENTIAL**



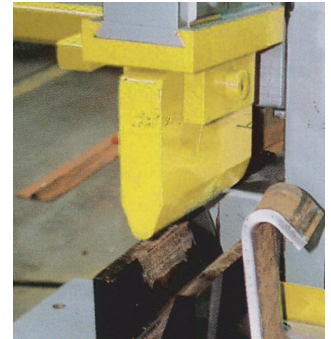
Strap bending



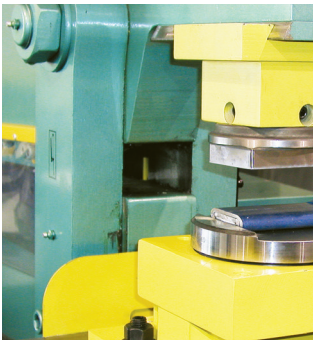
Adjustable bending attachment for solid round bar. Used for non-scuff bending of anchor bolts.



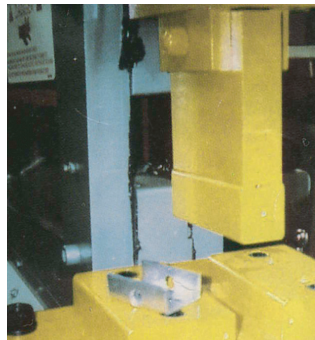
Channel punch



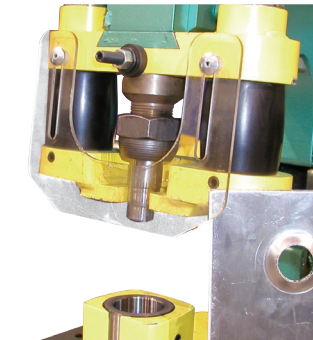
Bending attachment for acute angle bending of flat bar.



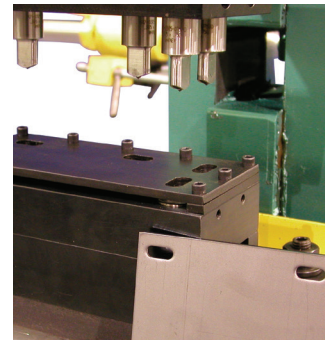
Tube crimper



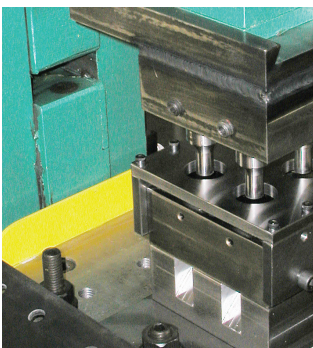
Convertible "U" bracket bending attachment. Capable of bending different "U" widths using the same base.



One-hit tread plate tooling punch and form



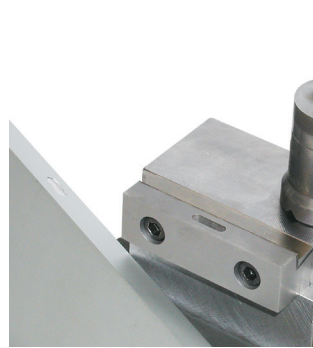
Multiple hole punch. Equal force applied through each punch.



Multiple hole punch



Pickets-flatten end and shear corners in one step.



Aluminum extrusion channel flange punch



Custom shear knives

IRONWORKER

LASER

PRESS BRAKE

PLASMA

SHEAR

COMBINATION

BENDING ROLL

TOOLING

PORTABLE PRESS

ATTACHMENTS



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