

Whitney Series 1000 Fabricators with Panelgage™ 1000M CNC Gauging System

...a process combination for low cost parts!

**Punch materials up to
1/2" (12 mm) rapidly,
repeatedly and economically.**



W.A. Whitney Model 1548
CNC Fabricator

Whitney Series 1000 Fabricators

Affordable. Versatile. Easy Operation. Ruggedly reliable for continuous heavy-duty punching.

Totally simple

Eliminate manual machine set-ups with Series 1000 Fabricators. Protect profit margins on prototype and production runs.

Hydraulic punching power

Maximum punching force is available throughout the entire stroke!

With the longer effective stroke, Series 1000 Fabricators rapidly and repeatedly punch through materials up to 1/2" (12 mm) thick, using fully controlled hydraulic power.

Series 1000 Fabricator Advantages

Boost Productivity — Fabricate four to ten times as many parts as conventional presses.

Fast Set-Up — Eliminate lost time due to lengthy set-ups and tear-downs. Set up quickly, easily, in just minutes.

Series 1000 Fabricators are designed and built to operate on heavy sheet and plate. Punch up to 5" (125 mm) diameter holes. Punch material up to 1/2" (12 mm) thick.

Minimize Inventory — Profitable short runs let you cut inventory and space needs.

Reduce Material Handling — Fabricate parts up to 72" (1825 mm) long without removing or repositioning. Optional 120"/144" (3050 mm/3660 mm) axis for more capability. Handling time reduced by as much as 50 percent.

"C" Frame Design with Rear Address Gauging — Fabricate material twice as wide as the y-axis.

No Clamps — No clamps to interfere with work surface. Programmed control change positions are not required.

Easy Operation — Operator simply positions material against the CNC-positioned gauge points, and uses a footswitch to initiate the punch cycle. Upon punch-stroke completion, the gauging advances automatically to the next programmed position.

Hydraulic Punching with Positive Stripping — Full tonnage capacity and safety control through entire punching stroke.



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Increase

- Accuracy
- Flexibility
- Repeatability
- Productivity

Low Cost

- Lower cost heavy-duty machine
- Economical quick change 28XX tooling
- Efficient for lot sizes from one to hundreds

Standard Tooling — Whitney 28XX punches and dies save up to 50 percent in tooling costs.

Rapid Tool Change — Changes completed in 15 seconds for round or shaped holes up to 5" (125 mm) diameter.

Accuracy — Gauge positioning accuracy is $\pm.005$ " with a repeat accuracy of $\pm.003$ ".

Overload Protection — Hydraulic punching system is protected from overload and automatically reset.

Panelgag 1000M CNC Control

Operator-friendly, machine-mounted control requires no special training for programmers. With only part dimensions, an operator uses a simple touchscreen to setup for a complete part.

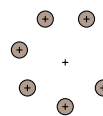
- Multiple part program storage in nonvolatile memory
- Software provided for additional storage/backup —easily added to your PC
- Full program review, edit and manual display
- Conversation-type, plain English programming
- English-metric operation
- On-board diagnostics
- Position display
- Manual operation with "Go To" position
- Electronic zeroing on standard and extended material stops
- Offsets



Simple Canned Cycle Programming

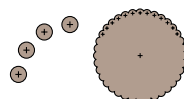
Six canned cycles simplify programming. Enter the coordinates and pattern from the part drawing and the Panelgag 1000M control establishes the location of each punch cycle.

Bolt Hole Circle



- X, Y of circle center
- Radius
- Number of holes
- Starting angle

Arcs and Circles



- X, Y of circle center
- Radius
- Number of holes
- Starting angle
- Finish angle

Matrix Grid:



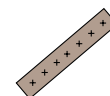
- X, Y of starting hole
- X hole spacing
- Y hole spacing
- Number of holes in X
- Number of holes in Y

Line at an Angle:



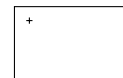
- X, Y of starting hole
- Angle
- Hole spacing
- Number of holes

Slot Nibble:



- X, Y of starting hole
- Starting angle
- Hole spacing
- Length

Window Cut:



- X, Y of starting hole
- Hole spacing
- X length
- Y length

Simple to use features for versatility

- Reduce set-up times.
- Convert quickly from thin-gauge to thick materials.
- Use maximum machine hit rates without lengthy adjustments.

Standard Equipment

Quick-set stroke length

Simply turning the cam on an adjustable limit switch assembly lets you work with the most efficient stroke length for every job.

Adjustable limit switch assembly set for material up to 1/8" (3 mm) thick.



Adjustable limit switch assembly set for material 10 ga. through 1/4". This position is also used for material 1/4" to 1/2" (6 mm to 12 mm) thick.



Pressure control switch

For reversing under pressure to countersink, extrude, coin, louvre and knockout.



Stripper plate versatility

Standard stripper plate with insert for material to 1/8" (3 mm).



Standard stripper plate without insert for 10 ga. through 1/4" (3.5 mm through 6 mm) material.



An optional stripper is available for material 1/4" to 1/2" thick.



Three standard models

Series 1000 CNC Fabricators meet application needs.

Model	Punching Force	Throat Depth
1530	50 tons (450 kN)	30" (760 mm)
1548	50 tons (450 kN)	48" (1220 mm)



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CNC Fabricator

28XX Style Quick-Change Punches and Dies

Economical. Accurate. Fast and easy tool changing.



Tool changing is easy with economical 28XX style quick-change tooling.

Series 1000 Fabricators use standard 28XX punches and dies with either flat face, 1/8" (3 mm) shear, or 7/16" max-shear.

This economical tooling allows for rapid tool changes, and is self-aligning with shaped sizes keyed for orientation.

Positive stripping allows the workpiece to strip free for instantaneous positioning without lowering punching tonnage.

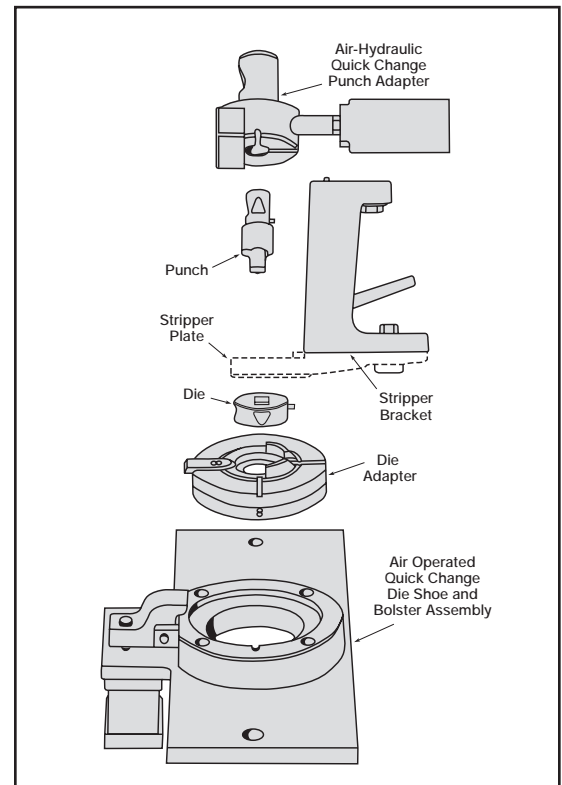
.001" TIR concentricity

All 28XX punches and dies are concentric to .001 TIR. On all punches, the punch tip is concentric with the punch shank. On all dies, the hole in the die is concentric with the outer diameter of the die. Shaped tooling is pinned for proper alignment. Custom pin location is available.

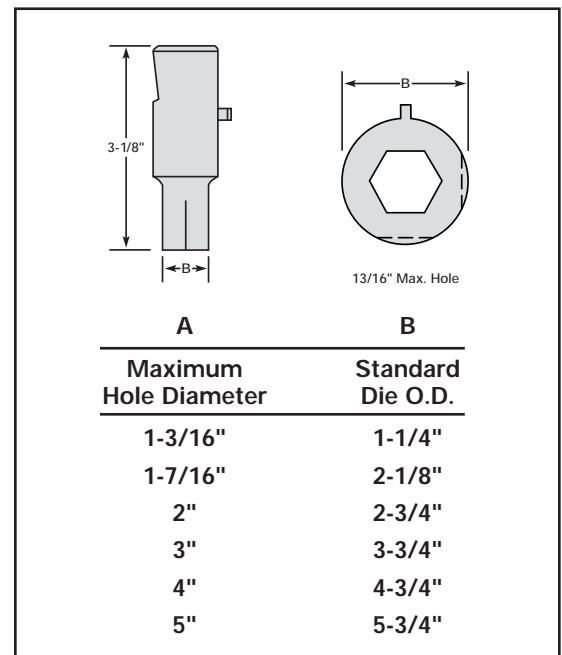
Optional urethane stripper sleeves

Urethane stripper sleeves are available for punching close-center holes in light gauge metal and for many other special applications. No marking or deformity of material occurs.

Strippers are supplied with only a small hole. The first punch stroke produces a snug fit of the stripper to its punch.



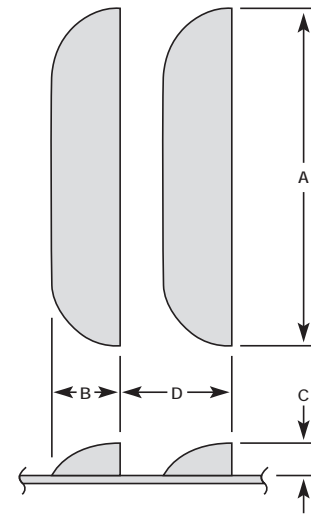
Air-hydraulic clamping of punch and air clamping of die



Tool and die standard sizes

Versatile tooling and techniques

Louver punches and dies with louvers formed up



Series 1000 Fabricators form louvers in the "up" position, allowing positive stripping of the material from the die. Replaceable cutting and forming inserts are available for five different lengths of cuts. One set of inserts is included with the tooling set. Additional insert sets are priced separately.

Length of Louver			
A	B	C	D (min.)
2"	5/8"	3/16"	15/16"
3"	5/8"	1/4"	15/16"
4"	3/4"	1/4"	1-1/8"
5"	3/4"	5/16"	1-1/8"
6"	3/4"	5/16"	1-1/8"

Maximum Material Capacity
10 ga. (3.4 mm) mild steel

Countersinking in one stroke

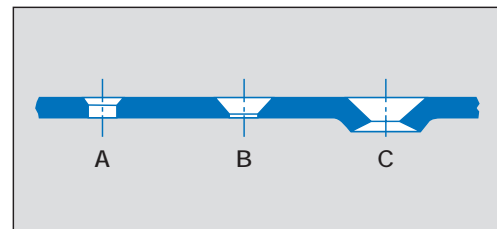


Eliminate costly secondary operations when countersinking and extruding by using special tools and techniques. One stroke of a Series 1000 can produce partial, full or formed countersinks, pierce and

extrude holes, countersink both sides of a hole, or pierce and form holes.

The special tooling is designed for use on hydraulic presses equipped with pressure adjustment controls.

The basic countersinks: partial (A), full (B), and formed (C). They vary widely in size and angle, but all can be produced in one press stroke.



A full countersink (see photo above) is widely used in approximately 3/16" to 1/2" (5 mm to 12 mm) material. It requires a pre-punched hole larger than the pilot on the countersink punch. A standard die and a countersink punch with a pilot is used to extrude the metal back into the hole. No material-thickening or burr is produced.

For complete information on standards and special-purpose tools see the Whitney 28XX Punch & Die Catalog.

Sheared Tooling

Sheared tooling increases press capacity

An increase of two to three times punching capacity is available from Series 1000 Fabricators by using special tooling to increase the tonnage capabilities.

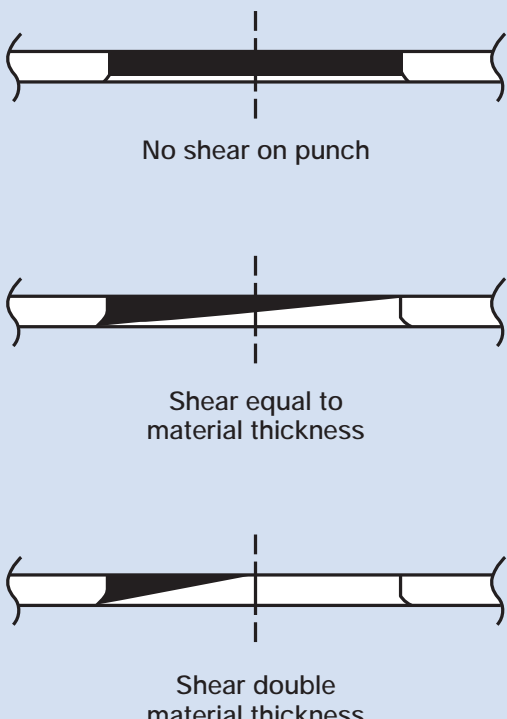
For example, a 30 ton Series 1000 can punch up to a 2" (50 mm) diameter hole through 4 ga. (5.7 mm) thick mild steel using a standard 2" (50 mm) punch with a 1/8" (3 mm) concave shear. Using a punch with 7/16" (11 mm) high

capacity concave shear the same machine can punch up to a 5" (127 mm) diameter hole in 5 ga. (5.3 mm) material.

This means a 30 ton (275 kN) press can be tooled up to produce holes which normally require an 80 ton (730 kN) capacity mechanical press. A 50 ton (455 kN) press can be tooled up to produce holes which normally require a 100 ton (910 kN) capacity mechanical press.

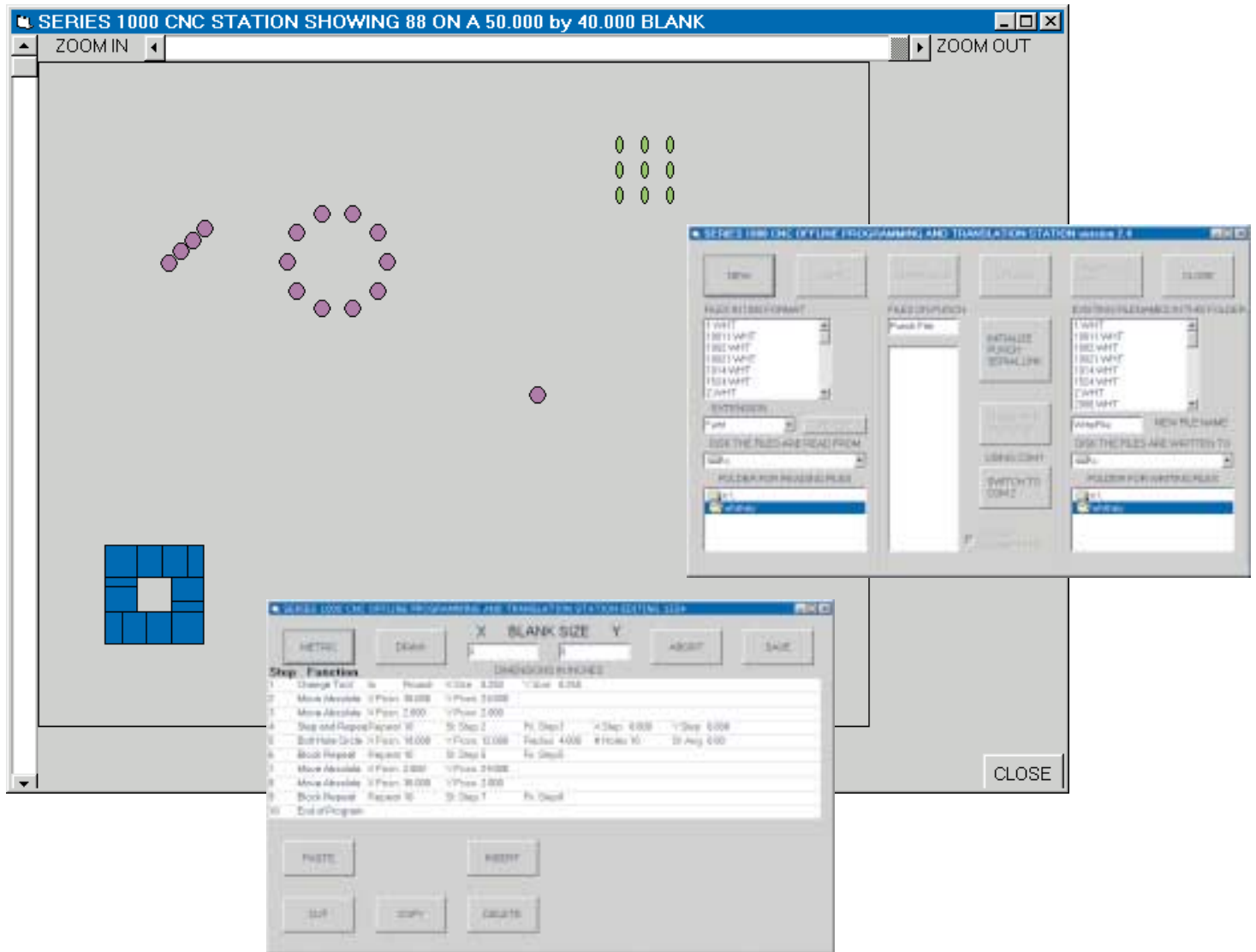
Comparison Chart

Standard Round vs. High Capacity Round with Concave Shear

 <p>No shear on punch</p> <p>Shear equal to material thickness</p> <p>Shear double material thickness</p>	Hole Diameter	Punch Style	Material Thickness		
	1"	Standard	5/16" (8 mm)	1/2" (12 mm)	
		High Capacity	5/16" (8 mm)	1/2" (12 mm)	
	2"	Standard	4 ga. (5.7 mm)	5/16" (8 mm)	
		High Capacity	1/4" (6 mm)	3/8" (9 mm)	
	3"	Standard	8 ga. (4 mm)	4 ga. (5.7 mm)	
		High Capacity	1/4" (4 mm)	3/8" (9 mm)	
	4"	Standard	10 ga. (3 mm)	6 ga. (5 mm)	
		High Capacity	7/32" (5.6 mm)	5/16" (8 mm)	
	5"	Standard	11 ga. (3 mm)	8 ga. (4 mm)	
		High Capacity	5 ga. (5.3 mm)	9/32" (7 mm)	
	Press Size		30 Ton (275 kN)	50 Ton (450 kN)	
	Press Model		1330	1530 1548	
	Based on A36-60,000 PSI material.				

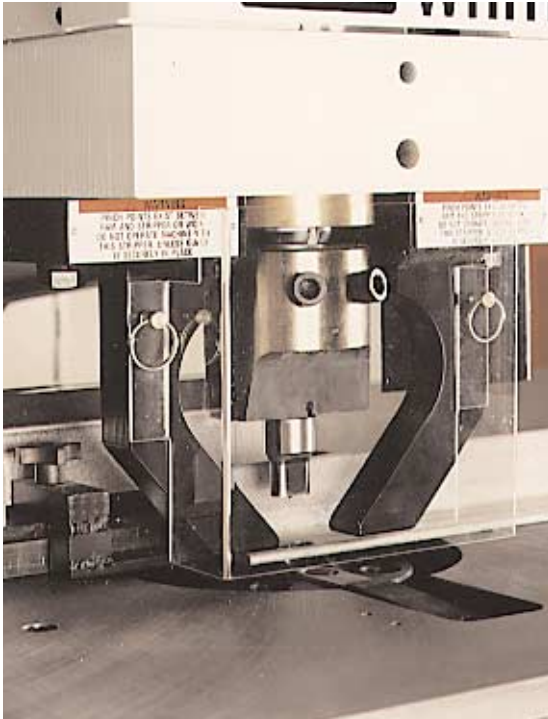
Optional Equipment

Off-line Program Software



- Do remote programming on your PC
- Full color graphic representation
- Editing
- Copying
- Convert Panelgace 2 and Panelgace 2E programs

- Upload and Download
- Generate Tool List
- Save/Restore machine parameters
- Create part program back-up files
- English/metric conversion



Punching shaped materials

Series 1000 Fabricators can be supplied with special tooling accessories to punch a wide range of shapes other than flat stock. Angles, channels and special extrusions can all be processed.

Special attachments, designed by Whitney engineers, help the Series 1000 Fabricators meet virtually any punching requirement.

Angle/channel iron punching assembly

Punch both angle and channel iron on the Series 1000 with the Angle Iron Attachment. Fabricate angle up to 3" x 3" (75 mm x 75 mm) and channel iron up to 3" x 12" x 20.7 lbs./ft. (75 mm x 305 mm x 9.4 kg/m). Consult Whitney for angle and channel iron over 3" (75 mm).

The attachment is easily installed without modifications to the press. Package includes special strippers and punch adapter with point of operation guarding.

Brush top tables

Brush top tables provide easy material movement and eliminate marks and scratches on polished, painted or anodized materials. The brushes maintain smooth workpiece support during the fabrication process.



Tool Box

Tool box organizes strippers, die adapters, punches and dies for easy use and offers convenient storage.

120"/144" (3050 mm/3660 mm) X-axis extensions

Optional extension gauges allow gauging up to 120" (3050 mm) or 144" (3660 mm) in the x-axis.

For example:

The standard x-axis gauge point is used for the first 72" (1830 mm) of travel, then pivoted out of the way. A second gauge point at the end of the extension allows 48" (1220 mm) more travel, up to 120" (3050 mm).

The 48" (1220 mm) extension is automatically considered for all punch positions. The control informs the operator which gauge point is to be used for x-axis positions located beyond 72" (1830 mm).

The y-axis gauge bar continues to operate in the normal manner. Both the 72" (1830 mm) and the extended gauge points are independently electronically zeroed.

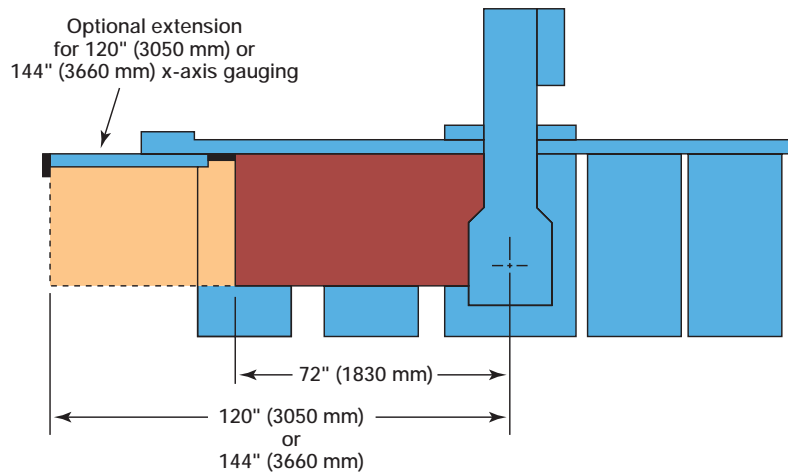
The extension gauge is used only for manual workpiece positioning.



Standard axis gauge for first 72" (1830 mm) of travel.



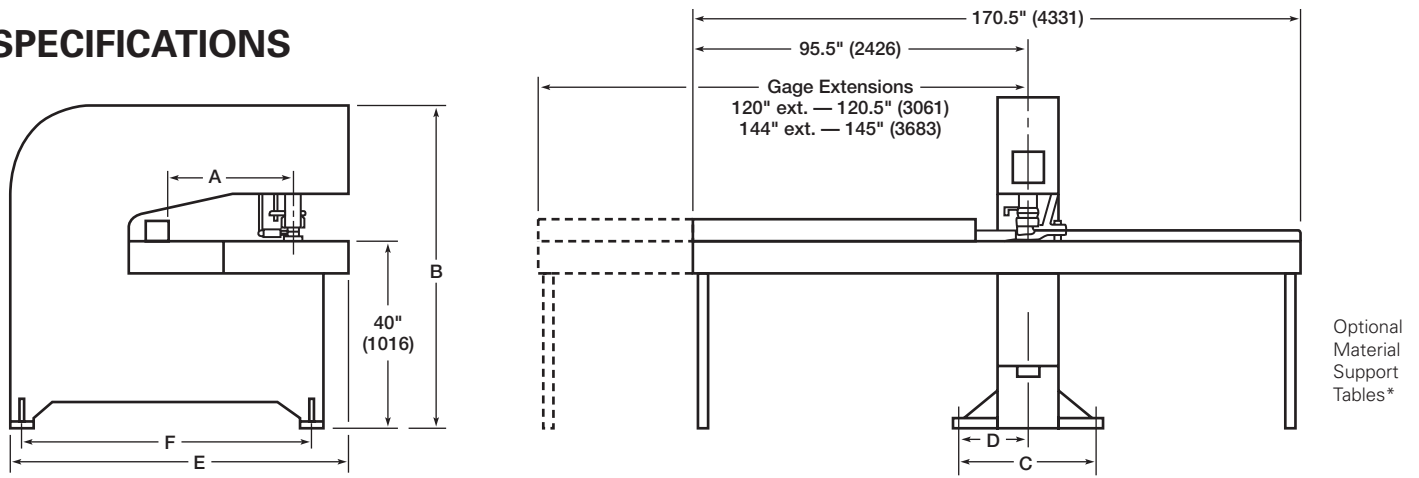
Gauge finger pivoted away allowing total travel up to 120" (3050 mm) or 144" (3660 mm).



Center Punch

The center punch is used primarily for layout of drilled holes. This can also be used to layout shear, bend lines and optional equipment added later.

SPECIFICATIONS



MODEL	A	B	C	D	E	F
1530	30" (762 mm)	80" (2032 mm)	33" (838 mm)	16-1/2" (419 mm)	95" (2413 mm)	78" (1981 mm)
1548	48" (1219 mm)	80" (2032 mm)	33" (838 mm)	16-1/2" (419 mm)	111" (2819 mm)	94" (2388 mm)

FABRICATOR MODEL	1530	1548
Punching Force	50 Tons (445 kN)	50 Tons (445 kN)
Punching Capacity: A36 - 60,000 psi shear strength		
Hole Diameter	Material Thickness	
	Std. Tooling	Max. Shear
1" (25 mm)	5/16" (8 mm)	5/16" (8 mm)
2" (50 mm)	4 ga. (5.7 mm)	1/4" (6 mm)
3" (75 mm)	8 ga. (4 mm)	1/4" (6 mm)
4" (100 mm)	10 ga. (3.5 mm)	7/32" (5.6 mm)
5" (125 mm)	11 ga. (3 mm)	5 ga. (5.3 mm)
	Std. Tooling	Max. Shear
	1/2" (12 mm)	1/2" (12 mm)
	5/16" (8 mm)	3/8" (9 mm)
	4 ga. (5.7 mm)	3/8" (9 mm)
	6 ga. (5 mm)	5/16" (8 mm)
	8 ga. (4 mm)	9/32" (7 mm)
	1/2" (12 mm)	1/2" (12 mm)
	5/16" (8 mm)	3/8" (9 mm)
	4 ga. (5.7 mm)	3/8" (9 mm)
	6 ga. (5 mm)	5/16" (8 mm)
	8 ga. (4 mm)	9/32" (7 mm)
Positioning Accuracy (CNC gauging)	±.005" (.125 mm)	±.005" (.125 mm)
Throat Depth	30" (760 mm)	48" (1220 mm)
Positioning Area Max. Standard	30" x 72" (760 mm x 1825 mm)	48" x 72" (1220 mm x 1825 mm)
Optional	30" x 120" or 144" (760 mm x 3050 mm or 3660 mm)	48" x 120" or 144" (1220 mm x 3050 mm or 3660 mm)
Punching Stroke Normal	1/2" (12 mm)	1/2" (12 mm)
Adjustable — Minimum	3/8" (6 mm)	3/8" (6 mm)
— Maximum	2" (50 mm)	2" (50 mm)
Hydraulic Power Unit	20 HP	20 HP
Machine Shipping Weight	12,410 lbs. (5641 kg)	17,120 lbs. (7782 kg)

*Number of optional support tables required varies with machine model and length of gauging system x-axis. Tables available with ball or brush transfer tops.
NOTE: Because Whitney is continually improving its products, specifications are subject to change without notice.