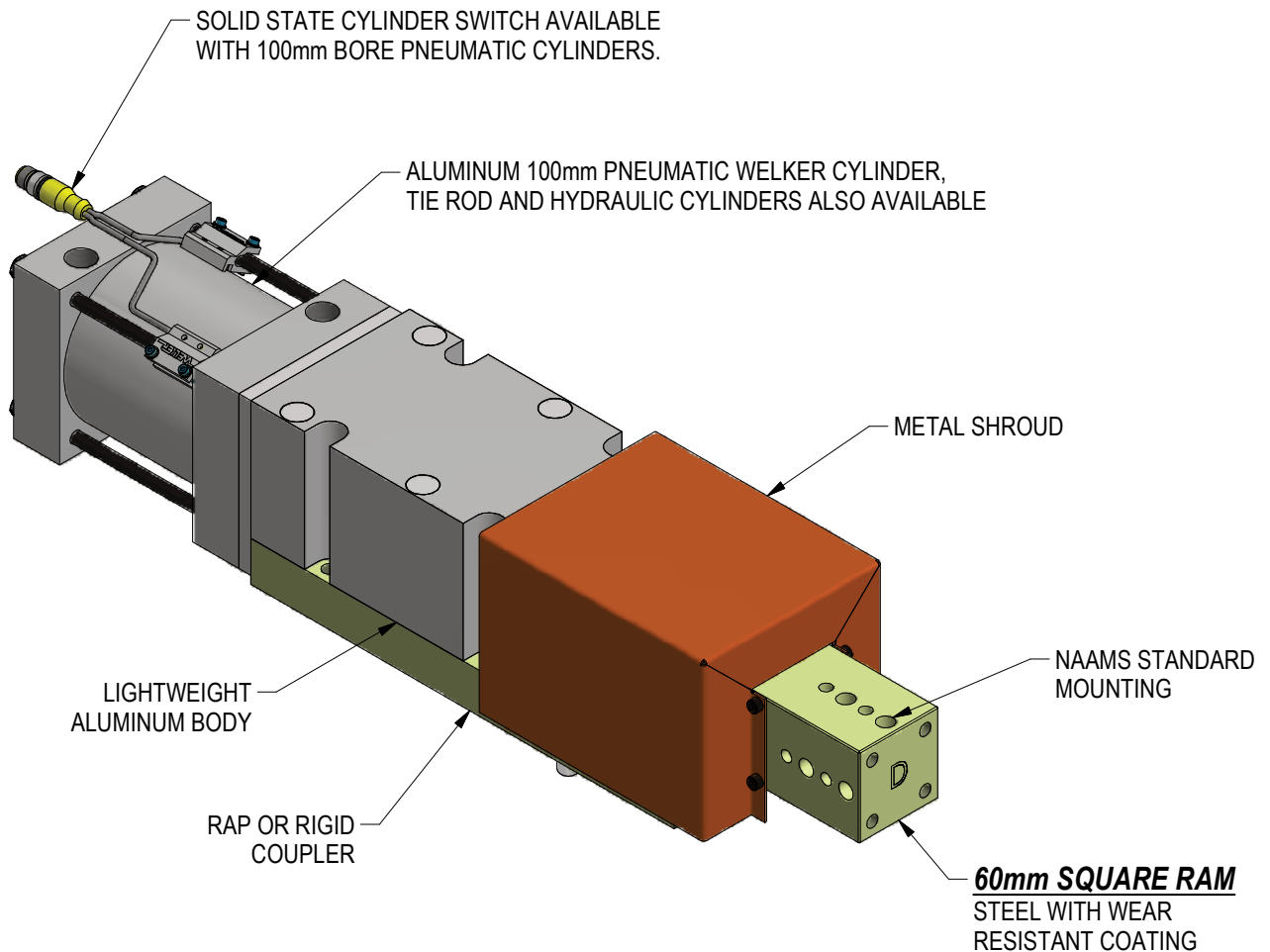


WP6 SERIES SHOT PIN

STROKES: 025, 050, 075, 100, 125, 150, 175, 200mm
PNEUMATIC OR HYDRAULIC CYLINDER



REVISED: 1/15/21

ORDERING INFORMATION

NOTE: ALL BOXES MUST BE FILLED IN FOR A COMPLETE PART NUMBER

W	P	6	N										0	0	0
---	---	---	---	--	--	--	--	--	--	--	--	--	---	---	---

Stroke _____

025 025, 050, 075, 100, 125, 150, 175, 200

Coupler _____

- A Rap (shortens nominal cylinder stroke by 3mm)
Rap only available with Actuator Options 01, 02, 30 or 31
- B Rigid

Cylinder _____

- 01 Pneumatic 100mm Tie Rod Single Rod (NPT Ports)
- 02 Pneumatic 100mm Tie Rod Single Rod (G Ports)
- 03 Pneumatic 100mm Tie Rod Double Rod (NPT Ports)
- 04 Pneumatic 100mm Tie Rod Double Rod (G Ports)
- 09 Hydraulic 80mm Bore Single Rod (SAE Ports)
- 10 Hydraulic 80mm Bore Single Rod (G Ports)
- 11 Hydraulic 80mm Bore Double Rod (SAE Ports)
- 12 Hydraulic 80mm Bore Double Rod (G Ports)
- 30 Pneumatic 100mm Welker Single Rod (NPT Ports)
- 31 Pneumatic 100mm Welker Single Rod (G Ports)
- 32 Pneumatic 100mm Welker Double Rod (NPT Ports)
- 33 Pneumatic 100mm Welker Double Rod (G Ports)

Stop Options _____

- 0 None
- E Adjustable Extend Stop* **NOTE: Stop Option E will shorten stroke**
- G Fixed Extend Stop* **NOTE: Stop Option G will shorten stroke**
*Requires requires double rod cylinder. Not available on Hyd. Cylinders.

Ram Style _____

- D 4 Hole - Large
- L 4 Hole - Medium

Switch _____

- 00 No Switch
- LX See Cylinder Switch Chart below. Only available with Cylinder Options 30, 31, 32, 33

Shroud _____

- 0 No Shroud
- 1 Shroud

Cylinder Prox (or "G" Port) Position _____

- A X1 Position
- B X2 Position
- C X3 Position
- D X4 Position

Standard Options - All other options may affect price and delivery

	Switch	Part Number	Manufacturer	Description
Cylinder Switches	L3	SWITCH L3* L3 sw itch is w eld field immune, comparable to World Sw itches. Dual sensor sw itch, 1 per cylinder	Welker	4-Wire, 4-Pin, DC (PNP) M12 X 1 Quick Disconnect
	L5	MK5113 Single sensor sw itch, 2 sw itches per cylinder	ifm Efector	3-Wire, 4-Pin, DC (NPN) M12 X 1 Quick Disconnect

Standard Switch Option - All other options may affect price and delivery

*Note that some mid and low frequency DC resistance applications (i.e. aluminum resistance welding applications) may cause a fault. In these applications, it is recommended that the sensor be ignored/bypassed during the welding cycle.

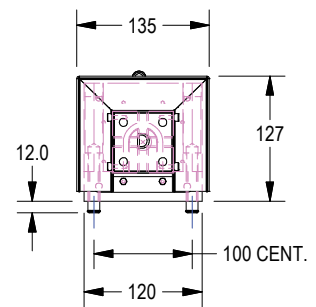
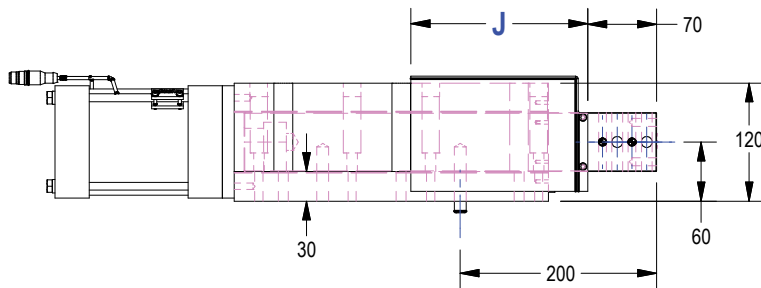
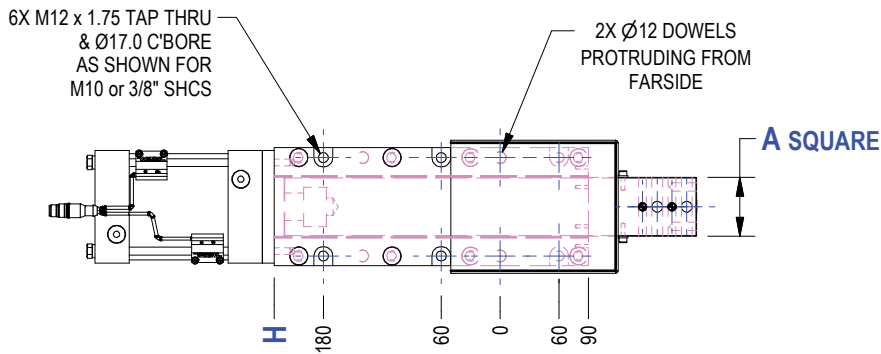
(DO NOT SCALE DRAWING)



GENERAL DIMENSIONS



WELKER SHOT PINS
WEB PAGE



Strokes (25mm increments)	Bore	Nominal Ram	A	H	J
25-100	100	60	60.000 59.987	230	180
125, 150	100	60	60.000 59.987	390	280
175, 200	100	60	60.000 59.987	440	280



SHOT PIN UNIT WEIGHT*								
STROKE:	25	50	75	100	125	150	175	200
WP6: CYL OPTION 01/02	75.0 lbs	75.8 lbs	76.5 lbs	77.3 lbs	78.1 lbs	78.9 lbs	79.6 lbs	80.4 lbs

*WEIGHTS SHOWN ARE APPROXIMATE AND WILL VARY WITH OPTIONS

(DO NOT SCALE DRAWING)



ENGINEERED PRODUCTS

(800) 229-0890 www.welkerproducts.com

WP6 100mm BORE WELKER PNEUMATIC CYLINDER INFORMATION

WP6N025A**310**D001**A**000

Cylinder Options

- 30** 100mm Welker Single Rod (NPT Ports)
- 31** 100mm Welker Single Rod (G Ports)
- 32** 100mm Welker Double Rod (NPT Ports)
- 33** 100mm Welker Double Rod (G Ports)

Stop Options

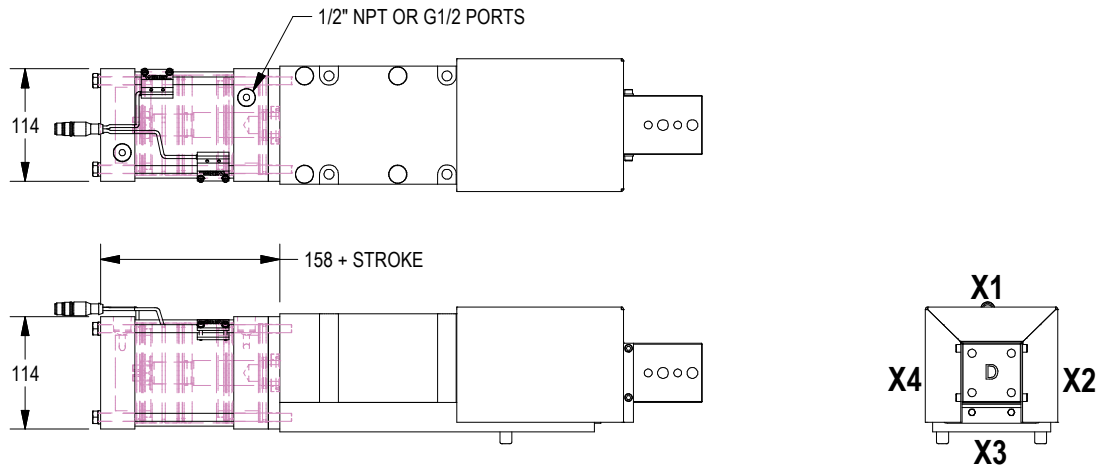
- 0** None
- E** Adjustable Extend Stop**
- G** Fixed Extend Stop**

Port Position

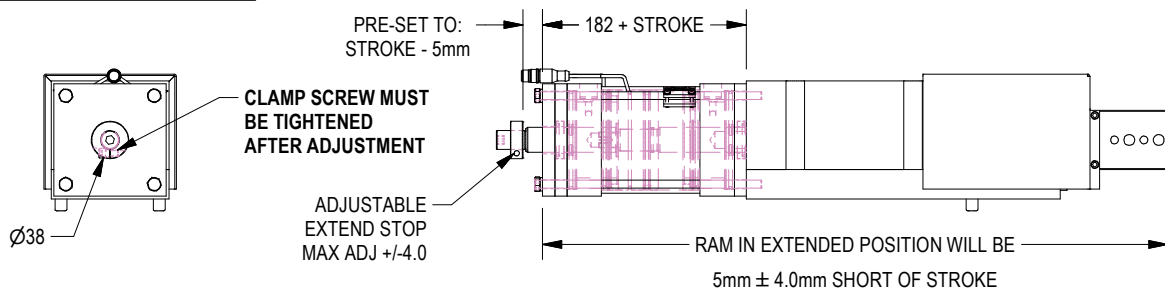
- A** X1 Rotation
- B** X2 Rotation
- C** X3 Rotation
- D** X4 Rotation

**Requires double rod cylinder

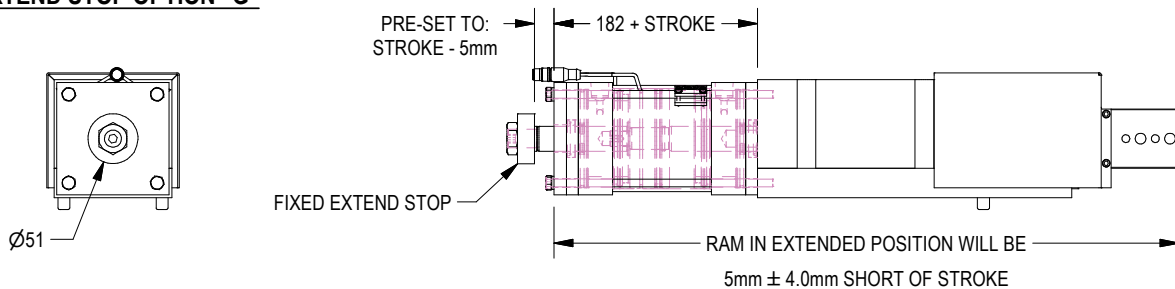
SINGLE ROD CYLINDER



DOUBLE ROD CYLINDER WITH EXTEND STOP OPTION "E"



DOUBLE ROD CYLINDER WITH EXTEND STOP OPTION "G"



(DO NOT SCALE DRAWING)

WELKER

ENGINEERED PRODUCTS

(800) 229-0890 www.welkerproducts.com

RECOMMENDED OPERATING PRESSURE

PNEUMATIC: 60-80 PSI, FLOW CONTROLS NOT REQUIRED

WP6 PNEUMATIC TIE ROD CYLINDER INFORMATION

WP 6 N 0 2 5 A 0 1 0 D 0 0 1 A 0 0 0

Cylinder Options

- 01 Single Rod (NPT Ports)
- 02 Single Rod (G Ports)
- 03 Double Rod (NPT Ports)
- 04 Double Rod (G Ports)

Stop Options

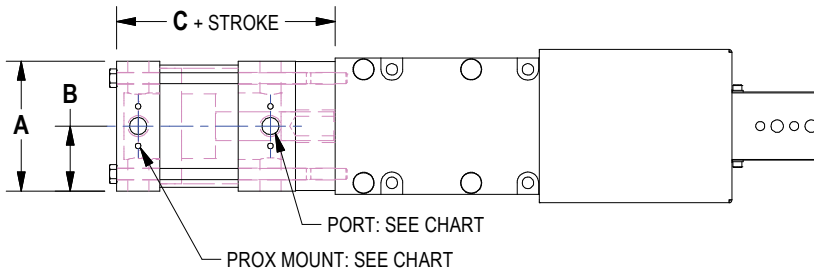
- 0 None
- E Adjustable Extend Stop**
- G Fixed Extend Stop**

Cylinder Prox (or "G" Port) Position

- A X1 Rotation
- B X2 Rotation
- C X3 Rotation
- D X4 Rotation

**Requires double rod cylinder

SINGLE ROD CYLINDER

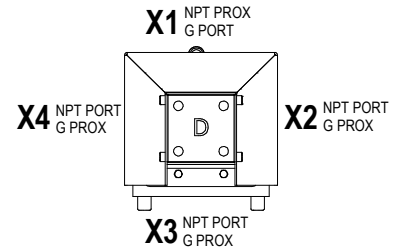
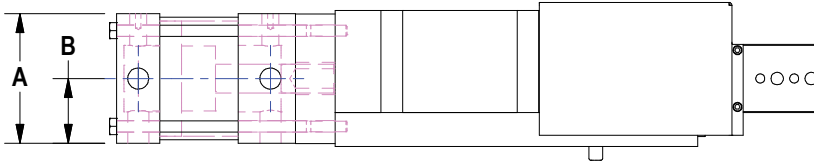


NPT PORT CYLINDERS

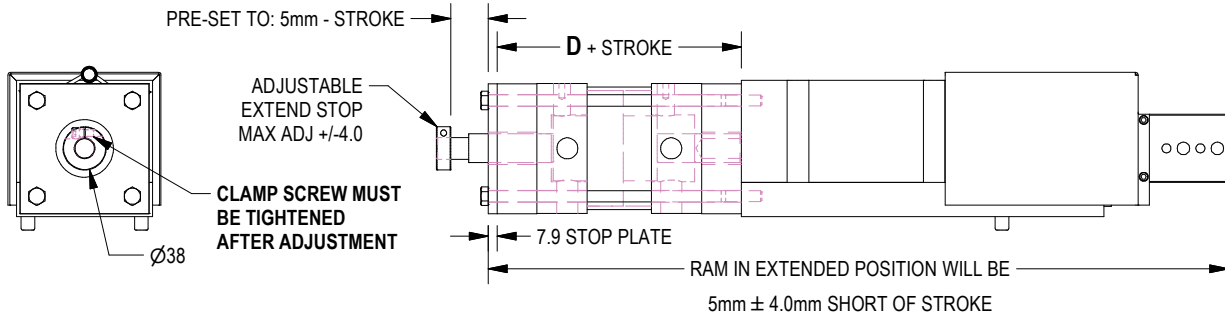
X1 OPTION DESIGNATES LOCATION OF THE PROX. TO ROTATE THE PROX LOCATION 90° CLOCKWISE, ORDER THE X2 OPTION. THE OTHER THREE SURFACES ARE THE SPECIFIED PORT.

"G" PORT CYLINDERS

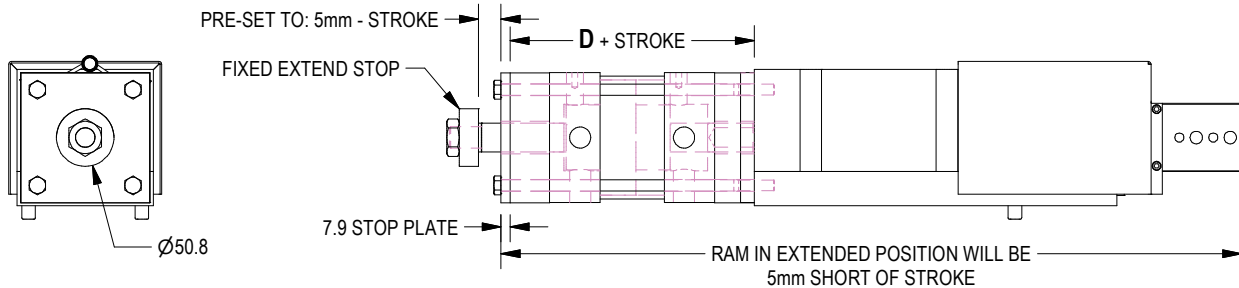
X1 OPTION DESIGNATES LOCATION OF THE PORT. TO ROTATE THE PORT LOCATION 90° CLOCKWISE, ORDER THE X2 OPTION. THE OTHER THREE SURFACES ACCEPT CYLINDRATOR.



DOUBLE ROD CYLINDER WITH STOP OPTION "E"



DOUBLE ROD CYLINDER WITH STOP OPTION "G"



EFFECTIVE CYLINDER AREA:

SERIES	NOMINAL RAM	PNEUMATIC BORE	A	B	C	D	PNEUMATIC PORTS	PROX READ DEPTH	PUSH	PULL
WP6	60	100	114	57	168	191	1/2" NPT or G1/2	32MM READ DEPTH	12.2 SQ.IN.	11.4 SQ.IN.

RECOMMENDED OPERATING PRESSURE

PNEUMATIC: 60-80 PSI, FLOW CONTROLS NOT REQUIRED
CYLINDERS ARE SWITCH READY (PROX PORT TYPE).
SWITCHES ARE NOT SUPPLIED WITH THE CYLINDER.

(DO NOT SCALE DRAWING)

WELKER

ENGINEERED PRODUCTS

(800) 229-0890 www.welkerproducts.com

WP6 HYDRAULIC CYLINDER INFORMATION

WP 6 N 0 2 5 B 0 9 0 D 0 0 1 A 0 0 0

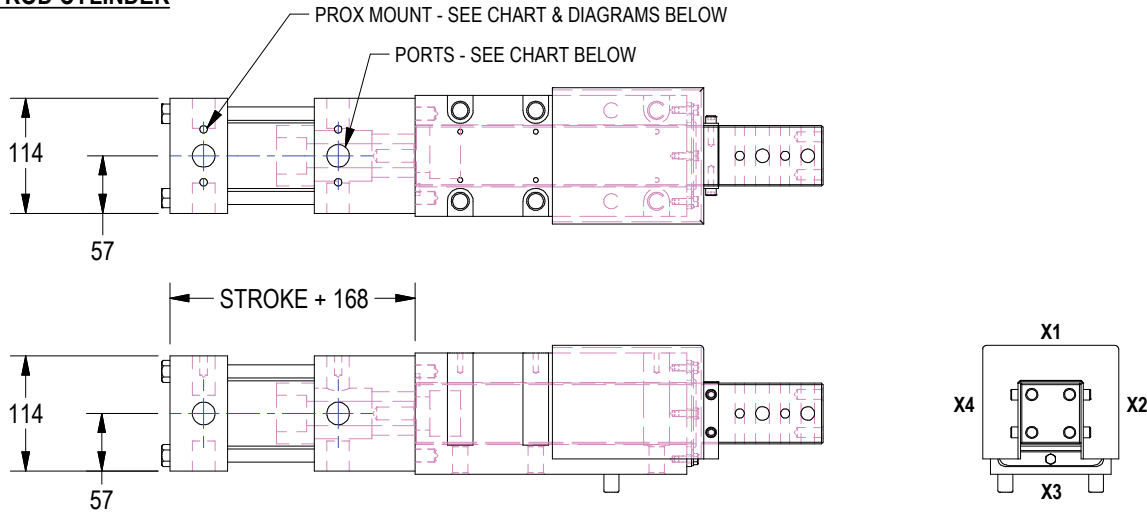
Cylinder Options

- 09 Single Rod (SAE Ports)
- 10 Single Rod (G Ports)
- 11 Double Rod (SAE Ports)
- 12 Double Rod (G Ports)

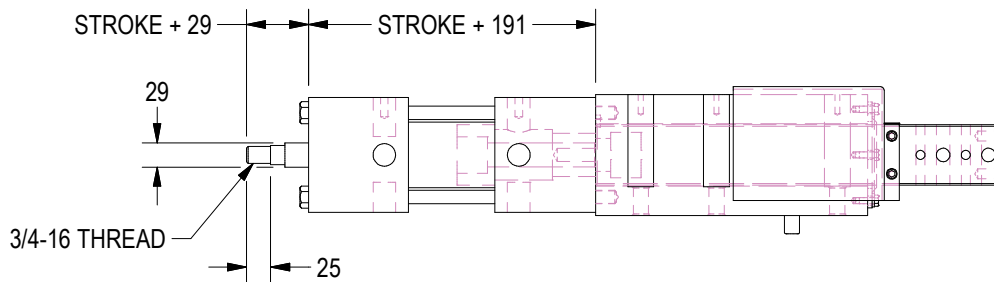
Cylinder Prox (or "G" Port) Position

- A X1 Rotation
- B X2 Rotation
- C X3 Rotation
- D X4 Rotation

SINGLE ROD CYLINDER

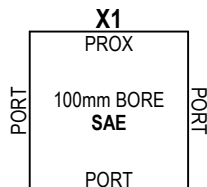


DOUBLE ROD CYLINDER



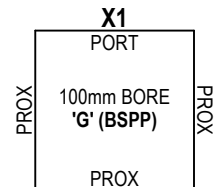
SAE PORT CYLINDERS

X1 OPTION DESIGNATES LOCATION OF THE PROX. TO ROTATE THE PROX LOCATION 90° CLOCKWISE, ORDER THE X2 OPTION. THE OTHER THREE SURFACES ARE THE SPECIFIED PORT.



"G" PORT CYLINDERS

X1 OPTION DESIGNATES LOCATION OF THE PORT. TO ROTATE THE PORT LOCATION 90° CLOCKWISE, ORDER THE X2 OPTION. THE OTHER THREE SURFACES ACCEPT CYLINDICATOR.



RECOMMENDED OPERATING PRESSURE

HYDRAULIC: 200 PSI, FLOW CONTROLS NOT REQUIRED
CYLINDERS ARE SWITCH READY (PROX PORT TYPE).
SWITCHES ARE NOT SUPPLIED WITH THE CYLINDER.

(DO NOT SCALE DRAWING)

WELKER

ENGINEERED PRODUCTS

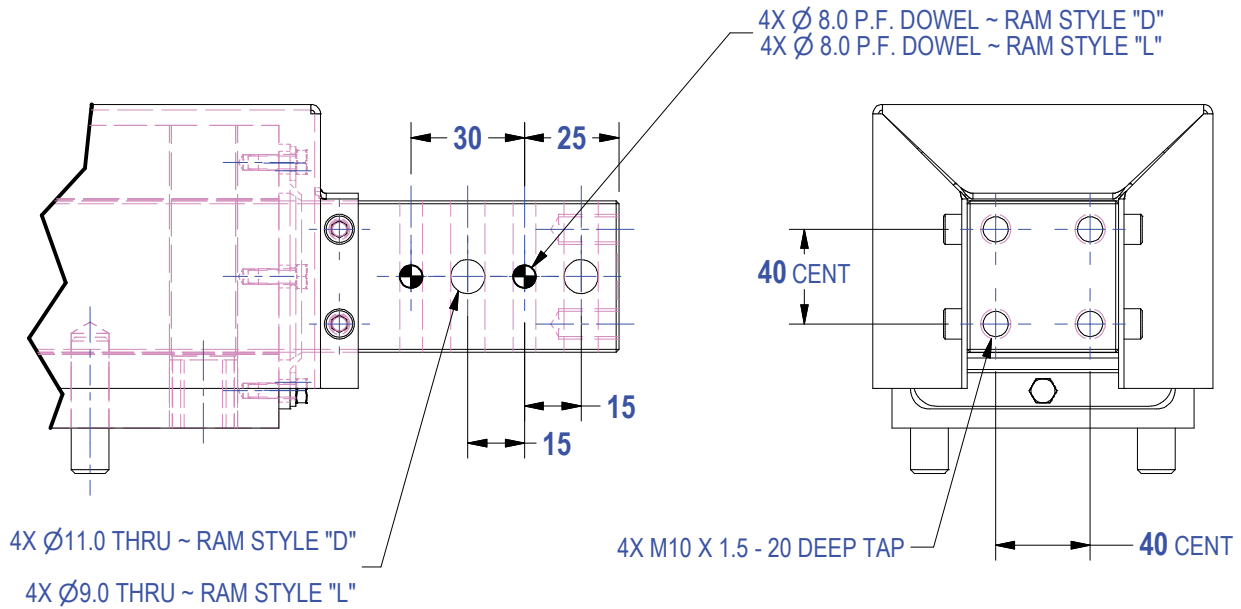
(800) 229-0890 www.welkerproducts.com

STANDARD RAM OPTIONS

(See supplemental ram sheet for non-standard options)

W P 6 N 0 2 5 A 3 1 0 **D** 0 0 1 A 0 0 0

Ram Style
D 4 Hole - Large
L 4 Hole - Medium



(DO NOT SCALE DRAWING)

WELKER

ENGINEERED PRODUCTS

(800) 229-0890 www.welkerproducts.com

Welker WP6 Shot Pin Technical Information

Body Mounting: Square ram shot pin units have dual mounting capability. At all mounting locations, you have the option of mounting from the top using the counter-bored clearance holes or the same holes, tapped from the bottom. Using any four of the six holes, symmetrical about the centerline, is sufficient. Protruding mounting dowels are provided and are press fit into the body.

Square ram packages are high precision full contact plane bearing units and therefore must be mounted to a flat surface. **Mounting surfaces must be flat within .002" (0.05mm).**

Ram Mounting: Square ram shot pin units use a standard NAAMS L-Block pattern with 15mm spacing. Spacing allows mounting of 3 and 4 hole pin retainers and L-blocks to the ram. Through holes can be tapped and fitted with standard thread inserts.

Shrouds: Safety orange steel shrouds are available for additional protection. Shrouds prevent undesirable buildup of contamination from welding and machining applications. Welker specifically recommends shroud usage in mig, tig and arc welding applications. Shrouds should only be removed if clearance problems exist and conditions permit. Consult Welker.

Wipers: The wiper is the only maintenance item on Welker pin units. It is a custom molded moly impregnated urethane wiper. Welker recommends changing the wiper yearly. Specific applications may require more or less frequent wiper service.

Stroke: The stroke accuracy of shot pins is limited to that of the cylinder. Normal cylinder stroke accuracy is $\pm .015"$ (0.38mm). For control of "end of stroke" repeatability, see extend and retract stop options for each series.

Rap couplings cause the unit to be less than the nominal stroke of the cylinder. 60mm ram units have a 3mm rap. The rap allows the cylinder to begin moving before moving the ram. The impact of the coupler helps free tooling from a bound condition. Most applications using a pneumatic shot pin should have rap couplings. Rap coupler not available on hydraulic units.

Welker cylinders do not require lubrication.

Switch: 60mm ram tie rod cylinders have prox switch (cylindicator) ports with 32mm read depth (probe length). Welker does not supply prox switches. Solid state cylinder switches available through Welker.

Repeatability: Shot pin units utilize a full contact bearing surface for high repeatability. Repeatability within $\pm .002"$ (0.05mm) part to part is achievable.

Wear: Wear equals variance in position under load over time. Shot pin tests indicate maximum wear of .002" wear at 3 million cycles.

Loading and Deflection: Maximum deflection is $\pm .005"$ and is measured at the end of the ram up to the specified strokes and up to the loads and distances as shown below. Longer extensions can be used at lower tolerances and loads. Pins mounted closer to the body exhibit less deflection. For applications with longer strokes and higher loads, consult Welker.

