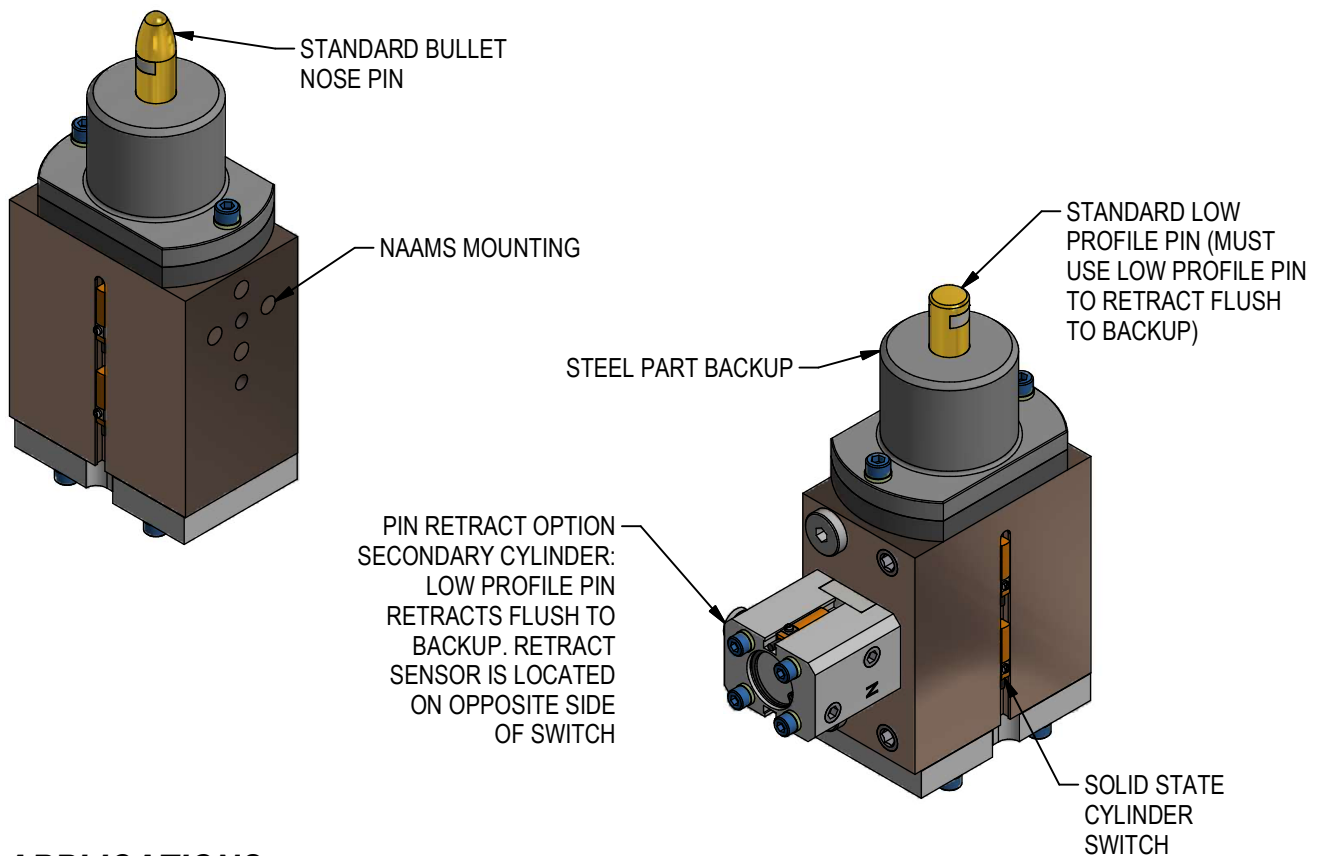


PCY SERIES PIN CLAMPS

FOR POSITIVE LOCATING AND CLAMPING

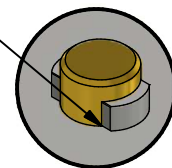
UP TO 4mm PART THICKNESS
8.00 - 26.00mm PIN DIAMETERS



APPLICATIONS

ROBOT END EFFECTORS
END OF ARM TOOLING
AUTOMOTIVE ASSEMBLY & B/W
PALLETIZED PART LOCATE & TRANSFER
WELDING & HIGHLY CORROSIVE ENVIRONMENTS

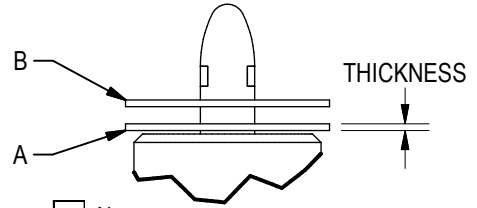
FINGERS SHOWN
CLAMPED ON PART:
GAPLESS CLAMP FINGER
DESIGN AT FULL
EXTENSION



PIN CLAMP WORKSHEET

PROJECT	STATION #	DATE	
CUSTOMER	CONTACT	EMAIL	PHONE

	MATERIAL	THICKNESS	HOLE SIZE (min-max)
A			
B			
C			



TOTAL THICKNESS: _____

WILL THE PIN BE IN GEO HOLES IN MULTIPLE METAL PIECES? Yes No

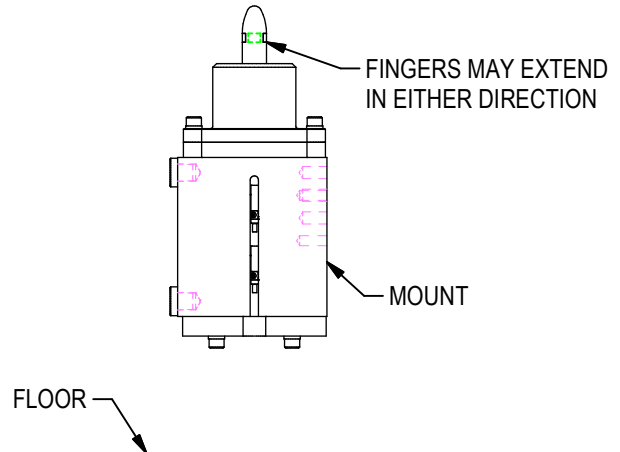
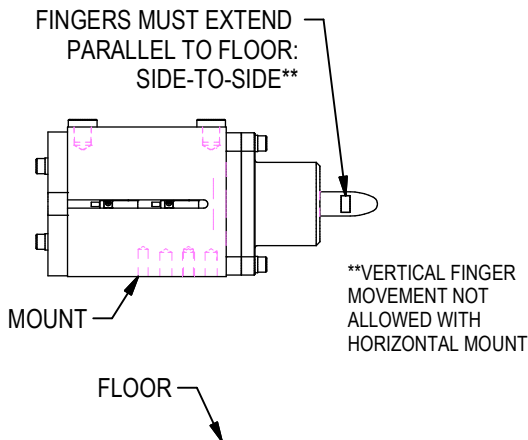
RECOMMENDED PIN DIAMETER:

HOLE SIZE	APPLICATION	RECOMMENDED PIN SIZE
8.20-16.20	GEO	0.20mm UNDER MINIMUM HOLE
16.21-26.15	GEO	0.15mm UNDER MINIMUM HOLE
8.50-26.50	MATERIAL HANDLING	0.50mm UNDER MINIMUM HOLE

FINGER & PIN CLAMP ORIENTATION

PIN CLAMP MOUNTED HORIZONTALLY:

PIN CLAMP MOUNTED INVERTED OR VERTICALLY:

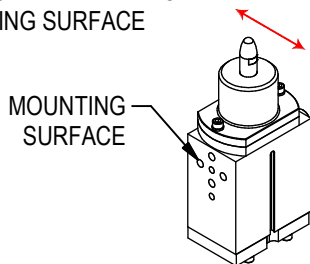


PART # _____ MOUNTING HORIZONTAL VERTICAL OR INVERTED

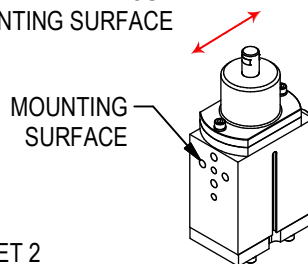
FINGERS @ 0° @ 90°

SUBMIT A PIN CLAMP WORKSHEET FOR EVERY INDIVIDUAL PIN CLAMP APPLICATION.

UNIT WITH FINGERS AT 0°
 FINGERS EXTEND & RETRACT **PARALLEL** TO MOUNTING SURFACE



UNIT WITH FINGERS AT 90°
 FINGERS EXTEND & RETRACT **PERPENDICULAR** TO MOUNTING SURFACE



ORDERING INFORMATION

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



Pin Diameter

08.00 - 26.00mm to 2 Decimal Places

Pin Type

- A** Bullet Nose Pin with fingers at 0°
- B** Bullet Nose Pin with fingers at 90°
- E** Low Profile Pin with fingers at 0°
- F** Low Profile Pin with fingers at 90°

Back Up Diameter

050 50mm Dia Max
Backup diameter must be larger than pin diameter

Magnetic Solid State Switch

- 00** None
- LX** See Switch Chart

Port Type

- A** NPT
- J** G

Actuator

- A** Double Acting
- B** Double Acting with Spring
- V** Double Acting w Retractable Pin & Secondary Cyl Sensing (Ports @ 90°)
- W** Double Acting w Retractable Pin, Spring & Secondary Cyl Sensing (Ports @ 90°)

Welker Cylinder Switch Chart

FOR PIN CLAMP ACTUATOR OPTION A & B

Option	QTY	Switch Part #	Wire	Output	Mfg
L3	1	SWITCH L3** Dual sensor, single connector switch: 1 switch required per cylinder	4	PNP	Welker
L5	2	MK5113 Single sensor, single connector switch: 2 switches required per cylinder	3	NPN	ifm Efeotor

FOR PIN CLAMP ACTUATOR OPTION V & W

Option	QTY	Switch Part #	Wire	Output	Mfg
L3	2	SWITCH L3**	4	PNP	Welker
	1	SWITCH L3S** Single sensor, single connector switch: 1 switch required for retract cylinder	3	PNP	
L5	5	MK5113	3	NPN	ifm Efeotor

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

All switches are DC M12 X 1, Quick Disconnect

**L3 switch is weld field immune, comparable to World Switches. 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.

TO ORDER REPLACEMENT CARTRIDGE



Pin Diameter

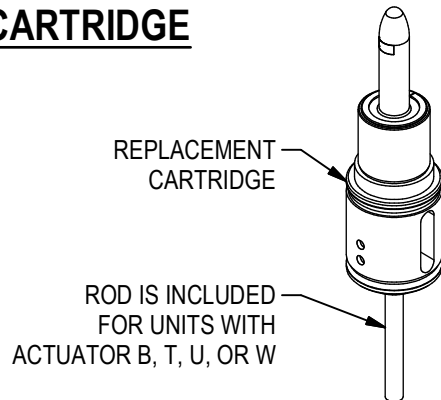
08.00 - 26.00 to 2 Decimal Places

Pin Type

- A** Bullet Nose Pin with fingers at 0°(Shown)
- B** Bullet Nose Pin with fingers at 90°
- E** Low Profile Pin with fingers at 0°
- F** Low Profile Pin with fingers at 90°

Actuator

- A** Dbl Acting
- B** Dbl Acting w Spring
- R** Dbl Acting w Retractable Pin (Ports @ 90deg)
- S** Dbl Acting w Retractable Pin (Ports @ 0deg Shown)
- T** Dbl Acting w Retractable Pin & Spring (Ports @ 0deg)
- U** Dbl Acting w Retractable Pin & Spring (Ports @ 90deg)
- V** Dbl Acting w Retractable Pin & Secondary Cyl Sensing (Ports @ 90deg)
- W** Dbl Acting w Retractable Pin, Spring & Secondary Cyl Sensing (Ports @ 90deg)



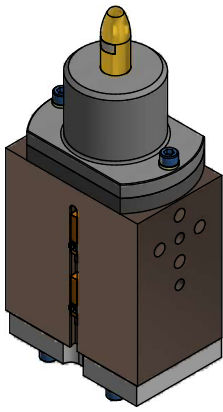
(DO NOT SCALE DRAWING)

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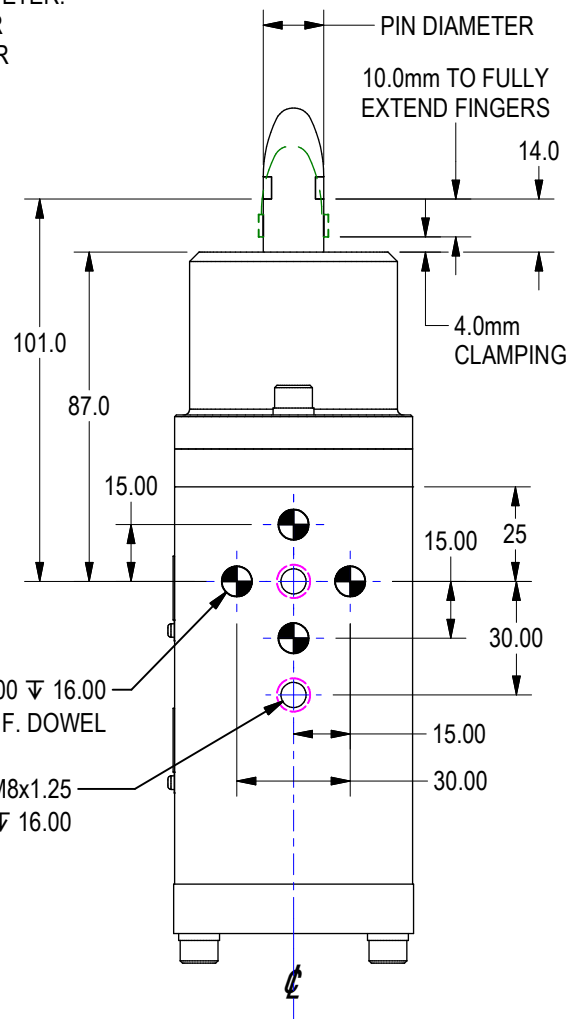
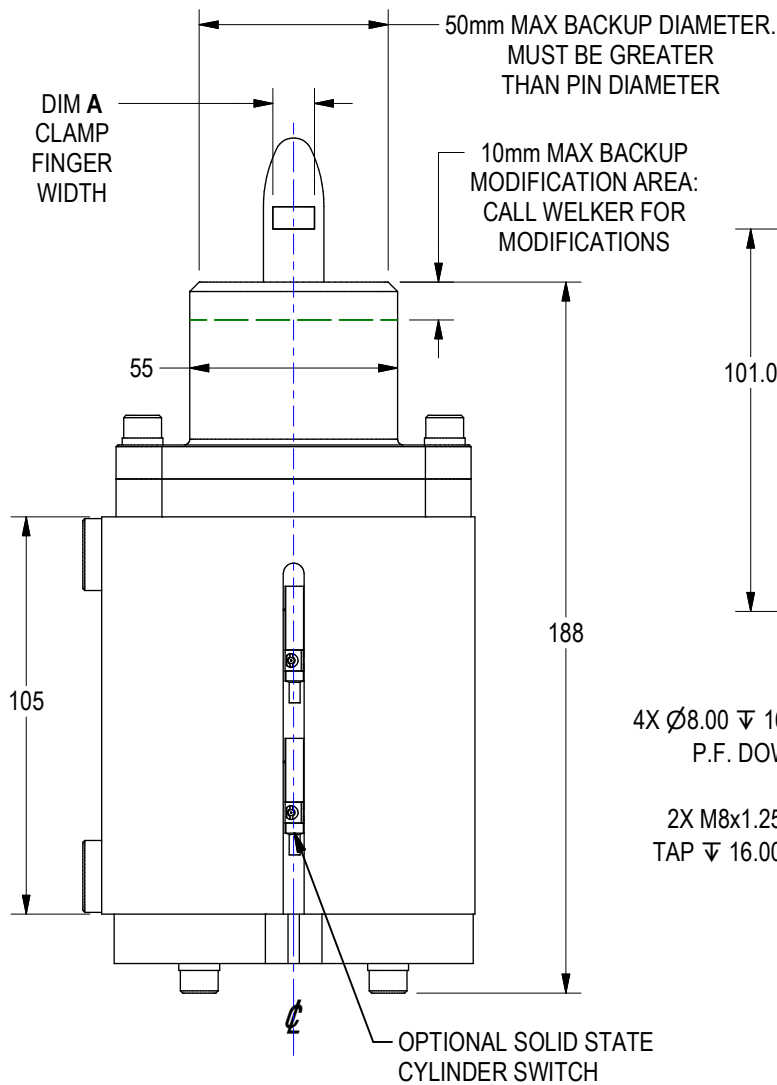
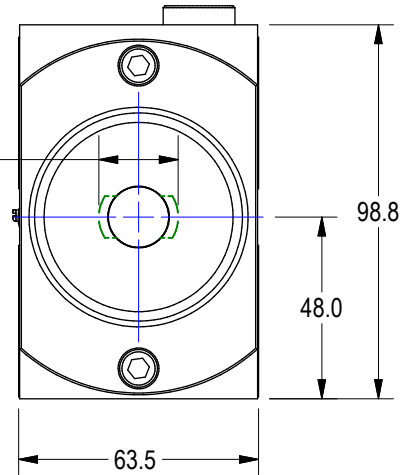
GENERAL DIMENSIONS



DESIGNER'S NOTE: SHIMMING
RECOMMENDED FOR X, Y, AND Z

FINGERS EXTENDED IN
CLAMPED POSITION.
DIM = PIN DIA + DIM B

PIN DIA	DIM A	DIM B
8.00 - 16.00mm	5mm	2.4mm
16.01 - 26.00mm	11mm	5.0mm



 **UNIT WEIGHT IS 8 LBS.**
(WEIGHT VARIES WITH UNIT OPTIONS)



WELKER PIN CLAMP
WEB PAGE

(DO NOT SCALE DRAWING)

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LOCATING PIN OPTIONS



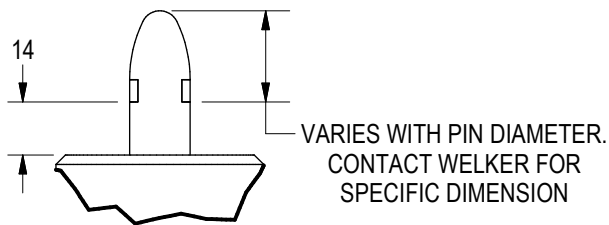
Pin Diameter
08.00 - 26.00mm to 2 Decimal Places

- Pin Type**
- A** Bullet Nose Pin with fingers at 0°
 - B** Bullet Nose Pin with fingers at 90°
 - E** Low Profile Pin with fingers at 0°
 - F** Low Profile Pin with fingers at 90°

NOTE: FOR HORIZONTAL APPLICATIONS, ORIENTATION OF THE CLAMP FINGER MOVEMENT SHOULD BE PARALLEL TO THE GROUND

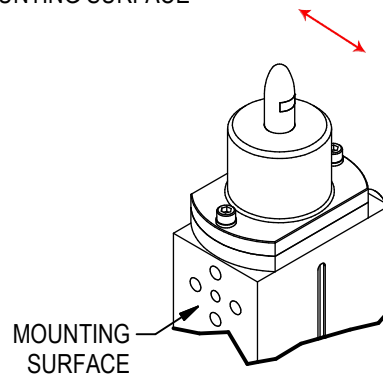
OPTION

- A** BULLET NOSE PIN WITH FINGERS AT 0°
- B** BULLET NOSE PIN WITH FINGERS AT 90°



PIN TYPE OPTION "A"

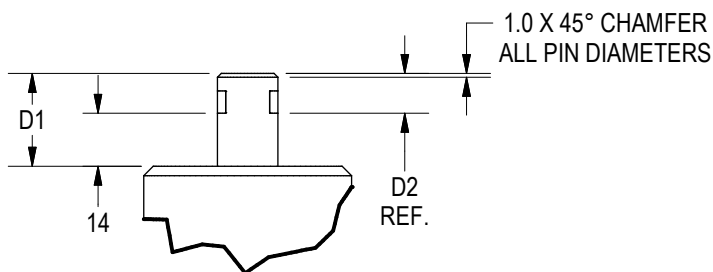
BULLET NOSE PIN WITH FINGERS SHOWN AT 0° FINGERS EXTEND & RETRACT **PARALLEL** TO MOUNTING SURFACE



OPTION

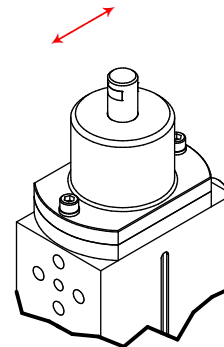
- E** LOW PROFILE PIN WITH FINGERS AT 0°
- F** LOW PROFILE PIN WITH FINGERS AT 90°

WHEN USED WITH ACTUATORS V & W:
 PINS WITH DIA 8.00-16.00mm RETRACT *BELOW FLUSH* TO BACKUP
 TO BACKUP
 PINS WITH DIA 16.01-26.00mm RETRACT *FLUSH* TO BACKUP



PIN TYPE OPTION "F"

LOW PROFILE PIN WITH FINGERS SHOWN AT 90° FINGERS EXTEND & RETRACT **PERPENDICULAR** TO MOUNTING SURFACE



PIN DIA.	D1	D2
8.00-16.00mm	19.0	5.0
16.01-26.00mm	24.5	10.5

(DO NOT SCALE DRAWING)

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ACTUATOR INFORMATION

Y
1
9
6
5
B

0
0
0
5
0
K
A

Actuator

- A** Double Acting
- B** Double Acting with Spring
- V** Double Acting with Retractable Pin & Secondary Cyl Sensing (Ports at 90°)
- W** Double Acting with Retractable Pin, Spring & Secondary Cyl Sensing (Ports at 90°)

Port Type

- A** NPT
- J** G

	CLAMP FORCE (LBS.) (INCLUDES SPRING PRESSURE)	
DESCRIPTION	60 PSI	
A DOUBLE ACTING	82	
B DOUBLE ACTING WITH SPRING	150	
V DOUBLE ACTING WITH RETRACTABLE PIN & SECONDARY CYL SENSING	82	
W DOUBLE ACTING WITH RETRACTABLE PIN, SPRING & SECONDARY CYL SENSING	150	

NOTES:

AT LOSS OF AIR PRESSURE, SPRING ASSIST WILL MAINTAIN CONSTANT CLAMP PRESSURE:

68 LBF

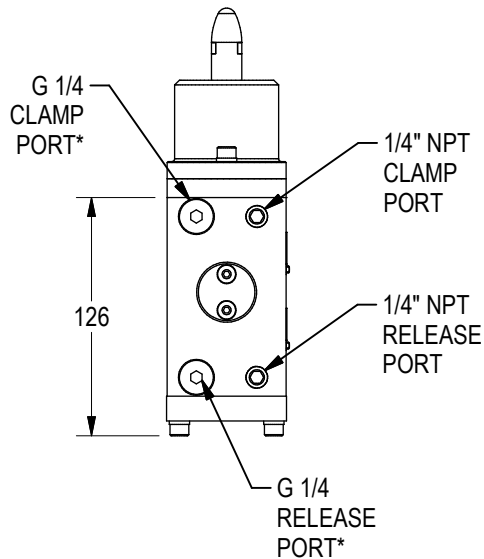
FOR INVERTED APPLICATIONS, PART WEIGHT MUST NOT EXCEED:

68 LBF

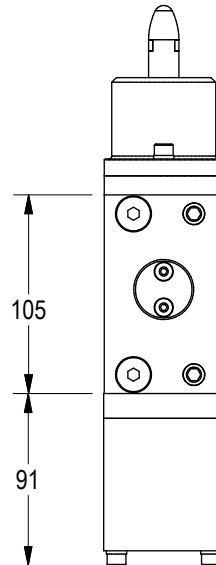
NORMAL OPERATING TEMPERATURE FOR ALL ACTUATORS:

- 10°F TO 165°F
- 23°C TO 74°C

ACTUATOR A
DOUBLE ACTING



ACTUATOR B
NON RETRACTABLE SPRING CLAMP



*SHOWN PLUGGED

(DO NOT SCALE DRAWING)

ENGINEERED PRODUCTS

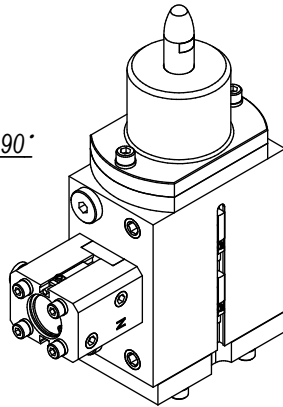
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RETRACT OPTION: ACTUATORS V & W

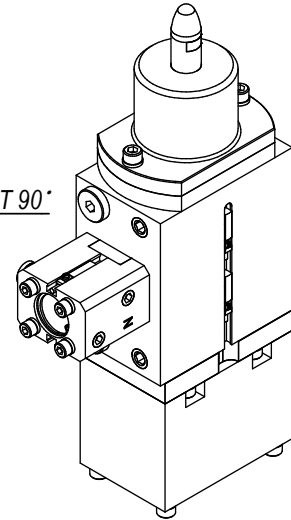
FOR RETRACT SEQUENCE SEE SHEET 8

SEE SHEET 4 FOR GENERAL DIMENSIONS

RETRACT PORTS AT 90°



RETRACT PORTS AT 90°



ACTUATOR V

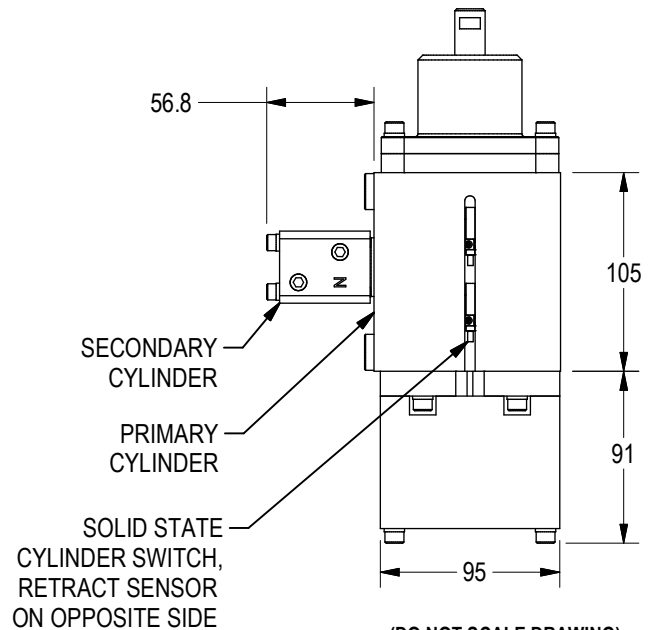
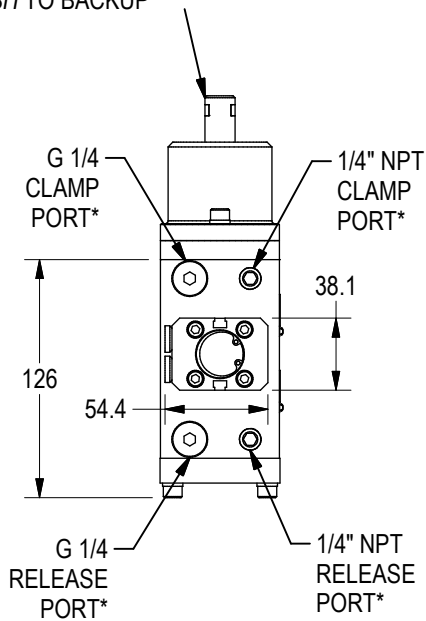
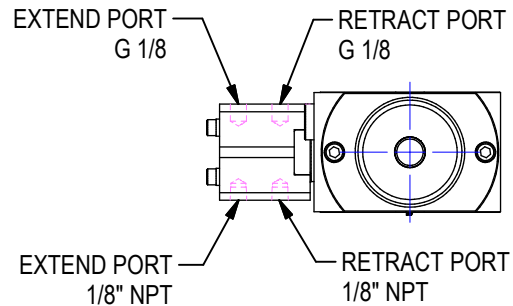
DOUBLE ACTING WITH RETRACTABLE PIN, SECONDARY CYLINDER SENSING, & PORTS AT 90°

ACTUATOR W

DOUBLE ACTING WITH RETRACTABLE PIN, SPRING, SECONDARY CYLINDER SENSING, & PORTS AT 90°

MUST USE LOW PROFILE PIN OPTION "E" OR "F" FOR PIN TO RETRACT FLUSH TO BACKUP:

- PINS WITH DIA 8.00-16.00mm RETRACT *BELOW FLUSH TO BACKUP*
- PINS WITH DIA 16.01-26.00mm RETRACT *FLUSH TO BACKUP*



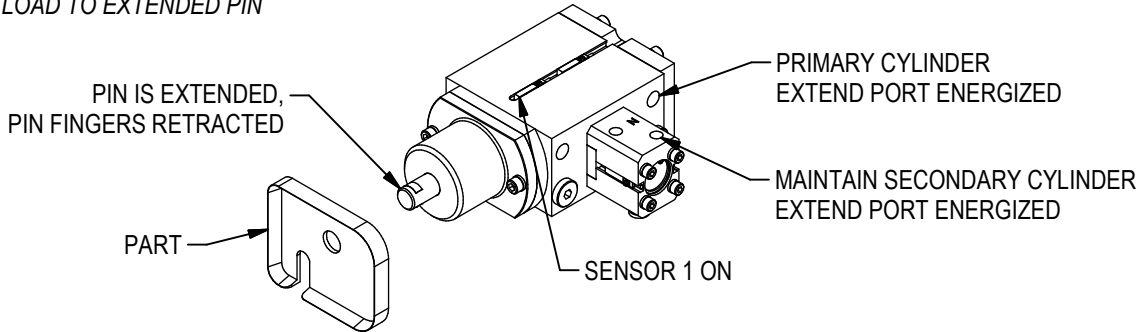
(DO NOT SCALE DRAWING)

*SHOWN PLUGGED

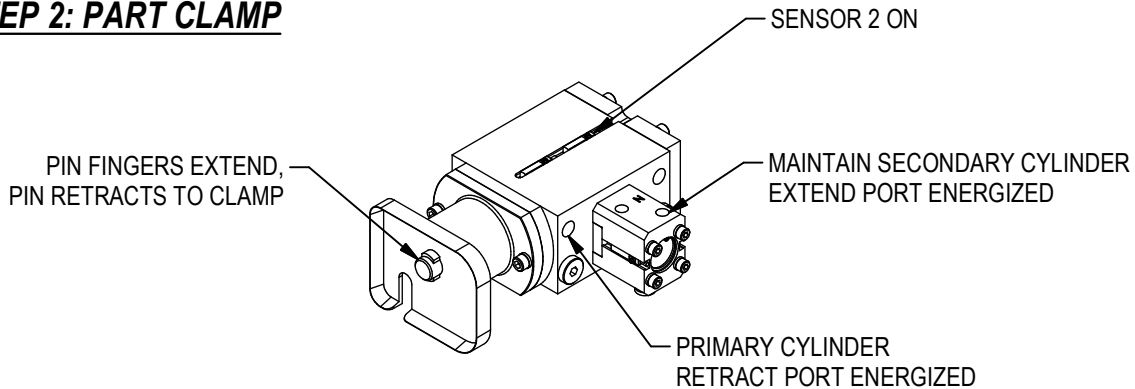
PIN CLAMP RETRACT OPTION SEQUENCE

STEP 1: PART LOAD

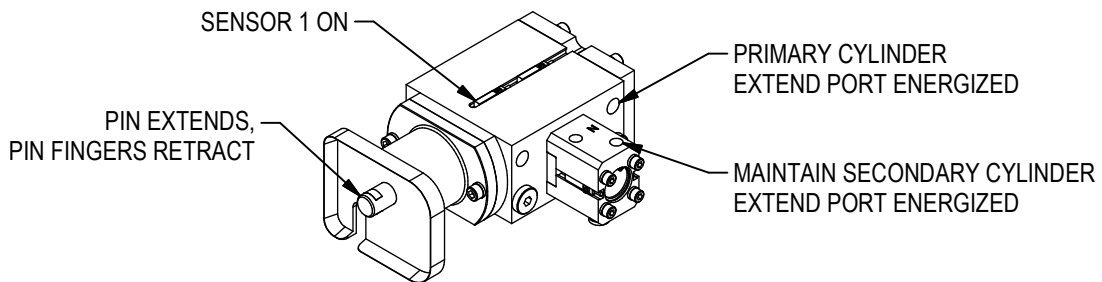
ALWAYS LOAD TO EXTENDED PIN



STEP 2: PART CLAMP

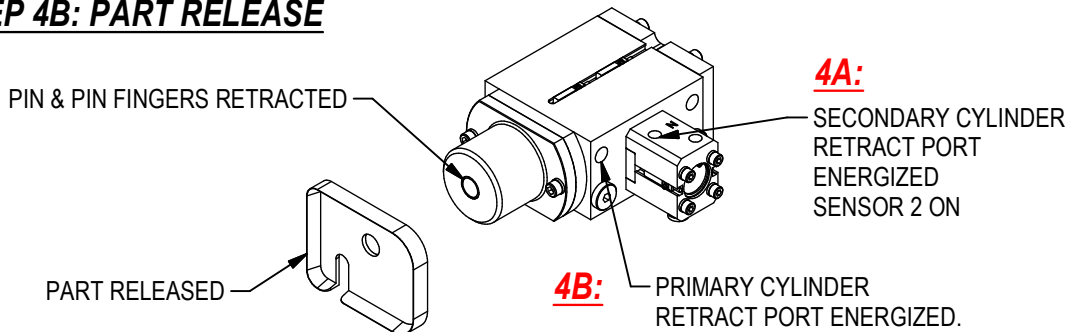


STEP 3: PIN RELEASE



STEP 4A: PIN RETRACT

STEP 4B: PART RELEASE



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PCY PIN CLAMP DESIGN GUIDELINES

1. FOR HORIZONTAL APPLICATIONS, ORIENTATION OF THE CLAMP FINGER MOVEMENT SHOULD BE PARALLEL TO THE GROUND FOR ROUND HOLES.
2. PROXIMITY OF SOME WELD APPLICATIONS TO THE PIN CLAMP COULD AFFECT THE LIFE OF THE PIN AND CLAMP FINGERS.
3. IMPACT LOADING AND EXCESSIVE SIDE LOADING MUST BE AVOIDED. FOR ROBOTICS AND HARD AUTOMATION APPLICATIONS, THE LOCATING PINS NEED TO ENGAGE AND DISENGAGE AT LOAD AND UNLOAD.
4. WELKER ENGINEERED PRODUCTS DOES NOT RECOMMEND MORE THAN ONE 4-WAY AND ONE 2-WAY LOCATING DEVICE IN A COMMON GEO SETTING APPLICATION. PIN BIND AND EXCESSIVE SIDE LOAD MAY RESULT. IF A GEO SETTING APPLICATION REQUIRES MULTIPLE LOCATING DEVICES, CONTACT WELKER.
5. PCY PIN CLAMPS ARE DESIGNED TO BE OPERABLE UP TO **60 PSI MAX.**
6. PIN CLAMP PNEUMATIC ACTUATORS HAVE INTEGRATED FLOW RESTRICTIVE ORIFICES. FLOW CONTROLS ARE NOT REQUIRED.

WARRANTY

WELKER ENGINEERED PRODUCTS WARRANTS TO ITS CUSTOMERS PURCHASING PIN CLAMPS MANUFACTURED BY WELKER THAT THESE UNITS ARE FREE FROM DEFECTS IN WORKMANSHIP AND MATERIALS. WELKER WARRANTS IT WILL REPAIR DEFECTS IN ITS MANUFACTURE DETERMINED BY WELKER TO HAVE OCCURRED AS A RESULT OF DEFECTIVE WORKMANSHIP AND /OR MATERIALS. THIS WARRANTY AUTOMATICALLY EXPIRES AT THE EARLIER OF THREE YEARS FROM THE DATE OF WELKER BEARING'S SHIPMENT OF THE PRODUCTS TO ITS CUSTOMER, OR THREE MILLION CYCLES. THE AFOREMENTIONED WARRANTY SHALL NOT APPLY IF WELKER DETERMINES THE PIN CLAMP(S) WERE MISAPPLIED, ABUSED, OR MODIFIED BY THE CUSTOMER. WITH THE EXCEPTION OF THE THREE YEAR OR THREE MILLION CYCLE WARRANTY ON DEFECTIVE WORKMANSHIP AND MATERIALS, WELKER BEARING MAKES NO EXPRESS WARRANTY, NO WARRANTY OF MERCHANTABILITY, NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE AND NO WARRANTY WHICH EXTENDS BEYOND THIS WRITING ON WELKER MANUFACTURED PIN CLAMPS SOLD BY WELKER BEARING.

LOCATING PINS AND CLAMP FINGERS ARE CONSIDERED WEAR ITEMS AND AS SUCH ARE NOT INCLUDED IN THIS WARRANTY UNLESS THERE IS A MANUFACTURING DEFECT AS STATED ABOVE.

UNDER NO CIRCUMSTANCES SHALL WELKER BEARING BE LIABLE TO ANYONE FOR INCIDENTAL, CONSEQUENTIAL, EXEMPLARY, SPECIAL OR PUNITIVE DAMAGES WHETHER DIRECT OR INDIRECT, INCLUDING, BUT NOT LIMITED TO DOWN TIME, ARISING OUT OF OR RELATED TO ANY PRODUCTS SOLD OR MANUFACTURED BY WELKER ENGINEERED PRODUCTS.

ANY PRODUCT THOUGHT TO BE DEFECTIVE IN WORKMANSHIP OR MATERIALS MUST BE RETURNED TO WELKER FREIGHT PREPAID FOR EVALUATION. WELKER SHALL NOT BE LIABLE FOR LABOR COST INCURRED IN THE REMOVAL OF A PART, DEFECTIVE PART OR THE INSTALLATION OF ANY REPLACEMENT PART.

(DO NOT SCALE DRAWING)

