PCZ SERIES PIN CLAMPS

FOR POSITIVE LOCATING AND CLAMPING
UP TO 2mm PART THICKNESSES
8.00 to 16.00mm PIN DIAMETERS

APPLICATIONS

ROBOT END EFFECTORS (10mm MIN PIN DIA.)
END OF ARM TOOLING
AUTOMOTIVE ASSEMBLY & B/W
PALLETTIZED PART LOCATE & TRANSFER
WELDING & HIGHLY CORROSIVE ENVIRONMENTS

RELEASED 5/10/18
PIN CLAMP WORKSHEET

Project
Station #
Date
Customer
Contact
Email
Phone

NOMINAL HOLE DIAMETER:

Tolerance ± 

Single Metal
Thickness:

Multiple Metal
Quantity:

Overall thickness:

Will the pin be in geo holes in multiple metal pieces? 
Yes  No

RECOMMENDED PIN DIAMETER:

<table>
<thead>
<tr>
<th>Series</th>
<th>Application</th>
<th>Pin sizing</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCZ</td>
<td>geo</td>
<td>0.2mm under minimum</td>
</tr>
<tr>
<td>PCZ</td>
<td>material handling</td>
<td>0.5mm under minimum</td>
</tr>
</tbody>
</table>

FINGER & PIN CLAMP ORIENTATION

PIN CLAMP MOUNTED HORIZONTALLY: 

PIN CLAMP MOUNTED INVERTED OR VERTICALLY:

FINGERS MUST EXTEND PARALLEL TO FLOOR

FINGERS MAY EXTEND IN EITHER DIRECTION

MOUNT

FLOOR

MOUNT

FLOOR

Part # __________________________ Mounting ☐ Horizontal ☐ Vertical or inverted
Fingers ☐ @ 0° ⊗ @ 90°

Part # __________________________ Mounting ☐ Horizontal ☐ Vertical or inverted
Fingers ☐ @ 0° ⊗ @ 90°

Part # __________________________ Mounting ☐ Horizontal ☐ Vertical or inverted
Fingers ☐ @ 0° ⊗ @ 90°

ENGINEERED PRODUCTS
800-229-0890 www.welkerproducts.com

(SHEET 2)
ORDERING INFORMATION

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

Pin Diameter
08.00 - 16.00mm 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°

Actuator
A Double Acting
B Double Acting with Spring

Magnetic Solid State Switch
00 None
LX See Switch Chart

Port Type
A NPT
J G

Welker Cylinder Switch Chart

<table>
<thead>
<tr>
<th>Option</th>
<th>QTY</th>
<th>Switch Part #</th>
<th>Wire</th>
<th>Output</th>
<th>Mfg</th>
</tr>
</thead>
<tbody>
<tr>
<td>L3</td>
<td>1</td>
<td>SWITCH L3** Dual sensor, single connector switch: 1 switch required per cylinder</td>
<td>4</td>
<td>PNP</td>
<td>Welker</td>
</tr>
<tr>
<td>L5</td>
<td>2</td>
<td>MK5113 Single sensor, single connector switch: 2 switches required per cylinder</td>
<td>3</td>
<td>NPN</td>
<td>ifm Efector</td>
</tr>
</tbody>
</table>

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

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

All switches are DC M12 X 1, Quick Disconnect

TO ORDER REPLACEMENT CARTRIDGE

Pin Diameter
8.00 - 16.00 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)
T Dbl Acting w Retractable Pin & Spring (Ports @ 0deg)
U Dbl Acting w Retractable Pin & Spring (Ports @ 90deg)

REPLACEMENT CARTRIDGE

ROD IS INCLUDED FOR UNITS WITH ACTUATOR B

SHEET 3
GENERAL DIMENSIONS

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

FINGERS EXTENDED IN CLAMPED POSITION.
DIM = PIN DIA + 2.4mm

35mm MAX. BACKUP DIAMETER
MUST BE GREATER THAN PIN DIAMETER

10mm MAX BACKUP MODIFICATION AREA:
CALL WELKER FOR MODIFICATIONS

40.00
48
78

SOLID STATE CYLINDER SWITCH

FINGER WIDTH

84.5
38

SOLID STATE CYLINDER SWITCH

PIN DIAMETER

4X Ø8.00

12.00

P.F. DOWEL

15.00
30.00

2X M8x1.25

TAP Ø16.00

UNIT WEIGHT: 3.5 lbs
(WEIGHT VARIES WITH UNIT OPTIONS)
LOCATING PIN OPTIONS

PCZ PIN SIZING
To avoid part removal issues such as binding and pin breakage Welker recommends undersizing pin by 0.25mm
Part hole diameter: ____________________
Part weight: ____________________
Pin size: ____________________

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

PIN TYPE OPTION "A"
BULLET NOSE PIN WITH FINGERS SHOWN AT 0°
FINGERS EXTEND & RETRACT PARALLEL TO MOUNTING SURFACE

PIN TYPE OPTION "F"
LOW PROFILE PIN WITH FINGERS SHOWN AT 90°
FINGERS EXTEND & RETRACT PERPENDICULAR TO MOUNTING SURFACE

OPTION
A BULLET NOSE PIN WITH FINGERS AT 0°
B BULLET NOSE PIN WITH FINGERS AT 90°

OPTION
E LOW PROFILE PIN WITH FINGERS AT 0°
F LOW PROFILE PIN WITH FINGERS AT 90°

1.0 X 45° CHAMFER
ALL PIN DIAMETERS

(DO NOT SCALE DRAWING)

ENGINEERED PRODUCTS
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SHEET 5
**ACTUATOR INFORMATION**

**Actuator**
- A: Double Acting
- B: Double Acting with Spring

**Port Type**
- A: NPT
- J: G

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>CLAMP FORCE (LBS.) (INCLUDES SPRING PRESSURE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A DOUBLE ACTING</td>
<td>29</td>
</tr>
<tr>
<td>B DOUBLE ACTING WITH SPRING</td>
<td>39</td>
</tr>
</tbody>
</table>

**NOTES:**
- AT LOSS OF AIR PRESSURE, SPRING ASSIST WILL MAINTAIN CONSTANT CLAMP PRESSURE: 10 LBF
- FOR INVERTED APPLICATIONS, PART WEIGHT MUST NOT EXCEED: 10 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*
1. FOR HORIZONTAL APPLICATIONS, ORIENTATION OF THE CLAMP FINGER MOVEMENT SHOULD BE PARALLEL TO THE GROUND FOR ROUND HOLES. SEE GENERAL DIMENSION SHEET FOR MAXIMUM SIDE LOADS.

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. PCZ 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.