PIN CLAMPS
FOR POSITIVE LOCATING AND CLAMPING

**PCT**
12.00 - 16.00mm PIN DIAMETERS

- STANDARD BULLET NOSE PIN
- NAAMS COMPLIANT MOUNTING HOLE PATTERN
- PNEUMATIC ACTUATOR NPT or G PORTS
- SOLID STATE CYLINDER SWITCH
- GAPLESS CLAMP FINGER DESIGN AT FULL EXTENSION AND RETRACTION
- OPTIONAL LONG PART BACKUP

**PCS**
16.01 - 25.00mm PIN DIAMETERS

- LOCATING PIN IN SELF-CONTAINED CARTRIDGE, CARTRIDGE IS REPLACEABLE IN FIELD
- STANDARD LOW PROFILE PIN
- STANDARD STEEL PART BACKUP
- CUSTOMER SUPPLIED PROX SWITCH FOR RETRACT OPTION WITH WORLD SWITCH

**PCM**
25.01 - 40.00mm PIN DIAMETERS

- PIN RETRACT OPTION: LOW PROFILE PIN RETRACTS FLUSH WITH BACKUP
- WORLD SWITCH OPTION
- CUSTOMER SUPPLIED PROX SWITCH FOR RETRACT OPTION WITH WORLD SWITCH

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

REQUIRES NO LUBRICATION!
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>PCS, PCT, PCM</td>
<td>geo</td>
<td>0.15mm under minimum</td>
</tr>
<tr>
<td>PCS, PCT, PCM</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

MOUNT

MOUNT

FLOOR

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°

(DO NOT SCALE DRAWING)

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

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

<table>
<thead>
<tr>
<th>Series</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>A Std Steel Backup</td>
</tr>
<tr>
<td>C</td>
<td>B Steel Long Backup</td>
</tr>
<tr>
<td>M</td>
<td>C Alum Bronze Backup</td>
</tr>
<tr>
<td></td>
<td>D Alum Bronze Long Backup</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pin Diameter*</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.00-16.00</td>
</tr>
<tr>
<td>16.01-25.00</td>
</tr>
<tr>
<td>25.01-40.00</td>
</tr>
</tbody>
</table>

*Pin diameter to 2 decimal places

<table>
<thead>
<tr>
<th>Pin Type</th>
<th>Port Type &amp; Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Bullet Nose Pin w/ fingers at 0°</td>
<td>A 1/8 NPT at Pos 1</td>
</tr>
<tr>
<td>B Bullet Nose Pin w/ fingers at 90°</td>
<td>B 1/8 NPT at Pos 2</td>
</tr>
<tr>
<td>C Bullet Nose 2-way Pin w/ fingers @ 0° **</td>
<td>C 1/8 NPT at Pos 3</td>
</tr>
<tr>
<td>D Bullet Nose 2-way Pin w/ fingers @ 90° **</td>
<td>D 1/8 NPT at Pos 4</td>
</tr>
<tr>
<td>E Low Profile Pin w/ fingers at 0°</td>
<td>J 1/8 G at Pos 1</td>
</tr>
<tr>
<td>F Low Profile Pin w/ fingers at 90°</td>
<td>K 1/8 G at Pos 2</td>
</tr>
<tr>
<td>G Low Profile 2-Way Pin w/ fingers @ 0° **</td>
<td>L 1/8 G at Pos 3</td>
</tr>
<tr>
<td>H Low Profile 2-Way Pin w/ fingers @ 90° **</td>
<td>M 1/8 G at Pos 4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Backup Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>K 14mm (for clamping range 0.1 - 4mm)</td>
</tr>
<tr>
<td>N 17mm (for clamping range 4.1 - 7mm)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Backup Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>035-050 (Ø35-Ø50mm) C &amp; T Series</td>
</tr>
<tr>
<td>051-075 (Ø51-Ø75mm) M Series</td>
</tr>
</tbody>
</table>

See Sheet 11 for smaller backup diameters

<table>
<thead>
<tr>
<th>Actuator</th>
<th>Switch Assembly Type</th>
<th>Switch Options</th>
<th>Switch Assembly Type</th>
<th>Switch Options</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>World Switch (See World Switch Chart)</td>
<td>World Switch Sensor Position</td>
<td>World Switch (See World Switch Chart)</td>
<td>World Switch Sensor Position</td>
</tr>
<tr>
<td>0 None</td>
<td>A DC Turck 4 Pin (PNP)</td>
<td>0 None (No Switch)</td>
<td>0 None</td>
<td>0 None (No Switch)</td>
</tr>
<tr>
<td>A DC Turck 4 Pin (PNP)</td>
<td>B AC/DC Turck 5 Pin (N.O.)</td>
<td>E Sensor 01-Unclamped (Pin Extended)</td>
<td>A DC Turck 4 Pin (PNP)</td>
<td>B AC/DC Turck 5 Pin (N.O.)</td>
</tr>
<tr>
<td>B AC/DC Turck 5 Pin (N.O.)</td>
<td>C DC Turck 4 Pin (NPN)</td>
<td>R Sensor 02-Clamped (Pin Retracted)</td>
<td>B AC/DC Turck 5 Pin (N.O.)</td>
<td>C DC Turck 4 Pin (NPN)</td>
</tr>
<tr>
<td>C DC Turck 4 Pin (NPN)</td>
<td>D DC Pepprl-Fuchs 4 Pin (PNP)</td>
<td>R Sensor 02-Clamped (Pin Retracted)</td>
<td>C DC Pepprl-Fuchs 4 Pin (PNP)</td>
<td>D DC Pepprl-Fuchs 4 Pin (PNP)</td>
</tr>
<tr>
<td>D DC Pepprl-Fuchs 4 Pin (PNP)</td>
<td>E DC Balluff 4 Pin (PNP/NO)</td>
<td>Sensor 02-Unclamped</td>
<td>E DC Balluff 4 Pin (PNP/NO)</td>
<td>Sensor 02-Unclamped</td>
</tr>
<tr>
<td>E DC Balluff 4 Pin (PNP/NO)</td>
<td>J DC Efector 4 Pin (PNP)</td>
<td>Sensor 02-Unclamped</td>
<td>J DC Efector 4 Pin (PNP)</td>
<td>Sensor 02-Unclamped</td>
</tr>
<tr>
<td>J DC Efector 4 Pin (PNP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Cylinder switches not available with actuator A on PCT

Switch ordering examples:
- PCS with low profile pin, Turck World Switch in Retract position: C1601EBARA035KA
- PCM with bullet nose pin, Welker L3 switch: M2501BBL3A051KA

STANDARD PRICING INCLUDES THESE FEATURES

** Not available on PCT with pin diameters 12.00 - 12.99mm

SEE SHEET 14 FOR REPLACEMENT PIN CARTRIDGE & BACKUP ORDERING INFORMATION

(DO NOT SCALE DRAWING)
GENERAL DIMENSIONS

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

PORTS: SEE ACTUATOR OPTION SHEETS

4X P.F. FOR ØG DWL ~ H DEEP
2X NEARSIDE ~ 2X FARSIDE MOUNTING HOLES
8X J TAP ~ K DEEP
4X NEARSIDE ~ 4X FARSIDE MOUNTING HOLES

<table>
<thead>
<tr>
<th>SERIES</th>
<th>A</th>
<th>øB</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>*øL</th>
<th>M</th>
<th>N</th>
<th>R</th>
<th>øS</th>
<th>T</th>
<th>U</th>
<th>WGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>T</td>
<td>80</td>
<td>74</td>
<td>59</td>
<td>30.00</td>
<td>60.00</td>
<td>60</td>
<td>8</td>
<td>16</td>
<td>M8 X 1.25</td>
<td>16</td>
<td>12.00-16.00</td>
<td>19</td>
<td>108</td>
<td>18</td>
<td>35-50</td>
<td>8</td>
<td>3.4</td>
<td>12 LBS</td>
</tr>
<tr>
<td>C</td>
<td>80</td>
<td>74</td>
<td>59</td>
<td>30.00</td>
<td>60.00</td>
<td>60</td>
<td>8</td>
<td>16</td>
<td>M8 X 1.25</td>
<td>16</td>
<td>16.01-25.00</td>
<td>19</td>
<td>108</td>
<td>18</td>
<td>35-50</td>
<td>11</td>
<td>4.6</td>
<td>12 LBS</td>
</tr>
<tr>
<td>M</td>
<td>100</td>
<td>99</td>
<td>55</td>
<td>30.00</td>
<td>60.00</td>
<td>60</td>
<td>8</td>
<td>16</td>
<td>M10 X 1.5</td>
<td>20</td>
<td>25.01-40.00</td>
<td>19</td>
<td>110</td>
<td>22</td>
<td>51-75</td>
<td>18</td>
<td>5.6</td>
<td>20 LBS</td>
</tr>
</tbody>
</table>

* DIAMETER RANGE FOR 2-WAY LOCATING PINS ARE DIFFERENT FROM 4-WAY RANGE. SEE SHEET 4

(Do Not Scale Drawing)

Engineered Products
800-229-0890 www.welkerproducts.com

Sheet 4
### Locating Pin Options

#### Pin Diameter

(Ø25.00mm SHOWN) ORDER IN MILLIMETERS ONLY .01 INCREMENTS

<table>
<thead>
<tr>
<th>Pin Type</th>
<th>T SERIES DIAMETERS</th>
<th>C SERIES DIAMETERS</th>
<th>M SERIES DIAMETERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>12.00 - 16.00</td>
<td>16.01 - 25.00</td>
<td>25.01 - 40.00</td>
</tr>
<tr>
<td>B</td>
<td>12.00 - 16.00</td>
<td>16.01 - 25.00</td>
<td>25.01 - 40.00</td>
</tr>
<tr>
<td>C</td>
<td>13.00 - 16.00</td>
<td>18.00 - 26.00</td>
<td>26.85 - 42.00</td>
</tr>
<tr>
<td>D</td>
<td>13.00 - 16.00</td>
<td>18.00 - 26.00</td>
<td>26.85 - 42.00</td>
</tr>
<tr>
<td>E</td>
<td>12.00 - 16.00</td>
<td>16.01 - 25.00</td>
<td>25.01 - 40.00</td>
</tr>
<tr>
<td>F</td>
<td>12.00 - 16.00</td>
<td>18.00 - 26.00</td>
<td>26.85 - 42.00</td>
</tr>
<tr>
<td>G</td>
<td>13.00 - 16.00</td>
<td>16.01 - 25.00</td>
<td>25.01 - 40.00</td>
</tr>
<tr>
<td>H</td>
<td>13.00 - 16.00</td>
<td>18.00 - 26.00</td>
<td>26.85 - 42.00</td>
</tr>
</tbody>
</table>

**STOCK 4-WAY DIAMETERS:** 16.00, 19.85, 20.00, 24.85, 25.00, 34.85, 35.00, 39.85, 40.00

#### 4-WAY Pins

- **Option A:** Bullet Nose Pin with fingers at 0°
- **Option B:** Bullet Nose Pin with fingers at 90°
- **Option C:** Bullet Nose 2-way Pin with fingers at 0°
- **Option D:** Bullet Nose 2-way Pin with fingers at 90°
- **Option E:** Low Profile Pin with fingers at 0°
- **Option F:** Low Profile Pin with fingers at 90°
- **Option G:** Low Profile 2-Way Pin with fingers at 0°
- **Option H:** Low Profile 2-Way Pin with fingers at 90°

**Note:** For optimal horizontal applications, orientation of the clamp finger movement should be parallel to the ground for round holes.

#### 2-WAY Pins

- **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)

**Radial Relief for 2-Way Pins:**
- **T Series:** 0.50mm
- **C Series:** 1.00mm
- **M Series:** 1.00mm

**NOTE:** For optimal horizontal applications, orientation of the clamp finger movement should be parallel to the ground for round holes.
ACTUATOR INFORMATION

Series: T = PCT Body
       C = PCS Body
       M = PCM Body

Actuator: A = 2500
          B = AAR
          D = 035K

Port Type & Position:
A = NPT at Position #1
B = G at Position #1
C = NPT at Position #2
D = G at Position #2
E = NPT at Position #3
F = G at Position #3
G = NPT at Position #4
H = G at Position #4

NOTES: ALL ACTUATORS

1. At loss of air pressure, spring assist will maintain 50 lbs. of constant clamp pressure.
2. For inverted applications, part weight must not exceed 50 lbs.
3. Normal operating temperature for all actuators is -10° to 165°F, -23 to 74°C

PCT ACTUATOR INFORMATION

NOTE: Cylinder switches not available with actuator A on PCT

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>PORTS</th>
<th>CLAMP FORCE (LBS.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(includes spring pressure)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60 PSI</td>
</tr>
<tr>
<td>A DOUBLE ACTING 40mm BORE</td>
<td>1/8&quot; NPT or G 1/8</td>
<td>50</td>
</tr>
<tr>
<td>B SINGLE ACTING 50mm BORE, SPRING CLAMP</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>T SINGLE ACTING 50mm BORE, SPRING CLAMP, RETRACTABLE PIN</td>
<td></td>
<td>50</td>
</tr>
</tbody>
</table>

PCS & PCM ACTUATOR INFORMATION

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>PORTS</th>
<th>CLAMP FORCE (LBS.)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>50mm bore actuator (includes spring pressure)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>60 PSI 80 PSI 100 PSI</td>
</tr>
<tr>
<td>B DOUBLE ACTING 50mm BORE WITH SPRING ASSIST</td>
<td>1/8&quot; NPT or G 1/8</td>
<td>220 277 333</td>
</tr>
<tr>
<td>T DOUBLE ACTING 50mm BORE, SPRING ASSIST, RETRACTABLE PIN</td>
<td></td>
<td>220 277 333</td>
</tr>
</tbody>
</table>

TOP VIEW: PORT LOCATION

SWITCH SIDE

PORT TYPE & POSITION

A = NPT at position #1
B = NPT at position #2
C = NPT at position #3
D = NPT at position #4
J = G at position #1
K = G at position #2
L = G at position #3
M = G at position #4

(DO NOT SCALE DRAWING)
ACTUATOR DIMENSIONS: A & B
ACTUATOR T ON FOLLOWING SHEET

ACTUATOR A
40mm BORE

NOTES:
• Cylinder switches not available with actuator A on PCT
• Actuator A is only available with PCT

ACTUATOR B
50mm BORE

RELEASE PORT
CLAMP PORT

RELEASE PORT
CLAMP/RETRACT PORT: PCS, PCM
PCT RETRACT PORT
IS A BREATHER PORT, SPRING RETRACT
ACTUATOR T: RETRACT OPTION
FOR RETRACT SEQUENCE SEE SHEET 8

MUST USE LOW PROFILE PIN
OPTIONS E-H FOR PIN TO
RETRACT FLUSH TO BACKUP

SHOWN WITH
CYLINDER SWITCH
OPTION

EXTEND PORT
1/8" NPT or G1/8

RETRACT PORT
1/8" NPT or G1/8

CLAMP/RETRACT PORT
EXTEND PORT

SECONDARY
CYLINDER

PRIMARY CYLINDER
1/8" NPT OR G1/8

CLAMP/RETRACT PORT:
PCS, PCM
PCT RETRACT PORT
IS A BREATHER PORT,
SPRING RETRACT

DO NOT SCALE DRAWING

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PIN CLAMP RETRACT OPTION SEQUENCE

STEP 1: PART LOAD
- PIN IS EXTENDED, PIN FINGERS RETRACTED
- PRIMARY CYLINDER EXTEND PORT ENERGIZED
- POWER ON
- SENSOR 1 ON
- SECONDARY CYLINDER EXTEND PORT ENERGIZED
- PART

STEP 2: PART CLAMP
- PIN FINGERS EXTEND, PIN RETRACTS TO CLAMP
- PRIMARY CYLINDER RETRACT PORT ENERGIZED
- SENSOR 2 ON
- SECONDARY CYLINDER EXTEND PORT ENERGIZED

STEP 3: PIN RELEASE
- PIN EXTENDS, PIN FINGERS RETRACT
- PRIMARY CYLINDER EXTEND PORT ENERGIZED
- SENSOR 1 ON
- SECONDARY CYLINDER EXTEND PORT ENERGIZED

STEP 4A: PIN RETRACT
STEP 4B: PART RELEASE
- PIN & PIN FINGERS RETRACTED
- PRIMARY CYLINDER RETRACT PORT ENERGIZED
- POST SENSOR ON
- SECONDARY CYLINDER RETRACT PORT ENERGIZED
- PART RELEASED
- 4A:
- 4B:
WORLD SWITCH ASSEMBLY

0  NONE

A  DC TURCK 4-PIN (PNP)
   #Ni2-Q6.5-AP6-0.1-FS 4.4x3/S304

B  AC/DC TURCK 5-PIN (N.O.)
   #Ni2-Q6.5-ADZ32-0.1-FSB 5.4x4/S304

C  DC TURCK 4-PIN (NPN)
   #Ni2-Q6.5-AN6-0.1-FS 4.4x3/S304

D  *DC PEPPERL & FUCHS 4-PIN (PNP)
   #NBN2-F581-100S6-E8-V1

E  DC BALLUFF 4-PIN (PNP)
   #BES-Z02KR2-P5C20F-P100-S04

J  DC EFECTOR 4-PIN (PNP)
   #IN5374

*STANDARD SWITCH PRICING
OTHER SWITCHES MAY REQUIRE PRICING PREMIUM

SENSOR POSITION

0  NONE

E  Sensor 01-Unclamped (Pin Extended, Load/Unload Position)
   Sensor 02-Clamped (Pin Retracted)

R  Sensor 01-Clamped (Pin Retracted)
   Sensor 02-Unclamped (Load/Unload Position)

Note: Sensor 01 displays an amber LED. Sensor 02 displays a red LED
CYLINDER SWITCH INFORMATION

FOR PIN CLAMP ACTUATOR OPTION "B" & "D"
(NOTE: Cylinder switches not available with actuator A on PCT)

<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**</td>
<td>4</td>
<td>PNP</td>
<td>Welker</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dual sensor, single connector switch: 1 switch required per cylinder</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L5</td>
<td>2</td>
<td>MK5113</td>
<td>3</td>
<td>NPN</td>
<td>ifm Efector</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Single sensor, single connector switch: 2 switches required per cylinder</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FOR PIN CLAMP ACTUATOR OPTION "T"

<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**</td>
<td>4</td>
<td>PNP</td>
<td>Welker</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Single sensor, single connector switch: 1 switch required for retract cylinder</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L5</td>
<td>3</td>
<td>MK5113</td>
<td>3</td>
<td>NPN</td>
<td>ifm Efector</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Single sensor, single connector switch: 2 switches required per cylinder</td>
<td></td>
<td></td>
<td></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

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800-229-0890 www.welkerproducts.com

SHEET 11
## Backup Options

### Backup Diameter Range

<table>
<thead>
<tr>
<th>Min</th>
<th>Max</th>
<th>&quot;C&quot; &amp; &quot;T&quot; Series</th>
<th>&quot;M&quot; Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>035</td>
<td>050</td>
<td>&quot;C&quot; &amp; &quot;T&quot; Series</td>
<td>&quot;M&quot; Series</td>
</tr>
<tr>
<td>051</td>
<td>075</td>
<td>&quot;C&quot; &amp; &quot;T&quot; Series</td>
<td>&quot;M&quot; Series</td>
</tr>
</tbody>
</table>

**Backup Distance**

- **Option "K":** 14mm (for Clamping Range: 0.1 - 4mm)
- **Option "N":** 17mm (for Clamping Range: 4.1 - 7mm)

**Note:** Locating pin retracts to actuate clamp fingers. Clamp fingers are extending during the first 10mm of pin travel and then travels linearly until clamped.

For special part clamp ranges, contact Welker.

---

**Backup Dimensions for Diameters Less than the Minimum Shown**

Example: If ordering a "C" series with a 18.85mm pin and a 25.0mm backup touching the part, using the above order number, order #C1885AAARD025KA

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**Standard Backup Distances**

- **Option "N" (STD) for 17.0mm Backup Distance for Part Thicknesses 4.0mm - 7.0mm**
- **Option "K" (STD) for 14.0mm Backup Distance for Part Thicknesses 0.1mm - 4.0mm**

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**Backup Options**

- **A:** Standard Steel Backup
- **B:** Steel Long Backup
- **C:** Aluminum Bronze Backup
- **D:** Aluminum Bronze Long Backup
PIN CLAMP DESIGN GUIDELINES

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. ALL PIN CLAMPS ARE DESIGNED TO BE OPERABLE UP TO 110 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.

ALL PNEUMATIC PIN CLAMPS ARE SHIPPED WITH INTERNAL OR EXTERNAL FLOW RESTRICTORS. IF THESE RESTRICTORS ARE REMOVED OR BYPASSED, THE WARRANTY IS VOID.
REPLACEMENT PIN CLAMP CARTRIDGES
SEE SHEET 5 FOR PIN TYPES AND FINGER ORIENTATION

Series
- C R T - - - - - Options
  T PCT Body
  C PCS Body
  M PCM Body

Pin Diameter*
- - - -
12.00-16.00 T Series
16.01-25.00 C Series
25.01-40.00 M Series
*Pin diameter to 2 decimal places

Pin Type
- - - -
A Bullet Nose Pin w/ fingers at 0°
B Bullet Nose Pin w/ fingers at 90°
C Bullet Nose 2-way Pin w/ fingers @ 0° **
D Bullet Nose 2-way Pin w/ fingers @ 90° **
E Low Profile Pin w/ fingers at 0°
F Low Profile Pin w/ fingers at 90°
G Low Profile 2-Way Pin w/ fingers @ 0° **
H Low Profile 2-Way Pin w/ fingers @ 90° **

** Not available on PCT with pin diameters 12.00 - 12.99

Backup
- - - - -
Std Standard Backup
Long Long Backup
(Backups must be ordered separately)

Cartridge ordering examples:
- - - - -
C-CRT-16.00-A-STD
M-CRT-40.00-B-LONG
C-CRT-19.00-A-STD-T

REPLACEMENT BACKUP
ALL BACKUPS INCLUDE A BACKUP, BACKUP RING WITH SEAL, SPACER & HARDWARE
SEE SHEET 12 FOR BACKUP OPTIONS

Series
- - - - - Options A & C
  T PCT Body
  C PCS Body
  M PCM Body

Pin Diameter*
- - - -
12.00-16.00 T Series
16.01-25.00 C Series
25.01-40.00 M Series
*Pin diameter to 2 decimal places

Backup Diameter
- - - -
035-050 (Ø35-Ø50mm) C & T Series
051-075 (Ø51-Ø75mm) M Series

Backup ordering example:
- - - -
CE06C-16.00-035-K-A

Backup Distance
- - - -
K 14mm (for clamping range 0.1 - 4mm)
N 17mm (for clamping range 4.1 - 7mm)