PIN CLAMPS
FOR POSITIVE LOCATING AND CLAMPING

**PCT**
12.00 - 16.00mm
PIN DIAMETERS

- STANDARD BULLET NOSE PIN
- LOCATING PIN IN SELF-CONTAINED CARTRIDGE. CARTRIDGE IS REPLACEABLE IN FIELD

**PCS**
16.01 - 25.00mm
PIN DIAMETERS

- NAAMS COMPLIANT MOUNTING HOLE PATTERN
- PNEUMATIC ACTUATOR NPT or G PORTS
- STANDARD LOW PROFILE PIN
- STANDARD STEEL PART BACKUP
- GAPLESS CLAMP DESIGN AT FULL EXTENSION AND RETRACTION

**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

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

**REQUIRES NO LUBRICATION!**

Patent #6,786,478

RELEASED 9/20/19
**PIN CLAMP WORKSHEET**

<table>
<thead>
<tr>
<th>Project</th>
<th>Station #</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer</td>
<td>Contact</td>
<td>Email</td>
</tr>
</tbody>
</table>

**NOMINAL HOLE DIAMETER:**

| Single Metal | Thickness: |
| Multiple Metal | Quantity: |

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:**

FINGERS MUST EXTEND PARALLEL TO FLOOR

**PIN CLAMP MOUNTED INVERTED OR VERTICALLY:**

FINGERS MAY EXTEND IN EITHER DIRECTION

**MOUNT**

**FLOOR**

<table>
<thead>
<tr>
<th>Part #</th>
<th>Mounting</th>
<th>Fingers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Horizontal</td>
<td>@ 0°</td>
</tr>
<tr>
<td></td>
<td>Vertical or inverted</td>
<td>@ 0°</td>
</tr>
</tbody>
</table>

(DO NOT SCALE DRAWING)
ORDERING INFORMATION

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

Series
- 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 @ 90° **
- G: Low Profile 2-Way Pin w/ fingers @ 0° **
- H: Low Profile 2-Way Pin w/ fingers @ 90° **

Actuator
- See Actuator Charts

Switch Assembly Type
World Switch (See World Switch Chart)
- 0: None
- A: DC Turck 4 Pin (PNP)
- B: AC/DC Turck 5 Pin (N.O.)
- C: DC Turck 4 Pin (NPN)
- D: DC Pepprl-Fuchs 4 Pin (PNP)
- E: DC Balluff 4 Pin (PNP/NO)
- J: DC Efector 4 Pin (PNP)

Cylinder Switch (See Cylinder Switch Chart)
- 0: None
- L: Solid State Cylinder Switch

Switch Options
World Switch Sensor Position
- 0: None (No Switch)
- E: Sensor 01-Unclamped (Pin Extended)
- R: Sensor 01-Clamped (Pin Retracted)

Cylinder Switch Selection
- 0: None (No Switch)
- 3: DC 4 Pin (PNP) Weld Field Immune

NOTE: Cylinder switches not available with actuator A on PCT

Actuator Options
- A: Std Steel Backup
- B: Steel Long Backup
- C: Alum Bronze Backup
- D: Alum Bronze Long Backup

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

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

See Sheet 11 for smaller backup diameters

NOTE: Cylinder switches not available with actuator A on PCT

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)

WECKER ENGINEERED PRODUCTS
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SHEET 3
GENERAL DIMENSIONS

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

CLAMP FINGERS IN CLAMPED POSITION

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

PIN RETRACTED, FINGERS EXTENDED, CLAMPED POSITION

T CLAMP FINGER WIDTH

S BACKUP DIAMETER (PART REST)

R

N

M

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

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

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

(Do not scale drawing)

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SHEET 4
LOCATING PIN OPTIONS

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

Pin Diameter

<table>
<thead>
<tr>
<th>Pin Type</th>
<th>Description</th>
<th>12.00 - 16.00</th>
<th>16.01 - 25.00</th>
<th>25.01 - 40.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Bullet Nose Pin with fingers at 0°</td>
<td>T SERIES DIAMETERS</td>
<td>C SERIES DIAMETERS</td>
<td>M SERIES DIAMETERS</td>
</tr>
<tr>
<td>B</td>
<td>Bullet Nose Pin with fingers at 90°</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>Bullet Nose 2-way Pin with fingers at 0°</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>Bullet Nose 2-way Pin with fingers at 90°</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>Low Profile Pin with fingers at 0°</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>Low Profile Pin with fingers at 90°</td>
<td>12.00 - 16.00</td>
<td>16.01 - 25.00</td>
<td>25.01 - 40.00</td>
</tr>
<tr>
<td>G</td>
<td>Low Profile 2-Way Pin with fingers at 0°</td>
<td>13.00 - 16.00</td>
<td>18.00 - 26.00</td>
<td>26.85 - 42.00</td>
</tr>
<tr>
<td>H</td>
<td>Low Profile 2-Way Pin with fingers at 90°</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

- Varies with pin diameter
- Contact Welker for specific dimension

2-WAY PINS

- 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**
- C 2 5 0 0
- B 4 A R D 0 3 5 K A

**Port Type & Position**

**NOTES: ALL ACTUATORS**
- AT LOSS OF AIR PRESSURE, SPRING ASSIST WILL MAINTAIN 50 LBS. OF CONSTANT CLAMP PRESSURE.
- FOR INVERTED APPLICATIONS, PART WEIGHT MUST NOT EXCEED 50 LBS.
- 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.) (INCLUDES SPRING PRESSURE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A DOUBLE ACTING 40mm BORE</td>
<td>1/8&quot; NPT</td>
<td>50</td>
</tr>
<tr>
<td>B SINGLE ACTING 50mm BORE, SPRING CLAMP</td>
<td>1/8&quot; NPT</td>
<td>50</td>
</tr>
<tr>
<td>T SINGLE ACTING 50mm BORE, SPRING CLAMP, RETRACTABLE PIN</td>
<td>G 1/8</td>
<td>50</td>
</tr>
</tbody>
</table>

### PCS & PCM ACTUATOR INFORMATION

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

### TOP VIEW: PORT LOCATION

- SWITCH SIDE
- PORTS 1, 2, 3, 4
- NPT AT POSITION #1
- NPT AT POSITION #2
- NPT AT POSITION #3
- NPT AT POSITION #4
- G AT POSITION #1
- G AT POSITION #2
- G AT POSITION #3
- 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

65

82

73

65

119

73

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

(DO NOT SCALE DRAWING)
ACTUATOR T: RETRACT OPTION
FOR RETRACT SEQUENCE SEE SHEET 8

RETRACT OPTION WITH CYLINDER SWITCH

RETRACT OPTION WITH WORLD SWITCH

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

PRIMARY CYLINDER SWITCH
SECONDARY CYLINDER SWITCH

PIN RETRACT OPTION
WORLD SWITCH
CUSTOMER SUPPLIED PROX SWITCH FOR RETRACT OPTION WITH WORLD SWITCH

EXTEND PORT 1/8" NPT or G1/8
RETRACT PORT 1/8" NPT or G1/8

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

SECONDARY CYLINDER

PRIMARY CYLINDER

1/8" NPT OR G1/8

DO NOT SCALE DRAWING

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SHEET 8
PIN CLAMP RETRACT OPTION SEQUENCE

**STEP 1: PART LOAD**

- PIN IS EXTENDED, PIN FINGERS RETRACTED
- PART LOAD

**STEP 2: PART CLAMP**

- PIN FINGERS EXTEND, PIN RETRACTS TO CLAMP

**STEP 3: PIN RELEASE**

- PIN EXTENDS, PIN FINGERS RETRACT

**STEP 4A: PIN RETRACT**

**STEP 4B: PART RELEASE**

- 4A: SECONDARY CYLINDER RETRACT PORT ENERGIZED
- 4B: POST SENSOR ON
- PART RELEASED

- PRIMARY CYLINDER EXTEND PORT ENERGIZED
- POWER ON
- SENSOR 1 ON
- SECONDARY CYLINDER EXTEND PORT ENERGIZED
- PRIMARY CYLINDER RETRACT PORT ENERGIZED
- SENSOR 2 ON
- SECONDARY CYLINDER EXTEND PORT ENERGIZED
- PRIMARY CYLINDER EXTEND PORT ENERGIZED
- SENSOR 1 ON
- SECONDARY CYLINDER EXTEND PORT ENERGIZED
- PRIMARY CYLINDER RETRACT PORT ENERGIZED
- POST SENSOR ON
WORLD SWITCH INFORMATION

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-PSC20F-P100-S04

J  DC EFCCTOR 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

PCS WITH RETRACT OPTION AND WORLD SWITCH

PIN RETRACT OPTION
WORLD SWITCH
CUSTOMER SUPPLIED PROX SWITCH FOR RETRACT OPTION WITH WORLD SWITCH

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SHEET 10
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 L3S**</td>
<td>3</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>
</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

DO NOT SCALE DRAWING

ENGINEERED PRODUCTS
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## Backup Options

### Backup Diameter Range

<table>
<thead>
<tr>
<th>MIN</th>
<th>MAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>035</td>
<td>050</td>
</tr>
<tr>
<td>051</td>
<td>075</td>
</tr>
</tbody>
</table>

*(1mm increments)*

**Options**

- **A**: Standard Steel Backup
- **B**: Steel Long Backup
- **C**: Aluminum Bronze Backup
- **D**: Aluminum Bronze Long Backup

### 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.

### Special Part Clamp Ranges

For special part clamp ranges, contact Welker

### Backup Dimensions for Diameters Less Than the Minimum Shown

Example: To order a "C" series with \( \varphi 18.85 \) pin and a \( \varphi 25.0 \) backup touching the part, using the above order number, order #C1885AAARD025KA

### Standard Backup Distances

- **Option "N"** (STD) for 17.0 backup distance for part thicknesses 4.0mm - 7.0mm
- **Option "K"** (STD) for 14.0 backup distance for part thicknesses 0.1mm - 4.0mm

---

**Welker Engineered Products**

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(DO NOT SCALE DRAWING)

Sheet 12
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**
  - 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**
  - 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)