SERIES PEC
ARM OVER CLAMP
for Assembly and Welding

Superior part holding. Provides widest range of high clamping force in its class.

ISO-9001 CERTIFIED
Quality Management System Certified

2 new clamp sizes!

Patent Pending MPEC02A-EU

PHD is a member of the MAC Distributor Networkwww.phdinc.com
TO ORDER SPECIFY:
Model, Clamp Size, Bore Size, Output Shaft, Design No.,
Arm Rotation, and additional options if desired.

OPTIONS & KITS

Switch Options

Dimensions

Exploded View & Parts List

Switch Option

Positional Sensing

Mounting Options

Port Fittings (Both Ports)

Mounting Style

Model

Option Compatibility

Clamp Compatibility

Notes:
1) Magnet will be installed if cylinder switches are ordered. Units
   with V4 option are not available with magnet in cylinder (Swxx option).
2) All units come standard with PSxx or PRxx switch target.
3) Model PECxxD must be ordered for Axxx arm options.
4) All U-arms come standard with 90° rotation. Contact PHD for units
   that require 105° rotation and U-arm combinations.

Options not listed are available on all units.
SERIES PEC CLAMPS

enclosed design prevents particles and weld slag from entering

cam design locks clamp in closed position for the last 6° of rotation, ensuring part retention if air pressure is lost and makes initial setups easier

cam design provides widest range of high clamping force in its class

each clamp size is available in two bore sizes, providing a variety of configurations and options to fit a wide range of clamping solutions

cylinder mounted switches provide a low cost solution for position sensing of non-welding applications

WELDING APPLICATION
This application depicts a typical welding application where the PEC clamps hold down the parts while the robot welds smaller parts into place. The PHD cam design provides the means to have more part variation without having to adjust for part variation.

Major Benefits
- Manual release of clamp is achieved by using common tools without removing plugs while providing contamination resistance.
- Self-locking internal threads throughout eliminate need for thread locking adhesives or additional locking components.
- Flange mounting option provides a unique alternative to typical clamp mounting configurations.
- All units are positional switch ready.

Industry Uses
- Assembly and Welding

Our cam design sets us apart from typical toggles
see page 7 for more info!
**DIMENSIONS: SERIES PEC CLAMPS**

**PEC2x**
Note: PEC22D dimensioned

**PEC3x**
Note: PEC33D dimensioned

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All dimensions are reference only unless specifically tolerated.
**DIMENSIONS: SERIES PEC CLAMPS**

**PEC4x**
Note: PEC44D dimensioned

![Diagram of PEC4x with dimensions and notes]

- **LETTER DIM**
  - **PEC44**
    - B12: 2.205 [56.0]
    - B13: 1.102 [28.0]
    - B14: 2.680 [68.1]
    - B15: 0.610 [15.5]
    - P2: 4.311 [109.3]
    - P3: 3.839 [97.5]
    - P4: 0.748 [19.0]

- **PEC45**
  - B12: 2.283 [58.0]
  - B13: 1.142 [29.0]
  - B14: 2.788 [70.8]
  - B15: 0.610 [15.5]
  - P2: 4.390 [111.5]
  - P3: 3.682 [93.0]
  - P4: 0.709 [18.0]

---

**OUTPUT SHAFT CONFIGURATIONS**

- **PECxxD**
- **PECxxR**
- **PECxxL**

All dimensions are reference only unless specifically tolerated.
ENGINEERING DATA: SERIES PEC CLAMPS

SPECIFICATIONS

<table>
<thead>
<tr>
<th>MODEL SIZE</th>
<th>BORE mm</th>
<th>CLAMP TORQUE 87 psi (6 bar)</th>
<th>MAX. HOLDING TORQUE 40 psi</th>
<th>CLOSE OR OPEN TIME</th>
<th>DISPLACEMENT CLOSE</th>
<th>OPEN</th>
<th>WEIGHT lb kg</th>
<th>TYPICAL BACKLASH Cy</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEC22</td>
<td>25</td>
<td>125 14</td>
<td>663 75</td>
<td>0.6</td>
<td>1,53 25.1</td>
<td>1.18 19.3</td>
<td>2.0 0.91</td>
<td>1 ± 0.5°</td>
</tr>
<tr>
<td>PEC23</td>
<td>32</td>
<td>205 23</td>
<td>663 75</td>
<td>0.6</td>
<td>2.51 41.1</td>
<td>2.16 35.4</td>
<td>2.1 0.95</td>
<td>1 ± 0.5°</td>
</tr>
<tr>
<td>PEC33</td>
<td>32</td>
<td>250 28</td>
<td>1593 180</td>
<td>0.6</td>
<td>3.22 52.8</td>
<td>2.41 39.5</td>
<td>3.2 1.45</td>
<td>1 ± 0.5°</td>
</tr>
<tr>
<td>PEC34</td>
<td>40</td>
<td>400 45</td>
<td>1593 180</td>
<td>0.6</td>
<td>5.03 82.4</td>
<td>4.22 69.2</td>
<td>3.5 1.59</td>
<td>1 ± 0.5°</td>
</tr>
<tr>
<td>PEC44</td>
<td>40</td>
<td>570 64</td>
<td>3363 380</td>
<td>0.6</td>
<td>6.32 103.6</td>
<td>5.31 87.0</td>
<td>4.9 2.22</td>
<td>1 ± 0.5°</td>
</tr>
<tr>
<td>PEC45</td>
<td>50</td>
<td>900 102</td>
<td>3363 380</td>
<td>0.6</td>
<td>9.87 161.7</td>
<td>8.86 145.2</td>
<td>5.4 2.45</td>
<td>1 ± 0.5°</td>
</tr>
</tbody>
</table>

Clamp force is clamp torque divided by the distance from clamp pivot.

Holding torque is the maximum external torque that can be applied against the arm without destroying the clamp once the clamp has entered the locking/high force region.

Maximum tooling weight is the recommended maximum additional weight at a given distance from the pivot that will provide reliability after millions of cycles.

LOCKING MECHANISM

The Series PEC Clamp incorporates a cam/roller locking mechanism that prevents the arm from opening if air pressure is lost. The lock works in a range of 6 degrees from the fully closed position.

To manually unlock the clamp, first remove air pressure, then insert a small screwdriver or hex wrench (approximately 4 mm) through the slit in the lock release cover. Press down firmly and move the cam approximately one inch to get it out of the locking area. The lock release cover is made of a durable urethane material that will reclose and form a dust cover once the screwdriver or hex wrench is removed.
PHD's cam design maintains clamp force and locking range without the need for adjustable features. Toggle clamps require adjustable features or shims to maintain clamp force and locking feature.

## CAM VS. TOGGLE COMPARISON

**Example: PHD Cam vs. Toggle**

Toggle clamp with 1200 in-lb [136 Nm] torque vs. PHD clamp with 900 in-lb [102 Nm] torque

- Typical part variation = 0.04" [1 mm]
- Clamp force required = 250 lb [1112 N]
- Unit must stay locked during clamping
- Distance from clamp pivot to hold down location = 3' [76 mm]
- Force = Torque/Distance

### Clamp Force Comparison

<table>
<thead>
<tr>
<th>CLAMP ANGLE</th>
<th>PHD CAM</th>
<th>% OF FORCE</th>
<th>JAW IS LOCKED</th>
<th>CLAMP FORCE [lb]</th>
<th>% OF FORCE</th>
<th>JAW IS LOCKED</th>
<th>CLAMP FORCE [lb]</th>
<th>PART VARIATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°</td>
<td>100%</td>
<td>Yes</td>
<td>300 [1334]</td>
<td>100%</td>
<td>Yes</td>
<td>400 [1779]</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>0.1°</td>
<td>100%</td>
<td>Yes</td>
<td>300 [1334]</td>
<td>70%</td>
<td>Yes</td>
<td>280 [1245]</td>
<td>0.005</td>
<td></td>
</tr>
<tr>
<td>0.6°</td>
<td>100%</td>
<td>Yes</td>
<td>300 [1334]</td>
<td>55%</td>
<td>Maybe</td>
<td>220 [979]</td>
<td>0.031</td>
<td></td>
</tr>
<tr>
<td>1°</td>
<td>100%</td>
<td>Yes</td>
<td>300 [1334]</td>
<td>50%</td>
<td>No</td>
<td>200 [890]</td>
<td>0.052</td>
<td></td>
</tr>
<tr>
<td>2°</td>
<td>100%</td>
<td>Yes</td>
<td>300 [1334]</td>
<td>40%</td>
<td>No</td>
<td>160 [712]</td>
<td>0.105</td>
<td></td>
</tr>
<tr>
<td>4°</td>
<td>100%</td>
<td>Yes</td>
<td>300 [1334]</td>
<td>30%</td>
<td>No</td>
<td>120 [534]</td>
<td>0.210</td>
<td></td>
</tr>
<tr>
<td>6°</td>
<td>70%</td>
<td>Yes</td>
<td>210 [934]</td>
<td>25%</td>
<td>No</td>
<td>100 [458]</td>
<td>0.314</td>
<td></td>
</tr>
</tbody>
</table>

Shaded areas indicate values do not meet requirements for toggle designs.

### Diagram

**PEC45 vs. Toggle Comparison**

[Diagram showing comparison between PEC45 and Toggle]
OPTIONS & KITS: SERIES PEC CLAMPS

**Axxxx** ARM OPTION

This option provides a clamping arm at multiple locations and orientations in both standard and blank mounting configurations. Consult PHD for alternative arm designs.

**ARM OPTIONS - SHAPE/LOCATION**

- **Double**
- **Right**
- **Left**
- **Centered**

**ARM OPTIONS - ORIENTATION**

- Open/Unclamped
- Closed/Clamped

**CAUTION:**

Clamps with U-Style arms in the 90° clamp position (AU9xx) and positional sensors require units to have no more than 90° rotation to prevent damage to unit.
OPTIONS & KITS: SERIES PEC CLAMPS

ARxxx

Blank Arm Kits
Standard Arm Kits

AUxxx

Blank U-Style Kit
Standard U-Style Kit

**NOTE:** DIMENSIONS A4 THROUGH A10 NOT AVAILABLE WITH Axx00 OPTION

**LETTER DIM** | **MODEL NUMBER** | **PEC2x** | **PEC3x** | **PEC4x**
---|---|---|---|---
A1 | 1.181 | 30.0 | 1.653 | 42.0 | 1.969 | 50.0
A2 | 0.591 | 15.0 | 0.735 | 18.7 | 0.866 | 22.0
A3 | 0.381 | 9.0 | 0.564 | 10.6 | 0.421 | 10.7
A4 | 2.559 | 65.0 | 3.110 | 78.0 | 3.150 | 80.0
A5 | 0.394 | 10.0 | 0.394 | 10.0 | 0.394 | 10.0
A6 | 0.787 | 20.0 | 0.787 | 20.0 | 0.787 | 20.0
A7 | 0.787 | 20.0 | 0.787 | 20.0 | 0.787 | 20.0
A8 | 0.376 | 9.6 | 0.500 | 12.7 | 0.625 | 15.9
A9 | 0.256 | 6.5 | 0.276 | 7.0 | 0.276 | 7.0
A10 | 4 mm SLIP FIT | 6 mm SLIP FIT | 6 mm SLIP FIT

A11 | M5 SHCS | M6 SHCS | M8 SHCS
A12 | M4 HEX | M5 HEX | M6 HEX
A13 | 75 in-lb | 8.5 Nm | 125 in-lb | 14 Nm | 250 in-lb | 28 Nm

**NOTE:** DIMENSIONS A4 THROUGH A10 NOT AVAILABLE WITH Axx00 OPTION

**ARM KITS**

**MODEL** | **ARM, STRAIGHT BLANK (Axx00)** | **ARM, STRAIGHT STD (Axx01)**
---|---|---
PEC2x | 80569-00 | 80569-01
PEC3x | 78585-00 | 78585-01
PEC4x | 80570-00 | 80570-01

KITS INCLUDE ARM, ARM CLAMP AND SCREWS

Must be ordered as: **PECxxD-x-96**

**LETTER DIM** | **MODEL NUMBER** | **PEC2x** | **PEC3x** | **PEC4x**
---|---|---|---|---
A1 | 1.181 | 30.0 | 1.653 | 42.0 | 1.969 | 50.0
A2 | 0.591 | 15.0 | 0.735 | 18.7 | 0.866 | 22.0
A3 | 0.381 | 9.0 | 0.564 | 10.6 | 0.421 | 10.7
A4 | 2.559 | 65.0 | 3.110 | 78.0 | 3.150 | 80.0
A5 | 0.394 | 10.0 | 0.394 | 10.0 | 0.394 | 10.0
A6 | 0.787 | 20.0 | 0.787 | 20.0 | 0.787 | 20.0
A7 | 0.787 | 20.0 | 0.787 | 20.0 | 0.787 | 20.0
A8 | 0.376 | 9.6 | 0.500 | 12.7 | 0.625 | 15.9
A9 | 0.256 | 6.5 | 0.276 | 7.0 | 0.276 | 7.0
A10 | 4 mm SLIP FIT | 6 mm SLIP FIT | 6 mm SLIP FIT

A11 | M5 SHCS | M6 SHCS | M8 SHCS
A12 | M4 HEX | M5 HEX | M6 HEX
A13 | 75 in-lb | 8.5 Nm | 125 in-lb | 14 Nm | 250 in-lb | 28 Nm

**NOTE:** DIMENSIONS A4 THROUGH A10 NOT AVAILABLE WITH Axx00 OPTION

**KITS**

**MODEL** | **ARM, U-STYLE BLANK (Axx00)** | **ARM, U-STYLE STD (Axx01)** | **90° ROTATION**
---|---|---|---
PEC2x | 80569-02 | 80569-03 | 78600-01
PEC3x | 78585-02 | 78585-03 | 78600-02
PEC4x | 80570-02 | 80570-03 | 78600-03

ARM KITS INCLUDE ARM, ARM CLAMP AND SCREWS. ROTATION KITS ADD PARTS TO PISTON AND REQUIRE SOME DISASSEMBLY.

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OPTIONS & KITS: SERIES PEC CLAMPS

**M001 FLANGE MOUNTING CYLINDER BODY**

This option provides an integrated flange mount to the bottom of the clamp to simplify mounting. This option is only available on PEC34 units. Consult PHD for alternative mounting options.

<table>
<thead>
<tr>
<th>LETTER DIM</th>
<th>MODEL NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2</td>
<td>B2 6.889 175</td>
</tr>
<tr>
<td>B12</td>
<td>B12 1.890 48</td>
</tr>
<tr>
<td>B14</td>
<td>B14 2.362 60</td>
</tr>
<tr>
<td>B17</td>
<td>B17 0.492 12</td>
</tr>
<tr>
<td>B18</td>
<td>B18 0.551 14</td>
</tr>
<tr>
<td>B19</td>
<td>B19 2.992 76</td>
</tr>
<tr>
<td>B20</td>
<td>B20 2.441 62</td>
</tr>
<tr>
<td>B21</td>
<td>B21 1.772 45</td>
</tr>
<tr>
<td>B22</td>
<td>B22 0.268 6.8</td>
</tr>
<tr>
<td>B23</td>
<td>B23 1.795 45.6</td>
</tr>
<tr>
<td>B24</td>
<td>B24 0.023 .6</td>
</tr>
</tbody>
</table>

**M002 FLANGE MOUNTING PLATE**

This option provides a bolt-on mount to the bottom of the clamp to simplify mounting. This option is only available on PEC23 and PEC45 units. Consult PHD for alternative mounting options.

<table>
<thead>
<tr>
<th>LETTER DIM</th>
<th>MODEL NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>B12</td>
<td>B12 1.634 42</td>
</tr>
<tr>
<td>B14</td>
<td>B14 1.851 47</td>
</tr>
<tr>
<td>B17</td>
<td>B17 0.394 10</td>
</tr>
<tr>
<td>B18</td>
<td>B18 0.433 11</td>
</tr>
<tr>
<td>B19</td>
<td>B19 2.500 64</td>
</tr>
<tr>
<td>B20</td>
<td>B20 2.126 54</td>
</tr>
<tr>
<td>B21</td>
<td>B21 1.102 28</td>
</tr>
<tr>
<td>B22</td>
<td>B22 0.268 6.8</td>
</tr>
<tr>
<td>B23</td>
<td>B23 1.254 31.9</td>
</tr>
<tr>
<td>B24</td>
<td>B24 0.151 3.8</td>
</tr>
</tbody>
</table>

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OPTIONS & KITS: SERIES PEC CLAMPS

PORT LOCATION
This option specifies alternate port locations for the cylinder providing flexibility and customer convenience.

NOTES:
1) NUMBERS ENCLOSED IN HEX INDICATE PORT POSITION
2) POSITIONS 2 AND 4 ARE ONLY AVAILABLE ON PEC22, PEC33, AND PEC44 UNITS

PORT FITTINGS
LAA (metal) or LBB (plastic) option provides 90° swivel fittings for ease of air line hook up.

V4 SEAL OPTION
This option provides polyurethane piston seals for longer life in harsh environment applications. This option does not allow the use of magnets in the cylinder and therefore is not compatible with SWxx switch options.

<table>
<thead>
<tr>
<th>LETTER DIM</th>
<th>OPTION CODE</th>
<th>PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1 1/8 NPT</td>
<td>LAA</td>
<td>62178-003</td>
</tr>
<tr>
<td>PF1 0.625</td>
<td>LAA</td>
<td>71120-001</td>
</tr>
<tr>
<td>PF2 0.885</td>
<td>LAA</td>
<td>62195-005</td>
</tr>
<tr>
<td>PF3 0.472</td>
<td>LBB</td>
<td>71121-001</td>
</tr>
</tbody>
</table>

All dimensions are reference only unless specifically tolerated.
SWITCH OPTION: SERIES PEC CLAMPS

**PSxxx**  STANDARD POSITION SENSING

**PRxxx**  REVERSED POSITION SENSING

This option provides arm open and arm closed sensing by affixing an aluminum housing to the back of the clamp body. The adjustable switches sense the position of a target on the cam as the clamp opens and closes. PS positions satellite switch S02/S2 to sense open and S01/S1 to sense close. PR positions the satellite switch S01/S1 to sense open and S02/S2 to sense close. See tables and diagrams for satellite switch to quick disconnect pin number relationships.

### Positional Sensor Mounting

<table>
<thead>
<tr>
<th>MODEL</th>
<th>KIT NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEC2x</td>
<td>80575</td>
</tr>
<tr>
<td>PEC3x</td>
<td>80575</td>
</tr>
<tr>
<td>PEC4x</td>
<td>80576</td>
</tr>
</tbody>
</table>

Includes switch housing and mounting hardware

### Matching Cordsets 2 Meters Long

<table>
<thead>
<tr>
<th>LETTER</th>
<th>PEC2x</th>
<th>PEC3x</th>
<th>PEC4x</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>in</td>
<td>mm</td>
<td>in</td>
</tr>
<tr>
<td>PS1</td>
<td>0.354</td>
<td>9.0</td>
<td>0.354</td>
</tr>
<tr>
<td>PS2</td>
<td>0.547</td>
<td>13.9</td>
<td>0.547</td>
</tr>
<tr>
<td>PS3</td>
<td>1.181</td>
<td>30.0</td>
<td>1.181</td>
</tr>
<tr>
<td>PS4</td>
<td>3.366</td>
<td>85.5</td>
<td>3.360</td>
</tr>
<tr>
<td>PS5</td>
<td>2.490</td>
<td>63.0</td>
<td>2.392</td>
</tr>
<tr>
<td>PS6</td>
<td>MS SHCS</td>
<td>MS SHCS</td>
<td>M5 SHCS</td>
</tr>
<tr>
<td>PS7</td>
<td>M4 HEX</td>
<td>M4 HEX</td>
<td>M4 HEX</td>
</tr>
<tr>
<td>PS8</td>
<td>70 in-lb</td>
<td>7.9 Nm</td>
<td>70 in-lb</td>
</tr>
</tbody>
</table>

### Connector Position

- **1** - Parallel to output shaft
- **9** - Perpendicular to output shaft

### Switch Option

- **N** - No Switch
- **A** - 5-pin AC/DC Switch
- **D** - 4-pin PNP DC Switch (P + F)
- **E** - 4-pin PNP DC Switch (Turck)
- **F** - 4-pin PNP DC Switch (Efector)
- **H** - 4-pin NPN DC Switch (P + F)
- **J** - 4-pin NPN DC Switch (Turck)

### HOLE LOCATIONS

- **CLOSED-CLAMP**
  - Position 1-2
- **OPEN-UNCLAMP**
  - Position 7-9

Note: Connector position 9 is not available with switch option A.
SWITCH OPTION: SERIES PEC CLAMPS

SWITCH OPTION A  71483-002-PEC  Turck Part #: Ni 2-Q6.5-ADZ32-0.16-FSB 5.4X4/S304

SWITCH OPTION D  71483-001-PEC  P + F Part #: NBN2-F581-160S6-E8-V1 (PNP)
SWITCH OPTION H  71483-005-PEC  P + F Part #: NBN2-F581-160S6-E10-V1 (NPN)

SWITCH OPTION E  71483-003-PEC  Turck Part #: Ni 2-Q6.5-0.16-BDS-2AP6X3-H1141/S34 (PNP)
SWITCH OPTION J  71483-006-PEC  Turck Part #: Ni-2-Q6.5-AN6-0.16-FS 4.4X3/S304 (NPN)

SWITCH OPTION F  71483-004-PEC  Efector Part #: IN 5375 (PNP)

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**SWITCH OPTION: SERIES PEC CLAMPS**

**SW41**  
1 NPN SWITCH INSTALLED

**SW42**  
2 NPN SWITCHES INSTALLED

**SW51**  
1 PNP SWITCH INSTALLED

**SW52**  
2 PNP SWITCHES INSTALLED

---

### PART NO. | DESCRIPTION
---|---
73360-01 | Solid State NPN (Sink) 5 - 28V DC, 165 mm Cable with Quick Disconnect

### Specifications 73360-01

**Switching Logic**  
Solid State Output, Normally Open

**Sensor Type**  
PNP Current Sinking

**Operating Voltage**  
5 - 28 VDC

**Switching Current**  
200 mA max

**Switching Voltage**  
6 W max

**Current Consumption**  
0.01 mA max

**Leakage Current**  
0.01 mA max

**Indicator**  
Red LED

**Cable**  
Ø 2.8, 3C, PVC

**Sensitivity**  
40 Gauss

**Temperature Range**  
-10°C to 70°C

**Shock**  
5G

**Vibration**  
9G

**Enclosure Classification**  
IP67 (NEMA 6)

**Protection Circuit**  
Power Source Reverse Polarity, Surge Suppression

---

**SWITCH SLOT LOCATIONS**

**63549-xx CORDSET WITH FEMALE QUICK CONNECT**

**NOTE:** ALL NUMBERS IN [ ] ARE METRIC AND ARE IN mm

---

All dimensions are reference only unless specifically tolerated.

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EXPLODED VIEW & PARTS LIST: SERIES PEC CLAMPS

NOTES:
1) Cylinder repair kits include all seals, retaining rings, and shock pads required to rebuild cylinder. Consult PHD for piston rod, bushing and bore plug replacements.
2) Position sensor mounting kit includes switch housing and mounting hardware.

KEY
1 Right Body
2 Left Body
3 Pinion Assembly
   PEC3xL - Left
   PEC3xR - Right
4 Cam
5 Link
6 Roller Bearing
7 Switch Slot Cover
8 Dowel Pin
9 Dowel Pin
10 Dowel Pin
11 Body Mounting Screws
12 Switch Slot Cover Screw
13 Lock Release Cover
14 Cylinder Assembly
15 Cylinder Mounting Screws

DESCRIPTION
Right Body
Left Body
Pinion Assembly
Cam
Link
Roller Bearing
Switch Slot Cover
Dowel Pin
Dowel Pin
Dowel Pin
Body Mounting Screws
Switch Slot Cover Screw
Lock Release Cover
Cylinder Assembly
Cylinder Mounting Screws

KIT DESCRIPTION
Cylinder Repair Kit (Standard)
Cylinder Repair Kit (-V4 Option)
Blank Straight Arm Kit
Blank U-Style Arm Kit
U-Style Arm Kit
96° Rotation Kit
Positional Sensor Mounting Kit
Flange Mounting Kit (-M002)

PEC22/PEC23
80573-01
80573-02
80569-00
80569-01
80569-02
80569-03
80575
80578-01

PEC33/PEC34
78586-01
78586-02
78586-03
78586-04

PEC44/PEC45
80594-01
80594-02
80594-03
80594-04
80578-01
80578-02

*Consult PHD for cylinder assembly replacement part numbers

* 80521-xx-xx-xx-xx
* 78601-xx-xx-xx-xx
* 80546-xx-xx-xx-xx

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