Superior part locating and positioning.
Provides the best repeatability in its class.

Patent Pending

PSP01
TO ORDER SPECIFY:
Model, Unit Size, Mounting Style, Design No., Stroke, and additional options if desired.

UNIT SIZE
63 mm Bore

DESIGN NO.
1 - Imperial
5 - Metric

STROKE mm
25, 50

MODEL
PSP - Shot Pin

MOUNTING STYLE
W - M12 Threads, C Bore holes & dowels holes

PORT LOCATION
BLANK - Rigid (Standard)
RP - Rap

RAM COUPLING
PP2 - Position 2
PP3 - Position 3
PP4 - Position 4

PORT FITTINGS (BOTH PORTS)
BLANK - None
LAA - 90° Swivel Elbow, Metal
LBB - 90° Swivel Elbow, Plastic

PORT LOCATION
BLANK - Position 1
PP2 - Position 2
PP3 - Position 3
PP4 - Position 4

SENSING OPTION
S - Standard
R - Reversed

WELD PROTECTION
BLANK - Urethane scraper
WC1 - Weld cover
WC2 - Bronze scraper
See note.

WC1 - Weld Protection
BLANK - None
WC1 - Weld cover
WC2 - Bronze scraper
See note.

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

CONNECTOR POSITION
1 - Parallel to ram
9 - Perpendicular to ram

NOTE:
- WC1 option includes the standard urethane scraper.
- WC2 option replaces the urethane scraper with a bronze scraper.
- WC1 and WC2 options can be ordered together (-WC1-WC2).

TO ORDER SPECIFY:
Model, Unit Size, Mounting Style, Design No., Stroke, and additional options if desired.
**Major Benefits**

- Smaller, more compact design
- After millions of cycles, adjustable bearing system can be used to make worn-in units “like-new” providing better accuracy over a much longer period of time
- Internal porting and shock absorption eliminates the need to adjust air cushions or flow controls and still provide quick cycle rates
- Self-locking internal threads throughout eliminate need for thread locking adhesives or additional locking components
- 24 hour delivery

**Industry Uses**

- Assembly and Welding
DIMENSIONS: SERIES PSP SHOT PINS

NOTES:
1) ALL DIMENSIONS ARE REFERENCE UNLESS OTHERWISE SPECIFIED
2) *DIMENSION SHOWN WITH UNIT RETRACTED - ADD STROKE LENGTH FOR EXTENDED POSITION

ENGINEERING DATA: SERIES PSP SHOT PINS

<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
<th>SERIES PSP</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEALS</td>
<td>Polyurethane</td>
</tr>
<tr>
<td>WORKING PRESSURE</td>
<td>40 psi min. - 100 psi max.</td>
</tr>
<tr>
<td>OPERATING TEMPERATURE</td>
<td>-20° to +180° F [-28° to +82° C]</td>
</tr>
<tr>
<td>LUBRICATION</td>
<td>Factory lubricated for life</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MODEL SIZE</th>
<th>STROKE</th>
<th>BORE</th>
<th>UNIT WEIGHT</th>
<th>THEORETICAL CYLINDER FORCE 87 psi [6 bar]</th>
<th>EXTEND AND RETRACT TIME</th>
<th>DISPLACEMENT</th>
<th>MIN. VALVE RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSP6</td>
<td>25</td>
<td>63</td>
<td>14.6.4</td>
<td>387 44 287 32</td>
<td>0.15</td>
<td>9.6 157 5.9 97</td>
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<tr>
<td>PSP6</td>
<td>50</td>
<td>63</td>
<td>14.6.4</td>
<td>387 44 287 32</td>
<td>0.20</td>
<td>11.4 187 7.7 126</td>
<td>1.0</td>
</tr>
</tbody>
</table>

DEFLECTION
The Series PSP shot pin cylinder is adjusted so that deflection is less than .008" [0.20 mm] at the load point. A 50 lb force is pushed down on the ram as shown and then pulled up with 10 lb to determine the total deflection and free play of the actuator. The change in deflection after 3 million cycles has been tested to be less than .003" [0.08mm] at the load point.

REPEATABILITY
The Series PSP shot pin cylinder has shock pads on extend and retract of the actuator. These shock pads help decelerate the ram and eliminate the need for external flow controls and/or air cushion adjustments. Testing has shown that the stroke is repeatable within .005" [.13mm] after 3 million cycles.
OPTIONS & KITS: SERIES PSP SHOT PINS

**RP** RAP COUPLING

Allows the piston to move before moving the ram. The impact helps free tooling from a bound condition. This option does not reduce the stroke of the unit.

**PPx** PORT LOCATION

This option specifies alternate port location for the cylinder providing flexibility and customer convenience. The port position can be changed by removing the cylinder bolts and rotating the cylinder body.

**Lxx** PORT FITTINGS

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

**WC1** WELD COVER

-WC1 provides an additional weld cover that surrounds the ram and helps prevent weld slag from damaging the wiper and bushing area.

**WC2** BRONZE SCRAPER

-WC2 provides a metallic bronze scraper to help remove excess contamination better than the standard urethane wiper. This option can be used when there is not enough room for a weld cover.

All dimensions are reference only unless specifically tolerated.
This option provides extend and retract sensing by affixing an aluminum housing to the top of the ram body. The retract switch is fixed needing no adjustment. The extend switch is adjustable at the end of stroke to sense either the leading or trailing edge of the target and has about 3/8" of adjustment. Loosening the M5 screw and sliding it up or down adjusts the extend switch position. PS positions the S01/S1 switch to sense the extend position and S02/S2 switch to send the retract position. PR positions the S01/S1 switch to sense the retract position and S02/S2 to sense the extend position.

**Sensing Option**
- **PSxxx**: Standard Position Sensing
- **PRxxx**: Reversed Position Sensing

**Switch Housing Position**
- 1 - Position 1

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

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

**Adjustable Extend Switch Location**
- 4X M5 SHCS
- 4 mm HEX
- 70 in-lb TORQUE

**Retract Switch Location**
- Adjust non-adjustable

**Matching Cordsets 2 Meters Long**

<table>
<thead>
<tr>
<th>Switch Option</th>
<th>PHD Part Number</th>
<th>Cordset Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>73317-00-02</td>
<td>KB 5T-2</td>
</tr>
<tr>
<td>D</td>
<td>65440-001-02</td>
<td>V1-G-YE2M-PVC</td>
</tr>
<tr>
<td>E</td>
<td>78039-00-02</td>
<td>RK 4.4T-2</td>
</tr>
<tr>
<td>F</td>
<td>65440-001-02</td>
<td>V1-G-YE2M-PVC</td>
</tr>
<tr>
<td>H</td>
<td>65440-001-02</td>
<td>V1-G-YE2M-PVC</td>
</tr>
<tr>
<td>J</td>
<td>78039-00-02</td>
<td>RK 4.4T-2</td>
</tr>
</tbody>
</table>

All dimensions are reference only unless specifically tolerated.
SWITCH OPTION: SERIES PSP SHOT PINS

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

SWITCH OPTION D  71483-001-PSP  P+F Part #: NBN2-F581-160S6-E8-V1  (PNP)

SWITCH OPTION H  71483-005-PSP  P+F Part #: NBN2-F581-160S6-E10-V1  (NPN)

SWITCH OPTION E  71483-003-PSP  Turck Part #: Ni 2-Q6.5-0.16-BDS-2AP6X3-H1141/S34  (PNP)

SWITCH OPTION J  71483-006-PSP  Turck Part #: Ni 2-Q6.5-0.16-FS 4.4X3/S304  (NPN)

SWITCH OPTION F  71483-004-PSP  Effector Part #: IN 5375  (PNP)

All dimensions are reference only unless specifically tolerated.
EXPLODED VIEW & PARTS LIST: SERIES PSP SHOT PINS

TUBE STUFFER REQUIRED TO ASSEMBLE PISTON/SEALS INTO BORE

<table>
<thead>
<tr>
<th>KEY</th>
<th>DESCRIPTION</th>
<th>MODEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>50 mm Ram Body</td>
<td>PSP6W-1x25</td>
</tr>
<tr>
<td>2</td>
<td>NAAMS L-Block Ram</td>
<td>79486-01</td>
</tr>
<tr>
<td>3</td>
<td>Bottom Cover</td>
<td>79487-01</td>
</tr>
<tr>
<td>4</td>
<td>Top Cover</td>
<td>79488-01</td>
</tr>
<tr>
<td>5</td>
<td>Preload Bearing Rail</td>
<td>79489-01</td>
</tr>
<tr>
<td>6</td>
<td>Flat Bearing Rail</td>
<td>79490-02</td>
</tr>
<tr>
<td>7</td>
<td>Piston</td>
<td>79491-01</td>
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<tr>
<td>8</td>
<td>25 mm Stop Tube</td>
<td>79512-01</td>
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<tr>
<td>9</td>
<td>Cylinder Body</td>
<td>79493-01-5</td>
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<tr>
<td>10</td>
<td>Bushing</td>
<td>79512-01-5</td>
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<tr>
<td>11</td>
<td>Bearing Assembly</td>
<td>79493-01-5</td>
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<tr>
<td>12</td>
<td>Pull Dowel Pin</td>
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<tr>
<td>13</td>
<td>Piston SHCS</td>
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<tr>
<td>14</td>
<td>Cylinder Body SHCS</td>
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<td>15</td>
<td>Cover SHCS</td>
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<td>17</td>
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<td>18</td>
<td>Body O-Ring Seal</td>
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<tr>
<td>19</td>
<td>Plug O-Ring Seal</td>
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<td>20</td>
<td>Rod Seal</td>
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<td>22</td>
<td>Rod Wiper</td>
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<tr>
<td>23</td>
<td>Shock Pad</td>
<td>79493-01-5</td>
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<tr>
<td>24</td>
<td>Bore Plug</td>
<td>79493-01-5</td>
</tr>
<tr>
<td>25</td>
<td>Retaining Ring</td>
<td>79493-01-5</td>
</tr>
</tbody>
</table>

KIT DESCRIPTION | PART NO.
---|---
Cylinder Repair Kit | 79513-01*
Rap Coupling Kit | 79514-01*
Rod Wiper Kit | 79515-01
Rod Scraper Kit | 79516-01
Positional Sensing Kit | 79517-01

* = Kit requires tube stuffer 75724-02 (sold separately)

TUBE STUFFER PER 75724-02 (SOLD SEPARATELY)