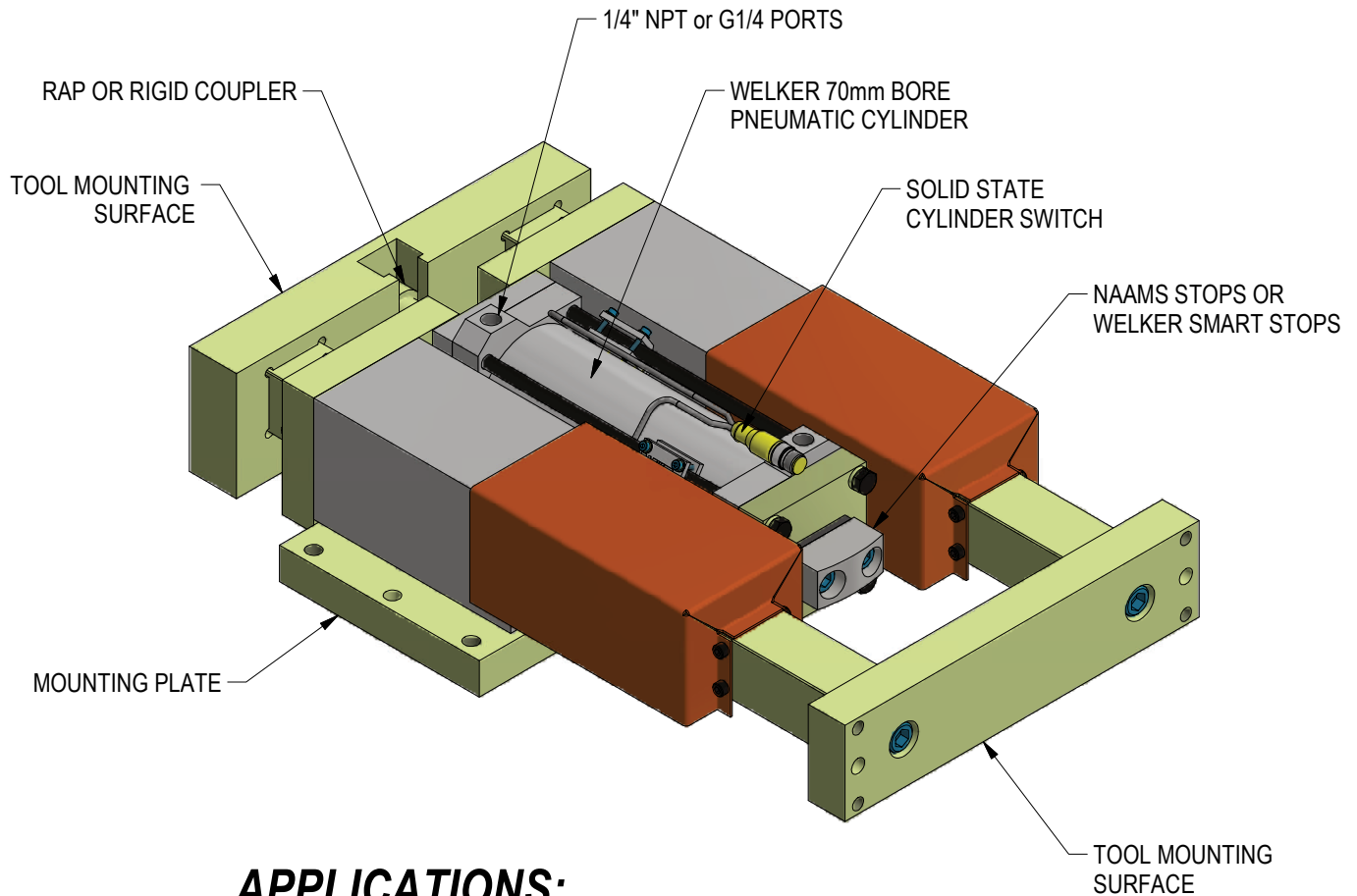


DB4 GUIDED SLIDE



APPLICATIONS:

RETRACTABLE PINS & LOCATORS
PUSHERS
CROWDERS
THRUSTERS
SMALL LIFTERS
SLIDES

ALUMINUM UNIT AVAILABLE

RELEASED: 1/19/21

ORDERING INFORMATION

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



Stroke
025 25-150mm (25mm increments)

Coupler
A Rap* (shortens nominal stroke by 2mm)
B Rigid
*Not available with High Precision option

Actuator
01 Pneumatic - Single Rod - NPT
02 Pneumatic - Single Rod - G Port

Material
S Steel: Aluminum body, Steel mounting plates & ram
A Aluminum: Aluminum body, mounting plates & ram

Switch
00 No Switch
P1 Welker Smart Stops
LX See Welker Cylinder Switch Chart

Precision Stroke
X Standard Precision
P High Precision (not available with Rap Coupler option)

Port Rotation
1 Port in Position 1
3 Port in Position 3

Extend Shims
Quarter mm
0 See Shim Chart

Extend Shims
Whole mm
0 See Shim Chart

Retract Shims
Quarter mm
0 See Shim Chart

Retract Shims
Whole mm
0 See Shim Chart

Shroud
0 No Shroud
1 Shroud

Standard Options - All other options may affect price & delivery.

| SHIM CHART | | | | | | | | | |
|------------------------|------|----------|------|----------|------|----------|------|------------------|------|
| WHOLE MILLIMETER CODES | | | | | | | | QUARTER MM CODES | |
| THK (mm) | CODE | THK (mm) | CODE | THK (mm) | CODE | THK (mm) | CODE | THK (mm) | CODE |
| 0 | 0 | 8 | 8 | 16 | G | 24 | R | 0.00 | 0 |
| 1 | 1 | 9 | 9 | 17 | H | 25 | S | 0.25 | A |
| 2 | 2 | 10 | A | 18 | J | 26 | T | 0.50 | B |
| 3 | 3 | 11 | B | 19 | K | 27 | U | 0.75 | C |
| 4 | 4 | 12 | C | 20 | L | 28 | V | | |
| 5 | 5 | 13 | D | 21 | M | 29 | W | | |
| 6 | 6 | 14 | E | 22 | N | 30 | X | | |
| 7 | 7 | 15 | F | 23 | P | 35 | Y | | |

| | Switch | Part Number | Manufacturer | Description |
|-------------------|--------|--|--------------|---|
| Cylinder Switches | L3 | SWITCH L3* L3 sw itch is w eld field immune, comparable to World Sw itches. Dual sensor sw itch, 1 per cylinder | Welker | 4-Wire, 4-Pin, DC (PNP) M12 X 1 Quick Disconnect |
| | L5 | MK5113 Single sensor sw itch, 2 sw itches per cylinder | ifm Efector | 3-Wire, 4-Pin, DC (NPN) M12 X 1 Quick Disconnect |

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

*Note that some mid and low frequency DC resistance applications (i.e. aluminum resistance w elding applications) may cause a fault. In these applications, it is recommended that the sensor be ignored/bypassed during the w elding cycle.

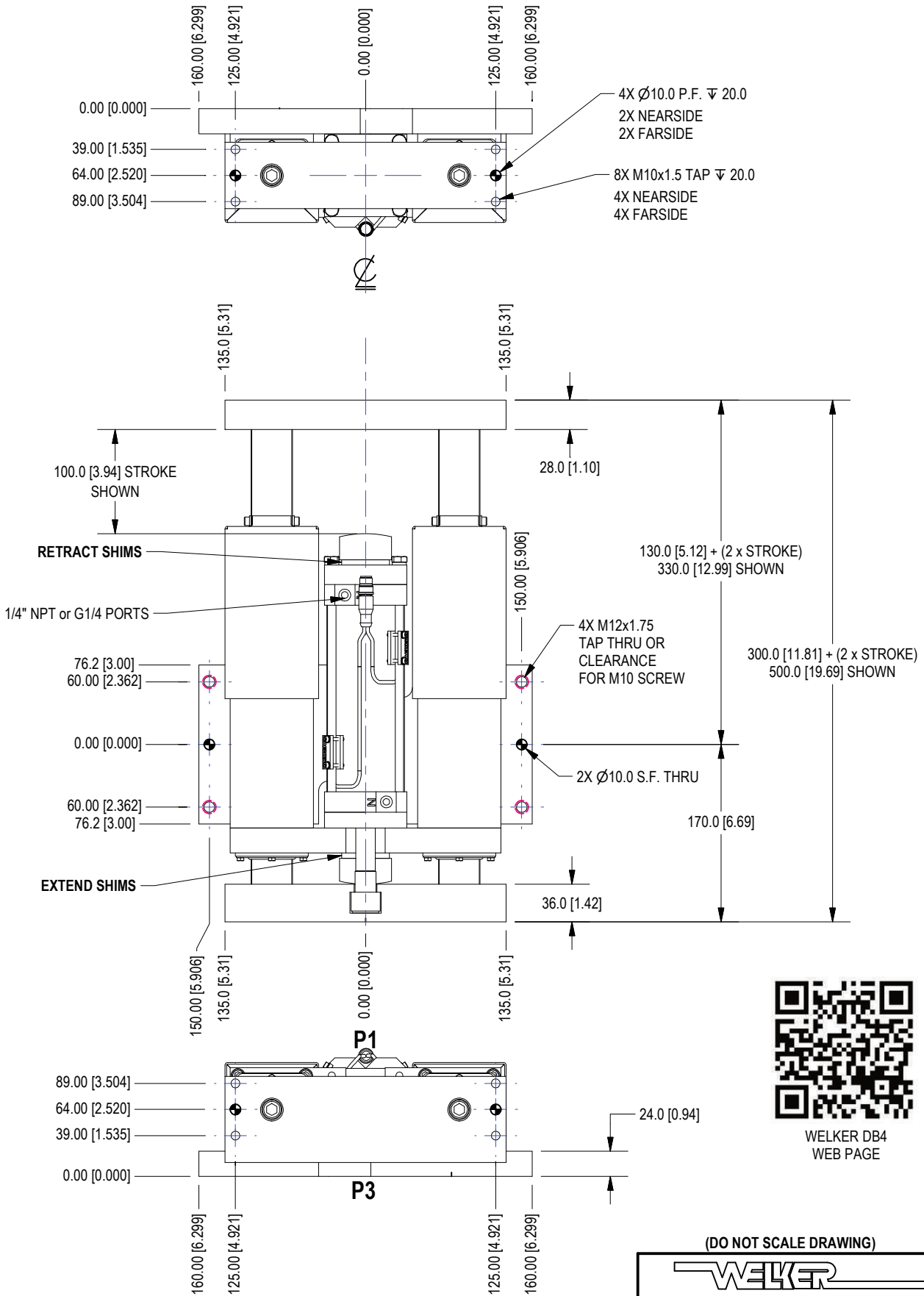


| WEIGHTS (WEIGHTS SHOWN ARE APPROXIMATE, VARY WITH OPTIONS) | | | | | | |
|--|----------|--------|--------|----------|----------|----------|
| STROKE: | 25mm | 50mm | 75mm | 100mm | 125mm | 150mm |
| STEEL | 81 lbs | 83 lbs | 86 lbs | 88 lbs | 90.5 lbs | 94.5 lbs |
| ALUMINUM | 43.5 lbs | 44 lbs | 45 lbs | 45.5 lbs | 46 lbs | 48 lbs |

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GENERAL DIMENSIONS



WELKER DB4
WEB PAGE

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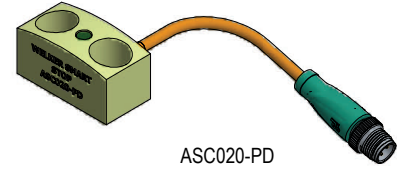
WELKER SMART STOP

WELKER SMART STOP does all stopping & sensing functions in one part.
SMART STOP minimizes engineering, field set up and operator adjustment time.

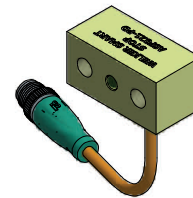
WELKER SMART STOP eliminates:

- Need for separate mounts, brackets & flags.
- Need for switch adjustments when shimming.
- Improper adjustment of outboard switches.
- Outboard switch vibrating loose in bracket.
- Protecting outboard proxies from being stepped on or bent in tools.

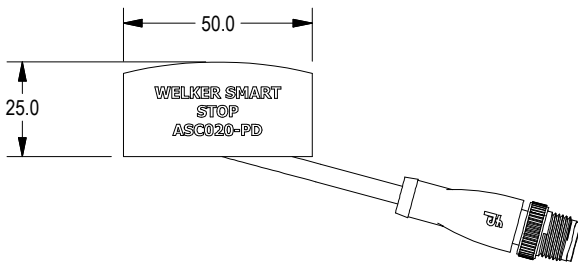
MODEL NO:
 ASC020-PD FOR CROWNED, DRILL & C'BORE FOR M10 SHCS + DC SWITCH
 ASC021-PD FOR CROWNED, M10X1.5 TAP + DC SWITCH
 ASF020-PD FOR FLAT, DRILL & C'BORE FOR M10 SHCS + DC SWITCH
 ASF021-PD FOR FLAT, M10X1.5 TAP + DC SWITCH



ASC020-PD

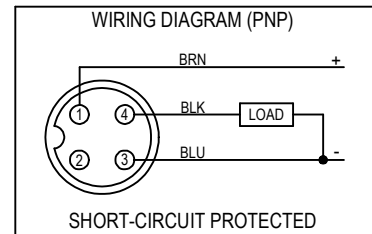


ASF021-PD



SPECIFICATIONS

| | |
|--|--------------------------------|
| CONTACT CARRIER MATERIAL (RSE) | PUR |
| MOLDED HEAD MATERIAL / COLOR (RSE) | THERMOPLASTIC PUR / BLACK |
| CONTACT MATERIAL / PLATING (RSE) | GOLD-PLATED BRASS |
| COUPLING NUT MATERIAL / PLATING (RSE) | NICKEL-PLATED BRASS |
| RATED OPERATING DISTANCE | 2mm = .079" (NOMINAL) |
| MOUNTING MODE | FLUSH |
| HYSTERESIS (DIFFERENTIAL TRAVEL) | 3-15% |
| MAX. RELATIVE TEMPERATURE DRIFT | LESS THAN OR EQUAL TO ±10% |
| MIN. REPEAT ACCURACY | LESS THAN OR EQUAL TO 2% |
| OPERATING TEMPERATURE | -25 to 70° (-13 to 158°F) |
| RATED OPERATIONAL VOLTAGE (DC) | 10-30 VDC |
| MAX. RIPPLE | LESS THAN OR EQUAL TO 10% |
| RATED OPERATIONAL CURRENT | LESS THAN OR EQUAL TO 150 mA |
| NO-LOAD CURRENT | LESS THAN OR EQUAL TO 15 mA |
| MAX. OFF-STATE CURRENT | LESS THAN OR EQUAL TO 0.1mA |
| MAX. SWITCHING FREQUENCY | LESS THAN OR EQUAL TO 3 kHz |
| RATED INSULATION VOLTAGE | 0.5 kV |
| OUTPUT FUNCTION | 3-WIRE, NORMALLY OPEN, PNP |
| SHORT-CIRCUIT PROTECTION | YES |
| MAX. VOLTAGE DROP | LESS THAN OR EQUAL TO 1.8 V |
| WIRE BREAKAGE / REVERSE POLARITY PROTECT | YES |
| DEGREE OF PROTECTION | IP 67 |
| HOUSING MATERIAL | SST, V2A 1.4301 |
| ACTIVE FACE | PLASTIC, PA12-GF30 |
| OUTER CABLE JACKET (SENSOR) | 3mm PUR |
| VIBRATION RESISTANCE | 55 Hz (1mm) |
| SHOCK RESISTANCE | 30 x g (11 ms) |
| PIG-TAIL LED COLOR | GREEN = POWER, YELLOW = OUTPUT |



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Welker DB4 Technical Information

Shrouds: Safety orange steel shrouds are available for additional protection. Shrouds prevent undesirable buildup of contamination from welding and machining applications. Welker specifically recommends shroud usage in MIG, TIG and arc welding applications. Shrouds should only be removed if clearance problems exist and conditions permit. Consult Welker.

Wipers: The wiper is a custom molded moly impregnated urethane wiper. Welker recommends changing the wiper yearly. Specific applications may require more or less frequent wiper service.

Stroke: The stroke accuracy of shot pins is limited to that of the cylinder. Normal cylinder stroke accuracy is $\pm .015"$ (0.38mm). Rap couplings cause the unit to be 2mm less than the nominal stroke of the cylinder. The rap allows the cylinder to accelerate without load, acting like a slide hammer. The impact of the coupler helps free tooling from a bound condition, similar to a dowel puller.

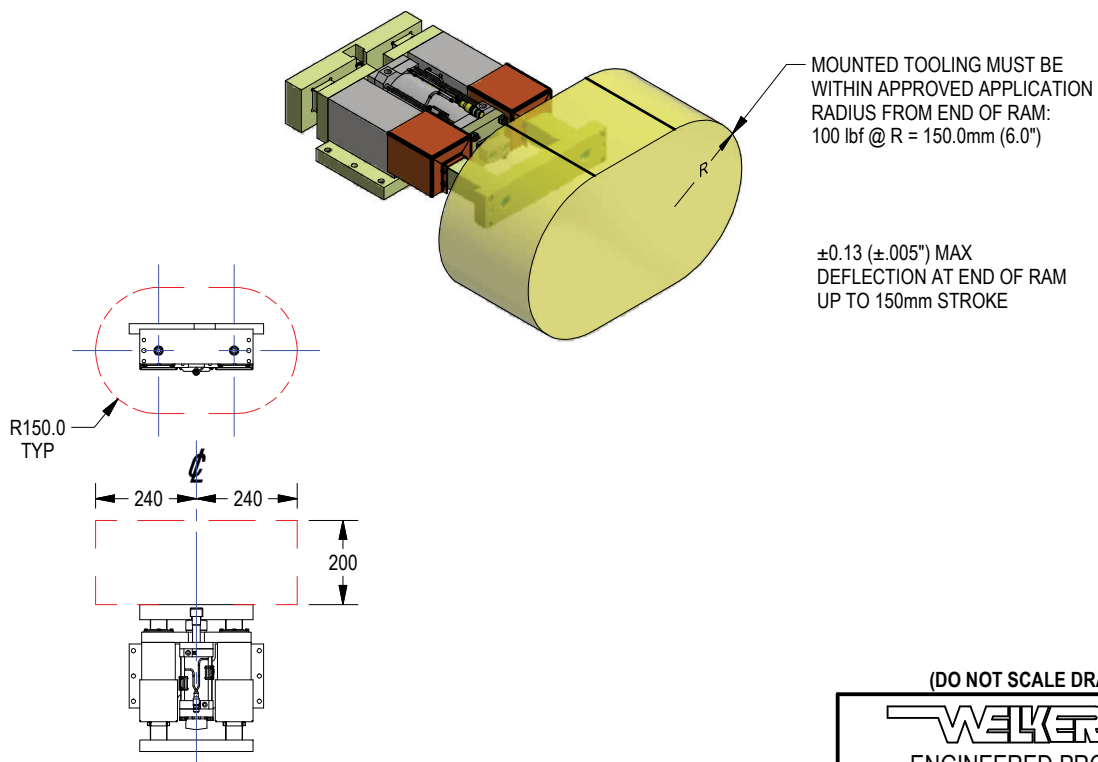
Welker cylinders do not require lubrication.

Switch: DB4 is available only with solid state cylinder switch.

Repeatability: Shot pin units utilize a full contact bearing surface for high repeatability. Repeatability within $\pm .002"$ (0.05mm) part to part is achievable.

Wear: Defined as variance in position under load over time. Shot pin tests indicate maximum wear of $.002"$ wear at 3 million cycles.

Loading and Deflection: Maximum deflection is $\pm .005"$ and is measured at the **end of the ram** up to the specified strokes and up to the loads and distances as shown below. Longer extensions can be used at lower tolerances and loads. Pins mounted closer to the body exhibit less deflection. For applications with longer strokes and higher loads, consult Welker.



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