ENGINEERED PRODUCTS

ISO 9001 REGISTERED

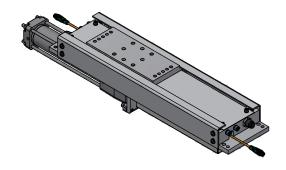
LP SERIES RAIL SLIDES

STROKES UP TO 495mm

LPM

250 LB LOAD CAPACITY

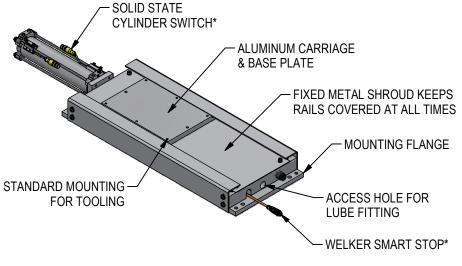
50mm BORE PNEUMATIC CYLINDER, NPT OR G PORTS. ROD LOCK CYLINDER* AVAILABLE (SHOWN) 15-SERIES SQUARE RAIL BEARINGS



<u>LP1</u>

250 LB LOAD CAPACITY

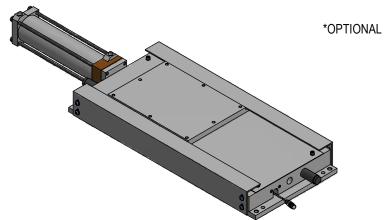
50mm BORE PNEUMATIC CYLINDER NPT OR G PORTS 15-SERIES SQUARE RAIL BEARINGS



LP2

500 LB LOAD CAPACITY

70mm BORE PNEUMATIC CYLINDER NPT OR G PORTS 25-SERIES SQUARE RAIL BEARINGS



RELEASED 2/7/23

ORDERING INFORMATION NOTE: ALL BOXES MUST BE FILLED IN FOR A COMPLETE PART NUMBER 0 0 0 **Series** LPM LP1 LP2 Stroke 135 075, 135, 195, 255, 315, 375, 435 & 495 Strokes Actuator **Switch Options** 01 Cylinder with NPT Ports 00 No Switch 02 Cylinder with G Ports LX Cylinder Switch* Cylinder with Rod Lock, 3/8" NPT Ports (LPM ONLY) See chart below Cylinder with Rod Lock, G3/8 Ports (LPM ONLY) *ONLY available with Actuator 01/02 Port Location Ports @ X1 (Ports will be above carriage plate) Not available with LPM **Stop Options** Ports @ X2 X NAAMS Stop Ports @ X3 (Ports will be below base plate) P Welker Smart Stop Ports @ X4 Retract Shims: Whole mm -Retract Shims: Quarter mm -Extend Shims: Whole mm -Extend Shims: Quarter mm -

	SHIM CHART								
	WHOLE MILLIMETER CODES QUARTER MM CODES						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	Н	25	S	0.25	Α
2	2	10	Α	18	J	26	Т	0.50	В
3	3	11	В	19	K	27	U	0.75	С
4	4	12	С	20	L	28	٧		
5	5	13	D	21	M	29	W		
6	6	14	E	22	N	30	Х		
7	7	15	F	23	Р	35	Υ		

Shimming for slides is available to quarter millimeter increments. Select whole and quarter mm sizes from codes shown on chart. For increment sizes not shown, order a larger shim and machine to desired size. Example: For a 0.62mm shim order 0.75 shim, machine to 0.62.

See Shim Chart Coding below

Examples: 16.25mm shim = GA

24.00mm shim = R0 10.50mm shim = AB

05.75mm shim = 5C

Switch	Part Number	Manufacturer	Description
L3	SWITCH L3**	Welker	4-Wire, 4-Pin, DC (PNP)
L3	L3 switch is weld field immune, comparable to World Switches	vveikei	M12 X 1 Quick Disconnect
L5	MK5113	ifm Efector	3-Wire, 4-Pin, DC (NPN)
LJ	IVINOTTO	IIII LI ector	M12 X 1 Quick Disconnect

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

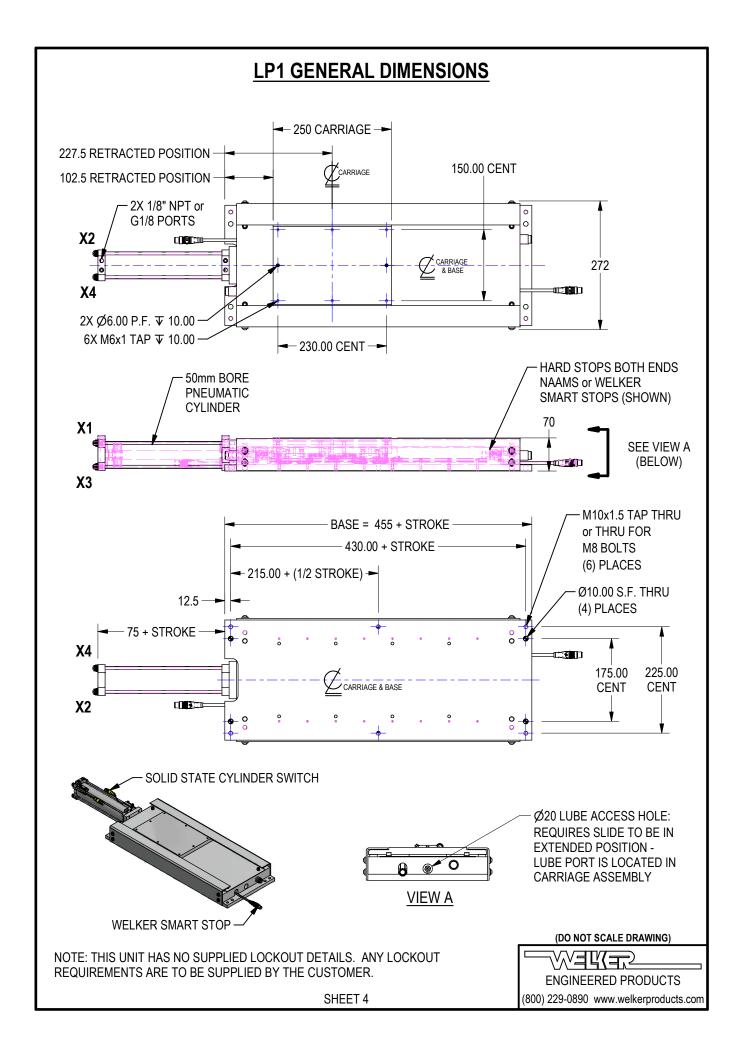
SWITCHES ON LP SLIDES ARE SINGLE-SENSOR: TWO SWITCHES ARE INSTALLED PER CYLINDER. *Cylinder switches only available with Actuators 01/02. Switches for Actuators 03/04 are customer supplied ~ contact SMC.

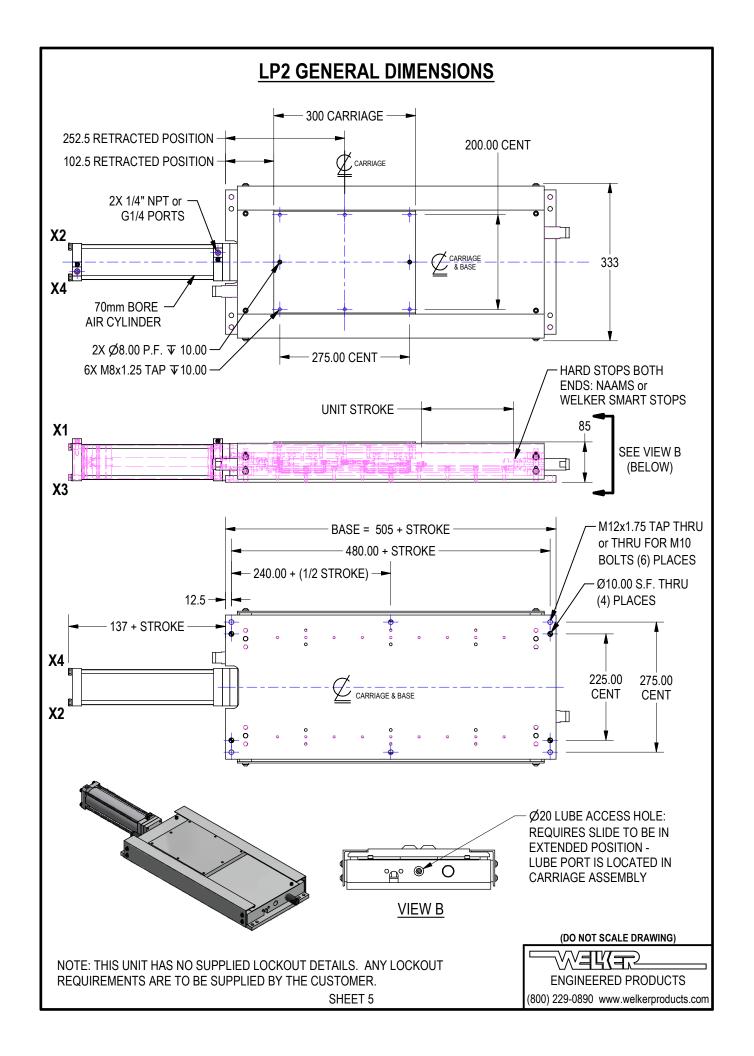
**Note that some mid and low frequency DC resistance applications (i.e. aluminum resistance welding applications) may cause a fault. In these applications, it is recommended that the sensor be ignore or bypassed during the welding cycle.

SHEET 2



LPM GENERAL DIMENSIONS NOTE FOR ALL CUSTOMER FASTENERS: FASTENERS MUST NOT EXCEED 15mm DEPTH IN CARRIAGE PLATE 475.0 + STROKE -**EXTEND SHIM SIDE** CARRIAGE 237.5 RETRACT -65.00 RETRACTED SHIM SIDE 35.00 Ε C 30.00 **X2** 15.00 152.4 0.00 **REF** CARRIAGE 15.00 & BASE **X4** 30.00 D 12.5 * 35.00 15.00 * -HOLE CHART: 65.00 A: 10.00mm PF THRU (4 PLACES) 70.00 CENT B: M12x1.75 TAP THRU (4 PLACES) C: M10x1.5 TAP THRU (6 PLACES) - 225.00 CENT --*TYP BOTH ENDS D: 8.00mm PF THRU (4 PLACES) 250 CARRIAGE -E: 10mm S.F. THRU (4 PLACES) F: M10x1.5 TAP THRU or THRU FOR M8 BOLTS (4 PLACES) SEE VIEW A (BELOW) 267.0 50mm BORE PNEUMATIC, 0 **CYLINDER** 70.00 **OPTION 01/02** MOUNT SURFACE REF **X3** 91.5 + STROKE FOR CYL OPTIONS 01.02 **SOLID STATE CYLINDER SWITCH** CYLINDER OPTIONS 03 & 04 ARE SMC CDNA2 50mm BORE ROD LOCK CYLINDERS. CYLINDER SWITCHES ARE CYLINDER 03 & 04 LENGTHS: CUSTOMER SUPPLIED, CONTACT SMC. 075mm STROKE: 291mm 135mm STROKE: 366mm 195mm STROKE: 416mm **X4** 255mm STROKE: 491mm @0 O 315mm STROKE: 541mm |d Φ 375mm STROKE: 591mm @0@|**0** 435mm STROKE: 666mm **X2** 495mm STROKE: 716mm M10x1.5 TAP - 237.5 + 1/2 STROKE (2) PLACES 100 CARRIAGE VIEW A: Ø20 LUBE ACCESS HOLE: REQUIRES SLIDE TO BE IN (DO NOT SCALE DRAWING) **RETRACTED POSITION -**LUBE PORT IS LOCATED IN CARRIAGE ASSEMBLY **ENGINEERED PRODUCTS X3** SHEET 3 (800) 229-0890 www.welkerproducts.com



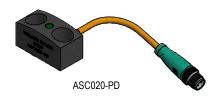


WELKER SMART STOP

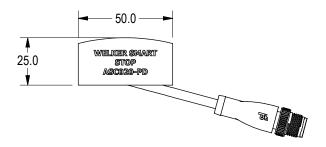
WELKER SMART STOP does all stopping & sensing functions in one part. **SMART STOP** minimizes engineering, field set up and operater adjustment time.

WELKER SMART STOP eliminates:

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



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





SPECIFICATIONS

General Specifications

Switching function	Normally Open (NO)	
Output type	PNP	
Rated operating distance,sn	1.75mm	
Output polarity	DC	
Assured operating distance sa	0 - 1.42 mm	
Output type	3-wire	
Nominal Ratings		
Operating voltage, U _B	5 - 30 V DC	
Switching frequency f	0 - 6000 Hz	

Operating voltage, U _B	5 - 30 V DC
Switching frequency, f	0 - 6000 Hz
Reverse polarity protection	Reverse polarity protected
Short-circuit protection	Pulsing
Voltage drop, U _d	≤ 1.5 V
Operating current, I _L	0 - 100 mA
Off-state current, I _r	0 - 0.2 mA
No-load supply current, I ₀	≤ 15 mA

Indicators/	Operating Me	ans
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LED green
LED yellow
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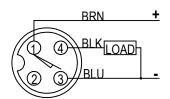
Ambient temperature	-40 - 85 °C (-40 - 185 °F)
Storage temperature	-40 - 85 °C (-40 - 185 °F)

Mechanical Specifications

Connection type Connector plug	M12 x 1 , 4-pin
Cable length	255mm
Degree of protection	IP67
Cable material	Weld spatter resistant, robotic quality POC
Cable color	Orange

SHEET 6

WIRING DIAGRAM (PNP)

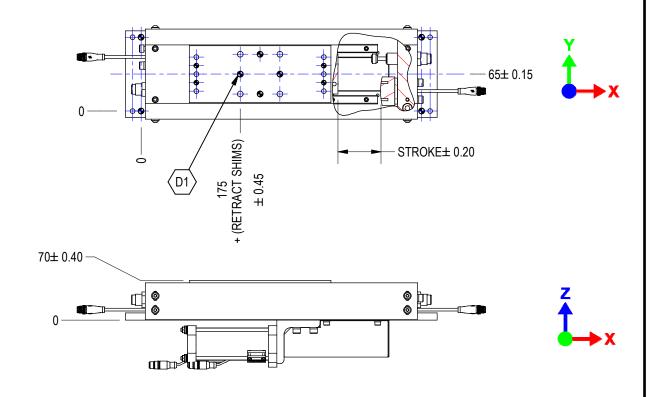




LPM SLIDE ACCURACY

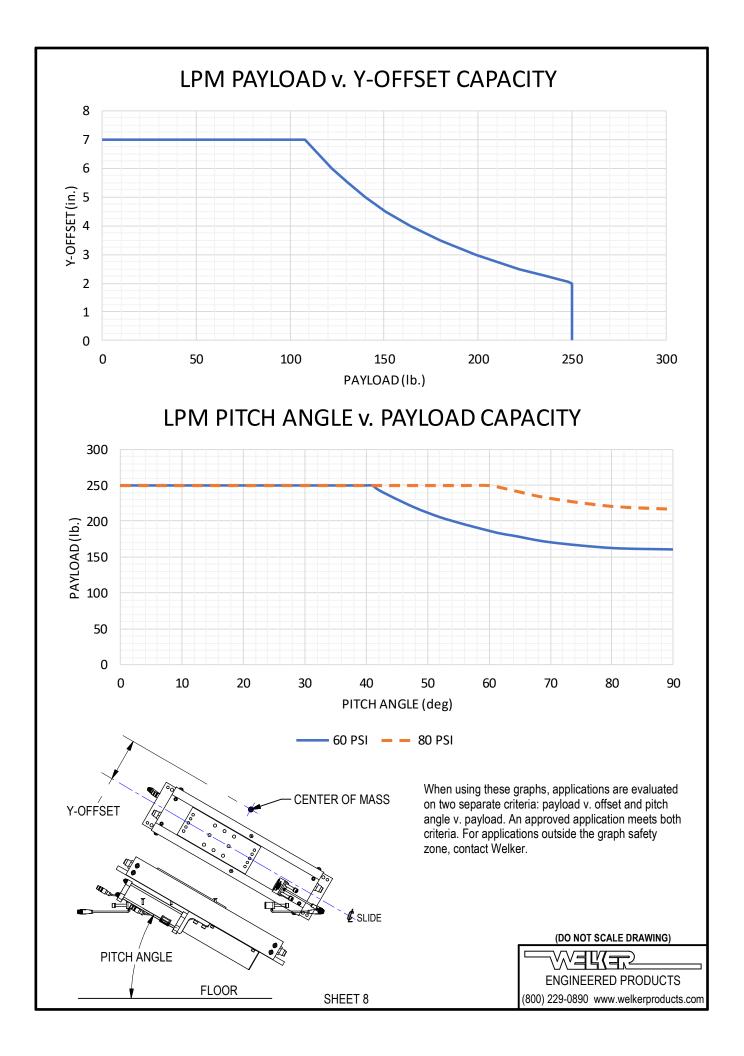
<u>POSITIONAL ACCURACY</u> specifies the allowable deviation between the nominal position of a reference point on the carriage (D1 as shown) to the actual position that is achieved.

TRAVEL ACCURACY specifies the allowable deviation along the plane of motion of a reference point on the carriage (D1 as shown) to the actual position *during movement* - in other words, the allowable side-to-side movement (in the direction of Y) and up-and-down movement (in the direction of Z) as the unit travels.



TRAVEL ACCURACY (RUNOUT)		
Y-DIRECTION	Z-DIRECTION	
0.15	0.15	

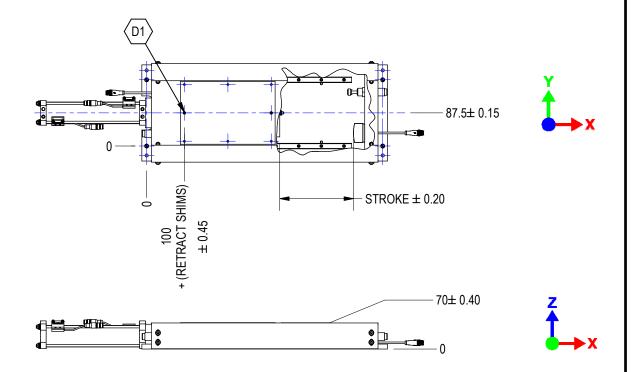




LP1 SLIDE ACCURACY

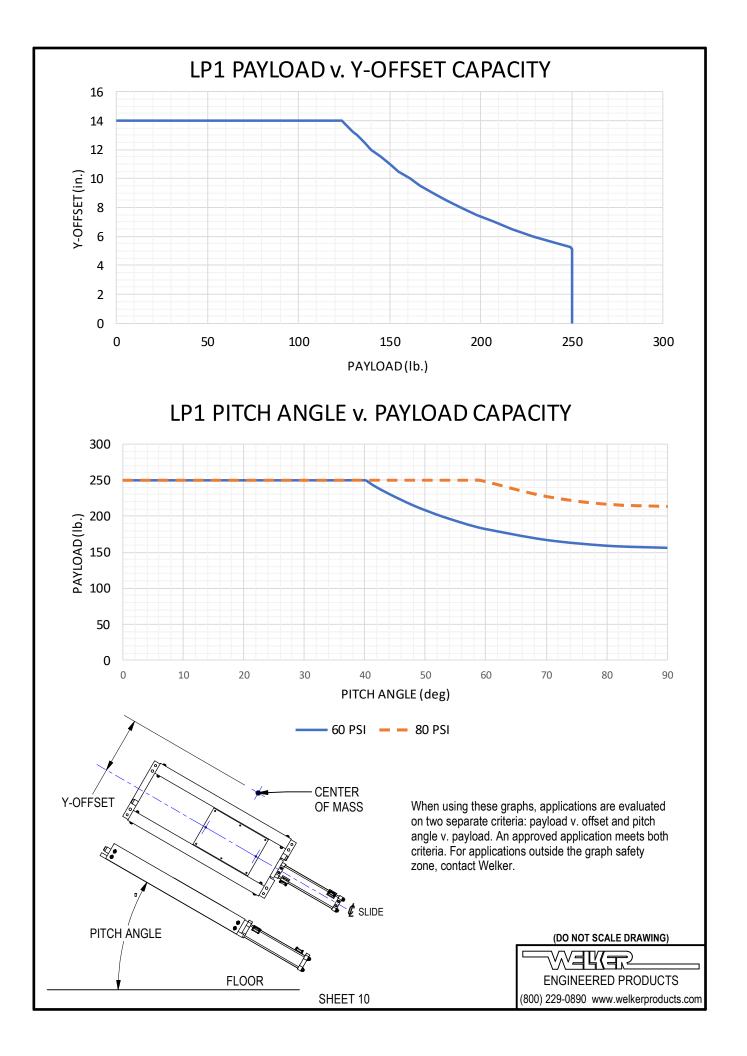
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TRAVEL ACCURACY (RUNOUT)		
Y-DIRECTION	Z-DIRECTION	
0.15	0.15	

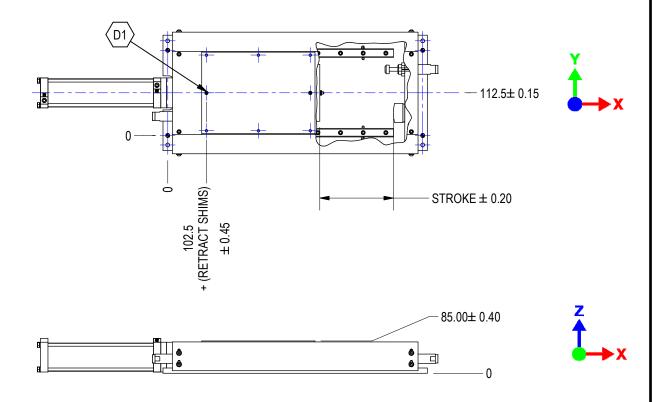




LP2 SLIDE ACCURACY

POSITIONAL ACCURACY specifies the allowable deviation between the nominal position of a reference point on the carriage (D1 as shown) to the actual position that is achieved.

TRAVEL ACCURACY specifies the allowable deviation along the plane of motion of a reference point on the carriage (D1 as shown) to the actual position *during movement* - in other words, the allowable side-to-side movement (in the direction of Y) and up-and-down movement (in the direction of Z) as the unit travels.



TRAVEL ACCURACY (RUNOUT)		
Y-DIRECTION	Z-DIRECTION	
0.15	0.15	



