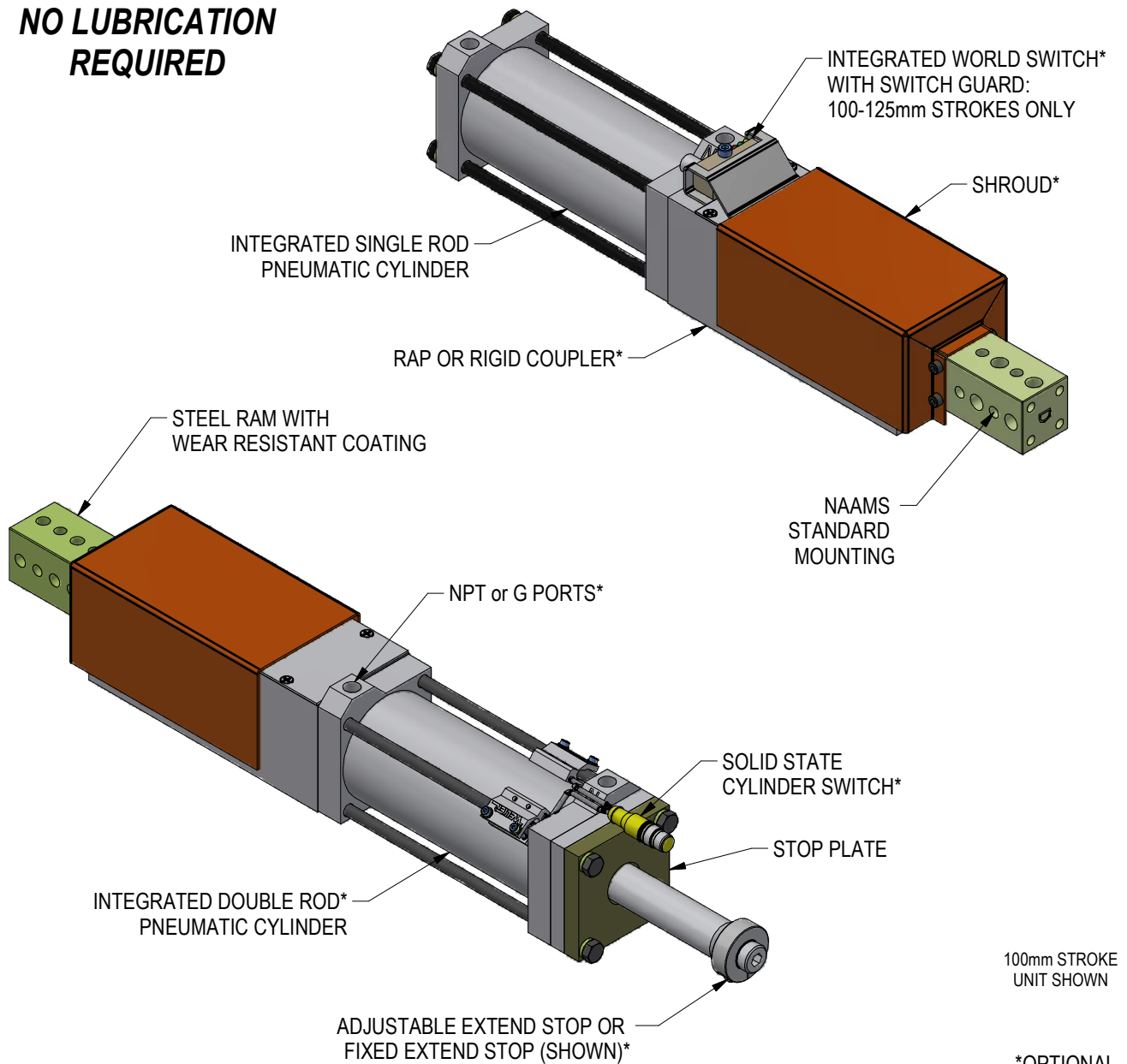


## S02345 LONG STROKE UB4 SHOT PIN

**NO LUBRICATION  
REQUIRED**

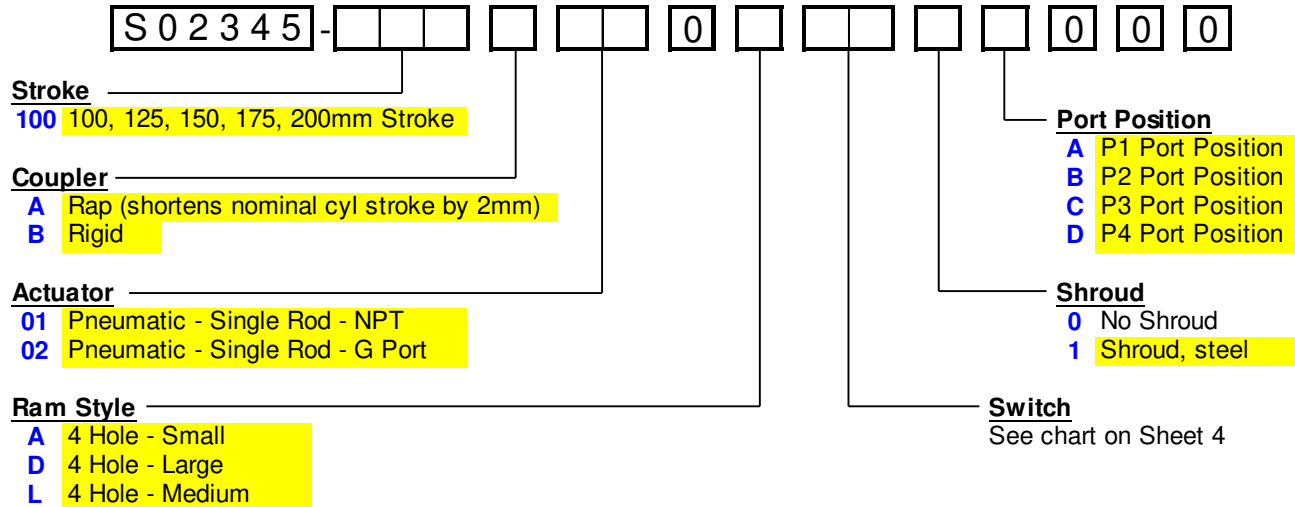


100mm STROKE  
UNIT SHOWN

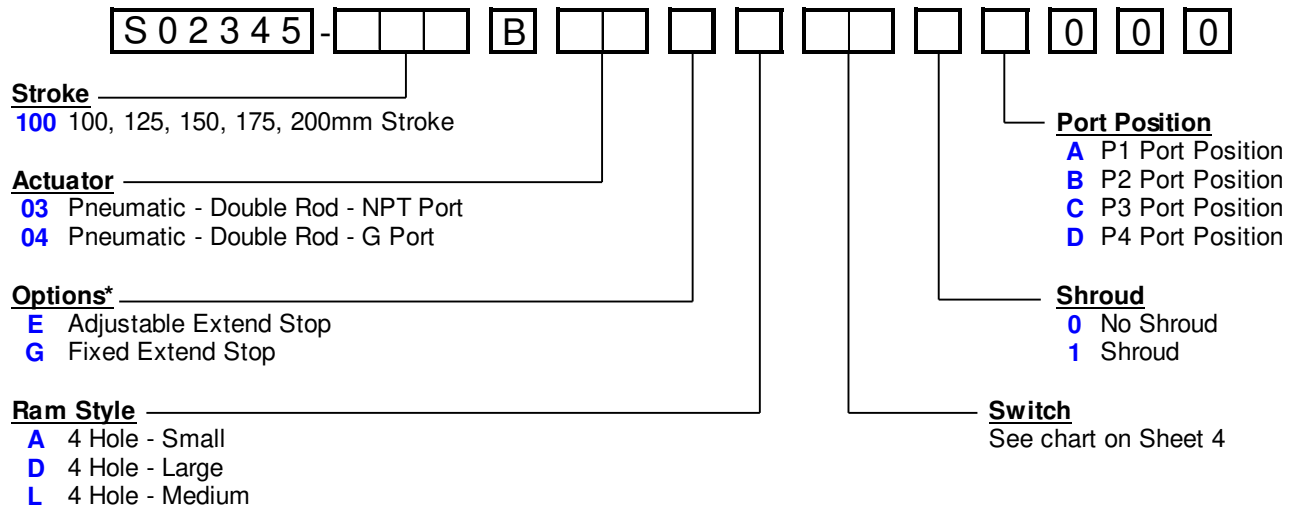
\*OPTIONAL

RELEASED 1/11/23

## ORDERING INFORMATION FOR UNITS WITH SINGLE ROD ACTUATORS



## ORDERING INFORMATION FOR UNITS WITH DOUBLE ROD ACTUATORS



**Standard Options - All other options may affect price and delivery.**

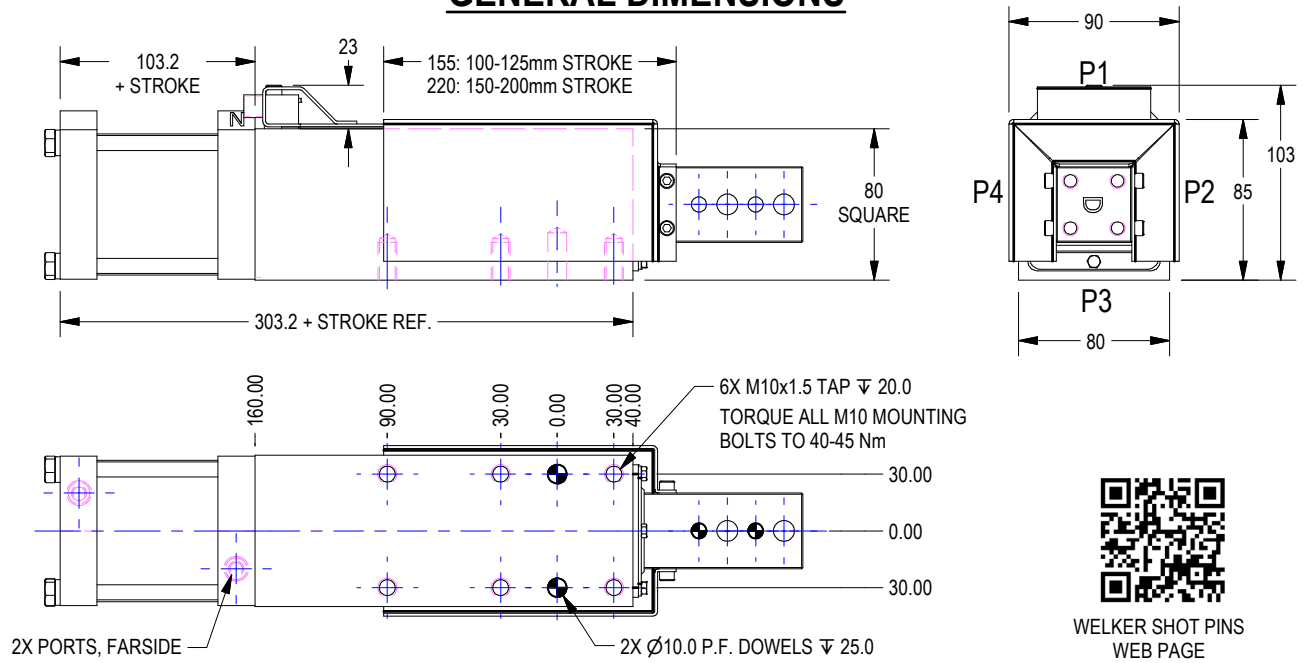
**\*NOTES:**  
 Options E & G will shorten stroke.

(DO NOT SCALE DRAWING)

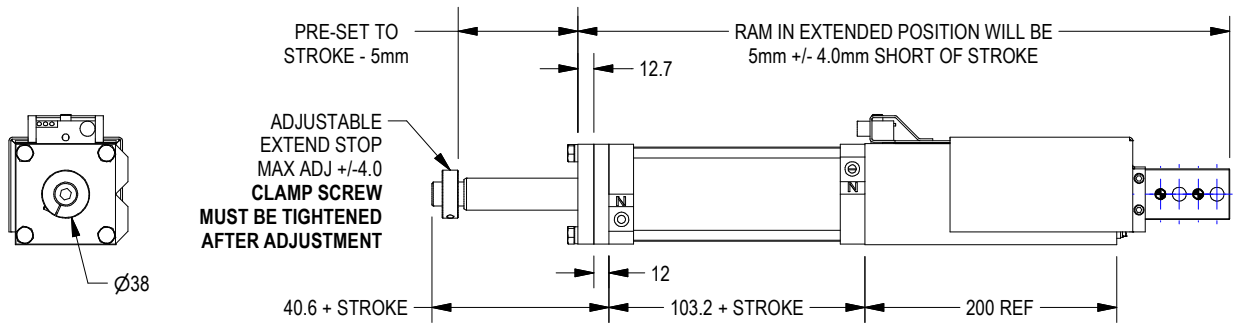


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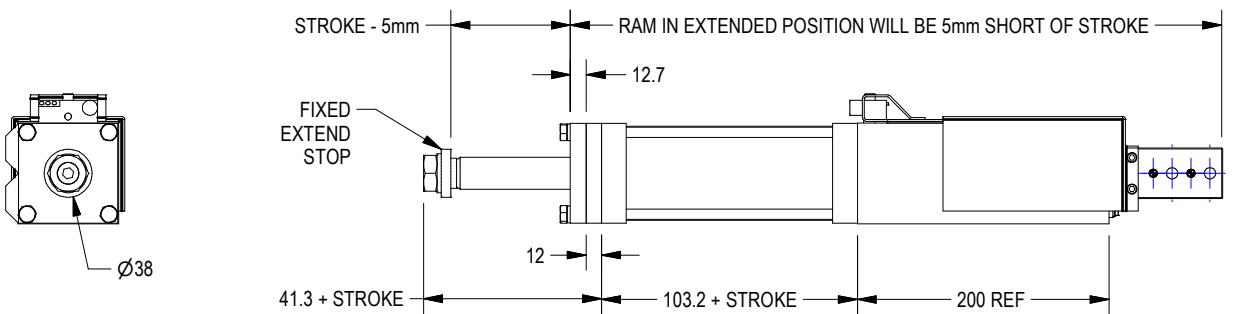
# GENERAL DIMENSIONS



## DOUBLE ROD CYLINDER WITH EXTEND STOP OPTION "E"



## DOUBLE ROD CYLINDER WITH EXTEND STOP OPTION "G"



UNIT WEIGHTS (WEIGHTS SHOWN VARY WITH OPTIONS)					
ACTUATOR	100mm STROKE	125mm STROKE	150mm STROKE	175mm STROKE	200mm STROKE
01/02	40.3	41.1	41.9	42.7	43.4
03/04	43.5	44.5	45.5	46.5	47.5

RECOMMENDED OPERATING PRESSURE: 60-80 PSI, FLOW CONTROLS NOT REQUIRED

NOMINAL RAM	PNEUMATIC BORE	PORTS	PUSH Sq.In.	PULL Sq.In.
40	70	1/4" NPT OR G1/4	5.97	3.49

SHEET 3



(DO NOT SCALE DRAWING)

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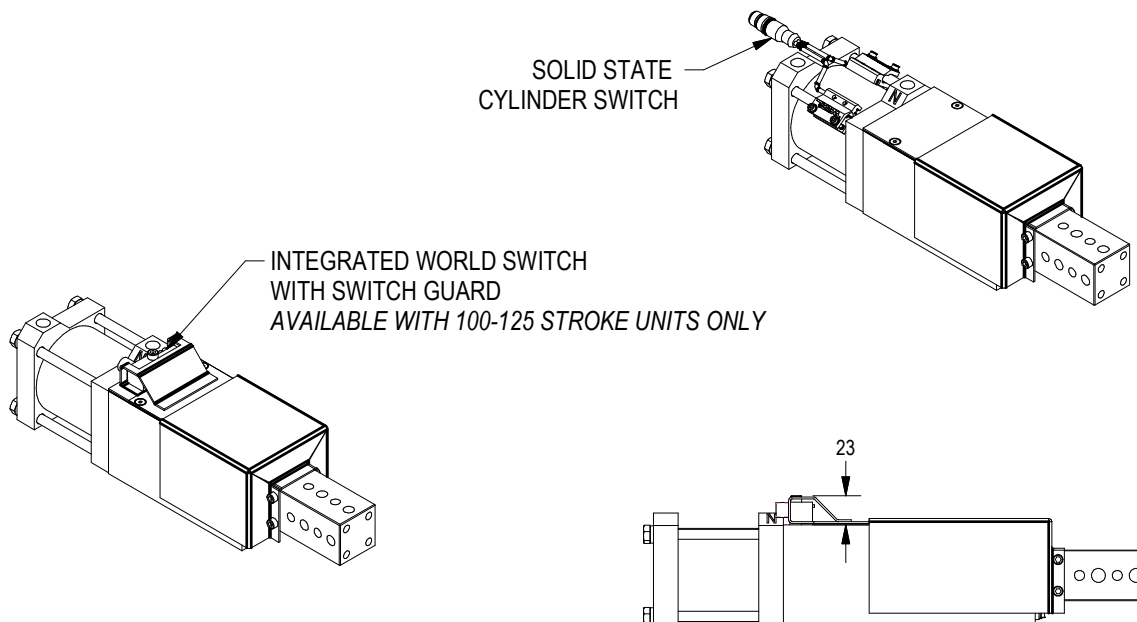
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# SWITCH OPTIONS

WORLD SWITCHES UP TO 125mm STROKE	Order Number	Manufacturer's Part Number	Mfr.	Description
	SO1 EXTEND / SO1 RETRACT			All sw itches are quick disconnect
	00	No Sw itch		
	99	World Sw itch Ready		Customer Supplied Sw itch. Prepared for sw itches below :
	SE / SR	Ni2-Q6.5-AP6-0.16-FS 4.4X3/S304	Turck	4-Wire, 4-Pin, DC M12 X 1 (PNP)
	TE / TR	Ni2-Q6.5-ADZ32-0.16-FSB 5.4X4/S304	Turck	4-Wire, 5-Pin, AC/DC 1/2-20 (N.O.)
	UE / UR	Ni2-Q6.5-AN6-0.16-FS 4.4X3/S304	Turck	3-Wire, 4-Pin, DC M12 X 1 (NPN)
	VE / VR	NBN2-F581-160S6-E8-V1	Pepperl & Fuchs	4-Wire, 4-Pin, DC M12 X 1 (PNP)
	WE / WR	BES-Z02KR2-PSC20F-P165-S04-V	Balluff	3-Wire, 4-Pin, DC M12 X 1 (PNP)
	YE / YR	IN5375	Efector	3-Wire, 4-Pin, DC M12 X 1 (PNP)
	ZE / ZR	WWS001A	Welker	4-Wire, 4-Pin, DC M12 X 1 (PNP)
CYLINDER SWITCHES	L3*	SWITCH L3 ~ Dual sensor, single connector sw itch	Welker	4-Wire, 4-Pin, DC (PNP) M12 X 1
	L5	MK5113 ~ Single sensor, single connector sw itch: 2 sw itches installed on cylinder	ifm Efector	3-Wire, 4-Pin, DC (NPN) M12 X 1

Standard Sw itch Option - All other options may affect price and delivery

SWITCH OPTIONS 00, L3, L5 INCLUDE PISTON MAGNET.  
WORLD SWITCHES AND OPTION 99 DO NOT INCLUDE PISTON MAGNET.



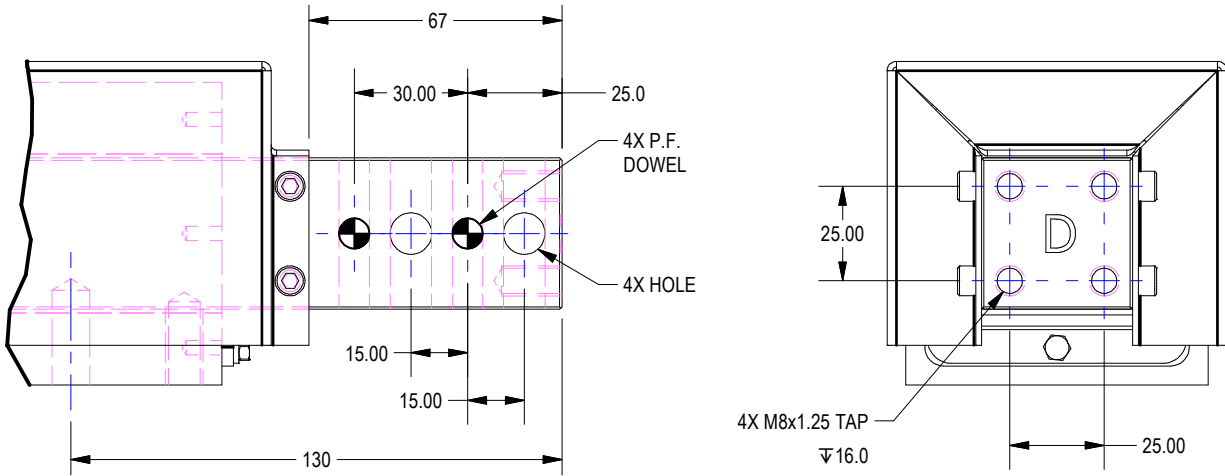
\*L3 switch is weld field immune, comparable to World Switches. Note that some mid and low frequency DC resistance applications (i.e. aluminum resistance welding applications) may cause a fault. In these applications, it is recommended that the sensor be ignored/bypassed during the welding cycle.

(DO NOT SCALE DRAWING)

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# STANDARD RAM OPTIONS

(NON-STANDARD RAM OPTIONS NOT AVAILABLE ON THIS UNIT)



RAM STYLE	DOWELS	HOLES
A	6.0 THRU	9.0mm THRU
D	8.0 THRU	11.0mm THRU
L	8.0 THRU	9.0mm THRU

(DO NOT SCALE DRAWING)



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## Welker S02345 Shot Pin Technical Information

**Body Mounting:** Square ram packages are high precision full contact plane bearing units and therefore must be mounted to a flat surface. **Mounting surfaces must be flat within .002" (0.05mm).** Tighten M10 mounting screws to 45 Nm (33 ft-lb).

**Ram Mounting:** Square ram shot pin units use a standard NAAMS L-Block pattern with 15mm spacing. Spacing allows mounting of 3 and 4 hole pin retainers and L-blocks to the ram. Through holes can be tapped and fitted with standard thread inserts.

**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 the only maintenance item on Welker pin units. It 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). For adjustable and repeatable "end of stroke" conditions, see extend stop options. Rap couplings cause the unit to be less than the nominal stroke of the cylinder. The 40mm ram units have a 2mm rap. 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. Most applications using a pneumatic shot pin should have rap couplings while most hydraulic shot pin applications should use a rigid coupler. Rigid couplers must be used on all extend and retract stop units.

Welker cylinders do not require lubrication.

**Switch:** Available with cylinder switch, all strokes. World switch available with 100-125mm stroke units. World Switch ready (customer supplied) and no switch option available.

**Loading and Deflection:** For units up to 125mm stroke, maximum total deflection is 0.02" (0.5mm) and is measured at end of ram 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.

