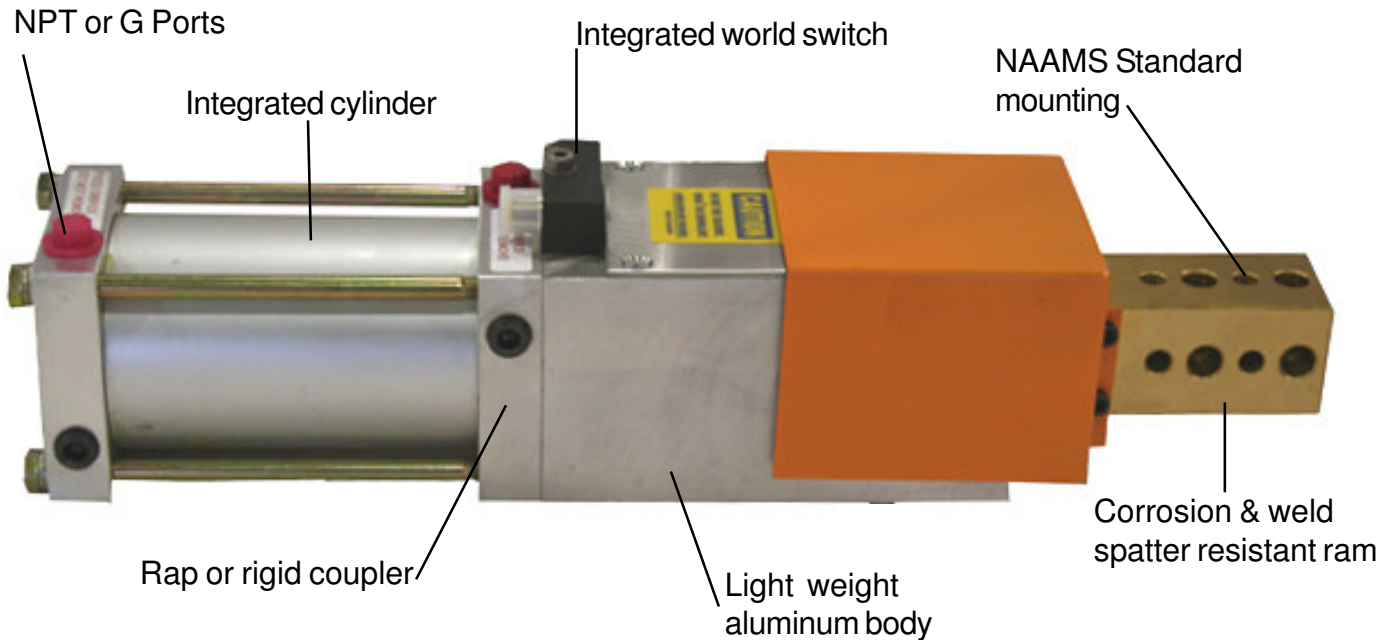




***GOLD-LINE* SHOT PIN UB SERIES**



INTEGRATED WORLD SWITCH

MULTIPLE OPTIONS FOR RAM HOLE PATTERN

[Download CAD drawings @ www.welkerproducts.com](http://www.welkerproducts.com)

APPLICATIONS: Retractable Locating Pins, Part Stops, Probe Slides, Wedge Locks, Escapements
Part Assembly Tools, Pick & Place, Backups, Ejectors, Straight Acting Clamps

REVISED: 11/10/2009

ORDERING INFORMATION

U
B
4
N
0
2
5
A
0
1
0
D
0
0
1
A
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0
0

Series
UB4N

Stroke
025 025, 050, & 075mm Stroke

Coupler
A Rap (shortens nominal cyl stroke by 2mm)
B Rigid

Actuator
01 Pneumatic - Single Rod - NPT
02 Pneumatic - Single Rod - G Port
03 Pneumatic - Double Rod - NPT Port
04 Pneumatic - Double Rod - G Port

Options
0 None
E Extend Stop - Req's Actuator option 03 or 04

Ram Style
D 4 Hole - Large
L 4 Hole - Medium
(See supplemental ram sheet for other non-standard ram options)

Switch
00 See Switch Chart

Shroud
0 No Shroud
1 Shroud

Port Position
A P1 Port Position
B P2 Port Position
C P3 Port Position
D P4 Port Position

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

Switch Options

	Order Number SO1 EXTEND (E) or SO1 RETRACT (R)	Part Number	Manufacturer	Description
World Switches	00	NONE		
	AE or AR	Ni2-Q6.5-AP6-0.1-FS 4.4X3/S304	Turck	4-Pin, DC M12 X 1 (PNP) Quick Disconnect
	BE or BR	Ni2-Q6.5-ADZ32-0.1-FSB 5.4X4/S304	Turck	5-Pin, A/C/DC 1/2-20 (N.O.) Quick Disconnect
	CE or CR	Ni2-Q6.5-AN6-0.1-FS 4.4X3/S304	Turck	4-Pin, DC M12 X 1 (NPN) Quick Disconnect
	DE or DR	NBN2-F581-100S6-E8-V1	Pepperl & Fuchs	4-Pin, DC M12 X 1 (PNP) Quick Disconnect
	EE or ER	BES-Z02KR2-PSC20F-P100-S04-V	Balluff	4-Pin, DC M12 X 1 (PNP) Quick Disconnect
	FE or FR	871D-MW2GP100A-D4	Allen Bradley	4-Pin, DC M12 X 1 (PNP) Quick Disconnect
	HE or HR	Ni2-Q6.5-0.1M-BDS-2AP6X3-H1141/S34	Turck	4-Pin, DC M12 X 1 (PNP) Quick Disconnect
	JE or JR	IN5374	Efecter	4-Pin, DC M12 X 1 (PNP) Quick Disconnect

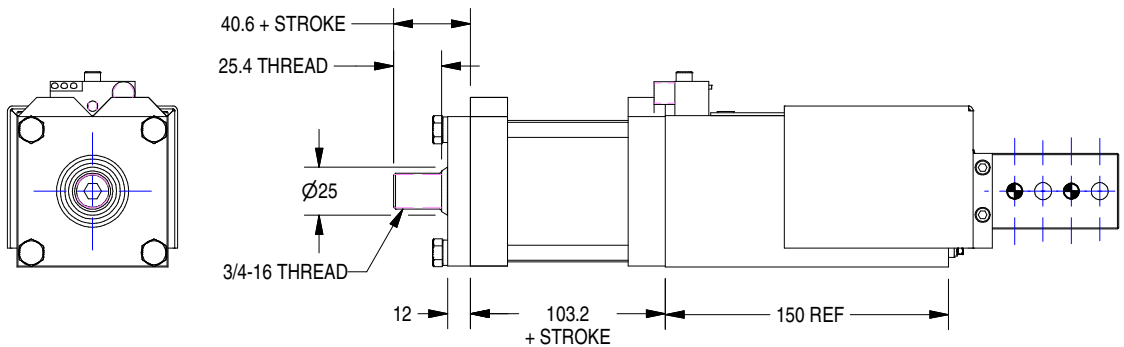
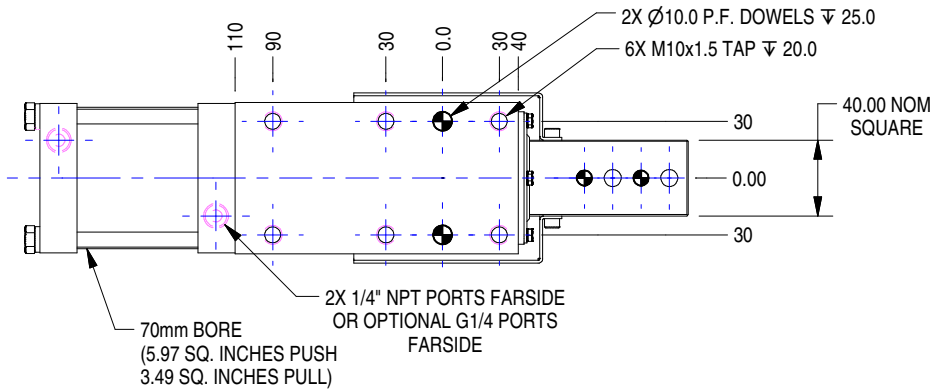
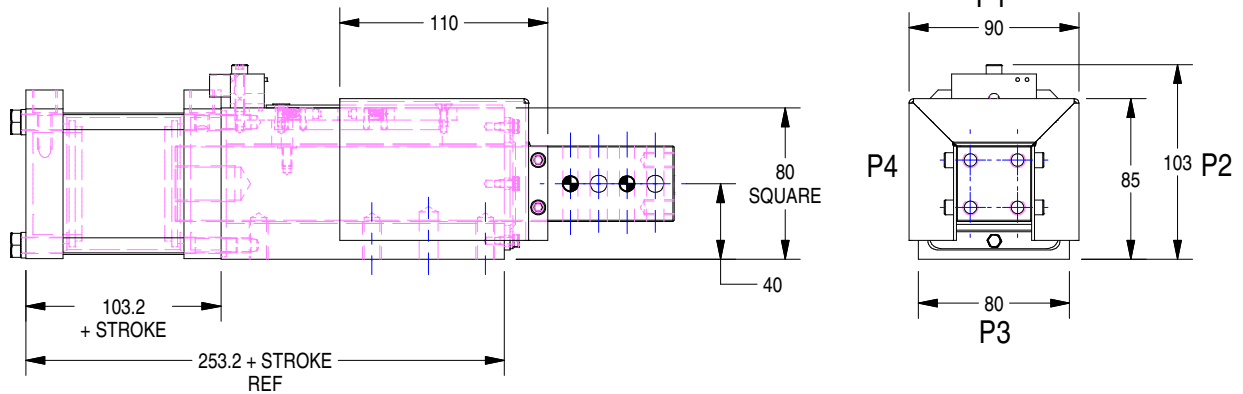
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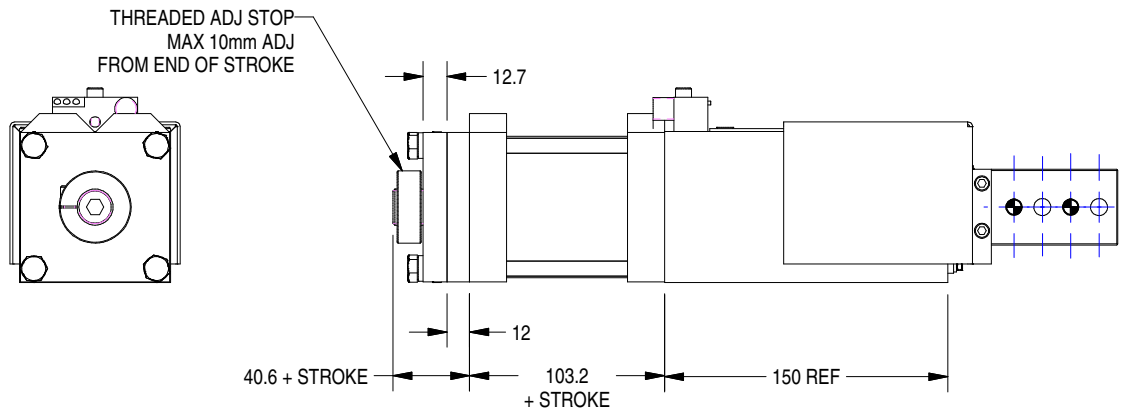
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GENERAL DIMENSIONS



DOUBLE ROD CYLINDER



EXTEND STOP

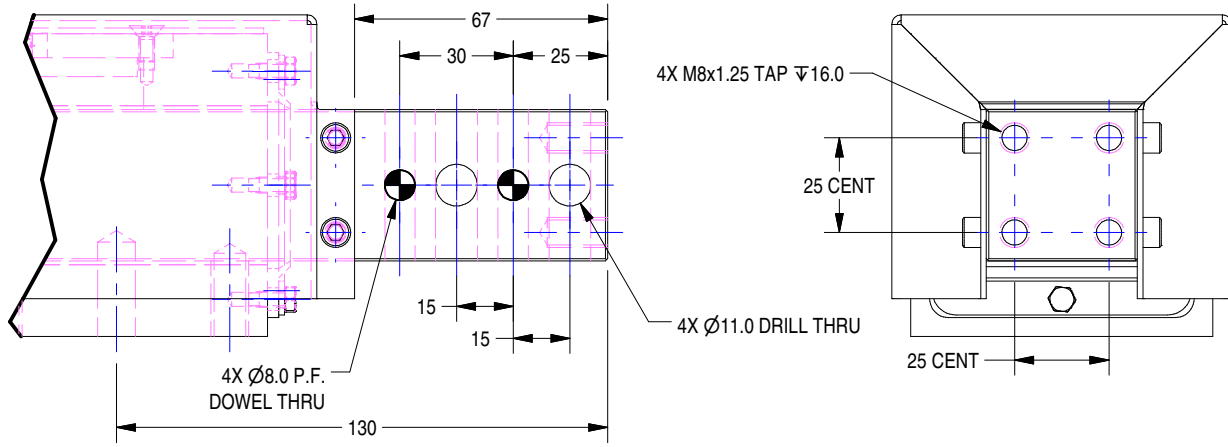
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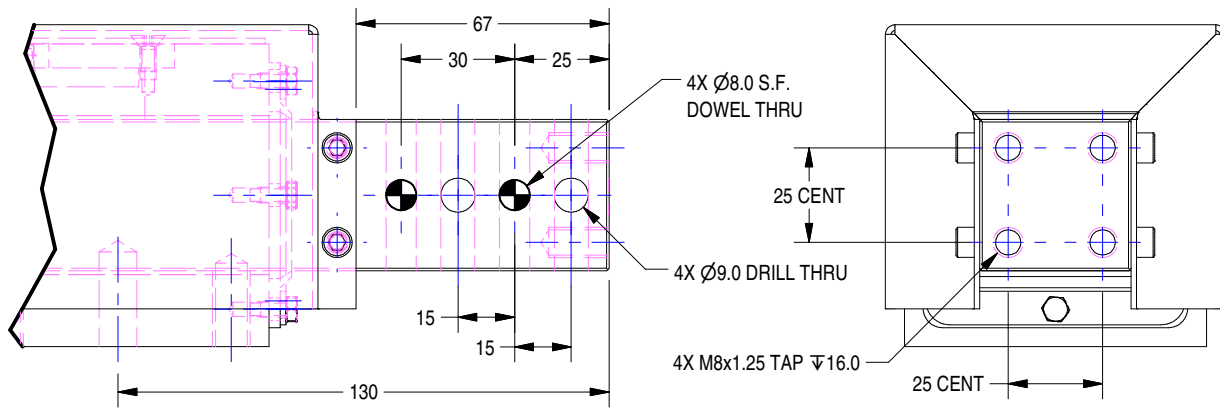
UNIT WEIGHT
71N (16.9 LBF) + 3N (.71 LBF)
PER 25mm STROKE

STANDARD RAM OPTIONS

(See supplemental ram sheet for other non-standard options)



RAM STYLE 'D'



RAM STYLE 'L'

(DO NOT SCALE DRAWING)

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SUPPLEMENTAL RAM OPTIONS

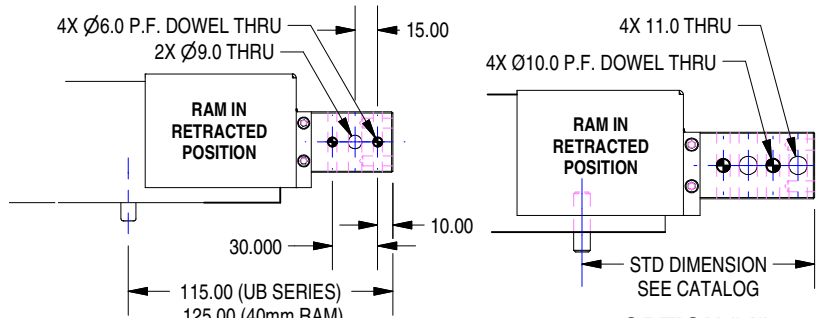
SPECIAL ORDER ONLY - NOT SUBJECT TO STANDARD PRICE OR DELIVERY

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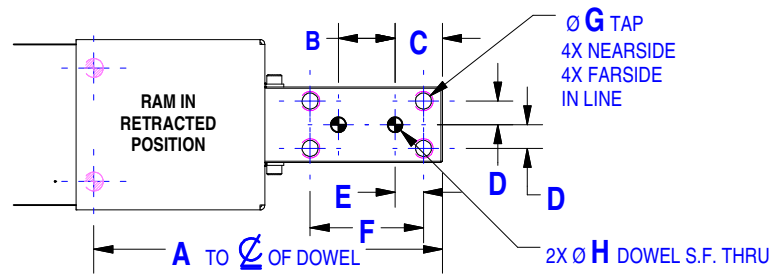
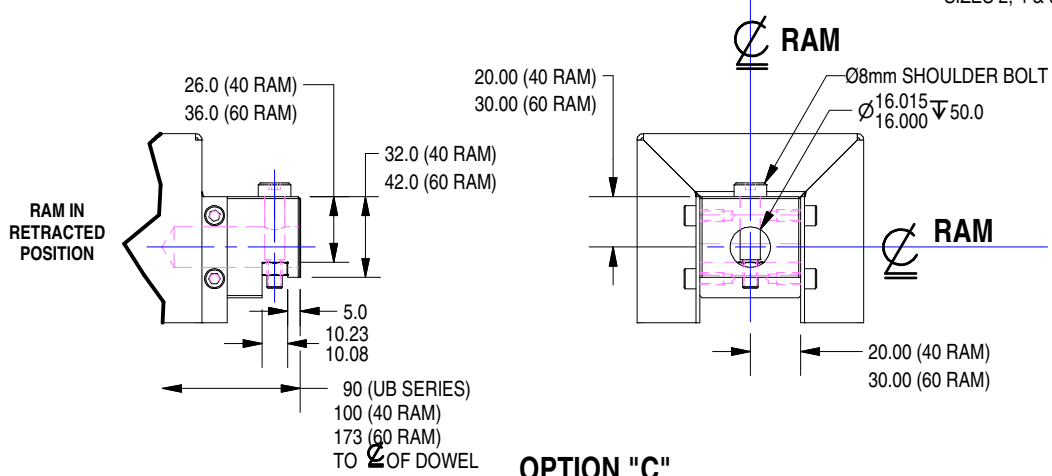
- | | | | |
|--|---|-----------------------|---|
| Series | Ram Size | Ram Options | Ram Rotation |
| EB Electric Side-By-Side
SB Pneumatic Side-By-Side
WP In Line
UB In Line w/Integrated Cyl
(40mm Ram) | 2 2 (24mm square)
where noted
4 4 (40mm square)
6 6 (60mm square) | See Ram Options Chart | 0 No Rotation
9 90° Rotation
(Ram Option "H") |

Ram Options

- A** 4 Hole - 6mm Dwls and 9mm Holes
- B** 3 Hole
- C** End Hole
- D** 4 Hole - Large (See Ram Options Sheet)
- E** 4 Hole - M8 Taps - 6mm Dwls
- F** 3 Hole - M8 Taps - 6mm Dwls
- G** 4 Hole - M10 Taps - 8mm Dwls
- H** 6 Hole
- J** 4 Hole - 10mm Dwls and 11mm Holes
- K** 3 Hole - 10mm Dwls and 11mm Holes
- L** 4 Hole - Medium (See Ram Options Sheet)



OPTION "J"
FOR ALL RAM SIZES 2, 4 & 6



Nominal

Ram	A	B	C	D	E	F	ØG	ØH
40	155 (145 UB Series)	30	25	12.5	15.0	60.0	M10 X 1.5 X 20 DEEP or Clear for M8 Screw	8
60	290	95	30	17.5	15.0	125.0	M12 X 1.75 X 24 DEEP or Clear for M10 Screw	10

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Welker Shot Pin Technical Information EB, SB, UB and WP Series

Body Mounting (except UB - see UB catalog)

Square ram shot pin units have dual mounting capability. At all mounting locations, you have the option of mounting from the top using the counter-bored clearance holes or the same holes, tapped from the bottom. Using any four of the six holes, symmetrical about the centerline, is sufficient. Protruding mounting dowels are provided and are press fit into the body.

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" (0.95mm).**

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 control of "end of stroke" repeatability, see extend and retract stop options for each series.

Rap couplings cause the unit to be less than the nominal stroke of the cylinder. The 24mm ram and 40mm ram units have a 2mm rap. The 60mm ram units have a 3mm rap. The rap allows the cylinder to begin moving before moving the ram. The impact of the coupler helps free tooling from a bound condition. Most applications using a pneumatic shot pin should have rap couplings while most hydraulic shot pin applications should use a rigid coupler.

Welker cylinders do not require lubrication. **WELKER DOES NOT MOUNT CUSTOMER SUPPLIED CYLINDERS TO SHOT PIN UNITS.** 24mm ram and 40mm ram tie rod cylinders use prox switch (cylindicator) ports with 1.025" read depth (probe length). 60mm ram tie rod cylinders have prox switch (cylindicator) ports with 1.250" read depth (probe length). Welker does not supply cylindicator switches. Shot pins ordered with compact cylinders are cylinder switch ready. Cylinder switches are available though Welker. World switches are available though Welker for shot pins offering world switch capability.

Repeatability

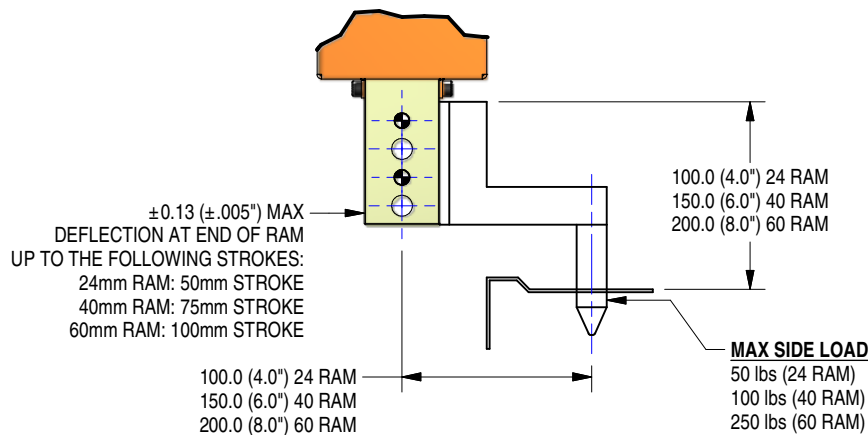
Shot pin units utilize a full contact bearing surface for high repeatability. Repeatability within $\pm .002"$ (0.05mm) part to part is achievable.

Wear

Wear equals 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.



SHEET 9

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