

"E" Series Linear Slides

The linear ball bearing

Either of two slide styles can be made from a single set of parts. Users can inventory less... and assemble specific models only as needed.

Bearing block— has slip-fit dowel hole & slot for precision alignment

Dowel pins engage floating rod coupler in "gantry" style shown here

Four thru tapped mounting holes, plus counterbored for SHCS

Rear toolbar

Dowel slot

Flange mounting plate is used when cylinder is mounted to rear toolbar in "gantry" style configurations. It is not used in "EO" thruster styles.

Dowel Hole

Front toolbar

Dowel slot

Guide shafts (2)

Nose mounted double acting air cylinder (Available with air cushions only on "EG" style Models 500, 625 & 750)

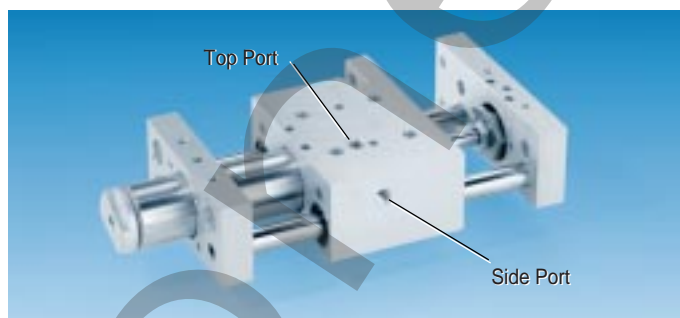
Stepped holes with press-fit threaded steel bushings for mounting stop bolts and hydraulic shock absorbers (2 here and 2 on rear toolbar)

Notch for stopbolt jam nut wrench clearance

Floating rod coupler has groove to engage locking pins either at front toolbar or at rear of bearing block as shown above

Unique shock absorber lockplate (shown tinted blue for illustration purposes) eliminates the often "difficult-to-access" shock absorber jam nut

"EO" On Board Thruster Style



The cylinder and its floating rod coupler can be installed "on board" by threading the cylinder nose into the bearing block housing and pinning the rod coupler to the front toolbar. O-rings seal against the cylinder body forming a chamber around its retract port accessed by connecting top, bottom and side ports in the bearing block. Unused ports get plugged.

In this configuration the bearing block is fixed and the toolbars reciprocate. The rear toolbar has an oversized hole allowing it to pass freely back and forth over the cylinder body.

"EG" Gantry Style Slide



These same components, with the simple addition of a flange mounting plate on the nose of the air cylinder, are used to convert the unit into a gantry style slide.

The cylinder flange is bolted to standard tapped holes in the rear toolbar; the floating rod coupler is pinned to the rear of the bearing block via standard dowel holes. With the toolbars and the cylinder remaining stationary, the bearing block acts as a reciprocating carriage.

slide system that cuts inventory requirements for machine builders

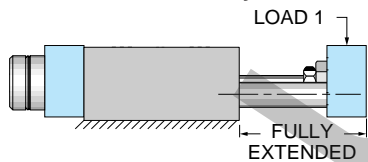
Engineering Data

Model	EO375	EG375	EO500	EG500	EO625	EG625	EO750	EG750
Guide Shaft Diameter	3/8"		1/2"		5/8"		3/4"	
Bore	5/8"		1-1/16"		1-1/2"		2"	
Power Factor Extend	.31		.89		1.77		3.14	
Power Factor Retract	.28		.81		1.62		2.83	
Weight, lbs. @ zero stroke	1.15	1.23	2.76	2.92	5.29	5.67	12.33	13.05
Add per inch of stroke	.07	.07	.18	.18	.23	.23	.41	.41
Standard Strokes (mm)	25-100 by 25		25-100 by 25 150-250 by 50		25-100 by 25 150-400 by 50		25-100 by 25 150-500 by 50	

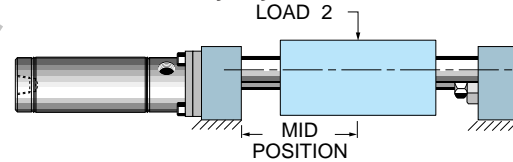
- **Pressure Rating:** Maximum operating pressure is 150 psi Air
- **Output Force:** Output Force = Pressure x Power Factor
- **Speed:** Safe speed range is determined by a number of factors. The most important consideration is total reciprocating weight. High loads combined with high speeds can develop severe and damaging impact loads. For speeds over 10 inches per second use optional shock absorbers.
- **Accuracy:** E Series Slides feature pre-loaded linear ball bearings for play-free operation. Each bearing has .0001"/.0003" pre-load built in with special ground guide shafts. Straightness tolerance is .0015" per foot of guide shaft. Repeatability of stroke is .001" with optional stop bolts. Note: Floating rod coupler necessarily has some built-in "end play". This "backlash" is taken out at end of stroke with optional stop bolts.

Load Sizing Guide

EO Series – On Board Style



EG Series – Gantry Style



Load Limits: Safe loading involves a combination of factors including: bearing capacity, shaft strength and allowable deflection, life expectancy, how the load is applied, and how fast the load is accelerated/decelerated.

DO NOT OVERLOAD – overloading can cause reduced product life, shaft bending and loss of position accuracy, as well as seal and bearing failure. **CAUTION:** Heavy reciprocating loads can cause damaging impact forces at end of stroke. It may be necessary to use adjustable stop bolts and hydraulic shock absorbers, or air cushions ("EG" only), or reduce speeds to avoid damage to slide and/or tooling.

SAFE LOADS (lbs.)

Model Number	Load Type	Stroke (mm)												Maximum Deflection	
		25	50	75	100	150	200	250	300	350	400	450	500		
375	Load 1	10.0	10.0	10.0	6.0										.005"
		10.0	10.0	10.0	10.0										.015"
	Load 2	13.0	13.0	13.0	13.0										.005"
		13.0	13.0	13.0	13.0										.015"
500	Load 1	29.0	29.0	24.0	12.0	6.0	3.0	1.4							.005"
		29.0	29.0	29.0	29.0	16.0	8.2	4.8							.015"
	Load 2	36.0	36.0	36.0	36.0	36.0	36.0	23.4							.005"
		36.0	36.0	36.0	36.0	36.0	36.0	36.0							.015"
625	Load 1	58.0	58.0	44.0	28.0	12.0	7.8	4.0	2.3	1.3	0.8				.005"
		58.0	58.0	58.0	58.0	34.0	20.0	11.0	6.1	4.0	2.8				.015"
	Load 2	73.0	73.0	73.0	73.0	73.0	62.3	36.4	24.5	18.3	14.5				.005"
		73.0	73.0	73.0	73.0	73.0	73.0	73.0	73.0	45.0	43.8				.015"
750	Load 1	100.0	100.0	72.0	55.0	20.0	12.0	8.0	5.0	4.0	2.2	1.8	1.5		.005"
		100.0	100.0	100.0	100.0	56.0	36.0	26.0	12.0	9.0	6.4	5.8	4.0		.015"
	Load 2	127.0	127.0	127.0	127.0	127.0	89.0	64.0	36.5	30.3	22.0	18.0	17.0		.005"
		127.0	127.0	127.0	127.0	127.0	127.0	127.0	127.0	120.0	95.0	65.3	50.4	46.2	.015"

"E" Series Linear Slides – Order Guide

Helpful hint:
Model Size = guide shaft diameter
in 3 decimal places

Style
O = "On Board" Cylinder
G = "Gantry" Cylinder Mounting
U = Unpowered (No Cylinder)

Options
E = Dovetail sensor mounting rail (EG Models only). See page 19. <i>Magnetic band on cylinder piston is standard. Sensors must be ordered separately.</i>
C = Air cushions ("EG500, EG625 & EG750" only)
V = Viton cylinder seals
W* = Rulon® linear shaft bearings
X* = Duralon® linear shaft bearings
Z = Pre-chromed stainless steel guide shafts (<i>Cannot be used with linear ball bearings</i>)
Note: *Sleeve bearings can be substituted for standard linear ball bearings.

Model Number Code				Options (Leave blank if none desired)	Adjustable Stopbolt Insert	Shock Absorber Insert & Lockplate
Series	Style	Model Size	Stroke			
E	O	500	– 25	– V	– AM10	– SM12

Model Size	Guide Shaft Diameter	Bore	Standard Stroke Length (mm)
375	3/8"	5/8"	25, 50, 75, 100
500	1/2"	1-1/16"	25, 50, 75, 100, 150, 200, 250
625	5/8"	1-1/2"	25, 50, 75, 100, 150, 200, 250, 300, 350, 400
750	3/4"	2"	25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500

Adjustable Stopbolt Insert	Thread Size Code from table below. Number = metric or 1/16's in inch
M = Metric	
F = Fractional Inch	

Shock Absorber Insert	Thread Size Code from table below. Number = metric or 1/16's in inch
M = Metric	
F = Fractional Inch	

Model Size	Stopbolt Insert Thread Size				Shock Absorber Insert Thread Size			
	Code	Metric	Code	Inch	Code	Metric	Code	Inch
375	–	–	AF04	1/4 - 28	SM10	M10 x 1.0	SF06	3/8 - 32
	AM08	M8 x 1.0	AF05	5/16 - 24				
500	AM08	M8 x 1.0	AF05	5/16 - 24	SM12	M12 x 1.0	SF07	7/16 - 28
	AM10	M10 x 1.0	AF06	3/8 - 24	SM14	M14 x 1.0	SF08	1/2 - 20
625	AM10	M10 x 1.0	AF06	3/8 - 24	SM14C‡	M14 x 1.5	SF09	9/16 - 18
	AM12	M12 x 1.0	AF08	1/2 - 20	SM12	M12 x 1.0	SF07	7/16 - 28
750	AM10	M10 x 1.0	AF06	3/8 - 24	SM14	M14 x 1.0	SF08	1/2 - 20
	AM12	M12 x 1.0	AF08	1/2 - 20	SM14C‡	M14 x 1.5	SF09	9/16 - 18
	AM18	M18 x 1.0	AF12	3/4 - 16	SM20	M20 x 1.5	SF12	3/4 - 16
					SM25	M25 x 1.5	SF16	1.0 - 12
					SM27	M27 x 3.0		

Note ‡: Denotes coarse thread

"BF" Style Stopbolt
Must be ordered separately

Part No.	Thread	L
BF05	5/16 - 24	2.50
BF06	3/8 - 24	3.00
BF08	1/2 - 20	3.50

"WM" Style Stopbolt with Actuator Pin
Must be ordered separately

"AH2" Housing with Sensor
"WM" Stopbolt
Hydraulic Shock Absorber

Part No.	Thread	H Hex	L	T
WM08	M8 x 1.0	7/16"	1.56"	.19"
WM10	M10 x 1.0	7/16"	1.56"	.19"
WM12	M12 x 1.0	5/8"	2.94"	.31"

This stopbolt is for use with Actuator Housing #AH2 and "Dovetail" style sensors. **See opposite page.** Actuator housing will attach to this stopbolt with a set screw engaging annular groove.

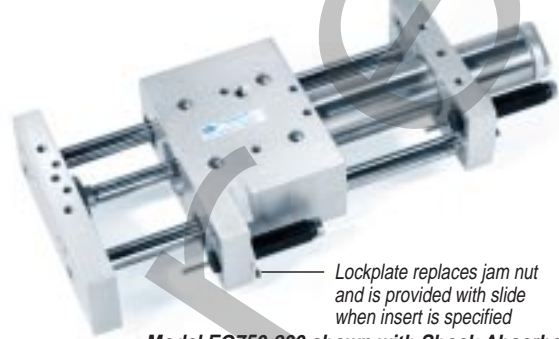
Shock Absorber and Sensor Accessories

Hydraulic Shock Absorbers ‡ –

Order separately by part numbers from this chart

Ace Brand Fabco-Air Part #	Enidine Brand Fabco-Air Part #	Thread Size	For use on these models
–	ES06	3/8 - 32	375
AS08	ES08	1/2 - 20	500, 625
AS16	ES16	1.0 - 12	750

‡ Note: These are general purpose shocks stocked by Fabco-Air. Other sizes, brands, etc., are available by special order.



Model EO750-200 shown with Shock Absorbers

Magnetic Piston Position Sensing – For "EG" Style Slides Only

Magnetically operated reed switches and electronic sensors are available in two mounting styles: one is fastened to the cylinder barrel with a band clamp (not included with sensor – must be ordered separately); the other with an adhesive-backed mounting rail with dovetail slots (Option "E"). A magnetic band on cylinder piston is standard.

Clamp On Style Sensors

Sensor Type	Prewired 9 ft. Part No.	Quick Disconnect Part No.*	LED	Electrical Characteristics
Reed	9-2A197-1003	9-2A197-1303	Yes	5-120 VAC/VDC, 0.5 AMP Max, 10 Watt Max, SPST N.O. 3.5 voltage drop
Electronic	9-2A197-1031	9-2A197-1331	Yes	Sourcing, PNP, 6-24 VDC, 0.5 Amp Max, 1.0 voltage drop
Electronic	9-2A197-1032	9-2A197-1332	Yes	Sinking, NPN, 6-24 VDC, 0.5 Amp Max, 1.0 voltage drop

Universal Band Clamp – Part Number 800-A00-000 – must be ordered separately

*Note: Quick disconnect style switches are supplied with male connector. Order female cordsets separately.

Dovetail Style Sensors – requires Option –E: Dovetail Mounting Rail (See description page 9)

Sensor Type	Prewired 9 ft. Part No.	Quick Disconnect Part No.*	LED	Electrical Characteristics
Reed	949-000-001	949-000-301	No	0-120 VDC/VAC, 0.5 Amp Max current, 10 Watt Max, 0 Voltage Drop
Reed	949-000-002	949-000-302	Yes	5-120 VDC/VAC, 0.03 Amp Max current, 4 Watt Max, 2.0 Voltage Drop
Electronic	949-000-031	949-000-331	Yes	Sourcing PNP 6-24 VDC, 0.20 Amp Max current, 0.5 Voltage Drop
Electronic	949-000-032	949-000-332	Yes	Sinking NPN 6-24 VDC, 0.20 Amp Max current, 0.5 Voltage Drop

*Note: Quick disconnect styles are supplied with 6 inch pigtail with male connector. Order female cordsets separately.

Model EG375 shown above with Clamp On Style Sensors; below with Dovetail Style

Female Cordsets for Quick Disconnect	
Length	Part No.
1 Meter	CFC-1M
2 Meters	CFC-2M
5 Meters	CFC-5M

Stopbolt Actuated Sensors – For "EO", "EG" and "EU" Style Slides

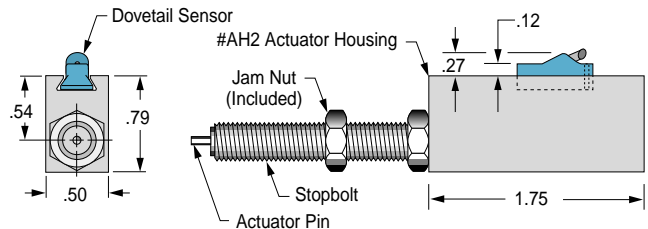
Stopbolt Actuated Sensors...

are comprised of three separate components:

- WM style stopbolt with actuator pin.
- Part #AH2 - Actuator Housing which attaches to any of the three sizes of WM style stopbolts.
- Dovetail style reed switch or electronic switch that mounts in a dovetail slot in the actuator housing.

How they work...

- Actuator housing #AH2 contains a spring loaded magnetic plunger.
- This housing attaches to the stopbolt with a set screw engaging a groove. Loosening the set screw allows the housing to swivel during stopbolt adjustment.
- Reed or electronic switches mount in the housing dovetail slot.
- At the end of stroke, the stopbolt actuator pin pushes the magnet plunger to actuate the sensor.

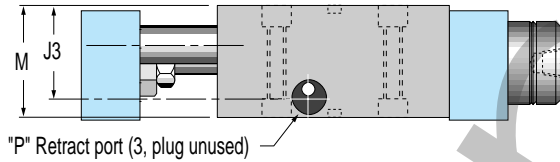
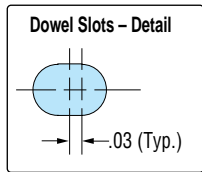


Guide to Ordering Slides with Stopbolt Actuated Sensors

1. Order slide with AM08, AM10, or AM12 threaded inserts.
2. Order required quantity of Code "WM" stopbolts w/actuator pin in a matching thread size.
3. Order required quantity of #AH2 Actuator Housings.
4. Order required quantity of Dovetail Sensors. Select desired Electrical characteristics and wire type from the table above.

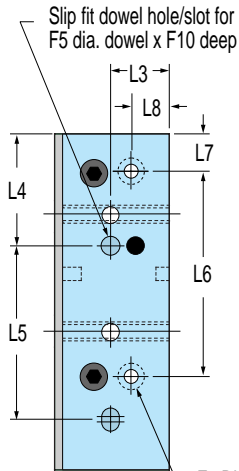
"E" Series Linear Slides

Series "EO" (On Board Style)



"P" Extend port (1). "EO" Slides are shipped with a pipe nipple and coupler to "extend" rear port beyond rear toolbar travel, allowing right-angle air fittings to be used without interference from reciprocating toolbar.

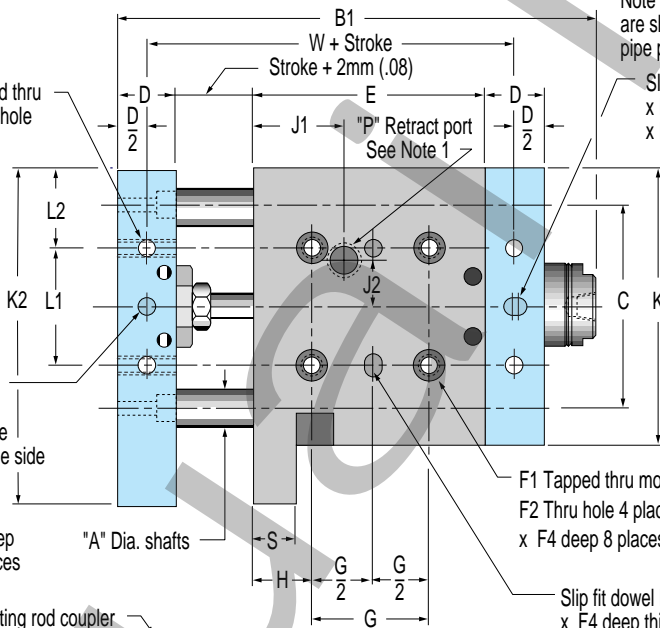
Note 1: Retract ports on this and opposite side are shipped with underflush hex socket type pipe plugs installed in each.



F1 Tapped thru mounting hole 6 places

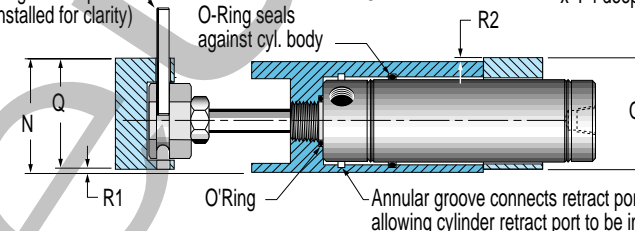
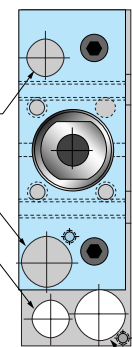
Slip fit dowel hole for F5 dia. dowel x F6 deep this side x F7 deep opposite side

Dowel pin (2) connects floating rod coupler to toolbar (shown partially installed for clarity)



Slip fit dowel slot for F5 dia dowel x F8 deep this side x F9 deep opposite side

Stop bolt location for cylinder extend
 Shock location for cylinder extend
 Stop bolt location for cylinder retract



B1 Dimensions Per Standard Strokes – "On Board" Style

Stroke Model	25 (.98)	50 (1.97)	75 (2.95)	100 (3.94)	150 (5.91)	200 (7.87)	250 (9.84)	300 (11.81)	350 (13.78)	400 (15.75)	450 (17.72)	500 (19.69)
375	136.8 (5.39)	187.2 (7.37)	237.6 (9.36)	288 (11.34)								
500	165.3 (6.51)	215.7 (8.49)	266.2 (10.48)	316.5 (12.46)	417.3 (16.43)	518.2 (20.40)	619 (24.37)					
625	178.5 (7.03)	228.9 (9.01)	279.2 (10.99)	329.7 (12.98)	430.5 (16.95)	531.3 (20.92)	632.1 (24.88)	732.9 (28.85)	833.7 (32.82)	934.5 (36.79)		
750	221.9 (8.74)	272.3 (10.72)	322.7 (12.70)	373.1 (14.69)	473.9 (18.66)	574.7 (22.63)	675.5 (26.59)	776.3 (30.56)	877.1 (34.53)	977.9 (38.50)	1078.7 (42.47)	1179.5 (46.44)

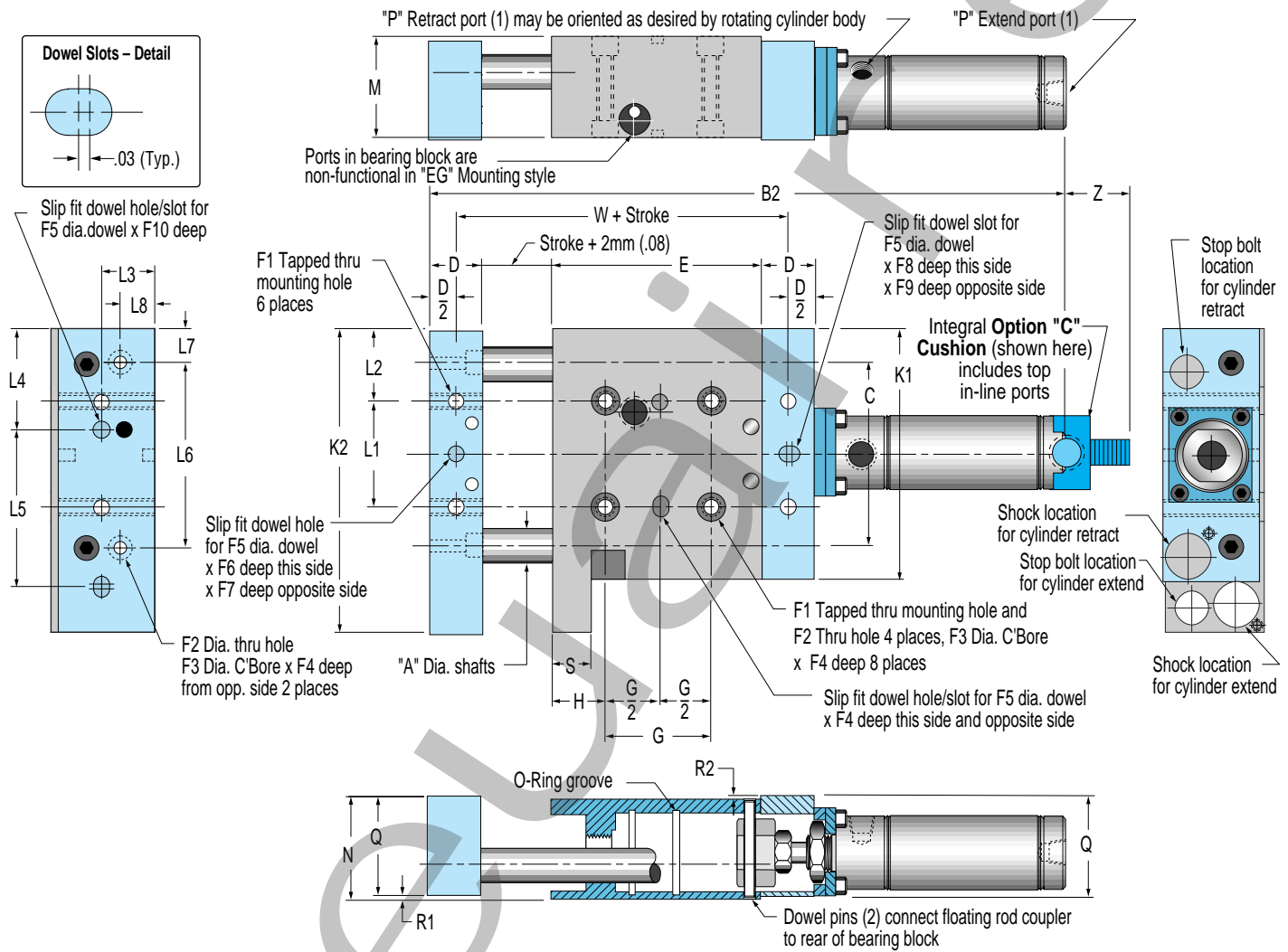
Slide Dimensions Not Affected by Stroke

Note: Chart is Dual Dimensioned. Example: 51 (2.008)

Model	Bore	ØA	C	D	E	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	G	H	J1	J2	J3
375	5/8	(.375)	51 (2.008)	18 (.71)	52 (2.05)	M6 X 1.0	5 (.20)	9.2 (.36)	5.4 (.21)	5.0	5.6 (.22)	3.3 (.13)	5.3 (.21)	2.8 (.11)	5.6 (.22)	28 (1.10)	12 (.47)	31.8 (1.25)	9.5 (.38)	22.0 (.87)
500	1-1/16	(.500)	70 (2.758)	20 (.79)	80 (3.15)	M6 X 1.0	5 (.20)	9.2 (.36)	5.4 (.21)	5.0	4.0 (.16)	4.0 (.16)	4.0 (.16)	3.0 (.12)	6.4 (.25)	40 (1.58)	20 (.79)	30.9 (1.22)	17.5 (.69)	30.0 (1.18)
625	1-1/2	(.625)	86 (3.386)	20 (.79)	90 (3.54)	M6 X 1.0	5 (.20)	9.2 (.36)	5.4 (.21)	6.0	7.9 (.31)	3.8 (.15)	7.9 (.31)	2.7 (.11)	6.4 (.25)	50 (1.97)	20 (.79)	55.0 (2.17)	22.0 (.87)	37.2 (1.47)
750	2	(.750)	120 (4.724)	25 (.98)	125 (4.92)	M10 X 1.5	8 (.32)	13.5 (.53)	8.3 (.33)	8.0	10 (.39)	7.6 (.30)	8.0 (.31)	4.0 (.16)	10.0 (.39)	72 (2.84)	26.5 (1.04)	76.2 (3.00)	30.1 (1.19)	46.0 (1.81)

Metric and (Inch) Dimensions

Series "EG" (Gantry Style)



B2 Dimensions Per Standard Strokes – "Gantry" Style												
Stroke Model	25 (.98)	50 (1.97)	75 (2.95)	100 (3.94)	150 (5.91)	200 (7.87)	250 (9.84)	300 (11.81)	350 (13.78)	400 (15.75)	450 (17.72)	500 (19.69)
375	188 (7.40)	238.4 (9.39)	288.8 (11.37)	339.2 (13.36)								
500	245.4 (9.66)	295.7 (11.64)	346.1 (13.63)	396.5 (15.61)	497.3 (19.58)	598.1 (23.55)	698.9 (27.52)					
625	268.1 (10.56)	318.5 (12.54)	368.9 (14.52)	419.5 (16.52)	520.1 (20.48)	620.9 (24.45)	721.7 (28.41)	822.5 (32.38)	923.3 (36.35)	1024.1 (40.32)		
750	346.5 (13.64)	396.9 (15.63)	447.3 (17.61)	497.7 (19.59)	598.4 (23.56)	699.3 (27.53)	800.1 (31.50)	900.9 (35.47)	1001.7 (39.44)	1102.5 (43.41)	1203.3 (47.37)	1304.1 (51.34)

Slide Dimensions Not Affected by Stroke

Note: Chart is Dual Dimensioned. Example: 37.2 (1.47)

K1	K2	L1	L2	L3	L4	L5	L6	L7	L8	M	N	P	Q	R1	R2	S	W	Z	Model
72 (2.84)	87 (3.43)	28 (1.10)	22 (.87)	14 (.55)	29 (1.14)	42 (1.65)	51 (2.01)	10.5 (.41)	8 (.32)	28 (1.10)	29 (1.14)	10 - 32	27.5 (1.08)	1.5 (.06)	1 (.04)	15 (.59)	72 (2.83)	N/A	375
96 (3.78)	116 (4.57)	40 (1.58)	28 (1.10)	20 (.79)	38 (1.50)	60 (2.36)	70 (2.76)	13.0 (.51)	13 (.51)	38 (1.50)	39 (1.54)	1/8 NPT	37.5 (1.48)	1.5 (.06)	1 (.04)	15 (.59)	102 (4.02)	27.0 (1.06)	500
120 (4.72)	140 (5.51)	50 (1.97)	35 (1.38)	27.5 (1.08)	48 (1.89)	70 (2.76)	86 (3.39)	17.0 (.67)	19 (.75)	54 (2.13)	55 (2.17)	1/8 NPT	53.5 (2.11)	1.5 (.06)	1 (.04)	15 (.59)	112 (4.41)	22.2 (.88)	625
160 (6.30)	195 (7.68)	72 (2.84)	44 (1.73)	35 (1.38)	30 (1.18)	100 (3.94)	120 (4.72)	20.0 (.79)	20 (.79)	68 (2.68)	70 (2.76)	1/4 NPT	68.0 (2.68)	2.0 (.08)	2 (.08)	25 (.98)	152 (5.98)	20.6 (.81)	750