**Product Index**

**Introduction**
Engineering considerations for product selection........4 -7
Quick reference guide to Fabco-Air linear slides .............8
New attachment method for dovetail style sensors ............9

**“GB” Series –**
Construction & engineering data ... 10, 11
Order guide........................................12
Tooling and stop options......................12
Position sensing options......................13
Dimensions....................................14, 15

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>375</td>
<td>3/8”</td>
<td>12mm</td>
<td>1/2, 1, 1-1/2, 2, 3, 4, 5, 6, 7, 8, 9, 10</td>
</tr>
<tr>
<td>500</td>
<td>1/2”</td>
<td>20mm</td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9, 10</td>
</tr>
<tr>
<td>750</td>
<td>3/4”</td>
<td>32mm</td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9, 10</td>
</tr>
</tbody>
</table>

**“L & S” Series –**
Construction & engineering data ... 16, 17
Order guide .....................................18, 19
“S” series dimensions ......................20
“L” series dimensions .....................21
Position sensing options......................19
Tooling and stop options.................19, 22
Cushions..............................................23
How to order summary ......................23

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>1/4”</td>
<td>5/16”</td>
<td>1/2, 1, 1-1/2, 2, 3, 4</td>
</tr>
<tr>
<td>375</td>
<td>3/8”</td>
<td>9/16”</td>
<td>1/2, 1, 1-1/2, 2, 3, 4, 5, 6</td>
</tr>
<tr>
<td>500</td>
<td>1/2”</td>
<td>3/4”</td>
<td>1, 2, 3, 4, 6, 8, 10, 12</td>
</tr>
<tr>
<td>750</td>
<td>3/4”</td>
<td>1-1/16”</td>
<td>1, 2, 3, 4, 6, 8, 10, 12</td>
</tr>
<tr>
<td>1000</td>
<td>1”</td>
<td>1-1/16”</td>
<td>1 to 4 by 1&quot; incr., 6 to 24 by 2&quot; incr.</td>
</tr>
<tr>
<td>1250</td>
<td>1-1/4”</td>
<td>2”</td>
<td>1 to 4 by 1&quot; incr., 6 to 24 by 2&quot; incr.</td>
</tr>
<tr>
<td>3-1250</td>
<td>1-1/4”</td>
<td>3”</td>
<td>1 to 4 by 1&quot; incr., 6 to 24 by 2&quot; incr.</td>
</tr>
</tbody>
</table>

**“SE” Series –**
Construction & engineering data ... 24, 25
Order guide........................................26-28
Dimensions.....................................30, 31
Thin parts placer...............25, 28, 29
3-Position, tandem cylinder models...29
Adjustable stop options............28, 35
Dial-A-Stroke® option.................36
Position sensing options............27, 32, 33
Stop and shock options............28, 34-36
Hi-thrust (Multi-Power®) slides .........35
How to order summary .............36, 37

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>1/4”</td>
<td>1/2”</td>
<td>1/2 to 4&quot; by 1/2&quot; increments</td>
</tr>
<tr>
<td>375</td>
<td>3/8”</td>
<td>3/4”</td>
<td>1 to 6 by 1&quot; increments</td>
</tr>
<tr>
<td>500</td>
<td>1/2”</td>
<td>1-1/8”</td>
<td>1 to 10 by 1&quot; increments</td>
</tr>
<tr>
<td>625</td>
<td>5/8”</td>
<td>1-1/8”</td>
<td>1 to 10 by 1&quot; increments</td>
</tr>
<tr>
<td>750</td>
<td>3/4”</td>
<td>2”</td>
<td>1 to 6 by 1&quot; increments</td>
</tr>
<tr>
<td>1000</td>
<td>1”</td>
<td>2-1/2”</td>
<td>1 to 6 by 1&quot; increments</td>
</tr>
<tr>
<td>1500</td>
<td>1-1/2”</td>
<td>3-1/4”</td>
<td>2 to 30 by 2&quot; increments</td>
</tr>
</tbody>
</table>
“EZ” Series –
Construction & engineering data... 38, 39
Order guide.................................40-45
Dimensions................................46-49
Thin parts placer.........................49
3-Position, tandem cyl. models....48
Adjustable stop options..............45
Position sensing options... 42, 43, 50, 51
Tooling, stop and
shock options............... 44, 45, 52-56
Applications........................... 57
How to order summary.............58, 59

<table>
<thead>
<tr>
<th>Model Size</th>
<th>Guide Shaft Dia.</th>
<th>Bore</th>
<th>Standard Stroke Length (Inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>1/4&quot;</td>
<td>1/2&quot;</td>
<td>1/2&quot; to 4&quot; by 1/2&quot; increments</td>
</tr>
<tr>
<td>375</td>
<td>3/8&quot;</td>
<td>3/4&quot;</td>
<td>1&quot; to 6&quot; by 1&quot; increments</td>
</tr>
<tr>
<td>500</td>
<td>1/2&quot;</td>
<td>1-1/8&quot;</td>
<td>1&quot; to 10&quot; by 1&quot; increments</td>
</tr>
<tr>
<td>625</td>
<td>5/8&quot;</td>
<td>1-1/8&quot;</td>
<td>1&quot; to 10&quot; by 1&quot; increments</td>
</tr>
<tr>
<td>750</td>
<td>3/4&quot;</td>
<td>2&quot;</td>
<td>1&quot; to 6&quot; by 1&quot; increments</td>
</tr>
<tr>
<td>1000</td>
<td>1&quot;</td>
<td>2-1/2&quot;</td>
<td>1&quot; to 6&quot; by 1&quot; increments</td>
</tr>
<tr>
<td>1500</td>
<td>1-1/2&quot;</td>
<td>3-1/4&quot;</td>
<td>2&quot; to 30&quot; by 2&quot; increments</td>
</tr>
</tbody>
</table>

“EZP” Series – (pick & place)
Construction & engineering data
EZP5025....................................60
EZP7550.....................................61
Order guide...............................62-66
Position sensing options........44, 45, 52-56
Tooling, stop & shock options... 66, 67
Dimensions
EZP5025....................................68
EZP7550.....................................69
3-position tandem cyl. models....70
Toolbar / transition plates for
parallel gripper mounting........71

“TS” Series –
Construction & engineering data... 72, 73
Order guide...............................74-76
Dimensions................................76-77
Air cushion...............................72, 80
Bolt-on options.........................78, 79
Position sensing options...........75, 79
Rod scraper..............................74, 78, 80
How to order summary.............80, 81

<table>
<thead>
<tr>
<th>Model Size</th>
<th>Bore</th>
<th>Guide Shaft Dia.</th>
<th>Standard Strokes in 1” Increments</th>
</tr>
</thead>
<tbody>
<tr>
<td>112</td>
<td>1-1/8&quot;</td>
<td>1/4&quot;</td>
<td>1” to 10”</td>
</tr>
<tr>
<td>150</td>
<td>1-1/2&quot;</td>
<td>3/8&quot;</td>
<td>1” to 12”</td>
</tr>
<tr>
<td>200</td>
<td>2&quot;</td>
<td>1-1/2&quot;</td>
<td>1” to 15”</td>
</tr>
<tr>
<td>250</td>
<td>2-1/2&quot;</td>
<td>5/8&quot;</td>
<td>1” to 20”</td>
</tr>
<tr>
<td>325</td>
<td>3-1/4&quot;</td>
<td>3/4&quot;</td>
<td>1” to 20”</td>
</tr>
<tr>
<td>400</td>
<td>4&quot;</td>
<td>1&quot;</td>
<td>1” to 20”</td>
</tr>
</tbody>
</table>

Other Fabco-Air Linear Guided Motion Products

Global Series® Cylinders
Guided Toolplate models
Catalog # GC-15

Pancake® Cylinders
with External Guide Pins
(Option “G”)
See Catalog # CV9

Square 1® Cylinders
with External Guide Pins
(Option “G”)
See Catalog # CV9
Fabco-Air offers a wide assortment of linear slides, each suited to a vast variety of applications. But how does one know which slide to select? This section of the catalog will guide you through the selection process by providing useful information and helpful hints.

Selecting a linear slide involves five factors

**Factor 1:** Bore size of cylinder  
(determines power factor and linear thrust)

**Factor 2:** Guide Shaft Diameter  
(determines slide’s load capacity)

**Factor 3:** Stroke  
(select from standard available strokes, or Fabco-Air can provide special stroke lengths)

**Factor 4:** Bearing Type and Guide Shaft material  
(linear ball bearing or sleeve type bearing; guide shaft material is matched to bearing type and application environment)

**Factor 5:** Selection of slide series  
(determines physical layout of the cylinder, bearings, guide shafts, toolbar/toolplate)

Factors 1 through 3 – Bore, Guide Shaft Size & Stroke

In this catalog, each slide series is detailed in its own section. Engineering information can be found at the beginning of each section, detailing cylinder bore size, guide shaft size, and standard strokes, as well as loading information listing how much load can be supported at a given stroke and what amount of shaft deflection can be expected. Refer to this data to determine correct model size required for your application.

**Factor 4 – Bearings & Guide Shafts**

**Linear ball bearings vs. sleeve type bearings. . .**

Linear ball bearings provide three major benefits:
1. Precision and accuracy - linear ball bearings can operate with little or no “play”, providing precise, repeatable motion.
2. Smooth, low friction motion - linear ball bearings can handle even severe overhung loads without sticking or binding. Rolling elements mean no sliding friction.
3. Long life - reduced friction provides long service life, especially on long strokes with high loads.

Sleeve type bearings – Duralon® or Rulon®
1. Sleeve bearings work best when used to support “carriage” type loads (where load is applied equally to the four bearings)
2. Sleeve bearings can handle moderate overhung loading. Heavy overhung loads can cause bearing to wear “egg-shaped”.
3. Sleeve bearings must have running clearance between I.D. and guide shaft. Therefore, some “play” will be exhibited at the toolbar. The closer the bearing-to-bearing spacing and/or the longer the stroke, the more free play motion at the toolbar.

Helpful bearing selection hints
- Long stroke, high speed applications are best handled by linear ball bearings.
- Short stroke, high cycle rate applications are best handled by Sleeve Type bearings. (example: 1” stroke @ 200 cycles per minute). Short, fast reciprocating motion can shorten the life of linear ball bearings and/or guide shafts because the inertia of the ball circuit causes “skidding” when direction is rapidly reversed.
Steel shell linear ball bearings – Yes!
Inexpensive linear ball bearings – No!

Fabco-Air linear ball bearing slides use high quality, high precision “steel shell” bearings that provide superior load support. Here's why. With steel shell bearings, the bearing load is distributed back to the housing bore via the entire bearing O.D. The ball bearing's I.D. is unaffected by the housing bore size, therefore providing a very precise “fit” to the guide shaft. Bearing-to-shaft pre-load can be accurately established and maintained.

Problem: bearing load is distributed back to the housing bore through small, crown shaped “bumps” on the load plates. High loads and/or sudden impacts cannot be supported by such a small area, causing the crowns to deform the housing bore. Furthermore the ball bearing's I.D. is DIRECTLY affected by the housing bore size. Enlarged housing bores, whether caused by deformation or by improperly finished I.D.s will cause bearing “slop” and toolbar “play”.

Steel shell linear ball bearing construction

Competitor's slides, equipped with bearings with plastic housings and load-plate type ball circuit construction can be problematic. This self aligning bearing concept is useful in applications where misalignment is likely. But it is unnecessary and often detrimental when used with packaged linear slides in which bearing housings are machined to such a high degree of accuracy.

Conversely, bores that are too small, such as when closed up by over anodizing, will increase the pre-load to the shaft. Excessive pre-load causes bearing overload and premature bearing and/or shaft failure.

Some recently developed plastic housing linear ball bearings have a ring or band in the center to help support the load. This feature still does not have support equal to the steel shell bearings used on Fabco-Air slides, and because the ring is “split”, the bearing's I.D. is still directly affected by the final housing bore diameter.
Factor 4 – continued

Linear Ball Bearing

Loading and Life Expectancy

Many slide applications involve an overhung load applied to the end of the guide shaft. In almost all of these cases, the slide's load capacity is determined by the strength of the guide shaft and its ability to resist bending. Linear ball bearings are not the limitation because their load capacities dramatically exceed the bending strength of the guide shafts.

### Linear Ball Bearing Load Capacities

For Shaft Diameters of | Rolling Load Ratings  
---------------------|---------------------  
.250"                | 60 lbs each bearing  
.375"                | 64 lbs each bearing  
.500"                | 177 lbs each bearing 
.625"                | 272 lbs each bearing 
.750"                | 300 lbs each bearing 
1.000"               | 410 lbs each bearing 
1.500"               | 900 lbs each bearing 

Example: from the load sizing guide found on page 45, a model EZ1000 slide with 2.0" stroke has a recommended overhun load of 200 pounds (produces .005" max. toolbar deflection or less). This load is supported by two linear bearings rated at 410 lbs each, 820 lbs total - which translates to a “safety factor” of more than 4 to 1! For a 20" stroke with the same .005" deflection, the load sizing guide gives a load recommendation of 4 pounds – a factor of over 200 to 1!

Linear ball bearings provide precise “no play” motion and long life is assured because it is loaded only to a small fraction of its capacity.

Life expectancy is 3 million to over 10 million cycles. This general cycle life can be predicted regardless of its stroke because the linear ball bearing is being so lightly loaded, compared to its rated capacity. Cycle life is determined as much by the number of “ball circuit reversals” as any other factor, including inches of total shaft travel.

Loading of Sleeve Bearings

Sleeve type bearings offer simplicity and low cost. They are ideal for moderate overhung loads, and can easily handle high loads in moderate speed carriage load applications.

Fabco-Air's superior Duralon® bearing offers increased performance over other sleeve bearing materials. Self lubricating, low friction Duralon® is a composite of Teflon®/Dacron® fabric liner bonded to filament-wound, high strength fiberglass and epoxy shell. Duralon® is resistant to corrosion, moisture, and temperature to 325°F. It has outstanding physical properties, very low friction, and will not gall or score guide shaft material.

Duralon® bearings are provided as standard on “GB” and “L & S” Series slides, and are available as an optional substitution (specify option code “X”) on all other Fabco-Air linear slides. Rulon® bearings can be substituted for linear ball bearings by specifying option code “W”. These bearings have an anodized aluminum shell with a Rulon® liner, and are available for users preferring this type of bearing material.

Guide Shaft Material Selection

The “GB” and “L & S” series slides are provided standard with pre-chrome plated stainless steel shafting. This material is supplied on other slides when option “X” (Duralon®) or option “W” (Rulon®) is specified. Slides with linear ball bearings are supplied with case hardened and ground steel (1045) shafting (shaft surface acts as inner race for the linear ball bearings). “SE” series uses a slightly larger tolerance material than “EZ” and “TS” slides, to provide a controlled pre-load for “no-play” motion. When option “Z”, stainless steel shafting, is specified for use with linear ball bearings, a 440C case hardened and ground stainless material is supplied, ground to the same tolerance as 1045 shaft would be for that slide model.

Note: 1045 shafting is hardened to 60-65 Rc, while 440C stainless is hardened to 52-56 Rc. Higher loaded slides may have a slight shaft life expectancy reduction with the 440C material.
Moisture Environments – Application Tips
Coolant splash, water spray, and humidity applications can be handled by several methods. Duralon® and pre-chrome stainless steel shafting can be used. When linear ball bearings are used, Fabco-Air can supply units greased with a special moisture displacing lubricant and corrosion resistant plated guide shafts.

Operating Speed Considerations
An often overlooked aspect in the selection of linear slides is the speed at which it will operate. It can be difficult to obtain true and accurate speed information, yet ignoring speed factors can have disastrous results.

Safe speed range is generally 6 to 8 inches per second if no external stop options are utilized. A 12" stroke in 2 seconds is approximately 6"/second speed. It is approximate speed because we have not taken into account acceleration and deceleration time. On shorter strokes, ignoring acceleration/deceleration can be very misleading. A 1" stroke in 0.16 second is an average speed of 6"/second, but in reality, mid-stroke speed is much higher because a good portion of time was accelerating up to speed. It then requires a higher speed to travel that same distance in the 0.16 second time span. This higher speed develops severe impact forces when it suddenly stops at the end of stroke.

Machine cycle speed can also be misleading. Cycling at 30 parts per minute is a comfortable speed for moderate strokes. But, is the slide reciprocating at a uniform speed, or does it dwell (remain stationary) for part of the cycle? If so, the slide has to operate at a higher speed to make up for the time lost during dwell.

High speeds can be handled safely and reliably with the right combination of bearings/Shaft, adjustable stops, and bumpers or hydraulic shock absorbers. Here are some tips:

Handling High Speeds
High speeds are best accomplished using linear ball bearings, as they can handle speeds up to 100 inches of travel per second. One exception is on short stroke (less than 1"), high cycle applications. Short, fast reciprocating motion tends to make the recirculating balls skid on the guide shaft when direction is reversed quickly, due to the inertia of the balls travelling in their track. A sleeve bearing may be superior in those applications. Fabco-Air offers both linear ball and sleeve bearings on most slide and pick & place models.

High speeds can cause heat buildup in the air cylinder caused by the friction of the seals. To minimize friction, most Fabco-Air slides are equipped with high quality, 80 durometer nitrile (Buna N) lip-type seals. Slides can be operated non-lubricated, but life expectancy is increased on high speed applications by using lubricated air.

High speed can cause damaging impact forces when the slide suddenly stops at the end of stroke. Adjustable stops should be used wherever possible to absorb impact externally rather than allowing the piston to bottom out inside the cylinder. “TS200” models and larger as well as “L & S 500” models and larger are available with air cushions to help decelerate the slide near end of stroke. Also, most slide models are available with either urethane bumpers or hydraulic shock absorbers. Urethane bumpers are an inexpensive way to absorb moderate impact forces while providing quieter operations. Precision end of stroke stop positioning is not possible though, as allowance must be made for the urethane to deform.

High loads at high speeds are best decelerated using hydraulic shock absorbers. Hydraulic shocks can be sized to the application, and provide a reliable way of decelerating a load over a given distance, bringing the motion to a safe, smooth stop in much the same way that a car is braked to a uniform stop (linear motion energy is converted to heat and dissipated). Hydraulic shocks are used in conjunction with adjustable stops. End of stroke stop positioning is precise (within .001") and pistons are not bottomed out in the cylinder. Linear energy remaining at the end of stroke after the hydraulic shock has decelerated the load is absorbed safely by the adjustable stop in the form of a minor impact force. With proper shock sizing, moderate to heavy loads can be operated at speeds up to 24 inches per second – and lighter loads even faster.
FABCO-AIR Linear Slides

Factor 5 – Quick Reference Guide to Slide Selection
Each Fabco-Air slide series is shown here for size and layout comparison.
For size comparison, drawings are to scale, showing 4” stroke slides with 1/2” diameter guide shafts.

“GB” Series (sleeve bearings)
Air cylinder is machined into bearing block. Standard features include bottom, side & rear mounting holes, top & side ports. Toolbar with top, front, and bottom mounting holes.

Reasons to select:
Rugged block slide, featuring replaceable Duralon® bearings, repairable built-in cylinder, interchangeable bolt pattern. Dual port locations, multiple mounting surfaces. Four inch stroke or less.

“L & S” Series (Sleeve bearings)
An inexpensive series using non-repairable air cylinders. The “L” Series is similar to the “EZ” Series while the “S” Series is similar to the “SE”. Note: Sleeve bearings need clearance to operate. Therefore some toolbar play exists. “L” & “S” slides are not intended for ultra-precision applications.

Reasons to select:
Used for applications where the extreme precision of a linear ball bearing slide is not required.

“S” Series – Shorter than “L”, but less capacity and more “play”.

“L” Series – high load capacity. Less “play” than “S” because bearings are further apart.

“SE” Series (Linear ball bearings*)
A shortened version of the “EZ” Series to save length. Cylinder is built into the bearing block which houses four linear ball bearings.

Reasons to select:
Shorter than “EZ”. Good load capacity. Wide spacing of guide shafts to resist torsional load. Linear ball bearings at each end of bearing block provide “no-play” precision motion.

“EZ” Series (Linear ball bearings*)
Rugged slide with guide shafts either side of integral air cylinder. The bearings are spaced further apart as stroke increases, providing exceptional bearing support.

Reasons to select:
Wide spacing of guide shafts to resist torsional load. Good load capacity. Provides “no-play” precision motion. Widest choice of tooling, stop, and shock options.

“TS” Series (Linear ball bearings*)
Very compact. It is the only linear ball bearing slide available that is “built into” the air cylinder.

Reasons to select:
Used where space is limited. High load capacity. Linear ball bearings at each end of cylinder provide “no-play” precision motion. Many tooling options available.

*Note: Linear ball bearing slides are also available with sleeve bearings as substitutions
Introducing the universal sensor system
Now, one magnetically operated electronic sensor* can be used across the board on all pneumatic elements of your equipment design projects – on every cylinder, every linear slide, every gripper, and every press requirement.

This dovetail style sensor can be installed into integral dovetail slots on Fabco-Air Pancake® and Square 1® cylinder products, plus “GB” series slides and Global Series™ air cylinders equipped with magnetic pistons. The same sensor can be specified on Fabco-Air “SPG” series parallel grippers and the square or round body angular grippers.

By utilizing Fabco-Air’s new and unique “double dovetail slot extruded aluminum rail”, shown in the photo (right), these same sensors can be used on “L & S”, “SE”, “EZ”, “EZP”, and “TS” series slide products by simply specifying a sensor option code in the catalog number. The extruded rail and dovetail sensors can also be purchased separately and installed on nearly any tube and tie-rod or “non-repair” type cylinder equipped with magnetic piston band.

How it works
An extruded aluminum rail with two side-by-side dovetail slots is attached to the cylinder body with a special adhesive-backed foam tape. The sensor inserts into one of the dovetail slots, is positioned as desired, and locked in place with a set screw.

Typical installation
The photo above shows an “SE” series linear slide with rail attachment and two sensors. Installation is quick and easy, and can be removed and remounted by simply peeling off and installing new tape. High-performance tape was originally developed for automotive trim parts, and provides a reliable attachment method with the convenience of “peel and stick” type tape.

Sensor adjustment is accomplished by simply sliding switch to proper position and locking the set screw at the wire exit end of the switch (photo above right).

To order the rail separately, . . .
Use catalog number “ER – (length in inches)”. Example: ER–12.06 (overall length = 12 1/16”) Rail is provided complete with adhesive foam tape. To install, peel tape backing and apply to cylinder tube. To order sensors for “ER” extruded rail, see page 13 of this catalog.

*Note: Reed switch also available on most series.
**"GB" Series Linear Slides**

Interchangeable, offe

Check list of NEW Key Features of **"GB" Series Block Style Slides**

- Longer strokes:
  - GB375 - Now 1/2" thru 6" strokes
  - GB500 - Now 1" thru 10" strokes
  - GB750 - Now 1" thru 10" strokes
- Two 4mm keyhole sensor mounting slots
- New round profile sensors with advanced technical features

Check list of Standard Features

- Tapped/thru hole combination mounting holes top & bottom
- Tapped holes front face of toolbar (4)
- Anodized toolbar and bearing block
- Extend and retract bumpers
- Replaceable sleeve bearings
- Side tapped mounting holes in body
- Slip fit dowel holes/slots on bottom and side of body
- Toolbar is slightly narrower than body, allowing side mounting of slide with clearance between toolbar and mounting surface
- Slip fit dowel hole/slot on front face of toolbar
- Top and side ports

Rear tapped holes in body - can be used for rear flange mounting

Toolbar has square pattern front face tapped holes (4) that are also counterbored at back for thru bolt mounting

Toolbar has vertical tapped/counterbored mounting holes

**Check list of versatile Options Availability**

- V – Viton seals allow operation to 325°F
- E – Magnetic piston for position sensing
- T1 – "Blank" toolbar
- A – Pair of clamp collars with rubber bumpers for extend adjustable stop
- B – Rear clampbar with rubber bumpers for extend adjustable stop (instead of collars)
- C – Tapped guide shafts at rear
- D – Rear stopbar, stop bolt and stop plate for adjustable extend stop
- F – Rear toolbar, same as front toolbar with matching hole pattern

**Exceptional Guide Shaft Bearings** – The better the bearing, the more cycle life you can expect from your slides.

Fabco-Air has incorporated a truly superior bearing material, Duralon®, for smooth performance and longer product life.

Duralon® is a composite of a Teflon®/Dacron® fabric liner bonded to a supporting filament-wound, high strength, fiberglass and epoxy resin shell. Resistant to corrosion, moisture and temperature to 325°F; the bearing is reliable in any environment. It has an extremely high load bearing capacity, very low friction, and will not gall or score the piston rod (see physical properties in the table below).

**Duralon® Bearings Excel**

**Load Capacity (psi)**

<table>
<thead>
<tr>
<th>Material</th>
<th>Coefficient</th>
<th>Slip-stick</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porous Bronze</td>
<td>4,500</td>
<td>.50</td>
</tr>
<tr>
<td>Porous iron</td>
<td>8,000</td>
<td>.35</td>
</tr>
<tr>
<td>Phenolic</td>
<td>6,000</td>
<td>.13</td>
</tr>
<tr>
<td>Nylon*</td>
<td>1,000</td>
<td>.05 - .16</td>
</tr>
<tr>
<td>TFE*</td>
<td>50</td>
<td>No</td>
</tr>
<tr>
<td>Reinforced Teflon®</td>
<td>2,500</td>
<td>.16</td>
</tr>
<tr>
<td>*TFE fabric</td>
<td>60,000</td>
<td>No</td>
</tr>
<tr>
<td>Poly carbonate</td>
<td>1,000</td>
<td>.20</td>
</tr>
<tr>
<td>Acetal</td>
<td>1,000</td>
<td>.20</td>
</tr>
<tr>
<td>Acetalon</td>
<td>1,000</td>
<td>No</td>
</tr>
<tr>
<td>Nytron</td>
<td>1,000</td>
<td>.32</td>
</tr>
<tr>
<td>Carbongraphite</td>
<td>60</td>
<td>No</td>
</tr>
</tbody>
</table>

*TFE fabric and reinforced Teflon® are listed at 325°F. *TFE fabric is used for high cycle applications only.

*Duralon bearing classification. Not to be used for design purposes.
**Engineering Data**

<table>
<thead>
<tr>
<th>Model</th>
<th>GB375</th>
<th>GB500</th>
<th>GB750</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guide Shaft Diameter</td>
<td>3/8&quot;</td>
<td>1/2&quot;</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>Bore</td>
<td>12 mm (.472&quot;)</td>
<td>20 mm (.787&quot;)</td>
<td>32 mm (1.260&quot;)</td>
</tr>
<tr>
<td>Power Factor Extend</td>
<td>.17</td>
<td>.49</td>
<td>1.25</td>
</tr>
<tr>
<td>Power Factor Retract</td>
<td>.13</td>
<td>.37</td>
<td>0.94</td>
</tr>
</tbody>
</table>

**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 extend bumpers (Options "A" or "B").

**Accuracy:** GB Series Slides feature replaceable, high performance, self lubricating Duralon® sleeve bearings and special ground guide shafts. Straightness tolerance is .0015" per foot of guide shaft. Repeatability of extend stroke is .001" with Option "D".

**Load Sizing Guide**

### GB Series

**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 stop collars and/or bumpers, or reduce speeds to avoid damage to slide and/or tooling.

---

**Weight (lbs.)**

<table>
<thead>
<tr>
<th>Model</th>
<th>GB375</th>
<th>GB500</th>
<th>GB750</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guide Shaft Diameter</td>
<td>3/8&quot;</td>
<td>1/2&quot;</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>Bore</td>
<td>12 mm (.472&quot;)</td>
<td>20 mm (.787&quot;)</td>
<td>32 mm (1.260&quot;)</td>
</tr>
<tr>
<td>Power Factor Extend</td>
<td>.17</td>
<td>.49</td>
<td>1.25</td>
</tr>
<tr>
<td>Power Factor Retract</td>
<td>.13</td>
<td>.37</td>
<td>0.94</td>
</tr>
</tbody>
</table>

**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 extend bumpers (Options "A" or "B").

**Accuracy:** GB Series Slides feature replaceable, high performance, self lubricating Duralon® sleeve bearings and special ground guide shafts. Straightness tolerance is .0015" per foot of guide shaft. Repeatability of extend stroke is .001" with Option "D".

---

**Safe Loads (lbs.)**

<table>
<thead>
<tr>
<th>Model</th>
<th>GB375</th>
<th>GB500</th>
<th>GB750</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke (inches)</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>GB375</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
</tr>
<tr>
<td>GB500</td>
<td>17.0</td>
<td>17.0</td>
<td>17.0</td>
</tr>
<tr>
<td>GB750</td>
<td>42.0</td>
<td>42.0</td>
<td>42.0</td>
</tr>
</tbody>
</table>

**Load Sizing Guide**

**GB Series**

---

**Weight (lbs.)**

<table>
<thead>
<tr>
<th>Model</th>
<th>GB375</th>
<th>GB500</th>
<th>GB750</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guide Shaft Diameter</td>
<td>3/8&quot;</td>
<td>1/2&quot;</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>Bore</td>
<td>12 mm (.472&quot;)</td>
<td>20 mm (.787&quot;)</td>
<td>32 mm (1.260&quot;)</td>
</tr>
<tr>
<td>Power Factor Extend</td>
<td>.17</td>
<td>.49</td>
<td>1.25</td>
</tr>
<tr>
<td>Power Factor Retract</td>
<td>.13</td>
<td>.37</td>
<td>0.94</td>
</tr>
</tbody>
</table>

**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 extend bumpers (Options "A" or "B").

**Accuracy:** GB Series Slides feature replaceable, high performance, self lubricating Duralon® sleeve bearings and special ground guide shafts. Straightness tolerance is .0015" per foot of guide shaft. Repeatability of extend stroke is .001" with Option "D".

---

**Safe Loads (lbs.)**

<table>
<thead>
<tr>
<th>Model</th>
<th>GB375</th>
<th>GB500</th>
<th>GB750</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke (inches)</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>GB375</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
</tr>
<tr>
<td>GB500</td>
<td>17.0</td>
<td>17.0</td>
<td>17.0</td>
</tr>
<tr>
<td>GB750</td>
<td>42.0</td>
<td>42.0</td>
<td>42.0</td>
</tr>
</tbody>
</table>

**Load Sizing Guide**

**GB Series**

---

**Weight (lbs.)**

<table>
<thead>
<tr>
<th>Model</th>
<th>GB375</th>
<th>GB500</th>
<th>GB750</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guide Shaft Diameter</td>
<td>3/8&quot;</td>
<td>1/2&quot;</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>Bore</td>
<td>12 mm (.472&quot;)</td>
<td>20 mm (.787&quot;)</td>
<td>32 mm (1.260&quot;)</td>
</tr>
<tr>
<td>Power Factor Extend</td>
<td>.17</td>
<td>.49</td>
<td>1.25</td>
</tr>
<tr>
<td>Power Factor Retract</td>
<td>.13</td>
<td>.37</td>
<td>0.94</td>
</tr>
</tbody>
</table>

**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 extend bumpers (Options "A" or "B").

**Accuracy:** GB Series Slides feature replaceable, high performance, self lubricating Duralon® sleeve bearings and special ground guide shafts. Straightness tolerance is .0015" per foot of guide shaft. Repeatability of extend stroke is .001" with Option "D".

---

**Safe Loads (lbs.)**

<table>
<thead>
<tr>
<th>Model</th>
<th>GB375</th>
<th>GB500</th>
<th>GB750</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke (inches)</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>GB375</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
</tr>
<tr>
<td>GB500</td>
<td>17.0</td>
<td>17.0</td>
<td>17.0</td>
</tr>
<tr>
<td>GB750</td>
<td>42.0</td>
<td>42.0</td>
<td>42.0</td>
</tr>
</tbody>
</table>
"GB" Series Linear Slides – Order Guide

Model Number Code

<table>
<thead>
<tr>
<th>Series</th>
<th>Model Size</th>
<th>Stroke Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>GB</td>
<td>500 – 10.0 – AET1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model Size</th>
<th>Guide Shaft Diameter</th>
<th>Bore</th>
<th>Power Factor</th>
<th>Standard Stroke Lengths (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>375</td>
<td>3/8&quot;</td>
<td>12mm</td>
<td>.17</td>
<td>1/2, 1, 1-1/2, 2, 3, 4, 5, 6</td>
</tr>
<tr>
<td>500</td>
<td>1/2&quot;</td>
<td>20mm</td>
<td>.49</td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9, 10</td>
</tr>
<tr>
<td>750</td>
<td>3/4&quot;</td>
<td>32mm</td>
<td>1.25</td>
<td>1, 2, 3, 4, 5, 6, 7, 8, 9, 10</td>
</tr>
</tbody>
</table>

Option Descriptions

A – Pair of clamp collars with rubber bumpers for extend adjustable stop (Bumpers may be removed if not desired)

B – Rear clampbar with rubber bumpers for alternate extend adjustable stop (instead of collars) - bumpers may be removed if not desired

C – Tapped guide shafts at rear

D – Rear stopbar, stop bolt and stop plate for adjustable extend stop (includes Option "C")

E – Magnetic piston for position sensing (Operating temperature range: –4°F to 176°F)

Order magnetic sensors separately. See page 13.

F – Rear toolbar; same as front toolbar with matching hole pattern (will be blank if "T1" specified; includes Option "C")

T1 – “Blank” toolbar (no mounting holes) – No charge

V – Viton seals. Increases operating temperature limit to 325°F

Special Option: Proximity Switches – consult factory.

Helpful hints:
- Model size = guide shaft diameters in three decimal places.
- Force (pounds) at toolbar = (power factor) x (psi)
- Operating pressure range: 20 to 150 psi.
Precise position sensing

Magnetically Actuated Sensors – Use with Option “E”

Sensors fit flush or below the bearing block surface

Precise position sensing

Magnetically Actuated Sensors – Use with Option “E”

Round Profile Sensors feature surge suppression, polarity protection, LED indicator, and extremely fast switching speeds. They slide into mating 4mm keyhole slots on the top face of the bearing block and are easily positioned and locked in place with a set screw. They are offered in two styles: a quick connect style with a 6 inch pigtail and male connector, or a prewired style with a 9 foot lead.

Female Cordsets are available in 1, 2, and 5 meter lengths.

Specify Option E and order sensors and cordsets separately from the tables below.

Sensor Dimensions (mm unless noted)

8mm Male Quick Connect

13.0 to center of Sensing Area for Reed Style

7.0 to center of Sensing Area for Electronic Style

6 in.

9 ft.

3-pin, quick connect style sensor shown

Prewired sensor shown with 9 ft. lead

3 pin cordset shown with sensor pigtail

All sensors feature surge suppression, polarity protection, LED indicator, and extremely fast switching speeds.

8mm Female Cordsets for Quick Connect Sensors

<table>
<thead>
<tr>
<th>Cordset Description</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 meter, 3-Pin</td>
<td>CFC-1M</td>
</tr>
<tr>
<td>2 meters, 3-Pin</td>
<td>CFC-2M</td>
</tr>
<tr>
<td>5 meters, 3-Pin</td>
<td>CFC-5M</td>
</tr>
</tbody>
</table>

Magnetic Sensors – Electrical Characteristics

<table>
<thead>
<tr>
<th>Sensor Type</th>
<th>Function</th>
<th>Switching Voltage</th>
<th>Switching Current</th>
<th>Switching Power</th>
<th>Switching Speed</th>
<th>Voltage Drop</th>
<th>Part Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reed Switch for PLC’s w/LED</td>
<td>SPST Normally Open</td>
<td>5-120V AC/DC 50/60 Hz</td>
<td>0.04 Amp max 0.005 Amp min.</td>
<td>4 Watts max.</td>
<td>0.5 ms operate 0.1 ms release</td>
<td>2.5 Volts</td>
<td>9C49-000-002 Requires 3 pin cordset</td>
</tr>
<tr>
<td>Electronic LED and Sourcing</td>
<td>PNP Normally Open</td>
<td>6-30 VDC</td>
<td>0.2 Amp max.</td>
<td>6 Watts max.</td>
<td>1.5μs operate 0.5μs release</td>
<td>1.5 Volts</td>
<td>9C49-000-031 Requires 3 pin cordset</td>
</tr>
<tr>
<td>Electronic LED and Sinking</td>
<td>NPN Normally Open</td>
<td>6-30 VDC</td>
<td>0.2 Amp max.</td>
<td>6 Watts max.</td>
<td>1.5μs operate 0.5μs release</td>
<td>1.5 Volts</td>
<td>9C49-000-032 Requires 3 pin cordset</td>
</tr>
</tbody>
</table>

Specifications subject to change without notice or incurring obligations.
“GB” Series Linear Slides

Dimensions

<table>
<thead>
<tr>
<th>Slide Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stroke</strong></td>
</tr>
<tr>
<td>Model 375</td>
</tr>
</tbody>
</table>

**“XX” Dimension (varies with stroke)**

| Model | Bore mm | Bore Inch | Ø Guide Shaft Dia | A | B | C | D | E | F | G | H | J | K1 | K2 | L | M | N | O | P | Q | R |
|-------|---------|-----------|-------------------|---|---|---|---|---|---|---|---|---|---|----|---|---|---|---|---|---|---|---|
| 375   | 12      | 0.47      | 3/8”              | 1.625 | 1.00 | 2.25 | 1.875 | 0.50 | 2.188 | 0.812 | 56 | 2.4 | 1.125 | .50 | 1.875 | 0.6 | 79 | 10 | 32 | 10 | 24 |
| 500   | 20      | 0.78      | 1/2”              | 2.125 | 1.50 | 3.00 | 2.125 | 1.250 | 2.938 | 1.250 | 88 | 3.31 | 1.500 | 1.250 | 1.250 | 10 | 62.5 | 120 | 1/8 NPT | 1/4-20 | 63 |
| 750   | 32      | 1.26      | 3/4”              | 2.625 | 2.00 | 4.00 | 2.125 | 1.000 | 3.938 | 1.750 | 19 | 4.06 | 2.000 | 1.000 | 1.688 | 1/4” | .812 | 1.74 | 1/8 NPT | 5/16-18 | .88 |

**“XX” Dimension (varies with stroke)**

| **Model** | **S** | **T** | **U** | **V** | **W** | **X** | **Y** | **Z** | **AA** | **BB** | **CC** | **DD** | **EE** | **FF** | **GG** | **HH** | **JJ** | **MM** | **RR1** | **RR2** | **SS** | **TT** |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 375  | 1/8   | 18    | .750  | .187  | 1.000 | 8-32 | .38 | .85 | 1.69 | 1.375 | 1/4-20 | .10 | 1.000 | 2.000 | 50 | 1.000 | 500 | 1.156 | 1.888 | 1.58 | 2.43 | .50 | 500 |
| 500  | 3/16  | .18   | 1.125 | .187  | 1.500 | 10-24 | .44 | 1.22 | 1.000 | 1.000 | 10-24 | .6 | .750 | 1.500 | 50 | 1.125 | 1.875 | 1.250 | 1.17 | 1.83 | .50 | .375 |
| 750  | 1/4   | 25    | 1.500 | 2.500 | 1.625 | 1/4-20 | .50 | 1.69 | 1.375 | 1/4-20 | .10 | 1.000 | 2.000 | 50 | 1.000 | 500 | 1.156 | 1.888 | 1.58 | 2.43 | .50 | 500 |
**Slide and Options Dimensions**

**Dimension Variations for longer stroke models**

<table>
<thead>
<tr>
<th>&quot;LL&quot; Dimension (varies with stroke)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Stroke</strong></td>
</tr>
<tr>
<td><strong>Model 375</strong></td>
</tr>
<tr>
<td><strong>Model 500</strong></td>
</tr>
<tr>
<td><strong>Model 750</strong></td>
</tr>
</tbody>
</table>

**Option “A” Stop Collars**

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>375</td>
<td>.34</td>
<td>.88</td>
<td>.31</td>
<td>.06</td>
</tr>
<tr>
<td>500</td>
<td>.41</td>
<td>1.13</td>
<td>.44</td>
<td>.13</td>
</tr>
<tr>
<td>750</td>
<td>.50</td>
<td>1.50</td>
<td>.56</td>
<td>.19</td>
</tr>
</tbody>
</table>

**Option “B” Rear Clampbar**

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>375</td>
<td>.38</td>
<td>.75</td>
<td>.41</td>
<td>2.19</td>
</tr>
<tr>
<td>500</td>
<td>.50</td>
<td>1.25</td>
<td>.63</td>
<td>2.94</td>
</tr>
<tr>
<td>750</td>
<td>.50</td>
<td>1.75</td>
<td>.88</td>
<td>3.94</td>
</tr>
</tbody>
</table>

**Option “C” Tapped Guide Shafts at Rear**

**Option “D” Rear Stopbar, Stopbolt & Stop Plate**

- **A** Tapped hole x **B** deep
- **C** Available adjustment
- **D** Stopbar
- **H** Screw
- **Note:** Stopbar & Stop Plate are steel

11-29-05

 Specifications subject to change without notice or incurring obligations.
“L” & “S” Series Linear Slides

Basic Model Selection

“S” Series (short) – single bearing block design, short overall length. (Photo this page)
“L” Series (long) – double bearing block design, increased bearing support. (Photo on next page)

Determine load capacity required and select a slide with appropriate guide shaft diameters and bearing block design. Use the convenient sizing guide at the right to determine safe loading and shaft deflections for various stroke lengths.

“S” Series - pictured here
“L” Series - photo on next page

Pre-lubricated: All cylinders are factory lubricated with special high endurance oil.
Pre-Tested: The quality of each assembly is assured by testing each unit for leakage and binding resistance prior to shipment.

Bearing Block: Clear anodized aluminum with precision machined mounting surfaces.
Choice of Mounting Styles:
Thru mounting holes (shown) — MH1
Bottom tapped mounting holes — MH2
Flange mount style ("S" only) — MF1
Side tapped mounting holes — MV1/MV2

End Caps: High strength, clear anodized aluminum alloy

Cylinder Body: Type 304 Stainless Steel

Magnetic Piston Band: Standard on all units (except 5/16" bore) for position sensing. Electronic sensors and reed switches are offered as accessories.

Front Toolbar
Clear anodized aluminum, machined top & front for squareness.
Tapped mounting holes top & front are standard. Code — T1: Optional blank toolbar (no mounting holes)
Codes — T5 & T6: Optional toolbars for joining dissimilar slides together for X-Y motion.

Floating Coupler:
Prevents cylinder rod binding ensuring higher cycle life.

Shaft Bearings:
High performance, self-lubricating, Duralon® sleeve bearings provide smooth guided action for long life.

Buna-N U-Cup Rod & Piston Seals:
U-Cup seals provide low breakaway friction and extended seal life. Standard seals are Buna-N; Viton seals are available for high temperatures.

Guide Shafts:
Large diameter hard chrome plated stainless steel shafts act as the inner race for the precision Duralon® sleeve bearings and provide a rigid attachment point for the toolbar.

Air Cushions (see photos page 23): Available on all models except “250” and “375” sizes

Engineering Data

<table>
<thead>
<tr>
<th>Model</th>
<th>S250</th>
<th>S375</th>
<th>S500</th>
<th>S750</th>
<th>L250</th>
<th>L375</th>
<th>L500</th>
<th>L750</th>
<th>S1000</th>
<th>L1000</th>
<th>S1250</th>
<th>L1250</th>
<th>S3-1250</th>
<th>L3-1250</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guide Shaft Diameter</td>
<td>1/4&quot;</td>
<td>3/8&quot;</td>
<td>1/2&quot;</td>
<td>3/4&quot;</td>
<td>1&quot;</td>
<td>1-1/4&quot;</td>
<td>1-1/4&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bore</td>
<td>5/16&quot;</td>
<td>9/16&quot;</td>
<td>3/4&quot;</td>
<td>1-1/16&quot;</td>
<td>1-1/2&quot;</td>
<td>2&quot;</td>
<td>3&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Factor Extend</td>
<td>.07</td>
<td>.25</td>
<td>.44</td>
<td>.89</td>
<td>1.77</td>
<td>3.14</td>
<td>7.07</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Factor Retract</td>
<td>.06</td>
<td>.22</td>
<td>.39</td>
<td>.81</td>
<td>1.62</td>
<td>2.84</td>
<td>6.63</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight, lbs. @ zero stroke</td>
<td>.17</td>
<td>.19</td>
<td>.46</td>
<td>.57</td>
<td>1.00</td>
<td>1.22</td>
<td>1.89</td>
<td>2.38</td>
<td>6.04</td>
<td>6.33</td>
<td>10.16</td>
<td>11.47</td>
<td>18.15</td>
<td>17.97</td>
</tr>
<tr>
<td>Add per inch of stroke</td>
<td>.04</td>
<td>.07</td>
<td>.07</td>
<td>.13</td>
<td>.18</td>
<td>.25</td>
<td>.30</td>
<td>.54</td>
<td>.53</td>
<td>.96</td>
<td>.59</td>
<td>1.02</td>
<td>.71</td>
<td>1.14</td>
</tr>
<tr>
<td>Standard Strokes</td>
<td>1/2&quot; to 2&quot; by 1/2&quot;</td>
<td>1/2&quot; to 2&quot; by 1/2&quot;</td>
<td>1&quot; to 4&quot; by 1&quot;</td>
<td>6&quot; to 12&quot; by 2&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3&quot; &amp; 4&quot;</td>
<td>3&quot; to 6&quot; by 1&quot;</td>
<td>6&quot; to 24&quot; by 2&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pressure Rating: Maximum operating pressure is 150 psi Air
Output Force: Output Force = Pressure × 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 extend and retract bumper package and/or air cushions.
Accuracy: The toolbar rod coupler design allows clearance for piston rod float to protect against binding. At full extension, the toolbar will exhibit a small amount of axial end play. The actual toolbar travel may vary slightly from nominal as a result. In applications requiring extreme accuracy, adjustable stop collars should be used in conjunction with a longer stroke length to eliminate the effect of end play.
Running clearances are required between the sleeve bearings and guide shafts. The minimal resultant toolbar free play due to these running clearances is not included in the tabulated load limits (see table on next page).
Low cost, yet rugged, sleeve bearing type linear slides

Load Sizing Guide

S Series – Single Bearing Block (Short)

L Series – Double Bearing Block (Long)

**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 positional 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 stop collars and/or bumpers, or air cushions (except “250” and “375” model sizes), or reduce speeds to avoid damage to slide and/or tooling.

<table>
<thead>
<tr>
<th>Model Number</th>
<th>MAX LOAD IN POUNDS</th>
<th>FULLY EXTENDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>S250</td>
<td>3.7</td>
<td>1.0</td>
</tr>
<tr>
<td>L250</td>
<td>5.0</td>
<td>1.0</td>
</tr>
<tr>
<td>S375</td>
<td>7.5</td>
<td>1.5</td>
</tr>
<tr>
<td>L375</td>
<td>10</td>
<td>2.5</td>
</tr>
<tr>
<td>S500</td>
<td>18.7</td>
<td>4.5</td>
</tr>
<tr>
<td>L500</td>
<td>25</td>
<td>7.0</td>
</tr>
<tr>
<td>S750</td>
<td>30</td>
<td>13.0</td>
</tr>
<tr>
<td>L750</td>
<td>40</td>
<td>23.0</td>
</tr>
<tr>
<td>S1000</td>
<td>55</td>
<td>20.0</td>
</tr>
<tr>
<td>L1000</td>
<td>70</td>
<td>32.0</td>
</tr>
<tr>
<td>S1250</td>
<td>95</td>
<td>45.0</td>
</tr>
<tr>
<td>L1250</td>
<td>125</td>
<td>70</td>
</tr>
<tr>
<td>S3-1250</td>
<td>220</td>
<td>150</td>
</tr>
<tr>
<td>L3-1250</td>
<td>280</td>
<td>190</td>
</tr>
</tbody>
</table>

**SAFE LOADS** (lbs.)

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Stroke</th>
<th>Maximum Deflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>S250</td>
<td>1/2&quot;</td>
<td>0.005</td>
</tr>
<tr>
<td>S250</td>
<td>1&quot;</td>
<td>0.015</td>
</tr>
<tr>
<td>S250</td>
<td>1 1/4&quot;</td>
<td>0.005</td>
</tr>
<tr>
<td>S250</td>
<td>2&quot;</td>
<td>0.015</td>
</tr>
<tr>
<td>S250</td>
<td>3&quot;</td>
<td>0.005</td>
</tr>
<tr>
<td>S250</td>
<td>4&quot;</td>
<td>0.015</td>
</tr>
<tr>
<td>S250</td>
<td>6&quot;</td>
<td>0.005</td>
</tr>
<tr>
<td>S250</td>
<td>8&quot;</td>
<td>0.015</td>
</tr>
<tr>
<td>S250</td>
<td>10&quot;</td>
<td>0.005</td>
</tr>
<tr>
<td>S250</td>
<td>12&quot;</td>
<td>0.015</td>
</tr>
<tr>
<td>S250</td>
<td>14&quot;</td>
<td>0.005</td>
</tr>
<tr>
<td>S250</td>
<td>16&quot;</td>
<td>0.015</td>
</tr>
<tr>
<td>S250</td>
<td>18&quot;</td>
<td>0.005</td>
</tr>
<tr>
<td>S250</td>
<td>20&quot;</td>
<td>0.015</td>
</tr>
<tr>
<td>S250</td>
<td>22&quot;</td>
<td>0.005</td>
</tr>
<tr>
<td>S250</td>
<td>24&quot;</td>
<td>0.015</td>
</tr>
</tbody>
</table>

Specifications subject to change without notice or incurring obligations
## “L” & “S” Series Linear Slides – Order Guide

### Step 1
Select a slide series (“L” or “S”) of a size to meet loading considerations. Determine stroke length, mounting style, plus any optional toolbar, mounting bars or integral options (such as Viton seals).

Helpful hint: **Model size = guide shaft diameter in 3 decimal places.**

### Integral Option Codes

- **V** Viton Cylinder Seals
- **P** In-line Top Ports (“S” Series only... Standard feature on S3-1250 Model only)
- **C** Air Cushions (500 size & larger) Details on pg. 23.

### Toolbar Configurations (For all mounting styles)
Optional toolbars, including blanks for machining custom mounting holes, may be substituted for standard toolbars at no additional cost.

All “L & S” Slides of the same model size can be joined together for 2-axis motion using the standard toolbars.

Allen Bolts attach this vertical unit with MH1 mounting to the toolbar of the horizontal unit.

### Toolbar Option Codes

- **T1** = Blank Toolbar (no mounting holes).

For joining dissimilar models, specify the horizontal toolbar.

- **T5** for L750 or S750
- **T6** for L1000 or S1000
- **T7** for L1250 or S1250 or L3-1250 or S3-1250

To order: Add “Option Code” to Mounting Style.
Example: L750 – 10.0 – MH2T5

Note: When an “L” Series slide is to be used for the vertical motion, use MH1BP mounting style on the vertical slide. Both bearing blocks need to be attached to a mounting surface for stability.

### Model Number Will End Here
If No Options Are Desired

<table>
<thead>
<tr>
<th>Model Size</th>
<th>Guide Shaft Diameter</th>
<th>Bore</th>
<th>Standard Stroke Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>1/4&quot;</td>
<td>5/16&quot;</td>
<td>1/2&quot;, 1&quot;, 1.1/2&quot;, 2&quot;, 3&quot;, 4&quot;</td>
</tr>
<tr>
<td>375</td>
<td>3/8&quot;</td>
<td>9/16&quot;</td>
<td>1/2&quot;, 1&quot;, 1.1/2&quot;, 2&quot;, 3&quot;, 4&quot;, 5&quot;, 6&quot;</td>
</tr>
<tr>
<td>500</td>
<td>1/2&quot;</td>
<td>3/4&quot;</td>
<td>1&quot;, 2&quot;, 3&quot;, 4&quot;, 6&quot;, 8&quot;, 10&quot;, 12&quot;</td>
</tr>
<tr>
<td>750</td>
<td>3/4&quot;</td>
<td>1-1/16&quot;</td>
<td>1&quot;, 2&quot;, 3&quot;, 4&quot;, 6&quot;, 8&quot;, 10&quot;, 12&quot;</td>
</tr>
<tr>
<td>1000</td>
<td>1&quot;</td>
<td>1-1/2&quot;</td>
<td>1 to 4 by 1&quot; incr., 6 to 24 by 2&quot; incr.</td>
</tr>
<tr>
<td>1250</td>
<td>1-1/4&quot;</td>
<td>2&quot;</td>
<td>1 to 4 by 1&quot; incr., 6 to 24 by 2&quot; incr.</td>
</tr>
<tr>
<td>3-1250</td>
<td>1-1/4&quot;</td>
<td>3&quot;</td>
<td>1 to 4 by 1&quot; incr., 6 to 24 by 2&quot; incr.</td>
</tr>
</tbody>
</table>

### Optional “B1” Mounting Bars
For use with MV1 or MV2 mounting styles for both “L” & “S” Slides.

To Order: Add “B1” to mounting style. Example: S375 – 4.0 – MV1B1

### Mounting Styles

- **MH1** Thru Mounting Holes (4)
- **MH1BP** (“L” Series Only) Package includes Base Mounting Plate attached to the MH1 bearing block
- **MH2** Tapped Mounting Holes (4 on opposite side)
- **MF1** Front Flange Tapped Mtg Holes (“S” Series Only)
- **MV1** Side Tapped Mounting Holes (4)
- **MV2** Side Tapped w/Ports on opposite side

Specifications subject to change without notice or incurring obligations
Building the Model Number in 3 Easy Steps

**Step 2**  
A magnetic piston band is standard on all units (except 250 models) for position sensing. Magnetically operated electronic sensors and reed switches are offered as accessories.

**Step 2: Sensing Options**
- **J73B**  
  (4Digits)

**Sensor Codes**  
(Use “S000” if NO Sensors are desired)
Select a code for sensor type and indicate position

Example: J73B  
E = Extend position only  
R = Retract position only  
B = Both extend & retract positions

Magnetically operated sensors are not available on “L” or “S” 250 Models. Proximity Switches can be installed on any model as a special order. Consult factory.

**Electronic Sensors & Magnetic Reed Switches**
These sensors are actuated by a magnetic band that is standard on all “L” and “S” Series slides (except 250 Models) and are available in 2 mounting styles – **Clamp On** or **Dovetail** in prewired or quick disconnect versions.

**“J” Style**
Clamp-on style pre-wired and quick disconnect sensors (Dual sensors require 2” or longer stroke).

**“E” Style**
Dovetail style pre-wired and quick disconnect sensors are compatible with any stroke.

**“J” Clamp-on Style Sensor Code**

<table>
<thead>
<tr>
<th>9 Ft.</th>
<th>Quick Disconnect*</th>
<th>Sensor Type</th>
<th>LED</th>
<th>Electrical Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>J70</td>
<td>J71</td>
<td>Reed</td>
<td>Yes</td>
<td>5-120 VDC/VAC, 0.5 Amp Max, 10 Watt Max, SPST N.O. 3.5 Voltage Drop</td>
</tr>
<tr>
<td>J72</td>
<td>J73</td>
<td>Electronic</td>
<td>Yes</td>
<td>Sourcing PNP 6-24 VDC, 0.50 Amp Max, 0.5 Voltage Drop</td>
</tr>
<tr>
<td>J74</td>
<td>J75</td>
<td>Electronic</td>
<td>Yes</td>
<td>Sinking NPN 6-24 VDC, 0.50 Amp Max, 1.0 Voltage Drop</td>
</tr>
</tbody>
</table>

**“E” Dovetail Style Sensor Code**

<table>
<thead>
<tr>
<th>9 Ft.</th>
<th>Quick Disconnect*</th>
<th>Sensor Type</th>
<th>LED</th>
<th>Electrical Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>E70</td>
<td>E71</td>
<td>Reed</td>
<td>Yes</td>
<td>5-120 VDC/VAC, 0.03 Amp Max, 4 Watt Max, 2.0 Voltage Drop</td>
</tr>
<tr>
<td>E72</td>
<td>E73</td>
<td>Electronic</td>
<td>Yes</td>
<td>Sourcing PNP 6-24 VDC, 0.20 Amp Max, 0.5 Voltage Drop</td>
</tr>
<tr>
<td>E74</td>
<td>E75</td>
<td>Electronic</td>
<td>Yes</td>
<td>Sinking NPN 6-24 VDC, 0.20 Amp Max, 0.5 Voltage Drop</td>
</tr>
<tr>
<td>E76</td>
<td>E77</td>
<td>Reed</td>
<td>No</td>
<td>6-120 VDC/VAC, 0.5 Amp Max, 5 Watt Max, 0 Voltage Drop</td>
</tr>
</tbody>
</table>

E800  
Dovetail Style Mounting Rail (Customer to furnish Sensors)

*Order cordsets separately as follows:  
Part No. CFC-1M is 1 meter cable with female connector.  
Part No. CFC-2M is 2 meter cable with female connector.  
Part No. CFC-5M is 5 meter cable with female connector.

**Step 3**  
What tooling will be required? Will stroke adjustability be needed?

**Step 3: Tooling & Stop Options**
- **RT Rear Toolbar (“L” Series only)**
  Specifying –T1 blank toolbar in “Step 1” also designates blank rear toolbar (–RT)

- **PL Toolplate (“L” Series only)**
  Includes plate, stand-offs, and the RT rear toolbar.

**Options for either “L” or “S” Series**

**Stop Collars** are used for stroke adjustment.  
- **KE** = Stop Collars extend only  
- **KR** = Stop Collars retract only  
- **KB** = Stop Collars both extend and retract

**Urethane Bumpers**

- **UE** = Bumpers extend only and stop collars  
- **UR** = Retract only, no stop collars  
- **UB** = Bumpers both ends with stop collars extend

**Note:** With “PL” or “RT” tooling option (“L” Series only), the stop collar of the “UE” bumper option is deleted because the rear toolbar provides the bumper stop. For pricing, use the cost of a “UR” option in place of the “UE” option (‘UE” option includes the cost of bumper washers and the stop collars).

**Note:** On models 750 & smaller, allow for a Urethane thickness of 1/8”.  
On models 1000 & 1250, allow for a Urethane thickness of 1/4”.

Specifications subject to change without notice or incurring obligations
**“L” & “S” Series Linear Slides**

**Series S (Short) – Single Bearing Block**
Compact Single Bearing Block Design Provides Short Overall Length

**Model S3-1250**
Model S3-1250 features individual bearing blocks connected by 4 tie rods. On MH1 & MH2 mounting style models (shown), the rear bearing block and its mounting holes are “wider” than the front block.

**MV1 & MV2 Mounting Styles**
(Side Tapped Mtg. Holes)
MV1 Shown. MV2 has retract port on opposite side.

**MH1 (Thru Hole) & MH2 (Tapped Hole) Mounting Styles**

**MF1 (Front Flange) Mounting Style**

**Model S3-1250**

**“S” Series Dimensional Data**

<table>
<thead>
<tr>
<th>Model</th>
<th>Bore</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>S250</td>
<td>5/16</td>
<td>1/4</td>
<td>2.25</td>
<td>1.312</td>
<td>.25</td>
<td>1.00</td>
<td>.144</td>
<td>.50</td>
<td>.688</td>
</tr>
<tr>
<td>S375</td>
<td>9/16</td>
<td>3/8</td>
<td>2.37</td>
<td>1.625</td>
<td>.38</td>
<td>1.50</td>
<td>.177</td>
<td>.75</td>
<td>1.125</td>
</tr>
<tr>
<td>S500</td>
<td>3/8</td>
<td>1/2</td>
<td>3.50</td>
<td>2.000</td>
<td>.50</td>
<td>2.00</td>
<td>.196</td>
<td>1.00</td>
<td>1.562</td>
</tr>
<tr>
<td>S750</td>
<td>1-1/16</td>
<td>3/4</td>
<td>4.00</td>
<td>2.750</td>
<td>.62</td>
<td>2.50</td>
<td>.266</td>
<td>1.25</td>
<td>2.000</td>
</tr>
<tr>
<td>S1000</td>
<td>1-1/2</td>
<td>1</td>
<td>5.75</td>
<td>4.000</td>
<td>1.00</td>
<td>3.75</td>
<td>.406</td>
<td>2.50</td>
<td>3.000</td>
</tr>
<tr>
<td>S1250</td>
<td>2</td>
<td>1-1/4</td>
<td>6.83</td>
<td>5.500</td>
<td>1.25</td>
<td>4.50</td>
<td>.531</td>
<td>3.00</td>
<td>3.000</td>
</tr>
<tr>
<td>S1250</td>
<td>3</td>
<td>1-1/4</td>
<td>8.13</td>
<td>5.500</td>
<td>1.25</td>
<td>6.00</td>
<td>.531</td>
<td>4.25</td>
<td>4.250</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>P Port</th>
<th>R</th>
<th>R1</th>
<th>S</th>
<th>S1</th>
<th>T</th>
<th>U</th>
<th>V</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>S250</td>
<td>#10-32</td>
<td>.312</td>
<td>.937</td>
<td>.77</td>
<td>1.31</td>
<td>#6-32</td>
<td>.25</td>
<td>.312</td>
<td>2.062</td>
</tr>
<tr>
<td>S375</td>
<td>#10-32</td>
<td>.375</td>
<td>1.125</td>
<td>.86</td>
<td>1.40</td>
<td>#8-32</td>
<td>.38</td>
<td>.437</td>
<td>2.688</td>
</tr>
<tr>
<td>S500</td>
<td>1/8 NPT</td>
<td>.562</td>
<td>1.500</td>
<td>1.63</td>
<td>2.20</td>
<td>#10-24</td>
<td>.50</td>
<td>.625</td>
<td>3.375</td>
</tr>
<tr>
<td>S750</td>
<td>1/8 NPT</td>
<td>.750</td>
<td>1.875</td>
<td>1.37</td>
<td>1.75</td>
<td>1/4-20</td>
<td>.75</td>
<td>.750</td>
<td>4.025</td>
</tr>
<tr>
<td>S1000</td>
<td>1/8 NPT</td>
<td>1.000</td>
<td>2.500</td>
<td>2.00</td>
<td>1.02</td>
<td>3/8-16</td>
<td>.88</td>
<td>1.000</td>
<td>6.750</td>
</tr>
<tr>
<td>S1250</td>
<td>1/4 NPT</td>
<td>1.250</td>
<td>3.375</td>
<td>.75</td>
<td>2.13</td>
<td>1/2-13</td>
<td>1.00</td>
<td>1.250</td>
<td>9.000</td>
</tr>
<tr>
<td>S1250</td>
<td>3/8 NPT</td>
<td>2.500</td>
<td>5.125</td>
<td>N/A</td>
<td>1.38</td>
<td>1/2-13</td>
<td>1.00</td>
<td>2.500</td>
<td>9.000</td>
</tr>
</tbody>
</table>

*Note: S1250 & S3-1250 models feature hollow guide shafts (1/4” wall thickness) for dynamic weight savings.*
### Series L (Long) – Double Bearing Block
Dual Bearing Blocks Provide Greater Stability and Increased Loading Capacity

#### Series L - Mounting Style Dimensions

- **MH1 (Thru Hole) & MH2 (Tapped Hole) Mounting Styles**
  - Does NOT include base plate
  - MH1 (Thru Hole) & MH2 (Tapped Hole) Mounting Styles
  - MH1 Thru Mounting Holes “F” Dia.
  - MH2 Tapped Mtg Holes “T” x “U” Deep (4) Opposite Side

- **MH1BP Mounting Style**
  - Includes Base Plate
  - MH1BP Mounting Style
  - Includes Base Plate

- **MV1 & MV2 Mounting Styles**
  - Side Tapped Mtg. Holes
  - MV1 Shown. MV2 has ports on opposite side.
  - “F” Diameter Mounting Holes (4)

- **Optional “B1” Mtg. Bars**

### “L” Series Dimensional Data

<table>
<thead>
<tr>
<th>Model</th>
<th>Bore</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G1</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>KV</th>
<th>L</th>
<th>M</th>
<th>M1</th>
<th>N</th>
<th>N1</th>
<th>P Port</th>
<th>P1</th>
<th>P2</th>
</tr>
</thead>
<tbody>
<tr>
<td>L250</td>
<td>5/16</td>
<td>1/4</td>
<td>3.25</td>
<td>1.312</td>
<td>25</td>
<td>0.50</td>
<td>1.44</td>
<td>1.75</td>
<td>1.87</td>
<td>31</td>
<td>0.56</td>
<td>1.75</td>
<td>2.38</td>
<td>0.781</td>
<td>1.63</td>
<td>1.25</td>
<td>0.937</td>
<td>9.37</td>
<td>2.38</td>
<td>6-32</td>
</tr>
<tr>
<td>L375</td>
<td>9/16</td>
<td>3/8</td>
<td>4.37</td>
<td>1.625</td>
<td>38</td>
<td>0.8</td>
<td>1.77</td>
<td>2.18</td>
<td>2.44</td>
<td>44</td>
<td>0.68</td>
<td>2.25</td>
<td>3.00</td>
<td>0.937</td>
<td>0.75</td>
<td>1.50</td>
<td>0.718</td>
<td>1.675</td>
<td>10-32</td>
<td>0.94</td>
</tr>
<tr>
<td>L500</td>
<td>5/8</td>
<td>1/2</td>
<td>5.06</td>
<td>2.000</td>
<td>50</td>
<td>0.75</td>
<td>1.96</td>
<td>3.31</td>
<td>3.56</td>
<td>60</td>
<td>0.75</td>
<td>2.75</td>
<td>3.75</td>
<td>1.187</td>
<td>1.00</td>
<td>2.00</td>
<td>0.875</td>
<td>2.375</td>
<td>1/8 NPT</td>
<td>1.00</td>
</tr>
<tr>
<td>L750</td>
<td>1-1/16</td>
<td>3/4</td>
<td>6.00</td>
<td>2.750</td>
<td>62</td>
<td>1.00</td>
<td>2.66</td>
<td>3.37</td>
<td>3.62</td>
<td>63</td>
<td>1.00</td>
<td>3.88</td>
<td>5.13</td>
<td>1.500</td>
<td>1.25</td>
<td>2.50</td>
<td>1.125</td>
<td>3.188</td>
<td>1/8 NPT</td>
<td>1.38</td>
</tr>
<tr>
<td>L1000</td>
<td>1-1/2</td>
<td>1</td>
<td>7.75</td>
<td>4.000</td>
<td>1.00</td>
<td>1.25</td>
<td>4.06</td>
<td>4.13</td>
<td>4.13</td>
<td>63</td>
<td>1.50</td>
<td>5.50</td>
<td>7.50</td>
<td>2.250</td>
<td>1.75</td>
<td>3.25</td>
<td>1.625</td>
<td>4.750</td>
<td>1/8 NPT</td>
<td>1.63</td>
</tr>
<tr>
<td>L1250</td>
<td>2</td>
<td>1-1/4</td>
<td>10.25</td>
<td>5.500</td>
<td>1.25</td>
<td>1.75</td>
<td>5.31</td>
<td>5.86</td>
<td>5.61</td>
<td>75</td>
<td>2.00</td>
<td>7.50</td>
<td>10.00</td>
<td>3.062</td>
<td>2.25</td>
<td>4.50</td>
<td>2.125</td>
<td>6.250</td>
<td>1/4 NPT</td>
<td>2.19</td>
</tr>
<tr>
<td>L3-1250</td>
<td>3</td>
<td>1-1/4</td>
<td>10.50</td>
<td>5.500</td>
<td>1.25</td>
<td>1.75</td>
<td>5.31</td>
<td>5.81</td>
<td>5.81</td>
<td>88</td>
<td>2.00</td>
<td>7.50</td>
<td>10.00</td>
<td>3.062</td>
<td>4.00</td>
<td>6.25</td>
<td>3.000</td>
<td>6.250</td>
<td>3/8 NPT</td>
<td>2.28</td>
</tr>
</tbody>
</table>

*Note: L1250 & L3-1250 models feature hollow guide shafts (1/4” wall thickness) for dynamic weight savings

Specifications subject to change without notice or incurring obligations

---

MH1BP Mounting Style

MH1BP Mounting Style with B1 Mounting Bars

MV1 Mounting Style with B1 Mounting Bars

“F” Diameter Mounting Holes (4)
"L" & "S" Series Linear Slides

**Stop Collars: "– KE, –KR & –KB"

*Note:* If "T1" blank toolbar is specified for front, then rear toolbar will also be blank.

**Urethane Bumpers: "– UE, –UR & –UB"

*Note:* Extend Bumper (–UE) includes Stop Collar as shown

**Optional Toolbars: "–T5, –T6 & –T7"

- **T5** is used on a 750 Model for attaching a 500 Model to create 2-axis motion.
- **T6** is used on a 1000 Model for attaching a 750 Model to create 2-axis motion.
- **T7** is used on a 1250 and 3-1250 Model for attaching a 1000 Model to create 2-axis motion.

**Low profile switch clamp with side-access clamp screw allows switch repositioning with toolplate in place.**

---

**Tooling & Stop Options Dimensional Data**

<table>
<thead>
<tr>
<th>Model</th>
<th>Bore</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>T1</th>
<th>T2</th>
<th>U</th>
<th>V</th>
</tr>
</thead>
<tbody>
<tr>
<td>L or S250</td>
<td>5/16</td>
<td>2.06</td>
<td>25</td>
<td>56</td>
<td>1.312</td>
<td>7.81</td>
<td>1.25</td>
<td>#6-32</td>
<td>2.88</td>
<td>25</td>
<td>1.03</td>
<td>.28</td>
<td>1/8</td>
<td>63</td>
<td>.25</td>
</tr>
<tr>
<td>L or S375</td>
<td>9/16</td>
<td>2.56</td>
<td>38</td>
<td>69</td>
<td>1.625</td>
<td>9.13</td>
<td>2.00</td>
<td>#8-32</td>
<td>3.81</td>
<td>25</td>
<td>1.03</td>
<td>.34</td>
<td>1/8</td>
<td>88</td>
<td>31</td>
</tr>
<tr>
<td>L or S500</td>
<td>3/4</td>
<td>3.38</td>
<td>50</td>
<td>.75</td>
<td>2.000</td>
<td>1.187</td>
<td>2.50</td>
<td>#10-24</td>
<td>5.31</td>
<td>38</td>
<td>1.13</td>
<td>.41</td>
<td>1/8</td>
<td>1.13</td>
<td>44</td>
</tr>
<tr>
<td>L or S750</td>
<td>1-1/16</td>
<td>4.63</td>
<td>63</td>
<td>1.00</td>
<td>2.750</td>
<td>1.500</td>
<td>3.00</td>
<td>1/4-20</td>
<td>5.88</td>
<td>50</td>
<td>1.13</td>
<td>.50</td>
<td>1/8</td>
<td>1.50</td>
<td>56</td>
</tr>
<tr>
<td>L or S1000</td>
<td>1-1/2</td>
<td>6.25</td>
<td>1.00</td>
<td>1.50</td>
<td>4.000</td>
<td>2.250</td>
<td>4.00</td>
<td>3/8-16</td>
<td>7.38</td>
<td>75</td>
<td>1.13</td>
<td>.50</td>
<td>1/4</td>
<td>1.75</td>
<td>75</td>
</tr>
<tr>
<td>L or S1250</td>
<td>2</td>
<td>8.50</td>
<td>1.25</td>
<td>2.00</td>
<td>5.500</td>
<td>3.082</td>
<td>5.00</td>
<td>1/2-13</td>
<td>9.86</td>
<td>1.00</td>
<td>1.13</td>
<td>.50</td>
<td>1/4</td>
<td>2.06</td>
<td>N/A</td>
</tr>
<tr>
<td>L or S3-1250</td>
<td>3</td>
<td>8.50</td>
<td>1.25</td>
<td>2.00</td>
<td>5.500</td>
<td>3.082</td>
<td>5.00</td>
<td>1/2-13</td>
<td>10.06</td>
<td>1.00</td>
<td>2.00</td>
<td>.50</td>
<td>1/4</td>
<td>2.06</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*Note: Extend Bumber (–UE) includes Stop Collar as shown.*
Cushions: Integral Option Code — C (Available on all “L & S” models except “250” and “375”)

When cushion option is specified, the air cylinder is rotated in the bearing block(s) as shown in photographs. Ports are placed at an angle. Cushion needle valve is 90° to the port. The “S” bearing block is notched for port and needle valve clearance.

“S” model cylinders with cushions (S500 and larger) include in-line ports (Option “P”).

How to Order Summary

**Step 1**
- Select “L” or “S” Series.
- Select model size based on guide shaft diameter.
- Select a stroke (Special strokes also available).

<table>
<thead>
<tr>
<th>Model Size</th>
<th>Guide Shaft Diameter</th>
<th>Bore</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>1/4&quot;</td>
<td>5/16&quot;</td>
</tr>
<tr>
<td>375</td>
<td>3/8&quot;</td>
<td>9/16&quot;</td>
</tr>
<tr>
<td>500</td>
<td>1/2&quot;</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>750</td>
<td>3/4&quot;</td>
<td>1-1/16</td>
</tr>
<tr>
<td>1000</td>
<td>1&quot;</td>
<td>1-1/2&quot;</td>
</tr>
<tr>
<td>1250</td>
<td>1-1/4&quot;</td>
<td>2&quot;</td>
</tr>
<tr>
<td>3-1250</td>
<td>1-1/4&quot;</td>
<td>3&quot;</td>
</tr>
</tbody>
</table>

**Step 2**
- Choose Mounting Style & Toolbar
- Select Integral Option

| Integral Options | V — Viton Seals  | P — In-line top ports ("S" Series only)  | C — Air cushions (Model “500” & larger) |

**Step 3**
- Sensor Options
- Select Tooling & Stop Options

<table>
<thead>
<tr>
<th>Tooling Options</th>
<th>— RT Rear toolbar (&quot;L&quot; Series Only)</th>
<th>— PL Toolplate (&quot;L&quot; Series Only)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>— KE Extend only</td>
<td>— KR Retract only</td>
</tr>
<tr>
<td></td>
<td>— KB Extend &amp; retract</td>
<td>— UB Extend &amp; retract</td>
</tr>
</tbody>
</table>

**Band Clamp Style Sensor Options**
- J70 [ Reed Switch prewired ][Not available on "250" models]
- J71 [ Reed w/quick disconnect ]
- J72 [Electronic Sourcing, prewired]
- J73 [Electronic Sourcing, w/quick disconnect]
- J74 [Electronic Sinking, prewired]
- J75 [Electronic Sinking, w/quick disconnect]

**Sensor Options**
- S000 indicates NO SENSORS desired
  - S000 indicates NO SENSORS desired
  - Note: Indicate sensor location in the box ( ). E= Extend, R=Retract,
  - B=Both Extend & Retract

**Cordsets w/Female Connector**
- Order as separate items
  - CFC-1M 1 meter cable
  - CFC-2M 2 meter cable
  - CFC-5M 5 meter cable

**Dovetail Style Sensor Options**
- E70 [ Reed Switch prewired ]
- E71 [ Reed w/quick disconnect ]
- E72 [Electronic Sourcing, prewired ]
- E73 [Electronic Sourcing, w/quick disconnect ]
- E74 [Electronic Sinking, prewired ]
- E75 [Electronic Sinking, w/quick disconnect ]
- E76 [Reed Switch prewired ]
- E77 [Reed w/quick disconnect ]
- E800 [Dovetail style mounting rail (Customer supplies the sensors)]

**Toolbars**
- T1 Blank Toolbar
- T5 Toolbar for Model 750 for attaching a Model 500
- T6 Toolbar for Model 1000 for attaching a Model 750
- T7 Toolbar for Model 1250 or 3-1250 for attaching a Model 1000

**Note:**
1) Dovetail sensors compatible with all strokes
2) Proximity Switches are available as a special order. Consult factory.
"SE" Series Linear Slides

**Compact design** – The SE Series Linear Slide was designed to fit precision motion applications where only limited space is available. The SE consists of a rugged, clear anodized, aluminum bearing block with **four, pre-loaded, sealed linear ball bearings** supporting hardened guide shafts and a front toolbar. (Optional sleeve-type, linear bearings are available. Code – X: Duralon®, Code – W: Rulon®) An integral air cylinder built into the rear of the bearing block powers the toolbar. The SE slide’s compact design and precision construction make it ideal for many machine applications where slide loads are moderate and a minimum overall length is necessary.

**Bearing Block**
Clear anodized aluminum with precision machined mounting surfaces.

**Thru-hole mounting (4) this side with tapped holes (4) on the opposite side.**

**Precision guide shafts**
Straightness .0015" per foot. Standard case hardened (Rc 61 - 65) and ground (9 - 14 microinches RMS). Optional stainless steel Code – Z.

**Optional Dowel Hole/Slot**
Code - D

Optional slip fit dowel holes and slip fit dowel slots allow for repeatably precise slide mounting and/or attachment of end tooling. Option may be specified at any or all of the five surface locations shown in blue.

**Side tapped mounting holes**
in body (four on each side).

**Dowel Surface 3**

**Dowel Surface 2**

**Front Toolbar**
Clear anodized aluminum, machined top & front for squareness. Tapped mounting holes (top & front) are standard. Optional slip fit dowel holes and slip fit dowel slots assure repeatedly precise tooling attachments. Code – T1: Optional blank toolbar (no mtg holes) Codes – T3 or T4: Optional toolbars for joining dis-similar slides together. SE and EZ Series can be combined for 2-axis motion.

**Stainless steel piston rod** – End of piston rod is piloted into the back of the toolbar by a precision machined counter-bore. A socket head cap screw completes attachment to the toolbar. This design eliminates piston rod side loads, increasing cylinder seal life and improving performance.

**Engineering Data**

<table>
<thead>
<tr>
<th>Model</th>
<th>SE250</th>
<th>SE375</th>
<th>SE500</th>
<th>SE625</th>
<th>SE750</th>
<th>SE1000</th>
<th>SE1500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guide Shaft Diameter</td>
<td>1/4&quot;</td>
<td>3/8&quot;</td>
<td>1/2&quot;</td>
<td>5/8&quot;</td>
<td>3/4&quot;</td>
<td>1&quot;</td>
<td>1-1/2&quot;</td>
</tr>
<tr>
<td>Bore</td>
<td>1/2&quot;</td>
<td>3/4&quot;</td>
<td>1-1/8&quot;</td>
<td>1-1/8&quot;</td>
<td>2&quot;</td>
<td>2-1/2&quot;</td>
<td>3-1/4&quot;</td>
</tr>
<tr>
<td>Power Factor Extend</td>
<td>.20</td>
<td>.44</td>
<td>.99</td>
<td>.99</td>
<td>3.14</td>
<td>4.91</td>
<td>8.30</td>
</tr>
<tr>
<td>Power Factor Retract</td>
<td>.17</td>
<td>.39</td>
<td>.88</td>
<td>.88</td>
<td>2.84</td>
<td>4.47</td>
<td>7.51</td>
</tr>
<tr>
<td>Weight, lbs. @ zero stroke</td>
<td>.41</td>
<td>.99</td>
<td>2.79</td>
<td>4.16</td>
<td>10.50</td>
<td>19.79</td>
<td>56.72</td>
</tr>
<tr>
<td>Weight per inch of stroke</td>
<td>.06</td>
<td>.13</td>
<td>.21</td>
<td>.27</td>
<td>.52</td>
<td>.81</td>
<td>1.60</td>
</tr>
<tr>
<td>Standard Strokes</td>
<td>1/2&quot; to 4&quot; by 1/2&quot; increments</td>
<td>1&quot; to 6&quot; by 1&quot; increments</td>
<td>1&quot; to 10&quot; by 1&quot; increments</td>
<td>1&quot; to 10&quot; by 1&quot; increments</td>
<td>1&quot; to 6&quot; by 1&quot; increments; 8&quot; to 18&quot; by 2&quot; increments</td>
<td>1&quot; to 6&quot; by 1&quot; increments; 8&quot; to 20&quot; by 2&quot; increments</td>
<td>2&quot; to 30&quot; by 2&quot; increments</td>
</tr>
</tbody>
</table>

**Pressure Rating:** Maximum operating pressure is 150 psi

**Output Force:** Output Force in Pounds = Pressure X Power Factor

**Speed:** Safe speed range is 6 to 8 inches per second. Speeds from 8 to 20 inches per second are obtainable with the hydraulic shock absorber or urethane bumper option. For higher speeds, and/or heavy reciprocating load applications, consult factory.

**Accuracy:** SE 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. The built-in air cylinder will stroke +.015"–.000" of nominal stroke. Repeatability of stroke is ±.001". Straightness tolerance is .0015" per foot of shaft.

Specifications subject to change without notice or incurring obligations
with moderate side loads & minimum overall length requirements

The Flexibility of Creating Custom 2-Axis Motion –
All like model SE Series slides (except the SE500) can be joined together to create a 2-axis motion device using standard toolbars. The bearing block of the vertical slide is easily bolted to the toolbar of the horizontal slide because the bolt hole patterns in the bearing blocks and the toolbars are identical. A no-cost, optional toolbar (T3) is available for joining two SE500s. Because all SE Series slides (except the SE250) share identical toolbars with their “EZ” Series cousins, an “SE” slide is also easily combined with an “EZ” unit. Optional, no-cost toolbars (T3 & T4) are available for mixing and matching dissimilar “SE” and “EZ” models. (See Toolbar Configurations in the order guide).

Thin Parts Placer –
Standard transition plates are available for joining two SE Series slides to create extremely compact 2-axis motion devices. The bearing block of the vertical unit is bolted to the transition plate which is mounted to the toolbar of the horizontal unit. In cases where wider bearing separation is required on the horizontal unit (for longer strokes, heavier overhung loading, etc.), an EZ Series slide may also be combined with an SE Model.

Load Sizing Guide

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 positional accuracy, as well as bearing and seal failure. CAUTION: Heavy reciprocating loads can create damaging impact forces at end of stroke. It may be necessary to use stop collars, bumpers, or hydraulic shock absorbers – or reduce speeds.

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Stroke</th>
<th>Safe Loads (lbs.)</th>
<th>Maximum Deflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE250</td>
<td>1&quot;</td>
<td>4.0 2.4 1.8 1.3</td>
<td>.005&quot;</td>
</tr>
<tr>
<td></td>
<td>2&quot;</td>
<td>17 10 4.0 2.5</td>
<td>.015&quot;</td>
</tr>
<tr>
<td>SE375</td>
<td>3&quot;</td>
<td>28 28 12 6.0 4.0</td>
<td>.005&quot;</td>
</tr>
<tr>
<td></td>
<td>4&quot;</td>
<td>28 28 12 18 12 6.8</td>
<td>.015&quot;</td>
</tr>
<tr>
<td>SE500</td>
<td>5&quot;</td>
<td>84 44 24 12 8.0 6.0 4.0 3.0 1.8 1.4</td>
<td>.005&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>120 120 60 36 24 16 12 8.2 6.0 4.8</td>
<td>.015&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>120 120 110 70 50 32 22 16 12 9.6</td>
<td>.030&quot;</td>
</tr>
<tr>
<td>SE625</td>
<td>6&quot;</td>
<td>150 84 44 28 16 12 9.0 7.8 5.6 4.0</td>
<td>.005&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>150 150 124 76 56 34 26 20 16 11</td>
<td>.015&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>150 150 150 140 88 60 56 38 29 22</td>
<td>.030&quot;</td>
</tr>
<tr>
<td>SE750</td>
<td>7&quot;</td>
<td>100 56 20 12 8.0 5.0 4.0 2.2 1.8</td>
<td>.005&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>280 114 56 36 26 12 9.0 6.4 5.8</td>
<td>.015&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>300 200 96 40 40 30 19 17.2 12</td>
<td>.030&quot;</td>
</tr>
<tr>
<td>SE1000</td>
<td></td>
<td>200 80 44 36 24 12 8.0 6.0 5.0 4.0</td>
<td>.005&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>470 220 120 80 50 36 24 17 13 12</td>
<td>.015&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>470 470 270 130 96 60 46 38 32 30</td>
<td>.030&quot;</td>
</tr>
<tr>
<td>SE1500</td>
<td></td>
<td>Stroke 4&quot; 6&quot; 8&quot; 10&quot; 12&quot; 18&quot; 24&quot; 30&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>600 510 300 200 125 76 50 10</td>
<td>.005&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>800 600 385 340 300 124 70 30</td>
<td>.015&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>800 600 650 600 550 202 104 40</td>
<td>.030&quot;</td>
</tr>
</tbody>
</table>
**Step 1: Basic Slide Model**

Select a slide model size, stroke length, mounting style, plus any optional toolbar, attachment (B1), or integral options (such as Viton seals). Helpful hint: The model size = guide shaft diameter in 3 decimal places.

**SE500 – 5.0 (Optional Tandem Cylinder Stroke) – MS1T1 – VZ**

**Model Number Will End Here**

**Leave Blank If No Integral Options Are Desired**

**Optional Tandem Cylinder Stroke**

**Mounting Style & Optional Toolbars**

**3-Position Tandem Cylinder Slides**

(Not available on SE250 or SE375)

Ordering example: **SE750 – 5.0 – 2.0 – MS1 – J72 M**

Primary Cylinder Stroke “E”

Secondary Cylinder Stroke “J”

Sensor locations – use “M” in the Box ( ) if mid-position sensor is required (3 sensors). Note: “M” (mid-position) is not available with “S50, S51, S60” sensors. All sensors are located on the primary cylinder, which also contains the magnetic piston band for “E” & “J” options. Shock options “D, E & F” are not available on tandem units.

**Integral Option Codes**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>Dowel Hole/Slot Code &amp; Location(s) Available on any or all of the 5 mounting surfaces shown in blue on page 30. Example: D13 specifies dowel hole/slot on bottom surface of bearing block (Surface #1) and on top surface of toolbar (Surface #3).</td>
</tr>
<tr>
<td>H</td>
<td>Hydraulic Cylinder Seals (150 psi max.)</td>
</tr>
<tr>
<td>V</td>
<td>Viton Cylinder Seals</td>
</tr>
<tr>
<td>W</td>
<td>Rulon® Shaft Bearings</td>
</tr>
<tr>
<td>X</td>
<td>Duralon® Shaft Bearings</td>
</tr>
</tbody>
</table>

**Guide Shaft Options**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>Hollow Guide Shafts Case hardened &amp; ground #52100 tubular steel available on SE750 Models and larger.</td>
</tr>
<tr>
<td>Z</td>
<td>Stainless Steel Guide Shafts: shaft material compatible with bearing type will be provided.</td>
</tr>
<tr>
<td>S</td>
<td>Grease fittings, Side</td>
</tr>
<tr>
<td>T</td>
<td>Grease fittings, Top</td>
</tr>
</tbody>
</table>

**Toolbar Option Codes**

- **T1** = Blank Toolbar (no mounting holes).
- **T3** for SE500 or EZ500
- **T4** for SE1000 or SE1200

For joining dissimilar models, specify the horizontal toolbar.

**Horizontal Slide**

<table>
<thead>
<tr>
<th>Model Size</th>
<th>Guide Shaft Bore</th>
<th>Standard Stroke Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>1/4&quot;</td>
<td>1/2&quot; to 4&quot; by 1/2&quot;</td>
</tr>
<tr>
<td>375</td>
<td>3/8&quot;</td>
<td>1&quot; to 6&quot; by 1&quot;</td>
</tr>
<tr>
<td>500</td>
<td>1/2&quot;</td>
<td>1&quot; to 10&quot; by 1&quot;</td>
</tr>
<tr>
<td>625</td>
<td>5/8&quot;</td>
<td>1&quot; to 10&quot; by 1&quot;</td>
</tr>
<tr>
<td>750</td>
<td>3/4&quot;</td>
<td>1&quot; to 10&quot; by 1&quot;</td>
</tr>
<tr>
<td>1000</td>
<td>1&quot;</td>
<td>1&quot; to 6&quot; by 1&quot;</td>
</tr>
<tr>
<td>1500</td>
<td>1-1/2&quot;</td>
<td>2&quot; to 30&quot; by 2&quot;</td>
</tr>
</tbody>
</table>

**Optional Toolbars**

- **T1** = Blank Toolbar (no mounting holes).
- **T3** for SE500 or EZ500
- **T4** for SE1000 or SE1200

**Example:** SE1000 – 10.0 – MS1T4

**Base Mounting Bar Option**

- **MS1**
  - Standard Mounting
  - Includes:
    - Tapped mounting holes
    - Thru mounting holes
    - Side tapped mounting holes

- **MS1B1**
  - Optional Base Mounting Bars

**Optional Base Mounting Bars**

**Grease Fittings**

- **S** = Grease fittings, Side
- **T** = Grease fittings, Top
Building the Model Number in 3 Easy Steps

Step 2: Sensing Options

- **SO3B**

  (4 Digits)

Model number will end here if no Shock, Stop, or Bumper Options are desired. Continue on to Step 3 if you need any of these options.

### Prox Switches w/Brackets & Actuators

- **Prewired style “SO1, SO3, SO5, SO7”**
- **Switch actuator has steel sensing flag**
- For “SO12, SO14, SO16, SO18” order straight or right angle cord set separately.

#### Proximity Switches w/Brackets & Actuators Only

<table>
<thead>
<tr>
<th>Option Code</th>
<th>Straight Cordset P/N</th>
<th>Rt. Angle Cordset P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>S01</td>
<td>PCS01-2M</td>
<td>PCS02-2M</td>
</tr>
<tr>
<td>S03</td>
<td>PCS03-2M</td>
<td>PCS04-2M</td>
</tr>
<tr>
<td>S05</td>
<td>PCS05-2M</td>
<td>PCS06-2M</td>
</tr>
<tr>
<td>S07</td>
<td>PCS07-2M</td>
<td>PCS08-2M</td>
</tr>
</tbody>
</table>

#### Female Cordsets w/2 Meter Leadwire for 12mm Proximity Switches

- **4 meter and 6 meter cord sets are also available. Please consult factory.**

### Snap Action Mechanical Switches

- **Pre-wired style housing “S50”**
- **Switch actuator**
- **Conduit fitting style housing “S51”**

### Magnetic Piston & Clamp-On Sensors (“J”) (Single sensor ~1” stroke min; Dual sensors ~2” stroke min. Not available on SE250.)

<table>
<thead>
<tr>
<th>Option Code</th>
<th>Leadwire Type</th>
<th>Electrical Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>S01</td>
<td>6’ Leadwire</td>
<td>110v AC, 2-wire, w/LED</td>
</tr>
<tr>
<td>S03</td>
<td>6’ Leadwire</td>
<td>24V DC, 2-wire, w/LED (PNP)</td>
</tr>
<tr>
<td>S05</td>
<td>6’ Leadwire</td>
<td>24V DC, 3-wire, PNP</td>
</tr>
<tr>
<td>S07</td>
<td>6’ Leadwire</td>
<td>24V DC, 3-wire, PNP</td>
</tr>
</tbody>
</table>

### Magnetic Piston & Dovetail Style Sensors (“E”)

- **For 1” Stroke & longer on all bores; Reed sensors not available on SE250 or SE375**

### Magnetic Piston

- **Customer supplies the sensors and mounting clamps**
- **Includes Dovetail Mounting Rail; customer supplies the sensors**

---

**Note 1:** Mid position “M” not available on SE250 or SE375 with prox options (SO1 thru SO4). “M” not available on any model with S05, S07, or S09.

**Example:** SO3B

**E**: Extend position only

**R**: Retract position only

**B**: Both extend & retract positions

**M**: 3 sensors (See note 1)

- Sensors beginning with the letter “J” (Prox, Snap Action, Air Pilot) are actuated by “dogs” clamped to the guideshafts.
- Sensors beginning with the letter “E” (Electronic sensors and reed switches) are actuated by a magnetic band on the piston.

---

**Sensor Codes** (Use “SO00” if NO Sensors are desired)

Select a code for sensor type and indicate position

<table>
<thead>
<tr>
<th>Code</th>
<th>Sensor Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Reed</td>
<td>Prox switches, snap action mechanical switches, 3-way pilot switches, magnetically operated electronic sensors and reed switches. Complete with sensors or brackets only.</td>
</tr>
<tr>
<td>R</td>
<td>Electronic</td>
<td>Prox switches, snap action mechanical switches, 3-way pilot switches, magnetically operated electronic sensors and reed switches. Complete with sensors or brackets only.</td>
</tr>
<tr>
<td>B</td>
<td>Reed &amp; Electronic</td>
<td>Prox switches, snap action mechanical switches, 3-way pilot switches, magnetically operated electronic sensors and reed switches. Complete with sensors or brackets only.</td>
</tr>
<tr>
<td>M</td>
<td>3 sensors</td>
<td>Prox switches, snap action mechanical switches, 3-way pilot switches, magnetically operated electronic sensors and reed switches. Complete with sensors or brackets only.</td>
</tr>
</tbody>
</table>

Specifications subject to change without notice or incurring obligations.
Step 3: Shock, Stop, & Bumper Options

**Shock Absorbers Options**

For SE500 through SE1500 Slides Indicate desired option quantity/location in the box ( ) as follows: E = Extend position; R = Retract position; B = Option located in both extend and retract position. (Stop collars are shown for position only and must be specified separately if desired.)

**Standard Location Codes**

- A ................. Ace Shocks ........ .........
- B .................. Enidine Shocks ............
- C ............. Brackets & Actuators only ......

Insert E, R or B in box

**Alternate Location Codes**

- D
- E
- F (Customer supplies the shocks)

Insert R or B in box

**SE1500 Slides Only**

- for Dual Shocks Model SE1500 only: Insert “X” after code letter to denote Dual Shocks

Example: “DXB” provides four shocks – 2 standard location extend shocks and 2 alternate location retract shocks

**Stop Collars**

for stroke adjustment.
- KE = Extend only
- KR = Retract only
- KB = Extend & retract

Use of “KR” reduces useable stroke length on SE250 & SE375. SE250 stroke loss = 3/16”; SE375 stroke loss = 1/8”.

**Urethane Bumpers**

Bumpers not compatible with prox, snap-action, or air pilot switches. If sensors are desired use magnetically operated “J” or “E” Options.
- UE = Extend only w/stop collars
- UR = Retract only, no stop collars
- UB = Both w/stop collars extend
- UK = Retract only with stop collars
- UKB = Both with stop collars both

Bumpers result in some stroke loss. See page 35

**Extend Bumpers or Stop Collars not compatible with -Jxx sensors on SE375**

**Thin Parts Placers**

Standard transition plates are available for joining two SE Series slides to create extremely compact 2-axis motion devices. The bearing block of the vertical unit is bolted to the transition plate which is mounted to the toolbar of the horizontal unit.

In cases where wider bearing separation is required on the horizontal unit (for longer strokes, heavier overhung loading, etc.), an EZ Series slide may also be combined with an SE Model.

Order transition plates by part number shown in the chart below. Order slides and accessories separately.

<table>
<thead>
<tr>
<th>Trans. Plate P/N</th>
<th>Horizontal Slide</th>
<th>Vertical Slide</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPL01</td>
<td>SE250</td>
<td>SE250</td>
</tr>
<tr>
<td>TPL02</td>
<td>SE375</td>
<td>SE250</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Trans. Plate P/N</th>
<th>Horizontal Slide</th>
<th>Vertical Slide</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPL01</td>
<td>SE250</td>
<td>SE250</td>
</tr>
<tr>
<td>TPL02</td>
<td>SE375</td>
<td>SE250</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>“A” Dimension</th>
<th>1.63</th>
<th>1.63</th>
</tr>
</thead>
<tbody>
<tr>
<td>“B” Dimension</td>
<td>.63</td>
<td>.63</td>
</tr>
<tr>
<td>“C” Dimension</td>
<td>.56</td>
<td>.56</td>
</tr>
</tbody>
</table>

**3-Position Tandem Cylinder Models**

Available on SE500, SE625, SE750, SE1000 and SE1500

**Principle of Operation**

Generally, when two 4-way valves are used to actuate a 3-position slide, separate regulators supply each valve. A self-relieving regulator, upstream of the valve controlling the primary cylinder, is set at 20 to 40 psi lower than the secondary cylinder supply.
Flexibility in creating custom linear motions

Slide Combinations – Transition Plate Part Numbers – Dimensions

<table>
<thead>
<tr>
<th>Transition Plate</th>
<th>Spacer, if required, is supplied with transition plate</th>
</tr>
</thead>
</table>

NOTE: Vertical Motion Slide is on same centerline as Horizontal Motion Slide as seen in this view

Vertical Motion Slide

Horizontal Motion Slide

This "gap" allows standard sensors and/or shocks to be added to vertical motion without interference

<table>
<thead>
<tr>
<th>Slide Combinations</th>
<th>Transition Plate Part Numbers</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>TPL03</td>
<td>SE375</td>
<td>2.00</td>
</tr>
<tr>
<td>TPL04</td>
<td>SE500</td>
<td>1.00</td>
</tr>
<tr>
<td>TPL05</td>
<td>SE500</td>
<td>.75</td>
</tr>
<tr>
<td>TPL06</td>
<td>SE625</td>
<td>1.00</td>
</tr>
<tr>
<td>TPL07</td>
<td>SE625</td>
<td>.75</td>
</tr>
<tr>
<td>TPL08</td>
<td>SE625</td>
<td>1.00</td>
</tr>
<tr>
<td>TPL09</td>
<td>SE625</td>
<td>.75</td>
</tr>
<tr>
<td>TPL10</td>
<td>SE625</td>
<td>1.00</td>
</tr>
<tr>
<td>TPL11</td>
<td>SE625</td>
<td>.75</td>
</tr>
<tr>
<td>TPL12</td>
<td>SE750</td>
<td>3.25</td>
</tr>
<tr>
<td>TPL13</td>
<td>SE750</td>
<td>1.50</td>
</tr>
<tr>
<td>TPL14</td>
<td>SE750</td>
<td>1.00</td>
</tr>
<tr>
<td>TPL15</td>
<td>SE750</td>
<td>.75</td>
</tr>
<tr>
<td>TPL16</td>
<td>SE1000</td>
<td>3.38</td>
</tr>
<tr>
<td>TPL17</td>
<td>SE1000</td>
<td>1.50</td>
</tr>
<tr>
<td>TPL18</td>
<td>SE1000</td>
<td>1.00</td>
</tr>
<tr>
<td>TPL19</td>
<td>SE1500</td>
<td>1.13</td>
</tr>
</tbody>
</table>

1 Full Retract

2 Mid-Position

3 Full Extend

Step 1 — In the retract position, ports 1 & 3 are pressurized.

Step 2 — High pressure applied at port #4 will override pressure at port #1 and extend the secondary cylinder to its full stroke pushing the primary cylinder forward to mid-position. Exhaust air from the primary cylinder is forced back through the valve and out the self-relieving regulator to atmosphere.

Step 3 — Shifting the primary cylinder’s 4-way valve to apply pressure to port #2 extends the slide to full extend position, “uncoupling” the primary piston from the secondary piston rod.

The slide can now be retracted to its mid-position by shifting the primary valve (retracting the primary piston until it stops against the extended secondary piston rod) – or the slide can be fully retracted by shifting both the primary and secondary valves.
### Standard Mounting Style –MS1

**Surface #3**
- B4 Optional Dowel Hole and Slot

**Surface #2**
- BB Offset

**Surface #1**
- B4 Optional Dowel Hole on Centers

**Surface #4**
- B4 Optional Dowel Slot on Centerlines

**Surface #5**
- B4 Optional Dowel Slot on Centerlines

**Note:**
- On the SE250 Model with optional proximity switch, the Base Mounting Bars will be assembled in the alternate mounting position.
- On the SE500 through SE1000 Models the Base Mounting Bar Option cannot be used with S50, S51 or S60 sensing options.

### “SE” Series Dimensional Data

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SE250</td>
<td>1/2</td>
<td>1/4</td>
<td>1.38</td>
<td>3.13</td>
<td>1.063</td>
<td>1.625</td>
<td>.16</td>
<td>.25</td>
<td>1.75</td>
<td>.50</td>
<td>.173</td>
<td>.25</td>
<td>.875</td>
<td>.128</td>
<td>.25</td>
<td>1.25</td>
<td>.50</td>
<td>#5</td>
</tr>
<tr>
<td>SE375</td>
<td>3/4</td>
<td>3/8</td>
<td>1.75</td>
<td>4.50</td>
<td>1.375</td>
<td>2.000</td>
<td>19</td>
<td>.25</td>
<td>2.00</td>
<td>.50</td>
<td>.204</td>
<td>.25</td>
<td>.750</td>
<td>.169</td>
<td>.38</td>
<td>1.50</td>
<td>.75</td>
<td>#6</td>
</tr>
<tr>
<td>SE500</td>
<td>1-1/8</td>
<td>1/2</td>
<td>2.50</td>
<td>6.00</td>
<td>2.000</td>
<td>2.750</td>
<td>25</td>
<td>.38</td>
<td>3.00</td>
<td>.75</td>
<td>.266</td>
<td>.38</td>
<td>2.000</td>
<td>.196</td>
<td>.50</td>
<td>2.25</td>
<td>1.00</td>
<td>#10</td>
</tr>
<tr>
<td>SE625</td>
<td>1-1/8</td>
<td>5/8</td>
<td>2.50</td>
<td>7.00</td>
<td>2.000</td>
<td>3.250</td>
<td>25</td>
<td>.38</td>
<td>4.00</td>
<td>.75</td>
<td>.266</td>
<td>.38</td>
<td>3.000</td>
<td>.196</td>
<td>.50</td>
<td>3.25</td>
<td>1.00</td>
<td>#16</td>
</tr>
<tr>
<td>SE750</td>
<td>2</td>
<td>3/4</td>
<td>4.00</td>
<td>8.63</td>
<td>3.250</td>
<td>4.500</td>
<td>38</td>
<td>.75</td>
<td>4.25</td>
<td>1.00</td>
<td>.406</td>
<td>.50</td>
<td>2.750</td>
<td>.406</td>
<td>.75</td>
<td>3.25</td>
<td>1.50</td>
<td>3/8</td>
</tr>
<tr>
<td>SE1000</td>
<td>2-1/2</td>
<td>1</td>
<td>5.00</td>
<td>10.38</td>
<td>4.000</td>
<td>5.500</td>
<td>50</td>
<td>1.00</td>
<td>5.00</td>
<td>1.25</td>
<td>.531</td>
<td>.63</td>
<td>3.000</td>
<td>.531</td>
<td>1.00</td>
<td>3.750</td>
<td>2.00</td>
<td>1/2</td>
</tr>
<tr>
<td>SE1500</td>
<td>3-1/4</td>
<td>1-1/2</td>
<td>6.00</td>
<td>13.75</td>
<td>5.000</td>
<td>7.500</td>
<td>50</td>
<td>1.00</td>
<td>7.00</td>
<td>1.25</td>
<td>.656</td>
<td>.63</td>
<td>4.500</td>
<td>.531</td>
<td>1.25</td>
<td>5.750</td>
<td>2.50</td>
<td>-</td>
</tr>
</tbody>
</table>

**Toolbar dowel holes/slots**
- are offset outward from tapped mounting hole as shown here.

**Mounting Style: “–MS1B1” (Base Mounting Bars)**

- On the SE250 Model with optional proximity switch, the Base Mounting Bars will be assembled in the alternate mounting position.
- On the SE500 through SE1000 Models the Base Mounting Bar Option cannot be used with S50, S51 or S60 sensing options.
3-Position Tandem Cylinder Models
Available on SE500, SE625, SE750, SE1000 and SE1500

Dowel Holes
Fabco-Air Dowel Holes feature a slip fit dowel hole and a slip fit dowel slot, allowing 2 dowels to be pressed into the mounting surface or the end tooling. This "hole and slot" method provides precision alignment, yet dowel pin centers do not have to be held at a critical dimension.

Dowel holes/slots may be located on any of the five surfaces shown at the right and in blue on the dimension drawings on page 30.

<table>
<thead>
<tr>
<th>Model</th>
<th>B4 Dowel Dimensions</th>
<th>C4 Dowel Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Depth</td>
<td>Slip Fit for Dowel Size</td>
</tr>
<tr>
<td>SE250</td>
<td>.09</td>
<td>3/32</td>
</tr>
<tr>
<td>SE375</td>
<td>.12</td>
<td>1/8</td>
</tr>
<tr>
<td>SE500</td>
<td>.16</td>
<td>3/16</td>
</tr>
<tr>
<td>SE625</td>
<td>.16</td>
<td>3/16</td>
</tr>
<tr>
<td>SE750</td>
<td>.25</td>
<td>1/4</td>
</tr>
<tr>
<td>SE1000</td>
<td>.37</td>
<td>5/16</td>
</tr>
<tr>
<td>SE1500</td>
<td>.43</td>
<td>3/8</td>
</tr>
</tbody>
</table>

Integral Option: "–Y" (Hollow Guide Shafts)
Tubular guide shafts are available on SE750, SE1000 and SE1500. They can be used to reduce reciprocating weight – or to run air and/or electrical lines through the shafts.

Internal Diameters are as follows:
- SE750: .44 ± .02
- SE1000: .60 ± .03
- SE1500: .89 ± .05
**“SE” Series Linear Slides**

*Note:* Proximity Switches shown are 12mm. Options S01, S03, S05 & S07 prewired styles are supplied with 6 ft. lead wire. Options S02, S04, S06 & S08 quick disconnect style are supplied with straight 2 meter cord set. Options S12, S14, S16, S18 are quick disconnect style without cord sets. S40, S41 & S42 are brackets and actuators only, no switches.

---

**Proximity Switch for SE250**

Prox. Switch Dog
(Actuates both the Extend and Retract Sensors)

Retract Position Sensor

SHCS (2)

Prox. Bracket

Extend Position Sensor
(Prewired styles shown gray; Quick Disconnect styles with Straight Cord Sets shown bold outline)

Prox Bracket Attachment Screws:
Remove these screws if thru mounting hole bolts are used

Thru Mounting Hole Bolts

Tapped Mounting Holes

---

**Proximity Switch for SE500 & SE625**

Prox. Switch Dog

Retract Position Sensor
(Bracket mounting holes are standard on all models)

10 (TYP)

.75

Prox. Switch Dog

Extend Position Sensor
(Prewired styles shown gray; Quick Disconnect styles with Straight Cord Sets shown bold outline)

---

**Proximity Switch Dog**

.75

---

Page 32 Specifications subject to change without notice or incurring obligations

1-20-99
Proximity Switch, Snap Action & Air Pilot Switch Options

Switch for SE375

- Prox. Switch Dog (Actuates extend sensor)
- Extend Position Sensor (Prewired styles shown gray; Quick Disconnect styles with Straight Cord Sets shown bold outline)
- Bracket Attachment Screws (Bracket mounting holes in bearing block are standard on all models)
- Retract Position Sensor (Actuated by sensing the end of guide shaft)

Switch for SE750 thru SE1500

- Retract Position Sensor (Bracket mounting holes are standard on all models)
- Extend Position Sensor (Prewired styles shown gray; Quick Disconnect styles with Straight Cord Sets shown bold outline)
- Prox. Switch Dog

Snap Action Mechanical Switch for SE500 thru SE1500

- Switch Dog
- Conduit Connection
- Switch Dog
- Conduit Type Housing
- Switch Dog

Air Pilot Switch for SE500 thru SE1500 Models

- 3-Way Air Limit Valve (Fabco-Air Model MSV-2) Shown In Actuated Position
- SHCS (2 Per Valve)
- Ports
- SHCS
- #10-32

Snap Action & Pilot Switch Dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>SE500</th>
<th>SE625</th>
<th>SE750</th>
<th>SE1000</th>
<th>SE1500</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1.06</td>
<td>.94</td>
<td>.75</td>
<td>.44</td>
<td>.00</td>
</tr>
</tbody>
</table>

Specifications subject to change without notice or incurring obligations
### Shock Absorber Options

**Standard Location** – Codes (Insert E, R or B)
- **A** Ace Shocks
- **B** Enidine Shocks
- **C** Brackets & Actuators only

### SE500 thru SE1000 Models

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE500</td>
<td>.62</td>
<td>.75</td>
<td>1.44</td>
<td>1/2-20</td>
<td>.19</td>
<td>1.88</td>
</tr>
<tr>
<td>SE625</td>
<td>.62</td>
<td>.75</td>
<td>1.44</td>
<td>1/2-20</td>
<td>.19</td>
<td>2.12</td>
</tr>
<tr>
<td>SE750</td>
<td>1.25</td>
<td>1.38</td>
<td>1.75</td>
<td>1.0-12</td>
<td>.38</td>
<td>3.00</td>
</tr>
<tr>
<td>SE1000</td>
<td>1.25</td>
<td>1.38</td>
<td>2.88</td>
<td>1.0-12</td>
<td>.38</td>
<td>3.53</td>
</tr>
</tbody>
</table>

**Alternate Location** – Codes (Insert R or B)
- **D** Ace Shocks
- **E** Enidine Shocks
- **F** Brackets & Actuators only

---

**SE1500 Model – Standard and Dual Shock Options**

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE500</td>
<td>.62</td>
<td>.75</td>
<td>1.44</td>
<td>1/2-20</td>
<td>.19</td>
<td>1.88</td>
</tr>
<tr>
<td>SE625</td>
<td>.62</td>
<td>.75</td>
<td>1.44</td>
<td>1/2-20</td>
<td>.19</td>
<td>2.12</td>
</tr>
<tr>
<td>SE750</td>
<td>1.25</td>
<td>1.38</td>
<td>1.75</td>
<td>1.0-12</td>
<td>.38</td>
<td>3.00</td>
</tr>
<tr>
<td>SE1000</td>
<td>1.25</td>
<td>1.38</td>
<td>2.88</td>
<td>1.0-12</td>
<td>.38</td>
<td>3.53</td>
</tr>
</tbody>
</table>

**Alternate Location** – Option Codes (Insert R or B)
- **D** Ace Shocks
- **E** Enidine Shocks
- **F** Brackets & Actuators only

---

Stop collars are compatible with all shock mounting packages.

This retract shock mounting bracket (shown in bold outline) is required only with applicable alternate location, dual shock options.
Stop and Bumper Options

Stop Collars – SE250 thru SE1500 Models

Bumper options use a combination of urethane washers and stop collars to create a cushioned stop. Bumpers are ideal for applications in which space limitations preclude use of hydraulic shock absorbers. **Note:** The Bumper Option is NOT compatible with standard proximity switch, snap action switch or air pilot options. **Extend Bumpers or Stop Collars not compatible with -Jxx sensors on SE375.**

**Stop Collars - SE250 thru SE1500 Models**

**Bumpers - SE250 thru SE1500 Models**

<table>
<thead>
<tr>
<th>Model</th>
<th>T1</th>
<th>T2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE250</td>
<td>.28</td>
<td>1/8</td>
</tr>
<tr>
<td>SE375</td>
<td>.34</td>
<td>1/8</td>
</tr>
<tr>
<td>SE500</td>
<td>.41</td>
<td>1/8</td>
</tr>
<tr>
<td>SE750</td>
<td>.50</td>
<td>1/8</td>
</tr>
<tr>
<td>SE1000</td>
<td>.50</td>
<td>1/4</td>
</tr>
<tr>
<td>SE1500</td>
<td>.56</td>
<td>1/4</td>
</tr>
</tbody>
</table>

**NEW**

The cut-away view (left) illustrates the Multi-Power® principle in a 3-stage slide.

Three pistons attached to a common shaft nearly triple the output force of a conventional cylinder!

Shown above is an SE1000, 4-stage Multi-Power® slide capable of producing 1,830 pounds extend force at 100 psi supply pressure. A conventional cylinder would yield only 491 pounds of force at the same supply pressure.

**Multi-Power® “Hi-Thrust” Slides**

Get Increased Thrust Without Increasing the Cylinder Bore

Fabco-Air incorporates its famous Multi-Power® cylinder on SE and EZ Series slide models to increase slide thrust. For example, a 2-stage Multi-Power® cylinder on an SE750 Model increases thrust from 314 to 584 pounds at 100 psi supply pressure. The sketch at the right shows a cutaway view of a 3-stage Multi-Power® slide which would effectively raise thrust to over 850 pounds at the same 100 psi supply!

**How it works**

The cylinder uses multiple pistons attached to a common shaft. Each piston is isolated within its own chamber by means of baffles integral with the outer cylinder wall. Unique internal porting allows air pressure to simultaneously energize all pistons – thus multiplying the slide’s thrust.

Contact the factory for applicable Multi-Power® solutions for your high force requirements.

**Note:** Adding additional stages does increase the overall cylinder length.
“SE” Series Linear Slides

Specials

Alternate Adjustable Retract Stroke

An adjusting screw with a thread sealing locknut mounted in the rear end cap provides a simple, yet rugged adjustment of the cylinder stroke in the retract direction. The fine thread of the adjusting screw provides precision adjustment.

Rear Piston Rod Extension

This special configuration consists of a modified rear end cap with rod seal and an extended piston rod, allowing various special application uses. By adding a simple compression spring and clamp collar, a vertical load can be held in mid-position and powered either downward or upward.

Other uses include special sensing and/or position feedback devices attached to the extended piston rod. An extended rear piston rod added to a tandem cylinder option allows the slide to have a mid-position adjustment capability.

Alternate Adjustable Extend Stroke

Fabco-Air’s popular Dial-A-Stroke® can be applied to most SE Series models for precise adjustability of extend strokes.

Operator Safety – The stop tube, adjustment nut with skirt, and minimum clearances combine to eliminate pinch points.

Construction –

Adjustment Rod
Adjustment Nut with Mating Fine Pitch Thread
Adjustment Nut Skirt
Stop Tube

Stop Flange
Plastic Plug
Lock Screw
Contact Surfaces
Totally Enclosed

The stop tube is black anodized aluminum – the adjustment nut is blackened steel with a black anodized aluminum skirt – the stop flange is red anodized aluminum; all for corrosion resistance and appearance.

The adjustment nut, steel for long life, includes a lock screw with a plastic plug so the adjustment nut can be locked in place without damaging the threads. Precision adjustment is achieved with fine pitch threads on the adjustment rod. The stop flange is mounted on the end of the adjustment rod so the nut will not come off during adjustment.

Adjustment – Adjustment settings are simplified by convenient scale markings.

The stop tube is black anodized aluminum – the adjustment nut is blackened steel with a black anodized aluminum skirt – the stop flange is red anodized aluminum; all for corrosion resistance and appearance.

The adjustment nut, steel for long life, includes a lock screw with a plastic plug so the adjustment nut can be locked in place without damaging the threads. Precision adjustment is achieved with fine pitch threads on the adjustment rod. The stop flange is mounted on the end of the adjustment rod so the nut will not come off during adjustment.

Adjustment – Adjustment settings are simplified by convenient scale markings.

Steps 1

- Indicate the “SE” series.
- Select a stroke (Special strokes also available). Select model size based on guide shaft dia.

<table>
<thead>
<tr>
<th>Model Size</th>
<th>Guide Shaft Diameter</th>
<th>Bore</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>1/4&quot;</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>375</td>
<td>3/8&quot;</td>
<td>3/4&quot;</td>
</tr>
<tr>
<td>500</td>
<td>1/2&quot;</td>
<td>1-1/8&quot;</td>
</tr>
<tr>
<td>625</td>
<td>5/8&quot;</td>
<td>1-1/8&quot;</td>
</tr>
<tr>
<td>750</td>
<td>3/4&quot;</td>
<td>2&quot;</td>
</tr>
<tr>
<td>1000</td>
<td>1&quot;</td>
<td>2-1/2&quot;</td>
</tr>
<tr>
<td>1500</td>
<td>1-1/2&quot;</td>
<td>3-1/4&quot;</td>
</tr>
</tbody>
</table>

Model | Standard Stroke Length
--- | ----------------------
SE250 | 1/2" to 4" by 1/2" increments
SE375 | 1" to 6" by 1" increments
SE500 | 1" to 10" by 1" increments
SE625 | 1" to 10" by 1" increments
SE750 | 1" to 10" by 1" increments
SE1000 | 1" to 6" by 1" increments
SE1500 | 2" to 30" by 2" increments
How to Order Summary

### Step 2

- **S03B**
  - Sensor Options

### Step 3

- **CB – KE**
  - Select Shock Absorber, Bumper, and Adjustable Stop Options

#### Mounting Styles

- **MS1** = Standard Mounting
  - Includes: • Tapped mounting holes
  - • Thru mounting holes
  - • Side tapped mounting holes
- **MS1B1** = Base Mounting Bars (1 Pair)

#### Toolbars

- **T1** = Blank Toolbar
- **T3** = Toolbar for Model SE500 to attach an SE500 or an EZ500
- **T4** = Toolbar for Model SE1000 to attach an SE500, EZ500, SE750 or EZ750

#### Integral Options

- **D** – Dowel Hole and Slot Specify Surface Location(s)
  - 1, 2, 3, 4, or 5 in box(es)
- **H** – Hydraulic Cylinder Seals
- **V** – Viton Cylinder Seals

#### Bearing Options

- **W** – Rulon® Sleeve Bearings
- **X** – Duralon® Sleeve Bearings

#### Guide Shaft Options

- **Y** – Hollow Guide Shafts
- **Z** – Stainless Steel Guide Shafts
- **S** – Grease fittings, Side
- **T** – Grease fittings, Top

#### Shock Options

Specify E, R, or B in box ( )

- **A** – Ace Shocks
- **B** – Enidine Shocks
- **C** – Brackets and actuators only

#### Alternate Location

Specify R or B

- **D** – Ace Shocks
- **E** – Enidine Shocks
- **F** – Brackets and actuators only

#### Dual Shock Options for Model SE1500 only

Specify E, R, or B in box:

- **AX** – Ace Shocks
- **BX** – Enidine Shocks
- **CX** – Brkts & actuators

#### Other Options

- **KE** – Stop collars, extend
- **KR** – Stop collars retract
- **KB** – Stop collars both
- **UE** – Bumpers extend with stop collars
- **UR** – Bumpers retract only without stop collars
- **UB** – Bumpers both ends w/stop collars extend
- **UKR** – Bumper retract only with stop collars
- **UKB** – Bumpers both ends with stop collars both ends

---

**Sensor Options**

- **S000** – Indicates NO SENSORS desired
  - Note: Indicate sensor location in the box ( ).
  - **E**= Extend, **R**=Retract, **B**=Both Extend & Retract
  - **M**=3 Sensors

- **S01** thru **S18**
  - 12mm Prox Switch w/Brackets & Actuators
  - Choose desired electrical characteristics
  - Choose pre-wired or quick disconnect with or without cord set

- **S40** thru **S42**
  - Prox Switch Brackets & Actuators Only, no Switches.
  - Choose 12mm, 8mm, or 5mm

- **S50**, **S51** (E, R or B only)
  - Snap Action Mechanical Switches
  - Choose pre-wired or with conduit fitting

- **S60** (E, R or B only)
  - Air Pilot Switch

- **J70** thru **J75** (Not available on SE250)
  - Magnetic Piston and Clamp-on Sensors.
  - Choose reed or electronic (PNP or NPN)
  - Choose pre-wired or quick disconnect with cord set
  - Single sensor – 1" stroke min.
  - Dual sensors – 2" stroke min.

- **J800**
  - Magnetic Piston Only, No Sensors

- **E70** thru **E77**
  - Magnetic Piston & Dovetail Style Sensors
  - Choose reed or electronic (PNP or NPN)
  - Choose pre-wired or quick disconnect with cord set.
  - Requires 1" or longer stroke. Reed switches not available on SE250 or SE375.

- **E800**
  - Magnetic Piston & Dovetail Mounting Rail (attached) only, no sensors. Requires 1" or longer stroke

---

Specifications subject to change without notice or incurring obligations
"EZ" Series Linear Slides

Engineering Data

**Max Operating Pressure:** 150 psi

**Output Force:** Output Force in Pounds = Pressure x Power Factor

**Speed:** Speeds up to 24 inches per second are obtainable by utilizing an optional stop package in conjunction with urethane bumpers or hydraulic shocks. Moderate reciprocating loads can be safely cycled up to 12 inches per second by utilizing an adjustable stop option without bumpers or shocks. Except for light loads and moderate speeds, operating EZ slides without an adjustable stop option is not recommended. Moderate to heavy loads should not be stopped by bottoming the piston against the end cap.

**Important note:** Most linear slide failures are caused by severe, damaging impact loads (which act like a "slide hammer" on the piston rod). Proper slide model sizing, use of adjustable stops and/or shocks/bumpers, and operating the slide at the lowest possible air pressure will insure successful operation and long product life.

**Accuracy:** EZ Series slides feature linear ball bearings for near play free operation. Each bearing has .0005" max "play" or less. The built-in air cylinder will stroke +.015" / –.000" with ± .001" repeatability.

**Optional Dowel Hole/Slot**

**Code – D**

Optional slip fit dowel holes and slip fit dowel slots allow for repeatably precise slide mounting and/or attachment of end tooling. Option may be specified at any of the five surface locations (1 – 6) listed here.

1. **#1 – MH1/MH2 end cap mounting surface** (bottom mounting surface)
2. **#2 – Toolbar face**
3. **#3 – Toolbar top**
4. **#4 – MV1/MV2 end cap mounting surface** (side mounting surface)
5. **#6 – MF1/MF2/MF3 end cap mounting surface** (flange face)

**Cylinder Endcaps**

Clear anodized aluminum with precision machined mounting surface

**Choice of endcap mounting styles**

Code – MH1: Thru-hole mounting (shown)
Code – MH2: Bottom tapped mounting hole
Code – MF1/MF2/MF3: Flange mount styles
Code – MV1/MV2: Side tapped hole mounting

**Unique design** – Integral air cylinder with end caps that serve as rugged housings for the linear ball bearings. Cylinder stroke is nominal +.015" / –.000" with ± .001" repeatability.

**Precision guide shafts**

Straightness .0015" per foot
Standard case hardened (Rc 61 - 65) and ground (9 - 14 microinches RMS)

**Optional stainless steel** Code – Z

**Precision linear ball bearings**

Standard sealed ball bearings with full steel bearing shell.

**Optional sleeve-type, linear bearings**

Code – X: Duralon®; Code –W: Rulon®

**Stainless steel piston rod** – End of piston rod is piloted into the back of the toolbar by a precision machined counterbore. A socket head cap screw completes attachment to the toolbar. This design eliminates piston rod side loads, increasing cylinder seal life and improving performance.

**Front Toolbar**

Clear anodized aluminum, machined top & front for squareness. Tapped mounting holes (top & front) are standard. Optional slip fit dowel holes and slip fit dowel slots assure repeatably precise tooling attachments.

**Code – T1:** Optional blank toolbar (no mtg holes)

**Codes – T3 or T4:** Optional toolbars for joining dissimilar slides together. SE and EZ Series can be combined for 2-axis motion.

**Optional Dowel Hole/Slot**

**Code – D**

Optional slip fit dowel holes and slip fit dowel slots allow for repeatably precise slide mounting and/or attachment of end tooling. Option may be specified at any of the five surface locations (1 – 6) listed here.

1. **#1 – MH1/MH2 end cap mounting surface** (bottom mounting surface)
2. **#2 – Toolbar face**
3. **#3 – Toolbar top**
4. **#4 – MV1/MV2 end cap mounting surface** (side mounting surface)
5. **#6 – MF1/MF2/MF3 end cap mounting surface** (flange face)

**Dowel Surface 2**

**Dowel Surface 3**

**Model**

<table>
<thead>
<tr>
<th>EZ250</th>
<th>EZ375</th>
<th>EZ500</th>
<th>EZ625</th>
<th>EZ750</th>
<th>EZ1000</th>
<th>EZ1500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guide Shaft Diameter</td>
<td>1/4&quot;</td>
<td>3/8&quot;</td>
<td>1/2&quot;</td>
<td>5/8&quot;</td>
<td>3/4&quot;</td>
<td>1&quot;</td>
</tr>
<tr>
<td>Bore</td>
<td>1/2&quot;</td>
<td>3/4&quot;</td>
<td>1-1/8&quot;</td>
<td>1-1/8&quot;</td>
<td>2&quot;</td>
<td>2-1/2&quot;</td>
</tr>
<tr>
<td>Power Factor Extend</td>
<td>.20</td>
<td>.44</td>
<td>.99</td>
<td>.99</td>
<td>3.14</td>
<td>4.90</td>
</tr>
<tr>
<td>Power Factor Retract</td>
<td>.17</td>
<td>.39</td>
<td>.88</td>
<td>.88</td>
<td>2.84</td>
<td>4.47</td>
</tr>
<tr>
<td>Weight, lbs. @ zero stroke</td>
<td>.46</td>
<td>1.10</td>
<td>2.40</td>
<td>3.35</td>
<td>8.31</td>
<td>19.10</td>
</tr>
<tr>
<td>Weight per inch of stroke</td>
<td>.06</td>
<td>.18</td>
<td>.32</td>
<td>.44</td>
<td>.74</td>
<td>1.19</td>
</tr>
<tr>
<td>Standard Strokes</td>
<td>1/2&quot; thru 4&quot; by 1/2&quot; incr.</td>
<td>1&quot; thru 6&quot; by 1&quot; incr.</td>
<td>1&quot; thru 10&quot; by 1&quot; incr.</td>
<td>1&quot; thru 10&quot; by 1&quot; incr.</td>
<td>1&quot; thru 10&quot; by 1&quot; incr.</td>
<td>1&quot; thru 10&quot; by 1&quot; incr.</td>
</tr>
</tbody>
</table>

**Specifications subject to change without notice or incurring obligations**

Page 38
Ideal for high precision, high load carrying capacity applications

Load Sizing Guide

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 positional accuracy, as well as bearing and seal failure. CAUTION: Heavy reciprocating loads can create damaging impact forces at end of stroke. It may be necessary to use adjustable stops, bumpers, or hydraulic shock absorbers – or reduce speeds.

Center support can be added to EZ500 and larger slides. Center support dramatically reduces deflection and increases load capacity on long stroke applications.

<table>
<thead>
<tr>
<th>Model</th>
<th>Load Type</th>
<th>Stroke</th>
<th>Maximum Deflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>EZ250</td>
<td>Load 1</td>
<td>4.0 1.8 1.3</td>
<td>.005*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17 10 4.0 2.5</td>
<td>.015*</td>
</tr>
<tr>
<td></td>
<td>Load 2</td>
<td>40 24 8.0 4.0</td>
<td>.005*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>48 44 38 19</td>
<td>.015*</td>
</tr>
<tr>
<td>EZ375</td>
<td>Load 1</td>
<td>28 28 6.0 4.0 2.8</td>
<td>.005*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>28 28 12 18 12 6.8</td>
<td>.015*</td>
</tr>
<tr>
<td></td>
<td>Load 2</td>
<td>60 36 14 8.6 3.6 2.0</td>
<td>.005*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>79 79 60 33 18 13</td>
<td>.015*</td>
</tr>
<tr>
<td>EZ500</td>
<td>Load 1</td>
<td>84 44 12 6.0 4.0 2.8 1.0</td>
<td>.005*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>120 120 34 16 12 8.2 6.0 4.8</td>
<td>.015*</td>
</tr>
<tr>
<td></td>
<td>Load 2</td>
<td>120 110 32 22 16 12 9.6 4.0</td>
<td>.030*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>290 210 60 44 29 24 20 20 15</td>
<td>.005*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>290 290 160 80 64 48 37 28</td>
<td>.015*</td>
</tr>
<tr>
<td>EZ625</td>
<td>Load 1</td>
<td>150 84 28 16 12 9.0 7.8 5.6 4.0</td>
<td>.005*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>150 150 76 56 34 26 20 16 11 10</td>
<td>.015*</td>
</tr>
<tr>
<td></td>
<td>Load 2</td>
<td>240 140 86 40 36 22 17 12 10 8</td>
<td>.030*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>420 420 160 120 84 60 56 34 24 20 15</td>
<td>.005*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>420 420 310 170 120 96 70 60</td>
<td>.015*</td>
</tr>
<tr>
<td>EZ750</td>
<td>Load 1</td>
<td>100 56 20 12 8.0 5.0 4.0 2.2 1.8</td>
<td>.005*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>120 114 56 36 26 12 9.0 6.4 5.8</td>
<td>.015*</td>
</tr>
<tr>
<td></td>
<td>Load 2</td>
<td>180 64 42 36 15 12 8 7 6 4</td>
<td>.030*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>450 190 110 80 44 24 17 14 12 8</td>
<td>.015*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>480 360 200 140 76 50 35 26 24</td>
<td>.030*</td>
</tr>
<tr>
<td>EZ1000</td>
<td>Load 1</td>
<td>200 80 44 36 24 12 8 6 5 4</td>
<td>.005*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>470 220 120 80 50 36 24 17 13 12</td>
<td>.015*</td>
</tr>
<tr>
<td></td>
<td>Load 2</td>
<td>240 110 80 66 65 50 42 38 32 30 24</td>
<td>.005*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>600 320 150 140 100 90 76 60 40 36 30 24</td>
<td>.015*</td>
</tr>
<tr>
<td></td>
<td>Load 3</td>
<td>600 600 540 430 320 210 156 90 84 70</td>
<td>.030*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Load Type</th>
<th>Stroke</th>
<th>Maximum Deflection</th>
</tr>
</thead>
<tbody>
<tr>
<td>EZ1500</td>
<td>Load 1</td>
<td>600 510 124 124 76 50 30 10 4</td>
<td>.005*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>800 800 300 300 202 124 70 40 10</td>
<td>.015*</td>
</tr>
<tr>
<td></td>
<td>Load 2</td>
<td>825 800 434 434 275 195 60 30 10</td>
<td>.005*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>920 920 750 750 480 335 90 30 10</td>
<td>.015*</td>
</tr>
<tr>
<td>Load 3</td>
<td></td>
<td>920 920 850 850</td>
<td>.030*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>Load Type</th>
<th>Stroke</th>
<th>Maximum Deflection</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Load 1</td>
<td>600 510 124 124 76 50 30 10 4</td>
<td>.005*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>800 800 300 300 202 124 70 40 10</td>
<td>.015*</td>
</tr>
<tr>
<td></td>
<td>Load 2</td>
<td>825 800 434 434 275 195 60 30 10</td>
<td>.005*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>920 920 750 750 480 335 90 30 10</td>
<td>.015*</td>
</tr>
<tr>
<td>Load 3</td>
<td></td>
<td>920 920 850 850</td>
<td>.030*</td>
</tr>
</tbody>
</table>

Single Overhead Support Beam– On stroke lengths longer than ten times the guide shaft diameter (Example: EZ625 is .625 x 10 = 6-1/4" stroke), a single beam increases “Load 1” by a factor of 1.9 to 1.

Twin Overhead Support Beam– On stroke lengths longer than ten times the guide shaft diameter (Example: EZ1000 is 1 x 10 = 10" stroke), a twin beam increases “Load 1” by a factor of 2.7 to 1.

Specifications subject to change without notice or incurring obligations
Step 1: Basic Slide Model

**EZ 750 – 5.0**

<table>
<thead>
<tr>
<th>Model Size</th>
<th>Guide Shaft Diameter</th>
<th>Bore</th>
<th>Standard Stroke Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>1/4&quot;</td>
<td>1/2&quot;</td>
<td>1/2&quot; to 4&quot; by 1/2&quot; increments</td>
</tr>
<tr>
<td>375</td>
<td>3/8&quot;</td>
<td>3/4&quot;</td>
<td>1&quot; to 6&quot; by 1&quot; increments</td>
</tr>
<tr>
<td>500</td>
<td>1/2&quot;</td>
<td>1-1/8&quot;</td>
<td>1&quot; to 10&quot; by 1&quot; increments</td>
</tr>
<tr>
<td>625</td>
<td>5/8&quot;</td>
<td>1-1/8&quot;</td>
<td>1&quot; to 10&quot; by 1&quot; increments</td>
</tr>
<tr>
<td>750</td>
<td>3/4&quot;</td>
<td>2&quot;</td>
<td>1&quot; to 6&quot; by 1&quot; increments</td>
</tr>
<tr>
<td>1000</td>
<td>1&quot;</td>
<td>2-1/2&quot;</td>
<td>1&quot; to 6&quot; by 1&quot; increments</td>
</tr>
<tr>
<td>1500</td>
<td>1-1/2&quot;</td>
<td>3-1/4&quot;</td>
<td>2&quot; to 30&quot; by 2&quot; increments</td>
</tr>
</tbody>
</table>

**3-Position Tandem Cylinder Slides**

*(Not available on SE250)*

Note: See pages 28 & 29 for principle of operation

Ordering example:

**EZ750 – 5.0 – 2.0 – MH2 – S03B – RC01CB**

Sensor locations—use “M” in the Box ( ) if mid-position sensor is required (3 sensors). Note: “M” (mid-position) is not available with “S50, S51, S60” sensors. All sensors are located on the primary cylinder, which also contains the magnetic piston band for “E” & “J” options. Mid-position “M” prox sensor is not available on “EZ375” models with “S01” through “S47” prox options (consider using “E” style sensors if mid-position sensing is required).

Port Locations: Top ports are standard on all tandem models. A top and bottom port combination is available for the EZ500 and EZ625 as a “special” order at no additional charge. Consult factory.

Optional “B1” Mounting Bars

For use with MV1 or MV2 Mounting style

To Order with Slide:
Add “B1” to mounting style

Example:

**EZ500 – 5.0 – MV1B1**

**Floating Rear Bearing Block Option** *(NOT available on EZ250)*

Puts maximum stroke within shortest possible envelope.

To order:
add “FRBB” after end cap mounting style and specify dimension “D”.

Ordering example: **EZ500 – 5.0 – MH2 – FRBB (D3.5)**

Options available:
Sensing options are limited to magnetically operated "E" & "J" Options. Tooling, Stop, and Shock options are **NOT** available.
Building the Model Number in 3 Easy Steps

Step 2

Please turn the page

Continue on to step 2 if you want to add Sensing Options.

Please turn the page

Leave Blank If No Integral Options Are Desired

− MV1B1T1
Mounting Style & Toolbars

Integral Options

− VZX

Leave Blank If No Integral Options Are Desired

Model Number Will End Here

− MV1B1T1

Endcap Mounting Styles

MH1
Thru Mtg Holes

MH2
Tapped Mtg Holes

MF1
Front Flange Mtg

MF2
Rear Flange Mtg

MF3
Front & Rear Flange Mtg

MV1
Side Tapped Mtg Holes

MV2
Side Tapped w/Ports on Opp. Side

Integral Option Codes

D
Dowel Hole/Slot Code & Location(s)
Available on any of the 5 mounting surfaces described on page 38. Example: D13 specifies
dowel hole/slot on bottom surface of bearing blocks and on top surface of toolbar.

H– Hydraulic Cylinder Seals (150 psi max.)

V– Viton Cylinder Seals

Bearing Options
Sleeve Bearings can be substituted for standard linear ball bearings.

W– Rulon® Shaft Bearings

X– Duralon® Shaft Bearings

Guide Shaft Options

Y– Hollow Guide Shafts
Case hardened & ground #52100 tubular steel available on EZ750 Models and larger.

Z– Stainless Steel Guide Shafts: shaft material compatible with bearing type will be provided.

<table>
<thead>
<tr>
<th>Bearing Type</th>
<th>Shaft Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Std. linear ball brgs.</td>
<td>440C hardened &amp; ground SS</td>
</tr>
<tr>
<td>Option “W” Rulon® sleeve</td>
<td>Hard chrome plated SS</td>
</tr>
<tr>
<td>Option “X” Duralon® sleeve</td>
<td>Hard chrome plated SS</td>
</tr>
</tbody>
</table>

Toolbar Option Codes

− T1 = Blank Toolbar (no mounting holes).

For joining dissimilar models, specify one of the horizontal toolbars listed below:

<table>
<thead>
<tr>
<th>Horizontal Motion</th>
<th>Vertical Motion</th>
</tr>
</thead>
<tbody>
<tr>
<td>− T2</td>
<td>for EZ375</td>
</tr>
<tr>
<td>− T3</td>
<td>for EZ500 or SE500</td>
</tr>
<tr>
<td>− T4</td>
<td>for EZ1000</td>
</tr>
<tr>
<td></td>
<td>EZ500, SE500, EZ750, or SE750</td>
</tr>
</tbody>
</table>

Note 1 – Using an “EZ” slide for the vertical motion is recommended only for light loads, short vertical strokes or slow horizontal speeds. For more severe applications, a special base plate should be attached to the endcaps of the vertical motion “EZ” slide. One end of this plate is “sandwiched” between face of horizontal motion’s toolbar and the front endcap of the vertical motion “EZ” slide. Rear endcap is attached to plate’s opposite end.

To order: Add “Option Code” to Mounting Style.
Example: EZ1000 – 10.0 – MH2T4

“EZ” Series Slides are also easily combined with the “SE” Series Slides. All EZ Series Slides except EZ250 share identical tooling mounting bars with their SE Series cousins.
Step 2: Sensing Options

Add sensors. Choices include proximity switches, snap action mechanical switches, 3-way air pilot switches, magnetically operated electronic sensors and reed switches. Available complete with sensors – or mounting brackets only if you are furnishing the sensors.

**Sensor Codes** (Use “S000” if NO Sensors are desired)

Select a code for sensor type and indicate position

Example: S03B

- **E** = Extend position only
- **R** = Retract position only
- **B** = Both extend & retract positions
- **M** = 3 sensors (See note 1)

(Use “S000” if NO Sensors are desired)

**Proximity Switch w/Brackets & Actuators**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Quick Disconnect w/2 M cord set</th>
<th>Quick Disconnect without cord set</th>
<th>Thread Size</th>
<th>Electrical Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>S01</td>
<td>S02</td>
<td>S12</td>
<td>12mm</td>
<td>110v AC, 2-wire, w/LED</td>
</tr>
<tr>
<td>S03</td>
<td>S04</td>
<td>S14</td>
<td>12mm</td>
<td>24v DC, 2-wire, w/LED (PNP)</td>
</tr>
<tr>
<td>S05</td>
<td>S06</td>
<td>S16</td>
<td>12mm</td>
<td>24v DC, 3-wire, w/LED (PNP)</td>
</tr>
<tr>
<td>S07</td>
<td>S08</td>
<td>S18</td>
<td>12mm</td>
<td>24v DC, 3-wire, w/LED (PNP)</td>
</tr>
</tbody>
</table>

**Proximity Switch Brackets & Actuators Only**

- **S40**
- **S45**
- **S46**
- **S47**

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Quick Disconnect w/2 M cord set</th>
<th>Quick Disconnect without cord set</th>
<th>Thread Size</th>
<th>Electrical Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>S40</td>
<td>S45</td>
<td>S46</td>
<td>12mm</td>
<td>Customer supplies the switches</td>
</tr>
<tr>
<td>S41</td>
<td>S46</td>
<td>S47</td>
<td>8mm</td>
<td>Customer supplies the switches</td>
</tr>
<tr>
<td>S42</td>
<td>S47</td>
<td></td>
<td>5mm</td>
<td>Customer supplies the switches</td>
</tr>
</tbody>
</table>

**Snap Action Mechanical Switches**

- **S01**
- **S02**
- **S12**

**Air Pilot Switches**

- **S50**
- **S51**

**Electrical Characteristics**

- **SPDT** 10 amp. capacity (See note 3)

**Magnetic Piston & Clamp-On Sensors (“J”)**

Single sensor –1” stroke min; Dual sensors –2” stroke min. Not available on EZ250.

**Magnetic Piston & Dovetail Style Sensors (“E”)**

For 1” Stroke & longer on all bores; Reed sensors not available on EZ250 or EZ375

**Magnetic Piston**

- **J800** Customer supplies the sensors and mounting clamps
- **E800** Includes Dovetail Mounting Rail; customer supplies the sensors

---

**Step 2: Sensing Options**

Model Number Ends Here

- **SO3B** (4 Digits)

---

**Note 1:** Mid position “M” not available on EZ250 or EZ375 with prox options.

**Note 2:**
Codes S45, S46 and S47 are available on EZ500 & EZ625 models only. This is an alternative prox bracket location to accommodate the extra length of the quick disconnect cordset. See page 50 for details.

**Note 3:**
Not available on EZ250 or EZ375
Not available on EZ500 with MV1 or MV1B1 mounting styles
Not available on EZ625 with MV1B1 mounting style
Prox Switches w/Brackets & Actuators

Quick disconnect style “S02, S04, S06, S08” is furnished with 2M cordset. For “S12, S14, S16, S18” order straight or right angle cordset separately.

Switch actuator has steel sensing flag

<table>
<thead>
<tr>
<th>Option Code</th>
<th>Straight Cordset P/N</th>
<th>Rt. Angle Cordset P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>S12</td>
<td>PCS01-2M</td>
<td>PCS02-2M</td>
</tr>
<tr>
<td>S14</td>
<td>PCS03-2M</td>
<td>PCS04-2M</td>
</tr>
<tr>
<td>S16</td>
<td>PCS05-2M</td>
<td>PCS06-2M</td>
</tr>
<tr>
<td>S18</td>
<td>PCS05-2M</td>
<td>PCS06-2M</td>
</tr>
</tbody>
</table>

4 meter and 6 meter cord sets are also available. Consult factory.

Clamp On Style Sensors “J70 – J75”

Sensor clamps mount on the cylinder tie rods

Dovetail Style Sensors “E70 – E77”

Adhesive backed, double dovetail rail bonds firmly to cylinder body; dovetail sensors slide and lock into mating slots in the rail.

Continue on to step 3 if you want to add Tooling, Stop, or Shock Options.

Specifications subject to change without notice or incurring obligations
**Step 3: Tooling, Stop, & Shock Options**

To have a valid model number all (6) positions in this section must be filled in with a character.

<table>
<thead>
<tr>
<th>Tooling Option</th>
<th>Stop Options</th>
<th>Shock Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Code – RC Rear Clampbar</td>
<td>01 U1 02</td>
<td>A B C</td>
</tr>
<tr>
<td>Note: Specifying “T1” blank toolbar in “Step 1” also designates a blank rear toolbar (– RT)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code – RT Rear Toolbar</td>
<td>01 U1</td>
<td>Extend shocks not available</td>
</tr>
<tr>
<td>Code – BL Tall Blocks</td>
<td>01 U1 02 03</td>
<td>A B C D E F</td>
</tr>
<tr>
<td>CS is NOT Available on EZ250 or EZ375</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S type sensors not available on EZ500/625/750</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code – CS w/center support</td>
<td>01 U1 02 03</td>
<td>A B C D E F</td>
</tr>
<tr>
<td>Code – PL Toolplate</td>
<td>01 U1 02 03</td>
<td>A B C D E F</td>
</tr>
<tr>
<td>Code – PS Toolplate &amp; Ctr. Support</td>
<td>01 U1 02 03</td>
<td>A B C D E F</td>
</tr>
<tr>
<td>Code – TB Twin Beam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1018 CRS available at no additional cost</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Material is Aluminum*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code – SB Single Beam</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1018 CRS available at no additional cost</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard Material is Aluminum*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code – VB Vertical Shaft Mtg. Blocks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“B2” mounting bars</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VB is only available with MH1 or MH2 endcaps</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Code – VBB2 with mounting bars</td>
<td>03</td>
<td>D E F</td>
</tr>
</tbody>
</table>

---

*“B2” mounting bars*

**VB** is only available with MH1 or MH2 endcaps

---

**Step 3** Select a tooling option to adapt the slide to the application. Is stroke adjustability required? Select from four adjustable stop options. Are hydraulic shock absorbers needed? Standard mounting brackets are available for both Ace and Endine. You can order complete shock assemblies – or brackets only if you are furnishing the shocks.
Adjustable Stop Option Details
The Step 3 chart on the opposite page indicates what stops are available for each tooling option. A tooling option must be selected before a stop option can be specified.

**Code 00** — This code indicates no stops desired.

**Code 01** — Allows complete adjustment over the entire stroke length from full to zero stroke. Threaded rod (with two flange nuts serving as the stops) is fastened to cylinder endcap and passes thru a clearance hole in rear tooling.

**Code U1** — Reduces noise and provides an impact absorbing stop cushion. It is the same stop as Type "01" with a urethane washer slipped onto the threaded rod against the flange nut.

**Code 02** — Is a modification of Type "01" where a stop bolt is added for the extend stop. It positions both extend and retract adjustments next to each other at the back of the slide.

Provides easier, more accessible adjustment in cases where a tooling option would cover the extend flange nut in a Type "01" stop.

**Code 03** — Can only be used with "BL", "CS", "PL", "PS", or "VB" tooling options.

Uses stop bolts at each end. On applications where the front & rear tall blocks are fixed and the cylinder is a reciprocating carriage, this "03" option eliminates the threaded stop rod which otherwise would also be reciprocating and require special guarding.

---

**General shock notes:**
1) Shocks not available on EZ250 model.
2) Shocks not available on EZ375-MF3
3) 1/2”-20 thread shocks/brackets are used on EZ375, EZ500 & EZ625.
4) 1”-12 thread shocks/brackets are used on EZ750, EZ1000 & EZ1500.
“EZ” Series Linear Slides

MH Mounting Styles – MH1 (Thru Hole) – MH2 (Tapped Hole)

Top View

Bottom View

Ordering Examples:
EZ500-4.0-MH1D12 Specifies dowel hole/slots on bottom mounting surface (#1) and toolbar face (#2)
EZ500-4.0-MH1D3 Specifies dowel hole/slot on toolbar top (#3) only
EZ500-4.0-MH2 Specifies tapped hole mounting with no dowel hole/slots

MF Mounting Styles – MF1 (Front Flange) – MF2 (Rear Flange) – MF3 (Front & Rear Flange)

Ordering Examples:
EZ500-4.0-MF1 Specifies front flange mounting with no dowel hole/slots
EZ500-4.0-MF2D26 Specifies rear flange with dowel hole/slot on toolbar face (#2) and end cap mounting surface (#6)

“EZ” Series Dimensional Data

<table>
<thead>
<tr>
<th>Model</th>
<th>Bore</th>
<th>A</th>
<th>A1</th>
<th>B</th>
<th>B1</th>
<th>C</th>
<th>C1</th>
<th>D1</th>
<th>D2</th>
<th>E</th>
<th>E1</th>
<th>F</th>
<th>F1</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K1</th>
<th>K2</th>
<th>K3</th>
</tr>
</thead>
<tbody>
<tr>
<td>EZ250</td>
<td>1/2</td>
<td>1/4</td>
<td>.25</td>
<td>3.00</td>
<td>N/A</td>
<td>2.0000</td>
<td>1.75</td>
<td>N/A</td>
<td>N/A</td>
<td>1.25</td>
<td>N/A</td>
<td>.173</td>
<td>1.250</td>
<td>.75</td>
<td>.25</td>
<td>.50</td>
<td>2.75</td>
<td>3.75</td>
<td>3.38</td>
</tr>
<tr>
<td>EZ375</td>
<td>3/4</td>
<td>3/8</td>
<td>.38</td>
<td>4.50</td>
<td>2.25</td>
<td>2.0000</td>
<td>2.25</td>
<td>.968</td>
<td>.688</td>
<td>2.25</td>
<td>2.12</td>
<td>2.04</td>
<td>1.750</td>
<td>1.50</td>
<td>.38</td>
<td>.75</td>
<td>3.00</td>
<td>4.12</td>
<td>3.75</td>
</tr>
<tr>
<td>EZ500</td>
<td>1-1/8</td>
<td>1/2</td>
<td>.50</td>
<td>6.12</td>
<td>2.50</td>
<td>2.7500</td>
<td>3.00</td>
<td>1.437</td>
<td>.688</td>
<td>2.75</td>
<td>2.69</td>
<td>2.66</td>
<td>2.375</td>
<td>1.75</td>
<td>.50</td>
<td>1.00</td>
<td>4.00</td>
<td>5.50</td>
<td>5.00</td>
</tr>
<tr>
<td>EZ625</td>
<td>1-1/8</td>
<td>5/8</td>
<td>.50</td>
<td>6.12</td>
<td>2.50</td>
<td>3.2500</td>
<td>3.00</td>
<td>1.562</td>
<td>.688</td>
<td>2.75</td>
<td>2.88</td>
<td>2.66</td>
<td>2.375</td>
<td>1.75</td>
<td>.50</td>
<td>1.00</td>
<td>4.75</td>
<td>6.25</td>
<td>5.75</td>
</tr>
<tr>
<td>EZ1000</td>
<td>2-1/2</td>
<td></td>
<td>1.00</td>
<td>11.69</td>
<td>4.62</td>
<td>5.5000</td>
<td>6.00</td>
<td>2.062</td>
<td>1.062</td>
<td>5.12</td>
<td>5.19</td>
<td>.531</td>
<td>4.500</td>
<td>3.12</td>
<td>1.00</td>
<td>2.00</td>
<td>8.00</td>
<td>11.00</td>
<td>10.00</td>
</tr>
<tr>
<td>EZ1500</td>
<td>3-1/4</td>
<td>1-1/2</td>
<td>1.25</td>
<td>15.25</td>
<td>6.25</td>
<td>7.5000</td>
<td>8.00</td>
<td>3.062</td>
<td>1.187</td>
<td>7.25</td>
<td>6.38</td>
<td>.656</td>
<td>6.000</td>
<td>4.25</td>
<td>1.50</td>
<td>2.50</td>
<td>11.00</td>
<td>14.75</td>
<td>13.50</td>
</tr>
</tbody>
</table>
MV Side Tapped Mounting Styles
MV1 – (Ports as Shown)
MV2 – (Ports Opposite Side)

Ordering Examples:
EZ500-4.0-MV1 Specifies side tapped mounting
EZ500-4.0-MV2B1D4 Specifies ports opposite side, base mounting bars, and dowel hole/slot on mounting surface #4

FRBB – Floating Rear Bearing Block
MH1/MH2 Mounting Only

Notes:
1) Not available on EZ250 model
2) EZ1000 available with MH2 mounting only
3) Dowel Hole/Slot option in bearing block not available
4) Both bearing blocks must be fastened to a common baseplate to form a rigid assembly

Ordering Example:
EZ500-5.0-MH2-FRBB (D3.5)
**EZ** Series Linear Slides 3-Position Slides

**EZ375 Tandem Cylinder Model**

FOR ADJUSTABLE STOP OPTION

\[ 7.12 + (2 \times \text{Stroke of Primary Cylinder}) + \text{Stroke of Secondary Cylinder} \]

FOR ADJUSTABLE STOP OPTION

\[ 2.25 + \text{Stroke of Primary Cyl.} + 1.50 + \text{Stroke of Primary Cylinder} \]

\[ .75 + \text{Stroke of Secondary Cyl.} + 1.00 + .75 \]

\[ 1.00 + .49 \]

Note 1

FOR ADJUSTABLE STOP OPTION

\[ 4.50 + (2 \times \text{Stroke of Primary Cyl.}) ] [\text{Without adjustable stops}] \]

Note: Port centerline is .02 to the rear of mounting hole centerline

3/8" Dia. Shafts

**EZ500, EZ625, EZ750, EZ1000, EZ1500 Tandem Cylinder Models**

FOR ADJUSTABLE STOP OPTION

\[ BB + (2 \times \text{Stroke of Primary Cylinder}) + \text{Stroke of Secondary Cylinder} \]

Note 1: Same as stroke of primary cylinder. (Adjustable stop package allows adjustment of end-of-stroke positions only. Mid-position is fixed.)

**“EZ” 3-Position Tandem Cylinder Dimensional Data**

<table>
<thead>
<tr>
<th>Model</th>
<th>Bore</th>
<th>A</th>
<th>B</th>
<th>BB</th>
<th>E</th>
<th>FF</th>
<th>G</th>
<th>H</th>
<th>HH</th>
<th>JJ</th>
<th>K</th>
<th>LL</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>EZ500</td>
<td>1-1/8</td>
<td>1/2</td>
<td>6.12</td>
<td>7.50</td>
<td>2.75</td>
<td>1.50</td>
<td>1.75</td>
<td>.50</td>
<td>.75</td>
<td>1.00</td>
<td>.75</td>
<td>1.47</td>
<td>1/8 NPT</td>
</tr>
<tr>
<td>EZ625</td>
<td>1-1/8</td>
<td>5/8</td>
<td>6.12</td>
<td>7.50</td>
<td>2.75</td>
<td>1.50</td>
<td>1.75</td>
<td>.50</td>
<td>.75</td>
<td>1.00</td>
<td>.75</td>
<td>1.47</td>
<td>1/8 NPT</td>
</tr>
<tr>
<td>EZ750</td>
<td>2</td>
<td>3/4</td>
<td>8.50</td>
<td>10.62</td>
<td>3.62</td>
<td>2.25</td>
<td>2.375</td>
<td>.62</td>
<td>1.12</td>
<td>1.00</td>
<td>1.16</td>
<td>2.44</td>
<td>1/4 NPT</td>
</tr>
<tr>
<td>EZ1000</td>
<td>2-1/2</td>
<td>1</td>
<td>11.69</td>
<td>14.31</td>
<td>5.12</td>
<td>2.75</td>
<td>3.125</td>
<td>1.00</td>
<td>1.12</td>
<td>1.50</td>
<td>1.56</td>
<td>2.94</td>
<td>1/4 NPT</td>
</tr>
<tr>
<td>EZ1500</td>
<td>3-1/4</td>
<td>1-1/2</td>
<td>15.25</td>
<td>18.56</td>
<td>7.25</td>
<td>3.25</td>
<td>4.250</td>
<td>1.50</td>
<td>1.25</td>
<td>2.00</td>
<td>2.06</td>
<td>3.94</td>
<td>3/8 NPT</td>
</tr>
</tbody>
</table>
Two-axis motion where space is limited

"EZ" Series Thin Parts Placers

The thin parts placer uses a transition plate to join two "EZ" Series slides together to form a narrow profile pick-and-place unit. This option used in conjunction with the MV1 or MV2 mounting styles is ideal for applications where a conventional "EZP" pick-and-place unit will not fit tight space limitations.

Listed below are standard model combinations joining two standard "EZ" models together as shown in the dimensional drawing. Other combinations can be made. Please call for details.

**Tooling option "~SB"**; the single beam overhead support option, can be used with the thin parts placer to increase stability and load capacity on long stroke applications.

How to Order:
Drawing and chart show transition plates used to join "EZ" Series slides to form a Thin Parts Placer. Order by designating the Plate Number for the combination desired, followed by a dash (–) and stroke length of the vertical motion slide.

*Plate ordering example: TPL 38/25 – 4.0*

*Note: Catalog number is for plate only. Order slides and their accessories separately.*

<table>
<thead>
<tr>
<th>Plate No.</th>
<th>38/25</th>
<th>50/25</th>
<th>50/38</th>
<th>62/25</th>
<th>62/38</th>
<th>62/50</th>
<th>75/38</th>
<th>75/50</th>
<th>75/62</th>
<th>100/50</th>
<th>100/62</th>
<th>100/75</th>
<th>150/75</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal Motion Slide</td>
<td>EZ375</td>
<td>EZ500</td>
<td>EZ500</td>
<td>EZ625</td>
<td>EZ625</td>
<td>EZ625</td>
<td>EZ750</td>
<td>EZ750</td>
<td>EZ750</td>
<td>EZ1000</td>
<td>EZ1000</td>
<td>EZ1000</td>
<td>EZ1500</td>
</tr>
<tr>
<td>Vertical Motion Slide</td>
<td>EZ250</td>
<td>EZ250</td>
<td>EZ375</td>
<td>EZ250</td>
<td>EZ375</td>
<td>EZ250</td>
<td>EZ375</td>
<td>EZ500</td>
<td>EZ500</td>
<td>EZ625</td>
<td>EZ625</td>
<td>EZ625</td>
<td>EZ750</td>
</tr>
<tr>
<td>A</td>
<td>8.38</td>
<td>10.00</td>
<td>9.90</td>
<td>10.00</td>
<td>9.90</td>
<td>11.21</td>
<td>12.28</td>
<td>13.59</td>
<td>14.21</td>
<td>16.78</td>
<td>17.41</td>
<td>18.85</td>
<td>22.41</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
<td>3.00</td>
<td>4.50</td>
<td>3.00</td>
<td>4.50</td>
<td>6.12</td>
<td>4.50</td>
<td>6.12</td>
<td>6.12</td>
<td>6.12</td>
<td>6.12</td>
<td>8.50</td>
<td>8.50</td>
</tr>
<tr>
<td>C</td>
<td>4.12</td>
<td>4.50</td>
<td>4.28</td>
<td>4.50</td>
<td>4.28</td>
<td>5.09</td>
<td>5.16</td>
<td>5.96</td>
<td>6.21</td>
<td>6.84</td>
<td>7.09</td>
<td>7.71</td>
<td>8.71</td>
</tr>
<tr>
<td>D</td>
<td>1.12</td>
<td>1.12</td>
<td>.78</td>
<td>1.12</td>
<td>.78</td>
<td>1.09</td>
<td>.78</td>
<td>1.09</td>
<td>.97</td>
<td>1.09</td>
<td>.97</td>
<td>.78</td>
<td>.78</td>
</tr>
<tr>
<td>E</td>
<td>.25</td>
<td>.25</td>
<td>.25</td>
<td>.25</td>
<td>.38</td>
<td>.38</td>
<td>.50</td>
<td>.50</td>
<td>.50</td>
<td>.50</td>
<td>.50</td>
<td>.75</td>
<td>.75</td>
</tr>
<tr>
<td>F</td>
<td>.00</td>
<td>.13</td>
<td>.13</td>
<td>.13</td>
<td>.25</td>
<td>.25</td>
<td>.25</td>
<td>.25</td>
<td>.25</td>
<td>.25</td>
<td>.25</td>
<td>.00</td>
<td>.00</td>
</tr>
</tbody>
</table>
“EZ” Series Linear Slides

Proximity Switch for EZ250 Models
MH1 / MH2 Mounting Styles

Note: For all EZ250 models
- Right angle quick disconnect cordsets are provided with S02, S04, S06, S08 – and "M" mid-position prox is not available.

Proximity Switch for EZ375 Models
MH1 / MH2 / MV1 / MV2 / MF1 / MF2 / MF3 Mounting Styles

Note: For all EZ375 models
- Right angle quick disconnect cordsets are provided with S02, S04, S06, S08 – and "M" mid-position prox is not available.

Proximity Switch for EZ500 & EZ625 Models
MH1 / MH2 / MV1 / MV2 / MF1 / MF2 / MF3 Mounting Styles

Pre-wired style
(S01, S03, S05, S07, S40, S41, S42)

Quick disconnect style S02, S04, S06, S08, S12, S14, S16, S18, S45, S46, S47

Extends prox bracket
Dog – actuates extend, retract and mid-position prox and optional retract shock absorber
Mid-position prox and bracket
Straight "Quick-connect" cordsets provided with S02, S04, S06, S08
**Proximity Switch, Snap Action & Air Pilot Switch Options**

Proximity Switch for EZ750, EZ1000 & EZ1500 Models

*MH1 / MH2 / MV1 / MV2 / MF1 / MF2 / MF3 Mounting Styles*

![Proximity Switch Locations](image)

Prox switch locations for EZ1500 when dual shock absorbers are used.

Snap Action Mechanical Switch for EZ500, EZ625, EZ750, EZ1000 & EZ1500

Note: Not available on EZ500 with MV1 mounting style
Not available on EZ625 with MV1B1 mounting style

Air Pilot Switch for EZ500, EZ625, EZ750, EZ1000 & EZ1500

Note: Not available on EZ500 with MV1 mounting style
Not available on EZ625 with MV1B1 mounting style

---

**Specifications subject to change without notice or incurring obligations**
"EZ" Series Linear Slides

Code “–RC” Rear Clampbar for EZ250 Model

Code “–RC” Rear Clampbar for EZ375 Model

Code “–RC” Rear Clampbar for EZ1500 Model

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F1</th>
<th>F2</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>JJ</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>NN</th>
</tr>
</thead>
<tbody>
<tr>
<td>EZ250</td>
<td>.38</td>
<td>.50</td>
<td>.62</td>
<td>N/A</td>
<td>N/A</td>
<td>#10-24</td>
<td>N/A</td>
<td>.13</td>
<td>.81</td>
<td>.94</td>
<td>.69</td>
<td>2.94</td>
<td>2.00</td>
<td>.25</td>
<td>1.25</td>
<td></td>
</tr>
<tr>
<td>EZ375</td>
<td>.50</td>
<td>.75</td>
<td>.53</td>
<td>N/A</td>
<td>1/2-20</td>
<td>#10-24</td>
<td>.75</td>
<td>.13</td>
<td>.81</td>
<td>1.06</td>
<td>1.25</td>
<td>4.38</td>
<td>3.00</td>
<td>.31</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>EZ500</td>
<td>.62</td>
<td>1.00</td>
<td>.86</td>
<td>1/2-20</td>
<td>1/4-20</td>
<td>1/4-20</td>
<td>.81</td>
<td>.25</td>
<td>1.12</td>
<td>1.94</td>
<td>1.25</td>
<td>5.88</td>
<td>4.00</td>
<td>.38</td>
<td>1.75</td>
<td></td>
</tr>
<tr>
<td>EZ625</td>
<td>.62</td>
<td>1.00</td>
<td>.88</td>
<td>.75</td>
<td>1/2-20</td>
<td>1/4-20</td>
<td>.81</td>
<td>.25</td>
<td>1.12</td>
<td>1.94</td>
<td>1.25</td>
<td>5.88</td>
<td>4.00</td>
<td>.38</td>
<td>1.75</td>
<td></td>
</tr>
<tr>
<td>EZ750</td>
<td>1.25</td>
<td>1.50</td>
<td>1.38</td>
<td>1.14</td>
<td>3/8-16</td>
<td>1.25</td>
<td>.38</td>
<td>2.44</td>
<td>2.69</td>
<td>1.31</td>
<td>8.25</td>
<td>5.00</td>
<td>.50</td>
<td>2.75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EZ1000</td>
<td>2.00</td>
<td>2.00</td>
<td>1.62</td>
<td>1.41</td>
<td>1.0-12</td>
<td>1.0-12</td>
<td>1.31</td>
<td>.50</td>
<td>3.56</td>
<td>3.88</td>
<td>1.03</td>
<td>11.44</td>
<td>6.00</td>
<td>.75</td>
<td>3.25</td>
<td></td>
</tr>
<tr>
<td>EZ1500</td>
<td>2.50</td>
<td>2.50</td>
<td>2.12</td>
<td>1.88</td>
<td>1.0-12</td>
<td>5/8-18</td>
<td>1.38</td>
<td>.50</td>
<td>4.50</td>
<td>4.81</td>
<td>1.22</td>
<td>15.00</td>
<td>6.00</td>
<td>1.00</td>
<td>4.25</td>
<td></td>
</tr>
</tbody>
</table>
Codes “–RT” Rear Toolbar (all models)

Codes “–BL, –CS, –PL & –PS”
“BL” Tall Blocks (all models)
“CS” Tall Blocks w/Center Support (note 1)
“PL” Toolplate (all models)
“PS” Toolplate & Center Support (note 1)

Note 1 – Not available on EZ250 and EZ375 Models

### Table of Dimensions

<table>
<thead>
<tr>
<th>O</th>
<th>P</th>
<th>Q</th>
<th>R</th>
<th>S</th>
<th>T</th>
<th>U</th>
<th>V</th>
<th>W1</th>
<th>W2</th>
<th>X</th>
<th>Y</th>
<th>YY</th>
<th>Z</th>
<th>ZZ</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5</td>
<td>1.38</td>
<td>.88</td>
<td>.50</td>
<td>.38</td>
<td>2.50</td>
<td>.25</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>.75</td>
<td>N/A</td>
<td>N/A</td>
<td>#8-32</td>
<td>.38</td>
<td>EZ250</td>
</tr>
<tr>
<td>2.25</td>
<td>2.00</td>
<td>1.25</td>
<td>.75</td>
<td>.50</td>
<td>3.75</td>
<td>.38</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>1.00</td>
<td>N/A</td>
<td>N/A</td>
<td>#10-24</td>
<td>.50</td>
<td>EZ375</td>
</tr>
<tr>
<td>2.75</td>
<td>2.50</td>
<td>1.50</td>
<td>1.00</td>
<td>1.00</td>
<td>4.88</td>
<td>.50</td>
<td>3.25</td>
<td>2.88</td>
<td>2.88</td>
<td>1.25</td>
<td>#8-32</td>
<td>.31</td>
<td>1/4-20</td>
<td>.62</td>
<td>EZ500</td>
</tr>
<tr>
<td>2.75</td>
<td>2.50</td>
<td>1.50</td>
<td>1.00</td>
<td>1.00</td>
<td>4.88</td>
<td>.50</td>
<td>3.25</td>
<td>2.88</td>
<td>2.88</td>
<td>1.25</td>
<td>#8-32</td>
<td>.38</td>
<td>1/4-20</td>
<td>.62</td>
<td>EZ625</td>
</tr>
<tr>
<td>3.88</td>
<td>3.38</td>
<td>2.25</td>
<td>1.50</td>
<td>1.25</td>
<td>6.88</td>
<td>.75</td>
<td>4.25</td>
<td>4.06</td>
<td>4.06</td>
<td>1.38</td>
<td>1/4-20</td>
<td>.50</td>
<td>3/8-16</td>
<td>.75</td>
<td>EZ750</td>
</tr>
<tr>
<td>4.50</td>
<td>4.00</td>
<td>2.75</td>
<td>2.00</td>
<td>1.00</td>
<td>9.44</td>
<td>1.00</td>
<td>5.25</td>
<td>5.05</td>
<td>5.59</td>
<td>1.50</td>
<td>5/16-18</td>
<td>.40</td>
<td>1/2-13</td>
<td>1.25</td>
<td>EZ1000</td>
</tr>
<tr>
<td>5.75</td>
<td>5.00</td>
<td>3.25</td>
<td>2.50</td>
<td>1.25</td>
<td>12.50</td>
<td>1.75</td>
<td>6.88</td>
<td>6.88</td>
<td>1.75</td>
<td>3/8-16</td>
<td>.56</td>
<td>5/8-11</td>
<td>1.75</td>
<td>EZ1500</td>
<td></td>
</tr>
</tbody>
</table>

Specifications subject to change without notice or incurring obligations
“EZ” Series Linear Slides

Code “–TB” Twin Beam (Available on EZ625 and larger models)

Note 1:
On “EZ625” models only, this dimension is 1.0" longer than standard “EZ625” models without the “TB” option.

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>MM</th>
<th>NN</th>
</tr>
</thead>
<tbody>
<tr>
<td>EZ625</td>
<td>6.87</td>
<td>1.00</td>
<td>1.00</td>
<td>4.25</td>
<td>2.00</td>
<td>2.75</td>
<td>3.75</td>
<td>.75</td>
<td>.750</td>
<td>1.750</td>
<td>1/4-20</td>
<td>.75</td>
<td>3/16</td>
<td>.16</td>
</tr>
<tr>
<td>EZ750</td>
<td>8.31</td>
<td>1.00</td>
<td>1.25</td>
<td>6.09</td>
<td>2.88</td>
<td>2.38</td>
<td>5.12</td>
<td>1.25</td>
<td>1.000</td>
<td>2.750</td>
<td>3/8-16</td>
<td>1.00</td>
<td>1/4</td>
<td>.25</td>
</tr>
<tr>
<td>EZ1000</td>
<td>11.44</td>
<td>1.25</td>
<td>1.50</td>
<td>7.44</td>
<td>3.75</td>
<td>3.13</td>
<td>6.00</td>
<td>1.50</td>
<td>1.125</td>
<td>3.250</td>
<td>1/2-13</td>
<td>1.50</td>
<td>5/16</td>
<td>.37</td>
</tr>
<tr>
<td>EZ1500</td>
<td>15.00</td>
<td>1.50</td>
<td>2.00</td>
<td>10.13</td>
<td>4.75</td>
<td>4.25</td>
<td>7.75</td>
<td>2.00</td>
<td>1.375</td>
<td>4.250</td>
<td>5/8-11</td>
<td>1.50</td>
<td>3/8</td>
<td>.43</td>
</tr>
</tbody>
</table>
**Tooling, Stop and Shock Option Dimensions**

**Code “–SB” Single Beam (Available on “EZ625” and larger models)**

Here an EZ750 Model with a single beam (shown with MV1 mounting style, "02" adjustable stops, "B1" mounting bars, shock absorbers and proximity switches) is joined by a simple adapter plate to a vertical motion SE Series Slide to form a pick & place device.

An SPG 200, parallel jaw gripper is attached to the toolbar of the vertical motion slide.

Note 2: On EZ625 model only, this dimension is 1.0" longer than standard EZ625 without the “SB” option.

<table>
<thead>
<tr>
<th>Model</th>
<th>N</th>
<th>P</th>
<th>R</th>
<th>S</th>
<th>T</th>
<th>W</th>
<th>Y</th>
<th>Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>EZ625</td>
<td>2.750</td>
<td>2.000</td>
<td>6.50</td>
<td>.500</td>
<td>1.500</td>
<td>1.750</td>
<td>6.50</td>
<td>1/4-20</td>
</tr>
<tr>
<td>EZ750</td>
<td>2.375</td>
<td>2.875</td>
<td>8.31</td>
<td>.750</td>
<td>1.500</td>
<td>2.750</td>
<td>9.00</td>
<td>3/8-16</td>
</tr>
<tr>
<td>EZ1000</td>
<td>3.125</td>
<td>3.750</td>
<td>11.44</td>
<td>1.000</td>
<td>2.000</td>
<td>3.250</td>
<td>11.00</td>
<td>1/2-13</td>
</tr>
<tr>
<td>EZ1500</td>
<td>4.250</td>
<td>4.750</td>
<td>15.00</td>
<td>1.250</td>
<td>2.500</td>
<td>4.250</td>
<td>14.12</td>
<td>5/8-11</td>
</tr>
</tbody>
</table>
“EZ” Series Linear Slides

Code “–VB” Vertical Shaft Mounting Blocks

Here at the left an EZ625 Model with “VB” vertical mounting blocks (shown with "03" stop bolts, "B2" mounting bars, and shock absorbers) is joined by a simple adapter plate to a smaller SE Slide to form a two-axis motion device similar to the lift-and-carry mechanism shown on the opposite page.

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>EZ250</td>
<td>.38</td>
<td>.50</td>
<td>2.38</td>
<td>1.875</td>
<td>.500</td>
<td>.173</td>
<td>.406</td>
<td>.531</td>
<td>#8-32 x .38</td>
<td>.88</td>
<td>2.50</td>
<td>N/A</td>
</tr>
<tr>
<td>EZ375</td>
<td>.38</td>
<td>.75</td>
<td>3.00</td>
<td>2.500</td>
<td>.625</td>
<td>.204</td>
<td>.531</td>
<td>.812</td>
<td>#10-24 x .50</td>
<td>1.25</td>
<td>3.75</td>
<td>N/A</td>
</tr>
<tr>
<td>EZ500</td>
<td>.50</td>
<td>1.00</td>
<td>3.88</td>
<td>3.250</td>
<td>.875</td>
<td>.266</td>
<td>.750</td>
<td>1.000</td>
<td>1/4-20 x .62</td>
<td>1.50</td>
<td>4.88</td>
<td>N/A</td>
</tr>
<tr>
<td>EZ625</td>
<td>.50</td>
<td>1.00</td>
<td>3.88</td>
<td>3.250</td>
<td>.875</td>
<td>.266</td>
<td>.750</td>
<td>1.000</td>
<td>1/4-20 x .62</td>
<td>1.50</td>
<td>4.88</td>
<td>N/A</td>
</tr>
<tr>
<td>EZ750</td>
<td>.75</td>
<td>1.50</td>
<td>5.38</td>
<td>4.375</td>
<td>1.250</td>
<td>.406</td>
<td>.625</td>
<td>1.625</td>
<td>5/16-18 x .75</td>
<td>2.12</td>
<td>6.94</td>
<td>.812</td>
</tr>
<tr>
<td>EZ1000</td>
<td>1.00</td>
<td>2.00</td>
<td>7.50</td>
<td>6.000</td>
<td>2.000</td>
<td>.531</td>
<td>.750</td>
<td>1.875</td>
<td>3/8-16 x 1.00</td>
<td>2.75</td>
<td>9.44</td>
<td>.937</td>
</tr>
<tr>
<td>EZ1500</td>
<td>1.25</td>
<td>2.50</td>
<td>9.00</td>
<td>7.000</td>
<td>2.250</td>
<td>.656</td>
<td>1.250</td>
<td>2.000</td>
<td>1/2-13 x 1.25</td>
<td>3.50</td>
<td>12.50</td>
<td>1.000</td>
</tr>
</tbody>
</table>
Here are a few ways standard EZ Series Slides can be custom configured to precisely fit your application.

**Two Slides on a Common Shaft**

An electrical test is performed by bringing check probes in from both sides to contact the terminal screws on a transformer. A pair of guide shafts extend through a modified toolbar positioned in the center and supporting two individual slides. Both of the slide's piston rods are attached to the center toolbar. Depending on the transformer model tested, either the left or right (or both) sets of check probes can be activated to contact the product.

**Lift and Carry Mechanism**

One EZ Series Slide joined by a simple adapter plate to a second, smaller EZ Slide forms a two-axis motion device that carries a "comb" which engages parts in an overhead feeder track. The parts are lifted slightly so that work can be performed on them (assembly, checking, ink branding, etc.). The horizontal motion shuttles the parts forward and pushes a part off the end of the track. Next the vertical unit retracts, lowering the "comb" while the horizontal unit returns ready to repeat the cycle.

**Tandem Cylinder Pick & Place**

This pick & place application features a three-position tandem cylinder on the vertical motion allowing the track fed parts to be picked up at one level and placed into the nest on the dial at a lower level. ➊ is retract position for tandem cylinder; ➋ is mid position; ➌ is extend position.

**Pallet Lift Station**

An EZ Series Slide with front flange mounting (MF1) used as a pallet lift mechanism on a conveyor type assembly system. Extra length guide shafts extend through the slide's toolbar and act as locating dowels that engage pallet bushings to provide precise pallet positioning.
### “EZ” Series Linear Slides

#### Step 1

Indicate “EZ” series.

Select model size based on guide shaft dia.

Select a stroke (Special strokes also available)

#### Model | Guide Shaft Diameter | Bore
---|---|---
250 | 1/4" | 1/2"
375 | 3/8" | 3/4"
500 | 1/2" | 1-1/8"
625 | 5/8" | 1-1/8"
750 | 3/4" | 2"
1000 | 1" | 2-1/2"
1500 | 1-1/2" | 3-1/4"

#### Mounting Styles

<table>
<thead>
<tr>
<th>Model</th>
<th>Standard Stroke Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>EZ250</td>
<td>1/2&quot; to 4&quot; by 1/2&quot; increments</td>
</tr>
<tr>
<td>EZ375</td>
<td>1&quot; to 6&quot; by 1&quot; increments</td>
</tr>
<tr>
<td>EZ500</td>
<td>1&quot; to 10&quot; by 1&quot; increments</td>
</tr>
<tr>
<td>EZ625</td>
<td>1&quot; to 10&quot; by 1&quot; increments</td>
</tr>
<tr>
<td>EZ750</td>
<td>1&quot; to 6&quot; by 1&quot; increments</td>
</tr>
<tr>
<td>EZ1000</td>
<td>1&quot; to 6&quot; by 1&quot; increments</td>
</tr>
<tr>
<td>EZ1500</td>
<td>2&quot; to 30&quot; by 2&quot; increments</td>
</tr>
</tbody>
</table>

### Integral Options

| D | Dowel Hole and Slot Specify Surface Location(s) 1, 2, 3, 4, or 6 in box(es) |
| H | Hydraulic Cylinder Seals |
| V | Viton Cylinder Seals |

### Bearing Options

| W | Rulon® Sleeve Bearings |
| X | Duralon® Sleeve Bearings |

### Guide Shaft Options

| Y | Hollow Guide Shafts |
| Z | Stainless Steel Guide Shafts |

### Toolbars

- **T1** = Blank Toolbar
- **T2** = Toolbar for Model EZ375 to attach an EZ375
- **T3** = Toolbar for Model EZ500 to attach an SE500 or an EZ500
- **T4** = Toolbar for Model EZ1000 to attach an SE500, EZ500, SE750 or EZ750
How to Order Summary

Step 2
– S03B

Sensor Options

S000 – Indicates NO SENSORS desired

Note: Indicate sensor location in the box ( ).
E= Extend, R=Retract, B=Both Extend & Retract, M=3 Sensors

S01 □ thru S18 □
12mm Prox Switch w/Brackets & Actuators
– Choose desired electrical characteristics
– Choose pre-wired or quick disconnect
with or without cord set

S40 □ thru S47 □
Prox Switch Brackets & Actuators Only,
no Switches. – Choose 12mm, 8mm, or 5mm
S50 □, S51 □ (E, R, or B only)
Snap Action Mechanical Switches
– Choose pre-wired or with conduit fitting

S60 □ (E, R, or B only)
Air Pilot Switch

J70 □ thru J75 □ (Not available on EZ250)
Magnetic Piston and Clamp-on Sensors.
– Choose reed or electronic (PNP or NPN)
– Choose pre-wired or quick disconnect
with cordset
Single sensor – 1” stroke min.
Dual sensors – 2” stroke min.

J800
Magnetic Piston Only, No Sensors

E70 □ thru E77 □
Magnetic Piston & Dovetail Style Sensors
– Choose reed or electronic (PNP or NPN)
– Choose prewired or quick disconnect
with cordset.
Requires 1” or longer stroke. Reed switches
not available on EZ2250 or EZ375.

E800
Magnetic Piston & Dovetail Mounting Rail
(attached) only, no sensors. Requires 1”
or longer stroke

Step 3
–RC 01 AB

Select Tooling Options

Tooling Options
RC – Rear Clampbar
RT – Rear Toolbar
BL – Tall Blocks
CS – Tall Blocks w/Center Support
PL – Toolplate
PS – Toolplate with Center Support
TB – Twin Beam
SB – Single Beam
VB – Vertical Shaft
VBB2 – Vertical Shaft Mounting Blocks

Select Stop Option

Stop Options
00 – No stops desired
01 – Threaded Rod with Flange Nuts
U1 – 01 Stop with Urethane Washers
02 – Threaded Rod with Retract Flange Nut
and an Extend Stop Bolt
03 – Extend and Retract Stop Bolts

Select Shock Option

Shock Options
N0 – Indicates NO SHOCKS desired

Specify E, R, or B in box ( ).
A □ – Ace Shocks
B □ – Enidine Shocks
C □ – Brackets and actuators only

Alternate Location
D □ – Ace Shocks
E □ – Enidine Shocks
F □ – Brackets and actuators only

Dual Shock Options for Model EZ1500 only
AX □ – Ace Shocks
BX □ – Enidine Shocks
CX □ – Brackets and actuators only

Alternate Location
DX □ – Ace Shocks
EX □ – Enidine Shocks
FX □ – Brackets and actuators only
**EZP5025**

**Cylinder Endcaps**
Clear anodized aluminum with precision machined mounting surface

**Choice of endcap mounting styles**
- Code – MH1: Thru-hole mounting (shown)
- Code – MH2: Bottom tapped mounting hole
- Code – MF1/MF2/MF3: Flange mount styles
- Code – MV1/MV2: Side tapped hole mounting

**“H01” Adjustable stops**

**Optional Dowel Hole/Slot**
Code – D
Optional slip fit dowel holes and slip fit dowel slots allow for repeatably precise slide mounting and/or attachment of end tooling. Option may be specified at any of the four surface locations (1, 2, 4 or 6) listed here.
- #1 – MH1/MH2 end cap mounting surface (bottom mounting surface)
- #2 – Toolbar bottom
- #4 – MV1/MV2 end cap mounting surface (side mounting surface)
- #6 – MF1/MF2/MF3 end cap mounting surface (flange face)

**VERTICAL MOTION**
Compact “TS” Style slide (shown with “V04” adjustable downstop)

**HORIZONTAL MOTION**
Same component parts as an EZ500 slide. (shown with “H01” adjustable stops)

**Toolbar**
Clear anodized aluminum, machined bottom & front for squareness. Bottom mounting surface features 4 tapped mounting holes, plus c bores at top for thru hole mounting. Front face has 2 tapped mounting holes. Optional slip fit dowel hole and slot (bottom surface only) assure repeatably precise tooling attachments. Code – T1: Optional blank toolbar (no mounting holes)

---

**Engineering Data**

**EZP5025 Specifications**

<table>
<thead>
<tr>
<th>Guide Shaft Diameter</th>
<th>Horizontal</th>
<th>Vertical</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2”</td>
<td>1/4”</td>
<td></td>
</tr>
<tr>
<td>Bore</td>
<td>1-1/8”</td>
<td>1-1/8”</td>
</tr>
<tr>
<td>Power Factor Extend</td>
<td>.99</td>
<td>.90</td>
</tr>
<tr>
<td>Power Factor Retract</td>
<td>.88</td>
<td>.90</td>
</tr>
<tr>
<td>Standard Strokes</td>
<td>1” thru 10”</td>
<td>1” thru 5”</td>
</tr>
<tr>
<td>(Specials available)</td>
<td>by 1” incr.</td>
<td>by 1” incr.</td>
</tr>
<tr>
<td>Add per inch of stroke</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SAFE LOADS (lbs.)**

<table>
<thead>
<tr>
<th>Vertical Stroke</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal</td>
<td>1.0</td>
<td>1.6</td>
<td>3.8</td>
<td>8.7</td>
<td>9.9</td>
<td>9.9</td>
<td>8.0</td>
<td>6.0</td>
<td>4.0</td>
<td>1.8</td>
</tr>
<tr>
<td>Load Sizing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Max Operating Pressure:** 150 psi

**Output Force:**

\[ \text{Pounds} = \text{Pressure} \times \text{Power Factor} \]

**Speed:**

Speeds up to 24 inches per second are obtainable by utilizing an optional stop package in conjunction with urethane bumpers or hydraulic shocks. Moderate reciprocating loads can be safely cycled up to 12 inches per second by utilizing an adjustable stop option without bumpers or shocks. Except for light loads and moderate speeds, operating EZP Pick & Place units without an adjustable stop option is not recommended. Moderate to heavy loads should not be stopped by bottoming the piston against the end cap.

**Important note:**

Most failures are caused by severe, damaging impact loads (which act like a
“slide hammer” on the piston rod). Proper model sizing, use of adjustable stops and/or shocks/bumpers, and operating the unit at the lowest possible air pressure will insure successful operation and long product life.

Accuracy: EZP Pick & Place units feature linear ball bearings for near play free operation. Each bearing has .0005" max “play” or less. The built-in air cylinder will stroke +.015" / –.000" of nominal stroke. Stroke repeatability is ±.001". Guide shaft straightness tolerance is .0015" per foot of shaft.

Bearings in the EZP Pick & Place units are housed in the cylinder end caps. As the stroke increases, the pairs of bearings become spaced further apart, increasing bearing load capacity.
"EZP" Series Pick & Place Units – Order Guide

Step 1: Basic Pick & Place Model


<table>
<thead>
<tr>
<th>Model</th>
<th>Motion</th>
<th>Guide Shaft Diameter</th>
<th>Bore</th>
<th>Standard Stroke Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>EZP5025</td>
<td>Horizontal</td>
<td>1/2&quot;</td>
<td>1-1/8&quot;</td>
<td>1&quot; to 10&quot; by 1&quot; increments</td>
</tr>
<tr>
<td>Vertical</td>
<td>1/4&quot;</td>
<td>1-1/8&quot;</td>
<td>1&quot; to 5&quot; by 1&quot; increments</td>
<td></td>
</tr>
<tr>
<td>EZP7550</td>
<td>Horizontal</td>
<td>3/4&quot;</td>
<td>2&quot;</td>
<td>1&quot; to 6&quot; by 1&quot; increments</td>
</tr>
<tr>
<td>Vertical</td>
<td>1/2&quot;</td>
<td>1-1/8&quot;</td>
<td>1&quot; to 8&quot; by 2&quot; increments</td>
<td></td>
</tr>
</tbody>
</table>

3-Position Tandem Cylinder Pick & Place Units

(Tandem cylinder NOT available on vertical motion of EZP5025)

Ordering example:

```
EZP7550 – 6 – 4H 2 – 1V – MH2 – S03M S03E – PLH02ABV03DB
```

Sensor locations: use “M” in the Box (□) if mid-position sensor is required (3 sensors). - Note: “M” (mid-position) is not available with “S50, S51, S60” sensors. All sensors are located on the primary cylinder, which also contains the magnetic piston band for “E” & “J” options. Mid-position “M” prox sensor is not available on vertical motion of EZP5025 models with prox options (consider using “E” or “J” style sensors if mid-position sensing is required.

Port Locations: Top ports are standard on the horizontal motion on all tandem models. The horizontal motion of the EZP5025 Pick & Place is available with a top and bottom port combination as a “special” order at no additional charge. Consult factory.

Optional “B1” Mounting Bars

For use with MV1 or MV2 Mounting style

To Order with EZP Unit:
Add “B1” to mounting style of horizontal motion.

Example:

```
EZP7550 – 5H 2V – MV1B1
```
Building the Model Number in 3 Easy Steps

**Step 2** Please turn the page

---

**Integral Options**

**D** Dowel Hole & Slot Code & Location(s)
Available on any of the mounting surfaces shown on page 60 & 61. **Example:** D12 specifies dowel holes/slots on bottom surface of bearing block and on bottom surface of toolbar.

**H** Hydraulic Cylinder Seals (150 psi max.)

**V** Viton Cylinder Seals

**Bearing Options** Sleeve Bearings can be substituted for standard linear ball bearings.

**W** Rulon® Shaft Bearings

**X** Duralon® Shaft Bearings

**Guide Shaft Options**

**Y** Hollow Guide Shafts
Case hardened & ground #52100 tubular steel available on EZP7550 horizontal motion.

**Z** Stainless Steel Guide Shafts: shaft material compatible with bearing type will be provided.

<table>
<thead>
<tr>
<th>Bearing Type</th>
<th>Shaft Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Std. linear ball brgs.</td>
<td>440C hardened &amp; ground SS</td>
</tr>
<tr>
<td>Option “W” Rulon® sleeve</td>
<td>Hard chrome plated SS*</td>
</tr>
<tr>
<td>Option “X” Duralon® sleeve</td>
<td>Hard chrome plated SS*</td>
</tr>
</tbody>
</table>

*Note: Except EZP5025 vertical motion will be 440C material

---

**Toolbar Options**

**Blank toolbar** (no holes) is available as a no cost substitution.

**Code**
- **T1** Blank toolbar
  Ordering example: EZP7550-5H2V-MH2T1

**Grippers**
EZP5025 and EZP7550 model pick & place units are available with transition plate or toolbar that will directly mount a Fabco-Air “SPG” Series parallel gripper (see catalog #GR-7 for gripper details). Mounting details are shown on page 71 of this catalog. Specify toolbar code here; order gripper separately.

**Model EZP5025**

**Code**
- **T10** Transition plate for “SPG 100” gripper
- **T20** Transition plate for “SPG 200” gripper
- **T30** Transition plate for “SPG 300” gripper

**Model EZP7550**

**Code**
- **T20** Toolbar to mount “SPG 200” gripper
- **T30** Toolbar to mount “SPG 300” gripper

---

To order a combination of these options, use multiple letters. **Example:** –D2XVZ specifies that a dowel hole, Duralon® shaft bearings, Viton seals and stainless steel guide shafts are built into the basic pick & place unit.
Add sensors. Choices include proximity switches, snap action mechanical switches, 3-way air pilot switches, magnetically operated electronic sensors and reed switches. Available complete with sensors – or mounting brackets only if you are furnishing the sensors.

**Step 2: Sensing Options**

**Sensor Codes**

*Use “S000” if NO Sensors are desired*

Select a code for sensor type and indicate position.

- **E** = Extend position only
- **R** = Retract position only
- **B** = Both extend & retract positions
- **M** = 3 sensors (See note 1)

- **Example:** S03B

Sensors beginning with the letter “S” (Prox, Snap Action, Air Pilot) are actuated by “dogs” clamped to the guideshafts. Sensors beginning with the letter “J” or “E” (Electronic sensors and reed switches) are actuated by a magnetic band on the piston.

**Note 1:** Mid position “M” not available on vert. motion of EZP5025 with prox options.

“M” not available on any model with S50, S51, or S60.

**Proximity Switch w/Brackets & Actuators**

<table>
<thead>
<tr>
<th>Sensor Type</th>
<th>Leadwire</th>
<th>Quick Disconnect with/without cordset</th>
<th>Electrical Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>S01</td>
<td>S02</td>
<td>S12</td>
<td>12mm, 110v AC, 2-wire, w/LED</td>
</tr>
<tr>
<td>S03</td>
<td>S04</td>
<td>S14</td>
<td>12mm, 24v DC, 2-wire, w/LED (NPN/PNP)</td>
</tr>
<tr>
<td>S05</td>
<td>S06</td>
<td>S16</td>
<td>12mm, 24v DC, 3-wire, w/LED (NPN) Sourcing</td>
</tr>
<tr>
<td>S07</td>
<td>S08</td>
<td>S18</td>
<td>12mm, 24v DC, 3-wire, w/LED (NPN) Sinking</td>
</tr>
</tbody>
</table>

**Proximity Switch Brackets & Actuators Only**

- **S40**
- **S41**
- **S42**
- **S45**
- **S46**
- **S47**

**Note 2:** Codes “S45, S46 & S47” available on horizontal motion of EZP5025 and vertical motion of EZP7550 only.

**Note 3:** Not available on horizontal motion of EZP5025 with “MV1” or “MV1B1” mounting style.

**Snap Action Mechanical Switches**

<table>
<thead>
<tr>
<th>Sensor Code</th>
<th>Leadwire</th>
<th>Conduit Fitting Style Housing</th>
<th>Electrical Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>S50</td>
<td>S51</td>
<td>SPDT 10 amp. capacity (See note 3)</td>
<td></td>
</tr>
</tbody>
</table>

**Air Pilot Switch**

- **S60**

Miniature 3-way air valve (See note 3)

**Magnetic Piston & Clamp-On Sensors (“J”)**

Single sensor –1” stroke min; Dual sensors –2” stroke min.

<table>
<thead>
<tr>
<th>Sensor Type</th>
<th>Quick Disconnect with/without cordset</th>
<th>LED</th>
<th>Electrical Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>J70</td>
<td>J71</td>
<td>Yes</td>
<td>5-120 VDC/VAC, 0.5 Amp Max, 10 Watt Max, SPST N.O., 3.5 Voltage Drop</td>
</tr>
<tr>
<td>J72</td>
<td>J73</td>
<td>Electronic</td>
<td>Sourcing NPN 6-24 VDC, 0.50 Amp Max, 1.0 Voltage Drop</td>
</tr>
<tr>
<td>J74</td>
<td>J75</td>
<td>Electronic</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Magnetic Piston & Dovetail Style Sensors (“E”)**

For 1” Stroke & longer on all bores.

<table>
<thead>
<tr>
<th>Sensor Type</th>
<th>Quick Disconnect with/without cordset</th>
<th>LED</th>
<th>Electrical Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>E70</td>
<td>E71</td>
<td>Yes</td>
<td>5-120 VDC/VAC, 0.03 Amp Max, 4 Watt Max, 2.0 Voltage Drop</td>
</tr>
<tr>
<td>E72</td>
<td>E73</td>
<td>Electronic</td>
<td>Yes</td>
</tr>
<tr>
<td>E74</td>
<td>E75</td>
<td>Electronic</td>
<td>Yes</td>
</tr>
<tr>
<td>E76</td>
<td>E77</td>
<td>Reed</td>
<td>No</td>
</tr>
</tbody>
</table>

**Magnetic Piston**

- **J800**
- **E800**

Includes Dovetail Mounting Rail; customer supplies the sensors.
Building the Model Number in 3 Easy Steps

Step 3

Please turn the page

Continue on to step 3 if you want to add Tooling, Stop, or Hydraulic Shock Options.

**Option**
- **Code**
- **Straight Cordset P/N**
- **Rt. Angle Cordset P/N**

<table>
<thead>
<tr>
<th>Option Code</th>
<th>Straight Cordset P/N</th>
<th>Rt. Angle Cordset P/N</th>
</tr>
</thead>
<tbody>
<tr>
<td>S12</td>
<td>PCS01-2M</td>
<td>PCS02-2M</td>
</tr>
<tr>
<td>S14</td>
<td>PCS03-2M</td>
<td>PCS04-2M</td>
</tr>
<tr>
<td>S16</td>
<td>PCS05-2M</td>
<td>PCS06-2M</td>
</tr>
<tr>
<td>S18</td>
<td>PCS05-2M</td>
<td>PCS06-2M</td>
</tr>
</tbody>
</table>

4 meter and 6 meter cord sets are also available. Consult factory.

**EZP7550 model showing both styles of proximity switches**

**Prewired style proximity switch**

Quick disconnect style proximity switch “S02, S04, S06, S08” is furnished with 2M cordset. For “S12, S14, S16, S18” order straight or right angle quick disconnect cordsets separately.

**Prox actuator dog for extend prox switch**

**Female Cordsets w/2 Meter Leadwire for 12mm Proximity Switches**

**EZP7550 model showing both styles of proximity switches**

**EZP7550 model showing “J” & “E” styles of magnetically operated sensors**

**“E” style dovetail sensors slide and lock into mating slots in extruded aluminum, adhesive-backed, double dovetail rail which is bonded firmly to cylinder body.**

**“J” style clamp-on sensors mount on tie rod**

**EZP7550 model showing “J” & “E” styles of magnetically operated sensors**

**Specifications subject to change without notice or incurring obligations**

Page 65
Select a tooling option to adapt the pick & place unit to the application. Is stroke adjustability required? Select from four adjustable stop options. Are hydraulic shock absorbers needed? Standard mounting brackets are available for both Ace and Enidine. You can order complete shock assemblies – or brackets only if you are furnishing the shocks.

### Step 3: Tooling, Stop, & Shock Options

All 12 positions in this section must be filled with a character to be a valid model number. A tooling option must be selected before a stop and/or shock option can be specified.

<table>
<thead>
<tr>
<th>Tooling Option</th>
<th>Horiz. Stop</th>
<th>Horiz. Shock</th>
<th>Vert. Stop</th>
<th>Vert. Shock</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC</td>
<td>H02</td>
<td>AB</td>
<td>V02</td>
<td>CE</td>
</tr>
</tbody>
</table>

**Select a Tooling Option**

- **Code – RC Rear Clampbar**
  - For Model EZP5025
  - Includes clampbar on horizontal & vertical motions.
  - (Tooling Option) (Horiz. Stop) (Horiz. Shock) (Vert. Stop) (Vert. Shock)
  - RC - H02 - AB - V02 - CE

- **Code – BL Tall Blocks**
  - For Model EZP7550 Vertical Motion
  - Includes clampbar on horizontal motion.
  - (Tooling Option) (Horiz. Stop) (Horiz. Shock) (Vert. Stop) (Vert. Shock)
  - BL - H02 - AB - V02 - CE

- **Code – PL Toolplate**
  - For Model EZP7550 Vertical Motion
  - Includes clampbar on horizontal motion.
  - (Tooling Option) (Horiz. Stop) (Horiz. Shock) (Vert. Stop) (Vert. Shock)
  - PL - H02 - AB - V02 - CE

**Available Stop and Shock Options**

- **Horiz. Stop**
  - H00 = None desired
  - H01
  - HU1
  - H02

- **Horiz. Shock**
  - NO = None desired
  - A
  - B
  - C

- **Vert. Stop**
  - V00 = None desired
  - V01
  - VU1
  - V02
  - V03

- **Vert. Shock**
  - NO = None desired
  - A
  - B
  - C
  - D
  - E
  - F
Completed model number

**EZP7550–5H2V–MH2T20–V–SO3BS03E–RCH02ABV02CE**

**Specifications subject to change without notice or incurring obligations**

### Adjustable Stop Option Details

The Step 3 chart on the opposite page indicates what stops are available for each tooling option. *Indicate H or V in the box ( □ ) .*

- **Code 00** – This code indicates no stops desired.
- **Code 01** – Allows complete adjustment over the entire stroke length from full to zero stroke. Threaded rod (with two flange nuts serving as the stops) is fastened to cylinder endcap. Flange nuts provide the adjustments.
- **Code U1** – Reduces noise and provides an impact absorbing stop cushion. It is the same stop as Type “01” with a urethane washer slipped onto the threaded rod against the flange nut.
- **Code 02** – Is a modification of Type “01” where a stop bolt is added for the extend stop. It positions both extend and retract adjustments next to each other at the back of the motion. Provides easier, more accessible adjustment in cases where a “PL” or “BL” tooling option would cover the extend flange nut in a Type “01” stop.
- **Code 03** – For use with “BL” or “PL” tooling options on Model EZP7550.
- **Code V04** – Stop bolt at one end – Downstop only. For use with EZP5025 vertical motion only.

### Shock Option Details

The Step 3 chart on the opposite page indicates what shocks are available for each tooling option. *Indicate shock quantity/location in the box ( □ ) as follows:*  

- **E** = Extend only;  
- **R** = Retract only;  
- **B** = Both extend and retract.

#### Standard Shock Location

- **EZP5025**
- **EZP7550**

#### Alternate Shock Location for Vertical Motion of EZP7550

Recommended when using “BL” or “PL” Tooling

### General Shock Notes:

1. EZP5025 uses 1/2”–20 thread shocks/brackets on horizontal and vertical motions.  
2. EZP7550 uses 1/2”–20 thread shocks/brackets on vertical motion, and 1”–12 thread on horizontal motion.  
3. EZP5025 vertical motion shock option is only available with 2” or longer vertical strokes.
EZP5025
MH1, MH2 Mounting Style

Dowel surface "D1"
Dowel surface "D6"

Specifications subject to change without notice or incurring obligations 7-7-99
EKP7550
MH1, MH2 Mounting Style

Optional Dowel Hole/Slot – Dimensions
*“D1” – See model EZ750 page 46
*“D2” & *“D3” – See model EZ500 page 46

MF1, MF2, MF3 Mounting Style

Dowel surface “D6”
See dimensions for model EZ750 page 46

MV1, MV2 Mounting Style

Dowel surface “D4”
See dimensions for model EZ750 page 47

Specifications subject to change without notice or incurring obligations
EZP5025
with Tandem horizontal motion

EZP7550
with Tandem horizontal motion and Tandem vertical motion

Specifications subject to change without notice or incurring obligations 7-7-99
Tandem cylinder models & units with “SPG” Grippers

**EKP5025** with “SPG” Series Parallel Gripper

- **Gripper Model**: SPG100, SPG200 or SPG300
- **Toolbar Model**: SPG200 or SPG300
- **Parallel Gripper**: Fabco-Air
- **Ordering Example**: EKP5025 – 3H1V – MH1T20 – D12
  - **T20** is transition plate for SPG200 gripper
  - **D12** is optional dowel hole/slot in horizontal mounting surface and dowel hole/slot in bottom toolbar surface

**Transition Plate Options**

<table>
<thead>
<tr>
<th>Code</th>
<th>Gripper Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>T10</td>
<td>SPG100</td>
</tr>
<tr>
<td>T20</td>
<td>SPG200</td>
</tr>
<tr>
<td>T30</td>
<td>SPG300</td>
</tr>
</tbody>
</table>

**EZP7550** with “SPG” Series Parallel Gripper

- **Gripper Model**: SPG200 or SPG300
- **Toolbar Model**: SPG200 or SPG300
- **Parallel Gripper**: Fabco-Air
- **Ordering Example**: EKP7550-6H5V-MH1T30
  - **T30** is toolbar with mounting holes for SPG300 gripper. (T20 & T30 are supplied with center dowel hole as a standard feature)

**Toolbar Options**

<table>
<thead>
<tr>
<th>Code</th>
<th>Gripper Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>T20</td>
<td>SPG200</td>
</tr>
<tr>
<td>T30</td>
<td>SPG300</td>
</tr>
</tbody>
</table>
"TS" Series Linear Slides

**Twin Guide Shafts**
- Straightness: .0015" per foot
- Standard case hardened (Rc 61 - 65) and ground (9 - 14 microinches RMS)
- **Optional stainless steel** Code – Z

**Tie Rods**
- Stainless steel

**End Caps**
- Precision machined aluminum alloy, clear anodized finish. (Shown with Optional Cushion – Code C).
- Choose from ten mounting style and port location combinations.

**Cylinder Tube**
- Hard coated aluminum alloy.

**Shaft Seals**
- Four lip seals for positive sealing, low friction and long cycle life.

**Tie Rods**
- Stainless steel

**Tapped Guide Shafts**
- Tapped guide shaft ends can be provided at one or both ends. This option includes ground shaft ends so that end tooling can be attached directly to the shaft ends. An optional retainer plate is also available and can be used in conjunction with any of the Shaft Clamp Mounting Blocks to provide positive mechanical attachment of the block to the guide shafts.

**Optional Air Cushion**
- Available on TS200 models and larger

**Cushion Adjust**
- Needle valve

**Mounting Holes**
- (not shown)
- Stainless steel screw thread inserts prevent "thread stripping".

**Shaft Clamp Block**
- with Stop Bolt

**Optional Tapped Guide Shafts**
- Tapped guide shaft ends can be provided at one or both ends. This option includes ground shaft ends so that end tooling can be attached directly to the shaft ends. An optional retainer plate is also available and can be used in conjunction with any of the Shaft Clamp Mounting Blocks to provide positive mechanical attachment of the block to the guide shafts.

**Stop Plate - Code "SP"**
- Standard NPT thread with choice of location.

**Precision linear ball bearings**
- Four sealed ball bearings (two in each end cap) with full steel bearing shell are standard.
- **Optional sleeve-type, linear bearings** Code – X: Duralon®; Code – W: Rulon®

**Specs:**
- **Specifications subject to change without notice or incurring obligations**

---

**Tapped guide shafts**
- (Not available with Option "Z")

---

**Tie Rods**
- Stainless steel

**Optional Tapped Guide Shafts**
- Tapped guide shaft ends can be provided at one or both ends. This option includes ground shaft ends so that end tooling can be attached directly to the shaft ends. An optional retainer plate is also available and can be used in conjunction with any of the Shaft Clamp Mounting Blocks to provide positive mechanical attachment of the block to the guide shafts.

**Stop Plate - Code “SP”**
- Standard NPT thread with choice of location.

---

**Pressure Rating:**
- Maximum operating pressure is 150 psi Air

**Output Force:**
- Output Force = Pressure x Power Factor

**Speed:**
- Safe speed range: without cushions – 6 to 8 inches per second; with cushions – 8 to 16 inches per second.
- Tandem hydraulic shock absorbers can be provided for speeds exceeding 18 inches per second, or for heavy reciprocating weights. Contact factory for application assistance.

**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 positional accuracy, as well as bearing and seal failure. CAUTION: Heavy reciprocating loads can create damaging impact forces at end of stroke. It may be necessary to use adjustable stop bolts, air cushions, or special hydraulic shock absorbers – or reduce speeds.

---

**Model**

<table>
<thead>
<tr>
<th>Model</th>
<th>TS112</th>
<th>TS150</th>
<th>TS200</th>
<th>TS250</th>
<th>TS325</th>
<th>TS400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bore</td>
<td>1-1/8&quot;</td>
<td>1-1/2&quot;</td>
<td>2&quot;</td>
<td>2-1/2&quot;</td>
<td>3-1/4&quot;</td>
<td>4&quot;</td>
</tr>
<tr>
<td>Power Factor Ext. &amp; Retract</td>
<td>.89</td>
<td>1.55</td>
<td>2.75</td>
<td>4.29</td>
<td>7.41</td>
<td>10.99</td>
</tr>
<tr>
<td>Guide Shaft Diameter</td>
<td>1/4&quot;</td>
<td>3/8&quot;</td>
<td>1/2&quot;</td>
<td>5/8&quot;</td>
<td>3/4&quot;</td>
<td>1&quot;</td>
</tr>
<tr>
<td>Weight, lbs. @ zero stroke</td>
<td>.88</td>
<td>2.05</td>
<td>3.96</td>
<td>7.03</td>
<td>11.76</td>
<td>22.02</td>
</tr>
<tr>
<td>Add lbs per inch of stroke</td>
<td>.12</td>
<td>.25</td>
<td>.40</td>
<td>.59</td>
<td>.82</td>
<td>1.29</td>
</tr>
</tbody>
</table>

---

**Standard Strokes**
- 1" to 10" by 1" incr. 1" to 12" by 1" incr. 1" to 15" by 1" incr. 1" to 20" by 1" incr. 1" to 20" by 1" incr. 1" to 20" by 1" incr.
**Compact, Precision Slides Housed Within Cylinder Bodies**

### Load Sizing Guide

**Load Limits**: Chart shows maximum loading for precision applications. Load (in pounds) will produce .005” deflection or less. Additional loading will cause increased shaft deflection, especially on long strokes. If your application does NOT require that shaft deflection be held to less than .005”, TS Series slides can be loaded higher than charted values. Consult factory for maximum safe load capacities.

#### Load Limits

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Load Type</th>
<th>Stroke</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1”</td>
<td>2”</td>
</tr>
<tr>
<td>TS112</td>
<td>Load 1</td>
<td>9.9</td>
</tr>
<tr>
<td></td>
<td>Load 2</td>
<td>17</td>
</tr>
<tr>
<td>TS150</td>
<td>Load 1</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Load 2</td>
<td>23</td>
</tr>
<tr>
<td>TS200</td>
<td>Load 1</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>Load 2</td>
<td>71</td>
</tr>
<tr>
<td>TS250</td>
<td>Load 1</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>Load 2</td>
<td>68</td>
</tr>
<tr>
<td>TS325</td>
<td>Load 1</td>
<td>180</td>
</tr>
<tr>
<td></td>
<td>Load 2</td>
<td>216</td>
</tr>
<tr>
<td>TS400</td>
<td>Load 1</td>
<td>320</td>
</tr>
<tr>
<td></td>
<td>Load 2</td>
<td>384</td>
</tr>
</tbody>
</table>

**Strokes longer than charted below are NOT recommended.**

**Shaded area indicates standard strokes;**

**Indicates non-standard strokes.**

#### Tooling Plate / Carriage Load

- **For Horizontal Shafts**
  - **Load 1**
  - **Load 2**
- **For Vertical Shafts**
  - **Load 3**
  - **Load 4**

Specifications subject to change without notice or incurring obligations.
“TS” Series Linear Slides

Step 1
Select a model size with guide shaft diameters required by loading/deflection considerations – or with cylinder bore/thrust requirements. Determine stroke and mounting required. Select built-in cylinder options: Air Cushions, Tapped Guide Shafts, Stop Plates, Metallic or Urethane Scrapers. Helpful hint: Model number indicates cylinder bore size in 2 place decimals. Example: the TS112 cylinder bore is 1.12”.

<table>
<thead>
<tr>
<th>Model Size</th>
<th>Bore</th>
<th>Guide Shaft Diameter</th>
<th>Standard Strokes in 1” Increments</th>
</tr>
</thead>
<tbody>
<tr>
<td>112</td>
<td>1-1/8”</td>
<td>1/4”</td>
<td>1” to 10”</td>
</tr>
<tr>
<td>150</td>
<td>1-1/2”</td>
<td>3/8”</td>
<td>1” to 12”</td>
</tr>
<tr>
<td>200</td>
<td>2”</td>
<td>1/2”</td>
<td>1” to 15”</td>
</tr>
<tr>
<td>250</td>
<td>2-1/2”</td>
<td>5/8”</td>
<td>1” to 20”</td>
</tr>
<tr>
<td>325</td>
<td>3-1/4”</td>
<td>3/4”</td>
<td>1” to 20”</td>
</tr>
<tr>
<td>400</td>
<td>4”</td>
<td>1”</td>
<td>1” to 20”</td>
</tr>
</tbody>
</table>

Integral Option Codes
Use “dashes” to separate

- D – Dowel Hole/Slot in Mounting Surface
- V – Viton Cylinder Seals
- Z – Stainless Guide Shafts, 440C hardened, ground

Bearing Options
Sleeve Bearings can be substituted for the standard linear ball bearings.

- W – Rulon® Shaft Bearings
- X – Duralon® Shaft Bearings

For the options shown below, indicate the desired location in the box ( △ ) as follows: L = Left hand end only; R = Right hand end only; B = Both ends

- MF1 / MF2 Flange Mount Ports on Center
  - MF1 – thru holes
  - MF2 – tapped holes

- MH1 Horizontal Shafts, Side Ports High – Opposite Sides

- MH2 Horizontal Shafts, Side Ports High & Low – Same Side

- MH3 Horizontal Shafts, Top Ports on Center

- MH4 Horizontal Shafts, Bottom Ports on Center

- MV1 Vertical Shafts, Side Ports on Center – Opposite Sides

- MV2 Vertical Shafts, Side Ports on Center – Same Side

- MV3 Vertical Shafts, Top Ports – Staggered

- MV4 Vertical Shafts, Bottom Ports – Staggered

Optional Attachments

“B1” Mounting Bars for MV or MH Mounting

“B2” Mounting Bars For Use With Side Proximity Switch Option and MV or MH Mounting. (B2 not required, and therefore not available, on TS400 models.)

To Order with Slide: Add “B1” or “B2” to mounting style. Example: TS250 – 12 – MH1B2

See page 80
Building the Model Number in 3 Easy Steps

**Step 2**  Determine the type of position sensing needed. Choices include proximity switches, or magnetically operated electronic sensors and reed switches. Available complete with sensors – or mounting brackets only if you are furnishing the sensors.

### Step 2: Sensing Options

#### Proximity Switches w/Brackets & Actuators

<table>
<thead>
<tr>
<th>Code</th>
<th>W/Brackets &amp; Actuators</th>
<th>Quick Disconnect</th>
<th>Quick Disconnect without Cord Set</th>
<th>Thread Size</th>
<th>Electrical Characteristics</th>
</tr>
</thead>
</table>

- **S01** L 12mm: 110v AC, 2-wire, w/LED
- **S03** R 12mm: 24v DC, 2-wire, w/LED (PNP/PNP)
- **S05** L 12mm: 24v DC, 3-wire, w/LED (PNP) Sourcing
- **S07** R 12mm: 24v DC, 3-wire, w/LED (PNP) Sinking

#### Proximity Switches w/Brackets & Actuators Only

<table>
<thead>
<tr>
<th>Code</th>
<th>Quick Disconnect</th>
<th>Proximity Switches w/Brackets &amp; Actuators Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>S00</td>
<td>S0000</td>
<td>– Use S0000 if no Sensing Options Are Desired</td>
</tr>
<tr>
<td>S01</td>
<td>S01</td>
<td>– S03TB (5 Digits)</td>
</tr>
<tr>
<td>S03</td>
<td>S03</td>
<td></td>
</tr>
<tr>
<td>S05</td>
<td>S05</td>
<td></td>
</tr>
<tr>
<td>S07</td>
<td>S07</td>
<td></td>
</tr>
<tr>
<td>S40</td>
<td>S40</td>
<td>Customer supplies the switches</td>
</tr>
<tr>
<td>S41</td>
<td>S41</td>
<td>Customer supplies the switches</td>
</tr>
<tr>
<td>S42</td>
<td>S42</td>
<td>Customer supplies the switches</td>
</tr>
</tbody>
</table>

#### Magnetically Actuated Sensors

Electronic sensors & reed switches are available as a package complete with magnetic piston. Sensors J70 thru J75 are tie rod mounted; Sensors E70 thru E77 are dovetail style and mounted in a rail on the cylinder body. The two boxes ( ) indicate location & quantity. First box indicates attachment surface: L 1, 2, 3 or 4 = left. In the 2nd box, R = right end, B = both ends. Example: J703R has one top-mounted sensor on the right end.

#### Magnetic Piston & Clamp-On Sensors (“J”)

<table>
<thead>
<tr>
<th>9 Ft.</th>
<th>Quick Disconnect w/SM cord set</th>
<th>Sensor Type</th>
<th>LED</th>
<th>Electrical Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>J70</td>
<td>J71</td>
<td>Reed</td>
<td>Yes</td>
<td>5-120 VDC/VAC, 0.5 Amp Max, 10 Watt Max, SPST N.O., 3.5 Voltage Drop Sourcing PNP 6-24 VDC, 0.50 Amp Max, 1.0 Voltage Drop Sinking NPN 6-24 VDC, 0.50 Amp Max, 1.0 Voltage Drop</td>
</tr>
<tr>
<td>J72</td>
<td>J73</td>
<td>Electronic</td>
<td>Yes</td>
<td>5-120 VDC/VAC, 0.50 Amp Max, 5 Watt Max, 0.5 Voltage Drop Sourcing PNP 6-24 VDC, 0.20 Amp Max, 0.5 Voltage Drop Sinking NPN 6-24 VDC, 0.20 Amp Max, 0.5 Voltage Drop</td>
</tr>
<tr>
<td>J74</td>
<td>J75</td>
<td>Electronic</td>
<td>Yes</td>
<td>5-120 VDC/VAC, 0.35 Amp Max, 5 Watt Max, 1.0 Voltage Drop Sourcing PNP 6-24 VDC, 0.20 Amp Max, 0.5 Voltage Drop Sinking NPN 6-24 VDC, 0.20 Amp Max, 0.5 Voltage Drop</td>
</tr>
</tbody>
</table>

#### Magnetic Piston & Dovetail Style Sensors (“E”)

<table>
<thead>
<tr>
<th>9 Ft.</th>
<th>Quick Disconnect w/SM cord set</th>
<th>Sensor Type</th>
<th>LED</th>
<th>Electrical Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>E70</td>
<td>E71</td>
<td>Reed</td>
<td>Yes</td>
<td>5-120 VDC/VAC, 0.03 Amp Max, 4 Watt Max, 2.0 Voltage Drop Sourcing PNP 6-24 VDC, 0.10 Amp Max, 0.5 Voltage Drop Sinking NPN 6-24 VDC, 0.10 Amp Max, 0.5 Voltage Drop</td>
</tr>
<tr>
<td>E72</td>
<td>E73</td>
<td>Electronic</td>
<td>Yes</td>
<td>5-120 VDC/VAC, 0.20 Amp Max, 0.5 Voltage Drop Sourcing PNP 6-24 VDC, 0.20 Amp Max, 0.5 Voltage Drop Sinking NPN 6-24 VDC, 0.20 Amp Max, 0.5 Voltage Drop</td>
</tr>
<tr>
<td>E74</td>
<td>E75</td>
<td>Electronic</td>
<td>Yes</td>
<td>5-120 VDC/VAC, 0.5 Amp Max, 10 Watt Max, 1.0 Voltage Drop Sourcing PNP 6-24 VDC, 0.20 Amp Max, 0.5 Voltage Drop Sinking NPN 6-24 VDC, 0.20 Amp Max, 0.5 Voltage Drop</td>
</tr>
<tr>
<td>E76</td>
<td>E77</td>
<td>Reed</td>
<td>No</td>
<td>5-120 VDC/VAC, 0.5 Amp Max, 10 Watt Max, 1.0 Voltage Drop Sourcing PNP 6-24 VDC, 0.50 Amp Max, 1.0 Voltage Drop Sinking NPN 6-24 VDC, 0.50 Amp Max, 1.0 Voltage Drop</td>
</tr>
</tbody>
</table>

**Magnetic Piston**: customer supplies the sensors

- J8000: Magnetic piston only.
- E80: Includes dovetail mounting rail; Specify location 1, 2, 3 or 4 in box ( )

---

Page 75 Specifications subject to change without notice or incurring obligations
Step 3: Bolt-on Options

- H2R - H3L - RPB

**Bolt-on Options**
Specify Left Hand, Right Hand, or Both with “L”, “R”, or “B” in boxes ( □ ). Use “dashes” to separate options.

**Horizontal Shaft Mounting Block**
H1 □ without stop bolt
H2 □ with stop bolt (shown) See Note 1

**Vertical Shaft Mounting Block**
V1 □ without stop bolt
V2 □ with stop bolt (shown) See Note 1

**Shaft Clamp Block with Stop Bolt**
H3 □ Stop bolt is used for stroke adjustment. See Note 1

**Retainer Plate**
RP □ Retainer plate. Must be used in conjunction with “TGS” option and one of the accessory blocks.

**Tooling Mounting Plate**
Cannot be used with top ports, with top proximity switch bracket, or with “J” Style sensor options

**On-Center Port Locations (“MH3, MH4, MV1, MV2”)**

**Corner Port Locations (“MH1, MH2, MV3, MV4”)**

**“Dowel Hole/Slot Option (Code “–D”)**
for “MH” & “MV” mounting styles

**Tapped Guide Shafts (Code “–TGS”)**

**“TS” Series Linear Slides**

**“TS” Series Dimensional Data**

<table>
<thead>
<tr>
<th>Model</th>
<th>Bore</th>
<th>Shaft Dia. S</th>
<th>A</th>
<th>AA</th>
<th>B</th>
<th>BB</th>
<th>C</th>
<th>CC</th>
<th>D</th>
<th>DD</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS112</td>
<td>1-1/8</td>
<td>249</td>
<td>3.50</td>
<td>3.94</td>
<td>969</td>
<td>1.125</td>
<td>1.582</td>
<td>2.000</td>
<td>1.38</td>
<td>1.81</td>
</tr>
<tr>
<td>TS150</td>
<td>1-1/2</td>
<td>374</td>
<td>4.25</td>
<td>4.75</td>
<td>1.125</td>
<td>1.500</td>
<td>2.000</td>
<td>2.750</td>
<td>1.44</td>
<td>1.94</td>
</tr>
<tr>
<td>TS200</td>
<td>2</td>
<td>499</td>
<td>5.13</td>
<td>5.88</td>
<td>1.562</td>
<td>1.875</td>
<td>2.000</td>
<td>3.375</td>
<td>1.81</td>
<td>2.56</td>
</tr>
<tr>
<td>TS250</td>
<td>2-1/2</td>
<td>624</td>
<td>6.88</td>
<td>7.75</td>
<td>1.875</td>
<td>2.000</td>
<td>2.125</td>
<td>4.000</td>
<td>2.19</td>
<td>3.06</td>
</tr>
<tr>
<td>TS325</td>
<td>3-1/4</td>
<td>749</td>
<td>8.50</td>
<td>7.50</td>
<td>2.000</td>
<td>2.500</td>
<td>2.500</td>
<td>5.250</td>
<td>2.44</td>
<td>3.44</td>
</tr>
</tbody>
</table>
Mounting Style Dimensions

Horizontal Shafts Mounting Style “–MH”

Vertical Shafts Mounting Style “–MV”

Flange Mounting Style “–MF1 & MF2”

(MF1” – Thru hole mounting)

(MF2” – Tapped hole mounting)

| E  | F | FF | G | GG | H | J | JJ | K | KK | L | M | N | P Port | R | RR | T | U | V | W | Y | Z |
|----|---|----|---|----|---|---|----|---|----|---|---|---|--------|---|----|---|---|---|---|---|---|--|
| 1.500 | 1.25 | 1.00 | .750 | 2.375 | .562 | 1.63 | #10-24 | .203 | .38 | 1.000 | .469 | 1/8 NPT | 6.00 | 6.19 | #4-40 | .38 | .38 | .28 | 3/16 | .18 |
| 2.000 | 1.50 | 1.75 | 1.000 | 3.250 | .750 | 2.13 | 1/4-20 | .266 | .50 | 1.250 | .625 | 1/4 NPT | 7.25 | 8.00 | #8-32 | .50 | .44 | .41 | 1/4 | .25 |
| 2.500 | 1.75 | 1.75 | 1.250 | 4.000 | 1.000 | 2.63 | 5/16-18 | .326 | .63 | 1.750 | .750 | 1/4 NPT | 8.63 | 9.38 | #10-24 | .63 | .50 | .50 | 1/4 | .25 |
| 3.000 | 2.00 | 2.00 | 1.500 | 5.000 | 1.375 | 3.25 | 3/8-16 | .391 | .63 | 2.000 | .812 | 1/4 NPT | 9.88 | 10.75 | 1/4-20 | .63 | .63 | .63 | 1/4 | .25 |
"TS" Series Linear Slides

Horizontal Shaft Mounting Block
(Code “–H1”) without stop bolt
(Code “–H2”) includes stop bolt

Vertical Shaft Mounting Block
(Code “–V1”) without stop bolt
(Code “–V2”) includes stop bolt

Shaft Clamp Block with Stop Bolt
(Code “–H3”)

Stop Plate (Code “–SP”)

“TS” Series Dimensional Data

<table>
<thead>
<tr>
<th>Model</th>
<th>Bore</th>
<th>A</th>
<th>AA</th>
<th>B1</th>
<th>B2</th>
<th>BB</th>
<th>C1</th>
<th>C2</th>
<th>CC</th>
<th>D1</th>
<th>D2</th>
<th>DD</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>GG</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS112</td>
<td>1-1/8</td>
<td>.25</td>
<td>.16</td>
<td>.75</td>
<td>1.25</td>
<td>.13</td>
<td>2.50</td>
<td>3.25</td>
<td>.40</td>
<td>2.000</td>
<td>2.750</td>
<td>.75</td>
<td>.218</td>
<td>.656</td>
<td>.63</td>
<td>1.625</td>
</tr>
<tr>
<td>TS150</td>
<td>1-1/2</td>
<td>.25</td>
<td>.16</td>
<td>.75</td>
<td>1.50</td>
<td>.13</td>
<td>3.50</td>
<td>4.00</td>
<td>.51</td>
<td>2.750</td>
<td>3.250</td>
<td>.75</td>
<td>.281</td>
<td>.750</td>
<td>.75</td>
<td>2.125</td>
</tr>
<tr>
<td>TS200</td>
<td>2</td>
<td>.375</td>
<td>.23</td>
<td>1.00</td>
<td>1.50</td>
<td>.19</td>
<td>5.00</td>
<td>6.50</td>
<td>.64</td>
<td>3.250</td>
<td>3.750</td>
<td>.75</td>
<td>.344</td>
<td>.750</td>
<td>.75</td>
<td>2.625</td>
</tr>
<tr>
<td>TS250</td>
<td>2-1/2</td>
<td>.375</td>
<td>.25</td>
<td>1.00</td>
<td>2.00</td>
<td>.19</td>
<td>5.00</td>
<td>5.50</td>
<td>.71</td>
<td>4.000</td>
<td>4.000</td>
<td>.75</td>
<td>.406</td>
<td>.875</td>
<td>1.00</td>
<td>3.125</td>
</tr>
<tr>
<td>TS325</td>
<td>3-1/4</td>
<td>.500</td>
<td>.31</td>
<td>1.25</td>
<td>2.25</td>
<td>.25</td>
<td>5.75</td>
<td>6.38</td>
<td>.81</td>
<td>4.750</td>
<td>5.375</td>
<td>.75</td>
<td>.469</td>
<td>1.125</td>
<td>1.00</td>
<td>3.875</td>
</tr>
<tr>
<td>TS400</td>
<td>4</td>
<td>.625</td>
<td>.50</td>
<td>1.25</td>
<td>N/A</td>
<td>.38</td>
<td>7.00</td>
<td>N/A</td>
<td>1.09</td>
<td>5.750</td>
<td>N/A</td>
<td>.75</td>
<td>.531</td>
<td>N/A</td>
<td>1.50</td>
<td>4.750</td>
</tr>
</tbody>
</table>
Option Dimensions

**Tooling Mounting Plate Package**
(Code "–PL V □ □" for vertical shafts)
(Code "–PL H □ □" for horizontal shafts)

![Diagram of Tooling Mounting Plate Package]

In the first box ( □ ) of the option code an "A" or an "S" specifies Aluminum or Steel. In the second box ( □ □ ) a "1" signifies stop bolts not desired; a "2" specifies stop bolts at each end.

**Base Mounting Bars –B1 & –B2**
(For use with "MH" or "MV" mounting)

![Diagram of Base Mounting Bars]

Base mounting bars are made from ground steel stock with black oxide surface treatment.  
**Note:** Use "B2" option when side mounted prox bracket would interfere with "B1" mounting holes.

**Retainer Plate (Code “–RP □ □”)**

Stop bolt (threads into "H3" block; jam nut fastens "RP" to "H3". See Note 1)

![Diagram of Retainer Plate]

Retainer plate option must be used in conjunction with "TGS" tapped guide shafts option and one of the bolt-on accessory blocks ("H1, H2, H3, V1, V2"). Provides positive mechanical attachment of the block to the guide shafts.  
**Note 1:** Socket head cap screw is used to fasten "RP" to clampblocks without stop bolt.

**Prox Switch (Codes “S01 □ □” thru “S42 □ □”)**

Prox switch actuator plate is spring loaded and rides on flanged bushings.  
Prox switch option requires a tooling option with stop bolt (or customer tooling) to drive the actuator plate.  
Bolt-on tooling options "H2, V2, & H3" include stop bolt.

| H  | J  | K   | L   | M   | N   | P   | Q   | R   | S   | T   | V  | W  | X  | Y   | YY | Z   | Bore | Model |
|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|-----|-----|------|------|-------|
| 1.50 | 1.25 | .675 | 1.125 | #10-24 | .44 | #10-24 | 1.50 | .75 | 1.59 | .594 | .250 | 5.68 | 1.19 | .13 | .50 | #4-40 | 1-1/8 | TS112 |
| 2.00 | 1.75 | 1.125 | 1.500 | 5/16-18 | .50 | 1/4-20 | 2.50 | 1.25 | 2.09 | .750 | .250 | 7.12 | 1.44 | .13 | .75 | #8-32 | 1-1/2 | TS150 |
| 2.50 | 2.06 | 1.375 | 1.875 | 5/16-18 | .50 | 1/4-20 | 2.50 | 1.50 | 2.59 | .875 | .375 | 8.38 | 1.63 | .19 | 1.00 | #10-24 | 2 | TS200 |
| 3.00 | 2.38 | 1.625 | 2.375 | 5/16-18 | .63 | 3/8-16 | 3.00 | 1.50 | 3.09 | .937 | .375 | 9.62 | 1.88 | .19 | 1.00 | 1/4-20 | 2 | TS250 |
| 3.75 | 3.00 | 2.000 | 3.062 | 3/8-16 | .63 | 7/16-14 | 3.50 | 2.00 | 3.84 | 1.062 | .500 | 10.75 | 2.12 | .25 | 1.00 | 5/16-18 | 3-1/4 | TS325 |
| 4.50 | 3.75 | 2.500 | 3.750 | 3/8-16 | .88 | 1/2-13 | 4.00 | 2.50 | 4.69 | 1.375 | .750 | 14.00 | 2.88 | .38 | 1.50 | 3/8-16 | 4 | TS400 |

Specifications subject to change without notice or incurring obligations
**Construction** – The cushion option consists of a needle valve adjacent to the port, a spud attached to the piston, and a lip type seal that acts both as a seal and a check valve.

**Operation** – As the slide nears the end of stroke, the spud enters the check seal, closing off the exhaust port and forcing the captured air to exhaust through the adjustable needle valve, providing a smooth, controlled deceleration. On the return stroke, the pressurized air collapses the rim of the lip seal allowing full air flow and providing a quick breakaway.

Cushion length can be specified. Long cushion spud allows slide to be adjusted to stop short of full stroke, and still have plenty of controlled cushioning.

**Ordering**

Code “C” (location L, R, or B in box) plus a 2-digit number to specify the cushion length as a number of 1/8” increments. Maximum cushion lengths are shown below; minimum cushion length is 3/4”.

<table>
<thead>
<tr>
<th>Model</th>
<th>Max. Cushion Lengths</th>
</tr>
</thead>
<tbody>
<tr>
<td>TS200</td>
<td>1-5/8” (13 eighths)</td>
</tr>
<tr>
<td>TS250</td>
<td>2” (16 eighths)</td>
</tr>
<tr>
<td>TS325</td>
<td>2-1/4” (18 eighths)</td>
</tr>
<tr>
<td>TS400</td>
<td>3” (24 eighths)</td>
</tr>
</tbody>
</table>

**Example:** For a TS250 with 1-1/2” cushions at both ends, the cushion code is – CB12

---

**Rod Scraper**  
**Available on all TS sizes**

**Construction** – The rod scraper option consists of a steel plate attached to the tie rods that houses a pair of exclusion rings (metallic or urethane) which will effectively remove contaminants that may cling to the guide shafts in severe environments (such as metal cutting machinery applications where “sticky” coolant is used).

The optional proximity switches and adjustable stop bolts (shown elsewhere in this catalog section) cannot be used with the scraper option.

Magnetically actuated sensors (Codes “J” & “E”) are compatible with the scraper option.

Special adjustable stops can be provided. Please contact the factory or your local Fabco-Air distributor.

**Ordering**

Code “MS” Metallic Rod Scraper (location L, R, or B in box)
Code “US” Urethane Rod Scraper (location L, R, or B in box)
## How to Order Summary

### Step 2

**Sensor Options**

<table>
<thead>
<tr>
<th>Sensor Options</th>
<th>S000 – Indicates no sensors desired</th>
<th>Proximity Switches w/Brackets &amp; Actuators</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Note: Indicate switch location in the 1st box</td>
<td>Note: Indicate switch location in the 1st box</td>
</tr>
<tr>
<td></td>
<td><strong>“T”</strong> = top surface; <strong>“S”</strong> = side surface</td>
<td><strong>“L”</strong> = Left end; <strong>“R”</strong> = Right end; <strong>“B”</strong> = Both ends</td>
</tr>
<tr>
<td></td>
<td>Indicate switch quantity in the 2nd box</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>S01</strong> thru <strong>S18</strong></td>
<td><strong>S40</strong> thru <strong>S42</strong></td>
</tr>
<tr>
<td></td>
<td>12mm Prox Switch w/Brackets &amp; Actuators</td>
<td>Prox Switch Brackets &amp; Actuators Only, no Switches.</td>
</tr>
<tr>
<td></td>
<td>– Choose desired electrical characteristics</td>
<td>– Choose reed or electronic (PNP or NPN)</td>
</tr>
<tr>
<td></td>
<td>– Choose pre-wired or quick disconnect with or without cord set</td>
<td>– Choose pre-wired or quick disconnect with or without cord set</td>
</tr>
<tr>
<td></td>
<td>J70 thru J75</td>
<td>J8000</td>
</tr>
<tr>
<td></td>
<td>Magnetic Piston and Clamp-on Sensors.</td>
<td>Magnetic Piston Only, No Sensors</td>
</tr>
<tr>
<td></td>
<td>– Choose reed or electronic (PNP or NPN)</td>
<td>– Choose reed or electronic (PNP or NPN)</td>
</tr>
<tr>
<td></td>
<td>– Choose pre-wired or quick disconnect with cord set</td>
<td>– Choose pre-wired or quick disconnect with cord set</td>
</tr>
<tr>
<td></td>
<td>E70 thru E77</td>
<td>E80 thru E80 (Surface location “1, 2, 3, or 4” in box)</td>
</tr>
<tr>
<td></td>
<td>Magnetic Piston &amp; Dovetail Style Sensors</td>
<td>Magnetic Piston &amp; Dovetail Mounting Rail (attached) only, no sensors.</td>
</tr>
<tr>
<td></td>
<td>– Choose reed or electronic (PNP or NPN)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>– Choose pre-wired or quick disconnect with cord set</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>E80</strong></td>
<td><strong>E80</strong></td>
</tr>
</tbody>
</table>

### Step 3

**Bolt-on Options**

<table>
<thead>
<tr>
<th>Bolt-on Options</th>
<th>H2R – H3L – RPB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal Shaft Mounting Block</td>
<td>Specify L, R, or B in box ( , ).</td>
</tr>
<tr>
<td>H1</td>
<td>– without stop bolt</td>
</tr>
<tr>
<td>H2</td>
<td>– with stop bolt (Requires “SP” or any prox option)</td>
</tr>
<tr>
<td>Vertical Shaft Mounting Block</td>
<td>Specify L, R, or B in box ( , ).</td>
</tr>
<tr>
<td>V1</td>
<td>– without stop bolt</td>
</tr>
<tr>
<td>V2</td>
<td>– with stop bolt (Requires “SP” or any prox option)</td>
</tr>
<tr>
<td>Shaft Clamp Block with Stop Bolt</td>
<td>Specify L, R, or B in box ( , ).</td>
</tr>
<tr>
<td>H3</td>
<td>– stop bolt is used for stroke adjustment. (Requires “SP” or any prox option)</td>
</tr>
<tr>
<td>Retainer Plate</td>
<td>Specify L, R, or B in box ( , ).</td>
</tr>
<tr>
<td>RP</td>
<td>– retainer plate must be used in conjunction with TGS option and one of the accessory blocks – H1, H2, H3, V1, or V2</td>
</tr>
<tr>
<td>Tooling Mounting Plate</td>
<td>Specify Aluminum or Steel in first box ( ) with “A” or “S”.</td>
</tr>
<tr>
<td>PL</td>
<td><strong>V</strong> – Tooling mounting plate and pair of vertical mounting blocks.</td>
</tr>
<tr>
<td>PL</td>
<td><strong>H</strong> – Tooling mounting plate and pair of horizontal mounting blocks.</td>
</tr>
</tbody>
</table>

### Integral Options

- **D** – Dowel Hole and Slot
- **V** – Viton Cylinder Seals
- **Z** – Stainless steel guide shafts, 440C hardened and ground

### Bearing Options

Sleeve bearings can be substituted for the standard linear ball bearings.

- **W** – Rulon® Sleeve Bearings
- **X** – Duralon® Sleeve Bearings

### Tapped Guide Shafts

**TGS** – Not available with option “Z”

### Stop Plate

**SP** – Required for use with Stop Bolt unless one of the prox options S01 – S42 is used

### Air Cushions (TS200 and larger)

C + 2 digits to express cushion length in number of 1/8 increments

### Rod Scrapers, Metallic

**MS** – see page 86

### Rod Scrapers, Urethane

**US** – see page 86
Fabco-Air Product Catalog Library

- Cylinders, Valves and Accessories
  Catalog # CV9
- Pancake® II Air Cylinders
  Catalog Pan2-2
- Square Pancake® II Air Cylinders
  Catalog # SqPan2
- ISO 6431 Cylinders
  Catalog # FAQR-09
- Twin Rod, Non-Rotating Air Cylinders
  Catalog # FDF-09 and Catalog # FDXS-09
- Multi-Power® Air Presses
  Catalog # FP16
- Stainless Steel Body Air Cylinders
  Catalog # SSB-03
- Pneumatic Grippers, Parallel Jaw and Angular Motion
  Catalog # GR-8
- Pneumatic Angular Grippers
  Catalog # FKA-09
- ISO 6432 Cylinders
  Catalog # FAE-09
- Global Series™ Metric Air Cylinders
  Catalog # GC-15
- Swing Clamps
  Bulletin # SC-DB04
- Swing Clamps, Pneumatic & Hydraulic
  Catalog # FMI.H
- Guided Motion Air Cylinders
  Catalog # FGM-10
- Air Slide Tables
  Catalog # FGXS-10

- Air Pilot & Solenoid Valves
  Catalog # FVS.Y-09
- Air Slide Tables
  Catalog # FGXS-10

- Stopped Cylinders
  Catalog # ST-SC
- Swing Clamps
  Bulletin # SC-DB04
- Swing Clamps, Pneumatic & Hydraulic
  Catalog # FMI.H
- Guided Motion Air Cylinders
  Catalog # FGM-10
- Air Slide Tables
  Catalog # FGXS-10