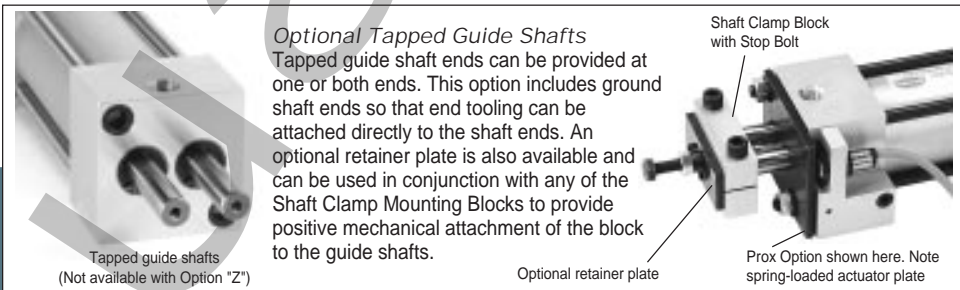
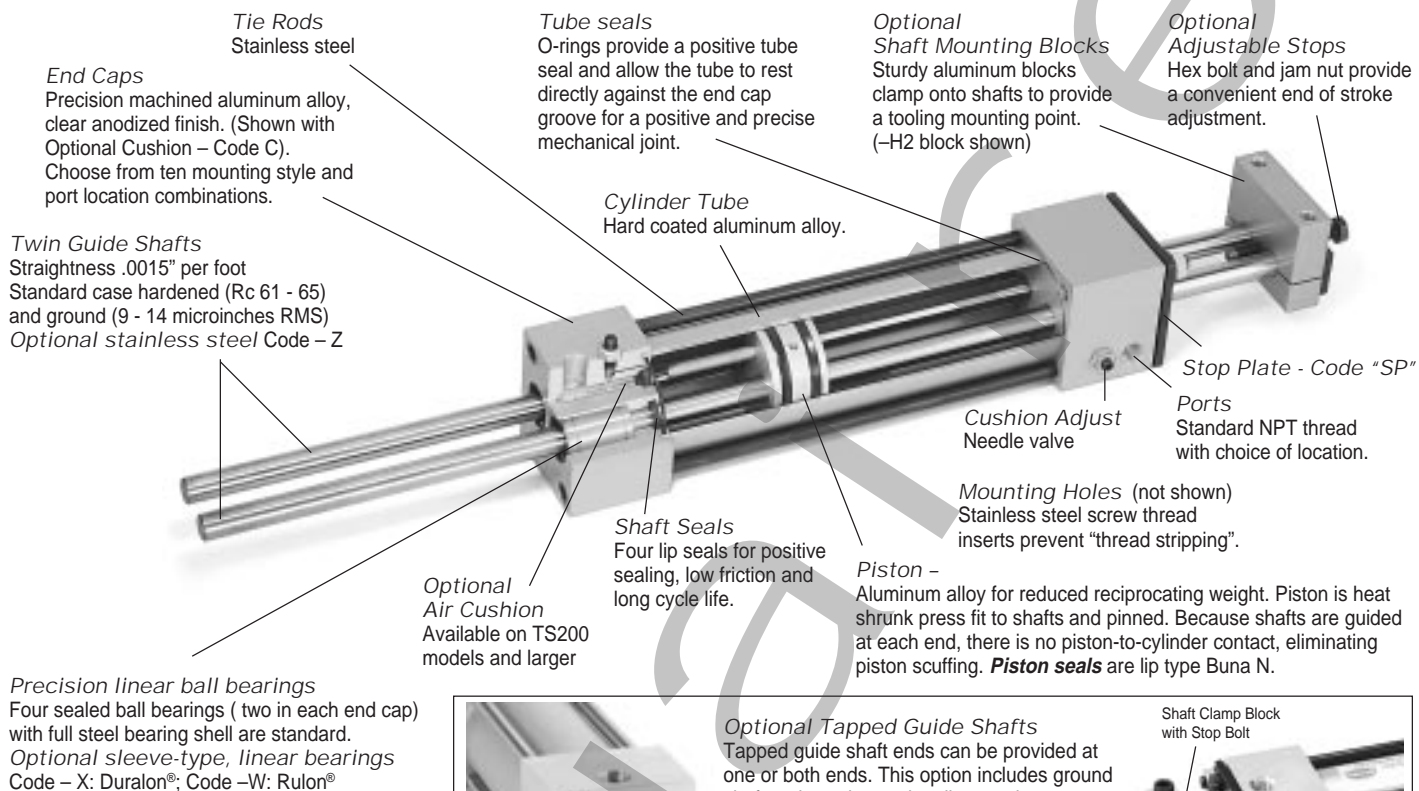


“TS” Series Linear Slides



Engineering Data

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

Pressure Rating: Maximum operating pressure is 150 psi Air

Output Force: Output Force = Pressure x Power Factor

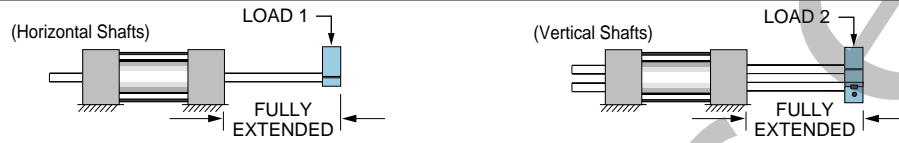
Speed: Safe speed range: without cushions – 6 to 8 inches per second; with cushions – 8 to 16 inches per second. Tandem hydraulic shock absorbers can be provided for speeds exceeding 18 inches per second, or for heavy reciprocating weights. Contact factory for application assistance.

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.

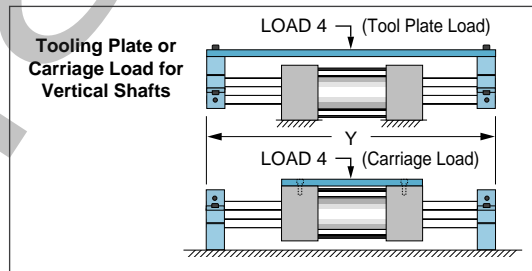
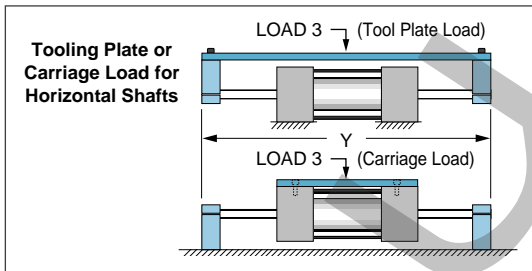
Compact, Precision Slides Housed Within Cylinder Bodies

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.

Model Number	Load Type	Stroke																			
		1"	2"	3"	4"	5"	6"	7"	8"	9"	10"	11"	12"	13"	14"	15"	16"	17"	18"	19"	20"
TS112	Load 1	9.9	8.7	3.8	1.6	1.0	0.5	0.4	0.3	0.1	0.1										
	Load 2	17	16.1	7.6	5.5	2.0	1.0	0.8	0.5	0.3	0.3										
TS150	Load 1	13	11.5	7.0	4.2	2.2	1.5	1.2	0.8	0.7	0.5	0.3	0.2								
	Load 2	23	19	14	8.2	4.4	3.0	2.4	1.6	1.4	1.0	0.6	0.5								
TS200	Load 1	58	54	26	13	8.0	4.0	3.5	3.1	2.5	1.9	1.6	1.3	1.1	1.0	0.4					
	Load 2	71	63	42	26	16	8.0	7.0	6.2	5.0	3.8	3.2	2.6	2.2	2.0	0.8					
TS250	Load 1	74	69	61	30	18	11	8.0	5.0	4.8	4.6	3.8	3.1	2.5	2.1	1.6	1.2	0.7	0.6	0.5	0.4
	Load 2	89	78	69	60	36	22	16	10	9.6	9.2	7.6	6.2	5.0	4.2	3.2	2.4	1.4	1.2	1.0	0.9
TS325	Load 1	180	170	160	98	62	34	21.5	12.5	10.5	8.5	7.6	6.1	4.9	3.8	3.3	2.8	2.5	2.1	1.8	1.5
	Load 2	216	210	202	196	124	68	43	25	21	17	15.2	12.2	9.8	7.6	6.6	5.6	5.0	4.2	3.6	3.0
TS400	Load 1	320	280	240	200	143	86	64	42	32	22	17	12.5	11.2	10	9.6	9.2	7.2	5.2	4.6	4.0
	Load 2	384	376	367	365	286	176	128	84	64	44	34	25	22.4	20	19.2	18.4	14.4	10.4	9.2	8.0



Strokes longer than charted below are NOT recommended. shaded area indicates standard strokes; indicates non-standard strokes.

Model Number	Tooling Plate / Carriage Load – (Maximum loads in pounds at mid-stroke producing .005" deflection or less)																			
Stroke	1"	2"	3"	4"	5"	6"	7"	8"	9"	10"	11"	12"	13"	14"	15"	16"	17"	18"	20"	
TS112	Y(inches)	8	10	12	14	16	18	20	22	24	26									
	Load 3	11	10.5	8.3	6.9	4.7	3.2	2.6	2.0	1.5	1.0									
	Load 4	17	16.5	16	15.5	12.7	6.5	5.7	3.3	2.4	1.8									
	Stroke	1"	2"	3"	4"	5"	6"	7"	8"	9"	10"	11"	12"	13"	14"	15"	16"	17"	18"	20"
TS150	Y(inches)	9.25	11.25	13.25	15.25	17.25	19.25	21.25	23.25	25.25	27.25	29.25	31.25							
	Load 3	14.8	14	13.8	11.6	10.1	8.5	6.5	4.5	3.7	3.0	2.5	2.0							
	Load 4	23.0	22.3	21.6	20.8	18.9	17.1	13.0	9.1	7.6	6.0	4.6	3.2							
	Stroke	2"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"				
TS200	Y(inches)	10.63	12.63	14.63	16.63	18.63	20.63	22.63	24.63	26.63	28.63	30.63	32.63	34.63	36.63	38.63				
	Load 3	58	52	38	24.5	20.2	16	12	8.0	7.5	6.9	6.6	6.3	5.9	5.1	4.0				
	Load 4	71	63	55	46.1	39.5	32	24	16	15	13.8	13.2	12.5	11.2	9.8	7.5				
	Stroke	2"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"				
TS250	Y(inches)	11.88	13.88	15.88	17.88	19.88	21.88	23.88	25.88	27.88	29.88	31.88	33.88	35.88	37.88	39.88	41.88	43.88	45.88	49.88
	Load 3	74	69.2	64.5	60	48	36	29.5	23	19.5	16	13	10	9.8	9.6	9.4	9.2	7.7	6.2	3.1
	Load 4	89	85	81	77	73	69.5	59	46	39	32	26	20	19.6	19.2	18.8	18.4	15.4	12.4	5.9
	Stroke	2"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"				
TS325	Y(inches)	15	19	23	27	31	35	39	43	47	51	55	59	63	67	71				
	Load 3	180	120	93	68	43	25	20.5	16.5	14.3	12.2	10	7.8	6.8	5.8	5.0				
	Load 4	216	192	168	124	80	50	41	33	28.6	24.4	20	15.6	13.6	11.6	10				
	Stroke	2"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"				
TS400	Y(inches)	18.25	22.25	26.25	30.25	34.25	38.25	42.25	46.25	50.25	54.25	58.25	62.25	66.25	70.25	74.25	78.25	82.25	86.25	
	Load 3	320	246	172	128	84	64	44	35	26	23	20	18.7	16.5	13.5	10.5	9.2	8.0	6.8	
	Load 4	384	364	344	256	168	128	88	70	52	46	40	37	33	27	21	18	16	13.5	
	Stroke	2"	4"	6"	8"	10"	12"	14"	16"	18"	20"	22"	24"	26"	28"	30"	32"	34"	36"	

“TS” Series Linear Slides – Order Guide

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”.

Step 1: Basic Slide Model

Model Number Will End Here If No Options Are Desired Leave Blank If No Integral Options Are Desired

TS 200 – 12 – MH2 – D – V – TGSB

Series Model Size Stroke Mounting Style & Port Locations Integral Options

Model Size	Bore	Guide Shaft Diameter	Standard Strokes in 1” Increments
112	1-1/8"	1/4"	1" to 10"
150	1-1/2"	3/8"	1" to 12"
200	2"	1/2"	1" to 15"
250	2-1/2"	5/8"	1" to 20"
325	3-1/4"	3/4"	1" to 20"
400	4"	1"	1" to 20"

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

Tapped Guide Shafts
 Code **TGS** Not available with Option “Z”

Stop Plate Code **SP** required for use with stop bolt unless one of the prox options S01 – S42 is used.

Air Cushions Code **C** + cushion length
 Use 2-digit number to specify length as a number of 1/8” increments. **Not available for TS112 or TS150**
 Max. Cushion Lengths
 TS200: 1-5/8” (13 eighths) TS325: 2-1/4” (18 eighths)
 TS250: 2” (16 eighths) TS400: 3” (24 eighths)
Example: For a TS250 with 1” cushions at both ends, the cushion code is – **CB08**

Rod Scrapers, Metallic Code **MS**
Rod Scrapers, Urethane Code **US**
 see page 86

Mounting Style & Port Locations

MH1 Horizontal Shafts, Side Ports High – Opposite Sides

MV1 Vertical Shafts, Side Ports on Center – Opposite Sides

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

MV2 Vertical Shafts, Side Ports on Center – Same Side

MH3 Horizontal Shafts, Top Ports on Center

MV3 Vertical Shafts, Top Ports – Staggered

MH4 Horizontal Shafts, Bottom Ports on Center

MV4 Vertical Shafts, Bottom Ports – Staggered

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

Optional Attachments

“B1” Bars **“B2” Bars**

“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.)

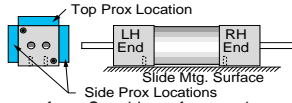
To Order with Slide: Add **“B1”** or **“B2”** to mounting style. **Example:** **TS250 – 12 – MH1B2**

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



Code followed by switch location in 1st box (): **T** = top surface; **S** = side surface, and quantity in 2nd box (): **L** = left end only; **R** = right end only; **B** = both ends. Prox switches are available complete with 12mm switches and actuators (S01 thru S18), or brackets & actuators only (S40 - S42). All mounting styles have top & side prox locations available except MH3 & MV3 have side locations only. Side mounted switches have both switches on the same side except MH1 & MV1 which have switches located on opposite sides.

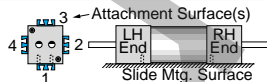
Proximity Switch w/Brackets & Actuators

Prewired w/ 6' Leadwire	Quick Disconnect w/2 M cord set	Quick Disconnect without cord set	Thread Size	Electrical Characteristics
S01 <input type="checkbox"/>	S02 <input type="checkbox"/>	S12 <input type="checkbox"/>	12mm	110v AC, 2-wire, w/LED
S03 <input type="checkbox"/>	S04 <input type="checkbox"/>	S14 <input type="checkbox"/>	12mm	24v DC, 2-wire, w/LED (NPN/PNP)
S05 <input type="checkbox"/>	S06 <input type="checkbox"/>	S16 <input type="checkbox"/>	12mm	24v DC, 3-wire, w/LED (PNP) Sourcing
S07 <input type="checkbox"/>	S08 <input type="checkbox"/>	S18 <input type="checkbox"/>	12mm	24v DC, 3-wire, w/LED (NPN) Sinking

Proximity Switch Brackets & Actuators Only

S40 <input type="checkbox"/>	12mm	Customer supplies the switches
S41 <input type="checkbox"/>	8mm	Customer supplies the switches
S42 <input type="checkbox"/>	5mm	Customer supplies the switches

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: 1, 2, 3 or 4. In the 2nd box, **L** = left end, **R** = right end, **B** = both ends. Example: **J703R** has one top-mounted sensor on the right end.

Magnetic Piston & Clamp-On Sensors ("J")

9 Ft. Prewired	Quick Disconnect w/5M cord set	Sensor Type	LED	Electrical Characteristics
J70 <input type="checkbox"/>	J71 <input type="checkbox"/>	Reed	Yes	5-120 VDC/VAC, 0.5 Amp Max, 10 Watt Max, SPST N.O., 3.5 Voltage Drop
J72 <input type="checkbox"/>	J73 <input type="checkbox"/>	Electronic	Yes	Sourcing PNP 6-24 VDC, 0.50 Amp Max, 1.0 Voltage Drop
J74 <input type="checkbox"/>	J75 <input type="checkbox"/>	Electronic	Yes	Sinking NPN 6-24 VDC, 0.50 Amp Max, 1.0 Voltage Drop

Magnetic Piston & Dovetail Style Sensors ("E")

9 Ft. Prewired	Quick Disconnect w/5M cord set	Sensor Type	LED	Electrical Characteristics
E70 <input type="checkbox"/>	E71 <input type="checkbox"/>	Reed	Yes	5-120 VDC/VAC, 0.03 Amp Max, 4 Watt Max, 2.0 Voltage Drop
E72 <input type="checkbox"/>	E73 <input type="checkbox"/>	Electronic	Yes	Sourcing PNP 6-24 VDC, 0.20 Amp Max, 0.5 Voltage Drop
E74 <input type="checkbox"/>	E75 <input type="checkbox"/>	Electronic	Yes	Sinking NPN 6-24 VDC, 0.20 Amp Max, 0.5 Voltage Drop
E76 <input type="checkbox"/>	E77 <input type="checkbox"/>	Reed	No	0-120 VDC/VAC, 0.5 Amp Max, 10 Watt Max, 0 Voltage Drop

Magnetic Piston ; customer supplies the sensors

J8000	Magnetic piston only.
E80 <input type="checkbox"/> 0	Includes dovetail mounting rail; Specify location 1, 2, 3 or 4 in box (<input type="checkbox"/>)

Model Number Ends Here If No Bolt-on Options Are Desired

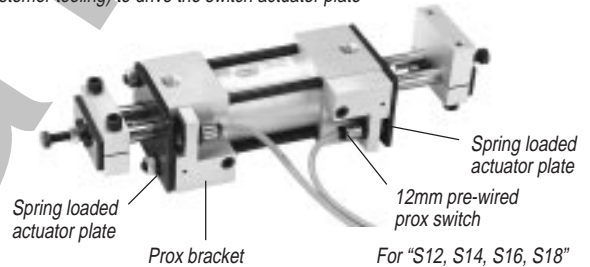
S03TB
(5 Digits)

- Use S0000 if no Sensing Options Are Desired)

Model number ends here if no Bolt-on Options are desired. Continue on to Step #3 if you need any of these options.

Prox Switches w/Brackets & Actuators

Prox switch requires a tooling option with stop bolt (or customer tooling) to drive the switch actuator plate



For "S12, S14, S16, S18" order straight or right angle cord set separately.

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

Option Code	Straight Cordset P/N	Rt. Angle Cordset P/N
S12	PCS01-2M	PCS02-2M
S14	PCS03-2M	PCS04-2M
S16	PCS05-2M	PCS06-2M
S18	PCS05-2M	PCS06-2M



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.

"TS" Series Linear Slides

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

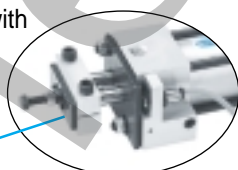
- H3 Stop bolt is used for stroke adjustment. See Note 1



Note 1: The aluminum end caps of the TS slide cannot be used as a stopbolt contact surface. A steel stop plate must be used. Specify either Integral Option "SP" or Prox Option "S01 - S42"

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



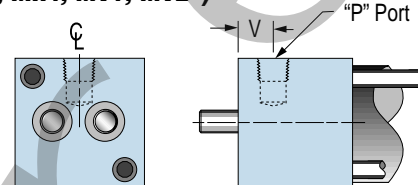
PL V Tooling mounting plate and pair of vertical shaft mounting blocks.

PL H Tooling mounting plate and pair of horizontal shaft mounting blocks.

In first box () use an "A" to specify Aluminum, or an S " to specify Steel. In the second box () use "1" meaning without Stop Bolt, or a "2" meaning with Stop Bolt.

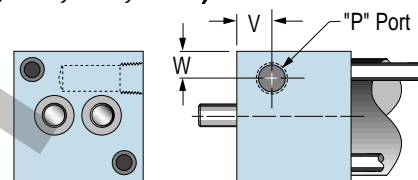
On-Center Port Locations

("MH3, MH4, MV1, MV2")



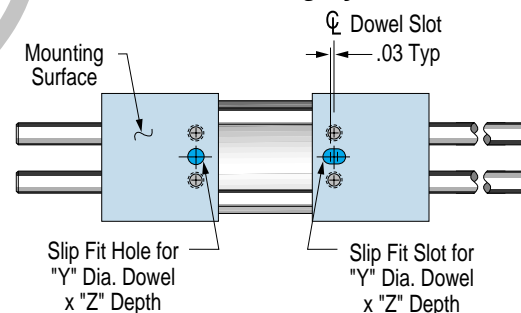
Corner Port Locations

("MH1, MH2, MV3, MV4")

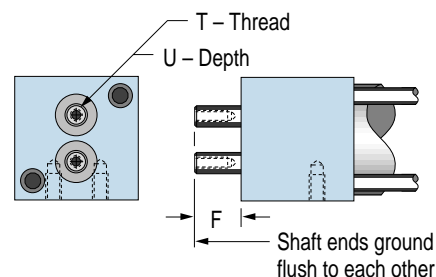


"Dowel Hole/Slot Option (Code "-D")

for "MH" & "MV" mounting styles



Tapped Guide Shafts (Code "-TGS ")

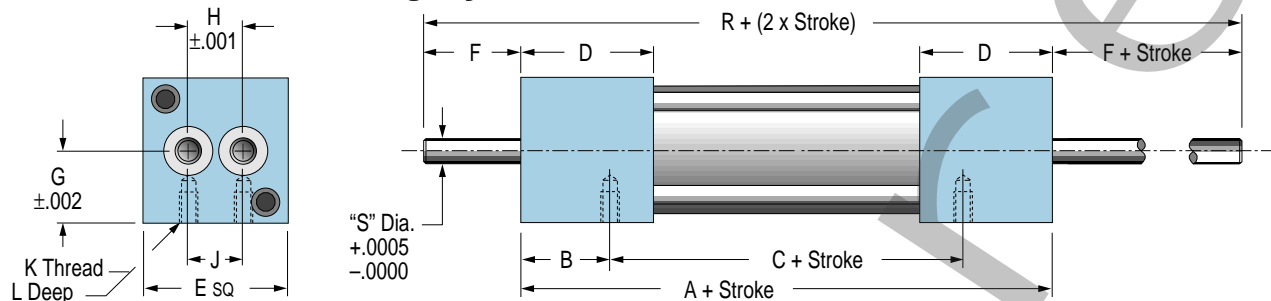


"TS" Series Dimensional Data

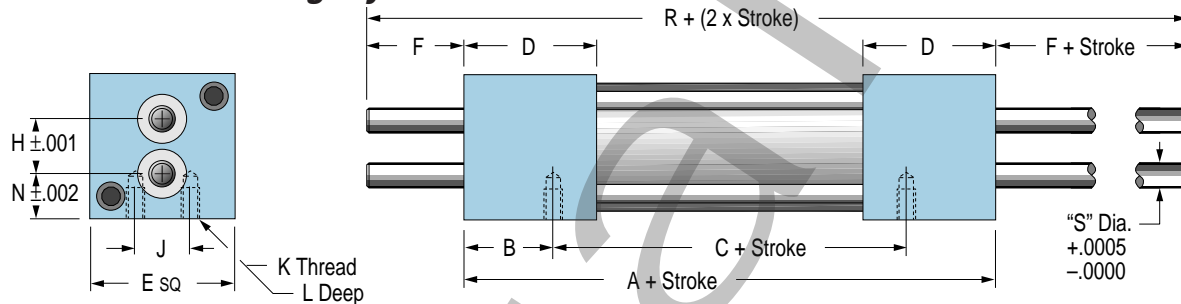
Model	Bore	Shaft Dia. S	A	AA	B	BB	C	CC	D	DD
TS112	1-1/8	.249	3.50	3.94	.969	1.125	1.562	2.000	1.38	1.81
TS150	1-1/2	.374	4.25	4.75	1.125	1.500	2.000	2.750	1.44	1.94
TS200	2	.499	5.13	5.88	1.562	1.875	2.000	3.375	1.81	2.56
TS250	2-1/2	.624	5.88	6.75	1.875	2.000	2.125	4.000	2.19	3.06
TS325	3-1/4	.749	6.50	7.50	2.000	2.500	2.500	5.250	2.44	3.44
TS400	4	.999	8.25	9.38	2.750	3.250	2.750	6.250	3.13	4.25

Mounting Style Dimensions

Horizontal Shafts Mounting Style “-MH□”



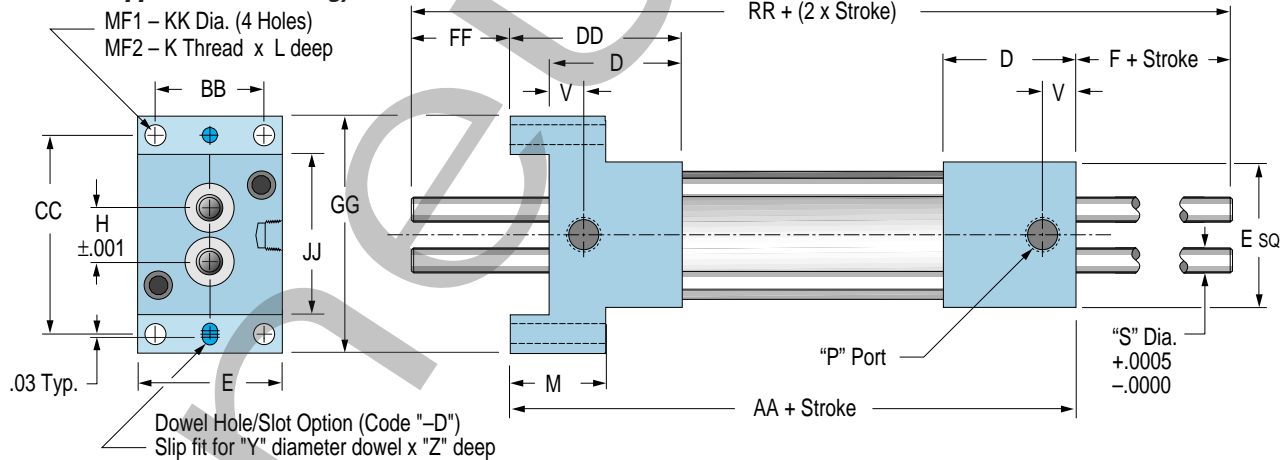
Vertical Shafts Mounting Style “-MV□”



Flange Mounting Style “-MF1 & MF2”

(“MF1” – Thru hole mounting)

(“MF2” – Tapped hole mounting)



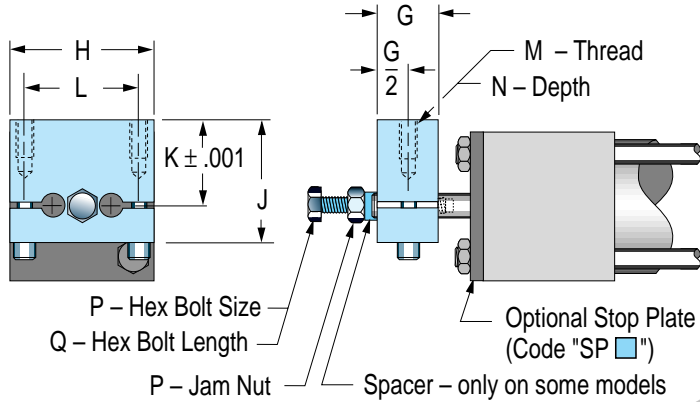
E	F	FF	G	GG	H	J	JJ	K	KK	L	M	N	P Port	R	RR	T	U	V	W	Y	Z
1.500	1.25	1.00	.750	2.375	.562	.562	1.63	#10-24	.203	.38	1.000	.469	1/8 NPT	6.00	6.19	#4-40	.38	.38	.28	3/16	.18
2.000	1.50	1.75	1.000	3.250	.750	.812	2.13	1/4-20	.266	.50	1.250	.625	1/4 NPT	7.25	8.00	#8-32	.50	.44	.41	1/4	.25
2.500	1.75	1.75	1.250	4.000	1.000	1.000	2.63	5/16-18	.328	.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	1.250	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
3.750	2.25	2.50	1.875	6.500	1.875	1.750	4.00	7/16-14	.453	.63	2.250	.937	3/8 NPT	11.00	12.25	5/16-18	.88	.75	.75	3/8	.37
4.500	3.00	3.00	2.250	7.500	2.250	2.250	4.75	1/2-13	.531	.75	2.500	1.125	3/8 NPT	14.25	15.38	3/8-16	.88	.88	.88	3/8	.37

"TS" Series Linear Slides

Horizontal Shaft Mounting Block

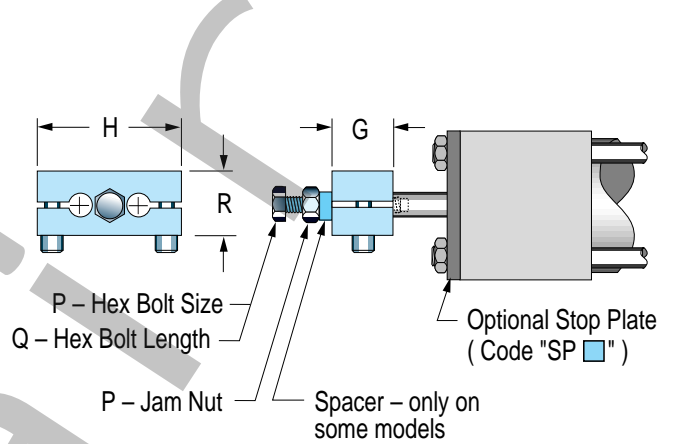
(Code "-H1" without stop bolt)

(Code "-H2" includes stop bolt)



Shaft Clamp Block with Stop Bolt

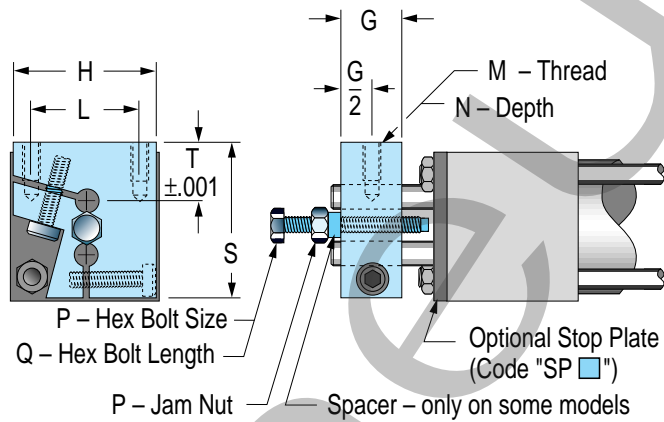
(Code "-H3")



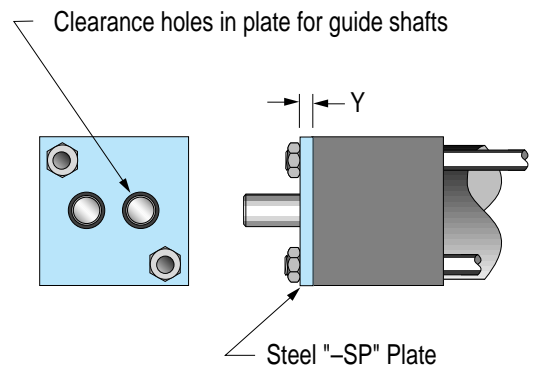
Vertical Shaft Mounting Block

(Code "-V1" without stop bolt)

(Code "-V2" includes stop bolt)



Stop Plate (Code "-SP")



"TS" Series Dimensional Data

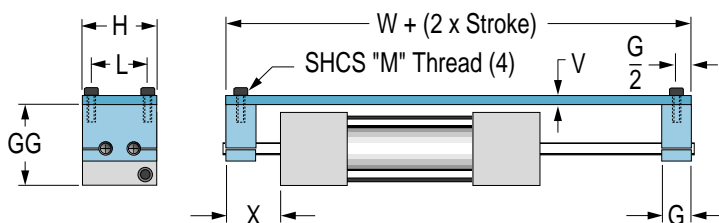
Model	Bore	A	AA	B1	B2	BB	C1	C2	CC	D1	D2	DD	E	F	G	GG
TS112	1-1/8	.250	.16	.75	1.25	.13	2.50	3.25	.40	2.000	2.750	.75	.218	.656	.63	1.625
TS150	1-1/2	.250	.16	.75	1.50	.13	3.50	4.00	.51	2.750	3.250	.75	.281	.750	.75	2.125
TS200	2	.375	.23	1.00	1.50	.19	4.00	4.50	.64	3.250	3.750	.75	.344	.750	.75	2.625
TS250	2-1/2	.375	.25	1.00	2.00	.19	5.00	5.50	.71	4.000	4.500	.75	.406	.875	1.00	3.125
TS325	3-1/4	.500	.31	1.25	2.25	.25	5.75	6.38	.81	4.750	5.375	.75	.469	1.125	1.00	3.875
TS400	4	.625	.50	1.25	N/A	.38	7.00	N/A	1.09	5.750	N/A	.75	.531	N/A	1.50	4.750

Option Dimensions

Tooling Mounting Plate Package

(Code "-PL V " for vertical shafts)

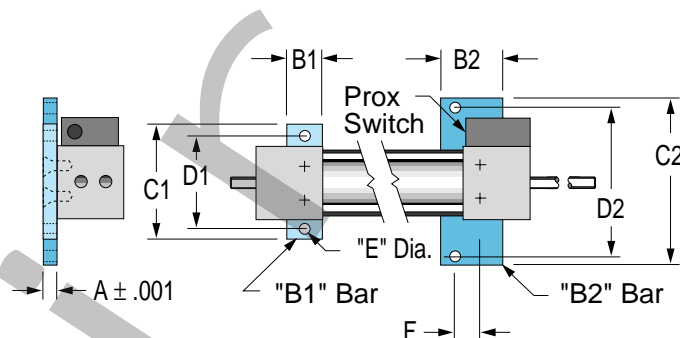
(Code "-PL H " for horizontal shafts)



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

Base Mounting Bars -B1 & -B2

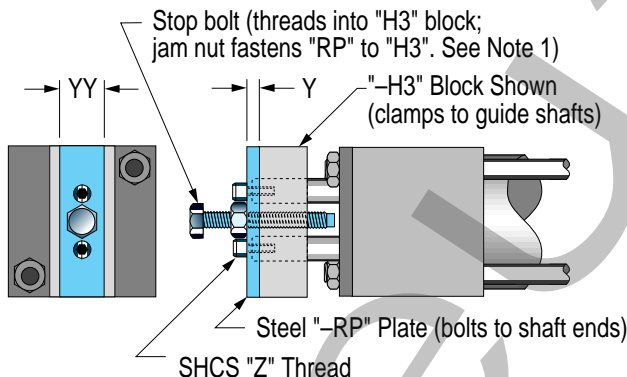
(For use with "MH" or "MV" mounting)



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 ")



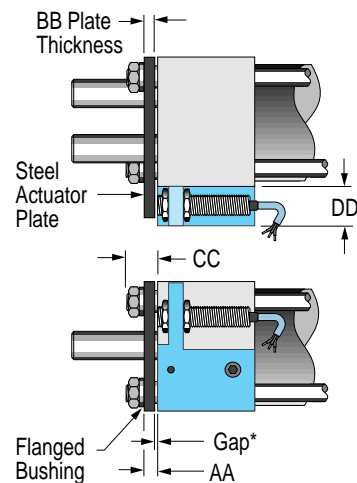
Retainer plate option must be used in conjunction with "TGS" tapped guide shafts option and one of the bolt-on accessory blocks ("H1, H2, H3, V1, V2"). Provides positive mechanical attachment of the block to the guide shafts. **Note 1: Socket head cap screw is used to fasten "RP" to clampblocks without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



*Note: Gap = "AA" - "BB"

H	J	K	L	M	N	P	Q	R	S	T	V	W	X	Y	YY	Z	Bore	Model
1.50	1.25	.875	1.125	#10-24	.44	#10-24	1.50	.75	1.59	.594	.250	5.88	1.19	.13	.50	#4-40	1-1/8	TS112
2.00	1.75	1.125	1.500	1/4-20	.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	.63	5/16-18	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	2-1/2	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

“TS” Series Linear Slides

Air Cushion Option

Available on TS200 Models and larger

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.

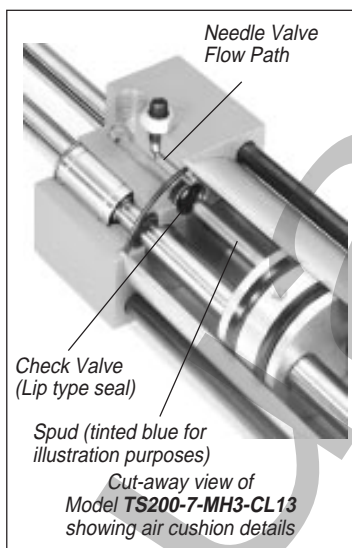
Cushion length can be specified. Long cushion spud allows slide to be adjusted to stop short of full stroke, and still have plenty of controlled cushioning.

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".

Model	Max. Cushion Lengths
TS200 ...	1-5/8" .. (13 eighths)
TS250 ...	2" (16 eighths)
TS325 ...	2-1/4" .. (18 eighths)
TS400 ...	3" (24 eighths)

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)



“MS” Metallic scraper shown here

Step 1

TS200 – 12.0 – MH2

Indicate “TS” series

Select model size from chart below

Model Size	Bore	Guide Shaft Diameter
112	1-1/8"	1/4"
150	1-1/2"	3/8"
200	2"	1/2"
250	2-1/2"	5/8"
325	3-1/4"	3/4"
400	4"	1"

Select a stroke (Special strokes also available)

Choose Mounting Style & port locations

Mounting Styles

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

For use with MH or MV only

–B1 Mounting Bars
–B2 Mounting Bars (except TS400)

MF1 Thru hole mounting
MF2 Tapped hole mounting
Flange Mount
Ports on Center

Model Standard Stroke Length

TS112	1" to 10" by 1" increments
TS150	1" to 12" by 1" increments
TS200	1" to 15" by 1" increments
TS250	1" to 20" by 1" increments
TS325	1" to 20" by 1" increments
TS400	1" to 20" by 1" increments

How to Order Summary

Step 2

Step 3

-D -V -TGSB

Select
Integral
Options

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

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

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

– S03TB

Sensor Options

Sensor Options

S000 – Indicates no sensors desired

Proximity Switches w/Brackets & Actuators

Note: Indicate switch location in the 1st box

☐☐ "T" = top surface; "S" = side surface

Indicate switch quantity in the 2nd box

☐☐ "L" = Left end, "R" = Right end, "B" = Both ends

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

Magnetically Actuated Sensors

Note: Indicate switch location in the 1st box

☐☐ Indicate surface location "1, 2, 3, or 4"

Indicate quantity in the 2nd box

☐☐ "L" = Left end, "R" = Right end, "B" = Both ends

J70 ☐☐ thru **J75** ☐☐

Magnetic Piston and Clamp-on Sensors.

- Choose reed or electronic (PNP or NPN)
- Choose pre-wired or quick disconnect with cord set

J8000

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.

E80 ☐☐ 0

(Surface location "1, 2, 3, or 4" in box)

Magnetic Piston & Dovetail Mounting Rail (attached only, no sensors.

– H2R – H3L – RPB

Bolt-on Options

Horizontal Shaft

Mounting Block

Specify **L, R, or B** in box (☐).

H1 ☐ – without stop bolt

H2 ☐ – with stop bolt (Requires "SP" or any prox option)

Vertical Shaft

Mounting Block

Specify **L, R, or B** in box (☐).

V1 ☐ – without stop bolt

V2 ☐ – with stop bolt (Requires "SP" or any prox option)

Shaft Clamp Block

with Stop Bolt

Specify **L, R, or B** in box (☐).

H3 ☐ – stop bolt is used for stroke adjustment. (Requires "SP" or any prox option)

Retainer Plate

Specify **L, R, or B** in box (☐).

RP ☐ – retainer plate must be used in conjunction with TGS option and one of the accessory blocks – H1, H2, H3, V1, or V2

Tooling Mounting Plate

Specify **Aluminum or Steel** in first box (☐) with "A" or "S".

In second box (☐) use "1" meaning without stop bolt, or "2" meaning with stop bolt.

PL ☐ **V** ☐ – Tooling mounting plate and pair of vertical mounting blocks.

PL ☐ **H** ☐ – Tooling mounting plate and pair of horizontal mounting blocks.