

PNEUMATIC AND HYDRAULIC AUTOMATION PRODUCTS

Space-Saving
Engineered Solutions



NASON
NEW THINKING

TABLE OF CONTENTS

7

L SERIES Pneumatic Cylinders



7	Features	28	32mm	Bore
9	How to Order	32	40mm	Bore
10	Engineering Data	36	50mm	Bore
11	Stock Strokes	40	63mm	Bore
12	12mm Bore	44	76mm	Bore
16	20mm Bore	48	101mm	Bore
20	25mm Bore	50	127mm	Bore
24	28.5mm Bore	52	152mm	Bore

54

TS SERIES Pneumatic Cylinders



54	Features	60	32mm	Bore
56	How to Order	61	40mm	Bore
57	Engineering Data	62	50mm	Bore
58	20mm Bore	63	63mm	Bore
59	25mm Bore	64	76mm	Bore

65

PS SERIES Pneumatic Cylinders



65	Features	71	32mm	Bore
67	How to Order	72	40mm	Bore
68	Engineering Data	73	50mm	Bore
69	20mm Bore	74	63mm	Bore
70	25mm Bore	75	76mm	Bore

76

BS SERIES Pneumatic Cylinders



76	Features	82	32mm	Bore
78	How to Order	83	40mm	Bore
79	Engineering Data	84	50mm	Bore
80	20mm Bore	85	63mm	Bore
81	25mm Bore	86	76mm	Bore

87

ACCESSORIES



87	Solid State Limit Sensors	94	Pivot Mountings
89	Sensor Low Profile*	95	Hollow Rod
90	Sensor Receptacles	96	Rod End Options
91	Alignment Couplers	97	Urethane Shock Pads
92	Flange Mountings		

98

CR SERIES Stainless Steel Cylinders

98	Features	105	40mm	Bore
100	How to Order	106	50mm	Bore
101	Engineering Data	107	63mm	Bore
102	20mm Bore	108	76mm	Bore
103	25mm Bore	109	Options	
104	32mm Bore			

* Product(s) no longer offered by Nason.

110

LC SERIES Non-rotating Load Carrying Cylinders



110	Features	116	28.5mm	Bore
111	How to Order	117	32mm	Bore
112	Engineering Data	118	40mm	Bore
113	12mm	119	50mm	Bore
114	20mm	120	63mm	Bore
115	25mm			

121

HB SERIES Pneumatic Block Slide Cylinders

121	Features	125	12mm	Bore
122	How to Order	126	25mm	Bore
123	Engineering Data	127	40mm	Bore
		128	50mm	Bore

129

SC SERIES Stopper Cylinders



129	Features	138	32mm	Bore
130	How to Order	141	40mm	Bore
131	Engineering Data	144	50mm	Bore
132	20mm	147		Rod End Styles
135	25mm	148		Flange Mounts

149

L 15 SERIES Hydraulic Cylinders



149	Features	156	32mm	Bore
150	How to Order	158	40mm	Bore
151	Engineering Data	160	50mm	Bore
152	20mm			
154	25mm			

162

L 20 SERIES Hydraulic Cylinders



162	Features	168	50mm	Bore
163	How to Order	169	63mm	Bore
164	Engineering Data	170	76mm	Bore
165	25mm	171	101mm	Bore
166	32mm	172		Rod End Options
167	40mm	173		Rod Extensions

174

L 30 SERIES Hydraulic Cylinders



174	Features	180	50mm	Bore
175	How to Order	181	63mm	Bore
176	Engineering Data	182	76mm	Bore
177	25mm	183		Rod End Options
178	32mm	184		Rod Extensions
179	40mm			

185

CUSTOM Cylinders



185	Features
186	Specialty Slides
186	Special Materials & Coatings
187	Custom Projects

NEW THINKING

FOR BETTER SOLUTIONS

For more than seven decades, Nason has provided pneumatic and hydraulic pressure devices to the industrial, military, and mobile hydraulics fields. Over a decade ago, Nason took the knowledge gained from designing and manufacturing custom devices for harsh environments, limited space requirements, and quality, long life products and applied it to our newest product offerings, Pneumatic and Hydraulic Automation products. We knew manufacturing these products would take the same commitments to quality that make our Pressure, Vacuum, and Temperature devices the standard bearers in the industry: quality people, quality materials, and quality designs.

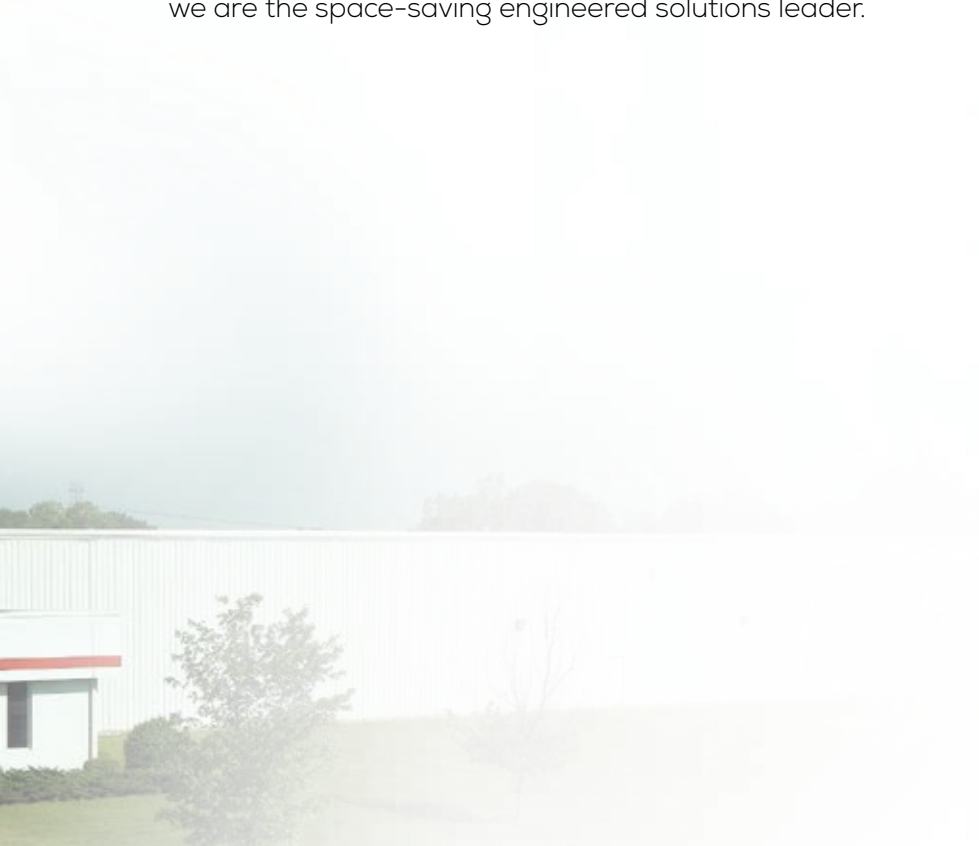
Privately owned and operated, Nason is located on 40 acres in Upstate South Carolina. Nason's 70,000-square-foot manufacturing facility features state-of-the-art CNC manufacturing equipment, as well as a fully staffed manual machinery department which allows Nason to react quickly to customer requirements. Nason's cylinder line is designed around 15 custom extrusions, with over 10,000 feet kept in raw stock to ensure quick reaction to custom design and delivery requests. All cataloged product is kept in stock, in component form, for quick assembly and delivery.





Nason's Engineering Department is staffed with over 75 years of experience in the pneumatic and hydraulic fields. Utilizing the latest 3D CAD software, Nason is fully staffed to meet your most demanding design requirements. 3D models as well as 2D prints of all Nason product lines are available for download from our website. Custom designs can be modeled and delivered quickly for insertion into your assembly models.

Contact Nason for your next automation need. Let us show you why we are the space-saving engineered solutions leader.



NASON

NASON CYLINDERS AT A GLANCE

Compact design—more power in a smaller package

Customized to your specifications

Low breakaway and running friction

100% precision-machined design

Field rebuildable

SMALLER for greater savings

Nason cylinders are small for more effective use of space, but their compact package delivers the same power as larger competitive products. That means you can downsize without compromising power capacity.

STRONGER for longer life

Our cylinders provide significantly more cycles of productive service. We use aluminum or stainless steel bar stock, and we hone the bore until it has a mirror finish. This assures longer seal and cylinder life and better performance.

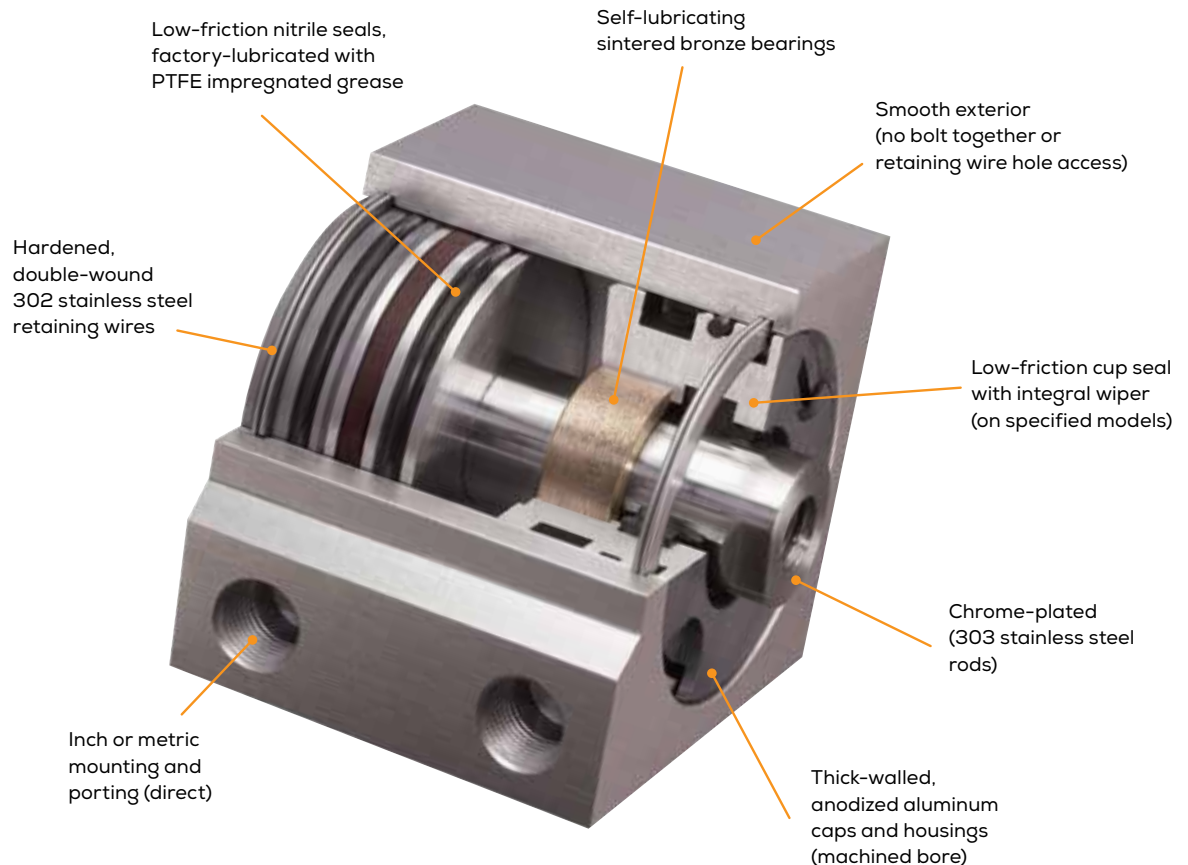
SMARTER for more flexibility

Unlike some manufacturers who buy extruded stock with pre-drilled holes, we custom drill our cylinders. That way we can accommodate your design specifications for drilling patterns, hole/contour geometry, ports, and mountings. Plus, smarter means being flexible; small or large quantities, any specification, prototype availability, and custom products and service.

We believe there is a smarter way to assure quality as well: all Nason cylinders are made in America in our own manufacturing plant. None of our products or components are produced offshore.

L SERIES

PNEUMATIC CYLINDERS



Low Breakaway and Running Friction / Long Life

Designed for low startup and running friction, the L series contains low-friction nitrile seals and is lubricated at the factory with PTFE impregnated grease. Precision-machined components and self-lubricating bearings ensure long life and continued low friction operation.

Compact Size / Clean Design

Nason L series cylinders were designed with today's automation equipment in mind. They offer more power in a smaller package than comparable pancake or compact type cylinders. The smooth exterior of the cylinder body (no bolt together or retaining wire hole access) means no dirt or grease traps.

Rugged Construction

The L series incorporates thick-walled, anodized aluminum housings and caps. Rods are chrome-plated 303 stainless steel riding in self-lubricating bronze bearings, and hardened 302 stainless steel retaining wires are used for assembly.

Rebuildable

All L series cylinders are field rebuildable.

Versatile Design

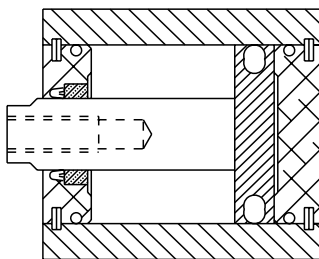
The L series cylinders are metric in design (bore and rod sizes). They are offered in inch or metric mounting and porting. Due to their 100% machined design, they are easily customized by Nason.

Individual Features

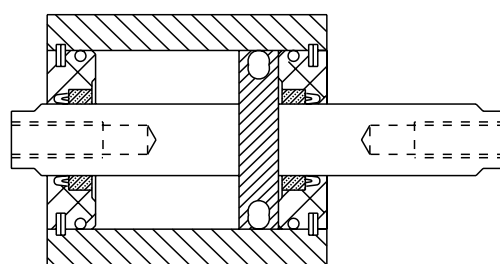
Model LS

- Most compact of 3 models

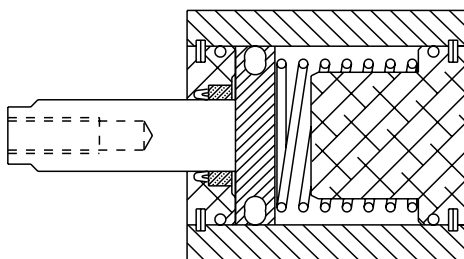
Double Acting, Single Rod



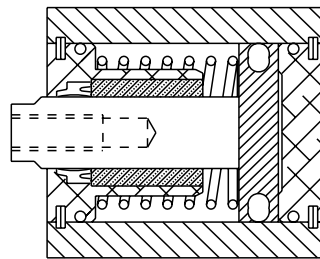
Type "D" - Double Acting, Double Rod



Type "R" - Single Acting, Spring Extend



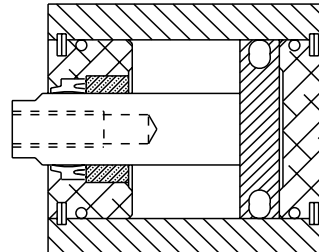
Type "S" - Single Acting, Spring Retract



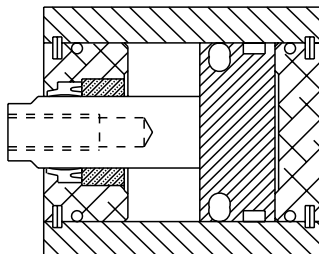
Model LE

- Extended internal rod bearing for additional load support
- Integral seal and rod wiper

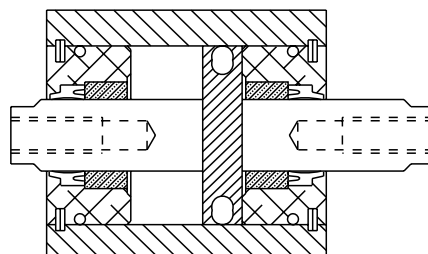
Double Acting, Single Rod



Double Acting, Single Rod



Type "D" - Double Acting, Double Rod



Model LH

- Extended internal rod bearing for additional load support
- Integral seal and rod wiper
- Wear band added to piston for additional load support

Example: Heavy Duty, 32mm Bore, 50mm stroke, Double Acting Single Rod, Tapped Mounting Both Ends, Nonmagnetic Piston, Inch threads, 17mm Total Rod Extension, Rod Stud

Diagram illustrating the product configuration options for a hydraulic cylinder, showing the relationship between Model, Bore, Stroke, Type, Mounting, Piston Type, and Options.

MODEL

LS	Standard Duty
LE	Medium Duty
LH	Heavy Duty

BORE

12	12mm (.47")
20	20mm (.79")
25	25mm (.98")
28.5	28.6mm (1.13")
32	32mm (1.26")
40	40mm (1.58")
50	50mm (1.97")
63	63mm (2.48")
76	76.2mm (3.00")
101	101mm (4.00")
127	127mm (5.00")
152	152mm (6.00")

STROKE

1 to 100	1mm to 100mm in 1mm increments
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See Stroke Table on Page 10 and Product Pages for Availability

TYPE

Nil	Double Acting, Single Rod
D	Double Acting, Double Rod
S	Single Acting, Spring Retract
R	Single Acting, Spring Extend

See Stroke Table on Page 10 and Product Pages for Availability

MOUNTING

MF	Threads on Front Face (Rod End)
MR	Threads on Rear Face (Opposite Rod End)
MB	Threads on Both Faces
MT	Drilled Thru and Counterbored for Bolt Clearance
MS	Threads on Side of Cylinder Body
FF	Flange on Front Face (Rod End)
FR	Flange on Rear Face (Opposite Rod End)
FE	Flange on Side of Cylinder Body (Holes on End)
FS	Flange on Side of Cylinder Body (Holes on Side)
PR	Pivot on Rear Face
PL	Pivot on Rear Face with Mounting Brackets and Pin

See Product Pages and Accessories Section for Availability

PISTON TYPE

Nil	No Magnet
M	Magnetic Piston

See note #1

OPTIONS

EM	InchThreads and Ports
HS	FKM Seals (See Note #1, page 10, and page 97)
SH	Hydraulic Seals (See Note #1, page 10, and page 97)
RE	Rod Eye Pivot (See page 96)
RS	Male Thread Stud for Rod End (See page 96)
RF	Additional 5mm Rod Extension (See page 96)
RT	Additional 10mm Rod Extension (See page 96)
RN	Additional 15mm Rod Extension (See page 96)
RY	Additional 20mm Rod Extension (See page 96)
RV	Additional 25mm Rod Extension (See page 96)
RH	Additional 35mm Rod Extension (See page 96)
R_	Additional custom Rod Extension (See page 96)
HR	Hollow double rod with standard taps (Type "D" must be specified)
HP	Hollow double rod with taps for fittings (Type "D" must be specified)
PE	Enlarged Ports (See Product pages for availability and size)
UB	Urethane Shock Pads Both Ends (See note #3 and page 97)
UF	Urethane Shock Pad Front (See note #3 and page 97)
UR	Urethane Shock Pad Rear (See note #3 and page 97)

Note 1 - Magnetic Piston "M" limits temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Magnetic Piston limits Pressure rating 250 PSI (1.7 MPa)

Note 2 - "R_" Enter desired additional Custom Length Rod extension in mm after "R". Example LE-32X40MSM-EMR20.4 would have a TOTAL ROD EXTENSION of 25.4mm (20.4mm+Standard 5mm extension)

Note 3 - "UB", "UF", "UR" Urethane Shock Pads limit temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Pads are mechanically retained at the Cap faces. "UB" OPTION CHANGES STROKE TOLERANCE TO +/-2mm. "UF" and "UR" OPTION CHANGES STROKE TOLERANCE TO +/-1mm.

Piston Areas and Pressure Ratings

Bore	Piston Area Extend	Piston Area Retract	Maximum Pressure Ratings		
			Standard Pneumatic	Hydraulic (SH Option)	Magnetic (SH Option)
12	1,13 cm ² (.18 in ²)	0,85 cm ² (.14 in ²)	1.0 MPa (150 PSI)	NA	NA
20	3,14 cm ² (.48 in ²)	2,64 cm ² (.40 in ²)	1.7 MPa (250 PSI)	3.45 MPa (500 PSI)	1.7 MPa (250 PSI)
25	4,91 cm ² (.76 in ²)	4,12 cm ² (.64 in ²)	1.7 MPa (250 PSI)	3.45 MPa (500 PSI)	1.7 MPa (250 PSI)
28.5	6,41 cm ² (1.0 in ²)	5,28 cm ² (.82 in ²)	1.7 MPa (250 PSI)	3.45 MPa (500 PSI)	1.7 MPa (250 PSI)
32	8,04 cm ² (1.25 in ²)	6,91 cm ² (1.07 in ²)	1.7 MPa (250 PSI)	3.45 MPa (500 PSI)	1.7 MPa (250 PSI)
40	12,56 cm ² (1.95 in ²)	10,55 cm ² (1.64 in ²)	1.7 MPa (250 PSI)	3.45 MPa (500 PSI)	1.7 MPa (250 PSI)
50	19,63 cm ² (3.04 in ²)	17,62 cm ² (2.73 in ²)	1.7 MPa (250 PSI)	3.45 MPa (500 PSI)	1.7 MPa (250 PSI)
63	31,17 cm ² (4.83 in ²)	28,03 cm ² (4.34 in ²)	1.7 MPa (250 PSI)	3.45 MPa (500 PSI)	1.7 MPa (250 PSI)
76	45,6 cm ² (7.07 in ²)	42,46 cm ² (6.59 in ²)	1.7 MPa (250 PSI)	3.45 MPa (500 PSI)	1.7 MPa (250 PSI)
101	81,07 cm ² (12.57 in ²)	77,93 cm ² (12.09 in ²)	1.4 MPa (200 PSI)	NA	NA
127	126,7 cm ² (19.6 in ²)	123,5 cm ² (19.1 in ²)	1.4 MPa (200 PSI)	NA	NA
152	181, 46 cm ² (28.2 in ²)	176,55 cm ² (27.45 in ²)	1.4 MPa (200 PSI)	NA	NA

Spring Forces for Type "S" and "R"

Bore	Stroke	Fully Compressed	Spring Rate
12	1mm - 25mm	2.72 kg (6 lbs)	.064 kg/mm (3.6 lbs/in)
20	1mm - 25mm	4.08 kg (9 lbs)	.098 kg/mm (5.5 lbs/in)
20	26mm - 50mm	4.40 kg (9.7 lbs)	.073 kg/mm (4.1 lbs/in)
25	1mm - 25mm	3.04 kg (6.7 lbs)	.063 kg/mm (3.5 lbs/in)
25	26mm - 50mm	3.13 kg (6.9 lbs)	.039 kg/mm (2.2 lbs/in)
28.5	1mm - 25mm	5.94 kg (13.1 lbs)	.134 kg/mm (7.53 lbs/in)
28.5	26mm - 50mm	6.07 kg (13.4 lbs)	.072 kg/mm (4.13 lbs/in)
32	1mm - 25mm	5.67 kg (12.5 lbs)	.134 kg/mm (7.53 lbs/in)
32	26mm - 50mm	6.03 kg (13.3 lbs)	.072 kg/mm (4.13 lbs/in)
40	1mm - 25mm	8.62 kg (19 lbs)	.198 kg/mm (11.1 lbs/in)
40	26mm - 50mm	9.03 kg (19.9 lbs)	.107 kg/mm (6.0 lbs/in)
50	1mm - 25mm	8.62 kg (19 lbs)	.198 kg/mm (11.1 lbs/in)
50	26mm - 50mm	9.03 kg (19.9 lbs)	.107 kg/mm (6.0 lbs/in)

Specifications

Media (Standard and HS Seals)	Air - Clean, Dry Or Lubricated
Media (SH Seals)	Standard Mineral Hydraulic Fluid
Pre-Lubricated at Factory	Non-soap elastomer/PTFE thickener
Temp. Range (Std.)	-10°C to 93°C (14°F to 200°F)
Temp. Range (Mag. Piston)	-10°C to 82°C (14°F to 180°F) See Note 2 & 3
Temp. Range (UB Option)	-10°C to 82°C (14°F to 180°F) See Note 2 & 3
Temp. Range (HS Option)	-10°C to 150°C (14°F to 302°F) See Note 2 & 3
Stroke Tolerance (Std)	+1mm/-0 (+0.04"/-0)
Stroke Tolerance (UB)	+/-2mm (+/-0.08")
Stroke Tolerance (UF)	+/-1mm (+/-0.04")
Stroke Tolerance (UR)	+/-1mm (+/-0.04")

Note 1 - Longer strokes and other increments available upon request

Note 2 - Magnetic Piston "M" limits temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Magnetic Piston and Sensor mounting tracks are provided on Front Stroke Cylinder only.

Note 3 - "UB", "UF", "UR" Urethane Shock Pads limit temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Pads are mechanically retained at the Cap faces. "UB" OPTION CHANGES STROKE TOLERANCE TO +/-2mm. "UF" and "UR" OPTION CHANGES

STROKE TOLERANCE TO +/-1mm. "UB", "UF", and "UR" Not available with "SH" Seal Option. Note 4 - While all Models are offered in all strokes, it is recommended that strokes over 50mm use LE or LH Models for added bearing support.

Available Strokes

Model LS - 10mm through 100mm in 1mm increments
Model LS with Magnetic Piston - 5mm through 100mm in 1mm increments
Models LE & LH (Standard and Magnetic Piston) - 5mm through 100mm in 1mm increments
Model LS, LE & LH 28.5mm Bore (Standard and Magnetic Piston) - 6.35mm through 101.6mm in 6.35mm increments
Model LS, Type S and R (Standard and Magnetic Piston) 12mm Bore - 5mm through 25mm in 1mm increments
Model LS, Type S and R (Standard and Magnetic Piston) 20mm Bore Thru 50mm Bore - 5mm through 50mm in 1mm increments
Model LS, Type S and R 28.5mm Bore (Standard and Magnetic Piston)) - 6.35mm through 50.8mm in 6.35mm increments

See note #1 and #4

Stock Strokes for Quick Delivery

Ship in 2-3 Days

Models LS, LE, and LH

Standard and Magnetic Pistons

Mounting Styles MF, MR, MB, MT, and MS

Metric and Inch Threads

Single Rod End Type Cylinders

Bore Sizes - 20mm, 25mm, 32mm			
1-10 pieces	Stock Strokes (Ship 2-3 days)		
Model	LS	LE	LH
Standard Piston	20mm	15mm	10mm
Magnetic Piston	15mm	10mm	5mm
Standard Piston	30mm	25mm	20mm
Magnetic Piston	25mm	20mm	15mm
Standard Piston	45mm	40mm	35mm
Magnetic Piston	40mm	35mm	30mm
Standard Piston	55mm	50mm	45mm
Magnetic Piston	50mm	45mm	40mm
Standard Piston	70mm	65mm	60mm
Magnetic Piston	65mm	60mm	55mm
Standard Piston	80mm	75mm	70mm
Magnetic Piston	75mm	70mm	65mm

Bore Sizes - 40mm, 50mm			
1-10 pieces	Stock Strokes (Ship 2-3 days)		
Model	LS	LE	LH
Standard Piston	25mm	15mm	10mm
Magnetic Piston	20mm	10mm	5mm
Standard Piston	35mm	25mm	20mm
Magnetic Piston	30mm	20mm	15mm
Standard Piston	50mm	40mm	35mm
Magnetic Piston	45mm	35mm	30mm
Standard Piston	60mm	50mm	45mm
Magnetic Piston	55mm	45mm	40mm
Standard Piston	75mm	65mm	60mm
Magnetic Piston	70mm	60mm	55mm
Standard Piston	85mm	75mm	70mm
Magnetic Piston	80mm	70mm	65mm

Strokes

Bore Size	Standard (Non-Magnetic)		5mm	10mm	15mm	20mm	25mm	30mm	35mm	40mm	45mm	50mm	55mm	60mm	65mm	70mm	75mm	80mm	85mm
20mm	Model	LS				*		*			*		*			*		*	
		LE			*		*			*		*			*		*		
		LH		*		*			*		*			*		*			
25mm	Magnetic Piston		5mm	10mm	15mm	20mm	25mm	30mm	35mm	40mm	45mm	50mm	55mm	60mm	65mm	70mm	75mm	80mm	85mm
32mm	Model	LS			*		*			*		*			*		*		
		LE		*		*			*		*			*		*			
		LH	*		*			*		*			*		*				

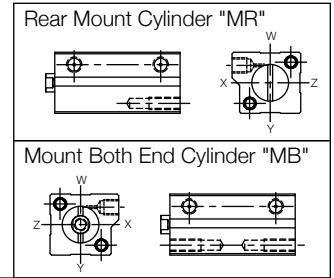
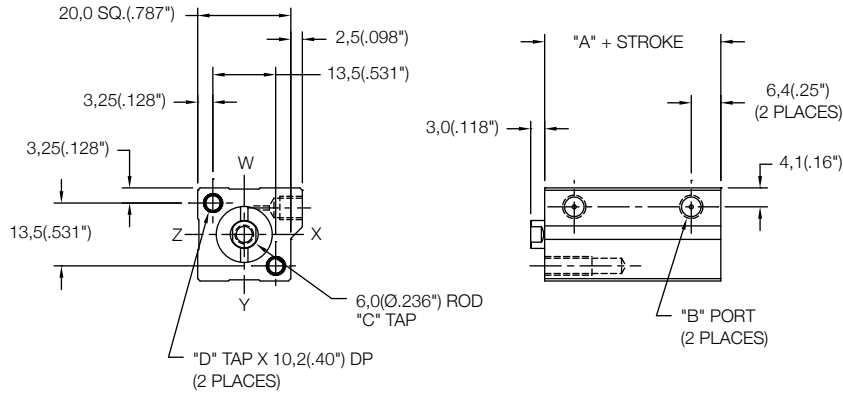
Strokes

Bore Size	Standard (Non-Magnetic)		5mm	10mm	15mm	20mm	25mm	30mm	35mm	40mm	45mm	50mm	55mm	60mm	65mm	70mm	75mm	80mm	85mm
40mm	Model	LS					*		*			*		*			*		*
		LE			*		*			*		*			*		*		
		LH		*		*			*		*			*		*			
50mm	Magnetic Piston		5mm	10mm	15mm	20mm	25mm	30mm	35mm	40mm	45mm	50mm	55mm	60mm	65mm	70mm	75mm	80mm	85mm
		LS				*		*			*		*			*		*	
		LE		*		*			*		*			*		*			
		LH	*		*			*		*			*		*				

Non Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	-	10mm - 50mm	16,0(0.63")	PUSH 1,13 cm ² (0.18 in ²)
LE	-	5mm - 50mm	21,0(0.83")	
LH	-	5mm - 50mm	26,0(1.03")	PULL 0,85 cm ² (0.14 in ²)
LS	S,R	5mm - 25mm	31,0(1.22")	

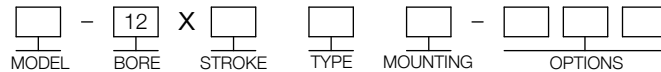
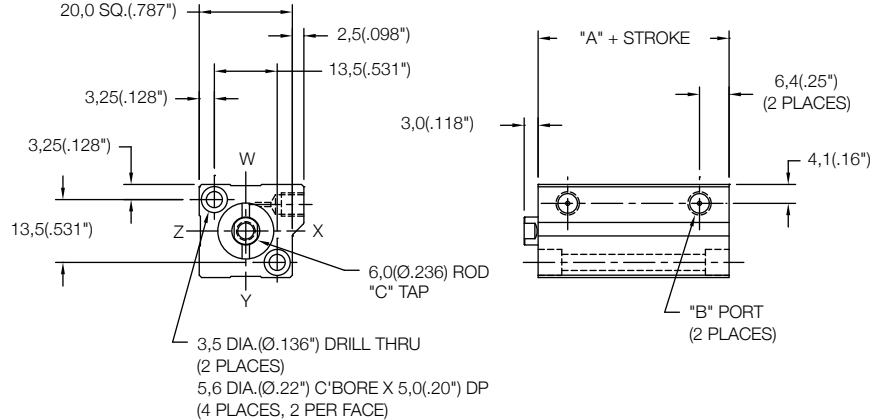
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M4X0,7	#8-32
"D"	M4X0,7	#8-32



Non Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	-	10mm - 20mm	16,0(0.63")	PUSH 1,13 cm ² (0.18 in ²)
LE	-	5mm - 15mm	21,0(0.83")	
LH	-	5mm - 10mm	26,0(1.03")	PULL 0,85 cm ² (0.14 in ²)
LS	S,R	5mm	31,0(1.22")	

	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M4X0,7	#8-32



MODEL
LS
LE
LH

5mm - 50mm STROKE
(SEE STROKE RANGE)

BLANK - NO CODE, DOUBLE
ACTING, SINGLE ROD

S - SINGLE ACTING, SPRING RETRACT
R - SINGLE ACTING, SPRING EXTEND

MT - THRU MOUNT
MF - FRONT MOUNT
MR - REAR MOUNT
MB - BOTH END MOUNTS
FF - FRONT FLANGE
FR - REAR FLANGE
(FOR FLANGES SEE PAGE 92)
PR - REAR PIVOT
(FOR PIVOT SEE PAGE 94)

EM - INCH THREADS & PORT OPTIONS

HS - HIGH TEMPERATURE SEALS OPTION:
AVAILABLE ON LE AND LH MODELS ONLY
(SEE PAGE 97)

RE - ROD EYE
(SEE PAGE 96)

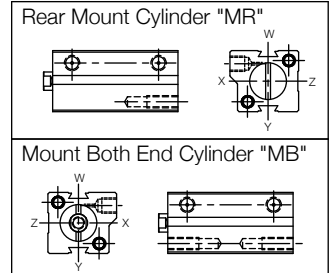
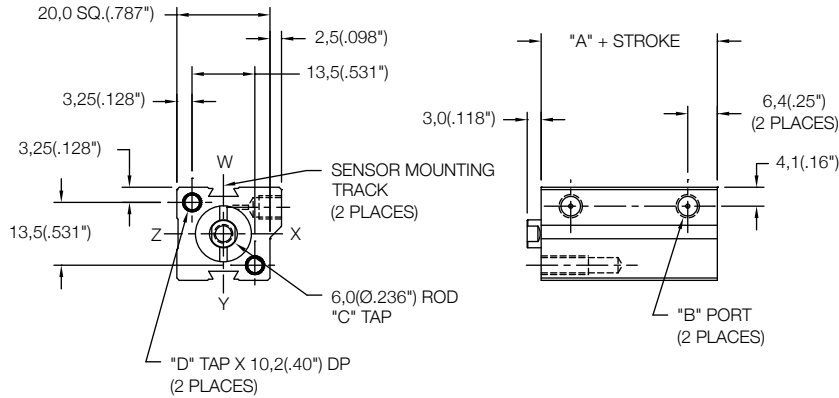
RS - MALE STUD FOR ROD END
(SEE PAGE 96)

RF, RH, RN, RT, RV, RY - ROD EXTENSIONS
(SEE PAGE 96)

Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	-	10mm - 50mm	26,0(1.03")	PUSH 1,13 cm ² (0.18 in ²) PULL 0,85 cm ² (0.14 in ²)
LE	-	5mm - 50mm	31,0(1.23")	
LH	-	5mm - 50mm	36,0(1.42")	
LS	S,R	5mm - 25mm	41,0(1.62")	

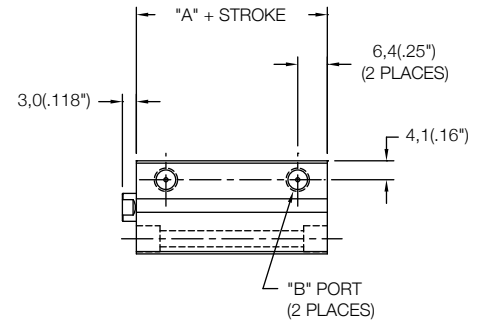
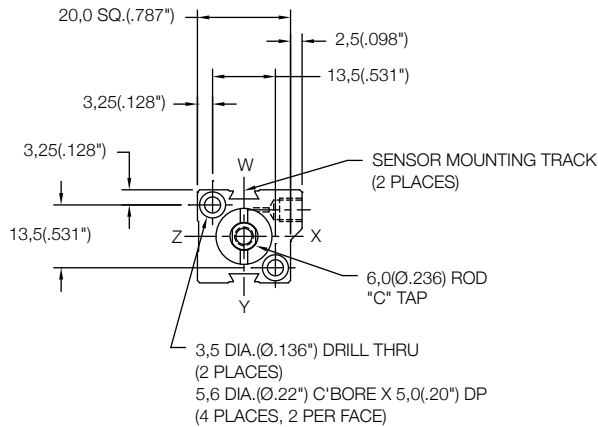
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M4X0,7	#8-32
"D"	M4X0,7	#8-32



Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	-	10mm	26,0(1.03")	PUSH 1,13 cm ² (0.18 in ²) PULL 0,85 cm ² (0.14 in ²)
LE	-	5mm	31,0(1.23")	

	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M4X0,7	#8-32



MODEL - 12 X STROKE TYPE MOUNTING MAGNETIC - OPTIONS

LS
LE
LH

5mm - 50mm STROKE
(SEE STROKE RANGE)

BLANK - NO CODE, DOUBLE
ACTING, SINGLE ROD

S - SINGLE ACTING, SPRING RETRACT
R - SINGLE ACTING, SPRING EXTEND

MT - THRU MOUNT
MF - FRONT MOUNT
MR - REAR MOUNT
MB - BOTH END MOUNTS
FF - FRONT FLANGE
FR - REAR FLANGE
(FOR FLANGES SEE PAGE 92)
PR - REAR PIVOT
(FOR PIVOT SEE PAGE 94)

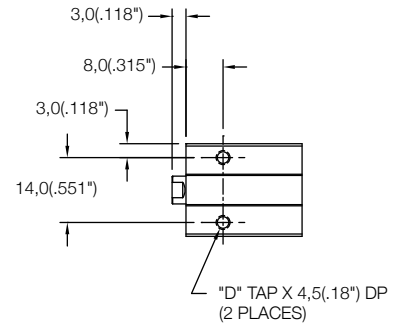
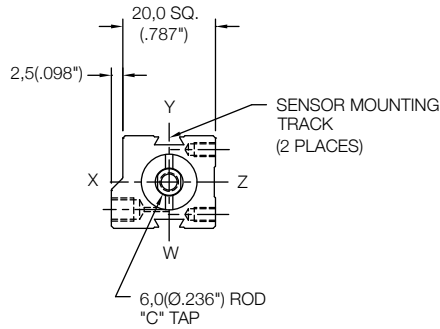
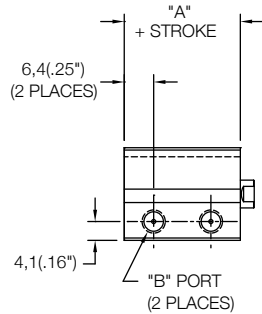
SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS (SEE PAGE 88)

- EM - INCH THREADS & PORT OPTIONS
- HS - HIGH TEMPERATURE SEALS OPTION:
AVAILABLE ON LE AND LH MODELS ONLY
(SEE PAGE 97)
- RE - ROD EYE
(SEE PAGE 96)
- RS - MALE STUD FOR ROD END
(SEE PAGE 96)
- RF, RH, RN, RT, RV, RY - ROD EXTENSIONS
(SEE PAGE 96)

Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	-	10mm	26,0(1.03")	PUSH 1,13 cm ² (0.18 in ²)
LE	-	5mm	31,0(1.23")	PULL 0,85 cm ² (0.14 in ²)

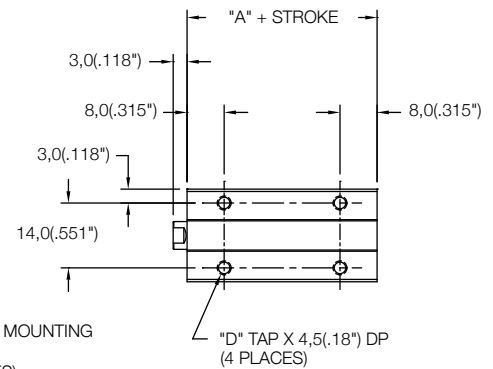
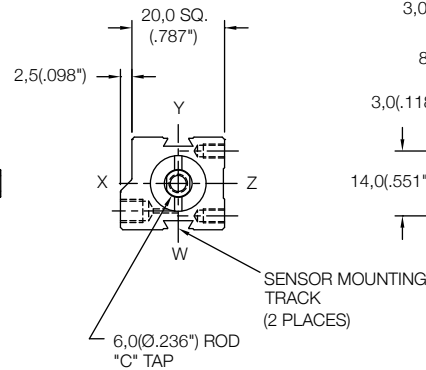
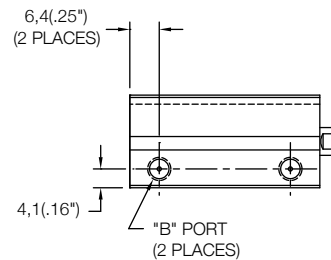
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M4X0,7	#8-32
"D"	M3X0,5	#4-40



Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	-	15mm - 50mm	26,0(1.03")	PUSH 1,13 cm ² (0.18 in ²)
LE	-	10mm - 50mm	31,0(1.23")	
LH	-	5mm - 50mm	36,0(1.42")	PULL 0,85 cm ² (0.14 in ²)
LS	S,R	5mm - 25mm	41,0(1.62")	

	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M4X0,7	#8-32
"D"	M3X0,5	#4-40

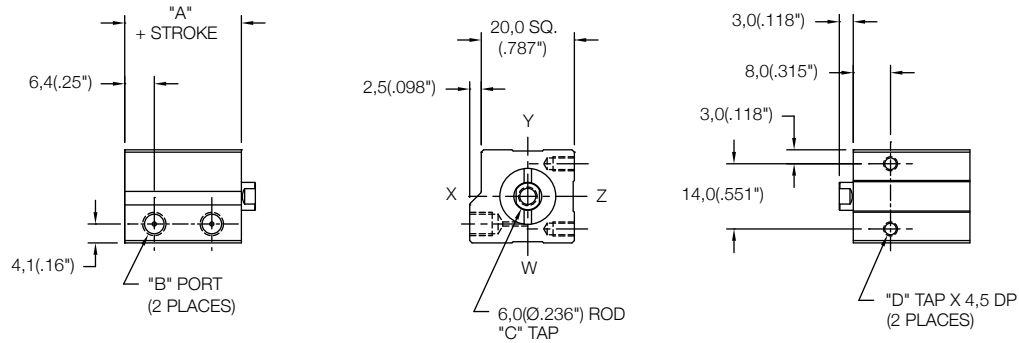


MODEL	-	12	X	STROKE	TYPE	MOUNTING	MAGNETIC	-	OPTIONS
LS LE LH				5mm - 50mm STROKE (SEE STROKE RANGE)	BLANK - NO CODE, DOUBLE ACTING, SINGLE ROD S - SINGLE ACTING, SPRING RETRACT R - SINGLE ACTING, SPRING EXTEND	MS - SIDE MOUNT FE - FLANGE ON END FS - FLANGE ON SIDE (SEE PAGE 93)	M		SENSORS SOLD SEPARATELY SKS, SKP, SCS, SCP - SOLID STATE LIMIT SENSORS (SEE PAGE 88) EM - INCH THREADS & PORT OPTIONS HS - HIGH TEMPERATURE SEALS OPTION: AVAILABLE ON LE AND LH MODELS ONLY (SEE PAGE 97) RE - ROD EYE (SEE PAGE 96) RS - MALE STUD FOR ROD END (SEE PAGE 96) RF, RH, RN, RT, RV, RY - ROD EXTENSIONS (SEE PAGE 96)

Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	-	10mm - 20mm	16,0(0.63")	PUSH 1,13 cm ² (0.18 in ²)
LE	-	5mm - 15mm	21,0(0.83")	
LH	-	5mm - 10mm	26,0(1.03")	PULL 0,85 cm ² (0.14 in ²)
LS	S,R	5mm	31,0(1.22")	

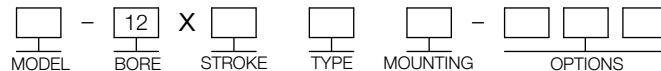
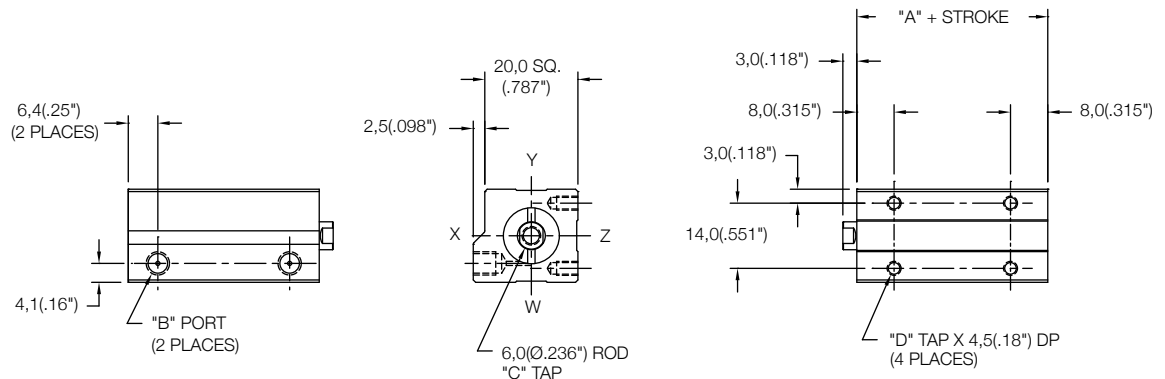
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M4X0,7	#8-32
"D"	M3X0,5	#4-40



Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	-	25mm - 50mm	16,0(0.63")	PUSH 1,13 cm ² (0.18 in ²)
LE	-	20mm - 50mm	21,0(0.83")	
LH	-	15mm - 50mm	26,0(1.03")	PULL 0,85 cm ² (0.14 in ²)
LS	S,R	10mm - 25mm	31,0(1.22")	

	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M4X0,7	#8-32
"D"	M3X0,5	#4-40



MODEL
LS
LE
LH

5mm - 50mm STROKE
(SEE STROKE RANGE)

BLANK - NO CODE, DOUBLE
ACTING, SINGLE ROD
S - SINGLE ACTING, SPRING RETRACT
R - SINGLE ACTING, SPRING EXTEND

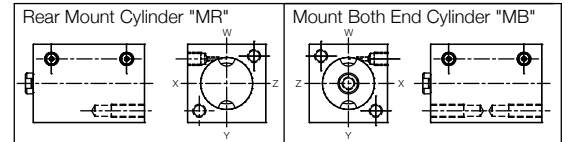
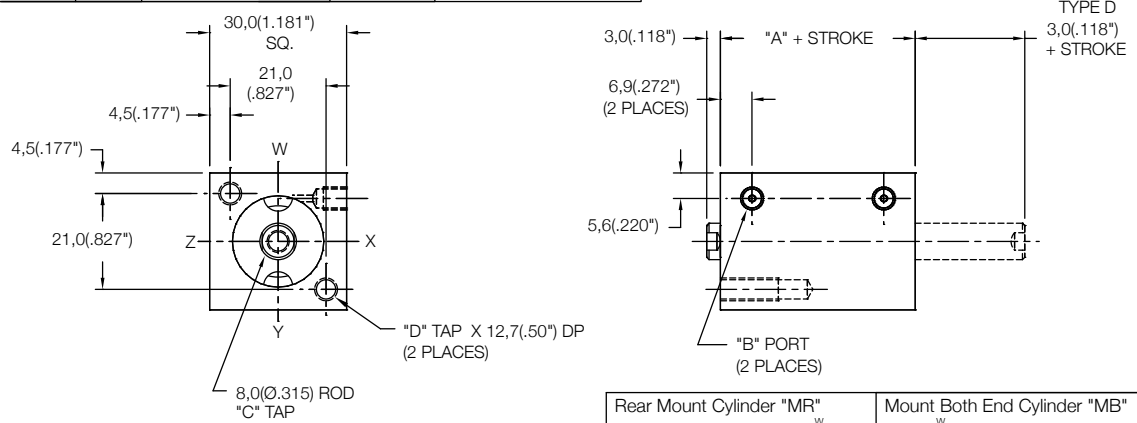
MS - SIDE MOUNT
FE - FLANGE ON END
FS - FLANGE ON SIDE
(SEE PAGE 93)

EM - INCH THREADS & PORT OPTIONS
HS - HIGH TEMPERATURE SEALS OPTION:
AVAILABLE ON LE AND LH MODELS ONLY
(SEE PAGE 97)
RE - ROD EYE
(SEE PAGE 96)
RS - MALE STUD FOR ROD END
(SEE PAGE 96)
RF, RH, RN, RT, RV, RY - ROD EXTENSIONS
(SEE PAGE 96)

Non Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 100mm	18,5(0.73")	PUSH 3,14 cm ² (0.48 in ²) PULL 2,64 cm ² (0.40 in ²)
LE	-	5mm - 100mm	23,5(0.93")	
LH	_,D	5mm - 100mm	28,5(1.12")	
LS	S,R	5mm - 50mm	33,5(1.32")	

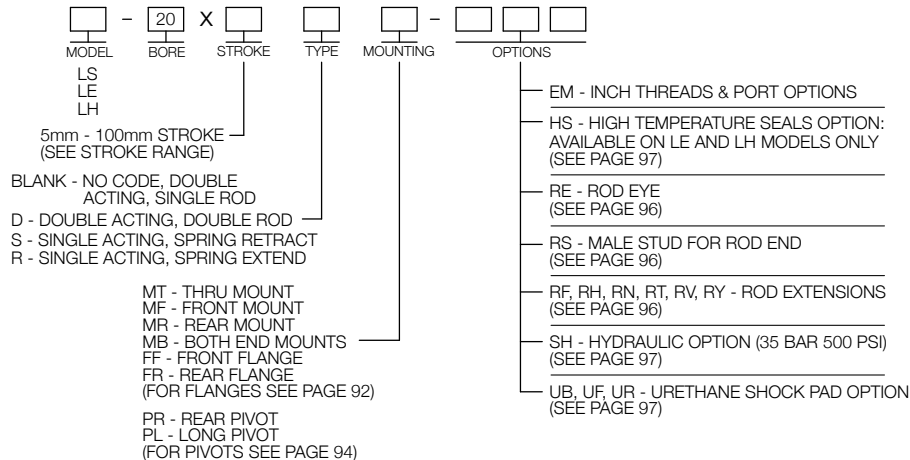
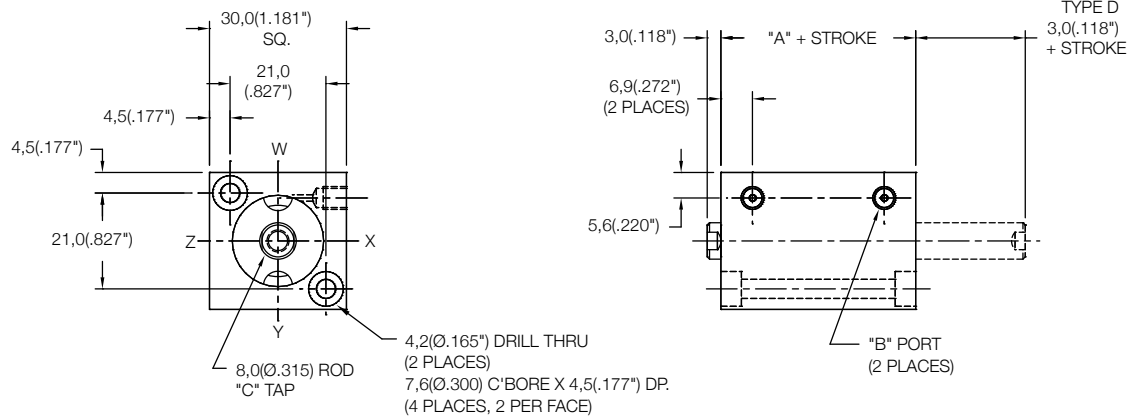
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M5X0,8	#10-32



Non Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 25mm	18,5(0.73")	PUSH 3,14 cm ² (0.48 in ²) PULL 2,64 cm ² (0.40 in ²)
LE	-	5mm - 20mm	23,5(0.93")	
LH	_,D	5mm - 15mm	28,5(1.12")	
LS	S,R	5mm - 10mm	33,5(1.32")	

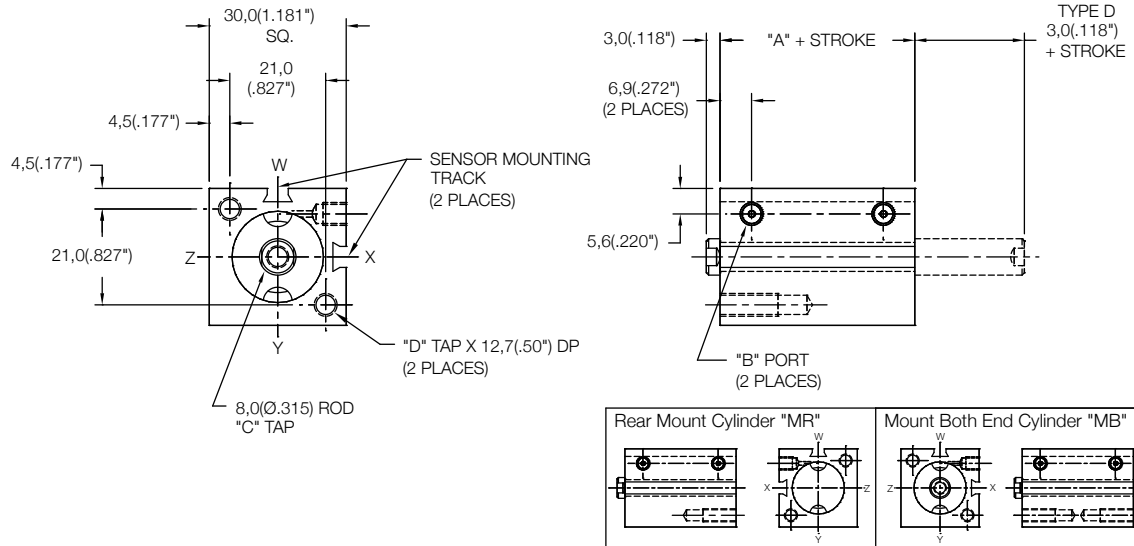
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32



Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	5mm - 100mm	23,5(0.93")	PUSH 3,14 cm ² (0.48 in ²)
LE	_,	5mm - 100mm	28,5(1.12")	
LH	_,D	5mm - 100mm	33,5(1.32")	PULL 2,64 cm ² (0.40 in ²)
LS	S,R	5mm - 50mm	38,5(1.52")	

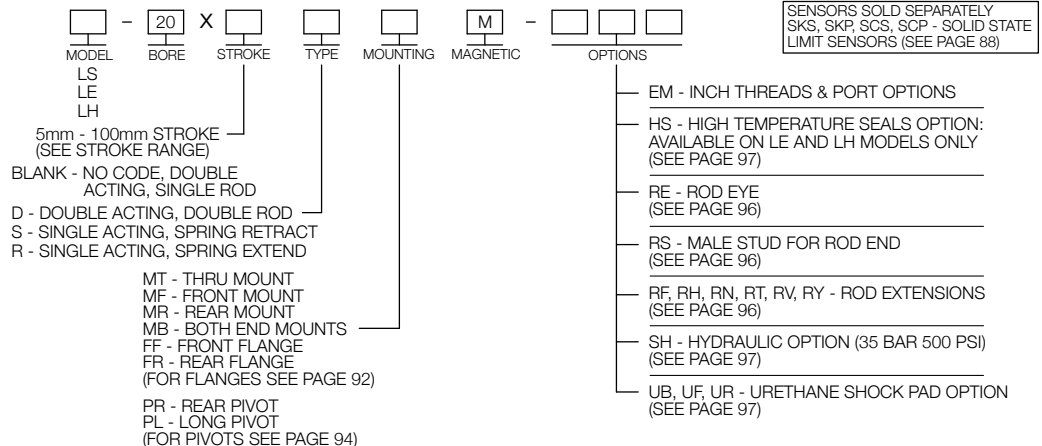
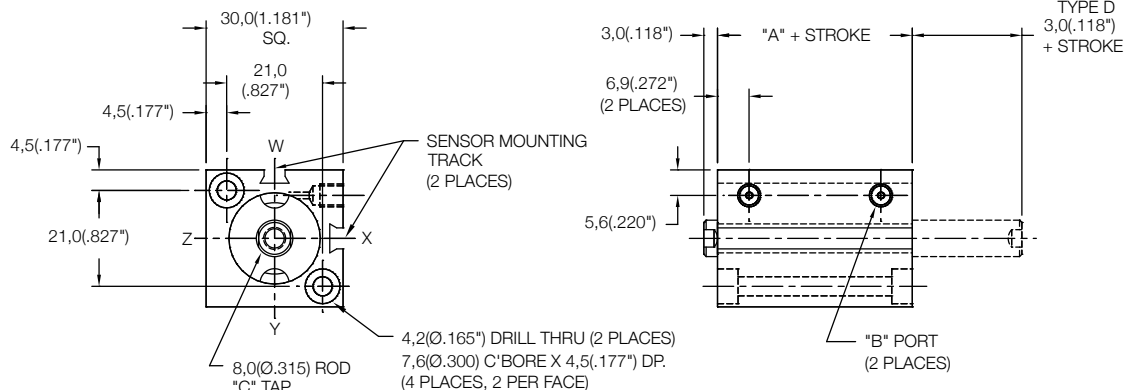
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M5X0,8	#10-32



Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	5mm - 20mm	23,5(0.93")	PUSH 3,14 cm ² (0.48 in ²)
LE	_,	5mm - 15mm	28,5(1.12")	
LH	_,D	5mm - 10mm	33,5(1.32")	PULL 2,64 cm ² (0.40 in ²)
LS	S,R	5mm	38,5(1.52")	

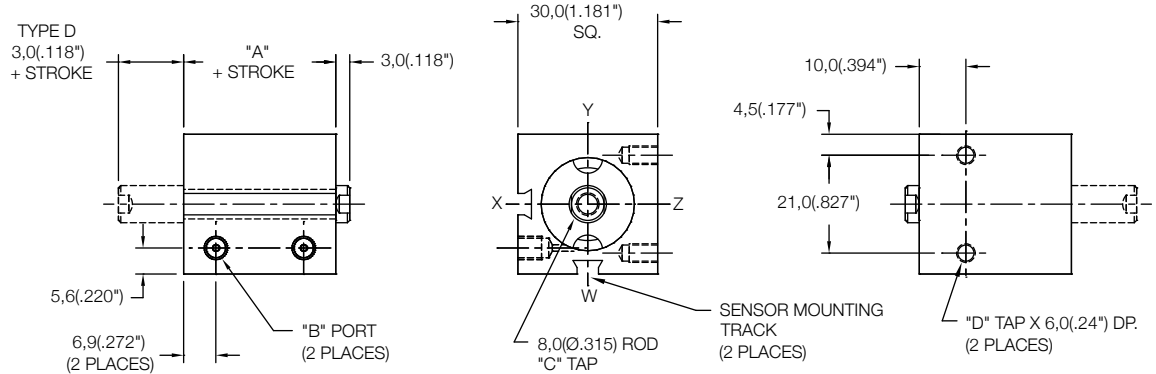
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32



Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	5mm - 15mm	23,5(0.93")	PUSH 3,14 cm ² (0.48 in ²)
LE	-	5mm - 10mm	28,5(1.12")	
LH	_,D	5mm	33,5(1.32")	PULL 2,64 cm ² (0.40 in ²)

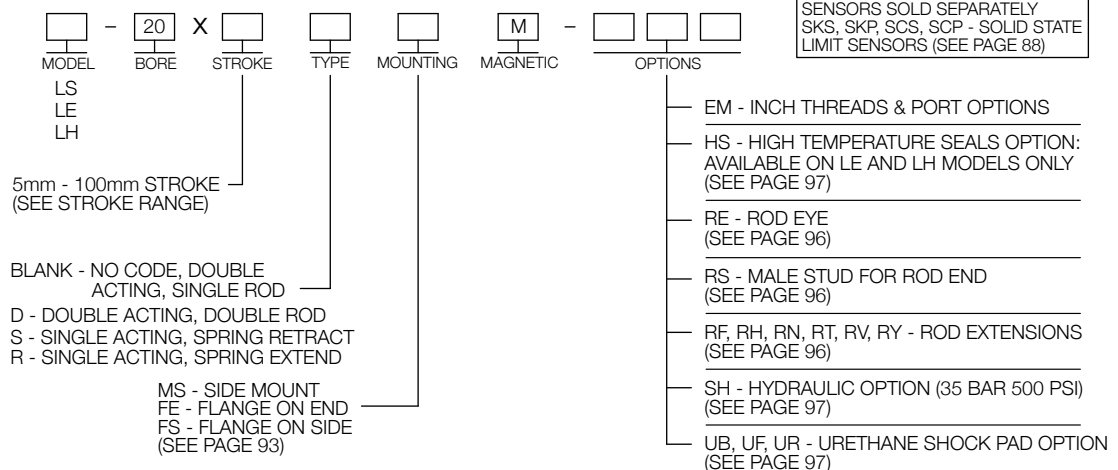
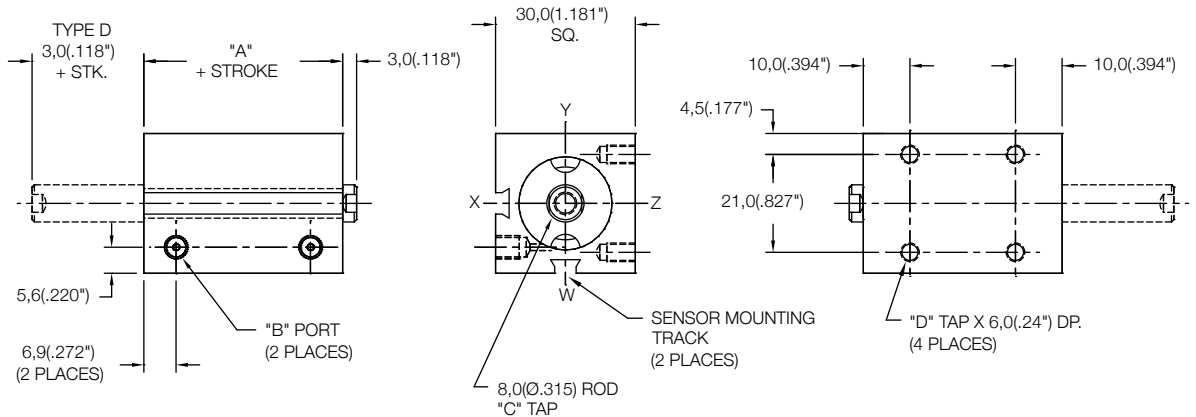
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M4X0,7	#8-32



Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	20mm - 100mm	23,5(0.93")	PUSH 3,14 cm ² (0.48 in ²)
LE	-	15mm - 100mm	28,5(1.12")	
LH	_,D	10mm - 100mm	33,5(1.32")	PULL 2,64 cm ² (0.40 in ²)
LS	S,R	5mm - 50mm	38,5(1.52")	

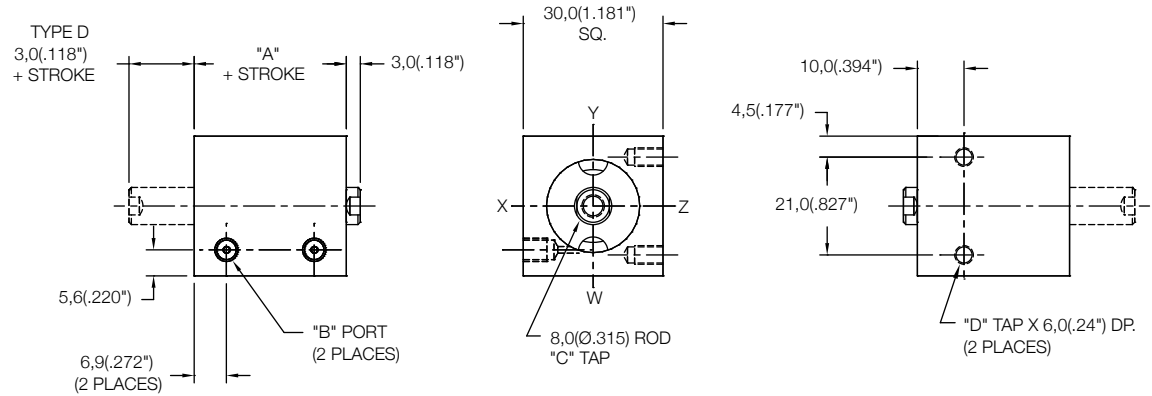
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M4X0,7	#8-32



Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	10mm - 20mm	18,5(0.73")	PUSH 3,14 cm ² (0.48 in ²)
LE	-	5mm - 15mm	23,5(0.93")	
LH	...D	5mm - 10mm	28,5(1.12")	PULL 2,64 cm ² (0.40 in ²)
LS	S,R	5mm	33,5(1.32")	

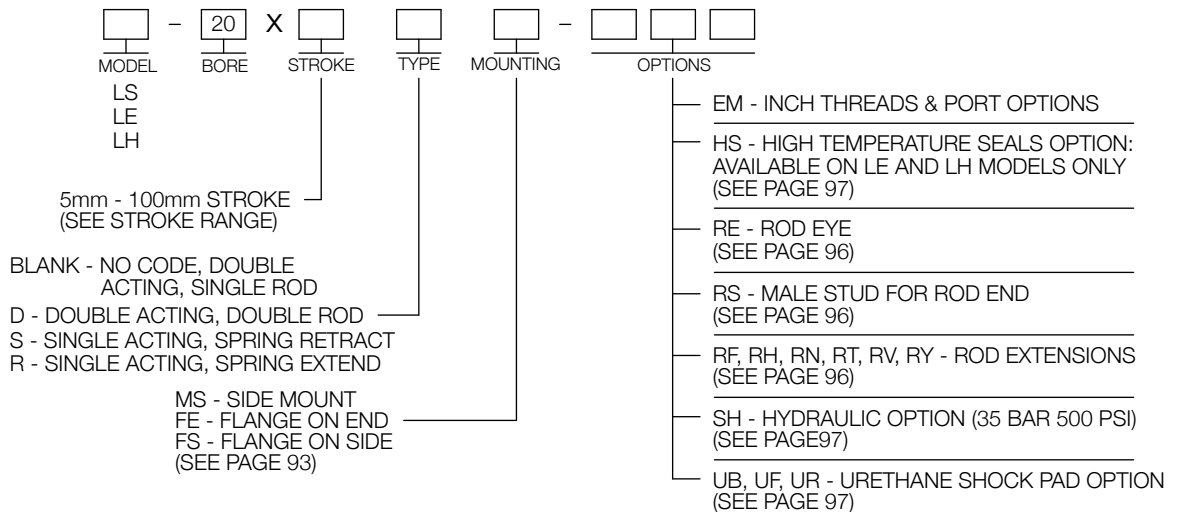
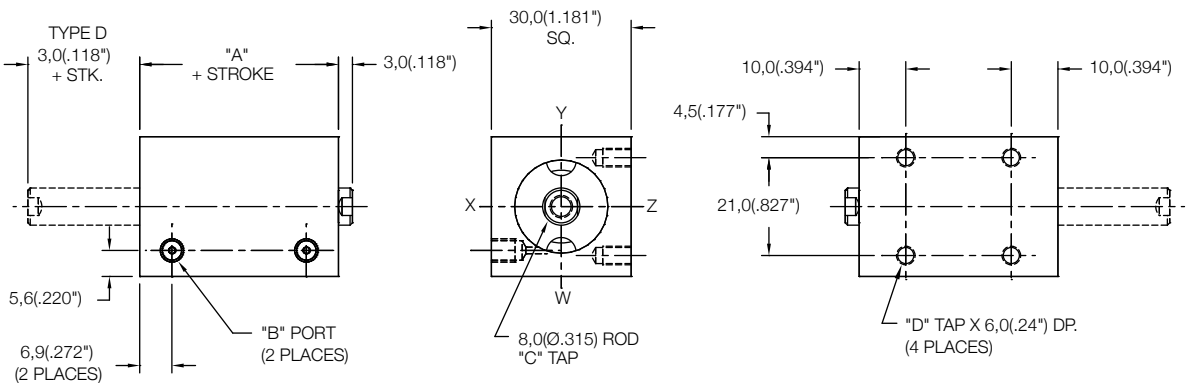
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M4X0,7	#8-32



Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	25mm - 100mm	18,5(0.73")	PUSH 3,14 cm ² (0.48 in ²)
LE	-	20mm - 100mm	23,5(0.93")	
LH	...D	15mm - 100mm	28,5(1.12")	PULL 2,64 cm ² (0.40 in ²)
LS	S,R	10mm - 50mm	33,5(1.32")	

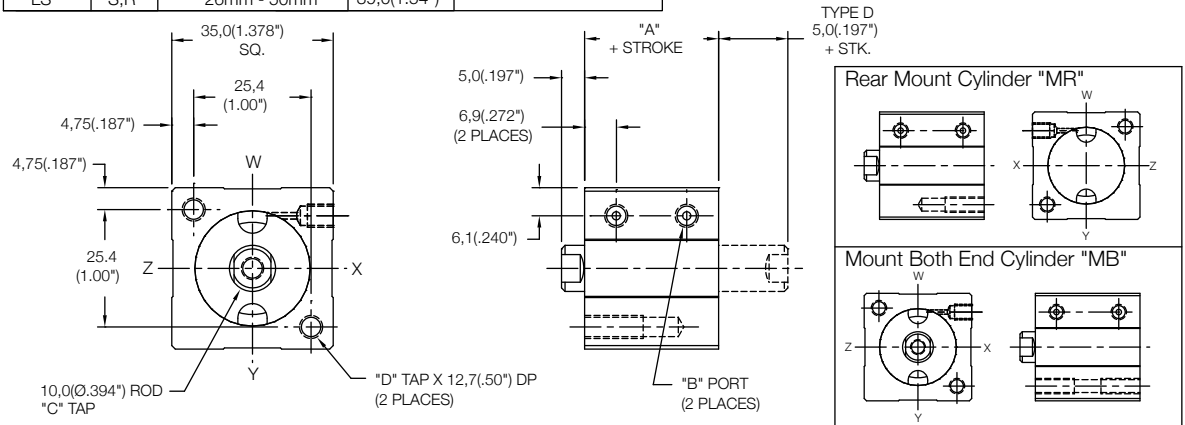
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M4X0,7	#8-32



Non Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 100mm	19,0(0.75")	PUSH 4,91 cm ² (0.76 in ²)
LE	_,	5mm - 100mm	24,0(0.95")	
LH	_,D	5mm - 100mm	29,0(1.14")	PULL 4,12 cm ² (0.64 in ²)
LS	S,R	5mm - 25mm	34,0(1.34")	
LS	S,R	26mm - 50mm	39,0(1.54")	

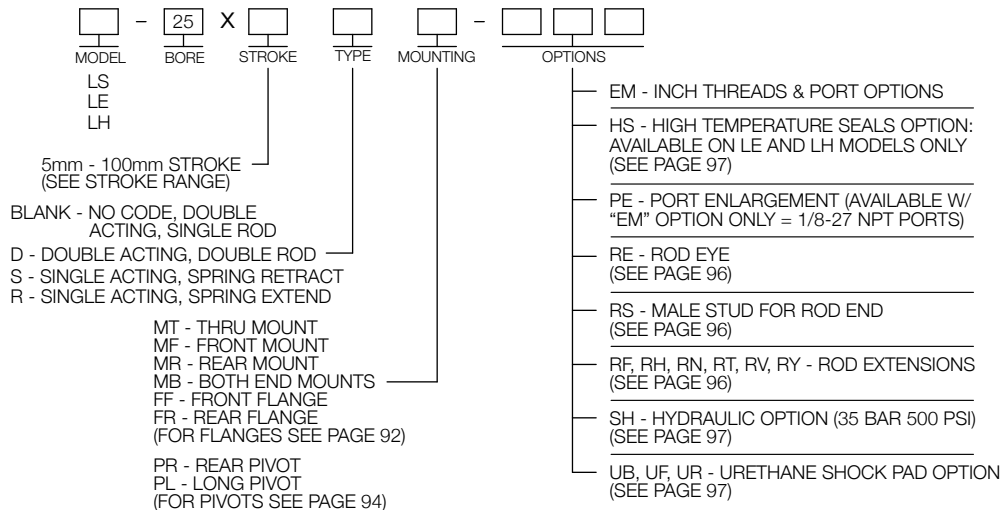
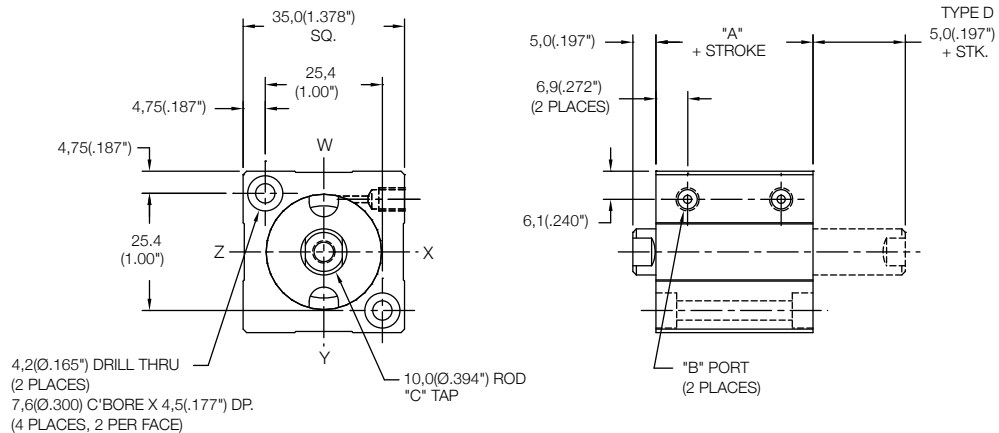
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M5X0,8	#10-32



Non Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 25mm	19,0(0.75")	PUSH 4,91 cm ² (0.76 in ²)
LE	_,	5mm - 20mm	24,0(0.95")	
LH	_,D	5mm - 15mm	29,0(1.14")	PULL 4,12 cm ² (0.64 in ²)
LS	S,R	5mm - 10mm	34,0(1.34")	

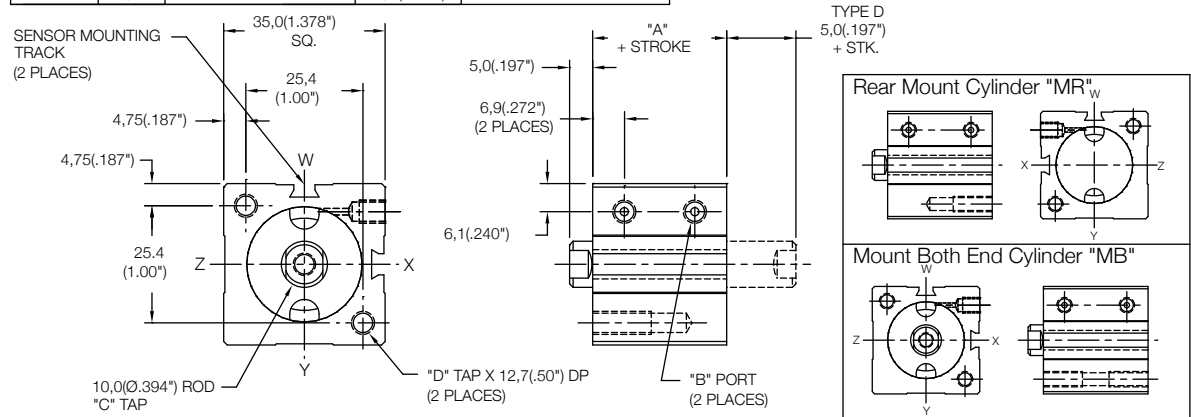
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32



Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	5mm - 50mm	24,0(0.95")	PUSH 4,91 cm ² (0.76 in ²)
LE	_,	5mm - 100mm	29,0(1.14")	
LH	_,D	5mm - 100mm	34,0(1.34")	
LS	S,R	5mm - 25mm	39,0(1.54")	PULL 4,12 cm ² (0.64 in ²)
LS	S,R	26mm - 50mm	44,0(1.74")	

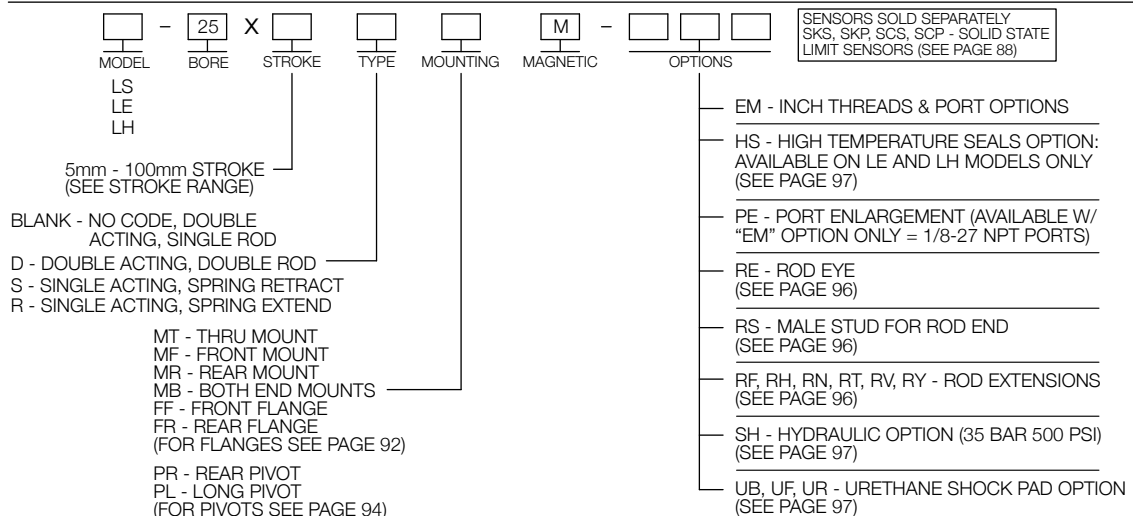
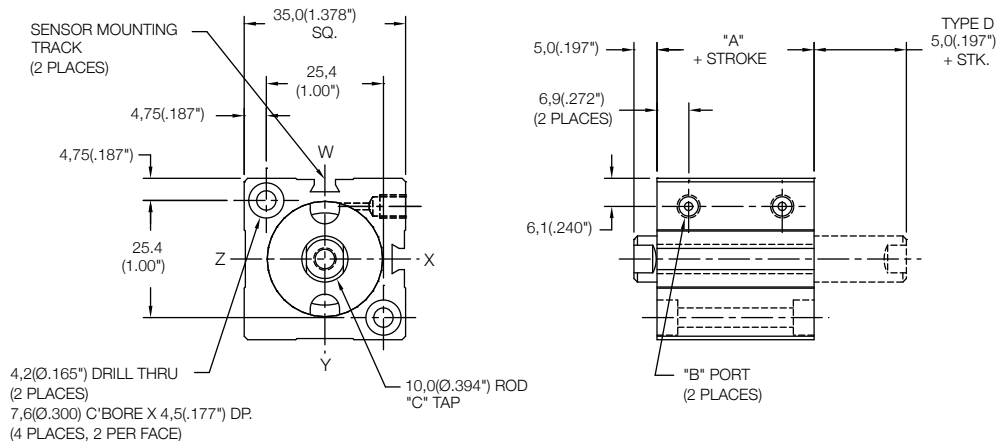
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M5X0,8	#10-32



Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	5mm - 20mm	24,0(0.95")	PUSH 4,91 cm ² (0.76 in ²)
LE	_,	5mm - 15mm	29,0(1.14")	
LH	_,D	5mm - 10mm	34,0(1.34")	
LS	S,R	5mm	39,0(1.54")	PULL 4,12 cm ² (0.64 in ²)

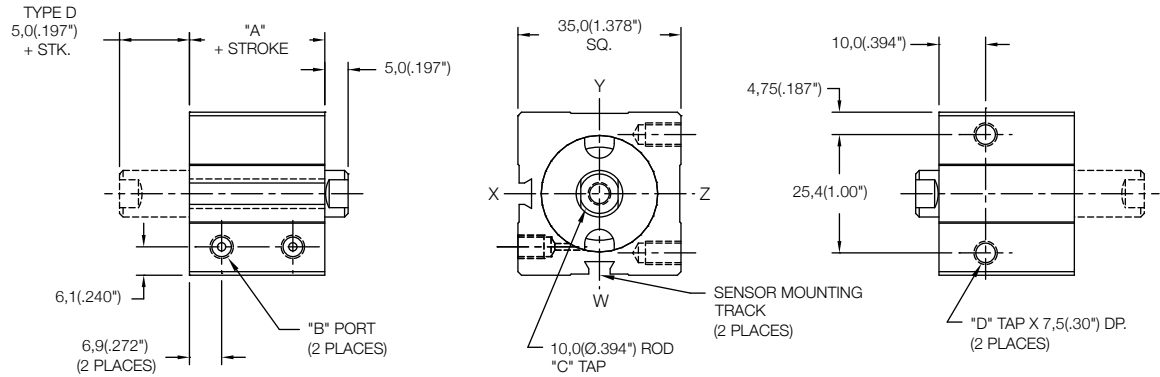
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32



Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	5mm - 15mm	24,0(0.95")	PUSH 4,91 cm ² (0.76 in ²)
LE	...	5mm - 10mm	29,0(1.14")	
LH	...D	5mm	34,0(1.34")	PULL 4,12 cm ² (0.64 in ²)

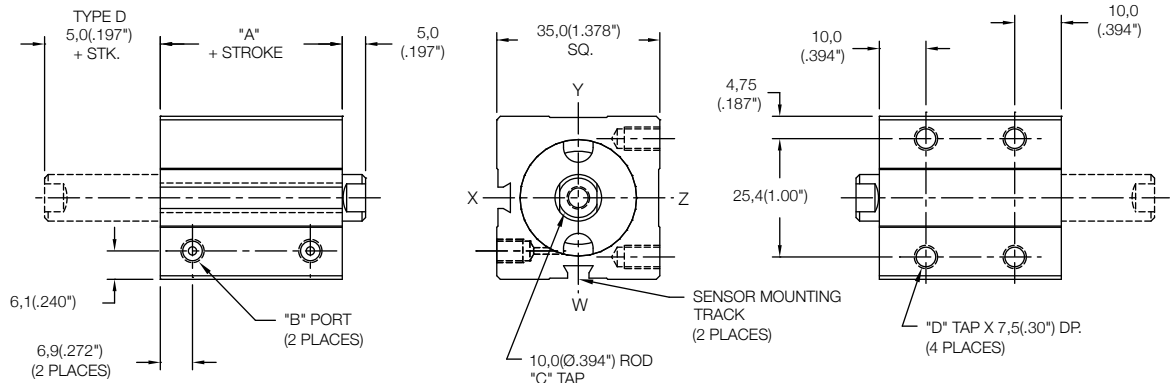
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M5X0,8	#10-32



Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	20mm - 100mm	24,0(0.95")	PUSH 4,91 cm ² (0.76 in ²)
LE	...	15mm - 100mm	29,0(1.14")	
LH	...D	10mm - 100mm	34,0(1.34")	PULL 4,12 cm ² (0.64 in ²)
LS	S,R	5mm - 25mm	39,0(1.54")	
LS	S,R	26mm - 50mm	44,0(1.74")	

	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M5X0,8	#10-32



MODEL - 25 X STROKE TYPE MOUNTING MAGNETIC OPTIONS

LS
LE
LH

5mm - 100mm STROKE (SEE STROKE RANGE)

BLANK - NO CODE, DOUBLE ACTING, SINGLE ROD

D - DOUBLE ACTING, DOUBLE ROD

S - SINGLE ACTING, SPRING RETRACT

R - SINGLE ACTING, SPRING EXTEND

MS - SIDE MOUNT

FE - FLANGE ON END

FS - FLANGE ON SIDE (SEE PAGE 93)

SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS (SEE PAGE 88)

EM - INCH THREADS & PORT OPTIONS

HS - HIGH TEMPERATURE SEALS OPTION:
AVAILABLE ON LE AND LH MODELS ONLY
(SEE PAGE 97)

PE - PORT ENLARGEMENT (AVAILABLE W/
"EM" OPTION ONLY = 1/8-27 NPT PORTS)

RE - ROD EYE
(SEE PAGE 96)

RS - MALE STUD FOR ROD END
(SEE PAGE 96)

RF, RH, RN, RT, RV, RY - ROD EXTENSIONS
(SEE PAGE 96)

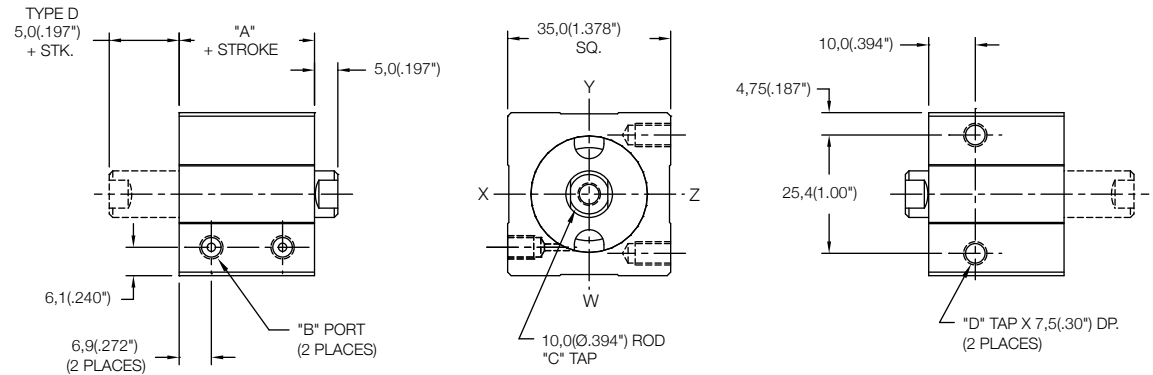
SH - HYDRAULIC OPTION (35 BAR 500 PSI)
(SEE PAGE 97)

UB, UF, UR - URETHANE SHOCK PAD OPTION
(SEE PAGE 97)

Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 20mm	19,0(0.75")	PUSH 4,91 cm ² (0.76 in ²)
LE	-	5mm - 15mm	24,0(0.95")	
LH	_,D	5mm - 10mm	29,0(1.14")	PULL 4,12 cm ² (0.64 in ²)
LS	S,R	5mm	34,0(1.34")	

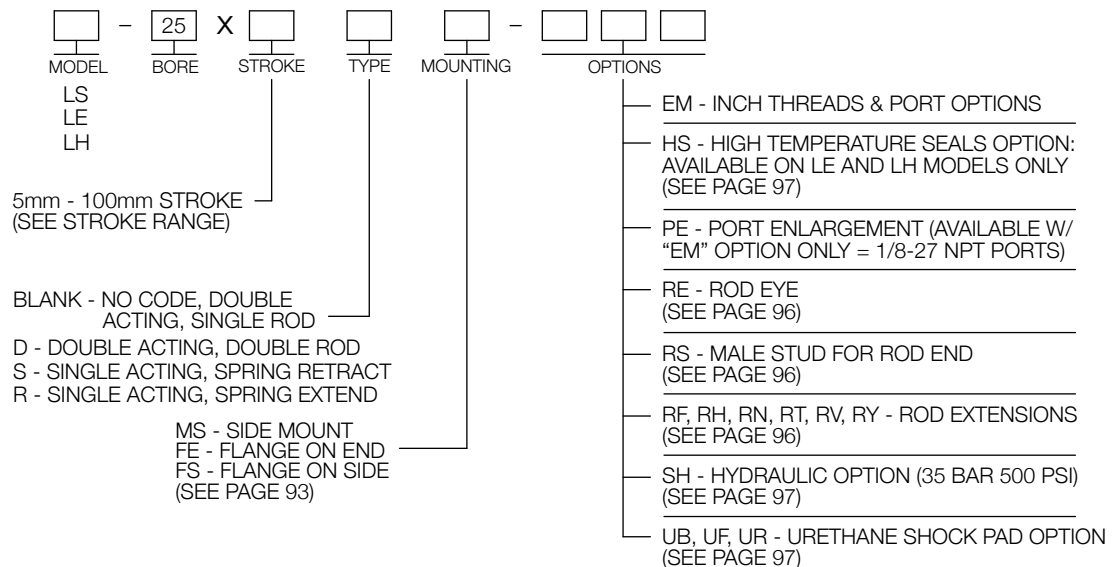
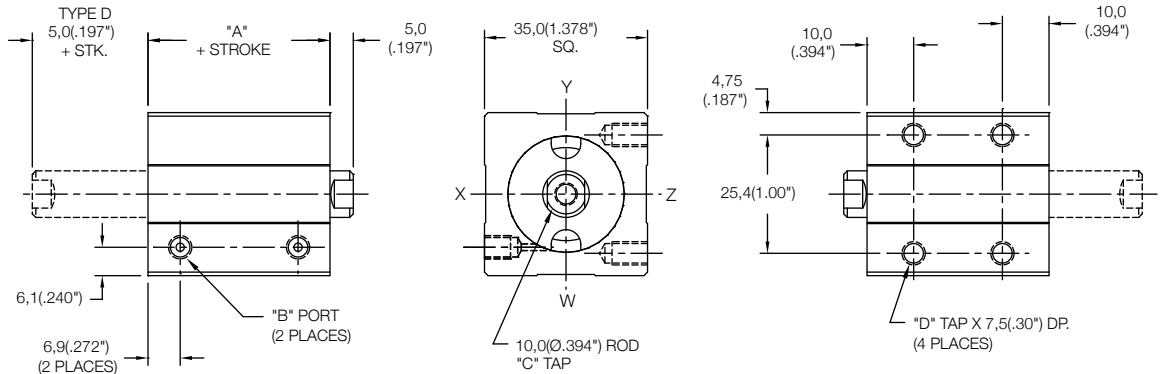
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M5X0,8	#10-32



Non Magnetic Side Mount Cylinder "MS"

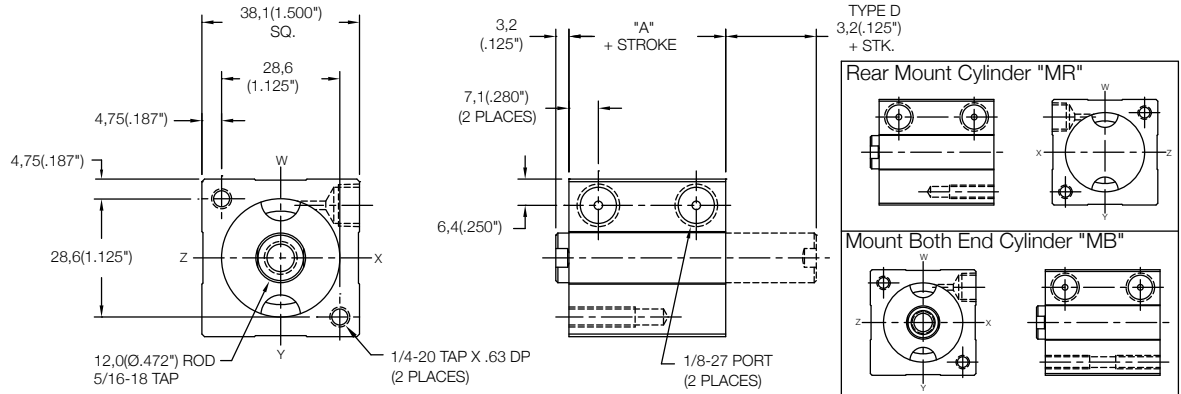
MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	25mm - 100mm	19,0(0.75")	PUSH 4,91 cm ² (0.76 in ²)
LE	-	20mm - 100mm	24,0(0.95")	
LH	_,D	15mm - 100mm	29,0(1.14")	PULL 4,12 cm ² (0.64 in ²)
LS	S,R	10mm - 25mm	34,0(1.34")	
LS	S,R	26mm - 50mm	39,0(1.54")	

	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M5X0,8	#10-32



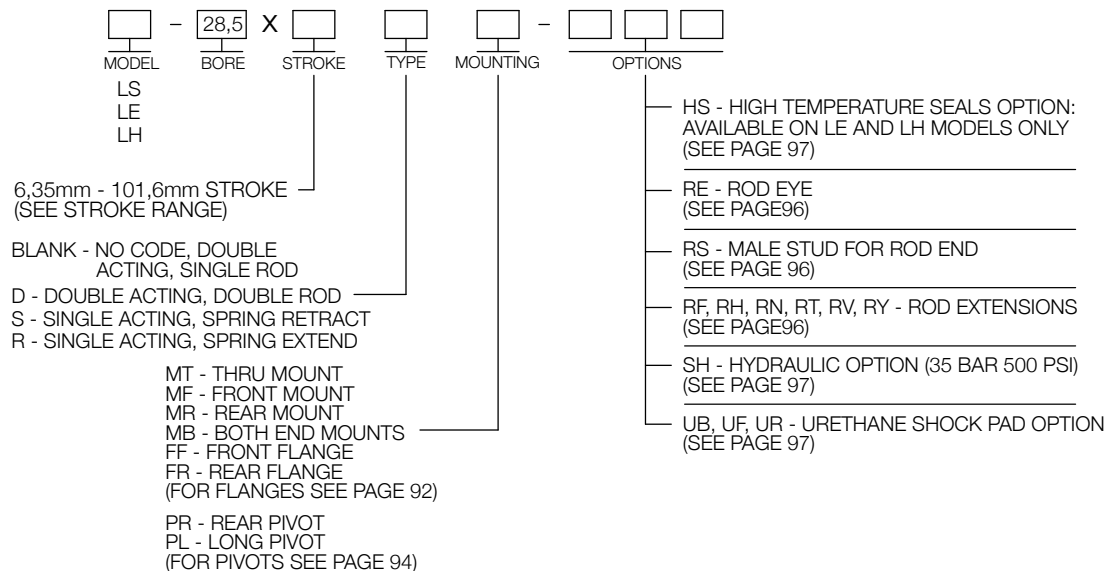
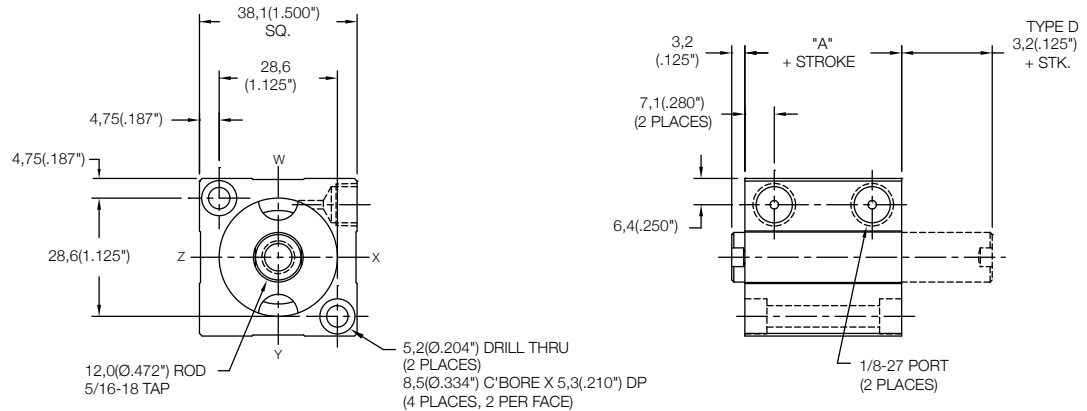
Non Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	6,35mm - 101,6mm	19,05(.75")	PUSH 6,41 cm ² (1.0 in ²)
LE	_,	6,35mm - 101,6mm	25,4(1.00")	
LH	_,D	6,35mm - 101,6mm	31,75(1.25")	PULL 5,28 cm ² (0.82 in ²)
LS	S,R	6,35mm - 25,4mm	31,75(1.25")	
LS	S,R	31,8mm - 50,8mm	38,1(1.50")	



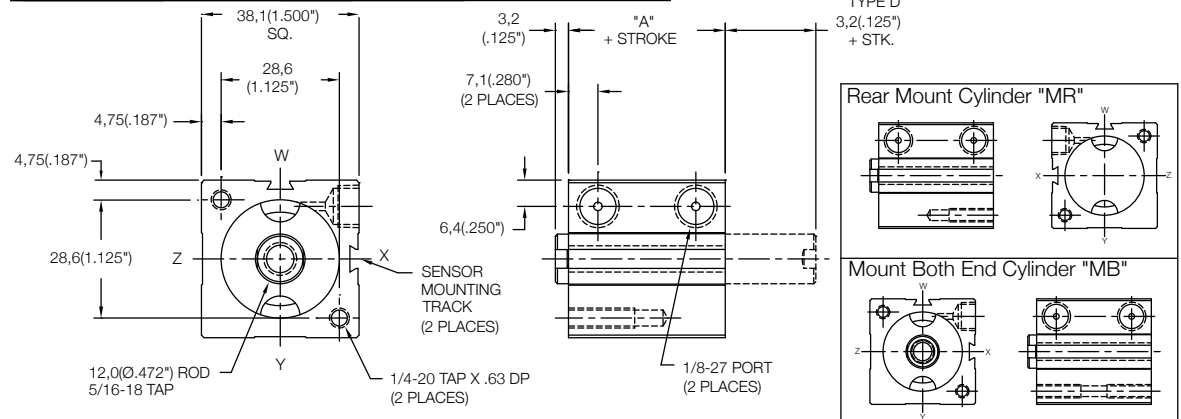
Non Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	6,35mm - 25,4mm	19,05(.75")	PUSH 6,41 cm ² (1.0 in ²)
LE	_,	6,35mm - 19,05mm	25,4(1.00")	
LH	_,D	6,35mm - 12,7mm	31,75(1.25")	PULL 5,28 cm ² (0.82 in ²)
LS	S,R	6,35mm - 12,7mm	31,75(1.25")	



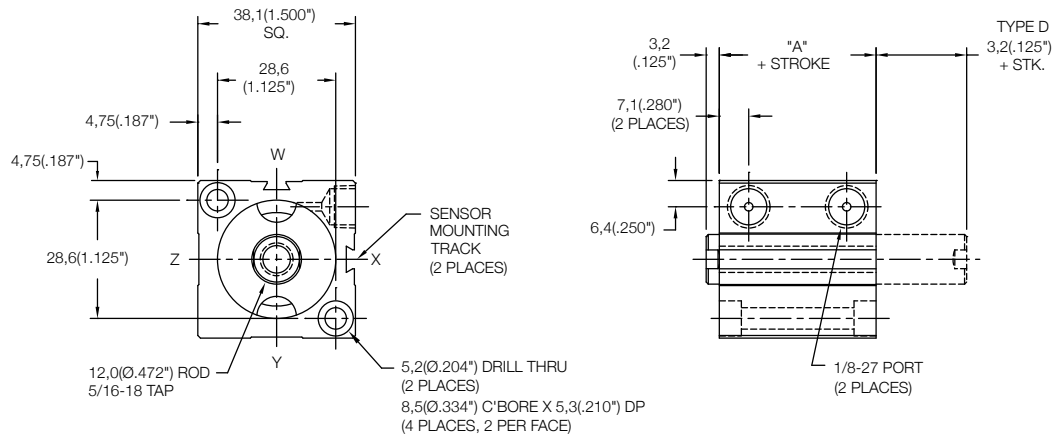
Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	6,35mm - 101,6mm	25,4(1.00")	PUSH 6,41 cm ² (1.0 in ²)
LE	...	6,35mm - 101,6mm	31,75(1.25")	
LH	...D	6,35mm - 101,6mm	38,1(1.50")	PULL 5,28 cm ² (0.82 in ²)
LS	S,R	6,35mm - 25,4mm	38,1(1.50")	
LS	S,R	31,8mm - 50,8mm	44,45(1.75")	



Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	6,35mm - 19,05mm	25,4(1.00")	PUSH 6,41 cm ² (1.0 in ²)
LE	...	6,35mm - 12,7mm	31,75(1.25")	
LH	...D	6,35mm	38,1(1.50")	PULL 5,28 cm ² (0.82 in ²)
LS	S,R	6,35mm	38,1(1.50")	

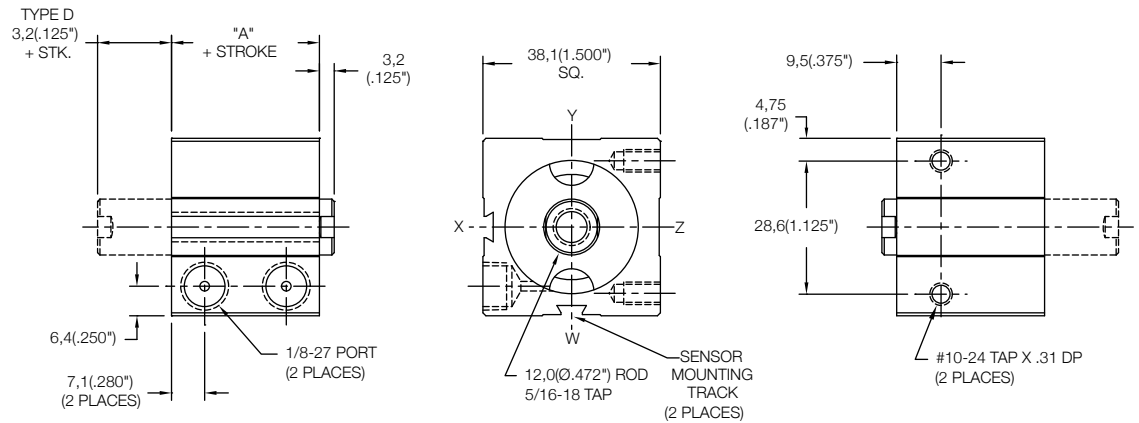


MODEL	BORE	STROKE	TYPE	MOUNTING	MAGNETIC	OPTIONS
LS LE LH	28,5	X			M	
6,35mm - 101,6mm STROKE (SEE STROKE RANGE) BLANK - NO CODE, DOUBLE ACTING, SINGLE ROD D - DOUBLE ACTING, DOUBLE ROD S - SINGLE ACTING, SPRING RETRACT R - SINGLE ACTING, SPRING EXTEND MT - THRU MOUNT MF - FRONT MOUNT MR - REAR MOUNT MB - BOTH END MOUNTS FF - FRONT FLANGE FR - REAR FLANGE (FOR FLANGES SEE PAGE 92) PR - REAR PIVOT PL - LONG PIVOT (FOR PIVOTS SEE PAGE 94) HS - HIGH TEMPERATURE SEALS OPTION: AVAILABLE ON LE AND LH MODELS ONLY (SEE PAGE 97) RE - ROD EYE (SEE PAGE 96) RS - MALE STUD FOR ROD END (SEE PAGE 96) RF, RH, RN, RT, RV, RY - ROD EXTENSIONS (SEE PAGE 96) SH - HYDRAULIC OPTION (35 BAR 500 PSI) (SEE PAGE 97) UB, UF, UR - URETHANE SHOCK PAD OPTION (SEE PAGE 97)						

SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS (SEE PAGE 88)

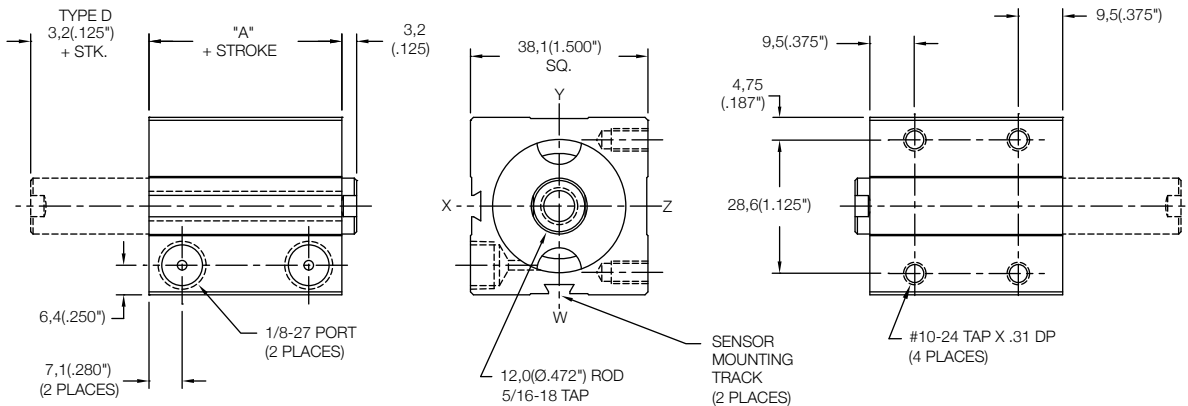
Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	6,35mm - 12,7mm	25,4(1.00")	PUSH 6,41 cm ² (1.0 in ²)
LE	-	6,35mm	31,75(1.25")	PULL 5,28 cm ² (0.82 in ²)



Magnetic Side Mount Cylinder "MS"

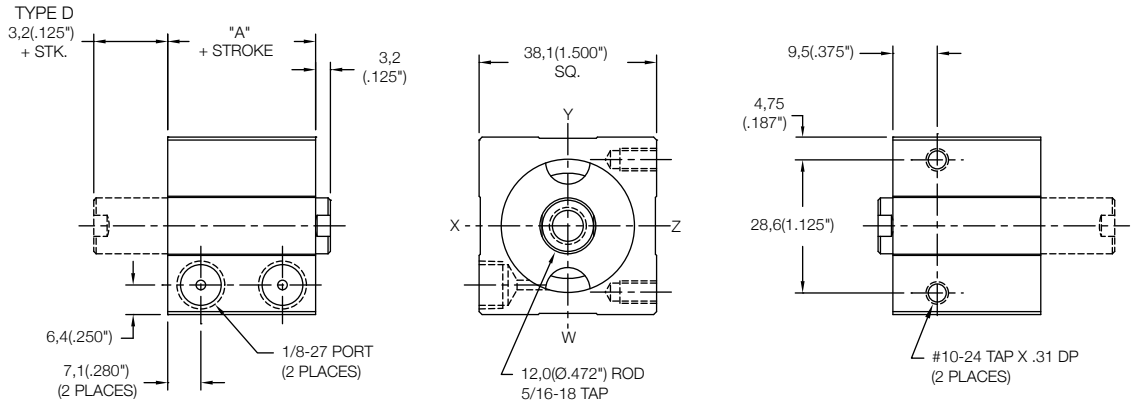
MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	19,05mm - 101,6mm	25,4(1.00")	PUSH 6,41 cm ² (1.0 in ²)
LE	-	12,7mm - 101,6mm	31,75(1.25")	PULL 5,28 cm ² (0.82 in ²)
LH	_,D	6,35mm - 101,6mm	38,1(1.50")	PULL 5,28 cm ² (0.82 in ²)
LS	S,R	6,35mm - 25,4mm	38,1(1.50")	
LS	S,R	31,8mm - 50,8mm	44,45(1.75")	



MODEL	-	28.5	X	STROKE	TYPE	MOUNTING	MAGNETIC	-	OPTIONS
LS LE LH							M		
6.35mm - 101.6mm STROKE (SEE STROKE RANGE) BLANK - NO CODE, DOUBLE ACTING, SINGLE ROD D - DOUBLE ACTING, DOUBLE ROD S - SINGLE ACTING, SPRING RETRACT R - SINGLE ACTING, SPRING EXTEND MS - SIDE MOUNT FE - FLANGE ON END FS - FLANGE ON SIDE (SEE PAGE 93) SENSORS SOLD SEPARATELY SKS, SKP, SCS, SCP - SOLID STATE LIMIT SENSORS (SEE PAGE 88) HS - HIGH TEMPERATURE SEALS OPTION: AVAILABLE ON LE AND LH MODELS ONLY (SEE PAGE 97) RE - ROD EYE (SEE PAGE 96) RS - MALE STUD FOR ROD END (SEE PAGE 96) RF, RH, RN, RT, RV, RY - ROD EXTENSIONS (SEE PAGE 96) SH - HYDRAULIC OPTION (35 BAR 500 PSI) (SEE PAGE 97) UB, UF, UR - URETHANE SHOCK PAD OPTION (SEE PAGE 97)									

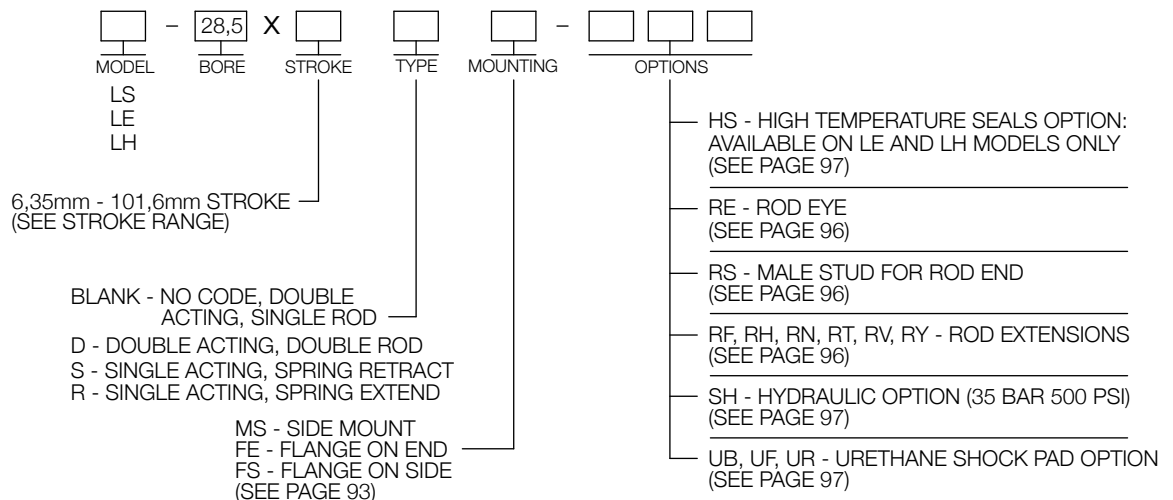
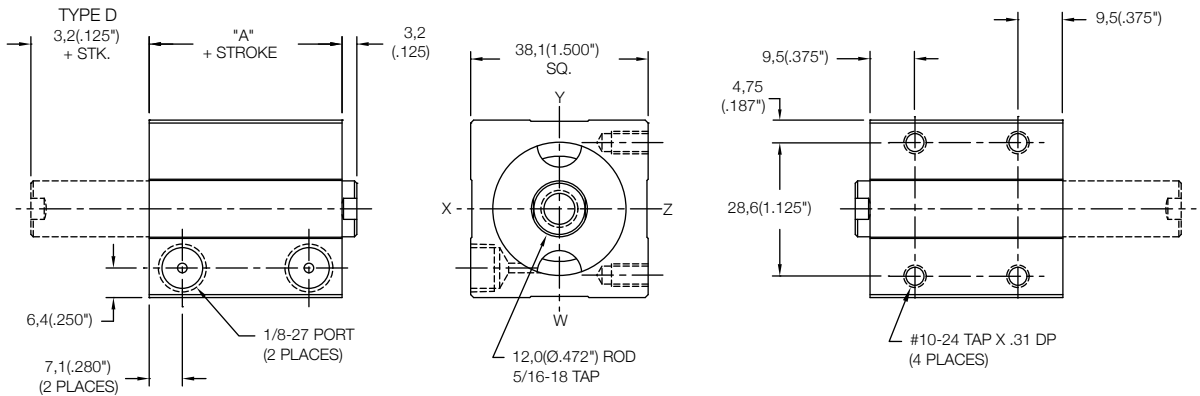
Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	6,35mm - 19,05mm	19,05(0.75")	PUSH 6,41 cm ² (1.0 in ²)
LE	-	6,35mm - 12,7mm	25,4(1.00")	
LH	_,D	6,35mm	31,75(1.25")	PULL 5,28 cm ² (0.82 in ²)
LS	S,R	6,35mm	31,75(1.25")	



Non Magnetic Side Mount Cylinder "MS"

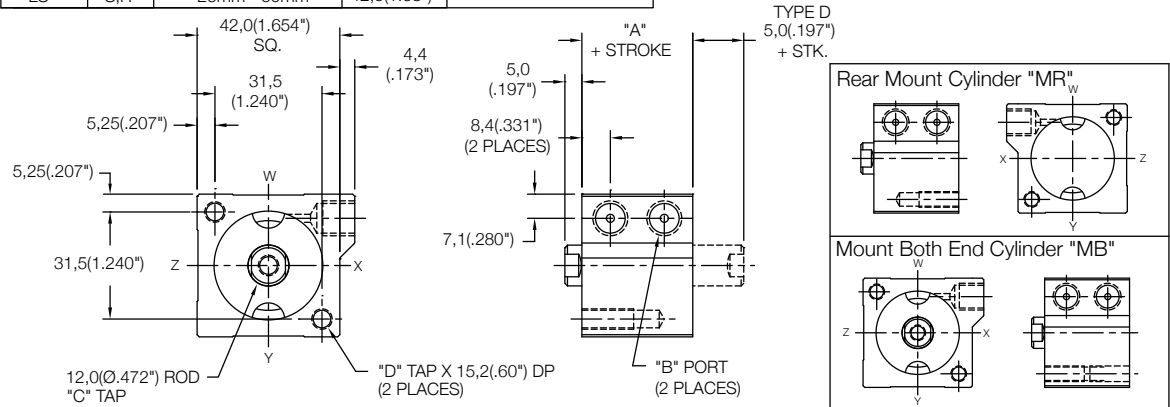
MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	25,4mm - 101,6mm	19,05(.75")	PUSH 6,41 cm ² (1.0 in ²)
LE	-	19,05mm - 101,6mm	25,4(1.00")	
LH	_,D	12,7mm - 101,6mm	31,75(1.25")	PULL 5,28 cm ² (0.82 in ²)
LS	S,R	12,7mm - 25,4mm	31,75(1.25")	
LS	S,R	31,8mm - 50,8mm	38,1(1.50")	



Non Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	__D	10mm - 100mm	22,5(0.89")	PUSH 8,04 cm ² (1.25 in ²)
LE	__	5mm - 100mm	27,5(1.08")	
LH	__D	5mm - 100mm	32,5(1.28")	PULL 6,91 cm ² (1.07 in ²)
LS	S,R	5mm - 25mm	37,5(1.48")	
LS	S,R	26mm - 50mm	42,5(1.68")	

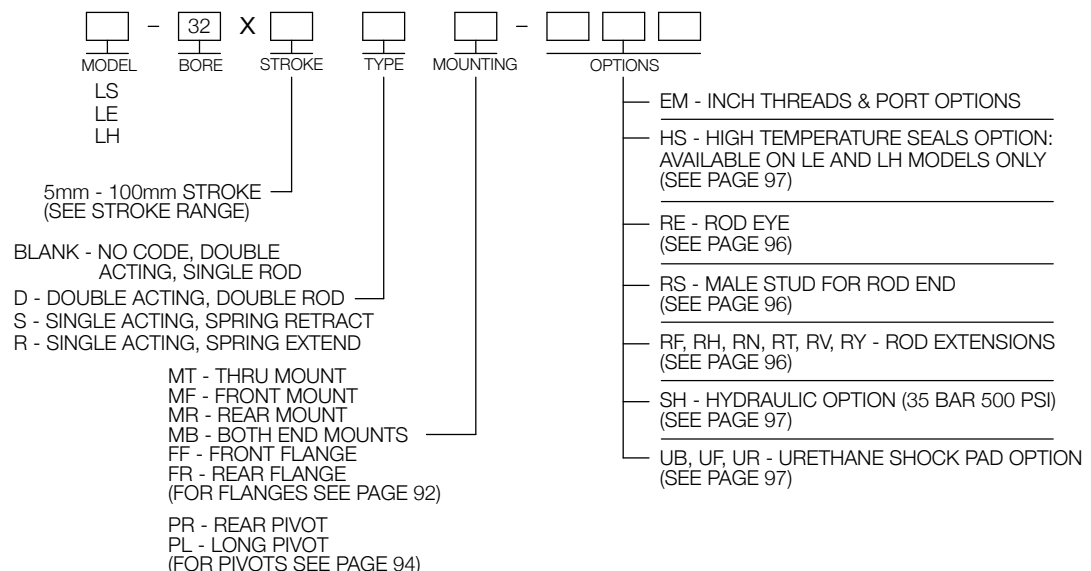
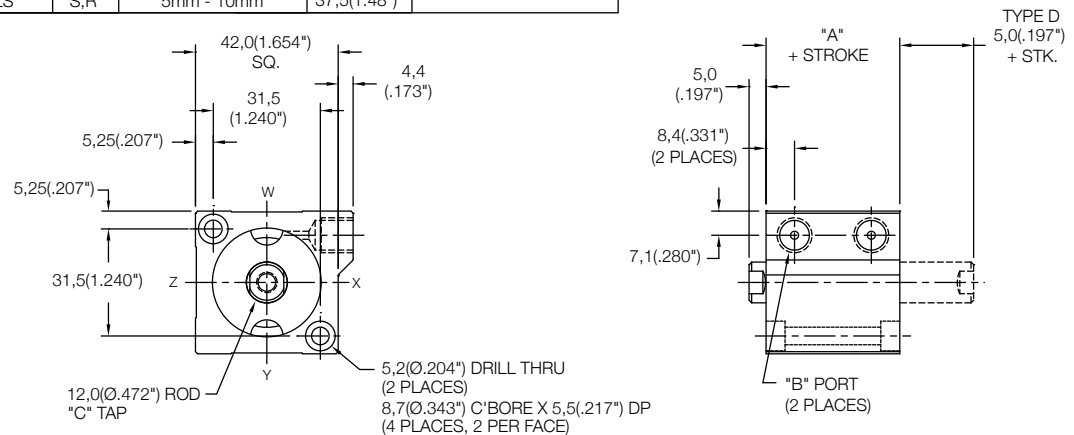
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M6X1,0	1/4-20
"D"	M6X1,0	1/4-20



Non Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	__D	10mm - 25mm	22,5(0.89")	PUSH 8,04 cm ² (1.25 in ²)
LE	__	5mm - 20mm	27,5(1.08")	
LH	__D	5mm - 15mm	32,5(1.28")	PULL 6,91 cm ² (1.07 in ²)
LS	S,R	5mm - 10mm	37,5(1.48")	

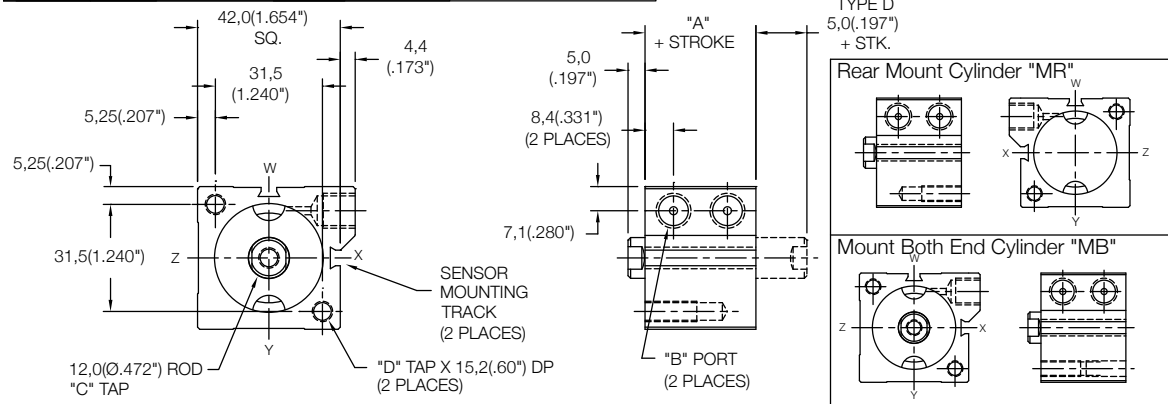
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M6X1,0	1/4-20



Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	5mm - 100mm	27,5(1.08")	PUSH 8,04 cm ² (1.25 in ²)
LE	...	5mm - 100mm	32,5(1.28")	
LH	...D	5mm - 100mm	37,5(1.48")	PULL 6,91 cm ² (1.07 in ²)
LS	S,R	5mm - 25mm	42,5(1.68")	
LS	S,R	26mm - 50mm	47,5(1.88")	

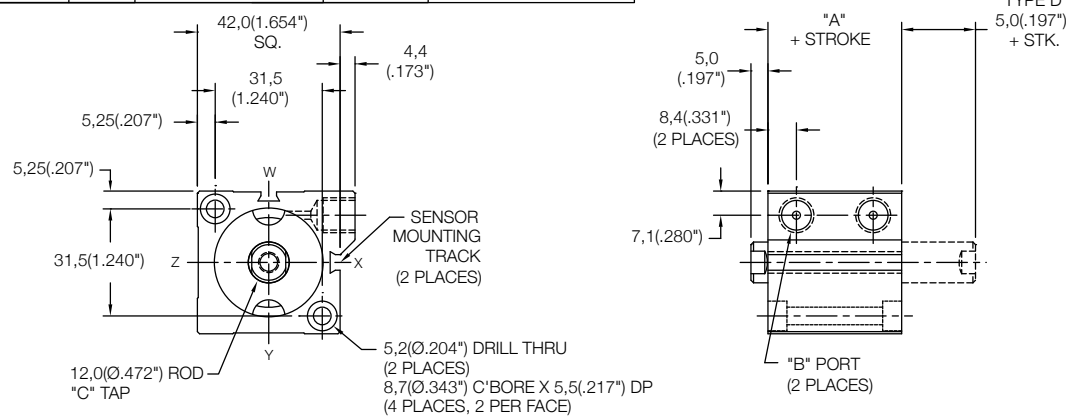
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M6X1,0	1/4-20
"D"	M6X1,0	1/4-20



Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	5mm - 20mm	27,5(1.08")	PUSH 8,04 cm ² (1.25 in ²)
LE	...	5mm - 15mm	32,5(1.28")	
LH	...D	5mm - 10mm	37,5(1.48")	PULL 6,91 cm ² (1.07 in ²)
LS	S,R	5mm	42,5(1.68")	

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M6X1,0	1/4-20

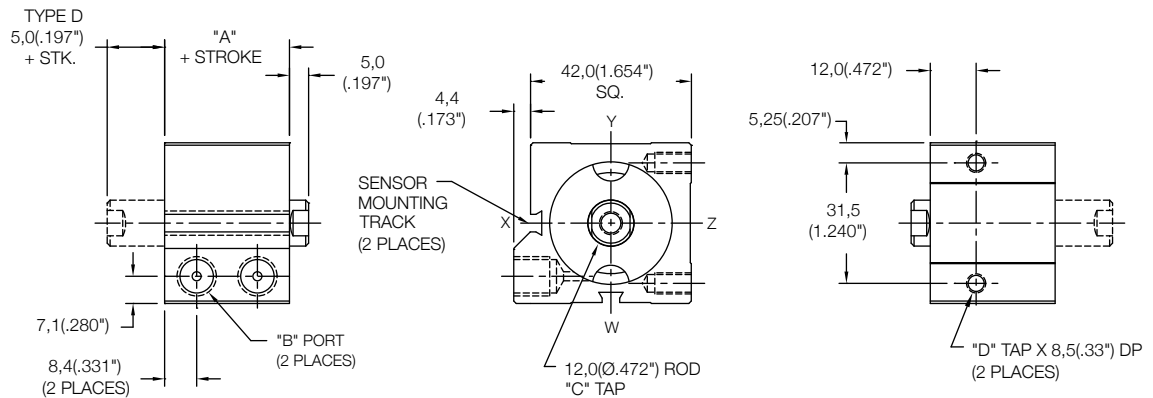


MODEL	-	32	X	STROKE	TYPE	MOUNTING	MAGNETIC	-	OPTIONS
LS LE LH							M		
5mm - 100mm STROKE (SEE STROKE RANGE)									
BLANK - NO CODE, DOUBLE ACTING, SINGLE ROD									
D - DOUBLE ACTING, DOUBLE ROD									
S - SINGLE ACTING, SPRING RETRACT									
R - SINGLE ACTING, SPRING EXTEND									
MT - THRU MOUNT									
MF - FRONT MOUNT									
MR - REAR MOUNT									
MB - BOTH END MOUNTS									
FF - FRONT FLANGE									
FR - REAR FLANGE (FOR FLANGES SEE PAGE 92)									
PR - REAR PIVOT									
PL - LONG PIVOT (FOR PIVOTS SEE PAGE 94)									
				SENSORS SOLD SEPARATELY SKS, SKP, SCS, SCP - SOLID STATE LIMIT SENSORS (SEE PAGE 88)					
				EM - INCH THREADS & PORT OPTIONS					
				HS - HIGH TEMPERATURE SEALS OPTION: AVAILABLE ON LE AND LH MODELS ONLY (SEE PAGE 97)					
				RE - ROD EYE (SEE PAGE 96)					
				RS - MALE STUD FOR ROD END (SEE PAGE 96)					
				RF, RH, RN, RT, RV, RY - ROD EXTENSIONS (SEE PAGE 96)					
				SH - HYDRAULIC OPTION (35 BAR 500 PSI) (SEE PAGE 97)					
				UB, UF, UR - URETHANE SHOCK PAD OPTION (SEE PAGE 97)					

Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	5mm - 15mm	27,5(1.08")	PUSH 8,04 cm ² (1.25 in ²)
LE	...	5mm - 10mm	32,5(1.28")	
LH	...D	5mm	37,5(1.48")	PULL 6,91 cm ² (1.07 in ²)

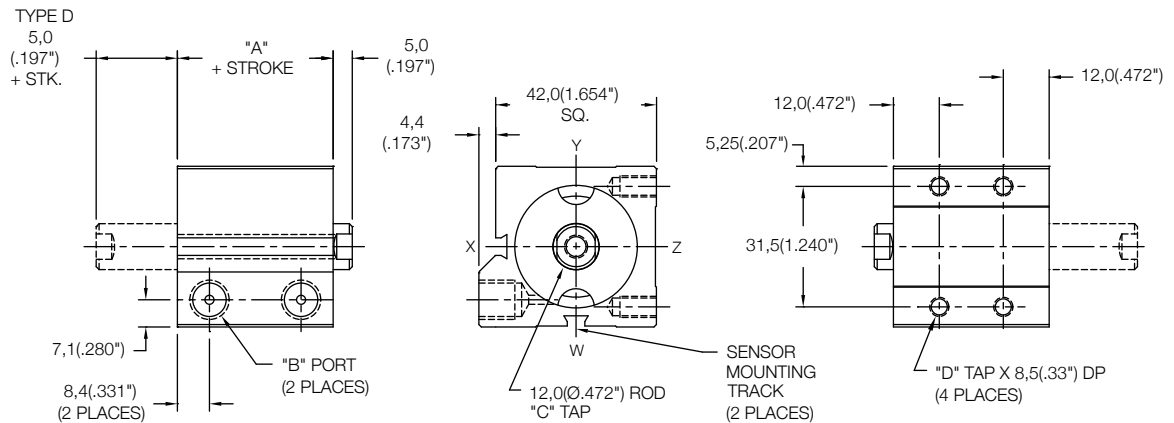
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M6X1,0	1/4-20
"D"	M5X0,8	#10-32



Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	20mm - 100mm	27,5(1.08")	PUSH 8,04 cm ² (1.25 in ²)
LE	...	15mm - 100mm	32,5(1.28")	
LH	...D	10mm - 100mm	37,5(1.48")	PULL 6,91 cm ² (1.07 in ²)
LS	S,R	5mm - 25mm	42,5(1.68")	
LS	S,R	26mm - 50mm	47,5(1.87")	

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M6X1,0	1/4-20
"D"	M5X0,8	#10-32

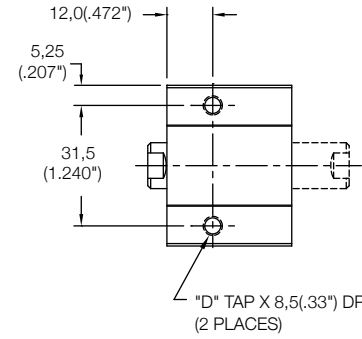
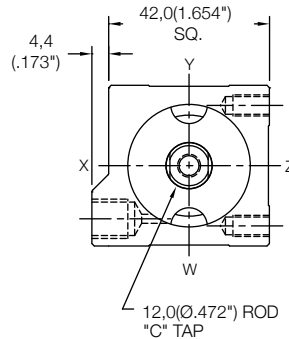
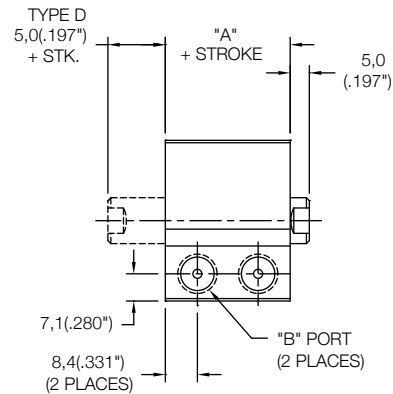


MODEL LS LE LH BORE 32 STROKE 5mm - 100mm STROKE (SEE STROKE RANGE) TYPE BLANK - NO CODE, DOUBLE ACTING, SINGLE ROD D - DOUBLE ACTING, DOUBLE ROD S - SINGLE ACTING, SPRING RETRACT R - SINGLE ACTING, SPRING EXTEND MOUNTING MS - SIDE MOUNT FE - FLANGE ON END FS - FLANGE ON SIDE (SEE PAGE 93)	MAGNETIC M OPTIONS EM - INCH THREADS & PORT OPTIONS HS - HIGH TEMPERATURE SEALS OPTION: AVAILABLE ON LE AND LH MODELS ONLY (SEE PAGE 97) RE - ROD EYE (SEE PAGE 96) RS - MALE STUD FOR ROD END (SEE PAGE 96) RF, RH, RN, RT, RV, RY - ROD EXTENSIONS (SEE PAGE 96) SH - HYDRAULIC OPTION (35 BAR 500 PSI) (SEE PAGE 97) UB, UF, UR - URETHANE SHOCK PAD OPTION (SEE PAGE 97)
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Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	10mm - 20mm	22,5(0.89")	PUSH 8,04 cm ² (1.25 in ²)
LE	...	5mm - 15mm	27,5(1.08")	
LH	...D	5mm - 10mm	32,5(1.28")	PULL 6,91 cm ² (1.07 in ²)
LS	S,R	5mm	37,5(1.48")	

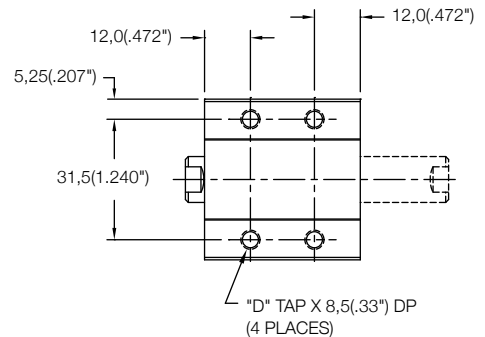
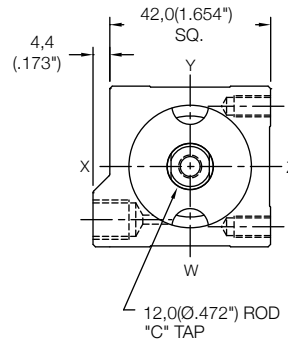
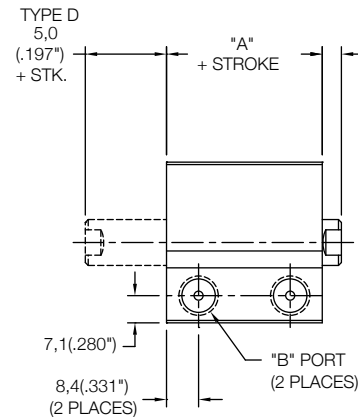
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M6X1,0	1/4-20
"D"	M5X0,8	#10-32



Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	25mm - 100mm	22,5(0.89")	PUSH 8,04 cm ² (1.25 in ²)
LE	...	20mm - 100mm	27,5(1.08")	
LH	...D	15mm - 100mm	32,5(1.28")	PULL 6,91 cm ² (1.07 in ²)
LS	S,R	10mm - 25mm	37,5(1.48")	
LS	S,R	26mm - 50mm	42,5(1.68")	

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M6X1,0	1/4-20
"D"	M5X0,8	#10-32



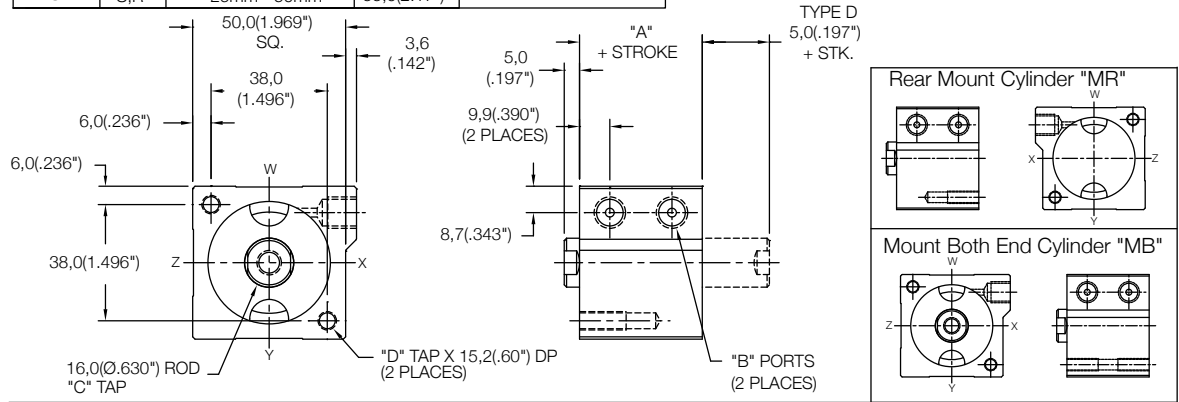
- MODEL: LS, LE, LH
- BORE: 32
- STROKE: 5mm - 100mm (SEE STROKE RANGE)
- TYPE:
 - BLANK - NO CODE, DOUBLE ACTING, SINGLE ROD
 - D - DOUBLE ACTING, DOUBLE ROD
 - S - SINGLE ACTING, SPRING RETRACT
 - R - SINGLE ACTING, SPRING EXTEND
- MOUNTING:
 - MS - SIDE MOUNT
 - FE - FLANGE ON END
 - FS - FLANGE ON SIDE (SEE PAGE 93)

- OPTIONS:
 - EM - INCH THREADS & PORT OPTIONS
 - HS - HIGH TEMPERATURE SEALS OPTION: AVAILABLE ON LE AND LH MODELS ONLY (SEE PAGE 97)
 - RE - ROD EYE (SEE PAGE 96)
 - RS - MALE STUD FOR ROD END (SEE PAGE 96)
 - RF, RH, RN, RT, RV, RY - ROD EXTENSIONS (SEE PAGE 96)
 - SH - HYDRAULIC OPTION (35 BAR 500 PSI) (SEE PAGE 97)
 - UB, UF, UR - URETHANE SHOCK PAD OPTION (SEE PAGE 97)

Non Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 100mm	25,0(0.98")	PUSH 12,56 cm ² (1.95 in ²) PULL 10,55 cm ² (1.64 in ²)
LE	-	5mm - 100mm	35,0(1.38")	
LH	-	5mm - 100mm	40,0(1.58")	PUSH 12,56 cm ² (1.95 in ²) PULL 10,55 cm ² (1.64 in ²)
LH	D	5mm - 100mm	45,0(1.78")	
LS	S,R	5mm - 25mm	45,0(1.78")	PUSH 12,56 cm ² (1.95 in ²) PULL 10,55 cm ² (1.64 in ²)
LS	S,R	26mm - 50mm	55,0(2.17")	

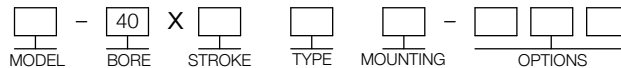
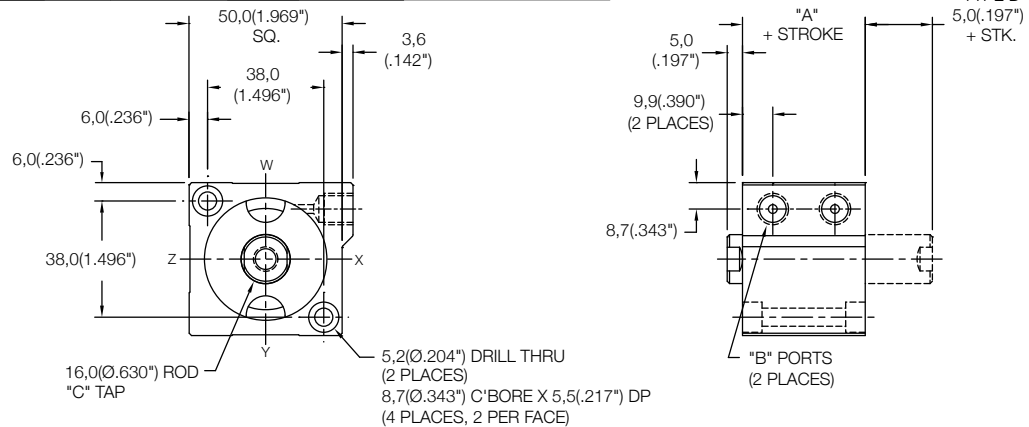
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M8X1,25	5/16-18
"D"	M6X1,0	1/4-20



Non Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 25mm	25,0(0.98")	PUSH 12,56 cm ² (1.95 in ²) PULL 10,55 cm ² (1.64 in ²)
LE	-	5mm - 15mm	35,0(1.38")	
LH	-	5mm - 10mm	40,0(1.58")	PUSH 12,56 cm ² (1.95 in ²) PULL 10,55 cm ² (1.64 in ²)
LH	D	5mm	45,0(1.78")	
LS	S,R	5mm	45,0(1.78")	PUSH 12,56 cm ² (1.95 in ²) PULL 10,55 cm ² (1.64 in ²)
LS	S,R	5mm	45,0(1.78")	

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M8X1,25	5/16-18



MODEL
LS
LE
LH

5mm - 100mm STROKE
(SEE STROKE RANGE)

BLANK - NO CODE, DOUBLE ACTING, SINGLE ROD
D - DOUBLE ACTING, DOUBLE ROD
S - SINGLE ACTING, SPRING RETRACT
R - SINGLE ACTING, SPRING EXTEND

MT - THRU MOUNT
MF - FRONT MOUNT
MR - REAR MOUNT
MB - BOTH END MOUNTS
FF - FRONT FLANGE
FR - REAR FLANGE
(FOR FLANGES SEE PAGE 92)

PR - REAR PIVOT
PL - LONG PIVOT
(FOR PIVOTS SEE PAGE 94)

EM - INCH THREADS & PORT OPTIONS

HS - HIGH TEMPERATURE SEALS OPTION:
AVAILABLE ON LE AND LH MODELS ONLY
(SEE PAGE 97)

PE - PORT ENLARGEMENT (AVAILABLE W/
"EM" OPTION ONLY = 1/4-18 NPT PORTS)

RE - ROD EYE
(SEE PAGE 96)

RS - MALE STUD FOR ROD END
(SEE PAGE 96)

RF, RH, RN, RT, RV, RY - ROD EXTENSIONS
(SEE PAGE 96)

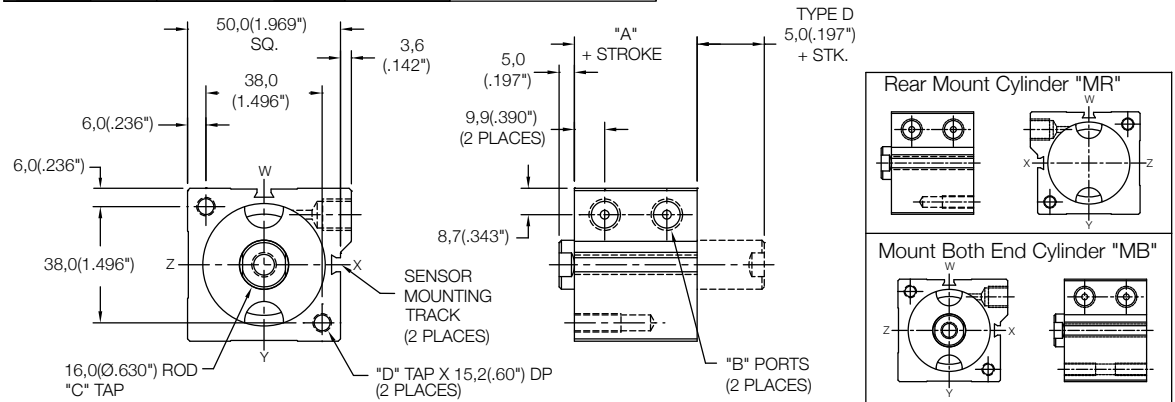
SH - HYDRAULIC OPTION (35 BAR 500 PSI)
(SEE PAGE 97)

UB, UF, UR - URETHANE SHOCK PAD OPTION
(SEE PAGE 97)

Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	—D	5mm - 100mm	30,0(1.18")	PUSH 12,56 cm ² (1.95 in ²) PULL 10,55 cm ² (1.64 in ²)
LE	—	5mm - 100mm	40,0(1.58")	
LH	—	5mm - 100mm	45,0(1.78")	PUSH 12,56 cm ² (1.95 in ²) PULL 10,55 cm ² (1.64 in ²)
LH	D	5mm - 100mm	50,0(1.98")	
LS	S,R	5mm - 25mm	50,0(1.97")	
LS	S,R	26mm - 50mm	60,0(2.36")	

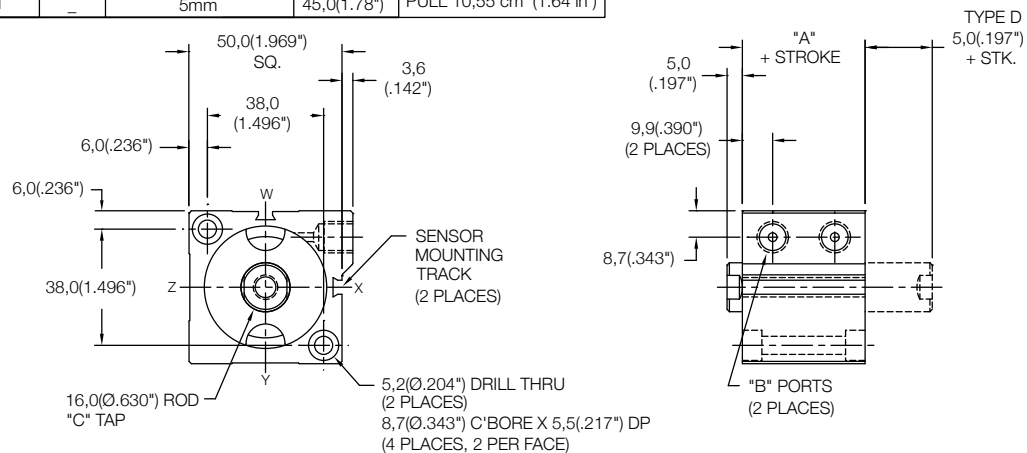
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M8X1,25	5/16-18
"D"	M6X1,0	1/4-20



Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	—D	5mm - 20mm	30,0(1.18")	PUSH 12,56 cm ² (1.95 in ²) PULL 10,55 cm ² (1.64 in ²)
LE	—	5mm - 10mm	40,0(1.58")	
LH	—	5mm	45,0(1.78")	

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M8X1,25	5/16-18

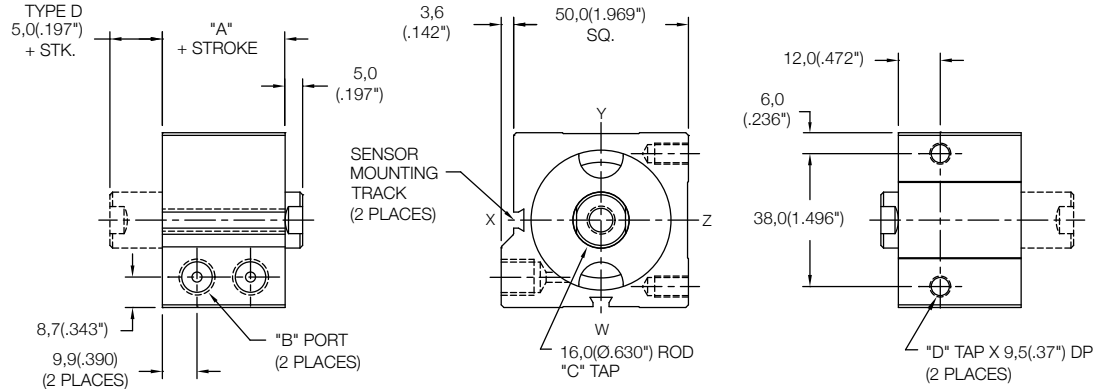


MODEL	-	40	X	STROKE	TYPE	MOUNTING	MAGNETIC	-	OPTIONS
LS LE LH							M		
5mm - 100mm STROKE (SEE STROKE RANGE)									
BLANK - NO CODE, DOUBLE ACTING, SINGLE ROD									
D - DOUBLE ACTING, DOUBLE ROD									
S - SINGLE ACTING, SPRING RETRACT									
R - SINGLE ACTING, SPRING EXTEND									
MT - THRU MOUNT									
MF - FRONT MOUNT									
MR - REAR MOUNT									
MB - BOTH END MOUNTS									
FF - FRONT FLANGE									
FR - REAR FLANGE (FOR FLANGES SEE PAGE 92)									
PR - REAR PIVOT									
PL - LONG PIVOT (FOR PIVOTS SEE PAGE 94)									
				SENSORS SOLD SEPARATELY SKS, SKP, SCS, SCP - SOLID STATE LIMIT SENSORS (SEE PAGE 88)					
				EM - INCH THREADS & PORT OPTIONS					
				HS - HIGH TEMPERATURE SEALS OPTION: AVAILABLE ON LE AND LH MODELS ONLY (SEE PAGE 97)					
				PE - PORT ENLARGEMENT (AVAILABLE W/ "EM" OPTION ONLY = 1/4-18 NPT PORTS)					
				RE - ROD EYE (SEE PAGE 96)					
				RS - MALE STUD FOR ROD END (SEE PAGE 96)					
				RF, RH, RN, RT, RV, RY - ROD EXTENSIONS (SEE PAGE 96)					
				SH - HYDRAULIC OPTION (35 BAR 500 PSI) (SEE PAGE 97)					
				UB, UF, UR - URETHANE SHOCK PAD OPTION (SEE PAGE 97)					

Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	5mm - 15mm	30,0(1.18")	PUSH 12,56 cm ² (1.95 in ²)
LE	-	5mm	40,0(1.58")	PULL 10,55 cm ² (1.64 in ²)

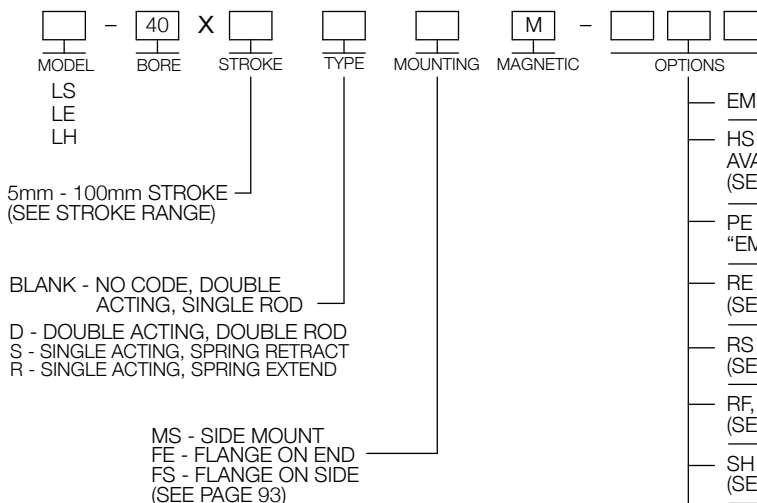
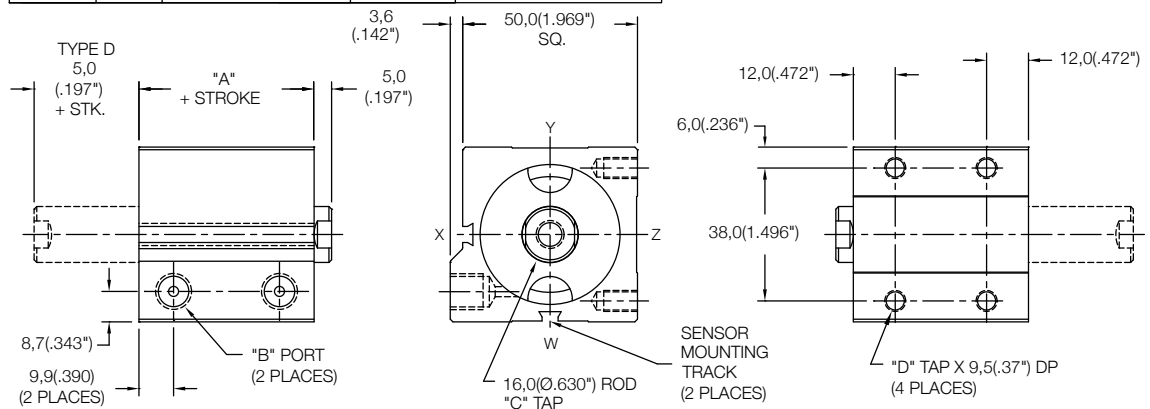
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M8X1,25	5/16-18
"D"	M6X1,0	1/4-20



Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	20mm - 100mm	30,0(1.18")	PUSH 12,56 cm ² (1.95 in ²)
LE	-	10mm - 100mm	40,0(1.58")	PULL 10,55 cm ² (1.64 in ²)
LH	-	5mm - 100mm	45,0(1.78")	
LH	D	5mm - 100mm	50,0(1.97")	
LS	S,R	5mm - 25mm	50,0(1.97")	
LS	S,R	26mm - 50mm	60,0(2.36")	

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M8X1,25	5/16-18
"D"	M6X1,0	1/4-20

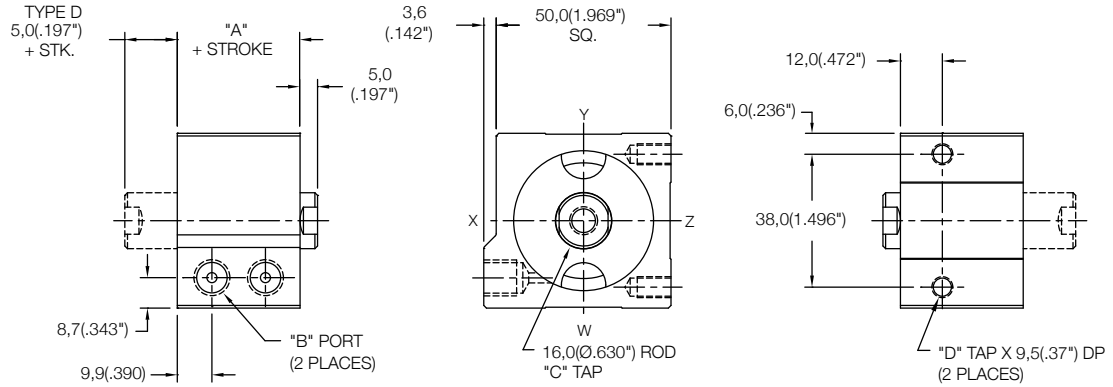


SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS (SEE PAGE 88)

Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	—D	10mm - 20mm	25,0(0.98")	PUSH 12,56 cm ² (1.95 in ²)
LE	—	5mm - 10mm	35,0(1.38")	
LH	—	5mm	40,0(1.58")	PULL 10,55 cm ² (1.64 in ²)

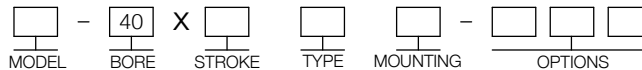
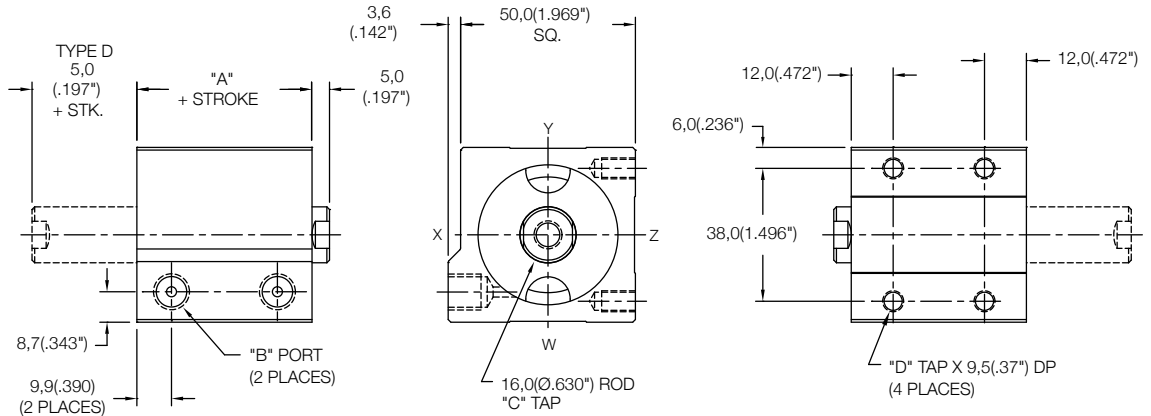
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M8X1,25	5/16-18
"D"	M6X1,0	1/4-20



Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	—D	25mm - 100mm	25,0(0.98")	PUSH 12,56 cm ² (1.95 in ²)
LE	—	15mm - 100mm	35,0(1.38")	
LH	—	10mm - 100mm	40,0(1.58")	PULL 10,55 cm ² (1.64 in ²)
LH	D	5mm - 100mm	45,0(1.78")	
LS	S,R	5mm - 25mm	45,0(1.78")	
LS	S,R	26mm - 50mm	55,0(2.17")	

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M8X1,25	5/16-18
"D"	M6X1,0	1/4-20



LS
LE
LH

5mm - 100mm STROKE
(SEE STROKE RANGE)

BLANK - NO CODE, DOUBLE
ACTING, SINGLE ROD

D - DOUBLE ACTING, DOUBLE ROD
S - SINGLE ACTING, SPRING RETRACT
R - SINGLE ACTING, SPRING EXTEND

MS - SIDE MOUNT
FE - FLANGE ON END
FS - FLANGE ON SIDE
(SEE PAGE 93)

EM - INCH THREADS & PORT OPTIONS

HS - HIGH TEMPERATURE SEALS OPTION:
AVAILABLE ON LE AND LH MODELS ONLY
(SEE PAGE 97)

PE - PORT ENLARGEMENT (AVAILABLE W/
"EM" OPTION ONLY = 1/4-18 NPT PORTS)

RE - ROD EYE
(SEE PAGE 96)

RS - MALE STUD FOR ROD END
(SEE PAGE 96)

RF, RH, RN, RT, RV, RY - ROD EXTENSIONS
(SEE PAGE 96)

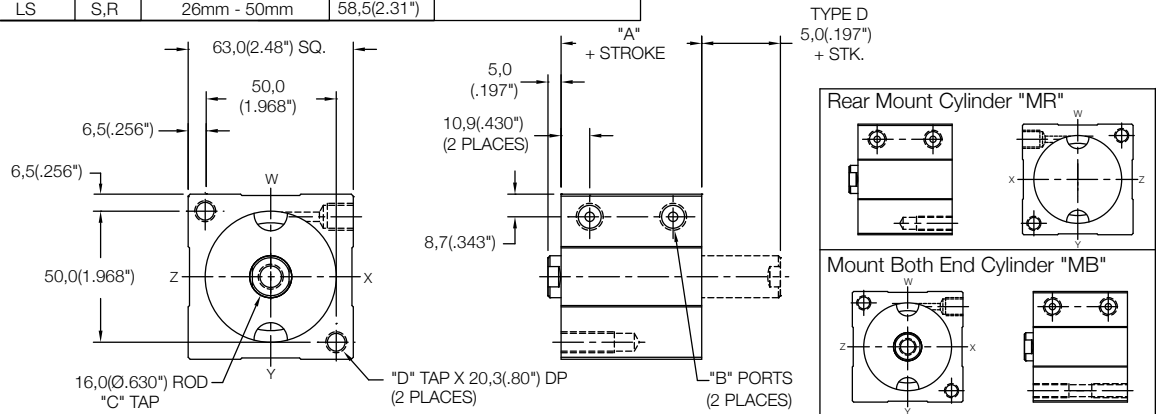
SH - HYDRAULIC OPTION (35 BAR 500 PSI)
(SEE PAGE 97)

UB, UF, UR - URETHANE SHOCK PAD OPTION
(SEE PAGE 97)

Non Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 100mm	28,5(1.12")	PUSH 19,63 cm ² (3.04 in ²) PULL 17,62 cm ² (2.73 in ²)
LE	—	5mm - 100mm	38,5(1.52")	
LH	—	5mm - 100mm	43,5(1.72")	PUSH 19,63 cm ² (3.04 in ²) PULL 17,62 cm ² (2.73 in ²)
LH	D	5mm - 100mm	48,5(1.91")	
LS	S,R	5mm - 25mm	48,5(1.91")	
LS	S,R	26mm - 50mm	58,5(2.31")	

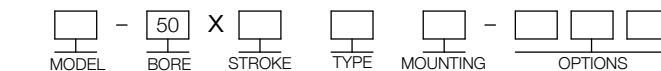
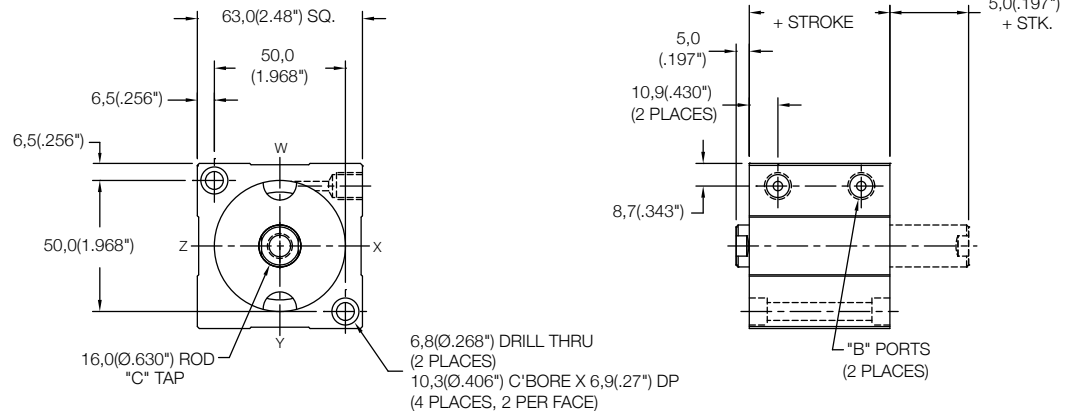
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M10X1,5	3/8-24
"D"	M8X1,25	5/16-18



Non Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 40mm	28,5(1.12")	PUSH 19,63 cm ² (3.04 in ²) PULL 17,62 cm ² (2.73 in ²)
LE	—	5mm - 30mm	38,5(1.52")	
LH	—	5mm - 25mm	43,5(1.72")	PUSH 19,63 cm ² (3.04 in ²) PULL 17,62 cm ² (2.73 in ²)
LH	D	5mm - 20mm	48,5(1.91")	
LS	S,R	5mm - 20mm	48,5(1.91")	

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M10X1,5	3/8-24



MODEL
LS
LE
LH

5mm - 100mm STROKE
(SEE STROKE RANGE)

BLANK - NO CODE, DOUBLE
ACTING, SINGLE ROD

D - DOUBLE ACTING, DOUBLE ROD
S - SINGLE ACTING, SPRING RETRACT
R - SINGLE ACTING, SPRING EXTEND

MT - THRU MOUNT
MF - FRONT MOUNT
MR - REAR MOUNT
MB - BOTH END MOUNTS
FF - FRONT FLANGE
FR - REAR FLANGE
(FOR FLANGES SEE PAGE 92)

PR - REAR PIVOT
PL - LONG PIVOT
(FOR PIVOTS SEE PAGE 94)

EM - INCH THREADS & PORT OPTIONS

HS - HIGH TEMPERATURE SEALS OPTION:
AVAILABLE ON LE AND LH MODELS ONLY
(SEE PAGE 97)

PE - PORT ENLARGEMENT (AVAILABLE W/
"EM" OPTION ONLY = 1/4-18 NPT PORTS)

RE - ROD EYE
(SEE PAGE 96)

RS - MALE STUD FOR ROD END
(SEE PAGE 96)

RF, RH, RN, RT, RV, RY - ROD EXTENSIONS
(SEE PAGE 96)

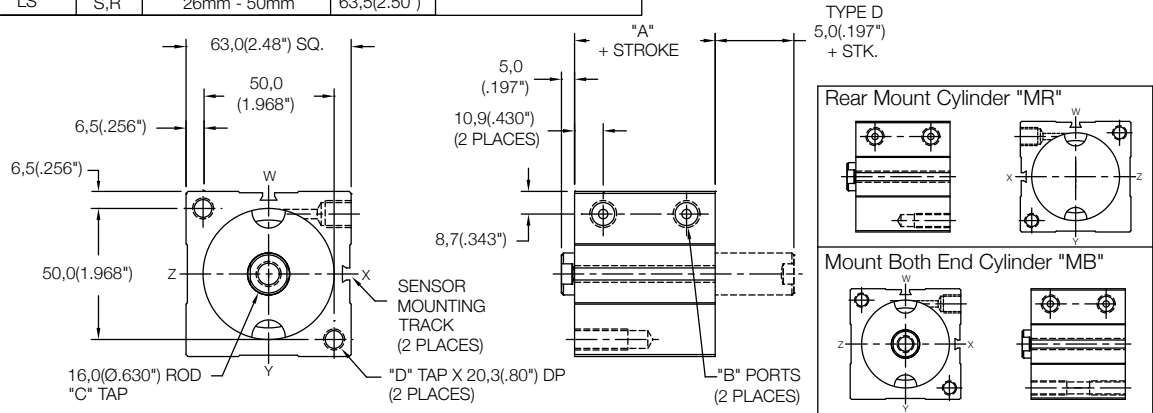
SH - HYDRAULIC OPTION (35 BAR 500 PSI)
(SEE PAGE 97)

UB, UF, UR - URETHANE SHOCK PAD OPTION
(SEE PAGE 97)

Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	—,D	5mm - 100mm	33,5(1.32")	PUSH 19,63 cm ² (3.04 in ²)
LE	—	5mm - 100mm	43,5(1.72")	
LH	—	5mm - 100mm	48,5(1.91")	PULL 17,62 cm ² (2.73 in ²)
LH	D	5mm - 100mm	53,5(2.11")	
LS	S,R	5mm - 25mm	53,5(2.11")	
LS	S,R	26mm - 50mm	63,5(2.50")	

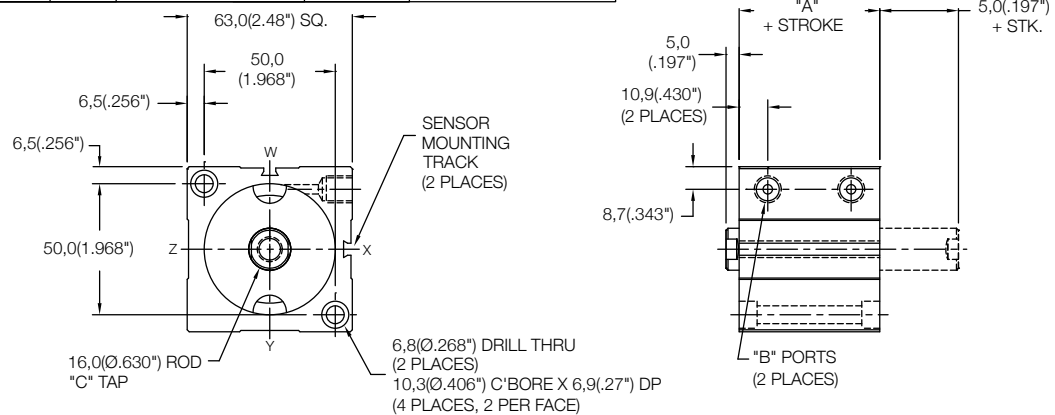
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M10X1,5	3/8-24
"D"	M8X1,25	5/16-18



Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	—,D	5mm - 35mm	33,5(1.32")	PUSH 19,63 cm ² (3.04 in ²)
LE	—	5mm - 25mm	43,5(1.72")	
LH	—	5mm - 20mm	48,5(1.91")	PULL 17,62 cm ² (2.73 in ²)
LH	D	5mm - 15mm	53,5(2.11")	
LS	S,R	5mm - 15mm	53,5(2.11")	

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M10X1,5	3/8-24



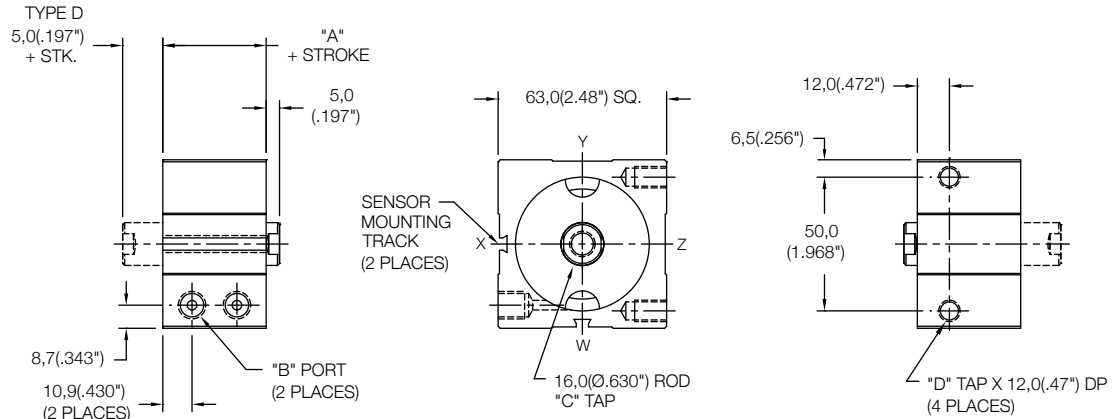
MODEL	—	50	X	STROKE	TYPE	MOUNTING	MAGNETIC	—	OPTIONS
LS LE LH				5mm - 100mm STROKE (SEE STROKE RANGE)	BLANK - NO CODE, DOUBLE ACTING, SINGLE ROD				
					D - DOUBLE ACTING, DOUBLE ROD S - SINGLE ACTING, SPRING RETRACT R - SINGLE ACTING, SPRING EXTEND				
					MT - THRU MOUNT MF - FRONT MOUNT MR - REAR MOUNT MB - BOTH END MOUNTS FF - FRONT FLANGE FR - REAR FLANGE (FOR FLANGES SEE PAGE 92)				
					PR - REAR PIVOT PL - LONG PIVOT (FOR PIVOTS SEE PAGE 94)				
									EM - INCH THREADS & PORT OPTIONS
									HS - HIGH TEMPERATURE SEALS OPTION: AVAILABLE ON LE AND LH MODELS ONLY (SEE PAGE 97)
									PE - PORT ENLARGEMENT (AVAILABLE W/ "EM" OPTION ONLY = 1/4-18 NPT PORTS)
									RE - ROD EYE (SEE PAGE 96)
									RS - MALE STUD FOR ROD END (SEE PAGE 96)
									RF, RH, RN, RT, RV, RY - ROD EXTENSIONS (SEE PAGE 96)
									SH - HYDRAULIC OPTION (35 BAR 500 PSI) (SEE PAGE 97)
									UB, UF, UR - URETHANE SHOCK PAD OPTION (SEE PAGE 97)

SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS (SEE PAGE 88)

Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	5mm - 15mm	33,5(1.32")	PUSH 19,63 cm ² (3.04 in ²)
LE	-	5mm	43,5(1.72")	PULL 17,62 cm ² (2.73 in ²)

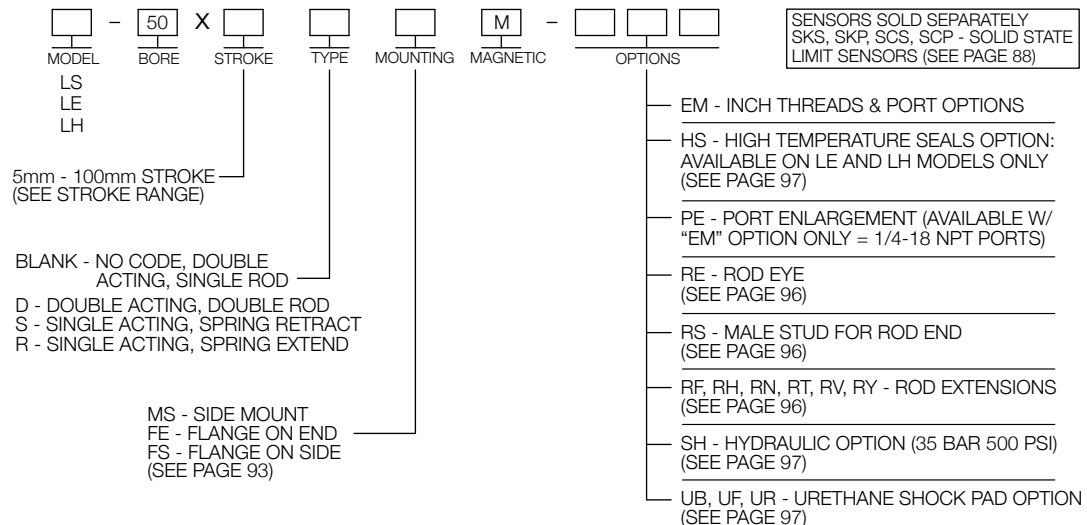
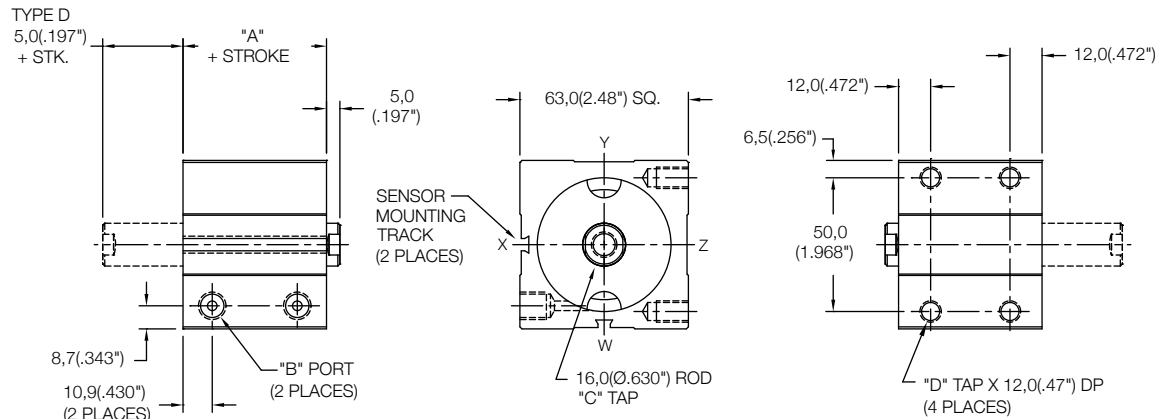
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M10X1,5	3/8-24
"D"	M8X1,25	5/16-18



Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	20mm - 100mm	33,5(1.32")	PUSH 19,63 cm ² (3.04 in ²)
LE	-	10mm - 100mm	43,5(1.72")	
LH	-	5mm - 100mm	48,5(1.91")	PULL 17,62 cm ² (2.73 in ²)
LH	D	5mm - 100mm	53,5(2.11")	
LS	S,R	5mm - 25mm	53,5(2.11")	
LS	S,R	26mm - 50mm	63,5(2.50")	

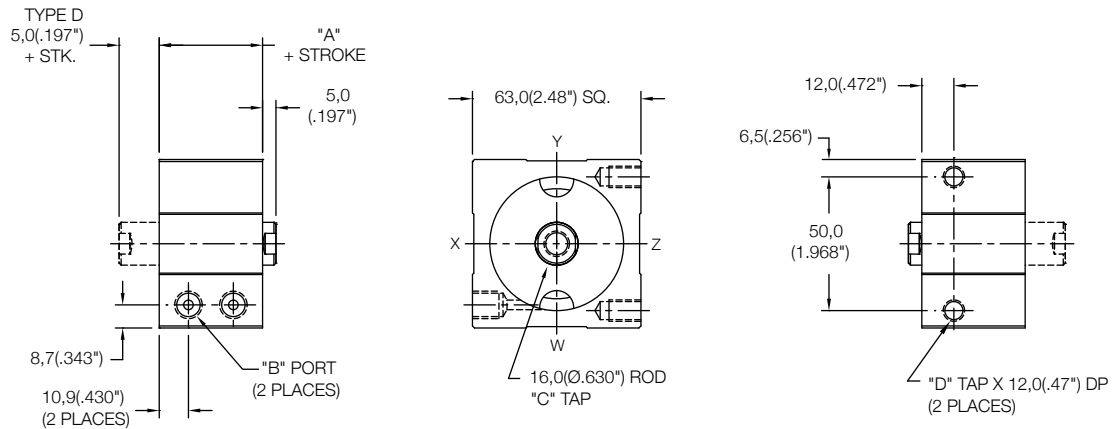
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M10X1,5	3/8-24
"D"	M8X1,25	5/16-18



Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	10mm - 20mm	28,5(1.12")	PUSH 19,63 cm ² (3.04 in ²)
LE	...	5mm - 10mm	38,5(1.52")	PULL 17,62 cm ² (2.73 in ²)
LH	...	5mm	43,5(1.72")	

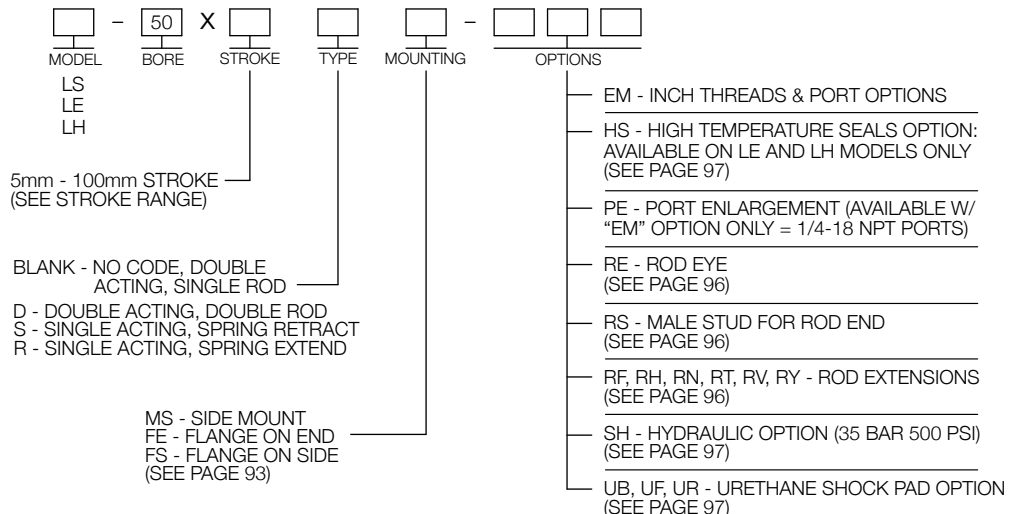
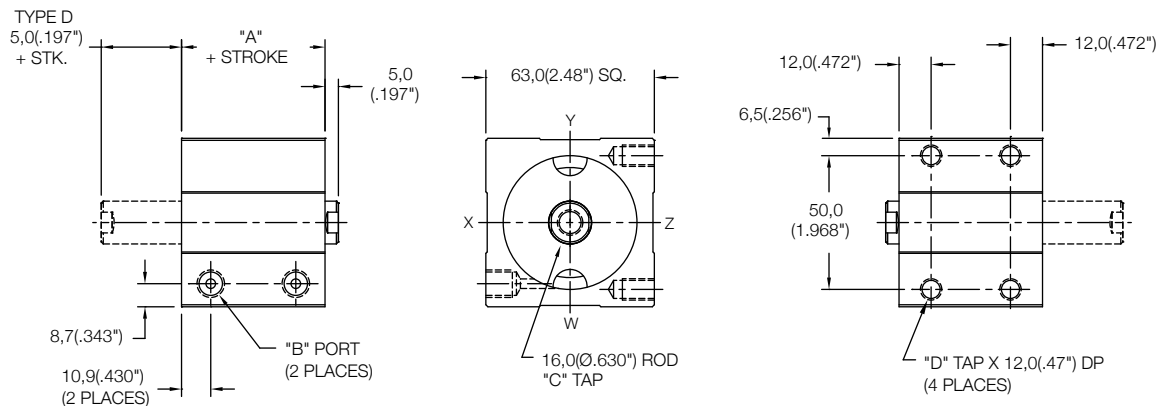
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M10X1,5	3/8-24
"D"	M8X1,25	5/16-18



Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	25mm - 100mm	28,5(1.12")	PUSH 19,63 cm ² (3.04 in ²)
LE	...	15mm - 100mm	38,5(1.52")	PULL 17,62 cm ² (2.73 in ²)
LH	...	10mm - 100mm	43,5(1.72")	
LH	D	5mm - 100mm	48,5(1.91")	
LS	S,R	5mm - 25mm	48,5(1.91")	
LS	S,R	26mm - 50mm	58,5(2.31")	

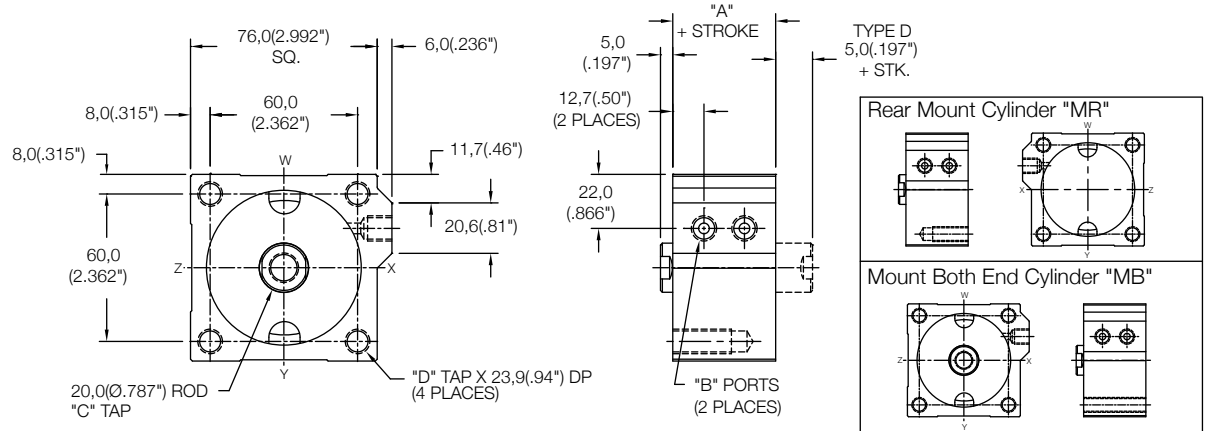
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M10X1,5	3/8-24
"D"	M8X1,25	5/16-18



Non Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	10mm - 100mm	32,0(1.26")	PUSH 31,17 cm ² (4.83 in ²)
LE	...	5mm - 100mm	42,0(1.66")	
LH	...D	5mm - 100mm	52,0(2.05")	PULL 28,03 cm ² (4.34 in ²)

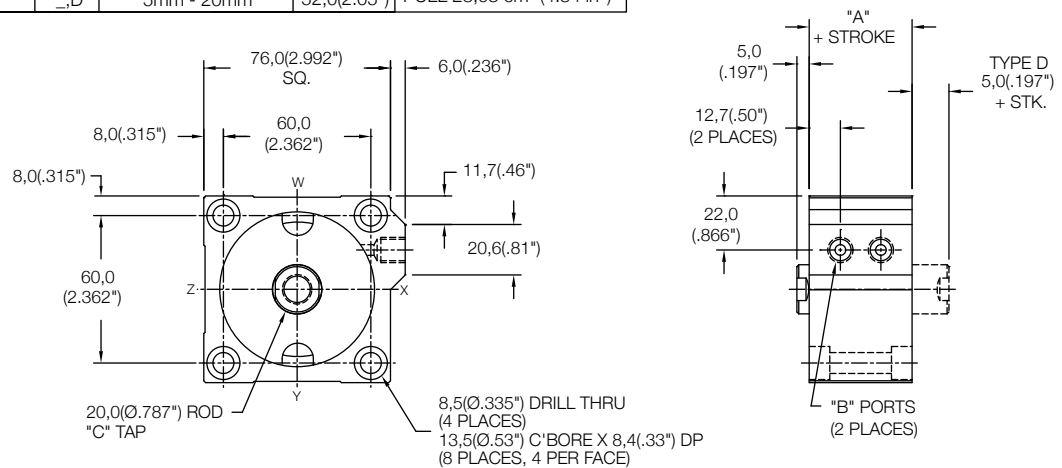
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M10X1,5	3/8-24



Non Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	10mm - 40mm	32,0(1.26")	PUSH 31,17 cm ² (4.83 in ²)
LE	...	5mm - 30mm	42,0(1.66")	
LH	...D	5mm - 20mm	52,0(2.05")	PULL 28,03 cm ² (4.34 in ²)

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13

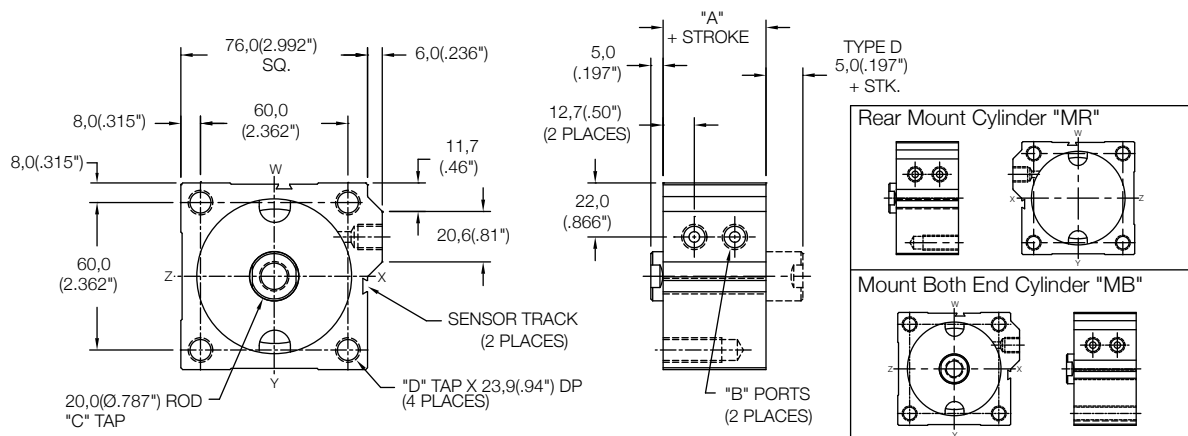


MODEL	BORE	STROKE	TYPE	MOUNTING	OPTIONS
LS LE LH	63	5mm - 100mm STROKE (SEE STROKE RANGE)	BLANK - NO CODE, DOUBLE ACTING, SINGLE ROD D - DOUBLE ACTING, DOUBLE ROD	MT - THRU MOUNT MF - FRONT MOUNT MR - REAR MOUNT MB - BOTH END MOUNTS FF - FRONT FLANGE FR - REAR FLANGE (FOR FLANGES SEE PAGE 92) PR - REAR PIVOT PL - LONG PIVOT (FOR PIVOTS SEE PAGE 94)	EM - INCH THREADS & PORT OPTIONS HS - HIGH TEMPERATURE SEALS OPTION: AVAILABLE ON LE AND LH MODELS ONLY (SEE PAGE 97) PE - PORT ENLARGEMENT (AVAILABLE W/ "EM" OPTION ONLY = 1/4-18 NPT PORTS) RE - ROD EYE (SEE PAGE 96) RS - MALE STUD FOR ROD END (SEE PAGE 96) RF, RH, RN, RT, RV, RY - ROD EXTENSIONS (SEE PAGE 96) SH - HYDRAULIC OPTION (35 BAR 500 PSI) (SEE PAGE 97) UB, UF, UR - URETHANE SHOCK PAD OPTION (SEE PAGE 97)

Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 100mm	37,0(1.46")	PUSH 31,17 cm ² (4.83 in ²)
LE	—	5mm - 100mm	47,0(1.85")	
LH	_,D	5mm - 100mm	57,0(2.25")	PULL 28,03 cm ² (4.34 in ²)

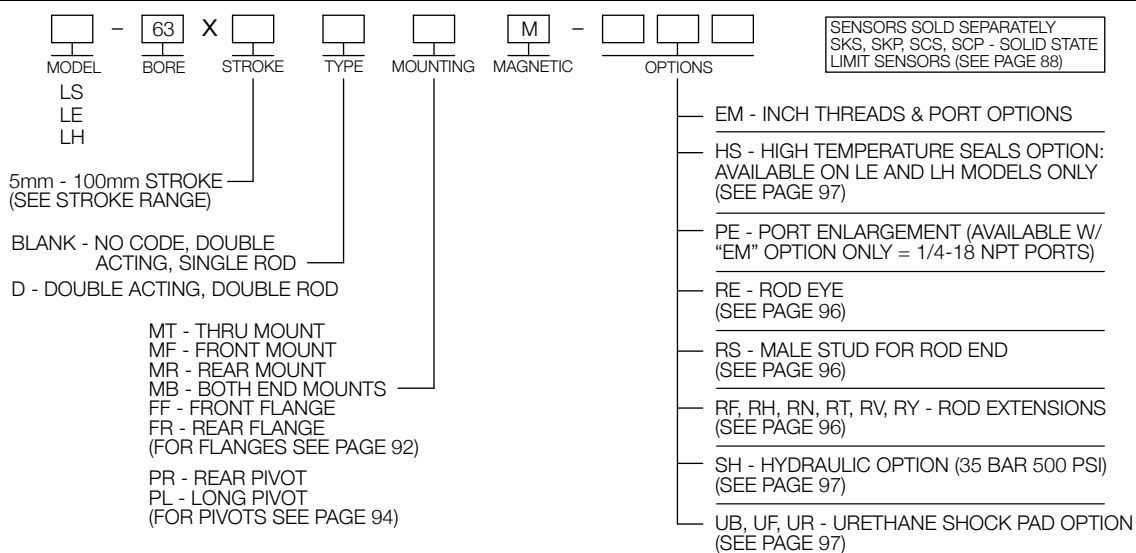
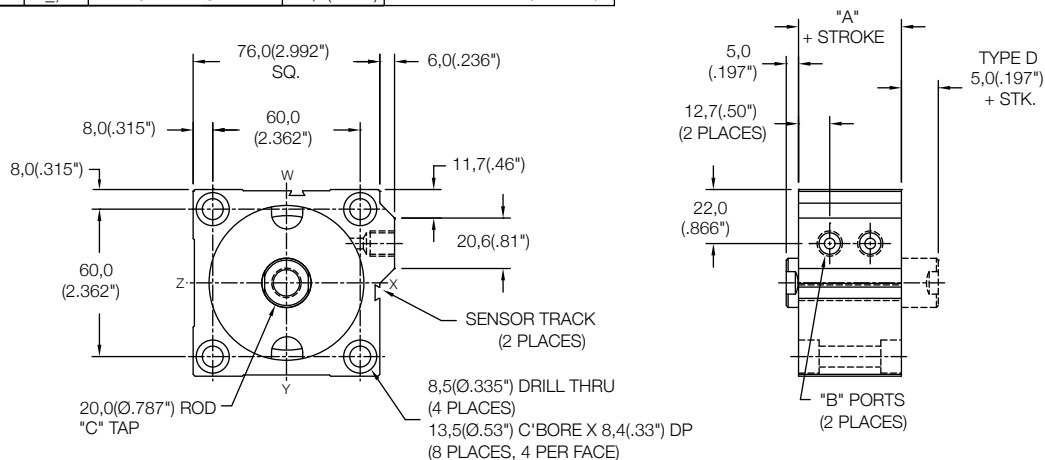
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M10X1,5	3/8-24



Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	—D	10mm - 35mm	37,0(1.46")	PUSH 31,17 cm ² (4.83 in ²)
LE	—	5mm - 25mm	47,0(1.85")	
LH	.D	5mm - 15mm	57,0(2.25")	PULL 28,03 cm ² (4.34 in ²)

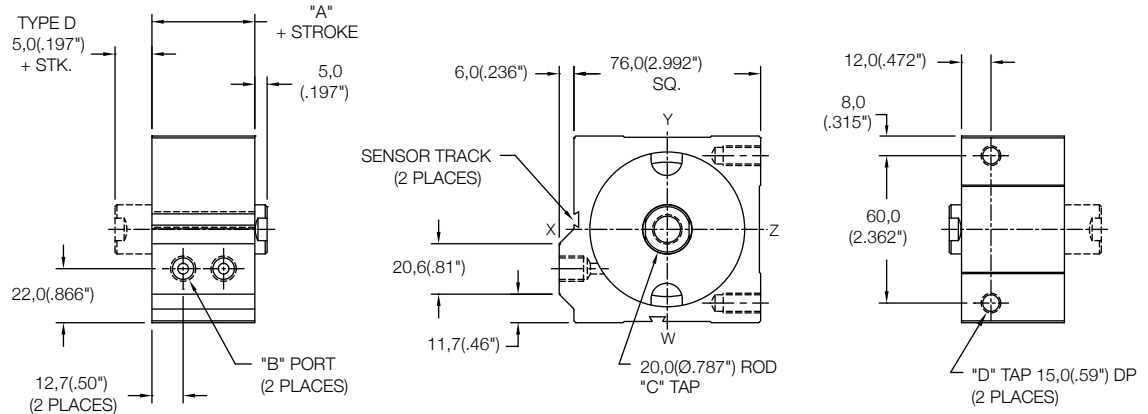
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13



Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	10mm - 15mm	37,0(1.46")	PUSH 31,17 cm ² (4.83 in ²)
LE	...	5mm	47,0(1.85")	PULL 28,03 cm ² (4.34 in ²)

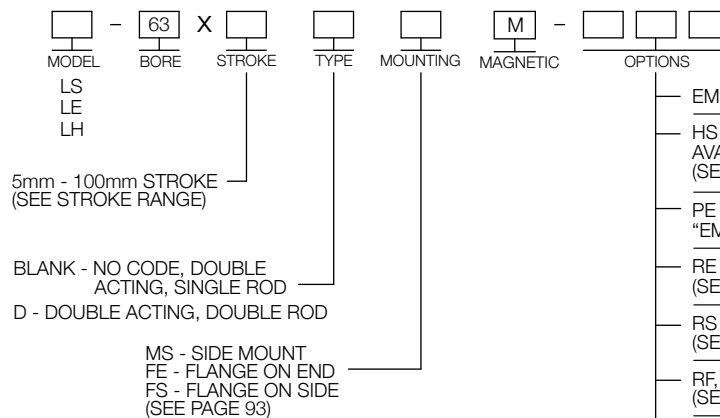
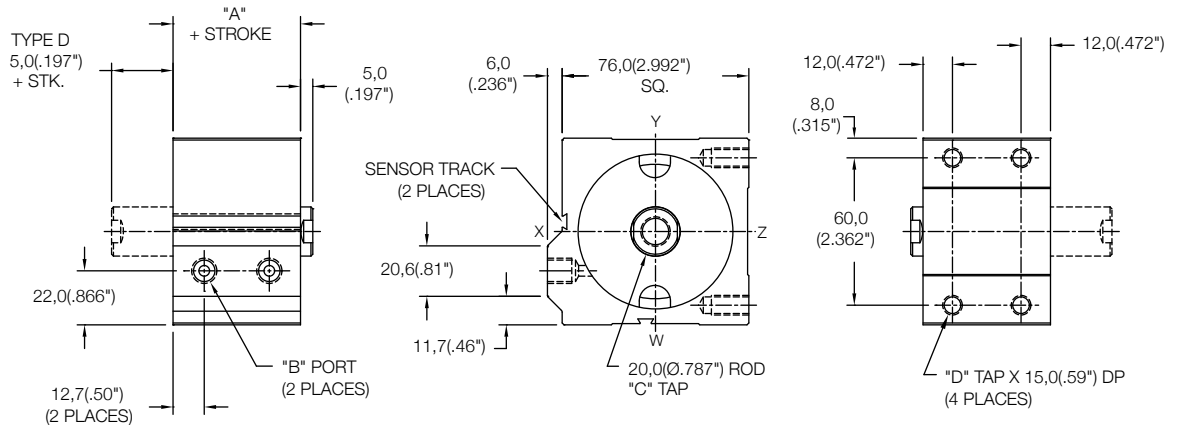
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M8X1,25	5/16-18



Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	20mm - 100mm	37,0(1.46")	PUSH 31,17 cm ² (4.83 in ²)
LE	...	10mm - 100mm	47,0(1.85")	PULL 28,03 cm ² (4.34 in ²)
LH	...D	5mm - 100mm	57,0(2.25")	PULL 28,03 cm ² (4.34 in ²)

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M8X1,25	5/16-18



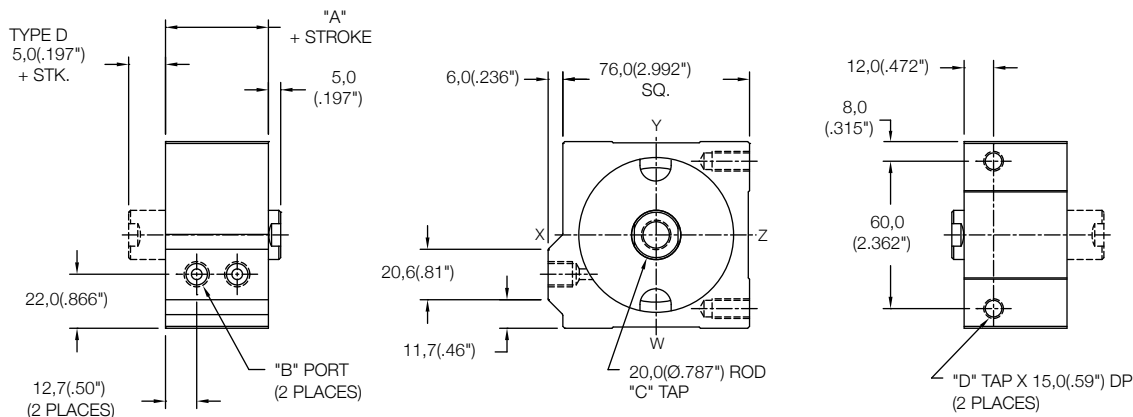
SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS (SEE PAGE 88)

- EM - INCH THREADS & PORT OPTIONS
- HS - HIGH TEMPERATURE SEALS OPTION: AVAILABLE ON LE AND LH MODELS ONLY (SEE PAGE 97)
- PE - PORT ENLARGEMENT (AVAILABLE W/ "EM" OPTION ONLY = 1/4-18 NPT PORTS)
- RE - ROD EYE (SEE PAGE 96)
- RS - MALE STUD FOR ROD END (SEE PAGE 96)
- RF, RH, RN, RT, RV, RY - ROD EXTENSIONS (SEE PAGE 96)
- SH - HYDRAULIC OPTION (35 BAR 500 PSI) (SEE PAGE 97)
- UB, UF, UR - URETHANE SHOCK PAD OPTION (SEE PAGE 97)

Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 20mm	32,0(1.26")	PUSH 31,17 cm ² (4.83 in ²)
LE	-	5mm - 10mm	42,0(1.66")	PULL 28,03 cm ² (4.34 in ²)

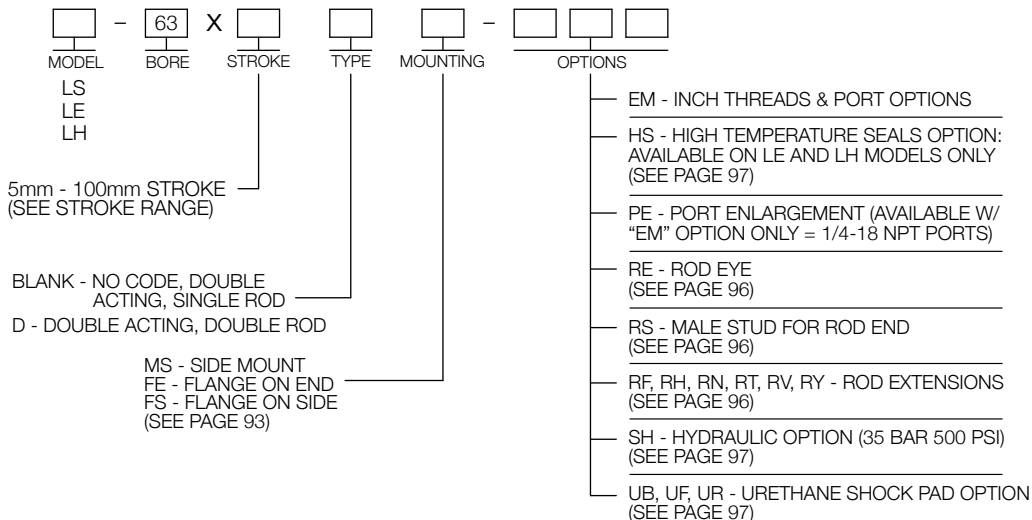
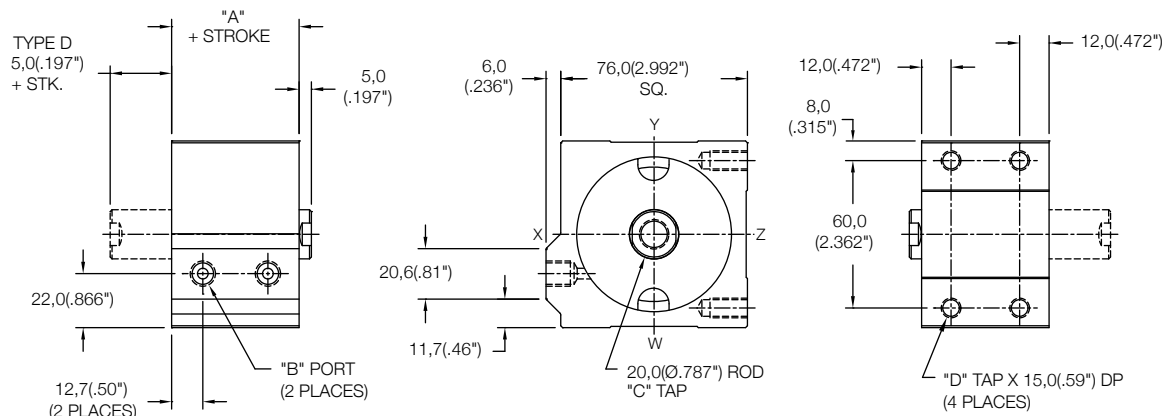
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M8X1,25	5/16-18



Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	25mm - 100mm	32,0(1.26")	PUSH 31,17 cm ² (4.83 in ²)
LE	-	15mm - 100mm	42,0(1.66")	PULL 28,03 cm ² (4.34 in ²)
LH	_,D	5mm - 100mm	52,0(2.05")	PULL 28,03 cm ² (4.34 in ²)

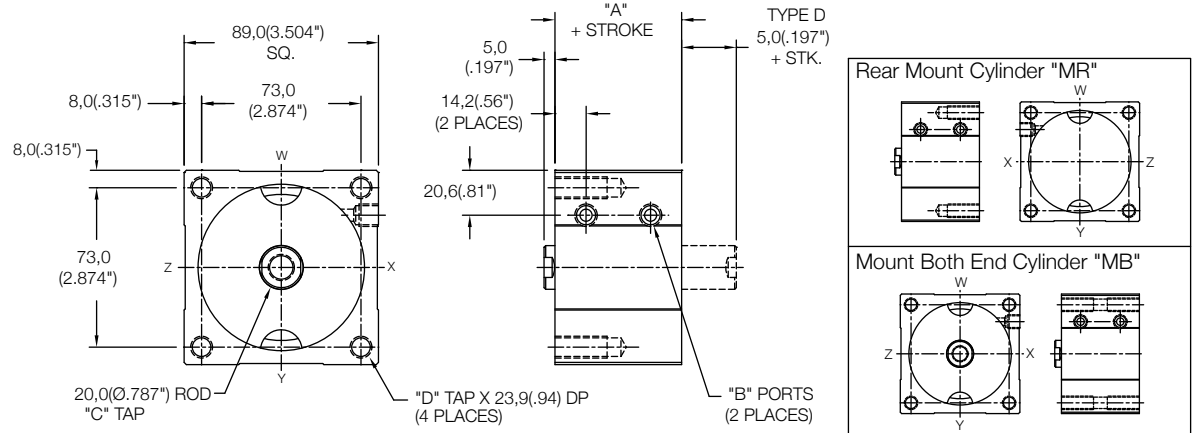
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M8X1,25	5/16-18



Non Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	10mm - 100mm	38,0(1.50")	PUSH 45,6 cm ² (7.07 in ²)
LE	...	5mm - 100mm	48,0(1.89")	PULL 42,46 cm ² (6.59 in ²)
LH	...D	5mm - 100mm	58,0(2.28")	PULL 42,46 cm ² (6.59 in ²)

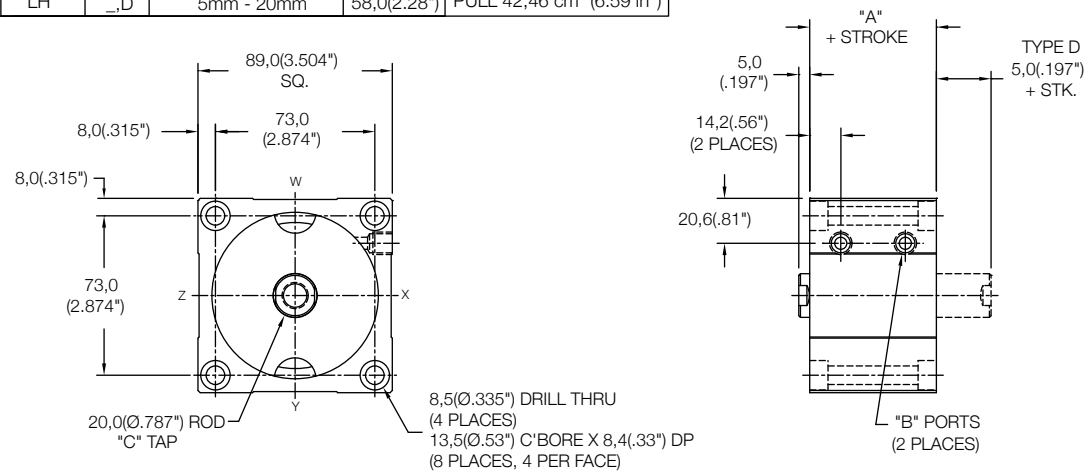
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M10X1,5	3/8-24



Non Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	10mm - 40mm	38,0(1.50")	PUSH 45,6 cm ² (7.07 in ²)
LE	...	5mm - 30mm	48,0(1.89")	PULL 42,46 cm ² (6.59 in ²)
LH	...D	5mm - 20mm	58,0(2.28")	PULL 42,46 cm ² (6.59 in ²)

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13



MODEL - 76 X STROKE TYPE MOUNTING OPTIONS

LS
LE
LH

5mm - 100mm STROKE
(SEE STROKE RANGE)

BLANK - NO CODE, DOUBLE
ACTING, SINGLE ROD
D - DOUBLE ACTING, DOUBLE ROD

MT - THRU MOUNT
MF - FRONT MOUNT
MR - REAR MOUNT
MB - BOTH END MOUNTS
FF - FRONT FLANGE
FR - REAR FLANGE
(FOR FLANGES SEE PAGE 92)

PR - REAR PIVOT
PL - LONG PIVOT
(FOR PIVOTS SEE PAGE 94)

EM - INCH THREADS & PORT OPTIONS

HS - HIGH TEMPERATURE SEALS OPTION:
AVAILABLE ON LE AND LH MODELS ONLY
(SEE PAGE 97)

PE - PORT ENLARGEMENT (AVAILABLE W/
"EM" OPTION ONLY = 1/4-18 NPT PORTS)

RE - ROD EYE
(SEE PAGE 96)

RS - MALE STUD FOR ROD END
(SEE PAGE 96)

RF, RH, RN, RT, RV, RY - ROD EXTENSIONS
(SEE PAGE 96)

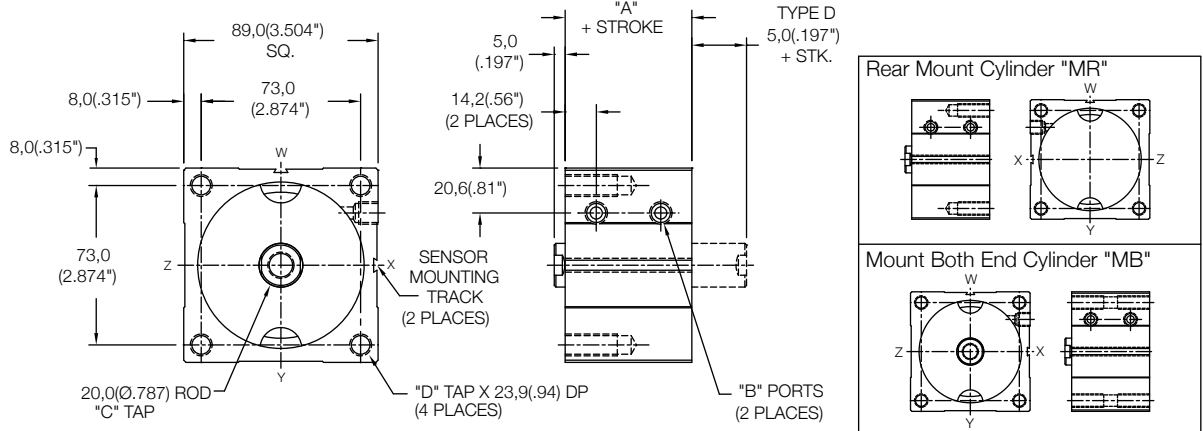
SH - HYDRAULIC OPTION (35 BAR 500 PSI)
(SEE PAGE 97)

UB, UF, UR - URETHANE SHOCK PAD OPTION
(SEE PAGE 97)

Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 100mm	43,0(1.69")	PUSH 45,6 cm ² (7.07 in ²)
LE	_,	5mm - 100mm	53,0(2.09")	PULL 42,46 cm ² (6.59 in ²)
LH	_,D	5mm - 100mm	63,0(2.48")	PULL 42,46 cm ² (6.59 in ²)

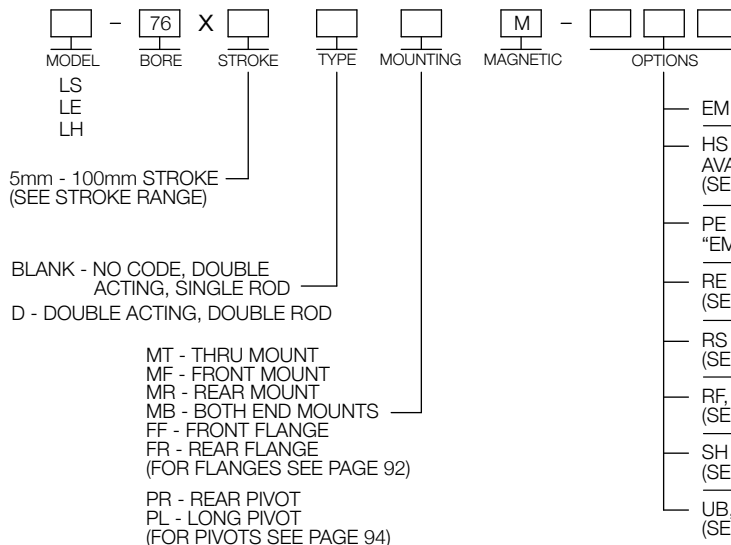
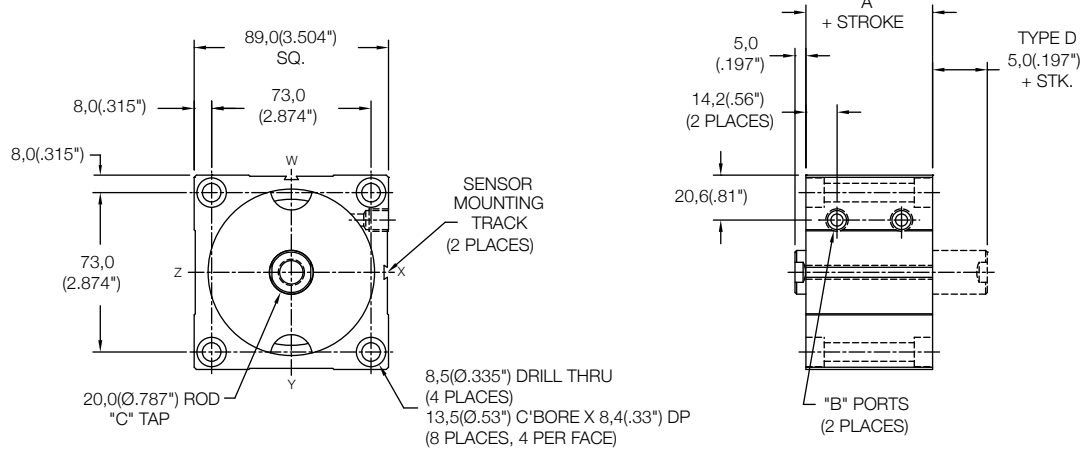
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M10X1,5	3/8-24



Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 35mm	43,0(1.69")	PUSH 45,6 cm ² (7.07 in ²)
LE	_,	5mm - 25mm	53,0(2.09")	PULL 42,46 cm ² (6.59 in ²)
LH	_,D	5mm - 15mm	63,0(2.48")	PULL 42,46 cm ² (6.59 in ²)

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13

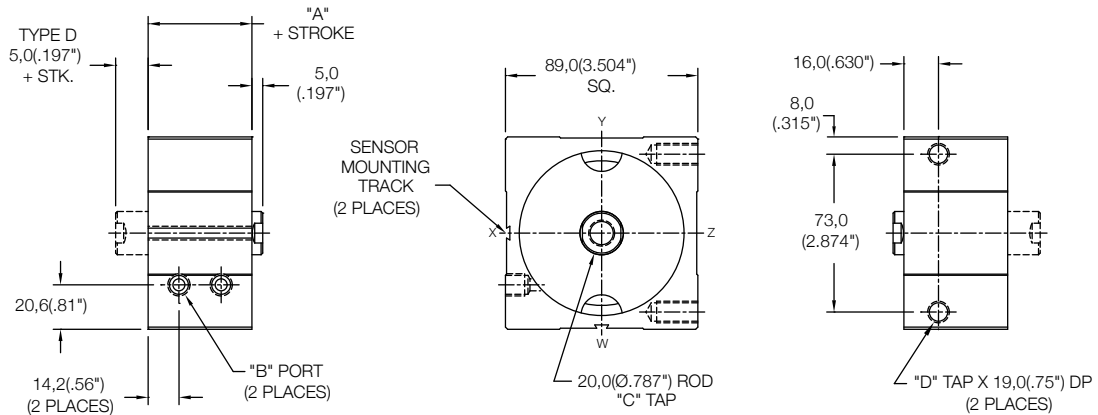


SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS (SEE PAGE 88)

Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	10mm - 15mm	43,0(1.69")	PUSH 45,6 cm ² (7.07 in ²)
LE	-	5mm	53,0(2.09")	PULL 42,46 cm ² (6.59 in ²)

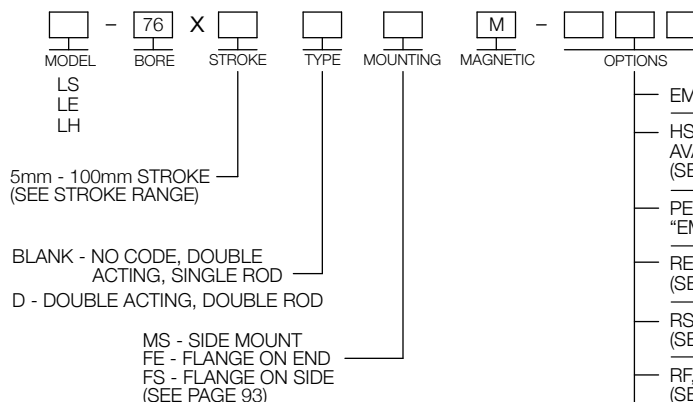
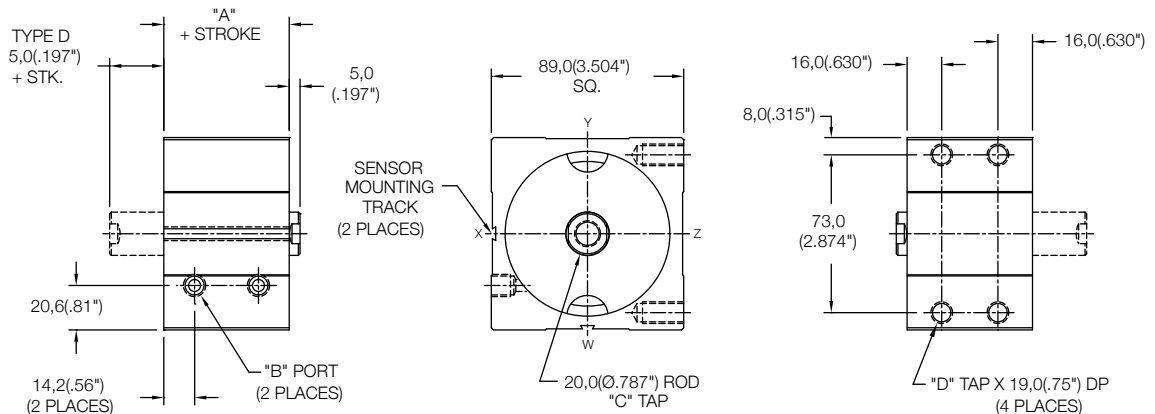
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M10X1,5	3/8-24



Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	...D	20mm - 100mm	43,0(1.69")	PUSH 45,6 cm ² (7.07 in ²)
LE	-	10mm - 100mm	53,0(2.09")	PULL 42,46 cm ² (6.59 in ²)
LH	...D	5mm - 100mm	63,0(2.48")	PULL 42,46 cm ² (6.59 in ²)

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M10X1,5	3/8-24

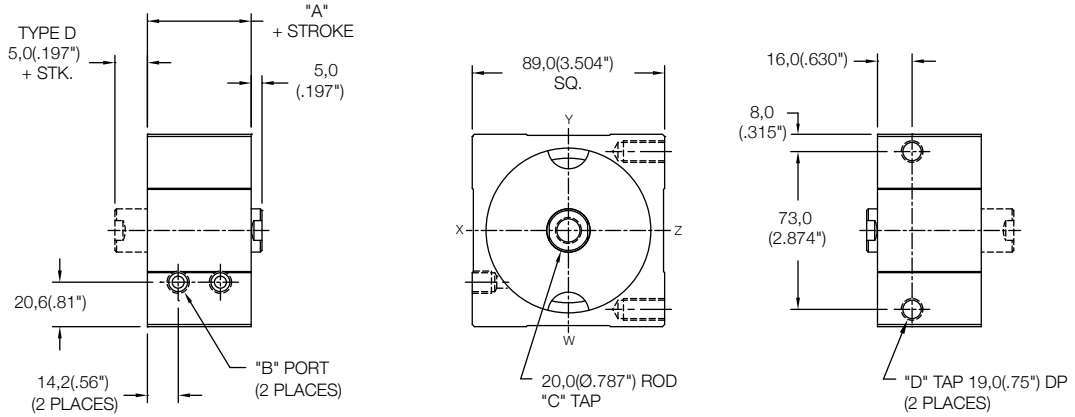


SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS (SEE PAGE 88)

Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 20mm	38,0(1.50")	PUSH 45,6 cm ² (7.07 in ²)
LE	-	5mm - 10mm	48,0(1.89")	PULL 42,46 cm ² (6.59 in ²)

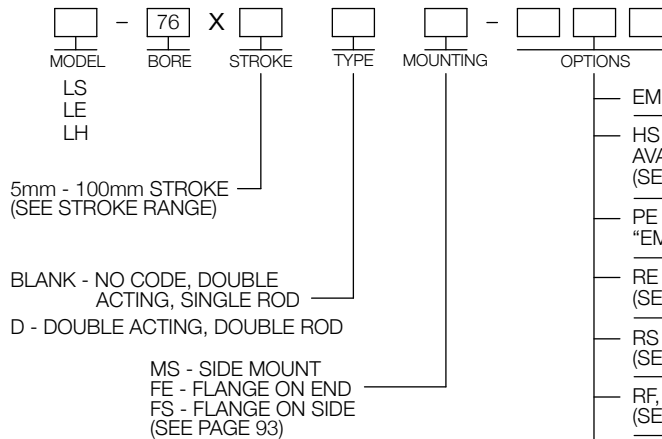
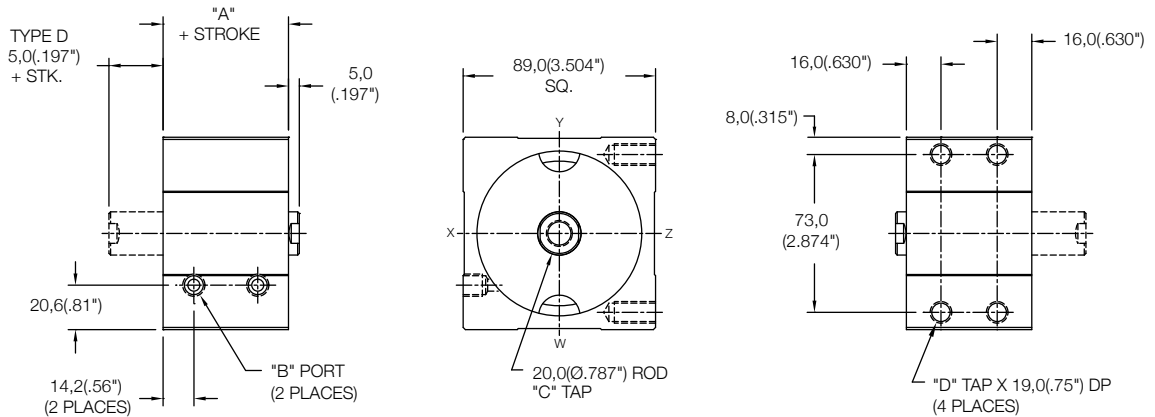
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M10X1,5	3/8-24



Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	25mm - 100mm	38,0(1.50")	PUSH 45,6 cm ² (7.07 in ²)
LE	-	15mm - 100mm	48,0(1.89")	PULL 42,46 cm ² (6.59 in ²)
LH	_,D	5mm - 100mm	58,0(2.28")	PULL 42,46 cm ² (6.59 in ²)

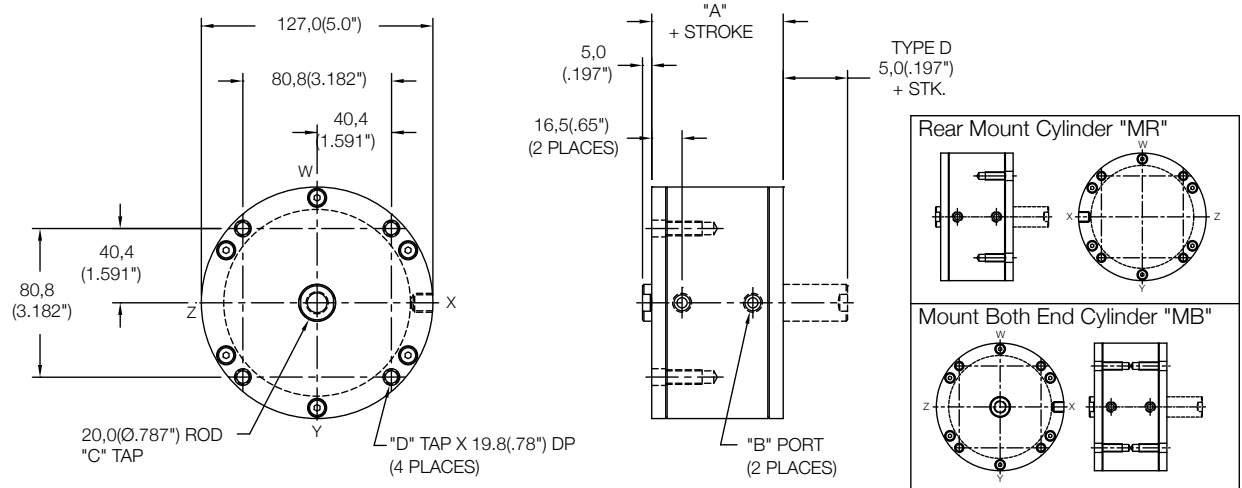
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M10X1,5	3/8-24



Non Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	—,D	10mm - 100mm	41,5(1.63")	PUSH 81,07 cm ² (12.57 in ²)
LE	—	5mm - 100mm	51,5(2.03")	
LH	—,D	5mm - 100mm	61,5(2.42")	PULL 77,93 cm ² (12.09 in ²)

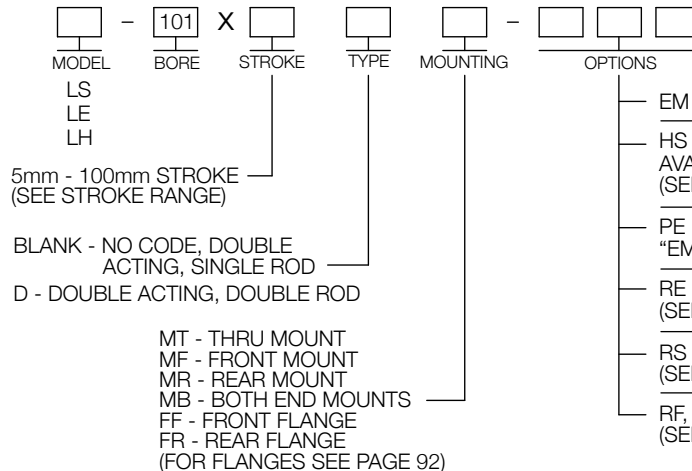
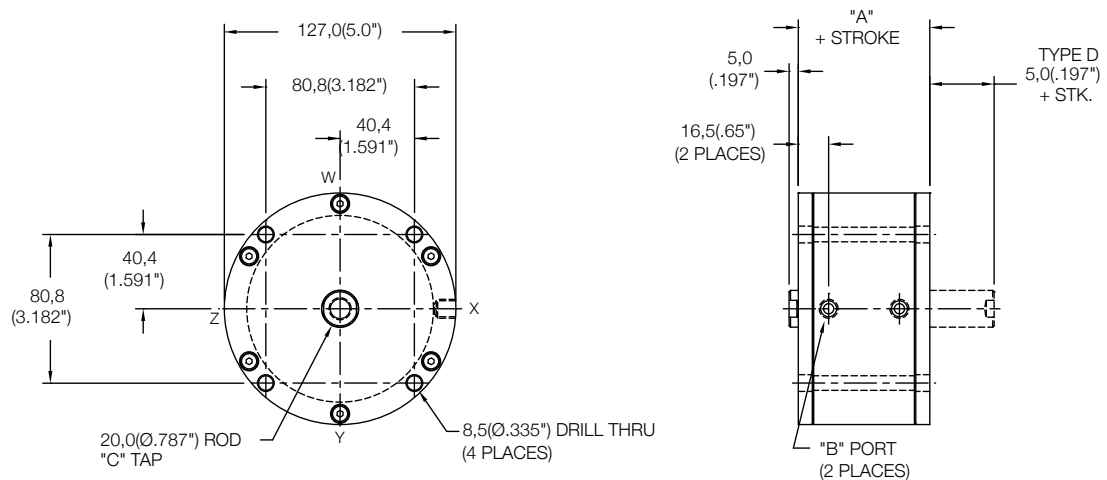
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M8X1,25	5/16-18



Non Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	—,D	10mm - 50mm	41,5(1.63")	PUSH 81,07 cm ² (12.57 in ²)
LE	—	5mm - 40mm	51,5(2.03")	
LH	—,D	5mm - 30mm	61,5(2.42")	PULL 77,93 cm ² (12.09 in ²)

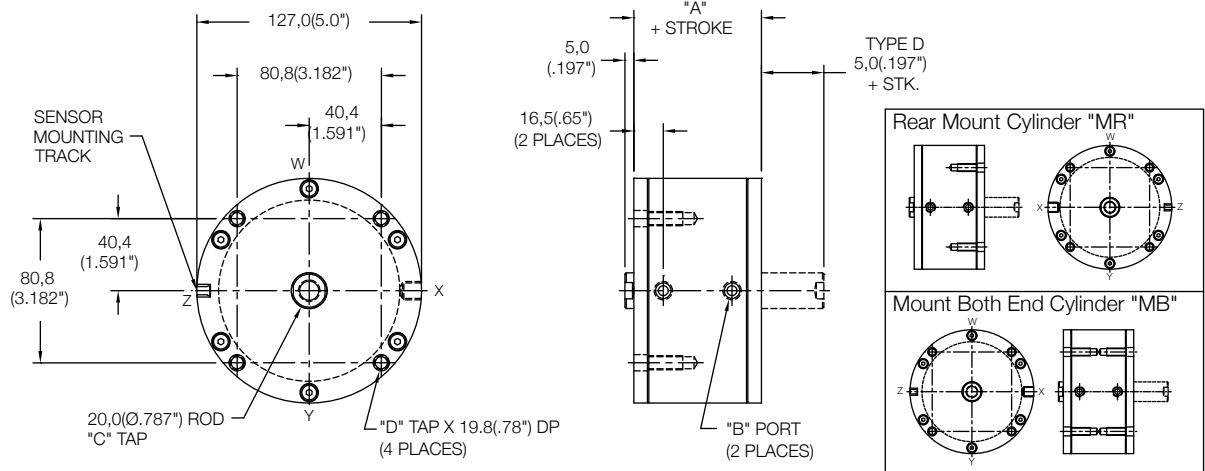
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13



Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 100mm	51,5(2.03")	PUSH 81,07 cm ² (12.57 in ²)
LE	_,	5mm - 100mm	61,5(2.42")	
LH	_,D	5mm - 100mm	71,5(2.82")	PULL 77,93 cm ² (12.09 in ²)

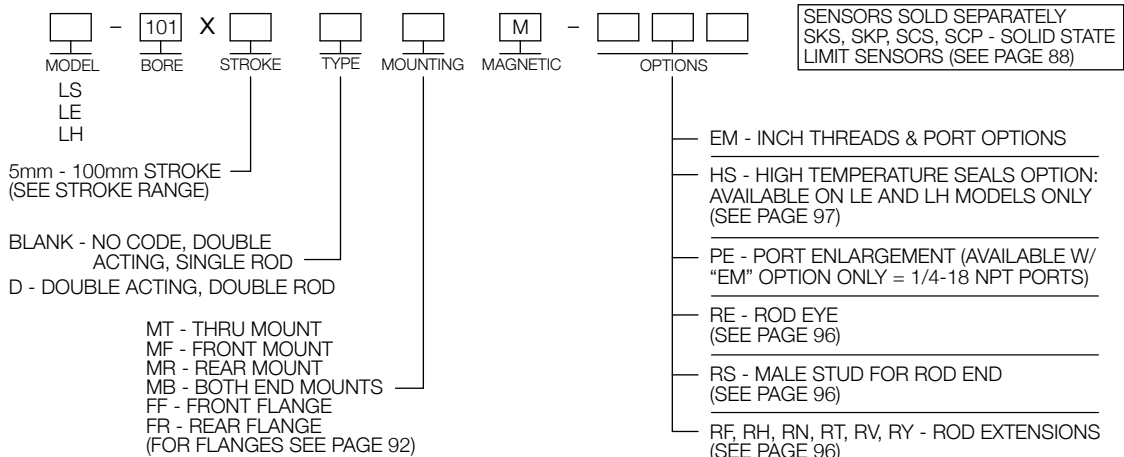
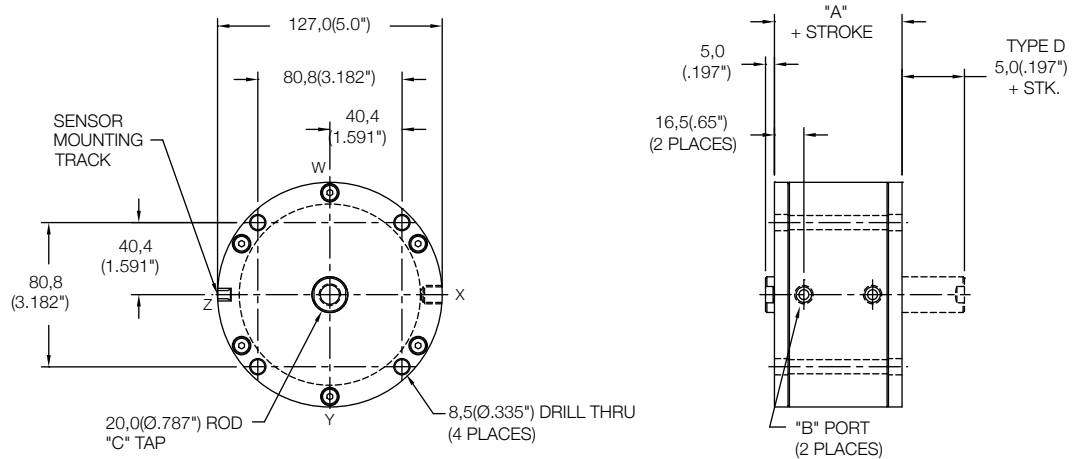
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M8X1,25	5/16-18



Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 40mm	51,5(2.03")	PUSH 81,07 cm ² (12.57 in ²)
LE	_,	5mm - 30mm	61,5(2.42")	
LH	_,D	5mm - 20mm	71,5(2.82")	PULL 77,93 cm ² (12.09 in ²)

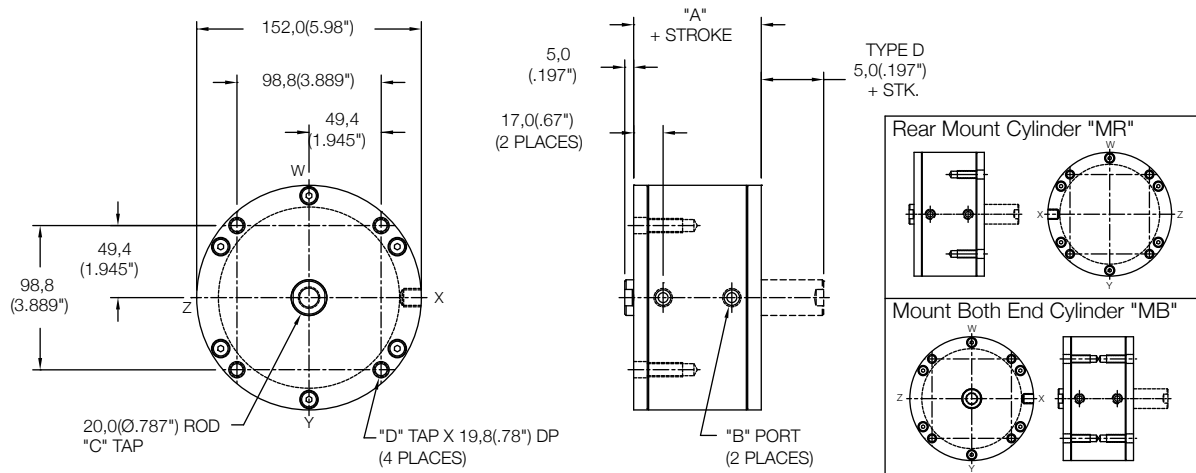
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13



Non Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	.D	10mm - 100mm	44,5(1.75")	PUSH 126,7 cm ² (19.6 in ²)
LE	—	5mm - 100mm	54,5(2.15")	
LH	.D	5mm - 100mm	64,5(2.54")	PULL 123,5 cm ² (19.1 in ²)

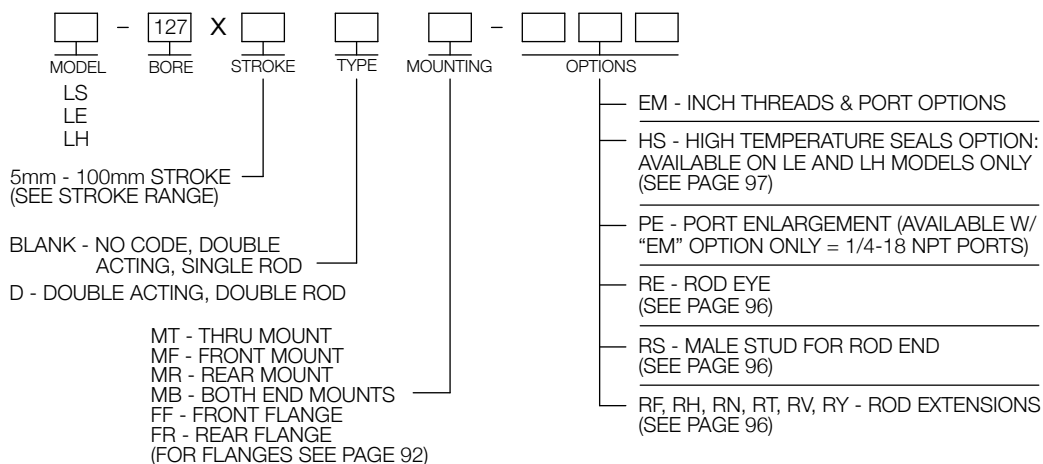
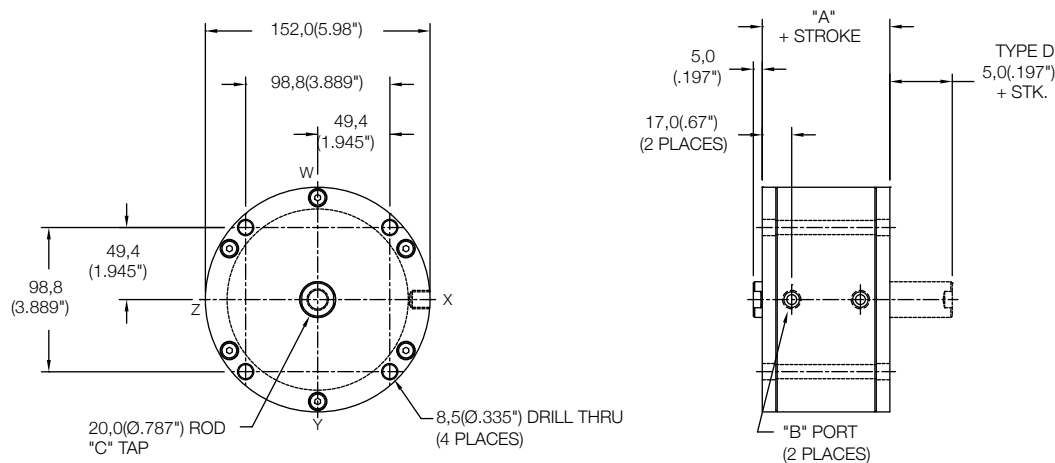
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M8X1,25	5/16-18



Non Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	„D	10mm - 45mm	44,5(1.75")	PUSH 126,7 cm ² (19.6 in ²)
LE	—	5mm - 35mm	54,5(2.15")	
LH	.D	5mm - 25mm	64,5(2.54")	PULL 123,5 cm ² (19.1 in ²)

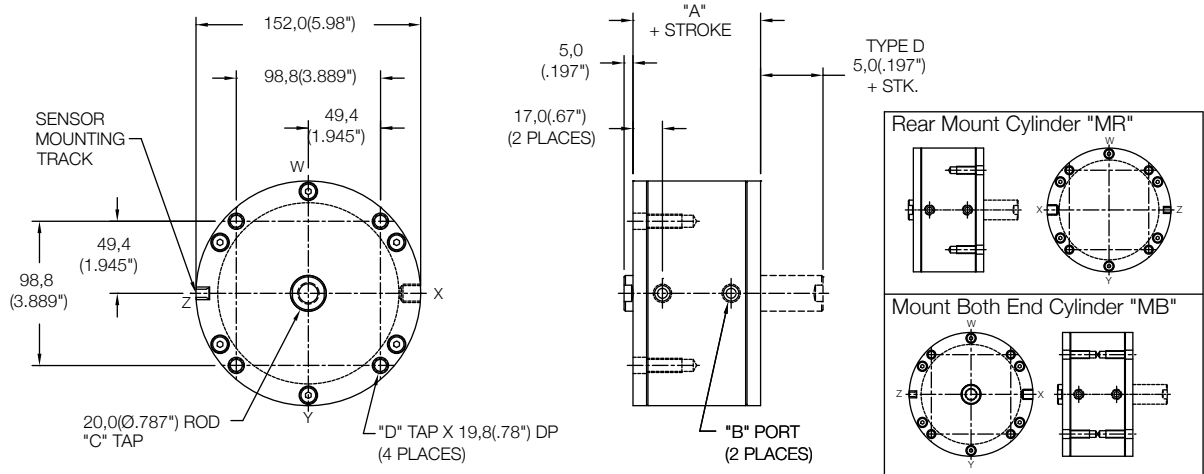
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13



Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	—D	10mm - 100mm	54,5(2.15")	PUSH 126,7 cm ² (19.6 in ²)
LE	—	5mm - 100mm	64,5(2.54")	
LH	—D	5mm - 100mm	74,5(2.93")	PULL 123,5 cm ² (19.1 in ²)

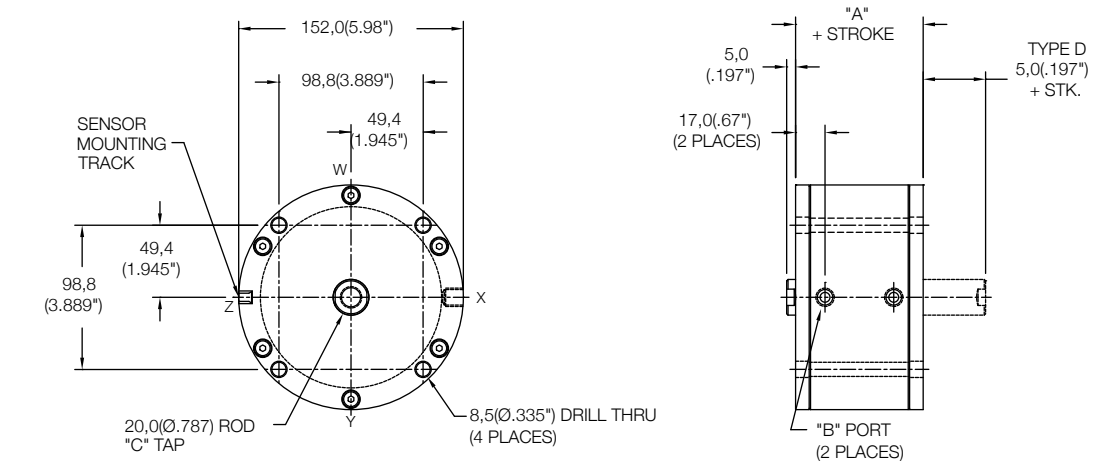
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M8X1,25	5/16-18



Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	—D	10mm - 35mm	54,5(2.15")	PUSH 126,7 cm ² (19.6 in ²)
LE	—	5mm - 25mm	64,5(2.54")	
LH	—D	5mm - 15mm	74,5(2.93")	PULL 123,5 cm ² (19.1 in ²)

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13

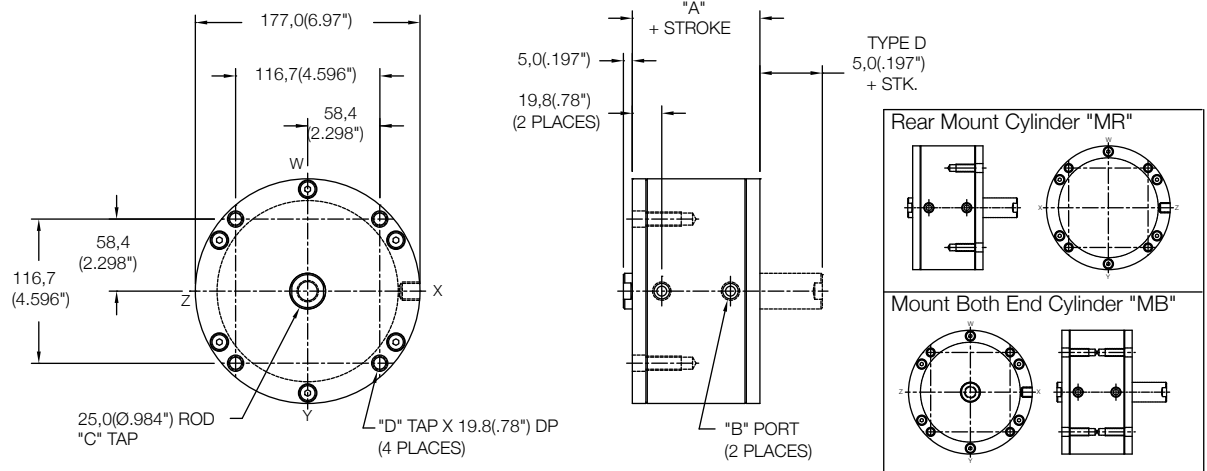


MODEL	—	127	X	STROKE	TYPE	MOUNTING	MAGNETIC	OPTIONS
LS LE LH								
5mm - 100mm STROKE (SEE STROKE RANGE)								
BLANK - NO CODE, DOUBLE ACTING, SINGLE ROD								
D - DOUBLE ACTING, DOUBLE ROD								
MT - THRU MOUNT MF - FRONT MOUNT MR - REAR MOUNT MB - BOTH END MOUNTS FF - FRONT FLANGE FR - REAR FLANGE (FOR FLANGES SEE PAGE 92)								
				SENSORS SOLD SEPARATELY SKS, SKP, SCS, SCP - SOLID STATE LIMIT SENSORS (SEE PAGE 88)				
				EM - INCH THREADS & PORT OPTIONS				
				HS - HIGH TEMPERATURE SEALS OPTION: AVAILABLE ON LE AND LH MODELS ONLY (SEE PAGE 97)				
				PE - PORT ENLARGEMENT (AVAILABLE W/ "EM" OPTION ONLY = 1/4-18 NPT PORTS)				
				RE - ROD EYE (SEE PAGE 96)				
				RS - MALE STUD FOR ROD END (SEE PAGE 96)				
				RF, RH, RN, RT, RV, RY - ROD EXTENSIONS (SEE PAGE 96)				

Non Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 100mm	51,0(2.00")	PUSH 181,46 cm ² (28.2 in ²) PULL 176,55 cm ² (27.45 in ²)

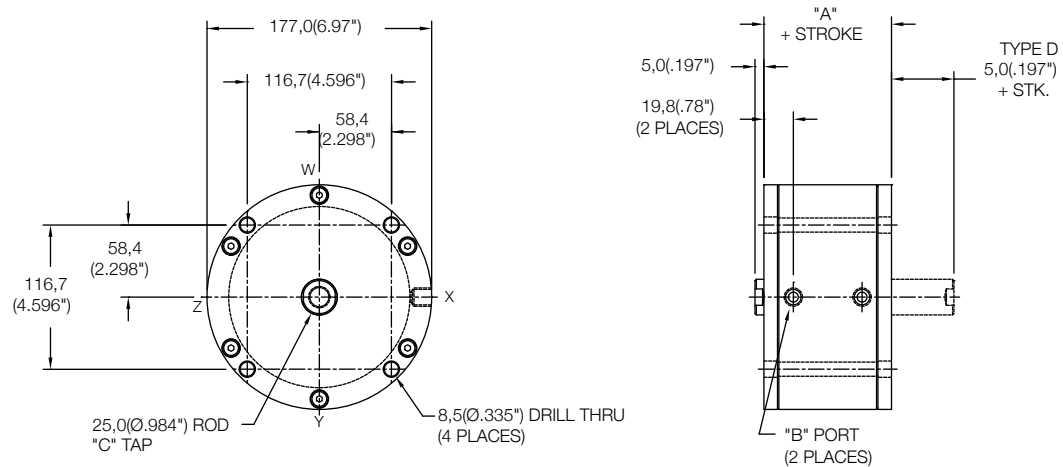
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M16X2,0	5/8-18
"D"	M8X1,25	5/16-18



Non Magnetic Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 40mm	51,0(2.00")	PUSH 181,46 cm ² (28.2 in ²) PULL 176,55 cm ² (27.45 in ²)

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M16X2,0	5/8-18



MODEL - 152 X STROKE TYPE MOUNTING OPTIONS

10mm - 100mm STROKE
(SEE STROKE RANGE)

BLANK - NO CODE, DOUBLE
ACTING, SINGLE ROD
D - DOUBLE ACTING, DOUBLE ROD

MT - THRU MOUNT
MF - FRONT MOUNT
MR - REAR MOUNT
MB - BOTH END MOUNTS
FF - FRONT FLANGE
FR - REAR FLANGE
(FOR FLANGES SEE PAGE 92)

EM - INCH THREADS & PORT OPTIONS

HS - HIGH TEMPERATURE SEALS OPTION:
AVAILABLE ON LE AND LH MODELS ONLY
(SEE PAGE 97)

PE - PORT ENLARGEMENT (AVAILABLE W/
"EM" OPTION ONLY = 1/4-18 NPT PORTS)

RE - ROD EYE
(SEE PAGE 96)

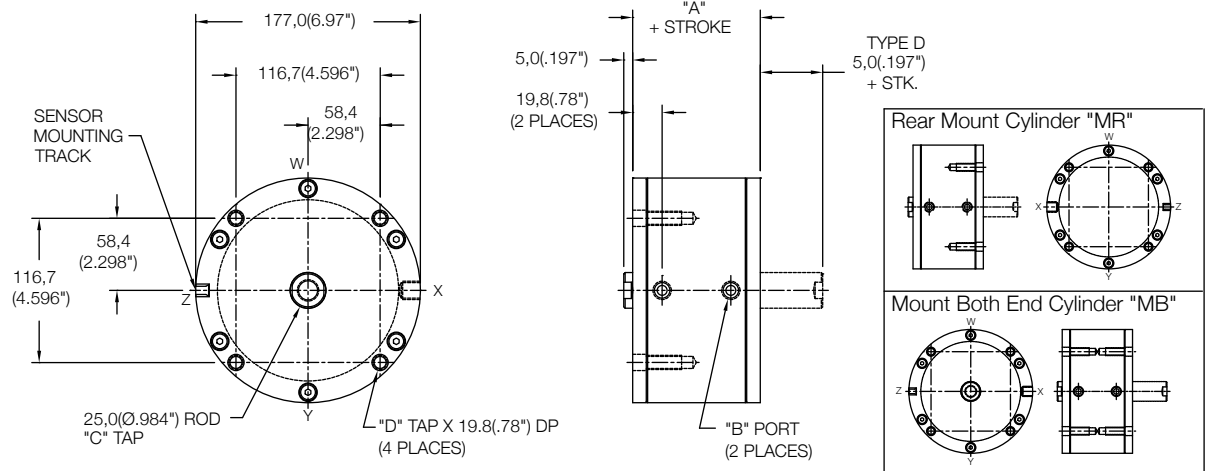
RS - MALE STUD FOR ROD END
(SEE PAGE 96)

RF, RH, RN, RT, RV, RY - ROD EXTENSIONS
(SEE PAGE 96)

Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 100mm	61,0(2.40")	PUSH 181,46 cm ² (28.2 in ²) PULL 176,55 cm ² (27.45 in ²)

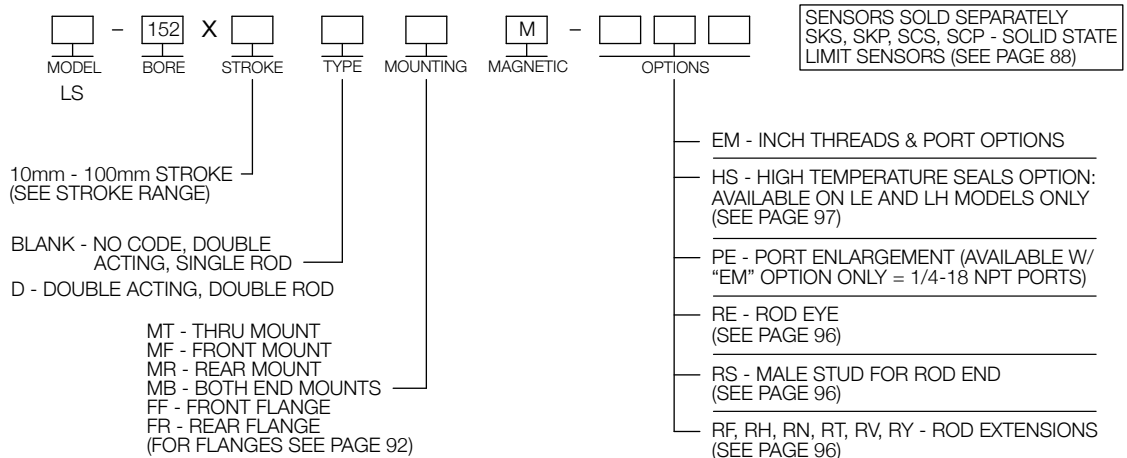
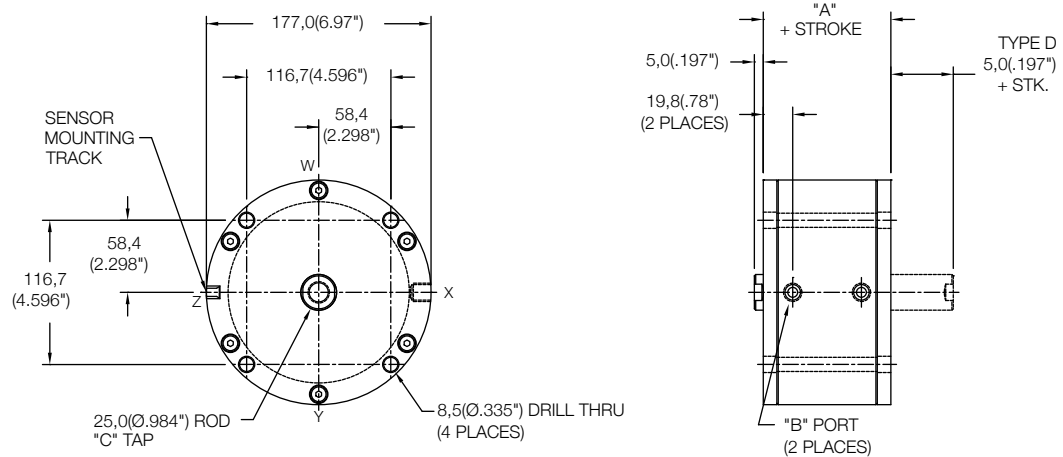
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M16X2,0	5/8-18
"D"	M8X1,25	5/16-18



Magnetic Thru Mount Cylinder "MT"

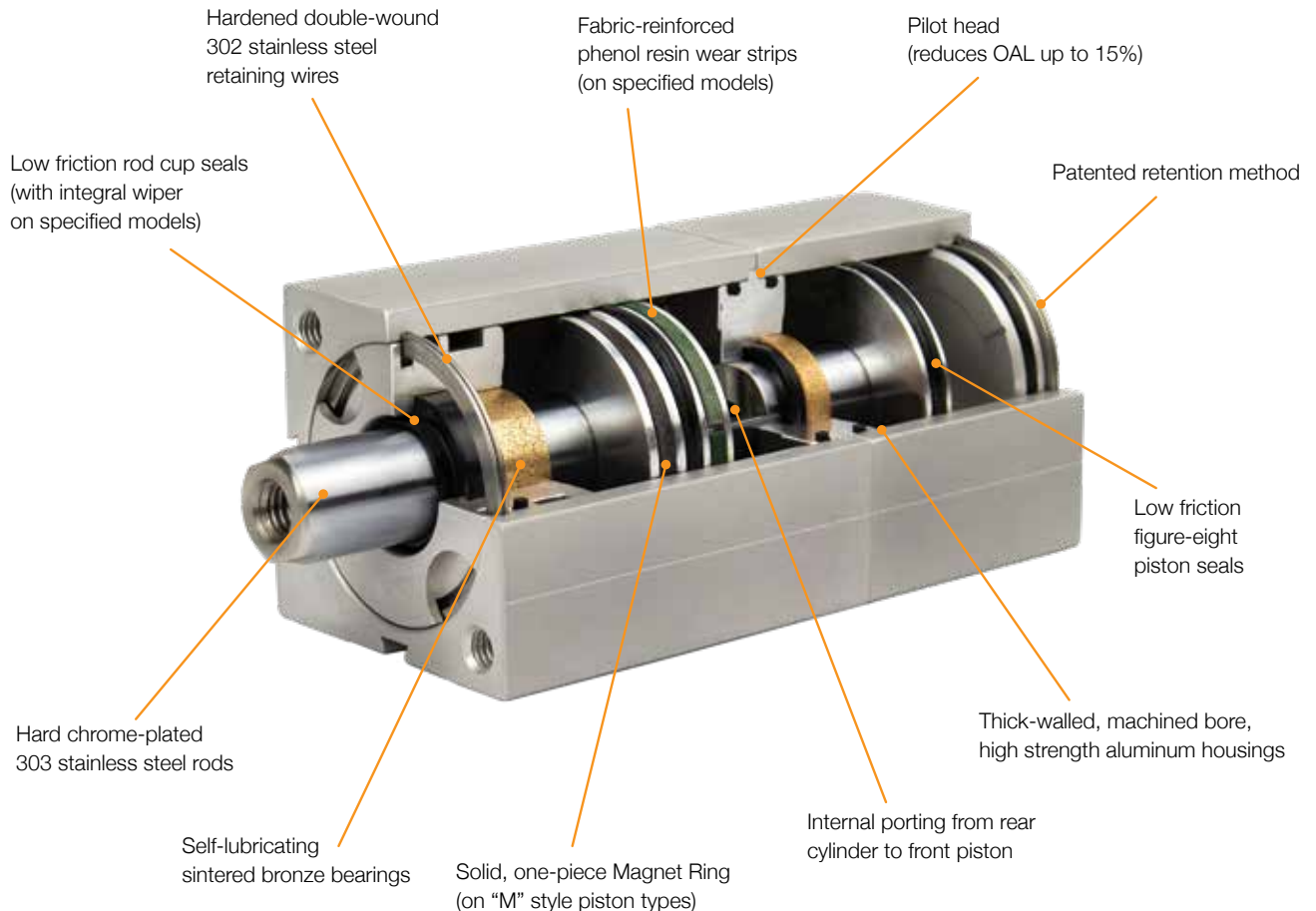
MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LS	_,D	10mm - 30mm	61,0(2.40")	PUSH 181,46 cm ² (28.2 in ²) PULL 176,55 cm ² (27.45 in ²)

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M16X2,0	5/8-18



TS SERIES

PNEUMATIC CYLINDERS

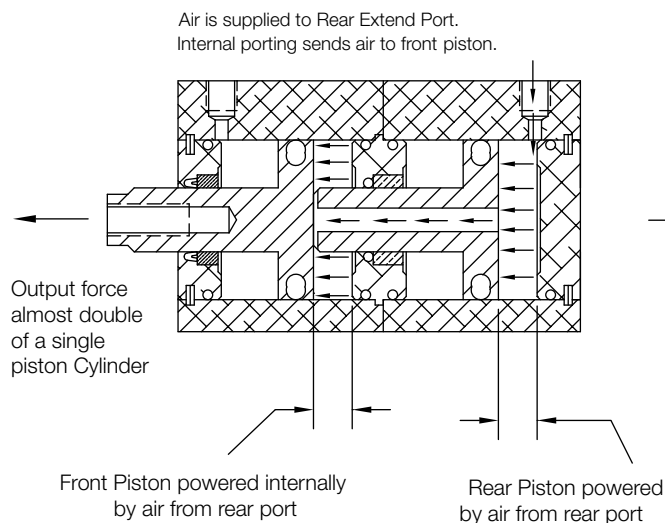


Tandem 2 Piston Pneumatic Cylinders

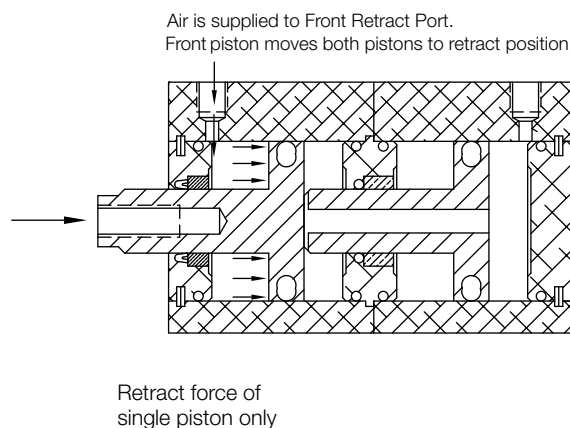
The T series cylinder line is based on the same rugged, proven designs of Nason's L series cylinders. Thick-walled, custom aluminum extrusions are precision bored and honed. High strength aluminum internal components are machined to exacting tolerances to control seal squeezes and stroke tolerances. Chrome-plated 303 stainless steel rods are precision ground for long life. The dual piloted head design aligns bores and rods and helps reduce overall length up to 15% compared to two standard units bolted together. Internal porting from the rear cylinder piston to the front cylinder piston simplifies plumbing.

Tandem Piston Cylinder

EXTENDING TANDEM 2 PISTON CYLINDER



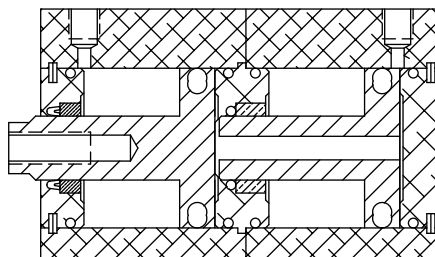
RETRACTING TANDEM 2 PISTON CYLINDER



Individual Features

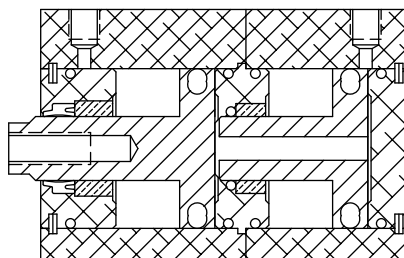
Model - TS

- Most compact of 3 models



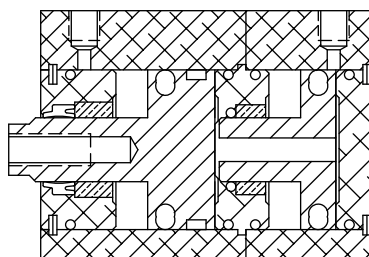
Model - TE

- Extended internal front rod bearing for additional load support
- Integral seal and rod wiper



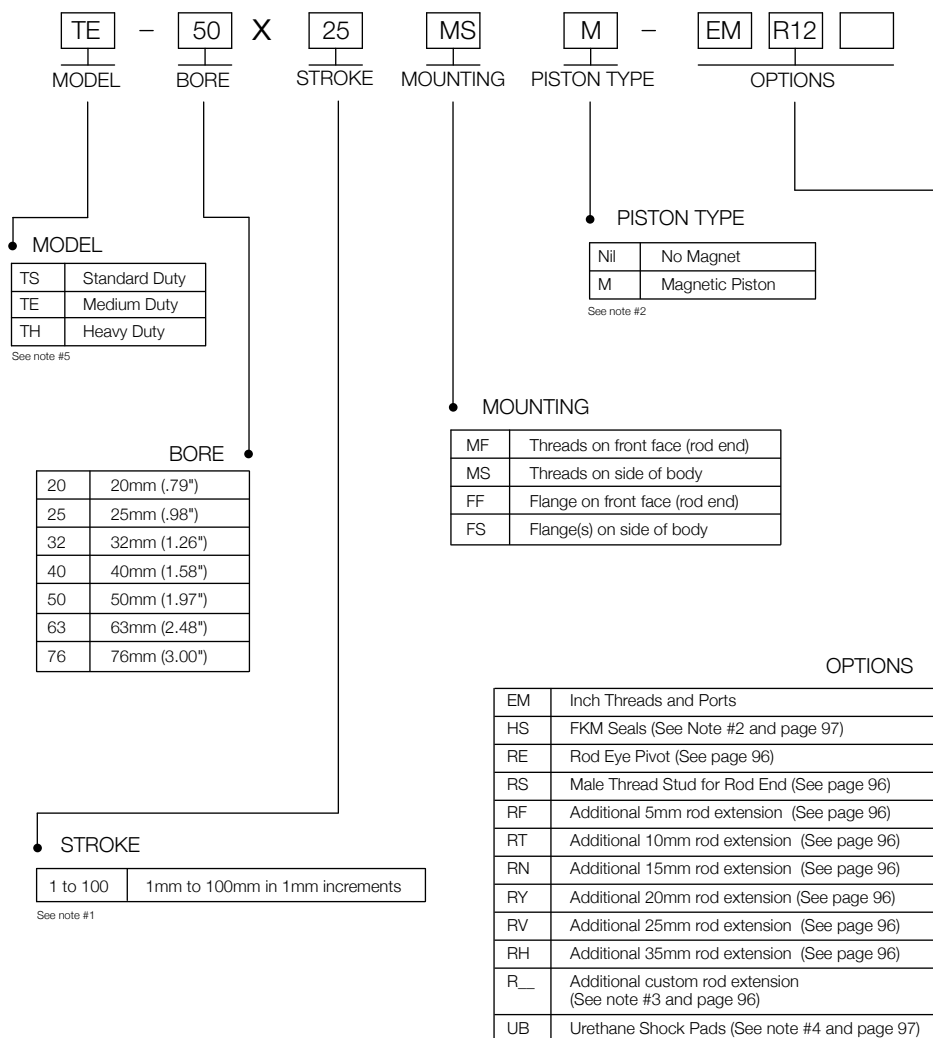
Model - TH

- Extended internal front rod bearing for additional load support
- Integral seal and rod wiper
- Wear band added to front piston for additional load support



How To Order

Example: Medium Duty, 50mm Bore, 25mm stroke , Tapped Side Mounting, Magnetic Piston, Inch threads, 17mm Total Rod Extension



Note 1 - All models use a 5mm stroke body length for Rear Cylinder Stroke of 5mm or less. Rear Cylinder Strokes over 5mm use body length of the actual stroke + adder. Model TS with a Nonmagnetic Piston uses a 9mm stroke body length for Front Cylinder Stroke of 9mm or less. Front Cylinder Strokes over 9mm use body length of the actual stroke + adder. Model TS with Code "M" Magnetic Piston uses a 4mm stroke body length for Front Cylinder Stroke of 4mm or less. Front Cylinder Strokes over 4mm use body length of the actual stroke + adder. Model TE 20, 25, & 32mm Bore with a Nonmagnetic Piston uses a 4mm stroke body length for Front Cylinder Stroke of 4mm or less. Front Cylinder Strokes over length of the actual stroke + adder. All other TE and TH bores and piston combinations use body length of the actual stroke + adder for Front Cylinder.

Examples: TS-20X4FF-EM would have a Total Length of 5+9+Dim"A" and a Rear Cylinder Stroke body Length of 5+16.36(Rear Cylinder Length Adder). See Product Page.
TS-20X10MS-RE would have a Total Length of (10x2)+Dim"A" and a Rear Cylinder Stroke body length of 10+16.36(Rear Cylinder Length Adder). See Product Page.

Note 2 - Magnetic Piston "M" limits temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Magnetic Piston and Sensor mounting tracks are provided on Front Stroke Cylinder only.

Note 3 - "R_" Enter desired additional Custom Length Rod extension in mm after "R". Example TE-32X40MSM-EMR20.4 would have a TOTAL ROD EXTENSION of 25.4mm (20.4mm+Standard 5mm extension)

Note 4 - "UB" Urethane Shock Pads limit temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Pads are mechanically retained at the four Cap faces. "UB" OPTION CHANGES STROKE TOLERANCES TO +/-2mm.

Note 5 - While all Models are offered in all strokes, it is recommended that strokes over 50mm use TE or TH Models for added bearing support.

Engineering Data

Bore	Piston Area Extend	Piston Area Retract	Min. Operating Pressure	Max. Operating Pressure
20	5,78 cm ² (.88 in ²)	2,64 cm ² (.40 in ²)	0.10 MPa (15 PSI)	1.4 MPa (200 PSI)
25	9,03 cm ² (1.40 in ²)	4,12 cm ² (.64 in ²)	0.10 MPa (15 PSI)	1.4 MPa (200 PSI)
32	14,95 cm ² (2.32 in ²)	6,91 cm ² (1.07 in ²)	0.08 MPa (12 PSI)	1.4 MPa (200 PSI)
40	23,11 cm ² (3.59 in ²)	10,55 cm ² (1.64 in ²)	0.08 MPa (12 PSI)	1.4 MPa (200 PSI)
50	37,25 cm ² (5.77 in ²)	17,62 cm ² (2.73 in ²)	0.07 MPa (10 PSI)	1.4 MPa (200 PSI)
63	59,20 cm ² (9.17 in ²)	28,03 cm ² (4.34 in ²)	0.07 MPa (10 PSI)	1.4 MPa (200 PSI)
76	88,06 cm ² (13.66 in ²)	42,46 cm ² (6.59 in ²)	0.07 MPa (10 PSI)	1.4 MPa (200 PSI)

Specifications

Action	Double Acting, 2 Piston Push
Media	Air - Clean, Dry Or Lubricated
Pre-Lubricated at Factory	Non-soap elastomer/PTFE thickener
Temp. Range (Std.)	-10°C to 93°C (14°F to 200°F)
Temp. Range (Mag. Piston)	-10°C to 82°C (14°F to 180°F) See Note 2 & 3
Temp. Range (UB Option)	-10°C to 82°C (14°F to 180°F) See Note 2 & 3
Temp. Range (HS Option)	-10°C to 150°C (14°F to 302°F) See Note 2 & 3
Stroke Tolerance (Std)	+1,0mm/-0 (+0.04"/-0)
Stroke Tolerance (UB)	+/-2mm (+/-0.08")

Available Strokes

1 to 100	1mm to 100mm in 1mm increments
----------	--------------------------------

Note 1 - All models use a 5mm stroke body length for Rear Cylinder Stroke of 5mm or less. Rear Cylinder Strokes over 5mm use body length of the actual stroke + adder. Model TS with a Nonmagnetic Piston uses a 9mm stroke body length for Front Cylinder Stroke of 9mm or less. Front Cylinder Strokes over 9mm use body length of the actual stroke + adder.

Model TS with Code "M" Magnetic Piston uses a 4mm stroke body length for Front Cylinder Stroke of 4mm or less. Front Cylinder Strokes over 4mm use body length of the actual stroke + adder.

Model TE 20, 25, & 32mm Bore with a Nonmagnetic Piston uses a 4mm stroke body length for Front Cylinder Stroke of 4mm or less. Front Cylinder Strokes over 4mm use body length of the actual stroke + adder.

All other TE and TH bores and piston combinations use body length of the actual stroke + adder for Front Cylinder.

Examples: TS-20X4FF-EM would have a Total Length of 5+9+Dim"A" and a Rear Cylinder Stroke body Length of 5+16.36(Rear Cylinder Length Adder). See Product Page.

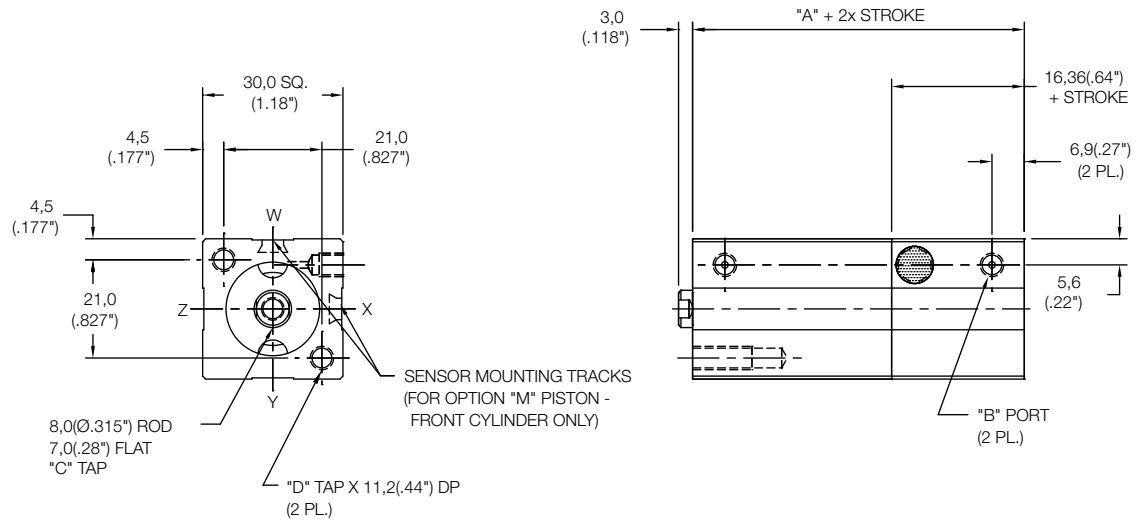
TS-20X10MS-RE would have a Total Length of (10x2)+Dim"A" and a Rear Cylinder Stroke body length of 10+16.36(Rear Cylinder Length Adder). See Product Page.

Note 2 - Magnetic Piston "M" limits temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Magnetic Piston and Sensor mounting tracks are provided on Front Stroke Cylinder only.

Note 3 - "UB" Urethane Shock Pads limit temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Pads are mechanically retained at the four Cap faces. "UB" OPTION CHANGES STROKE TOLERANCES TO +/-2mm.

Note 4 - While all Models are offered in all strokes, it is recommended that strokes over 50mm use TE or TH Models for added bearing support.

Tandem Piston Cylinder Front Mount Cylinder "MF"

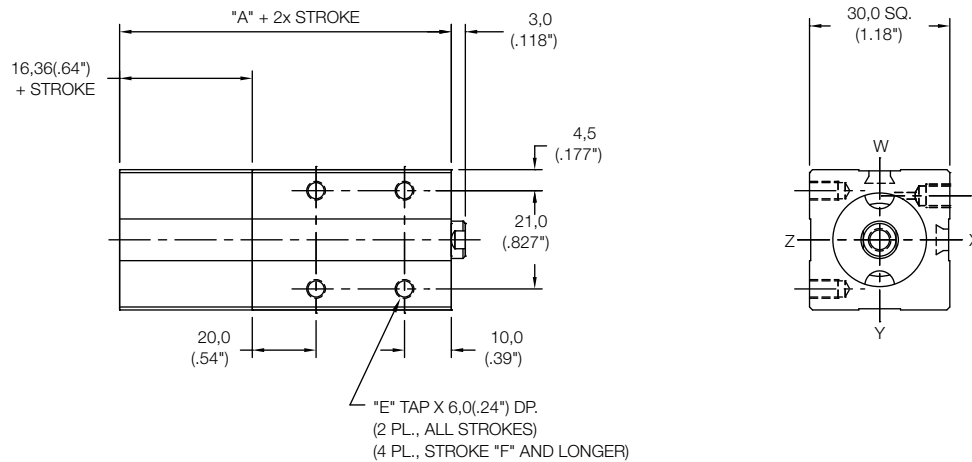


MODEL	PISTON	"A"	"F"	PISTON	"A"	"F"
TS	Non-Mag	34,0(1.34")	40,0mm(1.58")	Mag	39,0(1.54")	35,0mm(1.38")
TE	Non-Mag	39,0(1.54")	35,0mm(1.38")	Mag	44,0(1.73")	30,0mm(1.18")
TH	Non-Mag	44,0(1.73")	30,0mm(1.18")	Mag	49,0(1.93")	25,0mm(.98")

	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M5X0,8	#10-32
"E"	M4X0,7	#8-32

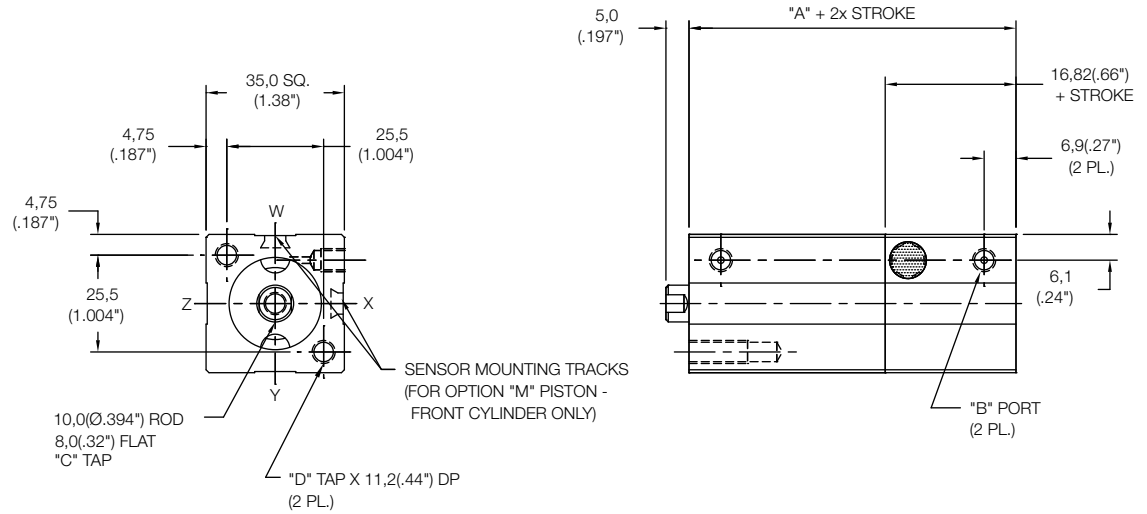
Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")



MODEL	-	20	X	STROKE	MOUNTING	PISTON TYPE	OPTIONS
TS TE TH							
Stroke in 1mm Increments (See Ordering Information and How It Works)							
				MF - Front Mount MS - Side Mount FF - Front Flange FS - Side Flange (For Flanges See Page 92 & 93)			
							EM - Inch Threads and Ports HS - FKM Seals (See Page 97 and Ordering Information) RE - Rod Eye (See Page 96) RS - Male Threaded Stud For Rod End (See Page 96) RF, RT, RN, RY, RV, RH, R_ - Rod Extensions (See Page 96 and Ordering Information)
							Nil - Nonmagnetic Piston M - Magnetic piston

Tandem Piston Cylinder Front Mount Cylinder "MF"

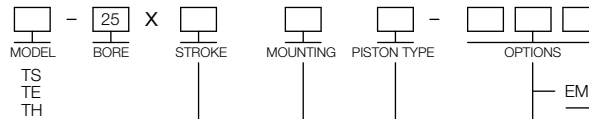
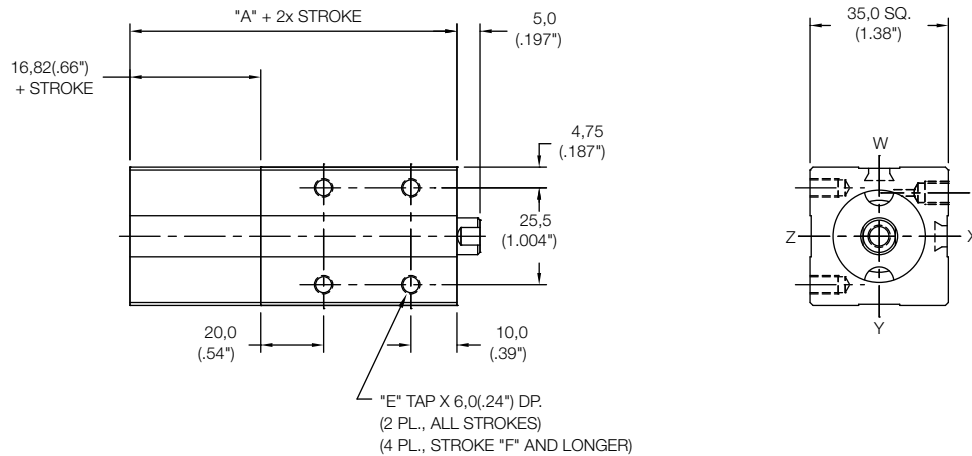


MODEL	PISTON	"A"	"F"	PISTON	"A"	"F"
TS	Non-Mag	35,0(1.38")	40,0mm(1.58")	Mag	40,0(1.58")	35,0mm(1.38")
TE	Non-Mag	40,0(1.58")	35,0mm(1.38")	Mag	45,0(1.77")	30,0mm(1.18")
TH	Non-Mag	45,0(1.77")	30,0mm(1.18")	Mag	50,0(1.97")	25,0mm(.98")

	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M5X0,8	#10-32
"E"	M5X0,8	#10-32

Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")

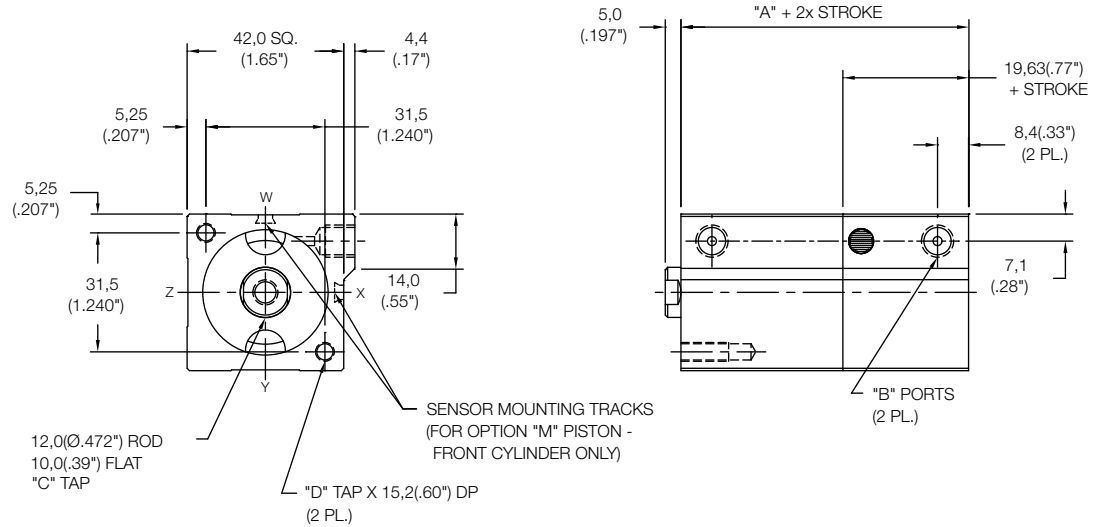


Stroke in 1mm Increments
(See Ordering Information and How It Works)

MF - Front Mount
MS - Side Mount
FF - Front Flange
FS - Side Flange
(For Flanges See Page 92 & 93)

Nil - Nonmagnetic Piston
M - Magnetic piston

Tandem Piston Cylinder Front Mount Cylinder "MF"

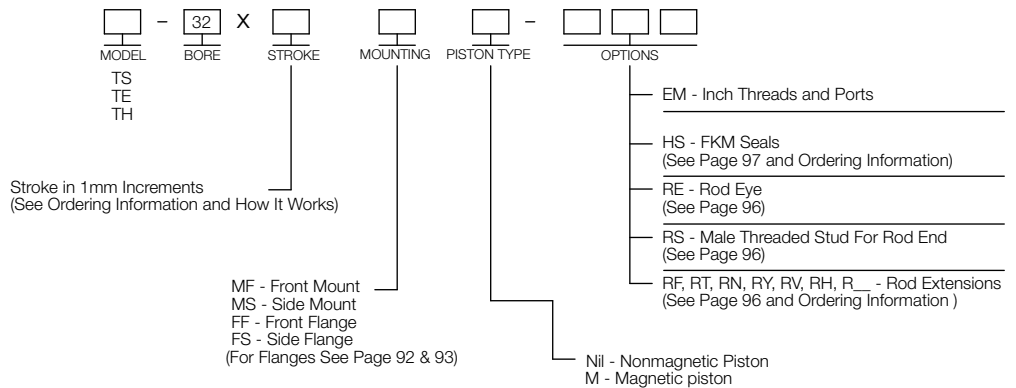
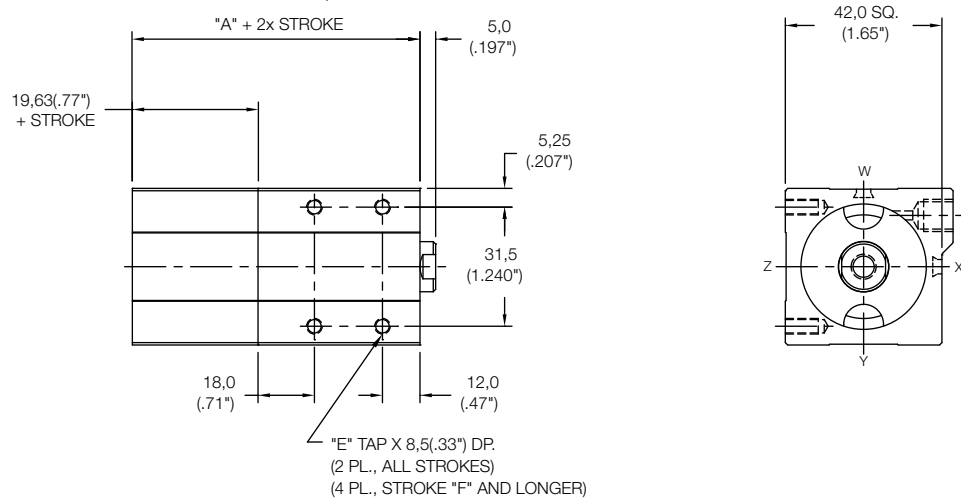


MODEL	PISTON	"A"	"F"	PISTON	"A"	"F"
TS	Non-Mag	41,0(1.61")	40,0mm(1.58")	Mag	46,0(1.81")	35,0mm(1.38")
TE	Non-Mag	46,0(1.81")	35,0mm(1.38")	Mag	51,0(2.01")	30,0mm(1.18")
TH	Non-Mag	51,0(2.01")	30,0mm(1.18")	Mag	56,0(2.21")	25,0mm(.98")

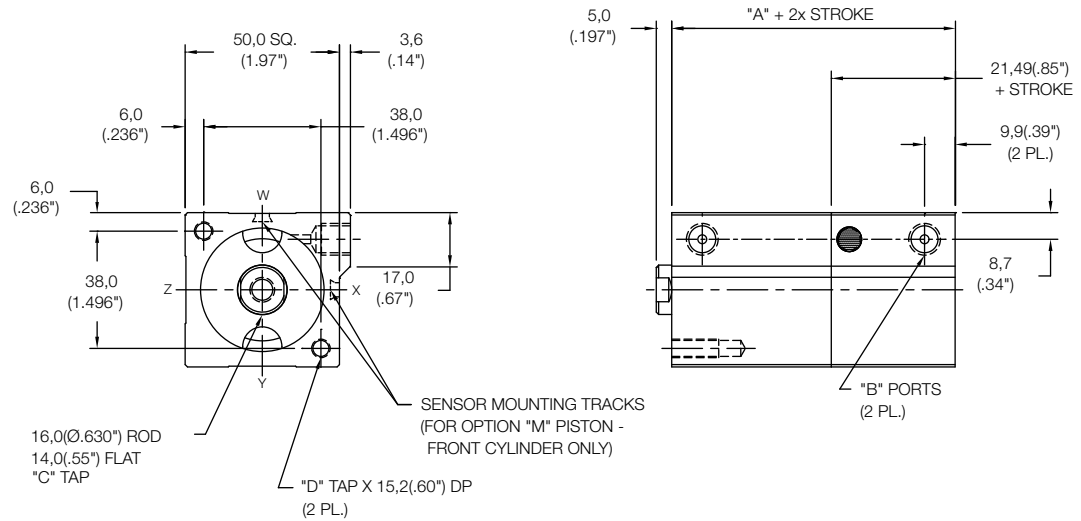
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M6X1,0	1/4-20
"D"	M6X1,0	1/4-20
"E"	M5X0,8	10-32

Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")



Tandem Piston Cylinder Front Mount Cylinder "MF"

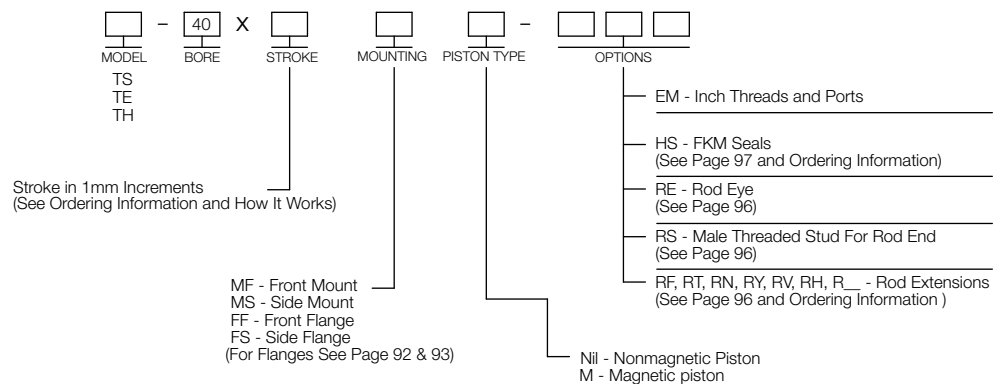
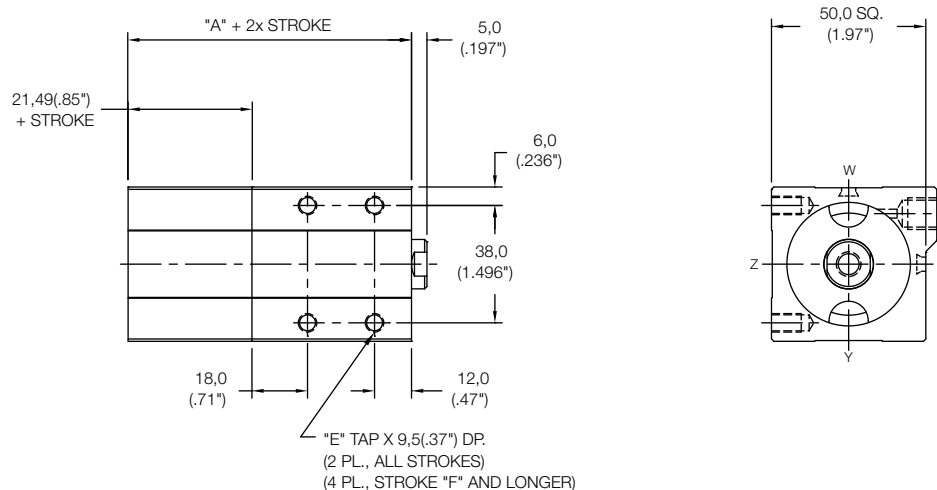


MODEL	PISTON	"A"	"F"	PISTON	"A"	"F"
TS	Non-Mag	45.0(1.77")	40.0mm(1.58")	Mag	50.0(1.97")	35.0mm(1.38")
TE	Non-Mag	55.0(2.17")	30.0mm(1.18")	Mag	60.0(2.36")	25.0mm(.98")
TH	Non-Mag	60.0(2.36")	25.0mm(.98")	Mag	65.0(2.56")	20.0mm(.79")

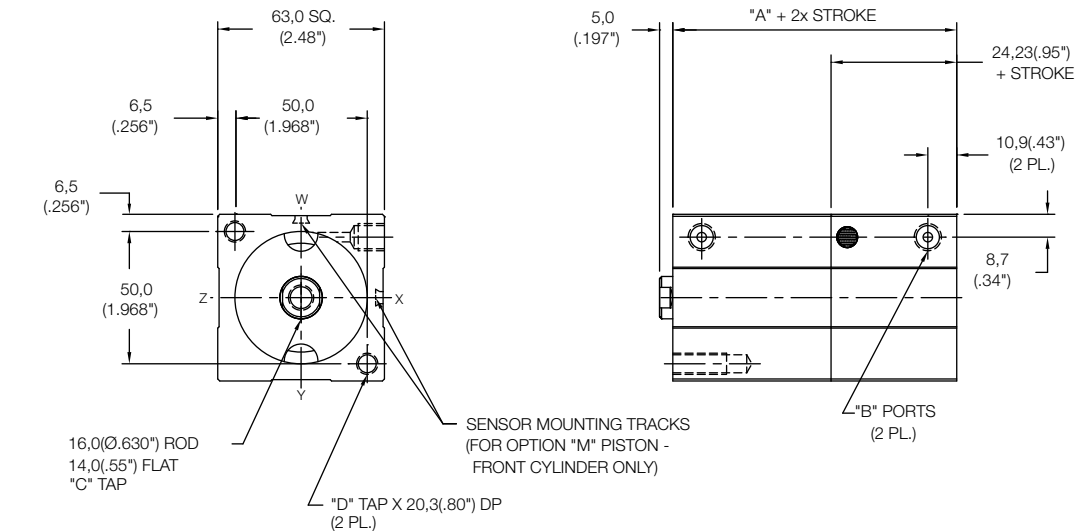
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M8X1,25	5/16-18
"D"	M6X1,0	1/4-20
"E"	M6X1,0	1/4-20

Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")



Tandem Piston Cylinder Front Mount Cylinder "MF"

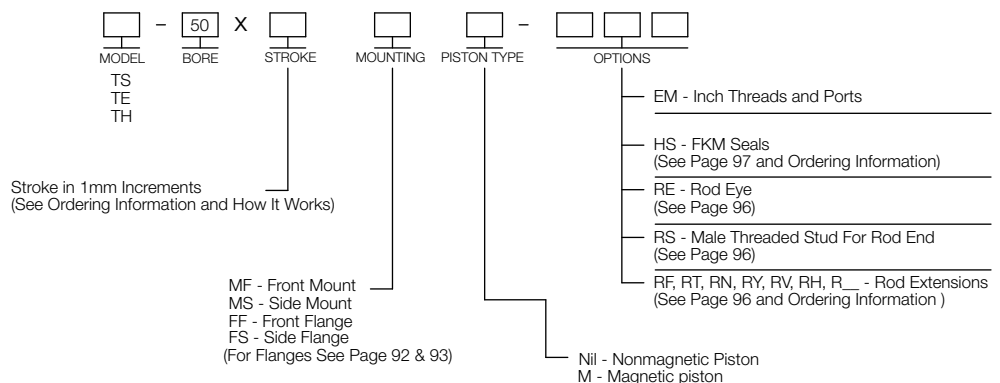
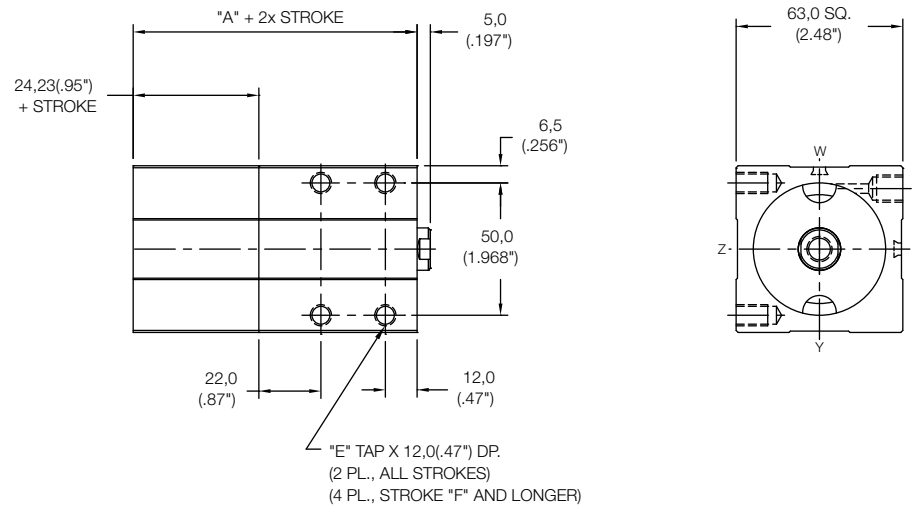


MODEL	PISTON	"A"	"F"	PISTON	"A"	"F"
TS	Non-Mag	51,0(2.01")	40,0mm(1.58")	Mag	56,0(2.20")	35,0mm(1.38")
TE	Non-Mag	61,0(2.40")	30,0mm(1.18")	Mag	66,0(2.60")	25,0mm(.98")
TH	Non-Mag	66,0(2.60")	25,0mm(.98")	Mag	71,0(2.80")	20,0mm(.79")

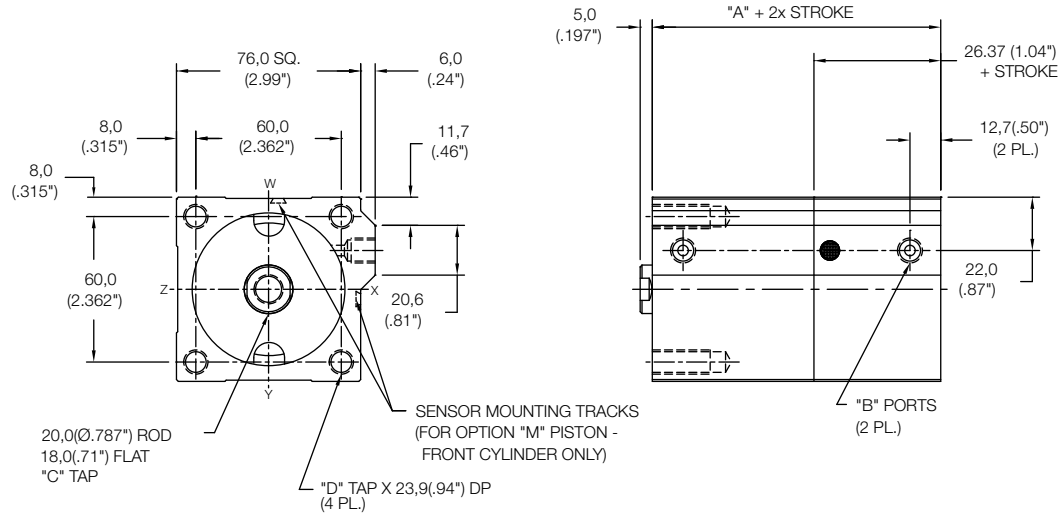
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M10X1,5	3/8-24
"D"	M8X1,25	5/16-18
"E"	M8X1,25	5/16-18

Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")



Tandem Piston Cylinder Front Mount Cylinder "MF"

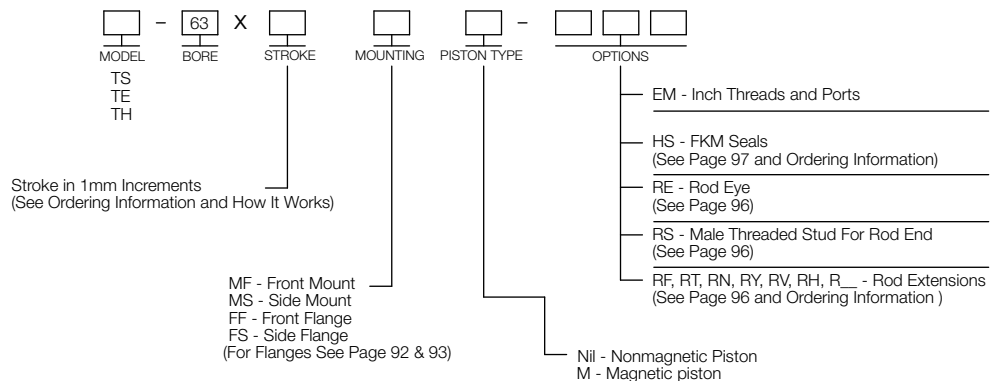
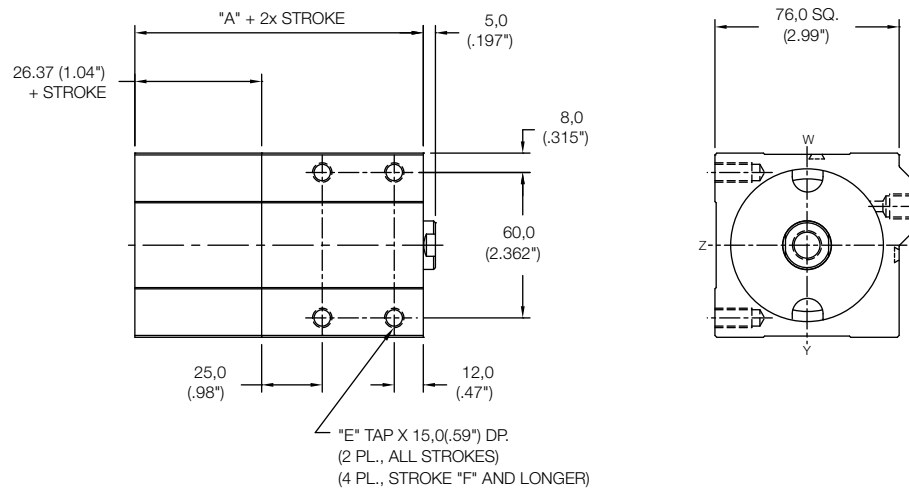


MODEL	PISTON	"A"	"F"	PISTON	"A"	"F"
TS	Non-Mag	56,0(2.20")	45,0mm(1.77")	Mag	61,0(2.40")	40,0mm(1.58")
TE	Non-Mag	66,0(2.60")	35,0mm(1.38")	Mag	71,0(2.80")	30,0mm(1.18")
TH	Non-Mag	76,0(2.99")	25,0mm(.98")	Mag	81,0(3.19")	20,0mm(.79")

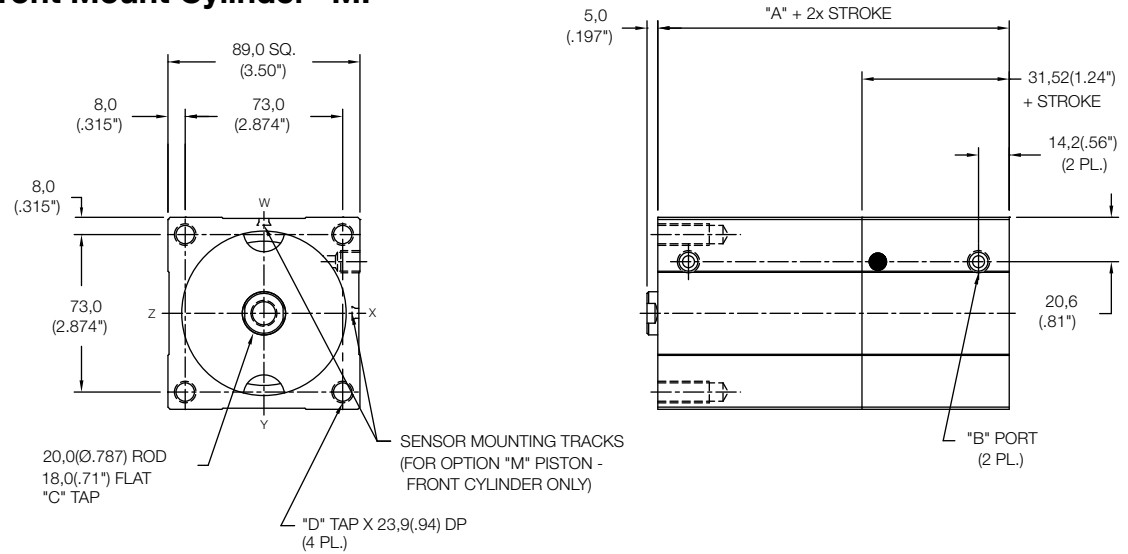
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M10X1,5	3/8-24
"E"	M8X1.25	5/16-18

Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")



Tandem Piston Cylinder Front Mount Cylinder "MF"

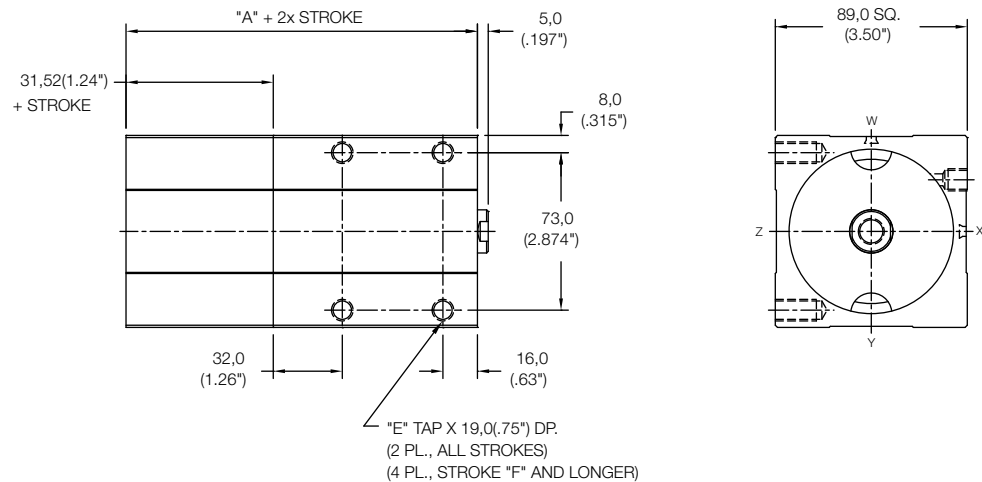


MODEL	PISTON	"A"	"F"	PISTON	"A"	"F"
TS	Non-Mag	67,0(2.64")	45,0mm(1.77")	Mag	72,0(2.83")	40,0mm(1.58")
TE	Non-Mag	77,0(3.03")	35,0mm(1.38")	Mag	82,0(3.23")	30,0mm(1.18")
TH	Non-Mag	87,0(3.43")	25,0mm(.98")	Mag	92,0(3.62")	20,0mm(.79")

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M10X1,5	3/8-24
"E"	M10X1,5	3/8-24

Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")



MODEL - BORE X STROKE MOUNTING PISTON TYPE OPTIONS

TS
TE
TH

76

X

STROKE

MOUNTING

PISTON TYPE

OPTIONS

Stroke in 1mm Increments
(See Ordering Information and How It Works)

MF - Front Mount
MS - Side Mount
FF - Front Flange
FS - Side Flange
(For Flanges See Page 92 & 93)

EM - Inch Threads and Ports

HS - FKM Seals
(See Page 97 and Ordering Information)

RE - Rod Eye
(See Page 96)

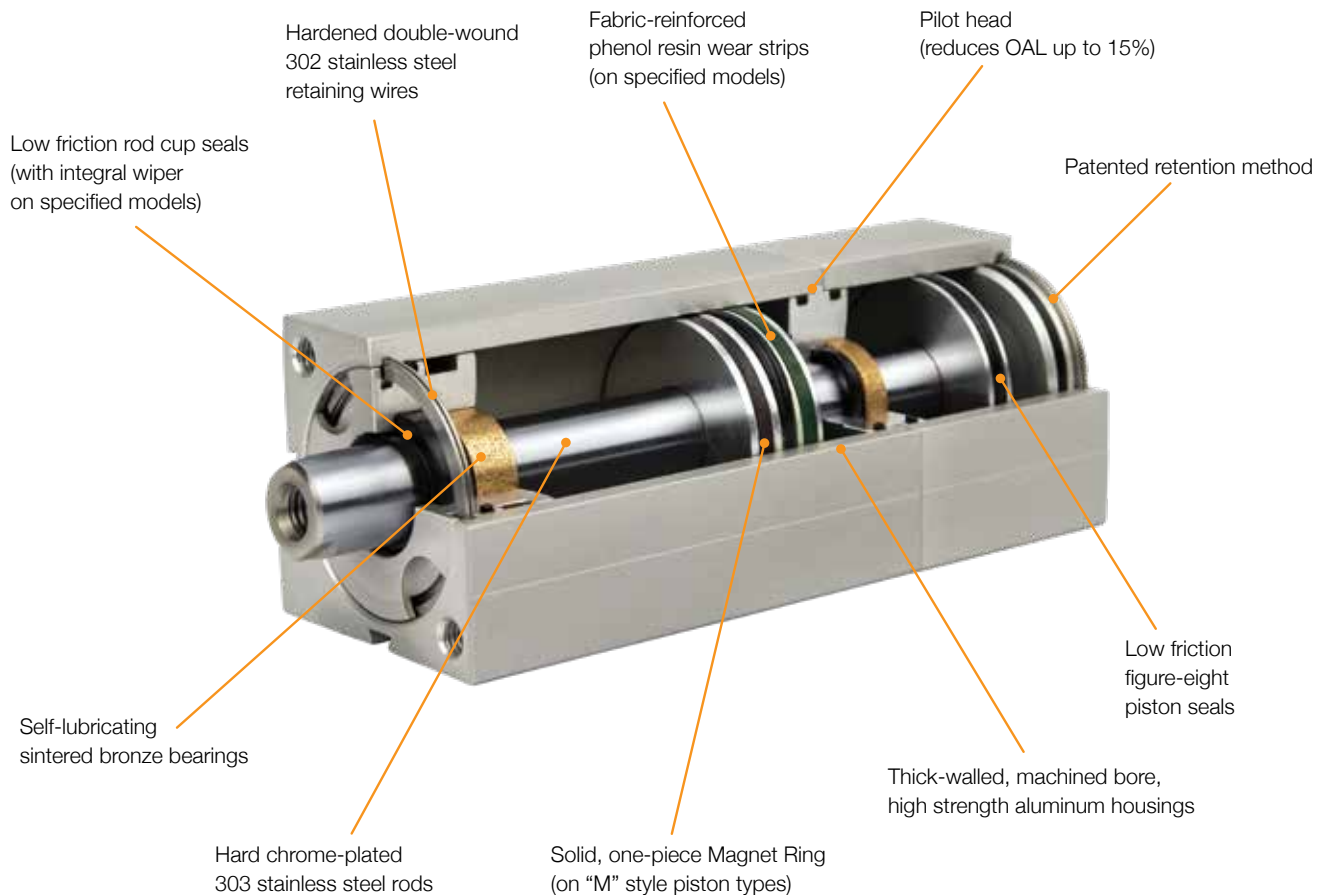
RS - Male Threaded Stud For Rod End
(See Page 96)

RF, RT, RN, RY, RV, RH, RL - Rod Extensions
(See Page 96 and Ordering Information)

Nil - Nonmagnetic Piston
M - Magnetic piston

PS SERIES

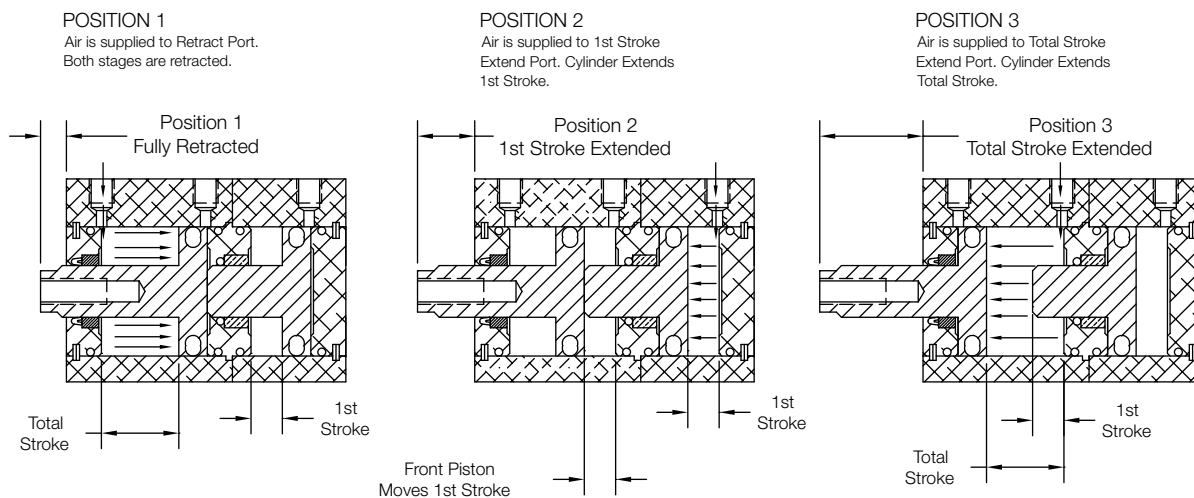
PNEUMATIC CYLINDERS



Multi-Position 3 Position Pneumatic Cylinders

The P series cylinder line is based on the same rugged, proven designs of Nason's L series cylinders. Thick-walled, custom aluminum extrusions are precision bored and honed. High strength aluminum internal components are machined to exacting tolerances to control seal squeezes and stroke tolerances. Chrome-plated 303 stainless steel rods are precision-ground for long life. The dual piloted head design aligns bores and rods and helps reduce overall length up to 15% compared to two standard units bolted together.

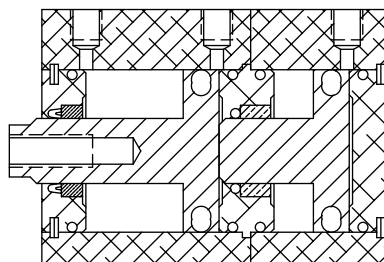
3 Position Multi-Position Cylinder



Individual Features

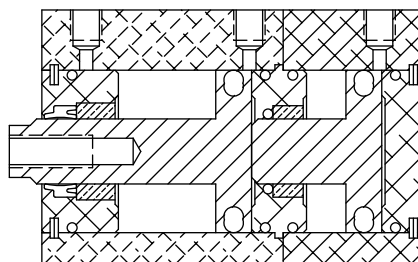
Model - PS

- Most compact of 3 models



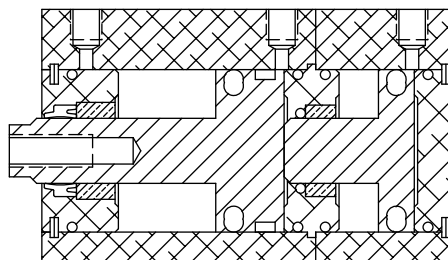
Model - PE

- Extended internal front rod bearing for additional load support
- Integral seal and rod wiper



Model - PH

- Extended internal front rod bearing for additional load support
- Integral seal and rod wiper
- Wear band added to front piston for additional load support



How To Order

Example: Medium Duty, 50mm Bore, 25mm stroke + 30mm Stroke (55mm Total Stroke), Flange Side Mounting, Magnetic Piston, Inch threads, 17mm Total Rod Extension, Urethane Shock Pads

PE	50	X	25	55	FS	M	EM	R12	UB
MODEL	BORE		1st STROKE	TOTAL STROKE	MOUNTING	PISTON TYPE	OPTIONS		

MODEL

PS	Standard Duty
PE	Medium Duty
PH	Heavy Duty

See note #5

BORE

20	20mm (.79")
25	25mm (.98")
32	32mm (1.26")
40	40mm (1.58")
50	50mm (1.97")
63	63mm (2.48")
76	76mm (3.00")

1st STROKE

1 to 99	1mm to 99mm in 1mm increments
Note: 1-4mm use 5mm body with spacers	

See note #1

TOTAL STROKE

2 to 100	2mm to 100mm in 1mm increments
Note: PS 2-8mm use 9mm body with spacers	
PS Magnetic Piston 2-4mm use 5mm body with spacers	
PE 2-4mm use 5mm body with spacer	

See note #1

PISTON TYPE

Nil	No Magnet
M	Magnetic Piston

See note #2

MOUNTING

MF	Threads on front face (rod end)
MS	Threads on side of body
FF	Flange on front face (rod end)
FS	Flange(s) on side of body

OPTIONS

EM	Inch Threads and Ports
HS	FKM Seals (See Note #2 and page 97)
RE	Rod Eye Pivot (See page 96)
RS	Male Thread Stud for Rod End (See page 96)
RF	Additional 5mm rod extension (See page 96)
RT	Additional 10mm rod extension (See page 96)
RN	Additional 15mm rod extension (See page 96)
RY	Additional 20mm rod extension (See page 96)
RV	Additional 25mm rod extension (See page 96)
RH	Additional 35mm rod extension (See page 96)
R_	Additional custom rod extension (See note #3 and page 96)
UB	Urethane Shock Pads (See note #4 and page 97)

Note 1 - All models use a 5mm stroke body length for 1st Stroke of 5mm or less. 1st Strokes over 5mm use body length of the actual stroke + adder.

Model PS with a Nonmagnetic Piston uses a 9mm stroke body length for Total Stroke of 9mm or less. Total Strokes over 9mm use body length of the actual stroke + adder.

Model PS with Code "M" Magnetic Piston uses a 4mm stroke body length for Total Stroke of 4mm or less. Total Strokes over 4mm use body length of the actual stroke + adder.

Model PE with a Nonmagnetic Piston uses a 4mm stroke body length for Total Stroke of 4mm or less. Total Strokes over 4mm use body length of the actual stroke + adder.

Examples: PS-20X3-8FF-EM would have a Total Length of 5+9+34(Dim"A") and a 1st Stroke body Length of 5+16.36(1st Stroke Length Adder). See 20mm Product Page.

PS-20X6-10MS-RE would have a Total Length of 6+10+34(Dim"A") and a 1st Stroke body length of 6+16.36(1st Stroke Length Adder). See 20mm Product Page.

Note 2 - Magnetic Piston "M" limits temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.).

Magnetic Piston and Sensor mounting tracks are provided on Front (Total Stroke) Cylinder only.

Note 3 - "R_" Enter desired additional Custom Length Rod extension in mm after "R". Example PE-32X40-90MSM-EMR20.4 would have a TOTAL ROD EXTENSION of 25.4mm (20.4mm+Standard 5mm extension)

Note 4 - "UB" Urethane Shock Pads limit temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Pads are mechanically retained at the four Cap faces. "UB" OPTION CHANGES STROKE TOLERANCES TO +/-4mm.

Note 5 - While all Models are offered in all strokes, it is recommended that total strokes over 50mm use PE or PH Models for added bearing support.

Engineering Data

Bore	Piston Area Extend	Piston Area Retract	Min. Operating Pressure	Max. Operating Pressure
20	3,14 cm ² (.48 in ²)	2,64 cm ² (.40 in ²)	0.10 MPa (15 PSI)	1.4 MPa (200 PSI)
25	4,91 cm ² (.76 in ²)	4,12 cm ² (.64 in ²)	0.10 MPa (15 PSI)	1.4 MPa (200 PSI)
32	8,04 cm ² (1.25 in ²)	6,91 cm ² (1.07 in ²)	0.08 MPa (12 PSI)	1.4 MPa (200 PSI)
40	12,56 cm ² (1.95 in ²)	10,55 cm ² (1.64 in ²)	0.08 MPa (12 PSI)	1.4 MPa (200 PSI)
50	19,63 cm ² (3.04 in ²)	17,62 cm ² (2.73 in ²)	0.07 MPa (10 PSI)	1.4 MPa (200 PSI)
63	31,17 cm ² (4.83 in ²)	28,03 cm ² (4.34 in ²)	0.07 MPa (10 PSI)	1.4 MPa (200 PSI)
76	45,60 cm ² (7.07 in ²)	42,46 cm ² (6.59 in ²)	0.07 MPa (10 PSI)	1.4 MPa (200 PSI)

Specifications

Action	Double Acting, 3 Position
Media	Air - Clean, Dry Or Lubricated
Pre-Lubricated at Factory	Non-soap elastomer/PTFE thickener
Temp. Range (Std.)	-10°C to 93°C (14°F to 200°F)
Temp. Range (Mag. Piston)	-10°C to 82°C (14°F to 180°F) See Note 2 & 3
Temp. Range (UB Option)	-10°C to 82°C (14°F to 180°F) See Note 2 & 3
Temp. Range (HS Option)	-10°C to 150°C (14°F to 302°F) See Note 2 & 3
Stroke Tolerance (Std)	+1,0mm/-0 (+0.04"/-0)
Stroke Tolerance (UB)	+/-2mm (+/- .08")

Available Strokes

First Stroke (See Note 1)	1mm to 99mm in 1mm increments
Total Stroke (See Note 1)	2mm to 100mm in 1mm increments

Note 1 - All models use a 5mm stroke body length for 1st Stroke of 5mm or less. 1st Strokes over 5mm use body length of the actual stroke + adder.

All Model PS with a Nonmagnetic Piston uses a 9mm stroke body length for Total Stroke of 9mm or less. Total Strokes over 9mm use body length of the actual stroke + adder.

All Model PS with Code "M" Magnetic Piston uses a 4mm stroke body length for Total Stroke of 4mm or less. Total Strokes over 4mm use body length of the actual stroke + adder.

Model PE 20,25, & 32mm Bore with a Nonmagnetic Piston uses a 4mm stroke body length for Total Stroke of 4mm or less. Total Strokes over 4mm use body length of the actual stroke + adder.

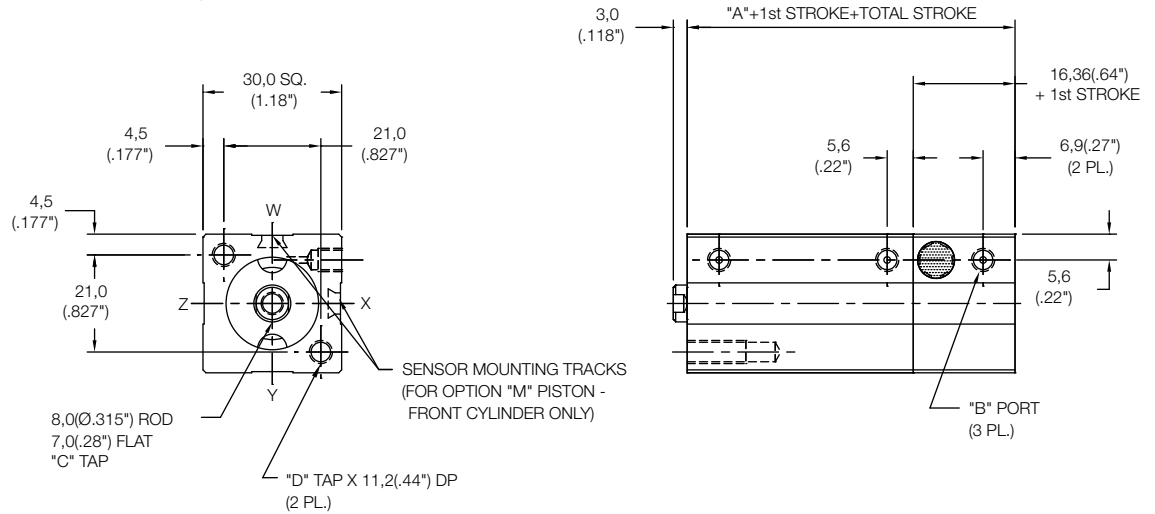
All other models, bores and piston combinations use body length of of the actual stroke + adder.

Note 2 - Magnetic Piston "M" limits temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Magnetic Piston and Sensor mounting tracks are provided on Front (Total Stroke) Cylinder only.

Note 3 - "UB" Urethane Shock Pads limit temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Pads are mechanically retained at the four Cap faces. "UB" OPTION CHANGES STROKE TOLERANCES TO +/-2mm.

Note 4 - While all Models are offered in all strokes, it is recommended that total strokes over 50mm use PE or PH Models for added bearing support.

Multi-Position Cylinder Front Mount Cylinder "MF"

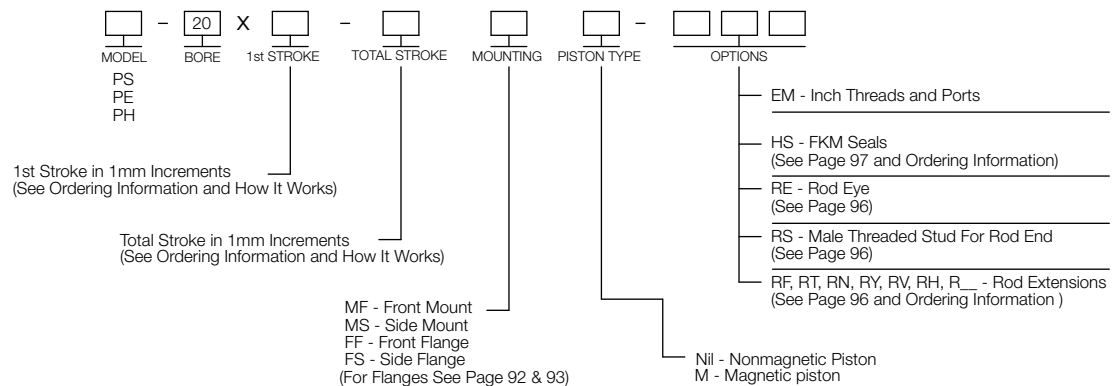
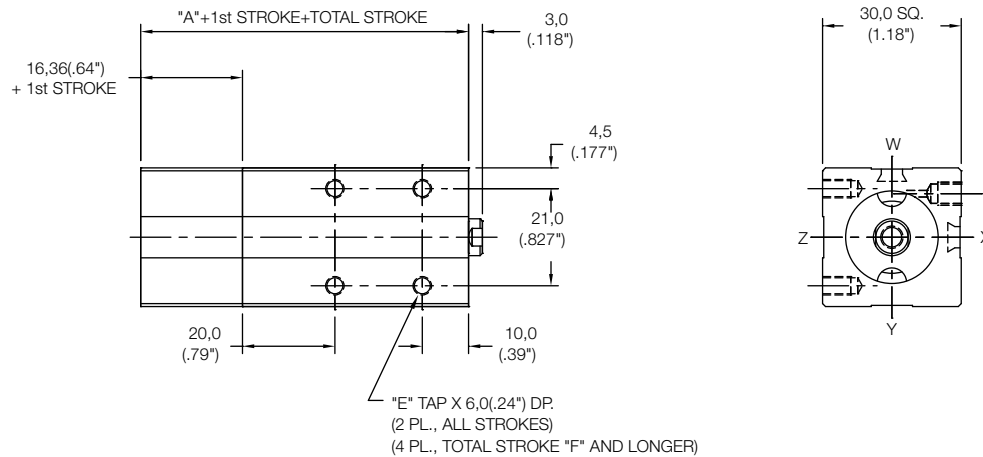


MODEL	PISTON	"A"	"F"	PISTON	"A"	"F"
PS	Non-Mag	34,0(1.34")	40,0mm(1.58")	Mag	39,0(1.54")	35,0mm(1.38")
PE	Non-Mag	39,0(1.54")	35,0mm(1.38")	Mag	44,0(1.73")	30,0mm(1.18")
PH	Non-Mag	44,0(1.73")	30,0mm(1.18")	Mag	49,0(1.93")	25,0mm(.98")

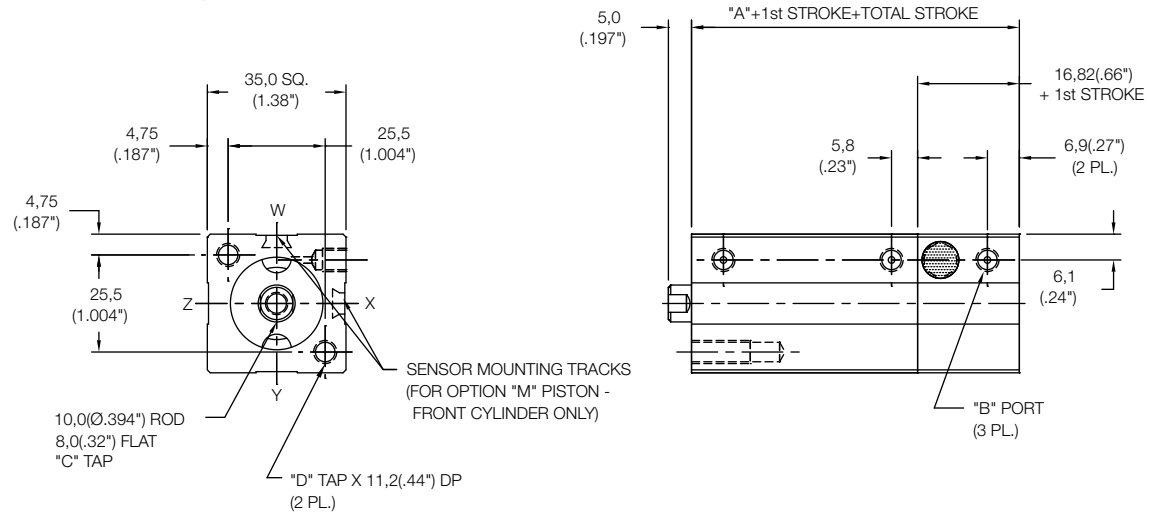
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M5X0,8	#10-32
"E"	M4X0,7	#8-32

Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")



Multi-Position Cylinder Front Mount Cylinder "MF"

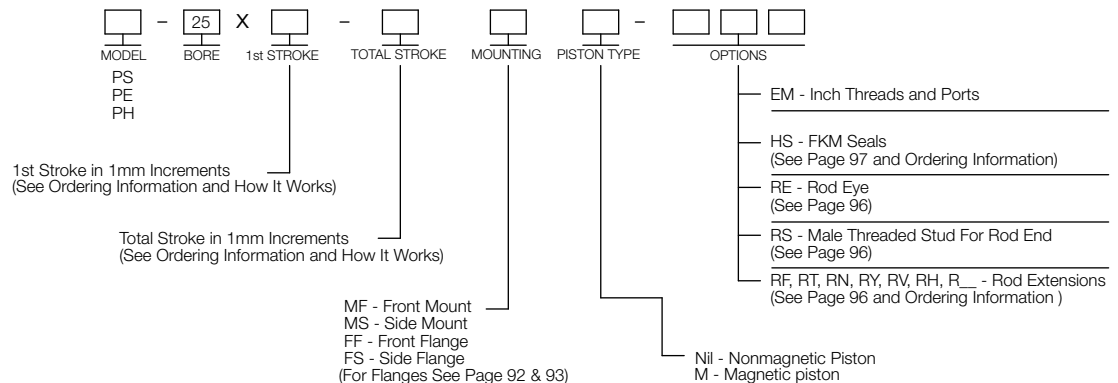
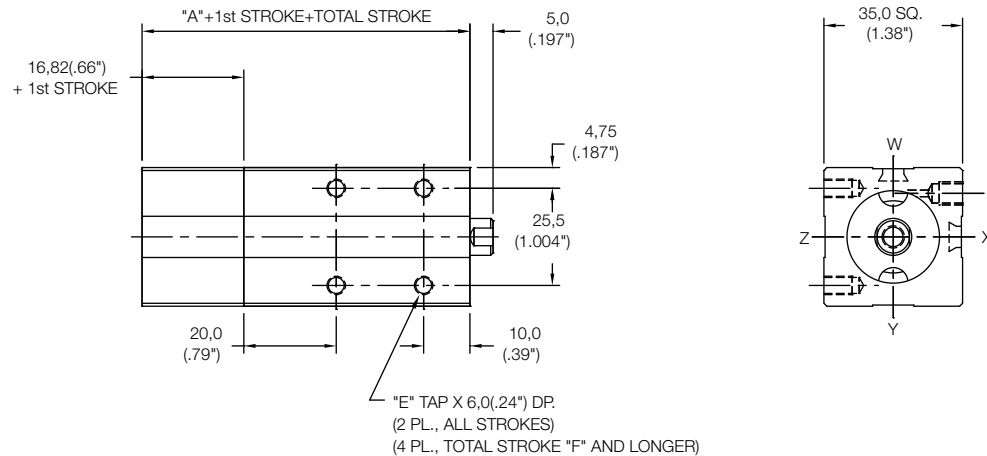


MODEL	PISTON	"A"	"F"	PISTON	"A"	"F"
PS	Non-Mag	35,0 (1.38")	40,0 mm (1.58")	Mag	40,0 (1.58")	35,0 mm (1.38")
PE	Non-Mag	40,0 (1.58")	35,0 mm (1.38")	Mag	45,0 (1.77")	30,0 mm (1.18")
PH	Non-Mag	45,0 (1.77")	30,0 mm (1.18")	Mag	50,0 (1.97")	25,0 mm (.98")

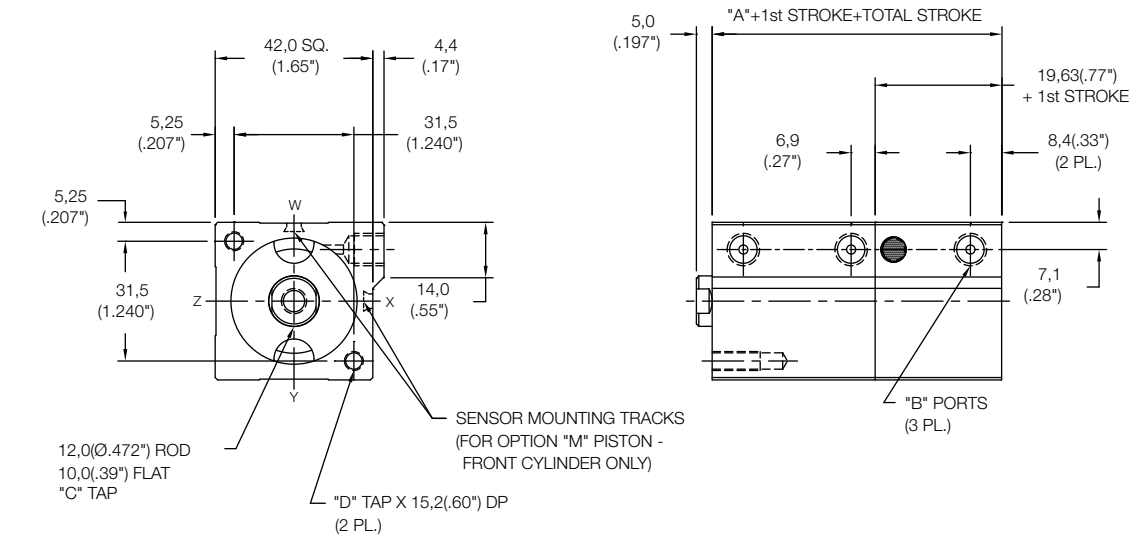
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M5X0,8	#10-32
"E"	M5X0,8	#10-32

Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")



Multi-Position Cylinder Front Mount Cylinder "MF"

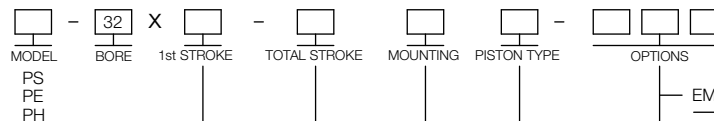
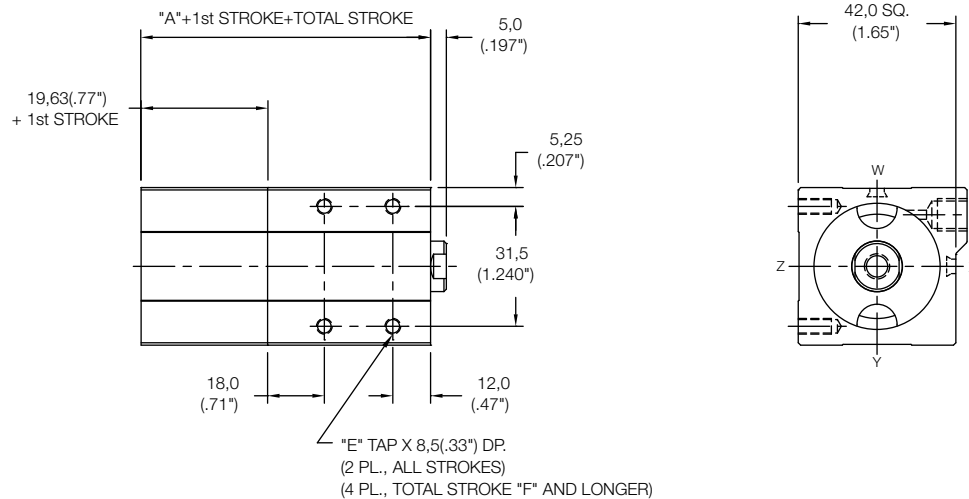


MODEL	PISTON	"A"	"F"	PISTON	"A"	"F"
PS	Non-Mag	41,0(1.61")	40,0mm(1.58")	Mag	46,0(1.81")	35,0mm(1.38")
PE	Non-Mag	46,0(1.81")	35,0mm(1.38")	Mag	51,0(2.01")	30,0mm(1.18")
PH	Non-Mag	51,0(2.01")	30,0mm(1.18")	Mag	56,0(2.21")	25,0mm(.98")

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M6X1,0	1/4-20
"D"	M6X1,0	1/4-20
"E"	M5X0,8	10-32

Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")



1st Stroke in 1mm Increments
(See Ordering Information and How It Works)

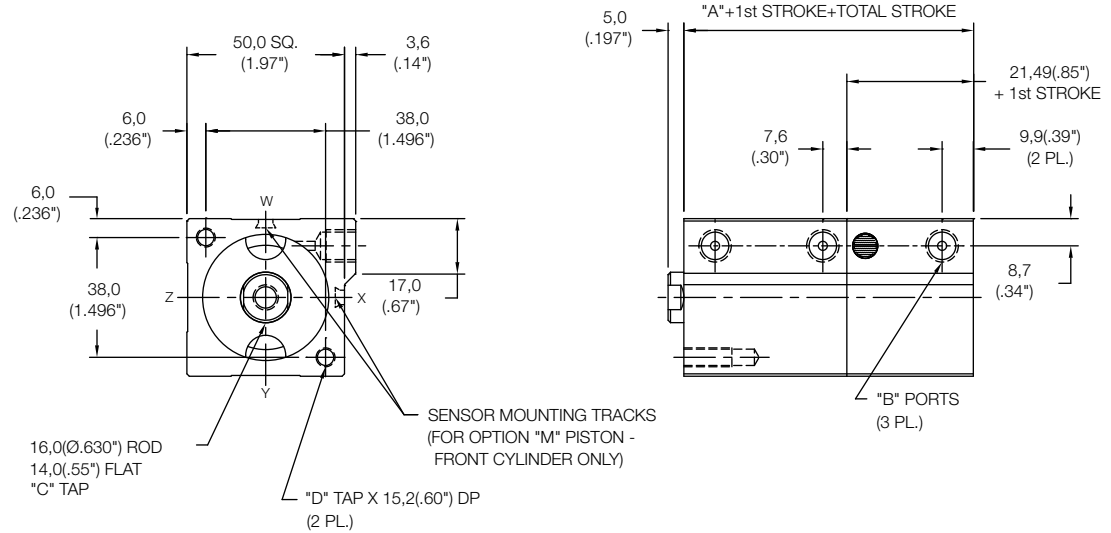
Total Stroke in 1mm Increments
(See Ordering Information and How It Works)

MF - Front Mount
MS - Side Mount
FF - Front Flange
FS - Side Flange
(For Flanges See Page 92 & 93)

EM - Inch Threads and Ports
HS - FKM Seals
(See Page 97 and Ordering Information)
RE - Rod Eye
(See Page 96)
RS - Male Threaded Stud For Rod End
(See Page 96)
RF, RT, RN, RY, RV, RH, R_ - Rod Extensions
(See Page 96 and Ordering Information)

Nil - Nonmagnetic Piston
M - Magnetic piston

Multi-Position Cylinder Front Mount Cylinder "MF"

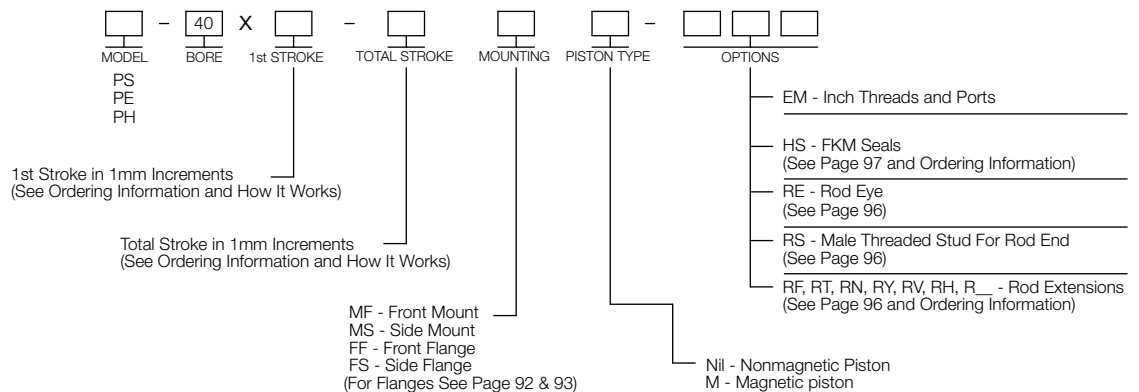
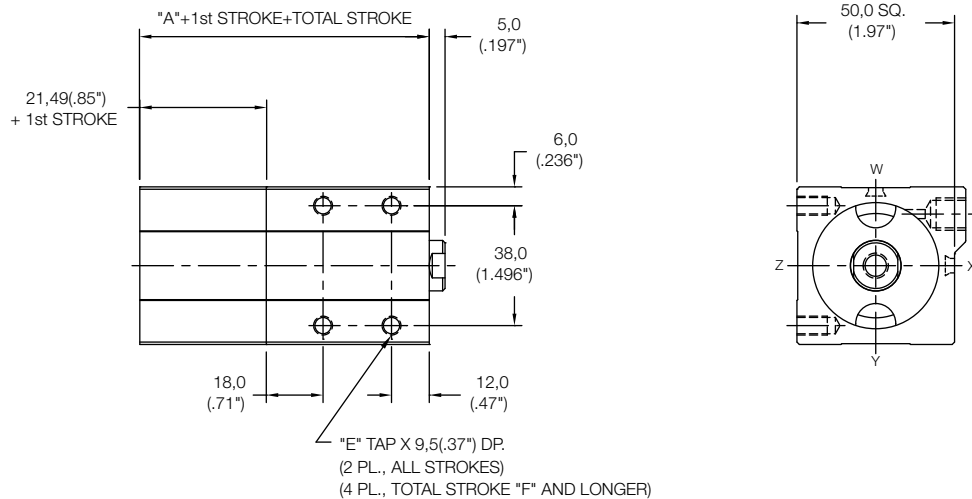


MODEL	PISTON	"A"	"F"	PISTON	"A"	"F"
PS	Non-Mag	45,0 (1.77")	40,0 mm (1.58")	Mag	50,0 (1.97")	35,0 mm (1.38")
PE	Non-Mag	55,0 (2.17")	30,0 mm (1.18")	Mag	60,0 (2.36")	25,0 mm (.98")
PH	Non-Mag	60,0 (2.36")	25,0 mm (.98")	Mag	65,0 (2.56")	20,0 mm (.79")

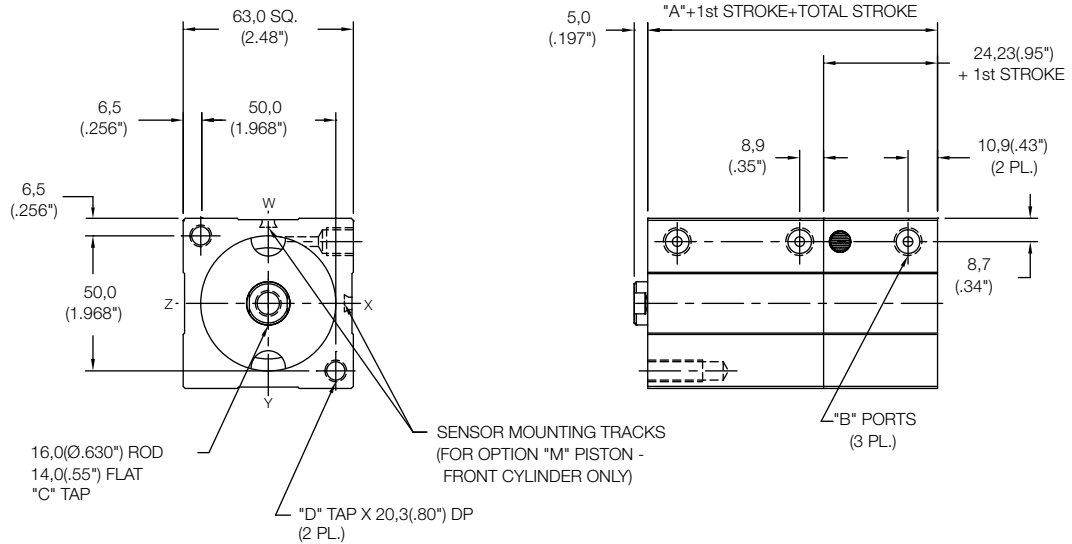
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M8X1,25	5/16-18
"D"	M6X1,0	1/4-20
"E"	M6X1,0	1/4-20

Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")



Multi-Position Cylinder Front Mount Cylinder "MF"

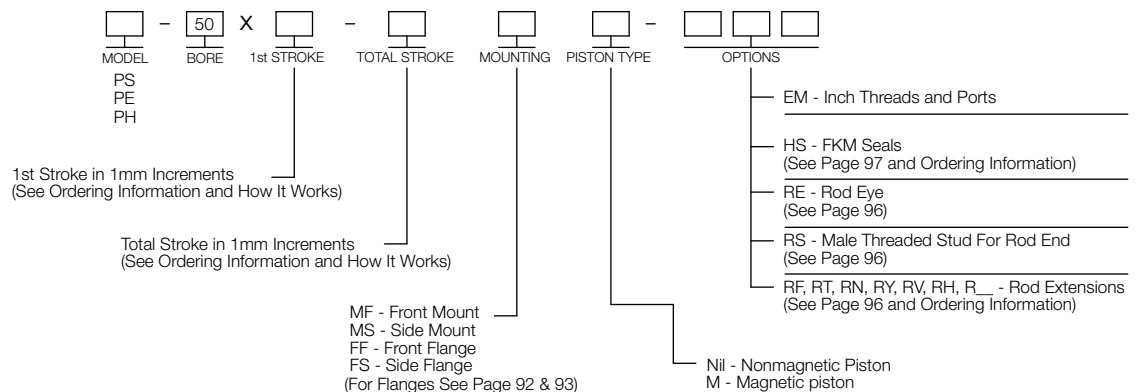
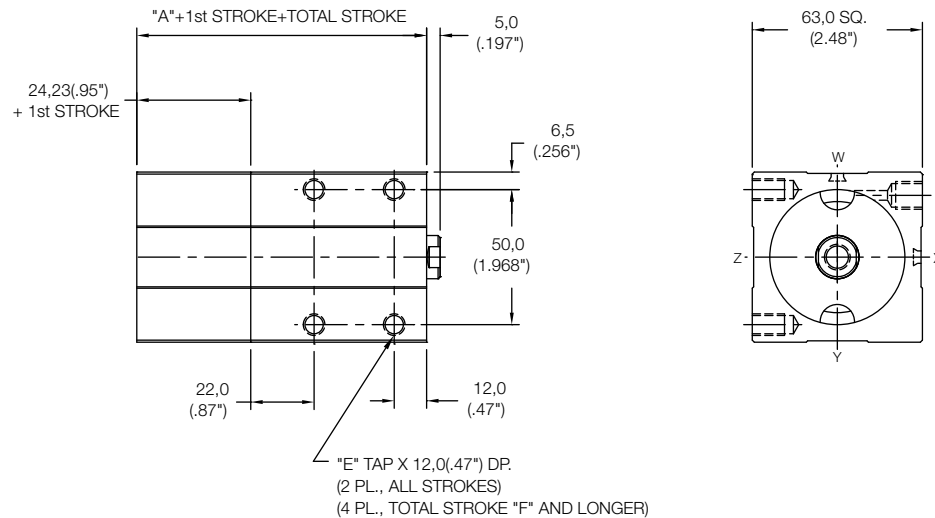


MODEL	PISTON	"A"	"F"	PISTON	"A"	"F"
PS	Non-Mag	51,0 (2.01")	40,0mm (1.58")	Mag	56,0 (2.20")	35,0mm (1.38")
PE	Non-Mag	61,0 (2.40")	30,0mm (1.18")	Mag	66,0 (2.60")	25,0mm (.98")
PH	Non-Mag	66,0 (2.60")	25,0mm (.98")	Mag	71,0 (2.80")	20,0mm (.79")

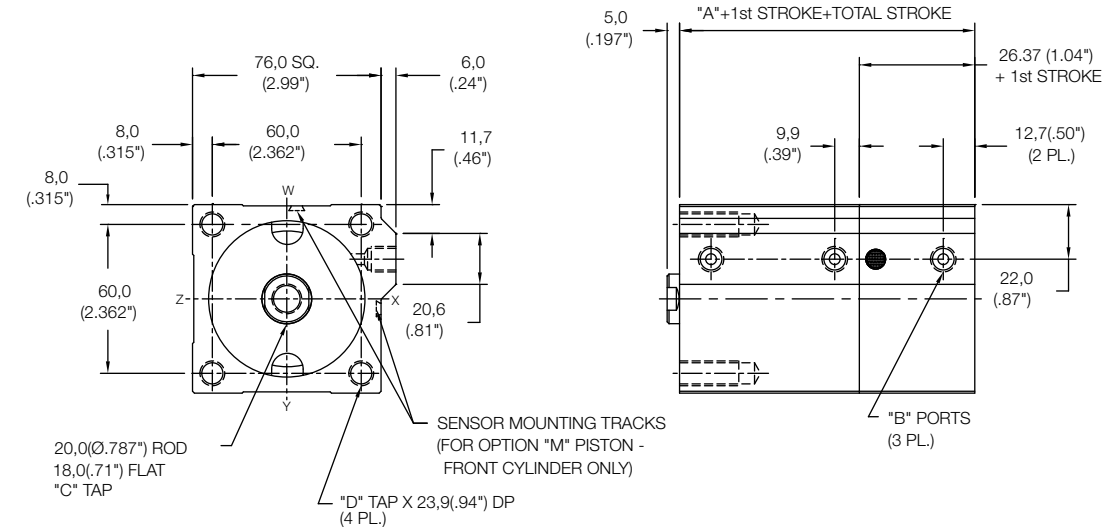
	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M10X1,5	3/8-24
"D"	M8X1,25	5/16-18
"E"	M8X1,25	5/16-18

Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")



Multi-Position Cylinder
Front Mount Cylinder "MF"

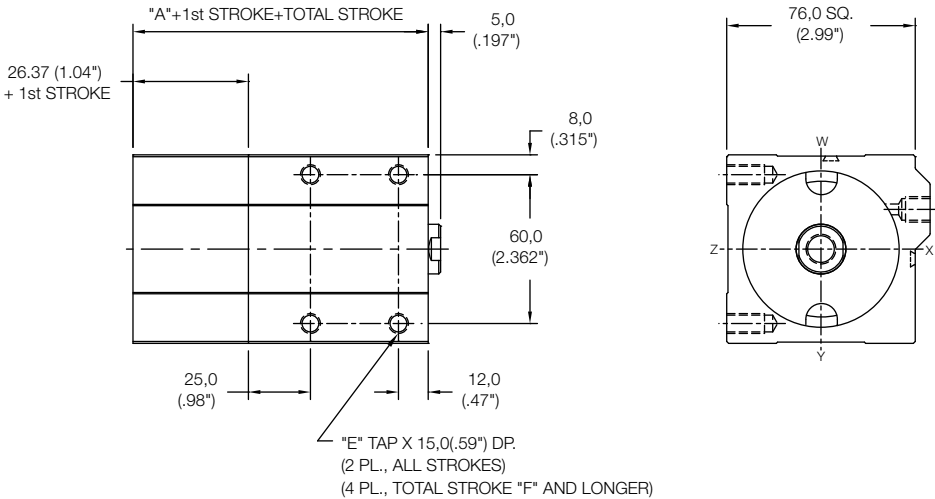


MODEL	PISTON	"A"	"F"	PISTON	"A"	"F"
PS	Non-Mag	56,0(2.20")	45,0mm(1.77")	Mag	61,0(2.40")	40,0mm(1.58")
PE	Non-Mag	66,0(2.60")	35,0mm(1.38")	Mag	71,0(2.80")	30,0mm(1.18")
PH	Non-Mag	76,0(2.99")	25,0mm(.98")	Mag	81,0(3.19")	20,0mm(.79")

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M10X1,5	3/8-24
"E"	M8X1,25	5/16-18

Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")



MODEL - 63 X - TOTAL STROKE - MOUNTING - PISTON TYPE - OPTIONS

PS
PE
PH

1st STROKE

TOTAL STROKE

EM - Inch Threads and Ports

HS - FKM Seals
(See Page 97 and Ordering Information)

RE - Rod Eye
(See Page 96)

RS - Male Threaded Stud For Rod End
(See Page 96)

RF, RT, RN, RY, RV, RH, R - Rod Extensions
(See Page 96 and Ordering Information)

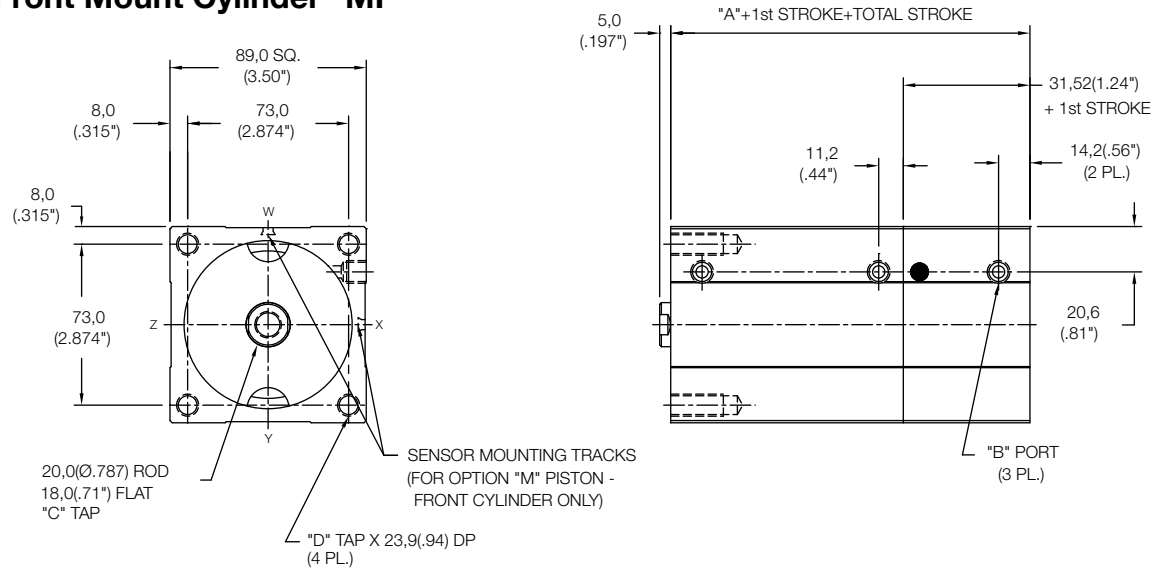
1st Stroke in 1mm Increments
(See Ordering Information and How It Works)

Total Stroke in 1mm Increments
(See Ordering Information and How It Works)

MF - Front Mount
MS - Side Mount
FF - Front Flange
FS - Side Flange
(For Flanges See Page 92 & 93)

Nil - Nonmagnetic Piston
M - Magnetic piston

Multi-Position Cylinder Front Mount Cylinder "MF"

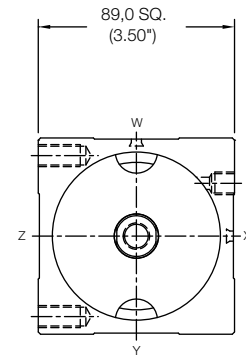
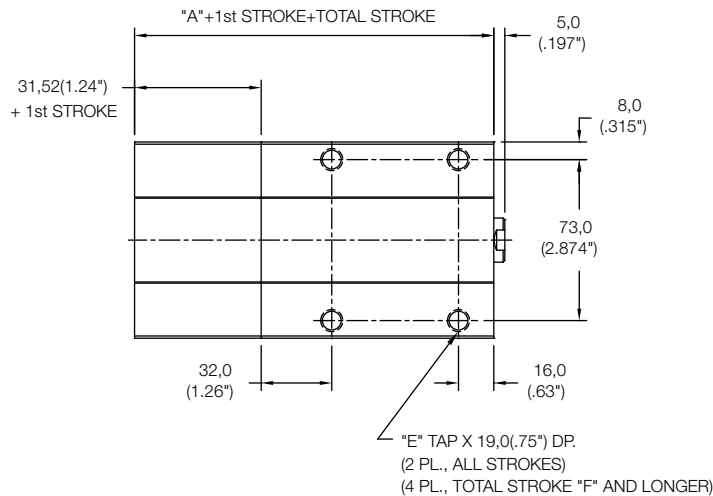


MODEL	PISTON	"A"	"F"	PISTON	"A"	"F"
PS	Non-Mag	67,0(2.64")	45,0mm(1.77")	Mag	72,0(2.83")	40,0mm(1.58")
PE	Non-Mag	77,0(3.03")	35,0mm(1.38")	Mag	82,0(3.23")	30,0mm(1.18")
PH	Non-Mag	87,0(3.43")	25,0mm(.98")	Mag	92,0(3.62")	20,0mm(.79")

	Standard Threads	"EM" Option
"B"	G1/8 PORT	1/8-27
"C"	M12X1,75	1/2-13
"D"	M10X1,5	3/8-24
"E"	M10X1,5	3/8-24

Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")



MODEL - BORE X 1st STROKE - TOTAL STROKE MOUNTING PISTON TYPE - OPTIONS

PS
PE
PH

1st Stroke in 1mm Increments
(See Ordering Information and How It Works)

Total Stroke in 1mm Increments
(See Ordering Information and How It Works)

MF - Front Mount
MS - Side Mount
FF - Front Flange
FS - Side Flange
(For Flanges See Page 92 & 93)

EM - Inch Threads and Ports

HS - FKM Seals
(See Page 97 and Ordering Information)

RE - Rod Eye
(See Page 96)

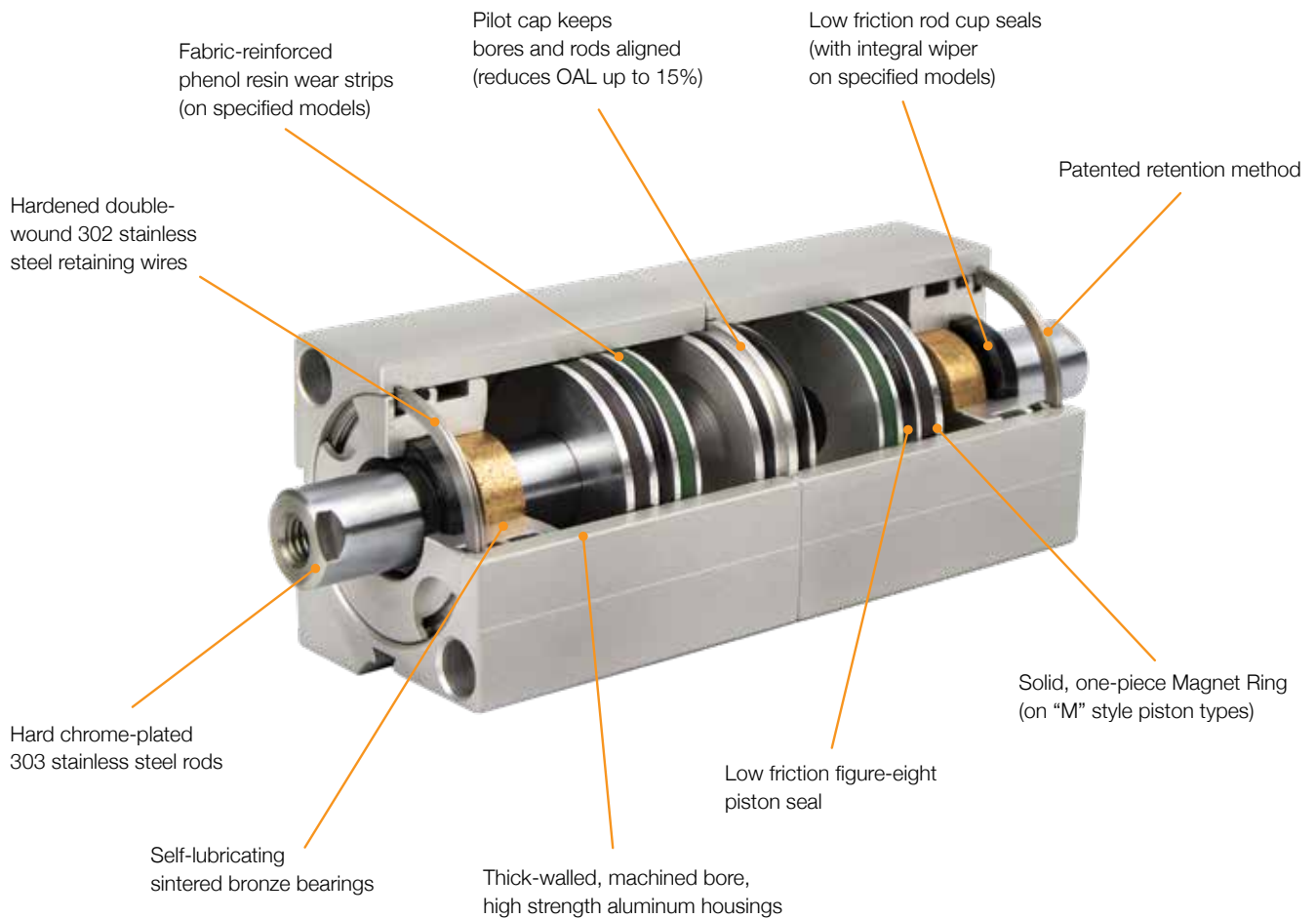
RS - Male Threaded Stud For Rod End
(See Page 96)

RF, RT, RN, RY, RV, RH, R - Rod Extensions
(See Page 96 and Ordering Information)

Nil - Nonmagnetic Piston
M - Magnetic piston

BS SERIES

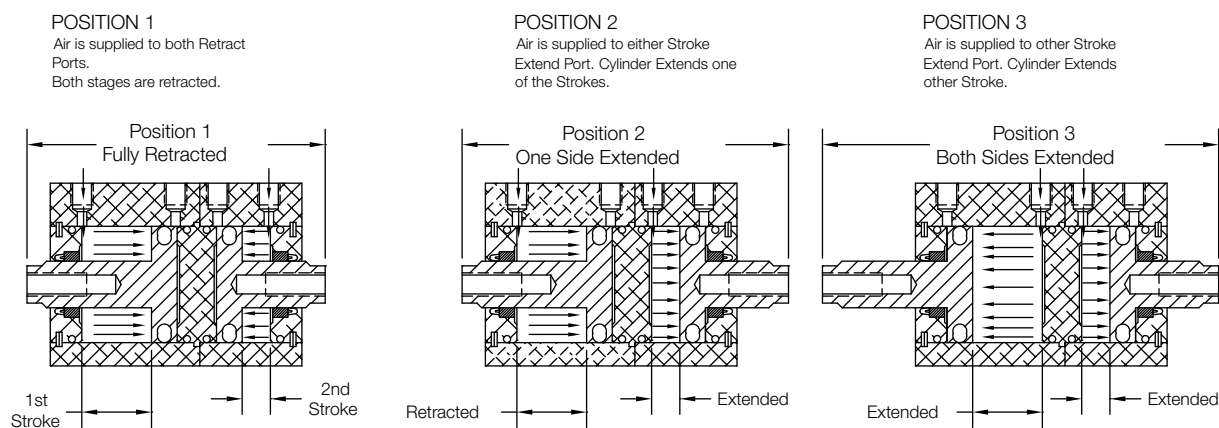
PNEUMATIC CYLINDERS



Back to Back 3 Position Pneumatic Cylinders

The B series cylinder line is based on the same rugged, proven designs of Nason's L series cylinders. Thick-walled, custom aluminum extrusions are precision bored and honed. High strength aluminum internal components are machined to exacting tolerances to control seal squeezes and stroke tolerances. Chrome-plated 303 stainless steel rods are precision ground for long life. The dual-piloted center cap keeps bores and rod ends in strict alignment. The unique design of the Back to Back series saves up to 15% of space compared to two standard units bolted together.

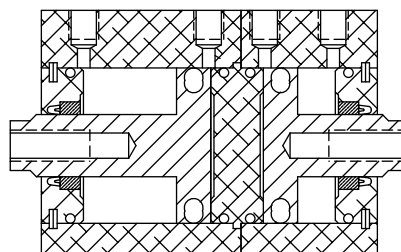
3 Position Back to Back Cylinder



Individual Features

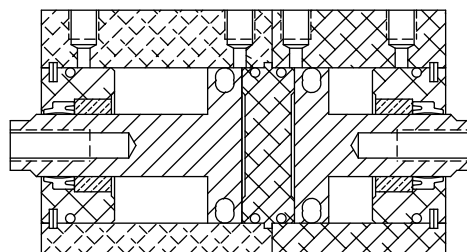
Model - BS

- Most compact of 3 models



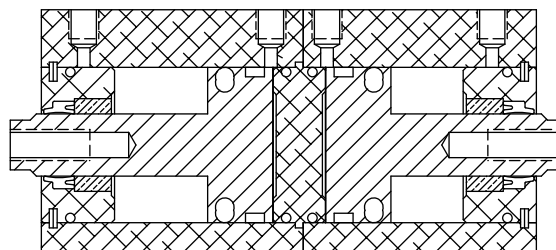
Model - BE

- Extended internal front rod bearings for additional load support
- Integral seal and rod wiper



Model - BH

- Extended internal front rod bearings for additional load support
- Integral seal and rod wiper
- Wear bands added to pistons for additional load support



How To Order

Example: Heavy Duty, 40mm Bore, 35mm stroke + 20mm Stroke, No Mounting Holes (using rod ends), Magnetic Piston, Inch Threads, 17mm Total Rod Extension on 1st Stroke, 13mm Total Rod Extension on 2nd Stroke, Urethane Shock Pads

BH	-	40	X	35	-	20		M	-	EM	R12	R8	UB
MODEL		BORE		1st STROKE		2nd STROKE		MOUNTING		PISTON TYPE		OPTIONS	

MODEL

BS	Standard Duty
BE	Medium Duty
BH	Heavy Duty

See note #5

BORE

20	20mm (.79")
25	25mm (.98")
32	32mm (1.26")
40	40mm (1.58")
50	50mm (1.97")
63	63mm (2.48")
76	76mm (3.00")

1st STROKE

1 to 100	1mm to 100mm in 1mm increments
Note: BS 1-11mm use 11mm body with spacers	
BS Magnetic Piston 1-6mm use 6mm body with spacers	
BE 20, 25, 32mm Bores 1-6mm use 6mm body with spacer	

See note #1

2nd STROKE

1 to 100	1mm to 100mm in 1mm increments
Note: BS 1-11mm use 11mm body with spacers	
BS Magnetic Piston 1-6mm use 6mm body with spacers	
BE 20, 25, 32mm Bores 1-6mm use 6mm body with spacer	

See note #1

PISTON TYPE

Nil	No Magnet
M	Magnetic Piston

See note #2

MOUNTING

Nil	No Mounting (Using rod ends)
MF	Threads on front face (rod end)
MS	Threads on side of body
FF	Flange on front face (rod end)
FS	Flange(s) on side of body

OPTIONS

EM	Inch Threads and Ports
HS	FKM Seals (See Note #2 and page 97)
RE	Rod Eye Pivot (See page 96)
RS	Male Thread Stud for Rod End (See page 96)
RF	Additional 5mm rod extension (See page 96)
RT	Additional 10mm rod extension (See page 96)
RN	Additional 15mm rod extension (See page 96)
RY	Additional 20mm rod extension (See page 96)
RV	Additional 25mm rod extension (See page 96)
RH	Additional 35mm rod extension (See page 96)
R__	Additional custom rod extension (See note #3 and page 96)
UB	Urethane Shock Pads (See note #4 and page 97)

Note 1 - Model BS with a Nonmagnetic Piston uses a 11mm stroke body length for Either Stroke of 11mm or less. Either Stroke over 11mm use body length of the actual stroke + adder. Model BS with Code "M" Magnetic Piston uses a 6mm stroke body length for Either Stroke of 6mm or less. Either Stroke over 6mm use body length of the actual stroke + adder. Model BE 20, 25, & 32mm Bore with a Nonmagnetic Piston uses a 6mm stroke body length for Total Stroke of 6mm or less. Total Strokes over 6mm use body length of the actual stroke + adder. Examples: BS-20X8-3FF-EM would have a Total Length of 11+11+34(Dim"A") and a 2nd Stroke body Length of 11+16.36(2nd Stroke Length Adder). See 20mm Product Page. BS-20X15-11MS-RE would have a Total Length of 15+11+34(Dim"A") and a 2nd Stroke body length of 11+16.36(1st Stroke Length Adder). See 20mm Product Page.

All other models, bores and piston combinations use body length of of the actual stroke + adder.

Note 2 - Magnetic Piston "M" limits temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Magnetic Piston and Sensor mounting tracks are provided on both Cylinders.

Note 3 - "R__" Enter desired additional Custom Length Rod extension in mm after "R". Example: BE-32X40-90MSM-EMR20.4R0 would have a TOTAL ROD EXTENSION of 25.4mm (20.4mm+Standard 5mm extension) on the 1st Stroke Cylinder and standard 5mm extension on the 2nd stroke cylinder. Example: BE-32X40-90MSM-EMR0RN would have a standard rod extension of 5mm on the 1st Stroke Cylinder and TOTAL ROD EXTENSION 20mm (15mm+Standard 5mm extension) on the 2nd stroke cylinder. Always specify BOTH rod extensions if ordering additional rod extension (even if one of the extensions is 0 (R0)).

Note 4 - "UB" Urethane Shock Pads limit temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Pads are mechanically retained at the four Cap faces. "UB" OPTION CHANGES STROKE TOLERANCES TO +/-2mm.

Note 5 - While all Models are offered in all strokes, it is recommended that total strokes over 25mm use BE or BH Models for added bearing support.

Engineering Data

Bore	Piston Area Extend	Piston Area Retract	Min. Operating Pressure	Max. Operating Pressure
20	3,14 cm ² (.48 in ²)	2,64 cm ² (.40 in ²)	0.08 MPa (12 PSI)	1.4 MPa (200 PSI)
25	4,91 cm ² (.76 in ²)	4,12 cm ² (.64 in ²)	0.08 MPa (12 PSI)	1.4 MPa (200 PSI)
32	8,04 cm ² (1.25 in ²)	6,91 cm ² (1.07 in ²)	0.07 MPa (10 PSI)	1.4 MPa (200 PSI)
40	12,56 cm ² (1.95 in ²)	10,55 cm ² (1.64 in ²)	0.07 MPa (10 PSI)	1.4 MPa (200 PSI)
50	19,63 cm ² (3.04 in ²)	17,62 cm ² (2.73 in ²)	0.05 MPa (7 PSI)	1.4 MPa (200 PSI)
63	31,17 cm ² (4.83 in ²)	28,03 cm ² (4.34 in ²)	0.05 MPa (7 PSI)	1.4 MPa (200 PSI)
76	45,60 cm ² (7.07 in ²)	42,46 cm ² (6.59 in ²)	0.05 MPa (7 PSI)	1.4 MPa (200 PSI)

Specifications

Action	Double Acting, 3 Position
Media	Air - Clean, Dry Or Lubricated
Pre-Lubricated at Factory	Non-soap elastomer/PTFE thickener
Temp. Range (Std.)	-10°C to 93°C (14°F to 200°F)
Temp. Range (Mag. Piston)	-10°C to 82°C (14°F to 180°F) See Note 2 & 3
Temp. Range (UB Option)	-10°C to 82°C (14°F to 180°F) See Note 2 & 3
Temp. Range (HS Option)	-10°C to 150°C (14°F to 302°F) See Note 2 & 3
Stroke Tolerance (Std)	+1,0mm/-0 (+0.04"/-0)
Stroke Tolerance (UB)	+/-2mm (+/- .08")

Available Strokes

First Stroke (See Note 1)	1mm to 100mm in 1mm increments
Second Stroke (See Note 1)	1mm to 100mm in 1mm increments

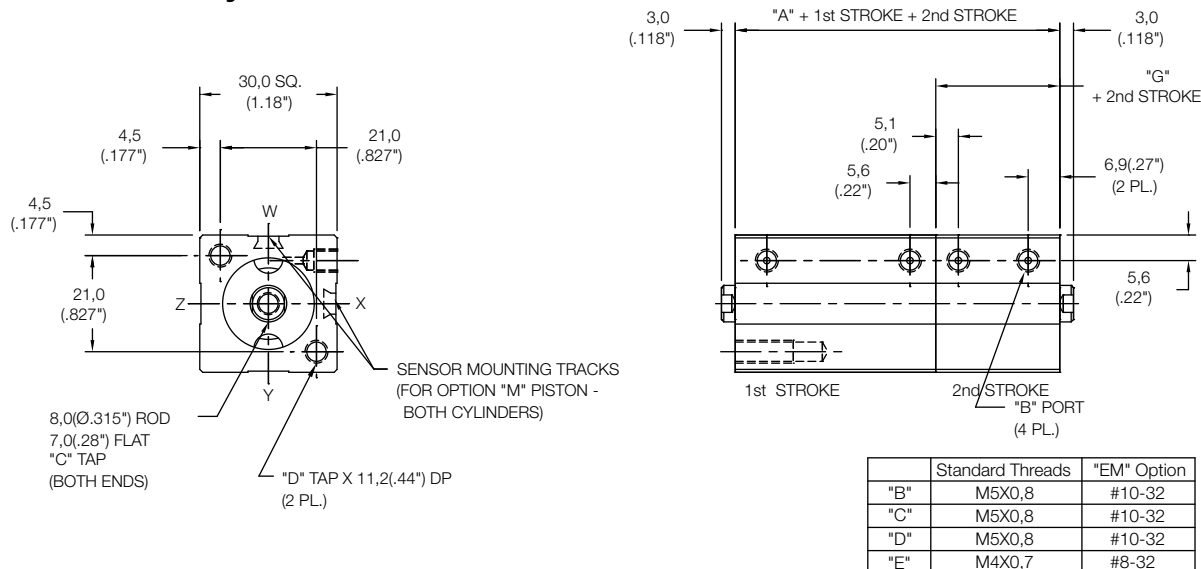
Note 1 - Model BS with a Nonmagnetic Piston uses a 11mm stroke body length for Either Stroke of 11mm or less. Either Stroke over 11mm use body length of the actual stroke + adder.
 Model BS with Code "M" Magnetic Piston uses a 6mm stroke body length for Either Stroke of 6mm or less. Either Stroke over 6mm use body length of the actual stroke + adder.
 Model BE 20, 25, & 32mm Bore with a Nonmagnetic Piston uses a 6mm stroke body length for Total Stroke of 6mm or less. Total Strokes over 6mm use body length of the actual stroke + adder.
 All other models, bores and piston combinations use body length of of the actual stroke + adder.

Note 2 - Magnetic Piston "M" limits temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Magnetic Piston and Sensor mounting tracks are provided on Front (Total Stroke) Cylinder only.

Note 3 - "UB" Urethane Shock Pads limit temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Pads are mechanically retained at the four Cap faces. "UB" OPTION CHANGES STROKE TOLERANCES TO +/-2mm.

Note 4 - While all Models are offered in all strokes, it is recommended that total strokes over 25mm use BE or BH Models for added bearing support.

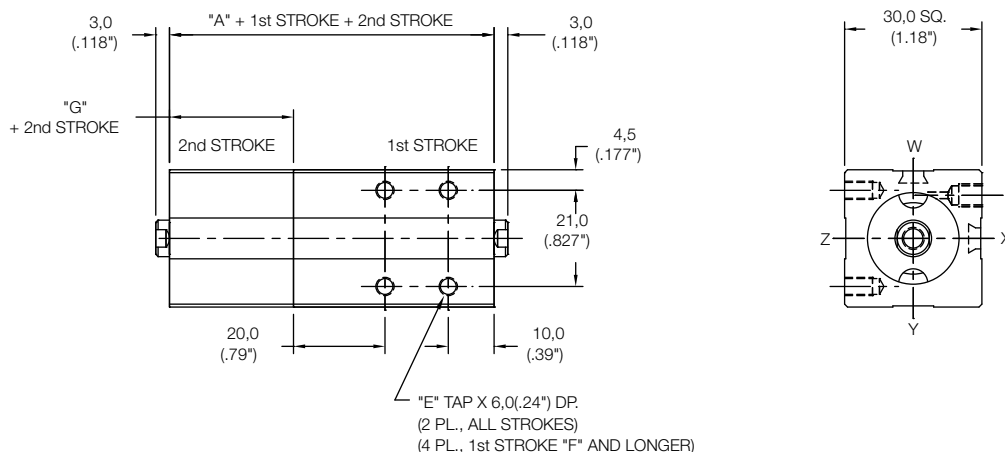
Back to Back Cylinder Front Mount Cylinder "MF"



MODEL	PISTON	"A"	"F"	"G"	PISTON	"A"	"F"	"G"
BS	Non-Mag	34,0(1.34")	40,0mm(1.58")	16,36(.64")	Mag	44,0(1.73")	35,0mm(1.38")	21,36(.84")
BE	Non-Mag	44,0(1.73")	35,0mm(1.38")	21,36(.84")	Mag	54,0(2.13")	30,0mm(1.18")	26,36(1.04")
BH	Non-Mag	54,0(2.13")	30,0mm(1.18")	26,36(1.04")	Mag	64,0(2.52")	25,0mm(.98")	31,36(1.23")

Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")



MODEL	BORE	1st STROKE	2nd STROKE	MOUNTING	PISTON TYPE	OPTIONS
-------	------	------------	------------	----------	-------------	---------

1st Stroke in 1mm Increments
(Must be the longest of the 2 strokes)
(See Ordering Information and How It Works)

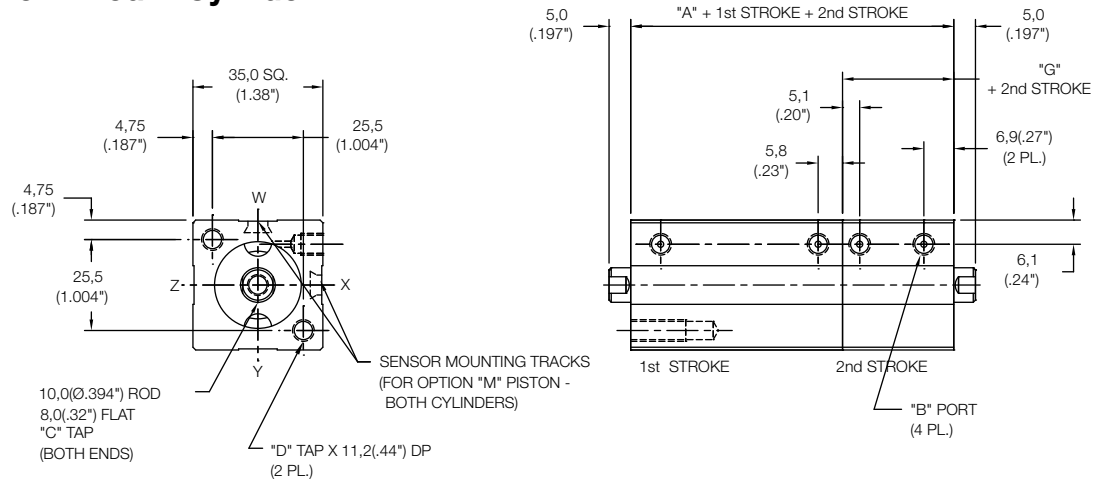
2nd Stroke in 1mm Increments
(Must be the shortest of the 2 strokes)
(See Ordering Information and How It Works)

Nil - No Mounts
(Mounting with rod ends)
MF - Front Mount
MS - Side Mount
FF - Front Flange
FS - Side Flange
(For Flanges See Page 92 & 93)
(Mounting is always on 1st stroke Cylinder)

Nil - Nonmagnetic Piston
M - Magnetic piston

EM - Inch Threads and Ports
HS - FKM Seals
(See Page 97 and Ordering Information)
RE - Rod Eye
(See Page 96)
RS - Male Threaded Stud For Rod End
(See Page 96)
RF, RT, RN, RY, RV, RH, RL - Rod Extensions
(See Page 96 and Ordering Information)

Back to Back Cylinder Front Mount Cylinder "MF"

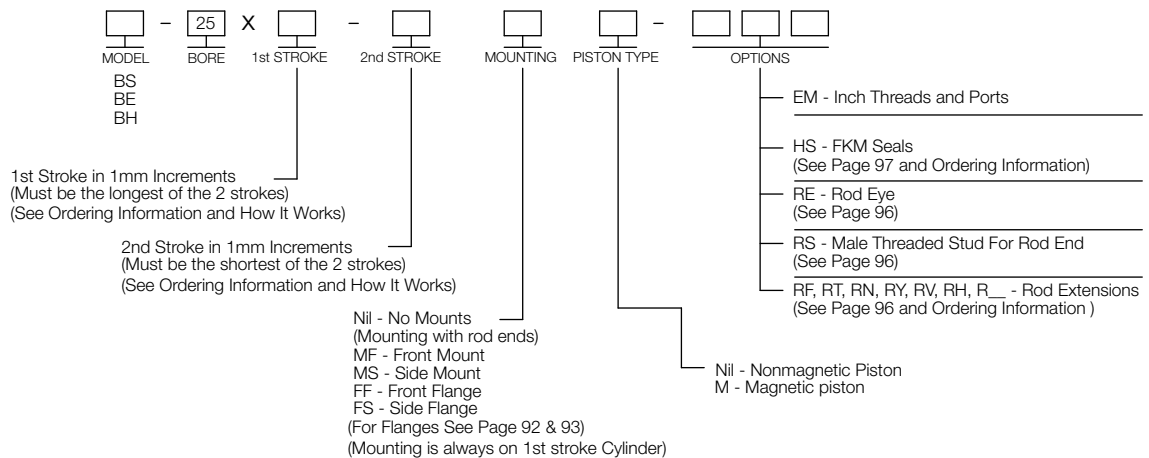
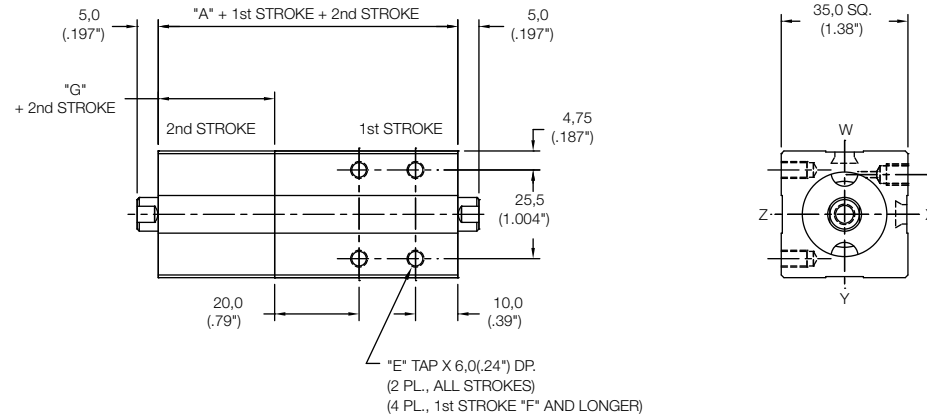


MODEL	PISTON	"A"	"F"	"G"	PISTON	"A"	"F"	"G"
BS	Non-Mag	35,0(1.38")	40,0mm(1.58")	16,82(.66")	Mag	45,0(1.77")	35,0mm(1.38")	21,82(.86")
BE	Non-Mag	45,0(1.77")	35,0mm(1.38")	21,82(.86")	Mag	55,0(2.17")	30,0mm(1.18")	26,82(1.06")
BH	Non-Mag	55,0(2.17")	30,0mm(1.18")	26,82(1.06")	Mag	65,0(2.56")	25,0mm(.98")	31,82(1.25")

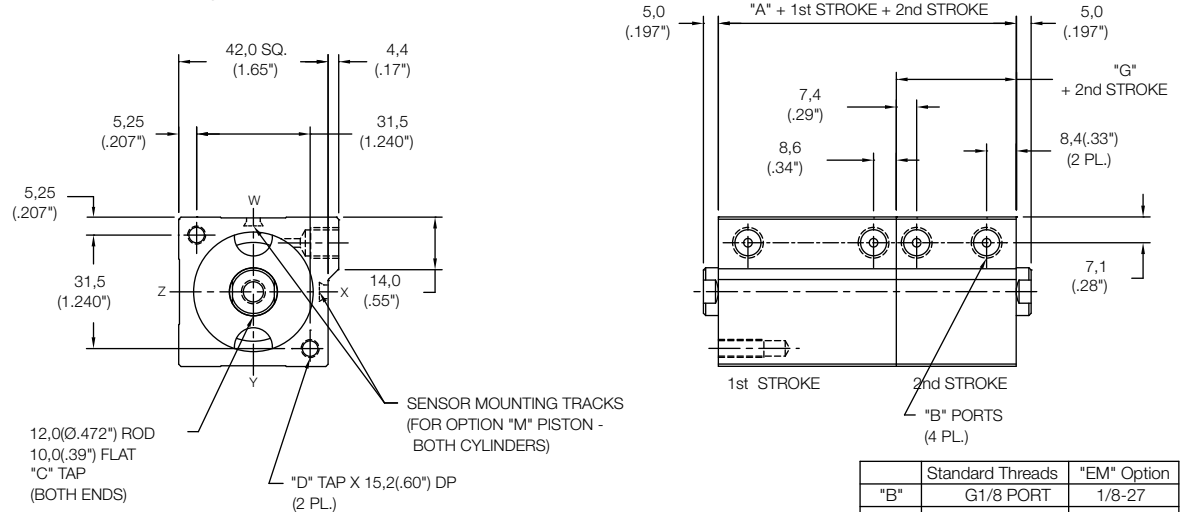
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M5X0,8	#10-32
"E"	M5X0,8	#10-32

Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")



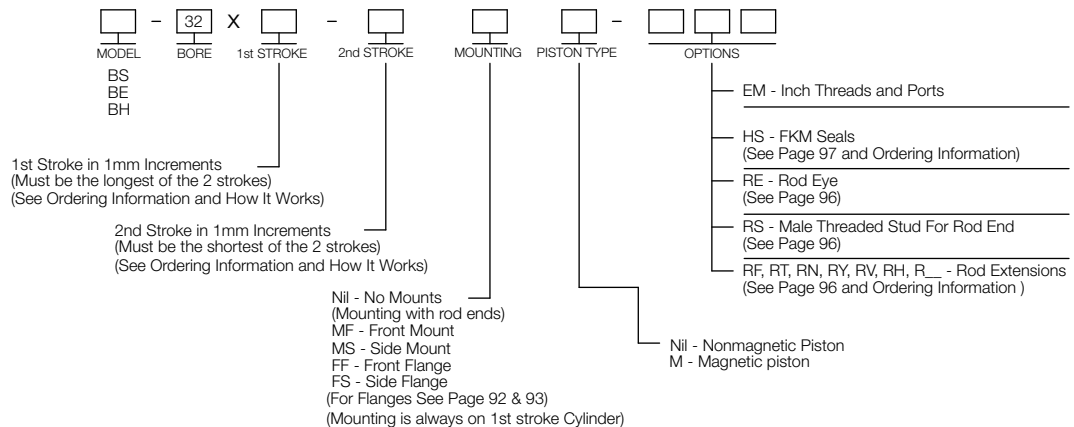
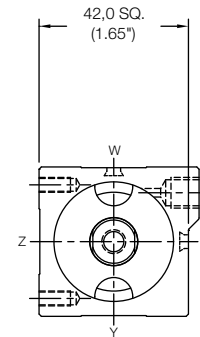
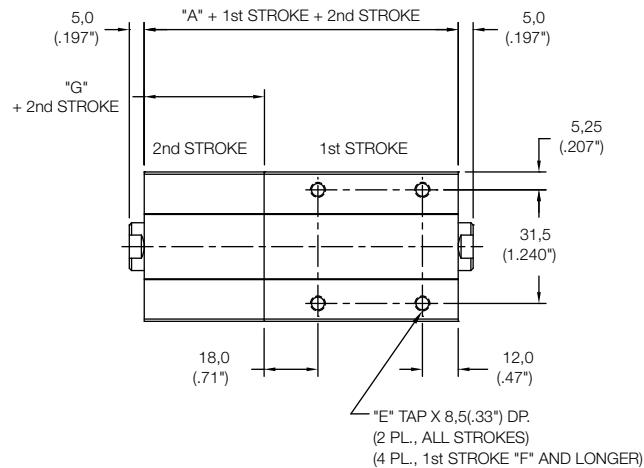
Back to Back Cylinder Front Mount Cylinder "MF"



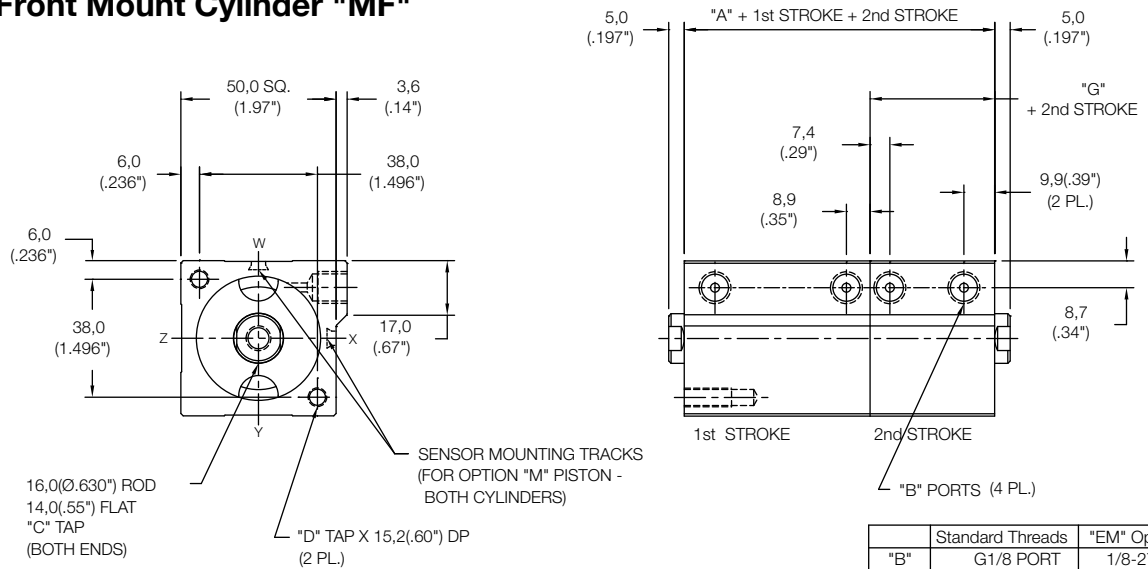
MODEL	PISTON	"A"	"F"	"G"	PISTON	"A"	"F"	"G"
BS	Non-Mag	41,0(1.61")	40,0mm(1.58")	19,63(.77")	Mag	51,0(2.01")	35,0mm(1.38")	24,63(.97")
BE	Non-Mag	51,0(2.01")	35,0mm(1.38")	24,63(.97")	Mag	61,0(2.40")	30,0mm(1.18")	29,63(1.17")
BH	Non-Mag	61,0(2.40")	30,0mm(1.18")	29,63(1.17")	Mag	71,0(2.80")	25,0mm(.98")	34,63(1.36")

Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")



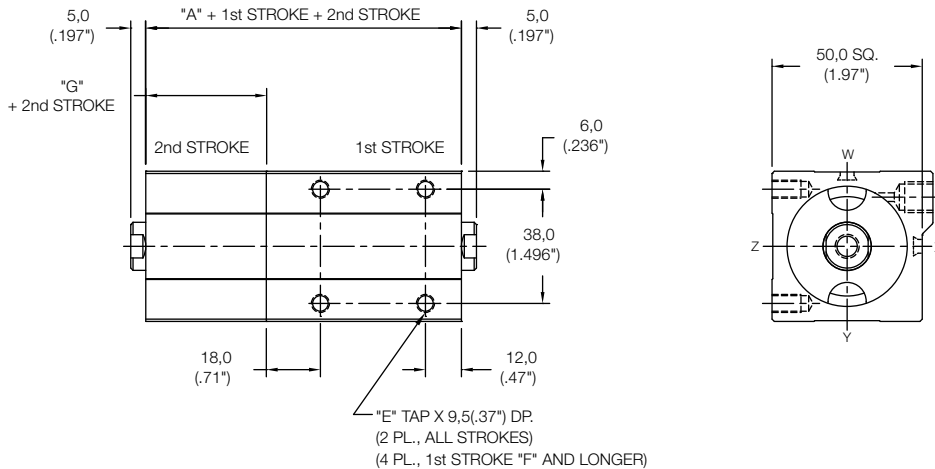
Back to Back Cylinder Front Mount Cylinder "MF"



MODEL	PISTON	"A"	"F"	"G"	PISTON	"A"	"F"	"G"
BS	Non-Mag	45,0(1.77")	40,0mm(1.58")	21,49(.85")	Mag	55,0(2.17")	35,0mm(1.38")	26,49(1.04")
BE	Non-Mag	65,0(2.56")	30,0mm(1.18")	31,49(1.24")	Mag	75,0(2.95")	25,0mm(.98")	36,49(1.44")
BH	Non-Mag	75,0(2.95")	25,0mm(.98")	36,49(1.44")	Mag	85,0(3.35")	20,0mm(.79")	41,49(1.63")

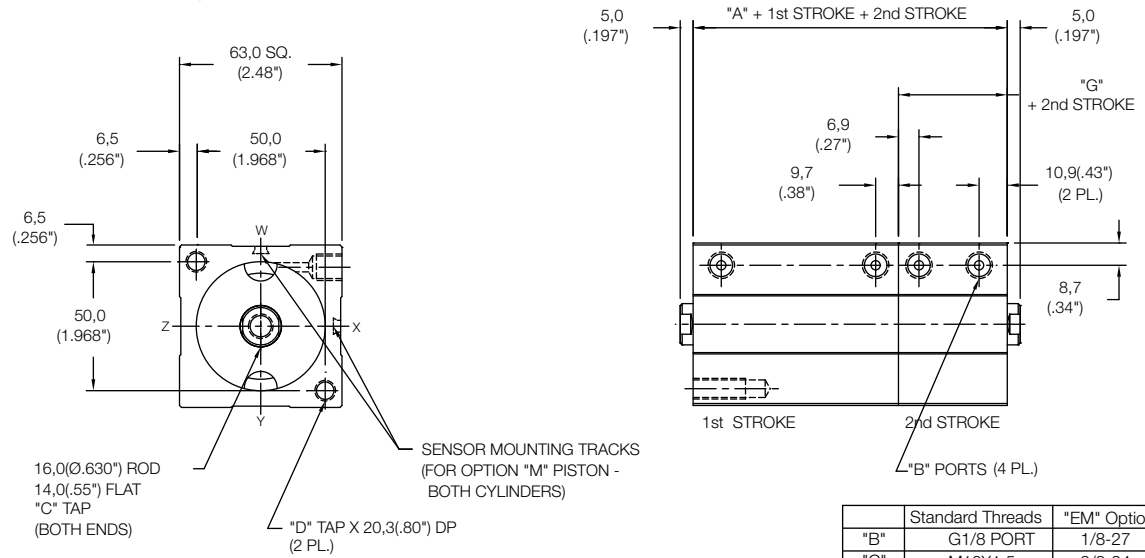
Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")



MODEL	-	40	X	1st STROKE	-	2nd STROKE	MOUNTING	PISTON TYPE	-	OPTIONS
BS BE BH										
1st Stroke in 1mm Increments (Must be the longest of the 2 strokes) (See Ordering Information and How It Works)				2nd Stroke in 1mm Increments (Must be the shortest of the 2 strokes) (See Ordering Information and How It Works)				Nil - No Mounts (Mounting with rod ends) MF - Front Mount MS - Side Mount FF - Front Flange FS - Side Flange (For Flanges See Page 92 & 93) (Mounting is always on 1st stroke Cylinder)		
								Nil - Nonmagnetic Piston M - Magnetic piston		
								EM - Inch Threads and Ports HS - FKM Seals (See Page 97 and Ordering Information) RE - Rod Eye (See Page 96) RS - Male Threaded Stud For Rod End (See Page 96) RF, RT, RN, RY, RV, RH, RL - Rod Extensions (See Page 96 and Ordering Information)		

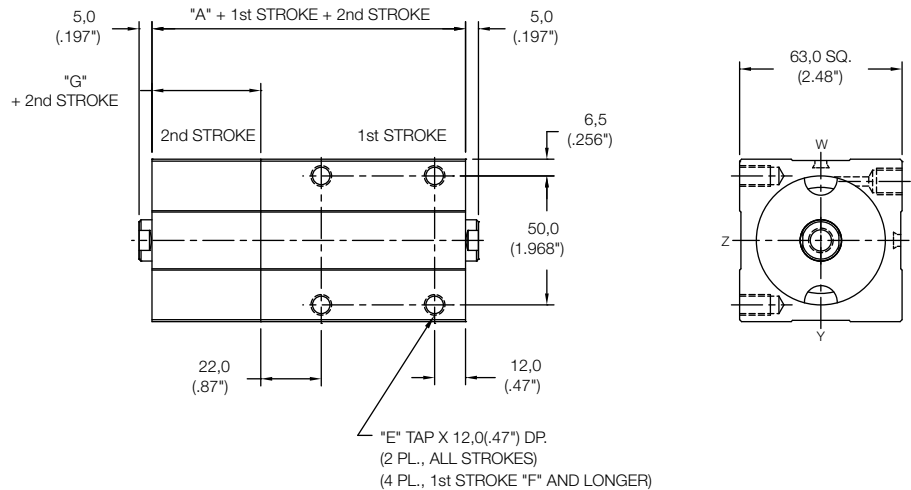
Back to Back Cylinder Front Mount Cylinder "MF"



MODEL	PISTON	"A"	"F"	"G"	PISTON	"A"	"F"	"G"
BS	Non-Mag	51,0(2.01")	40,0mm(1.58")	24,23 (.95")	Mag	61,0(2.40")	35,0mm(1.38")	29,23 (1.15")
BE	Non-Mag	71,0(2.80")	30,0mm(1.18")	34,23 (1.35")	Mag	81,0(3.19")	25,0mm(.98")	39,23 (1.54")
BH	Non-Mag	81,0(3.19")	25,0mm(.98")	39,23 (1.54")	Mag	91,0(3.58")	20,0mm(.79")	44,23 (1.74")

Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")



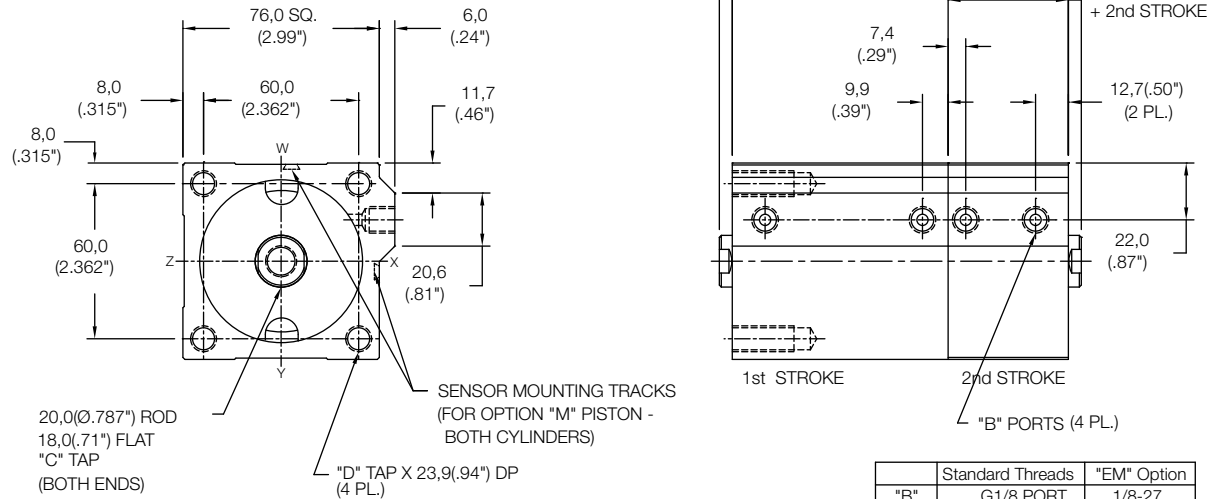
MODEL	BORE	1st STROKE	2nd STROKE	MOUNTING	PISTON TYPE	OPTIONS
BS BE BH	50					
						EM - Inch Threads and Ports
						HS - FKM Seals (See Page 97 and Ordering Information)
						RE - Rod Eye (See Page 96)
						RS - Male Threaded Stud For Rod End (See Page 96)
						RF, RT, RN, RY, RV, RH, R_ - Rod Extensions (See Page 96 and Ordering Information)
						Nil - Nonmagnetic Piston M - Magnetic piston

1st Stroke in 1mm Increments
(Must be the longest of the 2 strokes)
(See Ordering Information and How It Works)

2nd Stroke in 1mm Increments
(Must be the shortest of the 2 strokes)
(See Ordering Information and How It Works)

Nil - No Mounts
(Mounting with rod ends)
MF - Front Mount
MS - Side Mount
FF - Front Flange
FS - Side Flange
(For Flanges See Page 92 & 93)
(Mounting is always on 1st stroke Cylinder)

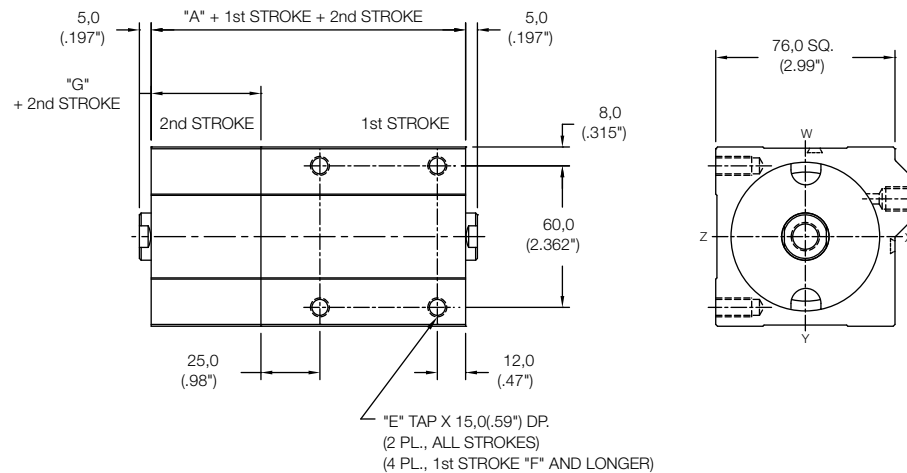
Back to Back Cylinder Front Mount Cylinder "MF"



MODEL	PISTON	"A"	"F"	"G"	PISTON	"A"	"F"	"G"
BS	Non-Mag	56,0(2.20")	45,0mm(1.77")	26,37(1.04")	Mag	66,0(2.60")	40,0mm(1.58")	31,37(1.24")
BE	Non-Mag	76,0(2.99")	35,0mm(1.38")	36,37(1.43")	Mag	86,0(3.39")	30,0mm(1.18")	41,37(1.63")
BH	Non-Mag	96,0(3.78")	25,0mm(.98")	46,37(1.83")	Mag	106,0(4.17")	20,0mm(.79")	51,37(2.02")

Side Mount Cylinder "MS"

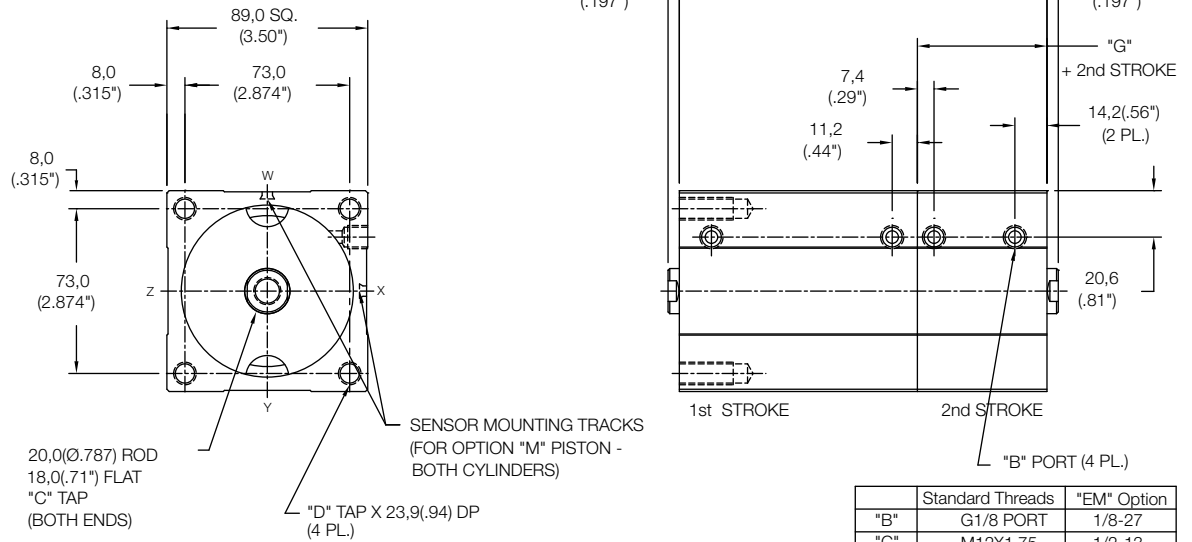
(All dimensions not shown same as "MF")



MODEL	BORE	1st STROKE	2nd STROKE	MOUNTING	PISTON TYPE	OPTIONS
-------	------	------------	------------	----------	-------------	---------

- 1st Stroke in 1mm Increments
(Must be the longest of the 2 strokes)
(See Ordering Information and How It Works)
- 2nd Stroke in 1mm Increments
(Must be the shortest of the 2 strokes)
(See Ordering Information and How It Works)
- Nil - No Mounts
(Mounting with rod ends)
MF - Front Mount
MS - Side Mount
FF - Front Flange
FS - Side Flange
(For Flanges See Page 92 & 93)
(Mounting is always on 1st stroke Cylinder)
- Nil - Nonmagnetic Piston
M - Magnetic piston
- EM - Inch Threads and Ports
- HS - FKM Seals
(See Page 97 and Ordering Information)
- RE - Rod Eye
(See Page 96)
- RS - Male Threaded Stud For Rod End
(See Page 96)
- RF, RT, RN, RY, RV, RH, R_ - Rod Extensions
(See Page 96 and Ordering Information)

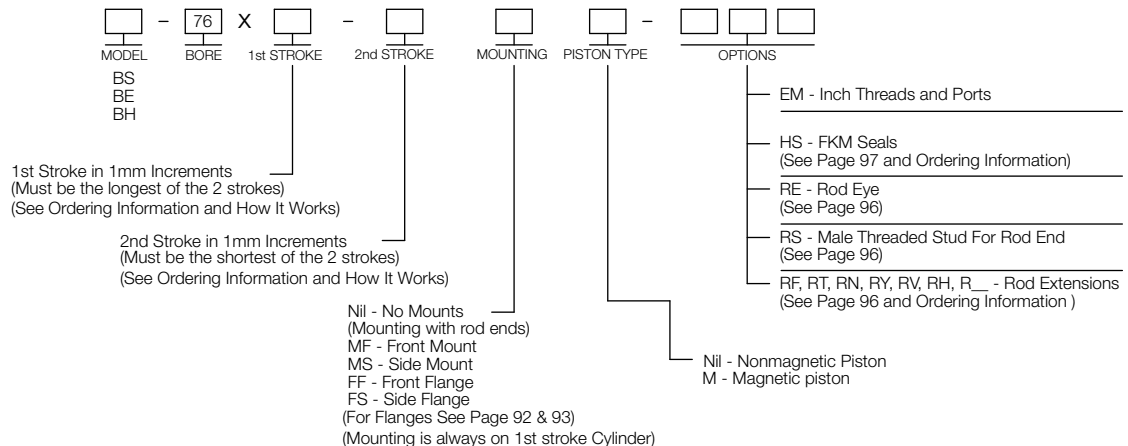
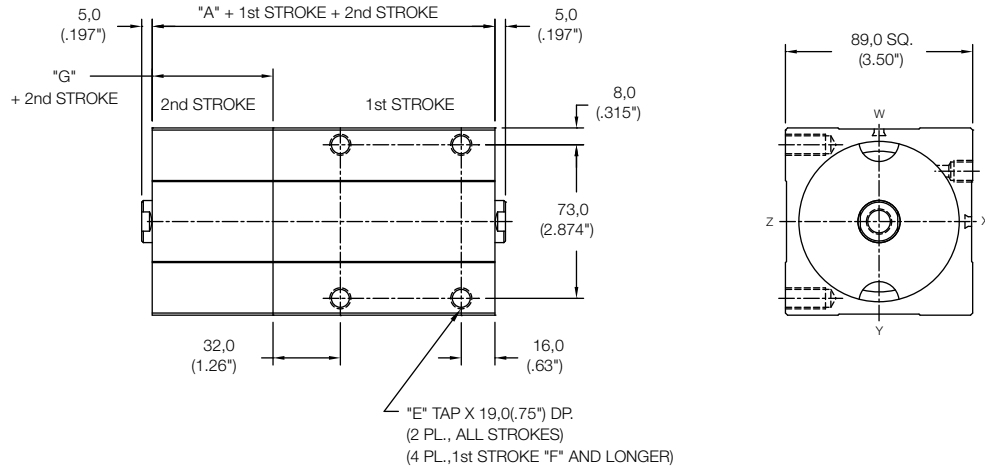
Back to Back Cylinder Front Mount Cylinder "MF"



MODEL	PISTON	"A"	"F"	"G"	PISTON	"A"	"F"	"G"
BS	Non-Mag	67,0(2.64")	45,0mm(1.77")	31,52(1.24")	Mag	77,0(3.03")	40,0mm(1.58")	36,52(1.44")
BE	Non-Mag	87,0(3.43")	35,0mm(1.38")	41,52(1.63")	Mag	97,0(3.82")	30,0mm(1.18")	46,52(1.83")
BH	Non-Mag	107,0(4.21")	25,0mm(.98")	51,52(2.03")	Mag	117,0(4.61")	20,0mm(.79")	56,52(2.23")

Side Mount Cylinder "MS"

(All dimensions not shown same as "MF")



ACCESSORIES

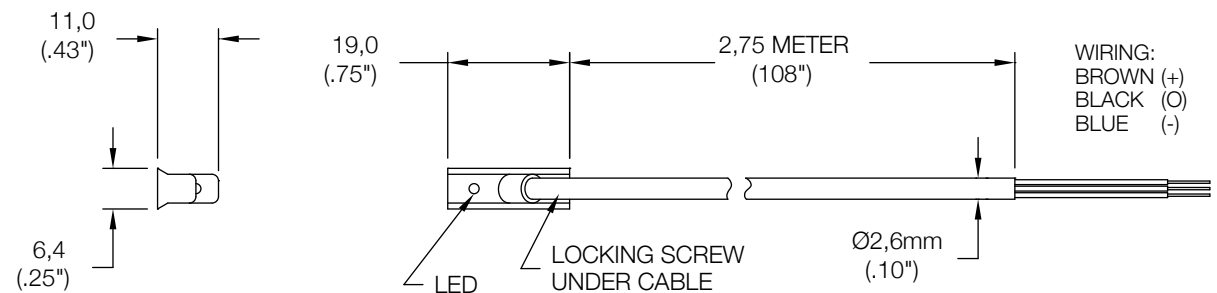


Solid State Limit Sensors

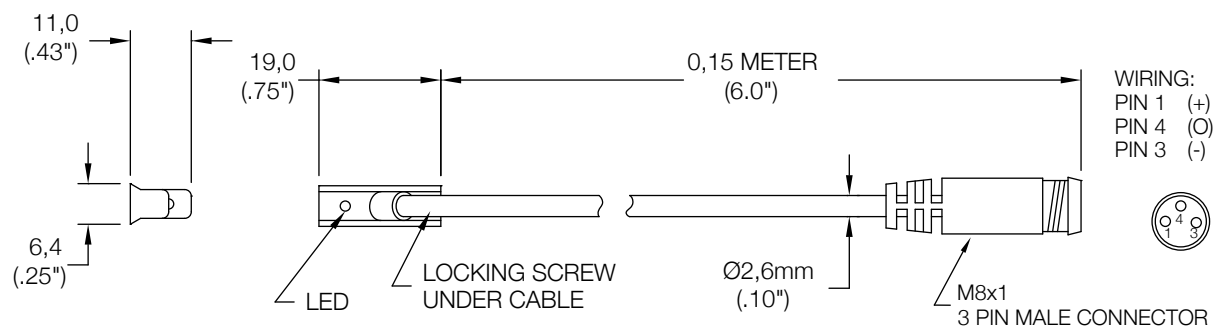
Nason limit sensors are magnetically activated digital output devices. They are on/off devices used to sense piston location on Nason "L" series cylinders. A magnet is added to the piston of the cylinder and a 60° dovetail is machined into the cylinder body to allow the sensors to be added. Magnetostrictive technology (similar to Hall Effect) is used to produce the sensors. This results in greater sensitivity and reduced dead-band compared to Hall devices.

Specifications		
Part Number	SKS, SKP	SCS, SCP
Switch Logic	Solid State Output, Normally Open	Solid State Output, Normally Open
Sensor Type	NPN, Current Sinking	PNP, Current Sourcing
Operating Voltage	5-28 VDC	
Switching Current	200mA max.	
Voltage Drop	1.0 V max	
Switching Power	4.8 Watts max.	
LED Indicator: Switch Active	Red	
Operating Temperature	-20°C to 80°C (-4°F to 176°F)	
Switching Speed	4 μ S operate, 4 μ S release	
Enclosure Classification	IP67, NEMA 6	
Cable	2.6 dia, 3C, 26 AWG, Black PVC	
Housing	Glass-filled Polypropylene	
Shock	50 G max	
Vibration	9 G max	

Flying Lead Sensors - Part #: SKS, SCS



Quick Disconnect Sensors - Part #: SKP, SCP



Mates with Part Number "SR" sensor receptacle. See page 90.

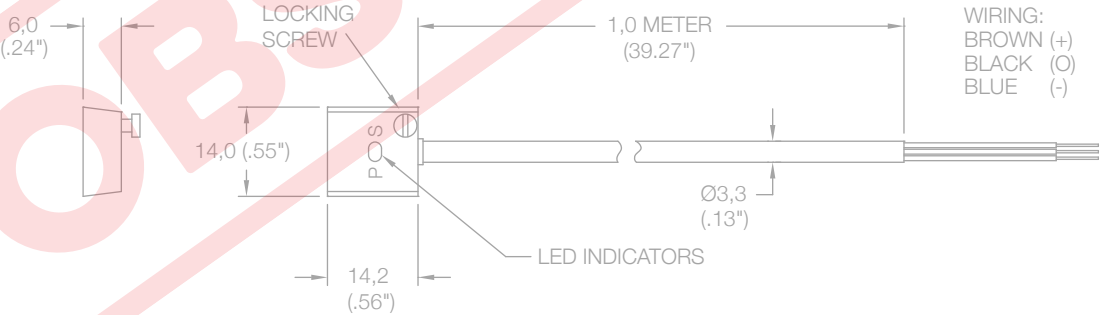
OBSOLETE

Low Profile Solid State Limit Sensors

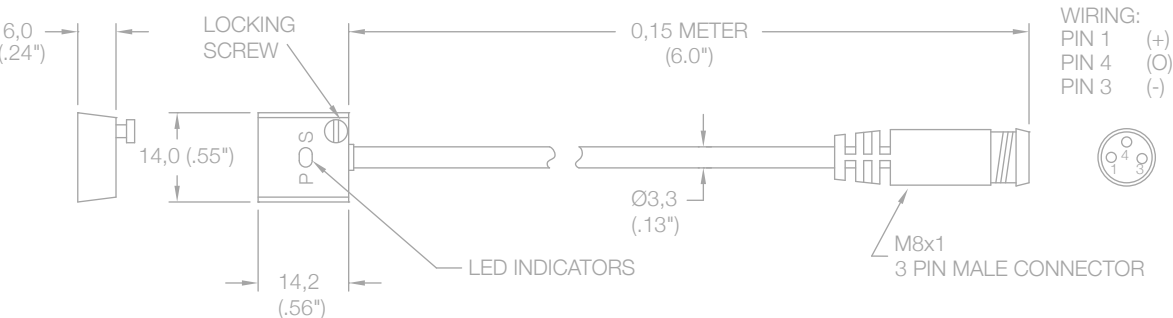
Nason limit sensors are magnetically activated digital output devices. They are on/off devices used to sense piston location on Nason "C" series cylinders. A magnet is added to the piston of the cylinder and a dovetail is machined into the cylinder body to allow the sensors to be added. Magneto-resistive technology (similar to Hall Effect) is used to produce the sensors. This results in greater sensitivity and reduced dead-band compared to Hall devices.

Specifications		
Part Number	NPL, NPP	PNL, PNP
Switch Logic	Solid State Output, Normally Open	Solid State Output, Normally Open
Sensor Type	NPN, Current Sinking	PNP, Current Sourcing
Operating Voltage	5-28 VDC	
Current Consumption: On Off	16mA @ 24 VDC	14mA @ 24 VDC
	7mA @ 24 VDC	7mA @ 24 VDC
Switching Current	100mA @ 24 VDC, 30mA @ 5 VDC	
Voltage Drop	1.5 V max @ 100mA	
Response Frequency	1 KHz max	
LED Indicators: Power On Switch Active	Green	
	Red	
Operating Temperature	-10°C to 70°C (14°F to 158°F)	
Circuit Protection	Reverse Polarity, Surge Suppression	
Enclosure Classification	IEC 529 IP67, NEMA 6P	
Cable	3.3 dia, 3C, 24 AWG, Black PVC	
Housing	Zinc Diecast - Black	Zinc Diecast - Silver
Shock	50 G max	
Vibration	9 G max	

Flying Lead Sensors - Part #: NPL, PNL



Quick Disconnect Sensors - Part #: NPP, PNP

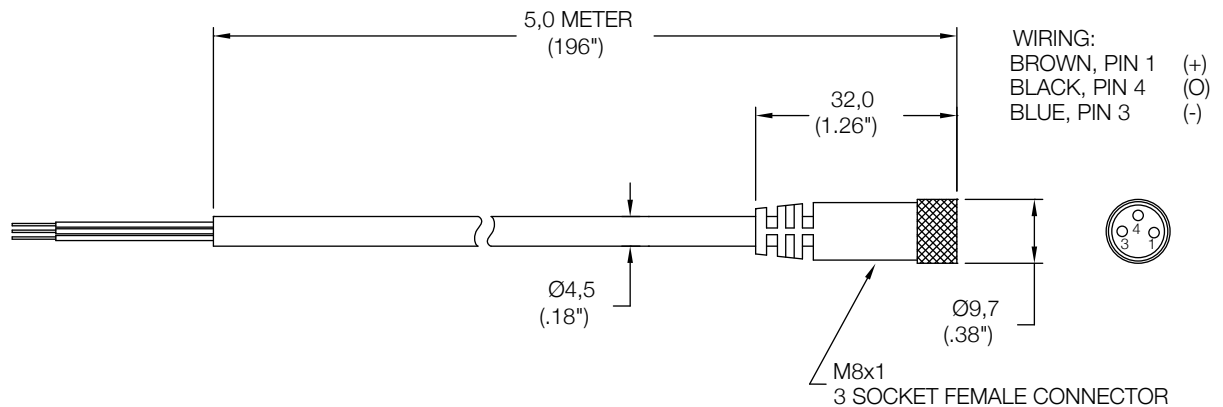


Mates with Part Number "SR" sensor receptacle. See page 90.

Sensor Receptacle

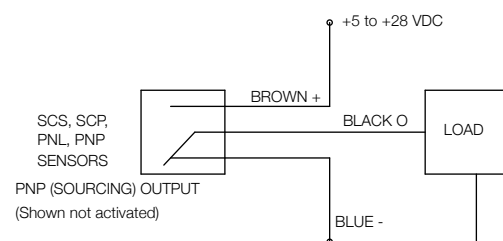
8mm female molded locking connector
Mates with SCP, SKP, NPP, PNP Sensors

Part #: SR

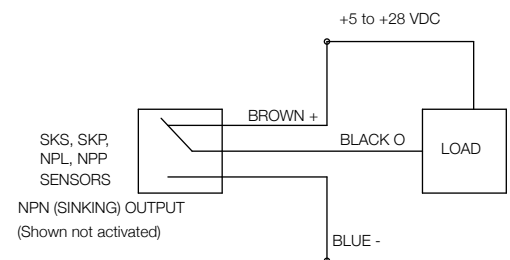


Sensor Schematics

PNP (Sourcing) output sensors complete a circuit by connecting the load to the supply current. These sensors are typically used on controllers with a single power supply. All sensors will utilize the same supply voltage.



NPN (Sinking) output sensors complete a circuit by connecting the load to ground. These sensors are typically used on controllers with multiple power supplies. All sensors can utilize different supply voltages. The ground is their common factor.

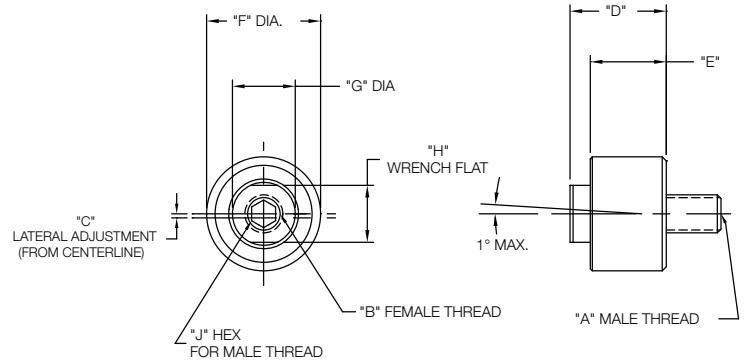


Important Notes

- All Nason sensors are magnetically activated devices. Cylinders should be ordered with option "M" for a magnetic piston.
- Presence of electromagnetic fields, external magnets, welding fields, etc. may effect operation of Nason sensors.
- Temperature ratings for sensors should be observed and will override seal option temperature ratings of the cylinder.

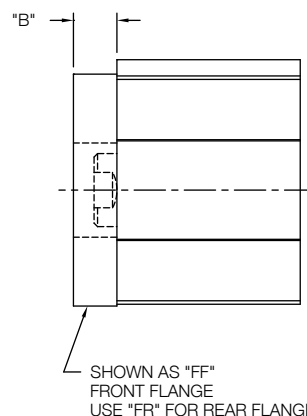
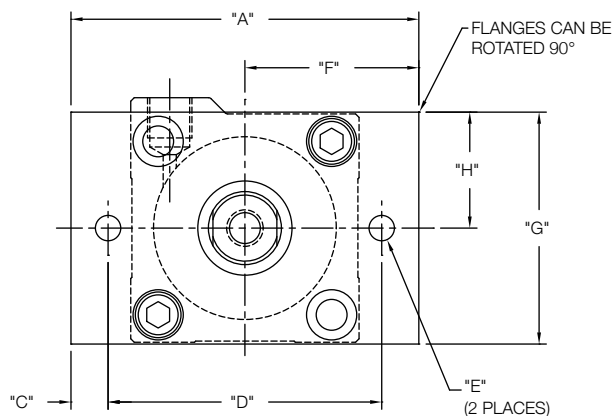
Features

- Hardened Steel Components with Black Oxide Finish
- 0,15mm (.006") Max. Axial Play
- Temperature rating -10°C to 204°C (0°F to 400°F)



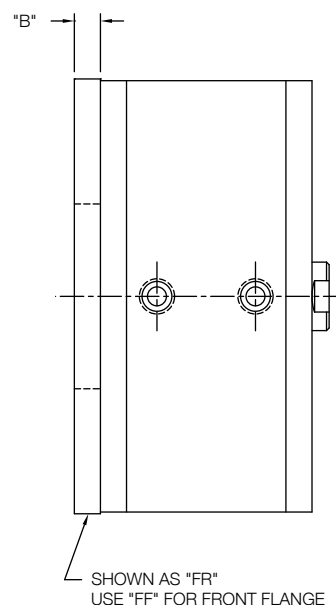
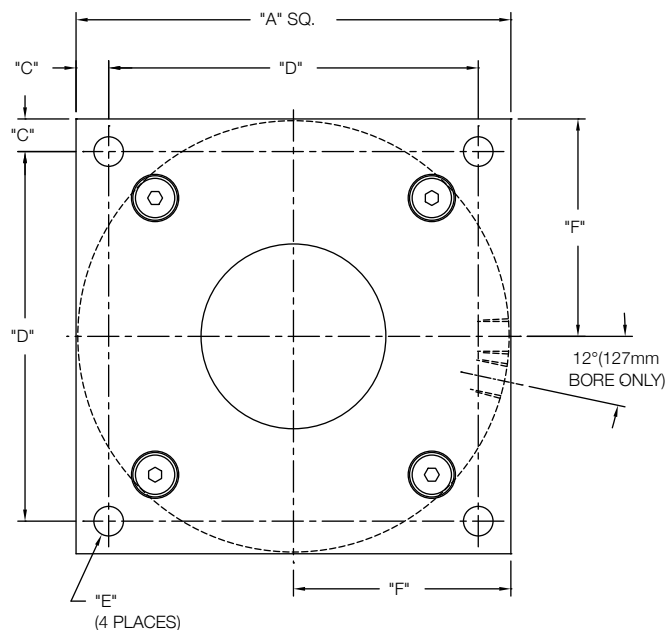
										Load Rating
Bore Part Number	A Male Thread	B Female Thread	C	D	E	F	G	H	J	Max Pull 5 X S.F.
AC-M4	M4x0,7 X 6,3mm	M4x0,7 X 5,5mm	0,5 (.02")	10,3 (.40")	8,7 (.34")	14,0 (.55")	6,0 (.24")	5,0 (.20")	2,5	.67 kN (150 lbs.)
AC-M4-C8	M4x0,7 X 6,3mm	#8-32 X .22"							5/64	
AC-C8	#8-32 X .31"	#8-32 X .22"								
AC-C8-M4	#8-32 X .31"	M4x0,7 X 5,5mm	0,8 (.03")	14,3 (.56")	10,3 (.41")	19,0 (.75")	8,0 (.31")	7,0 (.28")	3	1.11 kN (250 lbs.)
AC-M5	M5x0,8 X 8,4mm	M5x0,8 X 8,0mm							3/32	
AC-M5-F10	M5x0,8 X 8,4mm	#10-32 X .31"								
AC-M5-C10	M5x0,8 X 8,4mm	#10-24 X .31"								
AC-F10	#10-32 X .31"	#10-32 X .31"								
AC-F10-M5	#10-32 X .31"	M5x0,8 X 8,0mm								
AC-F10-C10	#10-32 X .31"	#10-24 X .31"								
AC-C10	#10-24 X .31"	#10-24 X .31"								
AC-C10-M5	#10-24 X .31"	M5x0,8 X 8,0mm								
AC-C10-F10	#10-24 X .31"	#10-32 X .31"								
AC-M6	M6x1,0 X 9,5mm	M6x1,0 X 11,0mm	0,8 (.03")	19,3 (.76")	14,3 (.56")	28,5 (1.13")	12,7 (.50")	11,0 (.43")	4	3.55 kN (800 lbs.)
AC-M6-C14	M6x1,0 X 9,5mm	1/4-20 X .44"							1/8	
AC-M6-F14	M6x1,0 X 9,5mm	1/4-28 X .44"								
AC-C14	1/4-20 X .41"	1/4-20 X .44"								
AC-C14-M6	1/4-20 X .41"	M6x1,0 X 11,0mm								
AC-C14-F14	1/4-20 X .41"	1/4-28 X .44"								
AC-F14	1/4-28 X .41"	1/4-28 X .44"								
AC-F14-M6	1/4-28 X .41"	M6x1,0 X 11,0mm								
AC-F14-C14	1/4-28 X .41"	1/4-20 X .44"	0,8 (.03")	21,0 (.83")	16,0 (.63")	28,5 (1.13")	12,7 (.50")	11,0 (.43")	5	4.66 kN (1050 lbs.)
AC-M8	M8x1,25 X 13,7mm	M8x1,25 X 12,0mm							5/32	
AC-M8-C516	M8x1,25 X 13,7mm	5/16-18 X .50"								
AC-M8-F516	M8x1,25 X 13,7mm	5/16-24 X .50"								
AC-C516	5/16-18 X .54"	5/16-18 X .50"								
AC-C516-M8	5/16-18 X .54"	M8x1,25 X 12,0mm								
AC-C516-F516	5/16-18 X .54"	5/16-24 X .50"								
AC-F516	5/16-24 X .54"	5/16-24 X .50"								
AC-F516-M8	5/16-24 X .54"	M8x1,25 X 12,0mm								
AC-F516-C516	5/16-24 X .54"	5/16-18 X .50"	0,8 (.03")	24,0 (.95")	19,0 (.75")	28,5 (1.13")	16,0 (.63")	14,0 (.55")	6	7.11 kN (1600 lbs.)
AC-M10	M10x1,5 X 13,7mm	M10x1,5 X 14,0mm							3/16	
AC-M10-F38	M10x1,5 X 13,7mm	3/8-24 X .56"								
AC-M10-C38	M10x1,5 X 13,7mm	3/8-16 X .56"								
AC-F38	3/8-24 X .54"	3/8-24 X .56"								
AC-F38-M10	3/8-24 X .54"	M10x1,5 X 14,0mm								
AC-F38-C38	3/8-24 X .54"	3/8-16 X .56"								
AC-C38	3/8-16 X .54"	3/8-16 X .56"								
AC-C38-M10	3/8-16 X .54"	M10x1,5 X 14,0mm								
AC-C38-F38	3/8-16 X .54"	3/8-24 X .56"	1,5 (.06")	35,0 (1.38")	28,5 (1.13")	38,0 (1.50")	19,0 (.75")	17,0 (.67")	8	15.55 kN (3500 lbs.)
AC-M12	M12x1,75 X 21,8mm	M12x1,75 X 22,0mm							1/4	
AC-M12-C12	M12x1,75 X 21,8mm	1/2-13 X .88"								
AC-M12-F12	M12x1,75 X 21,8mm	1/2-20 X .88"								
AC-C12	1/2-13 X .88"	1/2-13 X .88"								
AC-C12-M12	1/2-13 X .88"	M12x1,75 X 22,0mm								
AC-C12-F12	1/2-13 X .88"	1/2-20 X .88"								
AC-F12	1/2-20 X .88"	1/2-20 X .88"								
AC-F12-M12	1/2-20 X .88"	M12x1,75 X 22,0mm								
AC-F12-C12	1/2-20 X .88"	1/2-13 X .88"								

Face Flange Mounting - "FF" & "FR" 12mm Thru 76mm Bores



Material: Anodized Aluminum

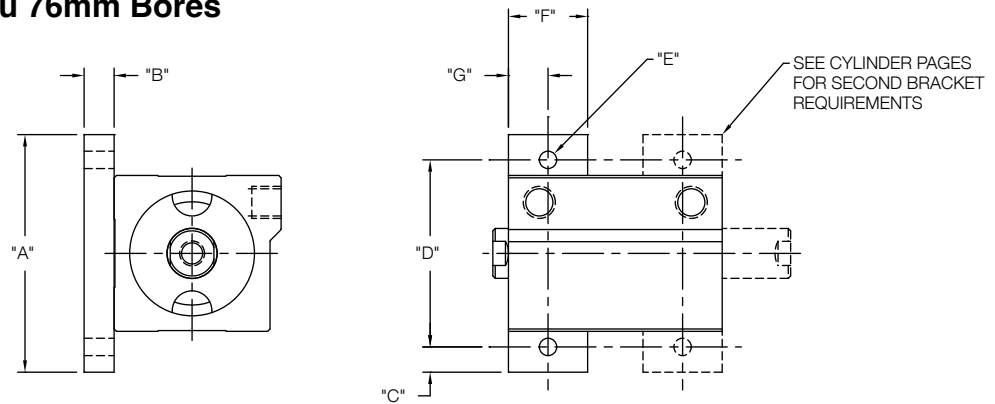
Face Flange Mounting - "FF" & "FR" 101mm Thru 152mm Bores



Material:
101mm Bore - Anodized Aluminum
127mm & 152mm Bore - Zinc Plated Steel

BORE	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"
12	50,8 (2.0")	6,4 (.25")	5,4 (.21")	40,0 (1.58")	4,5 (.18")	25,4 (1.0")	22,2 (0.88")	11,1 (.44")
20		9,5 (.38")	5,4 (.21")	43,0 (1.69")			31,8 (1.25")	15,9 (.63")
25		9,5 (.38")	5,4 (.21")	43,0 (1.69")			38,1 (1.50")	19,05 (.75")
28,5	63,5 (2.5")	6,4 (.25")	6,4 (.25")	50,8 (2.00")	5,5 (.22")	31,8 (1.25")	44,5 (1.75")	22,25 (.88")
32	76,2 (3.0")	9,5 (.38")	5,75 (.23")	52,0 (2.05")		38,1 (1.50")	50,8 (2.00")	25,4 (1.00")
40			8,1 (.32")	60,0 (2.36")			63,5 (2.50")	31,8 (1.25")
50	93,0 (3.66")	12,7 (.50")	7,5 (.30")	78,0 (3.07")	8,5 (.33")	46,5 (1.83")	63,5 (2.50")	31,8 (1.25")
63	120,0 (4.72")	19,05 (.75")	9,0 (.35")	102,0 (4.02")	10,5 (.41")	59,9 (2.36")	76,2 (3.00")	38,1 (1.50")
76	133,1 (5.24")	19,05 (.75")	9,5 (.38")	115,1 (4.53")		66,5 (2.62")	88,9 (3.50")	44,45 (1.75")
101	127,0 (5.0")		9,5 (.38")	108,0 (4.25")		63,5 (2.50")	N/A	N/A
127	177,8 (7.0")	9,5 (.38")	12,7 (.50")	152,4 (6.00")	10,5 (.41")	88,9 (3.50")	N/A	N/A
152								

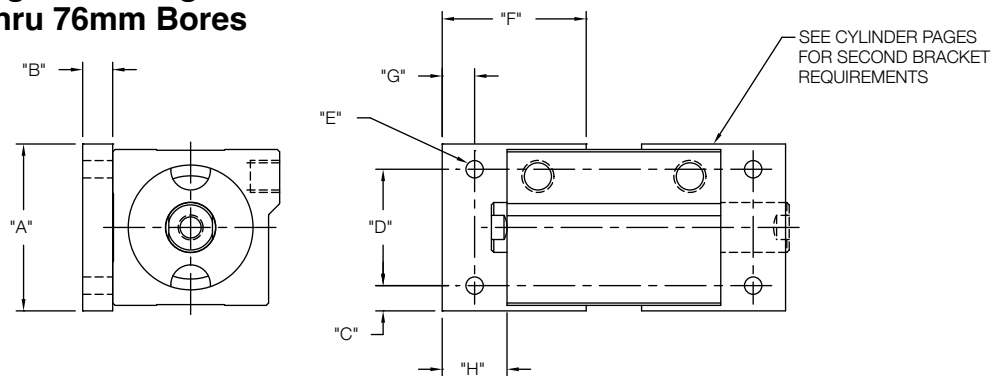
Side Flange Mounting - "FS" 12mm Thru 76mm Bores



Material: Anodized Aluminum

Bore	"A"	"B"	"C"	"D"	"E"	"F"	"G"
12	44,5 (1.75")	6,35 (.25")	4,8 (.19")	35 (1.38")	4,5 (.18")	16 (.63")	7,9 (.31")
20	50,8 (2.0")	9,5 (.38")	5,4 (.21")	40 (1.58")		19 (.75")	9,5 (.38")
25			3,9 (.15")	43 (1.69")			
28,5	63,5 (2.5")	4,8 (.19")	6,35 (.25")	50,8 (2.0")	5,5 (.22")	25,4 (1.00")	12,7 (.50")
32		9,5 (.38")	5,75 (.23")	52 (2.05")	5,5 (.22")		
40	76,2 (3")		8,1 (.32")	60 (2.36")	8,5 (.33")		
50	93 (3.66")	12,7 (.50")	7,5 (.30")	78 (3.07")	10,5 (.41")		
63	120 (4.72")	19 (.75")	9,0 (.35")	102 (4.02")			
76	133 (5.24")			115 (4.53")			

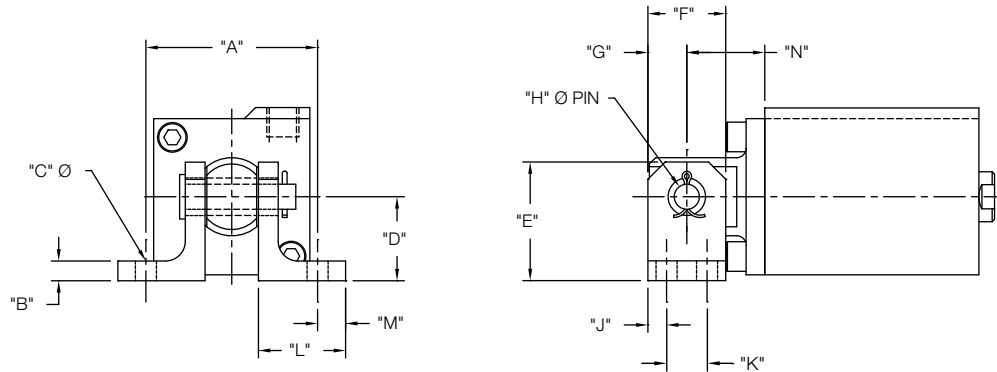
End Flange Mounting - "FE" 12mm Thru 76mm Bores



Material: Anodized Aluminum

Bore	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"
12	25,4 (1.00")	6,35 (.25")	4,2 (.17")	17,0 (.67")	4,5 (.18")	24,0 (.95")	4,0 (.16")	8,0 (.32")
20	31,8 (1.25")	9,5 (.38")	4,4 (.17")	23,0 (.91")		27,0 (1.06")		
25	38,1 (1.50")		4,05 (.16")	30,0 (1.18")				
28,5	38,1 (1.50")	4,8 (.19")	4,8 (.19")	28,6 (1.13")	5,6 (.22")	28,6 (1.13")	4,8 (.19")	9,7 (.38")
32	44,5 (1.75")	9,5 (.38")	5,0 (.20")	34,5 (1.36")	5,5 (.22")	35,4 (1.39")	5,0 (.20")	10,0 (.39")
40	50,8 (2.00")		4,9 (.19")	41,0 (1.61")				
50	63,5 (2.50")	12,7 (.50")	8,0 (.32")	47,5 (1.87")	8,5 (.33")	41,4 (1.63")	8,0 (.32")	16,0 (.63")
63	76,2 (3.00")	19 (.75")	10,1 (.40")	56,0 (2.20")	10,5 (.41")	45,4 (1.79")	10,0 (.39")	20,0 (.79")
76	88,9 (3.50")		9,95 (.39")	69,0 (2.72")				

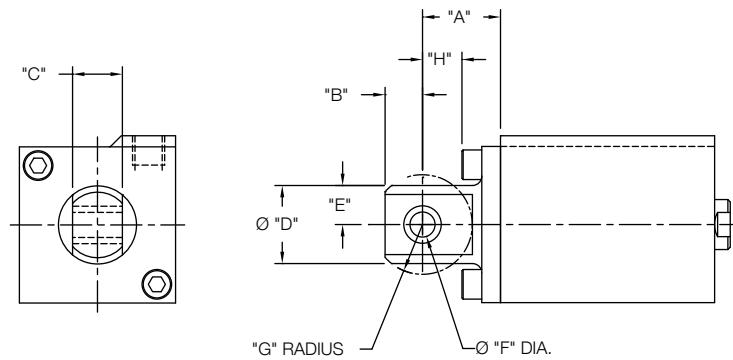
Long Pivot Mounting Style - "PL"



Bore	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"	"K"	"L"	"M"	"N"
20	48,8 (1.92")	6,35 (.25")	5,4 (.21")	20 (.79")	31,8 (1.25")	25 (.98")	12,5 (.49")	8,0 (.32")	6,0 (.24")	13 (.51")	25,0 (.98")	7,0 (.28")	23,0 (.91")
25	52,8 (2.08")		5,5 (.22")	27 (1.06")	38,1 (1.50")	25,4 (1.0")	12,7 (.50")	7,9 (.31")	6,35 (.25")	12,7 (.50")	25,4 (1.0")	9,7 (.38")	25,0 (.98")
28.5	48,3 (1.90")		6,8 (.27")	22 (.87")	31,8 (1.25")	25 (.98")	12,5 (.49")	8,0 (.32")	6,0 (.24")	13 (.51")	28,0 (1.10")	9,0 (.35")	
32	54,9 (2.16")	9,53 (.38")	27 (1.06")	38,1 (1.50")	50,8 (2.00")	35 (1.38")	17,5 (.69")	10,0 (.39")	8,0 (.32")	19 (.75")	30,0 (1.18")	13,0 (.51")	
40	58,7 (2.31")		34 (1.34")	50,8 (2.00")	63,5 (2.50")	40 (1.58")	20,0 (.79")		8,0 (.32")	19 (.75")	36,0 (1.42")	16,0 (.63")	40,0 (1.58")
50	65,8 (2.59")		46 (1.81")	63,5 (2.50")	76,2 (3.00")	50 (1.97")	25,0 (.98")		10,0 (.39")	20 (.79")	40,0 (1.58")	16,0 (.63")	
63	67,8 (2.67")												
76	73,7 (2.90")												

- LONG PIVOTS ALLOW FOR A MINIMUM 180° OF MOVEMENT
- LONG PIVOTS ARE ANODIZED ALUMINUM WITH SINTERED BRONZE BEARINGS
- PIVOT PINS ARE STEEL WITH STEEL COTTER PIN, INCLUDED

Pivot on Rear Face Mounting Style - "PR"



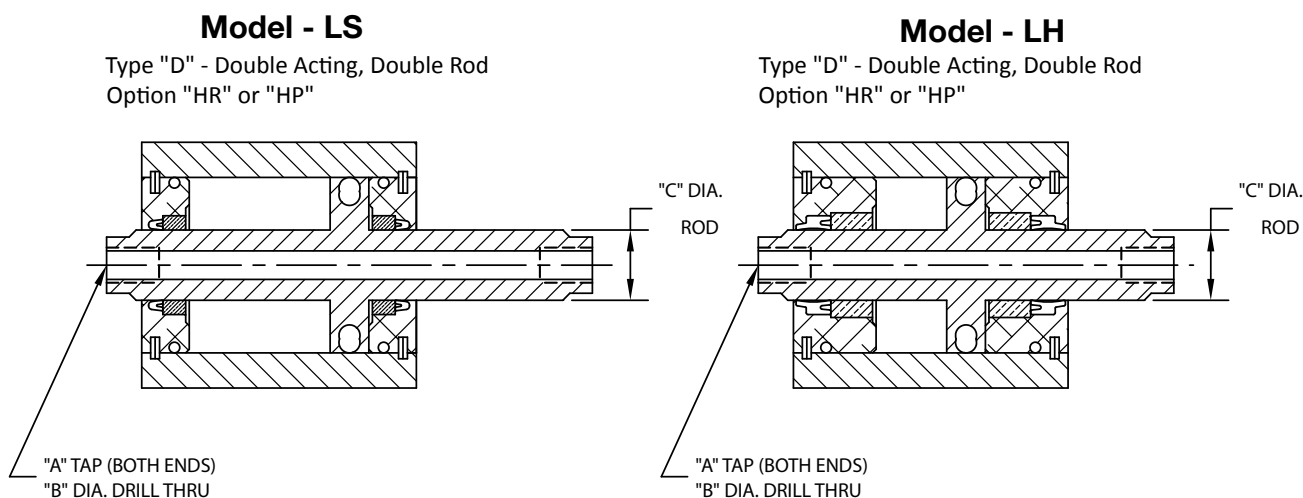
Bore	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"
12	20 (.79")	5,9 (.23")	6 (.24")	12 (.47")	6 (.24")	5 (.20")	13,9 (.55")	10,9 (.43")
20	23 (.91")	12 (.47")	12 (.47")	22 (.87")	11 (.43")	8 (.32")	14 (.55")	12,5 (.49")
25			16 (.63")			25 (.98 ")	12,5(.49")	
28.5	7,9 (.31")			16 (.63")	12 (.47")			
32								
40								
50	40 (1.58")	14 (.55")	19 (.75")	35 (1.38")	17,5 (.69")	10 (.39")	25 (.98")	23 (.91")
63			25 (.98")	40 (1.58")	20 (.79")		21 (.83")	
76								

- REAR PIVOT CAN BE ROTATED 90°
- REAR PIVOT OPTION IS ONLY AVAILABLE ON SINGLE END MODELS ONLY
- REAR PIVOTS ARE ANODIZED ALUMINUM WITH A SINTERED BRONZE BEARING

Hollow Rod

Hollow Rod - Options "HR" and "HP"
Thru hole for type "D" in Models "LS" and "LH"

"HR" - Hollow rod with standard taps
"HP" - Hollow rod with taps for fittings

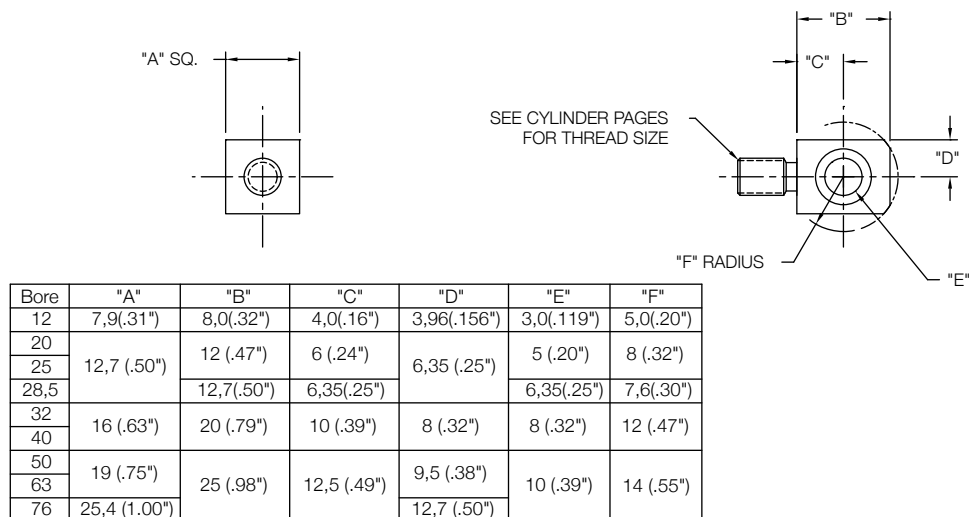


		HR Standard		HR "EM" Option		HP Standard		HP "EM" Option	
Bore	"C" Dia. Rod	"A" Tap	"B" Dia Thru	"A" Tap	"B" Dia Thru	"A" Tap	"B" Dia Thru	"A" Tap	"B" Dia Thru
20	8,0 (.315")	NA	NA	NA	NA	M5x0,8	1,2mm(.05")	#10-32	1,2mm(.05")
25	10,0 (.394")	NA	NA	NA	NA	M5x0,8	1,2mm(.06")	#10-32	1,2mm(.06")
28.5	12,0(.472")	5/16-18	6,9mm(.26")	NA	NA	M5x0,8	1,2mm(.16")	#10-32	1,2mm(.16")
32	12,0(.472")	M6X1,0	5,1mm(.20")	1/4-20	5,1mm(.20")	M5x0,8	1,2mm(.16")	#10-32	1,2mm(.16")
40	16,0(.630")	M8X1,25	6,6mm(.26")	5/16-18	6,6mm(.26")	G1/8	8,7mm(.34")	1/8-27 NPTF	8,7mm(.34")
50	16,0(.630")	M10X1,5	8,5mm(.33")	3/8-24	8,5mm(.33")	G1/8	8,7mm(.34")	1/8-27 NPTF	8,7mm(.34")
63	20,0(.787")	M12X1,75	10,2mm (.40")	1/2-13	10,5mm(.42")	G1/4	11,0mm(.43")	1/4-18 NPTF	11,4mm(.45")
76	20,0(.787")	M12X1,75	10,2mm (.40")	1/2-13	10,5mm(.42")	G1/4	11,0mm(.43")	1/4-18 NPTF	11,4mm(.45")
101	20,0(.787")	M12X1,75	10,2mm (.40")	1/2-13	10,5mm(.42")	G1/4	11,0mm(.43")	1/4-18 NPTF	11,4mm(.45")
127	20,0(.787")	M12X1,75	10,2mm (.40")	1/2-13	10,5mm(.42")	G1/4	11,0mm(.43")	1/4-18 NPTF	11,4mm(.45")
152	25,0(.984")	M16X2,0	14,0mm(.55")	5/8-18	14,5mm (.57")	G1/4	11,0mm(.43")	1/4-18 NPTF	11,4mm(.45")

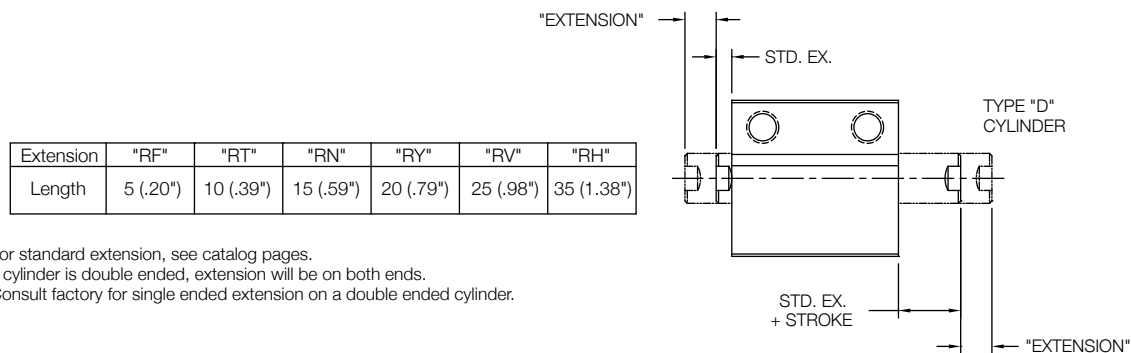
Notes:

- Maximum Operating Pressure of Cylinder with "HR" or "HP" option is 150 PSI Pneumatic Service Only. Not available with "SH" (Hydraulic Seals) Option.
- Pressure Rating for ID of hollow rod is 28inHg (Vacuum) to 150 PSI.
- For oversized rod diameters, undersize rod diameters, large thru holes, and custom threads contact Nason for a Custom Part Number

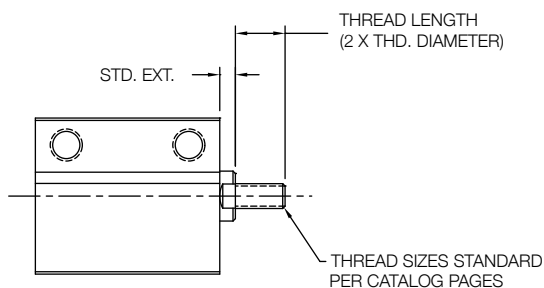
Rod Eye Option - "RE"



Rod Extensions Option - See Chart Below

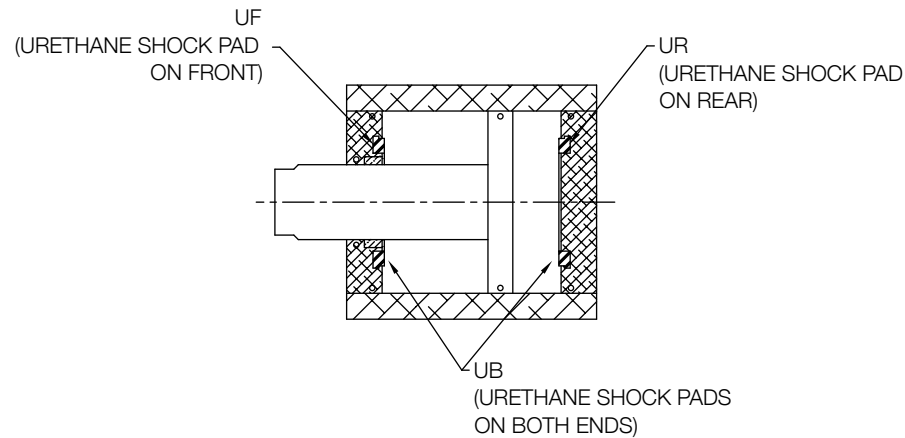


Rod Stud Option - "RS"



Bore	Std. Ext.	Thread Length
12	3 (.12")	8 (.32")
20	3 (.12")	10 (.39")
25	5 (.20")	10 (.39")
28,5	3,2(.13")	16(.63")
32	5 (.20")	12 (.47")
40	5 (.20")	16 (.63")
50	5 (.20")	20 (.79")
63	5 (.20")	24 (.95")
76	5 (.20")	24 (.95")

Urethane Shock Pads Option - "UF", "UR", "UB"



- Urethane shock pads available on 20mm thru 76mm Bores in models LS, LE, LH, and LC.
- Pneumatic service only.
- Temperature rating: -18°C to 82°C (0°F -180°F).
- Use for increased noise reduction, minor piston impact, or high cycle rates.
- Does not increase cylinder length.
- Shock pads mechanically retained in cap and head.
- Shock pads are replaceable.
- Shock pads are NOT suitable replacements in applications requiring shock absorbers.

Seal Options

OPTION	MATERIAL	MODEL	BORE SIZE	PRESSURE RATING	TEMPERATURE RATING	MEDIA
BLANK (NO CODE)	NITRILE	LS, LE, LH	12mm 20mm thru 76mm 101mm thru 152mm	10 BAR (150 PSI) 17 BAR (250 PSI) 14 BAR (200 PSI)	-18°C to 95°C (0°F to 200°F)	Air (Clean, Dry or Lubricated)
HS	FLUOROCARBON	LE, LH	12mm 20mm thru 76mm 101mm thru 152mm	10 BAR (150 PSI) 17 BAR (250 PSI) 14 BAR (200 PSI)	-18°C to 150°C (0°F to 302°F)	Air (Clean, Dry or Lubricated)
SH	NITRILE	LS, LE, LH	20mm thru 76mm	35 BAR (500 PSI)	-10°C to 70°C (14°F to 158°F)	Hydraulic Fluid (Mineral Oil, Water Polyglycol Solutions Water-in-Oil Emulsions)

- Temperature and pressure ratings are based on a combination of seal materials, lubrication, and cylinder design.
- For higher or lower temperature and/or pressure ratings, consult Nason for a custom solution. Nason has successfully designed cylinders to operate at temperature extremes of -40°F and +500°F respectively, as well pressures as low as 5PSI and as high as 3000 PSI.

CR SERIES

STAINLESS STEEL CYLINDERS

Smooth Operation / Long Life

Constructed with low-friction Nitrile seals and factory-lubricated with FDA complaint Food Grade PTFE impregnated grease, the CR series is designed for smooth startup and operation. Its precision machined components and low-friction bearings ensure long life and fluid operation.

Compact Size / Clean Design

Nason CR series cylinders were designed without bolt-together or retaining wire hole access. The smooth exteriors of Nason CR cylinders eliminate areas that traditionally trap dirt or grease. These compact workhorses were designed to stand up to the demanding operating conditions of food service, medical, and other industries.

Rugged Construction

The durable CR series incorporates thick-walled, 303 stainless steel housings and

caps with hardened 302 stainless steel retaining wires for assembly. Its rugged chrome plated 303 stainless steel rods glide effortlessly in composite plastic, FDA compliant bearings.

Rebuildable

All CR series cylinders are conveniently field repairable.

Versatile Design

The CR series cylinders are available in metric bore and rod sizes with inch or metric mounting and porting. Their 100% machined design makes them easy to customize for your specific application.

Magnetic Piston Option

Available magnetic piston options offer end of stroke sensing with Nason's "S" series sensors.

Nason's CR series of Corrosion Resistant pneumatic actuators were designed to be clean, wash down ready devices incorporating 303 stainless steel housings, heads, caps, chrome plated 303 stainless steel rods, 302 retaining wires, and long FDA compliant bearings. Standard bidirectional rod seals are offered with optional stainless steel rod scrapers. Heavy duty rubber rod wipers with integral cup seals are also offered for less demanding applications. Nason also offers front and rear covers that provide smooth end surfaces. These covers are attached with 18-8 stainless hex head bolts to provide smooth surfaces required by many Food Service applications. All units are factory lubricated with FDA compliant food grade grease.

Common Features

Smooth Operation / Long Life

Designed for smooth startup and operation, the CR series contains low friction Nitrile seals and are lubricated at the factory with FDA complaint Food Grade PTFE impregnated grease. Precision machined components and low friction bearings insure long life and continued low friction operation.

Compact Size / Clean Design

Nason CR cylinders were designed with today's food service, medical, and harsh operating conditions in mind. The smooth exterior of the cylinder body (no bolt together or retaining wire hole access) means no dirt or grease traps.

Rugged Construction

The CR series incorporates thick walled, 303 stainless steel housings and caps. Rods are chrome plated 303 stainless

steel riding in composite plastic, FDA compliant bearings. Hardened 302 stainless steel retaining wires are used for assembly.

Rebuildable

All CR series cylinders are field repairable.

Versatile Design

The CR series cylinders are metric in design (bore and rod sizes). They are offered in inch or metric mounting and porting. Due to their 100% machined design, they are easily customized by Nason.

Magnetic Piston Option

The CR series cylinders offer magnetic piston options for end of stroke sensing with Nason's "S" series sensors.

Individual Features

Model - CRS

- Most compact of 2 models
- Bidirectional rod seal

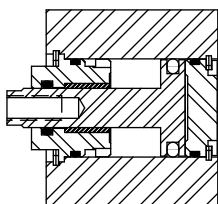
Model - CRH

- Bidirectional rod seal
- Fiber reinforced phenol resin wear band added to piston for additional load support

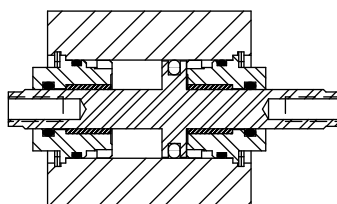
Model - CRS 20mm and 25mm Bores

Model - CRH 20mm and 25mm Bores

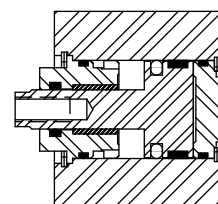
Double Acting,
Single Rod



Type "D" - Double
Acting, Double Rod



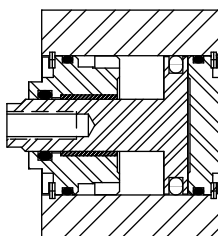
Double Acting,
Single Rod



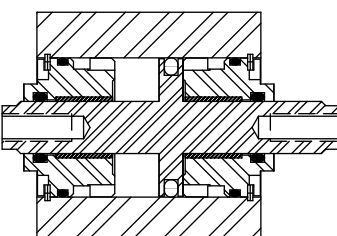
Model - CRS 32mm Bore and Larger

Model - CRH 32mm Bore and Larger

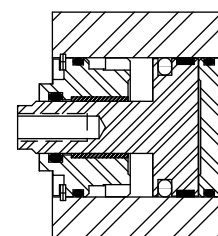
Double Acting,
Single Rod



Type "D" - Double
Acting, Double Rod



Double Acting,
Single Rod



How to Order

Example: Corrosion Resistant Heavy Duty, 32mm Bore, 50mm stroke, Double Acting Single Rod, Tapped Mounting Rod End, Nonmagnetic Piston, FKM Seals, Rear Cover Plate, Rod Wiper

CRH	-	32	X	50		MF	-	HS	RC	RW
MODEL		BORE		STROKE	TYPE	MOUNTING		PISTON TYPE	OPTIONS	

• MODEL

CRS	Standard Duty
CRH	Heavy Duty

• BORE

20	20mm (.79")
25	25mm (.98")
32	32mm (1.26")
40	40mm (1.58")
50	50mm (1.97")
63	63mm (2.48")
76	76.2mm (3.0")

• STROKE

5mm to 100mm in 1mm increments
Note: 20mm-25mm Bores 5-75mm Stroke

See Stroke Table and Product Pages for Availability

• TYPE

Nil	Double Acting, Single Rod
D	Double Acting, Double Rod

• PISTON TYPE

Nil	No Magnet
M	Magnetic Piston

See note #1

• MOUNTING

MF	Threads on Front Face (Rod End)
MR	Threads on Rear Face (Opposite Rod End)
MB	Threads on Both Faces
MT	Drilled Thru for Bolt Clearance

See Product Pages for Availability

• OPTIONS

EM	Inch Threads and Ports
HS	FKM Seals (See Note #1)
FC	Cover Front Plate (Rod End, or Either End on Type "D")
RC	Cover Rear Plate (Cap End, Rear - Opposite Rod on Type Single Rod)
BC	Cover Both Ends (Rod End and Cap End or Both Ends on Type "D")
HR	Hollow rod
HP	Hollow rod with Pipe Taps
RS	Male Thread Stud for Rod End
RF	Additional 5mm Rod Extension
RT	Additional 10mm Rod Extension
RN	Additional 15mm Rod Extension
RY	Additional 20mm Rod Extension
RV	Additional 25mm Rod Extension
RH	Additional 35mm Rod Extension
R_	Additional Custom Rod Extension (See note #2)
RW	Rod Wiper (Heavy Duty Rubber Wiper/Cup Seal on Rod)
MS	Metallic Scraper (Metal Scraper with Standard Rod Seal)
PE	Enlarged Ports (1/4 NPT on 63 and 76 Bore - Must order EM option)
UB	Urethane Shock Pads Both Ends (See note #3)
UF	Urethane Shock Pad Front (See note #3)
UR	Urethane Shock Pad Rear (See note #3)

Note 1 - Magnetic Piston "M" limits temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.).

Note 2 - "R_" Enter desired additional Custom Length Rod extension in mm after "R". Example LE-32X40MSM-EMR20.4 would have a TOTAL ROD EXTENSION of 28.4mm (20.4mm+Standard 8mm extension)

Note 3 - "UB", "UF", "UR" Urethane Shock Pads limit temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Pads are mechanically retained at the Cap faces. "UB" OPTION CHANGES STROKE TOLERANCE TO +/-2mm. "UF" and "UR" OPTION CHANGES STROKE TOLERANCE TO +/-1mm.

Piston Areas and Pressure Ratings

Bore	Piston Area Extend	Piston Area Retract	Maximum Pressure Ratings
			Standard Pneumatic
20	3.14 cm ² (.48 in ²)	2.64 cm ² (.40 in ²)	1.7 MPa (250 PSI)
25	4.91 cm ² (.76 in ²)	4.12 cm ² (.64 in ²)	1.7 MPa (250 PSI)
32	8.04 cm ² (1.25 in ²)	6.91 cm ² (1.07 in ²)	1.7 MPa (250 PSI)
40	12.56 cm ² (1.95 in ²)	10.55 cm ² (1.64 in ²)	1.7 MPa (250 PSI)
50	19.63 cm ² (3.04 in ²)	17.62 cm ² (2.73 in ²)	1.7 MPa (250 PSI)
63	31.17 cm ² (4.83 in ²)	28.03 cm ² (4.34 in ²)	1.7 MPa (250 PSI)
76	45.6 cm ² (7.07 in ²)	42.46 cm ² (6.59 in ²)	1.7 MPa (250 PSI)

Specifications

Media (Standard and HS Seals)	Air – Clean, Dry, or Lubricated
Pre-Lubricated at Factory	NSF – H1/PTFE Thickened
Bearing	Composite Plastic, EC Directive 10/2011 EC and FDA Compliant
Materials	302 and 303 Stainless Steels (Rods Chrome Plated)
Temp. Range (Std.)	-10C to 93C (14F to 200F)
Temp. Range (Mag. Piston)	-10C to 82C (14F to 180F) See Note 2 & 3
Temp. Range (UB Option)	-10C to 82C (14F to 180F) See Note 2 & 3
Temp. Range (HS Option)	-10C to 150C (14F to 302F) See Note 2 & 3
Stroke Tolerance (Std.)	+1mm/-0 (+0.04"/-0)
Stroke Tolerance (UB)	+/-2mm (+/-0.08")
Stroke Tolerance (UF)	+/-1mm (+/-0.04")
Stroke Tolerance (UR)	+/-1mm (+/-0.04")

Available Strokes

20 mm Bore Thru 25 mm Bore – 5 mm through 75 mm in 1mm increments
32 mm Bore Thru 76 mm Bore – 5 mm through 100 mm in 1mm increments

See note #1 and #4

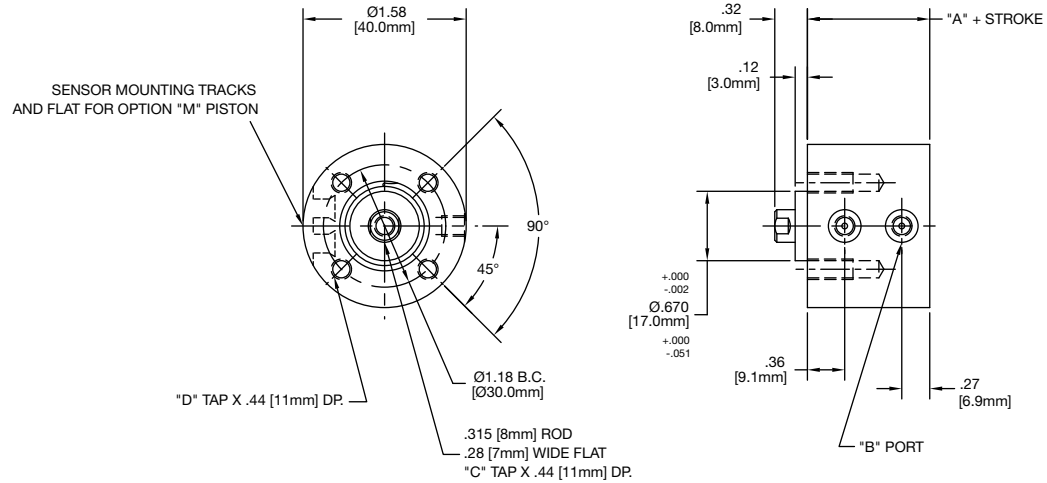
Note 1 - Longer strokes and other increments available upon request

Note 2 - Magnetic Piston "M" limits temperature range to -10C to 82C (14F to 180F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Magnetic Piston and Sensor mounting tracks are provided opposite ports. Other locations available upon request.

Note 3 - "UB", "UF", "UR" Urethane Shock Pads limit temperature range to -10C to 82C (14F to 180F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Pads are mechanically retained at the Cap faces. "UB" OPTION CHANGES STROKE TOLERANCE TO +/-2mm. "UF" and "UR" OPTION CHANGES STROKE TOLERANCE TO +/-1mm.

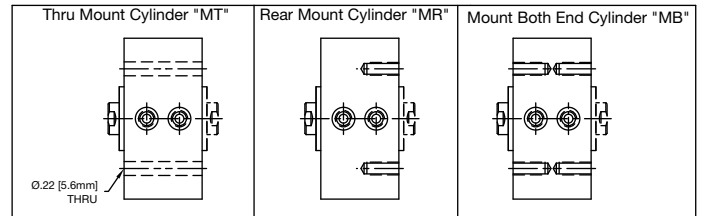
Note 4 - While all Models are offered in all strokes, it is recommended that strokes over 50mm in single rod units use CRH Model for added bearing support at Piston.

Corrosion Resistant Cylinder Type- Single Rod ("MF" Mounting Shown)

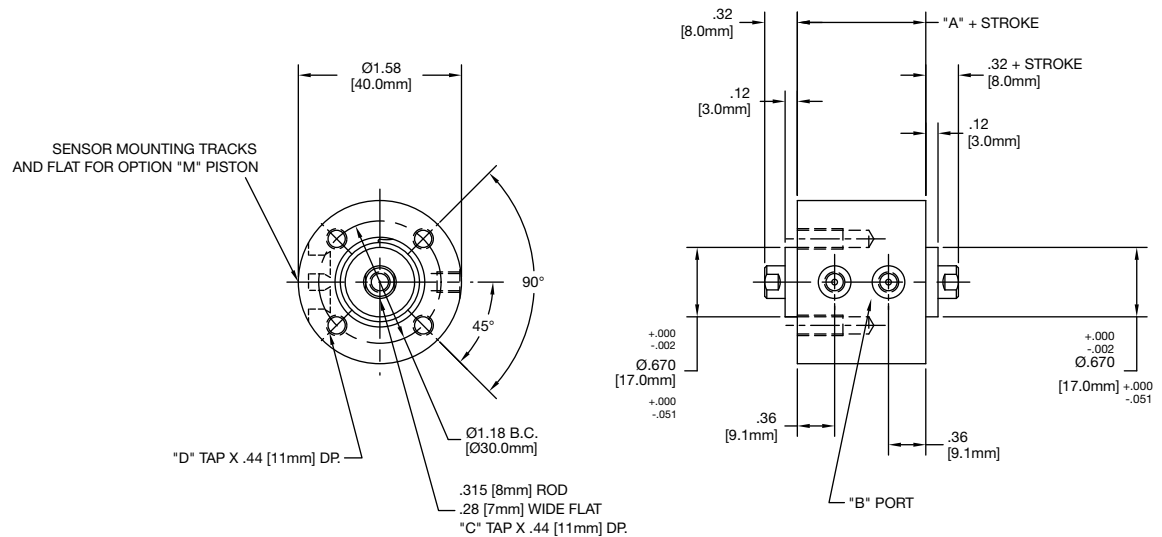


MODEL	PISTON	"A"	PISTON	"A"
CRS	Non-Mag	.98 [25,0]	Mag	1.18 [30,0]
CRH	Non-Mag	1.18 [30,0]	Mag	1.38 [35,0]

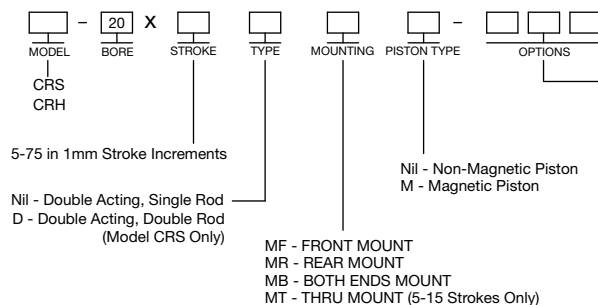
	Standard Threads	"EM" Option
"B"	M5X.8	#10-32
"C"	M5X.8	#10-32
"D"	M5X.8	#10-32



Type - Double Rod "D" ("MF" Mounting Shown)



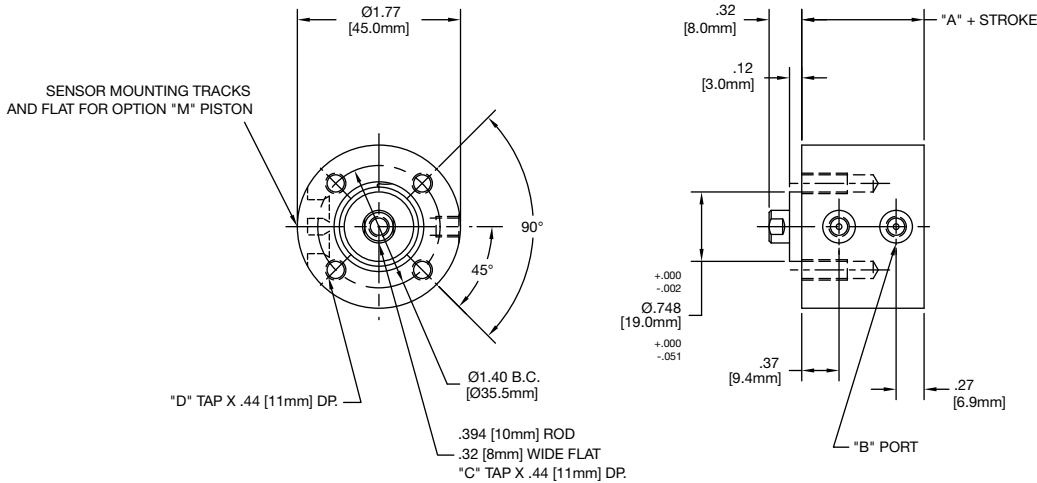
MODEL	PISTON	"A"	PISTON	"A"
CRS	Non-Mag	1.24 [31,5]	Mag	1.44 [36,5]



EM - Inch Threads and Ports
HS - FKM Seals
FC - Cover Front Plate (Rod End, or Either End Type "D")
RC - Cover Rear Plate (Cap End, Rear - Opposite Rod End)
BC - Cover Both Ends (Rod End And Cap End or Both Ends on Type "D")
HR - Hollow Rod
HP - Hollow Rod with Pipe Taps
RS - Male Thread Stud for Rod End
RF - Additional 5mm Rod Extension

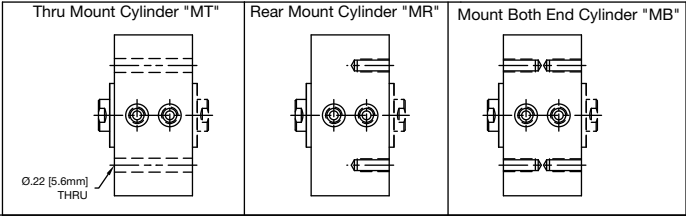
RT - Additional 10mm Rod Extension
RN - Additional 15mm Rod Extension
RY - Additional 20mm Rod Extension
RV - Additional 25mm Rod Extension
RH - Additional 35mm Rod Extension
R_ - Additional Custom Rod Extension
RW - Rod Wiper (Heavy Duty Rubber Wiper and Cup Seal on Rod)
MS - Metallic Scraper (Metallic Scraper with Standard Rod Seal)
UB - Urethane Shock Pads Both Ends
UF - Urethane Shock Pad Rod End
UR - Urethane Shock Pad Cap End (Opposite Rod End)

Corrosion Resistant Cylinder
Type- Single Rod ("MF" Mounting Shown)

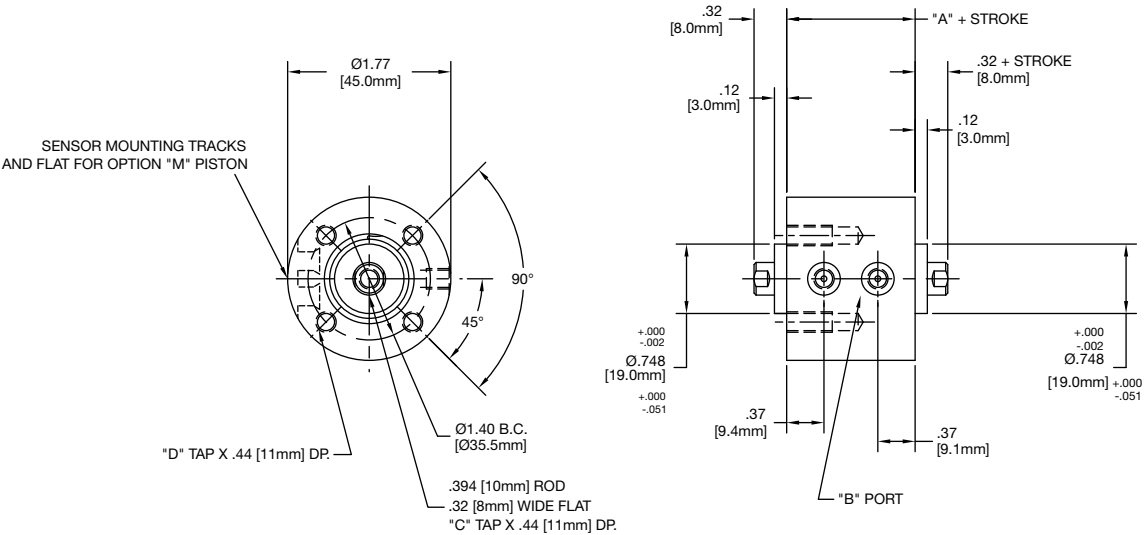


MODEL	PISTON	"A"	PISTON	"A"
CRS	Non-Mag	1.12 [28,5]	Mag	1.32 [33,5]
CRH	Non-Mag	1.32 [33,5]	Mag	1.52 [38,5]

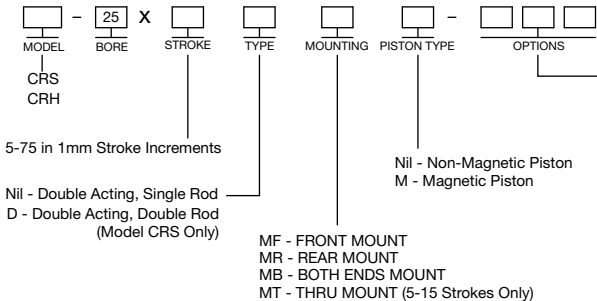
	Standard Threads	"EM" Option
"B"	M5X.8	#10-32
"C"	M5X.8	#10-32
"D"	M5X.8	#10-32



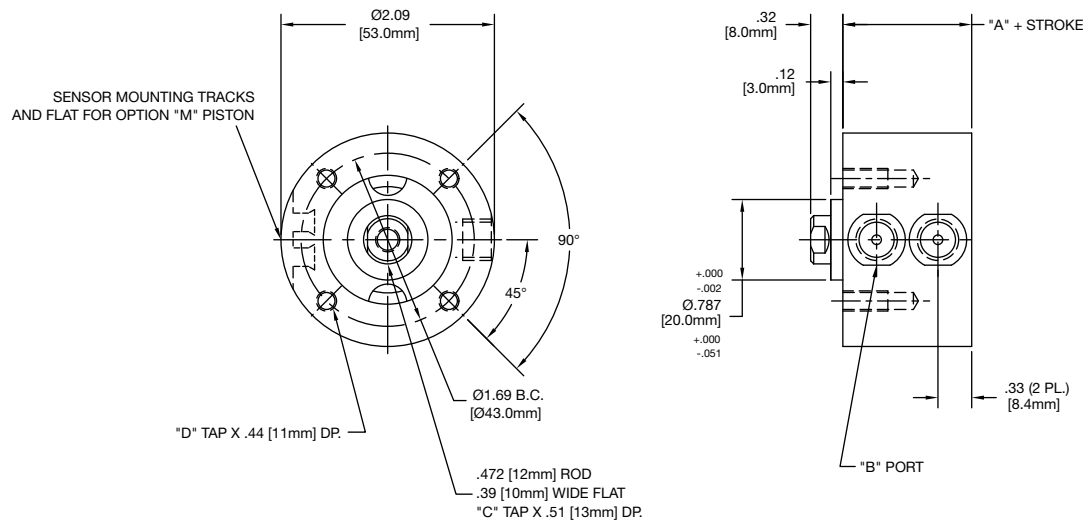
Type - Double Rod "D" ("MF" Mounting Shown)



MODEL	PISTON	"A"	PISTON	"A"
CRS	Non-Mag	1.50 [38,0]	Mag	1.69 [43,0]

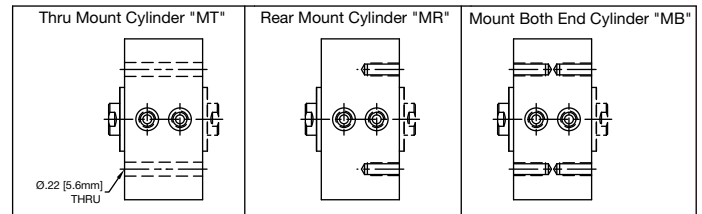


Corrosion Resistant Cylinder Type- Single Rod ("MF" Mounting Shown)

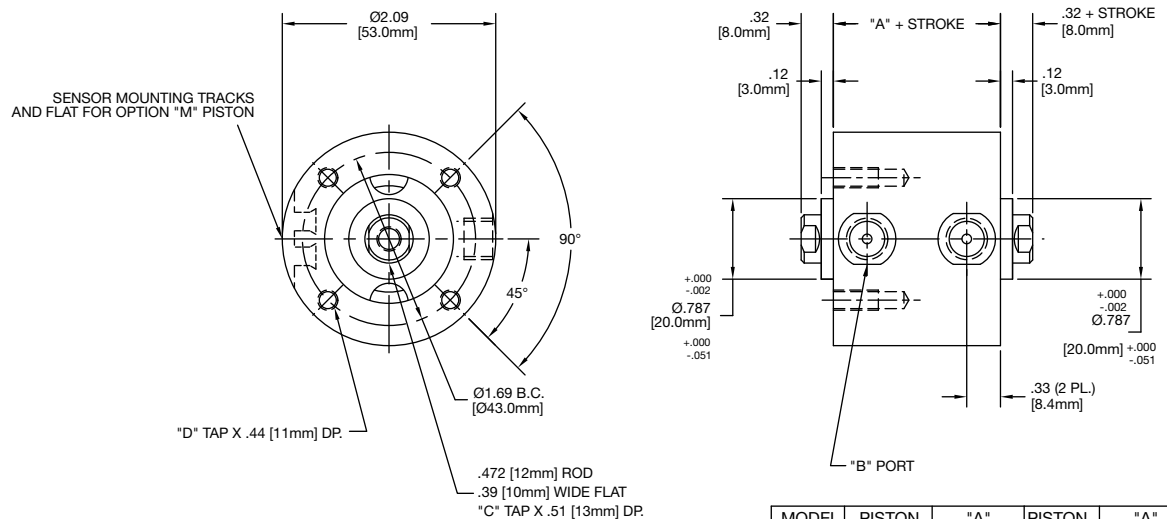


MODEL	PISTON	"A"	PISTON	"A"
CRS	Non-Mag	1.26 [32,0]	Mag	1.46 [37,0]
CRH	Non-Mag	1.46 [37,0]	Mag	1.65 [42,0]

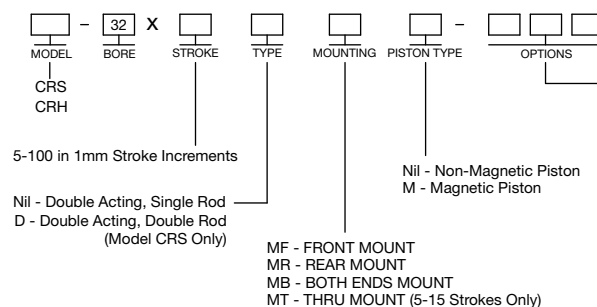
	Standard Threads	"EM" Option
"B"	G1/8 X 7mm DP.	1/8-27 NPTF
"C"	M6X1	1/4-20
"D"	M5X.8	#10-32



Type - Double Rod "D" ("MF" Mounting Shown)



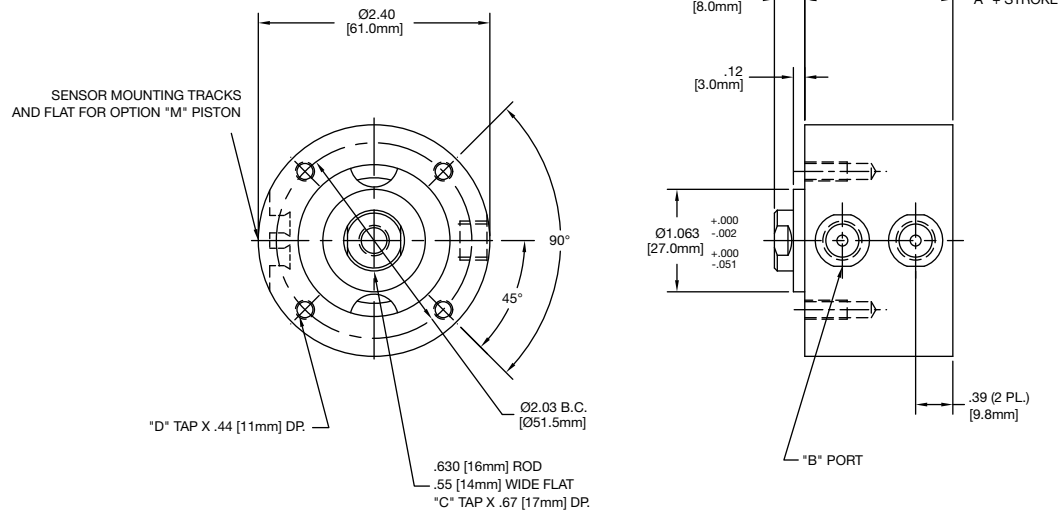
MODEL	PISTON	"A"	PISTON	"A"
CRS	Non-Mag	1.63 [41,5]	Mag	1.83 [46,5]



EM - Inch Threads and Ports
 HS - FKM Seals
 FC - Cover Front Plate (Rod End. or Either End Type "D")
 RC - Cover Rear Plate (Cap End, Rear - Opposite Rod End)
 BC - Cover Both Ends (Rod End And Cap End or Both Ends on Type "D")
 HR - Hollow Rod
 HP - Hollow Rod with Pipe Taps
 RS - Male Thread Stud for Rod End
 RF - Additional 5mm Rod Extension

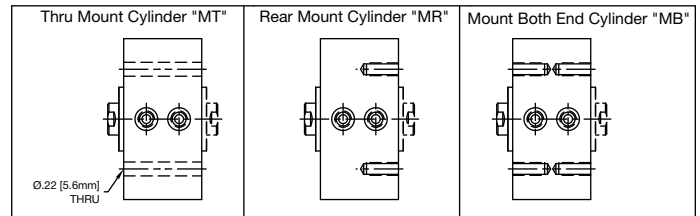
RT - Additional 10mm Rod Extension
 RN - Additional 15mm Rod Extension
 RY - Additional 20mm Rod Extension
 RV - Additional 25mm Rod Extension
 RH - Additional 35mm Rod Extension
 RL - Additional Custom Rod Extension
 RW - Rod Wiper (Heavy Duty Rubber Wiper and Cup Seal on Rod)
 MS - Metallic Scraper (Metallic Scraper with Standard Rod Seal)
 UB - Urethane Shock Pads Both Ends
 UF - Urethane Shock Pad Rod End
 UR - Urethane Shock Pad Cap End (Opposite Rod End)

Corrosion Resistant Cylinder Type- Single Rod ("MF" Mounting Shown)

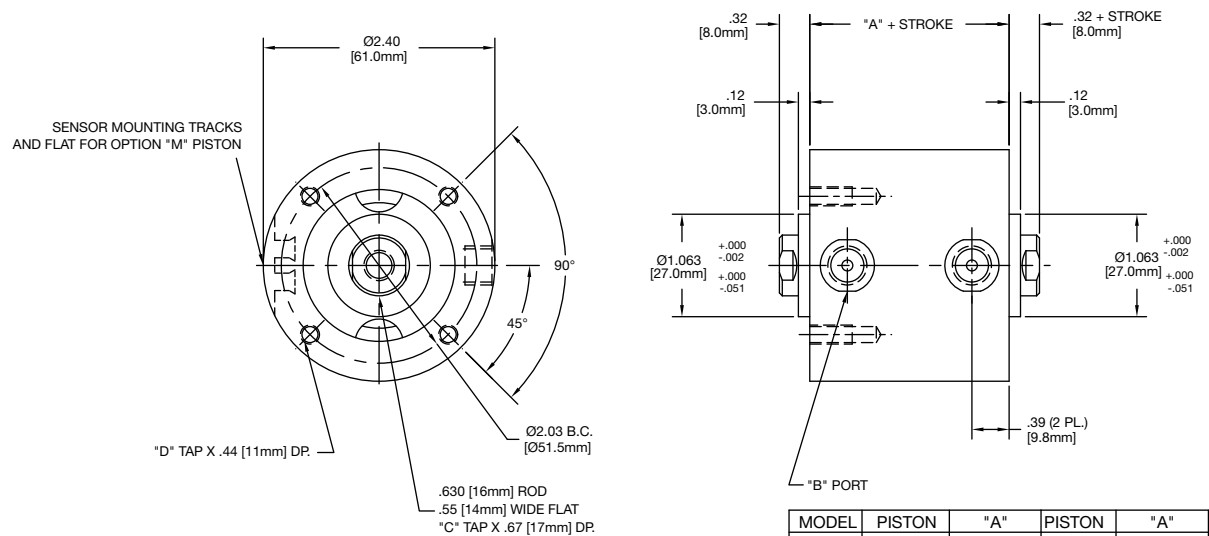


MODEL	PISTON	"A"	PISTON	"A"
CRS	Non-Mag	1.54 [39,0]	Mag	1.73 [44,0]
CRH	Non-Mag	1.73 [44,0]	Mag	1.93 [49,0]

	Standard Threads	"EM" Option
"B"	G1/8 X 7mm DP.	1/8-27 NPTF
"C"	M8X1.25	5/16-18
"D"	M5X.8	#10-32



Type - Double Rod "D" ("MF" Mounting Shown)



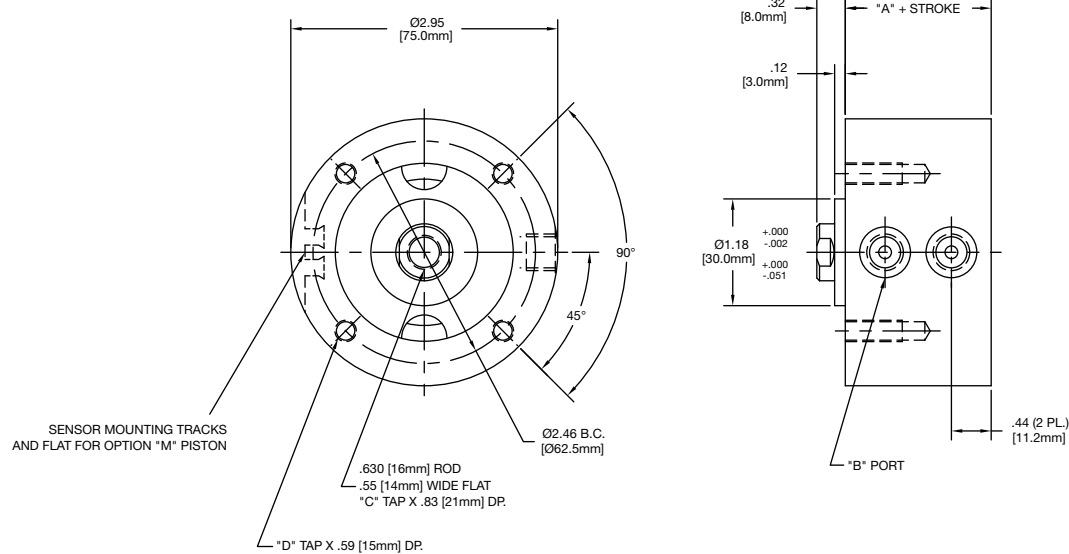
MODEL	PISTON	"A"	PISTON	"A"
CRS	Non-Mag	2.07 [52,5]	Mag	2.26 [57,5]

MODEL	BORE	STROKE	TYPE	MOUNTING	PISTON TYPE	OPTIONS
CRS CRH	40	X				
5-100 in 1mm Stroke Increments						
Nil - Double Acting, Single Rod D - Double Acting, Double Rod (Model CRS Only)						
MF - FRONT MOUNT MR - REAR MOUNT MB - BOTH ENDS MOUNT MT - THRU MOUNT (5-15 Strokes Only)						
Nil - Non-Magnetic Piston M - Magnetic Piston						

EM - Inch Threads and Ports
HS - FKM Seals
FC - Cover Front Plate (Rod End. or Either End Type "D")
RC - Cover Rear Plate (Cap End, Rear - Opposite Rod End)
BC - Cover Both Ends (Rod End And Cap End or Both Ends on Type "D")
HR - Hollow Rod
HP - Hollow Rod with Pipe Taps
RS - Male Thread Stud for Rod End
RF - Additional 5mm Rod Extension

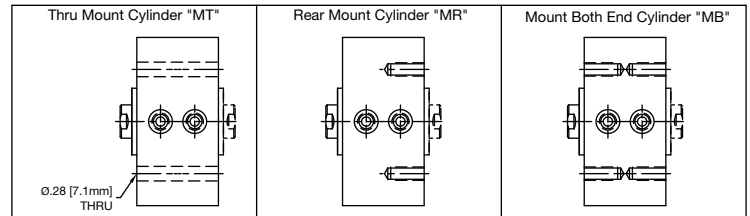
RT - Additional 10mm Rod Extension
RN - Additional 15mm Rod Extension
RY - Additional 20mm Rod Extension
RV - Additional 25mm Rod Extension
RH - Additional 35mm Rod Extension
RL - Additional Custom Rod Extension
RW - Rod Wiper (Heavy Duty Rubber Wiper and Cup Seal on Rod)
MS - Metallic Scraper (Metallic Scraper with Standard Rod Seal)
UB - Urethane Shock Pads Both Ends
UF - Urethane Shock Pad Rod End
UR - Urethane Shock Pad Cap End (Opposite Rod End)

Corrosion Resistant Cylinder Type- Single Rod ("MF" Mounting Shown)

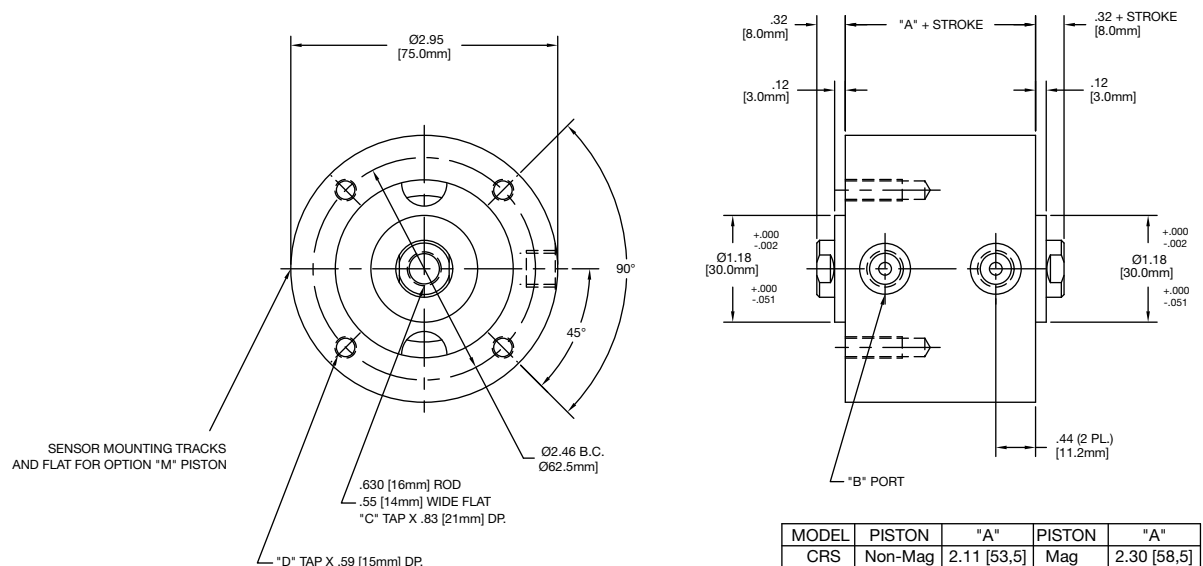


MODEL	PISTON	"A"	PISTON	"A"
CRS	Non-Mag	1.61 [41,0]	Mag	1.81 [46,0]
CRH	Non-Mag	1.81 [46,0]	Mag	2.00 [51,0]

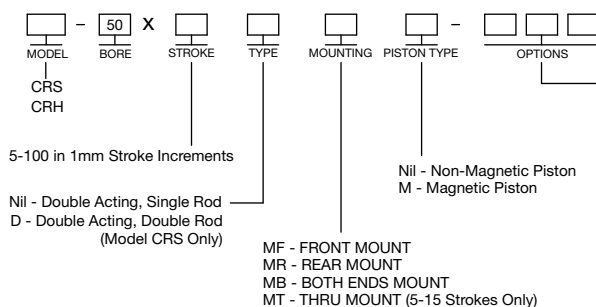
	Standard Threads	"EM" Option
"B"	G1/8 X 8mm DP.	1/8-27 NPTF
"C"	M10X1.5	3/8-24
"D"	M6X1	1/4-20



Type - Double Rod "D" ("MF" Mounting Shown)



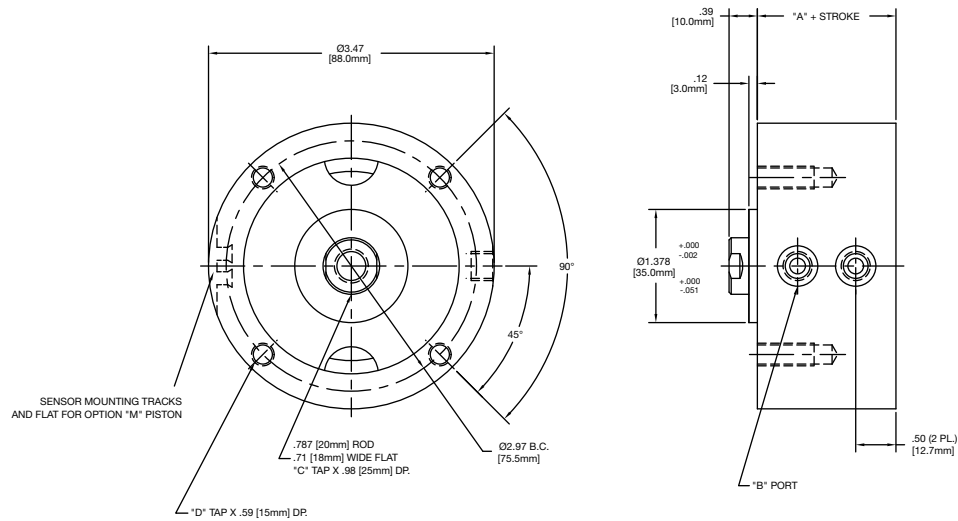
MODEL	PISTON	"A"	PISTON	"A"
CRS	Non-Mag	2.11 [53,5]	Mag	2.30 [58,5]



EM - Inch Threads and Ports
HS - FKM Seals
FC - Cover Front Plate (Rod End. or Either End Type "D")
RC - Cover Rear Plate (Cap End, Rear - Opposite Rod End)
BC - Cover Both Ends (Rod End And Cap End or Both Ends on Type "D")
HR - Hollow Rod
HP - Hollow Rod with Pipe Taps
RS - Male Thread Stud for Rod End
RF - Additional 5mm Rod Extension

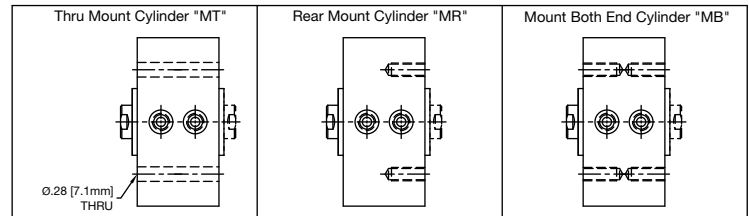
RT - Additional 10mm Rod Extension
RN - Additional 15mm Rod Extension
RY - Additional 20mm Rod Extension
RV - Additional 25mm Rod Extension
RH - Additional 35mm Rod Extension
RL - Additional Custom Rod Extension
RW - Rod Wiper (Heavy Duty Rubber Wiper and Cup Seal on Rod)
MS - Metallic Scraper (Metallic Scraper with Standard Rod Seal)
UB - Urethane Shock Pads Both Ends
UF - Urethane Shock Pad Rod End
UR - Urethane Shock Pad Cap End (Opposite Rod End)

Corrosion Resistant Cylinder Type- Single Rod ("MF" Mounting Shown)

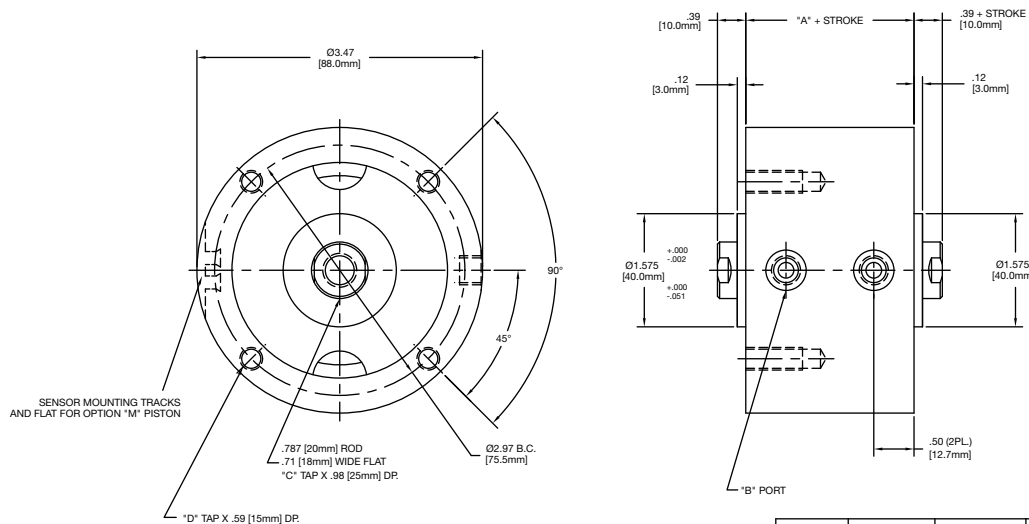


MODEL	PISTON	"A"	PISTON	"A"
CRS	Non-Mag	1.75 [44,5]	Mag	1.95 [49,5]
CRH	Non-Mag	2.15 [54,5]	Mag	2.34 [59,5]

	Standard Threads	"EM" Option
"B"	G1/8 X 8mm DP.	1/8-27 NPTF
"C"	M12X1.75	1/2-13
"D"	M6X1	1/4-20



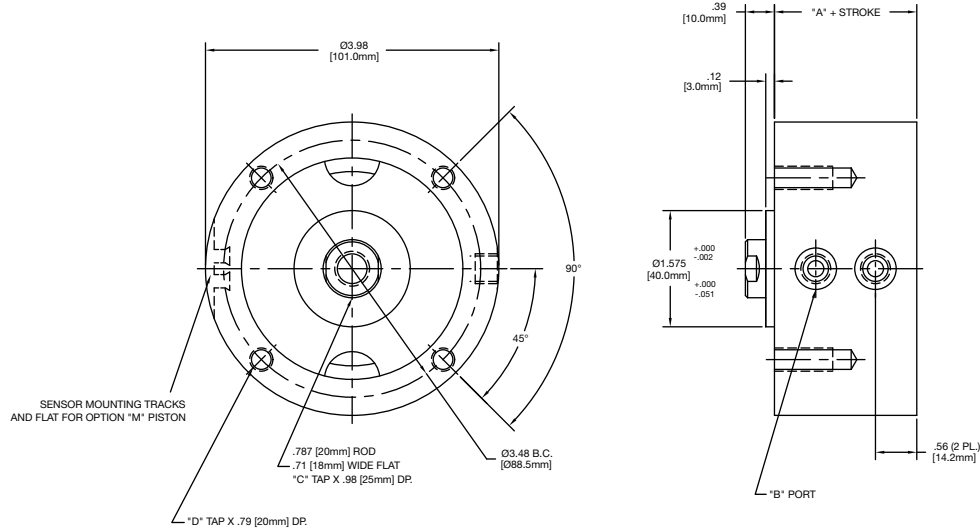
Type - Double Rod "D" ("MF" Mounting Shown)



MODEL	PISTON	"A"	PISTON	"A"
CRS	Non-Mag	2.24 [57,0]	Mag	2.44 [62,0]

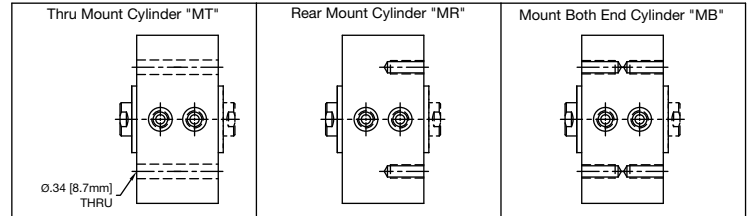
MODEL	BORE	STROKE	TYPE	MOUNTING	PISTON TYPE	OPTIONS
CRS CRH	63	5-100 in 1mm Stroke Increments	Nil - Double Acting, Single Rod D - Double Acting, Double Rod (Model CRS Only)	MF - FRONT MOUNT MR - REAR MOUNT MB - BOTH ENDS MOUNT MT - THRU MOUNT (5-25 Strokes Only)	Nil - Non-Magnetic Piston M - Magnetic Piston	EM - Inch Threads and Ports HS - FKM Seals FC - Cover Front Plate (Rod End. or Either End Type "D") RC - Cover Rear Plate (Cap End, Rear - Opposite Rod End) BC - Cover Both Ends (Rod End And Cap End or Both Ends on Type "D") HR - Hollow Rod HP - Hollow Rod with Pipe Taps RS - Male Thread Stud for Rod End RF - Additional 5mm Rod Extension RT - Additional 10mm Rod Extension RN - Additional 15mm Rod Extension RY - Additional 20mm Rod Extension RV - Additional 25mm Rod Extension RH - Additional 35mm Rod Extension RL - Additional Custom Rod Extension RW - Rod Wiper (Heavy Duty Rubber Wiper and Cup Seal on Rod) MS - Metallic Scraper (Metallic Scraper with Standard Rod Seal) UB - Urethane Shock Pads Both Ends UF - Urethane Shock Pad Rod End UR - Urethane Shock Pad Cap End (Opposite Rod End)

Corrosion Resistant Cylinder Type- Single Rod ("MF" Mounting Shown)

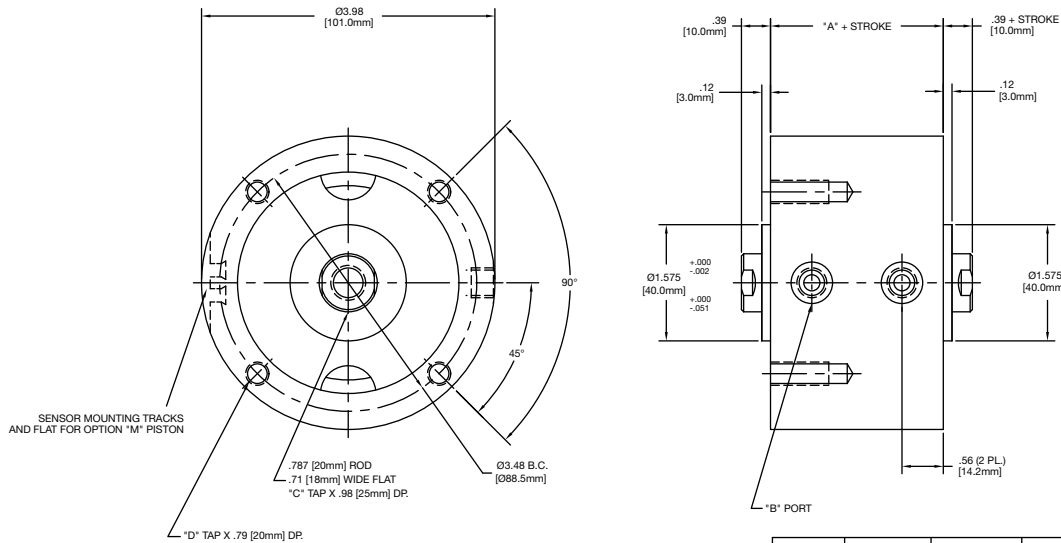


MODEL	PISTON	"A"	PISTON	"A"
CRS	Non-Mag	1.93 [49,0]	Mag	2.13 [54,0]
CRH	Non-Mag	2.32 [59,0]	Mag	2.52 [64,0]

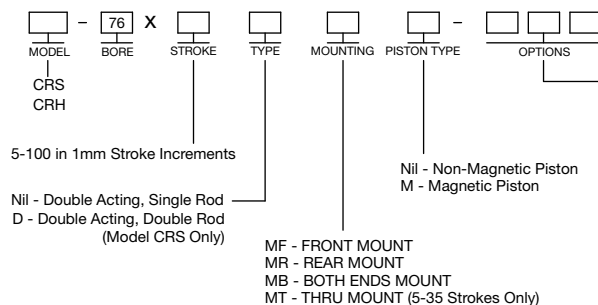
	Standard Threads	"EM" Option
"B"	G1/8 X 8mm DP.	1/8-27 NPTF
"C"	M12X1.75	1/2-13
"D"	M8X1,25	5/16-18



Type - Double Rod "D" ("MF" Mounting Shown)



MODEL	PISTON	"A"	PISTON	"A"
CRS	Non-Mag	2.34 [59,5]	Mag	2.54 [64,5]

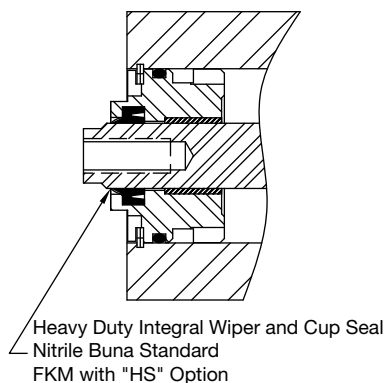


EM - Inch Threads and Ports
HS - FKM Seals
FC - Cover Front Plate (Rod End. or Either End Type "D")
RC - Cover Rear Plate (Cap End, Rear - Opposite Rod End)
BC - Cover Both Ends (Rod End And Cap End or Both Ends on Type "D")
HR - Hollow Rod
HP - Hollow Rod with Pipe Taps
RS - Male Thread Stud for Rod End
RF - Additional 5mm Rod Extension

RT - Additional 10mm Rod Extension
RN - Additional 15mm Rod Extension
RY - Additional 20mm Rod Extension
RV - Additional 25mm Rod Extension
RH - Additional 35mm Rod Extension
R_L - Additional Custom Rod Extension
RW - Rod Wiper (Heavy Duty Rubber Wiper and Cup Seal on Rod)
MS - Metallic Scraper (Metallic Scraper with Standard Rod Seal)
UB - Urethane Shock Pads Both Ends
UF - Urethane Shock Pad Rod End
UR - Urethane Shock Pad Cap End (Opposite Rod End)

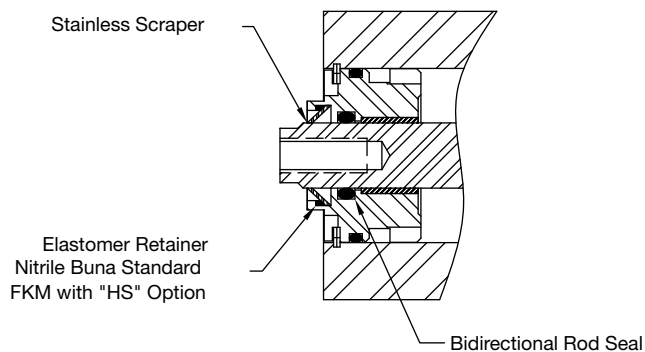
RW - Rod Wiper

Wipes dust and debris from rod



MS - Metallic Scraper (Stainless Steel)

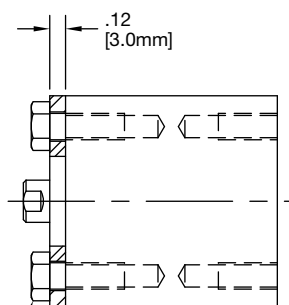
Scrapes dust and debris from rod



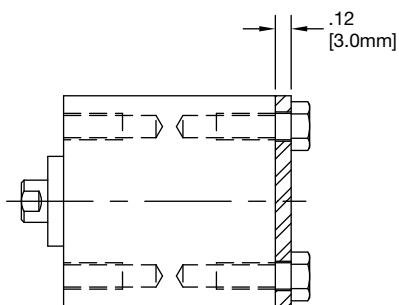
FC, RC, BC - Cover Plates

Covers assemble notches and step bores for smooth, clean ends

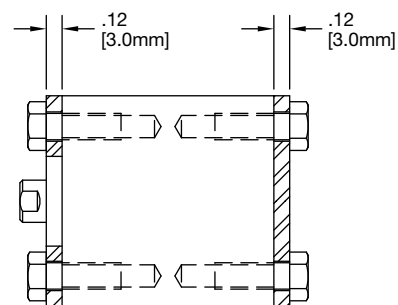
FC - Front Cover Plate



RC - Rear Cover Plate



BC - Both Ends Cover Plates

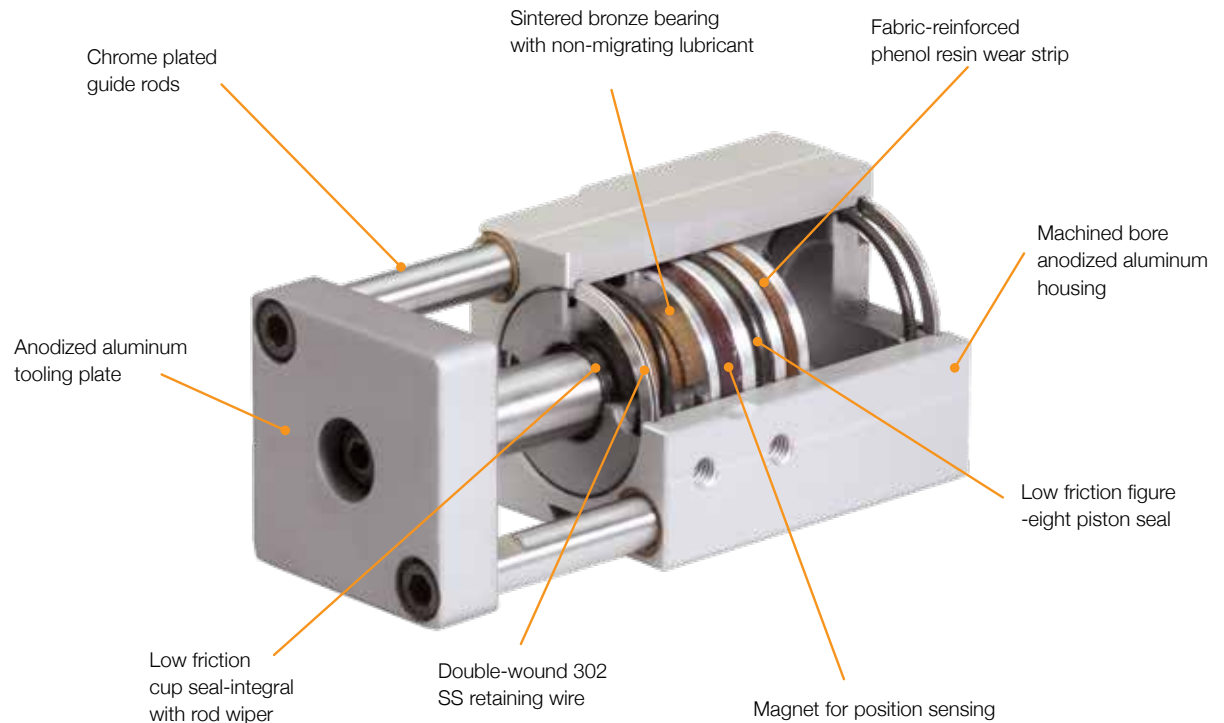


See Product Pages
for Hex Head Bolt Sizes

- Plate Material - 303 Stainless Steel
- Hex head Bolt Material - 18-8 Stainless Steel

LC SERIES

NON-ROTATING LOAD CARRYING CYLINDERS



Common Features

Nason's LC series of pneumatic guided load actuators were designed to be compact, long-lasting, load carrying devices for today's demanding design requirements. They are offered in various mounting styles, bores, and strokes to fulfill the needs of today's design engineers.

Actuator

The LC series guided cylinder actuator is based on Nason's LH cylinder. The extended internal rod bearing, wear banded piston, and integral rod wiper are all standard. Precision-machined components, self-lubricating bearings, and PTFE impregnated lubricant ensure long life and continued low friction operation.

Guiding Mechanism

Oversized, chrome-plated guide rods riding in specially formulated sintered bronze bearings provide rigid load-carrying capability. Guide

rods are located outside the sealed cylinder chamber but inside the overall envelope of the cylinder. The guide rods extend past the cylinder housing to ensure no finger trap exists. The guide rods are piloted into the tooling plate to provide more rigidity and ease of disassembly for modification.

Tooling Plate

Tooling plates are thick, anodized aluminum and are provided with tapped through holes for direct mounting, or through mounting, into your part.

Magnetic Piston Sensing

Magnetic piston and sensor mounting tracks are included as standard. See the sensor section for Nason's solid state sensor selection (sold separately).

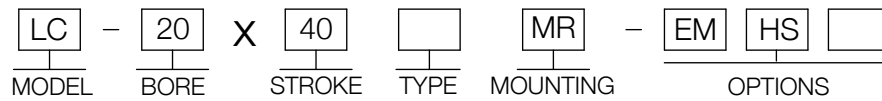
Rebuildable

All LC series cylinders are field-rebuildable.

How to Order

Example:

Part Number: LC-20X40MR-EMHS



MODEL
LC - Non-Rotating, Guided Load cylinder

BORE
12 - 12mm (.47")
20 - 20mm (.79")
25 - 25mm (.98")
28.5 - 28.5mm (1.13")
32 - 32mm (1.26")
40 - 40mm (1.58")
50 - 50mm (1.97")
63 - 63mm (2.48")

STROKE
See Stroke Table

TYPE
Blank (No Code) - Double Acting, Single Rod
D - Double Acting, Double Rod

MOUNTING
MR - Threads on Rear Face (Opposite Rod)
MS - Threads on Side of Cylinder Body
FR - Flange on Rear Face (Opposite Rod)
PR - Pivot on Rear Face

OPTIONS
EM - InchThreads (Mounting, Ports, and Tooling Plate) (See product pages for sizes)
HS - High Temperature Seals -10°C to 150°C (0°F to 302°F) (Available on "LE" and "LH" Models Only)
BP - Blank Tooling Plate (No Holes)
PE - 1/4 Ports (Available on 50 and 63mm Bores) With EM Option
UB - Urethane Shock Pads Both Ends (20 thru 63mm Bores)
UF - Urethane Shock Pad Front (Rod End) (20 thru 63mm Bores)
UR - Urethane Shock Pad Rear (Opposite Rod) (20 thru 63mm Bores)

Note 1 - Magnetic Piston "M" limits temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Magnetic Piston limits Pressure rating 250 PSI (1.7 MPa)

Note 2 - "UB", "UF", "UR" Urethane Shock Pads limit temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Pads are mechanically retained at the Cap faces. "UB" OPTION CHANGES STROKE TOLERANCE TO +/-2mm. "UF" and "UR" OPTION CHANGES STROKE TOLERANCE TO +/-1mm.

Operating Media:	Air (Clean, Dry or Lubricated)
Maximum Operating Pressure:	17 Bar (250 PSI)
Operating Temperature:	-10°C to 95°C (0°F to 180°F)
Packing:	Buna N
Lubrication:	PTFE impregnated grease
Stroke Tolerance:	+0,75mm/-0mm (+0.03"/-0")

Load Chart

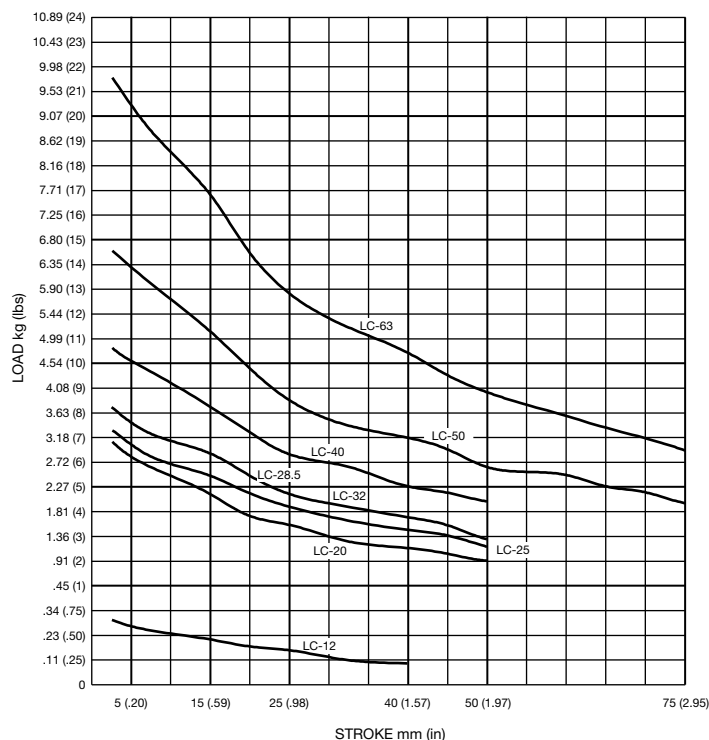
1. Loads based on .08mm (.003") deflection up to 25mm stroke and .16mm (.006") deflection over 25mm stroke and maximum life.
2. Rotational tolerance = +/- .5 degree
3. Speed controls or external shock absorbers are recommended to reduce impact and extend cylinder life.

Piston Area Chart

Bore	Push (Rod Extend)	Pull (Rod Retract)
12	1,13 cm ² (.18 in ²)	0,85 cm ² (.14 in ²)
20	3,14 cm ² (.48 in ²)	2,64 cm ² (.40 in ²)
25	4,91 cm ² (.76 in ²)	4,12 cm ² (.64 in ²)
28.5	6,41 cm ² (1.0 in ²)	5,28 cm ² (.82 in ²)
32	8,04 cm ² (1.25 in ²)	6,91 cm ² (1.07 in ²)
40	12,56 cm ² (1.95 in ²)	10,55 cm ² (1.64 in ²)
50	19,63 cm ² (3.04 in ²)	17,62 cm ² (2.73 in ²)
63	31,17 cm ² (4.83 in ²)	28,03 cm ² (4.34 in ²)

Stock Stroke Table

Bore	Standard Stroke Lengths
12	15, 25, 40
20	15, 25, 40, 50
25	
28.5	12.7, 25.4, 38.1, 50.8
32	15, 25, 40, 50
40	
50	15, 25, 40, 50, 75
63	



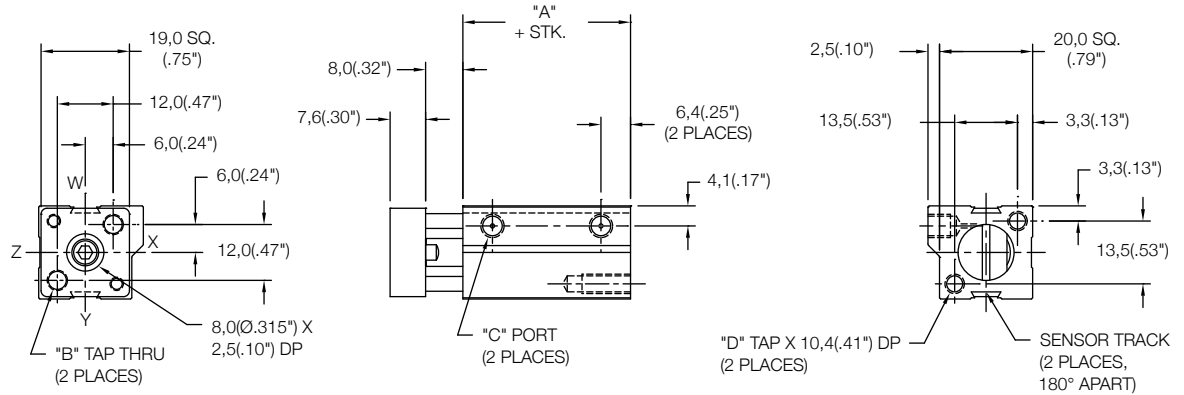
Cylinder Output Force Formula

Piston Area x Pressure = Output Force
Piston Area (in ²) x Pressure (PSI) = lbf (Pounds Force)
Piston Area (cm ²) x Pressure (kg/cm ²) = kgf (Kilograms Force)
Piston Area (cm ²) x Pressure (kg/cm ²) x 9.8 = Newtons
Piston Area (cm ²) x Pressure (Bar) x 10 = Newtons
Piston Area (cm ²) x Pressure (Bar) x 1.02 = kgf (Kilograms Force)

Rear Mount Cylinder "MR"

MODEL	STANDARD STROKES	"A"	PISTON AREA
LC	15mm	36,0(1.42")	PUSH 1,13 cm ² (0.18 in ²) PULL 0,85 cm ² (0.14 in ²)
	25mm		
	40mm		

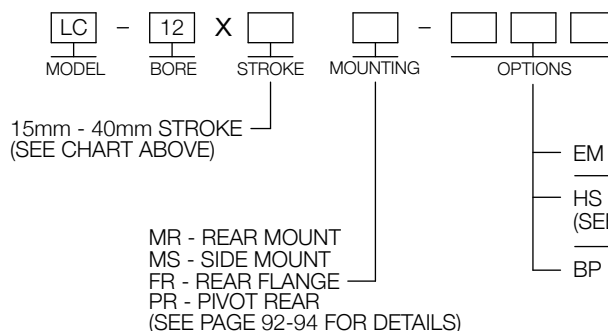
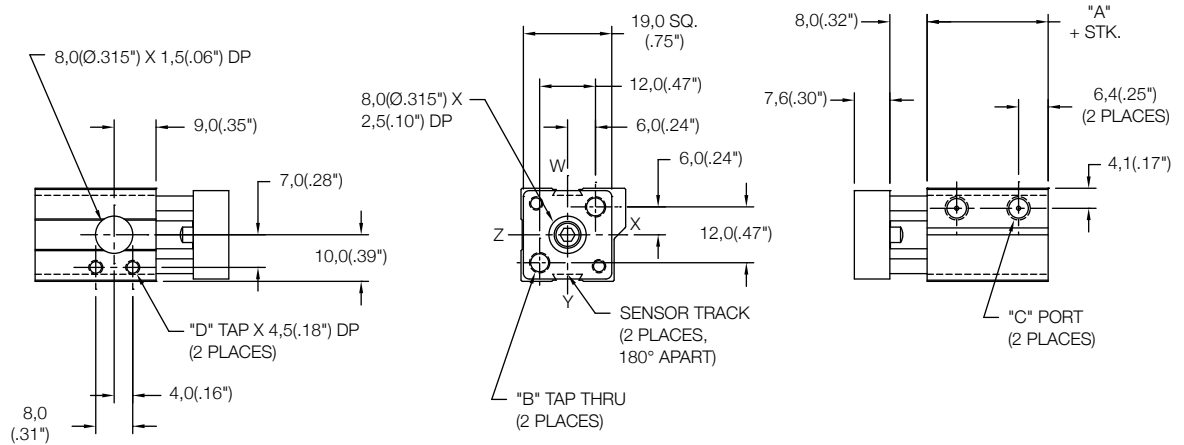
	Standard Threads	"EM" Option
"B"	M4X0,7	#8-32
"C"	M5X0,8	#10-32
"D"	M4X0,7	#8-32



Side Mount Cylinder "MS"

MODEL	STANDARD STROKES	"A"	PISTON AREA
LC	15mm	36,0(1.42")	PUSH 1,13 cm ² (0.18 in ²) PULL 0,85 cm ² (0.14 in ²)
	25mm		
	40mm		

	Standard Threads	"EM" Option
"B"	M4X0,7	#8-32
"C"	M5X0,8	#10-32
"D"	M3X0,5	#4-40



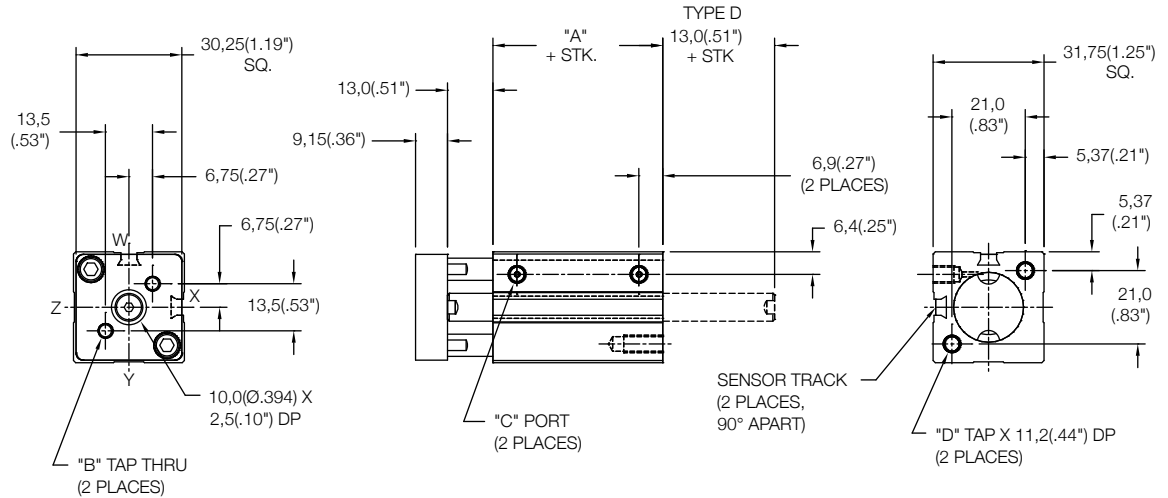
SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE CATALOG PAGE 88 FOR DETAILS)

EM - INCH THREADS & PORT OPTIONS:
HS - HIGH TEMPERATURE SEALS OPTION:
(SEE CATALOG PAGE 97 FOR DETAILS)
BP - BLANK TOOLING PLATE

Rear Mount Cylinder "MR"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LC	...D	15mm	33,5(1.32")	PUSH 3,14 cm ² (0.48 in ²)
		25mm		
		40mm		PULL 2,64 cm ² (0.40 in ²)
		50mm		

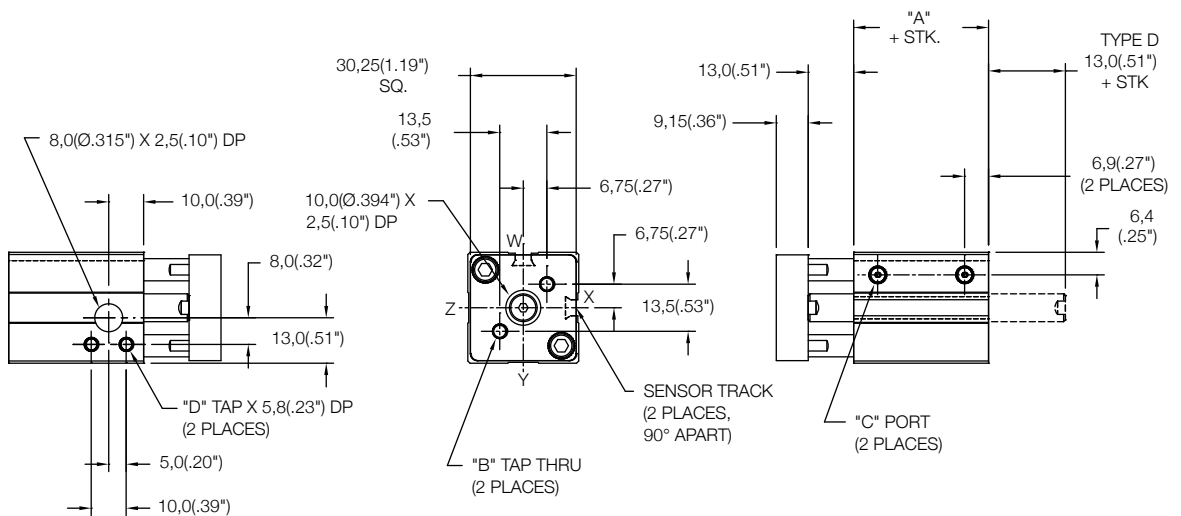
	Standard Threads	"EM" Option
"B"	M4X0,7	#8-32
"C"	M5X0,8	#10-32
"D"	M5X0,8	#10-32



Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LC	...D	15mm	33,5(1.32")	PUSH 3,14 cm ² (0.48 in ²)
		25mm		
		40mm		PULL 2,64 cm ² (0.40 in ²)
		50mm		

	Standard Threads	"EM" Option
"B"	M4X0,7	#8-32
"C"	M5X0,8	#10-32
"D"	M4X0,7	#8-32



LC - 20 X [] [] - [] [] []
 MODEL BORE STROKE TYPE MOUNTING OPTIONS

15mm - 50mm STROKE
 (SEE CHART ABOVE)

BLANK - NO CODE
 D - DOUBLE ROD
 (SEE PAGE 99 FOR DETAILS)

MR - REAR MOUNT
 MS - SIDE MOUNT
 FR - REAR FLANGE
 PR - PIVOT REAR
 (SEE PAGE 92-94 FOR DETAILS)

SENSORS SOLD SEPARATELY
 SKS, SKP, SCS, SCP - SOLID STATE
 LIMIT SENSORS
 (SEE CATALOG PAGE 88 FOR DETAILS)

EM - INCH THREADS & PORT OPTIONS:

HS - HIGH TEMPERATURE SEALS OPTION:
 (SEE CATALOG PAGE 97 FOR DETAILS)

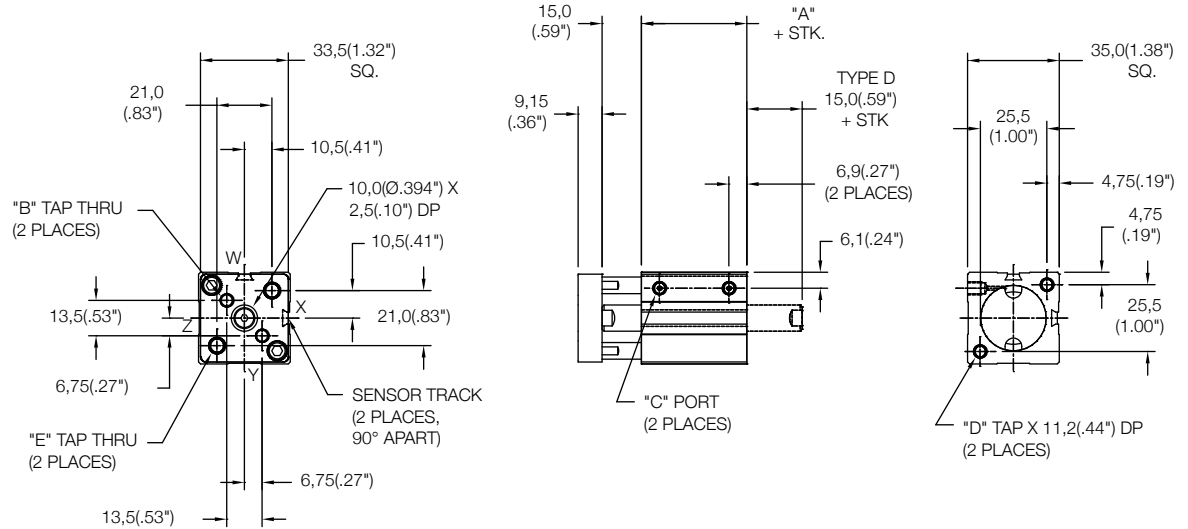
BP - BLANK TOOLING PLATE

UB, UF, UR - URETHANE SHOCK PAD OPTION
 (SEE CATALOG PAGE 97 FOR DETAILS)

Rear Mount Cylinder "MR"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LC	...D	15mm	34,0(1.34")	PUSH 4,91 cm ² (0.76 in ²)
		25mm		
		40mm		PULL 4,12 cm ² (0.64 in ²)
		50mm		

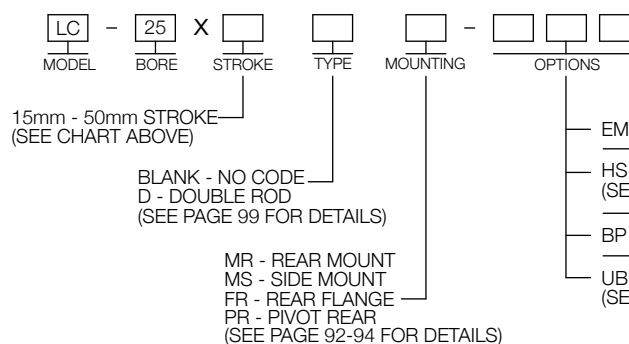
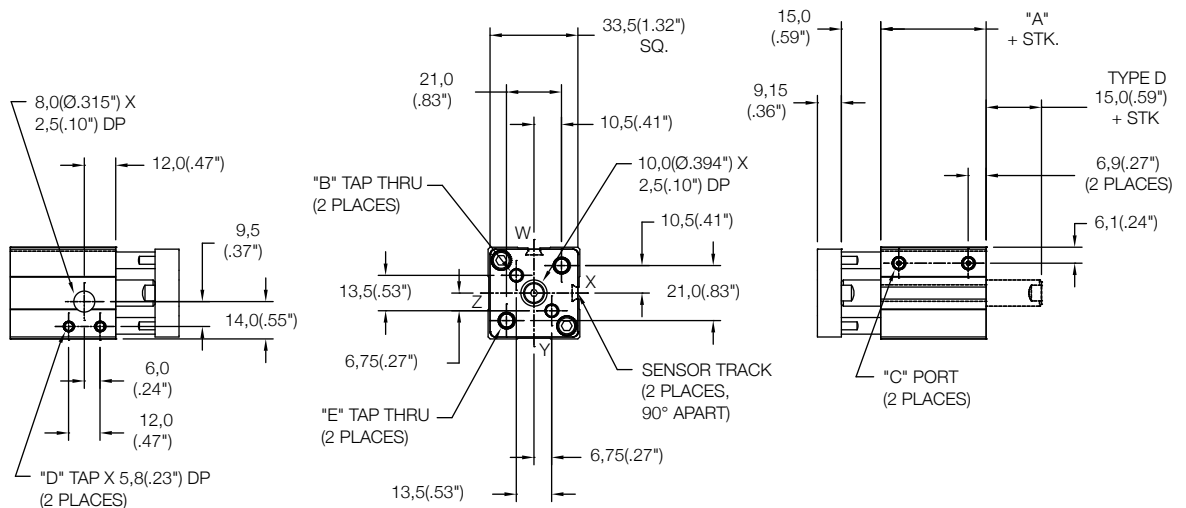
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M5X0,8	#10-32
"E"	M6X1,0	1/4-20



Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LC	...D	15mm	34,0(1.34")	PUSH 4,91 cm ² (0.76 in ²)
		25mm		
		40mm		PULL 4,12 cm ² (0.64 in ²)
		50mm		

	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M4X0,7	#8-32
"E"	M6X1,0	1/4-20

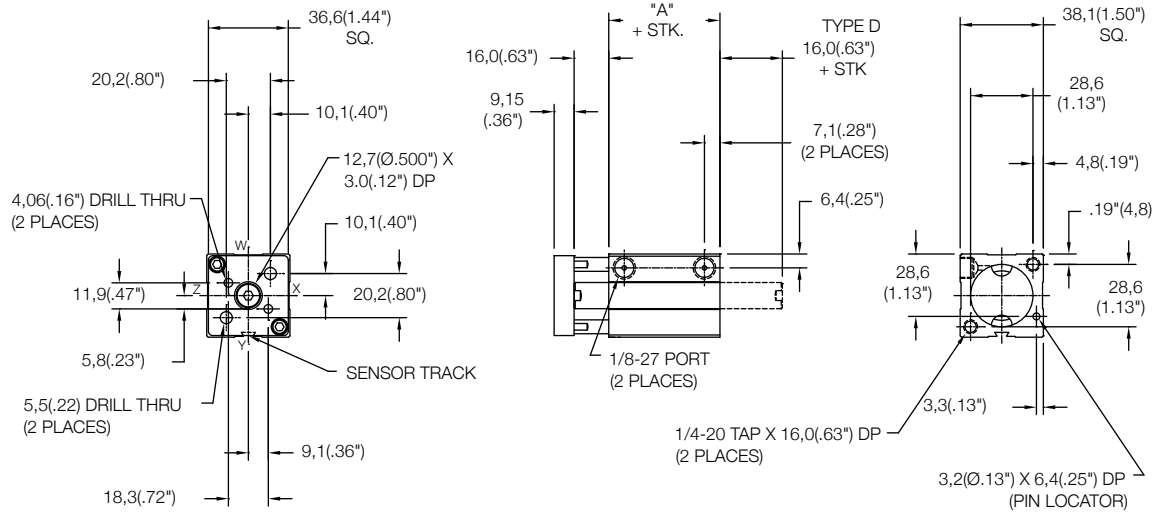


SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE CATALOG PAGE 88 FOR DETAILS)

- EM - INCH THREADS & PORT OPTIONS:
- HS - HIGH TEMPERATURE SEALS OPTION:
(SEE CATALOG PAGE 97 FOR DETAILS)
- BP - BLANK TOOLING PLATE
- UB, UF, UR - URETHANE SHOCK PAD OPTION
(SEE CATALOG PAGE 97 FOR DETAILS)

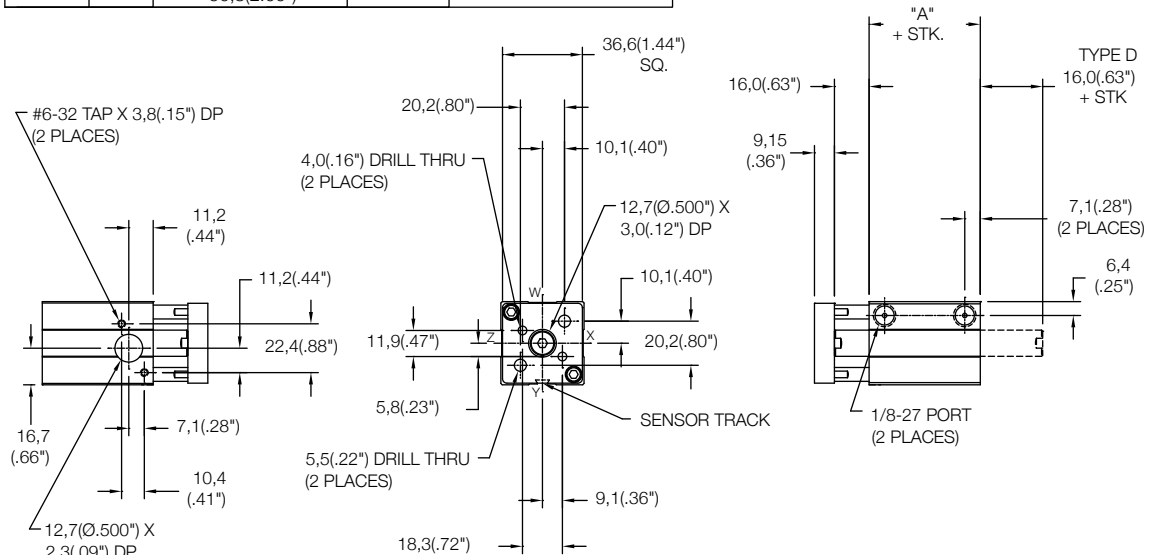
Rear Mount Cylinder "MR"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LC	...D	12,7(.50")	38,1(1.50")	PUSH 6,41 cm ² (0.99 in ²) PULL 5,28 cm ² (0.82 in ²)
		25,4(1.00")		
		38,1(1.50")		
		50,8(2.00")		



Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LC	...D	12,7(.50")	38,1(1.50")	PUSH 6,41 cm ² (0.99 in ²) PULL 5,28 cm ² (0.82 in ²)
		25,4(1.00")		
		38,1(1.50")		
		50,8(2.00")		



LC - 28,5 X [] [] - [] [] []
MODEL BORE STROKE TYPE MOUNTING OPTIONS

12,7(.50") - 50,8(2.00")
STROKE
(SEE CHART ABOVE)

BLANK - NO CODE
D - DOUBLE ROD
(SEE PAGE 99 FOR DETAILS)

MR - REAR MOUNT
MS - SIDE MOUNT
FR - REAR FLANGE
PR - PIVOT REAR
(SEE PAGE 92-94 FOR DETAILS)

SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE CATALOG PAGE 88 FOR DETAILS)

HS - HIGH TEMPERATURE SEALS OPTION:
(SEE CATALOG PAGE 97 FOR DETAILS)

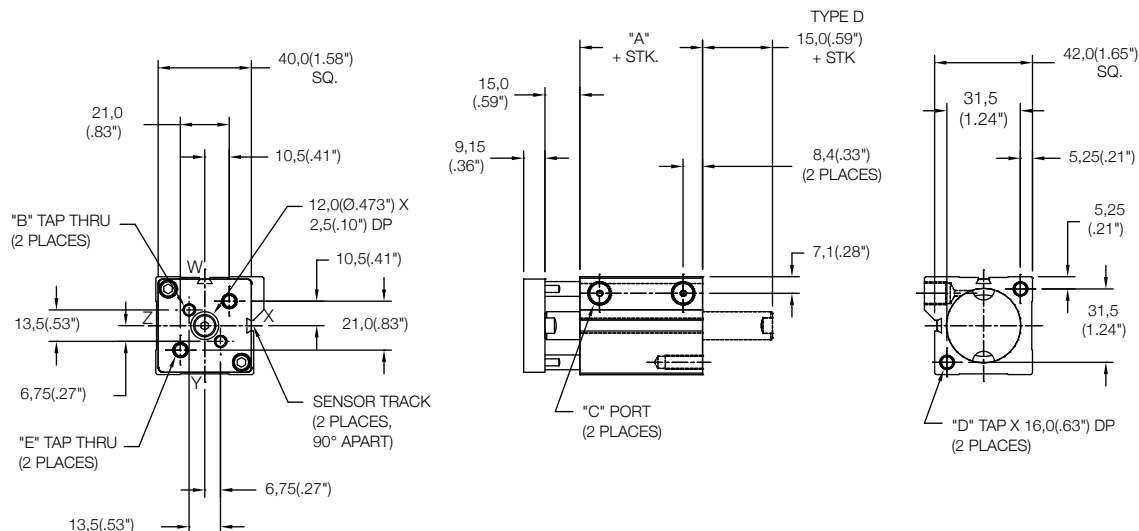
BP - BLANK TOOLING PLATE

UB, UF, UR - URETHANE SHOCK PAD OPTION
(SEE CATALOG PAGE 97 FOR DETAILS)

Rear Mount Cylinder "MR"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LC	└D	15mm	37,5(1.48")	PUSH 8,04 cm ² (1.25 in ²)
		25mm		
		40mm		PULL 6,91 cm ² (1.07 in ²)
		50mm		

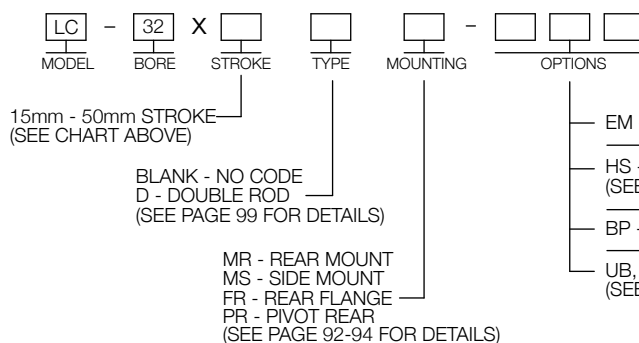
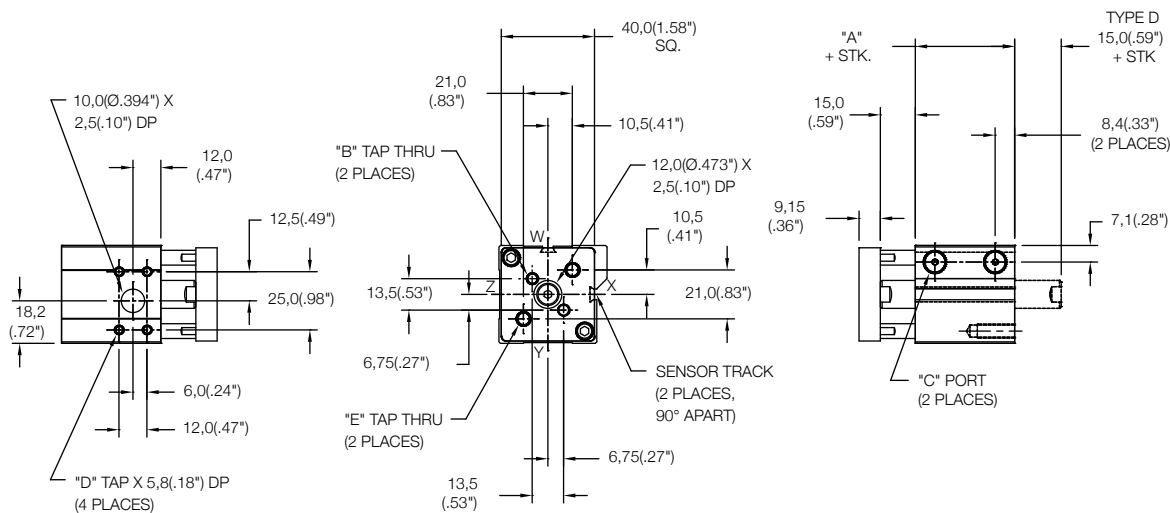
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	G1/8 PORT	1/8-27
"D"	M6X1,0	1/4-20
"E"	M6X1,0	1/4-20



Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LC	└D	15mm	37,5(1.48")	PUSH 8,04 cm ² (1.25 in ²)
		25mm		
		40mm		PULL 6,91 cm ² (1.07 in ²)
		50mm		

	Standard Threads	"EM" Options
"B"	M5X0,8	#10-32
"C"	G1/8 PORT	1/8-27
"D"	M4X0,7	#8-32
"E"	M6X1,0	1/4-20



SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE CATALOG PAGE 88 FOR DETAILS)

- EM - INCH THREADS & PORT OPTIONS:

- HS - HIGH TEMPERATURE SEALS OPTION:
(SEE CATALOG PAGE 97 FOR DETAILS)

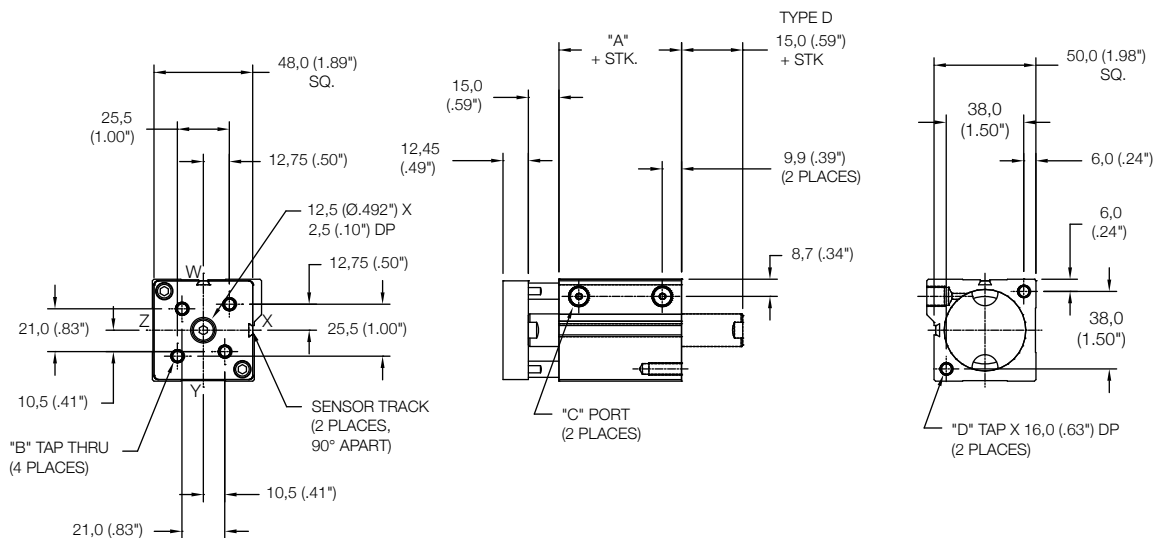
- BP - BLANK TOOLING PLATE

- UB, UF, UR - URETHANE SHOCK PAD OPTION
(SEE CATALOG PAGE 97 FOR DETAILS)

Rear Mount Cylinder "MR"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LC	..D	15mm	45 (1.78")	PUSH 12,56 cm ² (1.95 in ²)
		25mm		
		40mm		PULL 10,55 cm ² (1.64 in ²)
		50mm		

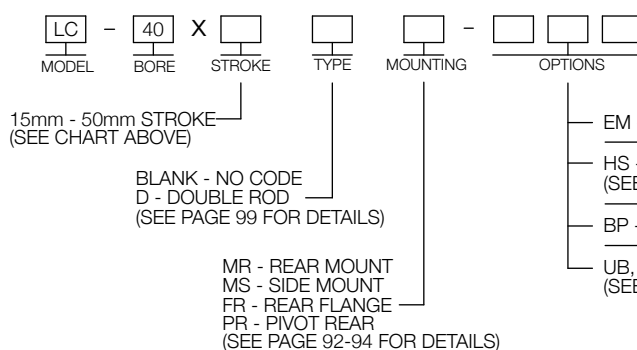
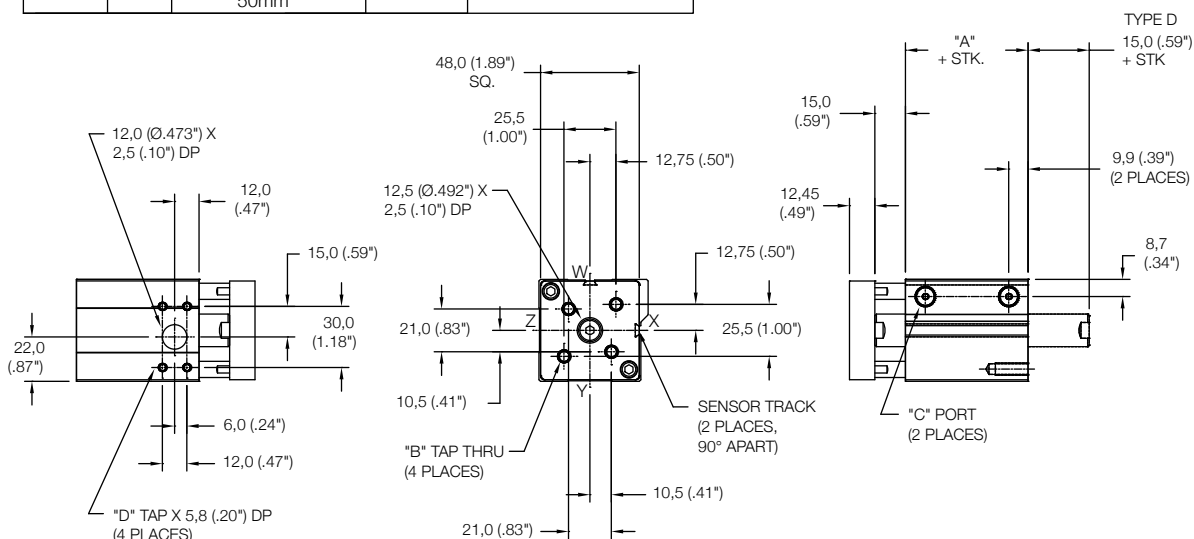
	Standard Threads	"EM" Option
"B"	M6X1,0	1/4-20
"C"	G1/8 PORT	1/8-27
"D"	M6X1,0	1/4-20



Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LC	..D	15mm	45 (1.78")	PUSH 12,56 cm ² (1.95 in ²)
		25mm		
		40mm		PULL 10,55 cm ² (1.64 in ²)
		50mm		

	Standard Threads	"EM" Option
"B"	M6X1,0	1/4-20
"C"	G1/8 PORT	1/8-27
"D"	M4X0,7	#8-32



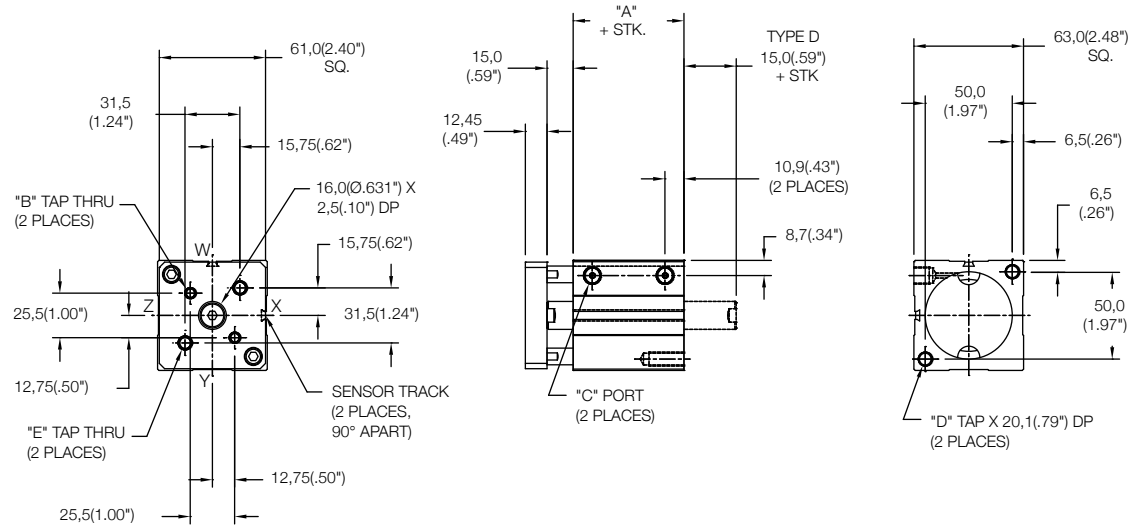
SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE CATALOG PAGE 88 FOR DETAILS)

- EM - INCH THREADS & PORT OPTIONS:
- HS - HIGH TEMPERATURE SEALS OPTION:
(SEE CATALOG PAGE 97 FOR DETAILS)
- BP - BLANK TOOLING PLATE
- UB, UF, UR - URETHANE SHOCK PAD OPTION
(SEE CATALOG PAGE 97 FOR DETAILS)

Rear Mount Cylinder "MR"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LC	D	15mm	48,5(1.91")	PUSH 19,63 cm ² (3.04 in ²) PULL 17,62 cm ² (2.73 in ²)
		25mm		
		40mm		
		50mm		
		75mm		

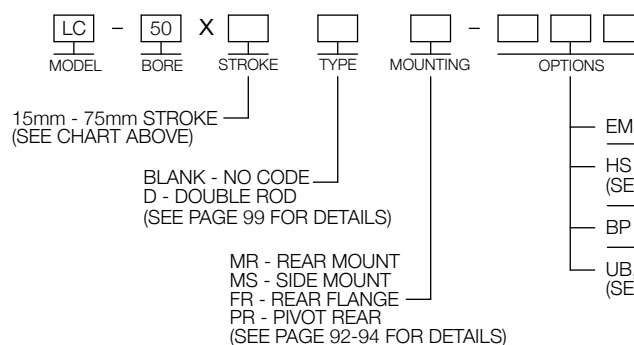
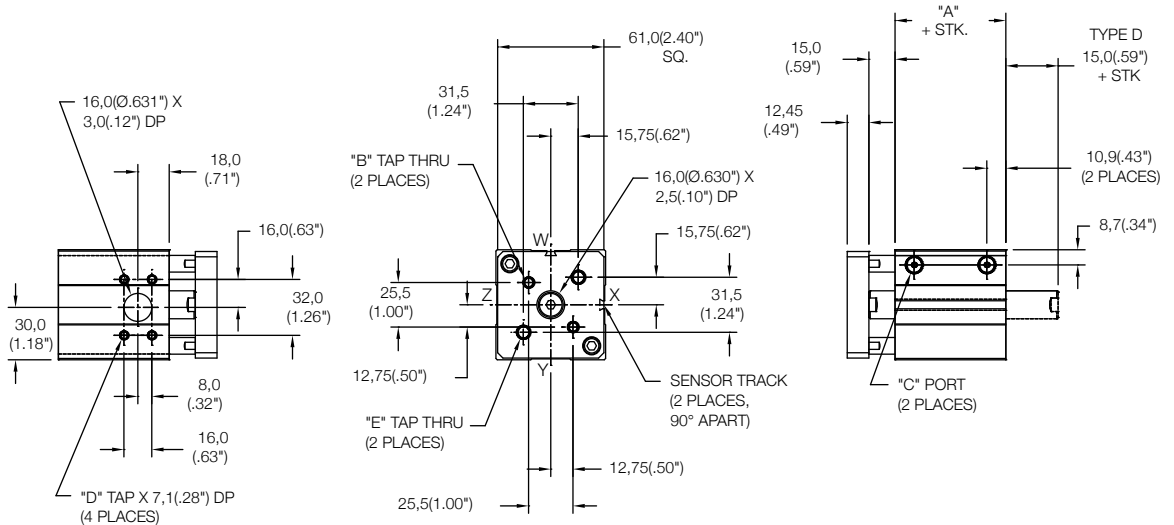
	Standard Threads	"EM" Option
"B"	M6X1,0	1/4-20
"C"	G1/8 PORT	1/8-27
"D"	M8X1,25	5/16-18
"E"	M8X1,25	5/16-18



Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LC	D	15mm	48,5(1.91")	PUSH 19,63 cm ² (3.04 in ²) PULL 17,62 cm ² (2.73 in ²)
		25mm		
		40mm		
		50mm		
		75mm		

	Standard Threads	"EM" Option
"B"	M6X1,0	1/4-20
"C"	G1/8 PORT	1/8-27
"D"	M5X0,8	#10-32
"E"	M8X1,25	5/16-18



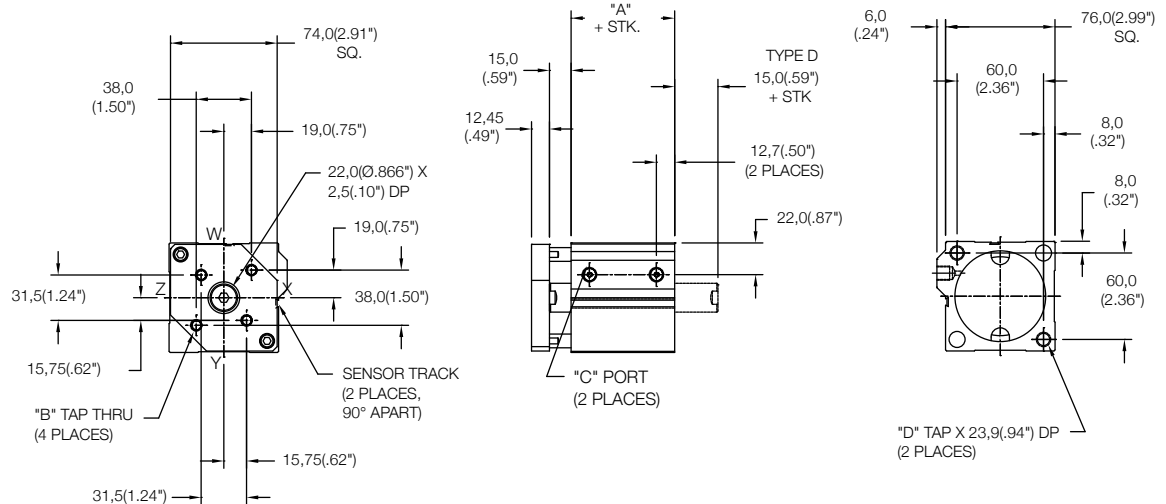
SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE CATALOG PAGE 88 FOR DETAILS)

- EM - INCH THREADS & PORT OPTIONS:
- HS - HIGH TEMPERATURE SEALS OPTION:
(SEE CATALOG PAGE 97 FOR DETAILS)
- BP - BLANK TOOLING PLATE
- UB, UF, UR - URETHANE SHOCK PAD OPTION
(SEE CATALOG PAGE 97 FOR DETAILS)

Rear Mount Cylinder "MR"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LC	_,D	15mm	57,0(2.25")	PUSH 31,17 cm ² (4.83 in ²) PULL 28,03 cm ² (4.34 in ²)
		25mm		
		40mm		
		50mm		
		75mm		

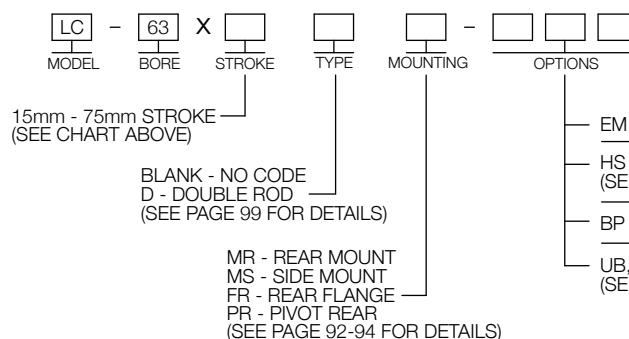
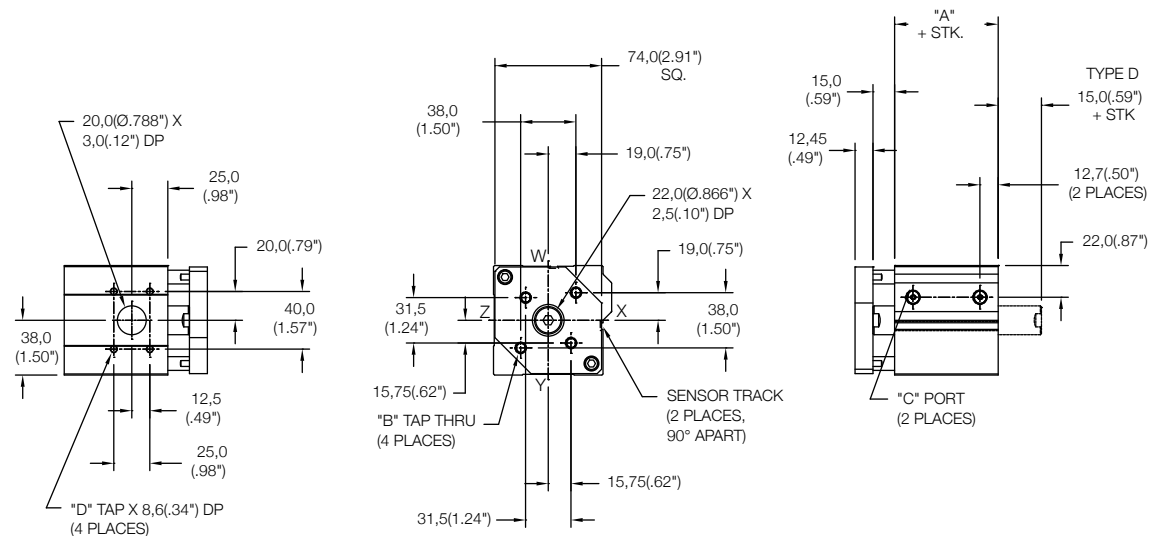
	Standard Threads	"EM" Option
"B"	M8X1,25	5/16-18
"C"	G1/8 PORT	1/8-27
"D"	M10X1,5	3/8-24



Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LC	_,D	15mm	57,0(2.25")	PUSH 31,17 cm ² (4.83 in ²) PULL 28,03 cm ² (4.34 in ²)
		25mm		
		40mm		
		50mm		
		75mm		

	Standard Threads	"EM" Option
"B"	M8X1,25	5/16-18
"C"	G1/8 PORT	1/8-27
"D"	M5X0,8	#10-32

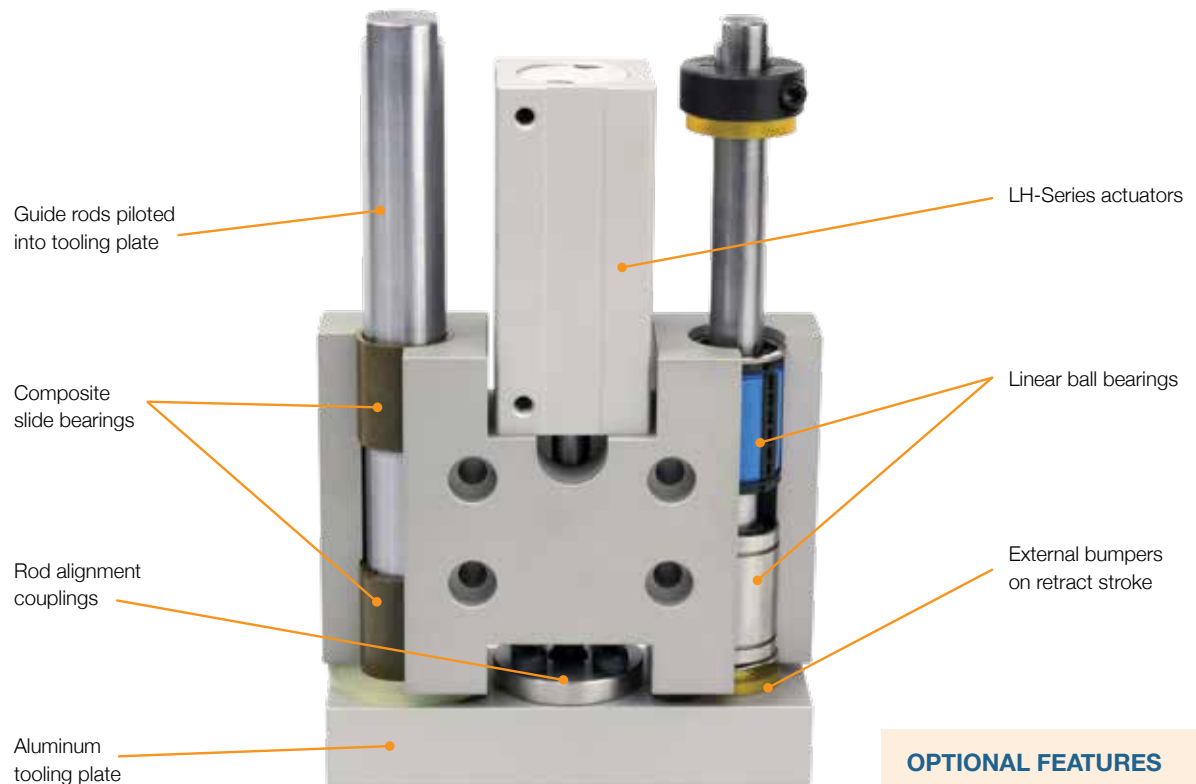


SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE CATALOG PAGE 88 FOR DETAILS)

- EM - INCH THREADS & PORT OPTIONS:
- HS - HIGH TEMPERATURE SEALS OPTION:
(SEE CATALOG PAGE 97 FOR DETAILS)
- BP - BLANK TOOLING PLATE
- UB, UF, UR - URETHANE SHOCK PAD OPTION
(SEE CATALOG PAGE 97 FOR DETAILS)

HB SERIES

HEAVY DUTY BEARING BLOCK SLIDES



OPTIONAL FEATURES

- Magnetic pistons
- External extend stroke bumper
- Adjustable stroke collar

Common features

Nason's H-Block Series of pneumatic slides are heavy duty units designed for the most demanding applications. Rugged aluminum bearing housings are designed to accept Linear Ball Bearings or Composite Slide Bearings. The Linear Ball Bearings, in conjunction with case hardened 1566 steel guide rods, provide high load capacity, low deflection, and low friction. The Composite Slide Bearings allow for heavy loads, impact, and vibration due to the larger diameter chrome plated 1050 steel guide rods and bearing material.

H-Blocks are powered by Nason's proven heavy duty LH series actuators. The LH cylinders that power the slides are field

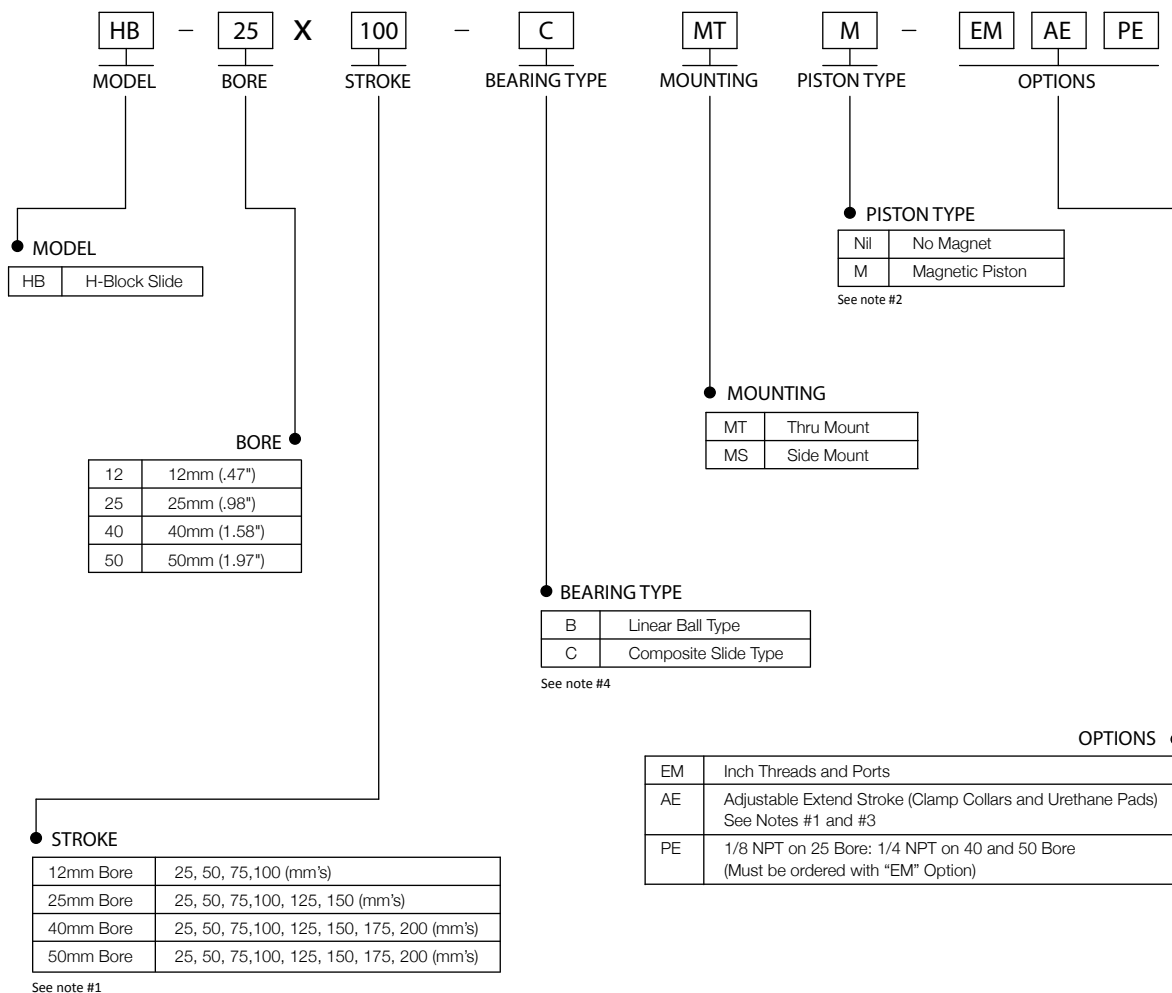
rebuildable. Magnetic pistons for position sensing are offered as options.

All units come with external bumpers on the retract stroke and an internal bumper on the extend stroke for noise reduction. External extend stroke bumpers and adjustable stroke collars are offered as options for intermediate strokes and impact resistance.

Heavy duty, thick aluminum tooling plates provide both thru mounting and tapped hole mounting. Guide rods are piloted into the tooling plates for rigidity and precision. All slides are designed with rod alignment couplings connecting the tooling plate to the cylinder rod to ensure maximum life for the LH cylinder.

How To Order

Example: H-Block Slide, 25mm Bore X 100mm Stroke, Composite Slide Bearings, Thru Mount, Magnetic Piston and Sensor Mounting Track, Inch Threads, Adjustable Extend Stroke/Urethane Shock Pads Extend, 1/8 NPT Ports.



Note 1 - Drive cylinder is manufactured in 25mm stroke increments. For intermediate strokes, order the next longer standard stroke and the "AE" option to set intermediate stroke.

Example: For a 32mm stroke, 25mm bore slide with linear ball bearings and thru mount, order HB-25X50-B-MT-AE and adjust collars for 32mm stroke.

Note 2 - Magnetic Piston "M" adds magnet to piston and 1 sensor track on port side. For other track locations, multiple sensor tracks, etc. consult factory.

Note 3 - Slides come with Urethane Shock Pads on the retract stroke as standard. For Urethane shock pads on extend stroke, order "AE" option and adjust collars so that shock pads engage.

Note 4 - Linear ball bearings should not be used in vibration or impact applications, or applications where dirt, oil, or contamination can occur. For vibration and impact applications, or where contamination may occur, choose the Composite slide type bearings.

Note 5 - Contact the factory for shock absorber options.

Action:	Double Acting
Media:	Air - Clean, Dry Or Lubricated
Pre-Lubricated at Factory:	Non-soap elastomer/PTFE thickener
Temp. Range:	-10C to 81C (14F to 178F)
Stroke Tolerance (Std):	+1,0mm/-0 (+0.04"/-0)

Piston Area Chart

Bore	Piston (Rod Extend)	Piston (Rod Retract)
12	1,13 cm ² (.18 in ²)	0,85 cm ² (.14 in ²)
25	4,91 cm ² (.76 in ²)	4,12 cm ² (.64 in ²)
40	12,56 cm ² (1.95 in ²)	10,55 cm ² (1.64 in ²)
50	19,63 cm ² (3.04 in ²)	17,62 cm ² (2.73 in ²)

Cylinder Ratings

Min. Operating Pressure	Max. Operating Pressure	Max. Piston Speed (See note #4)
0.10 MPa (14.5 PSI)	1.0 MPa (150 PSI)	200 mm/s (7.9 in/s)
0.07 MPa (10 PSI)	1.4 MPa (200 PSI)	400 mm/s (15.7 in/s)
0.07 MPa (10 PSI)	1.4 MPa (200 PSI)	400 mm/s (15.7 in/s)
0.07 MPa (10 PSI)	1.4 MPa (200 PSI)	400 mm/s (15.7 in/s)

Stock Stroke Table

Bore	Standard Stroke Lengths
12	25mm (.98"), 50mm (1.97"), 75mm (2.95"), 100mm (3.94")
25	25mm (.98"), 50mm (1.97"), 75mm (2.95"), 100mm (3.94"), 125mm (4.92"), 150mm (5.91")
40	25mm (.98"), 50mm (1.97"), 75mm (2.95"), 100mm (3.94"), 125mm (4.92"), 150mm (5.91"), 175mm (6.89"), 200mm (7.87")
50	25mm (.98"), 50mm (1.97"), 75mm (2.95"), 100mm (3.94"), 125mm (4.92"), 150mm (5.91"), 175mm (6.89"), 200mm (7.87")

Cylinder Output Force Formula

Piston Area x Pressure = Output Force
Piston Area(in ²) x Pressure(PSI) = lbf (Pounds Force)
Piston Area(cm ²) x Pressure(kg/cm ²) = kgf (Kilograms Force)
Piston Area(cm ²) x Pressure(kg/cm ²) x 9.8 = Newtons
Piston Area(cm ²) x Pressure(Bar) x 10 = Newtons
Piston Area(cm ²) x Pressure(Bar) x 1.02 = kgf (Kilograms Force)

Note 1 - Drive cylinder is manufactured in 25mm stroke increments. For intermediate strokes, order the next longer standard stroke and the "AE" option to set intermediate stroke.
Example: For a 32mm stroke, 25mm bore slide with linear ball bearings and thru mount, order HB-25X50-B-MT-AE and adjust collars for 32mm stroke.

Note 2 - For other temperature requirements, consult factory for a custom option.

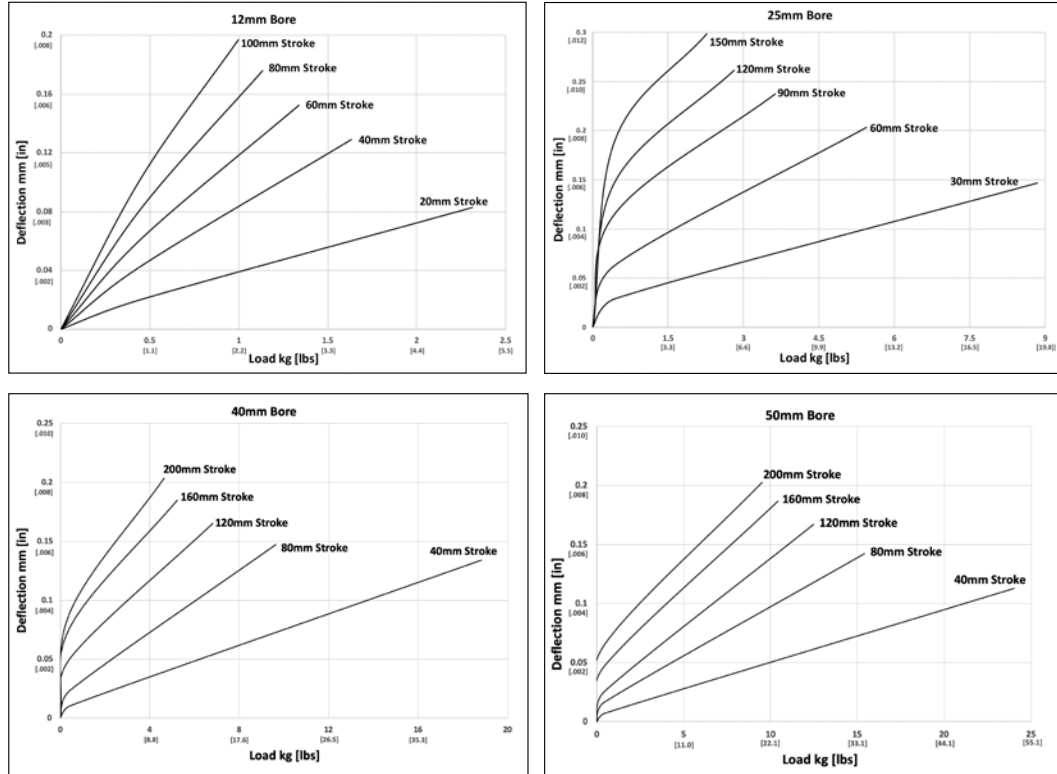
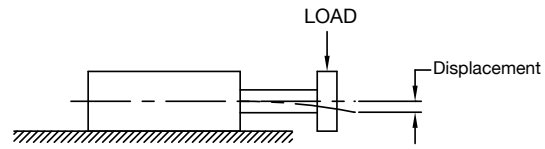
Note 3 - Slides come with Urethane Shock Pads on the retract stroke as standard.

Note 4 - Maximum speeds are with no loads. Speeds may need to be reduced based on loads and applications. Always consider the use of flow controls and/or external shock absorbers to avoid damage to the slide.

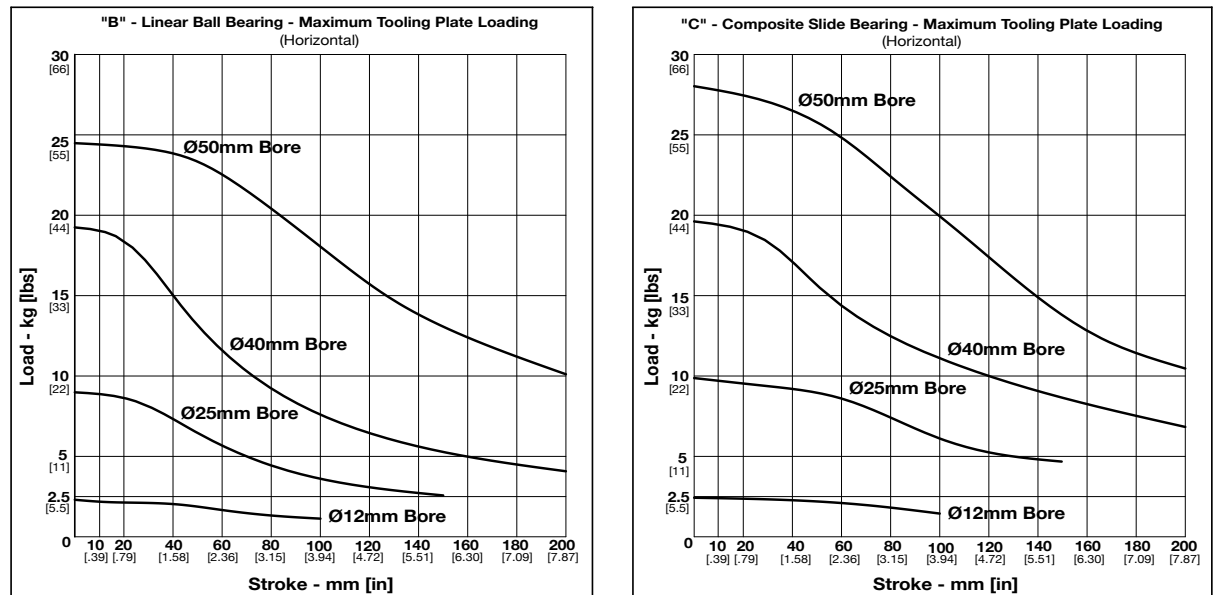
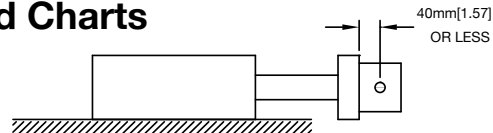
Note 5 - Contact the factory for shock absorber options.

"B" - Linear Ball Bearing Tooling Plate Displacement

(Reference Values)

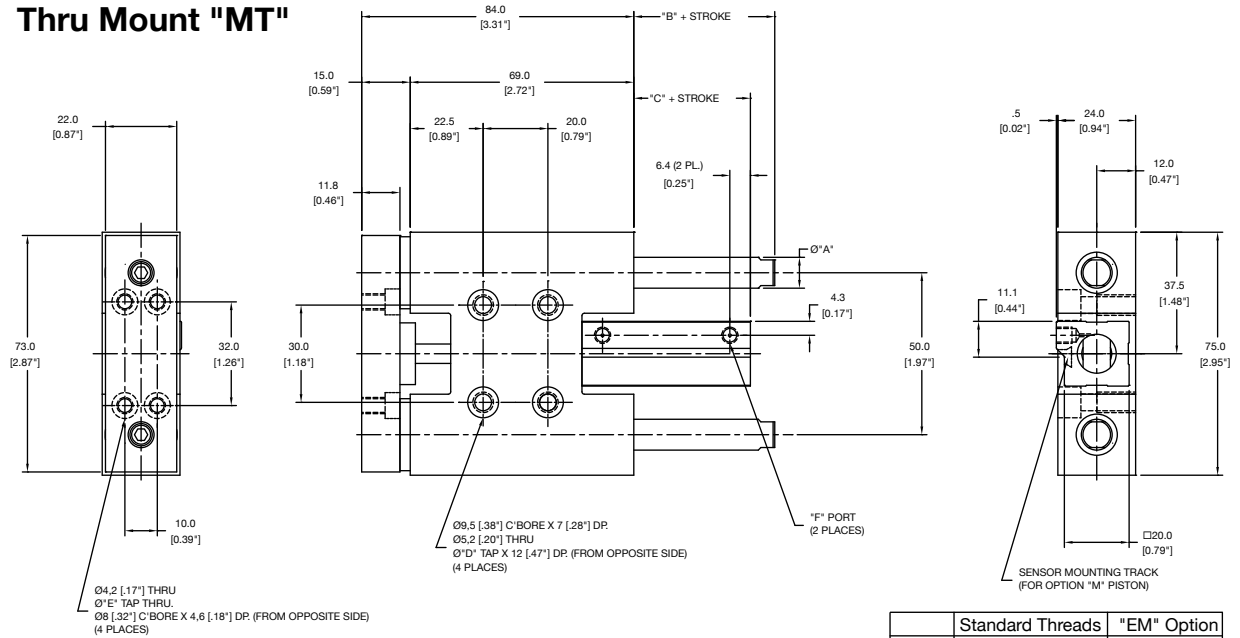


Horizontal Mounting Load Charts



Note1 - Flow controls and/or shock absorbers are strongly recommended when approaching maximum values. Consult the factory for shock absorber options.
Note 2 - Loads are for 200mm/sec (7.87in/sec) piston speed or less.

Thru Mount "MT"

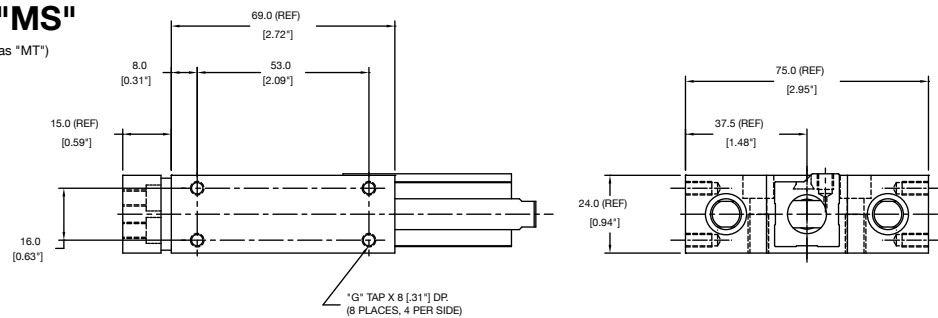


BEARING	"A"	"B"	PISTON	"C"	PISTON	"C"
"B" - BALL TYPE	6,35 (.25")	18,5 (.73")	Non-Mag	11,0 (.43")	Mag	21,0 (.83")
"C" - COMPOSITE TYPE	9,53 (.375")	18,5 (.73")	Non-Mag	11,0 (.43")	Mag	21,0 (.83")

	Standard Threads	"EM" Option
"D"	M6x1	1/4-20
"E"	M5x0.8	#10-32
"F"	M5X0.8	#10-32
"G"	M4x0,7	#8-32

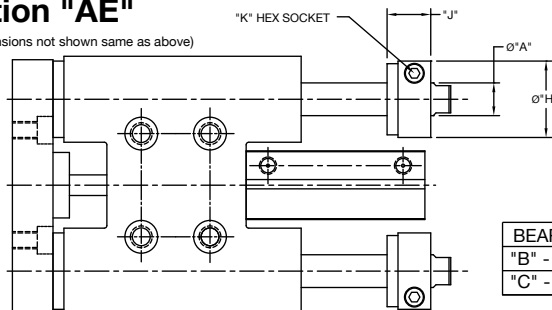
Side Mount "MS"

(All dimensions not shown same as "MT")

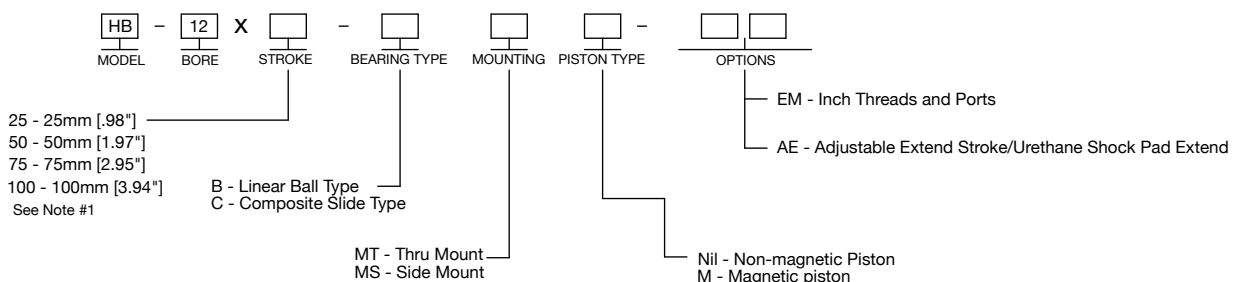


Option "AE"

(All dimensions not shown same as above)

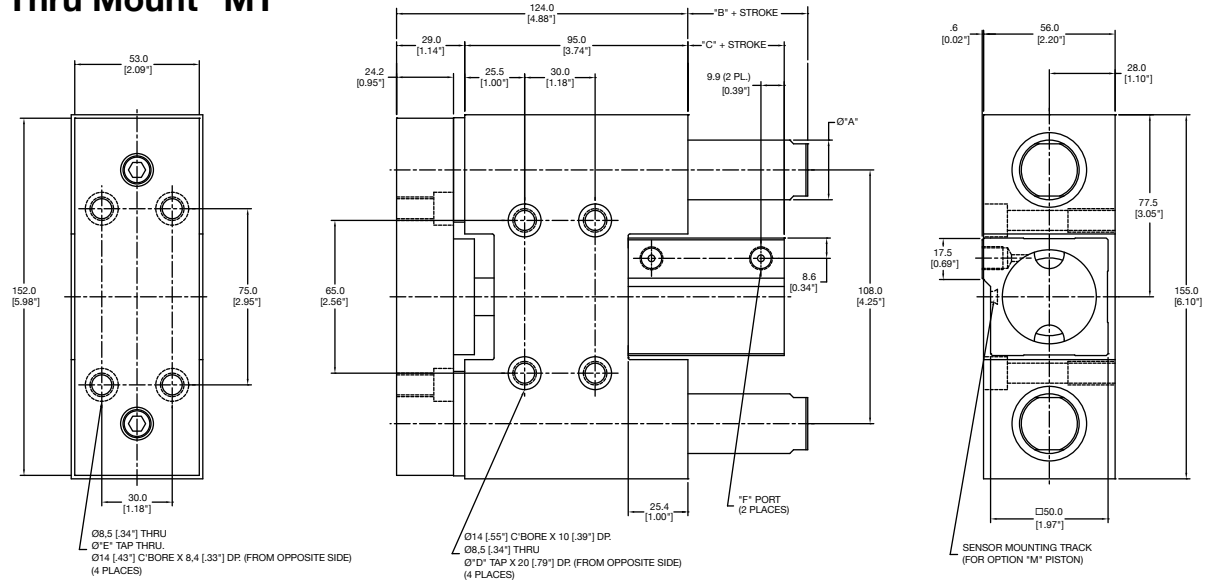


BEARING	"A"	"H"	"J"	"K"
"B" - BALL TYPE	6,35 (.25")	17,5 (.69")	11,1 (.44")	3/32
"C" - COMPOSITE TYPE	9,53 (.375")	22,2 (.88")	12,7 (.50")	7/64



Note 1 - Drive cylinder is manufactured in 25mm stroke increments. For intermediate strokes, order the next longer standard stroke and the "AE" option to set intermediate stroke.
Note 2 - Contact the factory for shock absorber option.

Thru Mount "MT"

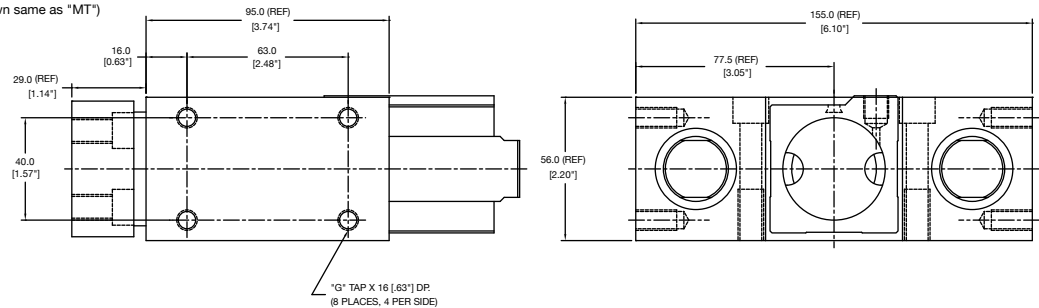


BEARING	"A"	"B"	PISTON	"C"	PISTON	"C"
"B" - BALL TYPE	19,05 (.75")	26,0 (1.02")	Non-Mag	16,0 (.63")	Mag	21,0 (.83")
"C" - COMPOSITE TYPE	25,4 (1.0")	26,0 (1.02")	Non-Mag	16,0 (.63")	Mag	21,0 (.83")

	Standard Threads	"EM" Option
"D"	M10x1,5	3/8-24
"E"	M10x1,5	3/8-24
"F"	G1/8	1/8 NPT
"G"	M8x1,25	5/16-18

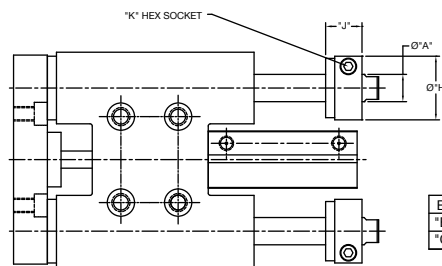
Side Mount "MS"

(All dimensions not shown same as "MT")

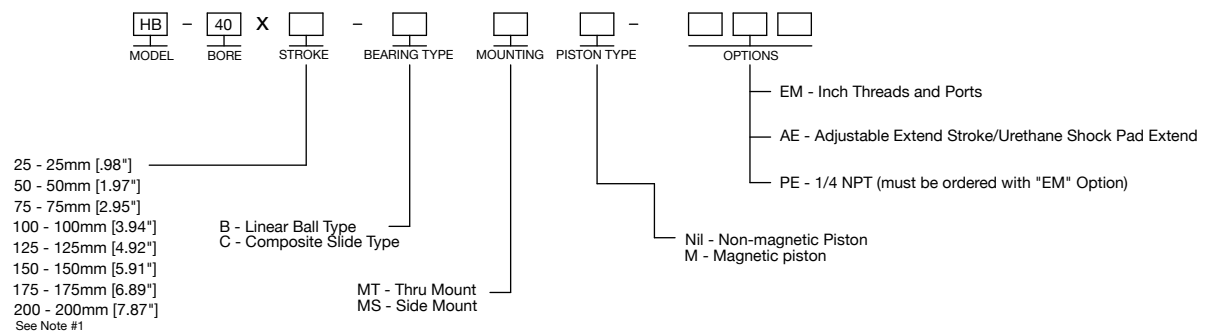


Option "AE"

(All dimensions not shown same as above)



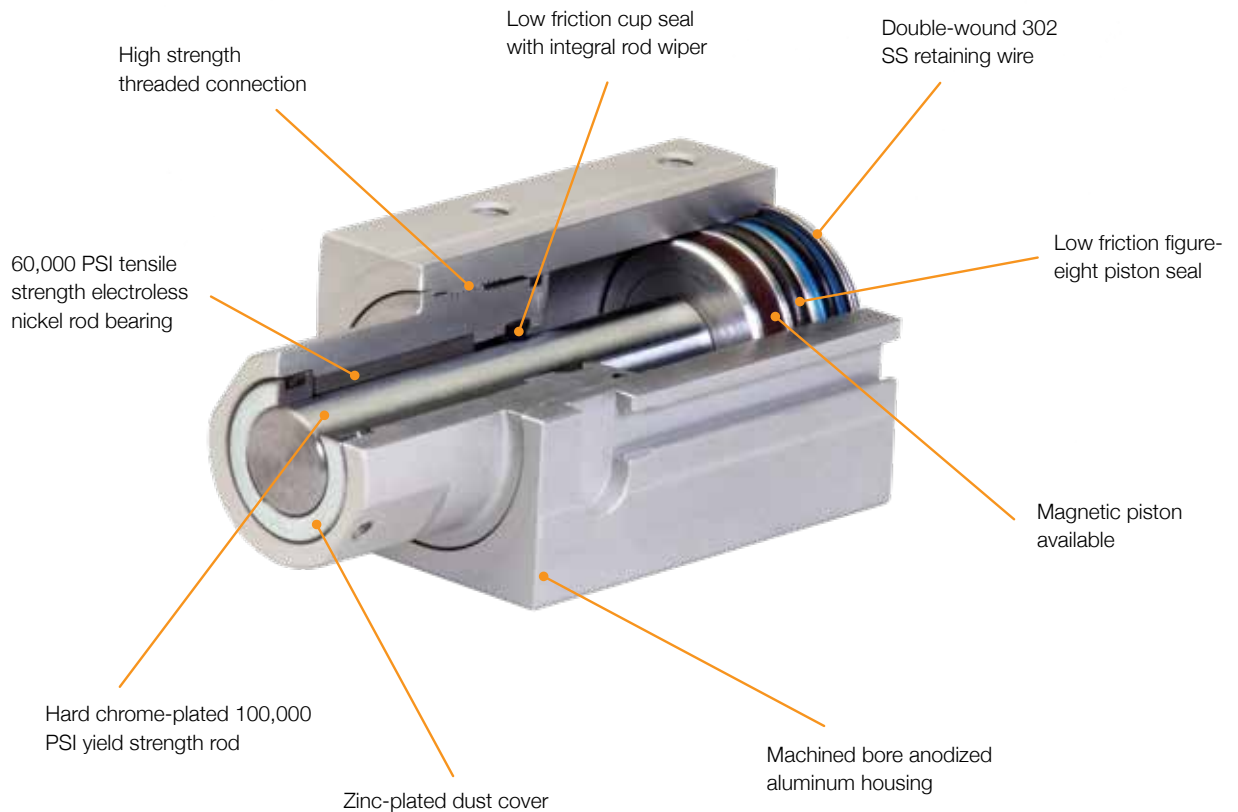
BEARING	"A"	"H"	"J"	"K"
"B" - BALL TYPE	19,05 (.75")	38,1 (1.50")	17,5 (.69")	3/16
"C" - COMPOSITE TYPE	25,4 (1.0")	44,5 (1.75")	17,5 (.69")	3/16



Note 1 - Drive cylinder is manufactured in 25mm stroke increments. For intermediate strokes, order the next longer standard stroke and the "AE" option to set intermediate stroke.
 Note 2 - Contact the factory for shock absorber option.

SC SERIES

STOPPER CYLINDERS



Common Features

Nason's SC series stopper cylinders were designed for today's demanding conveyor systems. With more power in a smaller package, the SC series stopper cylinder is offered in seven different mounting styles with three different rod end configurations to fit into almost any design situation.

Compact Size

Nason's SC series cylinders were designed with today's conveyor systems in mind. Five bore sizes with a variety of strokes and rod end options ensure a perfect fit for each application. Nason is able to fit a larger bore size into the same package as comparable competitive products.

Rugged Construction

The SC series incorporates 60,000 PSI tensile strength bearings with an oversized 100,000 PSI yield strength rod for maximum stopping power.

Versatile Design

The SC series stopper cylinders are metric in design (bore & rod size). They are offered in inch or metric mounting and porting. Five different threaded mounting options and two different flange mounting options ensure an exact fit into today's tight space requirements. Due to their 100% machined design, they are easily customized by Nason.

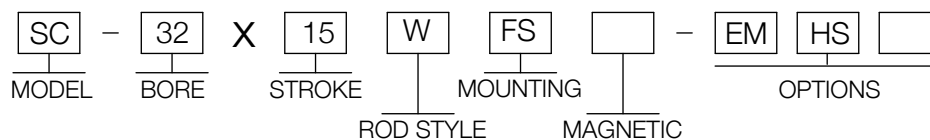
Rebuildable

All SC series cylinders are field-rebuildable.

How to Order

Example:

Part Number: SC-32X15WFS-EMHS



MODEL
SC - Stopper Cylinder

BORE
20 - 20mm (.79")
25 - 25mm (.98")
32 - 32mm (1.26")
40 - 40mm (1.58")
50 - 50mm (1.97")

STROKE	
20mm Bore	10 - 10mm Stroke
	15 - 15mm Stroke
25mm Bore	10 - 10mm Stroke
	15 - 15mm Stroke
	20 - 20mm Stroke
32mm Bore	10 - 10mm Stroke
	15 - 15mm Stroke
	20 - 20mm Stroke
40mm Bore	20 - 20mm Stroke
	25 - 25mm Stroke
	30 - 30mm Stroke
50mm Bore	20 - 20mm Stroke
	25 - 25mm Stroke
	30 - 30mm Stroke

ROD STYLE
BLANK (No Code) - Round Rod
F - Flat Rod
W - Flat Rod with Roller

MOUNTING
MF - Threads on Front Face (Rod End)
MR - Threads on Rear Face (Opposite Rod)
MB - Threads on Both Faces
MT - Drilled Through and Counterbored for Bolt Clearance
MS - Threads on Side of Cylinder Body
FR - Flange on Rear Face (Opposite Rod)
FS - Flange on Side of Cylinder Body

MAGNETIC
BLANK (No Code) - Standard "NO MAGNET" Piston
M - Magnetic Piston and Sensor Mounting

OPTIONS
EM - InchThreads (Mounting and Ports)
HS - High Temperature Seals -10°C to 150°C (0°F to 302°F)
UR - Urethane Shock Pad Rear (Opposite Rod)

Note 1 - Magnetic Piston "M" limits temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Magnetic Piston limits Pressure rating 250 PSI (1.7 MPa)

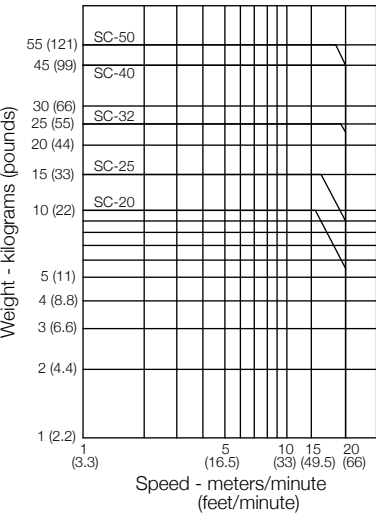
Note 2 - "UR" Urethane Shock Pads limit temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Pads are mechanically retained at the Cap faces. "UB" OPTION CHANGES STROKE TOLERANCE TO +/-2mm. "UR" OPTION CHANGES STROKE TOLERANCE TO +/-1mm.

Operating Media:	Air (Clean, Dry or Lubricated)
Maximum Operating Pressure:	17 Bar (250 PSI)
Operating Temperature:	-10°C to 95°C (0°F to 200°F)
Packing:	Buna N
Lubrication:	PTFE impregnated grease
Stroke Tolerance:	+1,0mm/-0mm (+0.04"/-0")

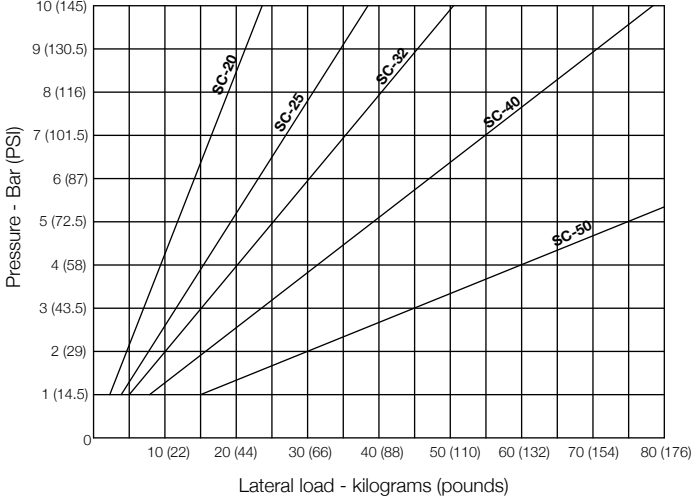
Unit Weights **kg (lbs)**

BORE	STROKE				
	10	15	20	25	30
20	0.15 (.34)	0.16 (.36)	—	—	—
25	0.21 (.47)	0.23 (.50)	0.24 (.53)	—	—
32	0.43 (.94)	0.45 (1.0)	0.48 (1.06)	—	—
40	—	—	0.74 (1.67)	0.79 (1.75)	0.83 (1.83)
50	—	—	1.10 (2.43)	1.15 (2.53)	1.19 (2.63)

Operating Ranges



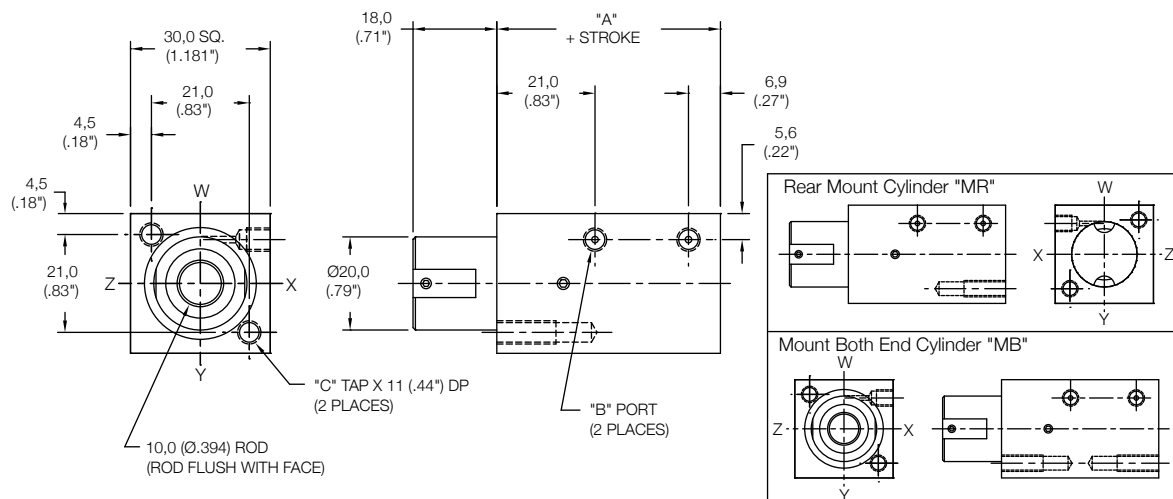
Minimum Operating Pressure for Load



Non Magnetic Front Mount Cylinder "MF"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	10mm	38,0 (1.50")	PUSH 3,14 cm ² (0.48 in ²)
	15mm		PULL 2,32 cm ² (0.36 in ²)

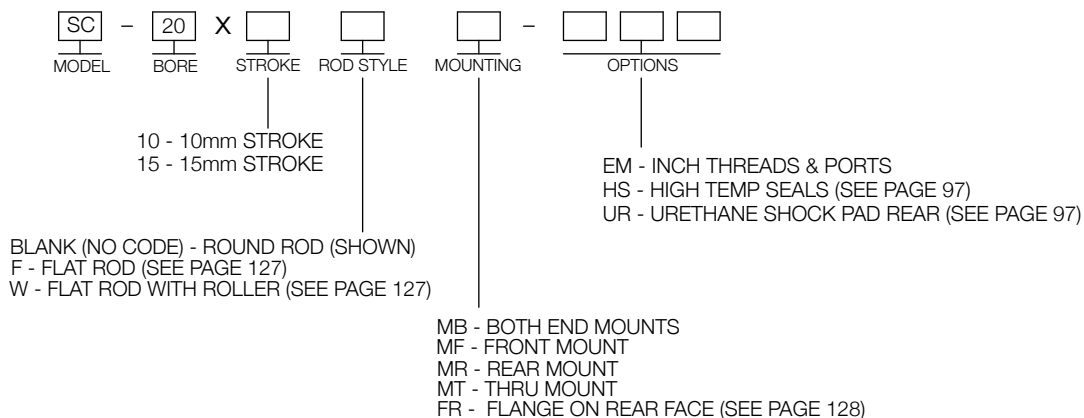
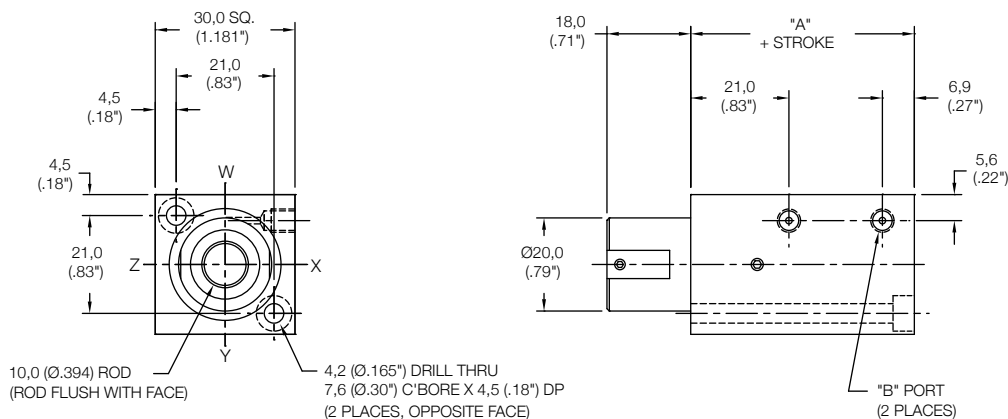
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0.8	#10-32



Non Magnetic Thru Mount Cylinder "MT"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	10mm	38,0 (1.50")	PUSH 3,14 cm ² (0.48 in ²)
	15mm		PULL 2,32 cm ² (0.36 in ²)

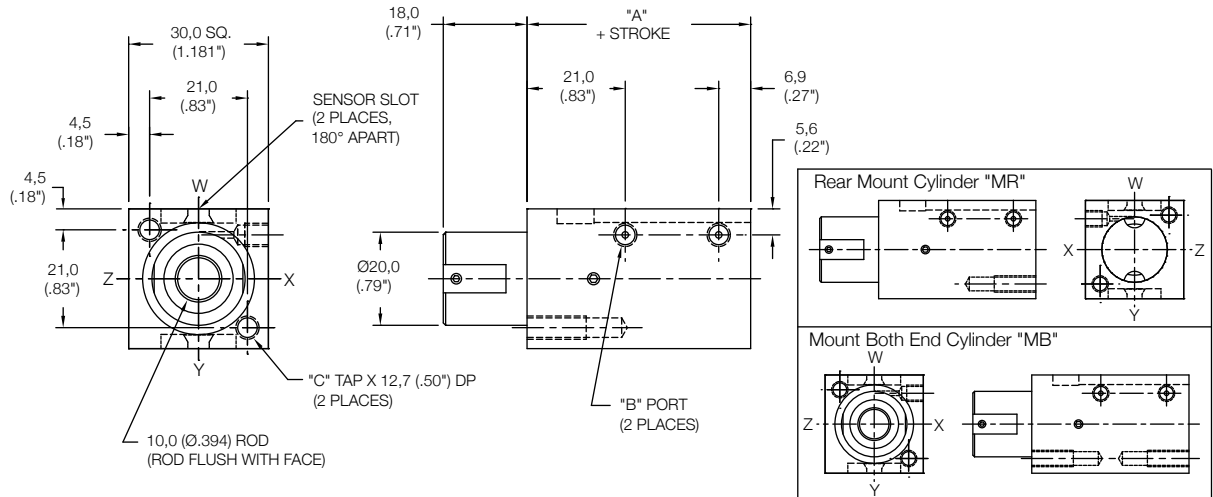
	Standard Threads	"EM" Option
"B"	M5X0.8	#10-32



Magnetic Front Mount Cylinder "MF"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	10mm	38,0 (1.50")	PUSH 3,14 cm ² (0.48 in ²)
	15mm		PULL 2,32 cm ² (0.36 in ²)

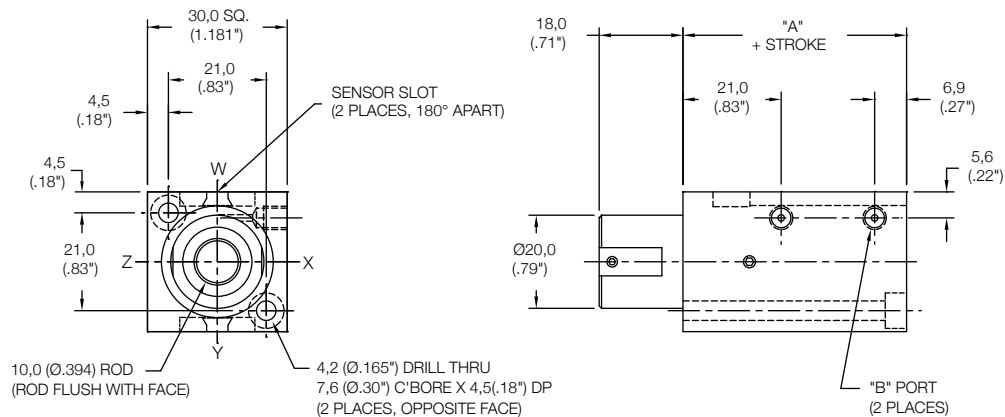
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32



Magnetic Thru Mount Cylinder "MT"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	10mm	38,0 (1.50")	PUSH 3,14 cm ² (0.48 in ²)
	15mm		PULL 2,32 cm ² (0.36 in ²)

	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32



SC - 20 X [] [] [] M - [] [] []

MODEL BORE STROKE ROD STYLE MOUNTING MAGNETIC OPTIONS

10 - 10mm STROKE
15 - 15mm STROKE

BLANK (NO CODE) - ROUND ROD (SHOWN)
F - FLAT ROD (SEE PAGE 127)
W - FLAT ROD WITH ROLLER (SEE PAGE 127)

SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE PAGE 88 FOR DETAILS)

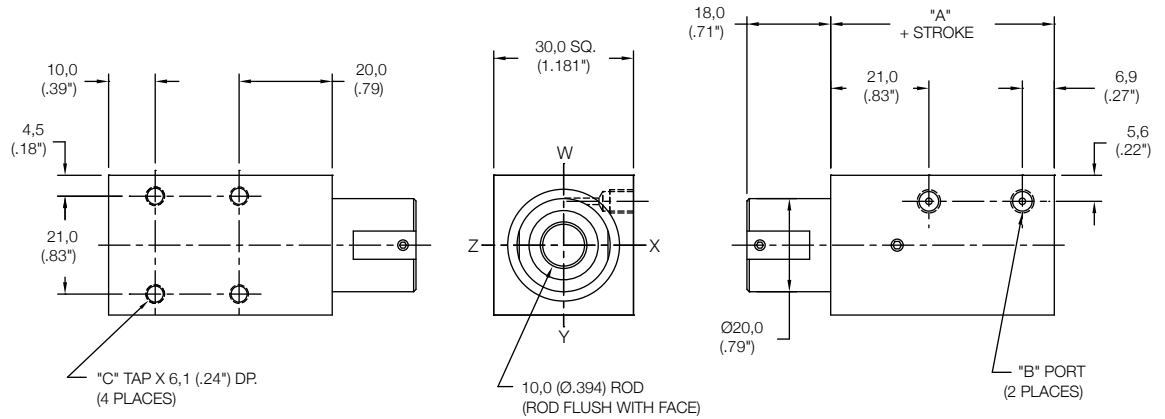
MB - BOTH END MOUNTS
MF - FRONT MOUNT
MR - REAR MOUNT
MT - THRU MOUNT
FR - FLANGE ON REAR FACE (SEE PAGE 128)

EM - INCH THREADS & PORTS
HS - HIGH TEMP SEALS (SEE PAGE 97)
UR - URETHANE SHOCK PAD REAR
(SEE PAGE 97)

Non Magnetic Side Mount Cylinder "MS"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	10mm	38,0 (1.50")	PUSH 3,14 cm ² (0.48 in ²)
	15mm		PULL 2,32 cm ² (0.36 in ²)

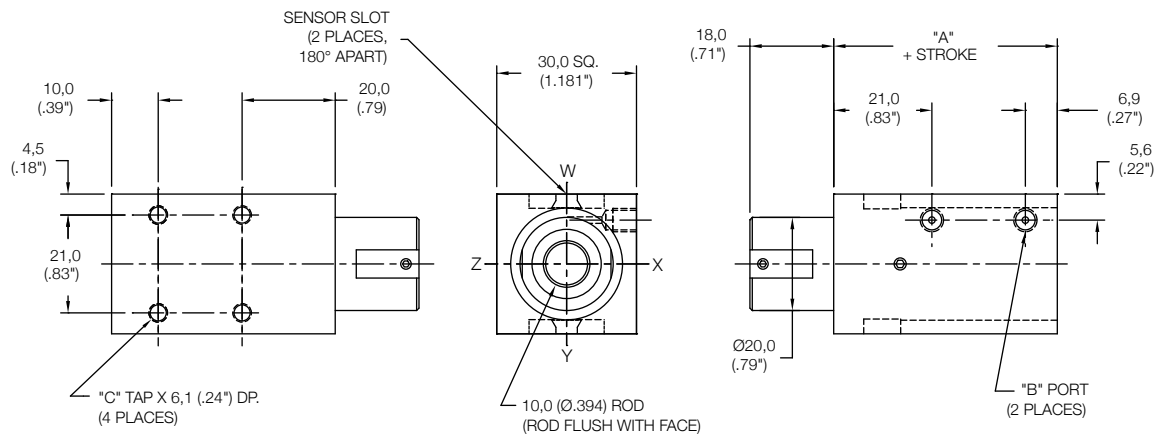
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M4X0,7	#8-32



Magnetic Side Mount Cylinder "MS"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	10mm	38,0 (1.50")	PUSH 3,14 cm ² (0.48 in ²)
	15mm		PULL 2,32 cm ² (0.36 in ²)

	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M4X0,7	#8-32



SC - 20 X [] [] [] - [] [] []
 MODEL BORE STROKE ROD STYLE MOUNTING MAGNETIC OPTIONS

10 - 10mm STROKE
 15 - 15mm STROKE

MS - SIDE THREADS
 FS - SIDE FLANGES
 (SEE PAGE 128)

EM - INCH THREADS & PORTS
 HS - HIGH TEMP SEALS (SEE PAGE 97)
 UR - URETHANE SHOCK PAD REAR
 (SEE PAGE 97)

BLANK (NO CODE) - ROUND ROD (SHOWN)
 F - FLAT ROD (SEE PAGE 127)
 W - FLAT ROD WITH ROLLER (SEE PAGE 127)

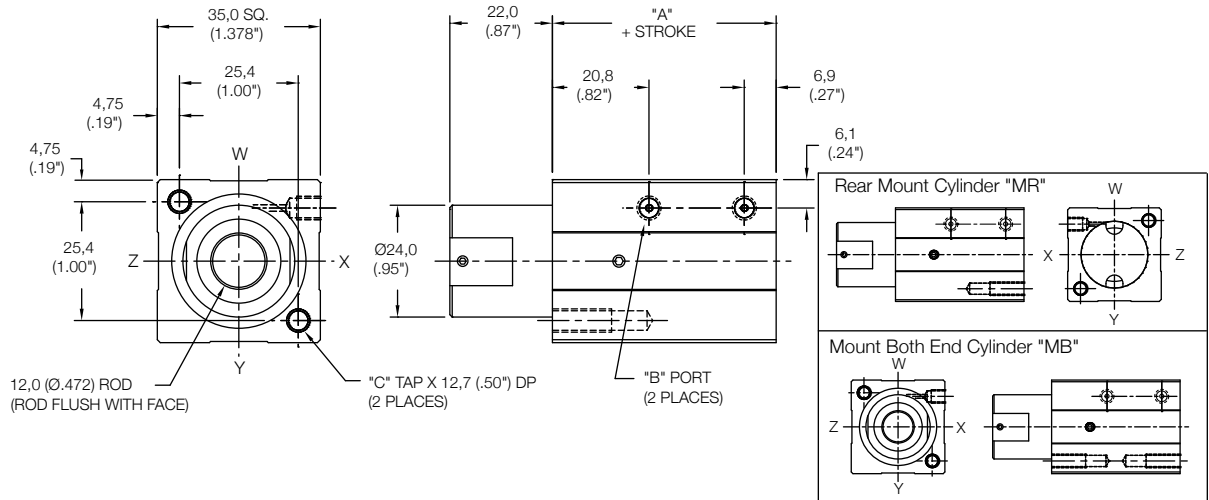
BLANK (NO CODE) - STANDARD "NO MAGNET" PISTON
 M - MAGNETIC PISTON AND SENSOR MOUNTING SLOTS

SENSORS SOLD SEPARATELY
 SKS, SKP, SCS, SCP - SOLID STATE
 LIMIT SENSORS
 (SEE PAGE 88 FOR DETAILS)

Non Magnetic Front Mount Cylinder "MF"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	10mm	38,0 (1.50")	PUSH 4,91 cm ² (0.76 in ²) PULL 3,81 cm ² (0.59 in ²)
	15mm		
	20mm		

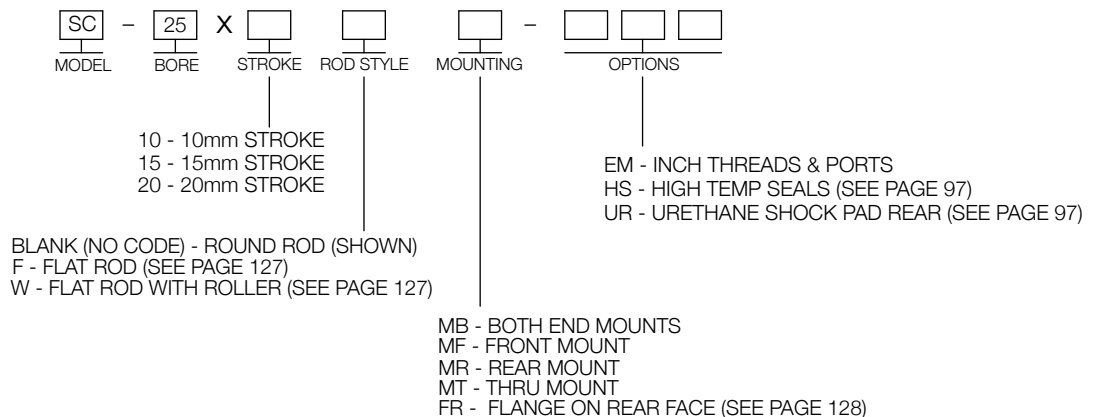
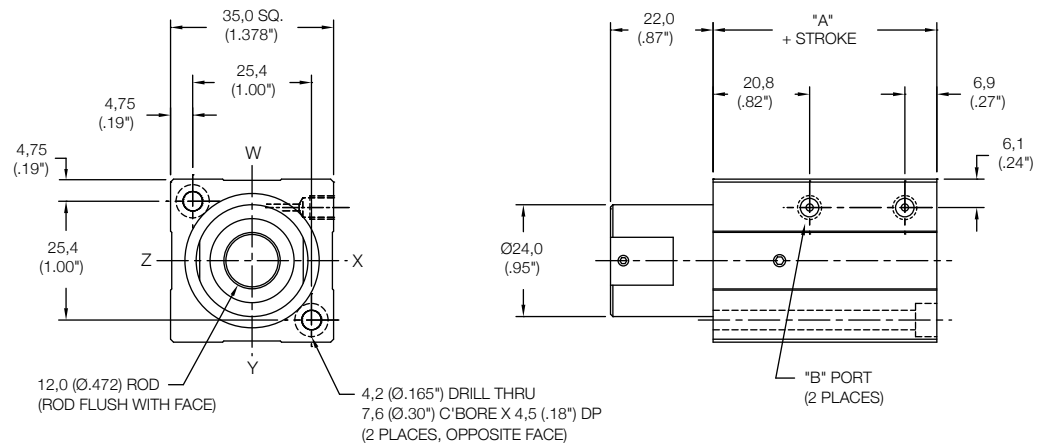
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32



Non Magnetic Thru Mount Cylinder "MT"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	10mm	38,0 (1.50")	PUSH 4,91 cm ² (.76 in ²) PULL 3,81 cm ² (.59 in ²)
	15mm		
	20mm		

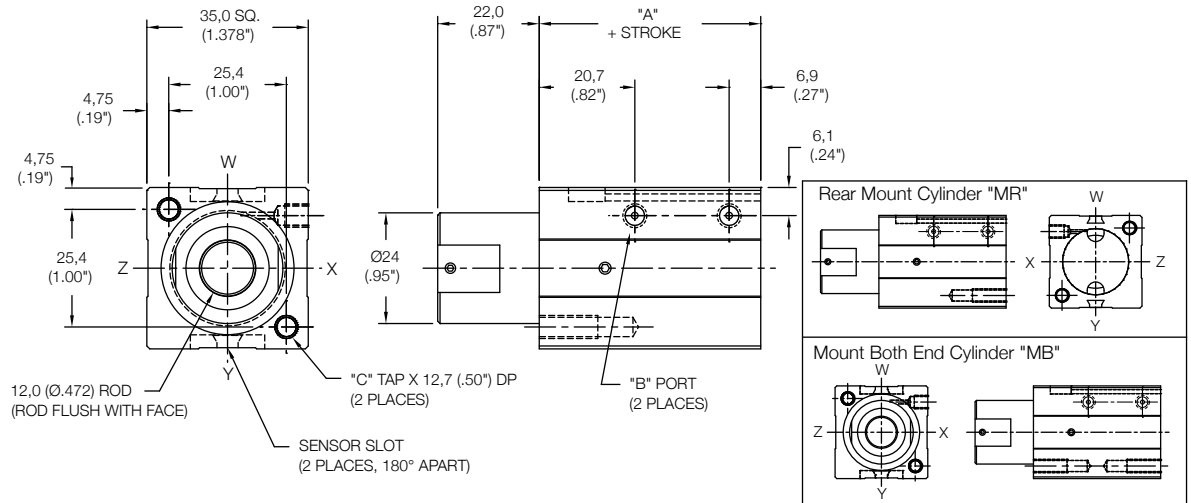
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32



Magnetic Front Mount Cylinder "MF"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	10mm	38,0 (1.50")	PUSH 4,91 cm ² (0.76 in ²) PULL 3,81 cm ² (0.59 in ²)
	15mm		
	20mm		

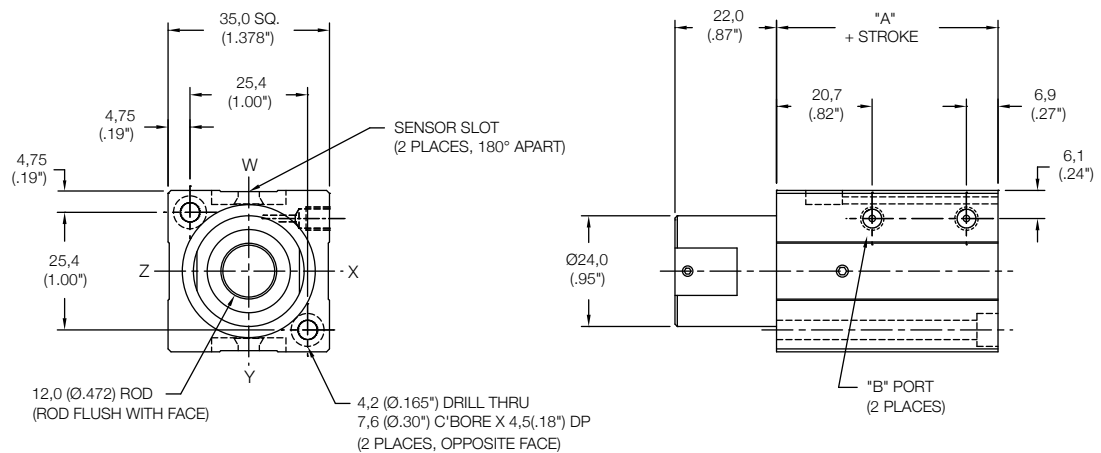
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32



Magnetic Thru Mount Cylinder "MT"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	10mm	38,0 (1.50")	PUSH 4,91 cm ² (.76 in ²) PULL 3,81 cm ² (.59 in ²)
	15mm		
	20mm		

	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32



SC - 25 X [] [] [] M - [] [] []
MODEL BORE STROKE ROD STYLE MOUNTING MAGNETIC OPTIONS

10 - 10mm STROKE
15 - 15mm STROKE
20 - 20mm STROKE

BLANK (NO CODE) - ROUND ROD (SHOWN)
F - FLAT ROD (SEE PAGE 127)
W - FLAT ROD WITH ROLLER (SEE PAGE 127)

SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE PAGE 88 FOR DETAILS)

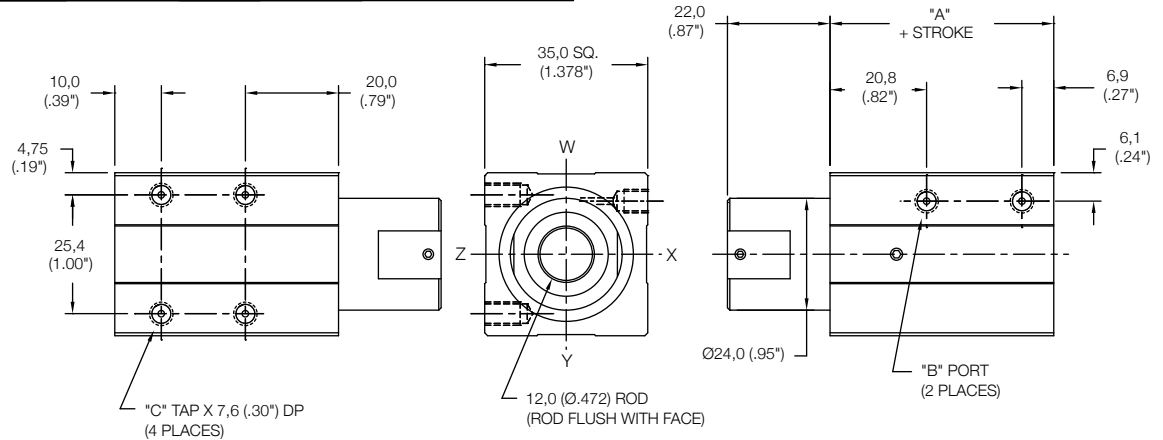
MB - BOTH END MOUNTS
MF - FRONT MOUNT
MR - REAR MOUNT
MT - THRU MOUNT
FR - FLANGE ON REAR FACE (SEE PAGE 128)

EM - INCH THREADS & PORTS
HS - HIGH TEMP SEALS (SEE PAGE 97)
UR - URETHANE SHOCK PAD REAR
(SEE PAGE 97)

Non Magnetic Side Mount Cylinder "MS"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	10mm	38,0 (1.50")	PUSH 4,91 cm ² (0.76 in ²) PULL 3,81 cm ² (0.59 in ²)
	15mm		
	20mm		

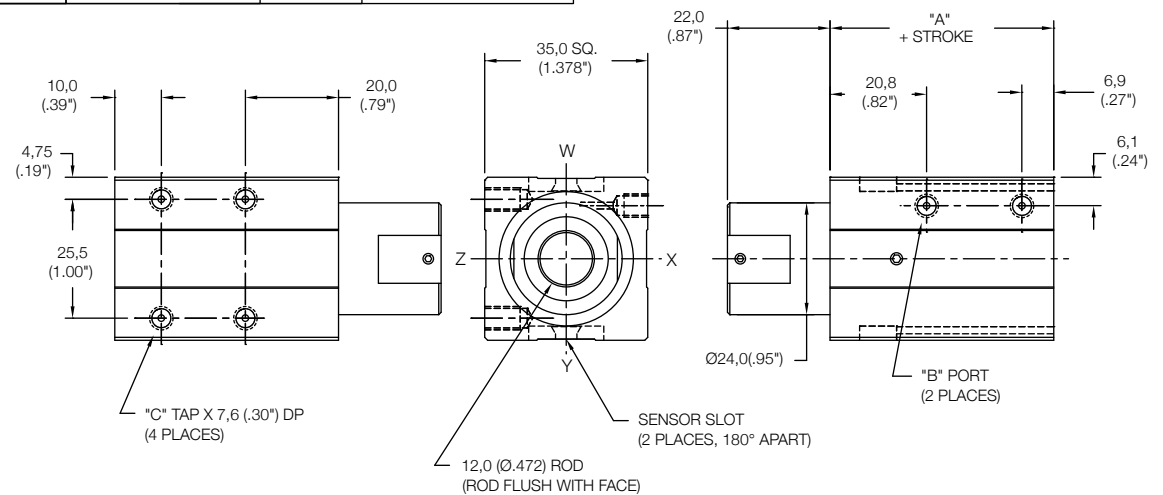
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32



Magnetic Side Mount Cylinder "MS"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	10mm	38,0 (1.50")	PUSH 4,91 cm ² (0.76 in ²) PULL 3,81 cm ² (0.59 in ²)
	15mm		
	20mm		

	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32



SC - 25 X [] [] [] - [] [] []
MODEL BORE STROKE ROD STYLE MOUNTING MAGNETIC OPTIONS

10 - 10mm STROKE
15 - 15mm STROKE
20 - 20mm STROKE

MS - SIDE THREADS
FS - SIDE FLANGES
(SEE PAGE 128)

EM - INCH THREADS & PORTS
HS - HIGH TEMP SEALS (SEE PAGE 97)
UR - URETHANE SHOCK PAD REAR
(SEE PAGE 97)

BLANK (NO CODE) - ROUND ROD (SHOWN)
F - FLAT ROD (SEE PAGE 127)
W - FLAT ROD WITH ROLLER (SEE PAGE 127)

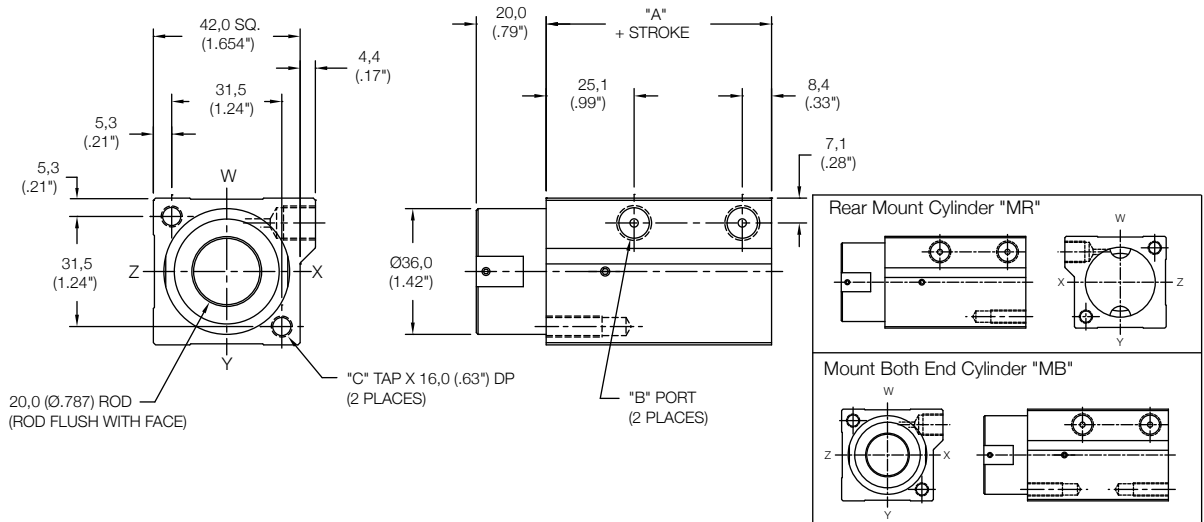
BLANK (NO CODE) - STANDARD "NO MAGNET" PISTON
M - MAGNETIC PISTON AND SENSOR MOUNTING SLOTS

SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE PAGE 88 FOR DETAILS)

Non Magnetic Front Mount Cylinder "MF"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	10mm	44,0 (1.73")	PUSH 8,04 cm ² (1.25 in ²) PULL 4,91 cm ² (0.76 in ²)
	15mm		
	20mm		

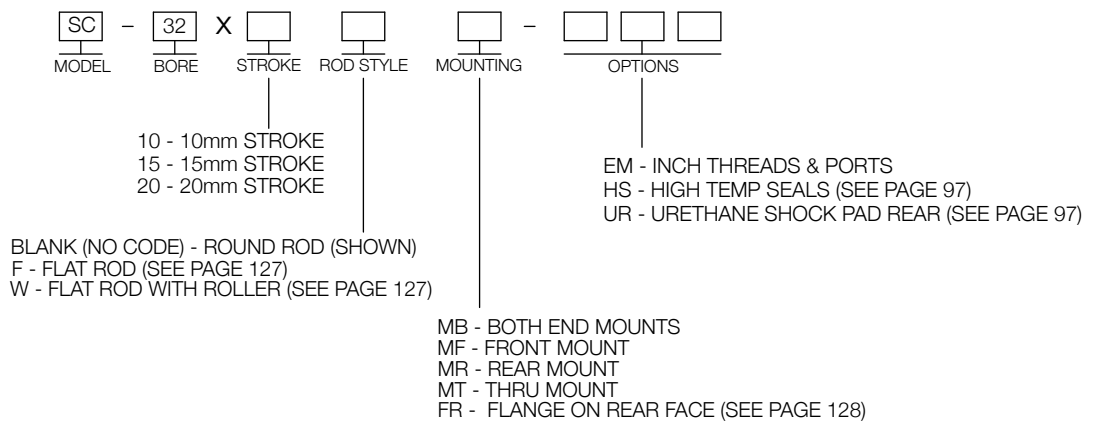
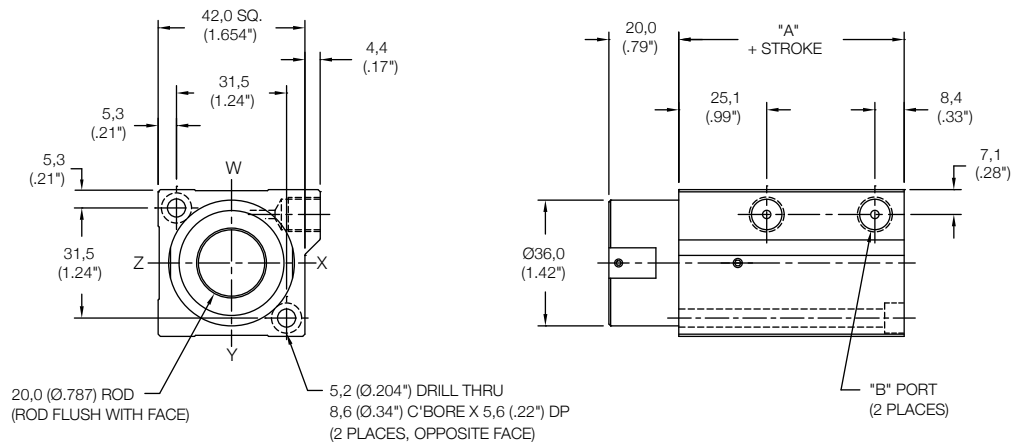
	Standard Threads	"EM" Option
"B"	G 1/8 PORT	1/8-27
"C"	M6X1,0	1/4-20



Non Magnetic Thru Mount Cylinder "MT"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	10mm	44,0 (1.73")	PUSH 8,04 cm ² (1.25 in ²) PULL 4,91 cm ² (0.76 in ²)
	15mm		
	20mm		

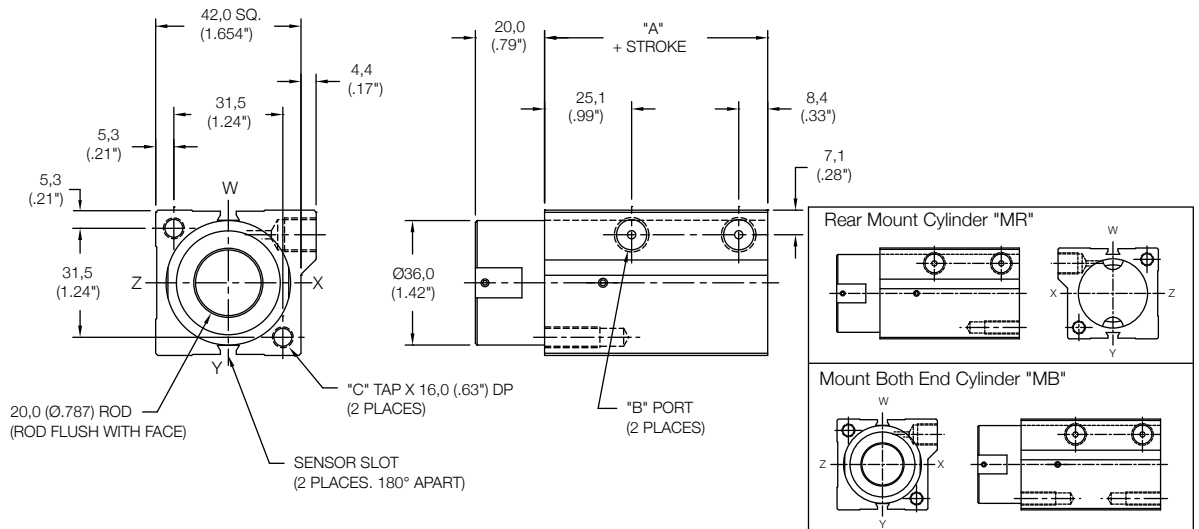
	Standard Threads	"EM" Option
"B"	G 1/8 PORT	1/8-27



Magnetic Front Mount Cylinder "MF"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	10mm	44,0 (1.73")	PUSH 8,04 cm ² (1.25 in ²) PULL 4,91 cm ² (0.76 in ²)
	15mm		
	20mm		

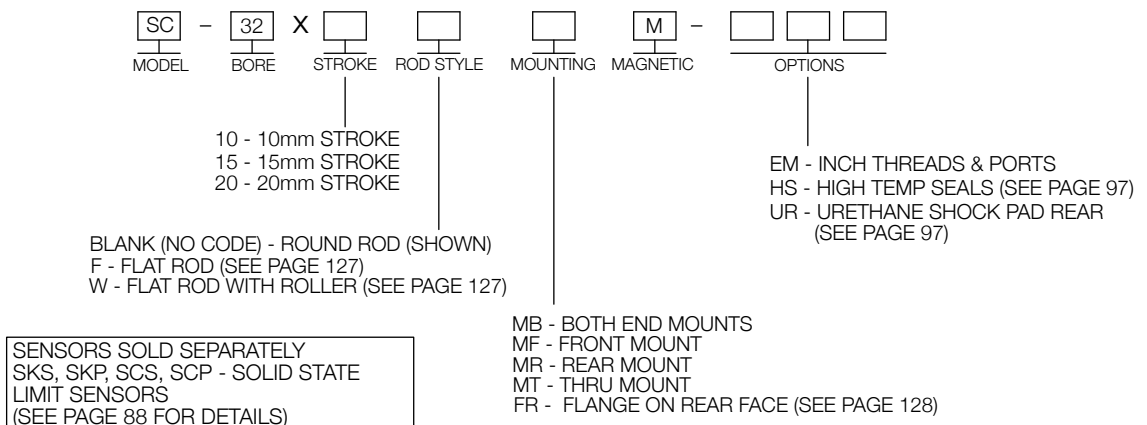
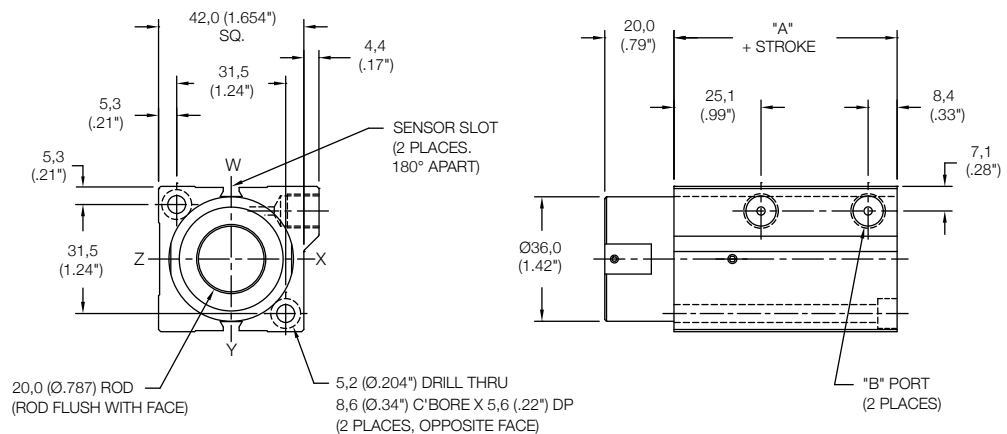
	Standard Threads	"EM" Option
"B"	G 1/8 PORT	1/8-27
"C"	M6X1,0	1/4-20



Magnetic Thru Mount Cylinder "MT"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	10mm	44,0 (1.73)	PUSH 8,04 cm ² (1.25 in ²)
	15mm		PULL 4,91 cm ² (0.76 in ²)
	20mm		

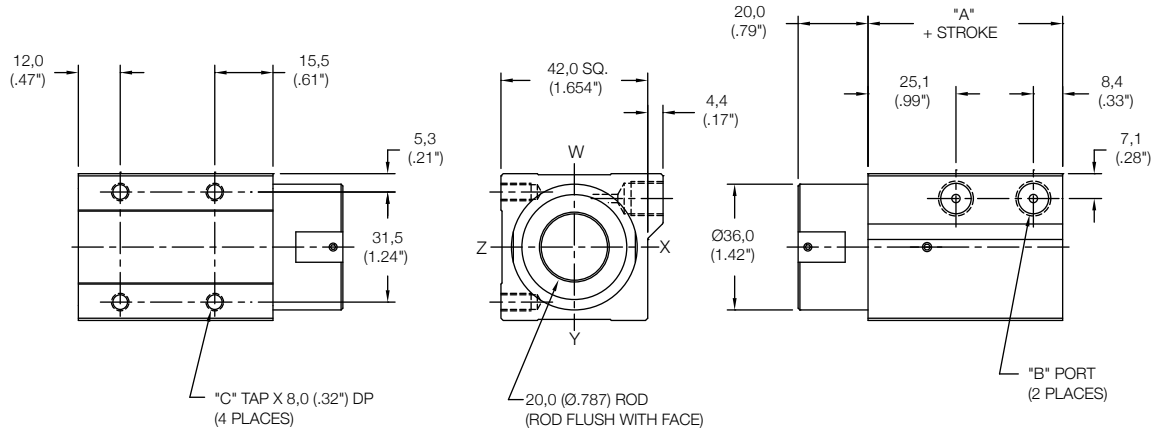
	Standard Threads	"EM" Option
"B"	G 1/8 PORT	1/8-27



Non Magnetic Side Mount Cylinder "MS"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	10mm	44,0 (1.73")	PUSH 8,04 cm ² (1.25 in ²) PULL 4,91 cm ² (0.76 in ²)
	15mm		
	20mm		

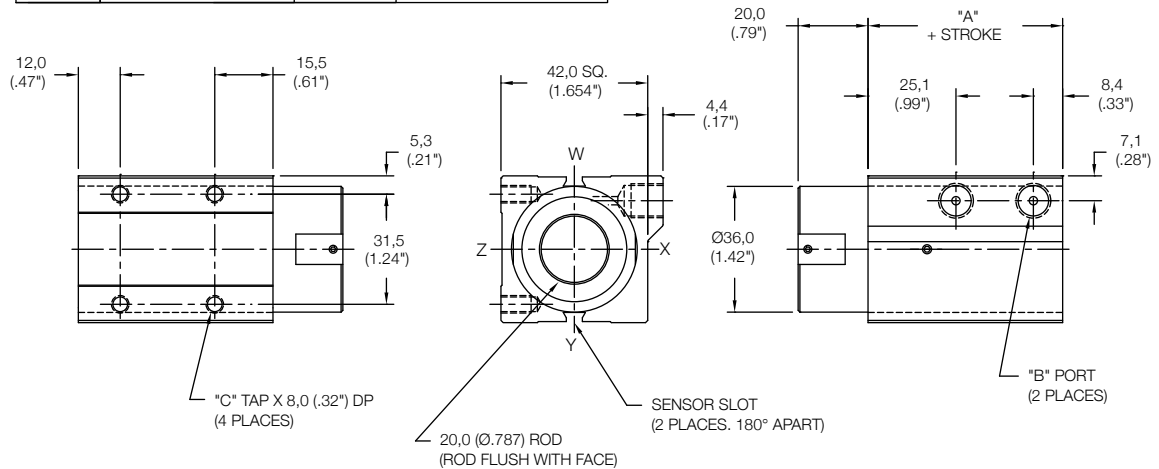
	Standard Threads	"EM" Option
"B"	G 1/8 PORT	1/8-27
"C"	M5X0,8	#10-32



Magnetic Side Mount Cylinder "MS"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	10mm	44,0 (1.73")	PUSH 8,04 cm ² (1.25 in ²) PULL 4,91 cm ² (0.76 in ²)
	15mm		
	20mm		

	Standard Threads	"EM" Option
"B"	G 1/8 PORT	1/8-27
"C"	M5X0,8	#10-32



SC - 32 X [] [] [] - [] [] []

MODEL BORE STROKE ROD STYLE MOUNTING MAGNETIC OPTIONS

10 - 10mm STROKE
15 - 15mm STROKE
20 - 20mm STROKE

MS - SIDE THREADS
FS - SIDE FLANGES
(SEE PAGE 128)

EM - INCH THREADS & PORTS
HS - HIGH TEMP SEALS (SEE PAGE 97)
UR - URETHANE SHOCK PAD REAR
(SEE PAGE 97)

BLANK (NO CODE) - ROUND ROD (SHOWN)
F - FLAT ROD (SEE PAGE 127)
W - FLAT ROD WITH ROLLER (SEE PAGE 127)

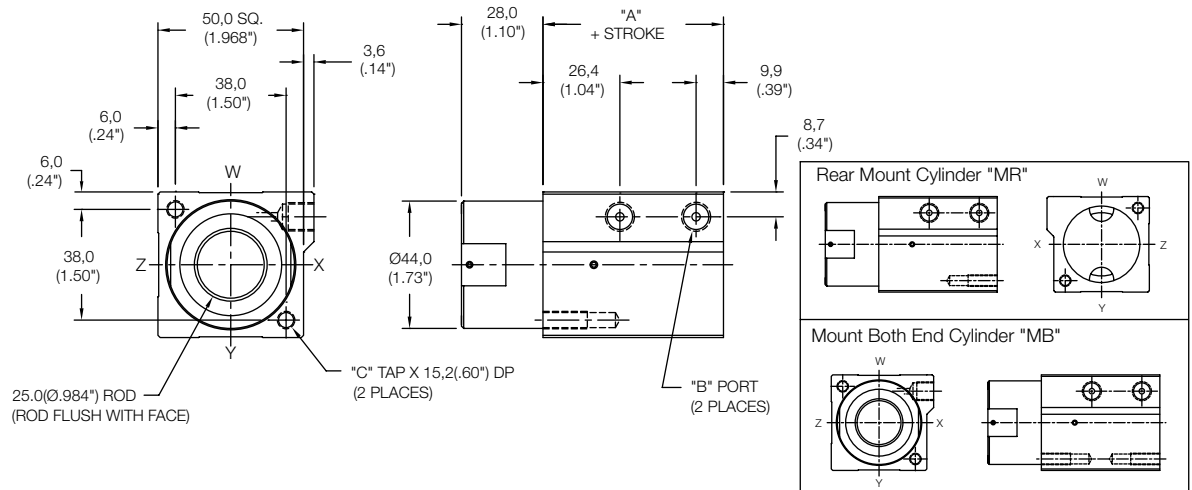
BLANK (NO CODE) - STANDARD "NO MAGNET" PISTON
M - MAGNETIC PISTON AND SENSOR MOUNTING SLOTS

SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE PAGE 88 FOR DETAILS)

Non Magnetic Front Mount Cylinder "MF"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	20mm	47,0 (1.85")	PUSH 12,56 cm ² (1.95 in ²) PULL 9,42 cm ² (1.46 in ²)
	25mm		
	30mm		

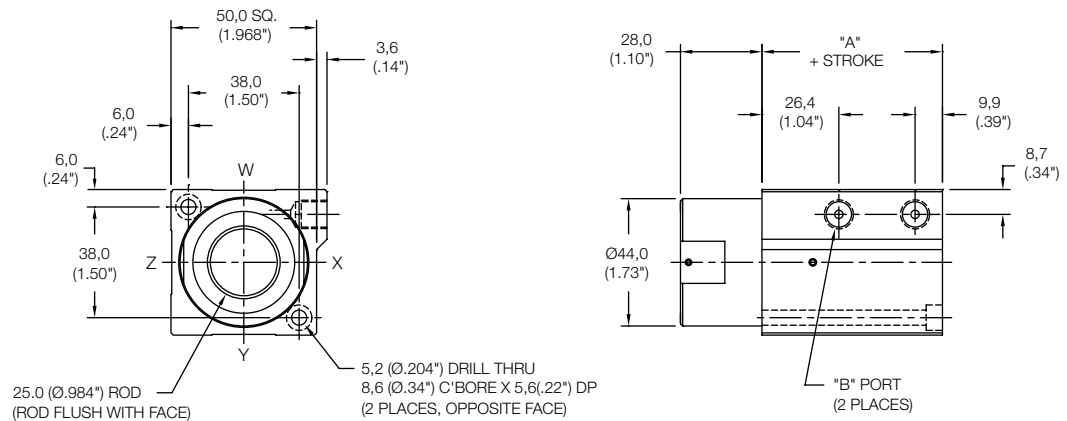
	Standard Threads	"EM" Option
"B"	G 1/8 PORT	1/8-27
"C"	M6X1,0	1/4-20



Non Magnetic Thru Mount Cylinder "MT"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	20mm	47,0 (1.85")	PUSH 12,56 cm ² (1.95 in ²) PULL 9,42 cm ² (1.46 in ²)
	25mm		
	30mm		

	Standard Threads	"EM" Option
"B"	G 1/8 PORT	1/8-27



SC - 40 X [] [] [] - [] [] []

MODEL BORE STROKE ROD STYLE MOUNTING OPTIONS

20 - 20mm STROKE
25 - 25mm STROKE
30 - 30mm STROKE

BLANK (NO CODE) - ROUND ROD (SHOWN)
F - FLAT ROD (SEE PAGE 127)
W - FLAT ROD WITH ROLLER (SEE PAGE 127)

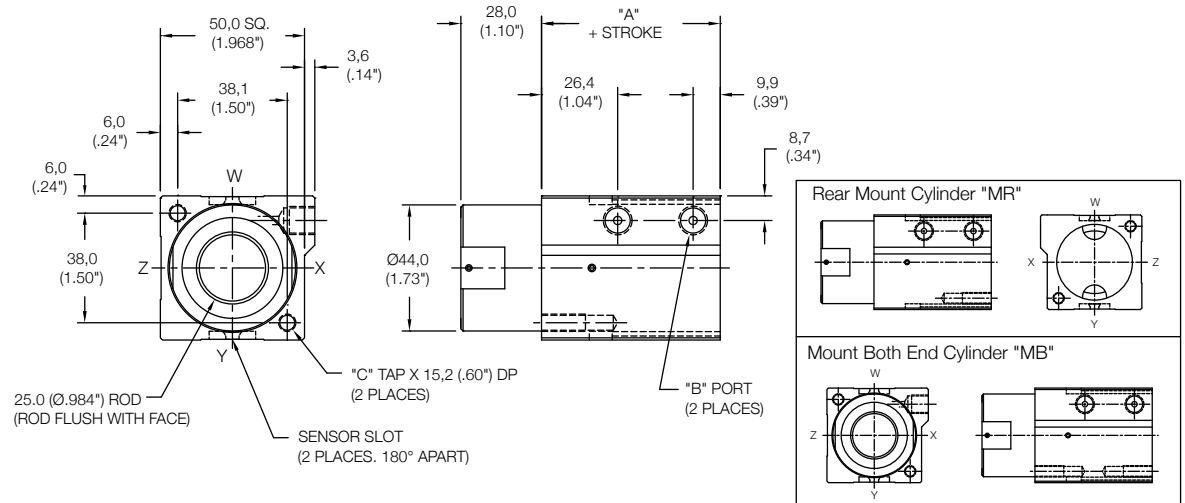
EM - INCH THREADS & PORTS
HS - HIGH TEMP SEALS (SEE PAGE 97)
UR - URETHANE SHOCK PAD REAR (SEE PAGE 97)

MB - BOTH END MOUNTS
MF - FRONT MOUNT
MR - REAR MOUNT
MT - THRU MOUNT
FR - FLANGE ON REAR FACE (SEE PAGE 128)

Magnetic Front Mount Cylinder "MF"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	20mm	47,0 (1.85")	PUSH 12,56 cm ² (1.95 in ²) PULL 9,42 cm ² (1.46 in ²)
	25mm		
	30mm		

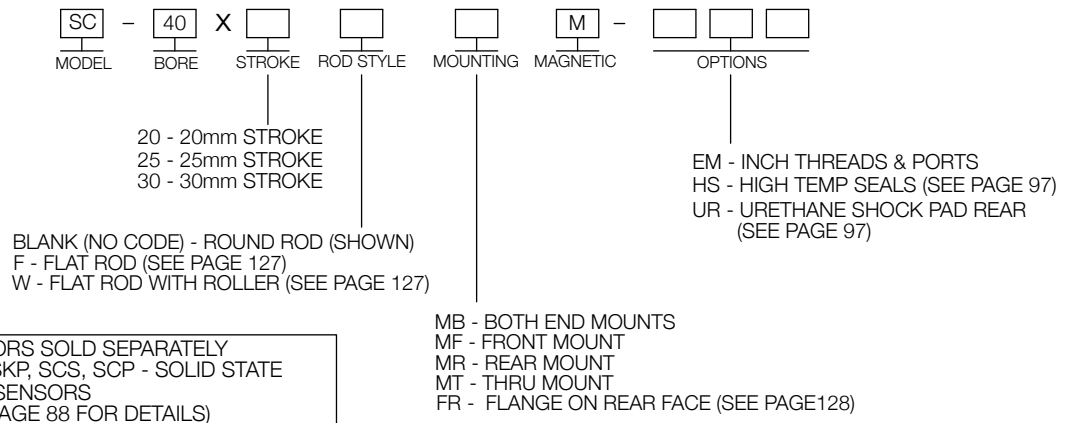
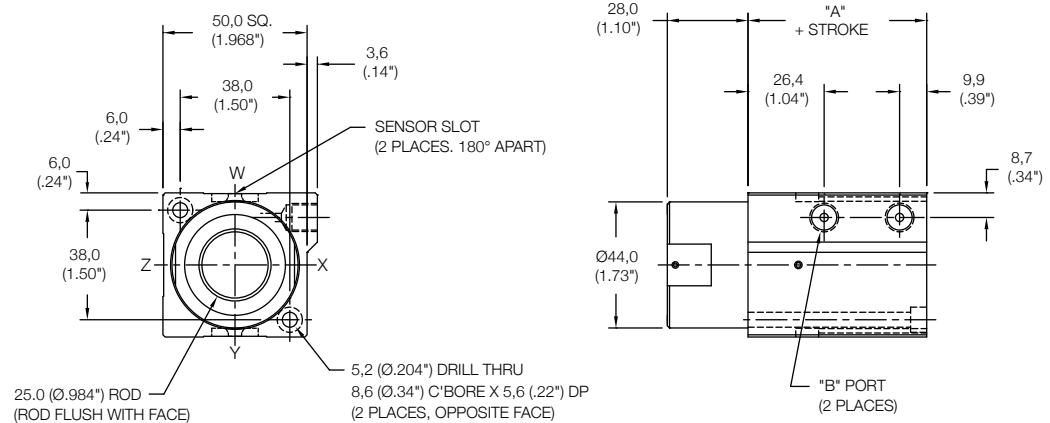
	Standard Threads	"EM" Option
"B"	G 1/8 PORT	1/8-27
"C"	M6X1,0	1/4-20



Magnetic Thru Mount Cylinder "MT"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	20mm	47,0 (1.85")	PUSH 12,56 cm ² (1.95 in ²) PULL 9,42 cm ² (1.46 in ²)
	25mm		
	30mm		

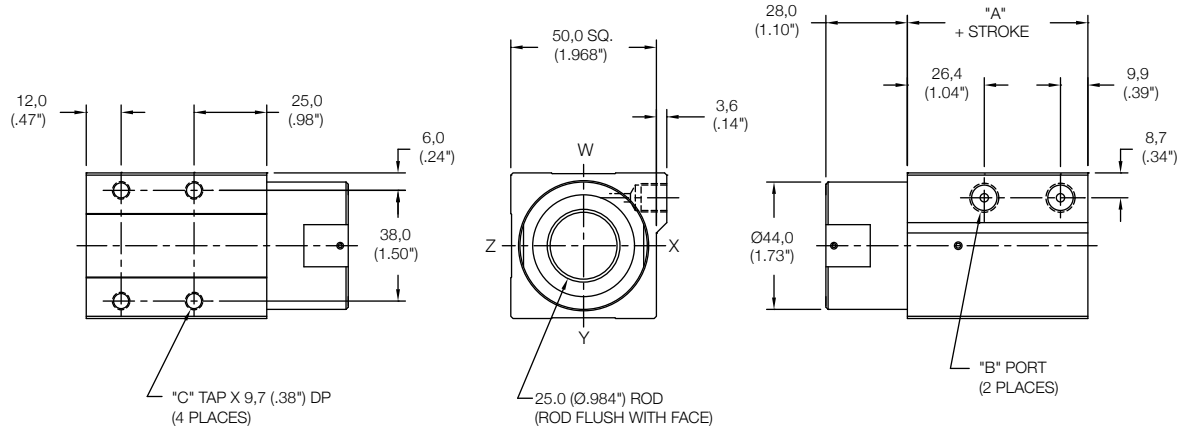
	Standard Threads	"EM" Option
"B"	G 1/8 PORT	1/8-27



Non Magnetic Side Mount Cylinder "MS"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	20mm	47,0 (1.85")	PUSH 12,56 cm ² (1.95 in ²) PULL 9,42 cm ² (1.46 in ²)
	25mm		
	30mm		

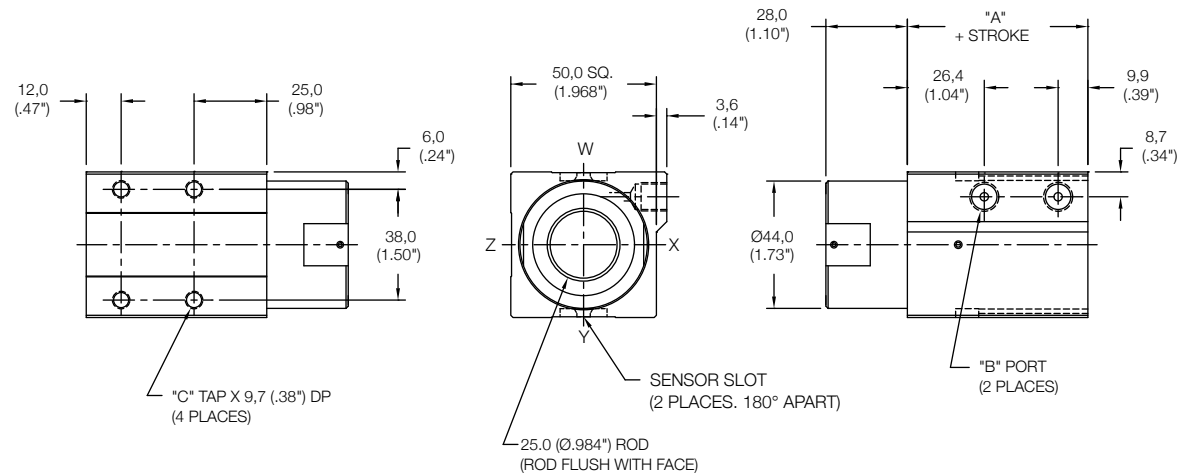
	Standard Threads	"EM" Option
"B"	G 1/8 PORT	1/8-27
"C"	M6X1,0	1/4-20



Magnetic Side Mount Cylinder "MS"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	20mm	47,0 (1.85")	PUSH 12,56 cm ² (1.95 in ²) PULL 9,42 cm ² (1.46 in ²)
	25mm		
	30mm		

	Standard Threads	"EM" Option
"B"	G 1/8 PORT	1/8-27
"C"	M6X1,0	1/4-20



SC - 40 X [] [] [] - [] [] []

MODEL BORE STROKE ROD STYLE MOUNTING MAGNETIC OPTIONS

20 - 20mm STROKE
25 - 25mm STROKE
30 - 30mm STROKE

MS - SIDE THREADS
FS - SIDE FLANGES
(SEE PAGE 128)

EM - INCH THREADS & PORTS
HS - HIGH TEMP SEALS (SEE PAGE 97)
UR - URETHANE SHOCK PAD REAR
(SEE PAGE 97)

BLANK (NO CODE) - ROUND ROD (SHOWN)
F - FLAT ROD (SEE PAGE 127)
W - FLAT ROD WITH ROLLER (SEE PAGE 127)

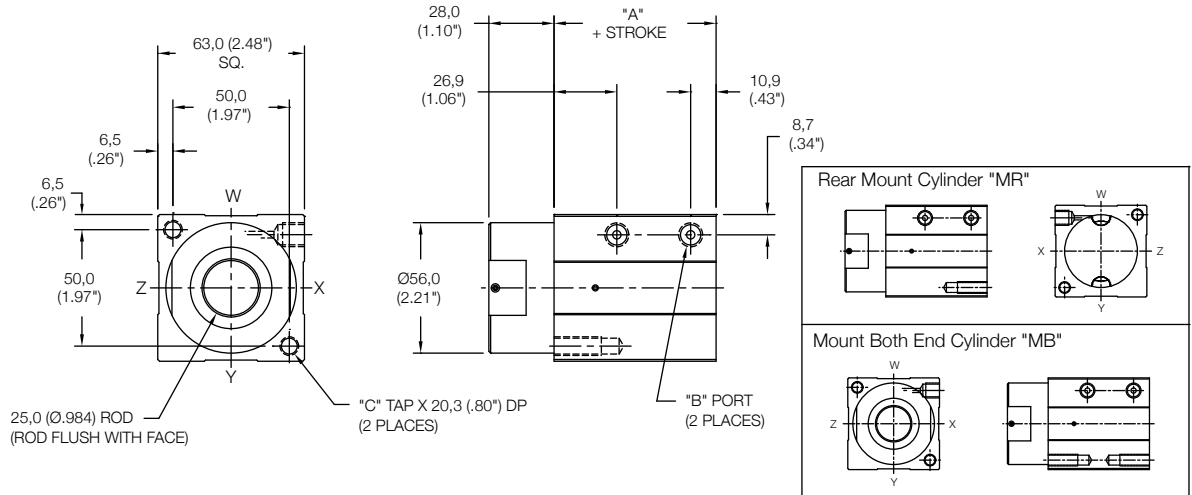
BLANK (NO CODE) - STANDARD "NO MAGNET" PISTON
M - MAGNETIC PISTON AND SENSOR MOUNTING SLOTS

SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE PAGE 88 FOR DETAILS)

Non Magnetic Front Mount Cylinder "MF"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	20mm	49,5 (1.95")	PUSH 19,63 cm ² (3.04 in ²) PULL 14,72 cm ² (2.28 in ²)
	25mm		
	30mm		

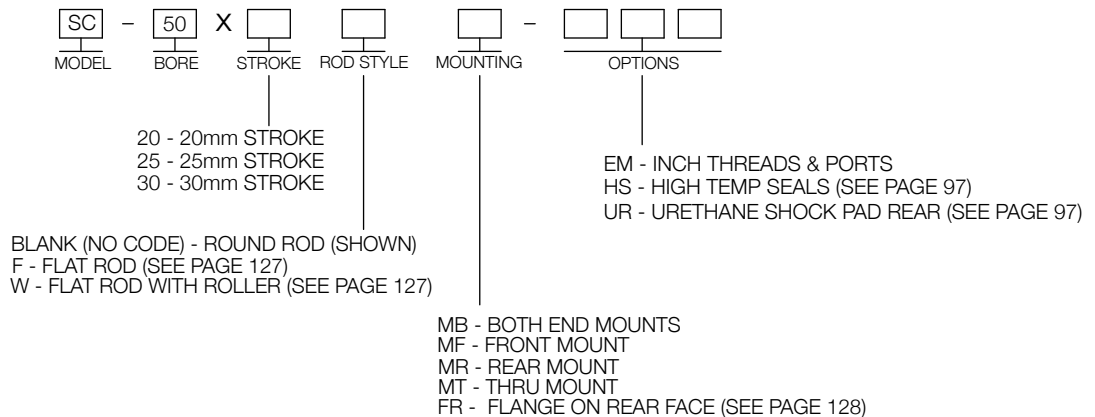
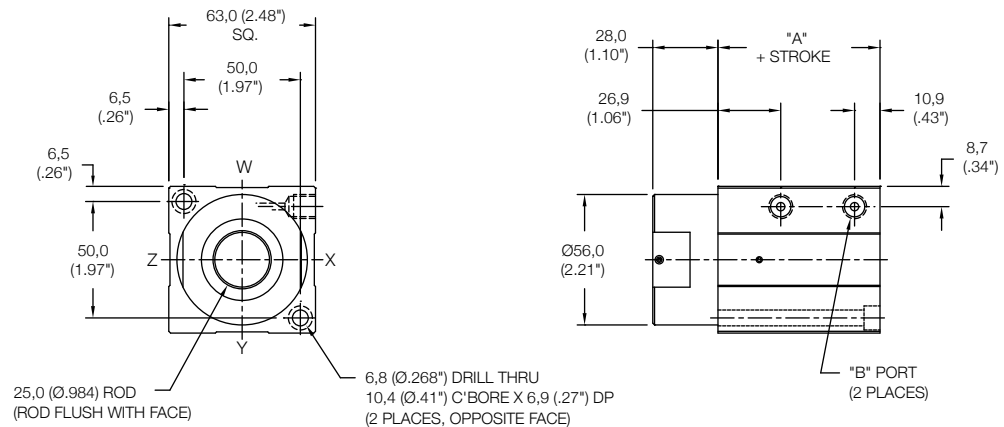
	Standard Threads	"EM" Option
"B"	G 1/8 PORT	1/8-27
"C"	M8X1,25	5/16-18



Non Magnetic Thru Mount Cylinder "MT"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	20mm	49,5 (1.95")	PUSH 19,63 cm ² (3.04 in ²) PULL 14,72 cm ² (2.28 in ²)
	25mm		
	30mm		

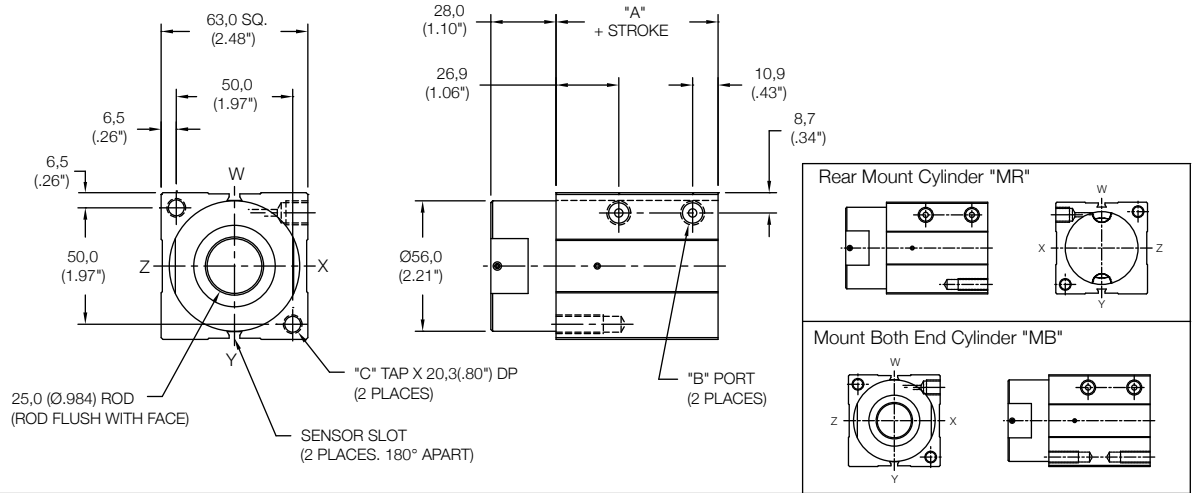
	Standard Threads	"EM" Option
"B"	G 1/8 PORT	1/8-27



Magnetic Front Mount Cylinder "MF"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	20mm	49,5 (1.95")	PUSH 19,63 cm ² (3.04 in ²) PULL 14,72 cm ² (2.28 in ²)
	25mm		
	30mm		

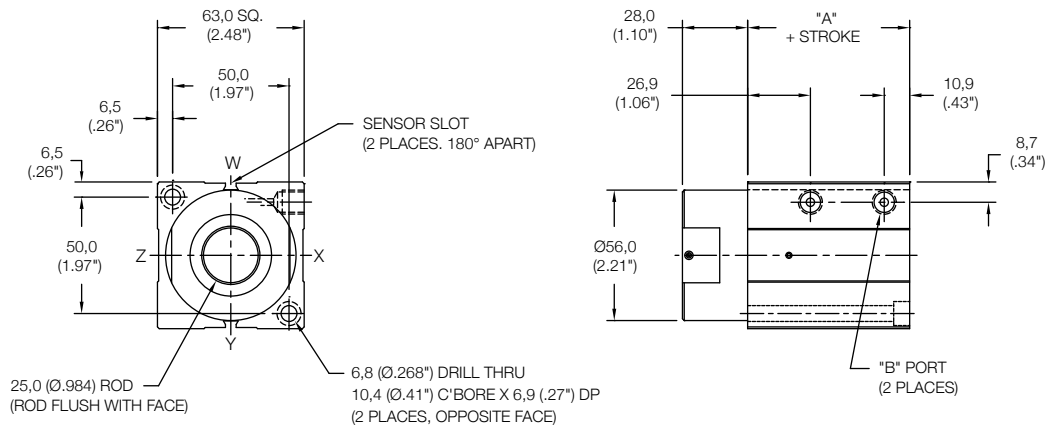
	Standard Threads	"EM" Option
"B"	G 1/8 PORT	1/8-27
"C"	M8X1,25	5/16-18



Magnetic Thru Mount Cylinder "MT"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	20mm	49,5 (1.95")	PUSH 19,63 cm ² (3.04 in ²) PULL 14,72 cm ² (2.28 in ²)
	25mm		
	30mm		

	Standard Threads	"EM" Option
"B"	G 1/8 PORT	1/8-27



SC - 50 X [] [] [] M - [] [] []
 MODEL BORE STROKE ROD STYLE MOUNTING MAGNETIC OPTIONS

20 - 20mm STROKE
 25 - 25mm STROKE
 30 - 30mm STROKE

BLANK (NO CODE) - ROUND ROD (SHOWN)
 F - FLAT ROD (SEE PAGE 127)
 W - FLAT ROD WITH ROLLER (SEE PAGE 127)

EM - INCH THREADS & PORTS
 HS - HIGH TEMP SEALS (SEE PAGE 62)
 UR - URETHANE SHOCK PAD REAR (SEE PAGE 97)

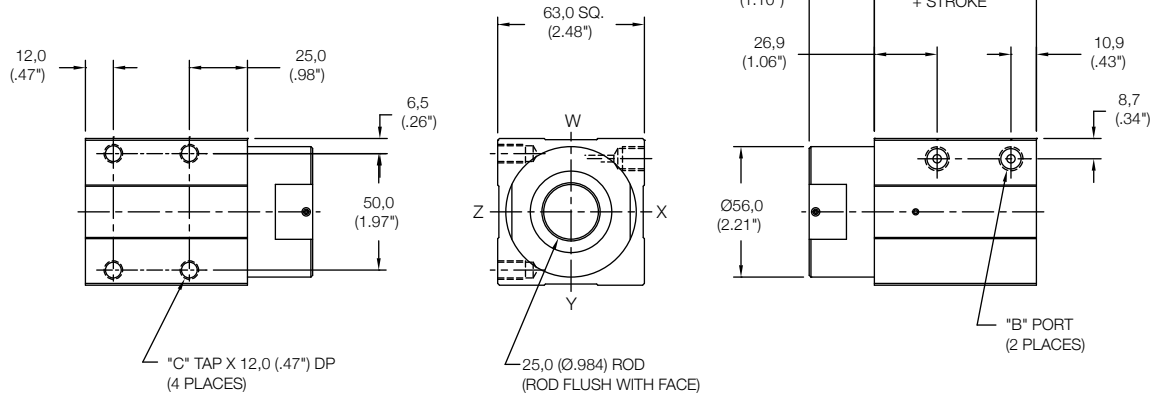
SENSORS SOLD SEPARATELY
 SKS, SKP, SCS, SCP - SOLID STATE
 LIMIT SENSORS
 (SEE PAGE 88 FOR DETAILS)

MB - BOTH END MOUNTS
 MF - FRONT MOUNT
 MR - REAR MOUNT
 MT - THRU MOUNT
 FR - FLANGE ON REAR FACE (SEE PAGE 128)

Non Magnetic Side Mount Cylinder "MS"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	20mm	49,5 (1.95")	PUSH 19,63 cm ² (3.04 in ²) PULL 14,72 cm ² (2.28 in ²)
	25mm		
	30mm		

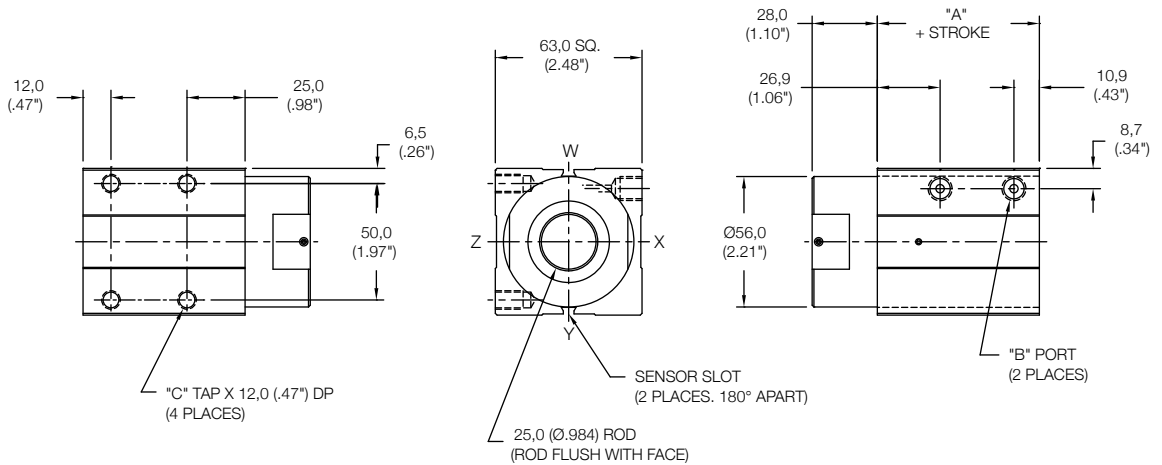
	Standard Threads	"EM" Option
"B"	G 1/8 PORT	1/8-27
"C"	M8X1,25	5/16-18



Magnetic Side Mount Cylinder "MS"

MODEL	STANDARD STROKES	"A"	PISTON AREA
SC	20mm	49,5 (1.95")	PUSH 19,63 cm ² (3.04 in ²) PULL 14,72 cm ² (2.28 in ²)
	25mm		
	30mm		

	Standard Threads	"EM" Option
"B"	G 1/8 PORT	1/8-27
"C"	M8X1,25	5/16-18



SC - 50 X [] [] [] - [] [] []
MODEL BORE STROKE ROD STYLE MOUNTING MAGNETIC OPTIONS

20 - 20mm STROKE
25 - 25mm STROKE
30 - 30mm STROKE

MS - SIDE THREADS
FS - SIDE FLANGES
(SEE PAGE 128)

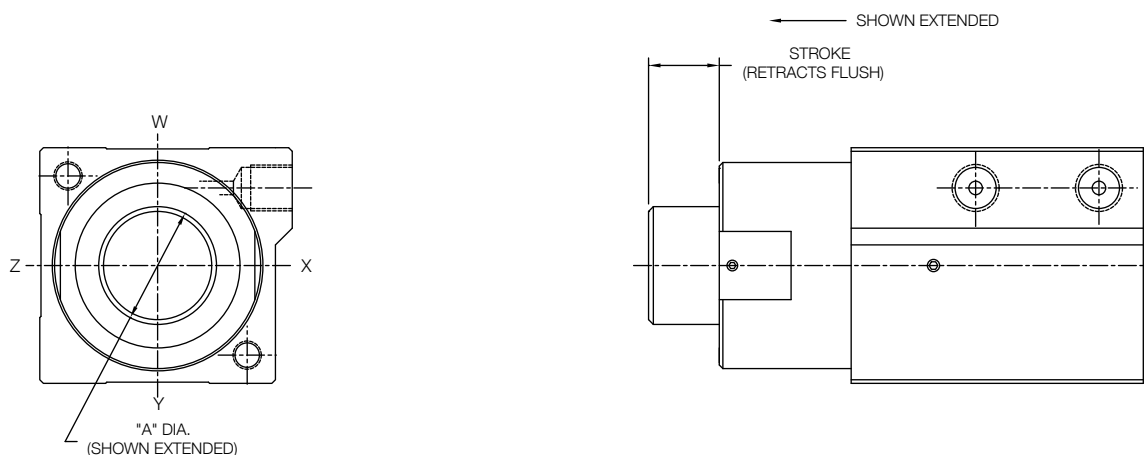
EM - INCH THREADS & PORTS
HS - HIGH TEMP SEALS (SEE PAGE 97)
UR - URETHANE SHOCK PAD REAR
(SEE PAGE 97)

BLANK (NO CODE) - ROUND ROD (SHOWN)
F - FLAT ROD (SEE PAGE 127)
W - FLAT ROD WITH ROLLER (SEE PAGE 127)

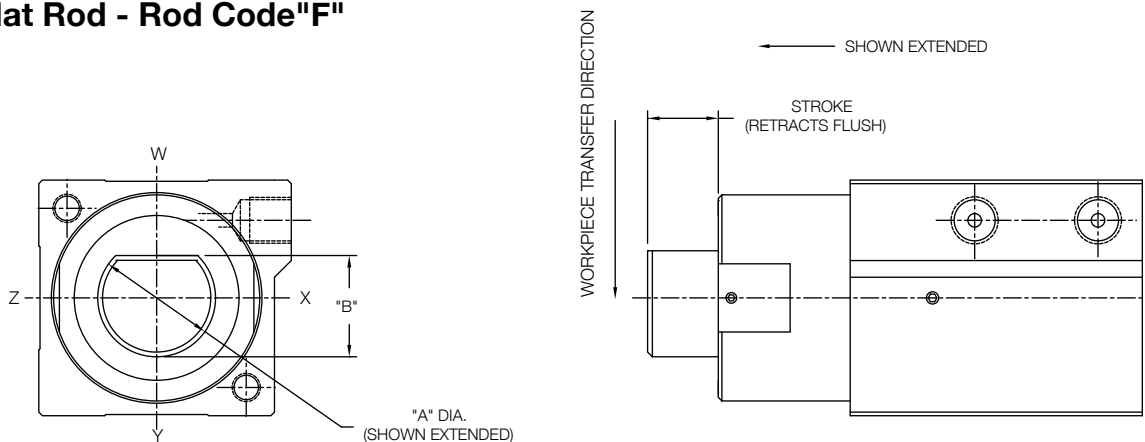
BLANK (NO CODE) - STANDARD "NO MAGNET" PISTON
M - MAGNETIC PISTON AND SENSOR MOUNTING SLOTS

SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE PAGE 88 FOR DETAILS)

Round Rod - Rod Code Blank (No Code)

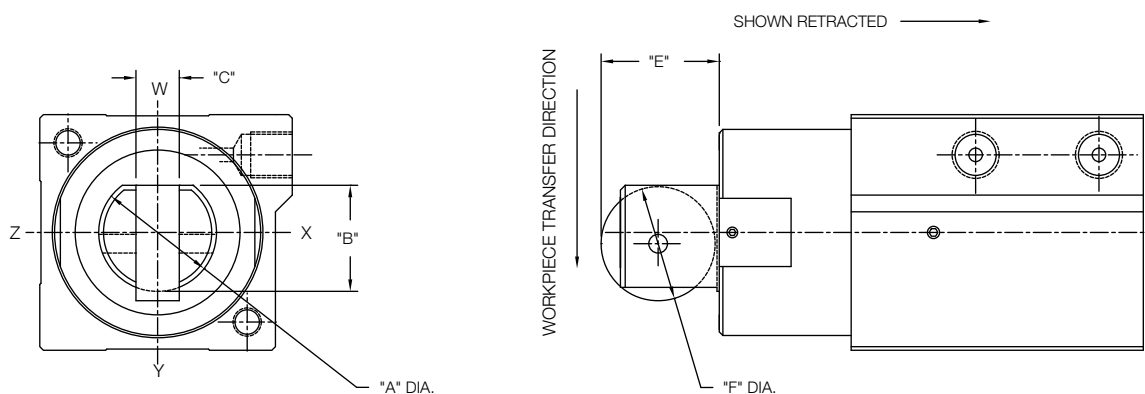


Flat Rod - Rod Code "F"



Standard orientation for flat is side "W". Flat can be reoriented to any position.

Flat Rod With Roller - Rod Code - "W"

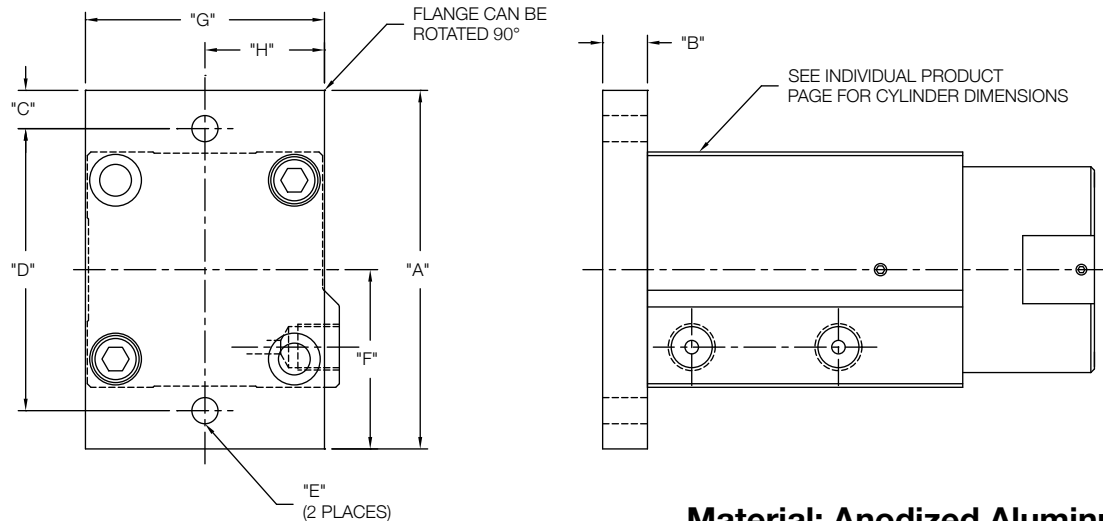


Standard orientation for flat is side "W". Flat can be reoriented to any position.

Bore	"A"	"B"	"C"	"D"	"E"	"F"
20	10,0(0.394")	8,0(0.315")	3,5 (.14")	6,35(0.25")	8,5 (0.33")	8,0 (0.32")
25	12,0(0.472")	10,0(0.394")	4,0(.16")	8,6(0.34")	11,0 (.43")	10,0 (0.39")
32	20,0(0.787")	18,0(0.709")	8,0 (.32")	17,0(0.67")	19,0 (.75")	18,0 (0.71")
40	25,0(0.984")	22,5(0.886")	9,0 (.35")	20,6(0.81")	25,0 (.98")	24,0 (0.95")
50	25,0(0.984")	22,5(0.886")	9,0 (.35")	20,6(0.81")	25,0 (.98")	24,0 (0.95")

- Rod shown extended on Round Rod and Flat Rod Styles
- Roller material: Plastic

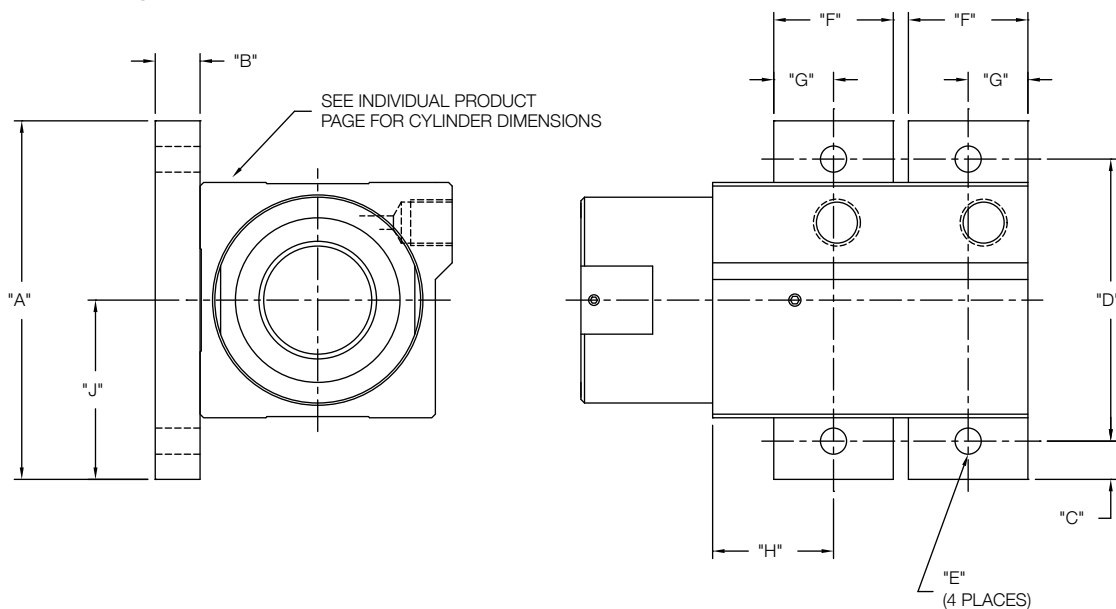
Rear Face Flange Mount - "FR"



Material: Anodized Aluminum

Bore	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"
20	50,8 (2.0")	9,5 (.38")	5,4 (.21")	40,0 (1.58")	4,5 (.18")	25,4 (1.0")	31,8 (1.25")	15,9 (.63")
25			3,9 (.15")	43,0 (1.69")			38,1 (1.50")	19,05 (.75")
32	63,5 (2.5")	9,5 (.38")	5,75 (.23")	52,0 (2.05")	5,5 (.22")	31,8 (1.25")	44,5 (1.75")	22,25 (.88")
40	76,2 (3.0")		8,1 (.32")	60,0 (2.36")			38,1 (1.50")	50,8 (2.00")
50	93,0 (3.66")	12,7 (.50")	7,5 (.30")	78,0 (3.07")	8,5 (.33")	46,5 (1.83")	63,5 (2.50")	31,8 (1.25")

Side Flange Mount - "FS"

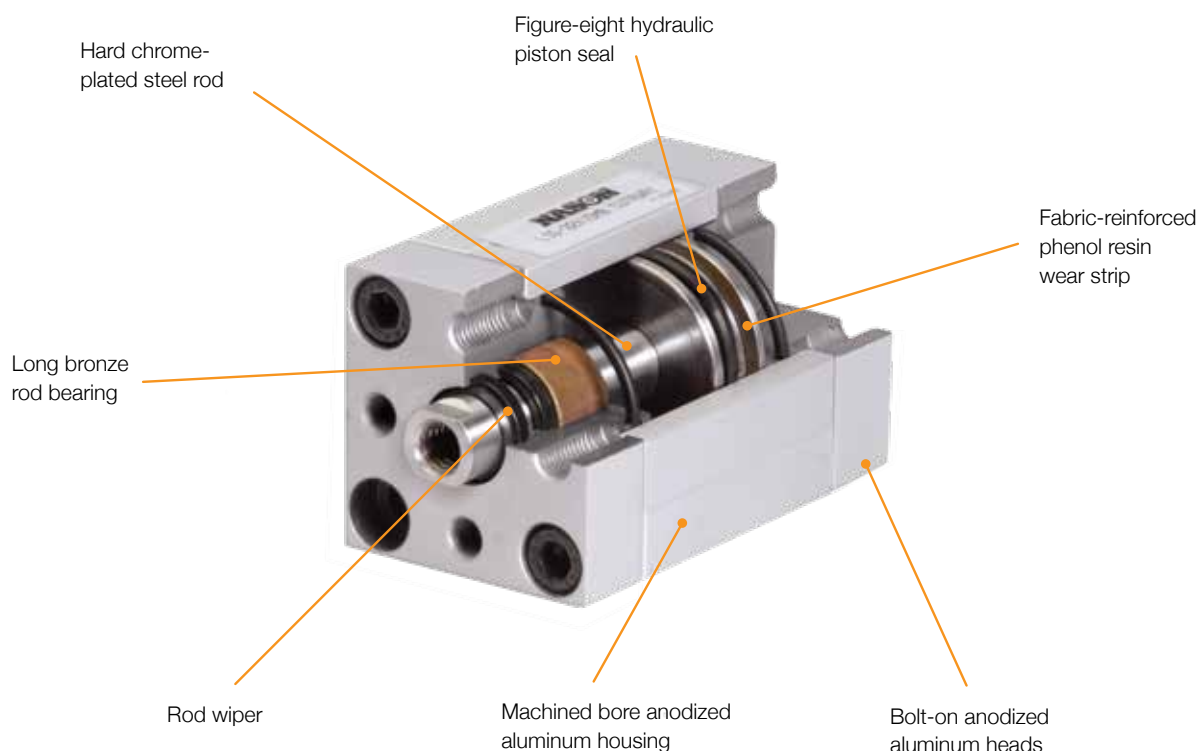


Material: Anodized Aluminum

Bore	"A"	"B"	"C"	"D"	"E"	"F"	"G"	"H"	"J"
20	50,8 (2.00")	9,5 (.38")	5,4 (.21")	40 (1.58")	4,5 (.18")	19 (.75")	9,5 (.38")	20,0 (.79")	25,4 (1.0")
25			3,9 (.15")	43 (1.69")					
32	63,5 (2.50")	9,5 (.38")	5,75 (.23")	52 (2.05")	5,5 (.22")	25,4 (1.00")	12,7 (.50")	16,25 (.64")	31,8 (1.25")
40	76,2 (3.00")		8,1 (.32")	60 (2.36")				25,75 (1.01")	38,1 (1.50")
50	93 (3.66")	12,7 (.50")	7,5 (.30")	78 (3.07")	8,5 (.33")			46,5 (1.83")	

L15 SERIES

HYDRAULIC CYLINDERS



Common Features

Nason's L15 series hydraulic actuators were designed to be compact, low friction, long lasting devices for today's demanding design requirements. They are offered in single and double rod configurations with inch or metric mounting and ports.

Low Breakaway and Running Friction / Long Life

Designed for low startup and running friction, the L15 series contains low friction nitrile seals, and the cylinders are lubricated at the factory with PTFE impregnated grease. Precision-machined components and self-lubricating bearings ensure long life and continued low friction operation.

Compact Size

Nason L15 cylinders were designed with today's automation equipment in mind. They offer more

power in a smaller package than comparable 1500 PSI hydraulic cylinders.

Rugged Construction

The L15 series incorporates thick-walled, anodized aluminum housings and caps. Rods are chrome-plated 1045/1050 steel riding in self-lubricating bronze bearings. Hardened fasteners are used for assembly. Steel pistons with wear rings and rod wipers are standard on all models.

Versatile Design

The L15 series cylinders are metric in design (bore and rod sizes). They are offered in inch or metric mounting and porting. Due to their 100% machined design, they are easily customized by Nason.

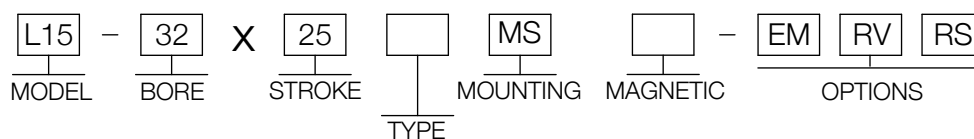
Rebuildable

All L15 series cylinders are field-rebuildable.

How to Order

Example:

Part Number: L15-32X25MS-EMRVRS



MODEL
L15 - 1500 PSI Hydraulic Cylinder

BORE
20 - 20mm (.79")
25 - 25mm (.98")
32 - 32mm (1.26")
40 - 40mm (1.58")
50 - 50mm (1.97")

STROKE
15 - 15mm (.59")
25 - 25mm (.98")
40 - 40mm (1.58")
50 - 50mm (1.97")
65 - 65mm (2.56")
75 - 75mm (2.95")

TYPE
BLANK (No Code) - Double Acting, Single Rod
D - Double Acting, Double Rod

MOUNTING
MF - Threads on Front Face (Rod End)
MR - Threads on Rear Face (Opposite Rod)
MB - Threads on Both Faces
MS - Threads on Side of Cylinder Body

MAGNETIC
BLANK (No Code) - Standard No Magnet
M - Magnetic Piston and Sensor Mounting

OPTIONS
EM - InchThreads (Mounting and Ports) (See product pages for sizes)
RS - Male Stud for Rod End (Length - 2 x Thread Diameter)
RF - 5mm (.197") Rod Extension
RT - 10mm (.394") Rod Extension
RV - 25mm (.984") Rod Extension

Operating Media:	Mineral oil, water polyglycal solutions, water-in-oil emulsions
Maximum Operating Pressure:	103 Bar (1500 PSI) 50mm Bore Magnetic Piston—69 Bar (1,000 PSI)
Operating Temperature:	-10°C to 70°C (0°F to 158°F)
Packing:	Buna N
Lubrication:	PTFE impregnated grease
Stroke Tolerance:	+0,75mm/-0mm (+0.03"/-0")

Piston Area Chart

Bore	Push (Rod Extend)	Pull (Rod Retract)
20	3,14 cm ² (.48 in ²)	2,64 cm ² (.40 in ²)
25	4,91 cm ² (.76 in ²)	4,12 cm ² (.64 in ²)
32	8,04 cm ² (1.25 in ²)	6,91 cm ² (1.07 in ²)
40	12,56 cm ² (1.95 in ²)	10,55 cm ² (1.64 in ²)
50	19,63 cm ² (3.04 in ²)	16,49 cm ² (2.56 in ²)

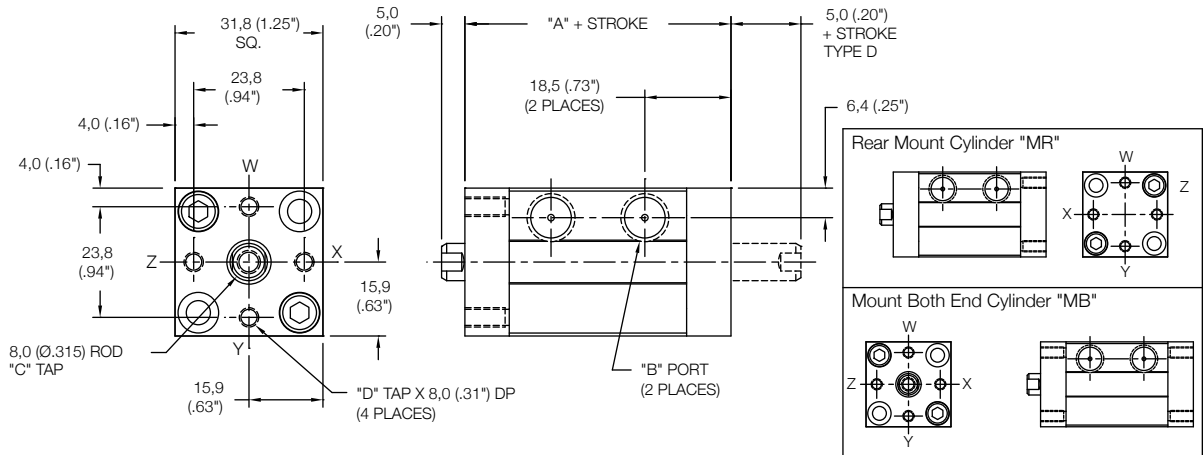
Cylinder Output Force Formula

Piston Area x Pressure = Output Force
Piston Area (in ²) x Pressure (PSI) = lbf (Pounds Force)
Piston Area (cm ²) x Pressure (kg/cm ²) = kgf (Kilograms Force)
Piston Area (cm ²) x Pressure (kg/cm ²) x 9.8 = Newtons
Piston Area (cm ²) x Pressure (Bar) x 10 = Newtons
Piston Area (cm ²) x Pressure (Bar) x 10 = Newtons
Piston Area (cm ²) x Pressure (Bar) x 1.02 = kgf (Kilograms Force)

Non Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L15	_D	15mm	47,0 (1.85")	PUSH 3,14 cm ² (0.48 in ²) PULL 2,64 cm ² (0.40 in ²)
		25mm		
		40mm		
		50mm		
		65mm		
		75mm		

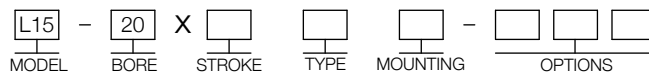
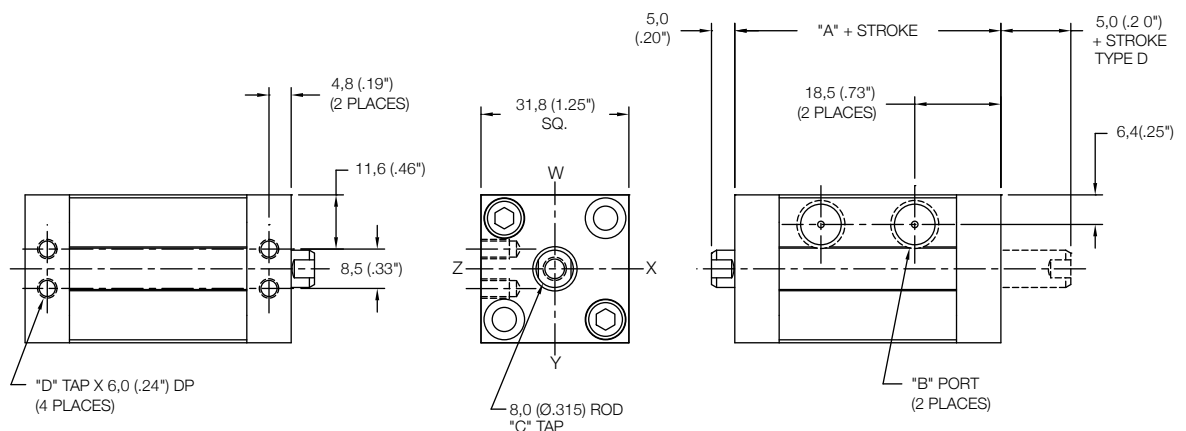
	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M5X0,8	#10-32
"D"	M4X0,7	#8-32



Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L15	_D	15mm	47,0 (1.85")	PUSH 3,14 cm ² (0.48 in ²) PULL 2,64 cm ² (0.40 in ²)
		25mm		
		40mm		
		50mm		
		65mm		
		75mm		

	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M5X0,8	#10-32
"D"	M4X0,7	#8-32



15mm - 75mm STROKE
(SEE STROKE RANGE)

BLANK - NO CODE
D - DOUBLE ROD

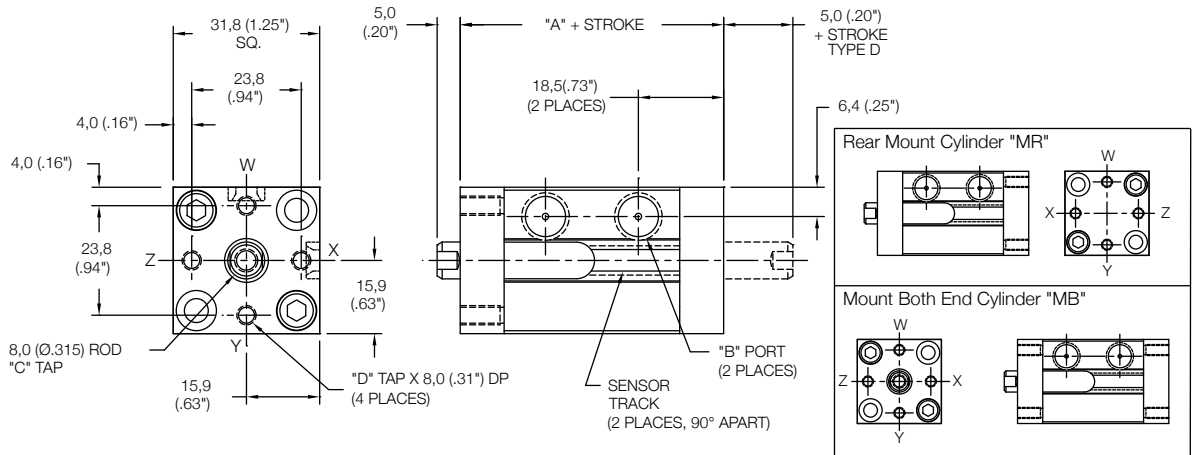
MB - BOTH END MOUNT
MF - FRONT MOUNT
MR - REAR MOUNT
MS - SIDE MOUNT

EM - INCH THREADS & PORT OPTIONS:
RS - MALE STUD FOR ROD END
(SEE PAGE 96 FOR DETAILS)
RF, RH, RN, RT, RV, RY - ROD EXTENSIONS
(SEE PAGE 96 FOR DETAILS)

Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L15	...D	15mm	62,0 (2.44")	PUSH 3,14 cm ² (0.48 in ²) PULL 2,64 cm ² (0.40 in ²)
		25mm		
		40mm		
		50mm		
		65mm		
		75mm		

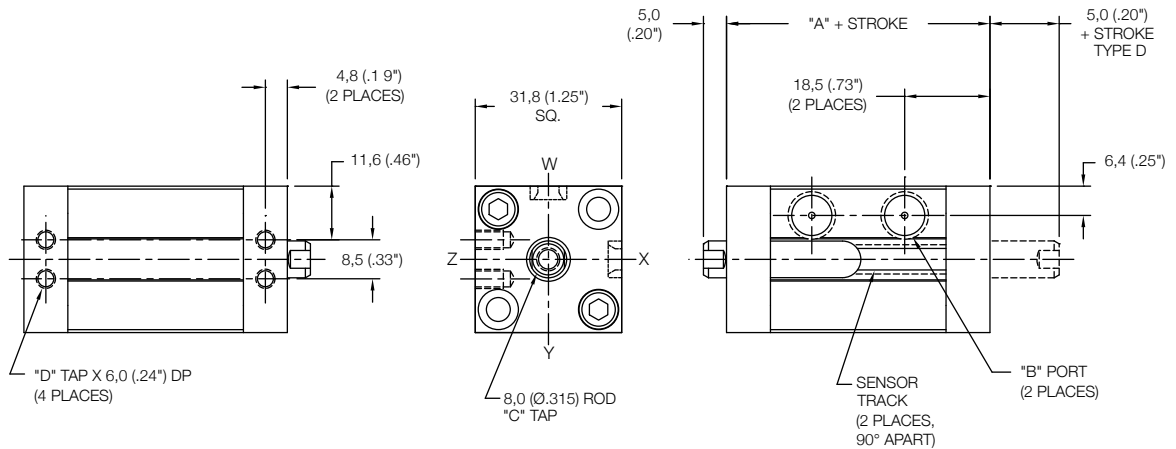
	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M5X0,8	#10-32
"D"	M4X0,7	#8-32



Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L15	...D	15mm	62,0 (2.44")	PUSH 3,14 cm ² (0.48 in ²) PULL 2,64 cm ² (0.40 in ²)
		25mm		
		40mm		
		50mm		
		65mm		
		75mm		

	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M5X0,8	#10-32
"D"	M4X0,7	#8-32



L15 - **20** X **...** **...** **M** - **...** **...** **...**
 MODEL BORE STROKE TYPE MOUNTING MAGNETIC OPTIONS

15mm - 75mm STROKE
(SEE STROKE RANGE)

BLANK - NO CODE
D - DOUBLE ROD

MB - BOTH END MOUNT
MF - FRONT MOUNT
MR - REAR MOUNT
MS - SIDE MOUNT

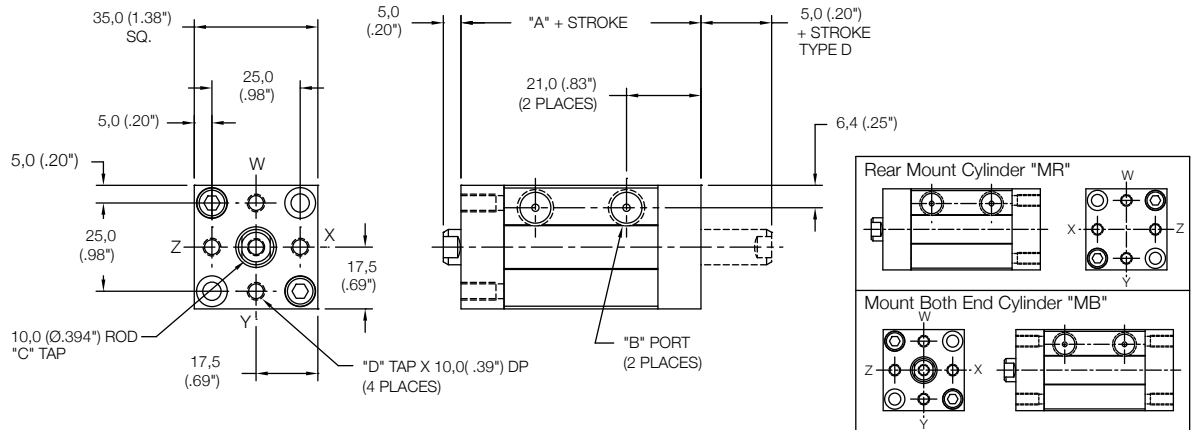
EM - INCH THREADS & PORT OPTIONS:
 RS - MALE STUD FOR ROD END
 (SEE PAGE 96 FOR DETAILS)
 RF, RH, RN, RT, RV, RY - ROD EXTENSIONS
 (SEE PAGE 96 FOR DETAILS)

SENSORS SOLD SEPARATELY
 SKS, SKP, SCS, SCP - SOLID STATE
 LIMIT SENSORS
 (SEE PAGE 88 FOR DETAILS)

Non Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L15	D	15mm	53,0 (2.09")	PUSH 4,91 cm ² (0.76 in ²)
		25mm		
		40mm		PULL 4,12 cm ² (0.64 in ²)
		50mm		
		65mm		
		75mm		

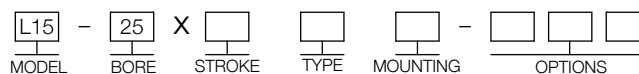
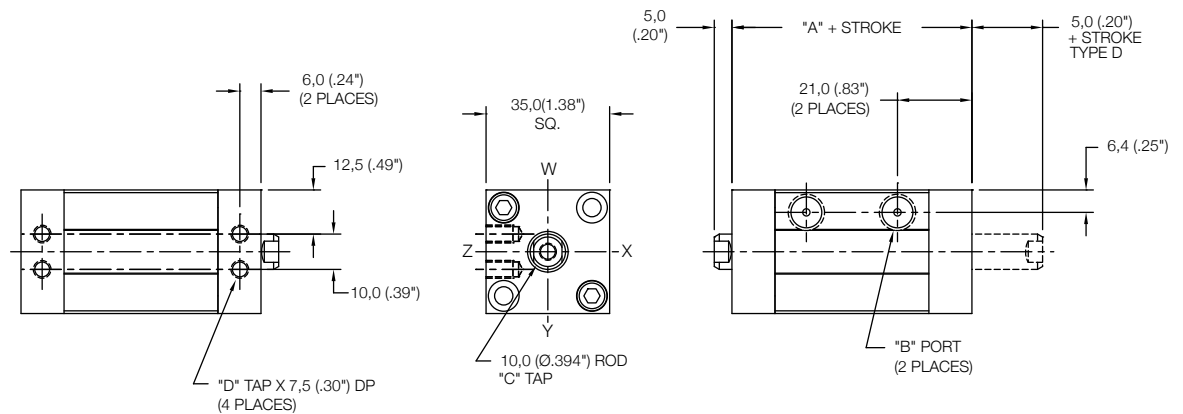
	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M6X1,0	1/4-20
"D"	M5X0,8	#10-32



Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L15	D	15mm	53,0 (2.09")	PUSH 4,91 cm ² (0.76 in ²)
		25mm		
		40mm		PULL 4,12 cm ² (0.64 in ²)
		50mm		
		65mm		
		75mm		

	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M6X1,0	1/4-20
"D"	M5X0,8	#10-32



15mm - 75mm STROKE
(SEE STROKE RANGE)

BLANK - NO CODE
D - DOUBLE ROD

MB - BOTH END MOUNT
MF - FRONT MOUNT
MR - REAR MOUNT
MS - SIDE MOUNT

EM - INCH THREADS & PORT OPTIONS:

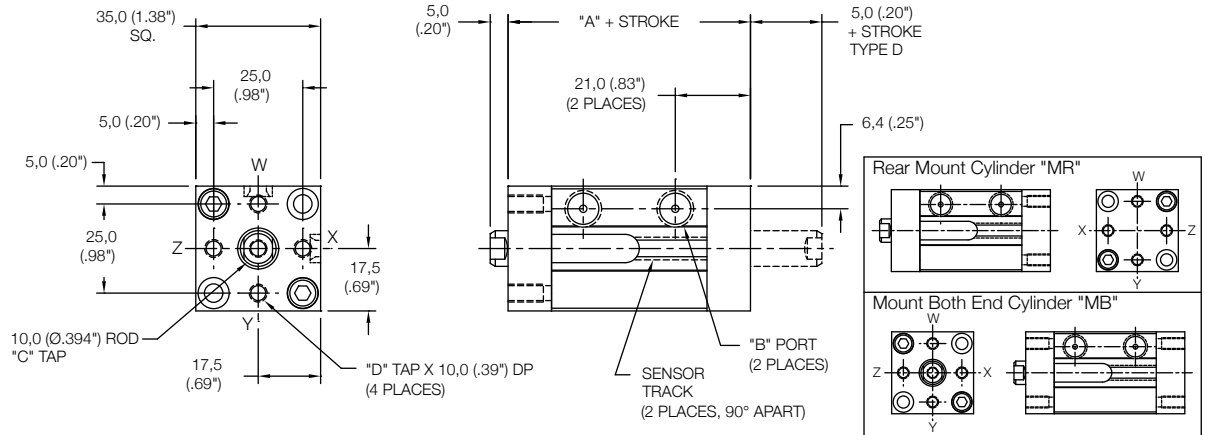
RS - MALE STUD FOR ROD END
(SEE PAGE 96 FOR DETAILS)

RF, RH, RN, RT, RV, RY - ROD EXTENSIONS
(SEE PAGE 96 FOR DETAILS)

Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L15	_,D	15mm	68,0 (2.68")	PUSH 4,91 cm ² (0.76 in ²) PULL 4,12 cm ² (0.64 in ²)
		25mm		
		40mm		
		50mm		
		65mm		
		75mm		

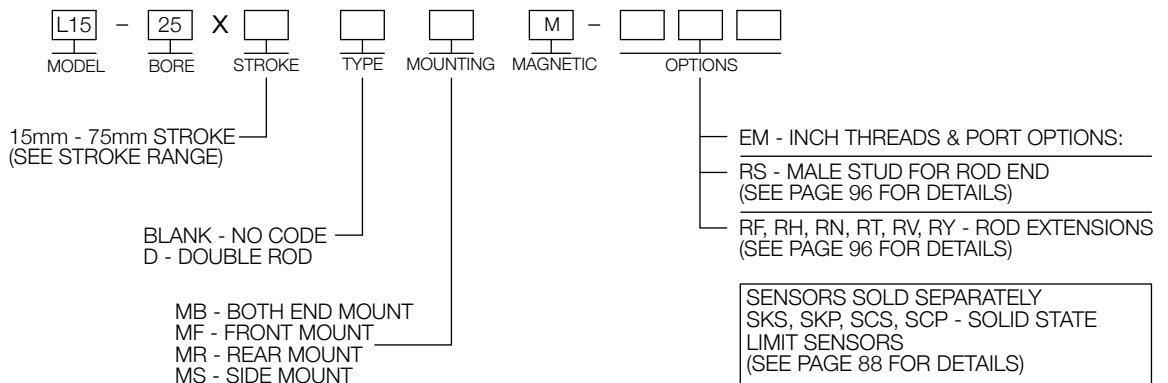
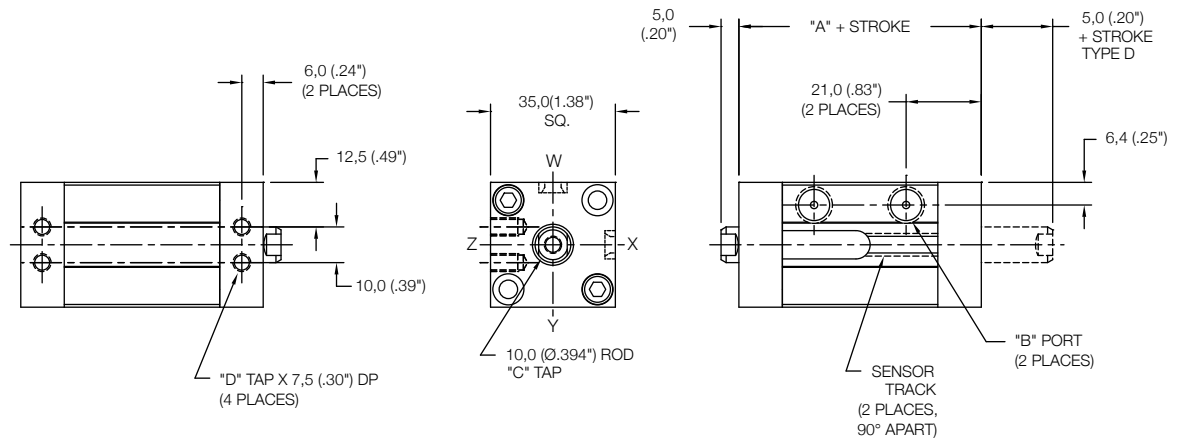
	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M6X1,0	1/4-20
"D"	M5X0,8	#10-32



Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L15	_,D	15mm	68,0 (2.68")	PUSH 4,91 cm ² (0.76 in ²) PULL 4,12 cm ² (0.64 in ²)
		25mm		
		40mm		
		50mm		
		65mm		
		75mm		

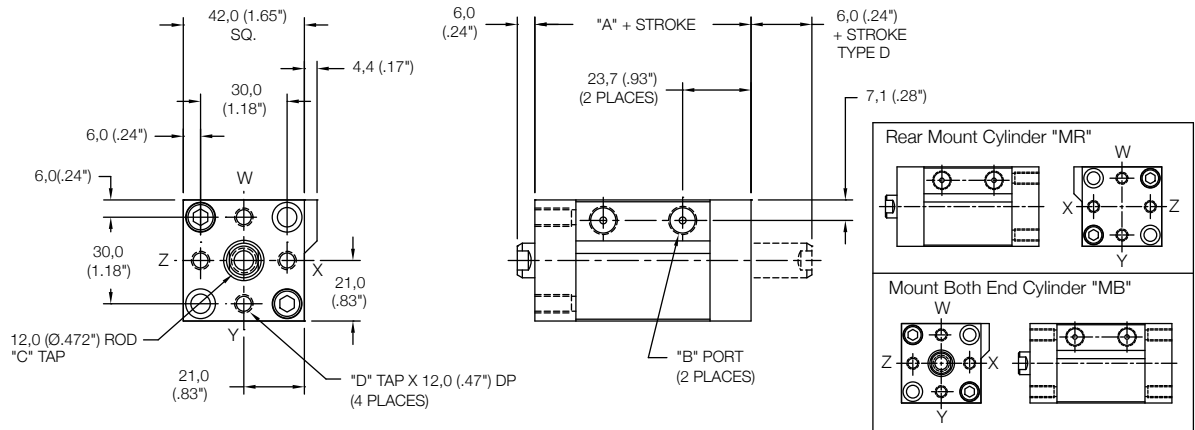
	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M6X1,0	1/4-20
"D"	M5X0,8	#10-32



Non Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L15	_D	15mm	60,0 (2.36")	PUSH 8,04 cm ² (1.25 in ²) PULL 6,91 cm ² (1.07 in ²)
		25mm		
		40mm		
		50mm		
		65mm		
		75mm		

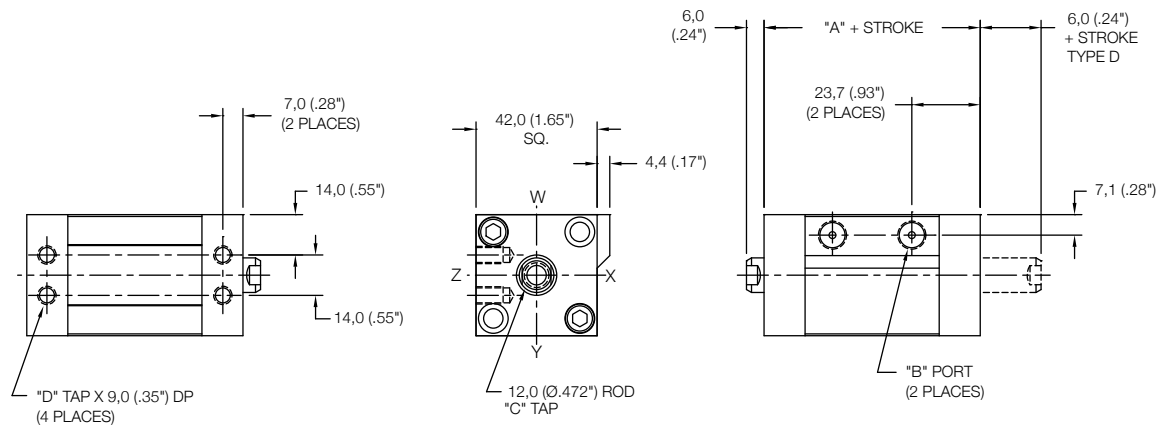
	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M8X1,25	5/16-18
"D"	M6X1,0	1/4-20



Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L15	_D	15mm	60,0 (2.36")	PUSH 8,04 cm ² (1.25 in ²) PULL 6,91 cm ² (1.07 in ²)
		25mm		
		40mm		
		50mm		
		65mm		
		75mm		

	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M8X1,25	5/16-18
"D"	M6X1,0	1/4-20



L15 - 32 X [] [] []
MODEL BORE STROKE TYPE MOUNTING OPTIONS

15mm - 75mm STROKE
(SEE STROKE RANGE)

BLANK - NO CODE
D - DOUBLE ROD

MB - BOTH END MOUNT
MF - FRONT MOUNT
MR - REAR MOUNT
MS - SIDE MOUNT

EM - INCH THREADS & PORT OPTIONS:

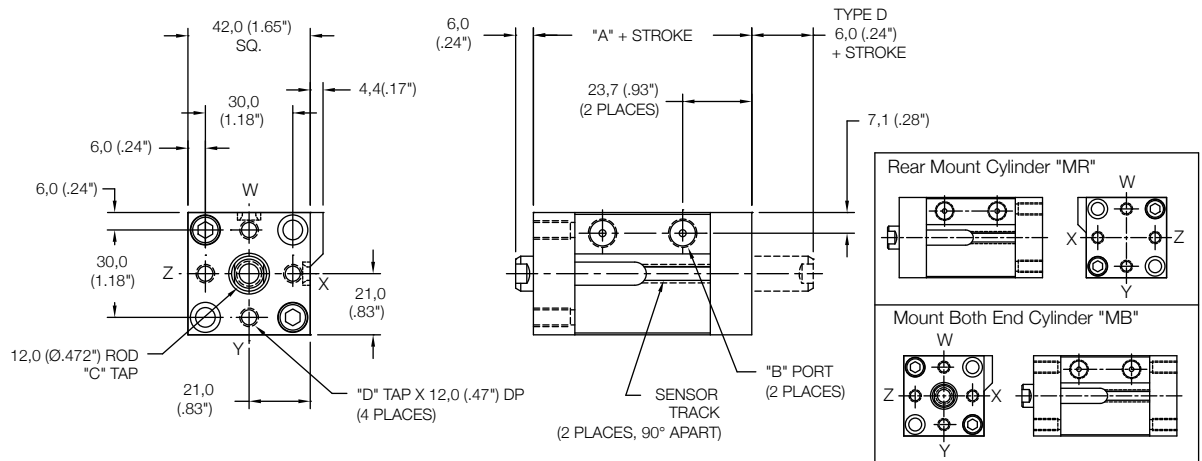
RS - MALE STUD FOR ROD END
(SEE PAGE 96 FOR DETAILS)

RF, RH, RN, RT, RV, RY - ROD EXTENSIONS
(SEE PAGE 96 FOR DETAILS)

Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L15	_,D	15mm - 75mm	75,0 (2.95")	PUSH 8,04 cm ² (1.25 in ²) PULL 6,91 cm ² (1.07 in ²)

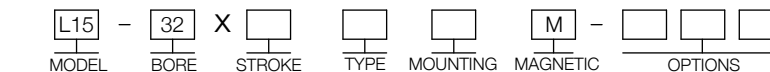
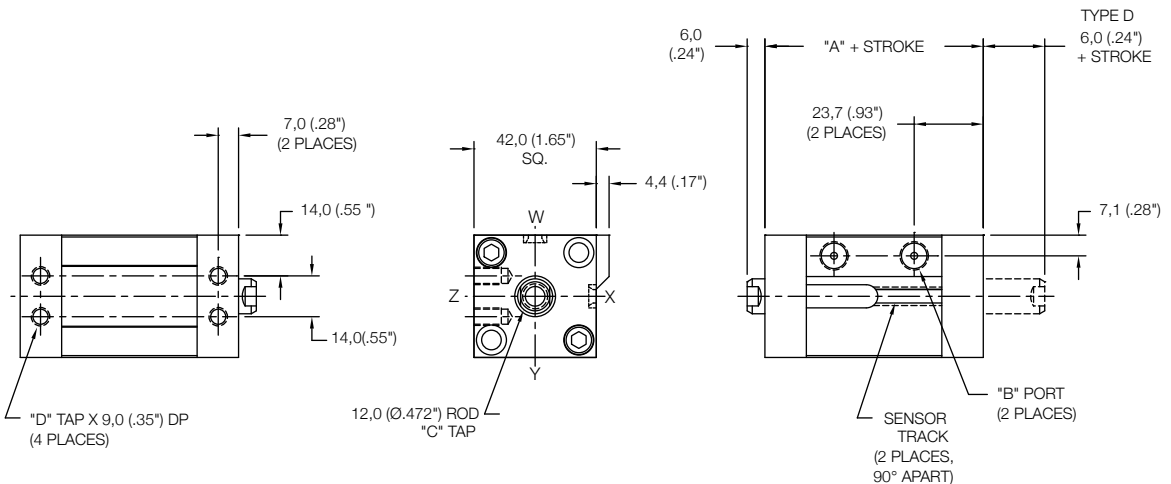
	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M8X1,25	5/16-18
"D"	M6X1,0	1/4-20



Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L15	_,D	15mm - 75mm	75,0 (2.95")	PUSH 8,04 cm ² (1.25 in ²) PULL 6,91 cm ² (1.07 in ²)

	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M8X1,25	5/16-18
"D"	M6X1,0	1/4-20



15mm - 75mm STROKE
(SEE STROKE RANGE)

BLANK - NO CODE
D - DOUBLE ROD

MB - BOTH END MOUNT
MF - FRONT MOUNT
MR - REAR MOUNT
MS - SIDE MOUNT

EM - INCH THREADS & PORT OPTIONS:

RS - MALE STUD FOR ROD END
(SEE PAGE 96 FOR DETAILS)

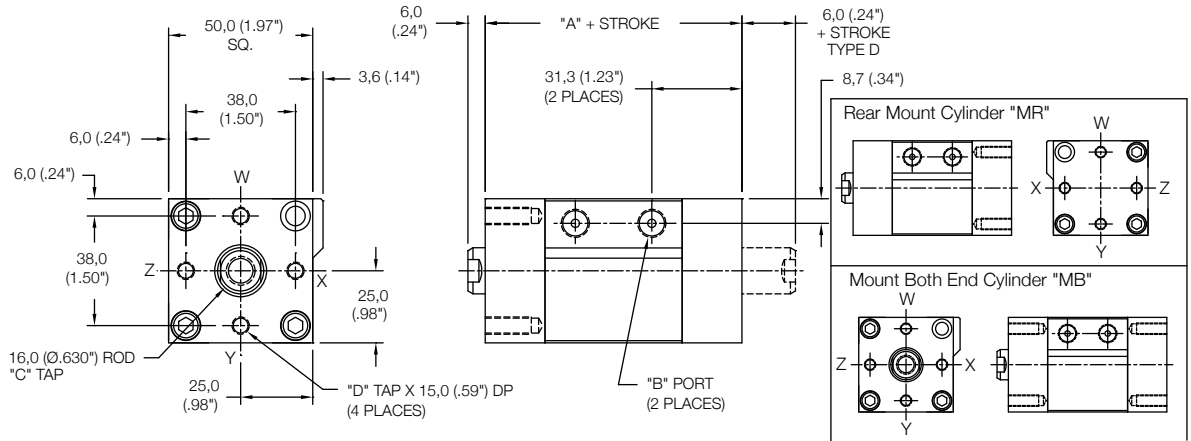
RF, RH, RN, RT, RV, RY - ROD EXTENSIONS
(SEE PAGE 96 FOR DETAILS)

SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE PAGE 88 FOR DETAILS)

Non Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L15	D	15mm	76,5 (3.01")	PUSH 12,56 cm ² (1.95 in ²) PULL 10,55 cm ² (1.64 in ²)
		25mm		
		40mm		
		50mm		
		65mm		
		75mm		

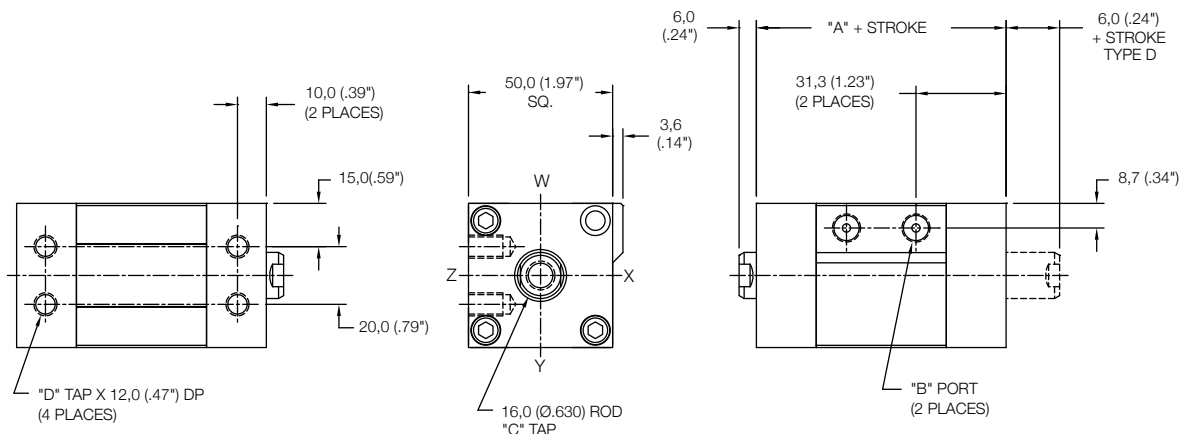
	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M10X1,5	3/8-24
"D"	M6X1,0	1/4-20



Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L15	D	15mm	76,5 (3.01")	PUSH 12,56 cm ² (1.95 in ²) PULL 10,55 cm ² (1.64 in ²)
		25mm		
		40mm		
		50mm		
		65mm		
		75mm		

	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M10X1,5	3/8-24
"D"	M8X1,25	5/16-18



L15 - 40 X -
 MODEL BORE STROKE TYPE MOUNTING OPTIONS

15mm - 75mm STROKE
(SEE STROKE RANGE)

BLANK - NO CODE
D - DOUBLE ROD

MB - BOTH END MOUNT
 MF - FRONT MOUNT
 MR - REAR MOUNT
 MS - SIDE MOUNT

EM - INCH THREADS & PORT OPTIONS:

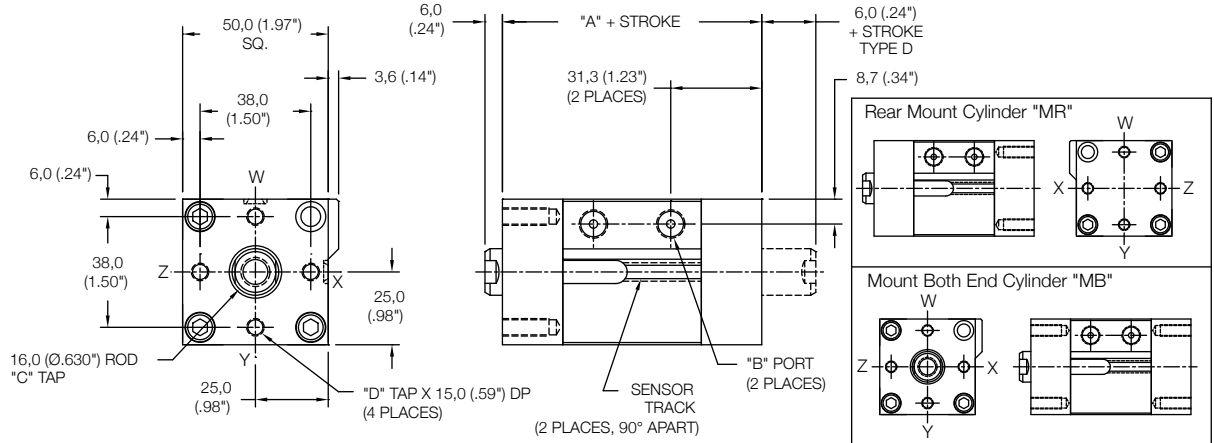
RS - MALE STUD FOR ROD END
(SEE PAGE 96 FOR DETAILS)

RF, RH, RN, RT, RV, RY - ROD EXTENSIONS
(SEE PAGE 96 FOR DETAILS)

Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L15	_D	15mm	91,5 (3.60")	PUSH 12,56 cm ² (1.95 in ²)
		25mm		
		40mm		PULL 10,55 cm ² (1.64 in ²)
		50mm		
		65mm		
		75mm		

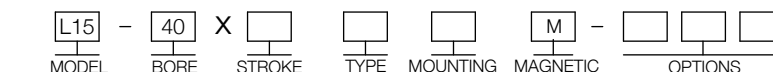
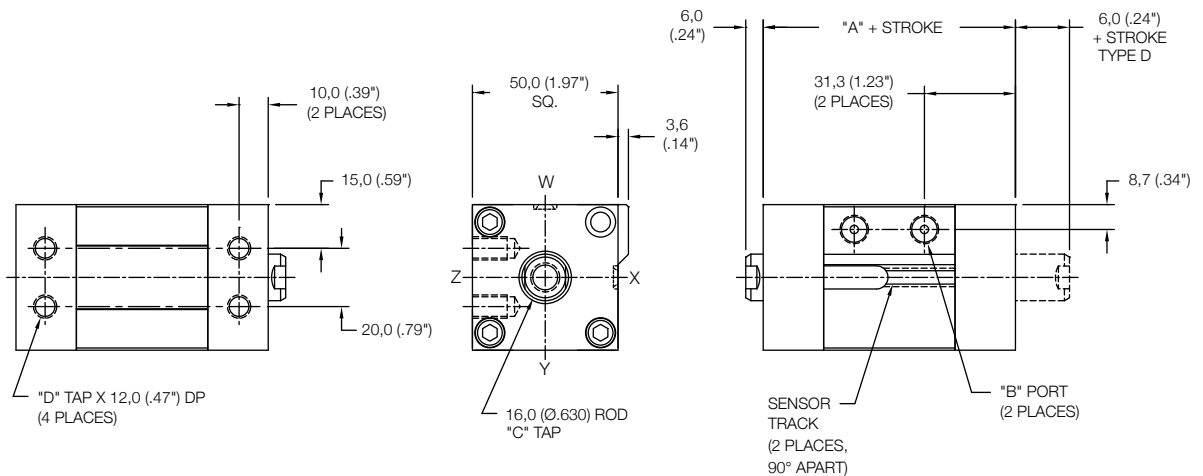
	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M10X1,5	3/8-24
"D"	M6X1,0	1/4-20



Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L15	_D	15mm	91,5 (3.60")	PUSH 12,56 cm ² (1.95 in ²)
		25mm		
		40mm		PULL 10,55 cm ² (1.64 in ²)
		50mm		
		65mm		
		75mm		

	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M10X1,5	3/8-24
"D"	M8X1,25	5/16-18



15mm - 75mm STROKE
(SEE STROKE RANGE)

BLANK - NO CODE
D - DOUBLE ROD

MB - BOTH END MOUNT
MF - FRONT MOUNT
MR - REAR MOUNT
MS - SIDE MOUNT

EM - INCH THREADS & PORT OPTIONS:

RS - MALE STUD FOR ROD END
(SEE PAGE 96 FOR DETAILS)

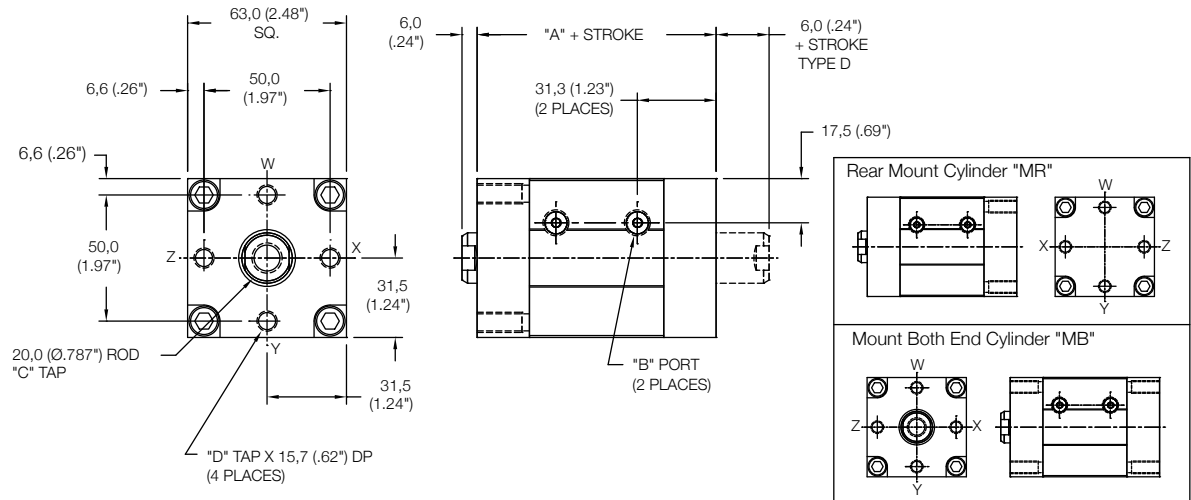
RF, RH, RN, RT, RV, RY - ROD EXTENSIONS
(SEE PAGE 96 FOR DETAILS)

SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE PAGE 88 FOR DETAILS)

Non Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L15	_D	15mm	80,0 (3.15")	PUSH 19,63 cm ² (3.04 in ²) PULL 17,62 cm ² (2.73 in ²)
		25mm		
		40mm		
		50mm		
		65mm		
		75mm		

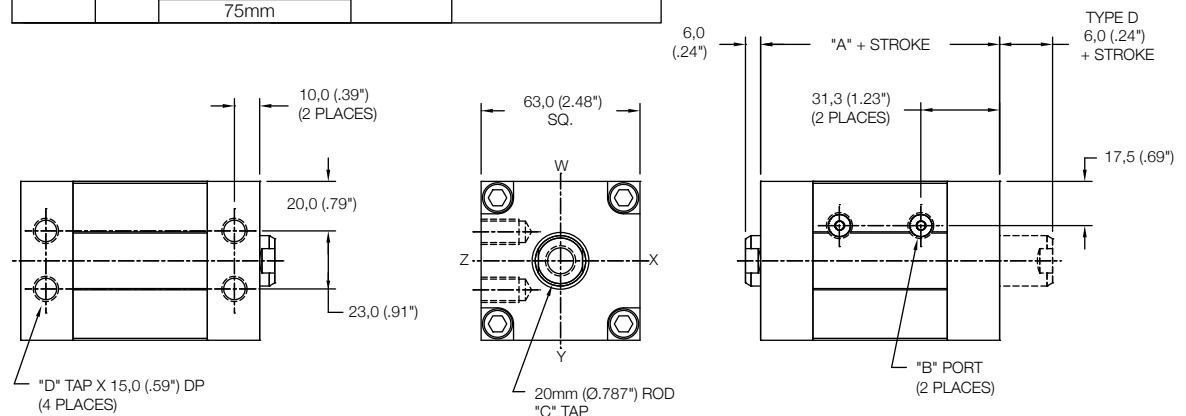
	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M12X1,75	1/2-13
"D"	M8X1,25	5/16-18



Non Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L15	_D	15mm	80,0 (3.15")	PUSH 19,63 cm ² (3.04 in ²) PULL 17,62 cm ² (2.73 in ²)
		25mm		
		40mm		
		50mm		
		65mm		
		75mm		

	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M12X1,75	1/2-13
"D"	M8X1,25	5/16-18



L15 - 50 X [] [] []
MODEL BORE STROKE TYPE MOUNTING OPTIONS

15mm - 75mm STROKE
(SEE STROKE RANGE)

BLANK - NO CODE
D - DOUBLE ROD

MB - BOTH END MOUNT
MF - FRONT MOUNT
MR - REAR MOUNT
MS - SIDE MOUNT

EM - INCH THREADS & PORT OPTIONS:

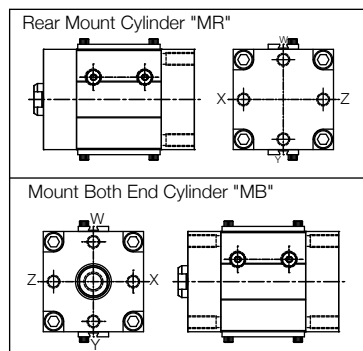
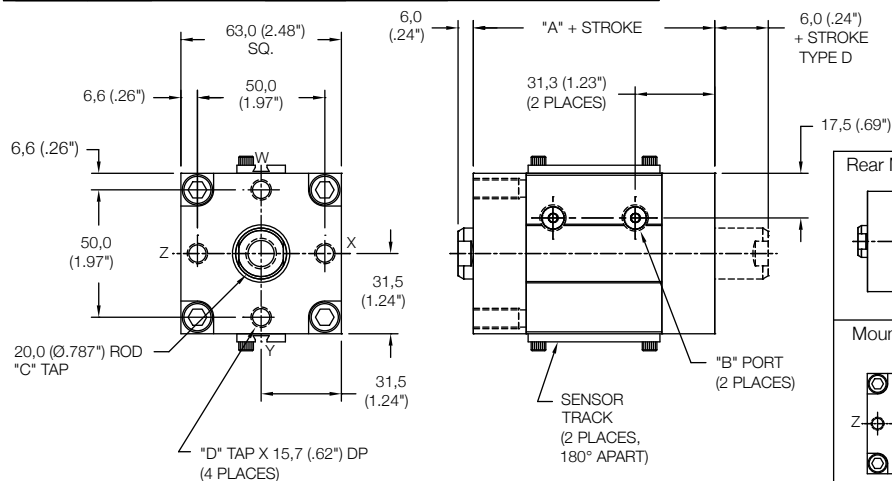
RS - MALE STUD FOR ROD END
(SEE PAGE 96 FOR DETAILS)

RF, RH, RN, RT, RV, RY - ROD EXTENSIONS
(SEE PAGE 96 FOR DETAILS)

Magnetic Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	*A*	PISTON AREA
L15	...D	15mm	95,0 (3.74")	PUSH 19,63 cm ² (3.04 in ²) PULL 17,62 cm ² (2.73 in ²)
		25mm		
		40mm		
		50mm		
		65mm		
		75mm		

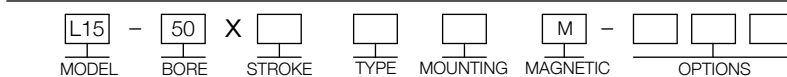
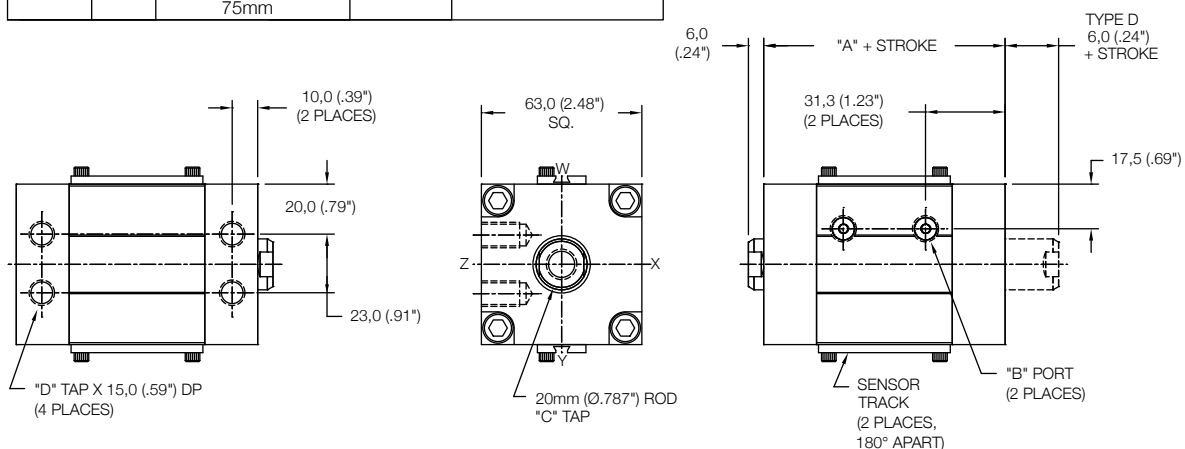
	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M12X1,75	1/2-13
"D"	M8X1,25	5/16-18



Magnetic Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L15	...D	15mm	95,0 (3.74")	PUSH 19,63 cm ² (3.04 in ²) PULL 17,62 cm ² (2.73 in ²)
		25mm		
		40mm		
		50mm		
		65mm		
		75mm		

	Standard Threads	"EM" Option
"B"	R 1/8 (1/8-28 BSPT)	1/8-27
"C"	M12X1,75	1/2-13
"D"	M8X1,25	5/16-18



15mm - 75mm STROKE
(SEE STROKE RANGE)

BLANK - NO CODE
D - DOUBLE ROD

MB - BOTH END MOUNT
MF - FRONT MOUNT
MR - REAR MOUNT
MS - SIDE MOUNT

EM - INCH THREADS & PORT OPTIONS:

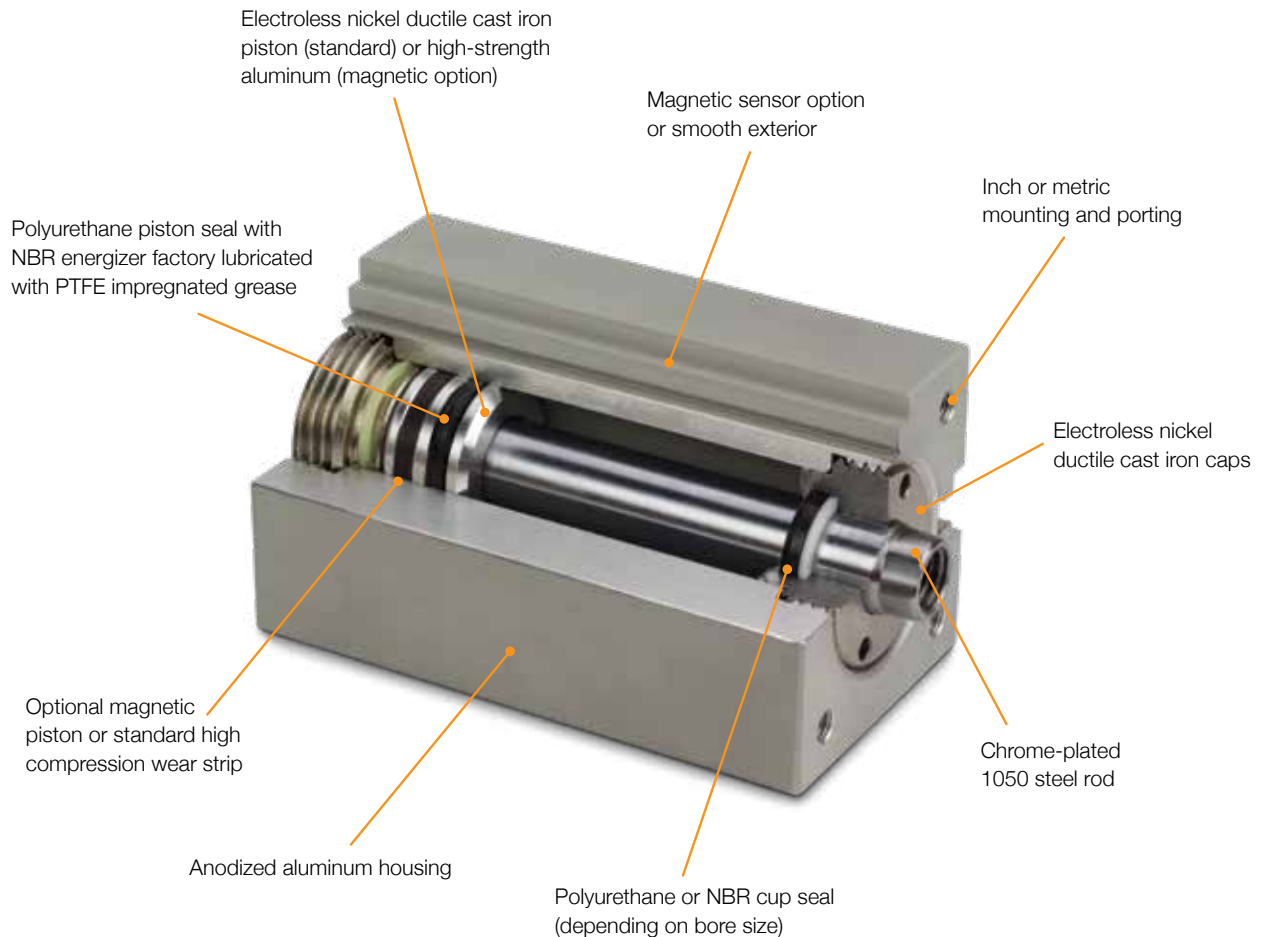
RS - MALE STUD FOR ROD END
(SEE PAGE 96 FOR DETAILS)

RF, RH, RN, RT, RV, RY - ROD EXTENSIONS
(SEE PAGE 96 FOR DETAILS)

SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE PAGE 88 FOR DETAILS)

L20 SERIES

HYDRAULIC CYLINDERS



Common Features

Nason's L20 series hydraulic actuators were designed to be compact, long-lasting devices for today's demanding design requirements. They are offered in single and double rod configurations with inch or metric mounting and ports.

Compact Size

Nason L20 series cylinders were designed with today's automation equipment in mind. They offer more power in a smaller package than comparable NFPA style hydraulic cylinders without sacrificing performance.

Rugged Construction

The L20 series incorporates thick-walled, anodized aluminum housing. The rods are

chrome-plated 1050 steel riding in electroless nickel-plated ductile cast iron rod bearings. The piston on non-magnetic models is ductile cast iron with wear rings standard. The optional magnetic piston is manufactured from a high-strength aluminum. Rod wipers are standard on all models.

Versatile Design

The L20 series cylinders are metric in design (bore and rod sizes). They are offered in inch or metric mounting and porting. Due to their 100% machined design, they are easily customized by Nason.

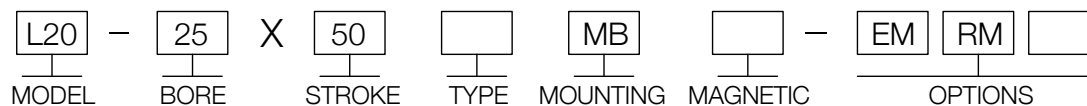
Rebuildable

All L20 series cylinders are field-rebuildable.

How to Order

Example:

Part Number: L20-25X50MB-EMRM



MODEL
L20 - Medium Pressure Cylinder

BORE
25 - 25mm (.98")
32 - 32mm (1.26")
40 - 40mm (1.58")
50 - 50mm (1.97")
63 - 63mm (2.48")
76 - 76mm (3.00")
101 - 101mm (4.00")

STROKE
See Stroke Table

TYPE
Blank (NO CODE) - Double Acting, Single Rod
D - Double Acting, Double Rod

MOUNTING
MF - Threads on Front Face (Rod End)
MR - Threads on Rear Face (Opposite Rod)
MB - Threads on Both Faces
MT - Drilled Through and Counter bored for Bolt Clearance

MAGNETIC
Blank (No Code) - Standard "NO MAGNET" Piston
M - Magnetic Piston and Sensor Mounting

OPTIONS
EM - Inch Threads (Mounting, Ports and Rods)
RM - Rod Male Threads
RF - 5mm (.197") Rod Extension
RT - 10mm (.394") Rod Extension
RN - 15mm (.591") Rod Extension
RY - 20mm (.787") Rod Extension
RV - 25mm (.984") Rod Extension
RH - 35mm (1.38") Rod Extension

Note 1 - Magnetic Piston "M" limits temperature range to -10°C to 82°C (14°F to 180°F). This temperature rating overrides ALL OTHER TEMPERATURE ratings (Standard Seals, HS Seals, etc.). Magnetic Piston limits Pressure rating 250 PSI (1.7 MPa)

Packing:	Urethane and Buna N
Lubrication:	PTFE impregnated grease
Stroke Tolerance:	+1,0mm/-0mm (+0.04"/-0")

Piston Area Chart

Bore	PUSH (ROD EXTEND)	PULL (ROD RETRACT)
25	4,91cm ² (.76in ²)	3,37cm ² (.52in ²)
32	8,04cm ² (1.25in ²)	5,50cm ² (.85in ²)
40	12,57cm ² (1.95in ²)	8,77cm ² (1.36in ²)
50	19,63cm ² (3.04in ²)	13,48cm ² (2.09in ²)
63	31,17cm ² (4.83in ²)	20,99cm ² (3.25in ²)
76	45,60cm ² (7.07in ²)	29,70cm ² (4.60in ²)
101	81,07cm ² (12.57in ²)	56,44cm ² (8.75in ²)

Stock Strokes

Bore	Stroke
25	25mm, 50mm, 75mm, 100mm (.98", 1.96", 2.95", 3.93")
32	
40	
50	
63	
76	
101	

5mm increments available with additional lead time

Cylinder Output Force Formula

Piston Area x Pressure = Output Force
Piston Area(in ²) x Pressure(PSI) = lbf (Pounds Force)
Piston Area(cm ²) x Pressure(kg/cm ²) = kgf (Kilograms Force)
Piston Area(cm ²) x Pressure(kg/cm ²) x 9.8 = Newtons
Piston Area(cm ²) x Pressure(Bar) x 10 = Newtons
Piston Area(cm ²) x Pressure(Bar) x 1.02 = kgf (Kilograms Force)

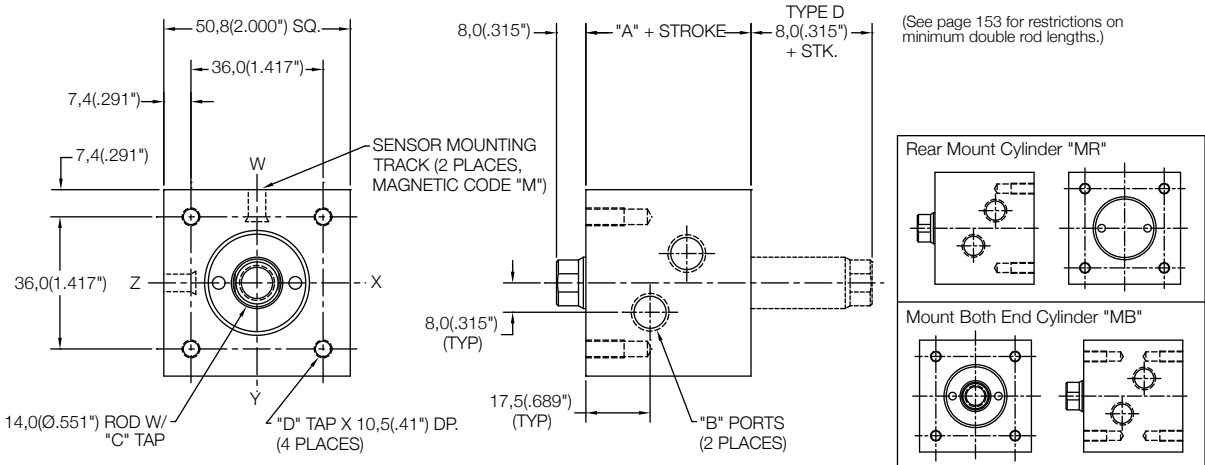
Cylinder Ratings

Bore	Pressure	Temperature
25	140 BAR (2030 PSI)	-10° C to 80° C (14° F to 176° F)
32	140 BAR (2030 PSI)	-10° C to 80° C (14° F to 176° F)
40	140 BAR (2030 PSI)	-23° C to 100° C (-10° F to 212° F)
50	120 BAR (1740 PSI)	-23° C to 100° C (-10° F to 212° F)
63	100 BAR (1450 PSI)	-23° C to 100° C (-10° F to 212° F)
76	100 BAR (1450 PSI)	-23° C to 100° C (-10° F to 212° F)
101	100 BAR (1450 PSI)	-23° C to 100° C (-10° F to 212° F)

Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L20	_,D	25mm, 50mm, 75mm, 100mm	45,0(1.77")	PUSH 4,91 cm ² (0.76 in ²) PULL 3,37 cm ² (0.52 in ²)

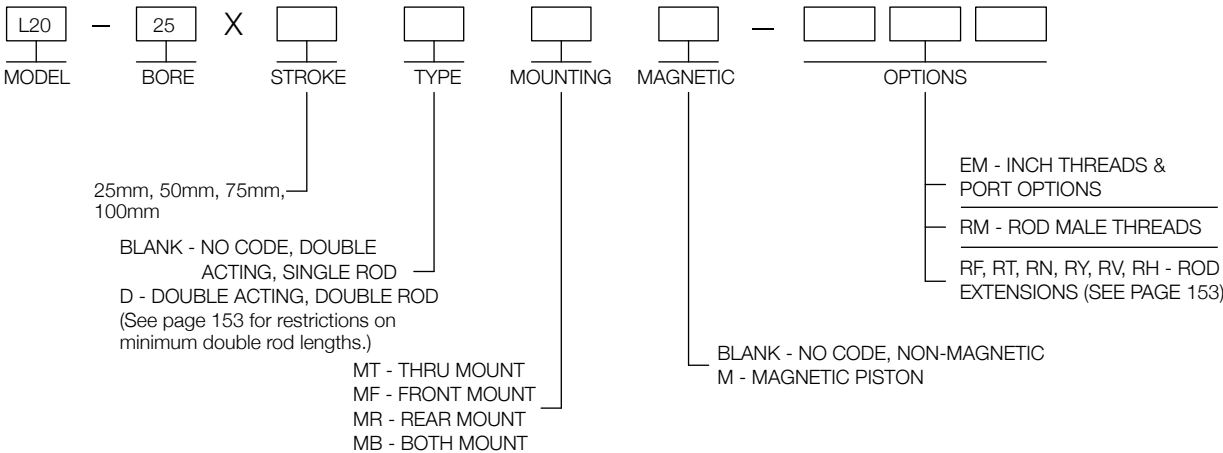
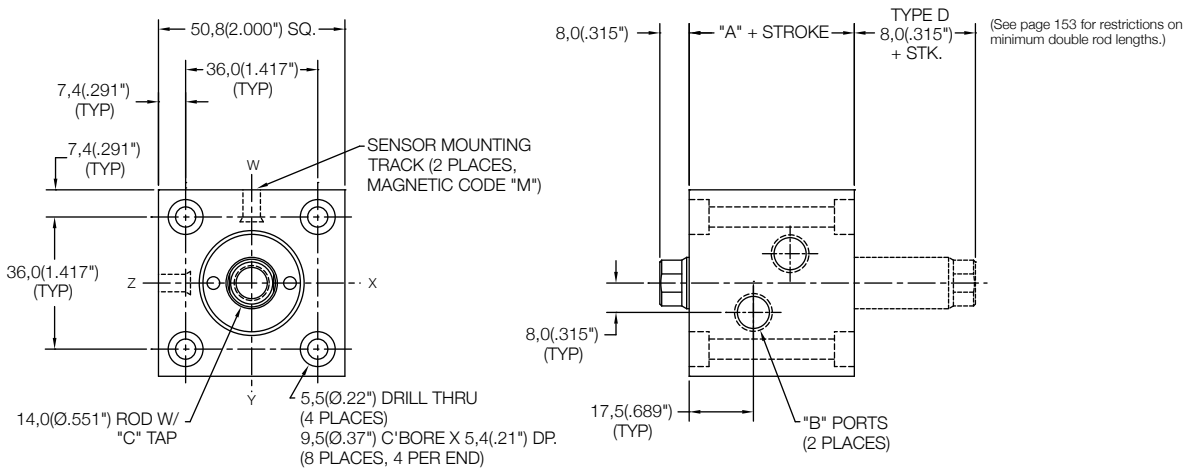
	Standard Threads	"EM" Option
"B"	G1/8	#2 SAE
"C"	M10X1,5	3/8-24
"D"	M5X0,8	#10-32



Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L20	_,D	25mm, 50mm, 75mm, 100mm	45,0(1.77")	PUSH 4,91 cm ² (0.76 in ²) PULL 3,37 cm ² (0.52 in ²)

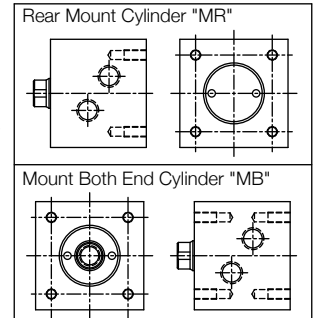
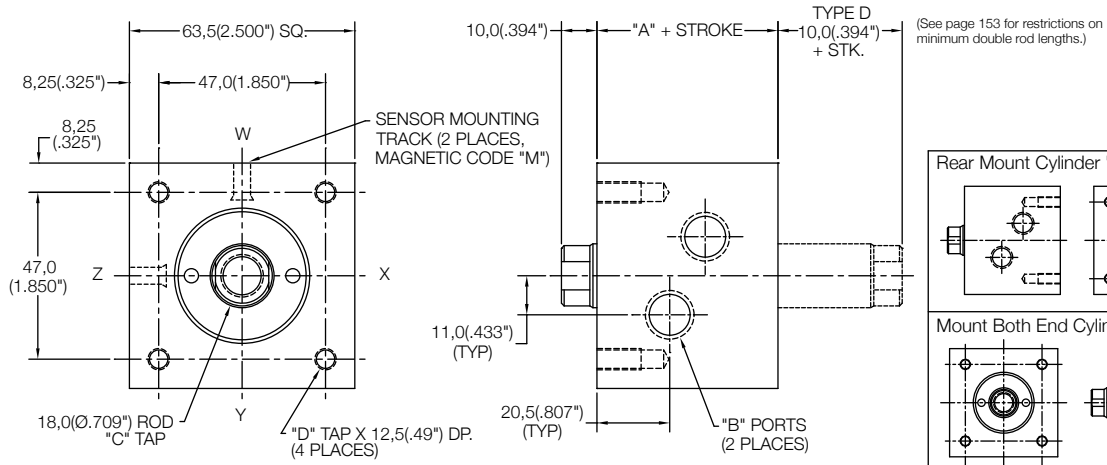
	Standard Threads	"EM" Option
"B"	G1/8	#2 SAE
"C"	M10X1,5	3/8-24



Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L20	_,D	25mm, 50mm, 75mm, 100mm	51,0(2.01")	PUSH 8,04 cm ² (1.25 in ²) PULL 5,50 cm ² (0.85 in ²)

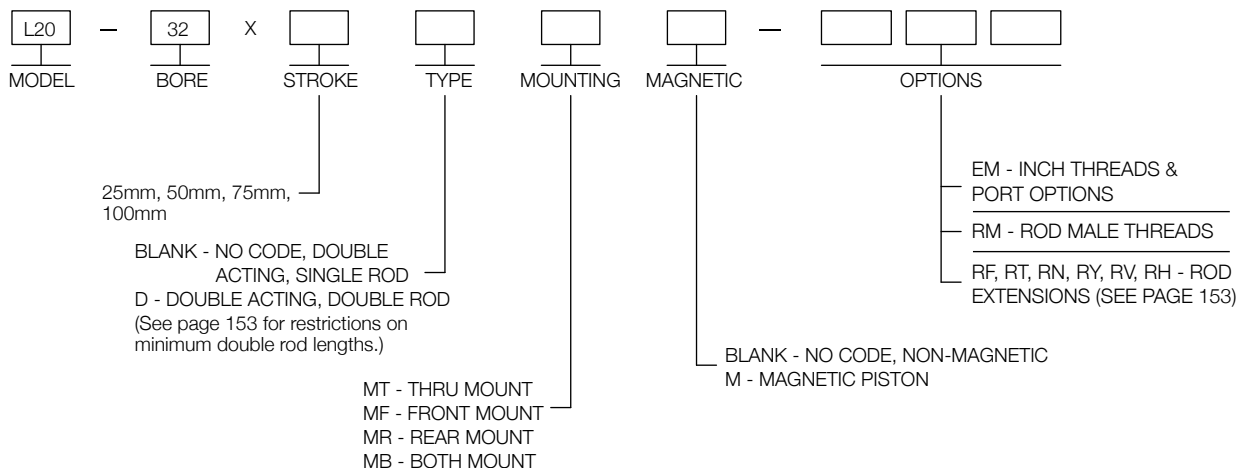
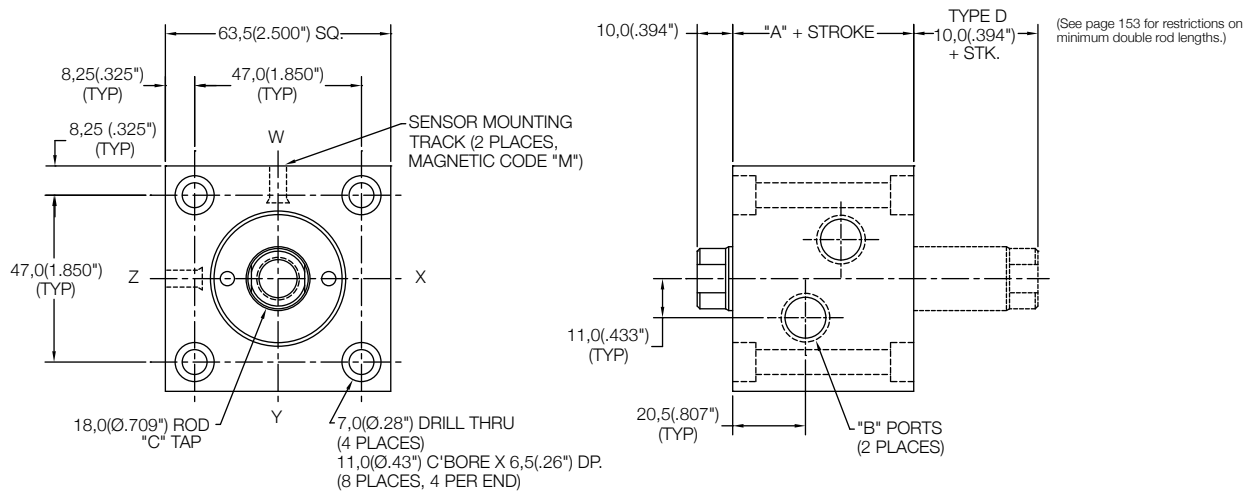
	Standard Threads	"EM" Option
"B"	G1/4	#4 SAE
"C"	M12X1,75	7/16-20
"D"	M6X1	1/4-28



Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L20	_,D	25mm, 50mm, 75mm, 100mm	51,0(2.01")	PUSH 8,04 cm ² (1.25 in ²) PULL 5,50 cm ² (0.85 in ²)

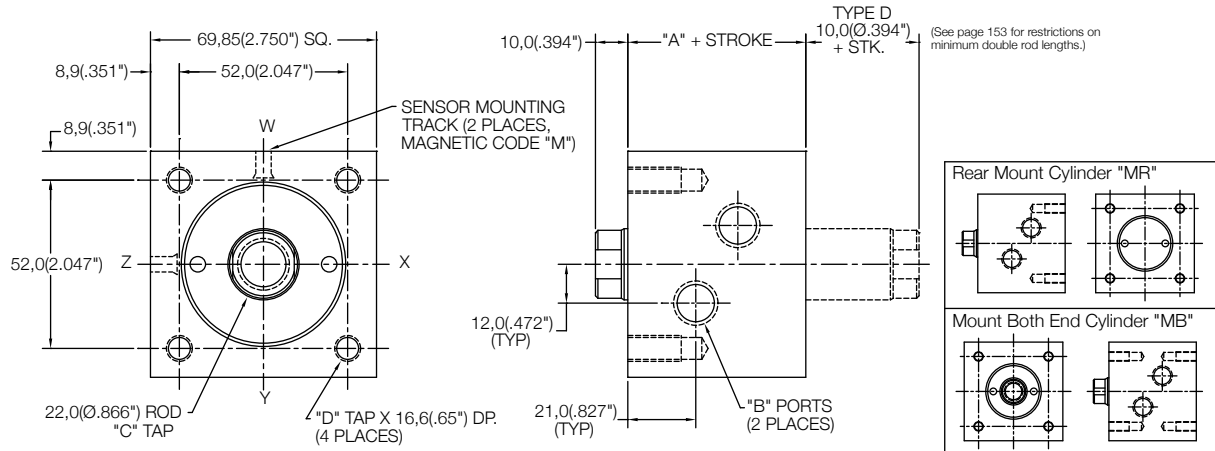
	Standard Threads	"EM" Option
"B"	G1/4	#4 SAE
"C"	M12X1,75	7/16-20



Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L20	_,D	25mm, 50mm, 75mm, 100mm	55,0(2.17")	PUSH 12,57 cm ² (1.95 in ²) PULL 8,77 cm ² (1.36 in ²)

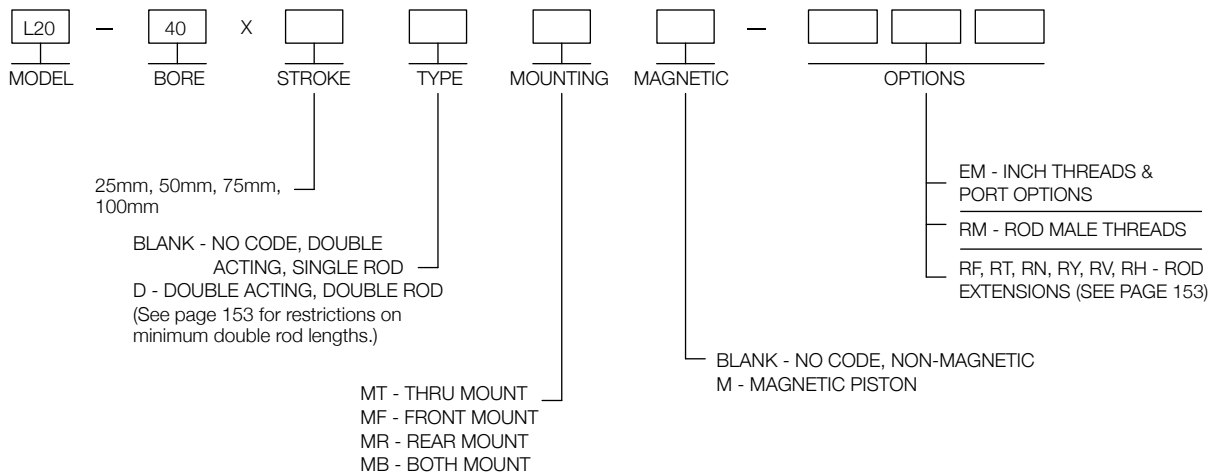
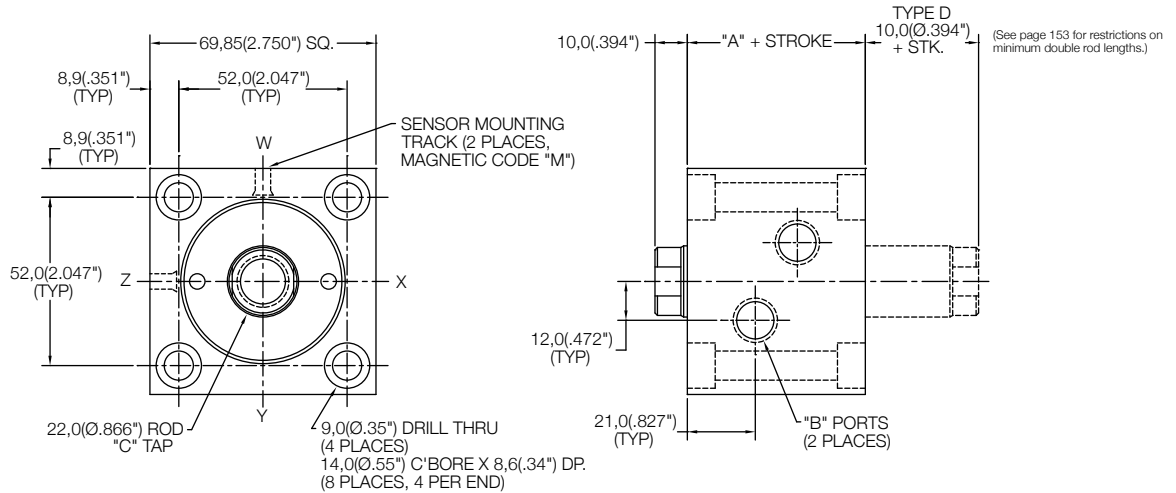
	Standard Threads	"EM" Option
"B"	G1/4	#4 SAE
"C"	M16X2	5/8-18
"D"	M8X1.25	5/16-24



Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L20	_,D	25mm, 50mm, 75mm, 100mm	55,0(2.17")	PUSH 12,57 cm ² (1.95 in ²) PULL 8,77 cm ² (1.36 in ²)

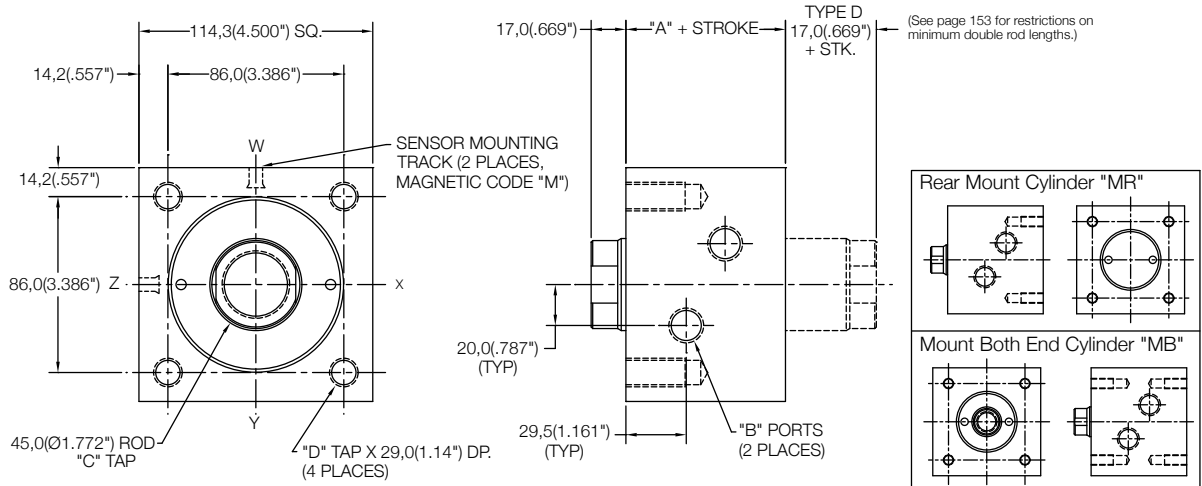
	Standard Threads	"EM" Option
"B"	G1/4	#4 SAE
"C"	M16X2	5/8-18



Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L20	_,D	25mm, 50mm, 75mm, 100mm	78,0(3.07")	PUSH 45,60 cm ² (7.07 in ²) PULL 29,70 cm ² (4.60 in ²)

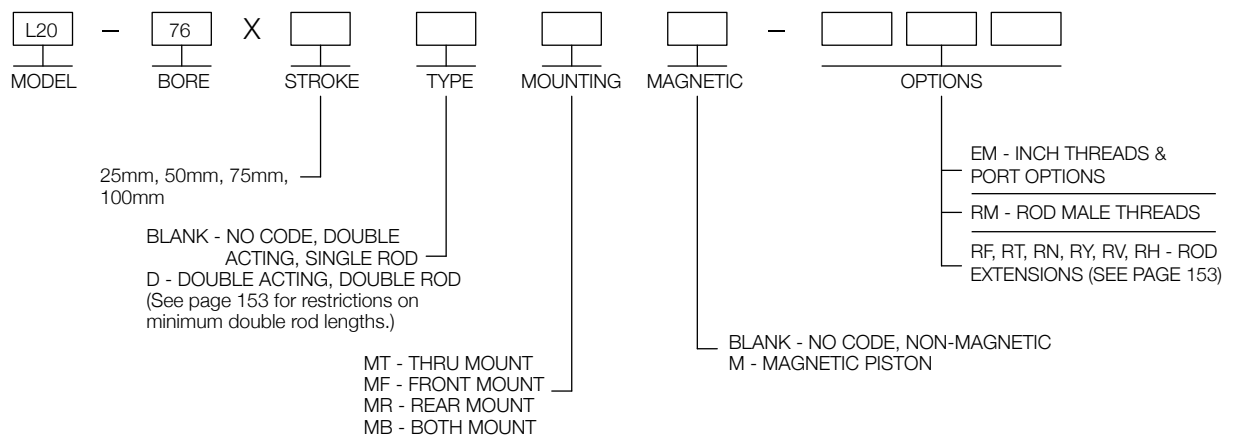
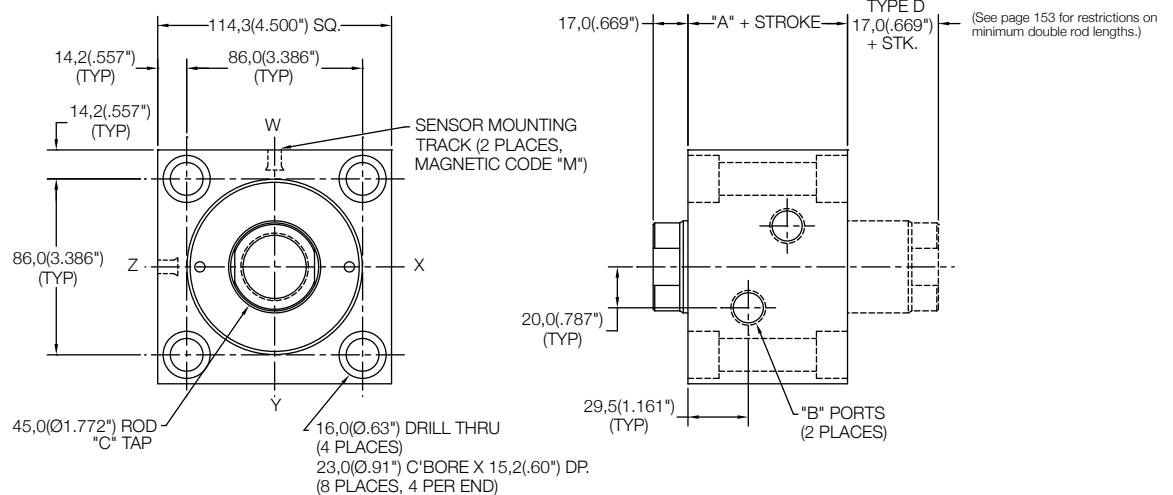
	Standard Threads	"EM" Option
"B"	G3/8	#6 SAE
"C"	M33X3.5	1 1/4-12
"D"	M14X2	5/8-18



Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L20	_,D	25mm, 50mm, 75mm, 100mm	78,0(3.07")	PUSH 45,60 cm ² (7.07 in ²) PULL 29,70 cm ² (4.60 in ²)

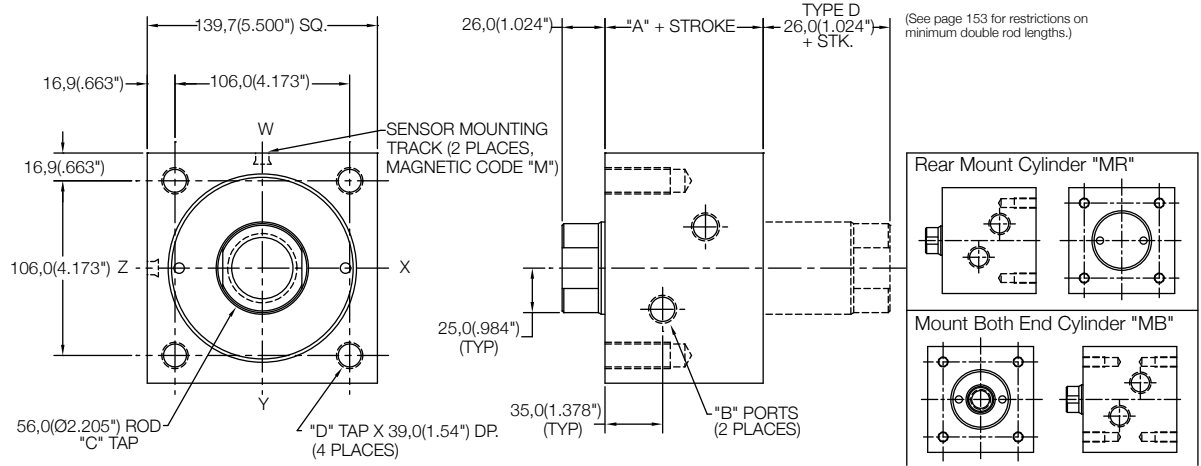
	Standard Threads	"EM" Option
"B"	G3/8	#6 SAE
"C"	M33X3.5	1 1/4-12



Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L20	_,D	25mm, 50mm, 75mm, 100mm	96,0(3.78")	PUSH 81,07 cm ² (12.57 in ²) PULL 56,44 cm ² (8.75 in ²)

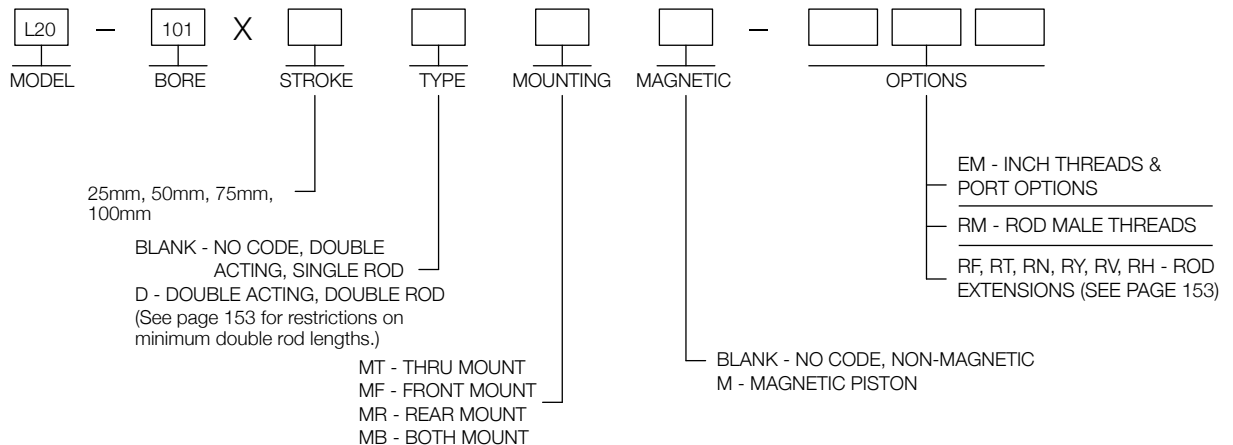
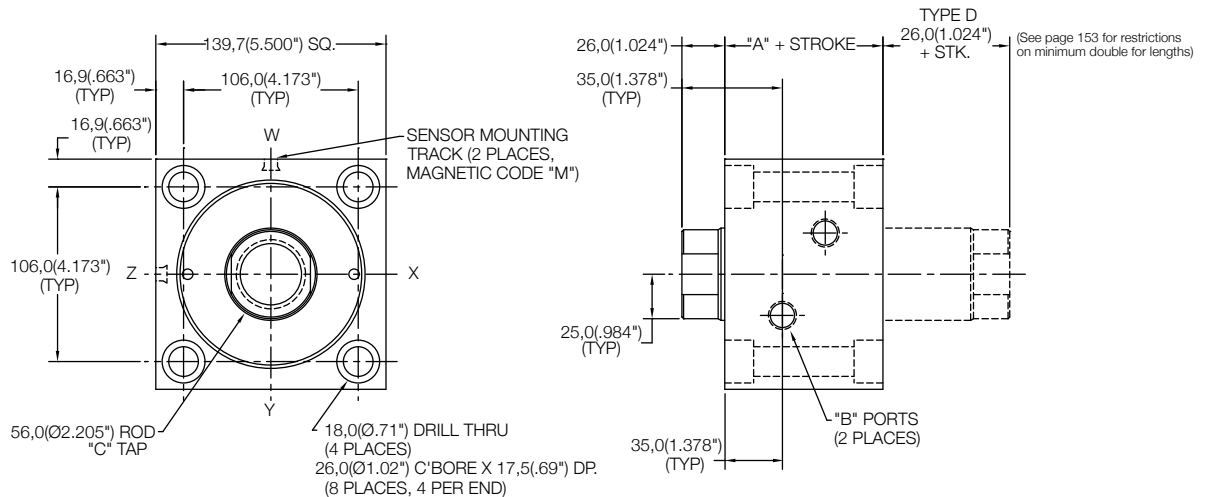
	Standard Threads	"EM" Option
"B"	G3/8	#6 SAE
"C"	M42X4.5	1 1/2-12
"D"	M16X2	5/8-18



Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L20	_,D	25mm, 50mm, 75mm, 100mm	96,0(3.78")	PUSH 81,07 cm ² (12.57 in ²) PULL 56,44 cm ² (8.75 in ²)

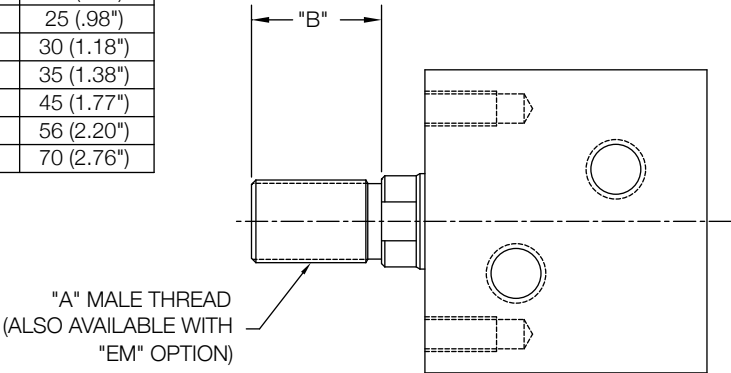
	Standard Threads	"EM" Option
"B"	G3/8	#6 SAE
"C"	M42X4.5	1 1/2-12



Male Thread
Option - "RM"

Bore	"A"	"B"	"EM" Option	"B"
25	M10X1.25	16 (.63")	1/2-20	18 (.71")
32	M12X1.25	18 (.71")	9/16-18	25 (.98")
40	M16X1.5	22 (.87")	3/4-16	30 (1.18")
50	M20X1.5	28 (1.10")	7/8-14	35 (1.38")
63	M27X2	36 (1.42")	1 1/4-12	45 (1.77")
76	M33X2	45 (1.77")	1 1/2-12	56 (2.20")
101	M42X2	56 (2.20")	1 3/4-12	70 (2.76")

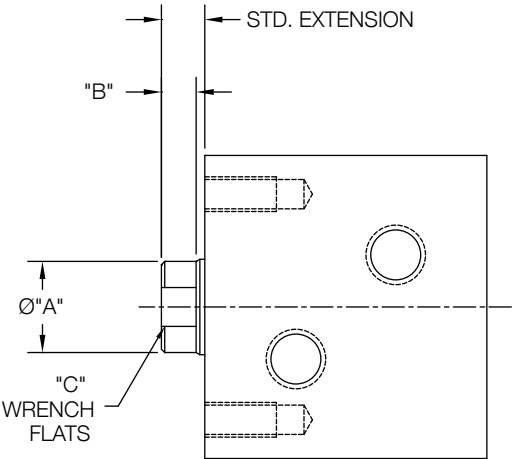
Dimensions above are the same for double rod cylinders.



Rod End Detail
See Chart Below

Bore	Ø"A"	"B"	"C"
25	13 (.51")	6 (.24")	12 (.47")
32	17 (.67")	8 (.31")	15 (.59")
40	21 (.83")	8 (.31")	19 (.75")
50	27 (1.06")	9 (.35")	24 (.94")
63	35 (1.38")	11 (.43")	32 (1.26")
76	43 (1.69")	13 (.51")	39 (1.54")
101	54 (2.13")	22 (.87")	48 (1.89")

Dimensions above are the same for double rod cylinders.



Rod Extensions

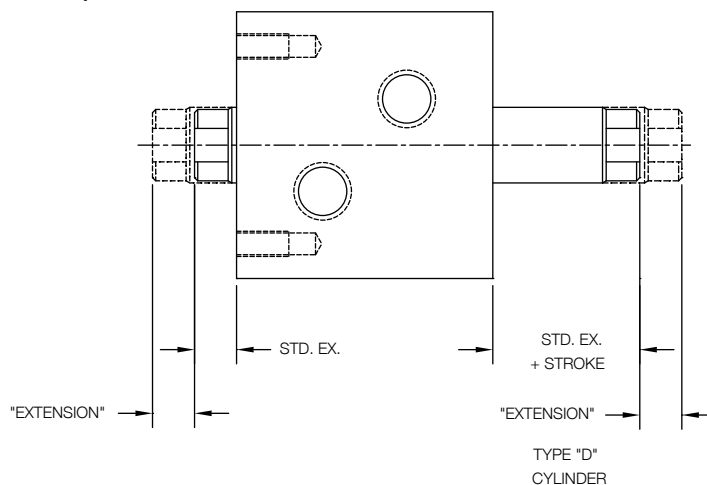
Option - See Chart Below

Extensions	"RF"	"RT"	"RN"	"RY"	"RV"	"RH"
Length	5 (.20")	10 (.39")	15 (.59")	20 (.79")	25 (.98")	35 (1.38")

For standard extension, see catalog pages.

If cylinder is double ended, extension will be on both ends.

Consult factory for single ended extension on a double ended cylinder.



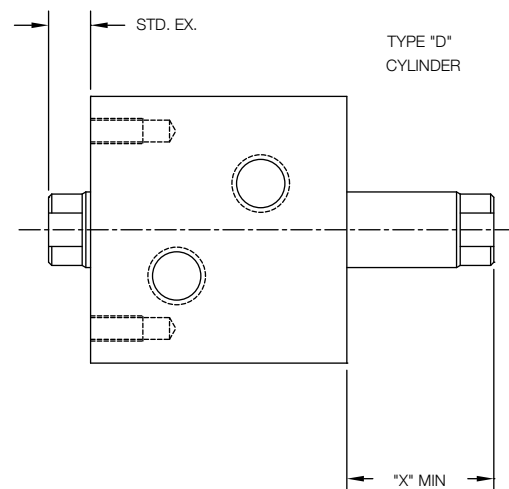
Minimum Rod Extension for Double Rod

Option (Type "D") - See Chart Below

Standard double rod cylinders must have "X" dimensions greater than or equal to those listed in the table below. Corresponding rod extensions will be added to cylinders which do not meet this minimum length, so that standard extension plus stroke adds up to "X" MIN. This applies only to rear rod.

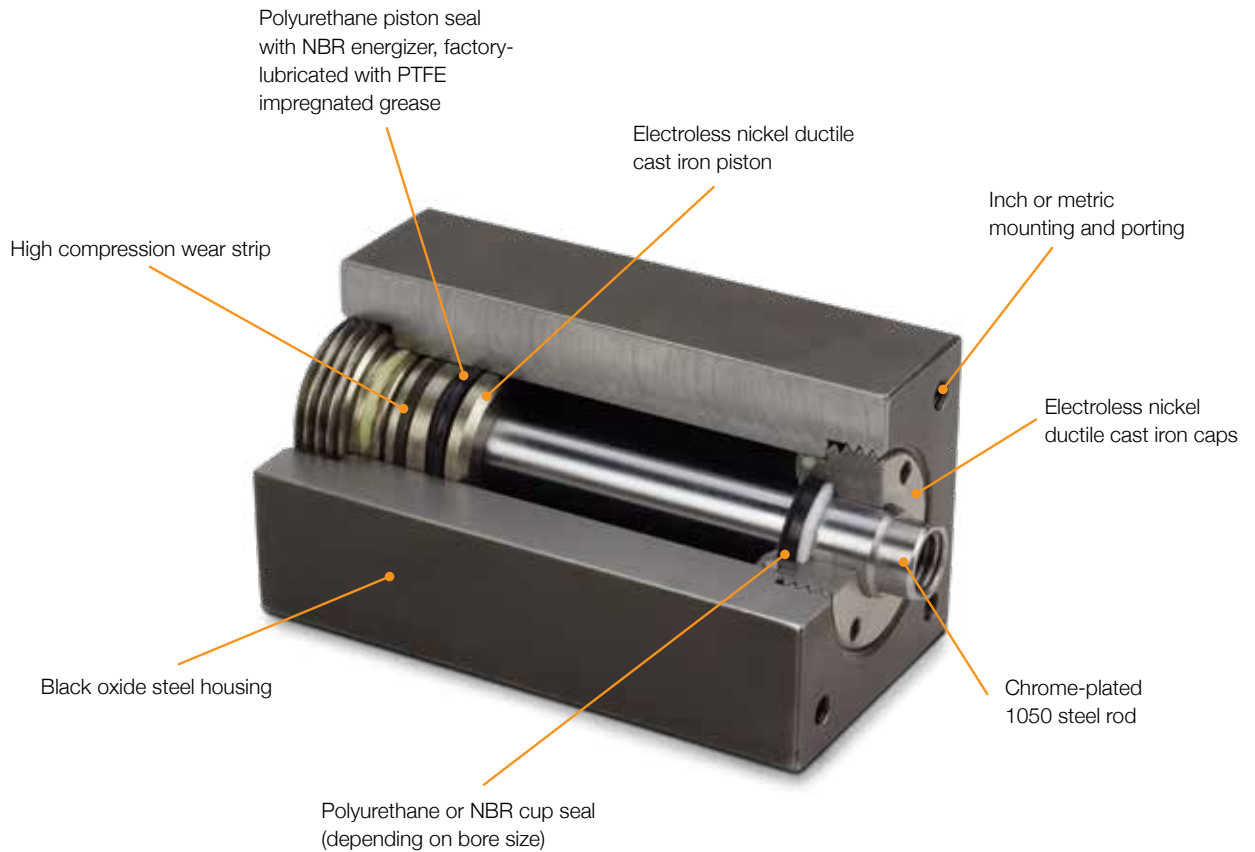
Bore	STD. Ex.	"X" MIN	For Strokes Less Than
25	8 (.31")	23 (.91")	15 (.59")
32	10 (.39")	25 (.98")	15 (.59")
40	10 (.39")	30 (1.18")	20 (.79")
50	11 (.43")	31 (1.22")	20 (.79")
63	13 (.51")	38 (1.50")	25 (.98")
76	17 (.67")	42 (1.65")	25 (.98")
101	26 (1.02")	51 (2.00")	25 (.98")

*Single rod cylinders and cylinders with "RM" rod male thread option do not have this restriction.



L30 SERIES

HYDRAULIC CYLINDERS



Common Features

Nason's L30 series hydraulic actuators were designed to be compact, long-lasting devices for today's demanding design requirements. They are offered in single and double rod configurations with inch or metric mounting and ports.

Compact Size

Nason L30 series cylinders were designed with today's automation equipment in mind. They offer more power in a smaller package than comparable NFPA style hydraulic cylinders without sacrificing performance.

Rugged Construction

The L30 series incorporates thick-walled steel housing. The rods are chrome-plated 1050 steel riding in electroless nickel-plated ductile cast iron rod bearings. The piston is ductile cast iron with wear rings standard. Rod wipers are standard on all models.

Versatile Design

The L30 series cylinders are metric in design (bore and rod sizes). They are offered in inch or metric mounting and porting. Due to their 100% machined design, they are easily customized by Nason.

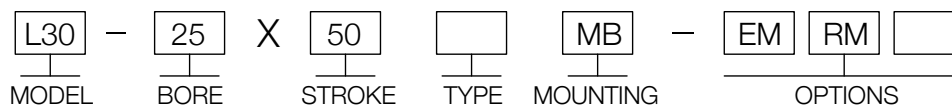
Rebuildable

All L30 series cylinders are field-rebuildable.

How to Order

Example:

Part Number: L30-25X50MB-EMRM



MODEL
L30 - High Pressure Cylinder

BORE
25 - 25mm (.98")
32 - 32mm (1.26")
40 - 40mm (1.58")
50 - 50mm (1.97")
63 - 63mm (2.48")
76 - 76mm (3.00")

STROKE
See Stroke Table

TYPE
Blank (NO CODE) - Double Acting, Single Rod
D - Double Acting, Double Rod

MOUNTING
MF - Threads on Front Face (Rod End)
MR - Threads on Rear Face (Opposite Rod)
MB - Threads on Both Faces
MT - Drilled Through and Counter bored for Bolt Clearance

OPTIONS
EM - Inch Threads (Mounting, Ports and Rods)
RM - Rod Male Threads
RF - 5mm (.197") Rod Extension
RT - 10mm (.394") Rod Extension
RN - 15mm (.591") Rod Extension
RY - 20mm (.787") Rod Extension
RV - 25mm (.984") Rod Extension
RH - 35mm (1.38") Rod Extension

Packing: Urethane and Buna N
 Lubrication: PTFE impregnated grease
 Stroke Tolerance: +0,75mm/-0mm (+0.03"/-0")

Piston Area Chart

Bore	PUSH (ROD EXTEND)	PULL (ROD RETRACT)
25	4,91cm ² (.76in ²)	3,37cm ² (.52in ²)
32	8,04cm ² (1.25in ²)	5,50cm ² (.85in ²)
40	12,57cm ² (1.95in ²)	8,77cm ² (1.36in ²)
50	19,63cm ² (3.04in ²)	13,48cm ² (2.09in ²)
63	31,17cm ² (4.83in ²)	20,99cm ² (3.25in ²)
76	45,60cm ² (7.07in ²)	29,70cm ² (4.60in ²)

Stock Strokes

Bore	Stroke
25	25mm, 50mm, 75mm, 100mm (.98", 1.96", 2.95", 3.93")
32	
40	
50	
63	
76	

5mm increments available with additional lead time

Cylinder Output Force Formula

Piston Area x Pressure = Output Force
Piston Area(in ²) x Pressure(PSI) = lbf (Pounds Force)
Piston Area(cm ²) x Pressure(kg/cm ²) = kgf (Kilograms Force)
Piston Area(cm ²) x Pressure(kg/cm ²) x 9.8 = Newtons
Piston Area(cm ²) x Pressure(Bar) x 10 = Newtons
Piston Area(cm ²) x Pressure(Bar) x 1.02 = kgf (Kilograms Force)

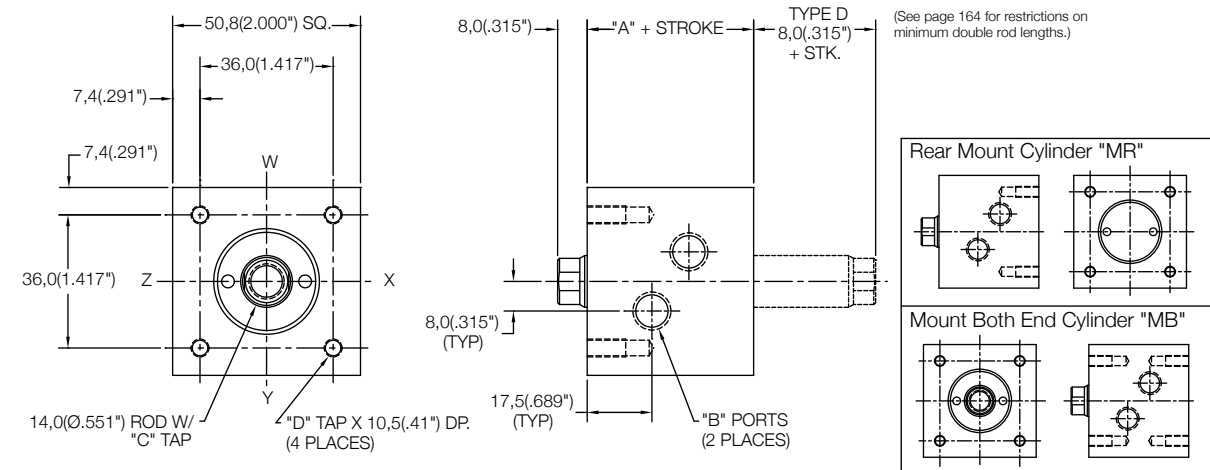
Cylinder Ratings

Bore	Pressure	Temperature
25	206 BAR (3000 PSI)	-10° C to 80° C (14° F to 176° F)
32	206 BAR (3000 PSI)	-10° C to 80° C (14° F to 176° F)
40	206 BAR (3000 PSI)	-23° C to 100° C (-10° F to 212° F)
50	206 BAR (3000 PSI)	-23° C to 100° C (-10° F to 212° F)
63	206 BAR (3000 PSI)	-23° C to 100° C (-10° F to 212° F)
76	206 BAR (3000 PSI)	-23° C to 100° C (-10° F to 212° F)

Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L30	_,D	25mm, 50mm, 75mm, 100mm	45,0(1.77")	PUSH 4,91 cm ² (0.76 in ²) PULL 3,37 cm ² (0.52 in ²)

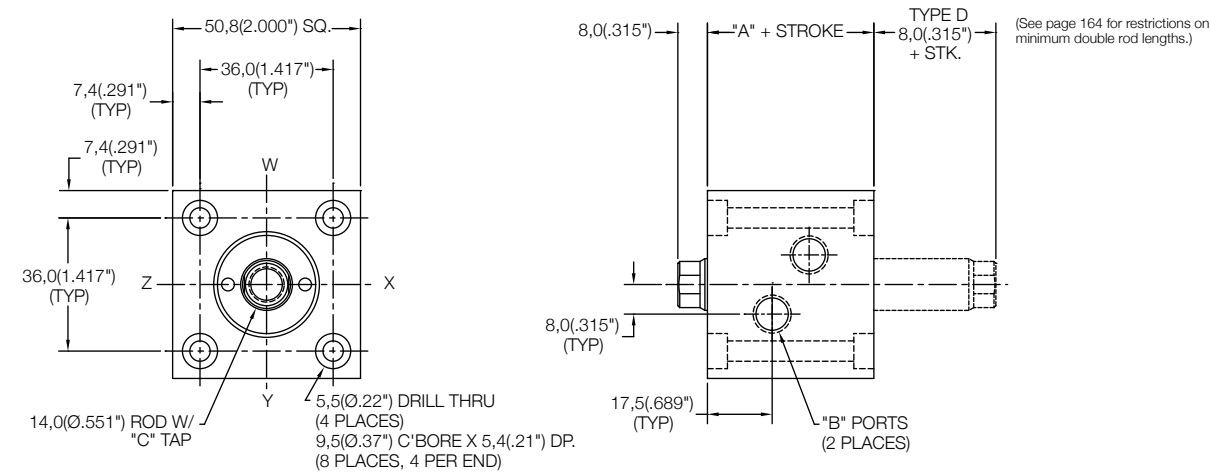
	Standard Threads	"EM" Option
"B"	G1/8	#2 SAE
"C"	M10X1,5	3/8-24
"D"	M5X0,8	#10-32



Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L30	_,D	25mm, 50mm, 75mm, 100mm	45,0(1.77")	PUSH 4,91 cm ² (0.76 in ²) PULL 3,37 cm ² (0.52 in ²)

	Standard Threads	"EM" Option
"B"	G1/8	#2 SAE
"C"	M10X1,5	3/8-24

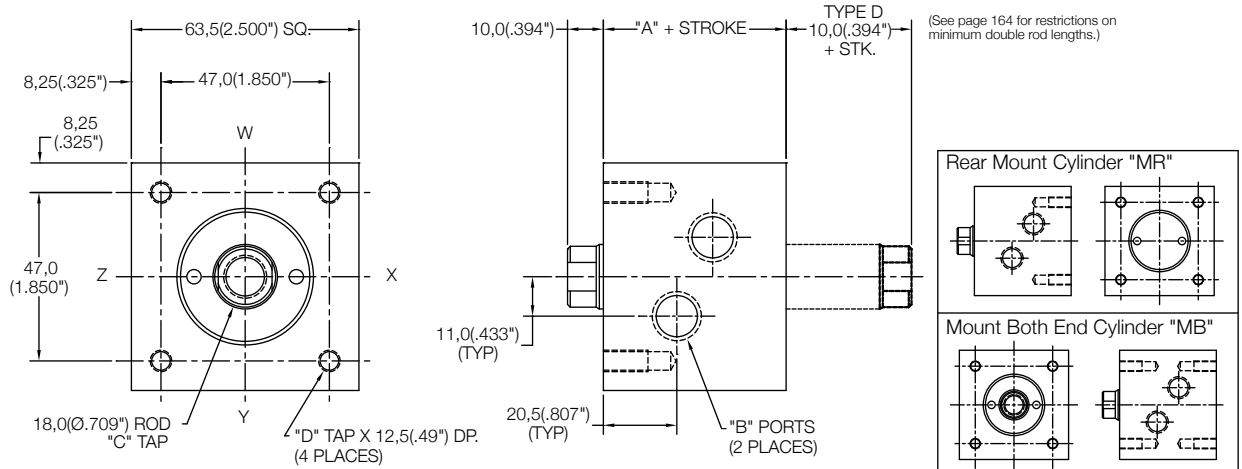


L30	-	25	X				-			
MODEL		BORE		STROKE	TYPE	MOUNTING		OPTIONS		
		25mm, 50mm, 75mm, 100mm						EM - INCH THREADS & PORT OPTIONS RM - ROD MALE THREADS RF, RT, RN, RY, RV, RH - ROD EXTENSIONS (SEE PAGE 164)		
								BLANK - NO CODE, DOUBLE ACTING, SINGLE ROD D - DOUBLE ACTING, DOUBLE ROD (See page 164 for restrictions on minimum double rod lengths.) MT - THRU MOUNT MF - FRONT MOUNT MR - REAR MOUNT MB - BOTH MOUNT		

Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L30	_,D	25mm, 50mm, 75mm, 100mm	51,0(2.01")	PUSH 8,04 cm ² (1.25 in ²) PULL 5,50 cm ² (0.85 in ²)

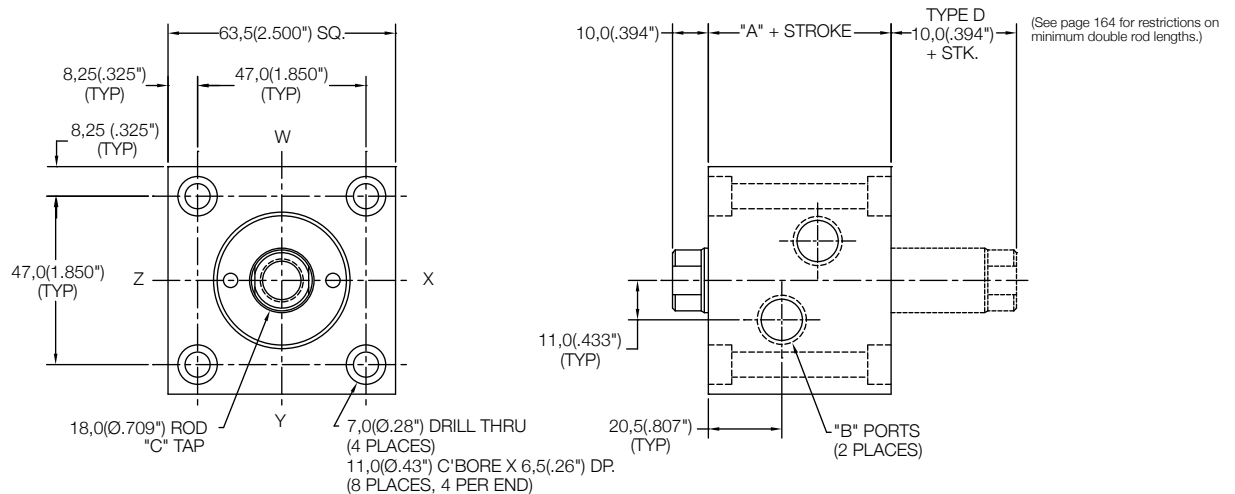
	Standard Threads	"EM" Option
"B"	G1/4	#4 SAE
"C"	M12X1,75	7/16-20
"D"	M6X1	1/4-28



Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L30	_,D	25mm, 50mm, 75mm, 100mm	51,0(2.01")	PUSH 8,04 cm ² (1.25 in ²) PULL 5,50 cm ² (0.85 in ²)

	Standard Threads	"EM" Option
"B"	G1/4	#4 SAE
"C"	M12X1,75	7/16-20



L30	-	32	X						
MODEL		BORE		STROKE		TYPE		MOUNTING	OPTIONS

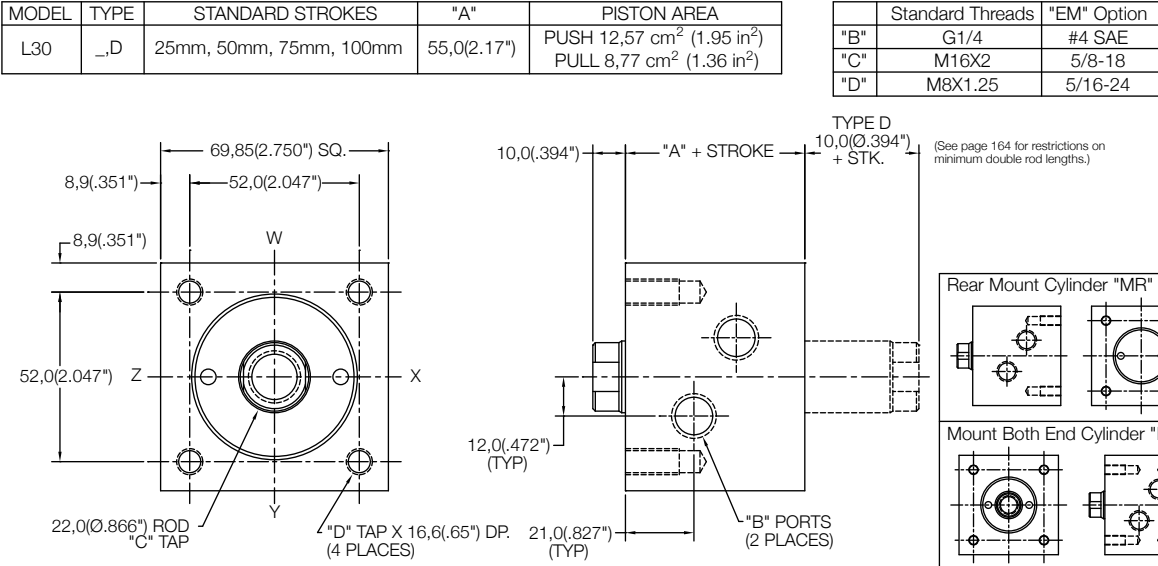
25mm, 50mm, 75mm, 100mm

BLANK - NO CODE, DOUBLE ACTING, SINGLE ROD
D - DOUBLE ACTING, DOUBLE ROD
(See page 164 for restrictions on minimum double rod lengths.)

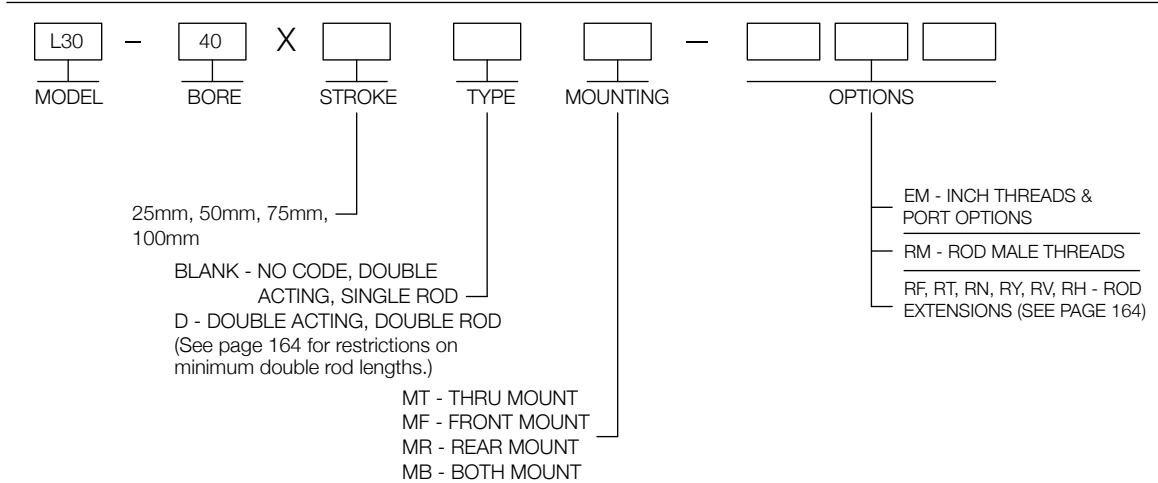
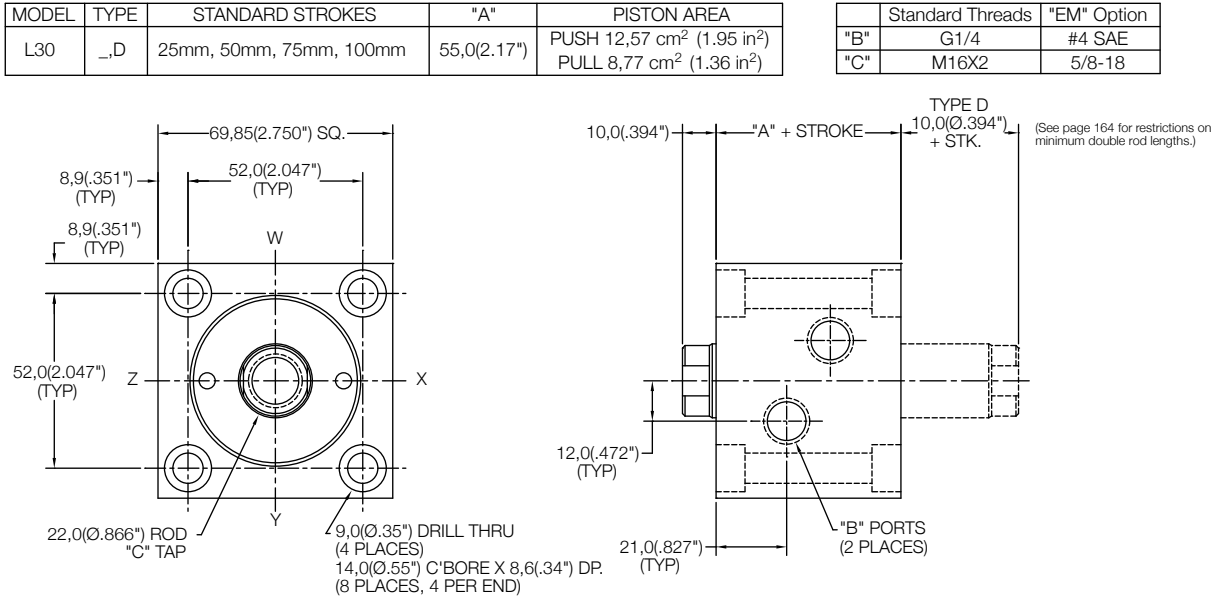
MT - THRU MOUNT
MF - FRONT MOUNT
MR - REAR MOUNT
MB - BOTH MOUNT

EM - INCH THREADS & PORT OPTIONS
RM - ROD MALE THREADS
RF, RT, RN, RY, RV, RH - ROD EXTENSIONS (SEE PAGE 164)

Front Mount Cylinder "MF"



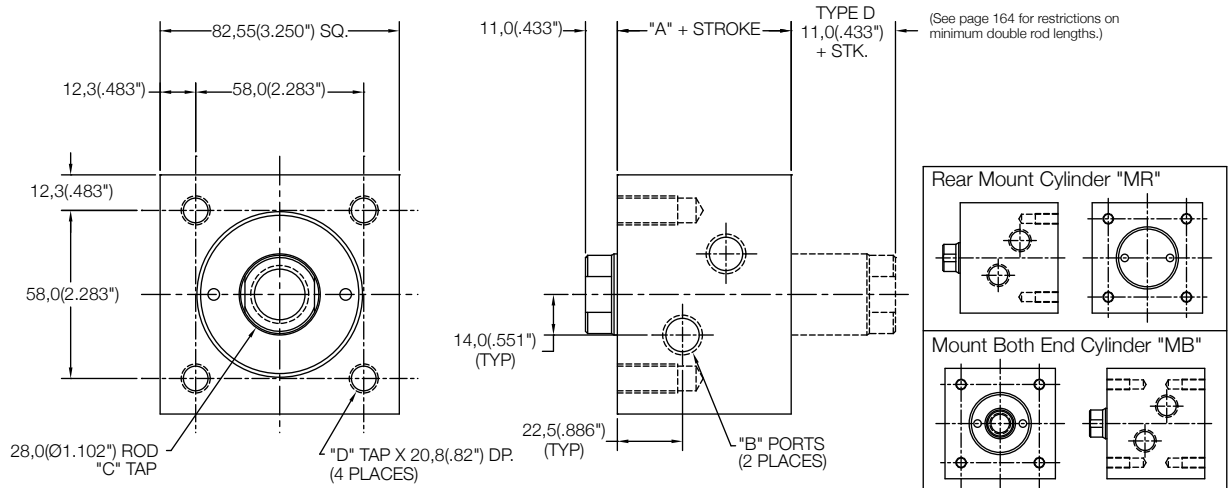
Thru Mount Cylinder "MT"



Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L30	_,D	25mm, 50mm, 75mm, 100mm	60,0(2.36")	PUSH 19,63 cm ² (3.04 in ²) PULL 13,48 cm ² (2.09 in ²)

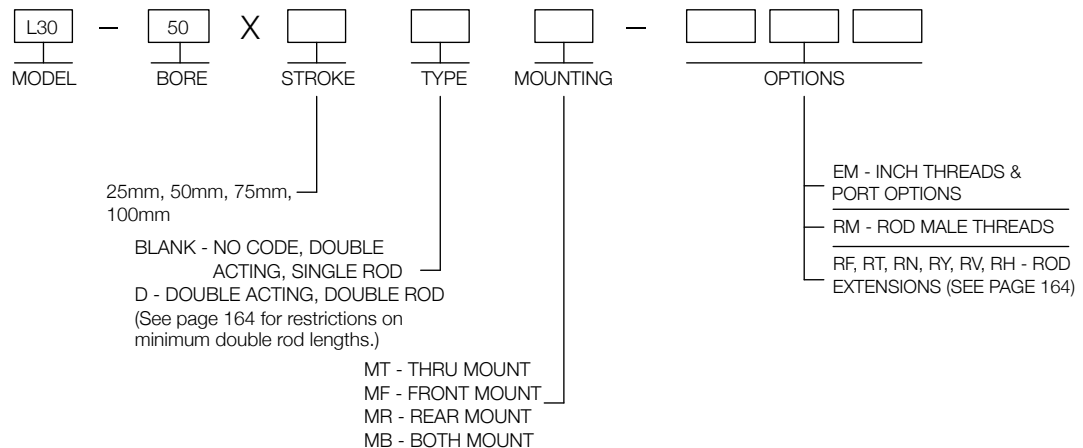
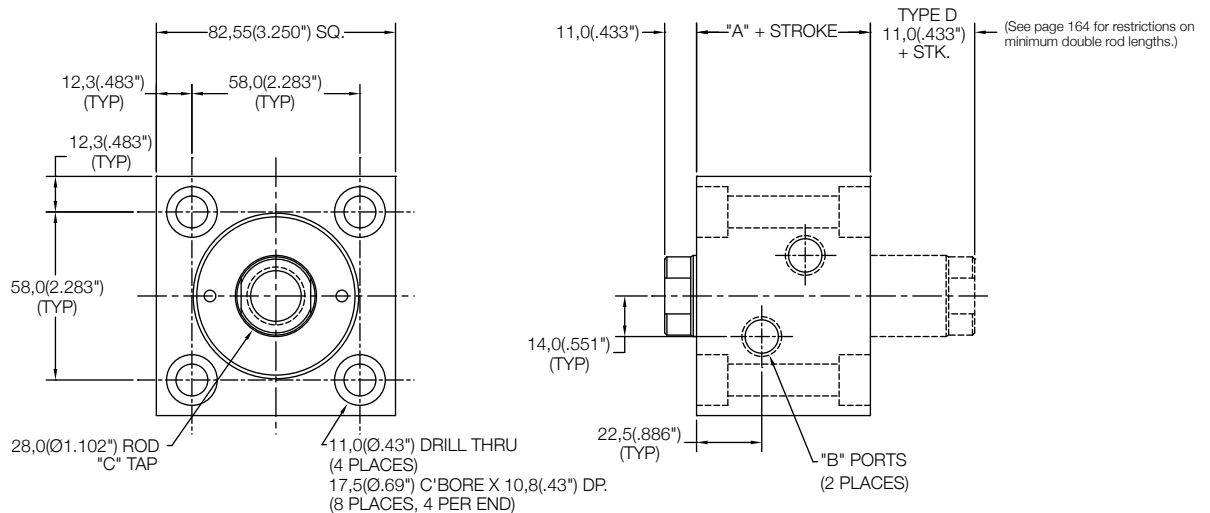
	Standard Threads	"EM" Option
"B"	G1/4	#4 SAE
"C"	M20X2.5	3/4-16
"D"	M10X1.5	3/8-24



Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L30	_,D	25mm, 50mm, 75mm, 100mm	60,0(2.36")	PUSH 19,63 cm ² (3.04 in ²) PULL 13,48 cm ² (2.09 in ²)

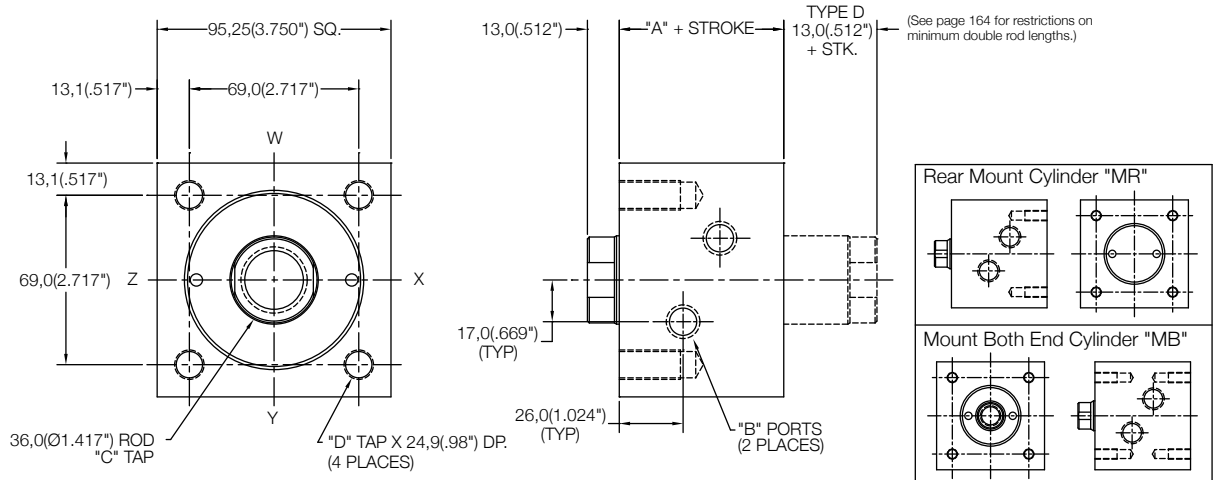
	Standard Threads	"EM" Option
"B"	G1/4	#4 SAE
"C"	M20X2.5	3/4-16



Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L30	_,D	25mm, 50mm, 75mm, 100mm	67,0(2.64")	PUSH 31,17 cm ² (4.83 in ²) PULL 20,99 cm ² (3.25 in ²)

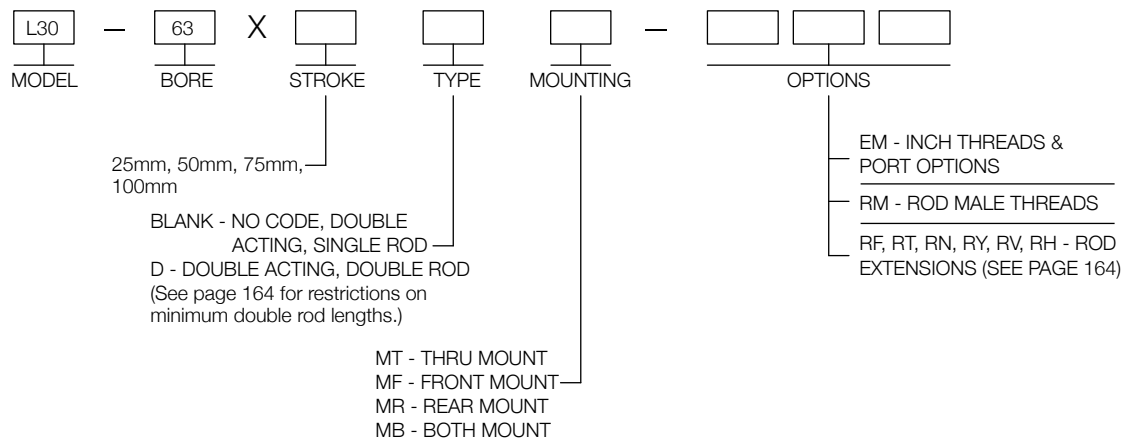
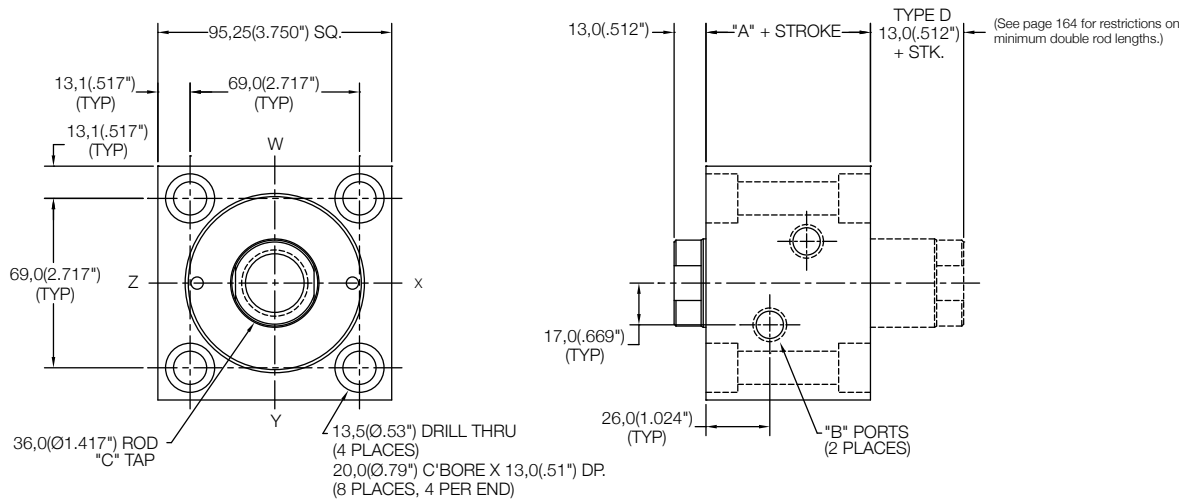
	Standard Threads	"EM" Option
"B"	G1/4	#4 SAE
"C"	M27X3	1-14
"D"	M12X1.75	1/2-20



Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L30	_,D	25mm, 50mm, 75mm, 100mm	67,0(2.64")	PUSH 31,17 cm ² (4.83 in ²) PULL 20,99 cm ² (3.25 in ²)

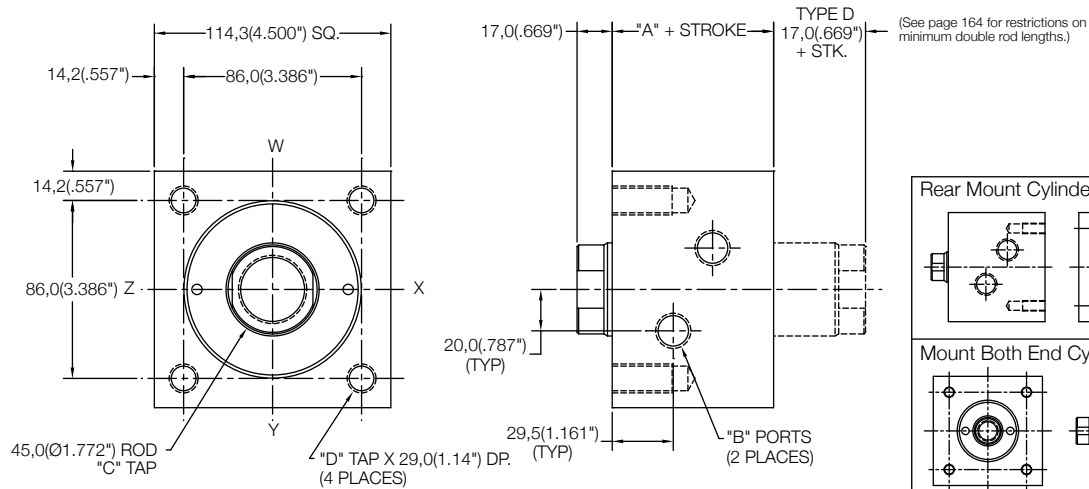
	Standard Threads	"EM" Option
"B"	G1/4	#4 SAE
"C"	M27X3	1-14



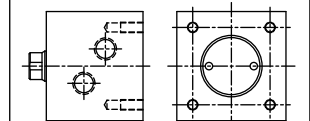
Front Mount Cylinder "MF"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L30	_,D	25mm, 50mm, 75mm, 100mm	78,0(3.07")	PUSH 45,60 cm ² (7.07 in ²) PULL 29,70 cm ² (4.60 in ²)

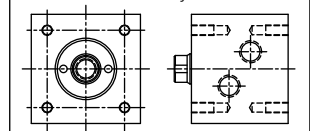
	Standard Threads	"EM" Option
"B"	G3/8	#6 SAE
"C"	M33X3.5	1 1/4-12
"D"	M14X2	5/8-18



Rear Mount Cylinder "MR"



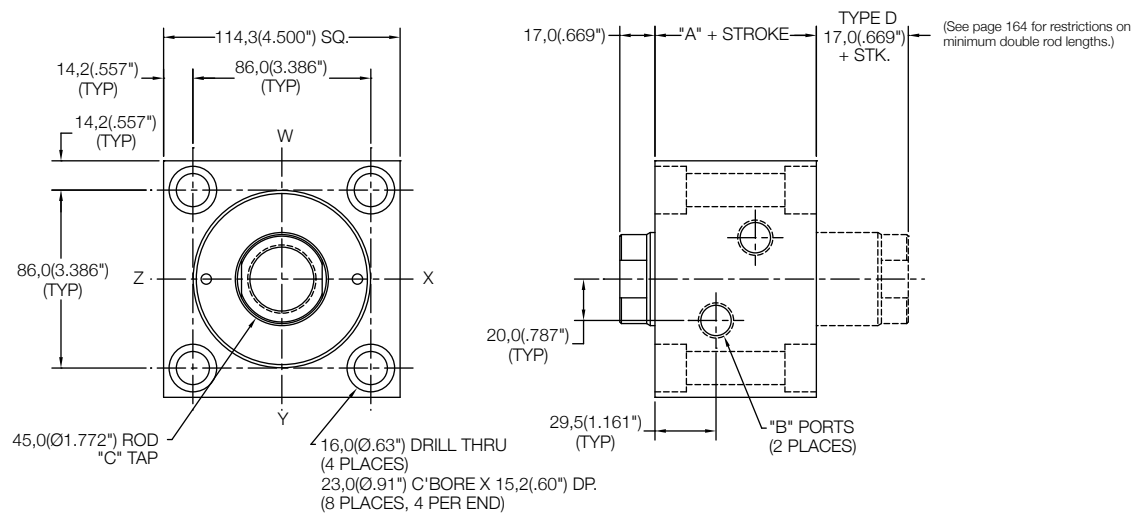
Mount Both End Cylinder "MB"



Thru Mount Cylinder "MT"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
L30	_,D	25mm, 50mm, 75mm, 100mm	78,0(3.07")	PUSH 45,60 cm ² (7.07 in ²) PULL 29,70 cm ² (4.60 in ²)

	Standard Threads	"EM" Option
"B"	G3/8	#6 SAE
"C"	M33X3.5	1 1/4-12



L30	—	76	X						
MODEL		BORE		STROKE		TYPE		MOUNTING	OPTIONS

25mm, 50mm, 75mm,
100mm

BLANK - NO CODE, DOUBLE
ACTING, SINGLE ROD
D - DOUBLE ACTING, DOUBLE ROD
(See page 164 for restrictions on
minimum double rod lengths.)

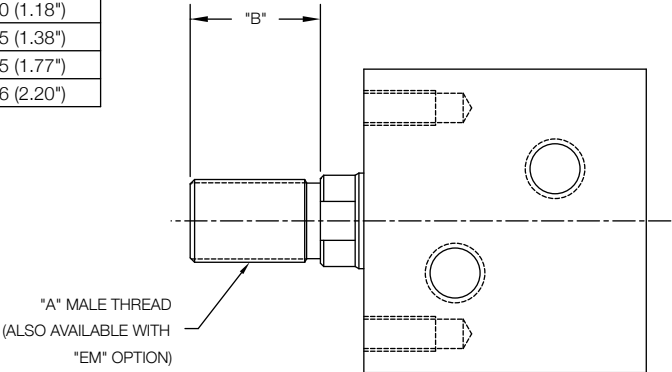
MT - THRU MOUNT
MF - FRONT MOUNT
MR - REAR MOUNT
MB - BOTH MOUNT

EM - INCH THREADS &
PORT OPTIONS
RM - ROD MALE THREADS
RF, RT, RN, RY, RV, RH - ROD
EXTENSIONS (SEE PAGE 164)

Male Thread
Option - "RM"

Bore	"A"	"B"	"EM" Option	"B"
25	M10X1.25	16 (.63")	1/2-20	18 (.71")
32	M12X1.25	18 (.71")	9/16-18	25 (.98")
40	M16X1.5	22 (.87")	3/4-16	30 (1.18")
50	M20X1.5	28 (1.10")	7/8-14	35 (1.38")
63	M27X2	36 (1.42")	1 1/4-12	45 (1.77")
76	M33X2	45 (1.77")	1 1/2-12	56 (2.20")

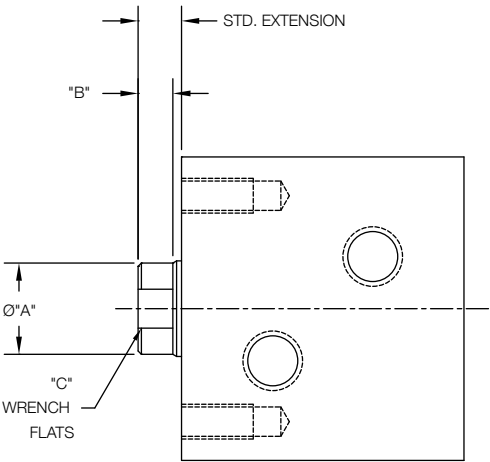
Dimensions above are the same for double rod cylinders.



Rod End Detail
See Chart Below

Bore	Ø"A"	"B"	"C"
25	13 (.51")	6 (.24")	12 (.47")
32	17 (.67")	8 (.31")	15 (.59")
40	21 (.83")	8 (.31")	19 (.75")
50	27 (1.06")	9 (.35")	24 (.94")
63	35 (1.38")	11 (.43")	32 (1.26")
76	43 (1.69")	13 (.51")	39 (1.54")

Dimensions above are the same for double rod cylinders.



Rod Extensions

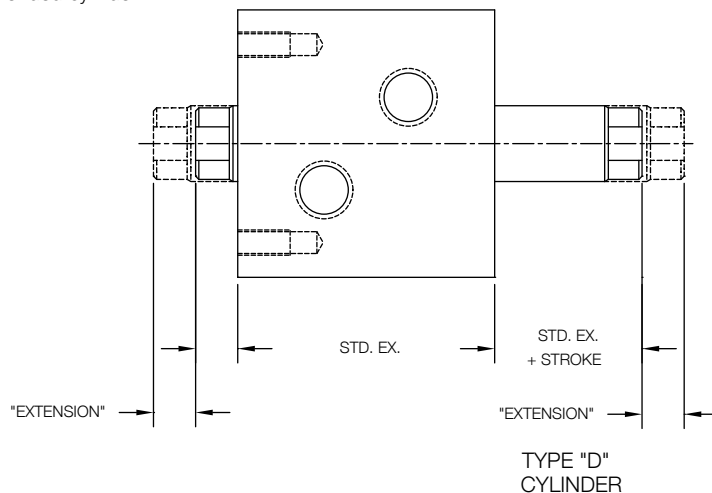
Option - See Chart Below

Extensions	"RF"	"RT"	"RN"	"RY"	"RV"	"RH"
Length	5 (.20")	10 (.39")	15 (.59")	20 (.79")	25 (.98")	35 (1.38")

For standard extension, see catalog pages.

If cylinder is double ended, extension will be on both ends.

Consult factory for single ended extension on a double ended cylinder.



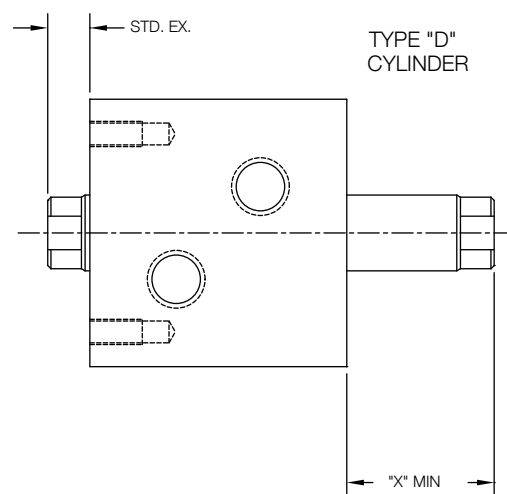
Minimum Rod Extension for Double Rod

Option (Type "D") - See Chart Below

Standard double rod cylinders must have "X" dimensions greater than or equal to those listed in the table below. Corresponding rod extensions will be added to cylinders which do not meet this minimum length, so that standard extension plus stroke adds up to "X" MIN. This applies only to rear rod.

Bore	STD. Ex.	"X" MIN	For Strokes Less Than
25	8 (.31")	23 (.91")	15 (.59")
32	10 (.39")	25 (.98")	15 (.59")
40	10 (.39")	30 (1.18")	20 (.79")
50	11 (.43")	31 (1.22")	20 (.79")
63	13 (.51")	38 (1.50")	25 (.98")
76	17 (.67")	42 (1.65")	25 (.98")

*Single rod cylinders and cylinders with "RM" rod male thread option do not have this restriction.



A collection of various pneumatic cylinders and actuators, including single-acting and double-acting models in different sizes and configurations. The components are shown against a white background. The items include: a large double-acting cylinder with three ports on the left; a compact double-acting cylinder with a top-mounted rod on the top left; a large white double-acting cylinder with a top-mounted rod on the top center; a compact double-acting cylinder with a top-mounted rod on the top right; a small double-acting cylinder with a top-mounted rod on the middle left; a small double-acting cylinder with a top-mounted rod on the middle center; a small double-acting cylinder with a top-mounted rod on the middle right; a small double-acting cylinder with a top-mounted rod on the bottom left; a small double-acting cylinder with a top-mounted rod on the bottom center; a small double-acting cylinder with a top-mounted rod on the bottom right; and a long, thin double-acting cylinder with a top-mounted rod on the bottom right.

Stop working around everyone else's standard cylinder. Your machine is unique, so why not have Nason design a unique custom cylinder for your specific application? Just show us what you want and we can provide a prototype for your approval. On the following pages are some examples of solutions we have provided other customers. Each one was unique in its design parameters. Some are made from specific materials or have unique coatings for harsh or clean room environments; some are made for high output in a small package; and some are just plain unusual. Talk to Nason about your next design need, and you will be pleasantly surprised.



All stainless steel slide designed for heavy wash down application in the food packaging industry.



Powerful 1500 PSI hydraulic slide in a compact package.



A low cost simple slide.



A heavy duty load carrying cylinder, made from plastic, for a highly corrosive environment.



Need a direct replacement of a competitor's product? Nason can help.



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ALL STEEL

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