

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 fill the need of today's design engineers.

Actuator

The LC series guided cylinder actuator is based on Nason's LH cylinder. 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 externally of the sealed cylinder chamber but inside the overall envelope of the cylinder. The guide rods are extended 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.

LC SERIES NON-ROTATING LOAD CARRYING CYLINDERS

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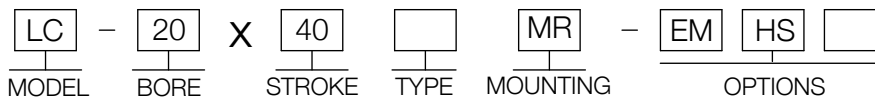
NEW
BORE SIZE



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)

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:	+0,75mm/-0mm (+0.03"/-0")

Load Chart

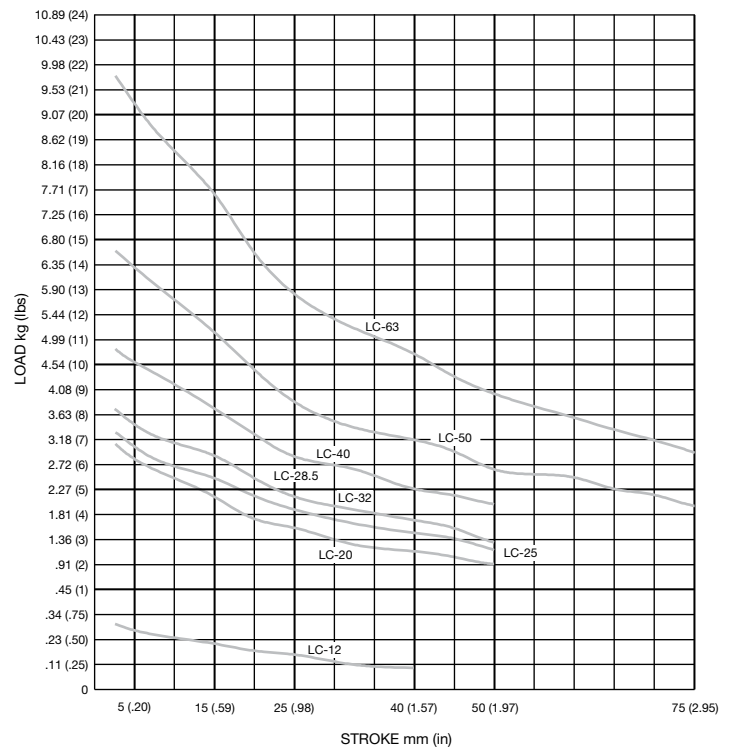
1. Loads based on .08mm (.003") deflection up to 25mm stroke and .16mm (.006") deflection over 25mm stroke and maximum life.
2. Rotational tolerance = +/- .5 degree
3. Speed controls or external shock absorbers are recommended to reduce impact and extend cylinder life.

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	



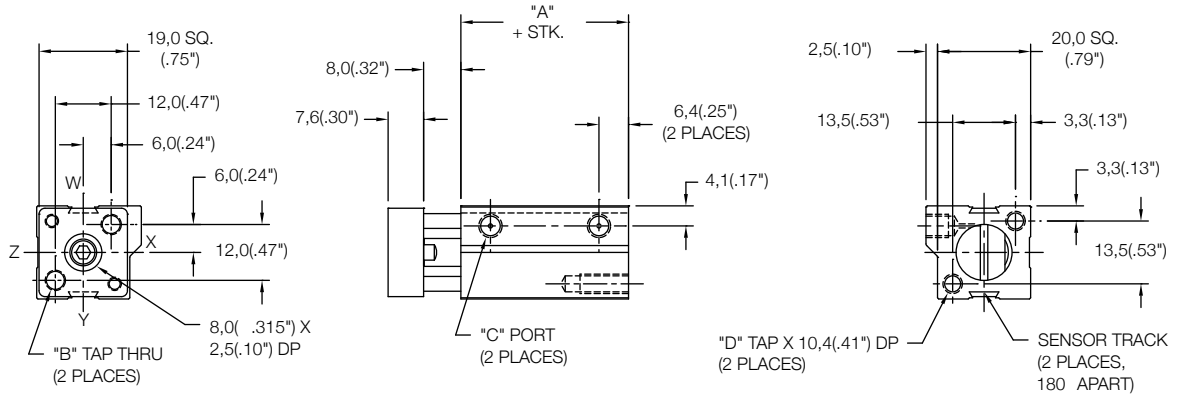
Cylinder Output Force Formula

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 (0.18 in) PULL 0,85 cm (0.14 in)
	25mm		
	40mm		

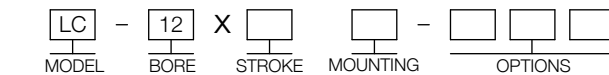
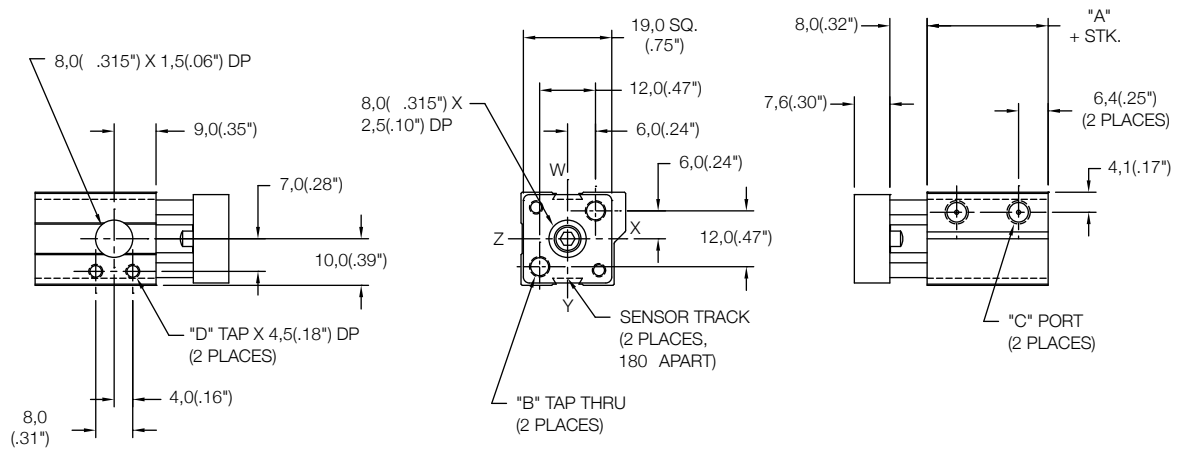
	Standard Threads	"EM" Option
"B"	M4X0,7	#8-32
"C"	M5X0,8	#10-32
"D"	M4X0,7	#8-32



Side Mount Cylinder "MS"

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

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



15mm - 40mm STROKE
(SEE CHART ABOVE)

MR - REAR MOUNT
MS - SIDE MOUNT
FR - REAR FLANGE
PR - PIVOT REAR
(SEE PAGE 58-60 FOR DETAILS)

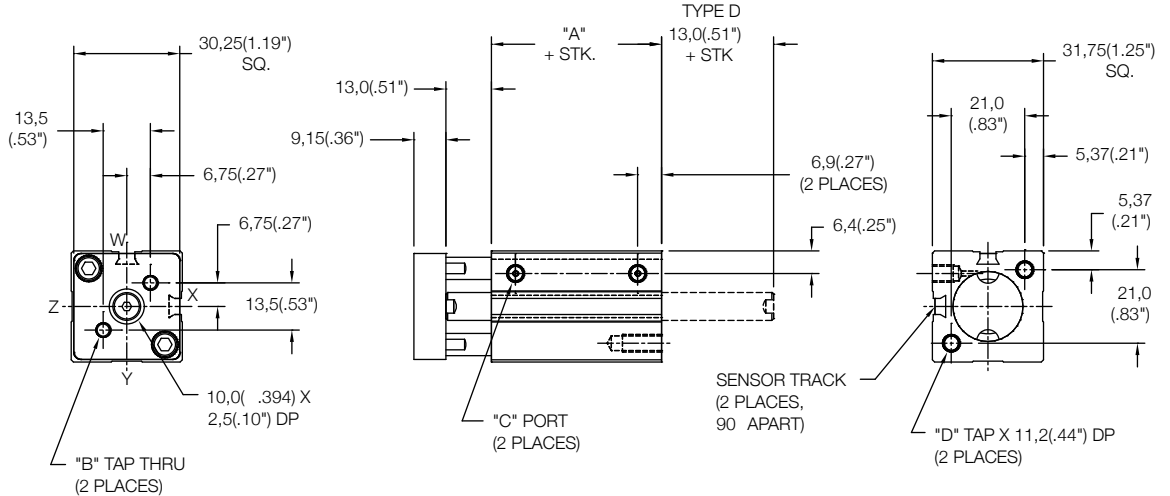
SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE CATALOG PAGE 54 FOR DETAILS)

EM - INCH THREADS & PORT OPTIONS:
HS - HIGH TEMPERATURE SEALS OPTION:
(SEE CATALOG PAGE 62 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 (0.48 in)
		25mm		
		40mm		PULL 2,64 cm (0.40 in)
		50mm		

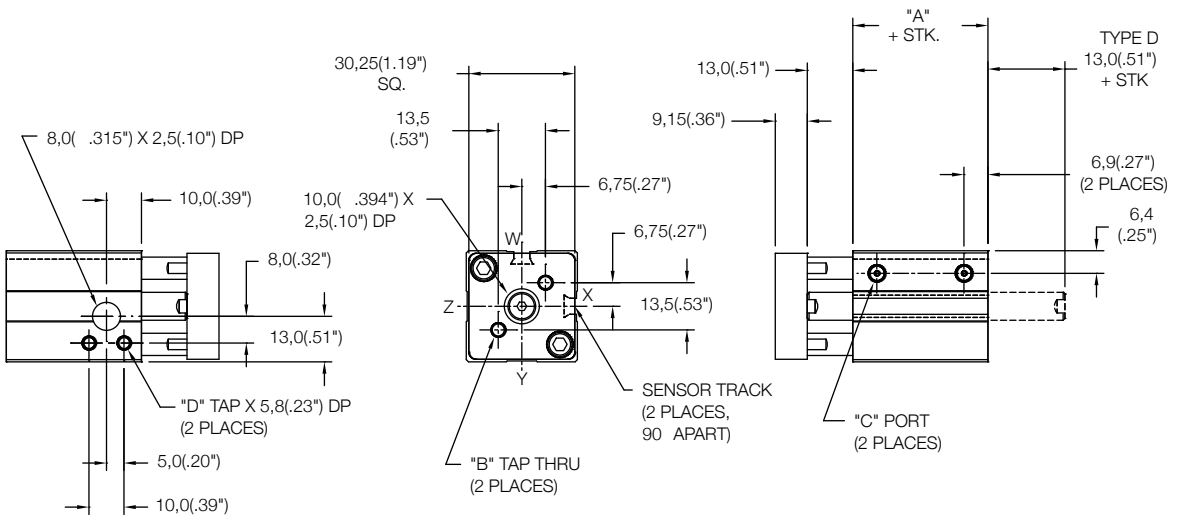
	Standard Threads	"EM" Option
"B"	M4X0,7	#8-32
"C"	M5X0,8	#10-32
"D"	M5X0,8	#10-32



Side Mount Cylinder "MS"

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

SENSORS SOLD SEPARATELY
 SKS, SKP, SCS, SCP - SOLID STATE
 LIMIT SENSORS
 (SEE CATALOG PAGE 54 FOR DETAILS)

15mm - 50mm STROKE
 (SEE CHART ABOVE)

BLANK - NO CODE
 D - DOUBLE ROD
 (SEE PAGE 64 FOR DETAILS)

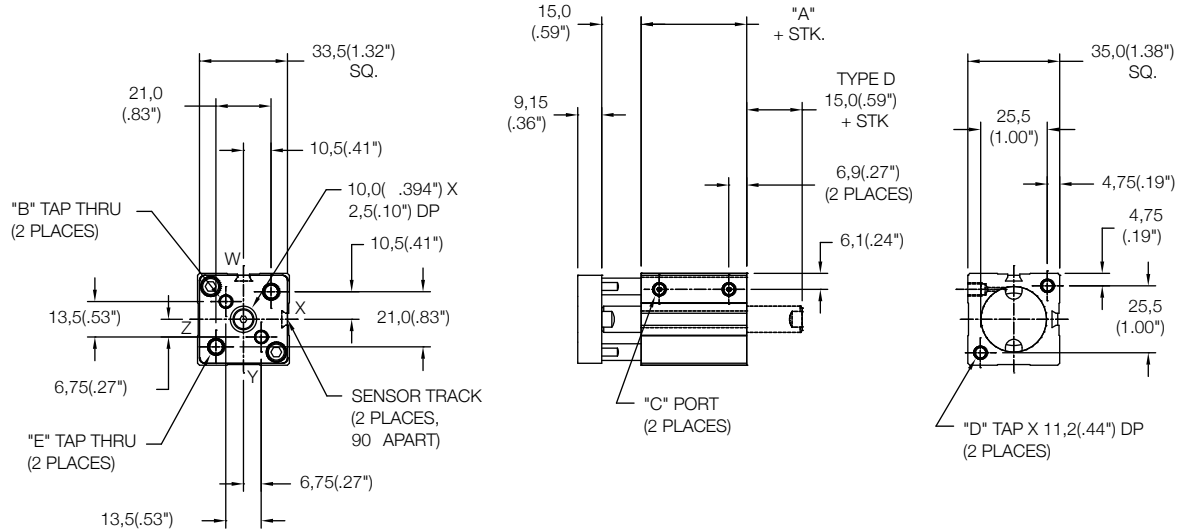
MR - REAR MOUNT
 MS - SIDE MOUNT
 FR - REAR FLANGE
 PR - PIVOT REAR
 (SEE PAGE 58-60 FOR DETAILS)

EM - INCH THREADS & PORT OPTIONS:
 HS - HIGH TEMPERATURE SEALS OPTION:
 (SEE CATALOG PAGE 62 FOR DETAILS)
 BP - BLANK TOOLING PLATE
 UB, UF, UR - URETHANE SHOCK PAD OPTION
 (SEE CATALOG PAGE 62 FOR DETAILS)

Rear Mount Cylinder "MR"

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

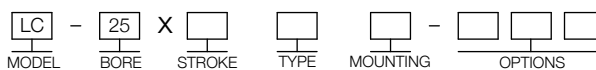
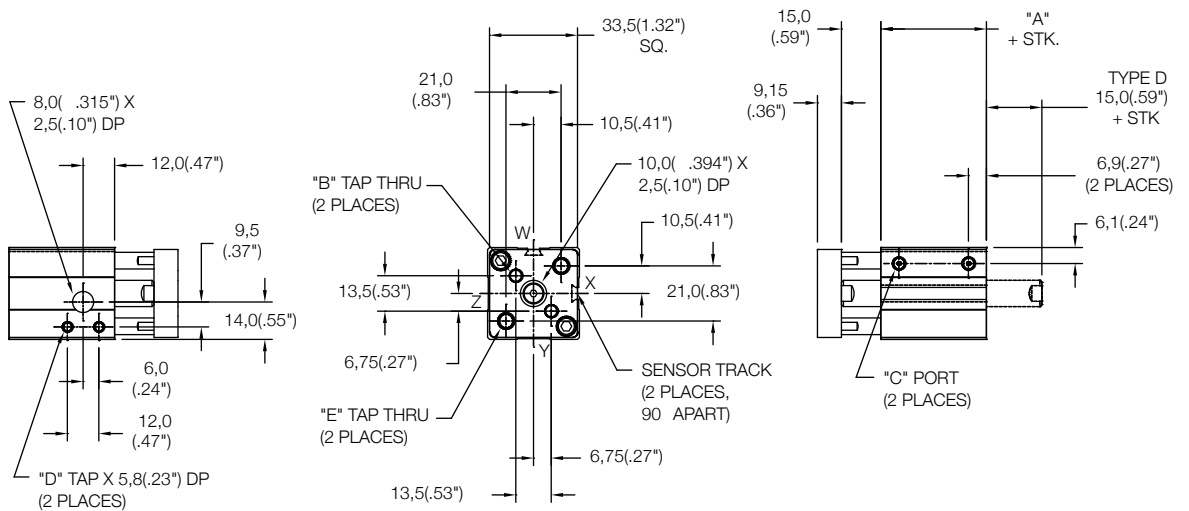
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	M5X0,8	#10-32
"D"	M5X0,8	#10-32
"E"	M6X1,0	1/4-20



Side Mount Cylinder "MS"

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



15mm - 50mm STROKE
(SEE CHART ABOVE)

BLANK - NO CODE
D - DOUBLE ROD
(SEE PAGE 64 FOR DETAILS)

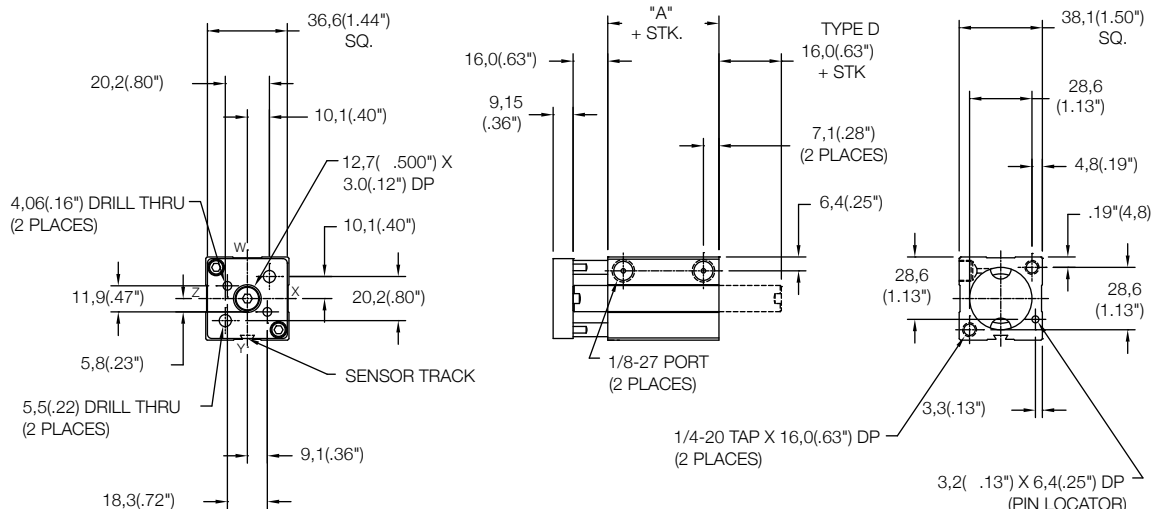
MR - REAR MOUNT
MS - SIDE MOUNT
FR - REAR FLANGE
PR - PIVOT REAR
(SEE PAGE 58-60 FOR DETAILS)

SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE CATALOG PAGE 54 FOR DETAILS)

EM - INCH THREADS & PORT OPTIONS:
HS - HIGH TEMPERATURE SEALS OPTION:
(SEE CATALOG PAGE 62 FOR DETAILS)
BP - BLANK TOOLING PLATE
UB, UF, UR - URETHANE SHOCK PAD OPTION
(SEE CATALOG PAGE 62 FOR DETAILS)

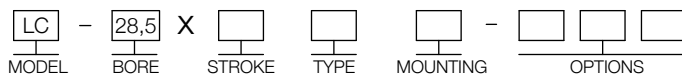
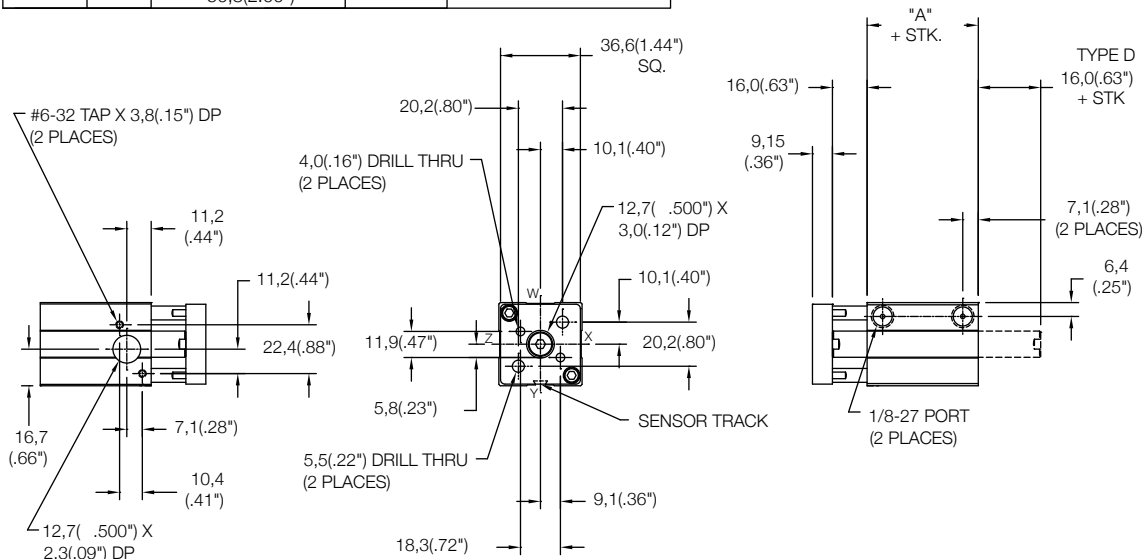
Rear Mount Cylinder "MR"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LC	...D	12,7(.50")	38,1(1.50")	PUSH 6,41 cm (0.99 in) PULL 5,28 cm (0.82 in)
		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 (0.99 in) PULL 5,28 cm (0.82 in)
		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 64 FOR DETAILS)

MR - REAR MOUNT
 MS - SIDE MOUNT
 FR - REAR FLANGE
 PR - PIVOT REAR
 (SEE PAGE 58-60 FOR DETAILS)

SENSORS SOLD SEPERATELY
 SKS, SKP, SCS, SCP - SOLID STATE
 LIMIT SENSORS
 (SEE CATALOG PAGE 54 FOR DETAILS)

HS - HIGH TEMPERATURE SEALS OPTION:
 (SEE CATALOG PAGE 62 FOR DETAILS)

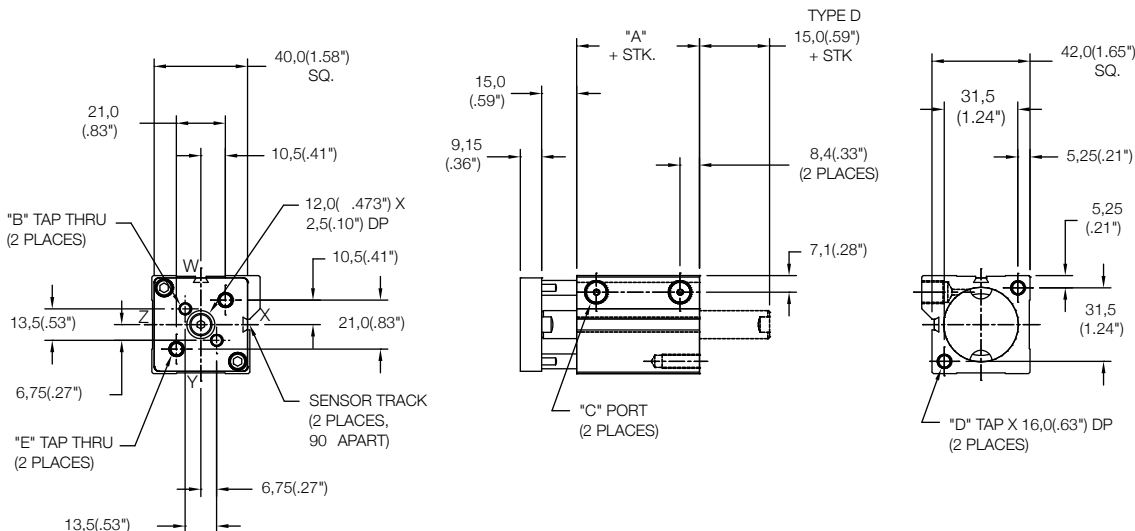
BP - BLANK TOOLING PLATE

UB, UF, UR - URETHANE SHOCK PAD OPTION
 (SEE CATALOG PAGE 62 FOR DETAILS)

Rear Mount Cylinder "MR"

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

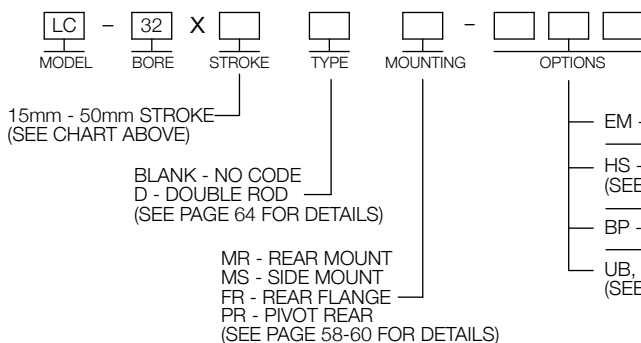
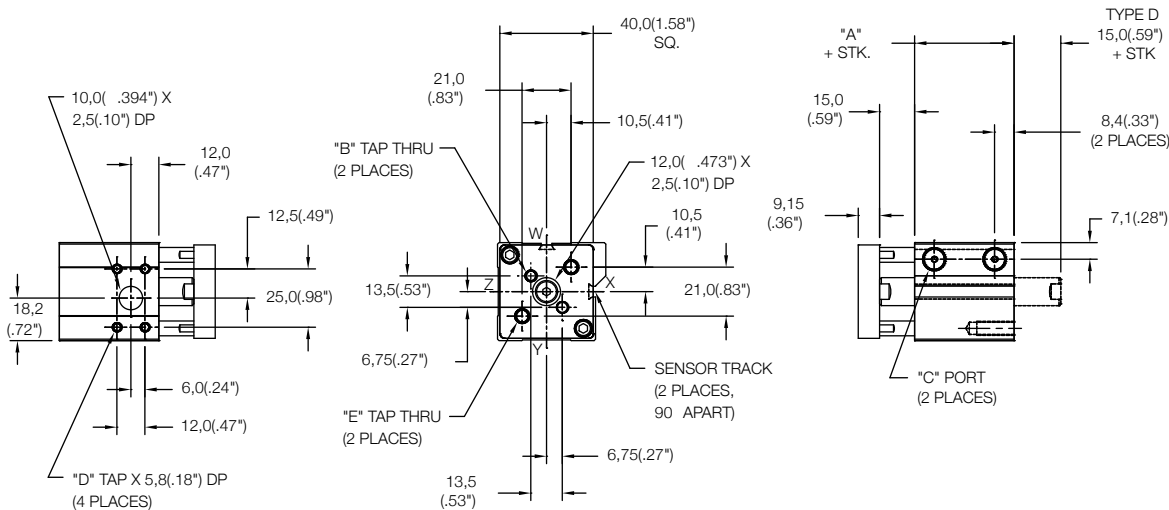
	Standard Threads	"EM" Option
"B"	M5X0,8	#10-32
"C"	G1/8 PORT	1/8-27
"D"	M6X1,0	1/4-20
"E"	M6X1,0	1/4-20



Side Mount Cylinder "MS"

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

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

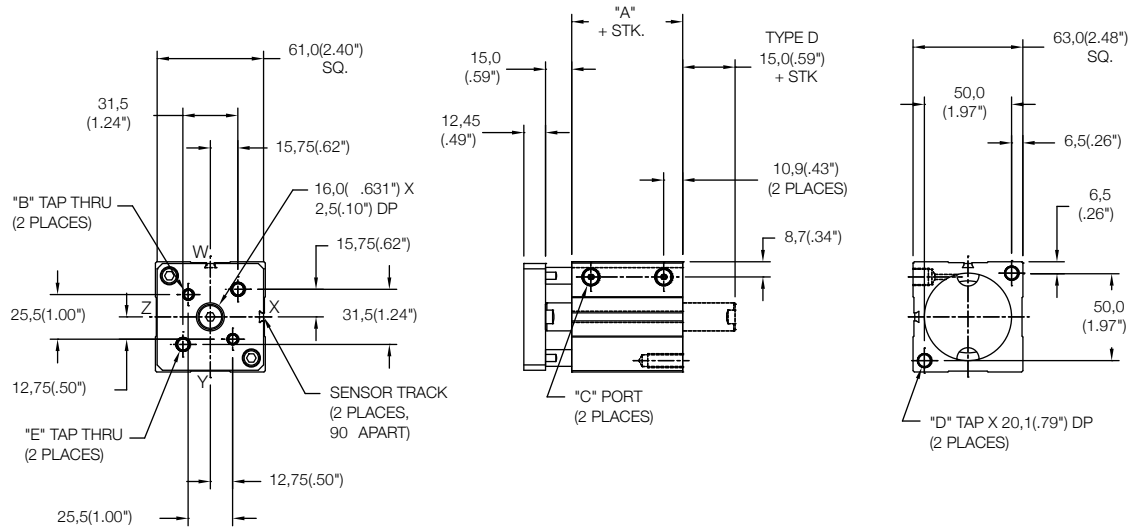


SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE CATALOG PAGE 54 FOR DETAILS)

Rear Mount Cylinder "MR"

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

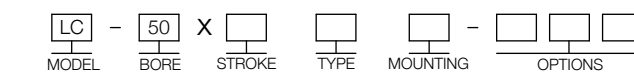
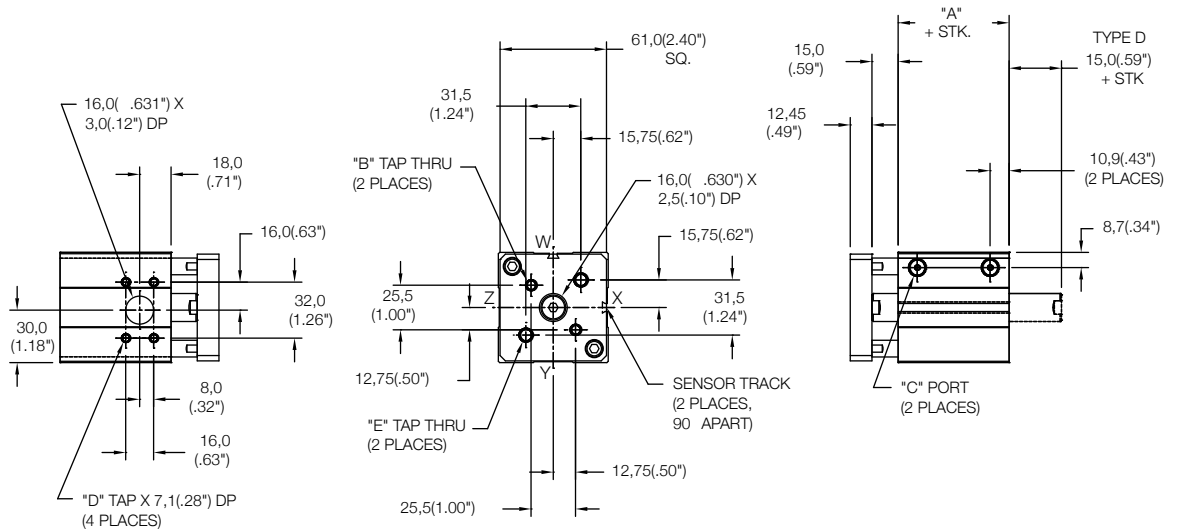
	Standard Threads	"EM" Option
"B"	M6X1,0	1/4-20
"C"	G1/8 PORT	1/8-27
"D"	M8X1,25	5/16-18
"E"	M8X1,25	5/16-18



Side Mount Cylinder "MS"

MODEL	TYPE	STANDARD STROKES	"A"	PISTON AREA
LC	_D	15mm	48,5(1.91")	PUSH 19,63 cm (3.04 in) PULL 17,62 cm (2.73 in)
		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



15mm - 75mm STROKE
(SEE CHART ABOVE)

BLANK - NO CODE
D - DOUBLE ROD
(SEE PAGE 64 FOR DETAILS)

MR - REAR MOUNT
MS - SIDE MOUNT
FR - REAR FLANGE
PR - PIVOT REAR
(SEE PAGE 58-60 FOR DETAILS)

SENSORS SOLD SEPARATELY
SKS, SKP, SCS, SCP - SOLID STATE
LIMIT SENSORS
(SEE CATALOG PAGE 54 FOR DETAILS)

EM - INCH THREADS & PORT OPTIONS:

HS - HIGH TEMPERATURE SEALS OPTION:
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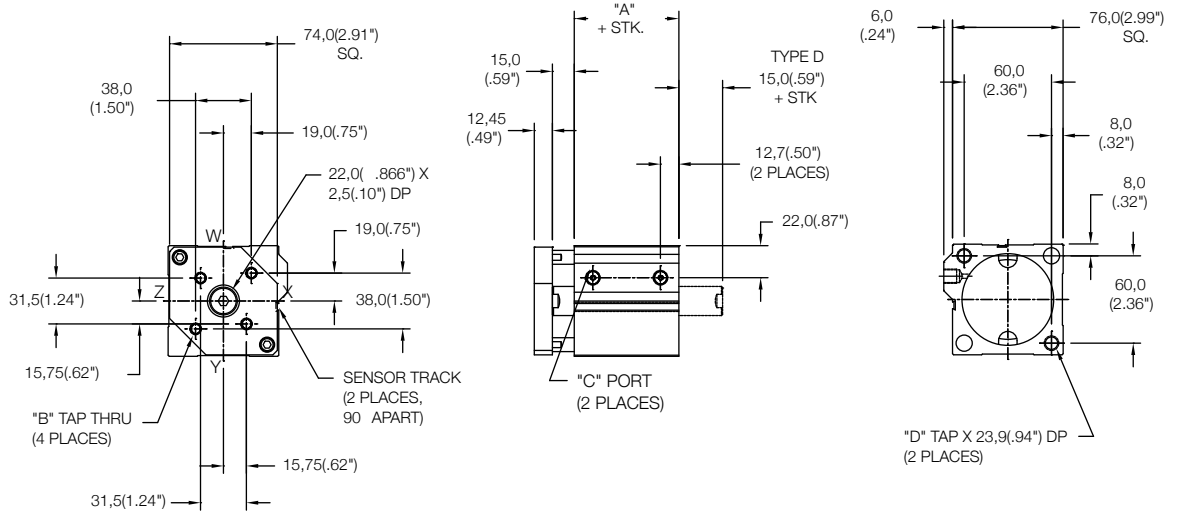
BP - BLANK TOOLING PLATE

UB, UF, UR - URETHANE SHOCK PAD OPTION
(SEE CATALOG PAGE 62 FOR DETAILS)

Rear Mount Cylinder "MR"

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

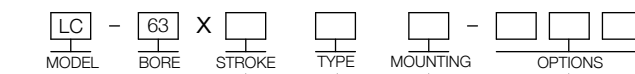
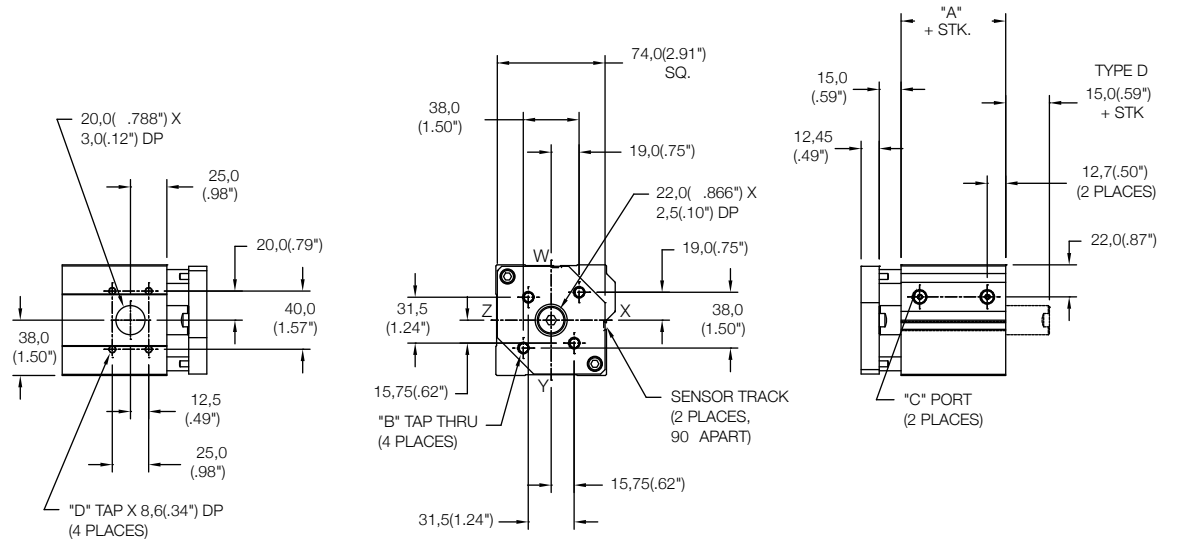
	Standard Threads	"EM" Option
"B"	M8X1,25	5/16-18
"C"	G1/8 PORT	1/8-27
"D"	M10X1,5	3/8-24



Side Mount Cylinder "MS"

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



15mm - 75mm STROKE
(SEE CHART ABOVE)

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D - DOUBLE ROD
(SEE PAGE 64 FOR DETAILS)

MR - REAR MOUNT
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(SEE CATALOG PAGE 62 FOR DETAILS)

BP - BLANK TOOLING PLATE

UB, UF, UR - URETHANE SHOCK PAD OPTION
(SEE CATALOG PAGE 62 FOR DETAILS)

NASON

NEW THINKING

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WARRANTY:

It is the sole responsibility of the user to determine the suitability of any product or information supplied by Nason for any application or use by the user.

THE FOLLOWING IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The Nason Company warrants each product to be free from defects in material and workmanship under normal use and service. Nason's obligation under this warranty is limited to repairing or supplying, at our option, a part or parts to replace any defective part(s) within one (1) year from the date of original sale. Wear components including but not limited to seals, wear bands, and bearings are excluded from this warranty. No product will be returned without prior authorized approval. If authorized, the transportation charges are to be prepaid to The Nason Company, Walhalla, SC. Unauthorized returns will be returned freight collect. The provisions of this warranty will not apply to any part(s) which have been subject to misuse, negligence, or accident, or which have been repaired or altered outside of The Nason Company service department in any way so as in the judgement of Nason to adversely affect its performance, stability, or reliability. The Nason Company neither assumes nor authorizes anyone to assume for it any other obligation or liability for any loss or damage either direct, incidental or consequential resulting from or arising out of or in connection with any of its defective part(s). Nason will not be responsible for any labor or other charges in connection with the removal of a product deemed to be defective or for installation or replacement of a defective or repaired product. Buyer's sole remedies are as provided herein. In no event shall Nason be liable for any cost of Buyer's cover, or for any indirect, special, consequential, incidental, or punitive damages of any sort, whether based on tort or breach of contract and/or warranty.

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