



**PENINSULAR[®]
CYLINDER CO.**

MH

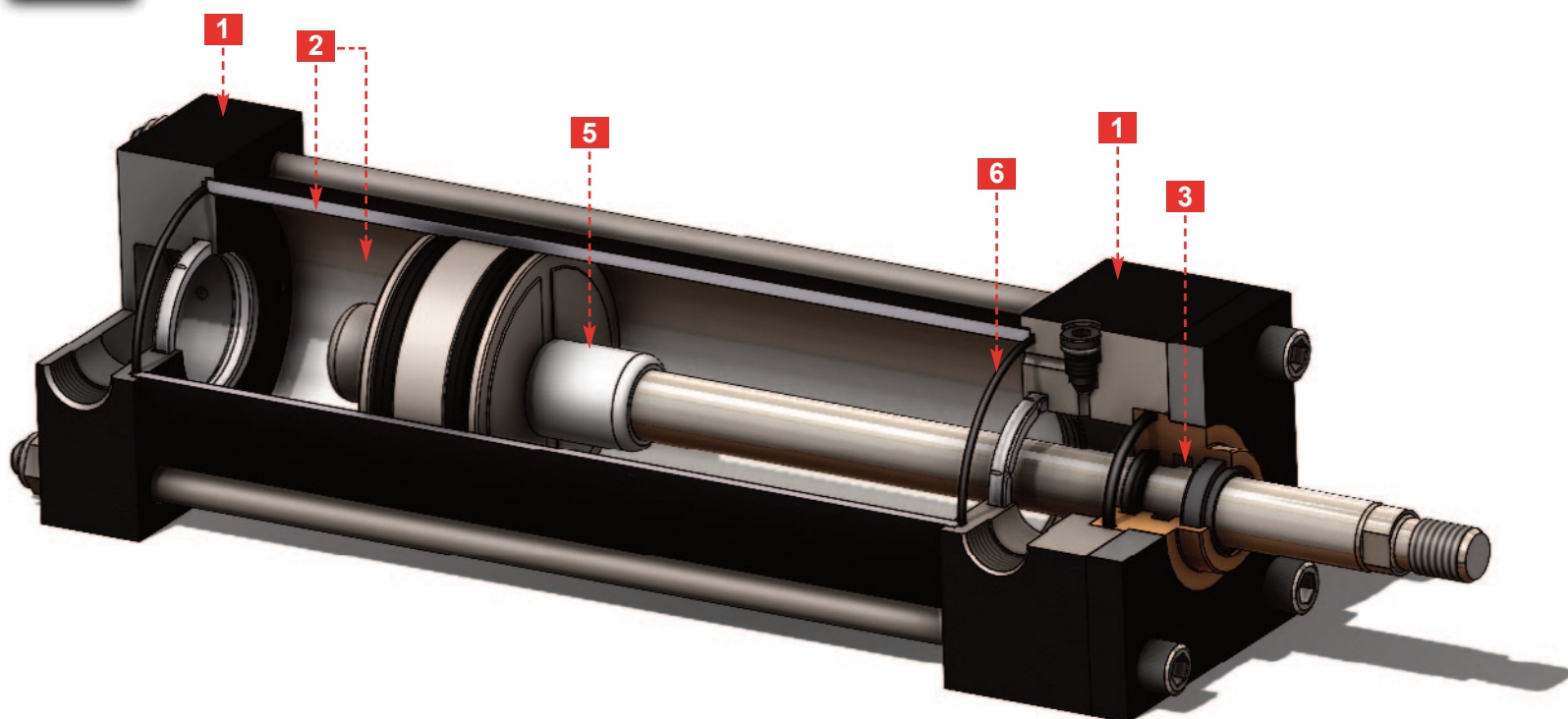
Series

PNEUMATIC

Air Cylinders

Steel • Heavy Duty • 250 PSI
Pre-Lubricated • NFPA Interchangeable





1 Heads & Caps

Square, precision made carbon steel. Can be made proximity switch ready to accept same probe-length switches at each end without spacers.

2 Cylinder Tube

D.O.M. seamless 1020 to 1026 steel; precision honed to 10/15 micro inch finish; hard chrome plated .0003/.0005" thick on ID. Chrome Plating reduces wear on piston seals and tube I.D. surface. Hard chrome plated I.D. provides corrosion resistance and minimizes tube scoring.

3 Lubrication Reservoirs

Located in the bearing cartridge. Provides effective way of metering maximum amount of lubricant to all areas over a long time period. Not subject to air turbulence and contamination.

4 Lubricant *(Not Shown)*

Teflon™ based grease. Long lasting lubrication of piston seals, inner cylinder wall surface, bearing cartridge ID, rod seal & rod wiper.

5 Piston

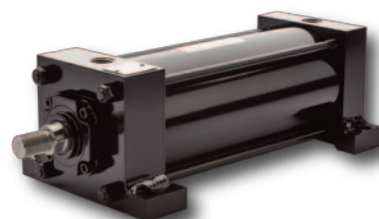
One-piece fine grained ductile iron piston threaded onto piston rod staked and held in place with thread locker. Affixed onto piston rod with minimum undercut providing maximum strength. Aluminum piston required for magnetic piston sensing - see #18.

6 Tube Seals

Nitrile axial placed O-Rings. When combined with accurately torqued tie rods, prevents extrusion of seal & air leaks under pressure.

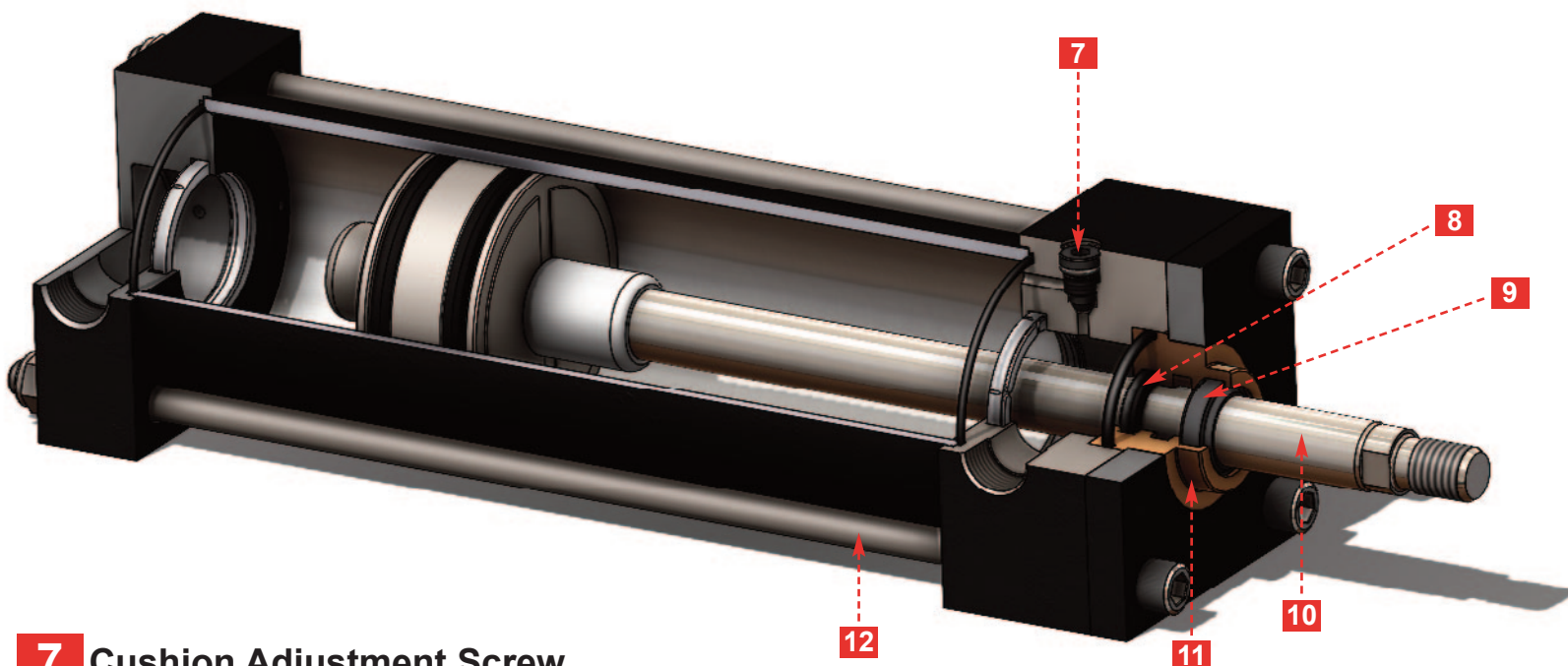


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7 Cushion Adjustment Screw

Steel needle valve with Buna-N O-Ring sealed screw, held captive with locking snap ring. Accurate fine adjustment of cushioning speed; no air leakage and safe for all users due to internal captive screw.

8 Rod Seal

80 durometer, rounded lip, prelubricated, carboxylated nitrile cup style. Disperses grease throughout ID of rod cartridge extending seal life within. Resists abrasion; significantly increases life and prevents leakage around piston rod.

9 Rod Wiper

Urethane H type wiper seal resists contaminants on the rod and provides additional sealing beyond rod seal. Severe external conditions could require the addition of an optional metallic rod scraper installed ahead of the rod wiper to effectively provide dual protection from the elements. Prevents dust, dirt and grit from entering the bearing cartridge and cylinder, which significantly extends the cylinder life.

10 Piston Rod

85,000 psi minimum yield strength chrome plated steel with core hardness of Rc 28-34. Rod is hard chrome-plated (.0003/.0005 thick) and polished to 12/15 micro inch finish. Solid male threads contain a radiused undercut. Resists wear and provides positive connections to existing machine components. Solid male threads contain a radiused undercut to minimize rod end breakage.

11 Bearing Cartridge

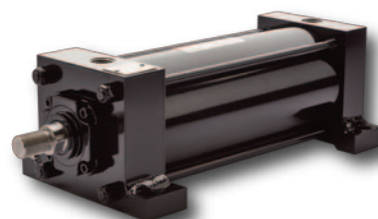
Floating, self-aligning ductile iron with internal lubrication reservoir. Retained by plate with cap screws; strong and shock resistant. A Buna-N O-Ring located around the cartridge OD prevents leakage. Float condition minimizes piston rod misalignment by reducing side loading. ID of bearing cartridge, rod seal and rod wiper lubricated on each stroke, reducing wear. Easily removed for maintenance without special tools to disassemble cylinder.

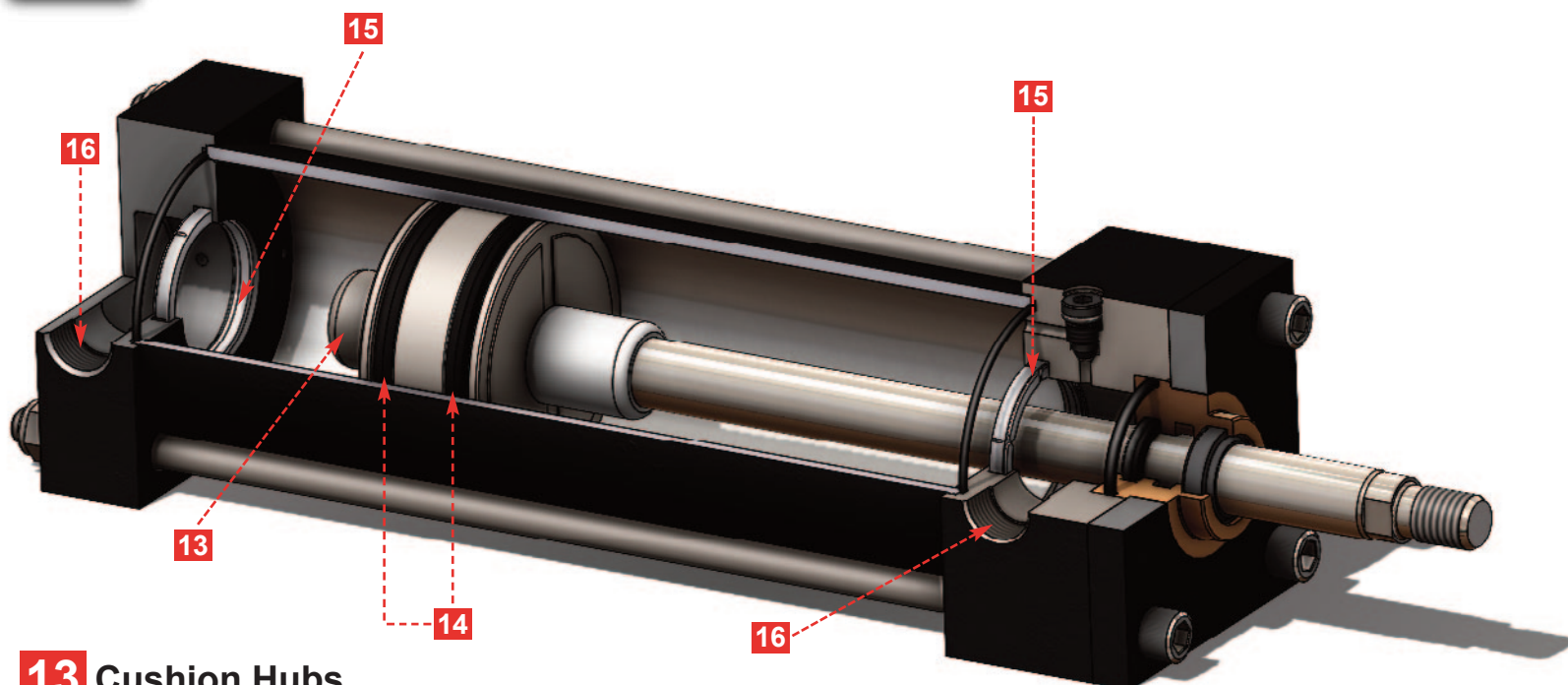
12 Tie Rods

Made from 100,000 psi minimum yield, stress-proof, medium carbon steel with rolled threads at each end. Provides maximum strength for connecting cylinder mounts and used with lock nuts to prevent loosening in service. Accurate torqueing prevents leaks at tube seals.



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13 Cushion Hubs

Steel with 8/12 micro inch finish RMS. Black oxide to prevent rusting and corrosion. Steel material permits the use of in-port cylinder head mounted proximity switches. Uniform size on each side of piston to eliminate different cushion seals and reduce spare parts inventory. Smooth surface reduces cushion seal wear and provides air-tight accurate operation. Ideal for proximity switch applications.

14 Piston Seals

80 durometer, rounded lip, prelubricated, carboxylated nitrile U cups. Resists abrasion; when used with Peninsular's internal lubrication system, provides considerably less wear and increases operating life.

15 Cushion Seals

90 durometer floating check type Urethane seals eliminate ball checks and related parts. Low friction breakaway and airtight cushioning assures smooth maximum effectiveness.

16 Ports

NPT standard, metric and other thread size options.

17 Optional Proximity Switch Capability *(Not Shown)*

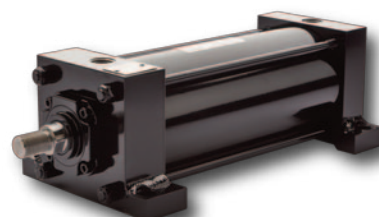
Allows for non-contact piston position sensing at near end of stroke. Precision machined cylinder heads and piston cushion hubs allow for mounting of "RF inductive" proximity switches using the same switch probe length at each cylinder end without shims or spacers underneath the switch. Self-contained switch probe not subject to contamination. This creates the same air gap between the sensing probe and target (cushion hubs), thus providing consistent, reliable and repeatable stroke-to-go. Eliminates the design and construction of brackets necessary to mount mechanical limit switches.

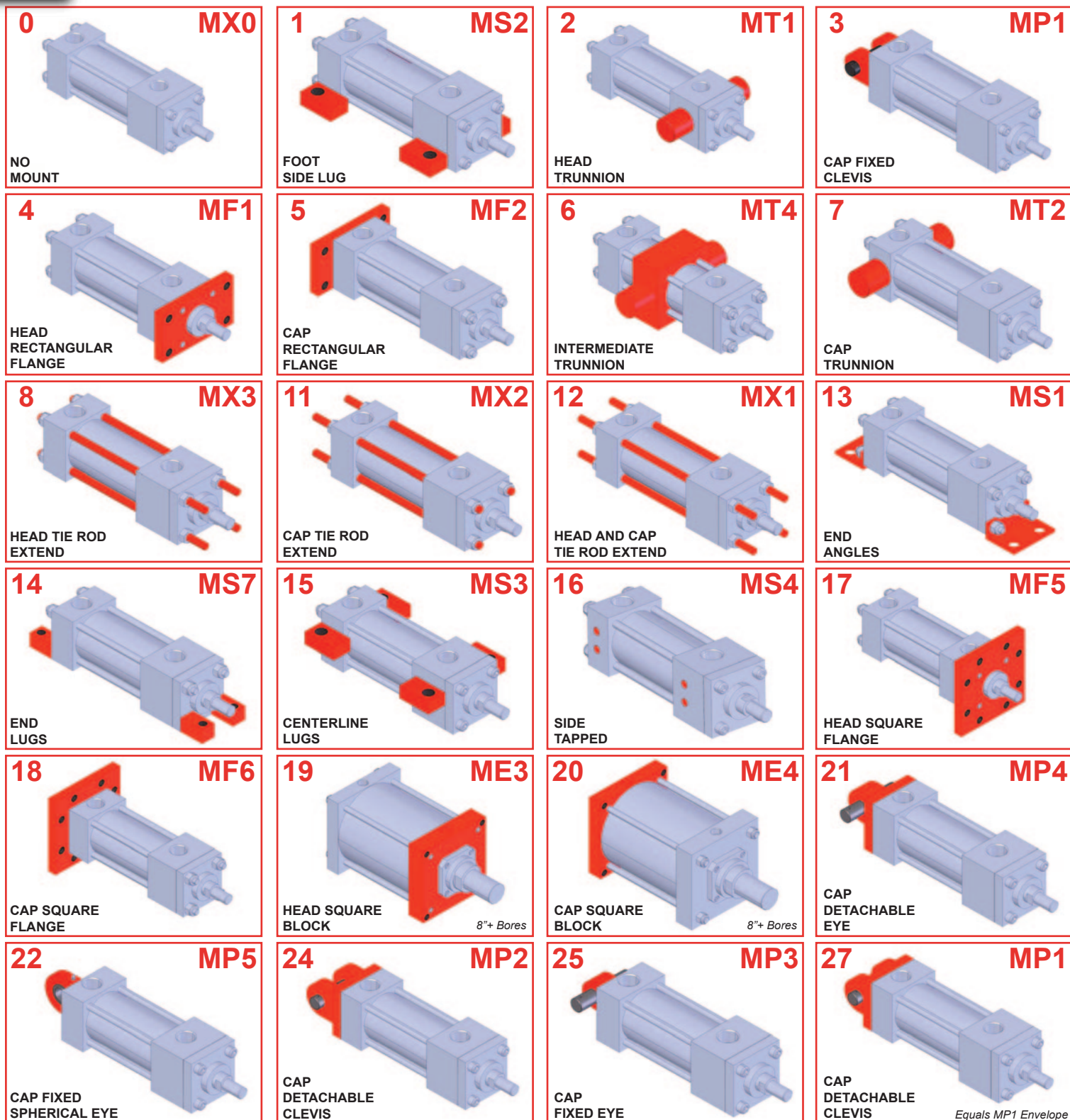
18 Optional Piston Magnet *(Not Shown)*

Tie-rod mounted reed switches can sense high gauss, "rare-earth material" magnet, anywhere along the cylinder stroke. Stronger magnetism outside of the cylinder tube insures actuation of the reed switch. Tie-rod mounted reed switches sense strong magnetic field provided by magnet in aluminum piston, allowing piston rod location to be determined wherever external switches are placed.

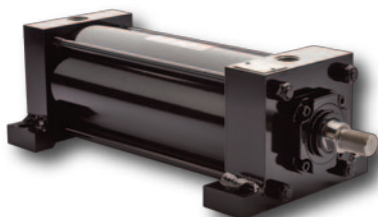


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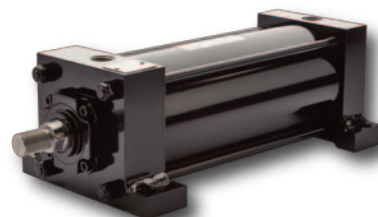
Note: Specify XI dimension at position "J" when ordering an intermediate trunnion cylinder (Mount Style #6). In the absence of an XI dimension, Peninsular will center the intermediate trunnion between the two end caps.



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Generate a Part Number Quickly Using the Online Configurator

<https://www.peninsularcylinders.com/configurator/>

Utilize the drop-down options & input fields to select the desired cylinder configuration. The system will automatically generate the part number. The cylinder configurator is equipped with various features, accessories, and kits to customize your cylinder. After configuration, you can export 2D drawings/3D CAD models and request a quote.

MH-4-325x8.25AM-ACNN-ACNN-O,SKMH-3210,RKMH-3210
 Peninsular Cylinder > Air Cylinders

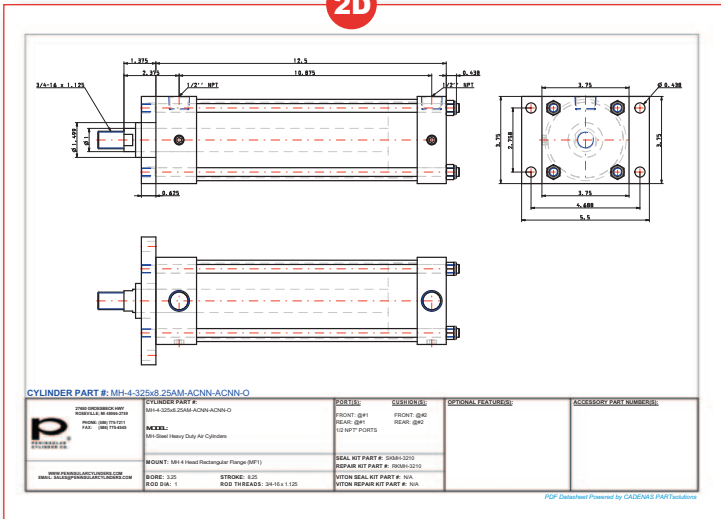
Remove all filters

Part Number	MH-4-325x8.25AM-ACNN-ACNN-O,SKMH-3210,RKMH-3210		
Bore Size (in inches)	3.250		
Mounting Style (For Intermediate Trunnion Mount-Specify XI Under Configurable Options Below)	MH 4 Head Rectangular Flange (MF1)		
Stroke Length (in inches)	8.25	(0.5.. ±0.1 ..180.0)	Inch
Piston Rod Diameter (in inches)	1.000		
Piston Rod Material	Induction Hardened Chrome Plated IHCP 1045 Steel		
Piston Rod Thread Type Selection	Standard Piston Rod Thread		
Standard Piston Rod Thread Size	3/4-16 x 1.125 (External NFPA Short Male)		
Non-Standard Piston Rod Thread Size	N/A		

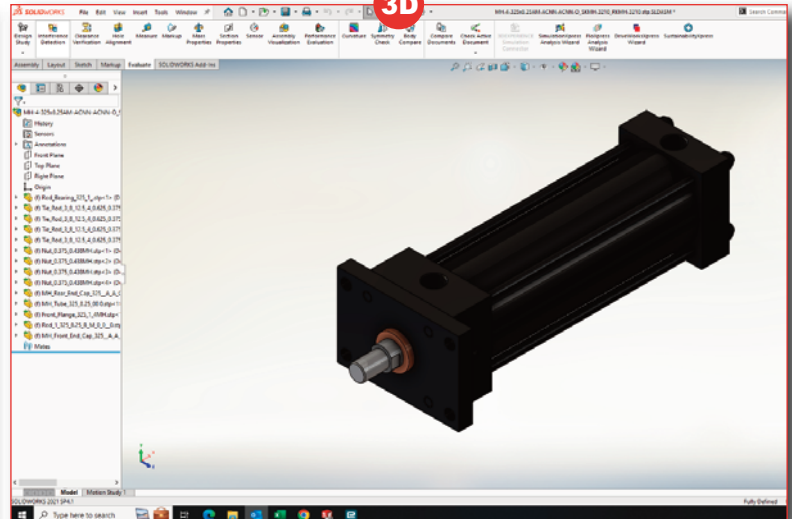
Front

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2D



3D



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Generate a Part Number using the information below
Or use the online configurator to generate a part number automatically.

SERIES	MOUNT	BORE	STROKE	ROD SIZE	ROD END	HEAD PORTS	CAP PORTS	MODS	MODS	MODS
MH	4	325	x 8.25	A	M	ACNN	ACNN	O	/ V	/ Z
A	B	C	D	E		F	G	H	J	J

A Cylinder Model: **MH**

- 1 1/2" Bore through 24" Bore
- Longer lasting improved nitrile seals (std)
- Machined steel cylinder heads (std)
- Removable, internally lubricated, bearing cartridge (std)
- D.O.M. Seamless tube with hard chrome plated I.D. (std)

- Internally lubricated for life; no in line lubrication required (std)
- 85,000 PSI yield "CPO" chrome plated high strength steel piston rod (std)
- Adjustable cushions with captive screw (cushions are optional)
- In-port mounted proximity switches for near end of stroke position sensing (optional) (replaces mechanical limit switches)

B Cylinder Mounting: **4**

0 No Mount (MX0)	11 Cap Tie Rod Extend (MX2)	20 Cap Square Block (8"+ Bores) (ME4)
1 Foot Side Lugs (MS2)	12 Head & Cap Tie Rod Extend (MX1)	21 Cap Detachable Eye (MP4)
2 Head Trunnion (MT1)	13 End Angles (MS1)	22 Cap Fixed Spherical Eye (MP5)
3 Cap Fixed Clevis (MP1)	14 End Lugs (MS7)	24 Cap Detachable Clevis (MP2)
4 Head Rectangular Flange (MF1)	15 Centerline Lugs (MS3)	25 Cap Fixed Eye (MP3)
5 Cap Rectangular Flange (MF2)	16 Side Tapped (MS4)	27 Cap Detachable Clevis (*)
6 Intermediate Trunnion (MT4)	17 Head Square Flange (MF5)	
7 Cap Trunnion (MT2)	18 Cap Spherical Eye (MF6)	*Equals MP1 Envelope Dimensions
8 Head Tie Rod Extend (MX3)	19 Head Square Block (8"+ Bores) (ME3)	

C Cylinder Bore: **325**

150 = 1 1/2" Bore	250 = 2 1/2" Bore	400 = 4" Bore	600 = 6" Bore	1000 = 10" Bore	14" Bore - 24" Bore
200 = 2" Bore	325 = 3 1/4" Bore	500 = 5" Bore	800 = 8" Bore	1200 = 12" Bore	Call Peninsular

D Stroke Length: **8.25**

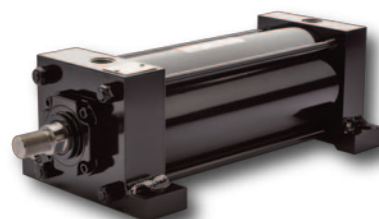
Peninsular MH Cylinders can be ordered in 1/4" increments with stroke lengths from 1/2" to over 15 feet.
For Stop Spool (Stop Tube) and Spring Return Extend applications, contact Peninsular to determine call out for correct stroke length to specify.

E Rod Diameter: **AM**

Specify Piston Rod Diameter and Rod Threads. See Rod Chart on Page 9



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Generate a Part Number using the information below
Or use the online configurator to generate a part number automatically.

SERIES MOUNT BORE STROKE ROD SIZE ROD END HEAD PORTS CAP PORTS MODS MODS MODS

MH - **4** - **325** x **8.25** **A** **M** - **ACNN** - **ACNN** - **O** / **V** / **Z**

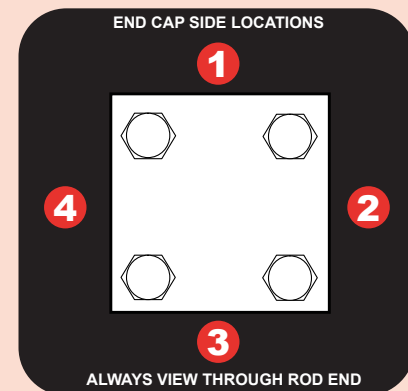
A **B** **C** **D** **E** **F** **G** **H** **J** **J**

F Plumbing: ACNN

Specify Plumbing Configuration for Front & Rear End Cap.

- N = No air supply port. No Cushion Adjustment Screw
- A = Air supply port
- S = Proximity Switch will be Affixed by Peninsular to the Cylinder Head (complete position H)
- M = Cylinder Head is Prepared to Receive an "In-port" Mounted Proximity Switch.
Peninsular Will Not Mount the Switch to the Cylinder Head. (Specify "O" in Position H)
- C = Cushion Adjustment Screw
- B = Cushion Adjustment Screw and Port at Same End Cap Location
- K = Non-Adjustable Cushions
- P = Oversize Ports
- U = Undersize Ports

G Plumbing: ACNN



H Proximity Switches:

Specify the required proximity switch that is to be affixed to cylinder.

- T-11 = Turck Mini-Connector
- T-31 = Turck Micro-Connector
- B-11 = Balluff Mini-Connector
- B-31 = Balluff Micro Connector
- O = None

RD Inductive (Cylinder Head Mounted) Proximity Switch Probe Length Dimensions (Both End Caps without Spacers)

Bore Size	1 1/2"	2"	2 1/2"	3 1/4"	4"	5"	6"	8"	10"	12"
Probe Length	1.025"	1.025"	1.025"	1.025"	1.250"	2.062"	2.062"	2.875"	3.775"	4.562"

Tie Rod Mounted Proximity Switches - Magnetic Piston Sensing (Call Peninsular if Required)

0V to 120V AC/DC, NPN (Sinking) and PNP (Sourcing) - DC, Mini, Micro and Other Connectors are Available.

Proximity Switch Cordsets are Available in Various Lengths. Magnetic Inductive, Hall Effect and Reed Technologies are Available.

J Optional Features:

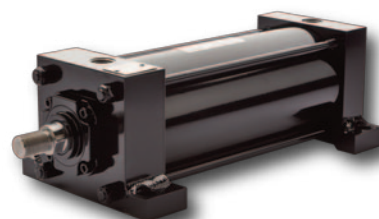
Specify Optional Features with Slash Mark and Alpha Characters

- /B = Adjustable Stroke
- /E = Extended Piston Rod*
- /F = Bronze Rod Cartridge
- /H = Rod Boot Cover
- /J = Spring Extend
- /K = Spring Return
- /N = Stop Tube*
- /R = Threaded Stud Rod End
- /S = Scraper Ring
- /U = Non-Rotatable Piston Rod
- /V = Viton Seals
- /XI = Specify XI Dimension (HP6)
- /Y = Double Rod End
- /Z = "Slip Tuff" Coated Rod Cartridge
- /O = Other Options (Describe)

*Specify Length



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FIRST LETTER DENOTES ROD DIAMETER

A = (STANDARD ROD DIAMETER)
B = (LARGER ROD DIAMETER)
C = (OVERSIZED ROD DIAMETER)
D = (OVERSIZED ROD DIAMETER)
E = (OVERSIZED ROD DIAMETER)

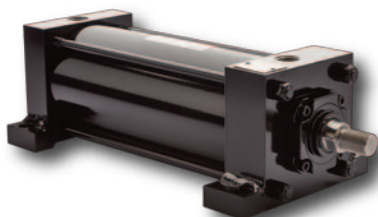
SECOND LETTER DENOTES ROD THREADS

M = (EXTERNAL NFPA SHORT MALE)
F = (NFPA SHORT FEMALE)
D = (NFPA FULL MALE)
I = (NFPA INTERMEDIATE MALE)
A = (NFPA LONG MALE)
X = (OTHER ROD ENDS - PLEASE SPECIFY)
S = (SPOOLED ROD END) CONTACT PENINSULAR FOR DIMENSIONAL INFO

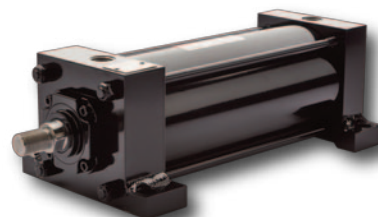
MH Air Cylinder Piston Rod Diameter and Rod Threads Chart

BORE SIZE	ROD DIA.	SHORT MALE "M"	SHORT FEMALE "F"	FULL MALE "D"	INTERMEDIATE MALE "I"	LONG MALE "A"
1.50	A= 0.62	7/16"-20 x 0.75	7/16"-20 x 0.75	5/8"-18 x 0.75	1/2"-20 x 0.75	1/2"-20 x 1.12
	B=1.00	3/4"-16 x 1.12	3/4"-16 x 1.12	1"-14 x 1.12	7/8"-14 x 1.12	7/8"-14 x 1.87
2.00	A= 0.62	7/16"-20 x 0.75	7/16"-20 x 0.75	5/8"-18 x 0.75	1/2"-20 x 0.75	1/2"-20 x 1.12
	B=1.00	3/4"-16 x 1.12	3/4"-16 x 1.12	1"-14 x 1.12	7/8"-14 x 1.12	7/8"-14 x 1.87
2.50	A= 0.62	7/16"-20 x 0.75	7/16"-20 x 0.75	5/8"-18 x 0.75	1/2"-20 x 0.75	1/2"-20 x 1.12
	B= 1.00	3/4"-16 x 1.12	3/4"-16 x 1.12	1"-14 x 1.12	1/2"-20 x 0.75	7/8"-14 x 1.87
	C= 1.38	1"-14 x 1.62	1"-14 x 1.62	1 3/8"-12 x 1.62	1 1/4"-12 x 1.62	1 1/4"-12 x 2.50
3.25	A= 1.00	3/4"-16 x 1.12	3/4"-16 x 1.12	1"-14 x 1.12	7/8"-14 x 1.12	7/8"-14 x 1.87
	B= 1.38	1"-14 x 1.62	1"-14 x 1.62	1 3/8"-12 x 1.62	1 1/4"-12 x 1.62	1 1/4"-12 x 2.50
	C= 1.75	1 1/4"-12 x 2.00	1 1/4"-12 x 2.00	1 3/4"-12 x 2.00	1 1/2"-12 x 2.00	1 1/2"-12 x 3.00
4.00	A= 1.00	3/4"-16 x 1.12	3/4"-16 x 1.12	1"-14 x 1.12	7/8"-14 x 1.12	7/8"-14 x 1.87
	B= 1.38	1"-14 x 1.62	1"-14 x 1.62	1 3/8"-12 x 1.62	1 1/4"-12 x 1.62	1 1/4"-12 x 2.50
	C= 1.75	1 1/4"-12 x 2.00	1 1/4"-12 x 2.00	1 3/4"-12 x 2.00	1 1/2"-12 x 2.00	1 1/2"-12 x 3.00
	D= 2.00	1 1/2"-12 x 2.25	1 1/2"-12 x 2.25	2"-12 x 2.25	1 3/4"-12 x 2.25	1 3/4"-12 x 3.50
5.00	A= 1.00	3/4"-16 x 1.12	3/4"-16 x 1.12	1"-14 x 1.12	7/8"-14 x 1.12	7/8"-14 x 1.87
	B= 1.38	1"-14 x 1.62	1"-14 x 1.62	1 3/8"-12 x 1.62	1 1/4"-12 x 1.62	1 1/4"-12 x 2.50
	C= 1.75	1 1/4"-12 x 2.00	1 1/4"-12 x 2.00	1 3/4"-12 x 2.00	1 1/2"-12 x 2.00	1 1/2"-12 x 3.00
	D= 2.00	1 1/2"-12 x 2.25	1 1/2"-12 x 2.25	2"-12 x 2.25	1 3/4"-12 x 2.25	1 3/4"-12 x 3.50
6.00	A= 1.38	1"-14 x 1.62	1"-14 x 1.62	1 3/8"-12 x 1.62	1 1/4"-12 x 1.62	1 1/4"-12 x 2.50
	B= 1.75	1 1/4"-12 x 2.00	1 1/4"-12 x 2.00	1 3/4"-12 x 2.00	1 1/2"-12 x 2.00	1 1/2"-12 x 3.00
	C= 2.00	1 1/2"-12 x 2.25	1 1/2"-12 x 2.25	2"-12 x 2.25	1 3/4"-12 x 2.25	1 3/4"-12 x 3.50
	D= 2.50	1 7/8"-12 x 3.00	1 7/8"-12 x 3.00	2 1/2"-12 x 3.00	2 1/4"-12 x 3.00	2 1/4"-12 x 4.50
8.00	A= 1.38	1"-14 x 1.62	1"-14 x 1.62	1 3/8"-12 x 1.62	1 1/4"-12 x 1.62	1 1/4"-12 x 2.50
	B= 1.75	1 1/4"-12 x 2.00	1 1/4"-12 x 2.00	1 3/4"-12 x 2.00	1 1/2"-12 x 2.00	1 1/2"-12 x 3.00
	C= 2.00	1 1/2"-12 x 2.25	1 1/2"-12 x 2.25	2"-12 x 2.25	1 3/4"-12 x 2.25	1 3/4"-12 x 3.50
	D= 2.50	1 7/8"-12 x 3.00	1 7/8"-12 x 3.00	2 1/2"-12 x 3.00	2 1/4"-12 x 3.00	2 1/4"-12 x 4.50
	E= 3.00	2 1/4"-12 x 3.50	2 1/4"-12 x 3.50	3"-12 x 3.50	2 3/4"-12 x 3.50	2 3/4"-12 x 5.50
10.00	A= 1.75	1 1/4"-12 x 2.00	1 1/4"-12 x 2.00	1 3/4"-12 x 2.00	1 1/2"-12 x 2.00	1 1/2"-12 x 3.00
	B= 2.00	1 1/2"-12 x 2.25	1 1/2"-12 x 2.25	2"-12 x 2.25	1 3/4"-12 x 2.25	1 3/4"-12 x 3.50
	C= 2.50	1 7/8"-12 x 3.00	1 7/8"-12 x 3.00	2 1/2"-12 x 3.00	2 1/4"-12 x 3.00	2 1/4"-12 x 4.50
	D= 3.00	2 1/4"-12 x 3.50	2 1/4"-12 x 3.50	3"-12 x 3.50	2 3/4"-12 x 3.50	2 3/4"-12 x 5.50
	E= 3.50	2 1/2"-12 x 3.50	2 1/2"-12 x 3.50	3 1/2"-12 x 3.50	3 1/4"-12 x 3.50	3 1/4"-12 x 6.50
12.00	A= 2.00	1 1/2"-12 x 2.25	1 1/2"-12 x 2.25	2"-12 x 2.25	1 3/4"-12 x 2.25	1 3/4"-12 x 3.50
	B= 2.50	1 7/8"-12 x 3.00	1 7/8"-12 x 3.00	2 1/2"-12 x 3.00	2 1/4"-12 x 3.00	2 1/4"-12 x 4.50
	C= 3.00	2 1/4"-12 x 3.50	2 1/4"-12 x 3.50	3"-12 x 3.50	2 3/4"-12 x 3.50	2 3/4"-12 x 5.50
	D= 3.50	2 1/2"-12 x 3.50	2 1/2"-12 x 3.50	3 1/2"-12 x 3.50	3 1/4"-12 x 3.50	3 1/4"-12 x 6.50
	E= 4.00	3"-12 x 4.00	3"-12 x 4.00	4"-12 x 4.00	3 3/4"-12 x 4.00	3 3/4"-12 x 7.50

OTHER ROD AND THREAD SIZES ARE AVAILABLE.
 FOR BORE SIZES 14" THROUGH 24" BORE, CONTACT PENINSULAR.



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