



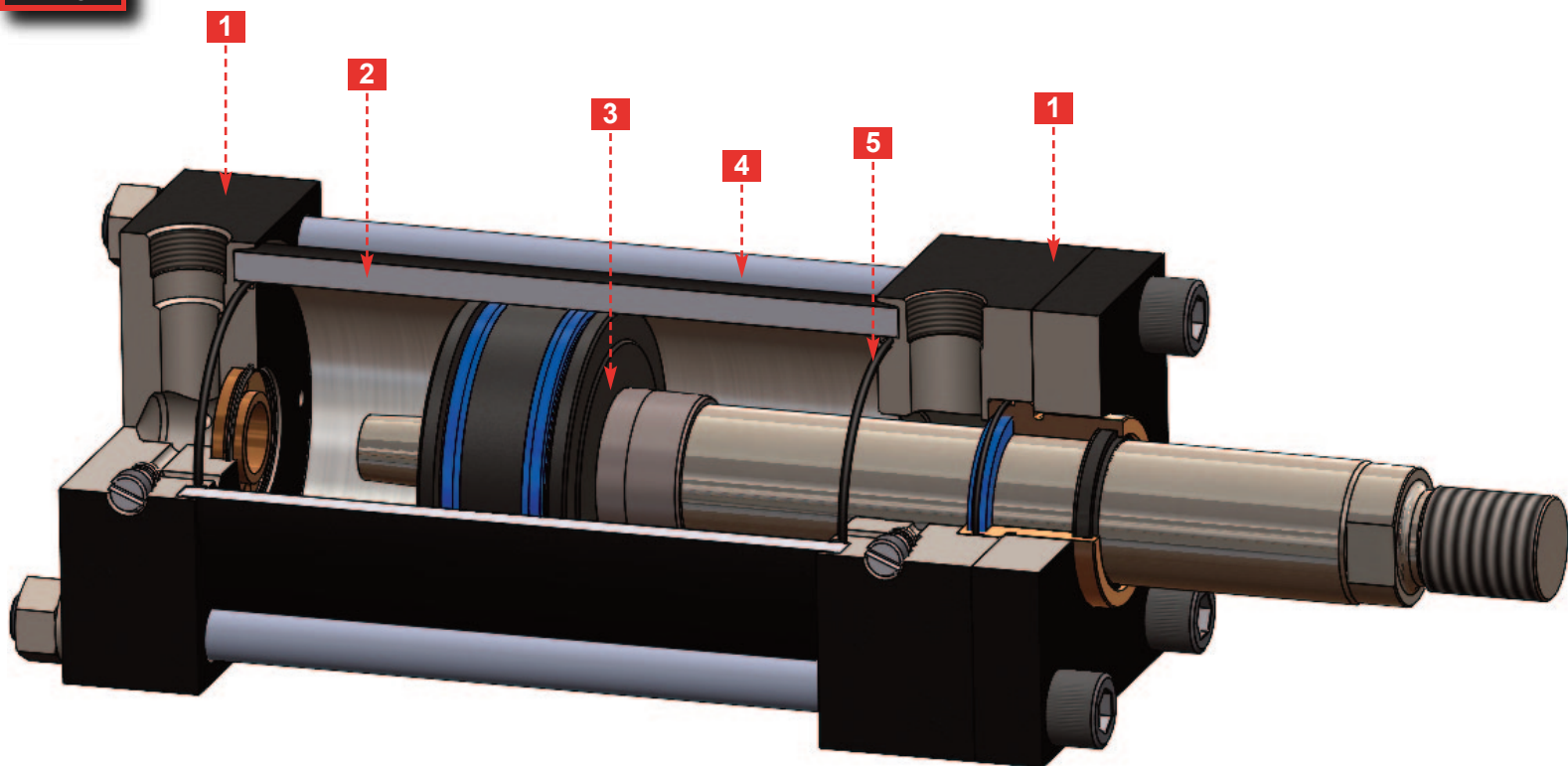
**PENINSULAR[®]
CYLINDER CO.**

IHP
Series
HYDRAULIC

Metric High Pressure
Hydraulic Cylinders

Steel • Heavy Duty • 210 Bar Working Pressure
ISO 6020-2 & 6020-3 • NFPA Interchangeable





1 Heads & Caps

Square, precision made carbon steel end covers. Precision machined for concentricity of tube, bearing, cushion and piston rod. Chamfered grooves allow fast and easy positioning of cylinder tube over the tube seals. Can be made proximity switch ready to accept same probe-length switches at each end without spacers.

2 Cylinder Tube

Heavy wall seamless D.O.M. steel material (1020 to 1026). Precision honed to 10/15 micro inch finish. Tubing has superior concentricity and a high degree of uniformity in wall thickness.

3 Piston

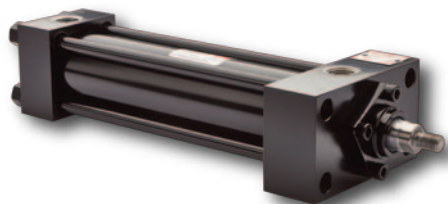
One-piece fine grained ductile iron piston is threaded onto piston rod and held in place with thread locker and staked to a secure position. Wide piston bearing surface reduces bearing loads and assures low wear and low friction to the piston seals and tube ID. An O-Ring with two backups are used to seal the piston to the rod, which prevents fluid leaks from bypassing the piston. Piston wear band optional.

4 Tie Rods

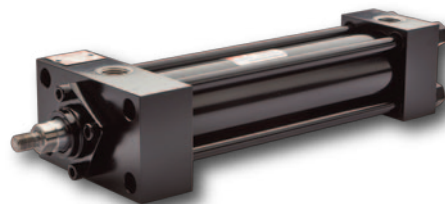
Made from 100,000 psi minimum yield, stress-proof, medium carbon steel with rolled threads at each end. Grade 8 hex nuts with washers provide maximum strength for cylinder assembly.

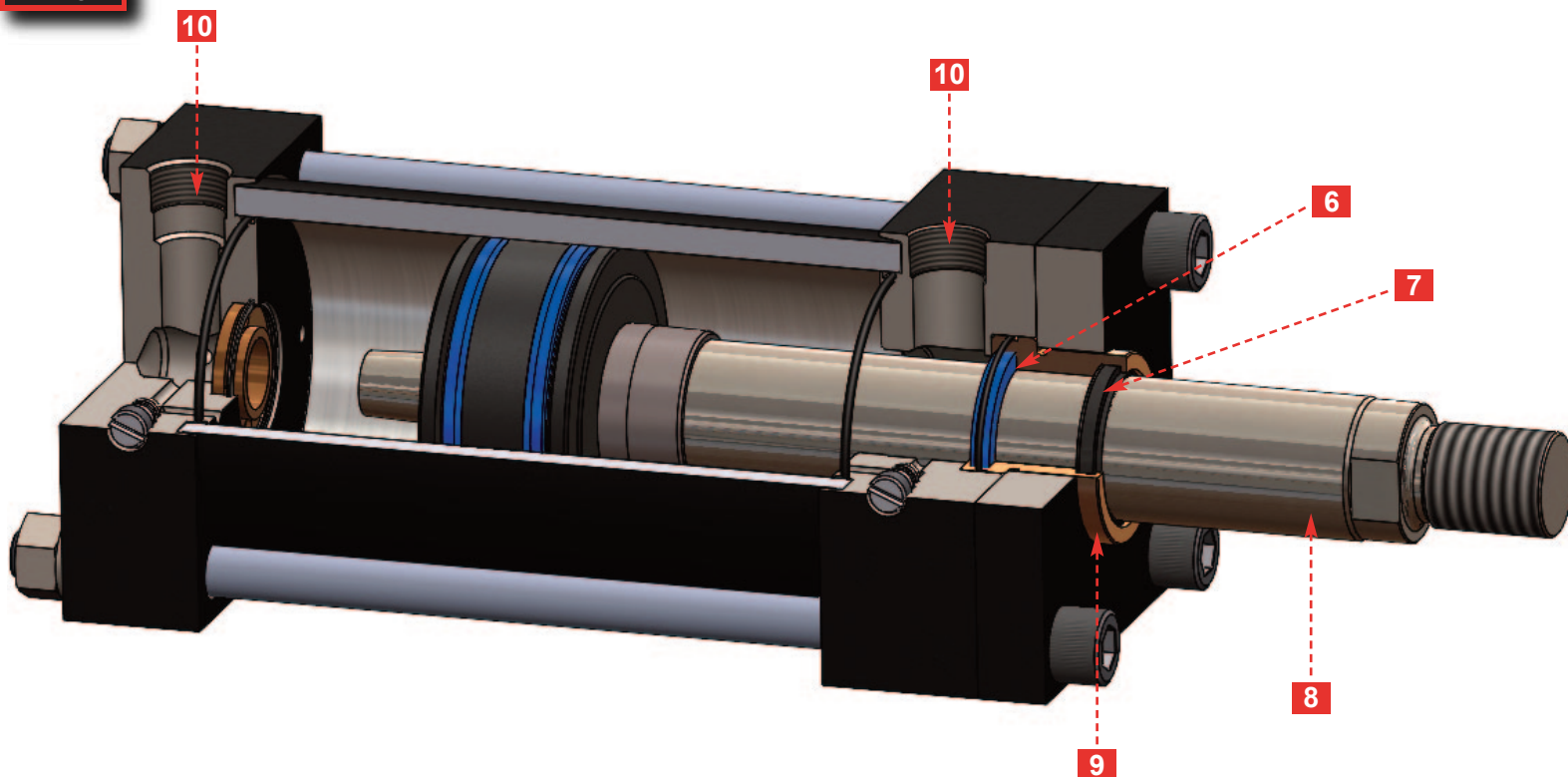
5 Tube Seals

90 durometer Buna-N Nitrile O-Rings are seated into grooves in both the head end and cap end covers. When combined with accurately torqued pre-stressed tie rods, proper O-Ring placement at the ID of the tube and confinement of the tube OD, seal extrusion and fluid leakage under pressure is prevented.



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6 Rod Seal

The asymmetrical twin lip Urethane rod seal U-cup provides positive static and dynamic sealing at both low and high pressures.

7 Rod Wiper

Urethane H type wiper seal keeps contaminants off 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. Guards against dust, dirt and grit from entering the bearing cartridge and cylinder, which significantly extends the cylinder life.

8 Piston Rod

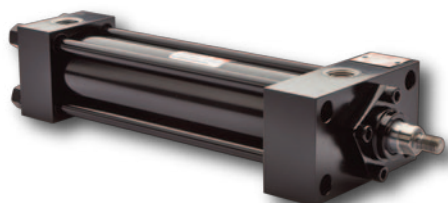
85,000 psi minimum yield strength chrome plated steel with core hardness of Rc 28-34. Rod is hard chrome-plated (.0003/.0005 thick) and polished to 12/15 micro inch finish. Solid male threads contain a radiused undercut. Resists wear and provides positive connections to existing machine components. Solid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

9 Bearing Cartridge

Floating, self-aligning bearing cartridge is made from grade 65-45-12 ductile iron. Cartridge is retained by cap screws and plate providing for strength and shock resistance. 90 durometer Buna-N O-Ring with backup ring on the cartridge O.D. prevents extrusion and fluid leakage around the outside of bearing cartridge. Float condition minimizes piston rod misalignment by reducing side loading.

10 Ports

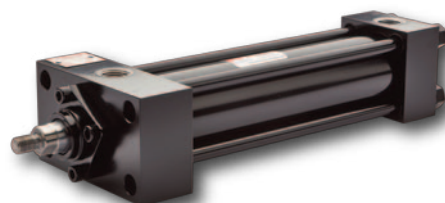
NPT or SAE O-Ring ports are to be identified at time of order. Optional port sizes include flange ports, metric ports and oversized ports. Universally adaptable to any hose or fitting.

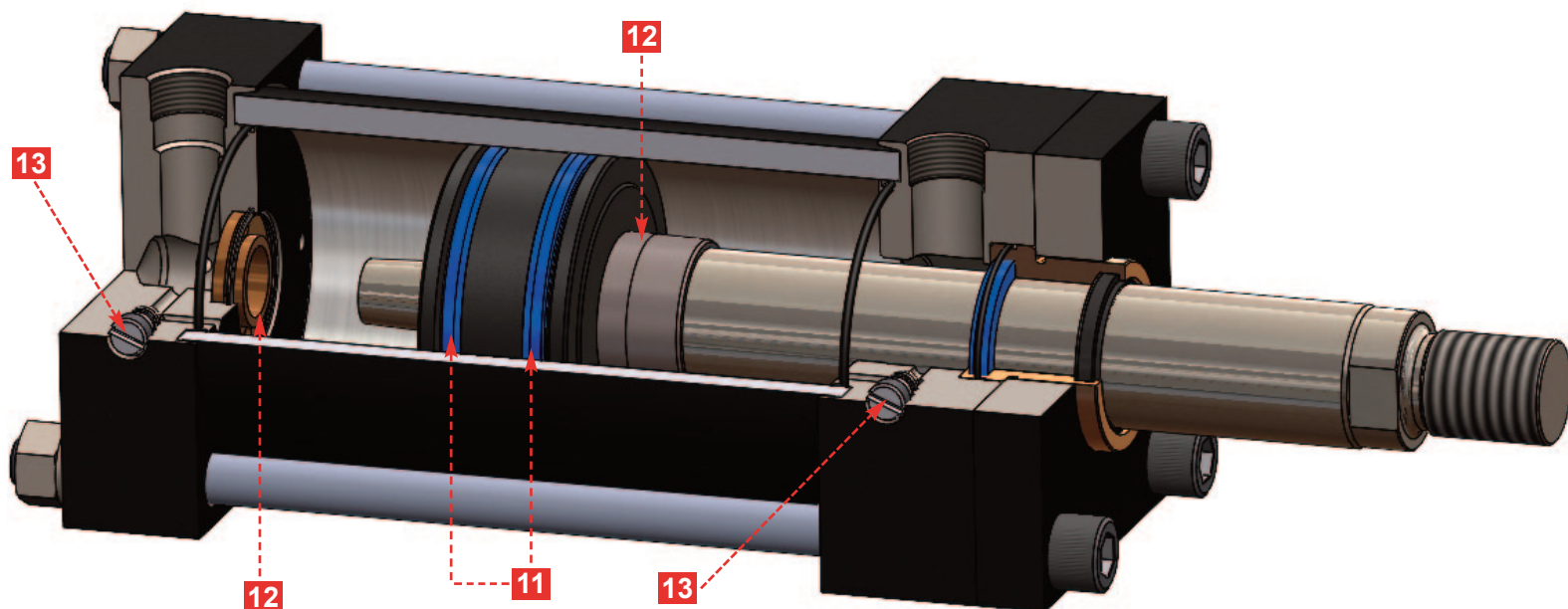


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11 Piston Seals

Asymmetrical urethane U-Cups with seal material options available including backup rings. Hydraulic X-Pac type seals are standard for 10" bore and larger cylinders. X-Pac seals may also be used on smaller bores. Step cut cast iron piston rings & high load piston seals are also available.

12 Cushions

Floating ductile iron rod cushion collar on head end. The cap cushion is a Ductile iron floating, check-type seal insert held captive by a retaining ring in the rear end cap. Ball checks are provided at both ends for rapid breakaway out of the cushion and the ball check screws are flush with the end caps. Cushions are optional but ultimately help prevent cylinder failure, due to fatigue, resulting from the piston slamming into cylinder end caps. A reliable floating cushion system provides for smooth action and eliminates binding conditions, which can cause sudden failure.

13 Cushion Adjustment Screw

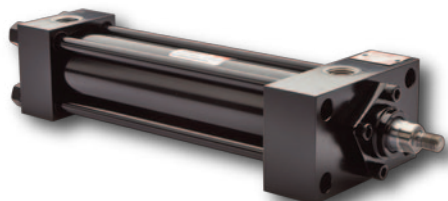
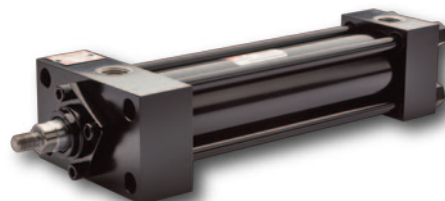
Steel needle valve with 90 durometer Nitrile O-Ring and backup ring. The captive adjustment screw can be locked in place and is flush with the end cap. The backup ring behind the O-Ring prevents fluid leakage around the adjustment screw. The cushion design allows fine adjustment of cushioning speed. Captive screw assures user safety.

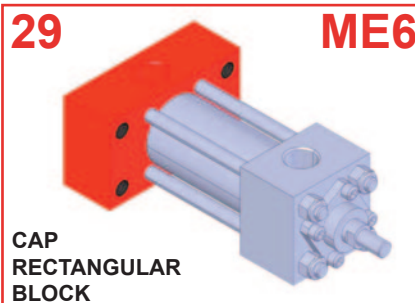
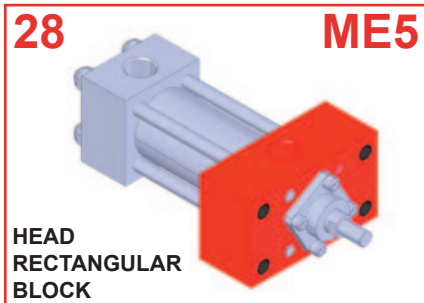
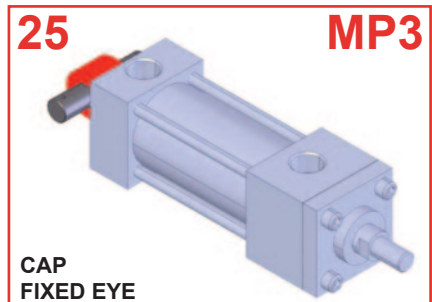
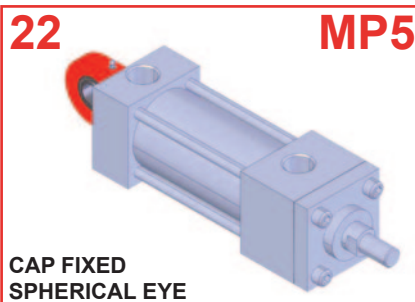
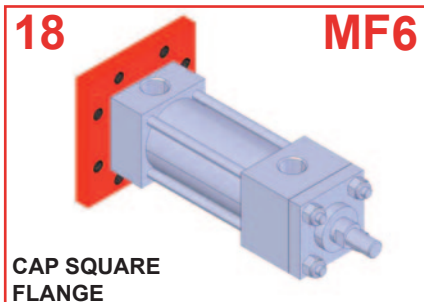
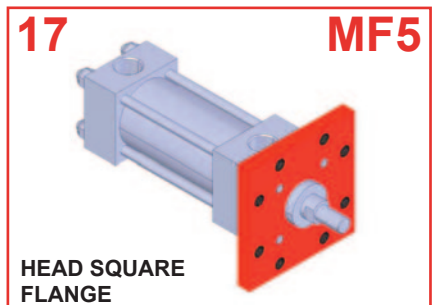
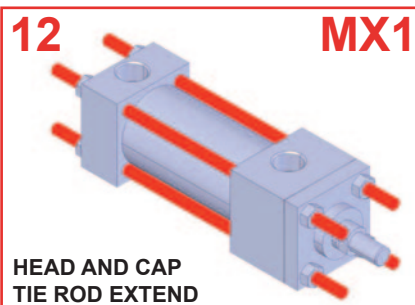
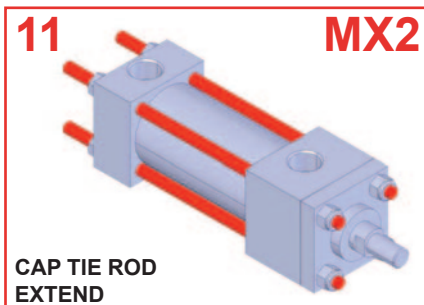
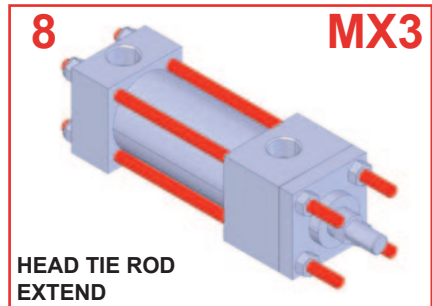
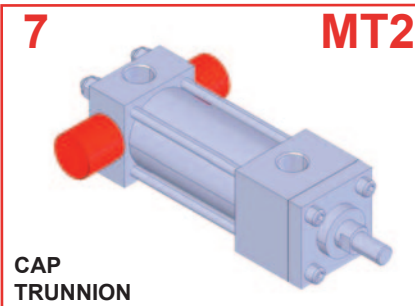
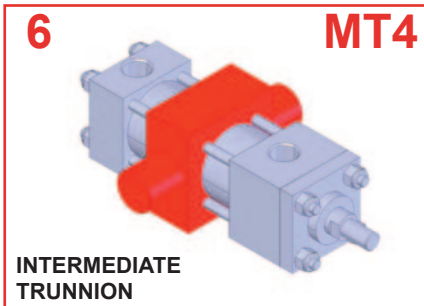
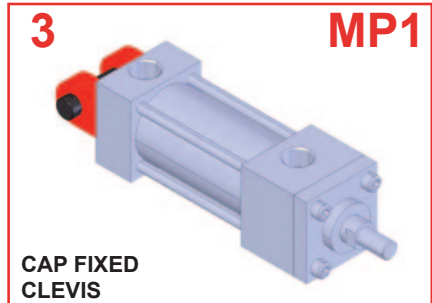
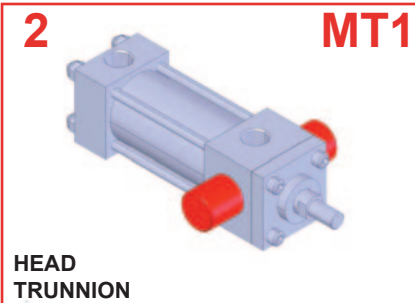
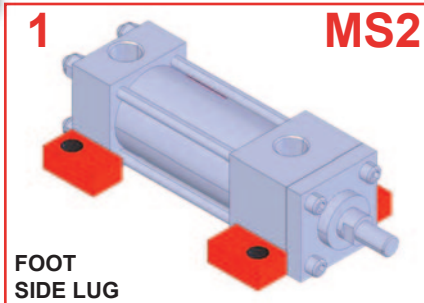
14 Optional Air Bleed System *(Not Shown)*

Manual air bleed plug is located on the cylinder tube.

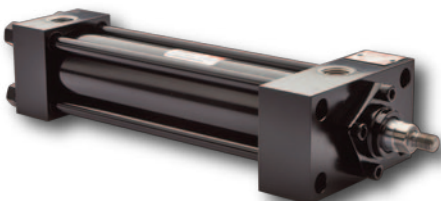
15 Optional Rod Drain Back System *(Not Shown)*

Drain feature is an additional groove cut into the front end of the bearing cartridge, between the rod wiper and rod seal, that drains off any accumulation of fluid between the seals. A cartridge drain port is located on the cartridge retainer plate for a user-installed drain line back to the reservoir. Captures hydraulic fluid and drains it back to the reservoir. This minimizes the slow weepage of hydraulic fluid through the rod wiper onto the piston rod. By capturing it and redirecting it to the tank.

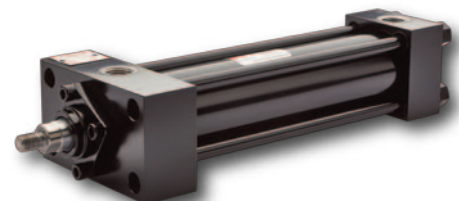
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Note: Specify XV dimension at position "J" when ordering an intermediate trunnion cylinder (Mount Style #6). In the absence of an XV dimension, Peninsular will center the intermediate trunnion between the two end caps.



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Generate a Part Number Quickly Using the Online Configurator

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

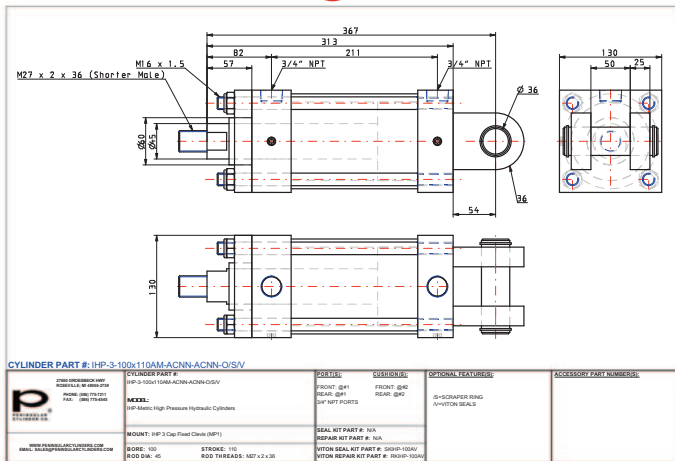
Utilize the drop-down options & input fields to select the desired cylinder configuration. The system will automatically generate the part number. The cylinder configurator is equipped with various features, accessories, and kits to customize your cylinder. After configuration, you can export 2D drawings/3D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

IHP-3-100x110AM-ACNN-ACNN-O/S/V,SKIHP-100A-SR-V,RKIHP-100A-SR-V
 Peninsular Cylinder > Hydraulic Cylinders

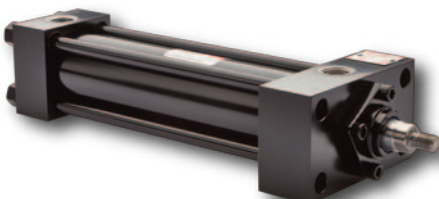
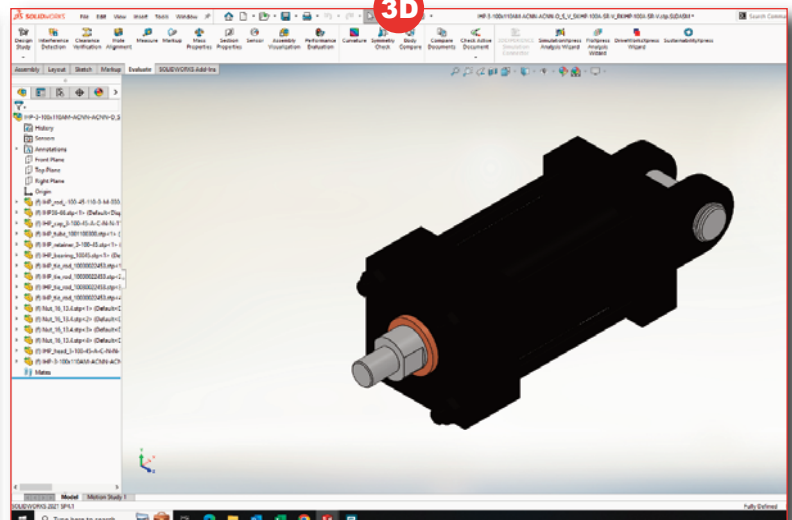
Part Number	IHP-3-100x110AM-ACNN-ACNN-O/S/V,SKIHP-100A-SR-V,RKIHP-100A-SR-V	
Bore Size (in mm)	100	mm
Mounting Style	IHP 3 Cap Fixed Clevis (MP1)	
Stroke Length (in mm)	110 (25.0.. ±1.0 ..3500.0)	mm
Piston Rod Diameter (in mm)	45	mm
Piston Rod Material	Induction Hardened Chrome Plated IHCP 1045 Steel	
Piston Rod Thread Size	M27 x 2 x 36 (Shorter Male)	

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2D

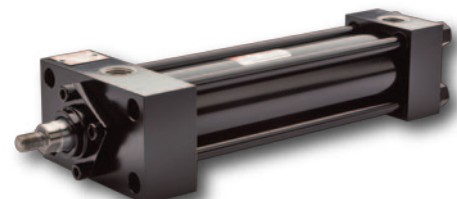


3D



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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
IHP	- 3	- 100	x 110	A	M	- ACNN	- ACNN	- O	/ S	/ V
A	B	C	D	E		F	G	H	J	J

A Cylinder Model: **IHP**

- 40mm Bore through 500mm Bore
- Nitrile seals with Teflon back up rings (std)
- Precision machined steel cylinder heads (std)
- Removable, self aligning, bearing cartridge (std)
- "Slip Tuff" coated rod cartridge for severe side loaded conditions (optional)
- D.O.M. Seamless tube precision honed and I.D. with thick wall (std)
- 100,000 PSI yield, chrome plated piston rod (std)
- Adjustable cushions with captive screw (cushions are optional)
- In-port mounted proximity switches for near end of stroke position sensing (opt). These replace mechanical limit switches.
- Air bleed system (optional)
- Rod cartridge drain back system (optional)

B Cylinder Mounting: **3**

1 Foot Side Lugs (MS2)	8 Head Tie Rod Extend (MX3)	22 Cap Fixed Spherical Eye (MP5)
2 Head Trunnion (MT1)	11 Cap Tie Rod Extend (MX2)	25 Cap Fixed Eye (MP3)
3 Cap Fixed Clevis (MP1)	12 Head & Cap Tie Rod Extend (MX1)	28 Head Rectangular (ME5)
6 Intermediate Trunnion (MT4)	17 Head Square Flange (MF5)	29 Cap Rectangular (ME6)
7 Cap Trunnion (MT2)	18 Cap Spherical Eye (MF6)	

C Cylinder Bore: **100**

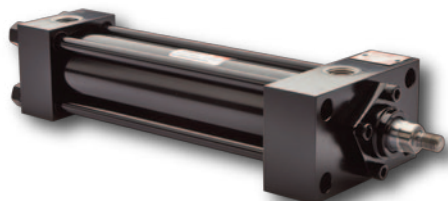
40 = 40mm Bore	80 = 80mm Bore	160 = 160mm Bore	320 = 320mm Bore	500 = 500mm Bore
50 = 50mm Bore	100 = 100mm Bore	200 = 200mm Bore	360 = 360mm Bore	
63 = 63mm Bore	125 = 125mm Bore	250 = 250mm Bore	400 = 400mm Bore	

D Stroke Length: **110**

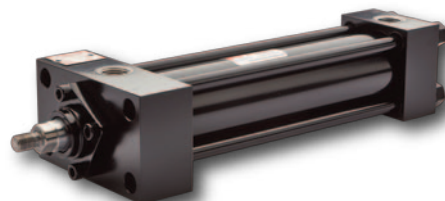
Peninsular IHP Cylinders can be ordered with stroke lengths from 25mm to 3,500mm.
 For Stop Spool (Stop Tube) applications, contact Peninsular to determine call out for correct stroke length to specify.

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.



F Plumbing: ACNN

Specify Plumbing Configuration for Front & Rear End Cap.

N = Nothing (No port, cushion, or prox.)

G = BSP Hydraulic Supply Port (parallel thread G-Port)

F = 4-Bolt Flange Type Hydraulic Supply Port (per ISO 6162 for bigger bores)

W = BPT Hydraulic Supply Port (tapered thread R-Port)

A = Hydraulic Supply Port - NPTF Threads

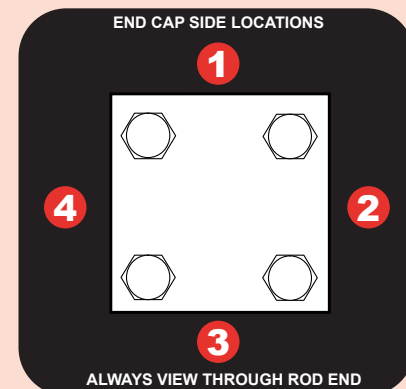
T = Hydraulic Supply Port - SAE Straight 'O' Ring Threads

C = Cushion Adjustment Screw

M = Proximity Switch Ready only, no switch mounted to the cylinder end cap

S = Proximity Switch to be In-Port mounted to the cylinder end cap (complete position H)

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

Optional Proximity Switch Capability

Allows for NON-CONTACT piston position sensing at near end of stroke. Precision machined cylinder heads and piston cushion hubs allow for in-port mounting of "RF inductive" proximity switches. Spacerless design using the same switch probe length at each end is optional. Self contained switch probe not subject to contamination. This design provides consistent, reliable, repeatable stroke-to-go and eliminates the design and construction of brackets necessary to mount external mechanical limit switches. (If proximity switch cords are required, contact Peninsular).

Contact Peninsular for probe lengths and stroke-to-go distances.

J Optional Features:

Specify Optional Features with Slash Mark and Alpha Characters

/C = Air Bleed

/D = Drain Back

/E = Extended Piston Rod*

/F = Bronze Rod Cartridge

/H = Rod Boot Cover

/I = Cast Iron Piston Rings

/L = Lubricated Trunnion Pins

/N = Stop Tube*

/P = Oversize Ports

/R = Threaded Stud Rod End

/S = Scraper Ring

/V = Viton Seals

/W = Withstands Corrosion

/X = Extended Key

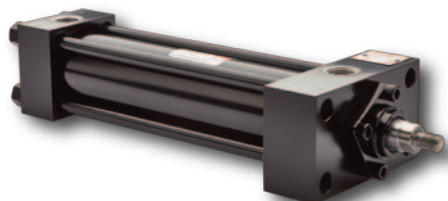
/XV = Specify XV Dimension (IHP6)

/Y = Double Rod End

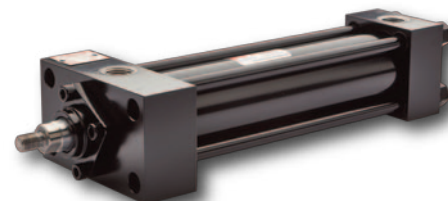
/Z = "Slip Tuff" Coated Rod Cartridge

/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)

SECOND LETTER DENOTES ROD THREADS

M = (EXTERNAL NFPA SHORT MALE)

L = (LONGER MALE ROD THREADS)

F = (NFPA SHORT FEMALE)

IHP Hydraulic Cylinder (Metric) Piston Rod Diameter and Rod Threads Chart

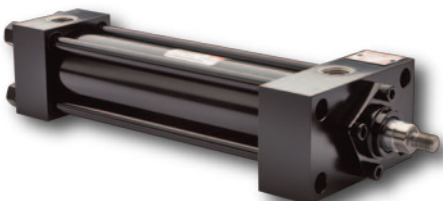
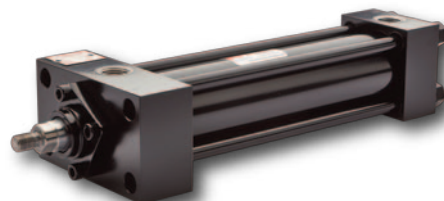
FOR ISO 6020-2 BORE SIZES = 40MM - 200MM

BORE SIZE	ROD DIA.	SHORT MALE "M"	LONGER MALE "L"	FEMALE "F"
40	A= 18	M10 x 1.25 x 14	M14 x 1.5 x 18	M12 x 1.25 x 18
	B= 28	M14 x 1.5 x 18	M20 x 1.5 x 28	M20 x 1.5 x 28
50	A= 22	M12 x 1.25 x 18	M16 x 1.5 x 22	M16 x 1.5 x 22
	B= 28	M16 x 1.5 x 22	M20 x 1.5 x 28	M20 x 1.5 x 28
	C= 36	M16 x 1.5 x 22	M27 x 2 x 36	M27 x 2 x 36
63	A= 28	M16 x 1.5 x 22	M20 x 1.5 x 28	M20 x 1.5 x 28
	B= 36	M20 x 1.5 x 28	M27 x 2 x 36	M27 x 2 x 36
	C= 45	M20 x 1.5 x 28	M33 x 2 x 45	M33 x 2 x 45
80	A= 36	M20 x 1.5 x 28	M27 x 2 x 36	M27 x 2 x 36
	B= 45	M27 x 2 x 36	M33 x 2 x 45	M33 x 2 x 45
	C= 56	M27 x 2 x 36	M42 x 2 x 56	M42 x 2 x 56
100	A= 45	M27 x 2 x 36	M33 x 2 x 45	M33 x 2 x 45
	B= 56	M33 x 2 x 45	M42 x 2 x 56	M42 x 2 x 56
	C= 70	M33 x 2 x 45	M48 x 2 x 63	M48 x 2 x 63
125	A= 56	M33 x 2 x 45	M42 x 2 x 56	M42 x 2 x 56
	B= 70	M42 x 2 x 56	M48 x 2 x 63	M48 x 2 x 63
	C= 90	M42 x 2 x 56	M64 x 3 x 85	M64 x 3 x 85
160	A= 70	M42 x 2 x 56	M48 x 2 x 63	M48 x 2 x 63
	B= 90	M48 x 2 x 63	M64 x 3 x 85	M64 x 3 x 85
	C= 110	M48 x 2 x 63	M80 x 3 x 95	M80 x 3 x 95
200	A= 90	M48 x 2 x 63	M64 x 3 x 85	M64 x 3 x 85
	B= 110	M64 x 3 x 85	M80 x 3 x 95	M80 x 3 x 95
	C= 140	M64 x 3 x 85	M100 x 3 x 112	M100 x 3 x 112

FOR ISO 6020-3 BORE SIZES = 250MM - 500MM

BORE SIZE	ROD DIA.	SHORTER MALE "M"	LONGER MALE "L"	FEMALE "F"
250	A= 140	M100 x 3 x 112	M100 x 3 x 165	M100 x 3 x 112
	B= 160	M110 x 3 x 112	M110 x 3 x 165	M110 x 3 x 112
	C= 180	M125 x 4 x 125	M125 x 4 x 185	M125 x 4 x 125
320	A= 180	M125 x 4 x 125	M125 x 4 x 185	M125 x 4 x 125
	B= 200	M140 x 4 x 140	M140 x 4 x 210	M140 x 4 x 140
	C= 220	M160 x 4 x 160	M160 x 4 x 240	M160 x 4 x 160
360	A= 180	M125 x 4 x 125	M125 x 4 x 185	M125 x 4 x 125
	B= 220	M160 x 4 x 160	M160 x 4 x 240	M160 x 4 x 160
	C= 250	M180 x 4 x 180	M180 x 4 x 270	M180 x 4 x 180
400	A= 220	M160 x 4 x 160	M160 x 4 x 240	M160 x 4 x 160
	B= 250	M180 x 4 x 180	M180 x 4 x 270	M180 x 4 x 180
	C= 280	M200 x 4 x 200	M200 x 4 x 300	M200 x 4 x 200
500	A= 280	M200 x 4 x 200	M200 x 4 x 300	M200 x 4 x 200
	B= 320	M220 x 4 x 220	M220 x 4 x 325	M220 x 4 x 220
	C= 360	M250 x 6 x 250	M250 x 6 x 375	M250 x 6 x 250

OTHER ROD AND THREAD SIZES ARE AVAILABLE, PLEASE CALL PENINSULAR.


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