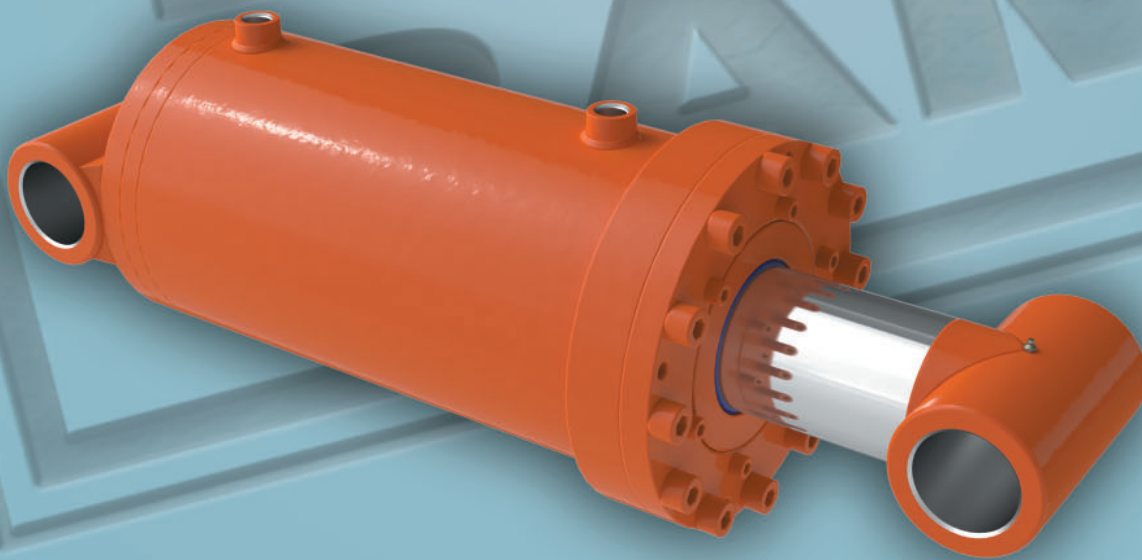




# BIG BORE CYLINDERS



**OEM HYDRAULIC CYLINDER SPECIALISTS**



# BIG BORE

**RAM** Big Bore cylinders achieve the power and pressure required for your equipment to move the heaviest loads. RAM Big Bore cylinders are heavy-duty, robust and often necessary for machinery that operates in tough working environments. With bore sizes from 10 inches up to 18 inches, RAM's Big Bore cylinders are up to the task!

The bore size, along with the desired operating pressure of the cylinder, determines the force output available. The bigger the bore, more force the cylinder can develop. Knowing the load your application needs to move and the hydraulic system pressure rating, will help determine the optimal bore size of your cylinders. With the increased cylinder size, the experts at RAM take every precaution to recommend internal componentry that will meet the performance requirements and the external operating conditions. Our priority is developing complete cylinder solutions that produce quality performance.

RAM is well-versed in the latest technologies in materials, cylinder componentry, cylinder design and manufacturing methods to ensure your cylinder functions exactly as required. RAM Big Bore cylinder designs can be customized specific to your application requirements. These cylinders are built to accommodate rough and rugged work environments and frequently need bolted construction to provide additional strength and easy serviceability.

Customized options include:

- High strength materials such as 4140, QT100, AR (Abrasion Resistant) and other high-yield strength carbon and alloy steels
- Increased shaft protection through induction hardened rods, thicker chrome, chrome over nickel and other material alternatives
- Leading edge large bore seal technologies for heavy duty use, high wear environments, and abrasion resistance
- Expanded seal sets to resist shock pressures
- Bellows for external shaft protection
- External guards for ports, hoses and oil lines
- Bolt in glands for added strength
- Hardened pins for added durability
- High pressure ports (SAE Code 61/62 4 bolt flange designs)
- Integrated valves (relief, counterbalance or PO check) to protect the cylinder, maintain position, and control the rate of extension and retraction to counteract external forces.

## STANDARD FEATURES

**Intended Use:** Double acting extension

**Rated Pressure:** Up to 3000 PSI

**Rod Material:** High tensile SAE C1026/St2.3 DOM, hard chrome plated

**Barrel Material:** High tensile SAE C1026/St52.3 cold drawn tube precision honed for extended seal life

**Gland Material:** High strength steel glands and stops (1045 Q&T)

**Piston Material:** Ductile iron 65-45-12 (ASTM A536)

**Ports:** SAE standard; NPTF and Code 61/62 are also available

**Port Plugs:** High quality steel

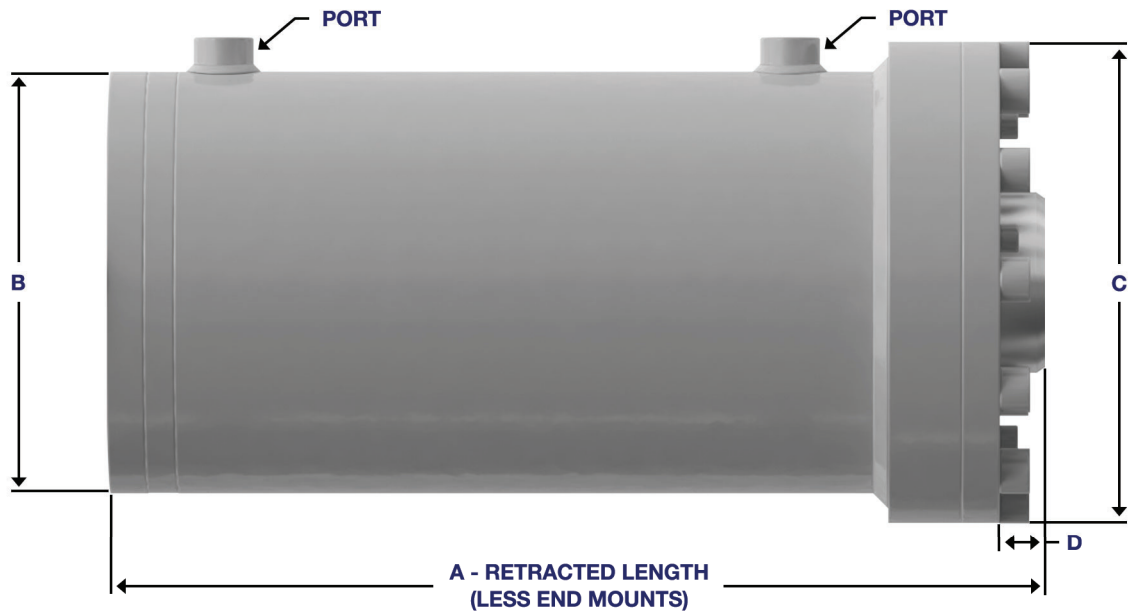
**Internal Seals:** North American

**Paint Finish:** 2 part urethane black

**Testing:** 100% full cycle tested



**BIG BORE  
CYLINDERS**

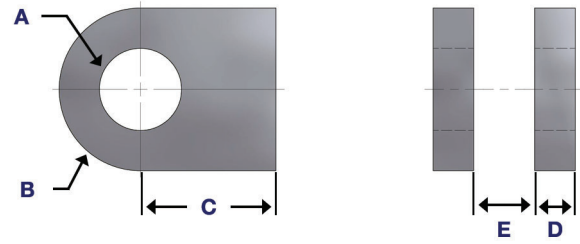
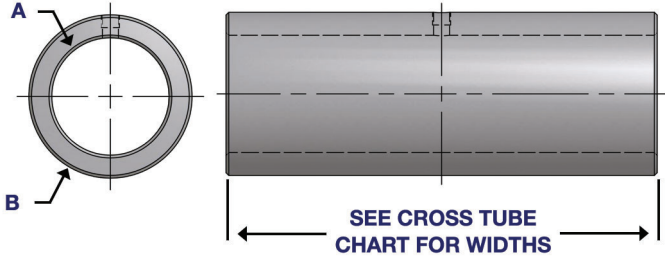


Bore (inches)	Rod Size	Extension Force at 3000 PSI (lbf)*	Retraction Force at 3000 PSI (lbf)*	Maximum Stroke	Retracted Length (No Mounts) A	B	C	D	Standard Ports
10.00	4.00	235,600	197,900	216	19.00 + Stroke	12.00	14.00	2.00	SAE-16
	5.00	235,600	176,700	216	19.00 + Stroke	12.00	14.00	2.00	SAE-16
	6.00	235,600	150,800	216	19.00 + Stroke	12.00	14.00	2.00	SAE-16
12.00	6.00	339,300	254,400	216	19.50 + Stroke	14.00	16.00	2.00	SAE-16
	7.00	339,300	223,800	216	19.50 + Stroke	14.00	16.00	2.00	SAE-16
	8.00	339,300	188,500	216	19.50 + Stroke	14.00	16.00	2.00	SAE-16
14.00	7.00	461,800	346,300	120	22.50 + Stroke	16.00	18.00	2.00	SAE-24
	8.00	461,800	311,000	120	22.50 + Stroke	16.00	18.00	2.00	SAE-24
	10.00	461,800	226,200	120	22.50 + Stroke	16.00	18.00	2.00	SAE-24
16.00	8.00	603,100	452,300	120	23.25 + Stroke	19.00	21.00	2.00	SAE-24
	9.00	603,100	412,300	120	23.25 + Stroke	19.00	21.00	2.00	SAE-24
	10.00	603,100	367,500	120	23.25 + Stroke	19.00	21.00	2.00	SAE-24
18.00	8.00	636,150*	510,500*	120	28.75 + Stroke	22.00	24.00	2.50	SAE-24
	9.00	636,150*	477,100*	120	28.75 + Stroke	22.00	24.00	2.50	SAE-24
	10.00	636,150*	439,800*	120	28.75 + Stroke	22.00	24.00	2.50	SAE-24

\*note 18" bore cylinder is rated at 2500 PSI

All specifications are subject to change without notice

# STANDARD MOUNTS



Cross Tube				
Bore	A	B	Width (Base)	Width (Rod)
10.00	3.53	5.50	12.50	8.00
12.00	4.03	6.00	14.50	10.00
14.00	5.03	8.00	16.50	10.00
16.00	6.03	9.50	19.50	12.00
18.00	6.53	10.00	22.50	14.00

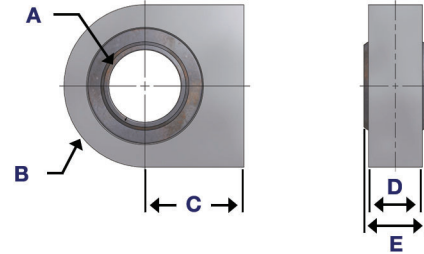
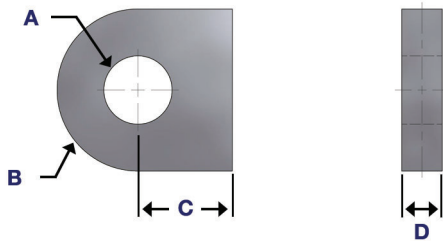
\*All measurements are in inches

All specifications subject to change without notice

Clevis					
Bore	A	B	C	D	E
10.00	3.53	3.50	4.00	2.00	4.00
12.00	4.03	4.00	4.50	2.50	5.00
14.00	5.03	5.00	5.75	3.00	6.00
16.00	6.03	6.00	7.00	3.50	7.00
18.00	6.53	6.50	7.75	4.00	8.00

\*All measurements are in inches

All specifications subject to change without notice



Tang				
Bore	A	B	C	D
10.00	3.53	3.50	4.00	4.00
12.00	4.03	4.00	4.50	5.00
14.00	5.03	5.00	5.75	6.00
16.00	6.03	6.00	7.00	7.00
18.00	6.53	6.50	7.75	8.00

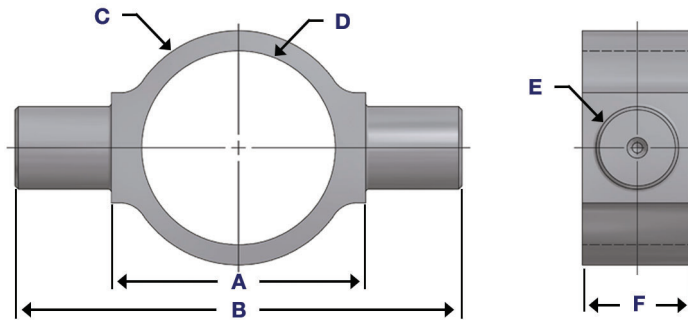
\*All measurements are in inches

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Tang with Bearing					
Bore	A	B	C	D	E
10.00	3.50	3.50	4.00	2.00	4.00
12.00	4.00	4.00	4.50	2.50	5.00
14.00	5.00	5.00	5.75	3.00	6.00
16.00	6.00	6.00	7.00	3.50	7.00
18.00	Consult Factory				

\*All measurements are in inches

All specifications subject to change without notice



Trunnion						
Bore	A	B	C	D	E	F
10.00	3.50	14.00	15.00	10.00	3.500	4.00
12.00	4.00	16.00	17.00	12.00	4.000	4.50
14.00	4.50	18.00	19.00	14.00	4.500	5.00
16.00	Consult Factory					
18.00	Consult Factory					

\*All measurements are in inches

All specifications subject to change without notice

## MOUNT OPTIONS

In addition to standard mounting options, RAM will design and/or manufacture custom mounts in a wide array of styles and materials.

We can also offer unique mounting locations, including mid-barrel positioning for mounting flexibility.

Contact the RAM Engineering team today and let them help select the best option for your application.







## **RAM** INDUSTRIES INC.

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