



# CUSTOM HEAVY DUTY CYLINDERS



EXPERIENCE • EXPERTISE • QUALITY • SERVICE



# CUSTOM HEAVY DUTY

**RAM** Heavy Duty cylinders are characterized as a robust cylinder design and are often necessary for machinery that operates in tough working environments. RAM understands the high demands placed on hydraulic cylinder performance in these rough and rugged conditions! This includes:

- Continuous cylinder cycling
- Heavy mechanical loads & weights
- Hot, cold, wet or dry operating conditions
- Equipment contact with earth, snow, salt, heavy/light, mixed or abrasive matter
- Higher operating pressures
- Frequency and magnitude of possible cylinder stress
- Fluid compatibility such as petroleum based, water based and fire resistant
- Environmental considerations through secondary sealing, containment and leak detection
- Field maintenance needs for cylinder accessibility, parts inter-changeability and easy teardown

The assessment of your equipment's operating environment is important, as RAM's expertise is in supplying cylinders that are specifically engineered for your application.

A wide range of cylinder styles and sizes (bore & stroke) are available at RAM. We are well-versed in the latest technologies in materials, cylinder componentry, cylinder design and manufacturing methods to ensure your cylinder functions exactly as required. 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 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
- 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
- Safety lockout
- Position sensor technology for increased cylinder precision and control
- Replaceable bushings and bearings for easier serviceability
- Hardened pins for added durability
- Custom designed mounting configurations to accommodate increased surface contact



# BUILT TO YOUR SPECIFICATIONS

**Rated Pressure:** Up to 5000 PSI

**Rod Size:** As required

**Rod Material:** High tensile SAE C1045,  
ground and polished hard chrome plated

**Barrel Size:** As required

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

**Gland Material:** Ductile iron 65-45-12 (ASTM A536) or  
steel (AISI 1026)

**Piston Material:** Ductile iron 65-45-12 (ASTM A536) or  
steel (AISI 1026)

**End Mounts:** Trunnion, clevis, tang, cross tube,  
spherical bearing, custom bushing, flange,  
cross drilled holes

**Head Style:** Bolt in flange type manufactured from  
ductile or steel

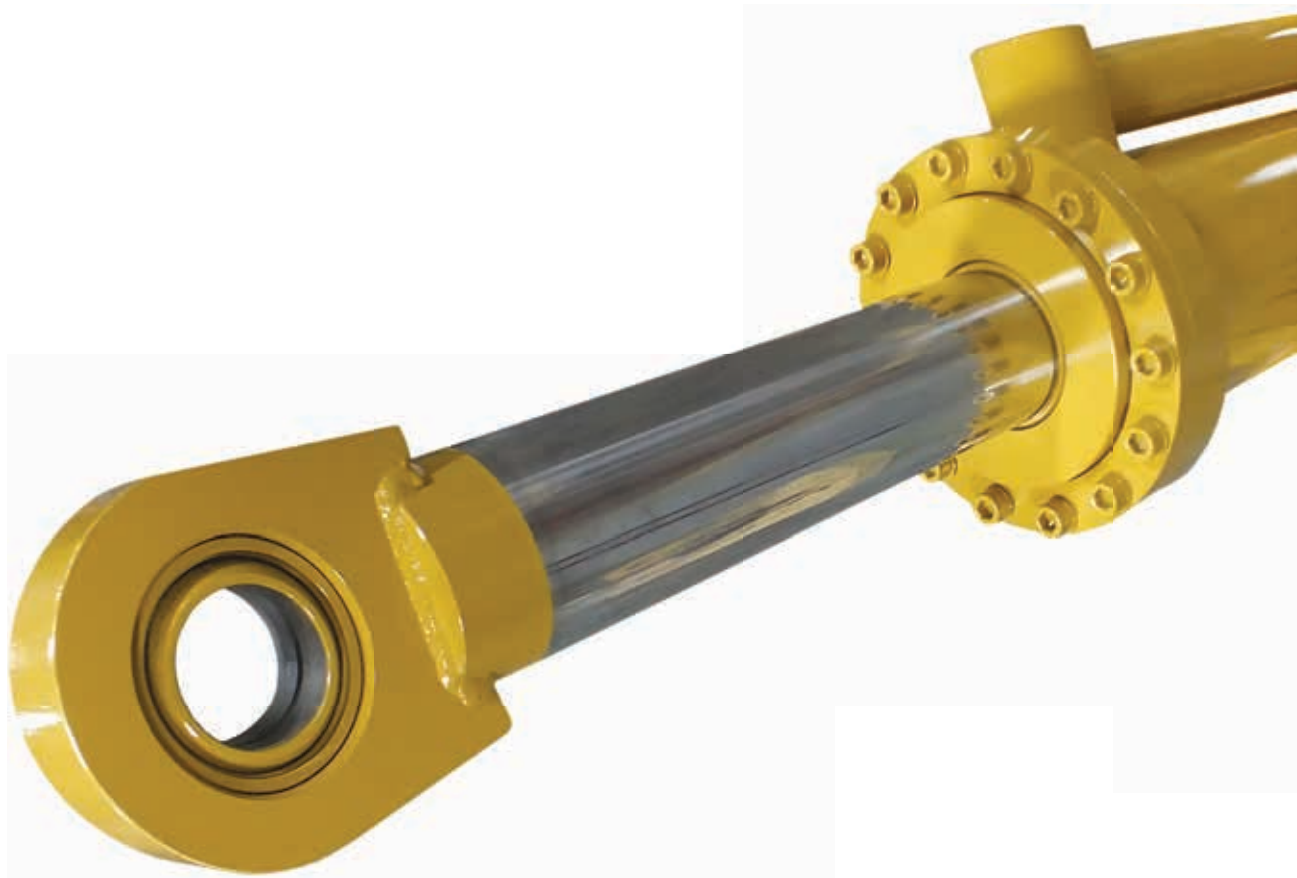
**Ports:** ORB, NPT, or Code 61 or 62 4-bolt flange

**Port Plugs:** High quality steel

**Internal Seals:** North American

**Paint Finish:** 2 part urethane black (or custom colors)

**Testing:** 100% full cycle tested





## **RAM** INDUSTRIES INC.

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