



*Industry Proven*  
**Mill-Type Cylinders**

# CYLINDER DESIGN FEATURES

Glassport Cylinders are designed and built for heavy-duty mill-type applications in either air or hydraulic service. Only the highest quality materials and strictest machining tolerances are acceptable in every Glassport Cylinder. All phases of manufacturing, from component production to final assembly, are monitored for precise adherence to design specifications.

Glassport Cylinders have gained a reputation among major OEM and direct-user customers as being both durable and dependable in applications with the toughest requirements. We are proud of our cylinders and of our attention to detail; both are unsurpassed in this industry.

## Rod Bearing

Quality bronze inboard bearing is automatically lubricated and provides proper rod alignment protection against cylinder side loading.

## Rod Packing

Standard multilip V-ring packing with optional Loaded Lip design if desired.

## Packing Gland

One-piece bronze construction for additional rod bearing strength and removable for easy access to the rod packing.

## Rod Flats

Standard wrench flats for easy rod end adjustments.

## Rod Wiper

Cleans the piston rod as it retracts into the cylinder to prevent system contamination and scoring of internal parts.

## Cylinder Heads

Rugged steel construction with accurately machined male pilot for proper alignment and assured end seal assembly.

## Cushion

For smooth end-of-stroke deceleration that will enhance the life of the cylinder.

## Piston

High-grade ductile iron construction provides both strength and a bearing surface with optional bronze overlaid steel.

## Cushion Adjusters

Multi-piece bronze and stainless steel assembly for precise control of cylinder deceleration.

## Piston Seals

Loaded Lip Seals are standard for a positive seal in both directions.

## Piston Rod

High-strength alloy steel precision machined and hard chrome plated to extend the life of rod, rod bearing and seals.

## Bolts

High-grade heat-treated alloy steel to withstand severe pressure shocks.

## Cylinder Body

Precision honed steel body for a smooth concentric finish with optional chrome plated bore.

## Cylinder Flanges

Welded to the Cylinder Body for a rigid through-bolt construction with the cylinder heads.



# SPECIFICATION DATA

## Mill-Type, Nonrotating Cylinders

Standard Glassport Cylinders can be selected in either Air or Hydraulic Service Designs.

**SERIES GA2001:** for Air Service, with operating pressures up to 200 psi. They are also offered as

**SERIES GH1001:** for Hydraulic Service, with operating pressures up to 1000 psi. Both series are available in standard bore sizes 2 through 20 inches.

**SERIES GH2002:** for Hydraulic Service, with operating pressures up to 2000 psi. Available in standard bore sizes 2 through 16 inches.

**SERIES GH3001:** for Hydraulic Service, with operating pressures up to 3000 psi. Available in standard bore sizes 3 through 16 inches.

Intermediate and fractional bore sizes are available upon request. Selection of a bore size depends on the force required and the pressure available.

## Cylinder Mounting Styles (for each Series)

- Foot Mount (F)
- Trunnion Mount (T)
- Female Clevis Mount (C)
- Rod End (front) Flange Mount (R)
- Blind End (rear) Flange Mount (B)

Other mounting configurations are available upon request.

## Cylinder Body

- Standard material is DOM Mechanical Steel Tubing. Hot Finished Seamless or Centrifugally Cast Steel is also used in the larger bore sizes.
- The bore of the cylinder is machined and honed to a 16 micro-inch finish.
- Chrome Plating is not standard but is an option.

## Cylinder Heads and Flanges

- Cylinder Heads are constructed of steel.
- Flanges are steel welded to the Cylinder Body.
- Cylinder Heads and Flanges are assembled with through bolts. All bolts are Grade 8 quality high-strength steel.
- Standard design is Octagonal, with Round and other shapes available.

## Piston Assemblies

- Standard material is a high grade of extruded ductile iron.
- Steel and bronze overlaid steel are optional upon request.
- Loaded Lip Seals are standard piston seals with cast iron Piston Rings, Chevrons and Wear Bands as options. Seal material is standard Urethane. Optional seal materials are available and should be specified for special fluid or temperature requirements. Glassport Cylinder should be consulted for recommendations.

## Piston Rods

- Standard material is Carbon Steel 1045 with a minimum 100,000 psi yield strength. Induction hardening is optional, as is the use of alloy steels.
- Chrome Plating is standard on all Piston Rods.
- When Hollow Rods are required to reduce weight, DOM Tubing is used, with Chrome Plating on the OD.
- Wrench Flats are standard.

## Rod Bearing and Gland Assembly

- Standard material is 660 Bronze for both the Bearing and Packing Gland.
- Chevron Rod Packing is standard, with Loaded Lip Seals available as an option.
- For special fluid or temperature requirements optional seal materials are available. Consult the manufacturer for recommendations.

## Cushions

- Cushions are optional and will be supplied upon request.
- Cushion Assemblies are a multi-piece Bronze and Stainless Steel unit.

## Stop Tubes

- When Stop Tubes are recommended in long-stroke applications, their lengths must be specified along with the net stroke of the cylinder. Please consult.

## Miscellaneous

- Metal Identity Tags are placed on all cylinders showing bore, stroke, model and serial number.
- Cylinder Drawings are provided with a Parts Bill of Materials included. Customer approval of drawings is recommended before manufacturing begins.

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