CYL SERIES
MEDIUM-DUTY
CUSTOM WELDED
HYDRAULIC
CYLINDERS

Bore Diameters:
1” to 7” (2.54 cm to 17.8 cm)

Stroke Lengths:
to 15’ (4.57 m)

For Working Pressures to 3000 PSIG (207BAR)
Energy®’s CYL Series Welded Cylinders Feature:

- Steel Base
- Clevis
- Ductile Iron Rod Guide
- Rugged Long-Life Bi-Directional Piston Seal with Nitrile Expander
- Ductile Iron Piston
- SAE O-Ring and NPTF Ports Available
- Reliable Double Lip U-Cup Rod Seal
- AN Style Wiper for Scraping Debris from Rod Surface
- St 52.3 Steel Tubing Typically Skive – Burnished to 4-10 Microinches RMS (.1 to .25 Microns RMS)

**BASE (B1-B9) AND ROD (R1-R9) ENDS**

**CYL CYLINDER DIMENSIONS**

<table>
<thead>
<tr>
<th>Bore Diameter</th>
<th>Available Rod Diameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5&quot; (3.8cm)</td>
<td>0.75&quot; (1.9cm), 1&quot; (2.5cm)</td>
</tr>
<tr>
<td>2.0&quot; (5.1cm)</td>
<td>1.125&quot; (2.9cm), 1.25&quot; (3.2cm)</td>
</tr>
<tr>
<td>2.5&quot; (6.4cm)</td>
<td>1.125&quot; (2.9cm), 1.25&quot; (3.2cm), 1.5&quot; (3.8cm)</td>
</tr>
<tr>
<td>3.0&quot; (7.6cm)</td>
<td>1.125&quot; (2.9cm), 1.25&quot; (3.2cm), 1.5&quot; (3.8cm), 1.75&quot; (4.4cm), 2&quot; (5.1cm)</td>
</tr>
<tr>
<td>3.5&quot; (8.9cm)</td>
<td>1.5&quot; (3.8cm), 1.75&quot; (4.4cm), 2&quot; (5.1cm)</td>
</tr>
<tr>
<td>4.0&quot; (10.2cm)</td>
<td>1.5&quot; (3.8cm), 1.75&quot; (4.4cm), 2&quot; (5.1cm), 2.5&quot; (6.4cm)</td>
</tr>
<tr>
<td>4.5&quot; (11.4cm)</td>
<td>1.75&quot; (4.4cm), 2&quot; (5.1cm), 2.5&quot; (6.4cm)</td>
</tr>
<tr>
<td>5.0&quot; (12.7cm)</td>
<td>2&quot; (5.1cm), 2.25&quot; (5.7cm), 2.5&quot; (6.4cm), 3&quot; (7.6cm)</td>
</tr>
<tr>
<td>6.0&quot; (15.2cm)</td>
<td>3&quot; (7.6cm), 4&quot; (10.2cm)</td>
</tr>
<tr>
<td>7.0&quot; (17.8cm)</td>
<td>3&quot; (7.6cm), 4&quot; (10.2cm)</td>
</tr>
</tbody>
</table>

*NOTE: Custom base and rod ends, as well as other custom cylinder features, may be available upon request. Please contact our factory for additional information.*

Please contact factory if the bore/rod combination you desire is not shown above.
CYL DESIGN OPTIONS & SPECIAL PORT BLOCKS

SPECIAL VALVE BLOCK (BOLTED ON)

Illustration is one typical example. For other options consult factory.

SPECIAL VALVE BLOCK IN BASE END

Illustration is one typical example. For other options consult factory.

PORT OPTIONS AVAILABLE

- Standard SAE O-Ring Ports: Available in straight, 90° elbow, and several other configurations
- NPTF Ports: Available in straight, 90° elbow, and several other configurations
- 4-Bolt Flange Ports: Please consult factory for availability

ADDITIONAL AVAILABLE FEATURES:

- Single-acting cylinders
- Ram-type cylinders
- Custom end mechanisms
- Custom fluid lines
- Hydraulic cushioning
- Integral stop tubes
- Custom valve blocks and valves
- Position sensing cylinders
- Re-phasing cylinders

ENERGY MANUFACTURING CUSTOM WELDED CYLINDER EXAMPLES

Illustration is one typical example. For other options consult factory.
Custom Quotation Request Form

This form must be filled out in its entirety before a welded cylinder quotation can be prepared. Unless noted otherwise by the customer, Energy Manufacturing will use the following parameters with respect to the processing of this request:

1. The oil temperature in the cylinder will be 170° Fahrenheit (77° Celsius) or less.
2. The rod speed will be 50 feet per minute (15.2 meters per minute) or less.
3. System filtration will be 20 micron or better.
4. The fluid used is SAE 20 (ISO VG68) or less-viscous petroleum-based fluid and is non-foaming type for hydraulic use.
5. Mount center-to-center and stroke dimensions are +/- 1/8" (+/-3.2 mm).
6. The cylinder is not used in a corrosive environment.

PURPOSE OF QUOTE: QUOTE DEADLINE DATE:

CUSTOMER DATA
Customer name: ______________________ Customer part number: ______________________
Address: ______________________________
City, State or Province, Zip or Postal Code, Country: ________________________________
Telephone number: ______________________ Purchasing contact: ______________________
Fax number: ______________________________ Engineering contact: ______________________
E-mail: ____________________________________________________

CYLINDER DATA
All welded cylinder quotation requests should be accompanied by a blueprint or sketch and the following data should be completed. Cushioned cylinder requests must include pump flow to cylinder, weight of load, and details of the linkage between cylinder and load.

Bore size: ________________________________
Stroke length: ____________________________
Rod diameter: ____________________________
Retracted pin center-to-center length: ________
Port type(s) (examples: NPT, NPTF, SAE O-Ring, 4-Bolt Flange, etc.): ______________________
Port size(s): ______________________________
Mounting pin diameter(s): ____________________
Test requirements:
( ) Standard 100% air test ( ) 100% Hydraulic test

APPLICATION DATA
Type of machine (crane, combine, etc.): ________________________________
Will cylinder be used to lift people? ____________________________
Type of function (hoist, swing, steering, etc.): _______________________
Estimated cycles per year: ____________________________
Does cylinder always reach full extend or retract position? ____________________________
Is cylinder subjected to high overrunning loads? ____________________________
Is cylinder subjected to side loading? ____________________________
Is cylinder barrel braced to restrict buckling? ____________________________

Primary cylinder effort will be to ( ) push load ( ) pull load ( ) both push and pull load
Cylinder is ( ) double acting ( ) single acting
Cylinder is mounted ( ) vertically ( ) horizontally
( ) swings through arc with mechanism

Pressure values:
Operating: ____________________________
Peak: ____________________________
Main system relief: ____________________________
Operating flow range: ____________________________

Energy® is a member of:
NFPA (National Fluid Power Association)

204 Plastic Lane • Monticello, IA 52310-9472 • USA
Phone: (319) 465-3537 • Fax: (319) 465-5279 • Web Site: www.energymfg.com • E-mail: info@energymfg.com

Form No. CYL (Rev. 5/11)