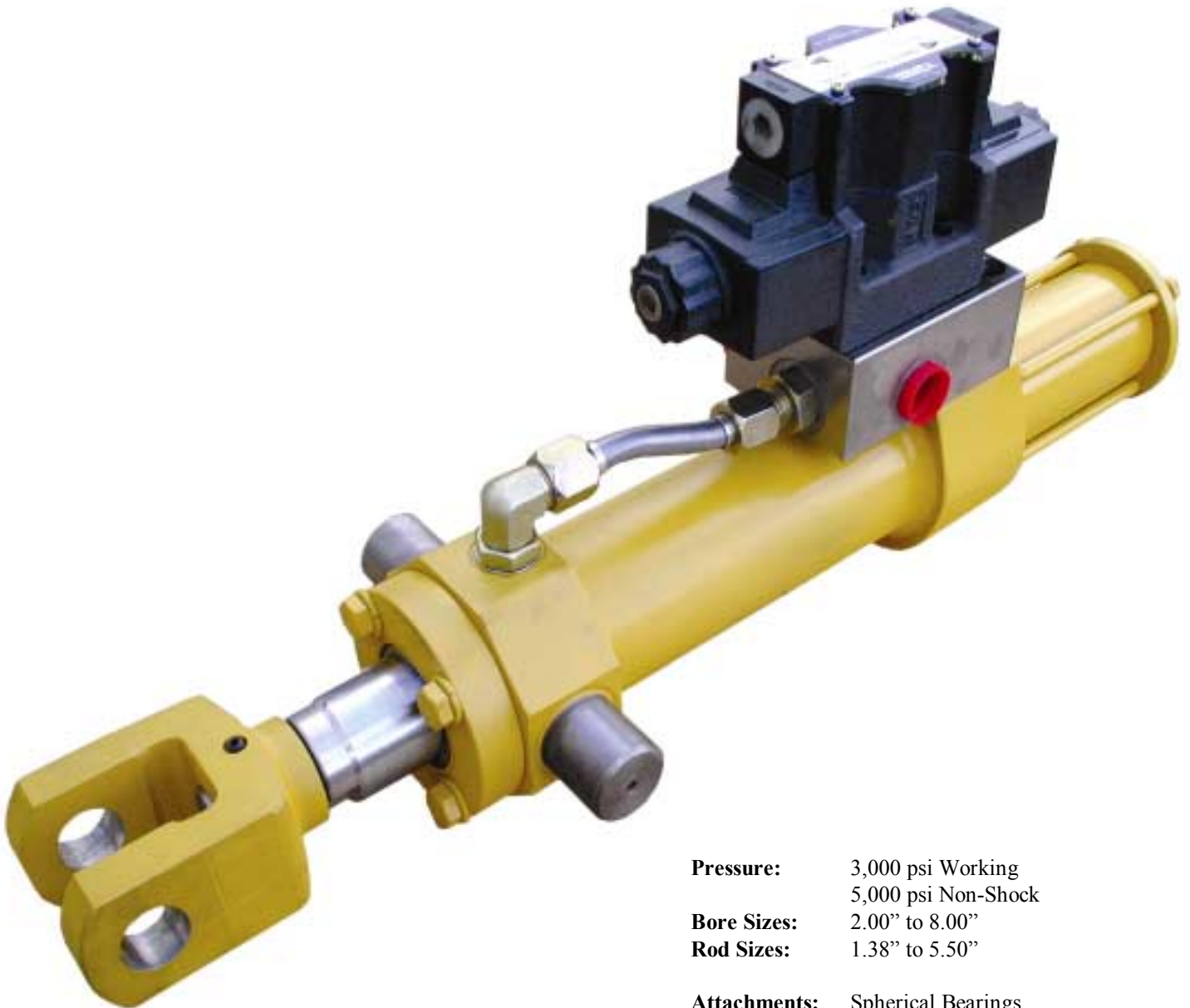




Series TM Hydraulic Cylinder TeMposonic



Pressure: 3,000 psi Working
5,000 psi Non-Shock

Bore Sizes: 2.00" to 8.00"

Rod Sizes: 1.38" to 5.50"

Attachments: Spherical Bearings
Clevis
Cross Hole
Threaded Rod

Series TM Cylinder

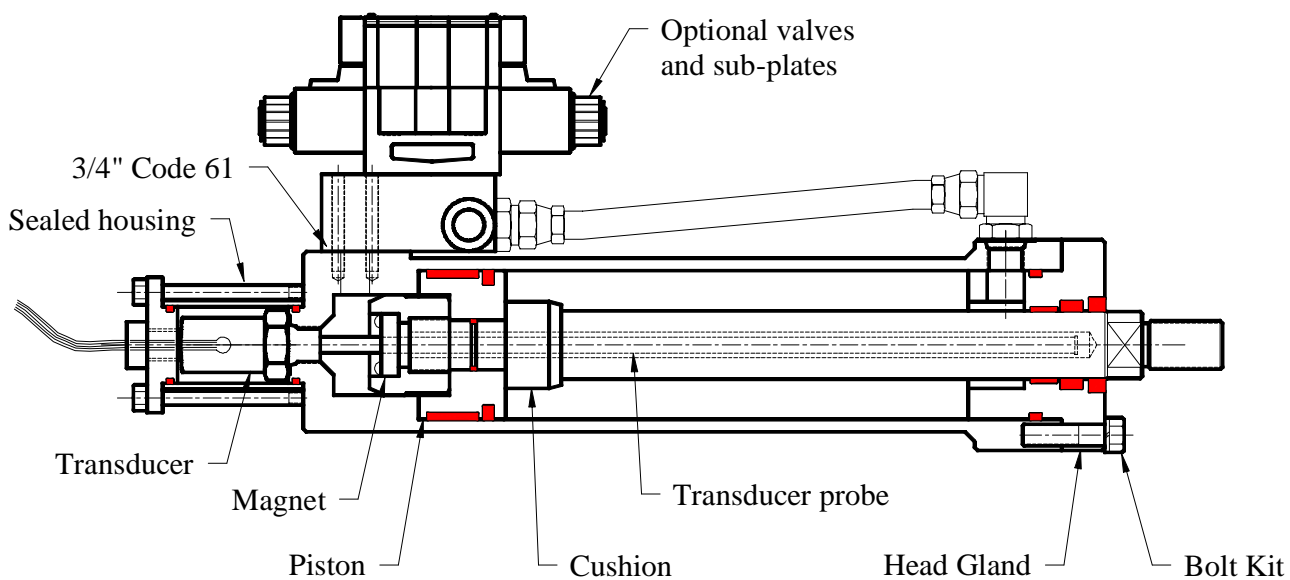
Our Series **TM** cylinders, with suitable electronics, can monitor the position and velocity of the piston. It is based on our popular Series **B** cylinder with provision for mounting an LVDT (Linear Velocity Displacement Transducer) and magnet from Temposonic, Balluff, or any other manufacturer.

The transducer assembly is mounted into the blind end of the cylinder. The magnet is housed in a stainless steel piston nut and the probe is inserted into a blind hole in the rod. The rod is drilled from one end only, which makes for a much stronger rod end than one that is drilled from both ends. A male thread is standard for the rod end. Therefore, any size and style of accessory with female threads is available. Female threads in the rod end can be accommodated, but the rod extension must be increased by the depth of the threads.

The transducer head is protected by a sealed housing. Since the back end of the cylinder must be clear to withdraw the probe, the available mounting styles are front and mid trunnion, front and rear flange and foot mount.

The pressure rating is 3000 psi operating and 5000 psi non-shock and fixed cushions at both ends of the cylinder are standard with series TM.

Options are available to mount a wide variety of servo or proportional valves on the cylinder. See page #27-7 of the manifold section for details.



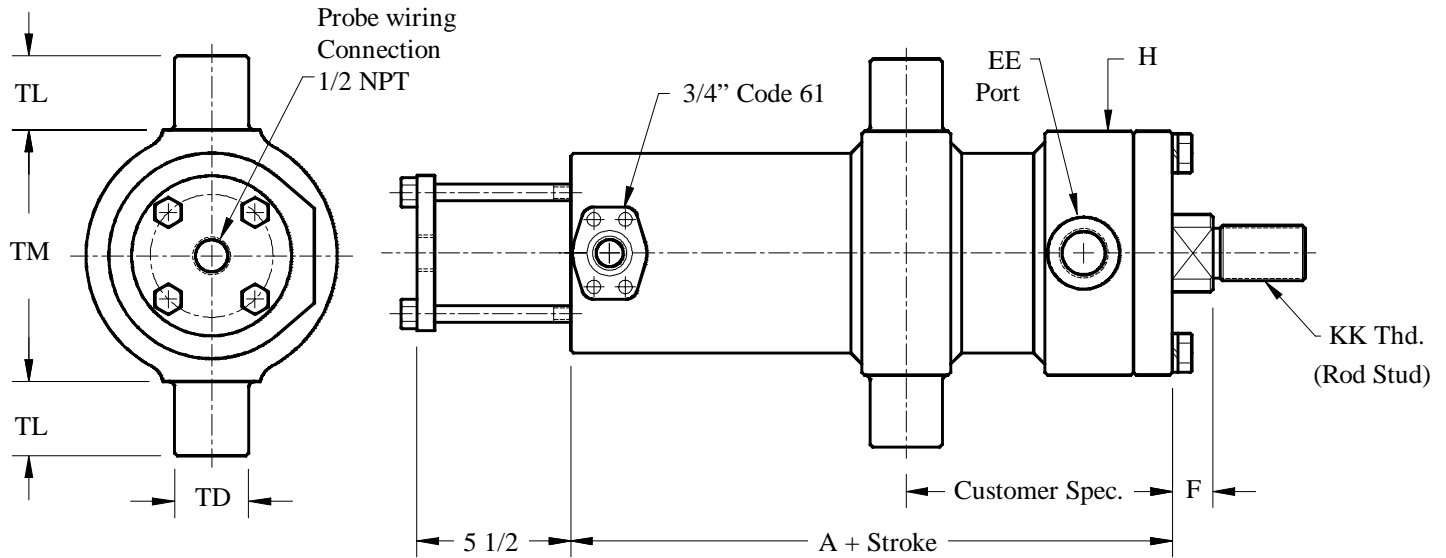
NOTE: Replacement parts for the piston, head gland, cushion, bolt kit and the seal kits are the same as Series B.

Series TM Cylinder – Trunnion

Mid Trunnion – Male

Rod End

Accessories:
Female Thd.
Welded



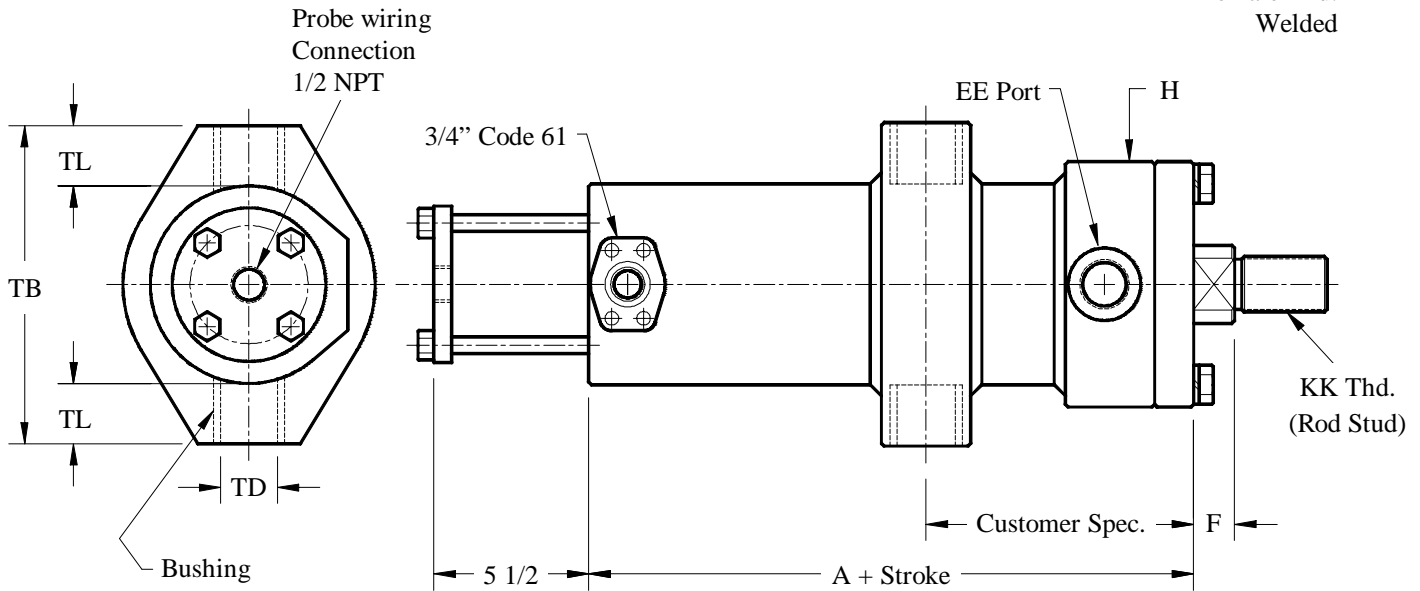
| Bore | Available Rod Sizes | | | | A | H Dia | TD | TL | TM | EE (ORB) | Standard sizes shown. | | |
|-------|---------------------|-------|-------|-------|-------|-------|------|------|-------|----------|-----------------------|------|----------|
| | | | | | | | | | | | CD Pin Ø | F | KK Thd |
| 2 | 1 3/8 | — | — | — | 6.69 | 3.25 | 1.38 | 1.38 | 3.50 | # 8 | 0.75 | 0.50 | 3/4-16 |
| 2 1/2 | 1 3/8 | 1 1/2 | 1 3/4 | — | 6.81 | 3.75 | 1.38 | 1.38 | 4.00 | # 8 | 0.75 | 0.63 | 3/4-16 |
| 3 | 1 3/8 | 1 3/4 | 2 | — | 7.13 | 4.25 | 1.38 | 1.38 | 4.50 | # 8 | 1.00 | 0.63 | 1-14 |
| 3 1/4 | 1 3/8 | 1 3/4 | 2 | 2 1/4 | 7.38 | 4.75 | 1.75 | 1.75 | 5.00 | # 12 | 1.00 | 0.75 | 1-14 |
| 4 | 1 3/4 | 2 | 2 1/2 | 3 | 7.75 | 5.50 | 1.75 | 1.75 | 5.50 | # 12 | 1.38 | 0.75 | 1 1/4-12 |
| 5 | 2 | 2 1/2 | 3 | 3 1/2 | 8.25 | 6.88 | 1.75 | 1.75 | 7.00 | # 12 | 1.75 | 0.88 | 1 1/2-12 |
| 6 | 2 1/2 | 3 | 3 1/2 | 4 | 8.88 | 8.00 | 2.00 | 2.00 | 8.50 | # 16 | 2.00 | 1.00 | 1 7/8-12 |
| 7 | 3 | 3 1/2 | 4 | 5 | 9.50 | 9.13 | 2.50 | 2.50 | 9.75 | # 20 | 2.50 | 1.00 | 2 1/4-12 |
| 8 | 3 1/2 | 4 | 5 | 5 1/2 | 10.50 | 10.50 | 3.00 | 3.00 | 11.00 | # 20 | 3.00 | 1.00 | 2 1/2-12 |
| 10 | 5 | 6 | 7 | — | 12.63 | 13.00 | 3.50 | 3.50 | 14.00 | # 20 | 3.50 | 1.25 | 3 1/4-12 |

Series TM Cylinder – Trunnion

Mid Trunnion – Female

Rod End

Accessories:
Female Thd.
Welded



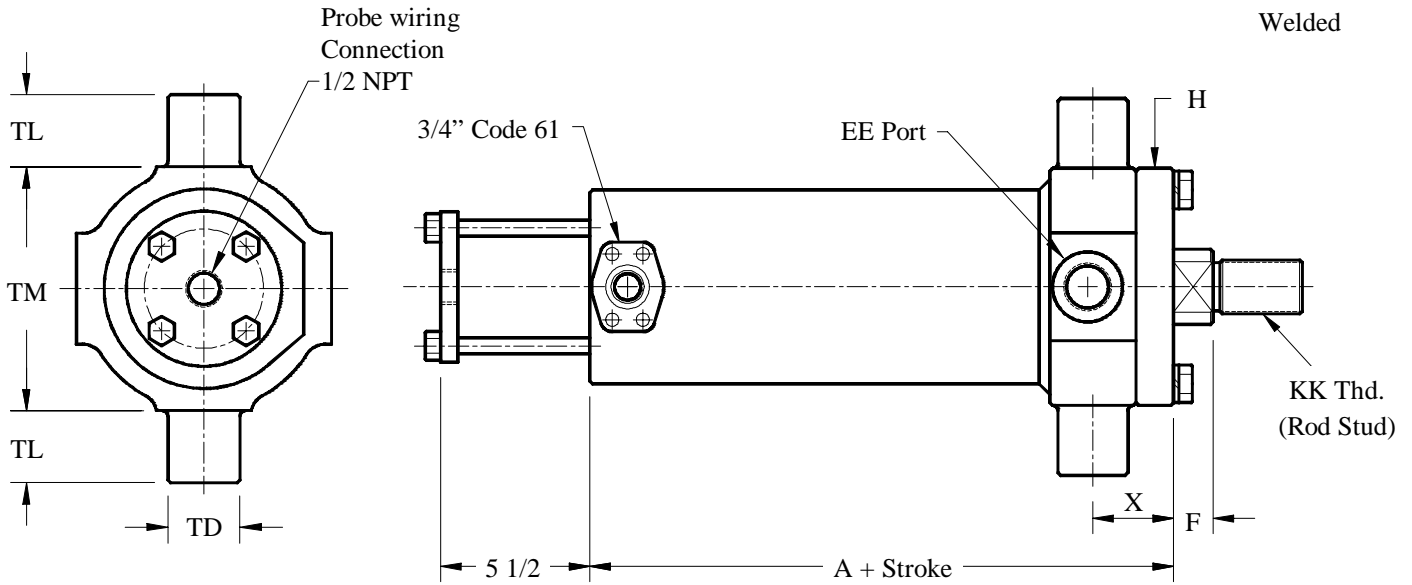
| Bore | Available Rod Sizes | | | | A | H Dia | TD | TL | TB | EE (ORB) | Standard sizes shown. | | |
|-------|---------------------|-------|--------|-------|-------|-------|------|------|-------|----------|-----------------------|------|----------|
| | CD Pin Ø | F | KK Thd | | | | | | | | | | |
| 2 | 1 3/8 | — | — | — | 6.69 | 3.25 | 0.75 | 0.63 | 3.75 | # 8 | 0.75 | 0.50 | 3/4-16 |
| 2 1/2 | 1 3/8 | 1 1/2 | 1 3/4 | — | 6.81 | 3.75 | 0.75 | 0.63 | 4.25 | # 8 | 0.75 | 0.63 | 3/4-16 |
| 3 | 1 3/8 | 1 3/4 | 2 | — | 7.13 | 4.25 | 1.00 | 0.88 | 5.38 | # 8 | 1.00 | 0.63 | 1-14 |
| 3 1/4 | 1 3/8 | 1 3/4 | 2 | 2 1/4 | 7.38 | 4.75 | 1.00 | 0.88 | 5.63 | # 12 | 1.00 | 0.75 | 1-14 |
| 4 | 1 3/4 | 2 | 2 1/2 | 3 | 7.75 | 5.50 | 1.38 | 1.31 | 7.25 | # 12 | 1.38 | 0.75 | 1 1/4-12 |
| 5 | 2 | 2 1/2 | 3 | 3 1/2 | 8.25 | 6.88 | 1.75 | 1.56 | 9.00 | # 12 | 1.75 | 0.88 | 1 1/2-12 |
| 6 | 2 1/2 | 3 | 3 1/2 | 4 | 8.88 | 8.00 | 1.75 | 1.56 | 10.00 | # 16 | 2.00 | 1.00 | 1 7/8-12 |
| 7 | 3 | 3 1/2 | 4 | 5 | 9.50 | 9.13 | 2.00 | 1.81 | 11.50 | # 20 | 2.50 | 1.00 | 2 1/4-12 |
| 8 | 3 1/2 | 4 | 5 | 5 1/2 | 10.50 | 10.50 | 2.50 | 2.25 | 13.50 | # 20 | 3.00 | 1.00 | 2 1/2-12 |

Series TM Cylinder – Trunnion

Front Trunnion

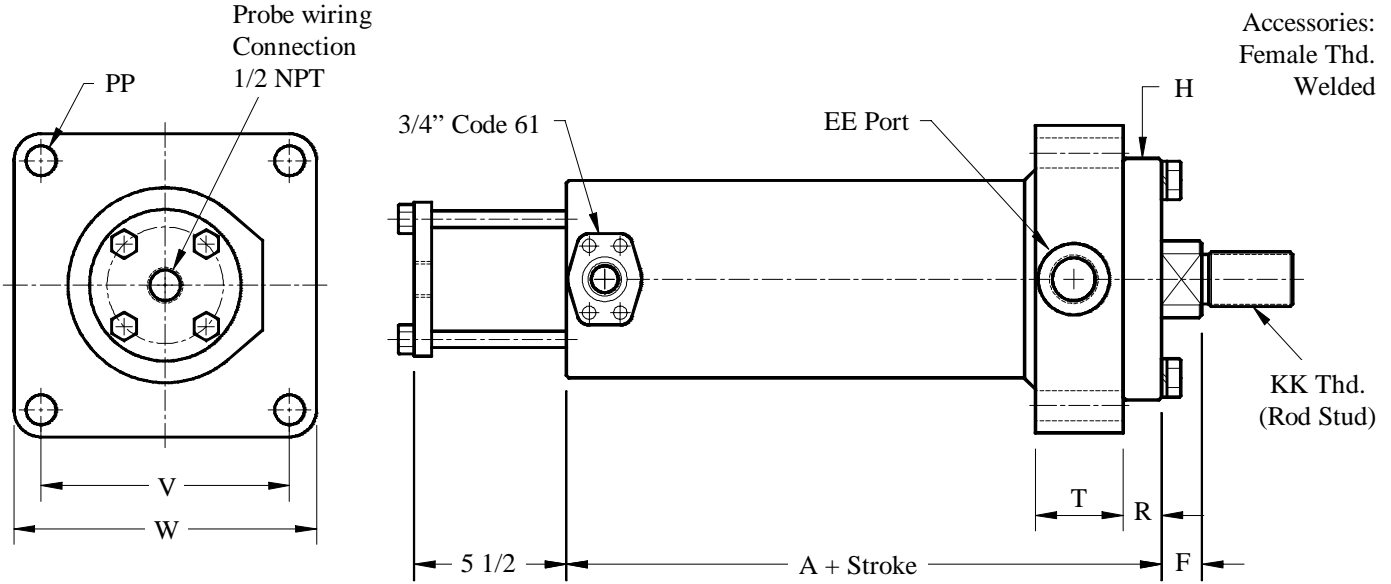
Rod End

Accessories:
Female Thd.
Welded



| Bore | Available Rod Sizes | | | | A | H Dia | TD | TL | TM | X | EE (ORB) | Standard sizes shown. | | |
|-------|---------------------|-------|-------|-------|-------|-------|------|------|-------|------|----------|-----------------------|------|----------|
| | | | | | | | | | | | | CD Pin Ø | F | KK Thd |
| 2 | 1 3/8 | — | — | — | 6.69 | 3.25 | 1.38 | 1.38 | 3.00 | 1.63 | # 8 | 0.75 | 0.75 | 3/4-16 |
| 2 1/2 | 1 3/8 | 1 1/2 | 1 3/4 | — | 6.81 | 3.75 | 1.38 | 1.38 | 3.50 | 1.69 | # 8 | 0.75 | 0.69 | 3/4-16 |
| 3 | 1 3/8 | 1 3/4 | 2 | — | 7.13 | 4.25 | 1.38 | 1.38 | 4.50 | 1.75 | # 8 | 1.00 | 0.63 | 1-14 |
| 3 1/4 | 1 3/8 | 1 3/4 | 2 | 2 1/4 | 7.38 | 4.75 | 1.75 | 1.75 | 4.50 | 2.00 | # 12 | 1.00 | 0.88 | 1-14 |
| 4 | 1 3/4 | 2 | 2 1/2 | 3 | 7.75 | 5.50 | 1.75 | 1.75 | 5.00 | 2.13 | # 12 | 1.38 | 1.00 | 1 1/4-12 |
| 5 | 2 | 2 1/2 | 3 | 3 1/2 | 8.25 | 6.88 | 1.75 | 1.75 | 6.50 | 2.38 | # 12 | 1.75 | 0.88 | 1 1/2-12 |
| 6 | 2 1/2 | 3 | 3 1/2 | 4 | 8.88 | 8.00 | 2.00 | 2.00 | 7.50 | 2.44 | # 16 | 2.00 | 1.06 | 1 7/8-12 |
| 7 | 3 | 3 1/2 | 4 | 5 | 9.50 | 9.13 | 2.50 | 2.50 | 8.50 | 2.94 | # 20 | 2.50 | 1.00 | 2 1/4-12 |
| 8 | 3 1/2 | 4 | 5 | 5 1/2 | 10.50 | 10.50 | 3.00 | 3.00 | 9.50 | 3.63 | # 20 | 3.00 | 1.00 | 2 1/2-12 |
| 10 | 5 | 6 | 7 | — | 12.63 | 13.00 | 3.50 | 3.50 | 12.63 | 4.25 | # 20 | 3.50 | 1.13 | 3 1/4-12 |

Series TM Cylinder – Front Flange



Rod End

Accessories:
Female Thd.
Welded

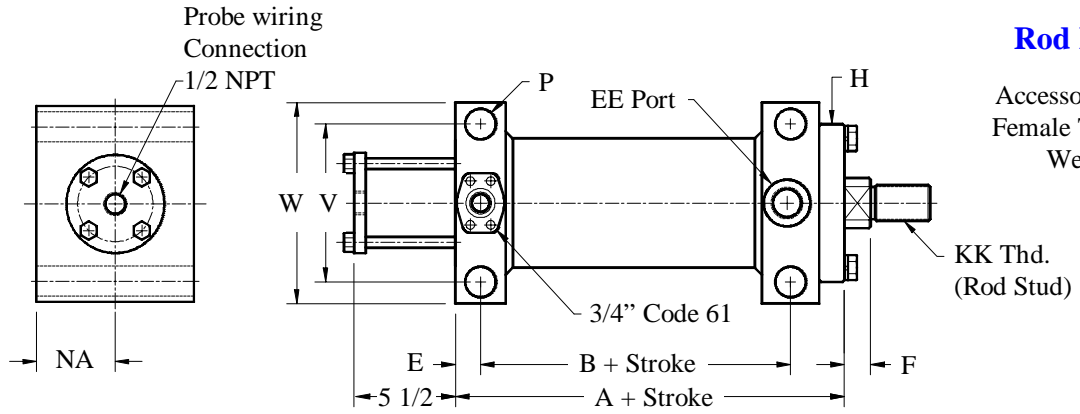
KK Thd.
(Rod Stud)

| Bore | Available Rod Sizes | | | | A | H Dia | PP Dia | T | R | V | W | EE (ORB) | Standard sizes shown. | | |
|-------|---------------------|-------|--------|-------|-------|-------|--------|------|------|-------|-------|----------|-----------------------|------|----------|
| | CD Pin Ø | F | KK Thd | | | | | | | | | | | | |
| 2 | 1 3/8 | — | — | — | 6.69 | 3.25 | 0.56 | 1.75 | 0.75 | 3.38 | 4.50 | # 8 | 0.75 | 0.50 | 3/4-16 |
| 2 1/2 | 1 3/8 | 1 1/2 | 1 3/4 | — | 6.81 | 3.75 | 0.56 | 1.75 | 0.81 | 3.88 | 5.00 | # 8 | 0.75 | 0.63 | 3/4-16 |
| 3 | 1 3/8 | 1 3/4 | 2 | — | 7.13 | 4.25 | 0.56 | 1.75 | 0.88 | 4.38 | 5.50 | # 8 | 1.00 | 0.63 | 1-14 |
| 3 1/4 | 1 3/8 | 1 3/4 | 2 | 2 1/4 | 7.38 | 4.75 | 0.69 | 2.00 | 1.00 | 4.75 | 6.00 | # 12 | 1.00 | 0.75 | 1-14 |
| 4 | 1 3/4 | 2 | 2 1/2 | 3 | 7.75 | 5.50 | 0.69 | 2.00 | 1.13 | 5.75 | 7.00 | # 12 | 1.38 | 0.75 | 1 1/4-12 |
| 5 | 2 | 2 1/2 | 3 | 3 1/2 | 8.25 | 6.88 | 0.94 | 2.13 | 1.25 | 7.00 | 8.50 | # 12 | 1.75 | 0.88 | 1 1/2-12 |
| 6 | 2 1/2 | 3 | 3 1/2 | 4 | 8.88 | 8.00 | 1.06 | 2.44 | 1.19 | 8.00 | 10.00 | # 16 | 2.00 | 1.00 | 1 7/8-12 |
| 7 | 3 | 3 1/2 | 4 | 5 | 9.50 | 9.13 | 1.31 | 2.75 | 1.44 | 8.50 | 11.00 | # 20 | 2.50 | 1.00 | 2 1/4-12 |
| 8 | 3 1/2 | 4 | 5 | 5 1/2 | 10.50 | 10.50 | 1.31 | 2.88 | 1.88 | 9.50 | 12.00 | # 20 | 3.00 | 1.00 | 2 1/2-12 |
| 10 | 5 | 6 | 7 | — | 12.63 | 13.00 | 1.31 | 3.38 | 2.25 | 11.50 | 14.00 | # 20 | 3.50 | 1.25 | 3 1/4-12 |

Series TM Cylinder – Foot Mount

Square Style

Bore Sizes:
2" to 3"

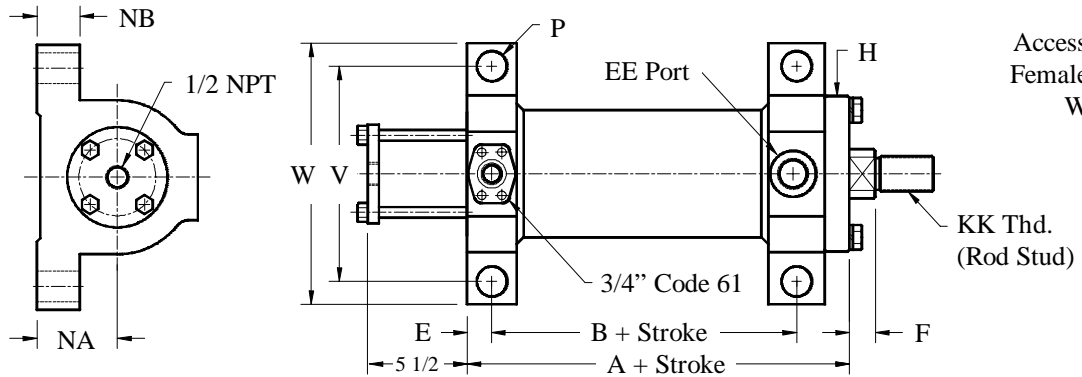


Rod End

Accessories:
Female Thd.
Welded

Rounded Style

Bore Sizes:
3 1/4" to 10"



Rod End

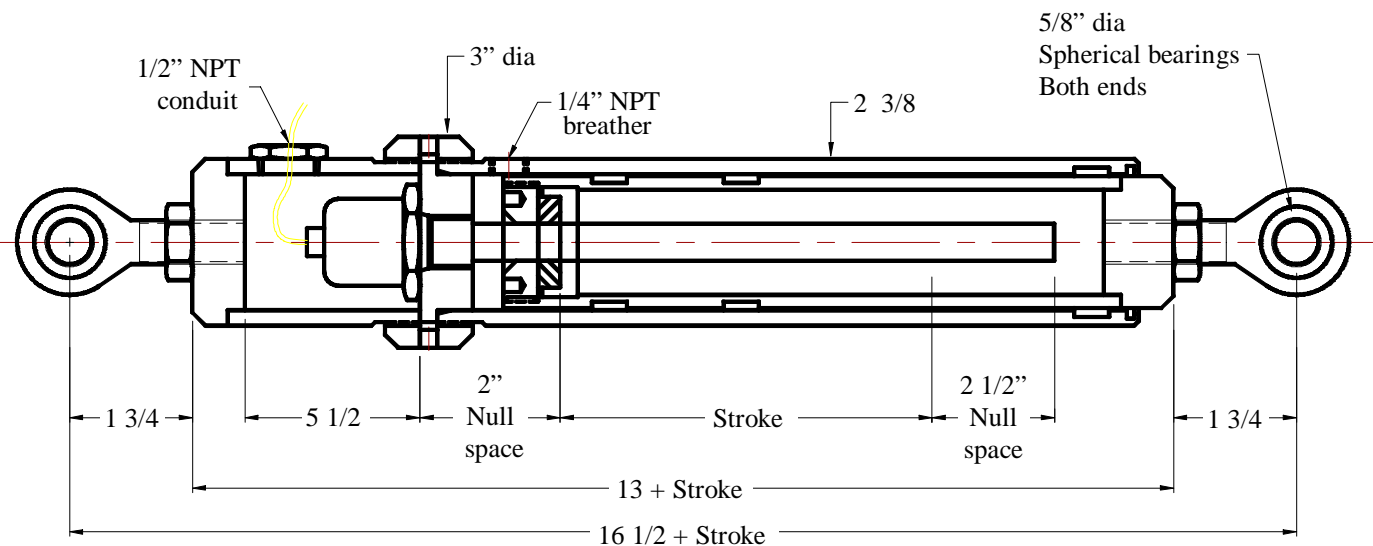
Accessories:
Female Thd.
Welded

| Bore | Available Rod Sizes | | | | A | B | E | H Dia | NA | NB | P Dia | V | W | EE ORB | Standard sizes shown. | | |
|-------|---------------------|-------|-------|-------|-------|------|------|-------|------|------|-------|-------|-------|--------|-----------------------|------|----------|
| | | | | | | | | | | | | | | | CD Pin Ø | F | KK Thd |
| 2 | 1 3/8 | — | — | — | 6.69 | 4.19 | 0.63 | 3.25 | 1.56 | — | 0.56 | 2.88 | 3.75 | # 8 | 0.75 | 0.50 | 3/4-16 |
| 2 1/2 | 1 3/8 | 1 1/2 | 1 3/4 | — | 6.81 | 4.25 | 0.75 | 3.75 | 1.94 | — | 0.56 | 3.38 | 4.25 | # 8 | 0.75 | 0.63 | 3/4-16 |
| 3 | 1 3/8 | 1 3/4 | 2 | — | 7.13 | 4.38 | 0.75 | 4.25 | 2.19 | — | 0.69 | 4.00 | 5.00 | # 8 | 1.00 | 0.63 | 1-14 |
| 3 1/4 | 1 3/8 | 1 3/4 | 2 | 2 1/4 | 7.38 | 4.50 | 0.88 | 4.75 | 2.44 | 1.25 | 0.81 | 6.38 | 7.75 | # 12 | 1.00 | 0.75 | 1-14 |
| 4 | 1 3/4 | 2 | 2 1/2 | 3 | 7.75 | 4.75 | 0.88 | 5.50 | 2.81 | 1.50 | 1.06 | 7.63 | 9.25 | # 12 | 1.38 | 0.75 | 1 1/4-12 |
| 5 | 2 | 2 1/2 | 3 | 3 1/2 | 8.25 | 5.06 | 0.88 | 6.88 | 3.44 | 1.75 | 1.06 | 8.75 | 10.38 | # 12 | 1.75 | 0.88 | 1 1/2-12 |
| 6 | 2 1/2 | 3 | 3 1/2 | 4 | 8.88 | 5.25 | 1.06 | 8.00 | 4.06 | 2.00 | 1.31 | 10.38 | 12.50 | # 16 | 2.00 | 1.00 | 1 7/8-12 |
| 7 | 3 | 3 1/2 | 4 | 5 | 9.50 | 5.31 | 1.38 | 9.13 | 4.75 | 2.50 | 1.56 | 12.25 | 15.00 | # 20 | 2.50 | 1.00 | 2 1/4-12 |
| 8 | 3 1/2 | 4 | 5 | 5 1/2 | 10.50 | 5.88 | 1.31 | 10.50 | 5.50 | 2.50 | 1.56 | 13.25 | 15.75 | # 20 | 3.00 | 1.00 | 2 1/2-12 |
| 10 | 5 | 6 | 7 | — | 12.63 | 7.00 | 1.63 | 13.00 | 6.50 | 3.50 | 1.81 | 17.00 | 20.00 | # 20 | 3.50 | 1.25 | 3 1/4-12 |

Temposonic housing

Temposonic probe housing

This is a complete Temposonic measuring device. It can be mounted to any type of machinery where one would want to measure the movement. With this arrangement, the moving piece of machinery would pull the rod out, while the barrel is stationary. The Temposonic feedback device will then send out a signal which can be translated into the machine position.



Materials:

- Barrel is CDSM or 304 stainless steel
- Rod is C1045 or 304 stainless steel
- Magnet carrier is brass
- Wear bands are reinforced nylon

Model number:

Our Model number is C1392-*stroke*