

**NEW PRODUCT**

### HOW TO ORDER:

TC - MS4 - 1 1/2 x 10 x 2S -

| SERIES |             |
|--------|-------------|
| TC     | 125 PSI AIR |

| BORE  | STROKE                     |
|-------|----------------------------|
| 1 1/2 | 0" to 60"<br>Made to Order |

| OPTIONS |  |
|---------|--|
| A =     | EXTENDED PISTON ROD THREAD (Example: A = 2")   |
| C =     | EXTENDED 5/8" PISTON ROD (Example: C = 3")   |
| KK2     | LARGE MALE ROD THREAD  |
| KK3     | FEMALE ROD THREAD  |
| KK3S    | STUDDER PISTON ROD (KK3 with Stud, Loctite in place)   |
| KK4     | FULL DIAMETER MALE ROD THREAD  |
| MPR     | MAGNETIC PISTON FOR REED OR SOLID STATE SWITCHES -<br>TRD MODELS: R10, RAC, AND MSS. (Refer to TRD Switch Catalog for selection)<br>NOTE: Magnet is on 1st stage only (2 1/2 Bore) and will only detect the position of one stage only |
| MPH     | MAGNETIC PISTON FOR HALL SWITCHES<br>NOTE: Magnet is on 1st stage only (2 1/2 Bore) and will only detect the position of one stage only  |
| OP      | OPTIONAL PORT LOCATION ( Example: Ports @ 3 & 7)   |
| SSA     | STAINLESS STEEL 5/8" PISTON ROD, TIE RODS & NUTS, AND FASTNERS   |
| SSF     | STAINLESS STEEL FASTENERS  |
| SSR     | STAINLESS STEEL 5/8" PISTON ROD  |
| SST     | STAINLESS STEEL TIE RODS & NUTS  |
| XX      | SPECIAL VARIATION (SPECIFY)  |

| NFPA MOUNTS |                           |
|-------------|---------------------------|
| MF1         | FRONT FLANGE              |
| MF2         | REAR FLANGE               |
| MP1         | REAR PIVOT CLEVIS         |
| MP2         | REAR PIVOT CLEVIS         |
| MP4         | REAR PIVOT EYE            |
| MS1         | FRONT & REAR END ANGLE    |
| MS4         | BOTTOM TAPPED HOLES       |
| MT2         | REAR TRUNNION             |
| BASEBAR     | SIDE LUG MOUNT (Non-NFPA) |
| MX0         | NO MOUNT                  |

| STAGES |           |
|--------|-----------|
| 2S     | TWO STAGE |

*Consult factory for Options not listed*

**STANDARD DELIVERY: 7-10 Work Days**

|                           |             |                              |                |
|---------------------------|-------------|------------------------------|----------------|
| <b>OPERATING PRESSURE</b> | 125 PSI AIR | <b>OPERATING TEMPERATURE</b> | -20 F to 200 F |
|---------------------------|-------------|------------------------------|----------------|

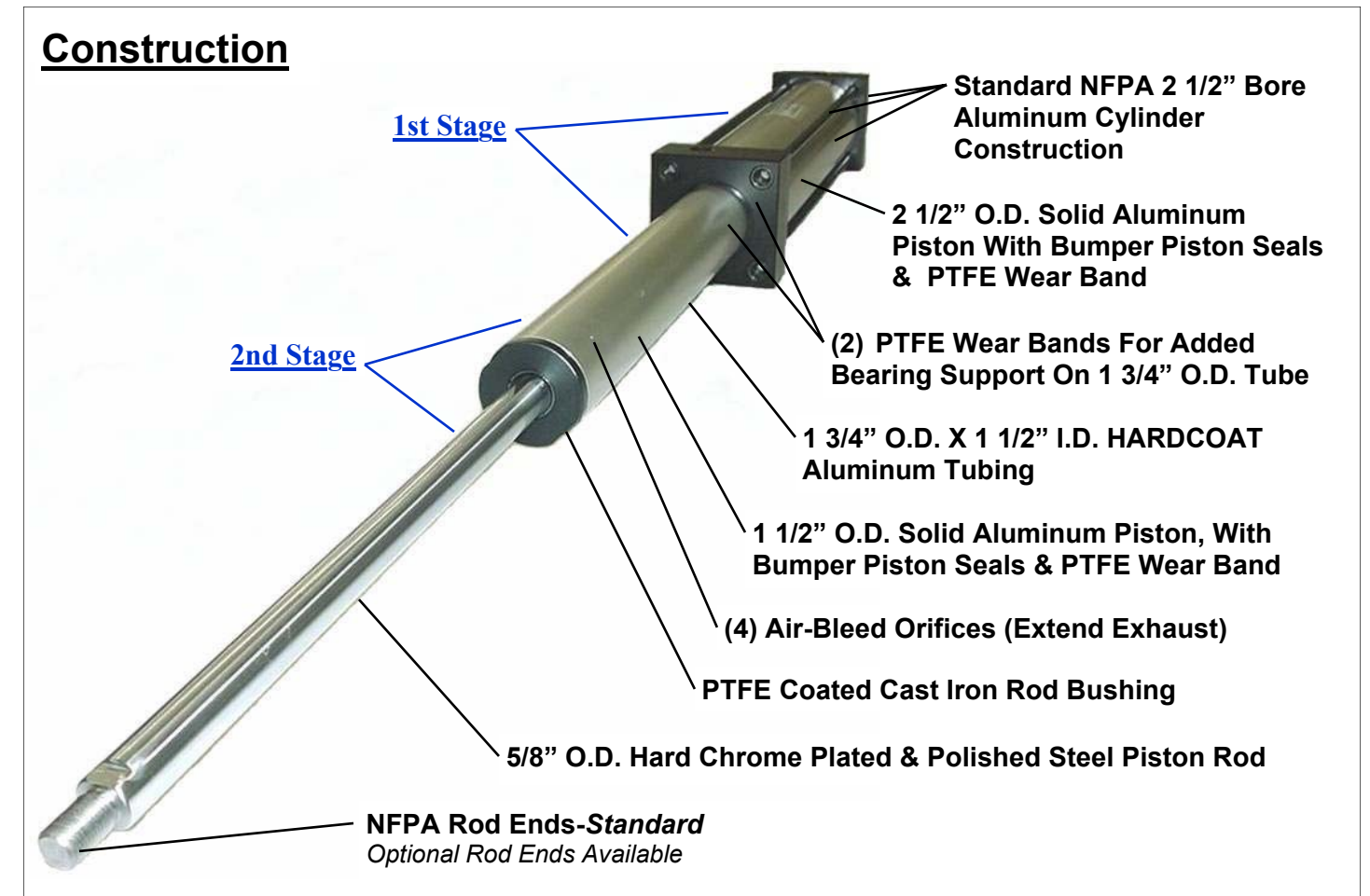
**NEW 3 YEAR WARRANTY**

TRD Manufacturing Incorporated, A *Bimba* Company, is an employee owned company. We take great pride in our products. TRD Manufacturing, Inc. warrants its cylinders for a full 3 years to be free from defects in material and workmanship. TRD Manufacturing, Inc. must be notified prior to returning product for warranty evaluation. Contact your local TRD distributor to obtain an RGA (Returned Goods Authorization Number) for proper tracking and expedite service on all warranty evaluations. TRD will repair or replace free of charge any products returned to the factory within 3 years of shipment that is proven to be defective in material and/or workmanship. A complete explanation of defects is required with the returned product. The TRD warranty applies only to products used properly and under normal operating conditions. All products are to be used in a safe manner, in properly designed systems. Safeguards to prevent personal injury or equipment damage must be used and are the sole responsibility of the user. In no event shall TRD Manufacturing, Inc. be liable for any consequential damages or installation costs resulting from delay or failure of delivery, defective material or workmanship or out of a breach by TRD Manufacturing, Inc. of any contract.

**TRD Manufacturing, Inc.**

A **BIMBA** Company  
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**NEW 2-STAGE TELESCOPING CYLINDER**



**Features**

- 1 1/2" Effective Bore Size
- Strokes up to 60"
- 2-Stage Telescoping
- Space Saving Design
- 100% Double Acting
- Heavy-Duty Construction
- Rated for Non-Lube Service
- Standard NFPA Mounting
- Many Cylinder Options to Choose From

| SPACE SAVING DESIGN (Overall Cylinder Lengths in Inches) |                        |                      |               |
|--|------------------------|----------------------|---------------|
| CYLINDER STROKE  | STANDARD NFPA CYLINDER | TELESCOPING CYLINDER | SPACE SAVINGS |
| 12"  | 16 5/8"                | 10 3/4"              | 35.34%        |
| 18"  | 22 5/8"                | 13 3/4"              | 39.23%        |
| 24"  | 28 5/8"                | 16 3/4"              | 41.48%        |
| 30"  | 34 5/8"                | 19 3/4"              | 42.96%        |
| 36"  | 40 5/8"                | 22 3/4"              | 44.00%        |
| 42"  | 46 5/8"                | 25 3/4"              | 44.77%        |
| 48"  | 52 5/8"                | 28 3/4"              | 45.37%        |
| 54"  | 58 5/8"                | 31 3/4"              | 45.84%        |
| 60"  | 64 5/8"                | 34 3/4"              | 46.23%        |

# SERIES "TC"

## Design Tips:

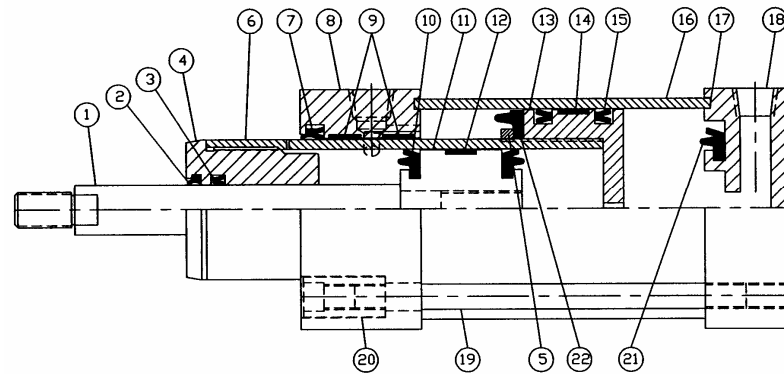
- Cylinders are designed to support the unit's weight only, and not intended for "side-load" applications. All loads should be guided and supported
- For proper speed control, use "meter-in" type flow control devices
- In high cycle speed applications, external shock absorbers should be used at end of strokes

## Push-Pull Force:

| CYLINDER FORCE COMPARISON CHART |        |           |           |
|---------------------------------|--------|-----------|-----------|
| TYPE                            | STROKE | 1ST STAGE | 2ND STAGE |
| 2-stage Telescoping             | PUSH   | 314 (LBS) | 176 (LBS) |
|                                 | PULL   | 250 (LBS) | 146 (LBS) |
| Standard NFPA                   | PUSH   | 176 (LBS) | N/A       |
|                                 | PULL   | 146 (LBS) | N/A       |

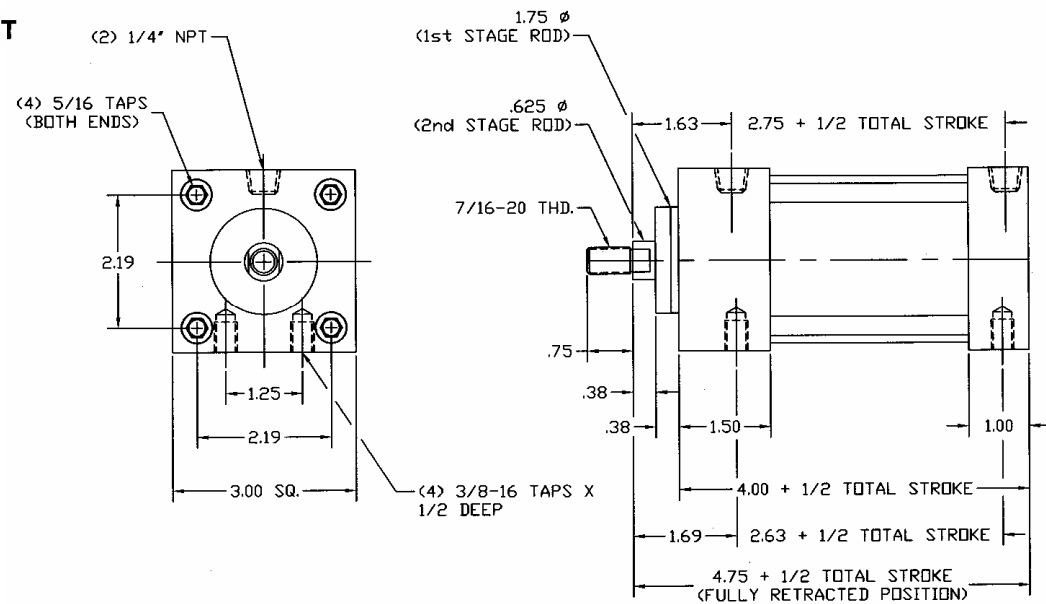
## SERIES "TC" CONSTRUCTION

- 5/8" Piston Rod
- Rod Wiper
- Rod Seal
- Rod Bushing
- Bumper Retainer
- 1.75 O.D. Tube
- Rod Wiper/Seal
- Aluminum Head
- PTFE Wear Band (2)
- 1 1/2" Bumper Piston Seals (2)
- 1 1/2" O.D. Piston
- PTFE Wear Band
- 2 1/2" Piston
- PTFE Wear Band
- 2 1/2" Piston Seal (2)
- 2 1/2" Tube
- Tube Seals (2)
- Aluminum Cap
- Tie Rod (4)
- Sleeve Nut (4)
- Cap Bumper
- Head Bumper



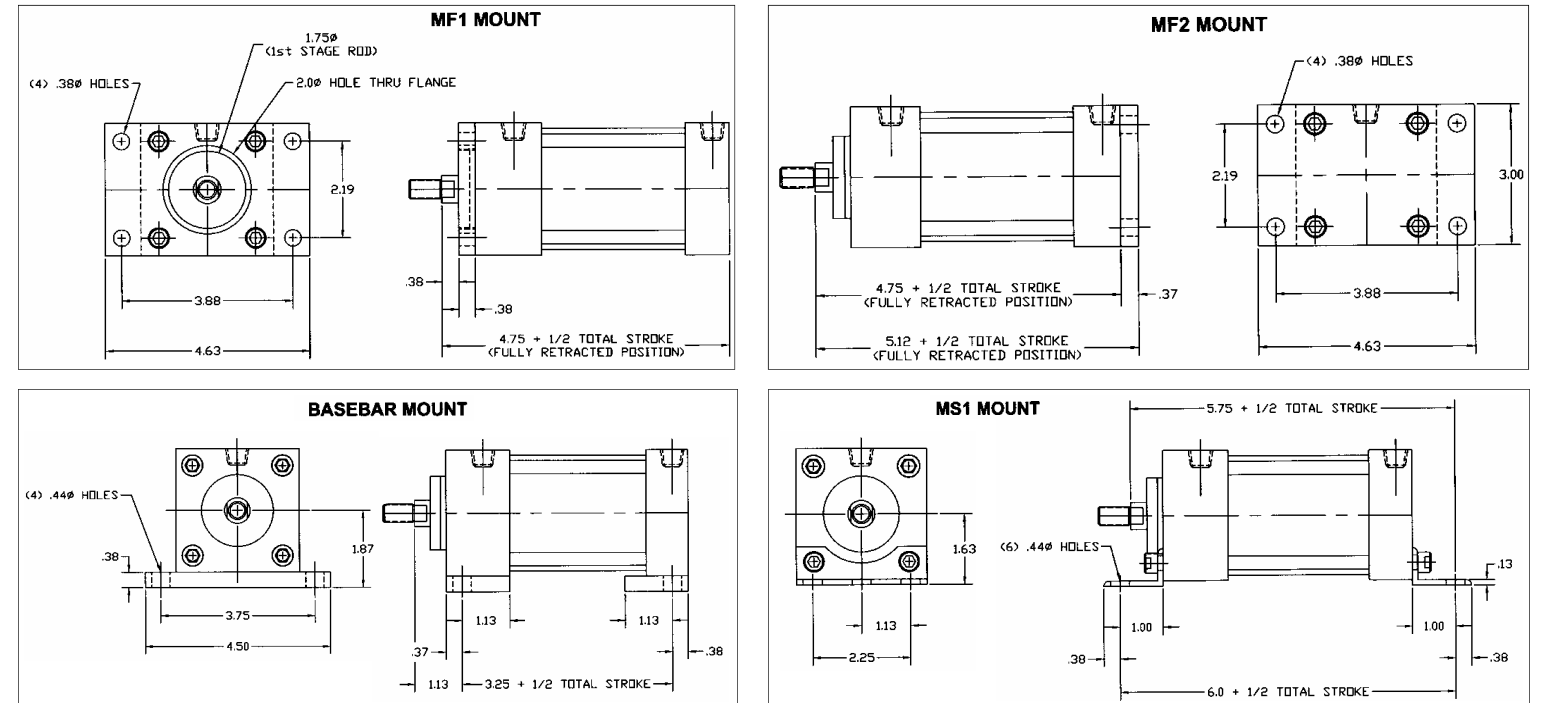
## SERIES "TC" DIMENSIONS- Base Mounts (Strokes: 0" to 60")

### MS4 MOUNT

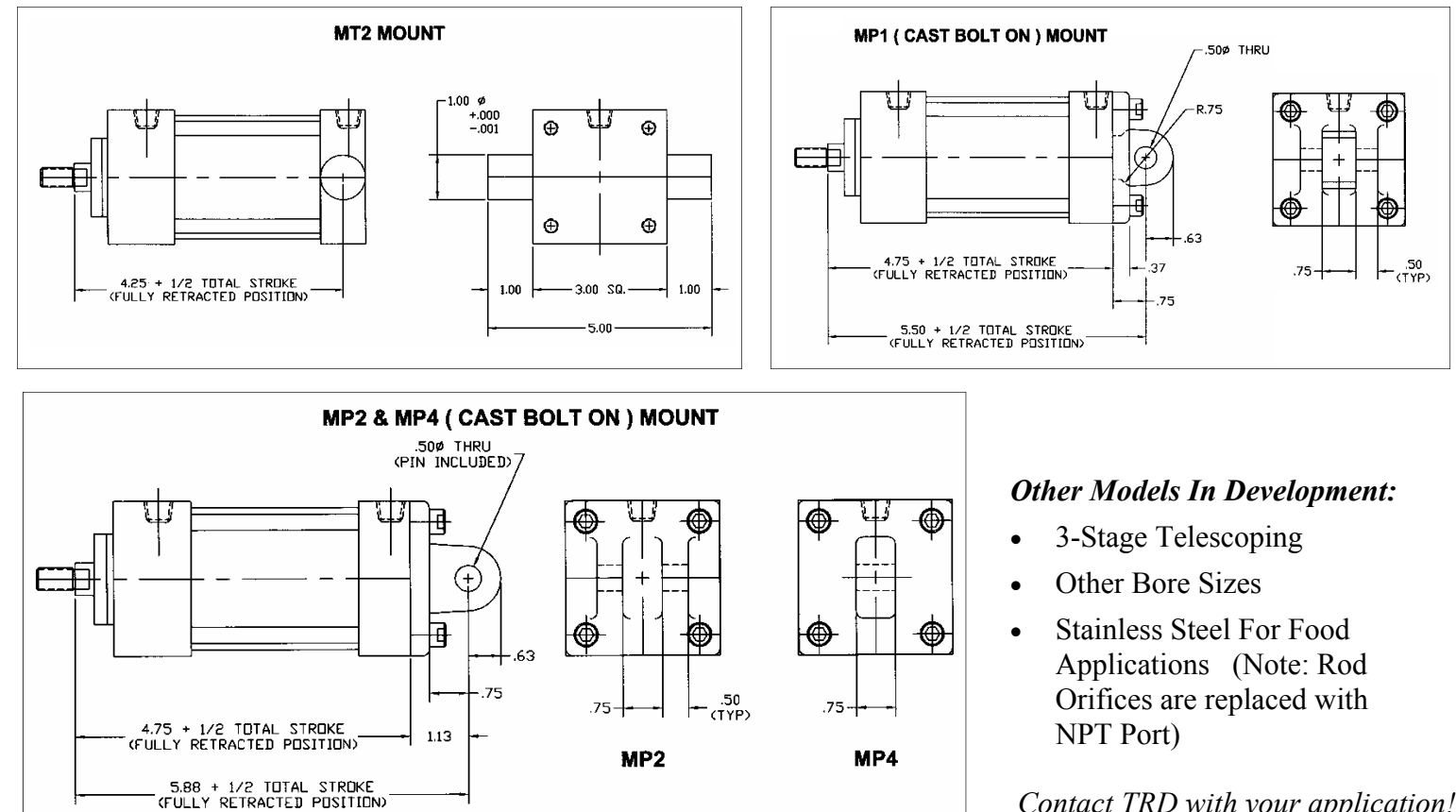


# SERIES "TC" DIMENSIONS

## Base Mounts (Strokes: 0" to 60")



## Pivot Mounts (Strokes: 0" to 36")



### Other Models In Development:

- 3-Stage Telescoping
- Other Bore Sizes
- Stainless Steel For Food Applications (Note: Rod Orifices are replaced with NPT Port)

Contact TRD with your application!