

PNEUMATIC CYLINDERS FOR VALVE ACTUATION

TIE RODS AND NUTS

Bore size from 3 1/4 to 12": Made from STAINLESS STEEL to limit corrosion.

Bore size from 14" to 20": High strength steel barstock along with zinc plated steel nuts (Grade 5).

GLAND BUSHING

Cartridge type, made from Bronze SAE 660. Seals can be replaced without dismantling the cylinder.

PISTON ROD

High carbon content steel SAE 1045, ground, polished and chrome plated. (Chrome plated #316 stainless steel available on request).

CYLINDER BARREL

Bore size from 3 1/4 to 12": Heavy wall steel tubing with a polished chrome plated interior for better durability.

Bore size from 14" to 20": Thermoset fiber reinforced composite, specially designed for cylinder tubing for weight reduction and corrosion resistance.

HEAD & CAP

Numerically controlled machined from hot rolled steel plates ASTM A36 or better.

PISTON PACKING

2 pressure sensitive "U" cups for better sealing and durability.

PISTON

Bore size from 3 1/4 to 8": Numerically controlled machined from high strength aluminum barstock

Bore size from 10" to 20": Made from mild steel. A wear strip is added on the outside diameter to protect the tube and assure a perfect fit.

PISTON WEAR STRIP

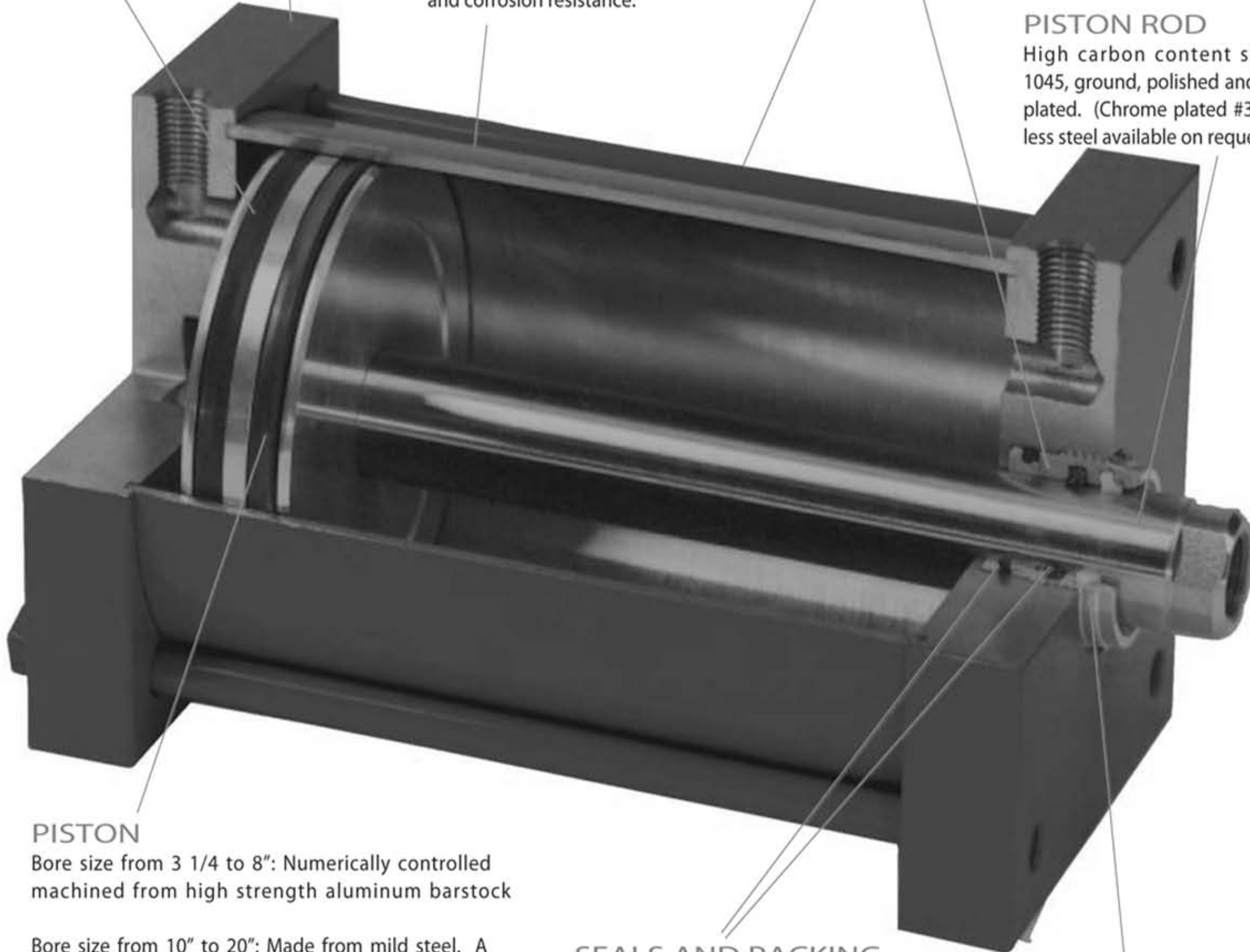
Bore size from 10" to 20": It consists of a teflon tape filled with particles of bronze and glass, for smoother piston operation.

SEALS AND PACKING

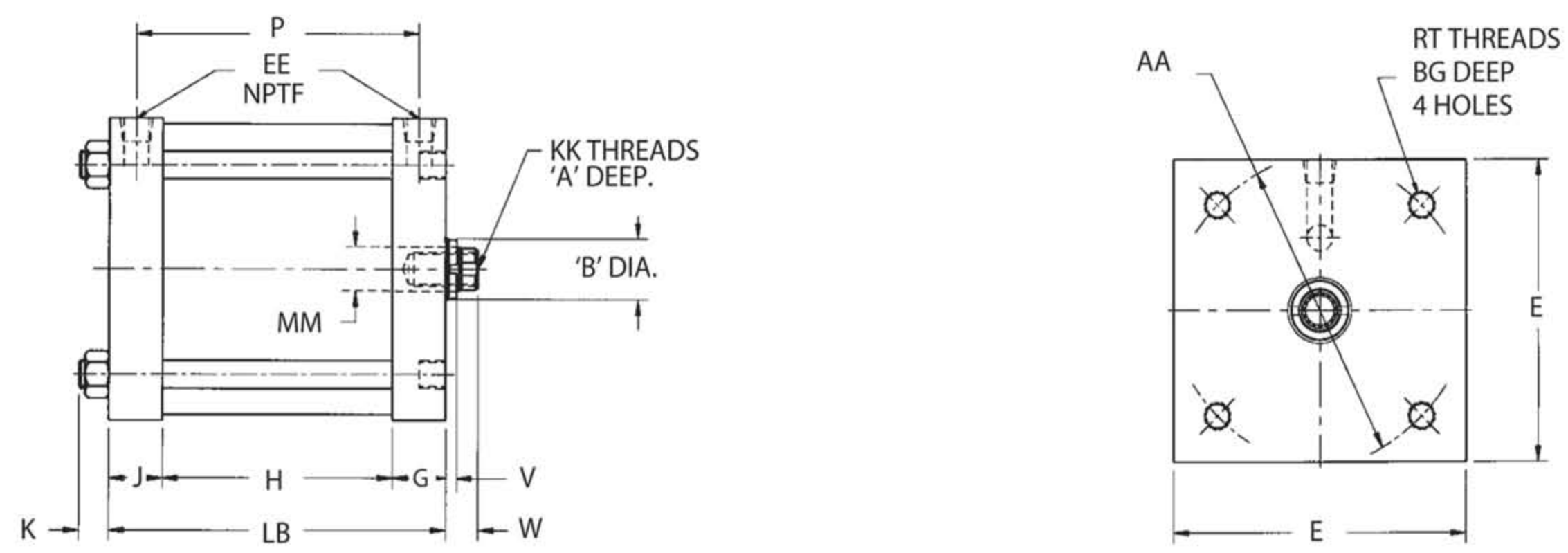
"U" CUP AND "O" RING used for added security. A high durometer nitrile material is offered as a standard for a temperature rating from -34°C to 120°C (-30°F to 250°F). For temperature range up to 250°C (450°F), fluorocarbon (viton) seals and packings are available

ROD WIPER

Stops dust and other particles from entering into the cylinder. Standard material is polyurethane. It can be replaced by fluorocarbon (viton) for higher temperature applications.



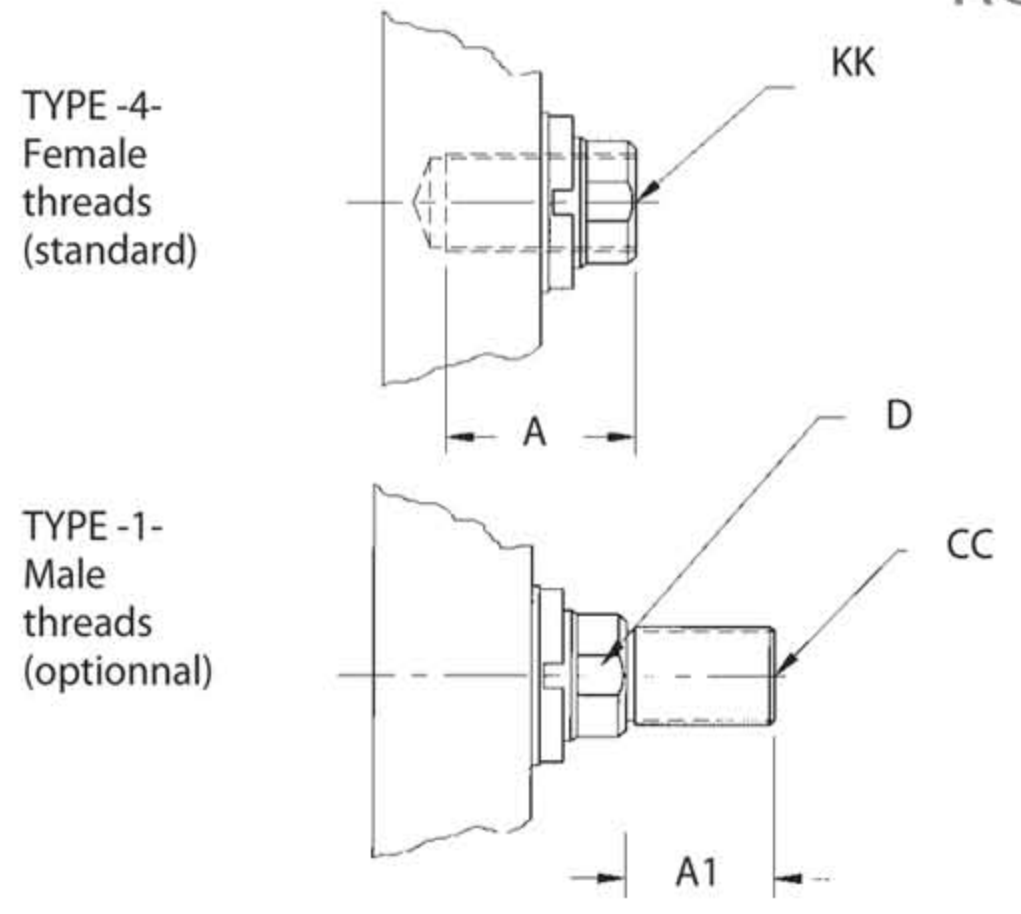
BASE MOUNTING



DIMENSIONS (IN.)

| BORE | MM ROD SIZE | KK UNF | A | AA | B | BG | E | EE NPTF | G | J | K | RT UNF | V | W | ADD STROKE | | |
|-------|-------------|------------|-------|--------|-------|-----|--------|---------|-------|-------|-------|----------|------|-------|------------|-------|-------|
| | | | | | | | | | | | | | | | LB | H | P |
| 3 1/4 | 1 | 5/8 - 18 | 1 1/2 | 3.900 | 1.375 | 5/8 | 3 3/4 | 1/4 | 1 | 1 | 3/8 | 3/8 - 24 | 1/4 | 3/4 | 3 | 1 | 2 |
| 4 | 1 | 5/8 - 18 | 1 1/2 | 4.700 | 1.375 | 5/8 | 4 1/2 | 1/4 | 1 | 1 | 3/8 | 3/8 - 24 | 1/4 | 3/4 | 3 | 1 | 2 |
| 5 | 1 | 5/8 - 18 | 1 1/2 | 5.800 | 1.375 | 1/2 | 5 1/2 | 1/4 | 1 | 1 | 1/2 | 1/2 - 20 | 1/4 | 3/4 | 3 1/8 | 1 1/8 | 2 1/8 |
| 6 | 1 | 5/8 - 18 | 1 1/2 | 6.900 | 1.375 | 1/2 | 6 1/2 | 1/4 | 1 | 1 | 1/2 | 1/2 - 20 | 1/4 | 3/4 | 3 1/8 | 1 1/8 | 2 1/8 |
| 7 | 1 | 5/8 - 18 | 1 1/2 | 8.100 | 1.375 | 5/8 | 7 1/2 | 3/8 | 1 1/4 | 1 1/4 | 5/8 | 5/8 - 18 | 1/4 | 3/4 | 3 3/4 | 1 1/4 | 2 1/2 |
| 8 | 1 | 5/8 - 18 | 1 1/2 | 9.100 | 1.375 | 5/8 | 8 1/2 | 3/8 | 1 1/4 | 1 1/4 | 5/8 | 5/8 - 18 | 1/4 | 3/4 | 3 3/4 | 1 1/4 | 2 1/2 |
| 10 | 1 3/8 | 1 - 14 | 2 | 11.200 | 1.875 | 3/4 | 10 5/8 | 3/8 | 1 1/2 | 1 1/2 | 3/4 | 3/4 - 16 | 5/16 | 1 | 4 3/4 | 1 3/4 | 3 1/4 |
| 12 | 1 3/8 | 1 - 14 | 2 | 13.300 | 1.875 | 3/4 | 12 3/4 | 1/2 | 1 1/2 | 1 1/2 | 3/4 | 3/4 - 16 | 5/16 | 1 | 4 3/4 | 1 3/4 | 3 1/4 |
| 14 | 1 3/8 | 1 - 14 | 2 | 15.400 | 1.875 | 7/8 | 14 3/4 | 1/2 | 1 3/4 | 1 3/4 | 7/8 | 7/8 - 14 | 5/16 | 1 | 5 1/2 | 2 | 3 3/4 |
| 16 | 2 | 1 1/2 - 12 | 2 1/2 | 17.800 | 2.500 | - | 17 | 1/2 | 3/4 | 3/4 | 1 | - | 3/8 | 1 1/2 | 5 5/8 | 2 1/8 | 3 7/8 |
| 18 | 2 | 1 1/2 - 12 | 2 1/2 | 20.000 | 2.500 | - | 19 | 3/4 | 1 3/4 | 1 3/4 | 1 1/8 | - | 3/8 | 1 1/2 | 5 7/8 | 2 3/8 | 4 1/8 |
| 20 | 2 | 1 1/2 - 12 | 2 1/2 | 22.300 | 2.500 | - | 21 | 3/4 | 1 3/4 | 1 3/4 | 1 1/4 | - | 3/8 | 1 1/2 | 6 1/8 | 2 5/8 | 4 3/8 |

ROD THREADS



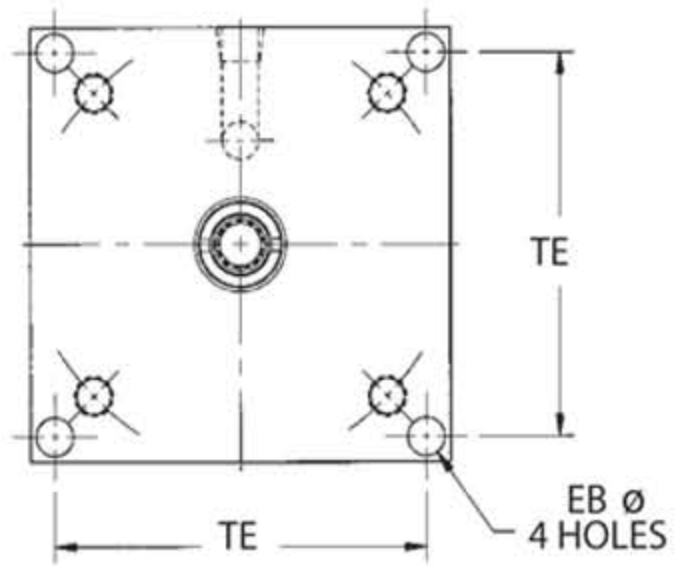
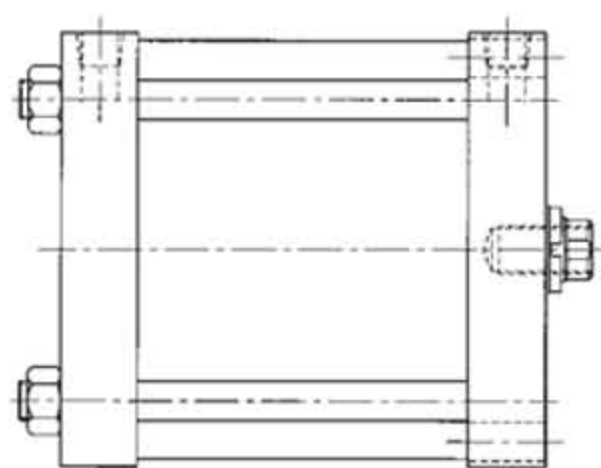
DIMENSIONS (IN.)

| ROD SIZE | A1 | CC UNF-2A | D | A | KK UNF-2B |
|----------|-------|------------|---------|-------|------------|
| 1 | 1 1/8 | 3/4 - 16 | 7/8 | 1 1/2 | 5/8 - 18 |
| 1 3/8 | 15/8 | 1 - 14 | 1 1/8 | 2 | 1 - 14 |
| 2 | 2 1/4 | 1 1/2 - 12 | 1 11/16 | 2 1/2 | 1 1/2 - 12 |

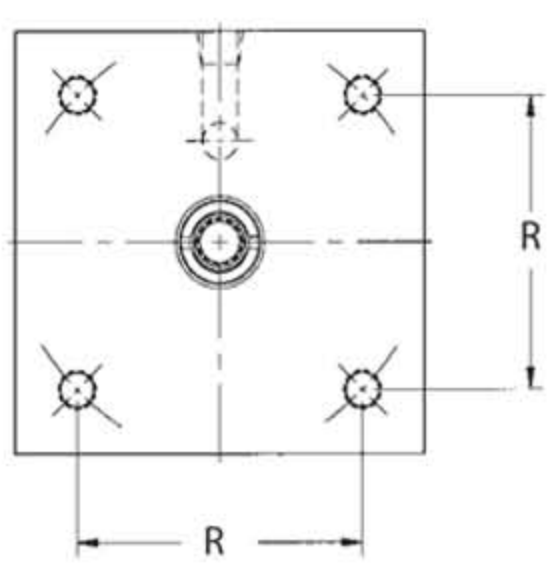
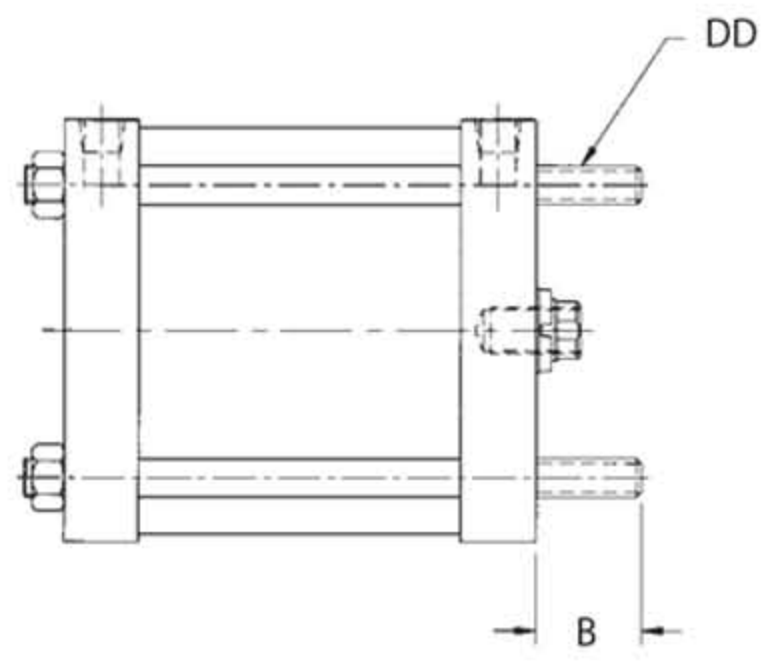
Consult factory for special rod ends.

OPTIONAL MOUNTINGS

SQUARE HEAD MOUNTING
 BORE SIZE: 7" TO 20" ONLY



EXTENDED TIE RODS MOUNTING



| BORE | EB | TE | BB | DD UNF | R |
|-------|--------|-------|-------|------------|-------|
| 3 1/4 | - | - | 1 3/8 | 3/8 - 24 | 2.76 |
| 4 | - | - | 1 3/8 | 3/8 - 24 | 3.32 |
| 5 | - | - | 1 3/4 | 1/2 - 20 | 4.10 |
| 6 | - | - | 1 3/4 | 1/2 - 20 | 4.88 |
| 7 | 9/16 | 6.75 | 2 | 5/8 - 18 | 5.73 |
| 8 | 11/16 | 7.57 | 2 | 5/8 - 18 | 6.44 |
| 10 | 13/16 | 9.40 | 2 1/4 | 3/4 - 16 | 7.92 |
| 12 | 13/16 | 11.10 | 2 1/4 | 3/4 - 16 | 9.40 |
| 14 | 15/16 | 12.87 | 2 1/2 | 7/8 - 14 | 10.90 |
| 16 | 1 1/16 | 14.85 | 2 3/4 | 1 - 14 | 12.59 |
| 18 | 1 3/16 | 16.69 | 3 1/4 | 1 1/8 - 12 | 14.14 |
| 20 | 1 5/16 | 18.46 | 3 1/4 | 1 1/4 - 12 | 15.77 |

Consult factory for special mountings.

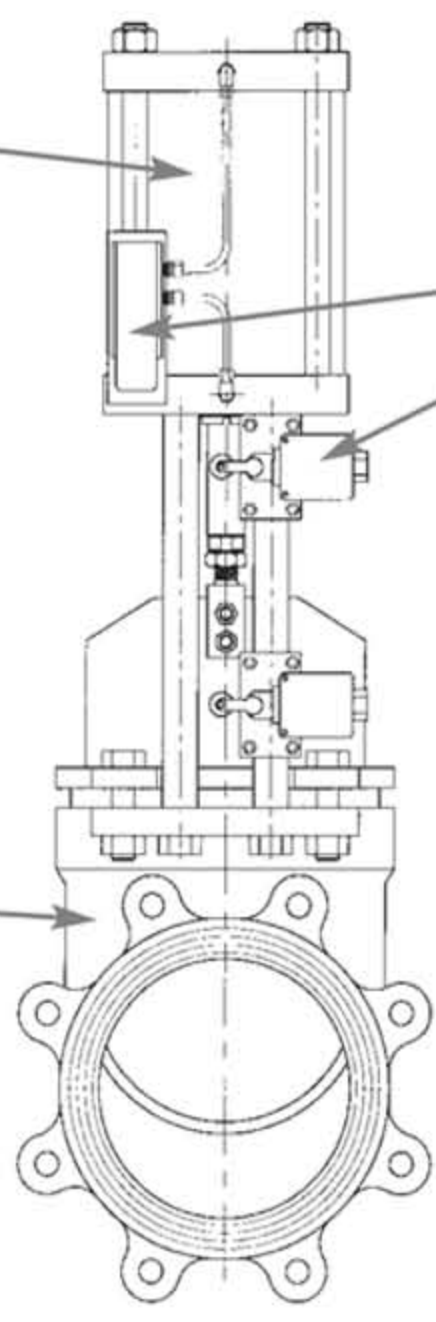
VALVE MOUNTINGS, OPTIONS AND ACCESSORIES

CYLINDER OPTIONS

- Stainless steel piston rod
- Double ended cylinder
- Viton seals (450°F)
- Piston rod scrapper
- Special exterior finish
- Water operation (AWWA)
- Spring return (fail safe)
- Multiple stage cylinder

VALVE TYPES

- Knife gate
- Wedge gate
- Globe
- Pinch
- Sluice



AUTOMATION ACCESSORIES

- Control valve:
 - Manual
 - Solenoid
- Limit switches
- Positioners
- Position transmitters

OTHER OPTIONS

- Stroke adjustment
- Manual override
- Stainless steel mounting
- Air fail safe system