



LIQUID CONTROLS SPONSLER, INC.

FLOW MEASURING DEVICES AND CONTROLS

A Unit of the IDEX Corporation

105 Albrecht Drive • Lake Bluff, IL 60044

(847) 295- 1050 • www.sponsler.com

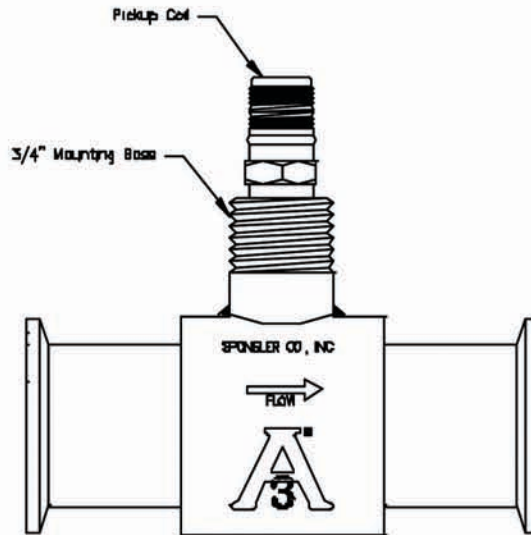


| TITLE | Rev. | File/Date | Author | Apprv. By | Released |
|------------------------------------|------|-----------|--------|-----------|----------|
| Meter Design Reference Information | | 6/11/02 | DDB | | |

The material presented is intended for design reference only. Consult applicable pressure codes for actual operating pressures.

I. LOW PRESSURE FITTINGS-

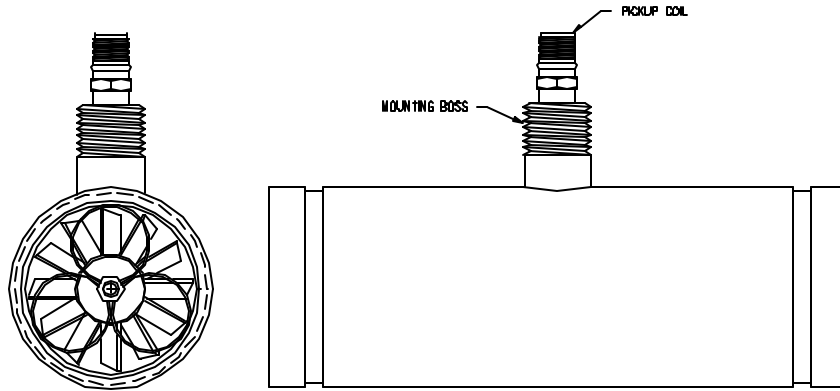
A. SANITARY METERS



| SIZE | END CON | OAL | OD | OPERATING PRESS |
|--------|---------|--------|----------|-----------------|
| 1/2" | 1/2" | 4" | 1 1/4" | 1,500psi |
| 5/8" | 3/4" | 4" | 1 1/4" | 1,500psi |
| 3/4" | 1 " | 5" | 2 1/16" | 1000psi |
| 1" | 1" | 5" | 2 1/16" | 1000psi |
| 1 1/4" | 1 1/2" | 5" | 2 1/16" | 600psi |
| 1 1/2" | 1 1/2" | 5" | 2 1/16" | 600psi |
| 2" | 2" | 6" | 2 9/16" | 550psi |
| 2 1/2" | 2 1/2" | 7 1/2" | 3 3/64" | 450psi |
| 3" | 3" | 9 1/2" | 3 37/64" | 350psi |

Service ratings are based on hydrostatic tests using standard molded BUNA-N gaskets and 304 SS Heavy Duty Clamps.

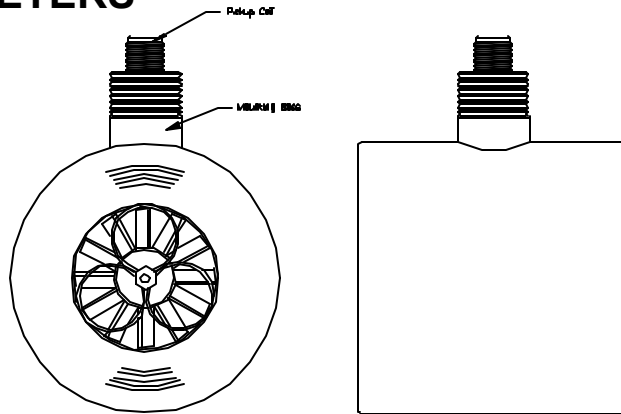
B. VICTUALIC METER



| SIZE | END CONN | OAL | OD | OPERATING PRESS |
|--------|------------|-----|---------|-----------------|
| 2 1/2" | CUT GROOVE | 7" | 2 7/8" | 1,000psi |
| 3" | CUT GROOVE | 10" | 3 1/2" | 1,000psi |
| 4" | CUT GROOVE | 12" | 4 1/2" | 1,000psi |
| 6" | CUT GROOVE | 14" | 6 5/8" | 1,000psi |
| 8" | CUT GROOVE | 16" | 8 5/8" | 800psi |
| 10" | CUT GROOVE | 20" | 10 3/4" | 800psi |

The pressures listed above are based on using standard couplings.

C. WAFER METERS



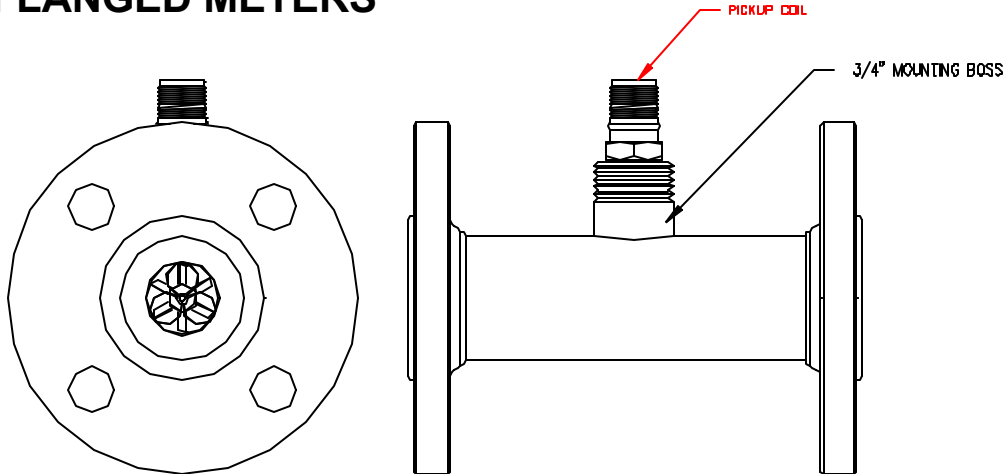
| SIZE | END CON | OAL | DIA | OPERATING PRESS |
|--------|-----------|--------|----------|-----------------|
| 3/4" | 3/4" RF | 2 1/2" | 1 11/16" | **** |
| 1" | 1" RF | 2 1/2" | 2" | **** |
| 1 1/2" | 1 1/2" RF | 2 1/2" | 2 1/2" | **** |
| 2" | 2" RF | 3 1/4" | 3 5/8" | **** |
| 2 1/2" | 2 1/2" RF | 3 1/2" | 4 1/8" | **** |
| 3" | 3" RF | 3 1/2" | 5" | **** |
| 4" | 4" RF | 3 1/4" | 6 3/16" | **** |

RF indicates raised face, wafer meters can mate to 150# through 2500# flanges.

Installation options: Alignment rings; Bored mating flanges.

****Operating Pressure is based on the flanges used. (See page 3)

D. FLANGED METERS



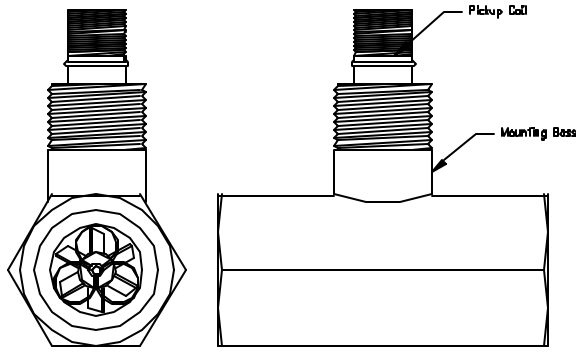
| SIZE | END CON | OAL | OD | OPERATING PRESS |
|--------|---------|--------|---------|-----------------|
| 1/2" | 1/2" | 5" | 3 1/2" | **** |
| 5/8" | 1/2" | 5 1/2" | 3 1/2" | **** |
| 3/4" | 3/4" | 5 1/2" | 3 7/8" | **** |
| 1" | 1" | 5 1/2" | 4 1/4" | **** |
| 1 1/4" | 1 1/4" | 6" | 4 5/8" | **** |
| 1 1/2" | 1 1/2" | 6" | 5" | **** |
| 2" | 2" | 6 1/2" | 6" | **** |
| 2 1/2" | 2 1/2" | 7" | 7" | **** |
| 3" | 3" | 10" | 7 1/2" | **** |
| 4" | 4" | 12" | 9" | **** |
| 5" | 5" | 14" | 10" | **** |
| 6" | 6" | 14" | 11" | **** |
| 8" | 8" | 16" | 13 1/2" | **** |
| 10" | 10" | 20" | 16" | **** |
| 12" | 12" | 24" | 19" | **** |

****Operating Pressure is based on the flanges used.
 Flanges range from 150#-2500# in the following styles: Flat face, Raised face, and Ring joint.
 (Overall lengths & pressure ratings vary from the list above for 1500#-2500#, consult factory).

Flanges @ 100° F

| | Carbon Steel | Stainless Steel |
|----------|--------------|-----------------|
| SIZE | Max PSI | Max PSI |
| 150# RF | 285 | 275 |
| 300# RF | 740 | 720 |
| 600# RF | 1480 | 1440 |
| 900# RF | 2220 | 2160 |
| 1500# RF | 3705 | 3600 |
| 2500# RF | 6170 | 6000 |

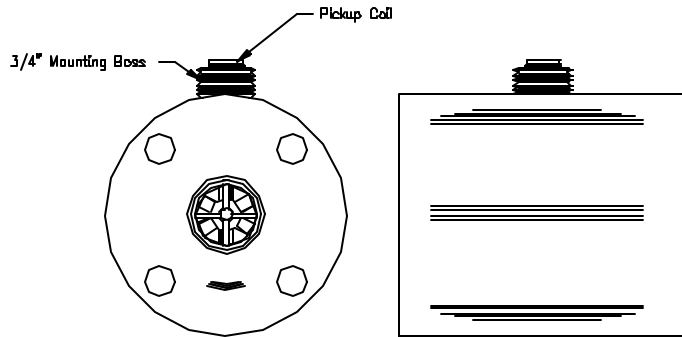
**E. FEMALE
NPT
METERS**



| SIZE | END CON | OAL | OD | OPERATING PRESS |
|--------|-------------|--------|--------|-----------------|
| 1/2" | 1/2" FNPT | 3.670" | 1 1/8" | 5,000psi |
| 5/8" | 5/8" FNPT | 3.860" | 1 1/8" | 5,000psi |
| 3/4" | 3/4" FNPT | 4.500" | 1 5/8" | 4,000psi |
| 1" | 1" FNPT | 4.500" | 1 5/8" | 3,000psi |
| 1 1/4" | 1 1/4" FNPT | 5.563" | 2 1/8" | 2,500psi |
| 1 1/2" | 1 1/2" FNPT | 6.000" | 2 1/8" | 2,000psi |
| 2" | 2" FNPT | 7.750" | 2 3/4" | 1,500psi |

Operating Pressure is based on 304 SS, Tensile strength of 75,000psi and a safety factor of 4:1 (316 SS is slightly higher)

**F. CORROSIVE
SERIES
FLANGED
METERS**



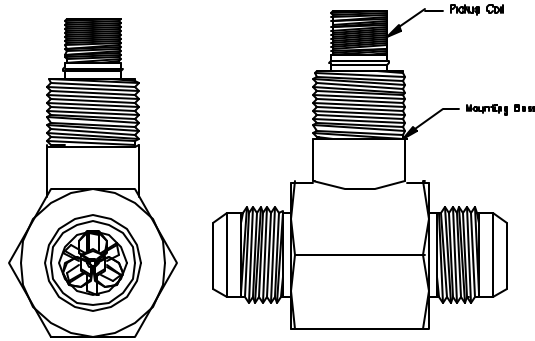
| SIZE | END CON | OAL | OD | OPERATING PRESS |
|--------|----------------|--------|--------|-----------------|
| 1/2" | 1/2" 150# RF | 5" | 3 1/2" | 150psi |
| 5/8" | 3/4" 150# RF | 5 1/2" | 3 7/8" | 150psi |
| 3/4" | 3/4" 150# RF | 5 1/2" | 3 7/8" | 150psi |
| 1" | 1" 150# RF | 5 1/2" | 4 1/4" | 150psi |
| 1 1/4" | 1 1/4" 150# RF | 6" | 4 5/8" | 150psi |
| 1 1/2" | 1 1/2" 150# RF | 6" | 5" | 150psi |
| 2" | 2" 150# RF | 6 1/2" | 6" | 150psi |
| 2 1/2" | 2 1/2" 150# RF | 7" | 7" | 150psi |
| 3" | 3" 150# RF | 10" | 7 1/2" | 150psi |
| 4" | 4" 150# RF | 14" | 9" | 150psi |

Flanged ends are in accordance with ANSI B16.5. Operating Pressure is based on tensile strength of material.

All materials are available as solid body construction except for 1 1/2"-4" CPVC. (Schedule pipe and flanges are used).

II. MEDIUM PRESSURE

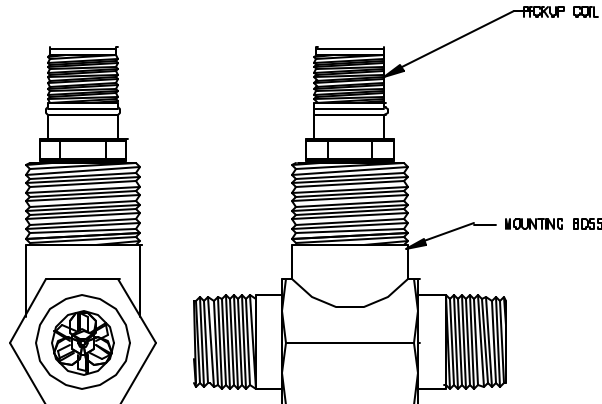
A. AN FLARE METERS



| SIZE | END CON | OAL | DIA | OPERATING PRESS |
|--------|------------|---------|--------|-----------------|
| 1/2" | 3/4"-16 | 2 9/16" | 1 1/8" | 6,000psi |
| 5/8" | 7/8"-14 | 2 3/4" | 1 1/8" | 6,000psi |
| 3/4" | 1 1/6"-12 | 3 1/4" | 1 5/8" | 5,500psi |
| 1" | 1 5/16"-12 | 3 1/2" | 1 5/8" | 4,500psi |
| 1 1/4" | 1 5/8"-12 | 3 7/8" | 1 7/8" | 4,000psi |
| 1 1/2" | 1 7/8"-12 | 4 3/8" | 2 1/8" | 3,000psi |
| 2" | 2 1/2"-12 | 4 3/4" | 2 3/4" | 2,500psi |

Operating Pressure is based on 304 SS, Tensile strength of 75,000psi and a safety factor of 4:1. (316 SS is slightly higher)

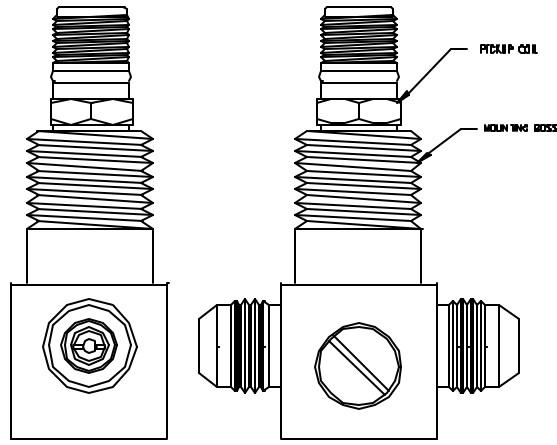
B. MALE NPT METERS



| SIZE | END CON | OAL | OD | OPERATING PRESS |
|--------|-------------|--------|--------|-----------------|
| 1/2" | 1/2" MNPT | 3" | 1 1/8" | 5,000psi |
| 5/8" | 1/2" MNPT | 3" | 1 1/8" | 5,000psi |
| 3/4" | 3/4" MNPT | 3 1/4" | 1 5/8" | 4,000psi |
| 1" | 1" MNPT | 3 1/2" | 1 5/8" | 3,000psi |
| 1 1/4" | 1 1/4" MNPT | 3 7/8" | 1 7/8" | 2,500psi |
| 1 1/2" | 1 1/2" MNPT | 4 3/8" | 2 1/8" | 2,000psi |
| 2" | 2" MNPT | 4 3/4" | 2 3/4" | 1,500psi |
| 2 1/2" | 2 1/2" MNPT | 5 1/8" | 3 1/4" | 1,500psi |
| 3" | 3" MNPT | 10" | 3 1/2" | 1,250psi |

Operating Pressure is based on 304 SS, Tensile strength of 75,000psi and a safety factor of 4:1. (316 SS is slightly higher)

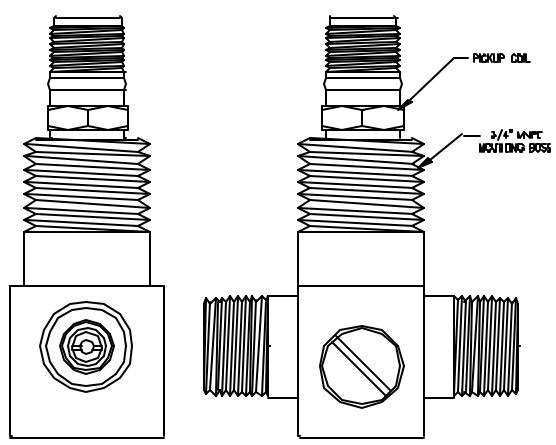
C. LO-FLO AN HOUSINGS



| SIZE | END CON | OAL | OD | OPERATING PRESS |
|---------|---------|---------|--------|-----------------|
| 20-90 | 3/4"-16 | 2 9/16" | 1 1/4" | 6,000psi |
| 100-175 | 3/4"-16 | 3" | 2" | 6,000psi |

Operating Pressure is based on 304 SS, Tensile strength of 75,000psi and a safety factor of 4:1 (316 SS is slightly higher)

D. LO-FLO NPT HOUSINGS

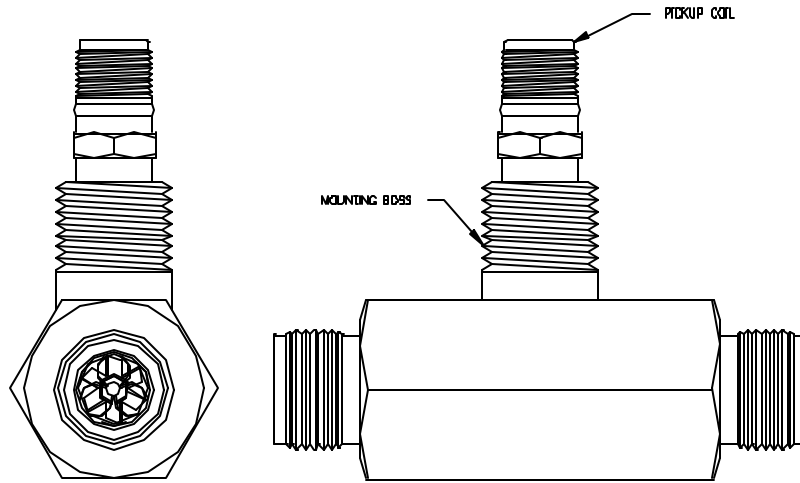


| SIZE | END CON | OAL | OD | OPERATING PRESS |
|---------|-----------|---------|--------|-----------------|
| 20-90 | 1/2" MNPT | 2 9/16" | 1 1/4" | 5,000psi |
| 100-175 | 1/2" MNPT | 3" | 2" | 5,000psi |

Operating Pressure is based on 304 SS, Tensile strength of 75,000psi and a safety factor of 4:1. (316 SS is slightly higher)

All data is subject to change without notice.

III. HIGH PRESSURE METERS



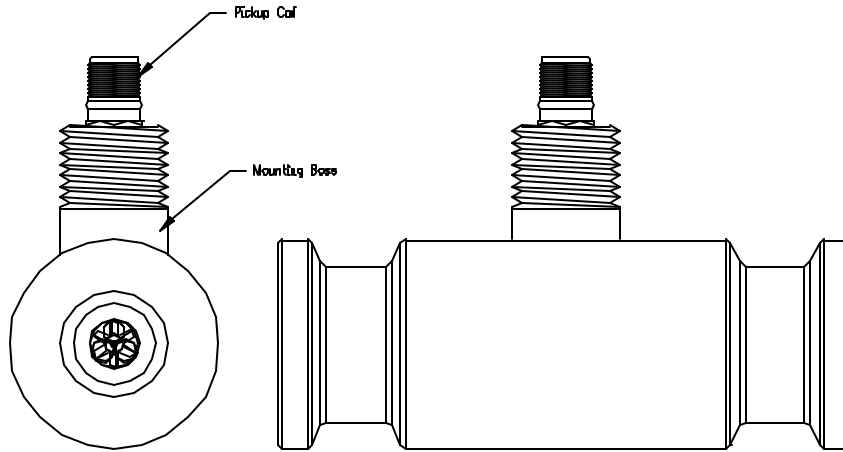
| SIZE | END CON | OAL | OD | OPERATING PRESS |
|--------|------------|---------|--------|-----------------|
| 1/2" | 3/4"-20 | 3 5/16" | 1 1/8" | 7,700psi |
| 5/8" | 7/8"-20 | 4" | 1 1/8" | 7,300psi |
| 3/4" | 1"-20 | 4 1/4" | 1 5/8" | 7,300psi |
| 1" | 1 5/16"-20 | 4 3/4" | 1 5/8" | 5,300psi |
| 1 1/4" | 1 5/8"-20 | 5" | 1 7/8" | 6,000psi |

Operating pressures listed above are based on the endfitting.

Tubing pressures are not rated the same as the endfittings, use the following formula to calculate the operating pressure:

$$\text{W/P} = \text{W2} \times \text{TS} \text{ divided by } \text{OD} \text{ (divided by } 4)$$

W/P: Working pressure. **W2:** Wall thickness times 2. **TS:** Tensile strength (75,000psi). **OD:** Outside diameter of tubing.



| SIZE | END CON | OAL | OD | OPERATING PRESS |
|--------|-----------|--------|--------|-----------------|
| 1/2" | 1GR5 | 5" | 2" | 16,000psi |
| 5/8" | 1GR5 | 5" | 2" | 16,000psi |
| 3/4" | 1GR7 | 5 1/2" | 2" | 8,000psi |
| 1" | 1GR11 | 5 1/2" | 2" | 4,000psi |
| 1 1/4" | 1 1/2GR14 | 6" | 3 1/8" | 5,500psi |
| 1 1/2" | 1 1/2GR14 | 6" | 3 1/8" | 5,500psi |
| 2" | 2GR20 | 6" | 3 5/8" | 4,500psi |
| 2 1/2" | 2 1/2GR25 | 7" | 5" | 5,500psi |
| 3" | 3GR27 | 10" | 5" | 3,000psi |
| 4" | 4GR40 | 12" | 6" | 2,000psi |

End connections listed are SCH 40, other schedules are available for higher pressure ratings. Operating pressure must be specified to determine end connection size and rating.

All data is subject to change without notice.