

# 2" Iron Model T-11

Bulletin SS01003 Issue/Rev. 0.6 (10/15)



**We put you first.  
And keep you ahead.**

## SMITH METER® PD ROTARY VANE METER

The Smith Meter® Model T-11 Meter is a 2", single-case, angle-type, rotary vane, positive displacement meter. Applications include: blending, batching, dispensing, inventory control, and custody transfer of oils, solvents, chemicals, paints, fats, and fertilizers.



### FEATURES

- » **Superior Accuracy** – The Smith Meter Rotary Vane meter principle, combined with the meter’s uniquely-designed (offset) inlet and outlet nozzles, minimizes pressure drop across the measuring chamber, which reduces flow through meter clearances to maximize accuracy.
- » **Low Pressure Drop** – Streamlined flow path provides low pressure drop.
- » **Positive and Accurate Registration** – High torque drive calibrator with adjustment in 0.05% increments ensures accurate registration.
- » **Long Service Life** – Low friction ball bearings, fixed cam-type timing, and rugged construction give sustained accuracy and long service life.

## OPERATING SPECIFICATIONS

### MAXIMUM FLOW RATE

|   | USGPM | L/min |
|---|-------|-------|
| Standard Continuous Rating                | 80    | 300   |
| Standard Intermittent Rating <sup>1</sup> | 100   | 375   |
| All Iron Trim Rating                      | 75    | 285   |

1 Intermittent rating applies to service on clean, refined products where continuous operation is not required (e.g., truck loading, rail loading, and other batching applications.)  
 2 Based on a maximum flow rate of 100 USGPM (375 L/min).  
 3 1,000 mPa•s = 1,000 cP = 1 Pa•s.

### MINIMUM FLOW RATE - TYPICAL PERFORMANCE

| Linearity <sup>2</sup> | Units | Viscosity (centipoise - mPa•s) |    |    |     |     |      |
|------------------------|-------|--------------------------------|----|----|-----|-----|------|
|                        |       | 0.5                            | 1  | 5  | 20  | 100 | 400  |
| ±0.15                  | USGPM | 30                             | 20 | 8  | 2.0 | 0.4 | 0.10 |
|                        | L/min | 113                            | 75 | 30 | 7.6 | 1.5 | 0.38 |
| ±0.25                  | USGPM | 20                             | 15 | 6  | 1.5 | 0.3 | 0.08 |
|                        | L/min | 75                             | 57 | 22 | 5.7 | 1.1 | 0.30 |
| ±0.50                  | USGPM | 15                             | 10 | 4  | 1.0 | 0.2 | 0.05 |
|                        | L/min | 57                             | 38 | 15 | 3.8 | 0.8 | 0.19 |

### Repeatability

±0.02%

### Viscosity

Standard: 400 mPa•s<sup>3</sup> (2,000 SSU) maximum.

Optional: 2 Pa•s (10,000 SSU) maximum - specify "High Viscosity Meter Clearances."

Over 2 Pa•s: Specify "High Viscosity Meter Clearances" and derate maximum flow rate in direct proportion to viscosity over 2 Pa•s (e.g., at 4 Pa•s, derate maximum flow rate to 50% of normal continuous rating - 40 gpm).

## Temperature

Standard: -20°F to 150°F (-29°C to 65°C).

Optional: -20°F to 200°F (-29°C to 93°C) - specify "High Temperature Meter Clearances" or "All Iron Trim."

Other Temperatures: Consult factory.

## Maximum Working Pressure

Standard: 150 psig (1,034 kPa) up to 200°F (93°C).

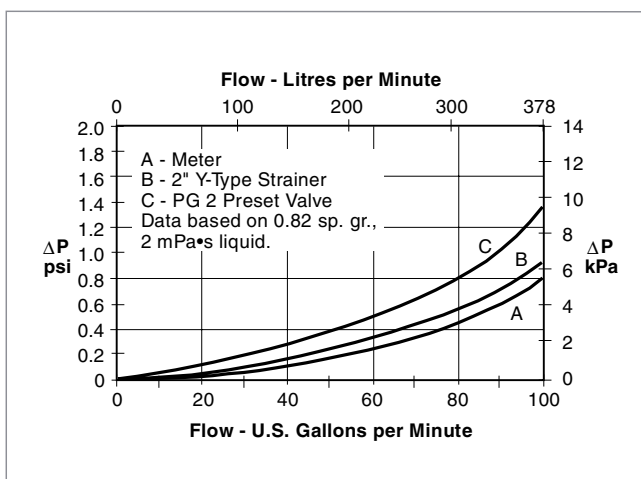
## Meter Gearing

One U.S. gallon or one dekalitre per revolution of meter calibrator output shaft.

## MATERIALS OF CONSTRUCTION

| MATERIALS OF CONSTRUCTION          |           |   |  |
|------------------------------------|-----------|---|--|
|                                    | Housing   | Internals   | Seals  |
| <b>Meter: T-11</b>                 | Cast Iron | Iron, Steel, Stainless Steel, Aluminum <sup>4</sup> , Bronze <sup>4</sup> | Cover O-Ring - Buna-N <sup>5</sup> , Opt'l. - Viton<br>Packing Gland - Buna <sup>5</sup> , Opt'l. - Viton or PTFE <sup>6</sup> |
| <b>Valve: SPG - 2 Preset Valve</b> | Cast Iron | Steel, Iron, Aluminum   | Buna N <sup>5</sup><br>Opt'l. - Viton  |

## PRESSURE DROP ( $\Delta P$ )



## ORDERING INFORMATION

| ORDERING INFORMATION           |   |
|--------------------------------|---|
| <b>Application</b>             | Batching, Loading, Blending, Inventory, Process Control, etc.   |
| <b>Operating Conditions</b>    | Liquid — Name and sp. gr., Flow Range <sup>7</sup> , Temp. Range <sup>7</sup> , Viscosity Range <sup>7</sup> , Maximum Working Pressure |
| <b>Seals</b>                   | Meter: Buna <sup>8</sup> , Viton or PTFE <sup>6</sup> .<br>Valve: Buna <sup>8</sup> , Viton.  |
| <b>Units of Registration</b>   | Gallons, Liters, Pounds and Kilograms   |
| <b>Inlet/Outlet Position</b>   | Position 1-A is standard and will be supplied unless another position (e.g., 2-C) is specified.   |
| <b>Options and Accessories</b> | As required.  |

<sup>4</sup> All iron trim (no aluminum or bronze) optional

<sup>5</sup> Standard

<sup>6</sup> Polytetrafluoroethylene (PTFE)

<sup>7</sup> Specify: minimum/normal/maximum.

<sup>8</sup> Standard seals supplied unless optional material specified.

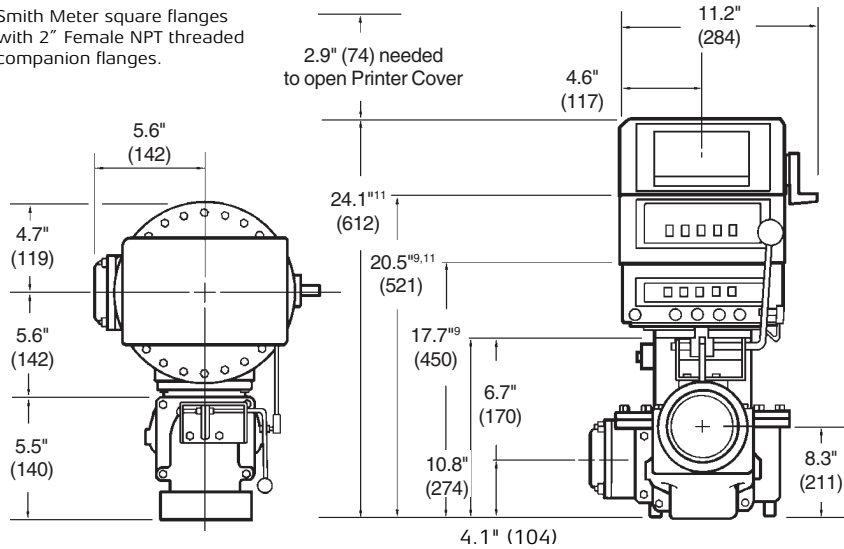
# DIMENSIONS

## Inches (Millimeters)

**Note:** Dimensions – inches to the nearest tenth (millimeters to the nearest whole mm), each independently dimensioned from respective engineering drawings.

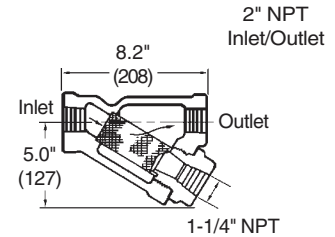
### Meter End Connections

Smith Meter square flanges with 2" Female NPT threaded companion flanges.



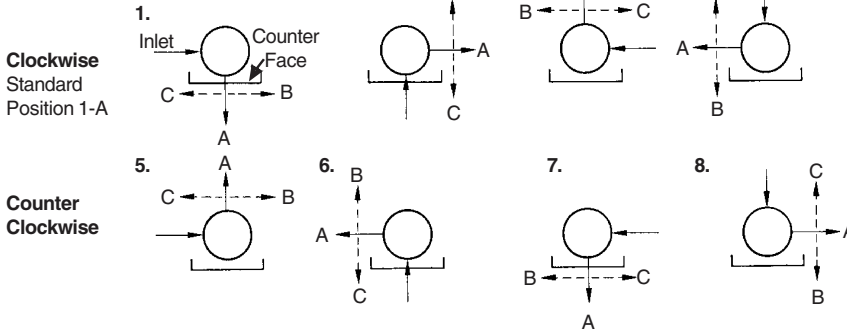
| Weights                         |      |     |
|---------------------------------|------|-----|
|                                 | lbs. | Kg. |
| Meter                           | 57   | 26  |
| 2" "Y" Type Strainer            | 15   | 7   |
| Meter/LNC                       | 72   | 33  |
| Preset Package <sup>10,12</sup> | 92   | 42  |

### 2" "Y" Type Cast Iron Strainer



It is recommended that meter be protected with a suitable mesh strainer.

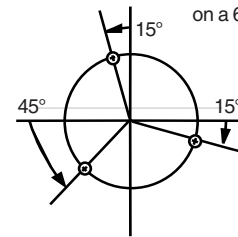
### Inlet/Outlet Positions



### Top View

### Meter

**Anchor Bolt Holes**  
3-3/8" - 16 Tapped Holes equally spaced on a 6.625" (168) dia. bolt circle.



**Note:** A, B, C denotes orientation of valve outlet used

9 Includes cover  
10 Includes Meter, LNC, Preset Counter and valve  
11 Deduct 3.7" (94) if Present Counter is not required  
12 Add 10lb. (4.5 kg) if ticket printer is required



**We put you first.  
And keep you ahead.**

**Revisions included in SS01003 Issue/Rev. 0.6 (10/15):**

Made correction to Weights table on page 3. New photo; Rearranged and made edits to footnotes throughout document.

The specifications contained herein are subject to change without notice and any user of said specifications should verify from the manufacturer that the specifications are currently in effect. Otherwise, the manufacturer assumes no responsibility for the use of specifications which may have been changed and are no longer in effect. Contact information is subject to change. For the most current contact information, visit our website at [www.fmctechnologies.com/measurementsolutions](http://www.fmctechnologies.com/measurementsolutions) and click on the "Contact Us" link in the left-hand column.