

Flow

Master PD Flow Meters



Master PD Flow Meters are precision made, highly accurate liquid measuring Flow Meters, used for checking the accuracy and calibration of field flow meters. These are available in single, double and triple capsule models to suit applications covering a wide range of flow capacities. Master PD Flow Meters facilitate quick calibration of field flow meters in their normal operating position, without the need for a proving tank or the dismantling of meters from the pipe lines.

DESIGN FEATURES

- High accuracy and repeatability over a wide flow range
- Special Unit Drum attachment for higher resolution readout
- Stepless calibration adjustment
- Low pressure drop
- Available in fixed or mobile trolley-mounted version

PRINCIPLE OF OPERATION

A mechanical Master PD Flow Meter is fitted with a Rate of Flow Indicator, Unit Drum attachment and a Veeder Root Counter. The unit drum facilitates to read-off fractions of litre (or deca-litre) and the final reading can be accurately read to 0.05 litre (or 0.05 deca-litre). The unit drum, positioned below the counter, consists of a graduated circular drum with vernier scale marking.

The mobile unit consists of a mobile trolley on which the Master PD Flow Meter is mounted, alongwith inlet and outlet hose connections to connect the Master PD Flow Meter in series with the field flow meter.

The procedure for checking is simple. The Master Flow Meter is connected in series with the field flow meter, either by connecting it in the field flow meter's pipe line or with the help of rubber hoses. After priming the system, counters of the test flow meter and the Master Flow Meter are zeroised and the adjusting ring of the unit drum is turned so that the zero marking coincides with any graduation on the unit drum. A fixed quantity of liquid, say 1000 litres is then passed at a constant flow rate and then respective readings on test flow meter and Master Flow Meter counters are noted down. Master Flow Meter's fractional reading is noted from the unit drum. After applying pre-established correction factors to the Master Flow Meter's reading, the corrected reading is then compared with the test flow meter's reading to calculate the inaccuracies of the test flow meter.

APPLICATIONS

- Calibration of field flow meters
- Tank calibration
- Test rigs



SPECIFICATIONS

PD FLOW METER

Type Positive displacement rotary vane

Sizes & Capsule : 80 mm (3"), single capsule
(Models TLM-03 & TLM-04)
: 80 mm (3"), double capsule
(Models TLM-05 & TLM-06)
: 100 mm (4"), double capsule
(Models TLM-07 & TLM-08)
: 100 mm (4"), triple capsule
(Models TLM-09 & TLM-10)
: 150 mm (6"), triple capsule
(Models TLM-11 & TLM-12)

Flow Range : 136 - 1364 lpm (TLM-03, TLM-04)
: 205 - 2046 lpm (TLM-05, TLM-06)
: 227 - 2273 lpm (TLM-07, TLM-08)
: 295 - 2955 lpm (TLM-09, TLM-10)
: 295 - 2955 lpm (TLM-11, TLM-12)

(Maximum flow rates can be uprated by 30% for aircraft refuelling with ATF)

* For higher size consult us.

End : 150 Class, ANSI B 16.5, FF/RF

Connections

Meter Hand of : Left hand entry, right hand discharge
Discharge (when facing the counter) : (for even meter model nos.)
Right hand entry, left hand discharge
(for odd meter model nos.)

Drive : Positive gear train or Pulse output

Counter : Mechanical - 5 digit reset, 8 digit non-reset totaliser, weatherproof
Veeder Root 7887
Electronic Batch Controller

Unit of Registration : Litres (TLM-03/04)
 Deca-litres (TLM-05 to TLM-12)
(Other units available on request)

Resolution : 0.05 Litres (TLM-03/04)
 0.05 Deca-litres (TLM-05 to TLM-12)

Accuracy : Better than $\pm 0.10\%$ / 0.05%
 (In accordance with IS:2801)

Repeatability : Better than $\pm 0.02\%$

Rangeability : 100% to 10% of maximum flow rate

Max. Working Pressure : 10.54 kg/cm^2

Temperature : Upto 70°C (Standard)
 Upto 200°C (Special)

Viscosity : 0.5 cst to 200 cst
(Consult factory for liquid viscosity above 200 cst)

MATERIALS OF CONSTRUCTION

Body : Cast Steel ASTM A 216 WCB
 Stainless Steel AISI 316

Rotor : Aluminium alloy LM-25 (Standard)
 Stainless Steel AISI 316 (Optional)

Vanes : Resin impregnated Morganite CY10C

Bearings : Stainless Steel AISI 440 C

Seals : Nitrile (Standard)
 Viton (Optional)

Other Wetted Parts : Stainless Steel AISI 410 and 304

Manifold : Cast Steel ASTM A 216 WCB
 Stainless Steel AISI 316
 Carbon Steel (Fabricated)

RATE OF FLOW INDICATOR

Type : Magnetic induction eddy current

Range : 0 - 1800 lpm (for single capsule meter)
 0 - 2600 lpm (for double capsule meter)
 0 - 4000 lpm (for triple capsule meter)

Readout : Litres per minute

Accuracy : $\pm 2\%$ F.S.D.

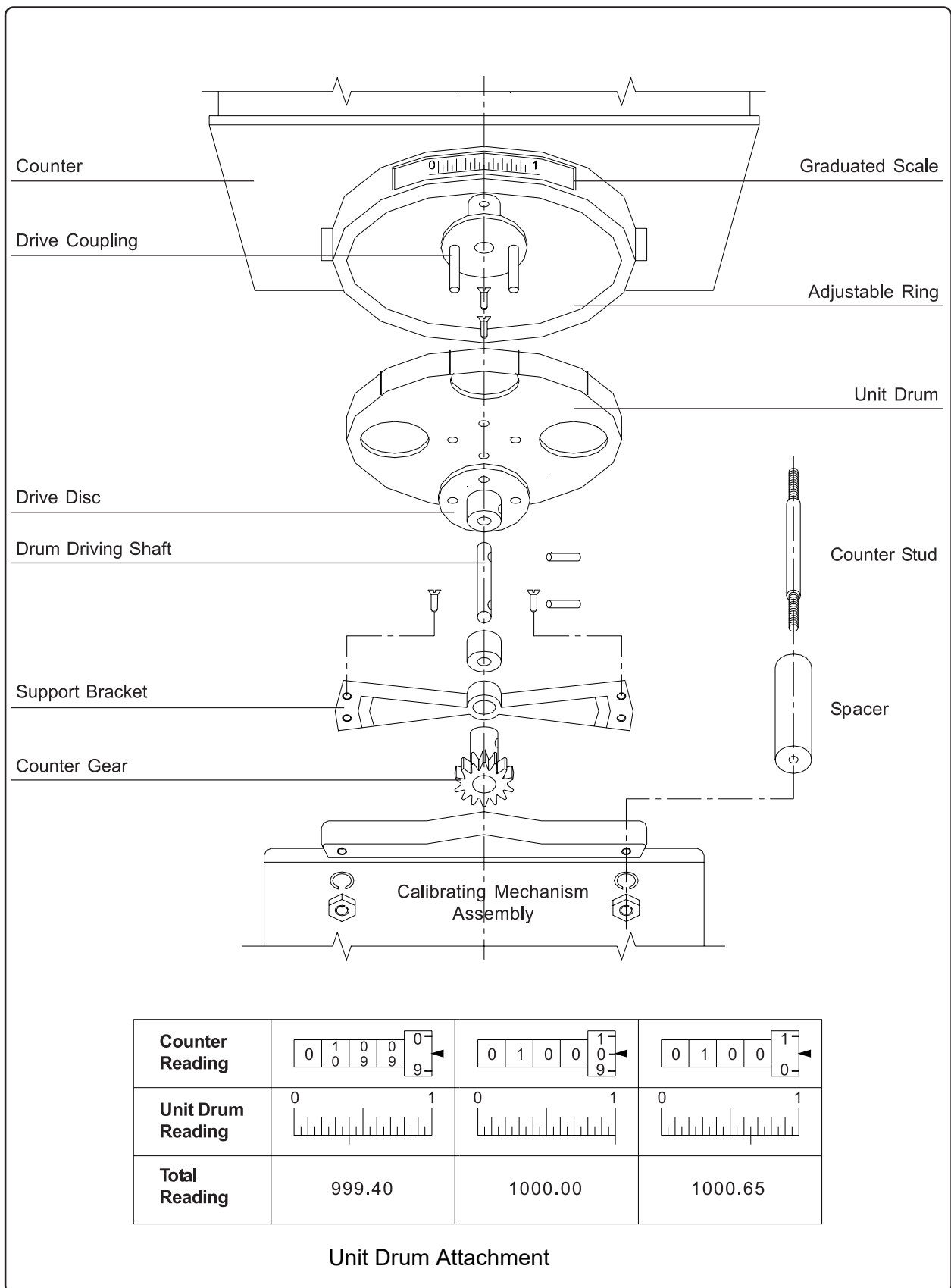
Dial Size : 80 mm

Drive : Rigid direct drive

Housing : Weatherproof



Electronic Master P.D. Flowmeter Skid



- Specifications are subject to change without notice.
- All dimensions are in mm unless otherwise specified.

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