



TYPE S MAGNETIC DRIVE

(S/MD) FLOWMETERS



2" Type S Mag Drive

- **Positive-Displacement Disc Principle**
- **Ideal for Continuous Operation**
- **Change Gears for Positive Calibration**
- **Accuracy $\pm 1.0\%$ of Rate**
- **Repeatability $.25\%$ of Rate**
- **Minimal Maintenance**
- **Compatible with Hundreds of Non-Acidic Liquids**
- **No Dynamic Seals, Magnetic Coupled Drive Eliminates Leaks**

DESCRIPTION

The 2" Type S Magnetic Drive (S/MD) flowmeters, with double case construction, utilize the nutating disc positive displacement measuring chamber technology. This design results in an extremely accurate meter which is insensitive to small changes in viscosity and flow profile disturbances. Each meter includes a base unit, which houses and protects the measuring chamber, and a gear train. Registers provide reset of delivery and totalization. A wide variety of pulse transmitters permit remote operation and monitoring.

DESIGN FEATURES

SUSTAINED ACCURACY

The RSM nutating disc measuring chamber is both accurate and dependable. The disc design permits accurate measurement of liquids with solid particles (up to 0.22 mm/0.009 in.) without major damage or erosion to the measuring chamber for intermittent (i.e., batching) operations.

MAGNETIC DRIVE

The magnetic drive feature eliminates the use of a stuffing box and drive shaft gear train. Elimination of the stuffing

box and drive shaft gear train, enables measurement of difficult fluids such as salt brine and sugar, which tend to crystallize. Type S/MD flowmeters are an ideal selection for continuous operation because they substantially reduce leaks and measuring element clogging. Further, the external gear train and register may be serviced without flow interruption.

FLEXIBILITY

The rugged bronze outer body components are compatible with hundreds of non-acidic liquids. Flanged end connections allow rapid conversion from right to left hand flow. Pulse transmitters, when used with the BATCHMATE (electronic batch control) and a locally acquired solenoid valve, result in an economical and dependable local or remote batching system.

LONG SERVICE LIFE

Rugged construction of Type S/MD flowmeters, along with continual design improvements, assure a system that is simple to operate and economical to use. Furthermore, Type S flowmeters have been proven through more than 100 years of manufacturing experience. The overall design of the Type S yields a meter with the ability to measure a wide variety of mildly corrosive liquids.

EASE OF MAINTENANCE

Type S flowmeters do not require elaborate timing gears or difficult adjustment procedures. Replacement of a worn or damaged measuring chamber, gear train, or register is both simple to accomplish and requires very little time. Because of the magnetic coupling, the gear train can be serviced without removing the cover.

POSITIVE AND ACCURATE REGISTRATION

Positive adjustment through patented Neptune calibration (change) gears may allow changes down to 0.15% increments and reduce errors caused by vibration and prevents tampering. Additionally, the rangeability of most configurations exceed $\pm 30\%$ with a single gear train.

CONVERSION

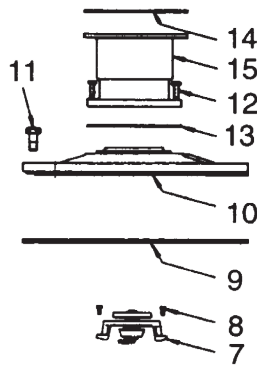
The magnetic drive conversion kit can be retrofitted to all 2" Type S flowmeters currently in the field, with either internal or external gear trains.

Using only conventional tools, field conversion is easily accomplished. Consult form P106 of 2" Type S Magnetic Drive Part's List.

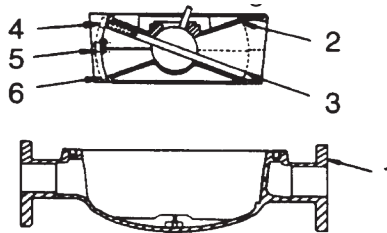
ACCURACY

All RSM Type S/MD (2") flowmeters are functionally tested for proper operation, verified for accuracy, and calibrated to an approved unit of measure in accordance with RSM operating procedures.

- Maximum error, based on a 10:1 turndown, shall not exceed $\pm 1.0\%$, as a percentage of rate for the entire flow range.
- For reduced variables (i.e., flowrange spreads, temperatures, pressures and high viscosities) accuracies of $\pm 0.5\%$ or better may be obtained. Consult the Sales office with a completed Application Data Sheet (ADS) for each specific application.
- Repeatability is 0.25% of rate.



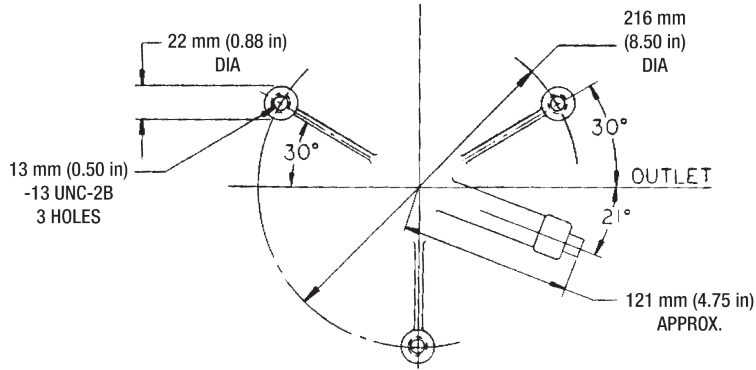
Type S Magnetic Drive for 600 Series Register



Index	Description	8	Screw
1	Main Case	Index	Description
2	Measuring chamber with disc	9	Main case gasket
3	Disc complete	10	Main case cover
4	Thrust roller	11	Main case bolt
5	Chamber assembling screw	12	Screw for 600 Series Register
6	Thrust roller bearing plate	13	Lower gasket
7	Drive assembly for 600 Series Register	14	Upper gasket

DIMENSIONAL DATA

Bottom View of 2" Main Case



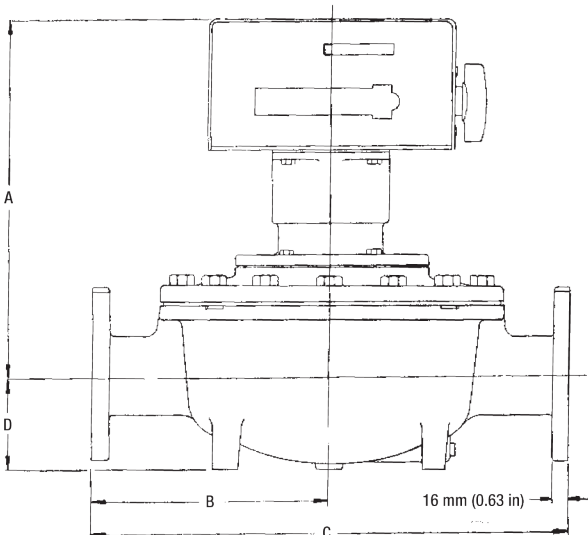
DIMENSION A, Millimeters (Inches)

	2"
600 Series	316 (12.44)

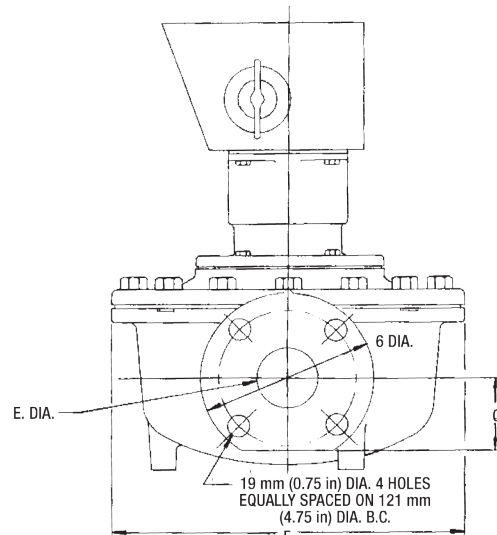
Dimensions B-G Millimeters (Inches)

	2"
B	216 (8.50)
C	432 (17.00)
D	92 (3.63)
E	54 (2.13)
F	311 (12.25)
G	59 (2.31)

2" Type S/MD with 600 Series Register (Front View)



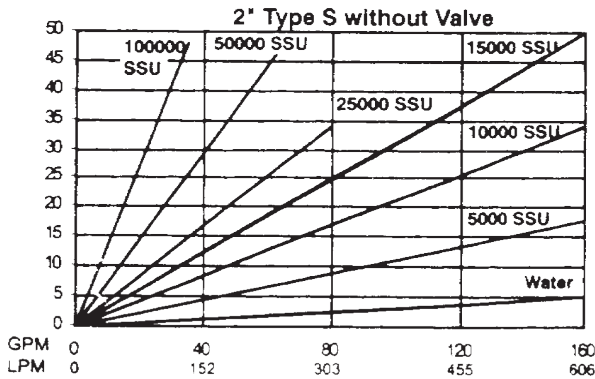
and 2" Type S/MD with 600 Series Register (Side View)



FLOWMETER OPERATING SPECIFICATIONS

CATEGORY	2" TYPE S/M/D
Type of Measuring Element	Double Case Nutating Disc
Measuring Chamber Displacement	148.67 cc (90.2344 in ³)
End Connections	2" ANSI Compatible
Temperature Rating (T Max)	121°C (250°F)
Pressure Ratings	8.6 bar (125 psi) @ 121°C
Flow Range (Q Max)	616 LPM (160 GPM) 62 LPM (16 GPM)
Totalized Units	10 Litres, 10 Kilograms, 10 Pounds, 1 US Gallon, or 10 US Gallons
Enclosure Class	Totally mechanical. If interfaced with a pulse transmitter, the rating of the device applies.
Power Supply	None, unless fitted with a pulse transmitter, then the rating of the installed device applies.
Main Body Material	Bronze (over 75% Cu)
Main Body Cover Material	Bronze (over 75% Cu)
Disc Piston	Ryton
Shaft Material	Stainless Steel
Packing Material	None Required
Gasket Material	Klingsil
Type of Coupling	Mechanical (Magnetic Drive)
Register Type	Capacity: Totalizer 9999999 600 Series Register: Resettable (5 digit), 8 digit Totalizer Capacity: Totalizer 99999999: Reset 99999
Transmitter Type	Consult Form TS-510
Transmitter Output	Consult Form TS-510
Manufacturer	Red Seal Measurement

PRESSURE LOSS DATA:



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