
Tech Talk

Selecting the proper magmeter size

The proper size of a magmeter is an important issue in terms of performance and longevity. It is often better to calculate the ideal meter size rather than simply match the existing pipe size. This will insure an appropriate liquid velocity for the application. Use the following velocity equation and design for optimal velocity ranges based on the specific application.

Application Notes

1. For normal conditions design for a full scale flow rate of 3-10 ft/sec
2. If liquid is abrasive, limit full scale velocity to 5 ft/sec
3. If liquid has solids, velocity should be between 9 and 15 ft/sec to prevent coating or settling of the solids
4. Minimum full scale velocity should be above 1.0 ft/sec depending on accuracy requirements, and maximum full scales should be less than 30 ft/sec

Equations

$$V = \frac{0.4085 \times GPM}{D^2} \quad \text{or} \quad GPM = 2.448 \times V \times D^2 \quad \text{or} \quad D = \sqrt{\frac{0.4085 \times GPM}{V}}$$

V = Velocity in Feet/Second

GPM = Flow rate in Gallons Per Minute

D = Meter diameter in Inches

Table for Toshiba Mount-Anywhere magmeters

Meter Size	Standard Range-GPM	GPM @ 1 ft/s	GPM @ 5 ft/s	GPM @ 10 ft/s
0.5	25	0.6	3	6
1.0	75	2	12	24
1.25	125	4	19	38
1.5	175	6	28	55
2	300	10	48	97
2.5	475	15	76	153
3	650	22	110	220
4	1,000	39	195	391
6	2,500	88	440	881
8	4,500	156	783	1566
10	7,000	244	1224	2448
12	10,000	352	1762	3525
14	12,000	479	2399	4798
16	16,000	626	3133	6266
18	20,000	793	3965	7931

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