



ROOTS Meters & Instruments

DATA SHEET

Restricting Flow Orifice Plates

ROOTS® Meters should not be oversped. The instantaneous overspeed caused by pressure drop or flow surges can destroy the meter. A restricting orifice plate installed downstream of the meter protects the meter from over ranging. Orifice plates are sized to cause critical flow at approximately 120% of the meter capacity for meters with a Maximum Allowable Operating Pressure (MAOP) of 175 PSIG or less. Meters with MAOP of greater than 200 PSIG have orifice plates sized at 100% of meter capacity. Installing the restricting orifice plate two to four pipe diameters downstream of the meter is recommended.

Nominal Orifice Sizes

Meter Model	Pipe Size (in.)	Plate O.D. (in.)	Orifice (in.)	Plate Thickness (in.)	Part Number
8C175 LMMA	1-1/2	3-9/32	17/64	1/8	A010847-024
8C175	2	4-1/32	9/32	1/8	A010847-032
11C175	2	4-1/32	21/64	1/8	A010847-033
15C175	2	4-1/32	3/8	1/8	A010847-034
2M175	2	4-1/32	7/16	1/8	A010847-035
3M175	2	4-1/32	17/32	1/8	A010847-001
5M175	3	5-9/32	23/32	1/8	A010847-013
7M175	3	5-9/32	13/16	1/8	A010847-002
11M175	4	6-25/32	1	1/8	A010847-012
16M175	4	6-25/32	1-7/32	1/8	A010847-003
23M175	6	8-21/32	1-15/32	1/4	A010847-004
38M175	6	8-21/32	1-29/32	1/4	A010847-005
56M175	8	10-29/32	2-1/4	5/16	A010847-006
102M175	10	13-9/32	3-1/8	3/8	A010847-007
23M232	4	6-25/32	1-11/32	1/8	A010847-060
1M300	1-1/2	3-9/32	9/32	3/16	A010847-030
3M300	2	4-1/32	31/64	3/16	A010847-031
1M740	2	4-9/32	0.277	1/4	A010847-040
1M1480	2	4-9/32	17/64	1/4	A010847-041
3M740	2	4-9/32	31/64	1/4	A010847-042
3M1480	2	4-9/32	7/16	1/4	A010847-043
3.6M600	2	4-5/16	9/16	1/4	A010847-023
4.6M900	3	5-13/16	21/32	1/4	A010847-009
5M1480	3	5-13/16	19/32	1/4	A010847-053
7M1440	3	5-13/16	23/32	1/4	A010847-016
7M1480	3	5-13/16	45/64	1/4	A010847-052

Caution: These orifice sizes are recommended as *Safety Devices Only* to protect the meter from over-ranging. If critical flow is reached often or for extended periods of time, the next larger size meter should be installed.

Note: The exact orifice size depends upon specific gravity of the gas being measured, operating pressure, temperature and/or other factors. An exact orifice size can be supplied upon request for any particular application. The orifice sizes listed above are the standard sizes that would be supplied if the orifice plate were ordered with a meter.



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