

452 Series

Mueller SYSTEMS

Magnetic Drive Positive Displacement Disc Meters Size 1"

Features

APPLICATIONS: Measurement of cold water for residential and small commercial applications where water volumes are low, and low flow sensitivity is important.

CONFORMANCE TO STANDARDS: Hersey Series 400 Water Meters comply with latest version of ANSI/AWWA Standard C700, NSF-61 372 and the Safe Water Drinking Act. Each meter is tested to ensure compliance.

CONSTRUCTION: Hersey 400 Water Meters consist of three basic parts: maincase; measuring chamber; and permanently sealed register. The maincase is made of bronze for long life. Direction of flow arrows and model are cast into each maincase. The bottom cover is epoxy-coated cast iron with a molded plastic liner separating it from the waterway. Optional plastic and bronze bottom covers are available. The measuring chambers are large for reduced wear during operation. The measuring chamber, integral strainer, nutating disc and thrust roller are thermoplastic, which is dimensionally stable and will not corrode. The thrust roller moves smoothly along a stainless steel wear plate to reduce friction and maintain accuracy. The register box and lid are available in plastic or bronze. The meter is designed so that the register can be replaced without removing the meter from the line.

REGISTER: The permanently sealed register has a unique seal and heat-treated glass to eliminate dirt, moisture infiltration and lens fogging. An integral tamper-proof locking feature is provided to resist tampering with the register. The totalizing register has a straight-reading odometer type display, a 360° test circle with center sweep hand and a low flow (leak) detector. Standard gearing is used, making registers interchangeable by size. All Hersey meter Models have electronic meter reading systems available for increased reading efficiency (see Meter Reading Systems.)

OPERATION: Water flows through the meter's strainer where debris is screened out. The incoming water fills a known volume of the measuring chamber on one or the other side of a movable disc that separates the chamber into two sections. As water enters, it moves the disc (nutates), forcing a known volume of water out of the meter from the opposite side of the disc. The process repeats as the sections refill and empty in turn. The nutating action of the disc is coupled magnetically to the register to indicate the volume of water that passes through the meter. The large capacity measuring chamber requires fewer nutations of the disc for each gallon measured, which helps to limit wear, extend the life of the meter, and reduce pressure loss.

MAINTENANCE: The Hersey Series 400 Water Meters are designed and manufactured to provide long service life with virtually no maintenance required.

CONNECTIONS: Supplied with external straight pipe threads (NPSM) per ANSI B1.20.1.



452 with Translator Register and Hot Rod

452 Series

Materials and Specifications

MODEL NUMBER	452
SIZES	1"x1"
STANDARDS	Manufactured and tested to meet or exceed all applicable parts of ANSI/AWWA C700 Standard NSF-61 372 and the Safe Water Drinking Act
SERVICE	cold water measurement with flow in only one direction
OPERATING FLOW RANGE	See Chart on the following page
ACCURACY	See Chart on the following page
PRESSURE LOSS	See Chart on the following page
MAXIMUM WORKING PRESSURE	150 PSI
TEMPERATURE RANGE	33F to 100F Water Temperature
MEASURING ELEMENT	Nutating Disc
DISC NUTATIONS (per Gallon)	452: 11.7
REGISTER TYPE	Straight reading, permanently sealed, magnetic drive with low flow indicator. Remote reading units optional.
METER CONNECTIONS	1" external (NPSM) straight pipe threads per ANSI B1.20.1
MATERIALS	Meter case – No Lead Bronze; Bottom cover – cast iron ASTM A126 CL. B; Chamber top/bottom – thermoplastic; Nutating disc – thermoplastic; Disc pin – stainless steel; Thrust roller – thermoplastic; Wear plate – stainless steel; Coupling – Ceramic magnet; Strainer – thermoplastic; Coupling shaft – stainless steel ANSI B18; Top cover bolts – stainless steel ANSI B18; Bottom cover bolts – stainless steel ANSI B18; Register box and lid – thermoplastic.
OPTIONS	Bottom cover – bronze UNSC84400 or thermoplastic; Register box and lid – bronze UNSC85700; AMR/AMI Reading Systems

Meter Registration

Meter Size	Initial Dial*	Capacity	Initial Dial*	Capacity
1"	10 Gallons	10 Million	1 Cubic Feet	1 Million

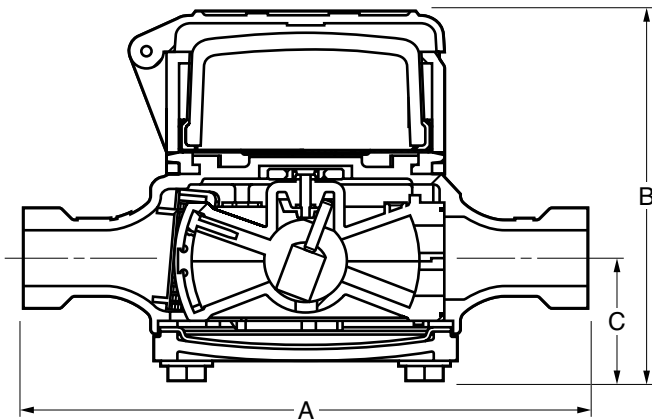
*Registration equal to one full revolution of the sweep hand.

Flow Characteristics

Meter Size	Typical Low Flow (95% Minimum)	Typical Operating Range (100% ± 1.5%)	Maximum Continuous Operation
1"	3/4 GPM	2 to 50 GPM	35 GPM

NOTE: Performance curves are typical only and NOT a guarantee of performance.

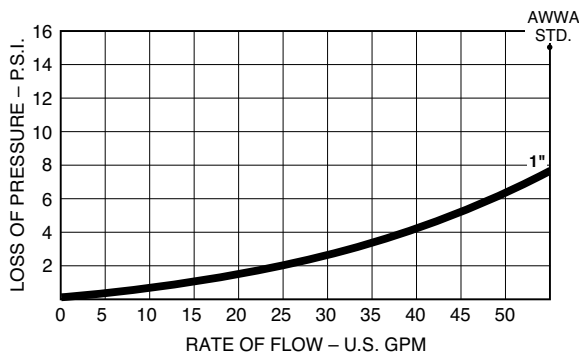
Dimensions and Weights



Meter Size	1"
	Ends External (NPSM) straight pipe threads
Model	452
Dimensions	
A	10-3/4"
B Visual Reg	6-5/8"
B Translator Reg	5.5
C	2-1/8"
Width	7.22"
inlet & outlet	1"
Net weight	11

Performance

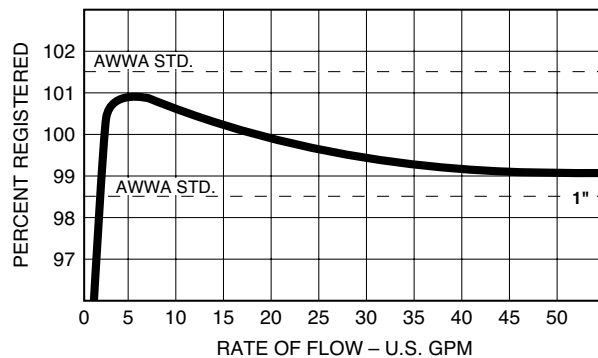
HEAD LOSS – 1" (Figure 1)



NOTE: Performance curves are typical only and NOT a guarantee of performance.

Performance

ACCURACY – 1" (Figure 2)



452 Series



Magnetic Drive Positive Displacement Disc Meters Size 1" Parts

452 Series

Ref No.	Description	Material	1" Model 452
1	Complete Register Housing Assembly Includes the following:	Plastic	B7856
		Bronze	B7857
2	Register Cover	Plastic	C5768
3	Spirol Pin	Plastic	AS41122
		Bronze	AS41123
4	Register Housing Base	-	C5769
5	Register Housing Insert	-	C5770
6	Register Locking Pin	Blue Color Plastic	A12658
		Brass Color Plastic	A126581
7	Visual Register USG	Glass/Brass	D32565
	Visual Register CF	Glass/Brass	D32566
	Translator Register USG*	Plastic/Brass	D35031xxx
	Translator Register CF*	Plastic/Brass	D35032xxx
	Specify Electronic Reading Valve 4, 5, or 6 Wheel		
8	5/8" x 1/2 Main Case 2006 and after	Bronze	-
	5/8" x 1/2 Main Case 2006 and after	No Lead Bronze	-
	5/8" x 3/4" Main Case 2006 and after	Bronze	-
	5/8" x 3/4" Main Case 2006 and after	No Lead Bronze	-
	3/4" Regular Main Case 2006 and after	Bronze	-
	3/4" Regular Main Case 2006 and after	No Lead Bronze	-
	3/4" Short Main Case 2006 and after	Bronze	-
	3/4" Short Main Case 2006 and after	No Lead Bronze	-
	1" Main Case 2006 and after	Bronze	-
	1" Main Case 2006 and after	No Lead Bronze	D3589SI
9	Complete Chamber Assembly Includes following parts 10-16	Plastic	C5692P0
10	Top Chamber Assembly	Plastic**	-
11	Bottom Chamber Assembly	Plastic**	-
12	Disc Assembly	Plastic/SST**	-
13	Thrust Roller	Plastic	-
		SST	A12662
14	Wear Plate	SST	B7666
15	Outlet Seal	Rubber	A130203
16	Chamber Retainer	Plastic	C5466
17	Strainer	Plastic	51026P045
18	Gasket	Rubber	C5489
19		Plastic	C5506
20	Bottom Cover 2006 and after	Cast Iron	B8623
	Bottom Cover 2006 and after	Bronze	B8624
	Bottom Cover 2006 and after	Plastic	-
21	Case Bolt 2006 and after	SST	90010 (6)
22	Washer – Plastic Bottom Only	SST	-

*Call Mueller Systems Customer Service for appropriate Translator Register and AMR Device part number.

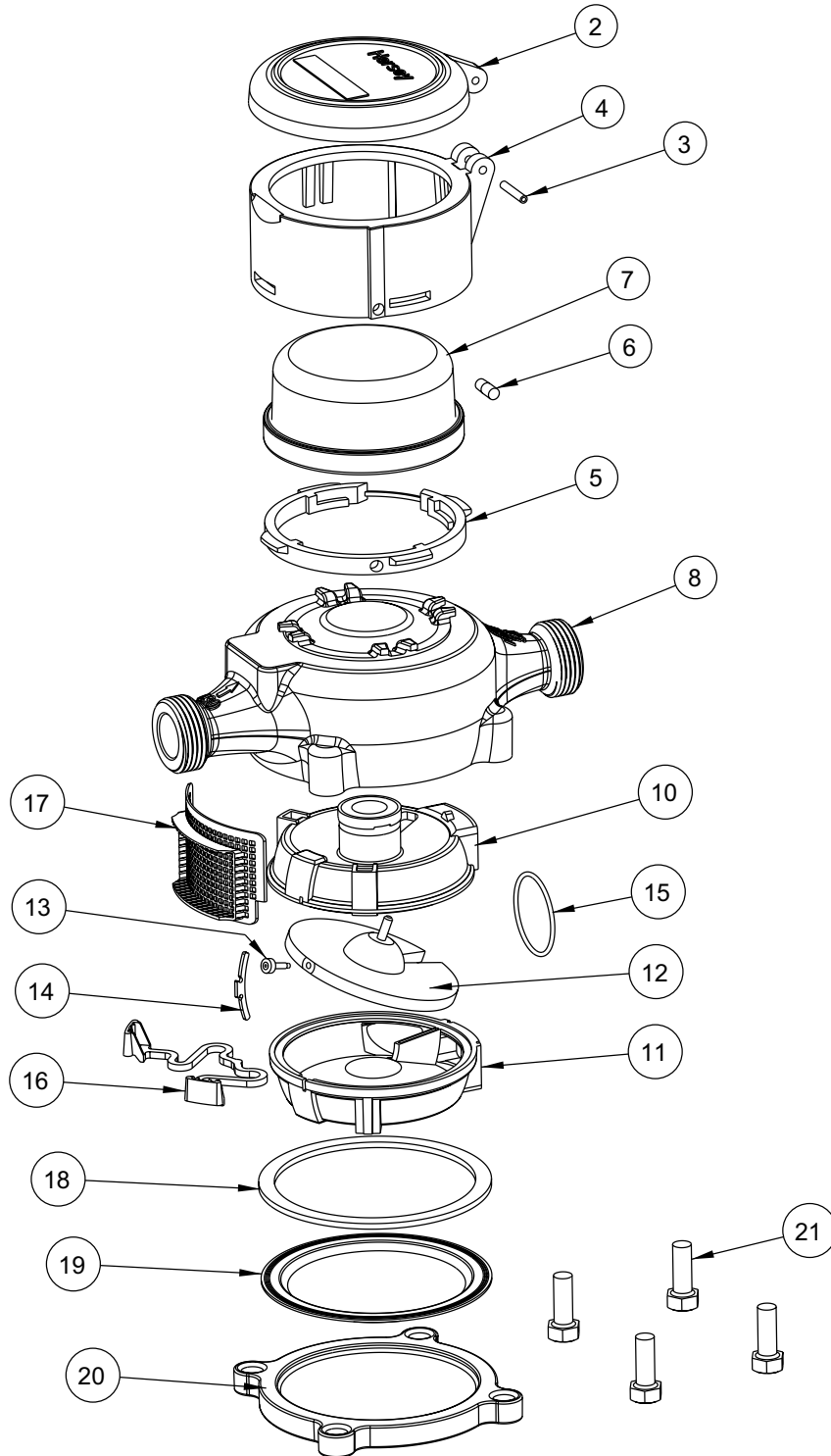
**Available only as part of item 9 – Complete Chamber Assembly. Note: If more than one part is required per assembly, quantity is noted after part number (in parenthesis). The different top and bottom case requirements for the various flange configurations. Bolt quantities and sizes vary.

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Magnetic Drive Positive Displacement Disc Meters
Model 452

452 Series



452 Series



Magnetic Drive Positive Displacement Disc Meters Size 1" – Manufactured prior to 2006

452 Series

Ref No.	Description	Material	1" Model 452
1	Complete Register Housing Assembly Includes the following:	Plastic	B7856
		Bronze	B7857
2	Register Cover	Plastic	C5768
3	Spirol Pin	Plastic	AS41122
		Bronze	AS41123
4	Register Housing Base	-	C5769
5	Register Housing Insert	-	C5770
6	Register Locking Pin	Blue Color Plastic	A12658
		Brass Color Plastic	A126581
7	Visual Register USG	Glass/Brass	D32565
	Visual Register CF	Glass/Brass	D32566
	Translator Register USG*	Plastic/Brass	D35031xxx
	Translator Register CF*	Plastic/Brass	D35032xxx
	Specify Electronic Reading Valve 4, 5, or 6 Wheel		
8	5/8" x 1/2" Main Case prior to 2006	Bronze	-
	5/8" x 3/4" Main Case prior to 2006	Bronze	-
	3/4" Regular Main Case prior to 2006	Bronze	-
	3/4" Short Main Case prior to 2006	Bronze	-
	1" Main Case prior to 2006	Bronze	-
9	Complete Chamber Assembly Includes following parts 10-16	Plastic	C5692P0
10	Top Chamber Assembly	Plastic**	-
11	Bottom Chamber Assembly	Plastic**	-
12	Disc Assembly	Plastic/SST**	-
13	Thrust Roller	Plastic	-
		SST	A12662
14	Wear Plate	SST	B7666
15	Outlet Seal	Rubber	A130203
16	Chamber Retainer	Plastic	C5466
17	Strainer	Plastic	51026P045
18	Gasket	Rubber	C5489
19	Liner	Plastic	C5506
20	Bottom Cover prior to 2006	Cast Iron	D3211
	Bottom Cover prior to 2006	Bronze	C5512
	Bottom Cover prior to 2006	Plastic	-
21	Case Bolt prior to 2006		90065 (6)
22	Washer – Plastic Bottom Only	SST	-

*Call Mueller Systems Customer Service for appropriate Translator Register and AMR Device part number.

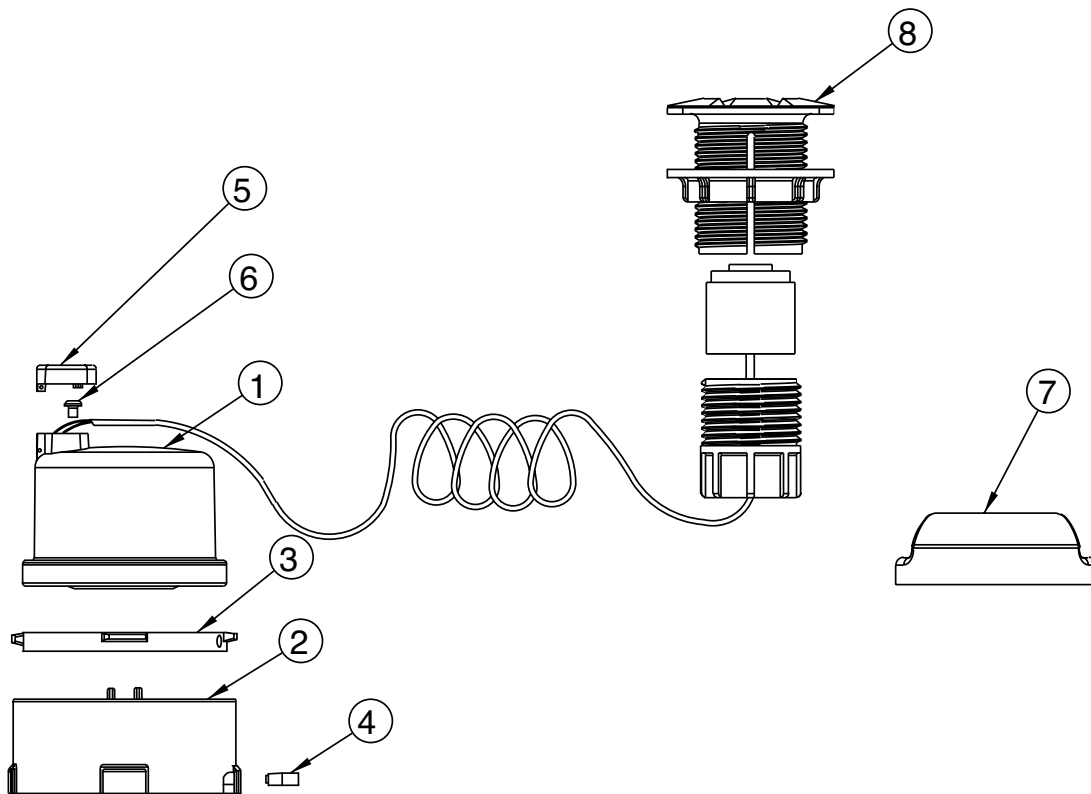
**Available only as part of item 9 – Complete Chamber Assembly. Note: If more than one part is required per assembly, quantity is noted after part number (in parenthesis). The different top and bottom case requirements for the various flange configurations. Bolt quantities and sizes vary.

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Magnetic Drive Positive Displacement Disc Meters Translator Parts

452 Series



Ref	Description	1" Model 452
1	Translator Register* Gallons Cubic Feet Specify Electronic Reading Value 4, 5, or 6 Wheel	D35031xxx D35032xxx
2	Register Housing Base (Plastic)	C5769
3	Register Housing Insert (Plastic)	C5770
4	Register Locking Pin (Blue Color Plastic)	A12658
5	Lens Terminal Cover	B8447
6	Terminal Lug Screw	98197 (3)
7	Wall Pad	T1234
8	Pit Pad with 3' of wire	T1235
9	1,000' Spool of Wire (not shown)	A13015
10	Register Housing Lid (not shown)	B8638

*Call Mueller Systems Customer Service for appropriate Translator Register and AMR Device part number.

**Begins with 2004 meters, for earlier retrofits call Mueller Systems Customer Service.