

## 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 IIS Water Meters comply with latest version of ANSI/AWWA Standard C700. Meters which are manufactured with the EnviroBrass® maincase option meet the requirements of NSF Standard 61. Each meter is tested to ensure compliance.

**CONSTRUCTION:** Hersey 400IIS 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 IIS 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.



## Materials and Specifications

- **MODEL NUMBER** ..... 430IIS, 442IIS, 452IIS
- **SIZES** ..... 5/8"x1/2", 5/8"x3/4", 3/4"x3/4", 3/4"x1" and 1"x1"
- **STANDARDS** ..... Manufactured and tested to meet or exceed all applicable parts of ANSI/AWWA C700 Standard EnviroBrass options meet requirements of NSF Standard 61.
- **SERVICE** .... cold water measurement with flow in only one direction
- **OPERATING FLOW RANGE** ..... See Chart on page 1.2
- **ACCURACY** ..... See Chart on page 1.2
- **PRESSURE LOSS** ..... See Chart on page 1.2
- **MAXIMUM WORKING PRESSURE** ..... 150 PSI
- **TEMPERATURE RANGE** ..... 33F to 100F Water Temperature
- **MEASURING ELEMENT** ..... Nutating Disc
- **DISC NUTATIONS (per Gallon)** ..... 430IIS: 49.6, 442IIS: 22.4, 452IIS: 11.7
- **REGISTER TYPE** ..... Straight reading, permanently sealed, magnetic drive with low flow indicator. Remote reading units optional.
- **METER CONNECTIONS** ..... 1/2", 3/4", 1" external (NPSM) straight pipe threads per ANSI B1.20.1
- **MATERIALS** ..... Meter case - bronze UNSC84400; 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; Bottom cover bolts - stainless steel ANSI B18; Register box and lid - thermoplastic.
- **OPTIONS** ..... Meter case - EnviroBrass® UNSC89520  
 Bottom cover - bronze UNSC84400 or thermoplastic;  
 Register box and lid - bronze UNSC85700; AMR Reading Systems

# 400 Series IIS

Magnetic Drive Positive Displacement Disc Meters  
 Sizes 5/8", 3/4" and 1"

## Meter Registration

Meter Size	Initial Dial*	Capacity	Initial Dial*	Capacity
5/8"	10 Gallons	10 Million	1 Cubic Feet	1 Million
3/4"	10 Gallons	10 Million	1 Cubic Feet	1 Million
1"	10 Gallons	10 Million	1 Cubic Feet	1 Million

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

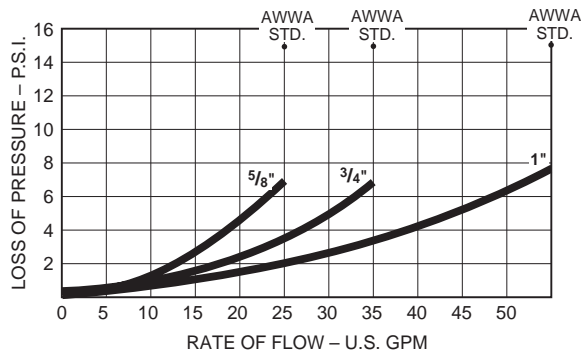
## Flow Characteristics

Meter Size	Typical Low Flow (95% Minimum)	Typical Operating Range (100% ± 1.5%)	Maximum Continuous Operation
5/8"	1/4 GPM	1/2 to 25 GPM	15 GPM
3/4"	1/2 GPM	3/4 to 35 GPM	25 GPM
1"	3/4 GPM	2 to 50 GPM	35

## Performance

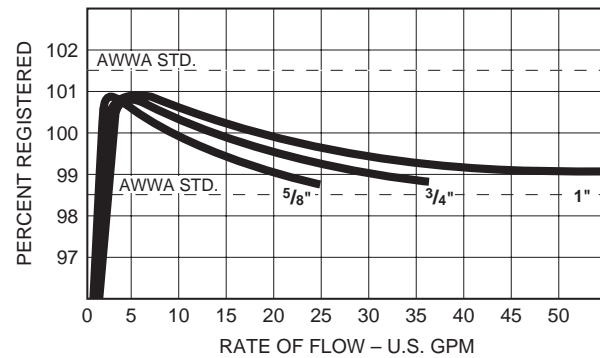
HEAD LOSS - 5/8", 3/4" AND 1"

(Figure 1)



ACCURACY - 5/8", 3/4", AND 1"

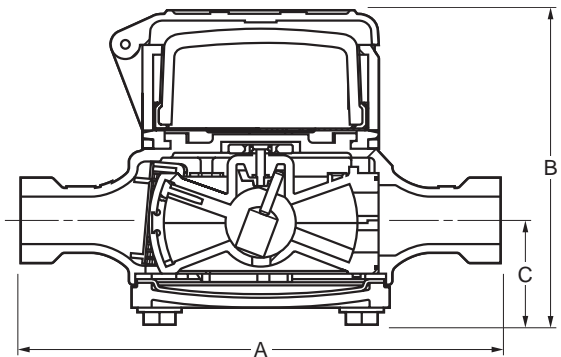
(Figure 2)



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

## Dimensions and weights

Meter Size	5/8"	3/4"	3/4" Short	3/4" x 1"	1"
<b>Ends External (NPSM) straight pipe threads</b>					
<b>Model</b>	<b>430</b>	<b>442</b>	<b>442</b>	<b>442</b>	<b>452</b>
<b>Dimension</b>					
A	7-1/2"	9"	7-1/2"	9"	10-3/4"
B	4-15/16"	5-11/16"	5-11/16"	5-11/16"	6-5/8"
C	1-5/8"	1-15/16"	1-15/16"	1-15/16"	2-1/8"
Width	4.25"	6.39"	6.39"	6.39"	7.22"
inlet and outlet	1/2" or 3/4"	3/4"	3/4"	1"	1"
Net weight	4-1/2	8-1/2	8	9	11



Note: Weights are in pounds and are approximate.