



A PRODUCT SHEET OF NEPTUNE TECHNOLOGY GROUP

High Performance Turbine Meter



Neptune® High Performance (HP) Turbine water meters offer some of the widest flow ranges of any turbine meters on the market.

All HP Turbine water meters meet or exceed the latest performance and accuracy requirements of AWWA C701 and maximum continuous flow rates may be exceeded by as much as 25% for intermittent periods.

Construction

Each HP Turbine consists of a rugged, lead free, high-copper alloy maincase, an AWWA Class II turbine measuring element, and a roll-sealed register. The maincase is corrosion-resistant, lightweight, and compact. Inlet and outlet connections are flanged. Strainers are available to prevent debris from entering the meter and to reduce the effects of uneven water flow due to upstream piping variations.

The unitized measuring element (UME) allows for quick, easy, in-line interchangeability. Water volume is measured accurately at all flows by a specially-designed assembly. The hydrodynamically-balanced, thrust-compensated rotor relieves pressure on the thrust bearings to minimize wear and provide sustained accuracy over an extended operating life. Direct coupling of the rotor to the gear train eliminates revenue loss due to slippage during fast starts and line surges. A calibration vane allows in-field calibration of the UME to lengthen service life and to ensure accurate registration.

The roll-sealed register eliminates leaking and fogging. A magnetic drive couples the register with the measuring element.

Application

The HP Turbine water meter is designed for applications where flow rates are consistently moderate to high.

Systems Compatibility

Adaptability to all present and future systems for flexibility.

Warranty

Neptune provides a limited warranty with respect to its HP Turbine water meters for performance, materials, and workmanship.

When desired, owner maintenance is easily accomplished by in-line replacement of major components.

KEY FEATURES

Roll-Sealed Register

- Magnetic-driven, low-torque registration ensures accuracy
- Impact-resistant register design with flat glass for readability
- 1:1 ratio, low-flow indicator identifies leaks
- Bayonet mount allows in-line serviceability
- Tamperproof seal pin deters theft
- Date of manufacture, size, and model stamped on dial face

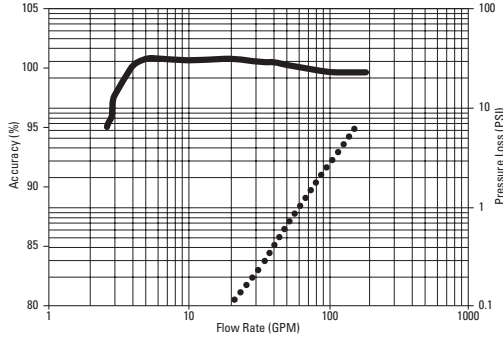
Lead Free Maincase

- Made from lead free, high-copper alloy
- NSF/ANSI 61 and 372 certified
- Compact design is lightweight and easy to handle
- Sturdy, durable, corrosion-resistant
- Resists internal pressure stresses and external damage
- Residual value

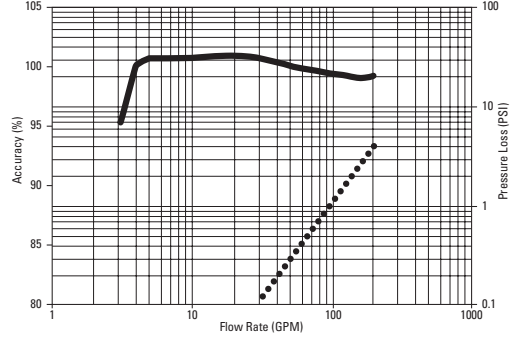
Turbine Measuring Element

- Excellent low-flow sensitivity and wide flow ranges available at 98.5% - 101.5% accuracy
- Direct coupling of rotor to gear train prevents slippage and ensures accurate registration
- Interchangeable measuring element allows for in-line service
- Hydrodynamically-balanced rotor
- Reusable O-ring gasket on 3" - 10" sizes

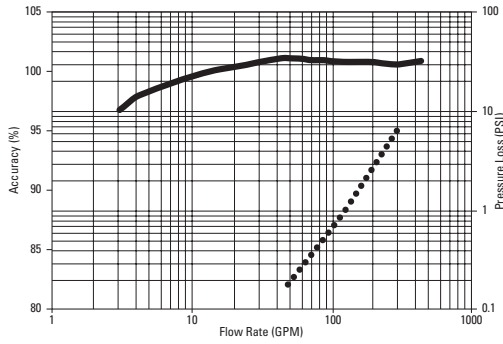
1½" Accuracy



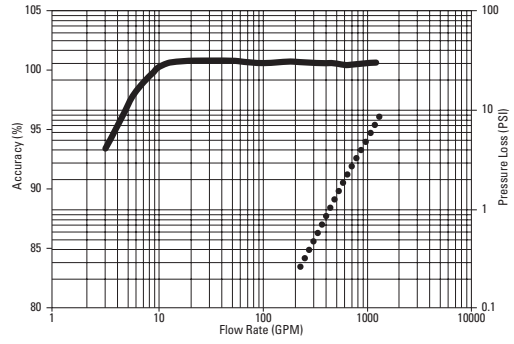
2" Accuracy



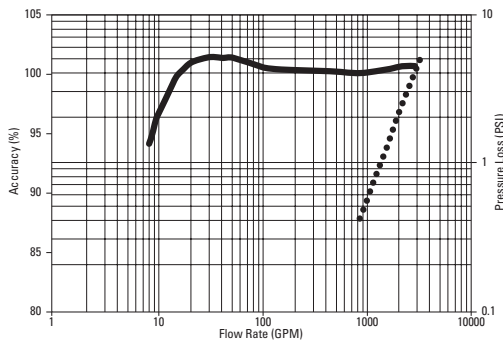
3" Accuracy



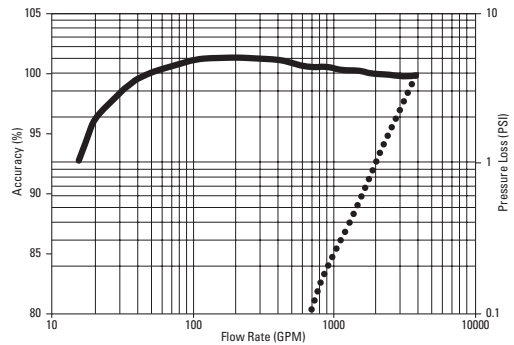
4" Accuracy



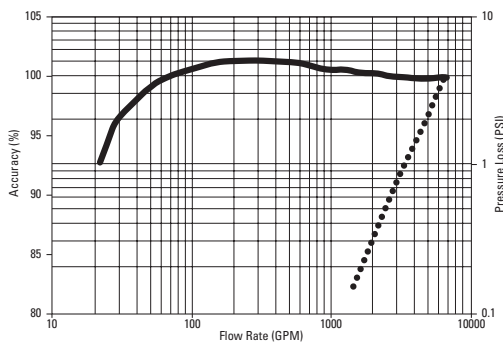
6" Accuracy



8" Accuracy



10" Accuracy



— Accuracy
..... Head Loss

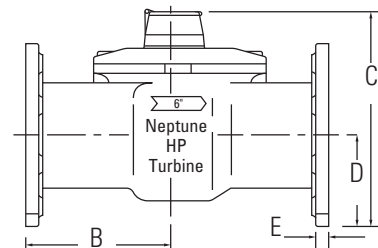
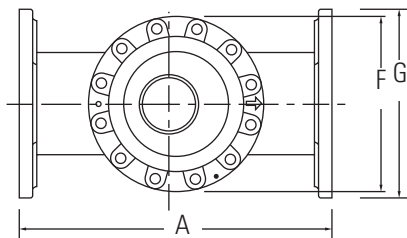
These charts show typical meter performance. Individual results may vary.

Operating Characteristics

Meter Size	Normal Operating Range @100% Accuracy (±1.5%)	Maximum Intermittent Flow	AWWA Standard
1½"	4 to 160 US gpm 0.91 to 36.3 m³/h	200 US gpm 45.4 m³/h	4 to 120 US gpm 0.91 to 27.3 m³/h
2"	4 to 200 US gpm 0.91 to 45.4 m³/h	250 US gpm 56.8 m³/h	4 to 190 US gpm 0.91 to 43.2 m³/h
3"	5 to 450 US gpm 1.14 to 102.2 m³/h	560 US gpm 127.2 m³/h	8 to 435 US gpm 1.8 to 98.8 m³/h
4"	10 to 1,200 US gpm 2.27 to 272.5 m³/h	1,500 US gpm 340.7 m³/h	15 to 750 US gpm 3.4 to 170.3 m³/h
6"	20 to 2,500 US gpm 4.55 to 567.8 m³/h	3,100 US gpm 704.1 m³/h	30 to 1,600 US gpm 6.8 to 306.6 m³/h
8"	35 to 4,000 US gpm 7.95 to 908.5 m³/h	5,000 US gpm 1135.6 m³/h	50 to 2,800 US gpm 11.4 to 635.9 m³/h
10"	50 to 6,500 US gpm 11.36 to 1476.3 m³/h	8,000 US gpm 1817 m³/h	75 to 4,200 US gpm 17.0 to 953.9 m³/h

Dimensions

Meter Size	A	B	C-STD	C-ProRead™	C-E-CODER® and ProCoder® Products	D	E	F	G	Weight
	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)	in (mm)	lbs (kg)
1½"	10 (254)	6½ (165)	7⅞ (181)	7⅞ (192)	7¾ (197)	1¾ (44)	¾ (19)	4½ (114)	5⅜ (137)	19 (8.6)
2"	10 (254)	6½ (165)	7⅞ (194)	8⅞ (204.8)	8¼ (210)	2⅞ (54)	1⅜ (21)	4½ (114)	5⅜ (137)	20 (9.1)
3"	12 (305)	6 (152)	10 (254)	10⅞ (265.1)	10⅞ (270)	3¾ (95)	⅝ (16)	6¼ (159)	7½ (191)	40 (18.1)
4"	14 (356)	6½ (165)	10⅞ (276)	11⅝ (287.3)	11½ (292)	4½ (114)	¾ (19)	8⅞ (206)	9 (229)	52 (23.6)
6"	18 (457)	8⅝ (219)	13 (330)	13⅞ (341.3)	13⅝ (346)	5½ (140)	1 (25)	10¼ (260)	11 (279)	115 (52.2)
8"	20 (508)	9⅝ (244)	15½ (394)	15⅝ (404.8)	16⅞ (409)	6¾ (171)	1⅞ (29)	10¼ (260)	13½ (343)	195 (88.4)
10"	26 (660)	12⅝ (321)	15½ (394)	15⅝ (404.8)	16⅞ (409)	8 (203)	1¼ (32)	10¼ (260)	16 (406)	275 (124.7)



Specifications

Application

- Cold water measurement of flow in one direction

Maximum operating pressure:

- 175 psi (1206 kPa)

Maximum operating temperature:

- 80°F

Register

- Direct reading, center-sweep, roll-sealed, magnetic drive with low-flow indicator

Measuring element

- AWWA Class II Turbine, hydrodynamically-balanced rotor

Guaranteed Systems Compatibility

All HP Turbine water meters are guaranteed adaptable to our ARB® V, ProRead™ (ARB VI), ProCoder™, E-CODER®, E-CODER®)R900i™, E-CODER®)R450i™, TRICON®/S, TRICON/E®3, and Neptune meter reading systems without removing the meter from service.

Options

Sizes

- 1½", 2", 3", 4", 6", 8", 10"

Units of measure:

- U.S. gallons, imperial gallons, cubic feet, cubic metres

Register Types

- Remote reading systems*: ARB V, ProRead, ProCoder, E-CODER, E-CODER)R900i, E-CODER)R450i, TRICON/S, TRICON/E3

* Consult factory for meter performance specifications when fitted with ARB.

- Reclaim

Companion flanges

- 1½" and 2" (oval): bronze
- 3", 4", 6": bronze or cast iron
- 8" and 10": cast iron

Strainer

- 1½"- 6" NSF/ANSI 61 lead free high copper alloy
- 1½"-10" NSF/ANSI 61 lead free Rilsan® nylon-coated ductile iron

Registration

Registration (6-wheel odometer, per sweep hand revolution)		
	1½", 2", 3", 4"	6", 8", 10"
1,000 US Gallons		✓
1,000 Imperial Gallons		✓
100 US Gallons	✓	
100 Imperial Gallons	✓	
100 Cubic Feet		✓
10 Cubic Feet	✓	
10 Cubic Metres		✓
1 Cubic Metre	✓	

Register Capacity (6-wheel odometer)		
	1½", 2", 3", 4"	6", 8", 10"
1,000,000,000 US Gallons		✓
1,000,000,000 Imperial Gallons		✓
100,000,000 US Gallons	✓	
100,000,000 Imperial Gallons	✓	
100,000,000 Cubic Feet		✓
10,000,000 Cubic Feet	✓	
10,000,000 Cubic Metres		✓
1,000,000 Cubic Metres	✓	



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