



## COLD WATER METERS/ DISPLACEMENT TYPE MAGNETIC DRIVE 5/8" - 2"



### SPECIFICATIONS

#### GENERAL

All cold water meters (displacement type - magnetic drive 5/8" - 2") furnished shall be produced from an ISO 9001 manufacturing facility and conform to the "Standard Specifications for Cold Water Meters" C700, latest revision issued by AWWA or as otherwise stated.

#### TYPE

Only magnetic-driven, positive displacement meters of the flat nutating disc type will be accepted because of enhanced low flow accuracy performance.

#### SIZE, CAPACITY, LENGTH

The size, capacity, and meter lengths shall be as specified in AWWA Standard C700 (latest revision). The maximum number of disc nutations is not to exceed those specified in AWWA C700 latest revision.

All meter maincases shall be made of a no-lead high copper alloy containing a minimum of 85% copper that meets the ANSI/NSF 61 standard. The serial number should be stamped between the outlet port of the maincase and the register. Maincase markings shall be cast raised and shall indicate size, model, direction of flow, and NSF 61 certification. Plastic maincases are not acceptable.

Maincases for 5/8", 3/4" and 1" meters shall be of the removable bottom cap type with the bottom cap secured by four (4) bolts on 5/8" and 3/4" sizes and six (6) bolts on the 1" size. Intermediate meter maincases shall also be made of the same lead-free brass material in sizes 1-1/2" and 2" with a cover secured to the maincase with eight (8) bolts. Meters with a frost plug, a screw-on design or no bottom cap shall not be accepted in 5/8"-1" sizes. The 5/8" meters shall have a synthetic polymer or cast iron bottom cap option.

All no-lead maincases shall be guaranteed free from manufacturing defects in workmanship and material for the life of the meter.

All meters must be adaptable to a field programmable absolute encoder register without interruption of the customer's service.

#### BOLTS

All maincase bolts shall be of 300 series non-magnetic stainless steel to prevent corrosion.

#### DIRECT READ STANDARD REGISTER

The register shall be of the straight reading sealed magnetic drive type and shall contain six (6) numeral wheels. Registers must be roll sealed and dry. All direct reading register cups shall be copper to prevent corrosion and be covered with a high strength, impact resistant flat glass lens to prevent breakage. The lens shall be positioned above the register box to allow for run off of debris. The register lid shall overlap the register box to protect the lens. The register retaining ring shall be designed to absorb impact from the register. Register boxes and lids shall be of high-strength synthetic polymer or approved equivalent. All registers shall have the size, model and date of manufacture stamped on the dial face. The dial shall have a red center sweep hand and shall contain 100 equally divided graduations at its periphery.

The register must contain a low flow indicator with a 1:1 ratio to disc nutations to provide leak detection.

Registers shall be secured to the maincase by means of a plastic tamper-proof seal to allow for inline service replacement. Register seal screws are only accepted when supplied with attached sealing wire to at least one bottom cap bolt with seal wire holes of not less than 3/32" in diameter.

Registers shall be guaranteed for at least 10 years. All meters will be guaranteed for one year on material and workmanship.

#### MEASURING CHAMBER

The measuring chamber shall be of a 2-piece snap-joint type with no fasteners allowed. The chamber shall be made of a non-hydrolyzing synthetic polymer.

The control block shall be the same material as the measuring chamber and be located on the top of the chamber. The control block shall be located after the strainer.

The measuring chamber outlet port shall be sealed to the maincase outlet port by means of an "O" ring gasket.

The flat nutating disc shall be a single piece made from non-hydrolyzing synthetic polymer and shall contain a type 316 stainless steel spindle. The nutating disc shall be equipped with a synthetic polymer thrust roller located within the disc slot. The thrust roller head shall roll on the buttressed track provided by the diaphragm.

The chamber shall be warranted for 10 years against freeze damage if the meter has been equipped with a frost proof cast iron or synthetic polymer bottom cap.

## STRAINERS

All meters shall contain a removable polypropylene plastic strainer screen. The strainer shall be located near the maincase inlet port, before the measuring chamber. The strainer shall also function as the device that holds the measuring chamber in place within the maincase. Straps or other types of fasteners shall not be accepted.

## PERFORMANCE

To ensure accuracy, each meter must be accompanied by a factory test tag certifying the accuracy at the flows required by AWWA C700.

All meters shall be warranted as follows:

Size	Low Flow	Low Flow New Meter Accuracy	Low Flow Repaired Meter Accuracy
5/8"	1/8 gpm @ 95%	5 Yrs or 500 KGal	5-10 Yr or 1.5 MGal
3/4"	1/4 gpm @ 95%	5 Yrs or 750 KGal	5-10 Yr or 2.3 MGal
1"	3/8 gpm @ 95%	5 Yrs or 1 MGal	5-10 Yr or 3 MGal
1-1/2"	3/4 gpm @ 95%	2 Yrs or 1.6 MGal	10 Yrs or 5 MGal
2"	1 gpm @ 95%	2 Yrs or 2.7 MGal	10 Yrs or 8 Mgal

Normal meter operating range shall be as follows:

Size	Accuracy Range $\pm$ 1.5%
5/8"	1/2 - 20 gpm
3/4"	3/4 - 30 gpm
1"	1 - 50 gpm
1-1/2"	2 - 100 gpm
2"	2-1/2 - 160 gpm

## MANUFACTURER

Meters and meter parts shall be manufactured, assembled, and tested within the United States. Manufacturers may be required to provide proof of where and of what percentage of the meter register, chamber, and maincase is manufactured in the United States.

Manufacturers shall have a minimum of fifteen years of field and production experience with all sizes and models quoted. Manufacturers shall provide only one model of meter which complies with these specifications. Suppliers must have been manufacturing meters for at least 100 years.

## SYSTEMS GUARANTEE

All meters shall be guaranteed upgradeable to the following Neptune systems without interruption of the customer's service.

**ProRead™ (ARB® VI) AutoDetect Absolute Encoder**

**E-Coder™ (ARB VII) Solid State Absolute Encoder**

**R900®**

**FloSearch® II**

**Tricon/E3®**

**Tricon**

Neptune engages in ongoing research and development to improve and enhance its products. Therefore, Neptune reserves the right to change product or system specifications without notice.

### Neptune Technology Group Inc.

1600 Alabama Highway 229  
Tallahassee, AL 36078  
USA  
Tel: (800) 645-1892  
Fax: (334) 283-7299

### Neptune Technology Group (Canada) Ltd.

7275 West Credit Avenue  
Mississauga, Ontario  
L5N 5M9  
Canada  
Tel: (905) 858-4211  
Fax: (905) 858-0428

### Neptune Technology Group Inc.

Ejército Nacional No. 418  
Piso 12, Desp. 1201-1202  
Col. Chapultepec Morales  
Delegación Miguel Hidalgo  
11570 México, Distrito Federal  
Tel: (525) 55203 5294 / (525) 55203 5708  
Fax: (525) 55203 6503

