


**Badger Meter**

## Recordall® Disc Meter

Cold Water Top Load Bronze, Size 1-1/2" (40 mm)  
 NSF/ANSI Standard 61 Certified, Annex G

### DESCRIPTION

Badger Meter Meter offers the Recordall Disc meter in Cast Bronze and a Lead-Free Alloy. The Lead-Free Alloy (Trade designation: M120-LL) version has been certified to comply with NSF/ANSI Standard 61, Annex G and carries the NSF-61 Mark on the housing. All components of the Lead-Free Alloy meter, i.e., disc, chamber, housing, seals, etc. comprise the certified system.

### Applications

For use in measurement of potable cold water in residential, commercial and industrial services where flow is in one direction only.

### Operation

Water flows through the meter's strainer and into the measuring chamber where it causes the disc to nutate. The disc, which moves freely, nutates on its own ball, guided by a thrust roller. A drive magnet transmits the motion of the disc to a follower magnet located within the permanently sealed register. The follower magnet is connected to the register gear train. The gear train reduces the disc nutations into volume totalization units displayed on the register dial face.

### Operating Performance

The Badger Meter Recordall Disc meters meet or exceed registration accuracy for the low flow rates (95%), normal operating flow rates ( $100 \pm 1.5\%$ ), and maximum continuous operation flow rates as specifically stated by AWWA Standard C700.

### Construction

Badger Meter Recordall Disc meter construction, which complies with ANSI/AWWA standard C700, consists of three basic components: bronze meter housing, measuring chamber, and permanently sealed register. A corrosion-resistant lead-free material is used for the measuring chamber.

To simplify maintenance, the register, measuring chamber, and strainer can be replaced without removing the meter housing from the installation. No change gears are required for accuracy calibration. Interchangeability of parts among like-sized meters also minimizes spare parts inventory investment.

### Magnetic Drive

Direct magnetic drive, through the use of high-strength magnets, provides positive, reliable and dependable register coupling for straight-reading or automatic meter reading options.

### Sealed Register

The standard register consists of a straight-reading odometer-type totalization display, 360° test circle with center sweep hand and flow finder to detect leaks. Register gearing consists of self-lubricating engineered polymer gears to minimize friction and provides long life. Permanently sealed; dirt, moisture, tampering and lens fogging problems are eliminated. Multi-position register simplifies meter installation and reading. Automatic meter reading systems are available for all Recordall Disc meters. All reading options are removable from the meter without disrupting water service.

### Tamper-Proof Features

Customer removal of the register to obtain free water can be prevented when the optional tamper detection seal wire screw or TORX® tamper resistant seal screw is added to the meter. Both can be installed at the meter site or at the factory.



Model 120 shown with optional 1" Test Plug

### Maintenance

Badger Meter Recordall Disc meters are designed and manufactured to provide long-term service with minimal maintenance. When maintenance is required, it can be performed easily either at the meter installation or at any other convenient location. As an alternative to repair by the utility, Badger Meter offers various maintenance and meter component exchange programs to fit the needs of the utility.

### Connections

Tailpieces/Flanges for installations of meters on various pipe types and sizes, including misaligned pipes, are available as an option.

### SPECIFICATIONS

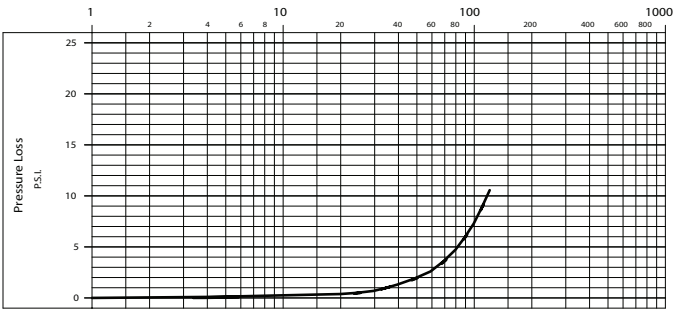
<b>Typical Operating Range</b> (100% ± 1.5%)	2.5...120 gpm (0.57...27 m <sup>3</sup> /hr)
<b>Low Flow (Min. 95%)</b>	1.25 gpm (0.28 m <sup>3</sup> /hr)
<b>Max. Continuous Operation</b>	80 gpm (18 m <sup>3</sup> /hr)
<b>Pressure Loss at Max.</b>	4.8 psi at 80 gpm (0.33 bar at 18 m <sup>3</sup> /hr)
<b>Max. Operating Temperature</b>	80° F (26° C)
<b>Max. Operating Pressure</b>	150 psi (10 bar)
<b>Measuring Element</b>	Nutating disc, positive displacement
<b>Register Type</b>	Straight reading, permanently-sealed magnetic drive standard. AMR/AMI units optional.
<b>Registration</b>	100 gallons, 10 cubic feet, 1 m <sup>3</sup> , 0.1 m <sup>3</sup>
<b>Register Capacity</b>	100,000,000 gallons 10,000,000 cubic feet, 1,000,000 m <sup>3</sup> 100,000 m <sup>3</sup> 6 odometer wheels
<b>Meter Connections</b>	1-1/2" AWWA two bolt elliptical flange, drilled or 1-1/2...11-1/2 NPT internal pipe threads.
<b>Test Plugs</b>	1" NPT test plug (TP) available on elliptical long and short versions.

### MATERIALS

<b>Meter Housing</b>	Cast Bronze, Lead-Free Alloy
<b>Housing Top Plates</b>	Bronze, Lead-Free Alloy
<b>Measuring Chamber</b>	Engineered Polymer
<b>Disc</b>	Engineered Polymer
<b>Trim</b>	Stainless Steel, Bronze
<b>Strainer</b>	Engineered Polymer
<b>Disc Spindle</b>	Stainless Steel
<b>Magnet</b>	Ceramic
<b>Magnet Spindle</b>	Stainless Steel
<b>Register Lid and Shroud</b>	Engineered Polymer, Bronze
<b>Generator Housing</b>	Engineered Polymer

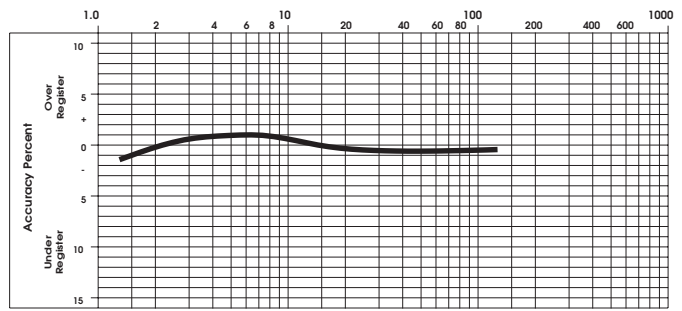
**PRESSURE LOSS CHART**

Rate of Flow, in Gallons per Minute



**ACCURACY CHART**

Rate of Flow, in Gallons per Minute



Meter Size	Meter Model	A Laying Length	B Height Reg./RTR	C Height Gen.	D Centerline to Base	Approx.	Shipping
1-1/2" (40 mm)	120 EL, Hex 120 EL, TP	12-5/8" (321 mm)	7" (178 mm)	8-3/8" (213 mm)	2-3/8" (60 mm)	8-3/4" (222 mm)	19 lb (8.6 kg)
1-1/2" (40 mm)	120 ELL 120 ELL, TP	13" (330 mm)	7" (178 mm)	8-3/8" (213 mm)	2-3/8" (60 mm)	8-3/4" (222 mm)	19 lb (8.6 kg)

EL = Elliptical

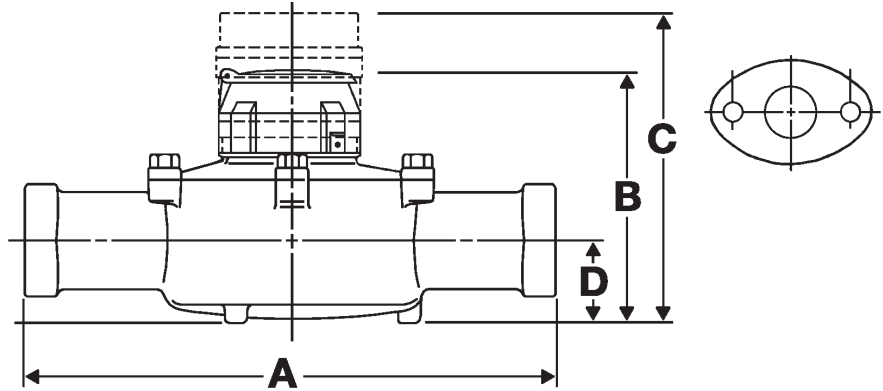
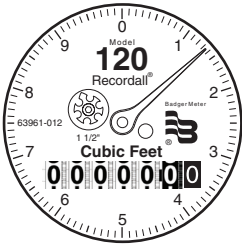
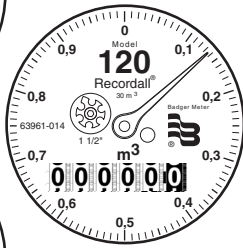
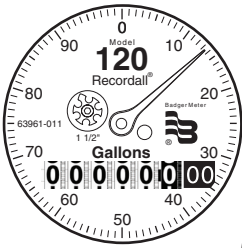
ELL = Elliptical Long

Hex = Hexagon, 1-1/2" - 11-1/2 NPT Thread

TP=Test Plug 1"

**Sweep Hand Registration**

Model	Gallon	Cubic Feet	Cubic Meter
M120	100	10	1/.1



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**The Americas | Badger Meter** | 4545 West Brown Deer Rd | PO Box 245036 | Milwaukee, WI 53224-9536 | 800-876-3837 | 414-355-0400  
**México | Badger Meter de las Americas, S.A. de C.V.** | Pedro Luis Ogazón N°32 | Esq. Angelina N°24 | Colonia Guadalupe Inn | CP 01050 | México, DF | México | +52-55-5662-0882  
**Europe, Middle East and Africa | Badger Meter Europa GmbH** | Nurtinger Str 76 | 72639 Neuffen | Germany | +49-7025-9208-0  
**Czech Republic | Badger Meter Czech Republic s.r.o.** | Mařikova 2082/26 | 621 00 Brno, Czech Republic | +420-5-41420411  
**Slovakia | Badger Meter Slovakia s.r.o.** | Racianska 109/B | 831 02 Bratislava, Slovakia | +421-2-44 63 83 01  
**Asia Pacific | Badger Meter** | 80 Marine Parade Rd | 21-04 Parkway Parade | Singapore 449269 | +65-63464836  
**China | Badger Meter** | Rm 501, N° 11 Longyue Apartment | N° 180 Longjin Rd, Jiuting Songjiang District | Shanghai, China | 201615 | +86-21-5763 5412