

**REQUEST FOR PROPOSAL**

Project Title: Cooley Laboratory Renovation  
Location: Montana State University

PPA No.: 10-0023  
RFP No.: 103  
Date: February 28, 2013

To: Dick Anderson Construction  
4498 Jackrabbit Lane  
Bozeman, MT 59718

Attention: Platisha

From: Cecilia Vaniman, Project Manager  
Cooley Lab Renovation  
Montana State University

Attention: \_\_\_\_\_

In order to expedite the Work and avoid or minimize delays in the Work the following information is requested. Please return a response by: 03/05/2013 Date Sent: 02/28/2013  
Date Received: \_\_\_\_\_

Proposal Requested:

**Provide two (2) Recordall Badger Meters to be located as shown on attached sketch**

Scope of work includes; Division 15

Please provide and install Badger Recordall meters for the RO water system as shown..

**This RFP is for pricing purposes only. The contractor shall not proceed with the scope of work described within until pricing is approved by the owner in writing.**

Distribution:  Owner  Architect  Engineer  
 Agency  Contractor  Other



**Badger Meter**

# Recordall® Cold Water Engineered Polymer Disc Meter

Size 3/4" (DN 20mm) NSF/ANSI Standard 61 Certified, Annex G

## DESCRIPTION

Badger Meter offers a Recordall disc meter line that has been certified to comply with NSF/ANSI Standard 61, Annex G. All components within the engineered polymer meter, i.e., disc, chamber, housing, o-rings, 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 3/4" Recordall Disc meter meets or exceeds registration accuracy for the low flow rates (95%), normal operating flow rates (100 ± 1.5%), and maximum continuous operation flow rates as specifically stated by AWWA Standard C710.

**CONSTRUCTION:** Badger Meter Recordall Disc meter construction, which complies with ANSI/AWWA standard C710, consists of three basic components: meter housing, measuring chamber, and permanently sealed register. The water meter is Engineered Polymer with externally-threaded spuds. A corrosion-resistant Engineered Polymer 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, remote 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 thermoplastic 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.

**MAINTENANCE:** The 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 offers various maintenance and meter component exchange programs to fit the needs of the utility.

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



Model 25PN

## SPECIFICATIONS

<b>Typical Operating Range (100% ± 1.5%)</b>	1/2 - 30 GPM (1.0 to 6.8 m3/hr)
<b>Low Flow (Min. 95%)</b>	1/4 GPM (.057 m3/hr)
<b>Maximum Continuous Operation</b>	15 GPM (3.4 m3/hr)
<b>Pressure Loss at Maximum Continuous Operation</b>	2.8 PSI at 15 GPM (0.19 bar at 3.4 m3/hr)
<b>Maximum Operating Temperature</b>	80°F (26°C)
<b>Maximum 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. Remote reading or Automatic Meter Reading units optional.
<b>Register Capacity</b>	10,000,000 Gallons, 1,000,000 Cubic Feet, 100,000 m3. 6 odometer wheels.
<b>Meter Connections</b>	Available in bronze and thermoplastic to fit 3/4" spud thread bore diameter sizes. See table below.

### METER SPUD & CONNECTION SIZES

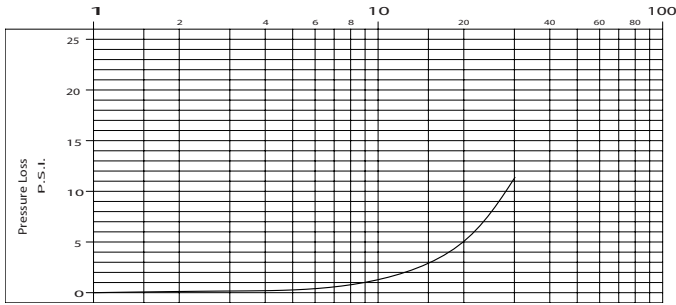
Size Designation	x	"L" Laying Length	"B" Bore Dia.	Coupling Nut and Spud Thread	Tailpiece Pipe Thread (NPT)
3/4"	x	9"	3/4"	1" (3/4")	3/4"

## MATERIALS

Meter Housing	Engineered Polymer
Housing Bottom Plate	Engineered Polymer
Measuring Chamber	Engineered Polymer
Disc	Engineered Polymer
Strainer	Engineered Polymer
Disc Spindle	Stainless Steel
Magnet	Ceramic
Magnet Spindle	Stainless Steel
Register Shroud	Engineered Polymer
Register Lid	Engineered Polymer or Bronze

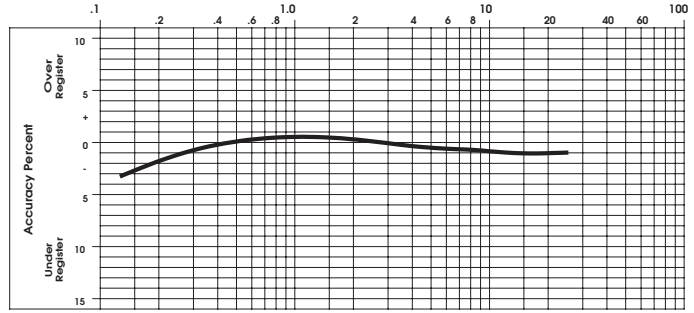
**PRESSURE LOSS CHART**

Rate of Flow, in Gallons per Minute



**ACCURACY CHART**

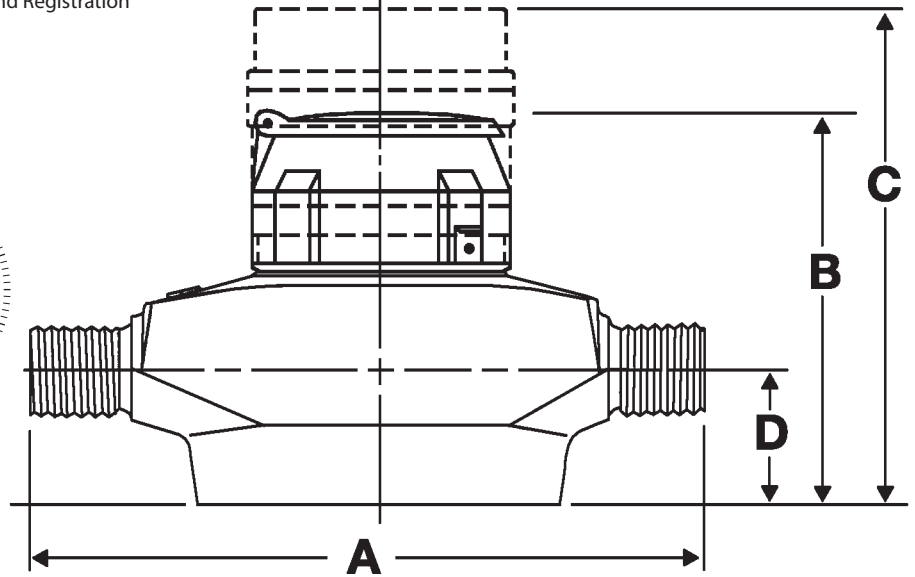
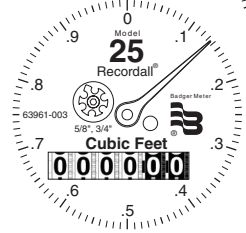
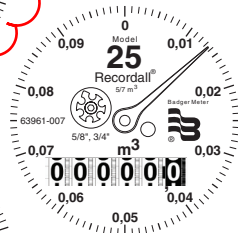
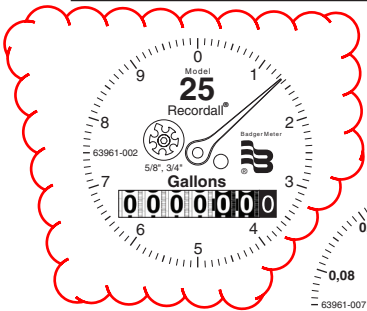
Rate of Flow, in Gallons per Minute



METER SIZE	METER MODEL	A LAYING LENGTH	B HEIGHT REG. / RTR	C HEIGHT GEN.	D CENTERLINE BASE	WIDTH	APPROX. SHIPPING WEIGHT
3/4" (20mm)	25PN	9" (229mm)	5-1/16" (128mm)	6-7/16" (163mm)	1-3/4" (44mm)	4-13/16" (122mm)	3 lb. (1.4kg)

MODEL	GALLON	CUBIC FOOT	CUBIC METER
M25	10	1	.1/.01

Sweep Hand Registration



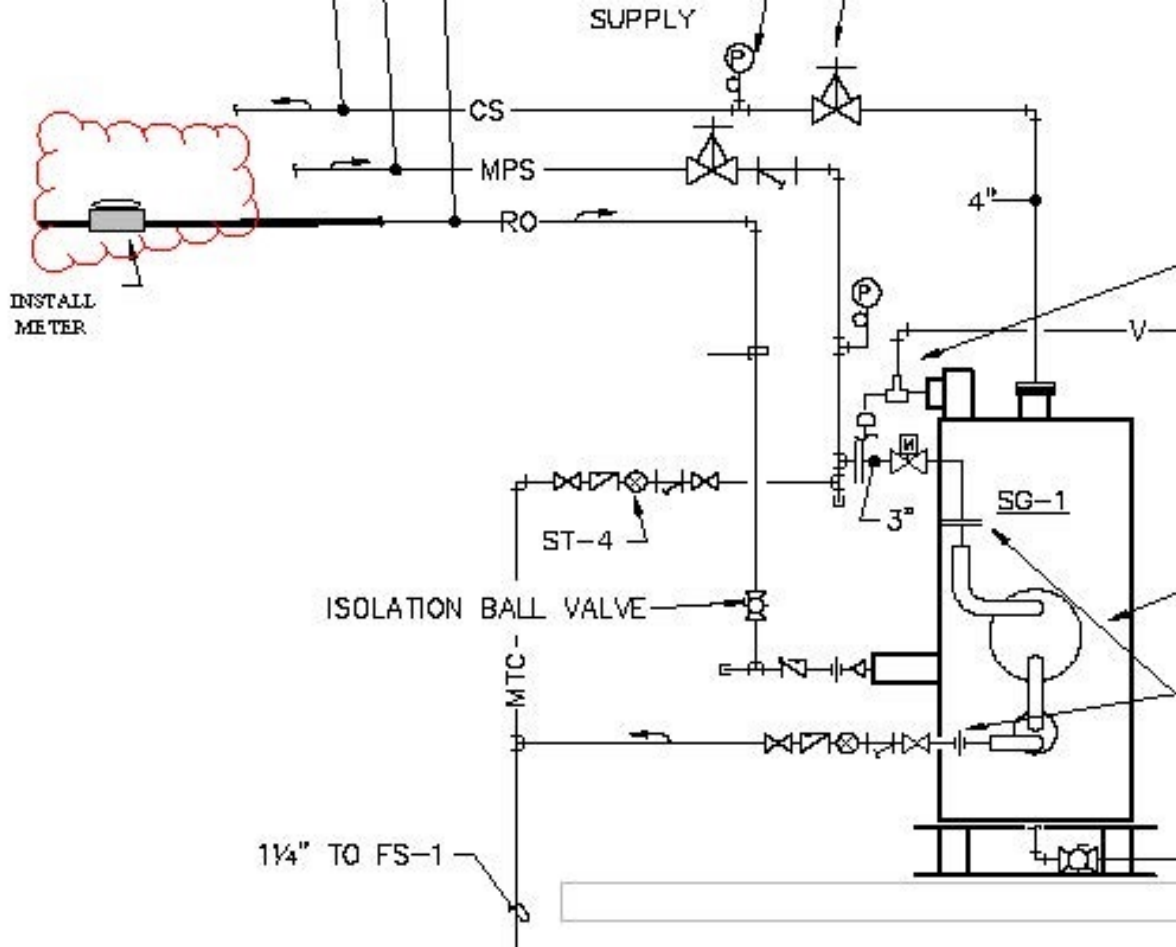
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Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding contractual obligation exists.



6 STEAM GENERATOR PIPING  
NO SCALE

