

# **DB Compound**

**Dual Body Compound Meter**



# Reliable Measurement For A Wide Range Of Flows

The Master Meter DB (Dual Body) Compound Meter is designed to provide utilities with highly accurate measurement over a wide flow range. By incorporating a Master Meter multi-jet meter and turbine meter in one assembly, the DB Compound relies on proven velocity measurement to produce high and sustained accuracy over a broad range of flows.

## Design and Operation

The Master Meter compound meter combines a Master Meter turbine meter on the main flow line and appropriately-sized multi-jet meter on the low flow or bypass line. A differential pressure valve controls the flow of water through the appropriate measuring device. Piping sized to the bypass line connects the meters in a single assembly.

Water flows through a bypass meter, and usage is recorded on its register, until the flow rate reaches approximately one half the capacity of the bypass meter. At that point, the drop in pressure causes the differential pressure valve to open, and water flows through both the main line and bypass meters. In its full open position, the valve allows unimpeded flow through both chambers and registration is recorded on both meters. When flow is decreasing the process is reversed,

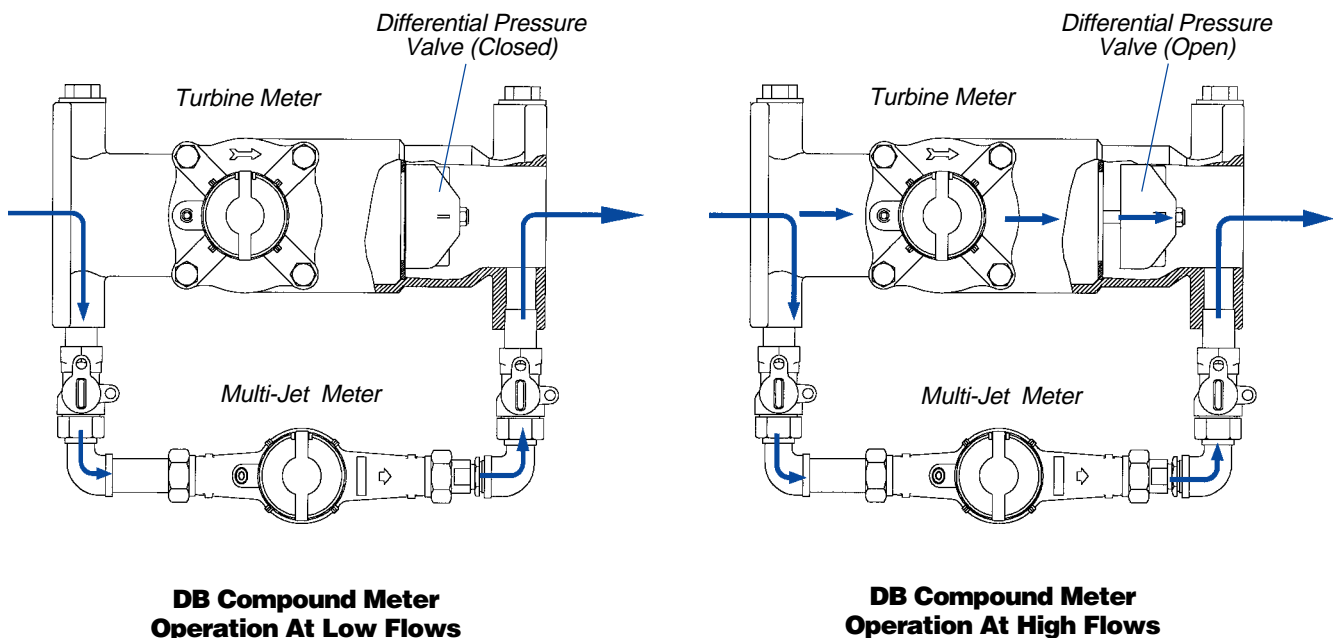
	AWWA C-702	DB Compound
<b>2" Compound Meter</b>		
Minimum Flow	1/4 gpm	1/4 gpm
Continuous Operating Range	2-80 gpm	1-175 gpm
Maximum Flow	160 gpm	285 gpm
<b>3" Compound Meter</b>		
Minimum Flow	1/2 gpm	1/4 gpm
Continuous Operating Range	4-160 gpm	1-330 gpm
Maximum Flow	320 gpm	480 gpm
<b>4" Compound Meter</b>		
Minimum Flow	3/4 gpm	3/4 gpm
Continuous Operating Range	6-250 gpm	2-440 gpm
Maximum Flow	500 gpm	750 gpm
<b>6" Compound Meter</b>		
Minimum Flow	1 1/2 gpm	1 1/2 gpm
Continuous Operating Range	10-500 gpm	5-1200 gpm
Maximum Flow	1000 gpm	1700 gpm

directing low flows through the multi-jet chamber.

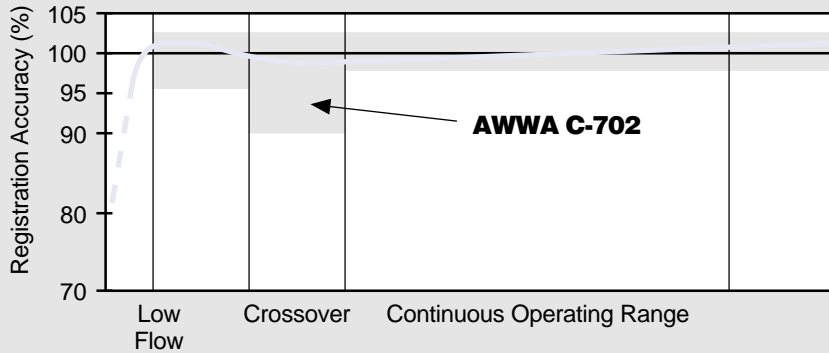
## Broad Flow Range

The Master Meter DB Compound Meter provides utilities accurate measurement

over a significantly broader flow range than specified in AWWA C-702, as shown in the chart above, and beyond that available with many other compound designs. In addition, Master Meter guarantees the accuracy of its meters in these broader flow ranges.



## ACCURACY CURVE 2", 3", 4" and 6" DB COMPOUND METERS



### High Accuracy At Crossover

With the DB Compound Meter, utilities need not fear revenue loss from meters operating in the crossover range. At crossover, when primary measurement of water flow shifts from one chamber to the other, the Master Meter DB Compound accurately measures at least 97 percent of flows, well above the AWWA specified 90%. Master Meter can provide high accuracy because of the DB Compound design, where flow through the bypass chamber continues to be measured, even once the turbine chamber is operating.

### Installation and Service Flexibility

Master Meter compound meters are designed to maximize installation flexibility. Meters are designed to fit comfortably in any current compound meter installation, with dimensions smaller than currently installed models. For even greater flexibility, the bypass meter can be installed on either side of the main line meter, to accommodate installations that may be close to walls of buildings or meter vaults.

To simplify service, shut-off valves are installed upstream and downstream of the multi-jet meter on the bypass line on 2", 3" and 4" sizes. When necessary, flow can be directed through the turbine chamber while the multi-jet is repaired in-line or replaced with another meter. The Master Meter Turbine Meter and differential pressure valve also can be serviced without removal from the line.

Lock wings are provided on the shut-off valves, should a utility desire to install locks to prevent customer diversion of low flows through the turbine chamber.

Both meters are sealed after factory calibration. For utility recalibration, to compensate for wear without parts replacement, external adjusting ports are available on both the main line and bypass meters. External adjusting ports are sealed to prevent tampering and provide visual indication of tampering attempts.

### Long-Life Design

To insure many years of dependable performance Master Meter's compound meter relies on proven materials and proven measurement designs.

The main cases housing both turbine and multi-jet measurement chambers are 81 percent copper composition; bronze register retaining rings and lids are standard. All piping and connections are bronze meeting AWWA Standard C-800. The bronze housing of the differential pressure valve surrounds an engineered plastic clapper with stainless steel shaft and rubber valve seat. The multi-jet and turbine chamber housings and impellers are constructed of rugged engineered plastics.

A reliable magnetic drive provides direct linkage between measurement elements and registers. No intermediate gearing is required; no gearing is exposed to water.

A flow straightener is housed upstream of the turbine chamber to condition flows for accurate measurement. And as is standard on all Master Meter Multi-jet Meters, the bypass meter of the DB Compound Meter incorporates a full 360° strainer. Debris passing through the strainer will flow through the measuring chamber without damage to the impeller, allowing both survival and accurate measurement in installations in which other designs would stop. A non-return valve is installed at the outlet of the multi-jet meter to prevent a backward flow of water through the low-flow meter. As with all meters 2" and above, a separate strainer is recommended to protect the critical measurement element from line-debris damage.

### Reading Flexibility

Standard direct read, DIALOG® Meter Reading System and Electrical Output registers are available for the DB Compound Meter. DIALOG registers are compatible with either on-site automated reading with a portable hand-held computer or telephone Automatic Meter Reading (AMR). Direct read and DIALOG registers are permanently sealed with a tempered glass lens, stainless steel base and wrap-around gasket to prevent intrusion of dirt or moisture.

For efficient on-site automated reading, DIALOG's capabilities enable the reading of both turbine and multi-jet registers from *one* ReadPad® mounted remote from the meter or in the top of a meter box lid.

### Extended Warranties

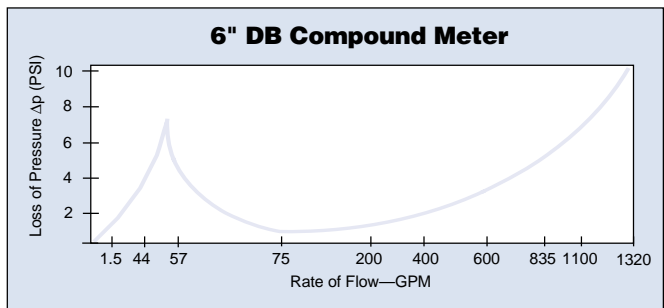
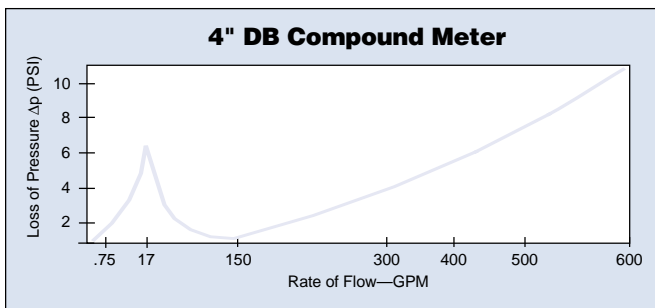
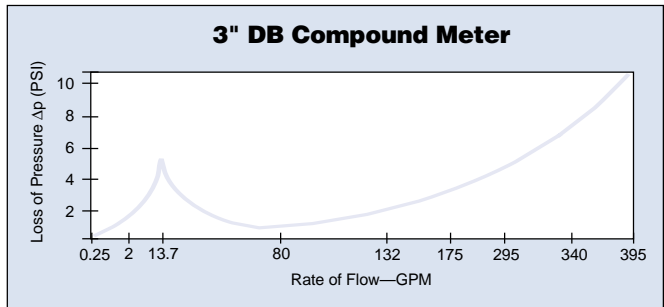
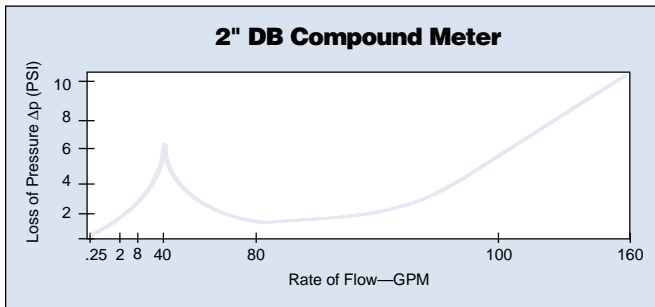
Master Meter guarantees the DB Compound Meter for two full years. In addition, performance of the Master Meter Multi-jet Meter installed on the bypass line is guaranteed for fifteen years—to operate to AWWA C-708 new meter accuracy for two full years and to repaired meter accuracy thru the fifteenth year (or specified registration limits.)

**Master Meter  
DB Compound Meter:  
Accurate, Dependable,  
Flexible. Why Settle  
For Less.**

## METER OPERATING CHARACTERISTICS AND DIMENSIONS

Characteristic/Dimension	2"	3"	4"	6"
Continuous Operating Range (gpm)	1 - 175	1 - 330	2 - 440	5-1200
Low Flow (gpm)	1/4	1/4	3/4	1 1/2
Maximum Flow - Intermittent (gpm)	285	480	750	1700
Changeover (gpm): Increasing Flow	8.5	8.5	17.0	36.0
Decreasing Flow	4.5	5.3	13.0	25.0
Maximum Working Pressure (psi)	150	150	150	150
Maximum Working Temperature (F)	120°	120°	120°	120°
Low Flow Meter Size	5/8"	5/8"	1"	1 1/2"
Accuracy: Low Flow	± 3 %	± 3 %	± 3 %	± 3 %
Changeover	± 3 %	± 3 %	± 3 %	± 3 %
Normal Operating Range	± 2 %	± 2 %	± 2 %	± 2 %
Length	15-1/4"	17"	20"	24"
Height	9-3/4"	8-3/4"	9-1/4"	13"
Height - Bottom to Center Line	2-1/4"	4-1/4"	4-3/4"	5-1/2"
Width	11-1/4"	15-1/2"	18-1/4"	20"
Weight (lbs.)	39	66	90	142

### HEAD LOSS CURVES



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