DESCRIPTION

The L series bolt-on meter head assembly can replace an existing meter head or kept as a spare for those meter locations that cannot have significant down-time.

The meter head bolts to any McCrometer meter that accepts a standard meter head assembly, including models MW5, MW6, MB9, MT9, and MG9.

All Mc Propeller flow meters are manufactured to comply with applicable provisions of NSF 61 / NSF 372 and AWWA Standard No. C704-02 for propeller-type flow meters.

FEATURES

Impellers

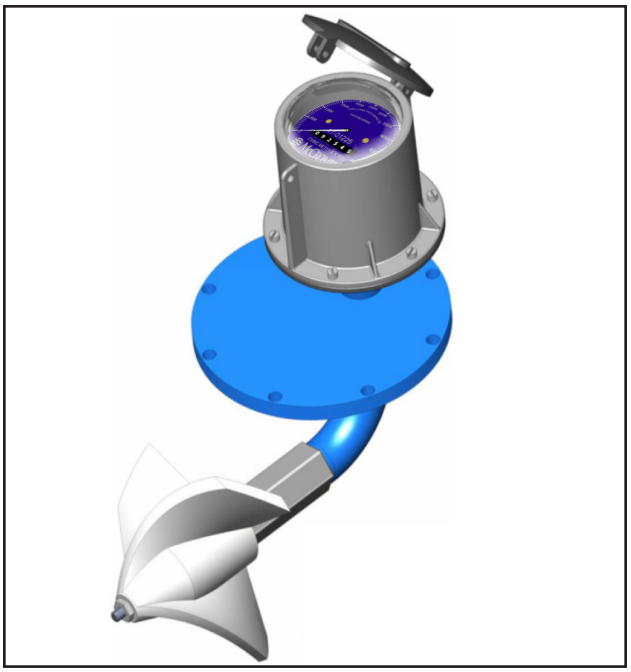
- Impellers are manufactured of high-impact plastic, capable of retaining their shape and accuracy over the life of the meter.
- Each impeller is individually calibrated at the factory to accommodate the use of any standard McCrometer register, and since no change gears are used, the meter can be field-serviced without the need for factory recalibration.

Bearings

- Factory lubricated stainless steel bearings are used to support the impeller shaft.
- The shielded bearing design limits the entry of materials and fluids into the bearing chamber, providing maximum bearing protection.

Register

- The instantaneous flowrate indicator is standard and available in gallons per minute, cubic feet per second, liters per second and other engineering units.
- The register is driven by a flexible steel cable with a magnetically coupled drive, encased within a protective vinyl liner.



Typical Applications

The Mc propeller meter is the most widely used flowmeter for municipal and wastewater treatment applications as well as agricultural and turf irrigation measurement. Typical applications include:

- Water and wastewater management
- Center pivot systems
- Sprinkler irrigation systems
- Drip irrigation systems
- Golf course and park water management
- Gravity turnouts for underground pipelines
- Commercial nurseries

- The register housing protects both the register and cable drive system from moisture while allowing clear reading of the flowrate indicator and totalizer.

Part Numbers, Digital Registers

L							-		-		-		-		-	
Top Plate Options																
Carbon Steel 150 psi	02															
Carbon Steel 300 psi	03															
Stainless Steel 150 psi	Q2															
Stainless Steel 300 psi	Q3															
METER SIZE																
2" Top Plate Meter		02														
2.5" Top Plate Meter		01														
3" Top Plate Meter		03														
4" Top Plate Meter		04														
6" Top Plate Meter		06														
8" Top Plate Meter		08														
10" Top Plate Meter		10														
12" Top Plate Meter		12														
14" Top Plate Meter		14														
16" Top Plate Meter		16														
18" Top Plate Meter		18														
20" Top Plate Meter		20														
24" Top Plate Meter		24														
30" Top Plate Meter		30														
36" Top Plate Meter		36														
42" Top Plate Meter		42														
48" Top Plate Meter		48														
Assembly Component Options																
Standard Top Plate For MC Tube (Standard ID)			A													
Non Standard Top Plate			X													
Bearing																
Standard				1												
Marathon				2												
SS316				3												
SS316 Marathon				4												
SS316 Ceramic				5												
Register Options																
Flowcom (FC200)					F											
Flow Connect (FC Smart Part on 2nd Line)					T											
Output Options																
No Outputs																
Open Collector Pulse						1										
4-20mA Analog Only						2										
4-20mA Analog + Open Collector Pulse						3										

continued on next page

Part Numbers, Digital Registers (cont.)

Output Cable Options							
No Output Cables							
6 ft	C1						
15 ft	C2						
25 ft	C3						
50 ft	C4						
75 ft	C5						
100 ft	C6						
150 ft	C8						
Smart Output Protocol / Telemetry Options							
No AMI Outputs/Telemetry Options							
Sensus Protocol (6ft Open End Cable)		SEN					
Itron 6 digit Protocol (6ft Open End Cable)		IT6					
Itron 9 digit [100W] Protocol (6ft Open End Cable)		IT9					
Neptune Protocol (6ft Open End Cable)		NEP					
SmartTrax On-Board (Integrated Telemetry on FlowCom)		STX					
2 ft SmartTrax Standalone Unit ExactRead Cable		S02					
6 ft SmartTrax Standalone Unit ExactRead Cable		S06					
25 ft SmartTrax Standalone Unit ExactRead Cable		S25					
50 ft SmartTrax Standalone Unit ExactRead Cable		S50					
Register Remote and Extension Options							
Meter Mount (Standard)							
6 ft Cable Remote Mount (Flowcom only)				R06			
25 ft Cable Remote Mount (Flowcom only)				R25			
50 ft Cable Remote Mount (Flowcom only)				R50			
6" Long Extension				006			
1" Increments for Extensions Lengths				XXX			
150" Maximum extension length				150			
SPECIAL OPTIONS							
No Special Options							
High Temp Prop and Seals					H		
No Batteries, Battery Tray Options							
Includes Batteries (*Standard*)							
No Batteries (Alkaline Tray)							NBA
No Batteries (Lithium Tray)							NBL

Part Numbers, Mechanical Registers

L						-		-	
Output Options									
No Outputs									
4-20 Analog Only (E7000-000)	A								
Dry Contact Pulse & 4-20 Analog (E7000-001)	B								
Opto Isolated Pulse & 4-20 Analog (E7000-002)	C								
Mechanical Datalogger (MC20-D2)	E								
Non Powered Pulse (EA618-02)	G								
CMOS Square Wave Pulse (EA631-002)	J								
Sink to Ground Pulse (EA631-102)	K								
Dry Contact Pulse (SA100)	L								
Register Remote and Extension Options									
Meter Mount (Standard)									
6" Long Extension						006			
1" Increments for Extensions Lengths						XXX			
150" Maximum extension length						150			
SPECIAL OPTIONS									
High Temp Prop and Seals									H

continued on next page

SPECIFICATIONS

Performance

Accuracy / Repeatability	• ±2% of reading guaranteed throughout full range • ±1% over reduced range • Repeatability 0.25% or better
Range	2" to 36"
Maximum Temperature	(Standard Construction) 160°F constant
Pressure Rating	150 psi. Consult factory for higher rated version.
Environmental Rating	NEMA 4X

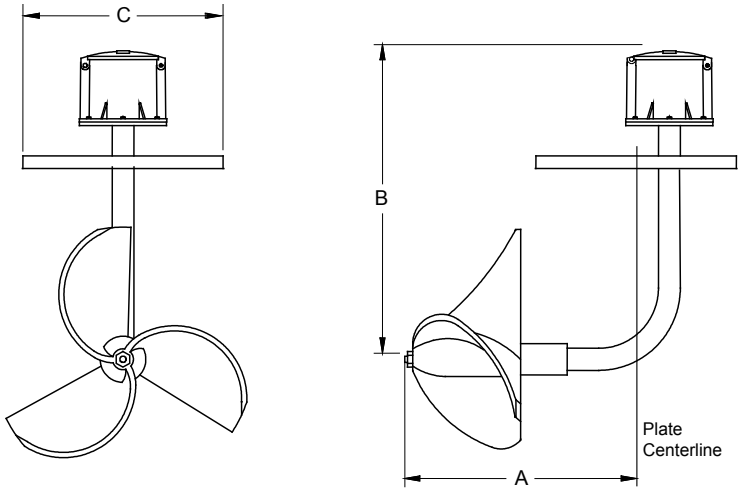
Materials

Top Plate	Stainless steel (2" to 4") or fusion-bonded epoxy coated carbon steel (6" and larger)
Bearing Assembly	Impeller shaft is 316 stainless steel. Ball bearings are 440C stainless steel
Magnets	(Permanent type) Alnico
Bearing Housing	• For models 2" to 16": 304 stainless steel standard, 316 stainless steel optional • For models 18" and larger: Brass standard, 316 stainless steel optional
Register	An instantaneous flowrate indicator and six-digit straight-reading totalizer are standard. The register is hermetically sealed within a die cast aluminum case. This protective housing includes a domed acrylic lens and hinged lens cover with locking hasp.
Impeller	Impellers are manufactured of high-impact plastic, retaining their shape and accuracy over the life of the meter.

Options

- Extended warranty
- Register extensions
- High temperature construction, 180°F max
- Marathon bearing assembly for higher than normal flowrates
- Digital register available in all sizes of this model
- A complete line of flow recording/control instrumentation
- Canopy boot
- SmartTrax on Board integrated telemetry for digital register option

DIMENSIONS



L Series		DIMENSIONS												
Meter Size	inches	2, 2½, 3	4	6	8	10	12	14	16	18	20	24	30	36
	mm	50, 63, 76	102	152	203	254	305	356	406	457	508	610	762	914
OD up to	inches	*	5.5	7.5	9.5	11.5	13.5	15.5	17.5	19.5	21.5	26.5	32.5	38.5
	mm	*	140	191	241	292	343	394	445	495	546	673	826	978
Part No.		**	L0233-10	L0234-10	L0235-10	L0236-10	L0237-10	L0238-10	L0239-10	L0240-10	L0241-10	L0242-10	L0243-10	L0243-30
Minimum Flow	GPM	40	50	90	100	125	150	250	275	400	475	700	1200	1500
	LPS	2.5	3.2	5.7	6.3	7.9	9.5	15.8	17.3	25.2	30.0	44.2	75.7	94.6
Maximum Flow	GPM	250	600	1200	1500	1800	2500	3000	4000	5000	6000	8500	12500	17000
	LPS	15.8	37.9	75.7	94.6	113.6	157.7	189.3	252.4	315.5	378.5	536.3	788.6	1072.5
Maximum Flow w/ Marathon Bearing	GPM		900	1800	2250	2700	3750	4500	6000	7500	9000	12750	18750	25500
Approx. Head Loss in Inches at Max. Flow	inches	1.06	.83	.61	.24	.14	.1	.07	.06	.05	.05	.04	.03	.02
	mm	27	21	15	6	4	3	2	2	1	1	1	1	1
Standard Dial Face**	GPM/ Gal	250/ 10	1000/ 100	1800/ 100	2500/ 100	3K/ 1000	4K/ 1000	6K/ 1000	8K/ 1000	10K/ 1000	10K/ 10K	15K/ 10K	15K/ 10K	30K/ 10K
Approx. Shipping Weight, lbs.	lbs	16	13.6	20.4	31.8	40.8	54.4	56.7	59.0	68	79	86	93	95
	kg	36	30	45	70	90	120	125	130	150	175	190	205	210
A***	inches	216	289	327	327	308	308	308	308	381	381	381	381	381
	mm	8.5	11 3/8	12.87	12.87	12.12	12.12	12.12	12.12	15	15	15	15	15
B	inches	241	273	273	298	349	375	375	425	425	476	527	568	670
	mm	9.5	10.75	10.75	11.75	13.75	14.75	14.75	16.75	16.750	18.750	20.750	22.380	26.380
C	inches	114	140	191	191	273	273	273	273	324	324	324	457	508
	mm	4.5	5.5	7.5	7.5	10.75	10.75	10.75	10.75	12.75	12.75	12.75	18	20
No. of Bolts Per Flange		6	6	8	8	12	12	12	12	16	16	16	16	16

* Use L0232-10 for meters built prior to January 1, 2000, and L0232-20 for meters built after January 1, 2000 and beginning with serial #00-7974-XX.
** Indicates the dial face range and multiplier
*** Dimension A is from center of meter head weldment.

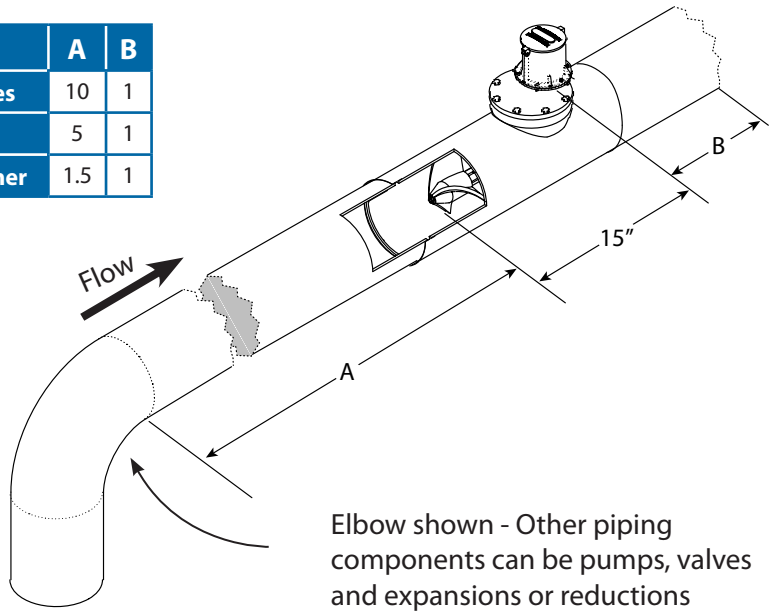
On ordering, please specify serial number of existing meter head assembly.

INSTALLATION

Standard installation is horizontal mount. If the meter is to be mounted in the vertical position, please advise the factory.

PIPE RUN REQUIREMENTS

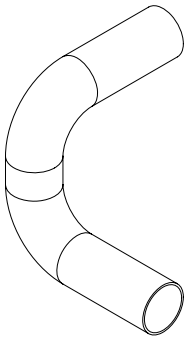
Configuration	A	B
Without straightening vanes	10	1
With straightening vanes	5	1
With FS100 Flow Straightener	1.5	1



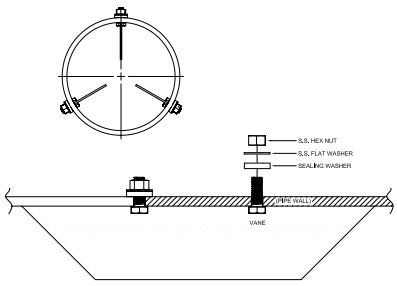
Elbow shown - Other piping components can be pumps, valves and expansions or reductions

STRAIGHTENING VANES

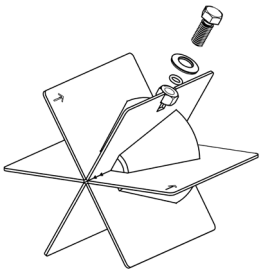
Special attention should be given to systems using two elbows "out of plane" or devices such as a centrifugal sand separator. These cause swirling flow in the line that affect propeller meters. Well developed swirls can travel up to 100 diameters downstream if unobstructed. Since most installations have less than 100 diameters to work with, straightening vanes become necessary to alleviate the problem. Straightening vanes will break up most swirls and ensure more accurate measurement. McCrometer actively encourages installing vanes just ahead of the meter. Straightening vanes are available in weld-in, bolt-in, and the FS100 Flow Straightener.



Elbows out of plane



Bolt-in straightening vanes



FS100 Flow Straightener

REGISTERS

Typical face plates

Standard register

Optional 7-wheel register

FlowCom register

Mechanical Register

The instantaneous flowrate indicator is standard and available in gallons per minute, cubic feet per second, liters per second and other units. The register is driven by a flexible steel cable encased within a protective vinyl liner. The register housing protects both the register and cable drive system from moisture while allowing clear reading of the flowrate indicator and totalizer.

Digital Register

The optional FlowCom digital register displays a flowmeter's flowrate and volumetric total. Available are four optional outputs: 4-20mA loop, open collector, optically isolated, and contact closure. Unique units of measurement for rate, total, 4-20mA, and pulse outputs. The FlowCom can be fitted to any new or existing McCrometer propeller flowmeter. The FlowCom also features a built-in data logger.

Smart Trax on Board

In addition to features mentioned on the FlowCom digital register, SmartTrax On Board integrated telemetry provide a streamlined, all-in-one flow measurement and telemetry system allowing growers and districts to remotely monitor water usage and manage allocations across their territories. This affects input costs such as chemigation, fuel and electricity costs, and most importantly - your time! For natural resource districts and the like, SmartTrax on Board removes the need to manually collect flow data from each metered well, freeing up personnel time.

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