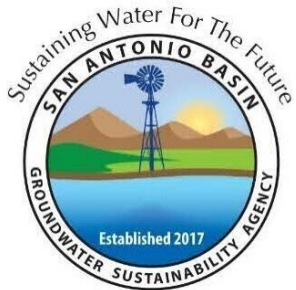


# SABGSA Board Meeting Updates and Action Items



**San Antonio Basin Groundwater Sustainability Agency**

Board Meeting

August 19, 2025

# Presentation: Best Practices for Flow Meter Selection and Installation

**Sam Taylor, Taylor Drilling & Pump**

**Agenda Item 6b**

# GloTech Corporation - GEM Flow Meter Series

## Electromagnetic ("Mag") Flow Meter

### Overview:

The GEM's advanced design enables maximum flexibility to provide superior accuracy in the most challenging fluid applications and installation conditions.

### Product Range: 2"-24" Diameter

The GloTech GEM series is available in a wide range of sizes and flange options to meet any application requirement.



### Key Features

- No moving parts within flow tube, resulting in low maintenance requirements and minimal head loss
- Minimal straight pipe requirements
- Rugged construction rated to IP68
- Various material options available
- Long-lasting, large capacity lithium battery pack
- Variety of data-output and telemetry options

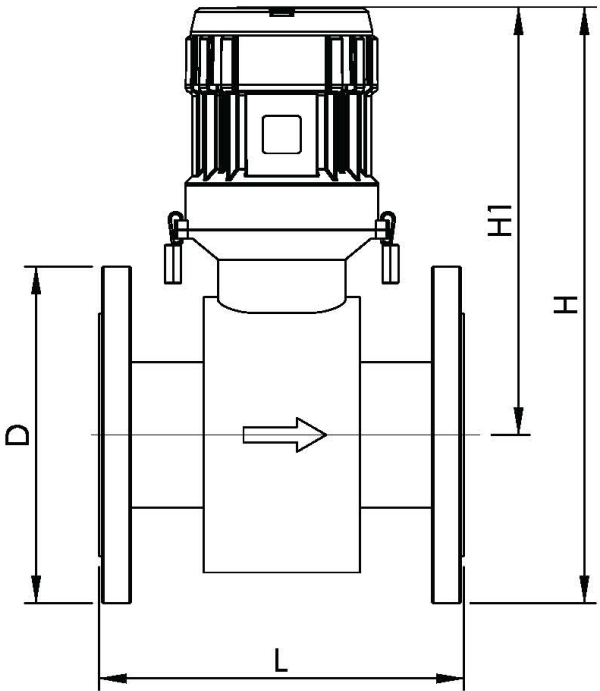
# GloTech Corporation - GEM Flow Meter Series

## Electromagnetic ("Mag") Flow Meter



### Technical Specifications

Size	2" ~ 24"
Medium Temp	≤ 320 F
Conductivity	≥20 μS / cm
Flow Velocity	0.3 ~ 40 ft / s
Accuracy	± 0.5 %
Enclosure Rating	IP68
Max Pressure	290 psi
Flange Standards	ANSI, DIN, BS
Battery Life	4 - 6 Years
Power	3.6V 19Ah x 5 8 ~ 32V DC / 8 ~ 32V AC
Ambient Temp	-40 F ~ 140 F
Outputs	Pulse / Frequency, Bluetooth, RS 485, Cellular (Optional)
Meter Housing	Carbon Steel
Electronics Housing	Die Cast Aluminum
Flow Tube	304 SS
Liner	Neoprene, PTFE
Electrodes	316 SS, Titanium



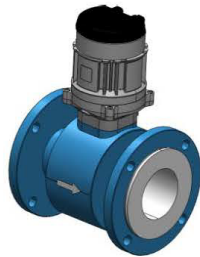


# GloTech - GEM Flow Meter Advantages

## Why In-Line Mag Meter?

*There are many types of flow meters used in irrigation, but the “in-line” or “flanged” mag meter is the most reliable*

Feature	Benefit
✓ No moving parts	<ul style="list-style-type: none"><li>▪ Low maintenance, worry-free installation</li><li>▪ No flow obstruction / pressure loss</li></ul>
✓ Minimal straight pipe run required	<ul style="list-style-type: none"><li>▪ Lower cost and greater ease of installation due to minimal disruption of piping</li></ul>
✓ Not effected by changes in medium (viscosity, solids content, etc.)	<ul style="list-style-type: none"><li>▪ Greater accuracy</li><li>▪ More types of water/fluids can be measured</li></ul>
✓ Greater accuracy	<ul style="list-style-type: none"><li>▪ Meets even the most stringent local requirements</li></ul>



*In-line Mag*



*Insertion Mag*



*Mechanical / Paddle Wheel*



*Ultrasonic*

# GloTech - GEM Flow Meter Advantages

## Features

*The GEM flow meter offers a far more robust feature set than other similarly priced magnetic flow meters*



### GEM Flow Meter

Output	Digital	Digital Pulse	Digital Pulse / High Resolution Frequency
	Analog	4-20mA	4-20mA
	Cellular	-	Optional Cellular
Power	Battery	Two 3.6V (Li-SOCl2) Batteries	Five 3.6V (Li-SOCl2) Batteries <i>(Double the Battery Life)</i>
	External	10-35 VDC	8-32 VDC / 8-32 VAC <i>(Additional Power Options Reduce the Need for Battery Replacement)</i>
Pipe Sizes		4", 6", 8", 10", 12"	2", 4", 6", 8", 10", 12", 14", 16", 18", 20", 24" <i>(More than Double the Available Sizes)</i>
Accuracy		±1%	±0.5%
Pressure Rating		150 psi	290 psi
Operating Temperature		-4° to 140°F (-20° to 60°C)	-40° to 140°F (-40° to 60°C)
Converter Enclosure		IP67	IP68
Field Adjustable Unit Display		-	Yes

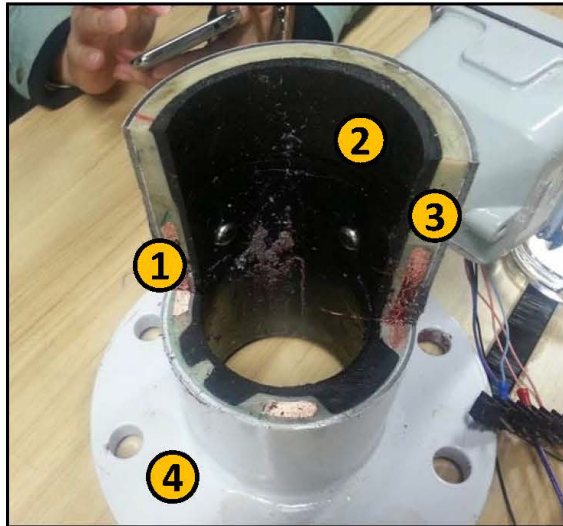
*More Output Options!*

*Better Accuracy and Operating Conditions!*

# GloTech - GEM Flow Meter Advantages

## Construction

*The GEM flow meter has strong quality and performance advantages vs. the leading brand in Ag today, which is Seametrics*



Cutaway of Seametrics Meter

	<b>GEM Flow Meter</b>	<b>Seametrics</b>
1	50% more copper windings = more accuracy / less power consumption	Least copper used in any mag meter brand on the market = cheap!
2	0.2" rubber liner = more wear resistant	0.040" rubber liner = wears out quickly!
3	Stainless Steel flow tube = Strong!	Some sort of plastic = easy to collapse (e.g. vacuum in pipe)
4	ANSI standard flanges = Strong!	ANSI "drilled" flanges = thin, cutting corners!

- Seametrics has a very undisciplined channel in Ag. Sold to wholesalers like WISH, OEMs like Valley, and certain installers directly... basically available everywhere, and yet beloved by no one
- The GEM flow meter can be offered at a competitive price to Seametrics, but represents a substantially greater VALUE due to quality and performance



# GloTech - GEM Flow Meter Advantages

*The GEM has many advantages over other types of products such as mechanical or “paddle wheel” meters, and ultrasonic meters*



- Mechanical or “paddle wheel” meters have a rotating component, which requires service. All kinds of stuff can get in the pipe clog it up!
- Both mechanical meters and ultrasonic meters are less accurate than mag meters, and require 5X longer straight pipe distance before and after its installation to properly measure flow

# McCrometer – Mc Propeller M03 Series

## Strap-on Saddle Flow Meter

### Overview:

The Mc Propeller M03 series uses a flexible drive-train and sealed ball bearings. Its unique design makes it easy to service in the field and requires no external power or batteries.

Standard features include an instantaneous flow rate indicator and six-digit totalizer.

### Reverse-helix Surface Water Option:

Features a meter body turned 180 degrees from normal with a propeller installed nose-first on the bearing shaft and a reverse flow style bearing assembly.

Configuration allows the ell to curve with the flow, allowing grass or other debris to shed off with ease and also reduces the ability of sand and silt to accumulate in the bearing.



# McCrometer – Mc Propeller M03 Series

## Strap-on Saddle Flow Meter

### Performance

<b>Accuracy / Repeatability</b>	<ul style="list-style-type: none"><li>• <math>\pm 2\%</math> of reading guaranteed throughout full range</li><li>• <math>\pm 1\%</math> over reduced range</li><li>• Repeatability 0.25% or better</li></ul>
<b>Range</b>	4" to 16"
<b>Maximum Temperature</b>	(Standard Construction) 160°F constant
<b>Pressure Rating</b>	150 psi. Consult factory for higher rated version.

### Materials

<b>Saddle</b>	304 stainless steel construction
<b>Bearing Assembly</b>	Impeller shaft is 316 stainless steel. Ball bearings are 440C stainless steel
<b>Magnets</b>	(Permanent type) Alnico
<b>Bearing Housing</b>	304 stainless steel standard, 316 stainless steel optional
<b>Register</b>	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.
<b>Impeller</b>	Impellers are manufactured of high-impact plastic, retaining their shape and accuracy over the life of the meter.



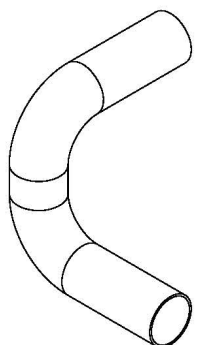
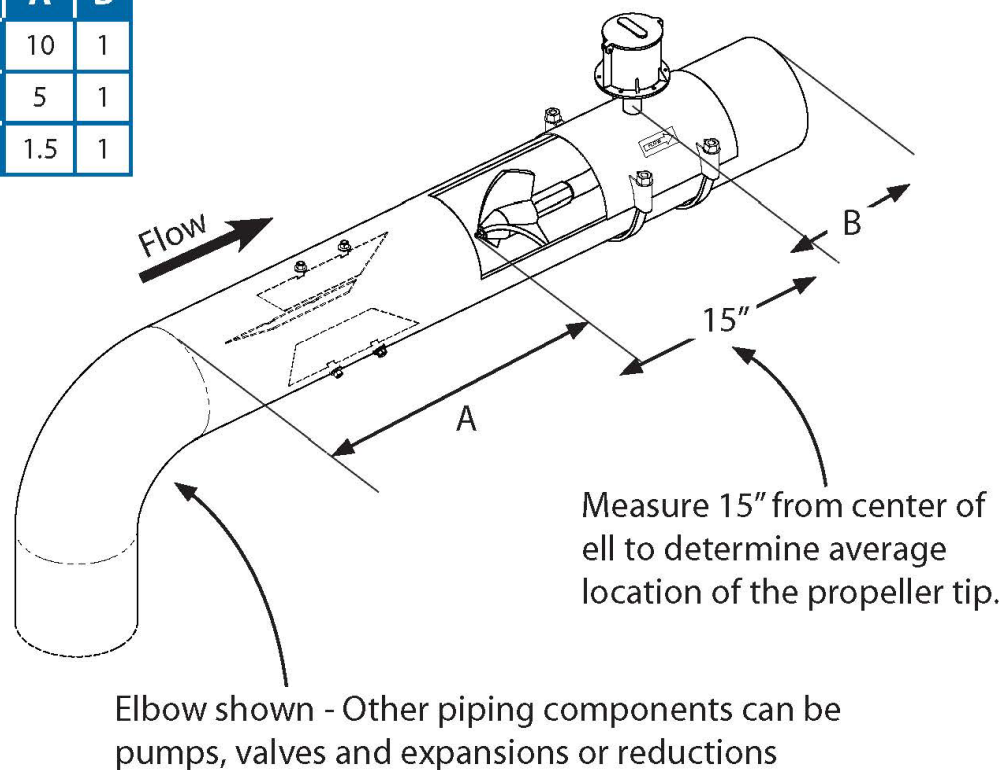
# McCrometer – Mc Propeller M03 Series Installation

## Strap-on Saddle Flow Meter - Standard Installation is Horizontal Mount

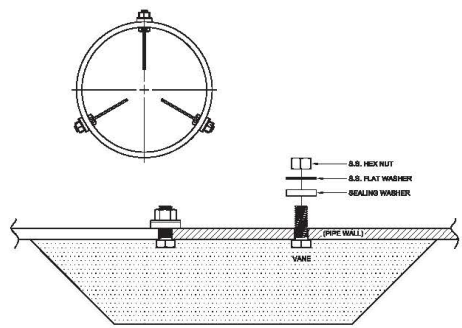
### Straightening Vanes

### Pipe Run Requirements

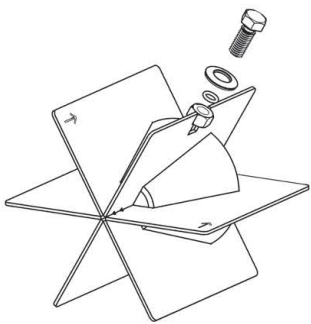
Configuration	A	B
Without straightening vanes	10	1
With straightening vanes	5	1
With FS100 Flow Straightener	1.5	1



Elbows out of plane



Bolt-in straightening vanes



FS100 Flow Straightener

# McCrometer – Mc Propeller M-Series

## M-Series Fixed Ell Flow Meters

### Overview:

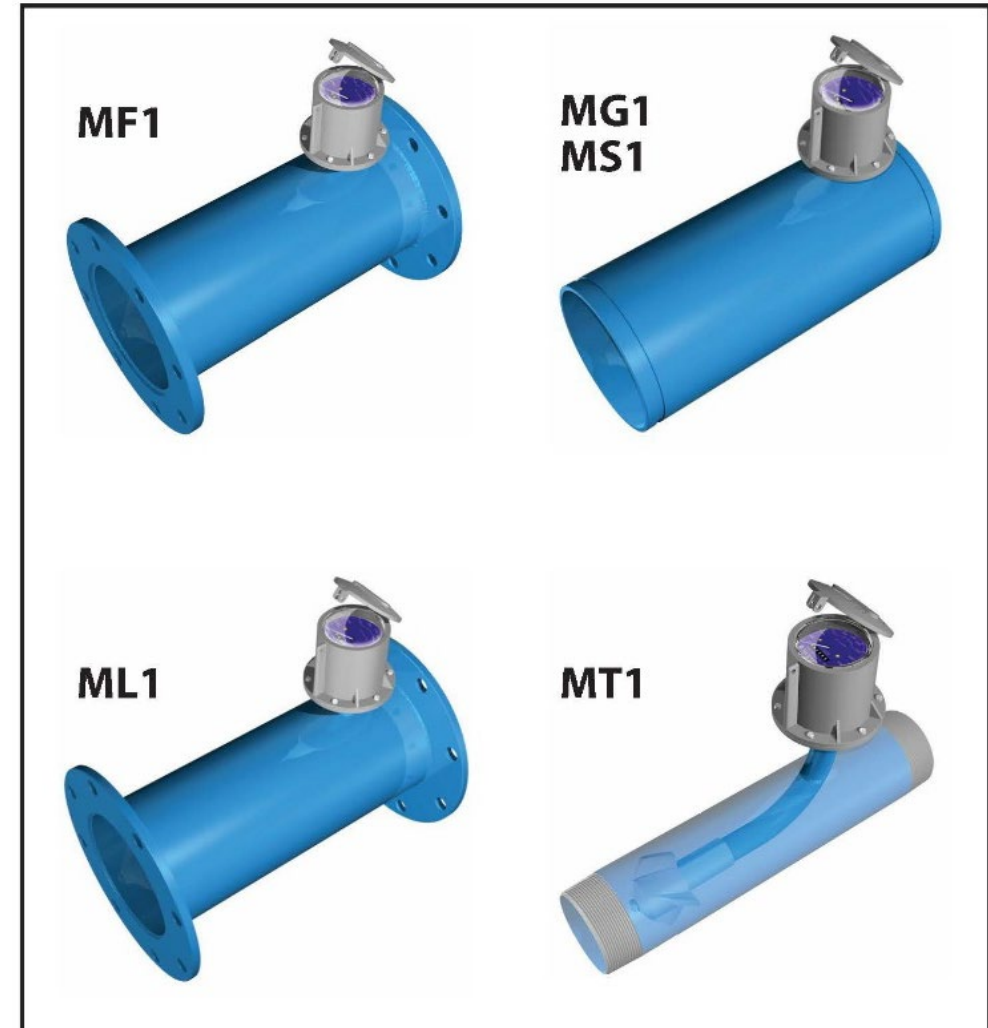
The impeller and drive assembly are easily accessed through the open end of the meter tube and can be field-serviced without need for factory calibration. The carbon steel flow tube has a fusion-bonded epoxy coating offering excellent corrosion protection.

### Models MF1 and ML1:

Models MF1 and ML1 are fitted with AWWA Class D flanges and designed for a maximum continuous pressure of up to 75 psi (ML1) and 150 psi (MF1).

### Models MS1 and MT1:

Other meter ends available are smooth end (MS1), grooved end (MT1) and threaded end (MT1).





# McCrometer – Mc Propeller M-Series

## M-Series Fixed Ell Flow Meter Specifications

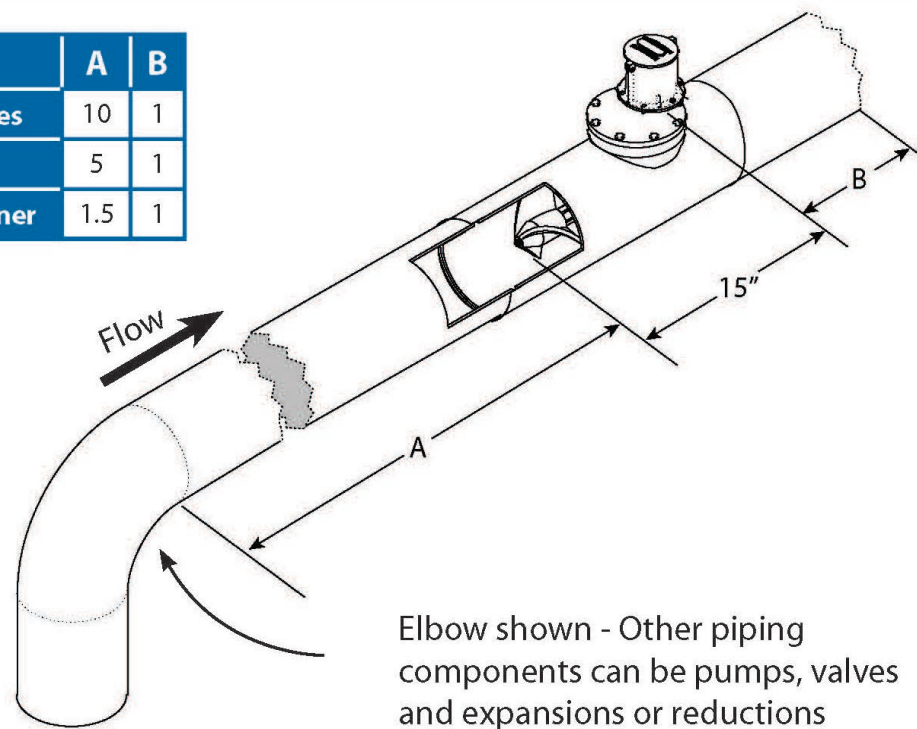
	MF100	ML100	MG100 MS100	MT100
<b>Performance</b>				
<b>Accuracy / Repeatability</b>	<ul style="list-style-type: none"><li>• <math>\pm 2\%</math> of reading guaranteed throughout full range</li><li>• <math>\pm 1\%</math> over reduced range</li><li>• Repeatability 0.25% or better</li></ul>	<ul style="list-style-type: none"><li>• <math>\pm 2\%</math> of reading guaranteed throughout full range</li><li>• <math>\pm 1\%</math> over reduced range</li><li>• Repeatability 0.25% or better</li></ul>	<ul style="list-style-type: none"><li>• <math>\pm 2\%</math> of reading guaranteed throughout full range</li><li>• <math>\pm 1\%</math> over reduced range</li><li>• Repeatability 0.25% or better.</li></ul>	<ul style="list-style-type: none"><li>• <math>\pm 2\%</math> of reading guaranteed throughout full range</li><li>• <math>\pm 1\%</math> over reduced range</li><li>• Repeatability 0.25% or better</li></ul>
<b>Range</b>	2" to 16"	6", 8", 10" 12"	2" to 24"	2" to 6"
<b>Maximum Temperature</b>	(Standard Construction) 160°F constant		(Standard Construction) 160°F constant	(Standard Construction) 160°F constant
<b>Pressure Rating</b>	150 psi. Consult factory for higher rated version.	75 psi	150 psi	150 psi

# McCrometer – Mc Propeller M Series Installation

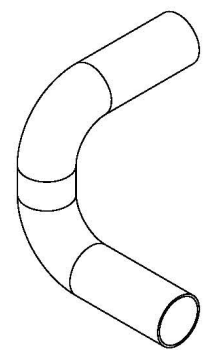
## Fixed Ell Flow Meter - Standard Installation is Horizontal Mount

### Pipe Run Requirements

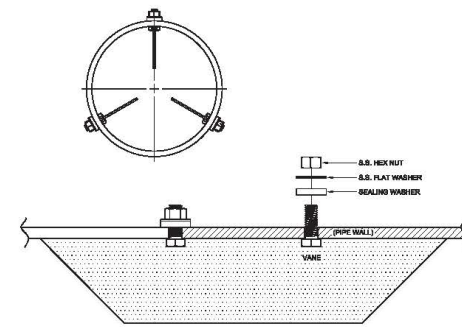
Configuration	A	B
Without straightening vanes	10	1
With straightening vanes	5	1
With FS100 Flow Straightener	1.5	1



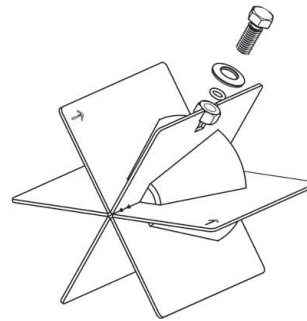
### Straightening Vanes



Elbows out of plane



Bolt-in straightening vanes



FS100 Flow Straightener

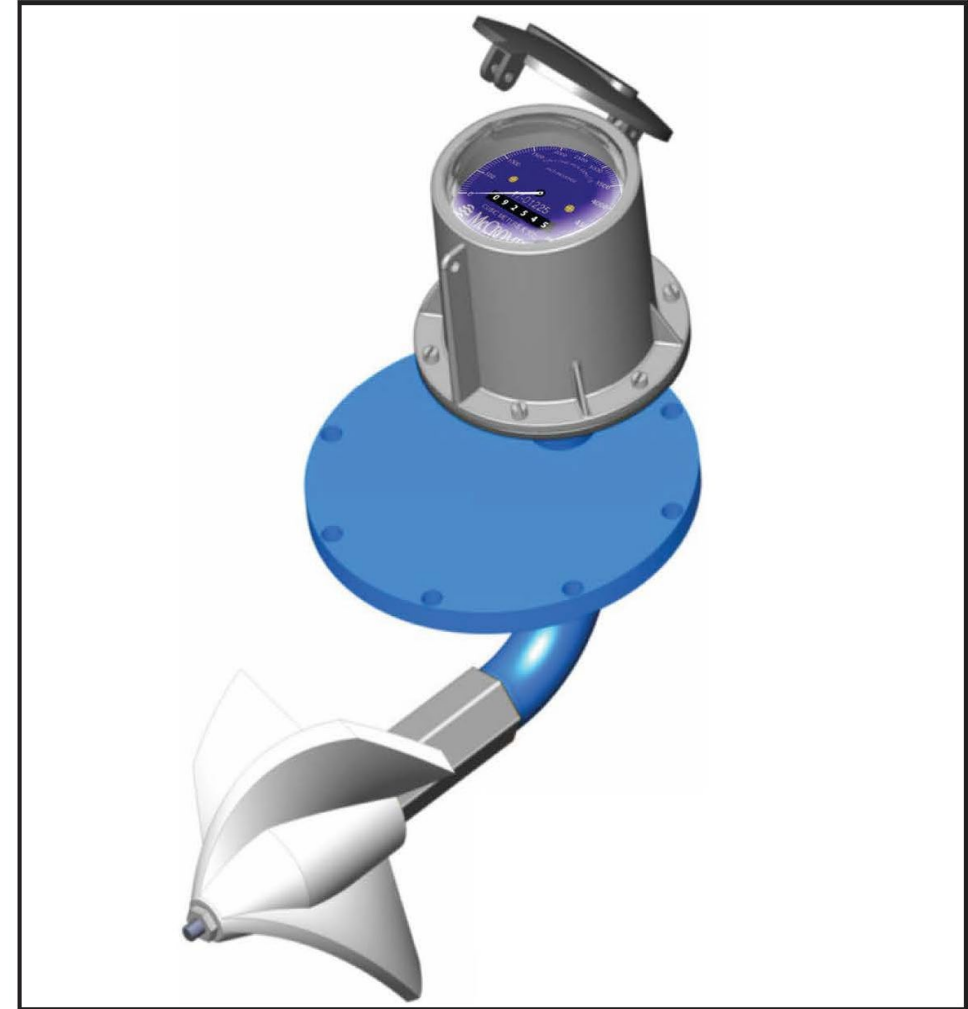
# McCrometer – Mc Propeller L Series

## L Series Bolt-On Meter Head Assembly

### Overview:

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.



# McCrometer – Mc Propeller L Series

## L Series Bolt-On Meter Head Assembly

### Performance

<b>Accuracy / Repeatability</b>	<ul style="list-style-type: none"><li>• <math>\pm 2\%</math> of reading guaranteed throughout full range</li><li>• <math>\pm 1\%</math> over reduced range</li><li>• Repeatability 0.25% or better</li></ul>
<b>Range</b>	2" to 36"
<b>Maximum Temperature</b>	(Standard Construction) 160°F constant
<b>Pressure Rating</b>	150 psi. Consult factory for higher rated version.
<b>Environmental Rating</b>	NEMA 4X

### Materials

<b>Top Plate</b>	Stainless steel (2" to 4") or fusion-bonded epoxy coated carbon steel (6" and larger)
<b>Bearing Assembly</b>	Impeller shaft is 316 stainless steel. Ball bearings are 440C stainless steel
<b>Magnets</b>	(Permanent type) Alnico
<b>Bearing Housing</b>	<ul style="list-style-type: none"><li>• For models 2" to 16": 304 stainless steel standard, 316 stainless steel optional</li><li>• For models 18" and larger: Brass standard, 316 stainless steel optional</li></ul>
<b>Register</b>	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.
<b>Impeller</b>	Impellers are manufactured of high-impact plastic, retaining their shape and accuracy over the life of the meter.

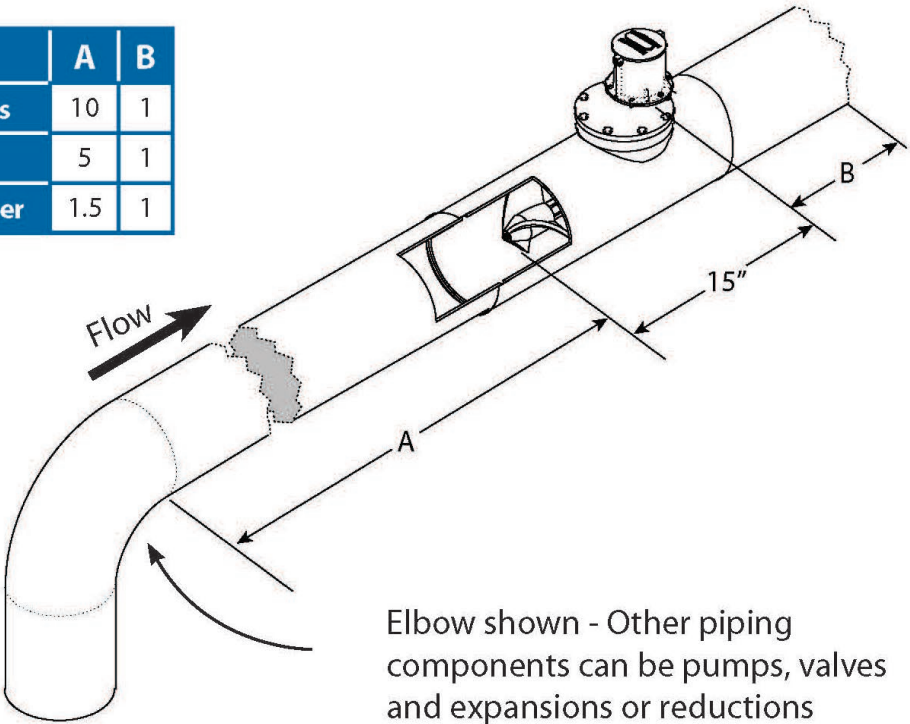


# McCrometer – Mc Propeller L Series Installation

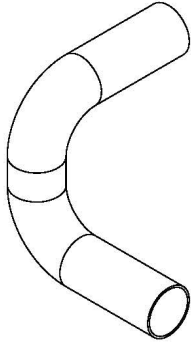
## L Series Bolt-On Meter Head Assembly

### Pipe Run Requirements

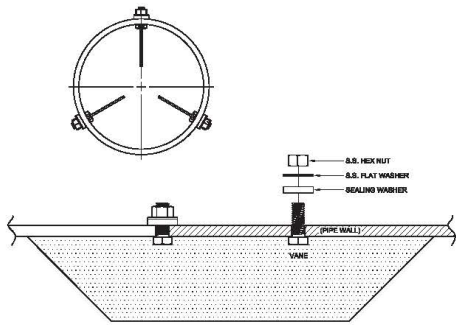
Configuration	A	B
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With straightening vanes	5	1
With FS100 Flow Straightener	1.5	1



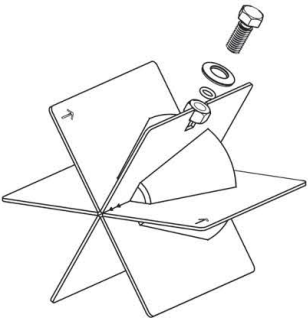
### Straightening Vanes



Elbows out of plane



Bolt-in straightening vanes



FS100 Flow Straightener

# McCrometer – Mc Propeller Registers

## Registers



### 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.



### SmartTrax 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.



Standard register



Optional 7-wheel register



FlowCom register

Questions?