



NATIONAL TYPE EVALUATION PROGRAM

Certificate of Conformance
for Weighing and Measuring Devices

For:

Meter Indicating Volume
Oval Gear Positive Displacement
Meter Sizes: 1", 1-1/2", 2" and 3" (See Below)
Series: M10, M40, M50 and M80
Model: MXX XXX – XXXXX
(See Page 3 Model Matrix)
Flow Rate: (See Below)

***Submitted By: Contact Info. Updated December 2016**

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Standard Features and Options

- Category 1 physical seal (see Page 2, Sealing)
- (Pulser) Dual Hall Effect sensors connected in series on Models M10, M40, M50 and M80
- (Pulser) Hi Pulse Hall Effect PCB on Model M50

Meter Model	Meter Size	Minimum Flow Rate		Maximum Flow Rate	
		US Gallons per Minute	Liters per Minute	US Gallons per Minute	Liters per Minute
M10	1"	6	23	33	125
M40	1-1/2"	13	49	66	250
M50	2"	19	72	93	350
M80	3"	37	140	185	700

This device was evaluated under the National Type Evaluation Program and was found to comply with the applicable technical requirements of "NIST Handbook 44: Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages. *Editorial changes, not affecting the type or metrological content, corrected this certificate.

Jerry Buendel
Chairman, NCWM, Inc.

Ronald Hayes
Committee Chair, National Type Evaluation Program Committee
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Macnaught Pty. Ltd.

Oval Gear Positive Displacement / MX XXX - XXXXX

Application: For use in stationary applications to measure products such as gasoline, diesel, bio-diesel, ethanol, and blends of these products. An acceptable range of products is listed below for reference. These meters may be interfaced with approved and compatible equipment.

Product Family	Typical Products ¹	Viscosity Centistokes
Fuels, Lubricants, Industrial and Food Grade Liquid Oils	Gasoline ⁴ 0.5 centistokes Diesel ³ 1.9 centistokes Bio Diesel (B100) 4.603 centistokes	0.5 – 4.603
Alcohols, Glycols, and Water Mixes Thereof	Ethanol (E100) 1.5 centistokes	1.5

¹ Note: The Typical Products listed in this table are not limiting or all-inclusive; there may be other products and product trade names, which fall into a product family.

³ Diesel fuel blends (bio-diesel) with up to 20 % vegetable or animal fat/oil.

⁴ Gasoline includes oxygenated fuel blends with up to 15 % oxygenate.

Identification: The metal identification badges are in two parts and riveted to the meter body (see Page 3).

Sealing: The meter calibration adjustment may be sealed with a wire security seal threaded through three drilled screw heads that secure the access plate to the meter casing.

Test Conditions: The Models M40 SRP-4EV (Gasoline), M40 ASP-4EV (Bio-Diesel), and M50 SSP-4E4K (Ethanol) meters were tested and installed in a stationary application using Tuthill ELNC-2121 (Certificate of Conformance Number 05-104) and Liquid Controls LCR-II (Certificate of Conformance Number 86-022A11) approved registers. The emphasis of the evaluation was on device design and operation. The M50 meter was evaluated using 100 percent ethanol (E100) and the M40 meters were evaluated using bio-diesel (B100) and gasoline. During the initial evaluation, the meters were tested using two certified (50 gallon and 100 gallon) test provers. Meters were tested at five individual flow rates four times each. Data was checked for accuracy and repeatability. After a throughput of more than 132 000 gallons for the M40 meter and 185 000 gallons for the M50 meter the meters were retested in a similar manner.

Type Evaluation Criteria Used: NIST Handbook 44, 2007 Edition, NCWM Publication 14, 2007 Edition

Tested By: Aaron Bowman (CA), Chris Hedlund (CA), John Roach (CA)

Conclusion: The results of the evaluations and information provided by the manufacturer indicate the devices comply with applicable requirements.

Information Reviewed By: S. Patoray, L. Bernetich (NCMW)



Sealing Provisions

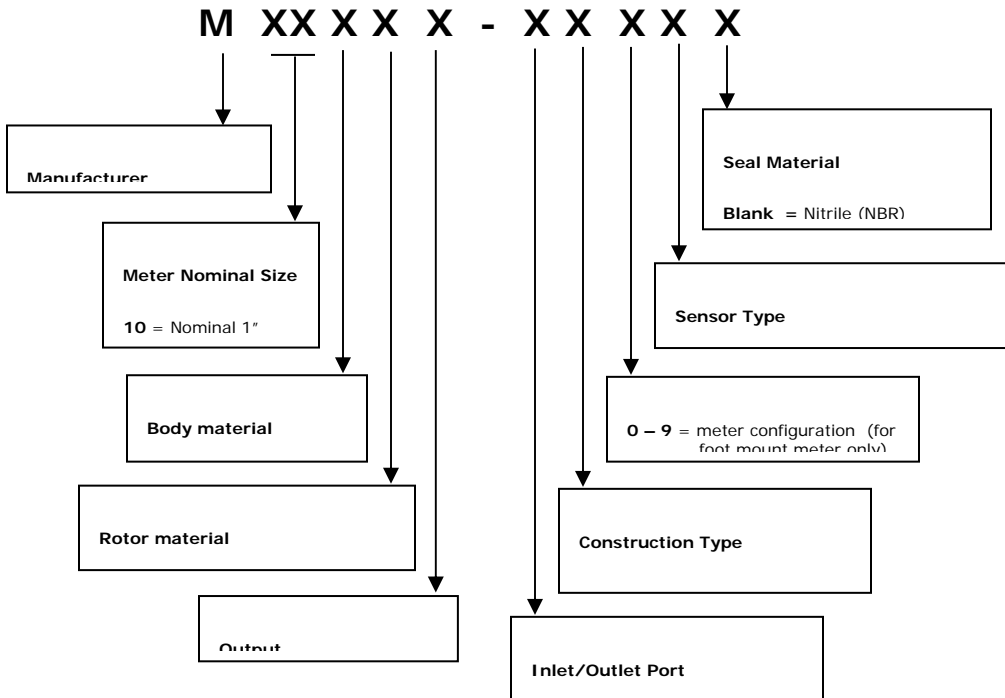
Typical Model

Numbering



Macnaught Pty. Ltd.

Oval Gear Positive Displacement / MX XXX - XXXXX



Flanged, threaded and foot mount M Series Meters

