



State of California
Department of Food and Agriculture
Division of Measurement Standards

Certificate Number: 5415-04
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***California Type Evaluation Program
Certificate of Approval
for Weighing and Measuring Devices***

For:

Multi-Jet Hot Water Meter
Models: 5/8" 140 °F, 3/4" 140 °F, and 1" 140 °F
Sizes: 5/8", 3/4", and 1"

Submitted by:

Utility Submeter Applications, Inc.
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Standard Features and Options

- Sealed six wheel odometer type register
- Gallon or cubic foot unit of measure
- Bronze case
- Magnetic drive
- Optional DIALOG® meter reading system and electrical output registers (functions not evaluated)

Note: Approved for use in "HORIZONTAL" position only.

This device was evaluated under the California Type Evaluation Program (CTEP) and was found to comply with the applicable technical requirements of California Code of Regulations for "Weighing and Measuring Devices." Evaluation results and device characteristics necessary for inspection and use in commerce are on the following pages.

Effective Date: December 7, 2004

Mike Cleary, Director

Utility Submeter Applications, Inc.
Multi-Jet Hot Water Meter
Models: 5/8" 140 °F, 3/4" 140 °F, and 1" 140 °F

Application: Approved for use as a domestic hot water meter (140 °F max) only when installed in a “**HORIZONTAL**” flow position. The flow direction indications are cast into the body of the meter.

Identification: The manufacturer’s (Master Meter) and the distributor’s (Utility Submeter Applications) names, the unit of measure, and the model number (prefaced with the word “MODEL”) are printed in red on the register face. The serial number (prefaced with “S/N”) is engraved on the discharge end of the body and additionally on the hinged register lid.

Sealing: Access to the adjusting screw can be sealed with a wire security seal threaded through a hole in the access bolt over the adjusting screw and through a hole in the register retaining ring.

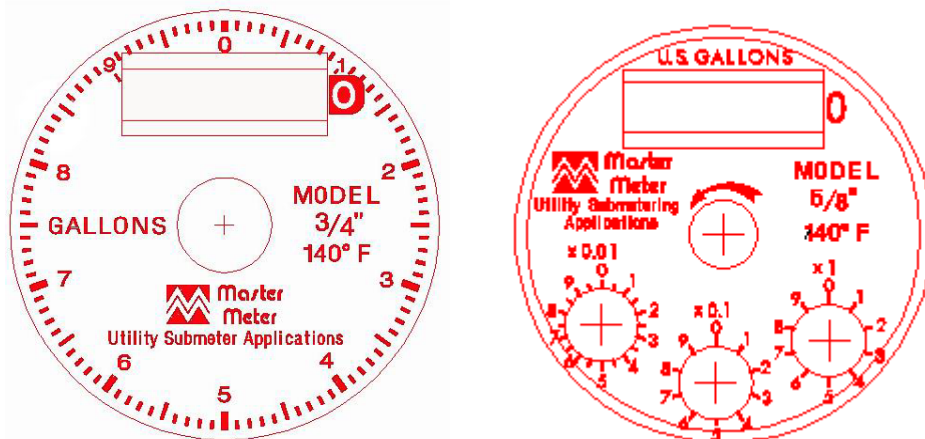
Operation: This is a velocity type meter where in-flowing water, distributed by multiple jets, flows past an impeller in the measuring chamber, creating an impeller velocity directly proportional to water velocity. The meter’s register interprets the velocity into total flow indicated in a volumetric unit of measure.

Test Conditions: Three Model 3/4" 140 °F water meters were submitted for evaluation. The emphasis of the evaluation was on the device design, marking requirements, accuracy, and repeatability of the meter with both hot (140 °F maximum) and cold (80 °F maximum) water. The meters were mounted in line with each other on a water meter test bench in a lab at a university research facility and tested three times each at maximum, intermediate, and minimum flow rates using hot (140 °F maximum) water. The tests were then repeated using cold water (80 °F maximum). After successful initial testing, a permanence test was conducted which consisted of recirculating in excess of 205 000 gallons of hot (140 °F maximum) water through the meters. All tests were then repeated.

Results of the evaluation indicate the devices comply with applicable requirements.

Type Evaluation Criteria Used: Title 4, California Code of Regulations, 2004 Edition

Tested By: Joe Raspino (CA)



Art Work of Register Faces