**TYPE 52.10, 52.20  MILK RECEIVING SYSTEMS AND MILK PICK-UP METERING SYSTEMS**

**APPLICATION**

Fixed metering systems used for the measurement and receipt of raw milk. These systems are found primarily at dairy plants. Vehicle mounted milk pick up metering systems. These mobile systems are used for the measurement of raw milk when picked up at the farms. (Note: while there is one system currently approved for milk pick-up, there are none in trade use at the time this document was developed. The regional Volumetric Specialists must be consulted prior to conducting inspections on this type of system)

**EQUIPMENT**

Appropriate sanitary volumetric prover dedicated to milk meters

**NOTE:** Proving standards must each be verified and designated as a local standard by Measurement Canada. Mobile prover standards require re-certification once every four years. When selecting the appropriate capacity of proving standard a minimum test volume should equal or exceed a one minute run at maximum operating rate.

**USE**

- Device and major components are approved for trade use ............ NoA, W&M Act Section 8
- Device and components are suitable for the actual use .................. NoA, R-271, R-272
- Device has been initially inspected (if applicable) and bears the initial inspection marks ........................................ R-29, bulletin V-8, bulletin V-9
- Flow rates are within approved range ........................................ NoA, R-290

**Note:** If the meter is in use when arriving on the premise, take note of operational pressure, vacuum and flow rate. Meters must be operated within prescribed approved limits. Tests should cover these conditions.

**VISUAL EXAM (MARKING AND LABELLING)**

- Device is marked with the required information (manufacturer’s name, model and serial number, approval number(s), maximal and minimal flow rate, volume corrected to 15°C, etc) ........ NoA, R.21
- The piston is marked with a serial number (for rotary piston meters only) ........................ NoA
- Information is located as required and marking is permanent (if applicable) ................. R.18
- Marking plate is permanently affixed to the device .................................................. R.18
- Initial inspection marks (dye or approved label) .................................................... R.29
- Units of measurement and, if applicable, the $ per litre or $ per litre face plate markings are appropriate (location, size, appropriate decimal and number of places) ................................................................. R.135, R.136, R.137
- Marking device usage restriction ................................................ NoA, R.70
TYPE 52.10, 52.20 MILK RECEIVING SYSTEMS AND MILK PICK-UP METERING SYSTEMS

VISUAL EXAMINATION (PRINTERS, TICKETS, COMPUTER’S PRINT OUT)

- Tickets are appropriate to the printing device .................................................. R.149
- Information are printed as required ................................................................. R.129, R.295, SVM.1-27
- Quantity printed with adequate number of digits, decimals .................................. R.126

VISUAL EXAMINATION (SEALS)

NOTE: A measuring chamber of a positive displacement meter is not required to be sealed as it needs to be opened and cleaned following usage. NoA must be consulted for special sealing provisions.

- Calibration adjustment is sealed ................................................................. R.235, NoA
- Register - Means of adjustment used for processing pulses is sealed ........ SVM.1-8, SVM.1-9
- Sealing flow control valve (if applicable) .................................................... R.280

VISUAL EXAMINATION (INSTALLATION - GENERAL)

NOTE: Milk receiving and milk pick up systems must be approved as a whole or a unit. They must comply with all applicable requirements of the Weights and Measures Regulations; in addition to comply with all requirements of the Weights and Measures Regulations, they must be installed with the approved components and as per the layout found in the NoA.

- Device is installed in accordance with restrictions and conditions listed in the notice of approval and in accordance with manufacturer’s instructions .............................................. NoA, R.68, R.69, R.70
- Device is adequately secured; is protected against abnormal environmental factors; is connected to an adequate and compatible electrical supply as prescribed by the manufacturer; and attached components do not adversely affect its performance ............................................. R.124, R.141, R.142
- Device’s primary register is positioned for customer view (if applicable) ............... R.144
- Minimum graduation is in compliance with requirements ............................. R.68(2), R.126, SVM.1-20
- Device / system has convenient means to allow for testing and inspection .......... R.284
- Position of manually set flow control valves must be specified.
- Physical condition of piston and measuring chamber and proper cover gaskets in use.

NOTE: Positive displacement meter pistons that are damaged must be replaced.

VISUAL EXAMINATION (SETTINGS)

- Register used with more than one meter or liquid prevents the delivery of more than one liquid at a time (if applicable) ................................................................. SVM.1-18
- Adjacent linearization factors must not deviate by more than 0.25% ............... SVM.1-10

NOTE: If the lowest and the highest linearization factor set values exceed 0.25%, additional tests at mid-flow range may be warranted.
TYPE 52.10, 52.20  MILK RECEIVING SYSTEMS AND MILK PICK-UP METERING SYSTEMS

VISUAL EXAMINATION (UPSTREAM AND DOWNSTREAM PIPING AND HOSES)

- These systems are drained when milk receiving operations are completed. Therefore, before initiating any further measurement operation, systems must be primed ........................................ R.291
- Short and unencumbered suction piping and hose; adequate slope .......................... R.273, NoA
- Piping and accessories are installed so as to minimize the passage of air and gaz ........ R.274
- Adequate air prevention and elimination system is in place; air eliminator has not been obstructed (if applicable) ................................................................. R.276, R.279, bulletin V-21
- Filter, strainer, or other approved means are located immediately upstream the meter .... R.277
- Sealed flow control valve (if necessary) ....................................................................... R.280
- All product is delivered downstream from the transfer point; all product is retained upstream from the transfer point; and piping / hose downstream from the meter can be readily inspected ................................................. R.282, R.289
- Pressure gauge installed in close proximity of the meter and in working condition .......... NoA
- Automatic means to stop liquid flow when missing pulses are detected .................. SVM.1-37
- Automatic valve having throttling effect is located downstream from the meter (if applicable) R.285

NOTE: Several newer systems use the Variable Frequency Drives technology for pump speed control. Consult the NoA.

NOTE: Use of booster pump(s) that could change operating conditions and affect accuracy.

NOTE: Piping, valves and other components must be examined for leakage. Particular attention must be payed when examining suction piping. Leakage may affect accuracy. Any leakage should be fixed before inspection.
TYPE 52.10, 52.20  MILK RECEIVING SYSTEMS AND MILK PICK-UP METERING SYSTEMS

PERFORMANCE

NOTE: Certified volumetric provers and measures are required to be wet and dripped in accordance to their verification certificate .................................................. STP-22

No need to apply correction for the expansion or contraction of the prover shell since these sanitary provers are calibrated at the reference temperature of 4 °C.

In-service limits of error apply to tests performed in the field............ bulletins V-3 and V-23

The following tests apply to both milk receiving systems and milk pick-up systems unless otherwise specified. The following is to be read in conjunction with the Procedure for testing Milk Receiving Metering Systems and Milk Pick-up Metering Systems .................................................. STP-28

- Return-to-zero Test .................................................. STP-1
- Segment Test (if electronic) .................................................. STP-3
- Vacuum Test .......................................................... STP-29
- Fast Flow Test .......................................................... STP-4
- Slow Flow Test (Receiving systems only) .......................... STP-5
- Repeatability Test (if necessary) .................................................. STP-7
- Split Compartment / Out of Product Test .......................... STP-8
- Agreement Between Registrations Test .......................... STP-9
- Computed Value Test (if applicable) .................................................. STP-10
- EM / RF Interference Test (if applicable) .......................... STP-20

NOTE: Annotate the inspection certificate with pressure, vacuum and flow rate under which the meter was tested and calibrated.

REVISION

Original document