



THE GLOBAL STANDARD
FOR LIVESTOCK DATA

ICAR Guidelines for User Manual of the Milk Meters

DairyManager Milk Meter

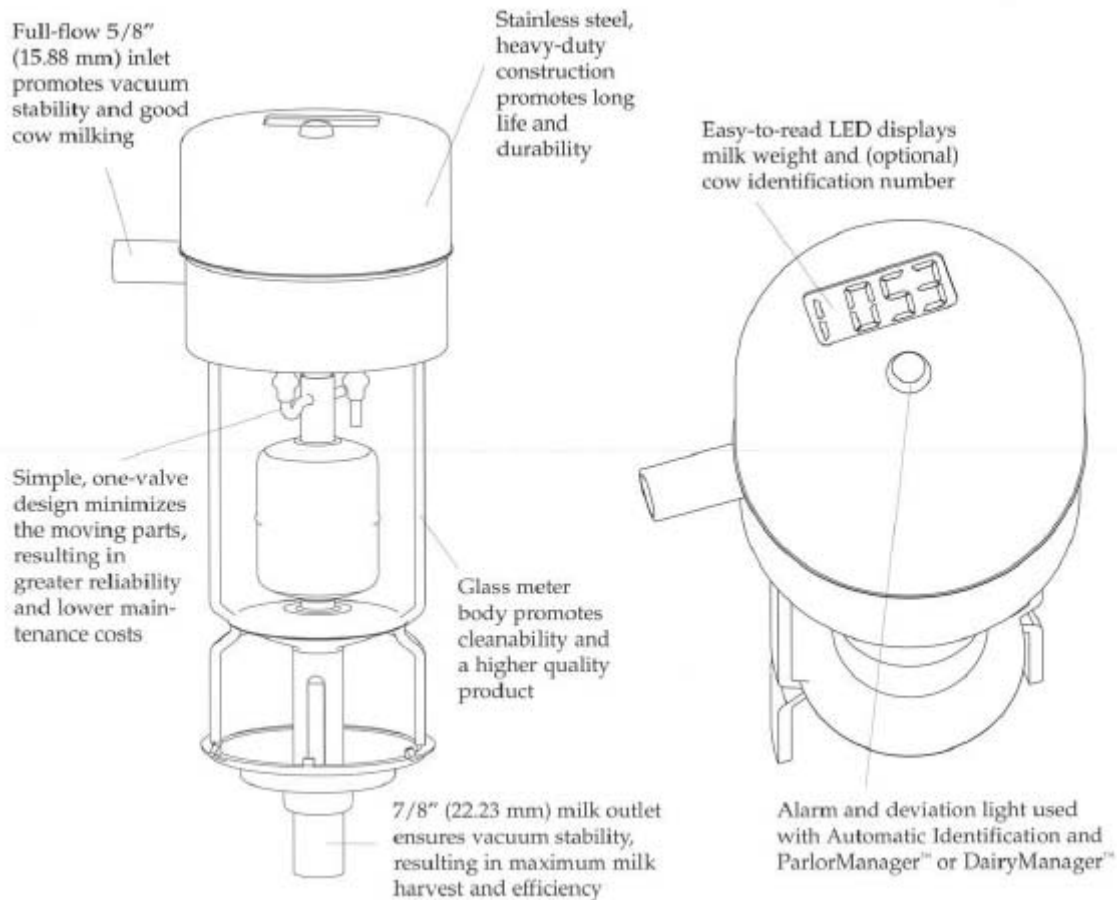
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Network. Guidelines. Certification.

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1 Performance Criteria and Characteristics



2 Accessories and Options

ParlorManager™
DairyManager™
DairyManager™ Automatic ID
MeterManager™
Milk Component Sub-Samplers

3 Surge DairyManager Milk Meter Milk Sampling Device

3.1 Installation and Operation Instructions

IMPORTANT! This product must be serviced only by a trained, qualified service technician.

IMPORTANT! This device must be cleaned by hand and must not be used as clean in place (CIP).

Note: All dimensions in [] are in millimeters unless otherwise specified.

3.1.1 Installation

Refer to *Figure 1* for the following steps.

Permanently mounted components

- Determine the mounting location for the milk sampling device. It can be mounted on either the right-hand or the left-hand lower corner of the milk meter.
- Slide the slot in the stainless steel plate **1** over the lower flange of the milk meter support bracket **2** in the desired orientation. Line up the upper hole in the

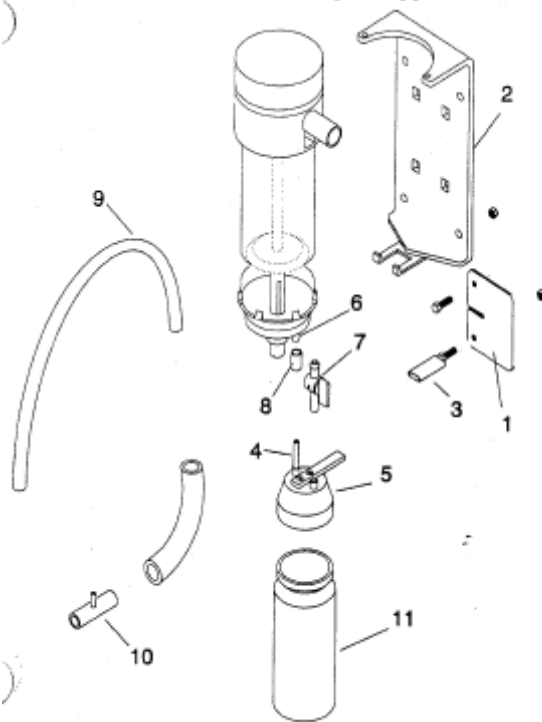


FIGURE 1 Milk Sampling Device Assembly

support bracket with the hole in the plate and bolt them together.

- Bolt the support tube **3** to plate **1** using the lower hole in the stainless steel plate.

Temporarily mounted components

- Install the stainless steel tube **4** in the rubber cap **5**, oriented such that the small hole is at the top, with at least .8 inch [20] of the tube sticking out of the cap.

Note: Ensure that the small hole is at the top of the stainless steel tube when it is inserted into the rubber cap.

- Push the tapered end of the vented plastic valve **7** into the other hole in the rubber cap **5**.
- Cut a short piece of silicon tube **8** approximately 1.6 inches [40] long and use it to connect the sample tube **4** to the sample outlet tube on the meter base **6**.
- Use the remainder of the silicon tube **9** to connect the top of the vented valve **7** to the stainless steel tee **10**.

IMPORTANT! SURGE equipment owners and operators should read and understand all operation and maintenance information. **Keep this information on file for future reference.**

3.1.2 Operation

Setup

Perform the following procedure prior to beginning milking on sampling days.

- Remove the silicon tube **9** from the sample tube on the meter base. Refer to *Figure 2*.
- Use the short piece of silicon tube to connect the sample tube **4** to the sample tube on the meter base. Firmly insert the stainless steel bar on the rubber cap **5** into the support tube **3**. Refer to *Figure 3*.
- Connect the top of the vented valve **7** to the stainless steel tee **10** using the silicon tube **9**.
- Apply system vacuum, open the vented valve **7** (refer to *Figure 4A*) and insert the sample jar **11** into the underside of rubber cap **5**. Push up on the sample jar until it is properly seated into the rubber cap.

Note: Ensure that the sample jar is properly seated into the rubber cap.

Normal Operation

IMPORTANT! This device must be cleaned by hand and must not be used as clean in place (CIP).

- Proceed with normal milking.
- After the milking unit has been removed from each cow, close the vented valve 7 (refer to *Figure 4B*). Remove the jar, agitate the milk and transfer it to the sample cup.
- Reattach the sample jar 11 and open the vented valve 7 (refer to *Figure 4A*) for the next cow.

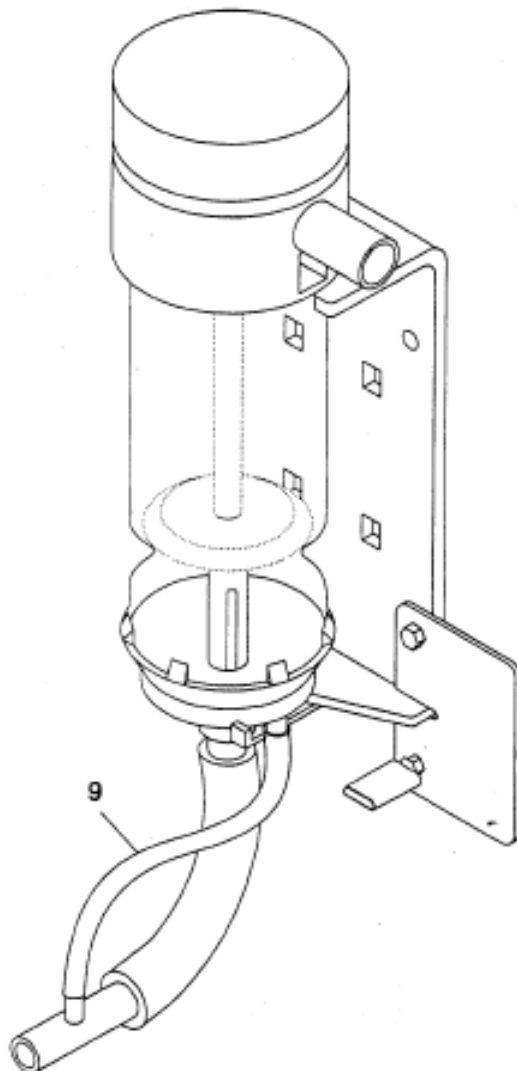


FIGURE 2 Hookup for No Sampling

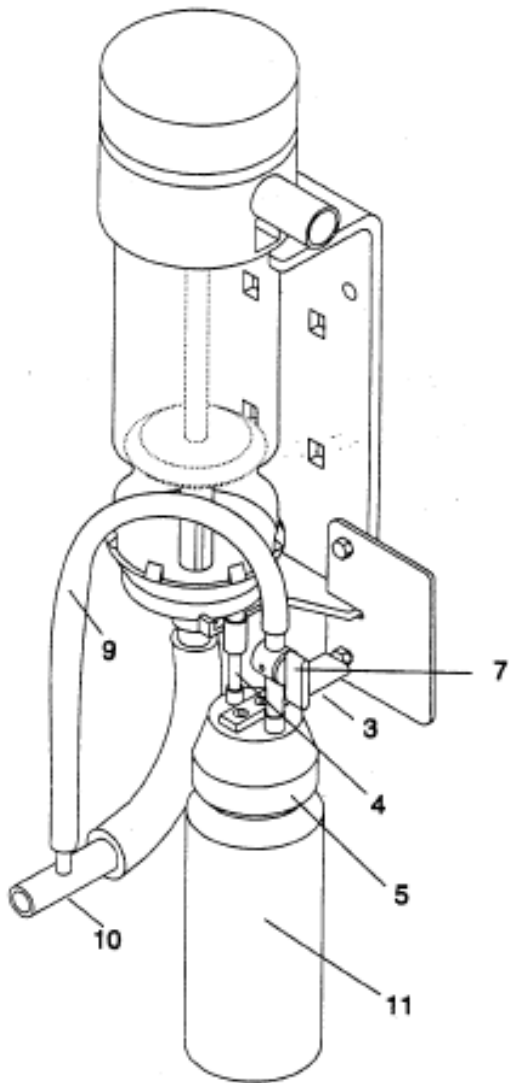


FIGURE 3 Sampling Hookup

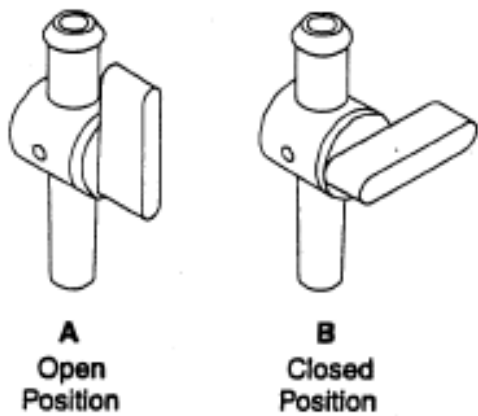
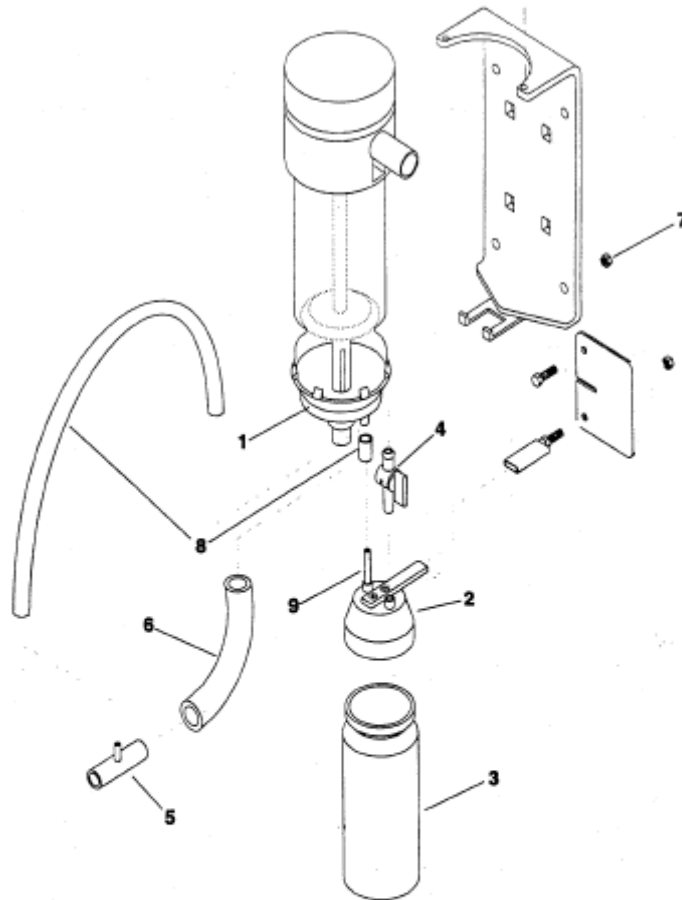


FIGURE 4 Vented Valve Operation



- 1 48124 Sampler Head Assembly, European
- 2 27817 Cap Electrode (Rubber)
- 3 48129 Sampler Cup, European
- 4 48130 Valve, European
- 5 48126 Vacuum Fitting Tee
- 6 48127 Rubber 90° Elbow
- 7 21100 Hex Nut 313-18 SS
- 8 47376 Hose .250 x .438 Diameter (10 feet)
- 9 47375 Butterfat Restrictor

* Recommended for Dealer Inventory

4 InFARMatIon Dairy Manager Milk Meter: Operation Instructions

Note: The information in this documentation supersedes all previously published information.

Thank you for purchasing the SURGE InFARMatIon DairyManager Milk Meter, a device which provides accurate milk measurement and much more.

Please take the time to read these instructions carefully. They will provide you with information required to help you get the most out of your SURGE milk meter system.

4.1 Features

- Accurate measurement of milk yield - ICAR, CMRB and DHIA approval
- LCD display with automatic reset
- Can operate with approved butterfat sampler
- Computer interface capability
- Stand-alone capability
- Built-in visual alarm with computer interface
- Automatic end-of-milking sensing
- Keypad optional
- Measurement in pounds or kilograms depending on model
- Attractive and durable stainless and glass construction
- Specially designed DHIA (official test) mode
- Single part design
- Designed specifically for milking parlors
- Continuous wetting for ease of cleaning

- CIP capability
- Low voltage: 24 Volts DC

4.2 Operation

The InFARMed DairyManager milk meter has 3 installation options:

- stand alone meters
- meters that operate detachers
- meters that are interfaced with InFARMed DairyManager or ParlorManager software.

The basic meter operation is the same for all 3 options.

Setting the End-of-Milking Detach Delay

Set the end-of-milking detach delay on the back of the DairyManager Control Module.

If the Standard End-of-Milking Detach Delay Control Chip is installed, refer to *Table I*.

Table I Standard End-of-Milking Detach Delay Control Chip

Switch Settings	Delay (Seconds)	Approximate Lbs/Min	Approximate Kgs/Min
0	30	1.00	.45
1	36	.80	.36
2	42	.70	.32
3	48	.60	.27
4	54	.55	.25
5	60	.50	.23
6	66	.45	.20
7	72	.40	.18
8	78	.38	.17
9	84	.35	.16

Note: Setting 4 is equivalent to a VSO.

If the optional Short End-of-Milking Detach Delay Control Chip is installed, refer to *Table II*.

Table II Short End-of-Milking Detach Delay Control Chip

Switch Settings	Delay (Seconds)	Approximate Lbs/Min	Approximate Kgs/Min
0	12	2.50	1.10
1	18	1.70	.76
2	24	1.30	.57
3	30	1.00	.45
4	36	.80	.36
5	42	.70	.32
6	48	.60	.27
7	54	.55	.25
8	60	.50	.23
9	66	.45	.20

Note: Setting 7 is equivalent to a VSO. The short end-of-milking delay control chip is only approved for the DairyManager meter control module.

Systems with computers must also set the end-of-milking detach delay in the InFARmation computer software. Refer to Chapter 6 (Equipment Setup) of the DairyManager Operator's Manual. Refer to Chapter 3 (System Parameters; DHIA Mode) of the ParlorManager Operator's Manual.

Note: The computer end-of-milking setting overrides the control module setting.

4.3 Pre-Milking Setup

Three steps are required to set up the meter for milking.

1. Set the wash switch on the control module to OFF.
2. Verify that the DHIA switch on the control module is set to OFF.
3. Press the reset button on the side of each meter. The display will show a flashing decimal point.

4.4 Normal Meter Operation

The milk meter will automatically begin indicating production when milk flow starts. When milk flow slows or stops, the meter will pause for a pre-set number of seconds called the end-of-milking detach delay. When this delay has completed, the meter will open the valve and allow the remaining milk to flow into the milk line ("dump" the milk), indicate the final production amount, send the milk information to the computer and

reset the meter for the next cow. The milk meter will automatically begin indicating production when milk flow from the next cow milked begins.

The meter can be forced to reset at any time by pressing the reset button on the side of the meter. When the reset button is pushed it will empty the remaining milk from the milk meter, indicate the final production amount, send the milk information to the computer, and reset it for the next cow.

4.5 Wash Mode

After milking is completed, set the wash switch on the control module to the ON position. The meter display will indicate the serial number.

4.6 Test Day Setup Procedure (Dairy Manager)

It is important on test day that the system be changed to DHIA (official test) mode. There are 4 installation configurations that require separate test day settings. Refer to *Table III*.

Table III Test Day Settings

Test Day Settings	DHIA Switch	Control Module Thumb Wheel	DairyManager Computer
Stand Alone Meters	On	0	N/A
Meters With Detachers	On	Not 0	N/A
ID Without Detachers	On	0	No *
ID With Detachers	On	Not 0	No *

* Refer to Chapter 6 (Equipment Setup) of the DairyManager Operator's Manual. Refer to Chapter 3 (System Parameters; DHIA Mode) of the ParlorManager Operator's Manual.

4.7 Milking Procedures on Teast Day

The mode of operation on test day is determined by the model of the meter and whether or not the system has detachers.

METERS WITHOUT DETACHERS (EXCEPT EUROPEAN MODEL 48043)

Note: Without detachers, the milk meter final dump does not occur until the reset button is pressed.

Set the control module thumb-wheel switch to zero and the DHIA switch to ON. Refer to *Table III*.

When milking for the current cow is completed, the test supervisor should push the reset button on the side of the meter and wait 3 seconds for the meter to indicate

the final production amount. The test supervisor should then record the milk weight.

When the last test milking session is completed, return the control module thumb-wheel to its original setting and set the DHIA switch to OFF.

METERS WITH DETACHERS (EXCEPT EUROPEAN MODEL 48043)

Note: With detachers, the milk meter final dump occurs when the detacher automatically retracts.

Set the control module DHIA switch to ON. Do not change the thumb-wheel setting. Refer to *Table III*.

When milking for the current cow is completed, and the milking unit has been automatically removed, the test supervisor should record the milk weight indicated in the display and push the reset button on the side of the meter to get ready for the next cow.

When the last test milking session is completed, set the control module DHIA switch to OFF.

EUROPEAN METERS WITH OR WITHOUT DETACHERS

Note: On European meters with or without detachers, the milk meter final dump does not occur until the reset button is pressed.

Set the control module DHIA switch to ON. Do not change the thumb-wheel setting. Refer to *Table III*.

When milking for the current cow is completed, the test supervisor should push the reset button on the side of the meter and wait 3 seconds for the meter to indicate the final production amount. The test supervisor should then record the milk weight.

When the last test milking session is completed, set the DHIA switch to OFF.

4.8 Milk Meter Operation with Meter Identification

COW IDENTIFICATION

The system identifies the cow at each milk stall and displays the cow number in 2 ways.

1. The new cow number will be indicated on the display automatically after milk flow starts. The cow number will flash 3 times, then alternate with the

indicated production. This continues until a detach occurs and new milk flow begins.

2. If the reset button on the side of the meter is pressed when the meter is in detach mode, the cow number indicated on the meter display will be the last cow identified at that stall. This can help to determine the cow's number before attaching the milking cluster.

ALARM CONDITION

The 2 alarm conditions, the cow alarm and the deviation alarm, may be audible as well as visual.

Cow alarm

The cow alarm alerts the operator to a preset alarm condition for a cow. When the cow is identified at the stall, the audible alarm will sound and the light on the meter will flash. To see the cow number on the meter display, press the reset button on the meter.

Refer to the ParlorManager[®], herd management or DairyManager software to determine the reason for the alarm. Refer to the Operator's Manual for setting the cow alarm.

Deviation alarm

The deviation alarm alerts the operator to cows that have an excessive change in production. This alarm could indicate several potential conditions such as; a cow in heat, off feed, mastitis, not milked out, and so forth.

The deviation alarm occurs after a cow is milked and production for the current milking is less than the deviation exception variable entered in the computer.

When the cow is finished milking and the milking unit has been automatically removed, the audible alarm will sound and the light on the meter will be on continuously. This light will stay on until a new cow is identified at that stall.

4.9 Cleaning and Chemicals

Washing and cleaning temperatures should be from 120 °F to 180 °F [49 °C to 82 °C]. Prevent the exposure of the meter and meter parts to the following:

- Petroleum and petroleum based compounds
- Adhesives and bonding agents
- Fly sprays
- Alcohols, phenols and esters

- Solvents such as acetone

Use all cleaning compounds at the manufacturers recommended strength. Limit exposure to chlorine compounds. Concentrations of chlorine should not exceed 200 ppm. Sanitizing just prior to milking is recommended. Sanitizing by itself will not replace proper washing between milkings. Rinse the system with an acid cleaner to neutralize chlorine compounds that attack rubber and rubber-like compounds.

4.10 Milk Meter Service Related Tools

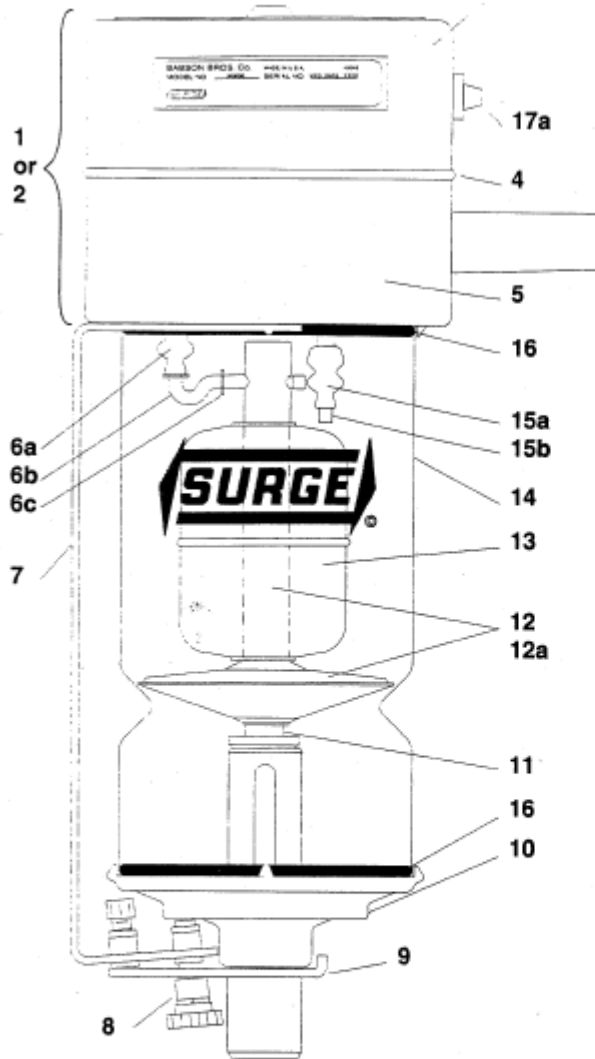
- Milk meter valve gauge - used to determine if the valve needs replacing.
- Sensor gauge - used to determine the sensor height.
- Milk meter valve changer - used to change the valve.

MAINTENANCE CHART

Use the table below to determine when to perform routine periodic maintenance procedures. Those procedures that may only be performed by the SURGE dealer or service person have been marked with the following dealer icon.



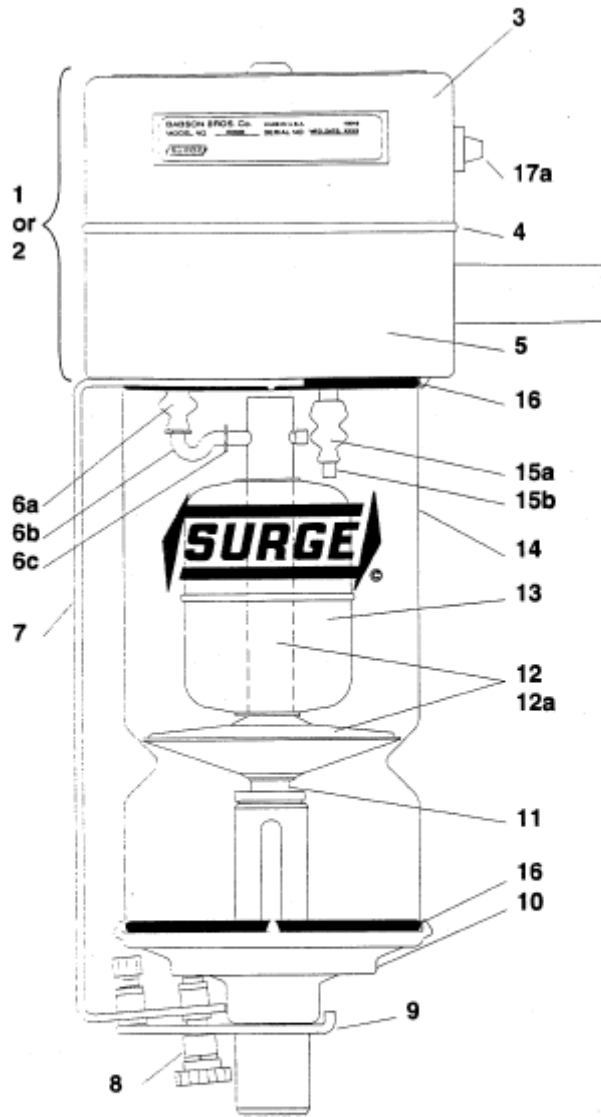
Interval	Task	Action
Daily or as required.	Ensure that the milk meters are washing properly for trouble free operation.	Each meter requires an additional quart [.95 liter] of wash solution.
Yearly	Not Applicable - Refer to Action	Replace the Lifter Bellows, the Sensor Bellows and the Rubber Valve.



- 1 49070 New DairyManager Milk Meter Head (Lbs)
- 2 48706 Repair and Return DairyManager Milk Meter Head (Lbs)
- * 3 47289 Cover Assembly (Lbs)
- * 4 47175 Gasket
- * 5 47288 Inlet Housing Assembly
- * 6 47282 Lifter Rod Kit (Not Shown)
- 4 47175 Gasket
- * 6a 48031 Lifter Bellows
- 6b ----- Lifter Rod
- 6c 22979 E-Ring (3)
- 7 48037 Meter Bracket
- * 8 48047 Thumb Screw
- 9 ----- Mounting Bracket
- 10 47124 Outlet Assembly
- * 11 48035 Wash Guide
- 12 47125 Valve Assembly
- * 12a 47123 Valve Only
- 13 48036 Float
- * 14 48016 Glass
- * 15 47200 Sensor Kit (Not Shown)
- 4 47175 Gasket
- * 15a 48097 Sensor Bellows
- 15b ----- Sensor
- * 16 48030 O-Ring
- * 17 48019 Meter Switch Repair Kit (Not Shown)
- * 17a 48084 Reset Switch Cover
 ----- Meter Switch (Not Shown)
 ----- Spring (Not Shown)
- * 18 48034 Rubber Replacement Kit (Not Shown)
- 6a 48031 Lifter Bellows
- 15a 48097 Sensor Bellows
- 16 48030 O-Ring (2)

* Recommended for Dealer Inventory

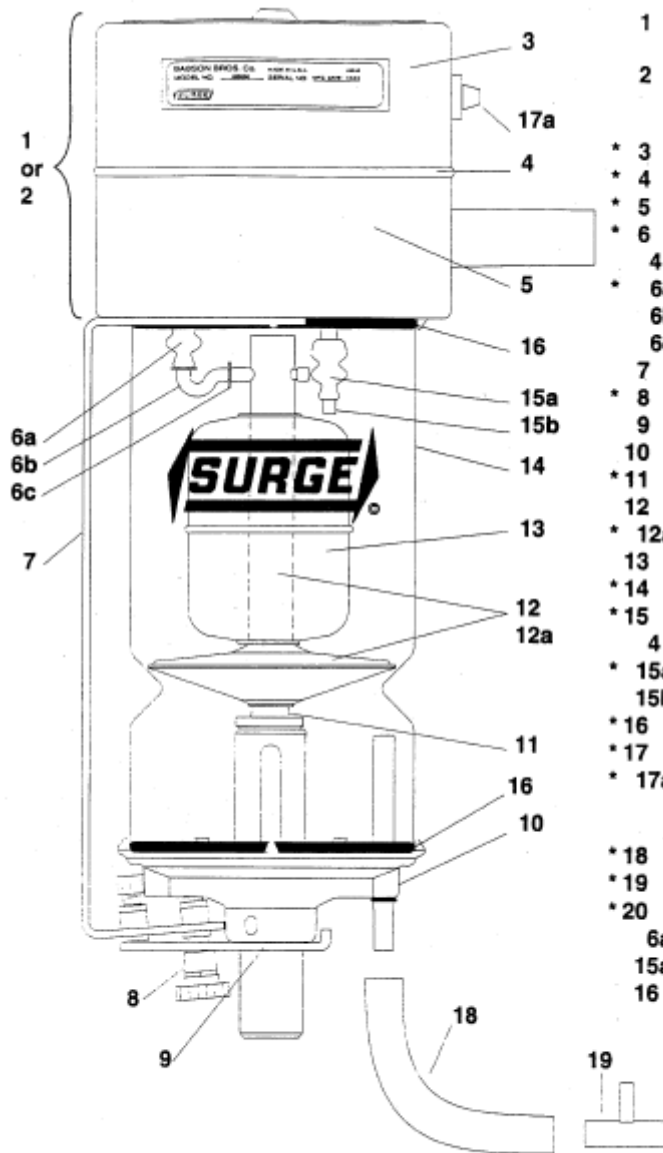
DAIRYMANAGER MILK METER - POUNDS (48201)



- 1** 49071 New DairyManager Milk Meter Head (Kg)
- 2** 48707 Repair and Return DairyManager Milk Meter Head (Kg)
- * **3** 47290 Cover Assembly (Kg)
- * **4** 47175 Gasket
- * **5** 47288 Inlet Housing Assembly
- * **6** 47282 Lifter Rod Kit (Not Shown)
- 4** 47175 Gasket
- * **6a** 48031 Lifter Bellows
- 6b** ----- Lifter Rod
- 6c** 22979 E-Ring (3)
- 7** 48037 Meter Bracket
- * **8** 48047 Thumb Screw
- 9** ----- Mounting Bracket
- 10** 47124 Outlet Assembly
- * **11** 48035 Wash Guide
- 12** 47125 Valve Assembly
- * **12a** 47123 Valve Only
- 13** 48036 Float
- * **14** 48016 Glass
- * **15** 47200 Sensor Kit (Not Shown)
- 4** 47175 Gasket
- * **15a** 48097 Sensor Bellows
- 15b** ----- Sensor
- 16** 48030 O-Ring
- * **17** 48019 Meter Switch Repair Kit (Not Shown)
- * **17a** 48084 Reset Switch Cover
 ----- Meter Switch (Not Shown)
 ----- Spring (Not Shown)
- * **18** 48034 Rubber Replacement Kit (Not Show)
- 6a** 48031 Lifter Bellows
- 15a** 48097 Sensor Bellows
- 16** 48030 O-Ring (2)

* Recommended for Dealer Inventory

DAIRYMANAGER MILK METER - KILOGRAMS (48202)



- 1 49062 New DairyManager Milk Meter Head (European)
- 2 48708 Repair and Return DairyManager Milk Meter Head (European)
- * 3 47291 Cover Assembly (European)
- * 4 47175 Gasket
- * 5 47288 Inlet Housing Assembly
- * 6 47282 Lifter Rod Kit (Not Shown)
- 4 47175 Gasket
- * 6a 48031 Lifter Bellows
- 6b ----- Lifter Rod
- 6c 22979 E-Ring (3)
- 7 48037 Meter Bracket
- * 8 48047 Thumb Screw
- 9 ----- Mounting Bracket
- 10 48124 Outlet Assembly
- * 11 48035 Wash Guide
- 12 47125 Valve Assembly
- * 12a 47123 Valve Only
- 13 48036 Float
- * 14 48016 Glass
- * 15 47200 Sensor Kit (Not Shown)
- 4 47175 Gasket
- * 15a 48097 Sensor Bellows
- 15b ----- Sensor
- * 16 48030 O-Ring
- * 17 48019 Meter Switch Repair Kit (Not Shown)
- * 17a 48084 Reset Switch Cover
----- Meter Switch (Not Shown)
----- Spring (Not Shown)
- * 18 48127 Rubber Elbow
- * 19 48126 1⁵/₁₆ inch x 1⁵/₁₆ inch x 5¹/₁₆ inch Tee
- * 20 48034 Rubber Replacement Kit (Not Shown)
- 6a 48031 Lifter Bellows
- 15a 48097 Sensor Bellows
- 16 48030 O-Ring (2)

* Recommended for Dealer Inventory

DAIRYMANAGER MILK METER - EUROPEAN (48043)