ALEMITE®

Service Guide

3640 3640-B
3641 3641-B
3643
3644 3644-C

Electronic Preset Metered Control Valve

Description

The metered control valves in model series 3640 are designed to meter a variety of fluids.

The valve assembly dispenses motor oils (SAE 5-50), gear oils (SAE 80-240), automatic-transmission fluid, antifreeze (ethylene glycol), and hydraulic fluid.

IMPORTANT: The valve is NOT intended to meter brake fluid, windshield wiper fluid, or antifreeze and water solution.

Each control valve:
- can automatically dispense a preset quantity of fluid or manually dispense
- includes an inlet swivel that contains a strainer

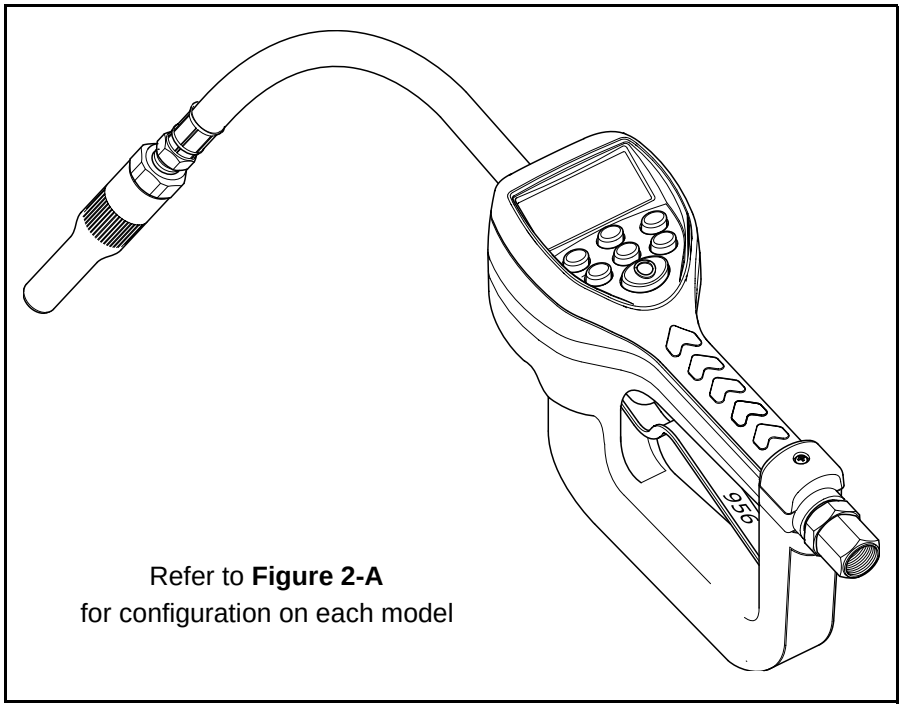

Figure 1 *Electronic Preset Metered Control Valve Model 3640 Series Model 3641 Shown*

Valve Model		Extension	Nozzle Type
3640	Oil	Rigid	Non-Drip Automatic
3640-B			Non-Drip Manual
3641		Flexible	Non-Drip Automatic
3641-B			Non-Drip Manual
3643	Gear Oil	Rigid	Non-Drip Automatic (with Manual Lock)
3644 (Obsolete)	Oil		Non-Drip High-Volume Automatic
3644-C			Non-Drip High-Volume Manual

Table 1 *Electronic Preset Metered Control Valve Model 3640 Series Designation*

Inlet Connection	Accuracy	Delivery Units of Measure (*Totalizer Unit of Measure*)		Flow Range		Temperature Range		Maximum Operating Pressure	
				gpm	lpm	° F	° C	psi	bars
1/2 " NPTF (f)	+/- 0.5 %	Pints, Quarts, Gallons (*Gallons*)	Liters (*Liters*)	0.25 to 8	1 to 30	20 to 120	-5 to 50	1000	67

Table 2 *Electronic Preset Metered Control Valve Model 3640 Series Specifications*

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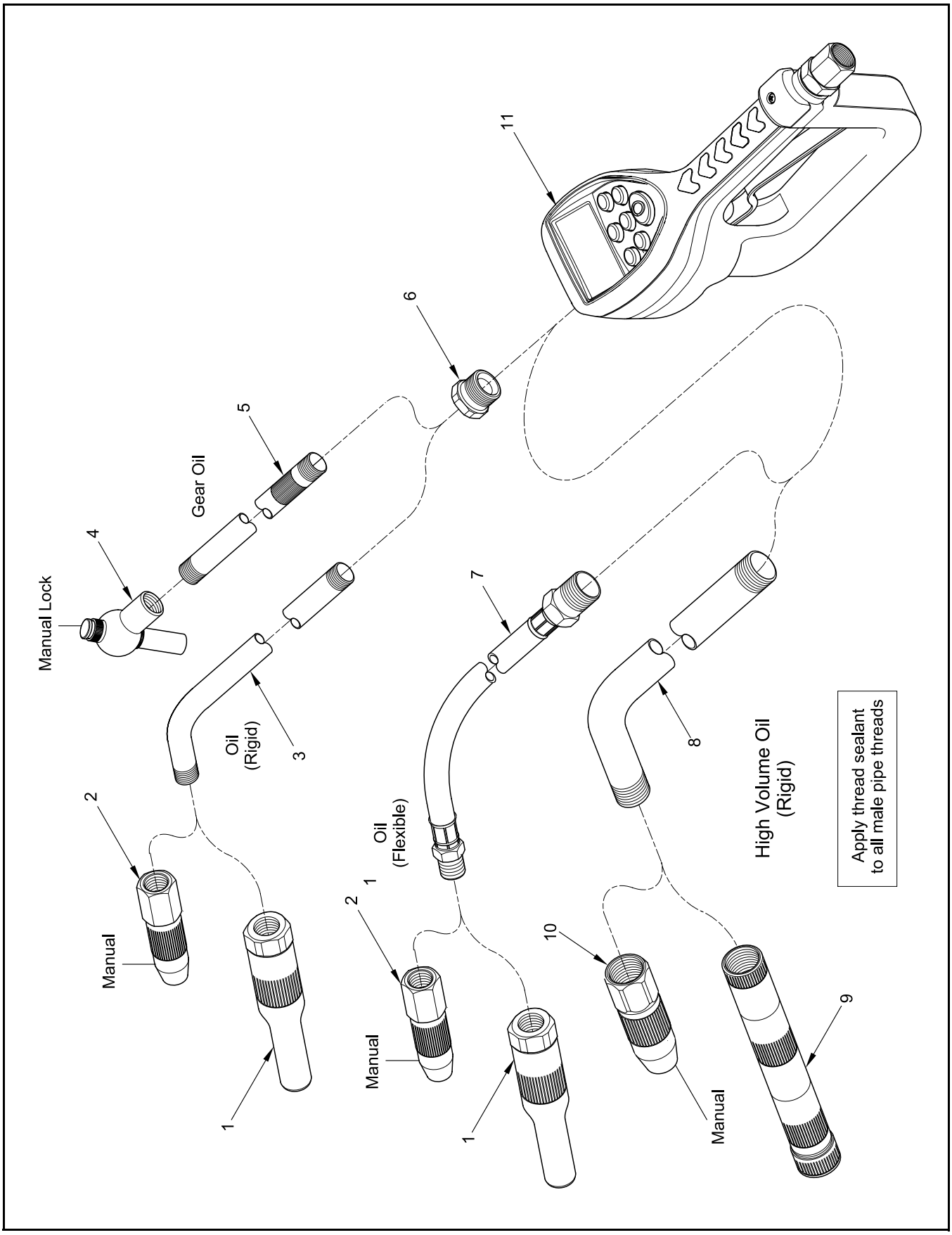


Figure 2-A *Electronic Preset Metered Control Valve Model 3640 Series - Exploded View*

Item No.	Part No.	Description	Control Valve							Qty	Notes	Numeric Order Part # (Item #)
			3640	3640-B	3641	3641-B	3643	3644 *	3644-C			
1	B339800	Non-Drip Nozzle, Automatic	●		●					1		51891 (6)
2	339084	Non-Drip Nozzle, Manual		●		●				1		318400-2 (4)
3	338702	Extension, Curved, 1/4 " NPTF (m)	●	●						1		320421 (5)
4	318400-2	Non-Drip Nozzle, Automatic (w/ Manual Lock)					●			1	See **Figure 8**	*332892* (9)
5	320421	Extension, Straight, 1/4 " NPTF (m)					●			1		338702 (3)
6	51891	Bushing, 1/2 " NPTF (m) x 1/4 " NPTF (f)	●	●			●			1		338709 (7)
7	338709	Hose, 1/2 " NPTF (m) x 1/4 " NPTF (m)			●	●				1		339084 (2)
8	339149	Extension, Curved, 1/2 " NPTF (m)						●	●	1		339149 (8)
9		Non-Drip Nozzle, High Volume Automatic						●		1	Obsolete	*339662* (11)
10	340084	Non-Drip Nozzle, High Volume Manual							●	1		B339800 (1)
11		Valve, Control, Electronic Preset Metered	All Models							1	See **Figure 2-B**	340084 (10)

Legend:
Part numbers left blank (or in *italics*) are not available separately
* Obsolete

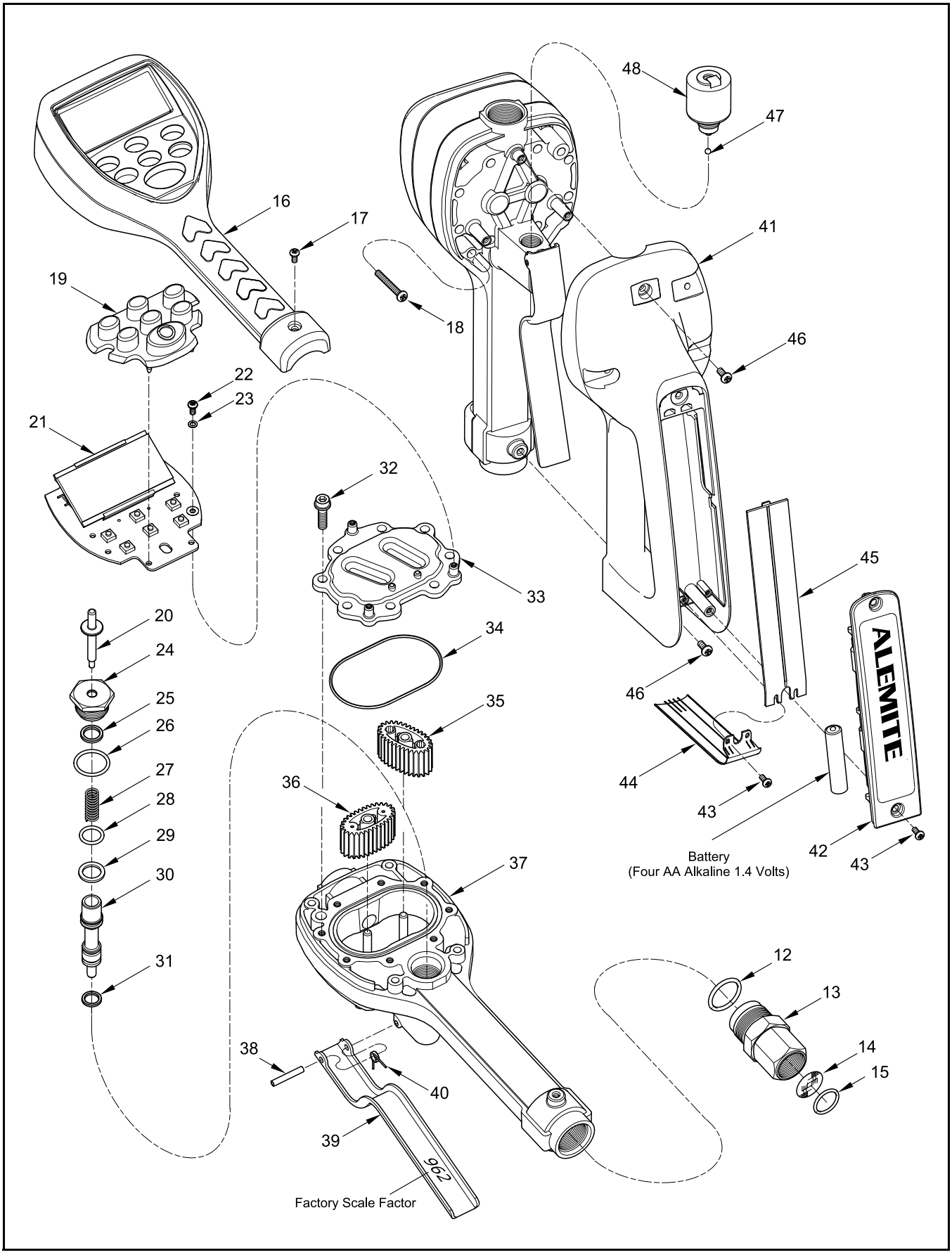


Figure 2-B *Electronic Preset Metered Control Valve Model 3640 Series - Exploded View*

Item No.	Part No.	Description	Qty	Notes	Numeric Order Part #	(Item #)
	393307-219	Kit, Swivel	1	Includes Items 12 - 15		(12)
12		O-Ring	1			(13)
13		Swivel	1			(14)
14		Screen	1			(15)
15		O-Ring	1			(16)
	393307-201	Kit, Top Case	1	Includes Items 16 - 18		(17)
16		Case, Top	1			(18)
17		Screw	1			(19)
18		Screw	4			(20)
	393307-223	Kit, Keypad and Stop Pin	1	Includes Items 19 & 20		(21)
19		Keypad	1			(22)
20		Pin, Stop	1			(23)
	393307-203	Kit, Circuit Board	1	Includes Items 21 - 23		(24)
21		Circuit Board	1			(25)
22		Screw	3			(26)
23		Washer, External Tooth	1			(27)
	393307-217	Kit, Valve	1	Includes Items 24 - 31		(28)
24		Nut, End	1			(29)
25		Seal	1			(30)
26		O-Ring	1			(31)
27		Spring	1			(35)
28		O-Ring	1			(36)
29		Ring, Back-Up	1			(37)
30		Valve	1			(38)
31		Seal	1			(39)
32	393307-208	Screw	8			(40)
33	393307-209	Cover, Housing	1			(41)
	393307-175	Kit, Gear	1	Includes Items 34 - 36		(42)
34	393307-210	O-Ring	1			(43)
35		Gear	1			(44)
36		Gear (w/ Magnet)	1			(45)
37		Housing	1			(46)
	393307-218	Kit, Lever	1	Includes Items 38 - 40	393307-175	
38		Pin, Roll	1		393307-201	
39		Lever	1		393307-203	
40		Spring, Lever	1		393307-208	(32)
	393307-224	Kit, Bottom Case	1	Includes Items 41 - 46	393307-209	(33)
41		Case, Bottom	1		393307-210	(34)
42		Door, Battery	1		393307-215	(47)
43		Screw	4		393307-216	(48)
44		Cover, Case	1		393307-217	
45		Partition	1		393307-218	
46		Screw	4		393307-219	
47	393307-215	Ball, Detent	1		393307-223	
48	393307-216	Solenoid	1		393307-224	

Legend:
Part numbers left blank are not available separately

Control Valve and Meter Operation

Modes of Operation

These valve assemblies are designed for automatic and manual modes of operation.

In automatic mode the display shows AUTO in the lower left-hand corner. See **Figure 3**. With the meter set to manual, AUTO does not appear (area is blank).

To change mode:

1. Press the **RESET** button.
   - This resets the counter to zero.
2. Press the **AUTO** button.
   - The meter toggles between modes.

Control Valve Operation

Manual Mode

With the meter set to manual:

1. Press the **RESET** button.
   - This resets the counter to zero.
2. Pull and hold the lever until the required amount of fluid is dispensed.

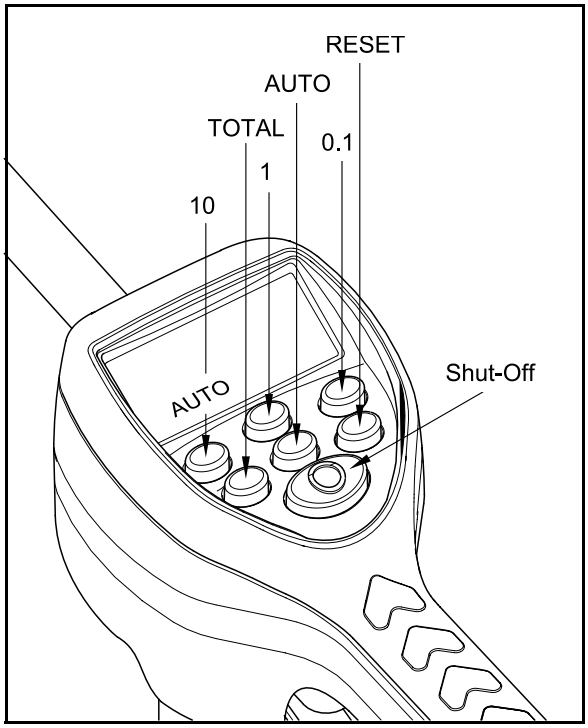


Figure 3 *Meter Buttons (w/Auto Display)*

Automatic Mode

1. Press the **RESET** button.
   - This resets the counter to zero.
2. Repeatedly press the **10**, **1**, and/or **0.1** buttons until the required automatic dispense quantity (up to 99.9 units) displays.

   EXAMPLE: To set a quantity of 4.5 units,
   - repeatedly press the **10** button until the screen is blank
   - repeatedly press the **1** button until 4 displays
   - repeatedly press the **0.1** button until 5 displays

Once the quantity is set:

3. Momentarily pull the lever to start the dispense cycle.
   - The valve latches in the open position.
   - The valve automatically closes once the meter registers the preset quantity.

Stopping Flow

The user can stop the flow during the dispense cycle by pressing the red button*. Momentarily pull the lever to resume the dispense cycle.

* Requires considerable force to depress.

Topping Off

The user can add fluid after the preset amount has been dispensed by pulling the lever.

CAUTION

Do not press the RESET button before topping off. The meter resets to zero to begin a new quantity.

Accumulated and Resettable Totals

The meter stores both accumulated and resettable totals.

Accumulated Total

Press and hold the **TOTAL** button to display the accumulated total.

Resettable Total

Press and hold the **TOTAL** button for 3 seconds to display the resettable total.

Press the **RESET** button while viewing the resettable total to reset the counter to zero.

Meter Programming

NOTE: Each meter is programmed in quarts and calibrated for motor oil at the factory.

Change Unit of Measure

1. Insert a blunt tool (5/32 "allen wrench) into the access hole in the back of the meter.
   - See **Figure 4**.
2. Press and hold the tool for 2 seconds.
   - The screen begins to flash and then displays the current scale factor and unit of measure.
   - The current unit of measure flashes.
   - See **Figure 5**.
3. Press the **TOTAL** button to cycle through the available units of measure (Quarts, Gallons, Pints, or Liters).

CAUTION

The accumulated and resettable totals are lost when changing to or from liters.

Once the required unit of measure displays:

4. Press the **RESET** button.
   - The chosen unit of measure illuminates steady.
   - The first digit of the value for the scale factor flashes.

   NOTE: Should Liters be set, the decimal point flashes.To change to a comma:

   4.1 Press the **TOTAL** button.
   - The comma flashes.

   4.2 Press the **RESET** button.
   - The comma illuminates steady.
   - The first digit of the scale factor flashes.

If the scale factor* does not need to be changed:

5. Insert the tool into the access hole in the back of the meter once again.
6. Press and hold the tool.
   - The screen flashes three (3) times and then goes blank.
7. Press the **RESET** button.
   - The normal delivery screen appears.

* The scale factor is a value that the meter uses to calculate the amount of fluid measured.

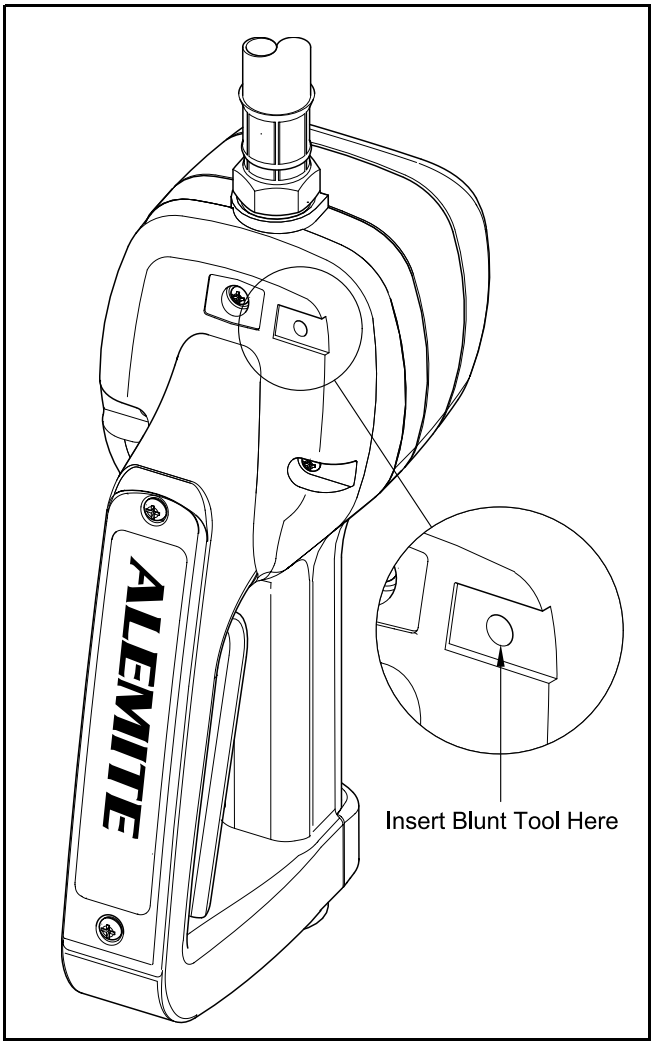


Figure 4 *Meter Programming Access Hole*

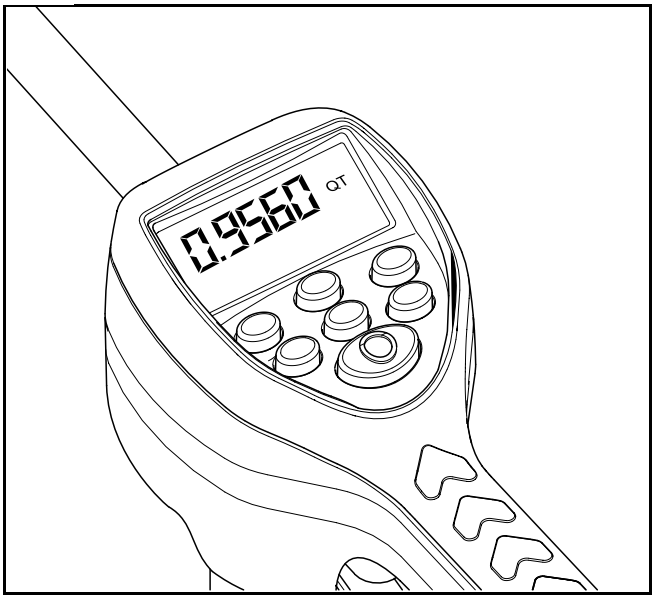


Figure 5 *Scale Factor and Units of Measure Screen*

Recalibration

It may become necessary to recalibrate the meter. Variables that cause a meter to require recalibration are:

- fluid viscosity
- fluid temperature
- flow rate

NOTE: The original scale factor is recorded by the factory on the back of the lever. See **Figure 2-B**.

Scale Factor Calculation

*IMPORTANT: Dispense the fluid at the normal flow rate in the **Manual** mode of operation.*

1. Dispense any amount of fluid greater than 1 gallon (3.8 liters) into an appropriate-sized graduated beaker.
2. Record the amount dispensed and the value displayed on the meter.
3. Insert a blunt tool (5/32 "allen wrench) into the access hole in the back of the meter.
   - See **Figure 4**.
4. Press and hold the tool for 2 seconds.
   - The screen begins to flash and then displays the current scale factor and unit of measure.
   - The current unit of measure flashes.
5. Record the current scale factor.
6. Divide the value of the amount dispensed by the value displayed on the meter. Multiply this product by the existing scale factor. The product is the new scale factor.

   EXAMPLE: Exactly 4 quarts were dispensed into the beaker and the meter registered 4.16 quarts. If the existing scale factor is 0.957, a new scale factor of 0.920 must be entered.

   (4 ÷ 4.16) x 0.957 = 0.920

Change the Scale Factor

7. Press the **RESET** button.
   - The first digit of the scale factor flashes.
8. Press the **TOTAL** button until the required value appears.

   NOTE: The first digit can be set to 0 or 1. All remaining digits to the right of the decimal point (comma) have a full range from 0 to 9.
9. Press the **RESET** button.
   - The next digit of the scale factor flashes.
10. Repeat steps 8 and 9 for all digits.
11. Once the last digit is set, press the **RESET** button.
    - The pulse delay factor (PS) screen appears.
    - See **Figure 6**.

    IMPORTANT: The pulse delay factor should always be set to zero. No pulse delay is required on these control valve models.
12. Insert the tool into the access hole in the back of the meter once again.
13. Press and hold the tool.
    - The screen flashes three (3) times and then goes blank.
14. Press the **RESET** button.
    - The normal delivery screen appears.

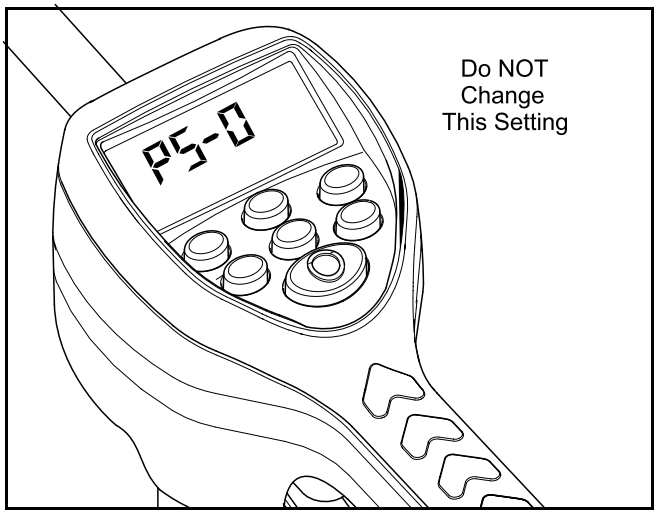


Figure 6 *Pulse Delay Factor Screen*

Meter Battery

A progression of warnings appear on the screen of the meter to indicate the condition of the batteries.

First Warning

The battery low icon appears in the lower left corner of the screen. See **Figure 7**.

This icon informs the user that the batteries are low and need to be changed within *one week* since the icon first appeared.

Second Warning

The **AUTO** icon disappears and the function is no longer available. The valve will still operate in manual mode and measure flow.

Third Warning

The screen goes blank. No power is available to measure flow.

> **NOTE**: The valve will allow fluid to pass but will not record the amount used.

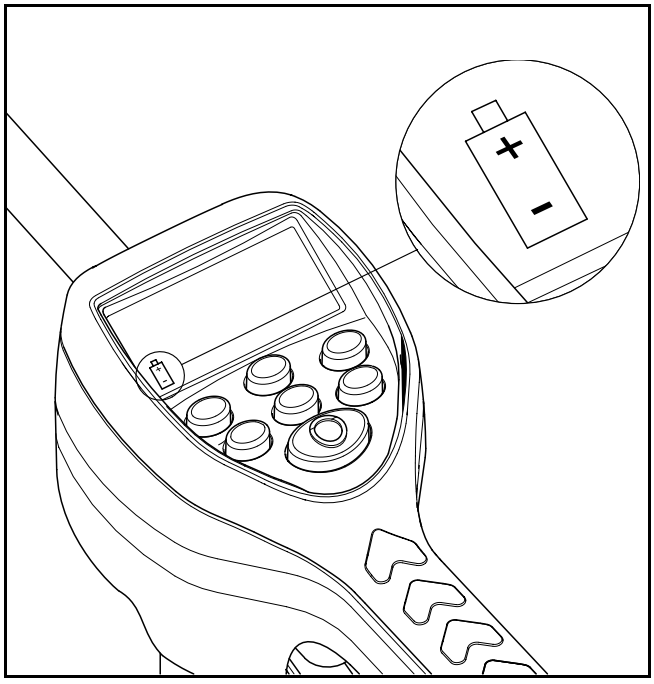


Figure 7 *Battery Low Icon*

Changing the Battery

The meter's circuit board assembly retains totals and programmed values when the batteries are removed from the valve.

> **NOTE**: Refer to **Figure 2-B** for component identification on the following procedures.

1. Remove Screws (**43**) that secure Battery Door (**42**) to Bottom Case (**41**).
   - Separate the Battery Door (with batteries) from the Case.
2. Remove the Batteries from the Battery Door.

WARNING

Recycle or dispose the used battery properly. Do not burn or puncture the battery. Toxic materials may be emitted which can cause personal injury.

CAUTION

Avoid touching the flat surfaces of the new battery. Skin oils can cause battery deterioration. Clean any suspect battery with alcohol prior to installation.

3. Install the new AA alkaline Batteries into the Door
   - Make sure the positive terminal on each Battery coincides with the positive indicator mark on the Battery Door.
4. Position the Battery Door to the Bottom Case.
5. Insert the Screws into the Battery Door.
   - Tighten the Screws securely.

Overhaul

NOTE: Refer to **Figure 2-A** and **2-B** for component identification on the major components of the valve assembly.

Prior to performing any maintenance procedure, the following safety precautions must be observed. Personal injury may occur.

WARNING

Do not use halogenated hydrocarbon solvents such as methylene chloride or 1,1,1 trichloroethane in this valve assembly. An explosion can result within an enclosed device capable of containing pressure when aluminum and/or zinc-plated parts come in contact with halogenated hydrocarbon solvents.

Release all pressure within the system prior to performing any overhaul procedure.

- **Disconnect the air supply line from the pump motor.**
- **Into an appropriate container, operate the control valve to discharge remaining pressure within the system.**

Never point a control valve at any portion of your body or another person. Accidental discharge of pressure and/or material can result in personal injury.

Read each step of the instructions carefully. Make sure a proper understanding is achieved before proceeding.

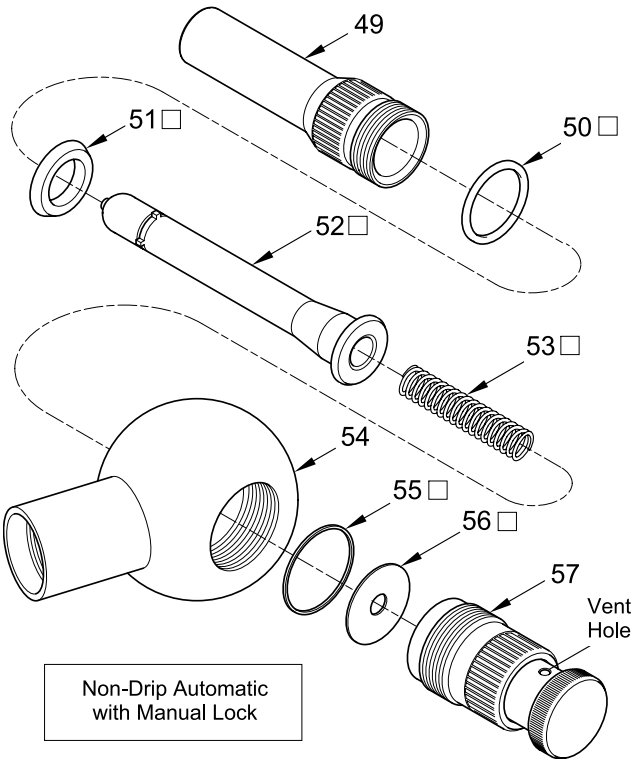
Disassembly

Extensions and Nozzles

1. Unscrew the extension assembly from Control Valve Assembly (**11**).
2. Separate the components of the extension assembly.

Non-Drip Nozzle (Automatic w/ Manual Lock)

1. Unscrew Nozzle (**49**) from Angle Body (**54**).
2. Remove O-Ring (**50**) from the Nozzle.
3. Remove Stem (**52**) from the Nozzle.
4. Remove V-Block (**51**) and Spring (**53**) from the Stem.
5. Unscrew Screw Assembly (**57**) from the Angle Body.
6. Remove Washer (**56**) from the Screw Assembly.
7. Remove Gasket (**55**) from the Angle Body.



Item No.	Part No.	Description	Notes	Qty
49		Nozzle		1
50		O-Ring, 1/2 " ID x 5/8 " OD	□	1
51		V-Block	□	1
52		Stem	□	1
53		Spring	□	1
54		Body, Angle		1
55		Gasket	□	1
56		Washer	□	1
57		Screw Assembly		1

Legend:
Part numbers left blank are not available separately
□ designates a repair kit item

Repair Kit

Part No.	Kit Symbol	Description
393518	□	Kit, Repair

Figure 8 *Nozzle Assembly 318400-2 - Exploded View*

Control Valve Assembly

Battery Door

1. Remove Screws (**43**) that secure Battery Door (**42**) to Bottom Case (**41**).
   • Separate the Battery Door (with batteries) from the Bottom Case.

Valve Case

2. Remove Screws (**43**) that secure Case Cover (**44**) and Partition (**45**) to the Bottom Case.
   • Remove the Case Cover and the Partition from the Bottom Case.

3. Remove four Screws (**46**) that secure Bottom Case (**41**) to Housing (**37**).

4. Push the Battery terminals from the Bottom Case.
   • Separate the Bottom Case from the Housing.

5. Remove four Screws (**18**) that secure the Housing to Top Case (**16**).

6. Remove one additional Screw (**17**) that secures the Top Case to the Housing.
   • Separate the Top Case from the Housing.

7. Remove Keypad (**19**) from the Top Case.

Solenoid

8. Carefully pull the terminal connector from Solenoid (**48**).

9. Unscrew the Solenoid from the Housing.

10. Remove Detent Ball (**47**).

Circuit Board and Metering Gears

11. Remove three Screws (**22**) that secure Circuit Board (**21**) to Housing Cover (**33**).
    • Remove the Circuit Board from the Housing.

    NOTE: The lower right-hand screw contains external tooth washer (**23**).

12. Remove Screws (**32**) that secure the Housing Cover to the Housing.
    • Remove the Housing Cover from the Housing.

13. Remove Gears (**35** and **36**) and O-Ring (**34**) from the Housing.

Valve Mechanism

14. Remove Stop Pin (**20**) from Nut (**24**).

15. Unscrew the Nut from the Housing.
    • Remove O-Ring (**26**) and Seal (**25**) from the Nut.

16. Remove Spring (**27**), Valve (**30**) [with O-Ring (**28**), Back-Up Ring (**29**), and Seal (**31**)] from the Housing.

Lever Mechanism

*IMPORTANT: Use care not to lose Spring (**40**) during the removal of Lever (**39**).*

17. Remove Roll Pin (**38**) that secures Lever (**39**) to the Housing as required.
    • Remove the Lever and Spring (**40**) from the Housing.

Swivel

18. Unscrew Swivel (**13**) from the Valve's Housing.

19. Remove O-Ring (**12**), O-Ring (**15**), and Screen (**14**) from the Swivel.

Clean and Inspect

1. Clean all metal parts in cleaning solvent. The solvent should be environmentally safe.

2. Inspect all parts for wear and/or damage.
   • Replace as necessary.

3. Closely inspect the mating surfaces of all components for any imperfections. Ensure a smooth and clean contact is obtained when assembled.

4. Closely inspect the mating surfaces of Cover (**33**) and Housing (**37**) for any imperfections. Ensure a smooth and clean contact is obtained when assembled.

Assembly

NOTE: Prior to assembly, certain components require lubrication in clean oil. Refer to **Table 3** for details.

Control Valve Assembly

Lever Mechanism

1. Install and hold Spring (**40**) onto Housing (**37**).
2. Position and hold Lever (**39**) onto the Housing.
3. Install Roll Pin (**38**) that secures the Lever and Spring to the Housing.

Valve Mechanism

4. Install Valve (**30**) [with O-Ring (**28**), Back-Up Ring (**29**), and Seal (**31**)] into the Housing.
5. Install Spring (**27**) into the Valve Assembly.
6. Install O-Ring (**26**) onto Nut (**24**).
7. Install Seal (**25**) into the Nut.
8. Screw the Nut into the Housing.
   - Tighten the Nut securely.
9. Install Stop Pin (**20**) [long end first] into the Nut.

Metering Gears

CAUTION

Position the Gear with the magnets correctly in the Housing. Meter will not function properly.

10. Install Gear (**36**) with the magnets into the Housing.
    - Make sure to locate the Gear properly in the Housing. See **Figure 9**.
11. Install additional Gear (**35**) into the Housing.
    - Make sure this Gear engages the magnet Gear perpendicularly.

    IMPORTANT: Rotate the Gear assembly by hand. Make sure the gear teeth are properly engaged.
12. Install and seat O-Ring (**34**) into the oval groove in the Housing.
13. Position Housing Cover (**33**) onto the Housing.
14. Install Screws (**32**) that secure the Housing Cover to the Housing.
    - Tighten the Screws in a crisscross pattern to 90 inch pounds (10.2 Nm).

Circuit Board

15. Position the Housing assembly with Housing Cover facing up.
16. Thread the wires from Circuit Board (**21**) through the upper right hand openings in the Housing.

    NOTE: The battery terminal wire threads through the larger opening.
17. Position the Circuit Board to the Housing.
18. Install Screws (**22**) that secure the Circuit Board Assembly to the Housing Cover.

    NOTE: The lower right-hand screw contains external tooth washer (**23**).

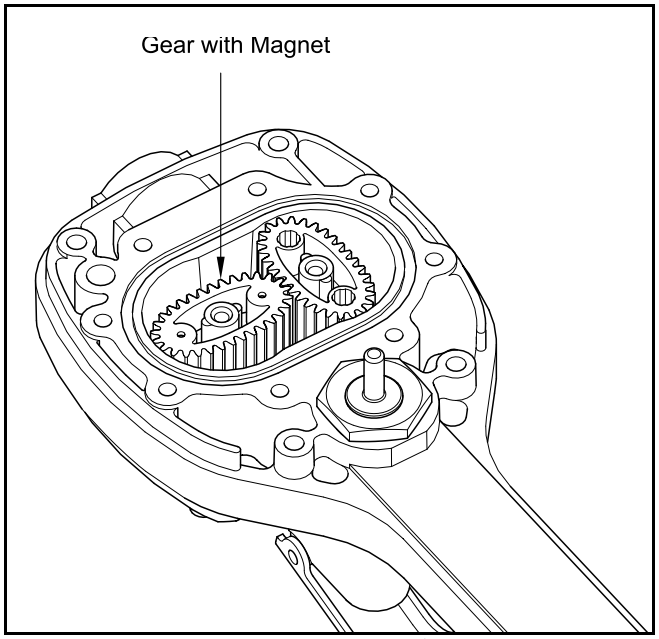


Figure 9 *Metering Gears*

Item No.	Description	Item No.	Description
12	O-Ring	31	Seal
25	Seal	34	O-Ring
26	O-Ring	50	O-Ring, 1/2 " ID x 5/8 " OD
28	O-Ring		

Table 3 *Components Lubricated in Clean Oil*

Solenoid

19. Drop Detent Ball (**47**) into the hole in the Housing.
20. Screw Solenoid (**48**) into the Housing securely.
21. Carefully push the terminal connector [no polarity] onto the Solenoid pins.
22. Install Keypad (**19**) into the holes of the Circuit Board Assembly.
23. Install Top Case (**16**) onto the Housing.
24. Install Screws (**18**) that secure the Housing to the Top Case.
    • Tighten the Screws securely.
25. Install one additional Screw (**17**) that secures the Top Case to the Housing.
    • Tighten the Screw securely.
26. Install and seat each Battery terminal onto Bottom Case (**41**).
    • Make sure each terminal is fully seated.
27. Position the Bottom Case over the Lever and onto the Housing.
    • Route the wiring properly with no kinks.

    NOTE: The Bottom Case may contact the Solenoid connector. This is permissible.
28. Install Screws (**46**) that secure the Bottom Case to the Housing.
    • Tighten the Screws securely.
29. Insert the tab of Partition (**45**) into the Bottom Case.
30. Insert the tabs of Case Cover (**44**) into the Bottom Case and over the Partition.
31. Install Screws (**43**) that secure the Case Cover and the Partition to the Bottom Case.
    • Tighten the Screws securely.

Battery Door

32. Position Battery Door (**42**) [with batteries] to the Bottom Case.
33. Insert Screws (**43**) into the Battery Door.
    • Tighten the Screws securely.

Swivel

34. Install Screen (**14**) and O-Ring (**15**) into Swivel (**13**).

    NOTE: O-Ring (**15**) is slightly smaller than O-Ring (**12**).
35. Install O-Ring (**12**) onto the Swivel.
36. Screw the Swivel into the Valve's Housing.
    • Tighten the Swivel securely.

Extension and Nozzles

Non-Drip Nozzle (Automatic w/ Manual Lock)

NOTE: Refer to **Figure 8** for component identification.

1. Install Gasket (**55**) into Angle Body (**54**).
2. Install Washer (**56**) into Screw Assembly (**57**).
3. Thread the Screw Assembly into the Angle Body.
   • Tighten the Screw Assembly securely.
4. Install O-Ring (**50**) onto Nozzle (**49**).
5. Install and seat V-Block (**51**) [heel end first] onto Stem (**52**).
6. Install the Stem assembly into the Nozzle.
7. Install Spring (**53**) into the Stem.
8. Screw the Nozzle assembly into Angle Body.
   • Tighten the Nozzle securely.

Extensions

1. Connect the components of the extension assembly and tighten securely.
2. Screw the extension assembly into Control Valve (**11**).
   • Tighten the extension securely.

Troubleshooting Chart

Control Valve Indications	Possible Problems	Solutions
Continuous product flow	1. O-Ring (**28**) worn or damaged 2. Foreign material under valve Seal (**31**)	1. Use Valve Kit 393307-217 2. Disassemble, clean, and inspect seat area. Check mating surfaces and use Valve Kit 393307-217as necessary. Locate and eliminate source of foreign material.
Reduced or zero flow	1. Gears (**35** and **36**) clogged 2. Clogged Screen (**14**) 3. Clogged system 4. Gears (**35** and **36**) installed incorrectly	1. Overhaul metering gear cavity 2. Clean Screen (**14**) 3. Clean system filter 4. Make sure the gears mesh properly
No product flow	Manual Nozzle (**2**, **4**, or **10**) not open	Open Nozzle (**2**, **4**, or **10**)
Leakage at Top Case (**16**) or Bottom Case (**43**)	1. Seal (**25**) worn or damaged. 2. O-Ring (**26**) worn or damaged 3. Initial tightening of Screws (**32**) not sufficient 4. O-Ring (**34**) worn or damaged	1. Use Valve Kit 393307-217 2. Replace O-Ring (**26**) 3. Tighten Screws (**32**) in a crisscross pattern to 90 inch pounds (10.2 Nm). 4. Replace O-Ring (**34**)
Leakage at Swivel Assembly (**13**)	1. Swivel internal seal worn or damaged. 2. Initial tightening of Swivel Assembly (**13**) not sufficient 3. O-Ring (**12**) worn or damaged.	1. Use Swivel Kit 393307-219 2. Tighten Swivel Assembly (**13**) 3. Replace O-Ring (**12**)
Leakage at Valve Assembly	Seal (**31**) worn or damaged.	Use Valve Kit 393307-217
Leakage at front end of Nozzle	Nozzle damaged	Replace Nozzle
Leakage at Extension Assembly	1. Initial tightening not sufficient 2. Thread sealant missing or inadequate	1. Tighten leaking connection 2. Apply thread sealant* to male pipe threads
Meter Indications	**Possible Problems**	**Solution**
Battery indicator appears on display	1. Weak Batteries 2. Dirty contacts	1. Replace Batteries 2. Clean Batteries and terminals
The **AUTO** icon disappears from the display	1. Weak Batteries 2. Dirty contacts	1. Replace Batteries 2. Clean Batteries and terminals
Display blank	1. Dead Batteries 2. Batteries installed incorrectly 3. Dirty contacts	1. Replace Batteries 2. Make sure the positive terminal on Battery coincides with the positive indicator mark on the Battery Door 3. Clean Batteries and terminals
Meter is not accurate	1. Incorrect scale factor 2. Flow rate above maximum 3. Flow rate below minimum	1. Change scale factor 2. Decrease flow rate 3. Increase flow rate
Meter does not count and the flow rate is normal	1. Gears (**35** and **36**) installed incorrectly 2. Circuit Board (**21**) defective	1. Make sure to locate the gears properly in the Housing 2. Use Circuit Board Kit 393307-203
* Do not apply thread sealant to the first two (2) threads. Contamination can occur.		

Changes Since Last Printing

Added Model 3644-C