SERVICE BULLETIN SB3011
REV. A 10/96

Balcrank

DATAFLOW™ Modular Control Handle
Electronic Metered Series

MODELS:
3330-001
3330-003
3330-005

Thoroughly read and understand this manual before installing, operating or servicing this equipment.

OPERATION, INSTALLATION, MAINTENANCE AND REPAIR GUIDE

General Safety

Thoroughly read and understand this manual before installing, operating or servicing this equipment.

Terms:
* NOTE: Gives more explanation of a procedure, or a help hint.

* ⚠ CAUTION: Alerts user to avoid or correct a condition which may or could cause damage and/or destroy the equipment.

* ⚠ WARNING: Alerts user to avoid or correct conditions which could cause bodily injury.

Always – read and follow the fluid and solvent manufacturer's recommendations regarding the use of protective eyewear, clothing, gloves and other personal equipment.

⚠ **WARNING:** Maximum Fluid Pressure 1000 PSI. (69 bar) Under no circumstances should the Control Handle be aimed at any person or your own body at any time. Personal injury may result.

Never – Alter or modify any part or parts of this dispensing handle or meter; doing so could cause it to malfunction causing bodily injury and/or property damage.

Control Handle Safety:
Do not modify any part of the Control handle valve. Modifying parts can cause malfunction and result in equipment damage and/or serious bodily injury.

Flexible Extension Wand Safety:
Always know the Maximum working pressure of your flexible extension hose. **Never exceed the system's lowest rated component.** When using a flexible hose extension always hold onto hose, else a whipping action may occur which could cause serious bodily injury.

Electronic Meter Safety:
To avoid damaging electronic components of the meter, never lay anything on the electronic circuit card; keep free from dirt and oils. Always read and follow repair section of this manual before attempting to work on the Electronic Meter.

System Procedure:
* The bare electronic meter has a **MAXIMUM WORKING PRESSURE** rating of 1500 psi (103 bar).

* The Grip (handle) has a **MAXIMUM WORKING PRESSURE** rating of 1000 psi (69 bar).

Never – exceed the maximum working pressure of the meter, control handle, or the pressure of the lowest rated equipment of your system.

⚠ **CAUTION: Before servicing reduce fluid supply pressure to zero. Disconnect Control Handle from lubricant supply line.**

Pressure Relief Procedure:
To reduce risk of serious bodily injury, including fluid injection or splashing into the eyes and/or onto the skin, follow this procedure below before maintaining and/or repairing this handle or any part of the system.

1. Disconnect the power source from the pump.
2. Open the handle into an approved waste container to relieve pressure on the system.
3. Leave any bleed-type drain valves open until you are ready to start using the system again.

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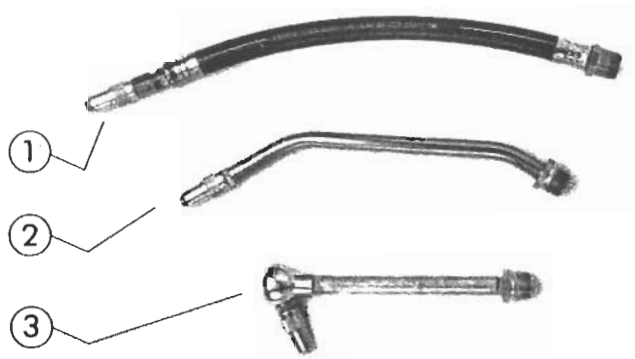
Replacement Dispensing Wand Types:



1 – 3332-001 – A.T.F. Flexible Nozzle (optional)
2 – 3332-003 – Oil Rigid Nozzle (standard)
3 – 3332-002 – Gear Oil Nozzle (optional)

NOTE:
Flexible Extension Wand Safety:
Always know the Maximum working pressure of your flexible extension hose. **Never exceed the system's lowest rated component.** When using a flexible hose extension always hold onto hose, else a whipping action may occur which could cause serious bodily injury.

Product Description

Balcrank digital Control Handles are used for dispensing measured quantities of automotive petroleum-based lubricants.

All models are equipped with totalizing and "on demand" flow rate capabilities.

The grip is shaped to fit the hand comfortably.

The control handle is balanced and lightweight for reduced operator fatigue.

All models are equipped with a manual anti-drip tip nozzle to prevent accidental drainage of lubricants from the control handle when not in use.

Electronic Meter Features:

* **High Flow Rate:** The Meter Module is accurate at flow rates up to 10 GPM; the complete Control Handle will easily allow flow rates up to 6 GPM.
* **Extemely Accurate:** Less than 0.4% error at any operating condition within its working range.
* **Broad Viscosity Range:** Suitable for use with automotive service fluids. Usable for all viscosities up to 10,000 SSU.
* **Reads Instantaneous Flow Rates:** The meter is capable of reading flow rates while the supply pump is in operation.

Modular Control Handle Features:

* **Comfortable to use and to operate:** The grip and trigger are ergonomically designed for excellent hand fit and the handle is weight balanced for ease of movement and placement.
* **Top Quality Construction:** is apparent throughout, in features like all metal construction, precision machined parts, long life elastomer seals for non-leak operation, and premium plating and enamel finish.
* **Full Features are Standard:** A ½"-NPT Swivel fitting is included at the inlet port, a built-in strainer provides final filtration, and a manual anti-drip tip is included on the extension wand stem.

Technical Data

Electronic Meter:

Flow range . . . . . 10 gallons/minute

Max. Operating Pressure . . . 1500 PSI (103 bar)

Battery Type . . . . . Lithium

Battery Size . . . . . AA

Battery Life . . . . . 2 yr. min.

Battery Voltage . . . . . 3.6 Volts

Battery specifications . . . . . Rated Discharge current: 100 microamps Rated Capacity: 1.0 amp hour

Maximum continuous discharge . . . . . 1 Milliamp

Inlet . . . . . ½" NPT

Outlet . . . . . ½" NPT

Weight . . . . . 1.8 lbs.

Units of Measurement . . . . . Factory set-Quart
NOTE: Easily resettable to Pint, Liter, or Gallon

Digital Display Range . . . . . .01 to 9999.99 gal pints or liter.

Totalizing Display . . . . . 999999 Gal, Pint, Quart or Liter.

Wetted Parts . . . . . Aluminum, Stainless Steel #303, Nitrile, Teflon® (DuPont Co.) & Ryton® (Phillips Petroleum Co.).

**Tested in S.A.E. #10 wt. Motor Oil. Flow rates will vary as fluid pressure and viscosities change.*

Control Handle:

Max. flow . . . . . 6.0 gallons/minute

Max. Operating Pressure . . . 1000 PSI (69 bar)

Weight . . . . . 2.1 lbs.

Inlet . . . . . ½" NPT

Outlet . . . . . ½" NPT

Wetted Parts . . . . . Aluminum, music wire, Polyurethane, Stainless Steel, Nitrile rubber

**Tested in S.A.E. #10 wt. Motor oil. Flow rate will vary as fluid pressure and viscosities change.*

Operation - Grip

WARNING: Under no circumstances should the nozzle be aimed at any person or your own body at any time. Always grasp the manual anti-drip tip nozzle housing from the threaded end so that your hand is not in front of the nozzle, when adjusting the nozzle open or closed.

1. Be sure the power source has been disconnected from the system and the system has had all the pressure relieved. (Refer to Pressure Relief Procedure on page 1). Connect Control Handle to lubricant line (½" NPT thread required) using a 1-1/8 inch wrench.

2. Close all bleeder type valves and reconnect the power source to the pump. Check system for leaks.

3. Adjust the manual anti-drip tip nozzle in the open position by turning the knurled portion of the anti-drip tip fully counterclockwise. This allows product to be dispensed freely.

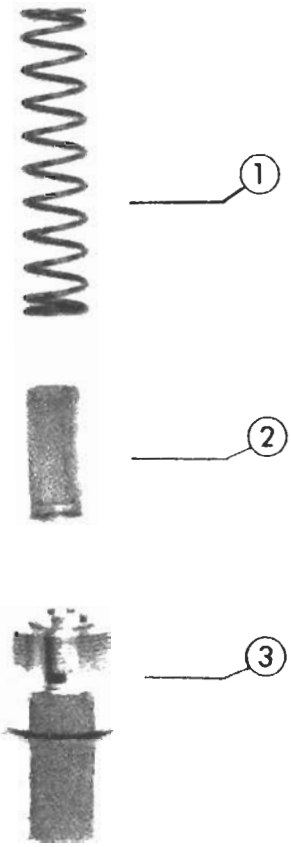
4. The lubricants will be delivered from the metered nozzle and the quantity dispensed will register on the meter.

5. When required amount of fluid has been dispensed, release the trigger to stop delivery.

6. Turn the anti-drip tip assembly clockwise to seal the extension wand closed after use.

7. Clean the strainer in handle frequently: Relieve pressure first, following pressure relief procedures on page 1 of this manual. Remove swivel and pull out strainer element. Clean the strainer and dispose of waste per state requirements. Once strainer has been cleaned, place back into handle and screw swivel on handle. Torque swivel to 18-20 ft-lbs.

WARNING: Maximum Fluid Pressure 1000 PSI. (69 bar) Under no circumstances should the Control Handle be aimed at any person or your own body at any time. Personal injury may result.



Swivel and Strainer Assembly

ITEM	MODEL	DESCRIPTION
1	825254	Valve Spring
2	825255	Strainer
3	810603	Swivel Assembly

Operation - Meter

⚠ CAUTION: To be sure proper quantity of fluid has been dispensed, always use the same units of measurement for a particular fluid. Units should only be changed by authorized personnel.

1. Be sure the power source to the system has been turned off and the system has had all pressure relieved. (Refer to Pressure Relief Procedure on page 1). Connect Control Handle to lubricant line (½" NPT thread required).

2. PURPOSE FOR **RESET:** To activate the Digital display press the reset button, this will clear the meter for starting a new dispensing cycle. This also clears the quantity dispensed from the last dispensing cycle.
   NOTE: *The digital display of the meter will turn off after thirty (30) seconds of setting idle.*

3. PURPOSE FOR **TOTAL:** The total display is always on during operation for your convenience. This allows you to see the total fluids dispensed at all times. To activate the display, just press the reset button. The meter is capable of keeping totals up to 999999 before returning to zero.

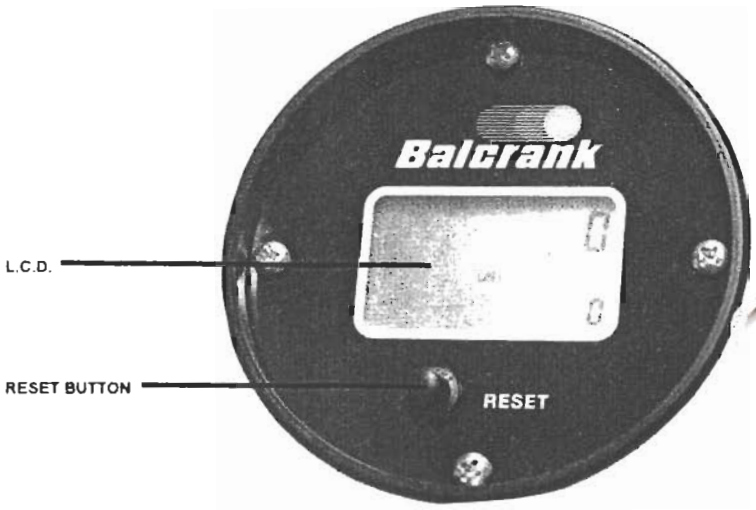
   NOTE: Totalized readings are resettable. If you should need to reset this running total, remove the battery for more than sixty (60) seconds. This will return the total count to zero.

4. PURPOSE FOR **RATE:** On demand while meter is dispensing, press reset and the display will begin showing the units being used per minute pumped. Press the reset button again to return display back to units pumped for that dispensing cycle.

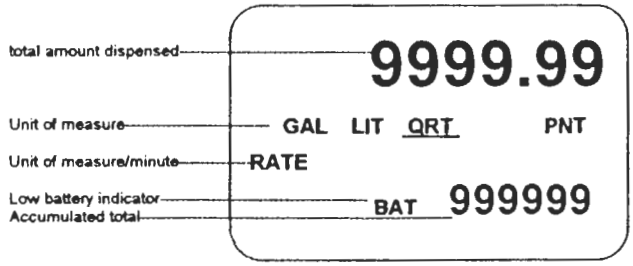
5. Press the **RESET** Button on the meter face to clear it before the next dispensing cycle.

⚠ WARNING: Maximum Fluid Pressure 1500 PSI. (103 bar) Under no circumstances should the Control Handle be aimed at any person or your own body at any time. Personal injury may result.

Meter front (Face)



Meter Display



NOTE: Only one unit of measure will be active on display. Example: If using quarts, only "QRT" will be diplayed.

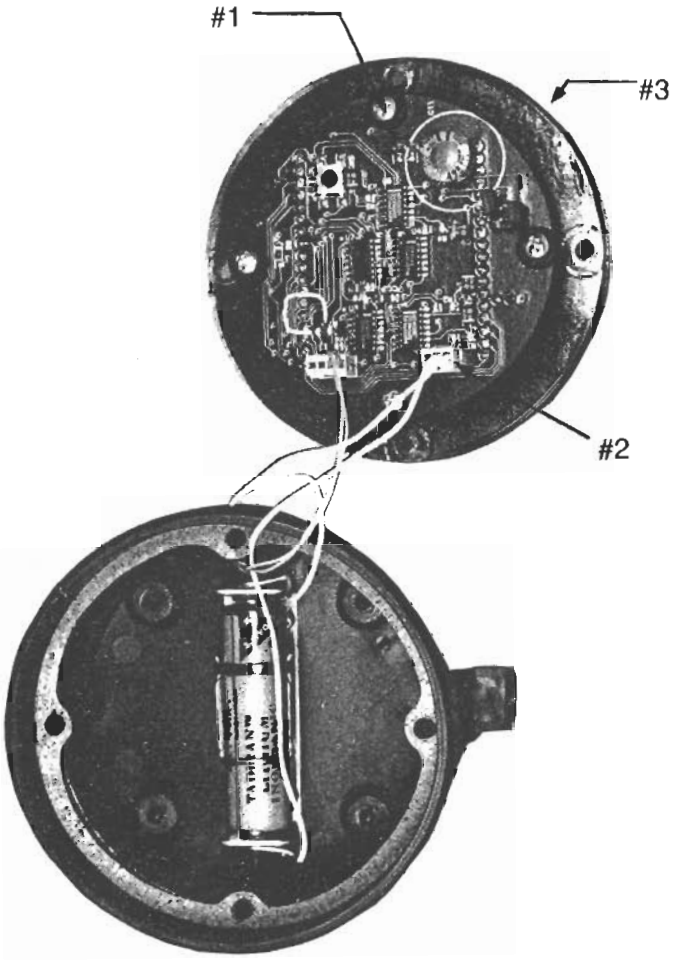
Units of Measurement

(QUART, PINT, LITER or GALLON)

HOW TO CHANGE THE MEASURED METER UNITS:

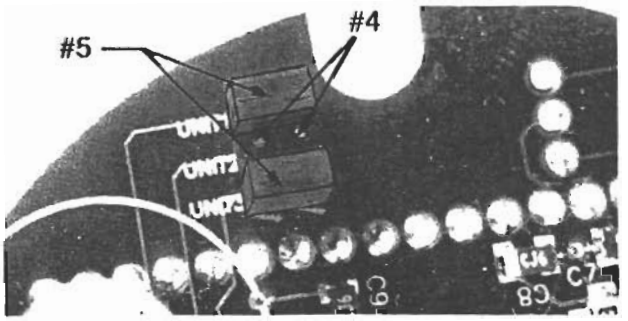
The Meter has been factory set for Quarts. To change the measurement units, remove the electronic LCD face module by unscrewing the four face screws (item #1, see illustration on right). Once the screws have been removed disconnect battery lead (item #2) from Electronic module(item #3), wait three minutes for power to drain out of capacitator. Following the diagram below you will see the meter has black Jumper Caps (item #4) on the back of the circuit board; these are used to change the unit measurements. By following the diagram below you can achieve any unit of measurement required simply by removing and changing the configuration of these caps.

NOTE: For Maximum Dispensing Accuracy, always set the meter to dispense in quarts or pints when dispensing one (1) gallon or less.



⚠ CAUTION: Placing the battery backwards in holder will cause reverse polarization, which may cause damage and/or destroy the meter's circuitry.

Electronic Units Measurement Diagram Legend: [* *] = Closed Jumper * * = Open Jumper			
Quart	Pint	Liter	Gallon
[* *]	* *	* *	[* *]
* *	[* *]	* [*]	* [*]
[* *]	[* *]	[* *]	* *



ITEM	MODEL	DESCRIPTION
1	826952	Battery holder & coupling
2	826951	Magnetic switch & coupling
3	none	Calibration reset button
4	none	Units of measure circuitry
5	826953	Jumper caps (two pcs)

⚠ WARNING: This electronic meter contains a Lithium Battery. Do not charge, force over discharge, crush or disassemble, penetrate, incinerate or heat the Battery to a temperature exceeding 190 deg F. Misuse and/or abuse of the battery may result in leakage or explosion!

TROUBLE SHOOTING

Pressure Relief Procedure:
To reduce risk of serious bodily injury, including fluid injection or splashing into the eyes and/or onto the skin, follow this procedure below before maintaining and/or repairing this handle or any part of the system.

1. Disconnect the power source from the pump.
2. Open the handle into an approved waste container to relieve pressure on the system.
3. Leave any bleed-type drain valves open until you are ready to start using.

⚠ CAUTION: Before servicing reduce fluid supply pressure to zero. Disconnect Control Handle from lubricant supply line.

1. If lubricant leaks around inlet and threads
1.1 Replace swivel assembly.
1.2 Tighten threads.

2. If lubricant flows from wand assembly continuously when trigger is not depressed:
Remove handle from lubricant line, remove swivel assembly (810603), pull out the strainer (825255) and spring (825254). Remove plunger and replace with new assembly (825408), then reassemble.

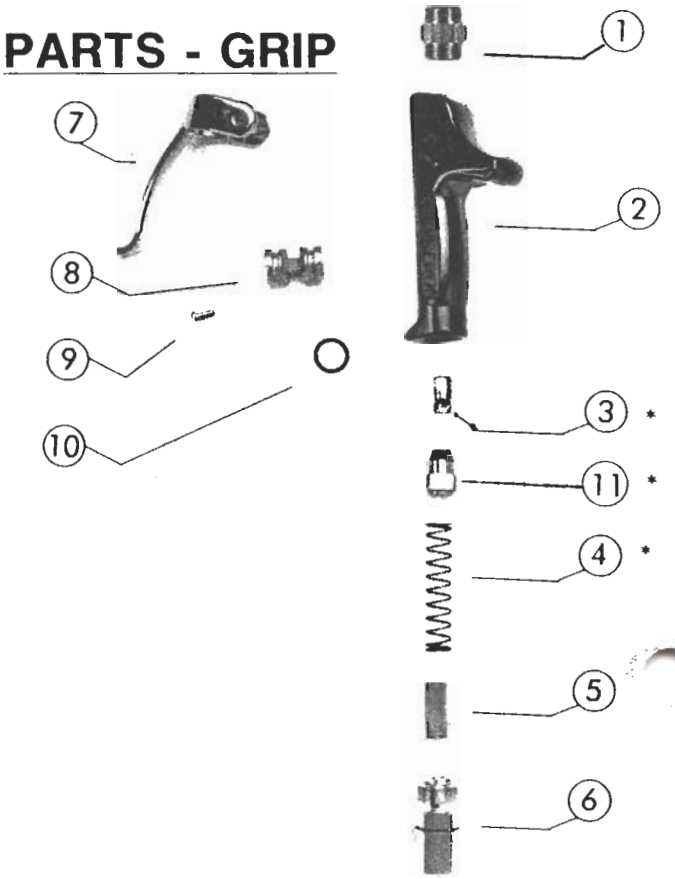
3. If lubricant leaks around side of handle, behind trigger:
Follow step 2, then remove trigger (825251), pivot-cam (825252) can now be removed, replace o-rings (807340).

4. If lubricant leaks from anti-drip tip assembly:
4.1 Replace tip assembly (810741).
4.2 If leak still occurs after replacing the tip, follow step 2.

GRIP ASSEMBLY:

5. No fluid flow:
Remove and clean strainer, following procedures on page 4 of this manual. Dispose of contaminates according to state regulations.

PARTS - GRIP



HANDLE BODY

ITEM	QTY.	MODEL	DESCRIPTION
1	1	826907	Nipple
2	1	825261	Hand Grip
3	1	825253	* Plunger
4	1	825254	* Valve Spring
5	1	825255	Strainer
6	1	810603	** Swivel Assembly
7	1	825251	Trigger
8	1	825252	Pivot Cam
9	2	827534	10-24 Screw
10	2	807340	* O-Ring
11	1	825257	Seal

Repair Kits: * Items included in Kit 825408
** 810603 Swivel Assembly

TROUBLE SHOOTING

Pressure Relief Procedure:
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3. Leave any bleed-type drain valves open until you are ready to start using.

MAINTENANCE

The meter is tamper proof and does not require periodic maintenance except for battery replacement every one to two years depending on use. (AA Lithium Battery-Balcrank 826950) Contact your Balcrank distributor to obtain separate more detailed instruction sheet SB3012 . This more detailed repair and/or rebuilding guide is necessary when making minor repairs instead of having to buy a complete new electronic meter. If electronic problems occur, the following Trouble Shooting procedures are recommended.

⚠ **CAUTION: To avoid damage to electronic components:**

- **ALWAYS use a personal grounding strap when working on electronic meter assemblies.**
- **NEVER lay anything on the back of the electronic module.**
- **BE SURE if you lay the electronic module down that you keep it free from dirt and oils.**
- **NEVER twist and/or force parts into place.**
- **ALWAYS align parts into proper position, read repair guide 826931 before repair or rebuilding of meter.**

ELECTRONIC METER ASSEMBLY:

⚠ **CAUTION: Before servicing reduce fluid supply pressure to zero. Disconnect Control Handle from lubricant supply line.**

1. **Digital display will not activate:**

   1.1 Press Reset to activate display, check to see if Battery Low indicator is being displayed; if it is, change the battery. If display still will not operate, replace Battery and check again. Remove four face plate screws and remove battery. Replacement Battery 826950.

⚠ **WARNING:** This electronic meter contains a Lithium Battery. Do not charge, force over discharge, crush or disassemble, penetrate, incinerate or heat the Battery to a temperature exceeding 190 deg. F. Misuse and/or abuse of the battery may result in leakage or explosion!

1.2 If Battery is working properly then electronic model needs to be replaced. Unscrew four face plate screws and remove electronic model and replace with Balcrank repair kit 826947 electronic model.

2. **Digital display is dim:**

   2.1 Press Reset to activate display and check to see if Battery Low indicator is being displayed, if so, replace battery. Remove four face plate screws and remove face plate.

   2.2 If Battery is working properly then electronic model needs to be replaced. Unscrew four face plate screws and remove electronic model and replace with Balcrank repair kit 826947 electronic model.

3. **No fluid flow readings on display:**

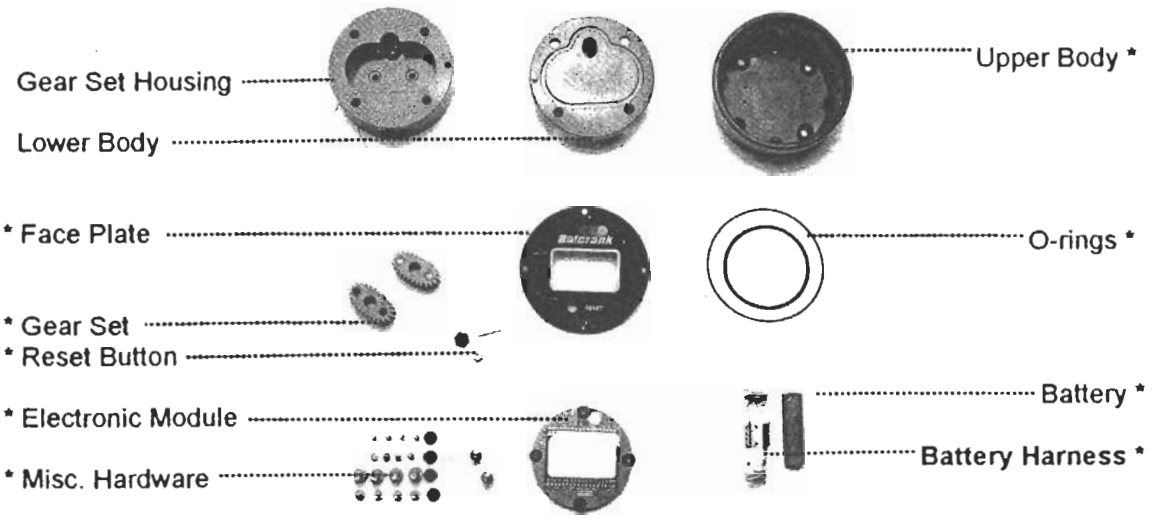
   3.1 Battery may need replacing.

   3.2 Fluid sensor may have moved out of location or has malfunctioned, refer to repair manual SB3012 under section Sensor repair. Sensor repair kit 826951.

   3.3 Driver Gears in counter housing have failed, foreign materials may be blocking rotation of gears, refer to repair manual SB3012 under section titled Counter Housing. Counter Housing Repair Kit 826948.

Parts-Electronic Meter:

Model 3120-017



*Repair Kits – Electronic Meter

Kit #1 826952 – Counter Housing & Battery Holder

Description	Qty.
Electronic Counter Housing	1
Battery Harness	1
Battery Safety Clip	1
O-ring (Counter Housing)	1

Kit #2 826951 – Magnetic Sensor w/Wire Harness

Description	Qty.
Magnetic Sensor w/plug in connector	1
Rubber Grommet Insert	1

Kit #3 826949 – Reset Button Assembly

Description	Qty.
Reset Button Boot	1
Reset Button Pin	1
Reset Button Bushing	1

Kit #4 826953 – Unit of Measure Jumper Set Caps

Description	Qty.
Pack Of Jumper Caps	10

⚠ **WARNING:** Use only Balcrank authorized replacement parts. The use of any other parts may impair the accuracy and safety of this meter. This could cause failure of meter. Failure of meter could cause serious bodily injury and/or property damage.

Kit #5 826948 – Meter Gear & Shaft Set

Description	Qty.
Set Of Gears w/pulse magnet	2
Set of Gear Shafts	2
O-ring (Lower Housing)	1
O-ring (Counter Housing)	1

Kit #6 826947 – Electronic Module Assembly

Description	Qty.
Electronic Circuit Board	1
Face Plate Bezel	1
Circuit Board Holder	1
Shock Support Grommets	4
Gasket (Face Plate)	1

Kit #7 826950 – Battery (Lithium)

Description	Qty
Battery (Lithium)	1