



LPLT-100 EV Battery Pack Leak Tester

LPVLT-100 Low Pressure / Vacuum Leak Tester



Operations Manual

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INTRODUCTION

Congratulations on the purchase of your Test-Quick product by Flo-Dynamics.

LPLT-100 EV BATTERY PACK LEAK TESTER

The Test-Quick LPLT-100 by Flo-Dynamics is the most affordable and simple to use low-pressure leak tester on the market. It is the only low-pressure leak tester that is guaranteed to be 100% free of vapor or smoke leak detection dye.

Leak test EV battery packs without contamination, using filtered and moisture-free air to ensure a correct seal after performing service. The LPLT-100 allows for a technician to connect, test, and provide an accurate leak flow rate on the flow meter. Simply switch the control knob to Decay/Off to perform pressure decay testing.

LPVLT-100 LOW PRESSURE / VACUUM LEAK TESTER

The Test-Quick LPVLT-100 by Flo-Dynamics is the most affordable and simple to use combination low-pressure and low-vacuum leak tester on the market. It is the only low-pressure and low-vacuum leak tester that is guaranteed to be 100% free of vapor or smoke leak detection dye. Using filtered and moisture-free air to test EV battery packs will ensure the battery pack is correctly sealed after performing service without adding contamination.

The LPVLT-100 allows a technician to connect, test, and give an accurate result to a leak size in BOTH pressure and vacuum. Provides leak size results in mm/in WC with dedicated flow meters for pressure and vacuum. To perform pressure decay testing, simply switch the control knob to Decay/Off and monitor the compound Pressure/Vacuum gauge.

Please take time to read through this manual to familiarize yourself with the unit before performing your first EV battery pack leak test.

CUSTOMER SERVICE CONTACT INFORMATION

For product information and tech support please call: **800-303-5874**
or visit: **www.flodynamics.com**

IMPORTANT SAFETY NOTICE

For your safety, read this manual thoroughly before operating this machine. This machine is intended for use by properly trained, skilled professional automotive technicians. The safety messages presented below and throughout this user's manual are reminders to the operator to exercise care when using this unit. Before using this machine, always refer to and follow the safety messages and applicable service procedures provided by the manufacturer of the vehicle being serviced.

• Read All Safety Instructions

Read, understand, and follow all safety messages and instructions in this manual. Safety messages in this section of the manual contain a signal word with a three-part message and, in some instances, an icon.

• Signal Words

The signal word indicates the level of the hazard in a situation:

DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury to the operator or to bystanders.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or to bystanders.

CAUTION

Indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor injury to the operator or to bystanders.

IMPORTANT

Indicates a situation which, if not avoided, may result in damage to the machine, or the vehicle being serviced.

• Safety Messages

Safety messages in this section contain three different type styles:

- Normal type states the hazard.
- **Bold type** states how to avoid the hazard.
- *Italic type* states the possible consequences of not avoiding the hazard.

• Safety Symbols

A safety symbol, when present, gives a graphical description of the potential hazard, and how to avoid the hazard:



Risk of Fire



Read Instructions Before Use



Risk of Explosion



Mandatory Eye Protection



Risk of Entanglement



Mandatory Protective Gloves



Dangerous Fumes



Mandatory Protective Clothing



Do Not Pull or Move



Risk of Burns

IMPORTANT SAFETY INSTRUCTIONS

DANGER



Engine exhaust contains toxic gases.

- **Vent vehicle's exhaust away from work area.**
- **Do not breathe exhaust.**

Exhaust gases will cause injury or death.

WARNING



Improper use and operation.

- **Read, understand and follow all safety messages and operational procedures in this manual before operating this machine.**
- **This equipment should be operated only by qualified personnel.**
- **Use this equipment only as described in this manual.**

Improper use and operation of this product can result in injury.

WARNING



Engine systems can malfunction expelling fuel, oil vapors, hot steam, hot toxic exhaust gases and other flying particles.

- **Wear safety goggles and protective clothing, user and bystander. Everyday eyeglasses only have impact resistant lenses; they are NOT safety glasses.**
- **Do not position head directly over or in front of carburetor or throttle body. Engine backfire can occur when air cleaner is out of normal position.**
- **Make sure gauge reads zero before connecting or disconnecting hose connections to adapters.**
- **Make sure cooling system pressure has been relieved before connecting or disconnecting hose connections and adapters.**
- **Keep a dry chemical (Class B) fire extinguisher rated for gasoline, chemical & electric fires in the work area.**

Fire, explosion, or flying particles may cause serious injury.

WARNING



Risk of expelling pressurized fluids.

- **Wear safety goggles and protective clothing, user, and bystander.**

- Engine systems can malfunction, expelling fuel, oil vapors, hot steam, hot toxic exhaust gases and other debris.
- Always unplug the machine from its power source when not in use.
- Keep the service hoses away from hot or moving engine parts. Hoses can split or burst causing fluid to be expelled.

- Avoid contact with engine coolant.

- Treatment methods are as follows:

Eyes: Flush eyes with plenty of water.

Skin: Wash with soap and water.

Inhalation: Move to uncontaminated area.

Ingestion: If large amount, get medical attention.

If any irritation persists, get medical attention.

- Dispose of used fluid according to environmental laws and regulations.

Fuel, oil vapors, hot steam, hot toxic exhaust gases, pressurized fluid, and other debris can cause serious injury.

WARNING

Risk of unexpected vehicle movement.

- **Block drive wheels before starting vehicle's engine to begin an exchange.**
- **Unless instructed otherwise, set parking brake and put gear selector in park.**
- **Do not leave a running vehicle unattended.**
- **If vehicle has an automatic parking brake release, disconnect release mechanism for testing and reconnect when testing is completed.**

A moving vehicle can cause injury.

WARNING



Risk of entanglement. Engine has moving parts.

- **Do not place tools on fenders or other places in engine compartment.**
- **Keep yourself, clothing, battery cables and service hoses clear of moving parts such as fan blades, belts, pulleys, hood and doors.**
- **Barriers are recommended to help identify danger zones in test area.**
- **Prevent personnel from walking through immediate test area.**

Contact with moving parts can cause injury.

WARNING



Risk of fire or explosion.

- **Do not operate in the vicinity of open containers of flammable liquids such as gasoline.**
- **Keep hoses and jumper cables away from heat sources and sharp edges.**
- **Do not operate equipment with damaged cords or hoses until they have been examined by a qualified serviceman.**

Fire or explosion can cause injury.

WARNING



Risk of fire or explosion. Gases produced by a battery are highly explosive.

- **Wear safety goggles and protective clothing, user and bystander.**
- **Do not smoke, place metal tools on battery or allow a spark or flame in vicinity of battery.**

Battery explosion can cause injury.

WARNING



Risk of burns.

- **Wear gloves when handling hot engine components.**
- **Do not remove radiator cap unless engine is cold.**
- **Pressurized engine coolant may be hot.**
- **Do not touch hot exhaust systems, manifolds, engines, radiators, etc.**

Hot fluid and engine parts may cause injury.

WARNING



Battery acid is a highly corrosive sulfuric acid.

- **Wear safety goggles and protective gloves, user and bystander.**
- **Have plenty of fresh water and soap nearby. If battery acid contacts skin, clothing, or eyes, flush exposed area with soap and water for 10 minutes.**
- **Do not touch eyes while working near battery.**

Battery acid can burn eyes and skin.

WARNING



Risk of burns.

- **Wear gloves when working near hot engine components.**
- **Do not touch hot exhaust systems, manifolds, engines, radiators, etc.**
- **The fluid coming from the vehicle along with some of the machine's components that the fluid comes into direct contact with (i.e. hoses and fittings) may reach temperatures uncomfortable to the touch. Exercise caution in avoiding contact with these items.**

Hot components can cause injury or discomfort.

CAUTION



Risk of injury.

- **This equipment should be operated by qualified personnel only.**
- **Use this equipment only as described in this manual.**
- **Always disconnect the machine from air source when not in use.**
- **Loop the pressure hose loosely in its proper location when machine is not in use.**
- **Do not operate equipment with a damaged hose, or if the equipment has been dropped or damaged, until it has been examined by a qualified service representative.**
- **Care should be taken to arrange the service hoses so that they will not be tripped over or pulled.**
- **Never pull on the service hoses to transport the machine. Damage may occur to these components, or machine may tip over.**
- **Keep area of operation clear of unnecessary tools and equipment. Utilize recessed tool storage areas on the top of the machine.**
- **Never leave the machine running unattended.**
- **This machine is not designed for any other purpose than the servicing of automotive cooling systems.**

Operation of this machine by anyone other than qualified personnel may result in injury.

CAUTION

Misdiagnosis may lead to incorrect or improper repair and/or adjustment.

- **Do not rely on erratic, questionable, or obviously erroneous test information or results. If test information or results are erratic, questionable, or obviously erroneous, make sure that all connections and data entry information are correct and that the test procedure was performed correctly. If test information or results are still suspicious, do not use them for diagnosis.**

Improper repair and/or adjustment may cause vehicle or equipment damage or unsafe operation.

IMPORTANT

Risk of equipment damage.

- **Servicing, transporting, or storing this machine in an attitude other than the normal operating position can result in fluid spillage and/or component damage.**
- **Never pull on the service hoses to transport the unit. Damage may occur to these components, or machine may tip over. Always use the handle to move.**
- **Periodically clean the machine by wiping down with a clean, soft, dry cloth.**

Improper operation of equipment may result in damage to machine or components.

SAVE AND FOLLOW THESE INSTRUCTIONS!

SPECIFICATIONS

LPLT-100

Dimensions: 10.75" H x 7" W x 10" D

Weight: 9.5 lbs.

Power: 75-175 psi shop air

LPVLT-100

Dimensions: 11.5" H x 7.5" W x 8.5" D

Weight: 11 lbs.

Power: 75-175 psi shop air

FEATURES

LPLT-100

- ✓ Uses shop air only (75 -175 psi)
- ✓ Supply pressure 14" WC +/- 1"
- ✓ Tests with only 100% filtered and moisture free air
- ✓ Designed in collaboration with Ford Engineering to comply with EV battery pack testing procedures
- ✓ Flow meter and gauge provides two testing modes – leak flow rate or pressure decay
- ✓ Test supply line 120", 3048 mm
- ✓ Handheld and lightweight
- ✓ Limited one year warranty
- ✓ Ford approved

LPVLT-100

- ✓ Uses only shop air (75 - 175 psi)
- ✓ Supply pressure: 14" WC +/- 1"
- ✓ Variable vacuum supply volume
- ✓ Tests with 100% filtered and moisture free air
- ✓ Designed in collaboration with OEM EV battery pack testing procedures
- ✓ Dual flow meters and compound pressure/vacuum gauge
- ✓ Provides leakage flow rates or pressure decay in both pressure and vacuum
- ✓ Test supply line: 120", 3048 mm
- ✓ Handheld and lightweight
- ✓ Limited one year warranty

OPERATING INSTRUCTIONS

LPLT-100

1. Connect tester to shop air (between 75-175 psi).
2. Turn control knob to TEST.
3. Connect pressure supply hose to system being tested.
4. Once flow meter ball stops descending, leak size will be indicated.
5. For pressure decay, turn control knob to DECAY/OFF and view gauge.

NOTE: Moisture may occasionally be present at the drain port on the bottom of the LPLT-100. This is a normal operation of the internal self-draining air & moisture filter.

LPVLT-100

VACUUM TESTING

1. Connect tester to shop air (between 75-175 psi).
2. Turn Main Control Valve to VAC. (-).
3. Turn Mode Control Valve to VAC. (-).
4. Connect vacuum supply hose to system being tested.
5. Once flow meter ball stops descending, leak size will be indicated.
6. For pressure decay, turn lower control knob clockwise to DECAY (-) and view gauge.

VACUUM CALIBRATION

1. Loosen nut on Vacuum Calibration knob.
2. Turn both valves to VAC. (-).
3. Holding finger over tip of nozzle, turn Vacuum Calibration knob (clockwise to increase, counterclockwise to decrease) until desired vacuum is achieved.

NOTE: To ensure correct vacuum reading, allow the vacuum gauge to stabilize by removing and replacing the restriction from the supply hose tip.

4. Verify the vacuum gauge reads the desired vacuum.
5. Secure nut on Vacuum Calibration knob.

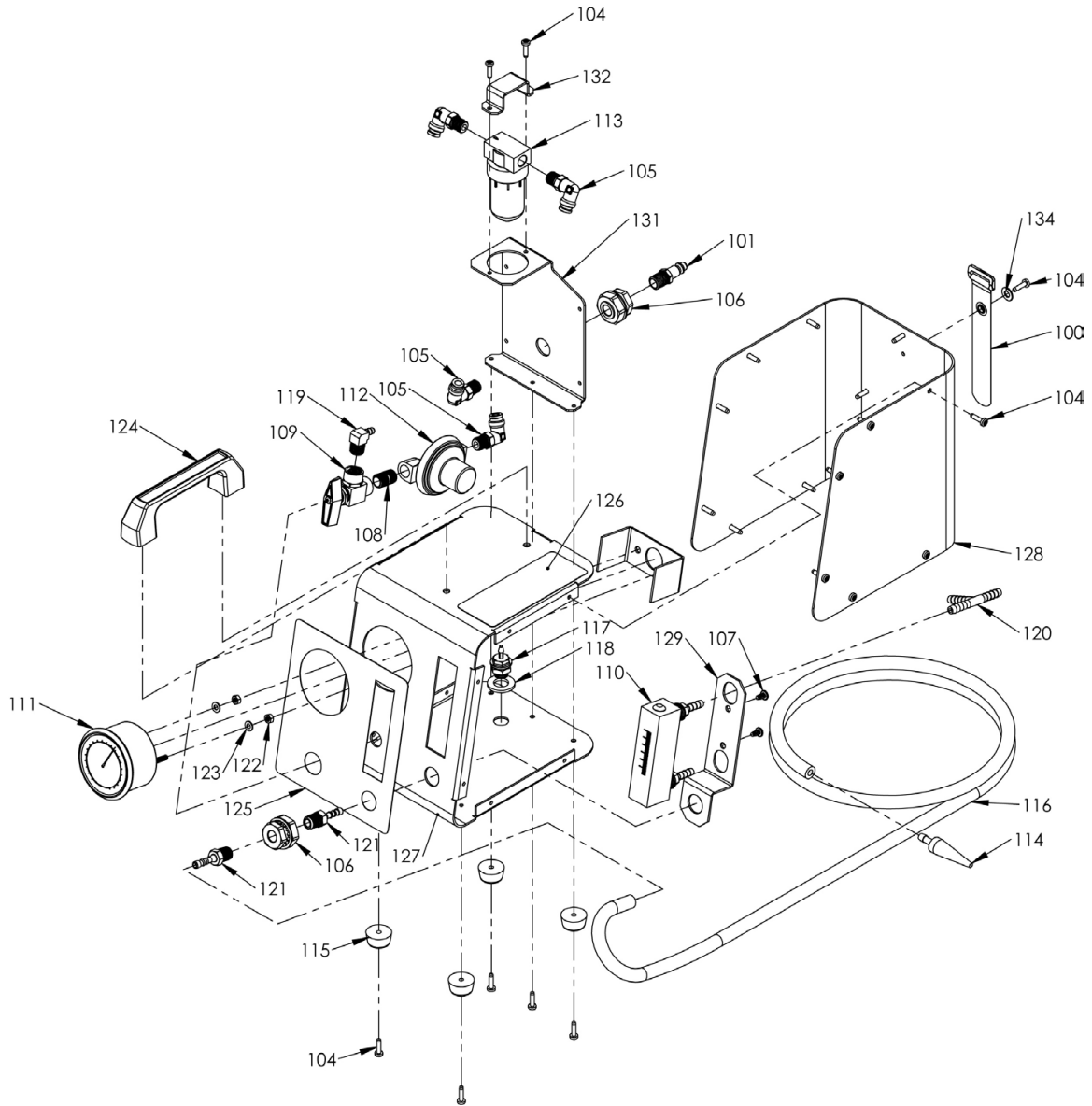
NOTE: Model LPVLT-100 comes preset from the factory to (17" WC).

MAINTENANCE

To keep your machine working properly:

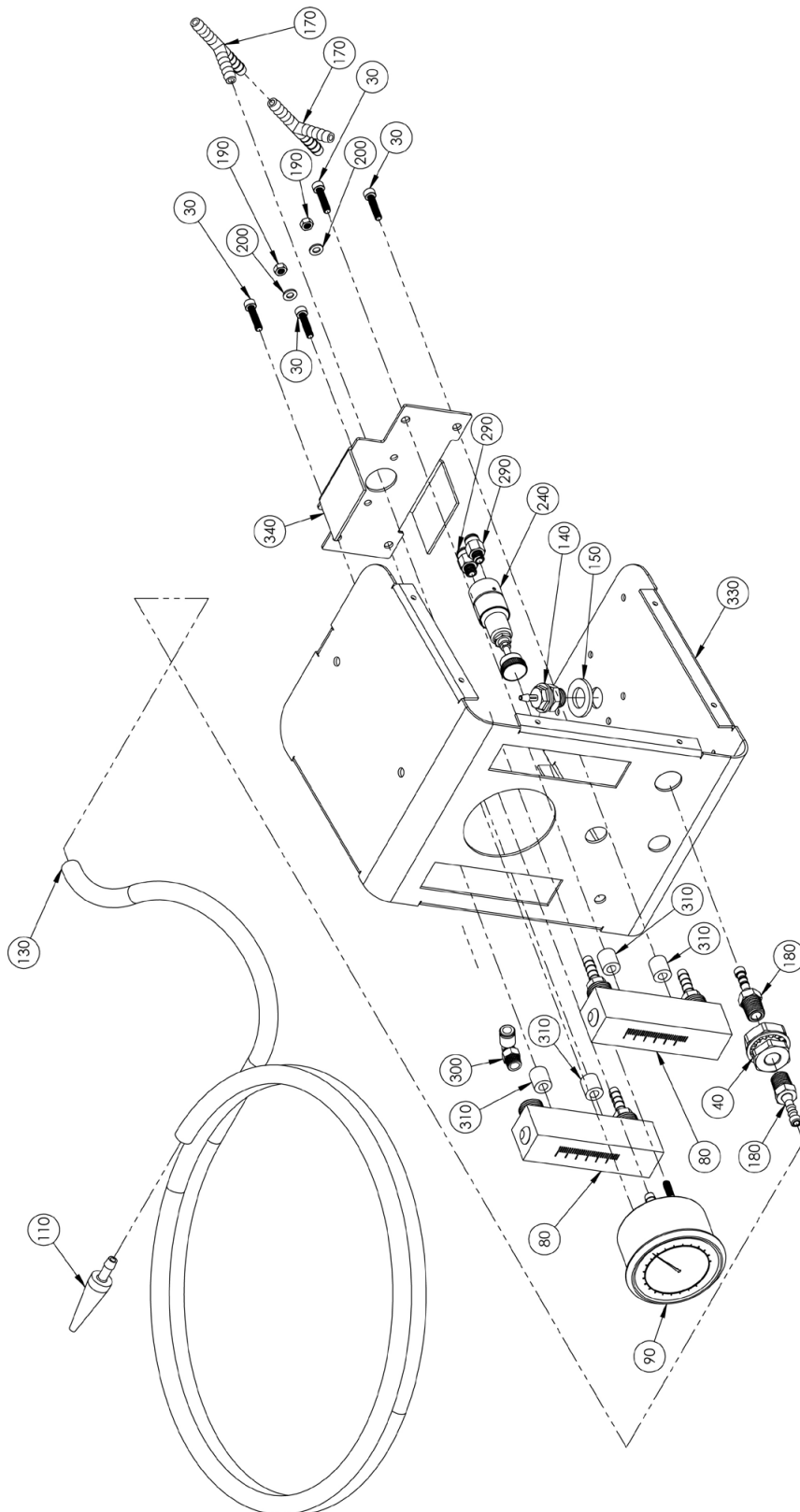
- Ensure only non-contaminated clean dry compressed air is used.
- Avoid spilling fluid on the unit.

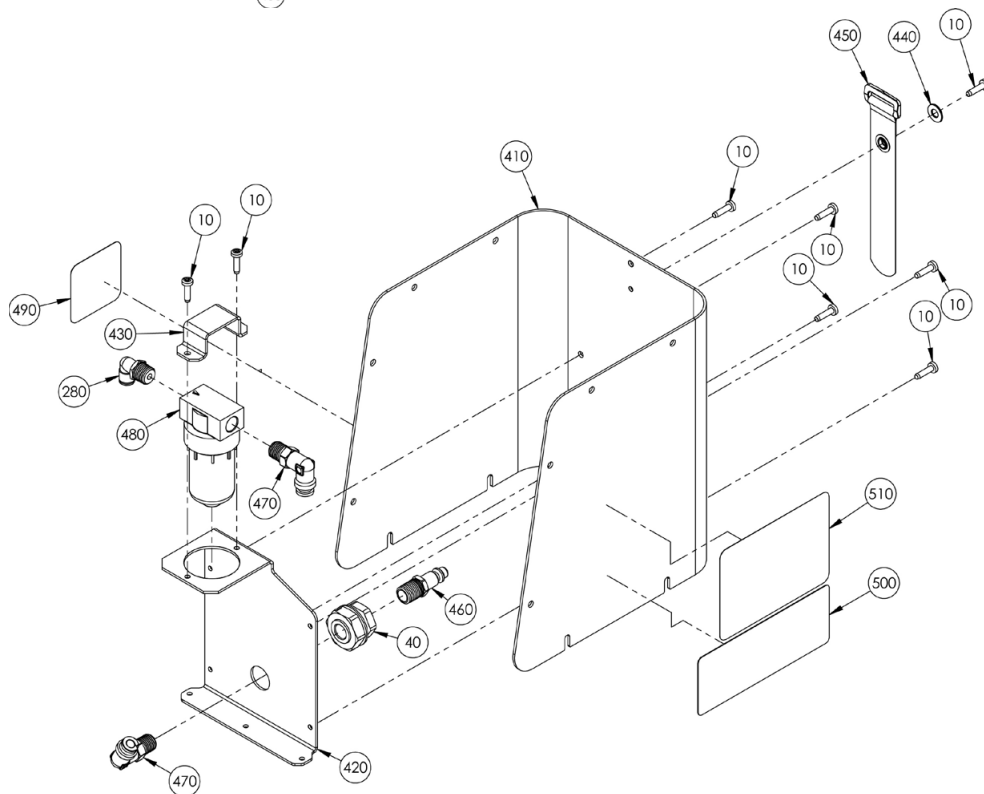
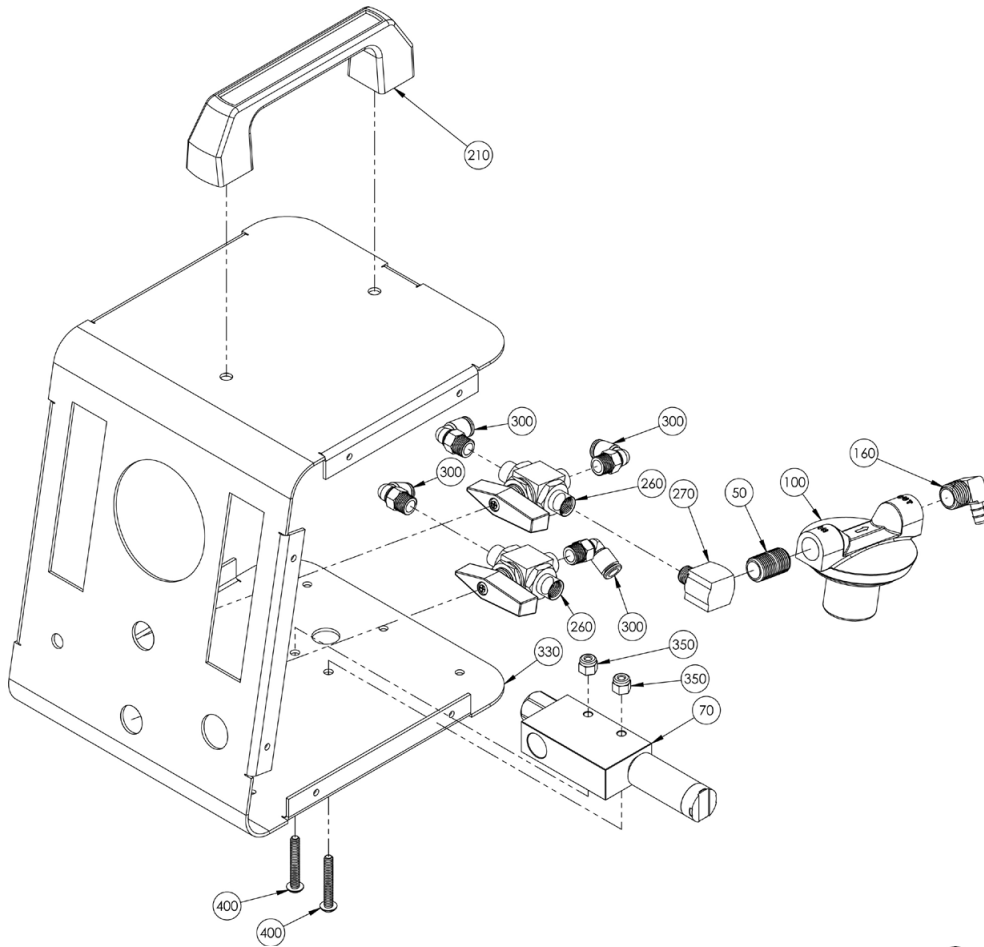
REPLACEMENT PARTS (LPLT-100)



ITEM NO.	PART NO.	DESCRIPTION	QTY.
100	40201527	CABLE TIE LPLT-100	1
101	941335	AIR NIPPLE 1/4NPT H2C	1
102	941512	HOSE-TYGON YELLOW PER FOOT	0.25
103	941532	TYGON-1,4ID YELLOW PER FOOT	1.25
104	10500036	SCREW, #8-32 x 5/8 20IP TAPTOTE BLK PHOS	25
105	40200338	5/16 TUBE X 1/4 NPT ELBOW W169PLPE-5-4	4
106	40200339	1/4 BRASS BULKHEAD FTTG	2
107	40200541	SCREW -10-32 X 3/8 FLAT HD PHIL MACH	2
108	40200594	1/4 X 7/8 NIPPLE - G TEC	1
109	40201467	2 WAY BRASS VALVE - LPLT-100	1
110	40201468	FLOWMETER - LPLT-100	1
111	40201469	PRESSURE GAUGE - LPLT-100	1
112	40201470	REGULATOR - LPLT-100	1
113	40201471	FILTER - LPLT-100	1
114	40201483	SUPPLY NOZZLE - LPLT100	1
115	40201486	RUBBER FOOT - LPLT100	4
116	40201500	HOSE-LEAK TEST SERVICE	6
117	40201508	FITTING - 5/32" TUBE ID BARB x 1/4 NPSM MALE - PLASTIC	1
118	40201509	WASHER - 9/16" SCREW SIZE, NAS1515-H9H - NYLON	1
119	40201513	FITTING - ELBOW 1/4" HOSE BARB X 1/4 NPT MALE	1
120	40201514	FITTING - TEE 1/4" X 1/4" X 1/4" HOSE BARB PLASTIC	1
121	40201515	FITTING - 1/4" ID BARB X 1/4" NPT MALE	2
122	40201516	HEX NUT - M5-0.8 GR 8	2
123	40201517	WASHER - FLAT M5 X 10MM OD	2
124	40201518	HANDLE - LPLT100	1
125	40201519	OVERLAY - CONTROL PANEL LPLT100	1
126	40201520	OVERLAY - INSTRUCTION LABEL LPLT100	1
127	40300467	GAGE FACE FOR LPLT-100	1
128	40300468	OUTER CABINET FOR LPLT-100	1
129	40300469	FLOW METER BRACKET FOR LPLT-100	1
130	40300470	AIR PRESSURE GAUGE BRACKET FOR LPLT-100	1
131	40300471	DRYER BRACKER FOR LPLT-100	1
132	40300472	DRYER BRACKET CLAMP FOR LPLT-100	1
133	R940557	TUBE 5/16 POLY PER FOOT	0.67
134	R940528	WASHER - NO 10 FLAT STEEL	1

REPLACEMENT PARTS (LPVLT-100)





ITEM NO.	PART NO.	DESCRIPTION	QTY.
10	10500036	SCREW, #8-32 X 5/8 20IP TAPTOTE BLK PHOS	25
20	40200012	SERIAL LABEL BLANK 2.5 X 7.5	1
30	40200295	SCREW-SOCKET HD CAP 10-32 X .875 SS	4
40	40200339	1/4 BRASS BULKHEAD FTTG	2
50	40200594	1/4 X 7/8 NIPPLE - G TEC	1
60	40200837	LABEL - FLO PROP 65 WARNING	1
70	40200875	VACUUM GENERATOR CV15H	1
80	40201468	FLOWMETER - LPLT-100	2
90	40201469	PRESSURE GAUGE - LPLT-100	1
100	40201470	REGULATOR - LPLT-100	1
110	40201483	SUPPLY NOZZLE - LPLT100	1
120	40201486	RUBBER FOOT - LPLT100	4
130	40201500	HOSE-LEAK TEST SERVICE	6
140	40201508	FITTING - 5/32" TUBE ID BARB X 1/4 NPSM MALE - PLASTIC	1
150	40201509	WASHER - 9/16" SCREW SIZE, NAS1515-H9H - NYLON	1
160	40201513	FITTING - ELBOW 1/4" HOSE BARB X 1/4 NPT MALE	1
170	40201514	FITTING - TEE 1/4" X 1/4" X 1/4" HOSE BARB PLASTIC	2
180	40201515	FITTING - 1/4" ID BARB X 1/4" NPT MALE	2
190	40201516	HEX NUT - M5-0.8 GR 8	2
200	40201517	WASHER - FLAT M5 X 10MM OD	2
210	40201518	HANDLE - LPLT100	1
220	40201526	OPS MANUAL-LPLT100	1
230	40201529	SHIPPING BOX LPLT100	1
240	40201543	REGULATOR-SUBMINIATURE 0-15PSI	1
250	40201544	OVERLAY-CONTROL PANEL LPVLT-100	1
260	40201555	VALVE-BRASS 3-WAY DIVERTER 1/8NPT	2
270	40201570	FITTING-1/8MPT X 1/4FPT ELBOW	1
280	40201571	FITTING-1/4MPT X 1/4 TUBE PTC	3
290	40201572	FITTING-1/8MPT X 1/4 TUBE PTC	2
300	40201573	FITTING-1/8MPT X 1/4 TUBE ELBOW PTC	5
310	40201574	SPACER-NYLON .257ID X .50D X .5625L	4
320	40201575	TUBING-1/4OD X 1/8ID PE BLACK	4
330	40300491	GAGE FACE FOR LPLT-100	1
340	40300493	BRACKET-TRIPLE GAUGE	1
350	940511	NUT LOCK 8/32 NYLON INSERT	2
360	940630	LABEL/2 7/8 X 2.5 BAR CODE SIL	1
370	940928	WARRANTY CARD TS400 MACHINES	1
380	941512	HOSE-TYGON YELLOW PER FOOT	0.25
390	941532	TYGON-1,4ID YELLOW PER FOOT	1.25
400	941615	SCREW-BHCS 8-32 X 1.5 BLACK	2
410	40300492	CABINET-OUTER LPVLT	1
420	40300471	DRYER BRACKER FOR LPLT-100	1
430	40300472	DRYER BRACKET CLAMP FOR LPLT-100	1
440	R940528	WASHER - NO 10 FLAT STEEL	1
450	40201527	CABLE TIE LPLT-100	1
460	941335	AIR NIPPLE 1/4NPT H2C	1
470	40200338	5/16 TUBE X 1/4 NPT ELBOW W169PLPE-5-4	2
480	40201471	FILTER - LPLT-100	1
490	40201225	LABEL - ASSEMBLED IN USA	1
500	40201520	OVERLAY - INSTRUCTION LABEL LPLT100	1
510	40201576	OVERLAY-VAC INSTRUCT LABEL	1

LIMITED ONE (1) YEAR WARRANTY

Test-Quick LPLT-100 by Flo-Dynamics

Flo-Dynamics warrants only to the original Purchaser that under normal use, care and service, the Equipment (except as otherwise provided herein) shall be free from defects in material and workmanship for one year from the date of original invoice. External hoses, remote control modules, adapters, and all other attachments, supplies and consumables (except as otherwise provided herein) are warranted for 90 calendar days from the date of original invoice. Filter elements are not warranted. Printed circuit boards purchased from, but not installed by Seller are not warranted.

SELLER'S OBLIGATIONS UNDER THIS WARRANTY ARE LIMITED SOLELY TO THE REPAIR OR, AT SELLER'S OPTION, REPLACEMENT OF EQUIPMENT OR PARTS WHICH TO SELLER'S SATISFACTION ARE DETERMINED TO BE DEFECTIVE AND WHICH ARE NECESSARY, IN SELLER'S JUDGEMENT, TO RETURN THE EQUIPMENT TO GOOD OPERATING CONDITION. NO OTHER WARRANTIES EXPRESS OR IMPLIED OR STATUTORY, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY AND ALL SUCH WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED.

This warranty does not cover (and separate charges for parts, labor and related expenses shall apply to) any damage to, malfunctioning, inoperability or improper operation of the Equipment caused by, resulting from or attributable to (A) abuse, misuse or tampering; (B) alteration, modification or adjustment of the Equipment by anyone other than Seller's authorized representatives; (D) improper or negligent use, application, operation, care, cleaning, storage or handling; (E) fire, water, wind, lightning or other natural causes; (F) adverse environmental conditions, including, without limitation, excessive heat, moisture, corrosive elements, or dust or other air contaminants, radio frequency interference, electric power failure, power line voltages beyond those specified for the equipment, unusual physical, electrical or electromagnetic stress, and/or any other condition outside of Seller's environmental specifications; (G) use of the Equipment in combination or connection with other equipment, attachments, supplies or consumables not manufactured or supplied by Seller; or (H) failure to comply with any applicable federal, state or local regulation.

Repairs or replacements qualifying under this Warranty will be performed on regular business days during Seller's normal working hours within a reasonable time following Purchaser's request. **All requests for Warranty service must be made during the stated Warranty period.** This warranty is non-transferable.