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CUSTOMER SERVICE CONTACT INFORMATION

For product information, tech support, or to order replacement parts, call:

1-800-303-5874



INTRODUCTION to the TSD450

Congratulations on the purchase of your Flo-Dynamics TSD450 automatic transmission fluid exchanging machine!

Simply put, this machine is the cleanest, safest, easiest, fastest, most thorough, and most cost-efficient method of fluid exchange ever devised. Suddenly, regular automatic transmission maintenance becomes a more realistic proposition. With the TSD450, you can exchange the transmission fluid either through the transmission cooler lines OR through the vehicle's dipstick. Transmission fluid exchanging is cleaner and easier than ever!

Transmission Fluid Exchange:

To attain the highest level of protection for internal transmission components and increase the transmission's life span to the maximum, it is recommended that the transmission's lubrication system is serviced every 15,000 miles (or according to the vehicle owner's manual). The Flo-Dynamics TSD450 exchanges virtually all of the used transmission fluid to new, without even requiring the transmission pan to be dropped. There is no spillage, and no mess.

- **The TSD450 can be used practically anywhere – and with almost any vehicle.**
- **It is compact, mobile, and self-contained.**
- **It operates off the 12-volt battery of the vehicle being serviced.**
- **It does not require a pit, lift, or ramp.**
- **The TSD450 hooks up directly to one of the vehicle's transmission cooler lines for a transmission fluid exchange or through the dipstick.**
- **The ATF fluid exchange, from setup to finish, typically takes 15 minutes or less for inline mode, and 10 minutes or less for dipstick mode!**

No wonder an ATF exchange is the most requested method of preventative automatic transmission maintenance today.

Please take time to read through this manual to familiarize yourself with the TSD450 before performing your first ATF exchange.

I. SAFETY INFORMATION

1.01 IMPORTANT SAFETY NOTICE

For your safety, read this manual thoroughly before operating your TSD450 unit. Your TSD450 unit 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 your TSD450, 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 TSD450 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

1.02 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 the Flo-Dynamics TSD450.**
- **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 debris.

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

Engine systems that fail can cause serious injury.

WARNING



Risk of expelling pressurized fluids.

- **Wear safety goggles and protective clothing, user and bystander.**
- **Verify that engine and machine are off before connecting or disconnecting cooler lines and adapter hoses.**
- **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.**
- **Tighten all connections properly. Insufficient or excessive torque can result in fluid leakage.**
- **Avoid contact with automatic transmission or power steering fluid.**
- **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.**

Although automatic transmission and power steering fluid pose no significant health hazards, some individuals may experience adverse reactions upon contact. Pressurized fluid 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.**

A moving vehicle can cause injury.

WARNING



Engine has moving parts. Risk of entanglement.

- **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 and pulleys.**

Contact with moving parts can cause injury.

WARNING



Risk of fire or explosion.

- **Do not operate the TSD450 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.**
- **This machine is equipped to operate on 12-volt DC power only. A power source greater than this can result in serious injury to the user as well as damage to the machine.**
- **Do not smoke, place metal tools on battery or allow a spark or flame in vicinity of battery.**
- **Clean battery terminals before hooking the machine's battery clips to them. During cleaning, keep airborne corrosion from eyes, nose and mouth.**

- Be sure both battery cables are tightly connected to the battery terminals as instructed before proceeding with a fluid exchange.
- Never remove battery cables from the battery terminals while the machine is operating. Only use the “EMERGENCY STOP” button located on the control panel to stop an exchange.

Battery explosion can 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.**
- **While cleaning battery’s terminals, keep airborne corrosion from eyes, nose and mouth.**
- **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 automatic transmission fluid coming from the vehicle along with some of the machine’s components that the fluid comes into direct contact with (i.e. external: hoses and quick-disconnect fittings; internal: hoses and all fittings) may reach temperatures uncomfortable to the touch. Exercise caution in avoiding contact with these items.**

Hot components can cause injury or discomfort.

CAUTION

Ratchet mechanisms and tools may slip or break if dirty. Mismatched or partially worn parts can cause ratchet or any tool to slip or break.

- **Frequently inspect and clean any tools used, and lubricate all non-sealed ratchet mechanisms with light oil.**
- **Do not replace worn parts individually. If adapter hose fittings become worn, see “Appendix C – Replacement Parts” to order new hoses.**
- **The use of any other accessories not specified in this manual may create a hazard.**

Tools that slip or break can cause injury.



Risk of injury.

- This equipment should be operated by qualified personnel only.
- Use this equipment only as described in this manual.
- Always unplug the machine from its power source when not in use.
- Loop the power cord loosely in its proper location when machine is not in use.
- Do not operate equipment with a damaged battery cables or hoses, 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 battery cables and service hoses so that they will not be tripped over or pulled.
- Never pull on the power cables or service hoses to transport the TSD450. 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.
- The TSD450 is not designed for any other purpose than the exchanging of automatic transmission and power steering fluid.

Operation of your TSD450 unit by anyone other than qualified personnel may result in injury.

IMPORTANT

Risk of equipment damage.

- Flushing high mileage cars that have not been previously serviced can cause operating problems in the transmission.
- Connect battery cables to a 12-volt power source only (i.e. vehicle's battery).
- Servicing, transporting, or storing this machine in an attitude other than the normal operating position can result in fluid spillage and/or component damage.
- Use only the manufacturer's recommended attachments.
- The Flo-Dynamics TSD450 is fully automatic. Refer to your control panel at all times.
- Never pull on the power cables or service hoses to transport the TSD450. Damage may occur to these components, or machine may tip over.
- 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!

II. FEATURES & SPECIFICATIONS

2.01 FEATURES

Mechanical Features

- Accurate sensor technology allows optimum fluid level to be maintained in vehicle's transmission.
- Two in-line 22-micron absolute fluid filters capture microscopic particles and contaminants.
- Numbered quick-disconnect hoses with adapters save time in identifying the proper hoses for the application
- Easy to use adapters allow quick hookup to virtually any automobile make and model, saving time and money.
- Clear service hoses give visual confirmation of new and used fluid movements.
- Ergonomically correct working height means greater productivity, less stress and strain.
- Durable roto-cast polyethylene body and tanks prevent vehicle damage. The unit is also lightweight and durable, for easier handling and longer life.
- Large 5-inch locking caster wheels make machine easy to maneuver.
- Easy-access service panel provides hassle-free operations for greater efficiency.

Electronic Features

- Self-contained battery cables hook up to the vehicle's 12-volt battery
- Automatic monitoring of fluid in new and used fluid tanks assures safe operation
- Accurate sensor technology
- LCD counter display with cumulative ATF options
- Ability to exchange anywhere from 1 to 20 quarts in 1 quart intervals
- Fluid measurements can be changed from quarts to liters
- Drain used fluid tank (no need to tip machine upside-down)
- Drain new fluid tank
- Ability to pause machine during exchange to change transmission filter
- Battery backup allows machine to resume where it left off should it lose power
- Add new fluid to transmission in 2/10 quart increments (approx. 1/8" on the dipstick)
- Remove fluid from transmission in 2/10 quart increments (approx. 1/8" on the dipstick)
- Cycle valves feature allows you to electronically clean out valves
- Totalizer check (indicates lifetime use)
- Interactive menu:
 - "Auto Prime" feature automatically primes the system
 - Indicate new fluid volume
 - Indicate used fluid capacity
 - Read battery voltage

Chemical Injection Features

- 0.9 GPM diaphragm chemical injection pump
- Easy access, front console mounted, 16 oz. delivery bottle, removable for easy cleaning
- Delivers chemical in less than a minute
- Chemical injection is fully integrated into inline exchange routine
- Chemical injection functionality as a standalone menu option
- Adjusts final fluid level to offset added chemicals

2.02 DIMENSIONS & TECHNICAL SPECIFICATIONS

DIMENSIONS:

39" Tall
24 3/4" Wide
25" Deep

Service Hoses:
10' outside of machine

Wheels:
5" locking casters (front)
5" casters (back)

Weight:
95 lbs

TECHNICAL SPECIFICATIONS:

Power:
12-Volt DC from vehicle battery

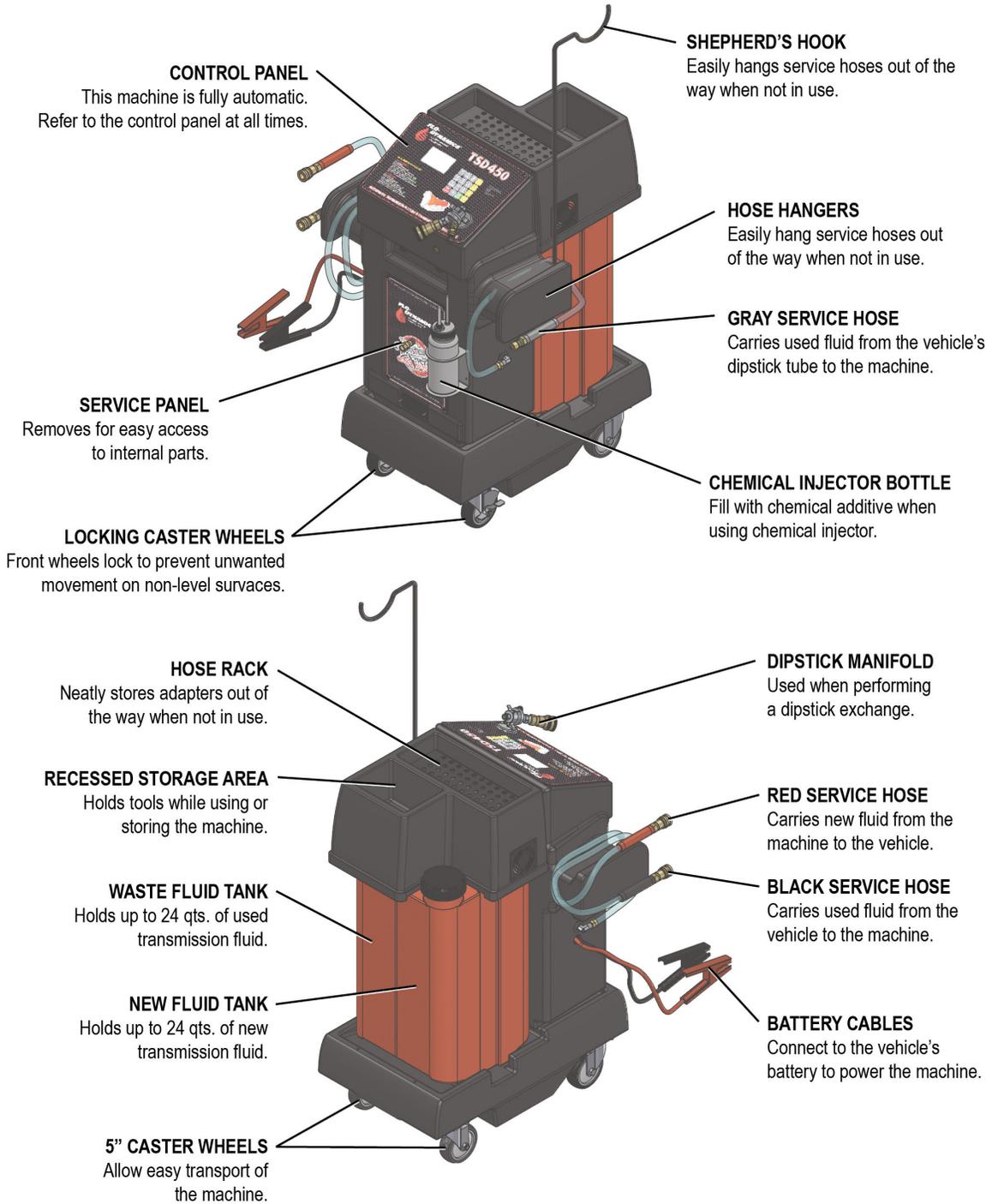
Fuse:
15 Amp

Fluid Sensors:
Accurate sensor technology

Filters:
22-micron absolute fluid filters

Operating Temperature:
65° to 150°F (15° to 65°C)

2.03 MACHINE OVERVIEW



III. OPERATING INSTRUCTIONS

OPERATION

NOTE: This machine is fully interactive. Always follow the on-screen instructions.

SAFETY RECOMMENDATIONS

- Use extreme safety measures when working around a running engine.
- Always block the vehicle's drive wheels.
- Ventilate the vehicle's exhaust.
- Always wear safety glasses.
- It's a good idea to wear gloves.

PREPARATION

- Road test the vehicle for at least one mile.
- Make sure there are no problems with the transmission such as leaks, low fluid level, shifting issues, etc.
- Connect battery cables to vehicle's battery.



PERFORMING A DIPSTICK EXCHANGE

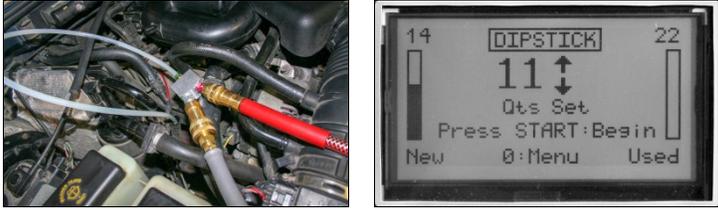
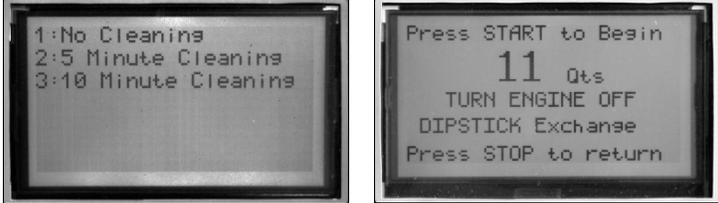
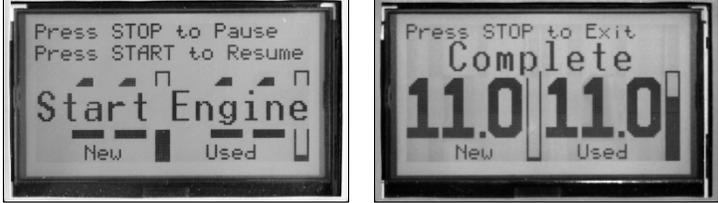
Press **2** for **Dipstick Exchange**.
 Add Transmission Cleaner.
 See "Adding Chemicals" section.



Press **1** for **Normal Exchange**.
 When this is selected, the machine will complete the exchange without prompting you to change the vehicle's transmission filter.

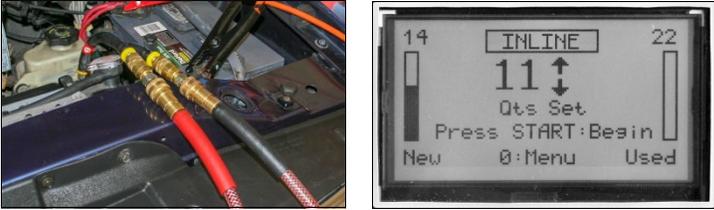
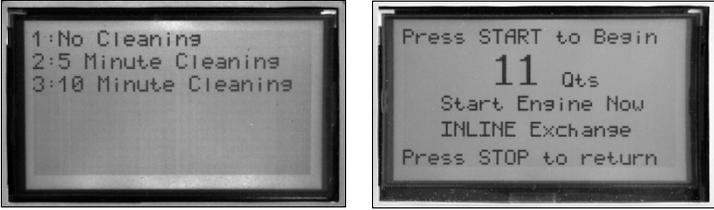
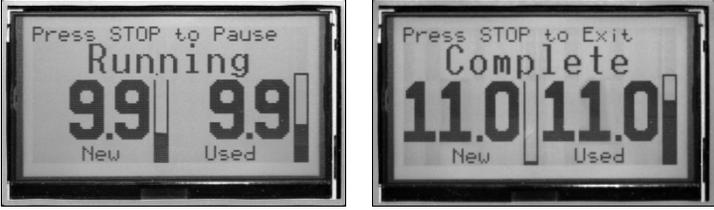
Press **2** for **Filter Replacement**. When this is selected, the machine will pause during the exchange and prompt you to change the vehicle's transmission filter. Follow the on-screen instructions.



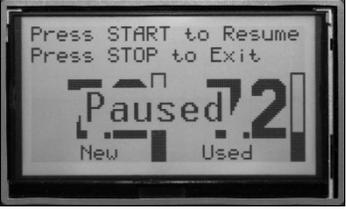
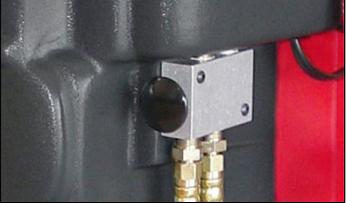
<p>Connect red and gray service hoses to chrome manifold. Insert nylon tube down dipstick tube the same length as the dipstick, being cautious not to insert too far.</p> <p>Use the yellow ▲ ▼ arrow keys to select the desired amount to be exchanged. Press the green button to proceed.</p>	
<p>When prompted, select a cleaning mode to circulate additives through the vehicle's transmission.</p> <p>Press 3 for 10 Minute Cleaning</p> <p>Press the Green Button to begin the exchange.</p>	
<p>Start the vehicle's engine when the display prompts you to do so. Then press the Green Button to proceed.</p> <p>Once the exchange is finished, the screen will beep and display "Complete".</p> <p>Add Transmission Treatment.</p> <p>See "Adding Chemicals" section.</p>	

PERFORMING AN INLINE EXCHANGE

<p>Press 1 for Inline Exchange.</p> <p>Vehicles with Internal Transmission Thermostats: Before a transmission fluid exchange service can be performed, refer to O.E. recommended procedure to ensure transmission fluid flow through transmission cooler.</p>	
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<p>Connect appropriate adapters to vehicle's cooler line fittings. Connect the red and black service hoses to the quick disconnect adapters on the end of the cooler line adapters.</p> <p>Add Transmission Cleaner.</p> <p>See "Adding Chemicals" section.</p> <p>Use the yellow ▲ ▼ arrow keys to select the desired amount to be exchanged. Press the Green Button to proceed.</p>	
<p>When prompted, select a cleaning mode to circulate additives through the vehicle's transmission.</p> <p>Press 3 for 10 Minute Cleaning</p> <p>Start the vehicle's engine when the display prompts you to do so. Then press the Green Button to begin the exchange.</p>	
<p>Once the exchange is finished, the screen will beep and display "Complete".</p> <p>Add Transmission Treatment.</p> <p>See "Adding Chemicals" section.</p>	

FUNCTIONS USED DURING AN EXCHANGE	
<p>Press 0 at any time to return to the main menu.</p>	

<p>If needed, while running, press the Red Button once to pause the exchange.</p> <p>Press the Green Button to resume from pause.</p> <p>Press the Red Button a second time to cancel the exchange.</p>	 
<p>When checking the fluid level:</p> <p>Press + or – to add or remove fluid in 2/10 of a quart increments.</p> <p>Use Option 3 in the main menu to add a full quart, and Option 4 to remove a full quart.</p>	 
<p>If the exchange stops and the display reads "Halted – Reverse Hoses", push or pull the knob on the flow diverter valve to switch directions, and press the Green Button to resume the exchange.</p>	 
<p>If the exchange stops and the display reads "Halted – Shift to Neutral", set the vehicle's parking brake, shift to neutral, and press the Green Button to resume the exchange.</p>	 

ADDING CHEMICALS

When cleaning or conditioning the vehicles transmission it is recommended to add chemicals through the dipstick. Always check the transmission fluid level prior to, and after, performing the service. **The Instructions below assume a proper fluid level before beginning.**

ADDING CHEMICALS THROUGH THE DIPSTICK TUBE (PREFERRED METHOD)

Pour Transmission Cleaner or Transmission Treatment directly into the dipstick tube using a suitably sized funnel.



FOR SEALED TRANSMISSIONS & INLINE SERVICE

In the event that the transmission does not have a dipstick and is sealed, the cleaner and conditioner (optional) may be injected directly into the vehicle via the onboard chemical injection system.

Select **5** or **10 Minute Cleaning** from the Inline menu.

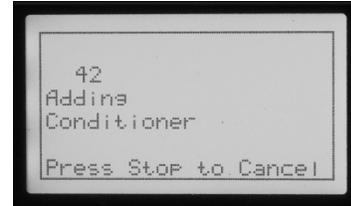
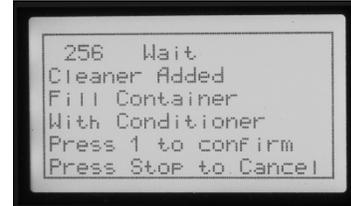
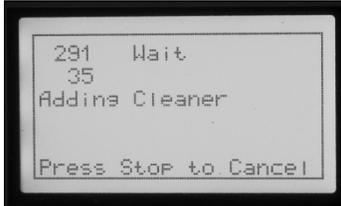
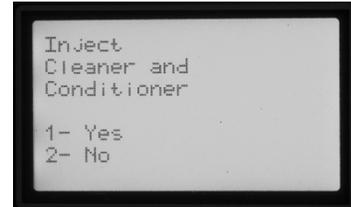
Select **Yes** from the Inject Cleaner and Conditioner screen

Pour specified volume of transmission cleaner into the bottle on the front of the machine after removing the cap by holding the cap and carefully unscrewing the bottle. Carefully remove draw tube from bottle by raising cap upward. When completed, reinstall the cap and begin exchange.

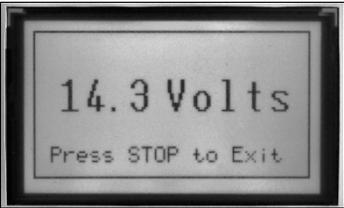
If adding conditioner after cleaning phase, press **1** and follow directions on screen.

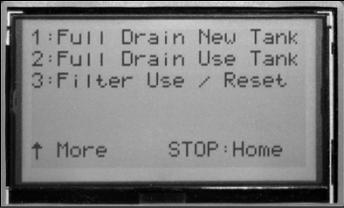
If **1** was pressed, the conditioner will be added to the vehicle near the end of the exchange.

The fluid level in the vehicle will be adjusted automatically based on the volume of chemicals used. Perform the normal final fluid level adjustment after the exchange is completed.



<p>Connect any open-ended adapter to the red service hose and insert into an appropriate disposal container. Make sure all other hoses are disconnected!</p> <p>Press the Green Button to begin the process.</p> <p>The unit will shut off when complete.</p> <p>NOTE: When fully draining a tank, the machine will not stop automatically when the tank is empty. You must push the Red Button on the control panel when the machine begins to pump air out of the red service hose.</p>	 
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VOLTAGE MONITOR	
<p>From the main menu, press ▼ to proceed to the next menu. Press 8 to display the voltage.</p>	 

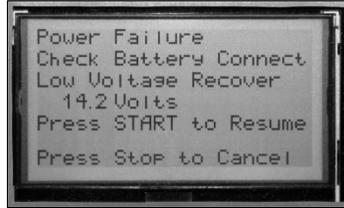
TOTAL FILTER USE	
<p>From the main menu, press ▼ twice. Press 3 to display the total filter use. Press 2 to reset.</p>	 

FILTER CHANGE DUE	
<p>The machine will indicate when the canister filters need to be replaced. Remove service panel. Use a standard filter band clamp tool to unscrew old filters, and replace them with new filters. Make sure new filters are on tight.</p> <p>IMPORTANT: Machine must be primed after filter change.</p>	 

POWER FAILURE MEMORY

If there is a power failure during a fluid exchange, the procedure can be continued seamlessly.

Simply reconnect the battery cables and press the **Green Button**. The exchange will resume where it left off.



CYCLE VALVES

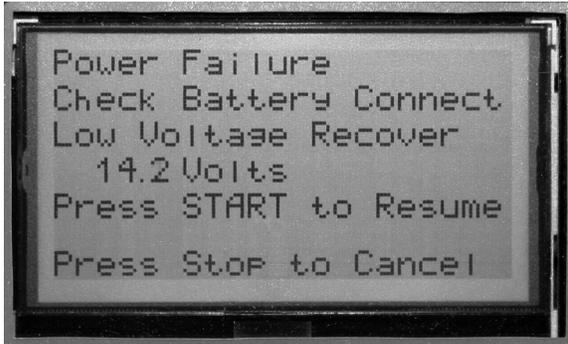
From the main menu, press ▼ to proceed to the next menu. Press **9** to cycle the valves.



IV. TROUBLESHOOTING & MAINTENANCE

4.01 COMMON PROBLEMS / SOLUTIONS

Problem: "Power Failure" screen displays

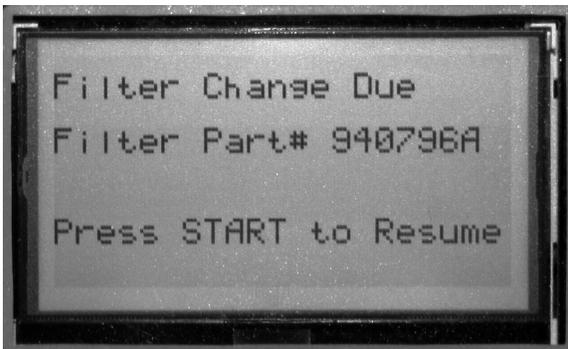


Solution 1: Check battery connection. Make sure there are no loose connections, and the machine's battery clips are not reversed. Remove all corrosion from the battery terminals. Make sure vehicle's A/C system is turned off.

Solution 2: The vehicle's battery is not putting out enough voltage to run the machine. Connect the machine to a better 12V power source. Stand-alone shelf batteries will not work.

4.02 MAINTENANCE PROCEDURES

• **Replace Canister Filters (Part#: 940796A) when machine prompts you to do so:**



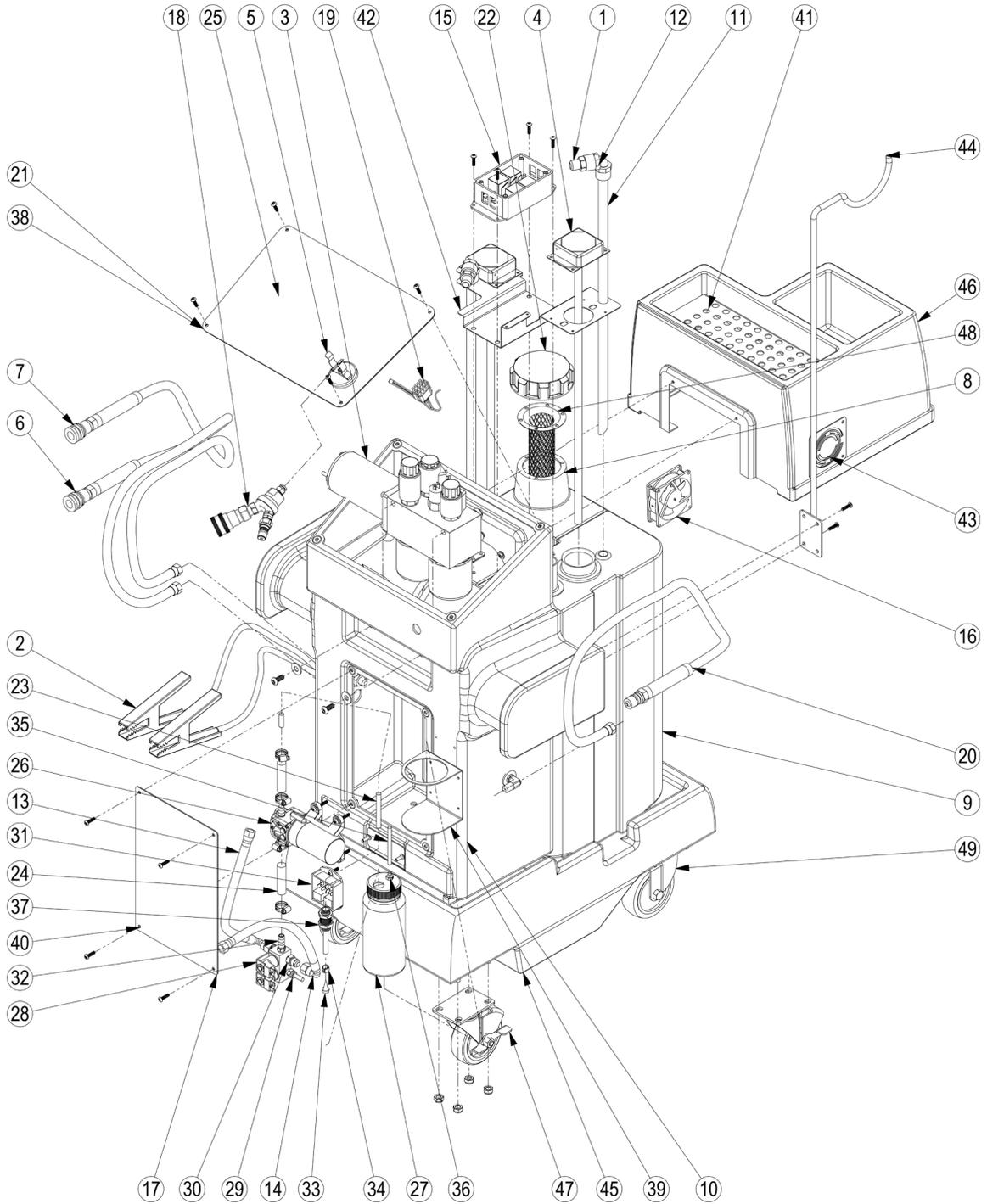
Use a standard filter band clamp tool to unscrew old filters, and replace them with new filters. Make sure new filters are on tight.

• **Clean Waste Fluid Screen (Located in bottom of recessed hose tray area)**

This helps eliminate surface tension caused by debris and contamination from the air. Using a sharp pick, remove screen. Clean using degreaser and brush, and blow out with air compressor.

• **Periodically Wipe Down Exterior using a soft, damp cloth.**

V. REPLACEMENT PARTS



ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	940125	MALE CONNECTOR 1/2 NPT 1/2 JIC	2
2	940307	6GA BATTERY CABLES 16 FT	1
3	940468	MANIFOLD W/R PUMP NO PRO PORT	1
4	940474	FLUID LEVEL SENSOR SHORT	2
5	940922	DOCK MAGNET	1
6	940785	SERVICE HOSE (BLACK)	1
7	940786	SERVICE HOSE (RED)	1
8	941202	NEW FLUID TANK	1
9	941203	USED FLUID TANK	1
10	941205	ATF CONSOLE-BLACK	1
11	941225	TUBE ALUMINUM 5/8 x 23.81	2
12	941226	ELBOW PLASTIC FEM 1/2 NPT x 5/8 TU	2
13	941229	HOSE ASSY BLK 039-8-8-8-11IN	1
14	941230	HOSE ASSY BLK 3939-8-8-8-10.5	1
15	941617W	MOTOR CONTROL BOX	1
16	941655W	COOLING FAN	1
17	941705	OVERLAY - UNIVERSAL LCD SERVICE PANEL	1
18	941716W	"Y" MANIFOLD FOR DIPSTICK SERVICE MACHINES	1
19	941726W	WIRE HARNESS ONLY	1
20	941728	SERVICE HOSE (GREY)	1
21	941787	OVERLAY - CONTROL PANEL	1
22	942113	TANK CAP	1
23	40200086	PARFLEX TUBING 3/8 OD	2
24	40200577	3/8 ID BLACK HOSE	2
25	40200740	ELECTRONIC BOARD	1
26	40200742	35 PSI PUMP VITON	1
27	40200919	16 OZ ROUND BOTTLE	1
28	40200920	MANIFOLD ASSEMBLY - CHEMICAL INJECTOR	1
29	40200921	MALE STRAIGHT ADAPTER 1/4 TUBE OD X 1/8 NPTF	1
30	40200923	3/8 JIC MALE X 1/8 NPT MALE FITTING	2
31	40200927	RELAY BOARD W/HARNESS - CHEMICAL INJECTOR	1
32	40200928	3/8 ID HOSE BARB x 1/8 MALE NPT	1
33	40201002	INLET SCREEN - CHEMICAL INJECTION	1
34	40201005	PINCH CLAMP 11/32 - 13/32 ID	1
35	40201025	POLY TUBING 1/4 OD PER FOOT	1
36	40201027	BULKHEAD UNION 4-4	1
37	40201028	BULKHEAD UNION -6	1
38	40300296	CONTROL PANEL	1
39	40300345	BRACKET - CHEMICAL BOTTLE	1
40	G940758	SERVICE PANEL	1
41	H940772	HOSE TRAY	1
42	P941234	TANK BRACKET - BLACK	1
43	P941616	COOLING FAN COVER BLACK	2
44	P941725	SHORT SHEPHERD HOOK ASSEMBLY	1
45	R940750	CHASSIS - BLACK	1
46	R940752	TOP - BLACK	1
47	R942118	CASTER 4 W/BRAKE	2
48	R942129	SCREEN BASKET	1
49	R942137	CASTER 4 SWIVEL	2

LIMITED ONE (1) YEAR WARRANTY

Flo-Dynamics TSD450

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.

