

Flo-Dynamics DFPSX-500

Differential & Power Steering Fluid X-Changer

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CUSTOMER SERVICE CONTACT INFORMATION

If you are experiencing problems with this machine,
visit www.flodynamics.com or call technical support at:

1-800-303-5874

IMPORTANT SAFETY NOTICE

For your safety, read this manual thoroughly before operating your 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

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 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 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.**
- **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 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 machine 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.

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 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



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 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 exchanging of power steering fluid.

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

IMPORTANT

Risk of equipment damage.

- 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.
- Never pull on the power cables or service hoses to transport the machine. 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!

MACHINE INFORMATION

TWO SEPARATE SYSTEMS...

DIFFERENTIAL FLUID

- Two 4 GPM gear pumps
- Trouble-free service on differentials, manual transmissions & transfer cases
- Gear pumps for thicker, heavier fluids
- Includes flexible adapters for all driveline openings
- Adapter storage rack
- Two-button operation
- Serviceable magnetic filter for catching metal particles
- Convenient, portable roll-around unit

POWER STEERING FLUID

- Two 0.9 GPM diaphragm pumps
- Replaces up to 95% of the old power steering fluid in less than 8 minutes
- New and waste fluid reservoirs
- Clear hoses for visual confirmation of new and waste fluid movement
- New and waste fluid on/off switches
- Battery cables hook up directly to vehicle's battery
- Dual pumps and service hoses drain and refill power steering system through the system's reservoir
- Fully portable-can perform service anywhere

SPECIFICATIONS

Dimensions: 38" H x 18" W x 25" D

Weight: 50 lbs.

Waste Fluid Bottle: 1 Gallon

Power: 12V

MAINTENANCE

- **Clean Filter Screen every 50 exchanges, or as needed**

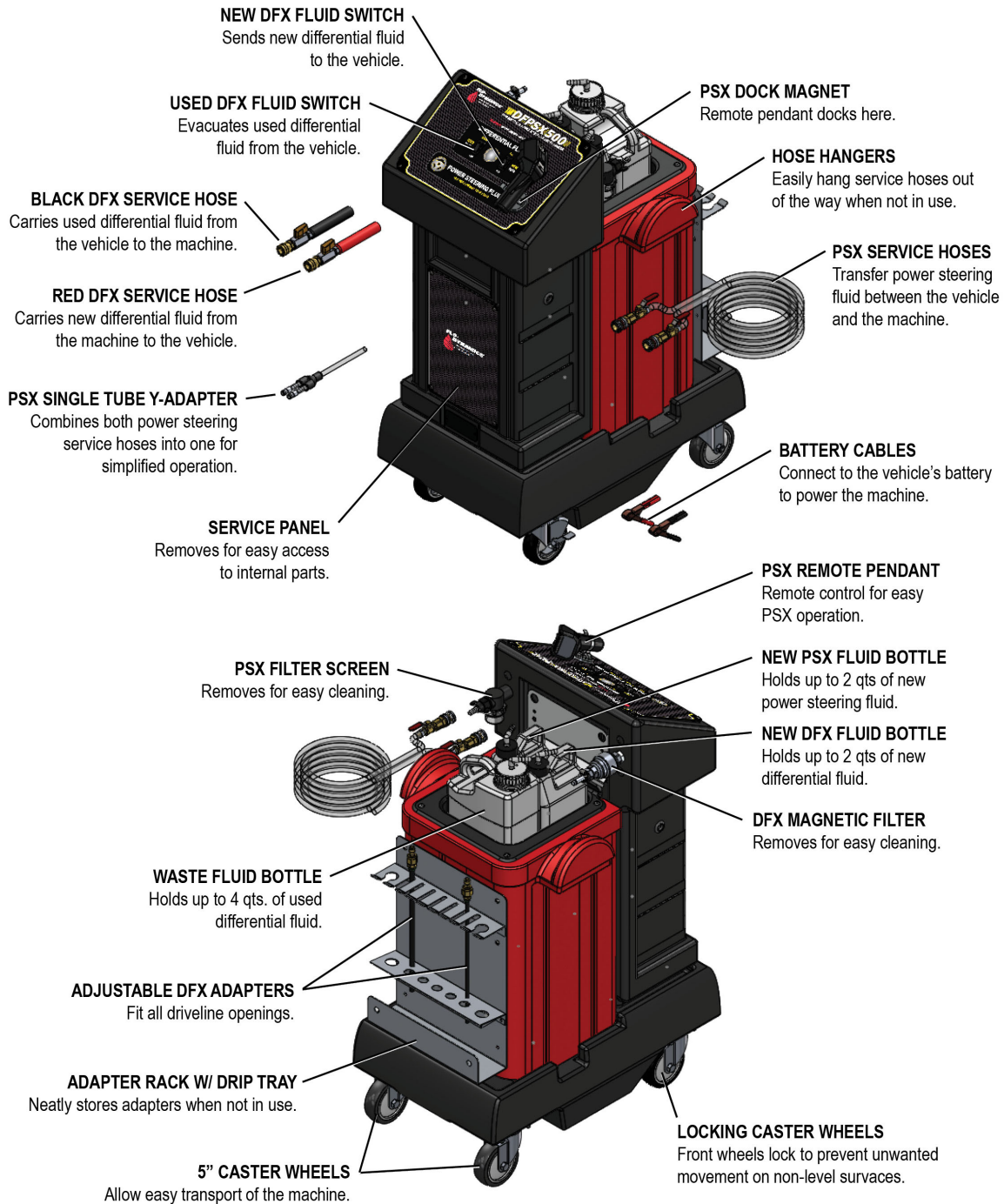
Open filter screen housing by unscrewing the top. Use a sharp pick to remove screen from housing. Clean using degreaser and brush, and blow out with air compressor. Put screen back in housing.

- **Clean Magnetic Filter every 50 exchanges, or as needed:**

Remove magnetic filter and rinse with water.

- **Periodically wipe down exterior using a soft, damp cloth.**

MACHINE OVERVIEW



OPERATING INSTRUCTIONS

SAFETY RECOMMENDATIONS

Safety glasses and gloves should be worn during the service.

Use extreme caution when raising the vehicle on the lift.



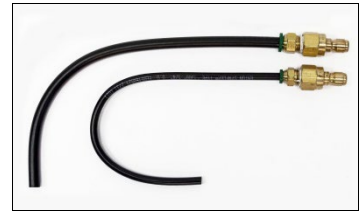
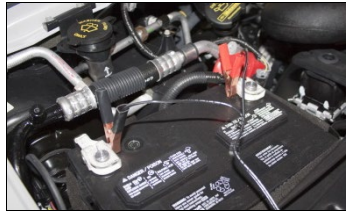
DIFFERENTIAL FLUID EXCHANGE

PREPARATION

Attach to **NEW FLUID** cap / inlet tube the appropriate differential fluid.

Connect battery cables to vehicle's battery.

Select appropriate adapter.



Attach the adapter to the **BLACK** service hose.

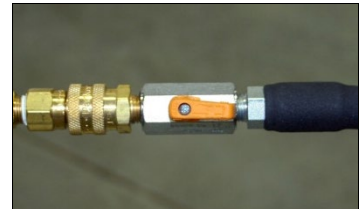
NOTE: Use larger suction wand whenever possible.



DRAIN DIFFERENTIAL

Insert adapter into vehicle's differential fill hole.

Open ball valve on **BLACK** service hose.



Set the **USED FLUID** switch to the **ON** position to remove fluid from the vehicle's differential.

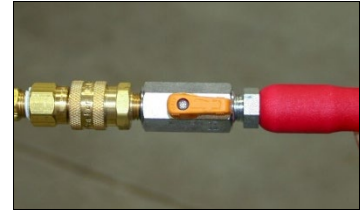
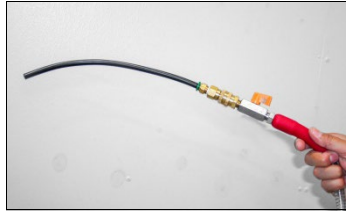
Set the switch **OFF** when finished.

NOTE: If vehicle has a drain plug, it can be removed to drain system.



FILL DIFFERENTIAL

Attach the adapter to the **RED** service hose.
Insert adapter into vehicle's differential fill hole.
Open ball valve on **RED** service hose.



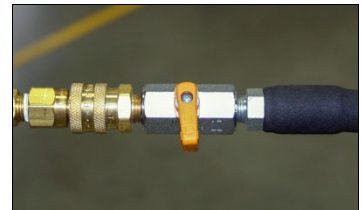
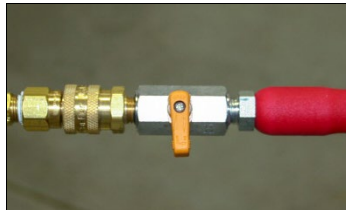
Set the **NEW FLUID** switch to the **ON** position to add fluid to the vehicle's differential.
Set the switch **OFF** when finished, and then close ball valve.

NOTE: Failure to turn switch off before closing ball valve will cause pump to shut off. Turn switch off to reset.



DISCONNECT

Close ball valves and remove adapters from service hoses.



Disconnect battery cables from vehicle's battery.



POWER STEERING FLUID EXCHANGE

PREPARATION

Check the fluid level and quality.
 Road test the vehicle for at least one mile.
 Make sure that there are no problems with the power steering system such as leaks, belt slippage or excessive noise.
 Connect battery cables to vehicle's battery.
 Position and secure the fluid line into the power steering fluid reservoir and make sure hose ball valves are in the open position.



Attach **NEW FLUID** cap / inlet tube to bottle of new power steering fluid.
 Make sure **USED FLUID** bottle is empty & attach to **USED FLUID** cap/inlet tube.



PERFORMING SERVICE

Start the vehicle's engine.

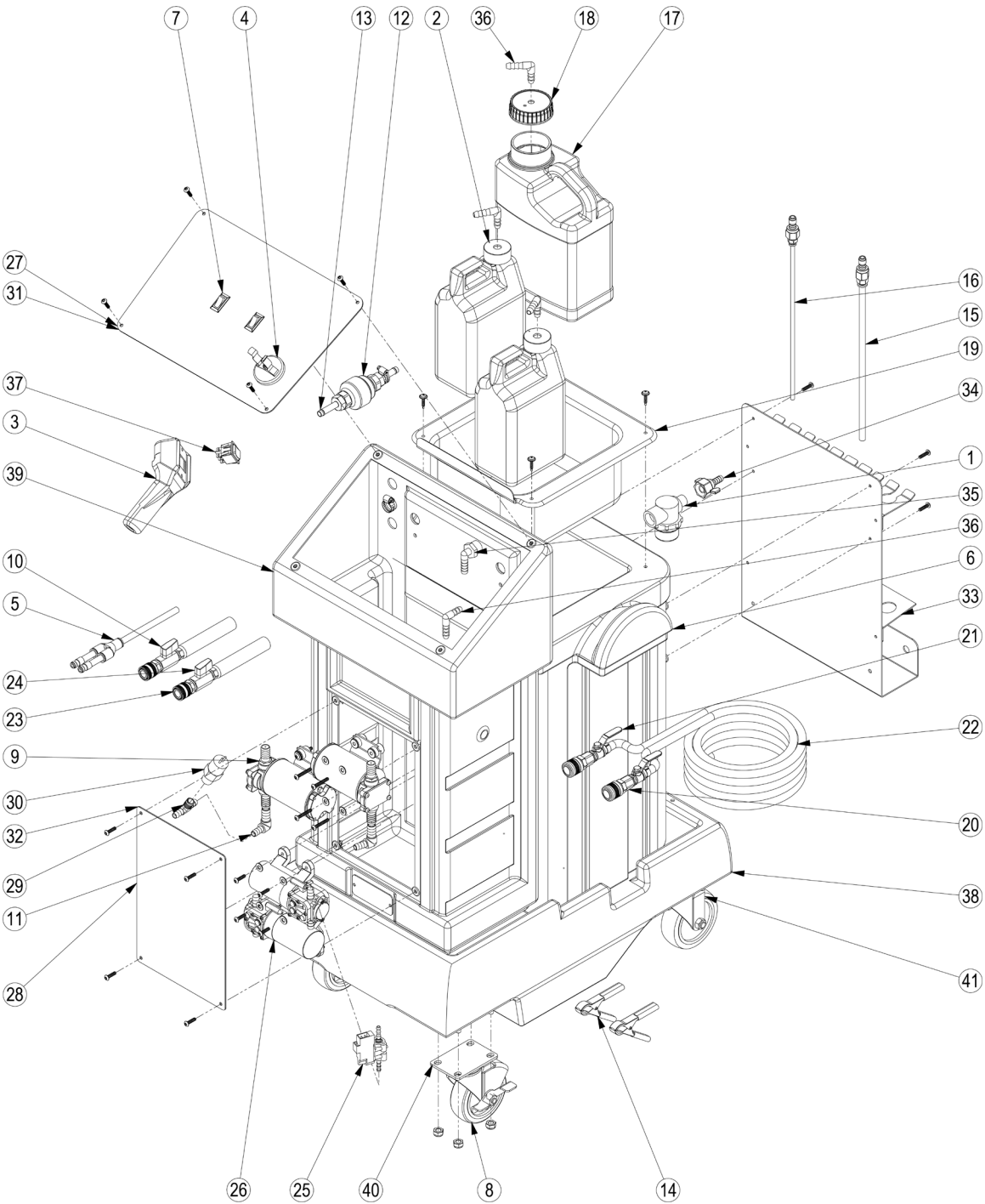
While watching the fluid level in the reservoir, use the **DRAIN** and **ADD** buttons on the remote pendant to repeatedly drain and add fluid. Repeated purging and adding of fluid will flush the old fluid out of the reservoir.
 Turn the steering wheel lock to lock several times, and repeat drain/fill and turning steering wheel until the fluid is clean.
 When finished, adjust fluid level, turn the ball valves to the "off" position on both hoses, and remove fluid line from power steering fluid reservoir.



Turn off engine, disconnect battery cables, and replace reservoir cap (and screen if applicable).



REPLACEMENT PARTS



ITEM NO.	PART NO.	DESCRIPTION	QTY.
1	940552	IN LINE STRAINER	1
2	940558	BOTTLE 64OZ NATURAL	2
3	940661	PENDANT BODY	1
4	940922	MAGNET HOLDER	1
5	941178	Y-ADAPTER	1
6	941252	REAR TANK SUPPORT - RED	1
7	941341	2WAY SWITCH	2
8	942137W	WHEEL ONLY 4" CASTERS	4
9	944022	PUMP-SMALL GEAR PUPPY	2
10	944063	BLACK SERVICE HOSE	1
11	944067	ELBOW-3/8 X 1/2 HOSE BARB	2
12	944096	MAGNOM MAGNETIC FILTER	1
13	944099	ADAPTER - SAE8 X 3/8 HOSE BARB	2
14	40100015	BATTERY CABLE ASSEMBLY	1
15	40100064	3/8 IN FLEXIBLE FILL OR REMOVE ADAPTER	1
16	40100066	1/4 IN FLEX SUCTION ADAPTER	1
17	40200438	1 GAL WASTE FLUID BOTTLE	1
18	40200439	CAP FOR 40200438 WASTE BOTTLE	1
19	40200440	2 GAL MOLDED TRAY	1
20	40200597	QUICK DISCONNECT 1/4 WITH SPRING	2
21	40200661	1/4 BARB X 1/4 MALE NPT BALL VALVE	2
22	40200664	DAIRY HOSE - GLITEX 300 SS	1
23	40200734	SIZE 1/4 SLEEVE LOCK SOCKET X 1/4 NPTF MALE COUPLER	2
24	40200735	RED SERVICE HOSE NEW STYLE	1
25	40200741	INLINE PRESSURE SWITCH 3/8 PORTS	1
26	40200742	35 PSI PUMP VITON	2
27	40200912	OVERLAY CONTROL PANEL	1
28	40200913	OVERLAY SERVICE PANEL	1
29	40200996	TEE FITTING 3/8 ID BARB X 3/8 ID BARB X 1/4 NPT MALE	1
30	40200997	PRESSURE SWITCH 90 PSI	1
31	40300319	CONTROL PANEL	1
32	G940758	SERVICE PANEL	1
33	P944018	HOSE RACK BLACK	1
34	R940553	HOSE BARB PLASTIC 1/2 FEMALE	1
35	R940554	ELBOW HOSE BARB PLASTIC 1/2 FE	1
36	R940559	ELBOW 3/8 X 3/8 SINGLE BARB	4
37	R940663	SWITCH - MOMENTARY	1
38	R940750	CHASSIS - BLACK	1
39	R940751	CONSOLE - BLACK	1
40	R942118	CASTER 4" W/BRAKE	2
41	R942137	CASTER 4" SWIVEL	2

LIMITED ONE (1) YEAR WARRANTY

FLO-DYNAMICS DFPSX-500

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.