

# Operating Manual



## Model 3023

 Fluid  
Service  
Technologies Ltd.

1210 Toovey Road  
Kelowna, BC Canada V1X 6R4  
Phone 250.765.9452  
joeh@fluidservicetech.com



# **SAFETY PRECAUTIONS**

- i** BEFORE STARTING VEHICLE, BE SURE ALL HOSES AND ATTACHMENTS ARE CLEAR FROM FAN AND MOVING PARTS
- ALWAYS WEAR EYE PROTECTION
- PERFORM SERVICE IN WELL-VENTILATED AREAS OR USE TAILPIPE EXHAUST HOSES
- NEVER LEAVE VEHICLE UNATTENDED WHILE PERFORMING SERVICE
- CHECK COOLING SYSTEM FOR LEAKS BEFORE PERFORMING FLUSH
- BE VERY CAREFUL WHEN REMOVING RADIATOR CAP AND PROTECT YOURSELF FROM SPRAY
- BE SURE HOSE CONNECTIONS ARE TIGHT
- i** DO NOT USE SPRING TYPE CLAMPS TO FASTEN HOSE ADAPTERS! USE ONLY GEAR STYLE CLAMPS LIKE THOSE INCLUDED WITH YOUR KIT.
- i** CHECK CYLINDERS ON REGULAR BASIS FOR CHIPS, STRESS CRACKS OR ANY FORM OF DAMAGE. IF CYLINDERS ARE DAMAGED OR IF MACHINE HAS BEEN DROPPED, CYLINDERS MUST BE REPLACED.
- i** CHECK THREADS ON CAP AND FILLER NECK FOR WEAR. THREAD CAP ON UNTIL YOU FEEL IT CONTACT THE SEAT AND BACK OFF ½ TURN. PULL UP AND DOWN ON CAP TO TEST FOR PLAY. ANY MORE THAN 1/16<sup>th</sup> OF AN INCH THE CAP AND NECK NEEDS REPLACEMENT.



## Table of Contents

Introduction to Coolant Flushing	4
Preparing the 3023 for service	4
Connecting to vehicles with pressure cap on purge tank	5
Connecting to vehicles with pressure cap on radiator	7
Using a Chemical Flush	7
Service Tips	9
Replacement Parts	9
Limited Warranty	10



## **Engine Coolant Service with the Cooling Flusher**

Improper cooling system maintenance is the leading cause of "Roadside Breakdown". Over time, antifreeze loses its ability to lubricate the water pump, and inhibit rust in the cooling system. The coolant becomes laden with soluble metals, which eventually clog up the radiator, heater core, engine and sensors. The engine runs hotter; sensors send inaccurate information to the vehicle's computer, resulting in poorer fuel economy and a hotter running engine.

The Cooling Flusher does a complete coolant exchange within minutes. Using a reverse flow process, the service does not require the engine to be running during the process. It incorporates an on board suction pump and the automatic shut off feature allows the technician to work on other tasks during the service.

### **Preparing the Cooling Flusher for Service**

1. Install a nipple that coincides with your shop air lines into the 1/4" NPT bulkhead on the top of **Cooling Flusher**.
2. With both switches in the "OFF" position, connect your shop air line to this nipple.
3. The larger hose connected to the bottom of Cooling Flusher is where the used antifreeze comes out. Place the end of this hose in either a pail large enough to hold the vehicle's antifreeze capacity, or connect a garden hose to feed into your used antifreeze storage.
4. Remove the top cap and fill The Cooling Flusher with the appropriate quantity of premixed water/antifreeze. Replace top cap.



## Performing the service on vehicles with pressure cap on purge tank (see page 7 for service on vehicles with pressure cap on radiator)

### Purge tank fitting connection instructions:



Male fitting with stepped adapter



Female fitting with 3/8" hose



Female fitting with 1/2" hose



Female fitting with 1" hose

For use with vehicles that do not have a cap on the radiator as pictured below

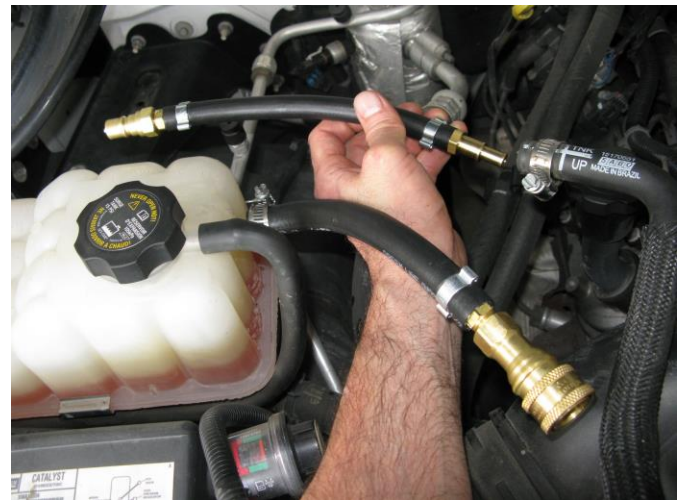
#1 Remove the hose from the purge tank (not uppermost overflow hose)





#2 Attach either the 3/8", 1/2" or 1" hose with female connector and clamp.

#3 Install stepped adapter into vehicle open hose and clamp.



#4 You are now ready to connect your Cooling Flusher (it'll only connect one way) and start your flush. **Do not start the engine!** Just turn the flush switch ON and the exchange will start. The Cooling Flusher will automatically shut itself down once the antifreeze in the cylinder has been forced into the vehicle.

When the service is complete, turn the "Flush" switch off and allow pressure to purge before disconnecting hoses.



## Performing the service on vehicles with pressure cap on radiator

1. Remove the vehicles radiator cap.

**ⓘ BE CAREFUL, THE ANTIFREEZE MAY BE HOT!**

2. Connect the hose with a male fitting from The Cooling Flusher toolbox to the black hose on The Cooling Flusher. This will be used to suck down the radiator and overflow tank.

3. Turn the “SUCTION” switch ON and suck the radiator down below the bottom of the top radiator hose. This is also a good time to suck out the overflow tank. When done, turn “SUCTION” switch OFF.

4. Remove the top radiator hose at either the engine or the radiator - whichever is most accessible.

5. (Typical, thermostat in top of engine) Connect the fitting with the hose to the engine side and the fitting without the hose to the Radiator side. (If thermostat in bottom of engine, connect opposite)

**ⓘ Do not use Spring Style Hose clamps! Use only the Gear Clamps style like those provided with the adaptor kit.**

6. If you are going to run a chemical flush in the system, follow steps #7 to #11. If not, replace radiator cap and jump to step # 12

**7. Pour chemical flush into the Radiator.**

**8. Refill the radiator with fluid (water) and replace the radiator cap.**



9. **Connect the two radiator hose fittings together. Connect the hose with the female fitting on engine side to the male fitting on the radiator side.**
10. **With hoses secure, start engine and run as per the chemical manufacturer's recommendations.**
11. **After the proper time has elapsed, shut engine off and disconnect hose connecting the top radiator hose fittings.**
12. Connect black hose on Cooling Flusher to radiator side fitting. Connect the green hose to engine side fitting.
13. **Do not start the engine!** Just turn the fill switch ON and the exchange will start. The Cooling Flusher will automatically shut itself down once the antifreeze in the cylinder has been forced into the vehicle.
14. Shut the fill switch OFF and disconnect the two lines from the radiator fittings. Reinstall the fitting with the short black hose to the black hose on The Cooling Flusher.
15. Use the suction function again to suck the Radiator down below the bottom of the top radiator hose. Turn switch OFF when done. You may now disconnect your shop air line.
16. Remove the fittings and replace the vehicle's hoses to their original positions.
17. Top up the Radiator (if using chemical antifreeze booster install into radiator now) and overflow tank, replace the caps and the service is complete.





## Service Tips

The male nipple on the bottom of Cooling Flusher, under the waste line is for cylinder draining. This is convenient when switching antifreeze types. With shop air line connected to The Cooling Flusher, connect the black service hose from the top of Cooling Flusher to this drain nipple and turn on the “suction switch” Cooling Flusher’s pump will suck all the fluid from the cylinder and purge out the waste line. This fluid can be salvaged from this line. Turn the suction switch OFF when done.

Sometimes debris from a very dirty cooling system can clog the quick-connect fittings. This is quite common with the short hose used to suck down the overflow tank. If you find your Cooling Flusher is slow or either will not push new fluid in or pull old fluid out, it is likely that a quick connect fitting is blocked up with debris. It is not usually the fittings on the machine that get clogged. Check the quick connect fittings that are attached to the aluminum radiator hose adapters. Connecting two of them together and blowing backwards through them will generally solve the problem.

### **Two Year Limited Warranty**

Fluid Service Technologies Ltd. (the Company) warrants the product for a period of Two Years against any defect in the materials, components, and assembly of the equipment. The Warranty does not extend to wear and tear on the side hose assemblies, nor to lost fittings, or damage to any part or assembly due to negligence or abuse. The limited warranty applies only to the original purchaser. The Warranty applies to the normal use of the unit in its intended application. The Company will not be liable for any other costs associated with a product failure such as, but not limited to lost service revenue, loss of ATF, coolant, engine oil, and brake fluid, nor non-authorized shipping costs and or labour charges other than described below.










In the case of any Warranty claim made by the original purchaser, the Company will determine, at its discretion, whether to repair or replace the unit, upon review of the nature of the Warranty claim. No unit should be returned to the Company without its prior written authorization.

Upon approval of a Warranty Claim by the Company, the customer has the following options regarding the repair of the unit:

1. The customer can ship the unit prepaid to the Service Center designated by the Company for repair.
2. The customer will be shipped the replacement part at no charge and, depending on the nature of the repair and at the discretion of the Company, will be allowed a maximum of \$100.00 labour to replace the part.

All warranty claims must be made within the specified warranty period. Proof of Purchase date must be supplied to the manufacturer.

**Technical Support Line 1.250.765-9452**

 <p># 30002 Large stepped adapter w/hose &amp; female coupler</p>	 <p># 30003 Large Stepped adapter w/ male coupler</p>	 <p># 30004 Small stepped adapter w/hose &amp; female coupler</p>
 <p># 30005 Small stepped adapter w/ male coupler</p>	 <p># 30006 Coolant hose adapter kit (6 piece) 1" to 2 1/4" in 1/4" increments</p>	 <p># 30008 Evacuation hose w/ male coupler</p>
 <p># 30009 Male Coupler same as used on Cooling Flusher and above fittings (Brass)</p>	 <p># 30010 Female Coupler same as used on Cooling Flusher and above fittings (Brass)</p>	 <p># 30020 Purge Tank Fitting Kit. Allows for easy connection for vehicles that do not have a cap on the radiator</p>