

Single Pump Coolant-Flush Machine 94480



Operating Procedures

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Read and understand all safety procedures before performing coolant services.

A) Safety Requirements

Wear safety goggles and gloves for eye and hand protection.

Work in well ventilated area, using tail pipe exhaust hose indoors.

Ensure that the vehicle's transmission is set to park position or neutral and set vehicle's park brake before performing service.

Inspect vehicle for fluid leaks, damaged belts or hoses, mechanical defects, or any unsafe conditions.

Use caution prior to removing a vehicles radiator cap, to protect against coolant spray or steam.

1. Before starting vehicle, check that all tools, hoses, shop towels, or service related items are clear from moving parts or exhaust components.
2. Inspect service equipment for any damage or loose components.
3. Pressure-test vehicles cooling system for leaks and radiator cap for correct pressure prior to performing coolant exchange service.
4. Use fender covers to protect vehicle finish from scratches ,or spills
5. Use a shop drain pan to catch coolant spillage.
6. Never leave vehicle unattended during Coolant Service.

WARNING! Coolant and vapors within a cooling-system may be extremely hot, and can cause severe burns. Extreme care should be used and proper protection worn when accessing vehicles cooling system. The hot fluid within the system may also be under pressure. Relieve all pressure, and/or let vehicle cool down to ambient temperature before opening hot cooling systems.

B) Prepare Machine Prior To Service

1. Determine the coolant capacity of the vehicle using the Cooling-System Specification Manual.
2. Remove the cap from New-Fluid Tank on the machine, then add the correct amount and type of coolant mixture to the new Coolant Tank, and replace tank cap.

C) Relieving Cooling-System Pressure

1. Attach the machine to the vehicles 12- Volt battery by connecting the machines red battery clip to the positive (+) battery terminal and the black battery clip to the negative (-) battery terminal.
2. On the machine, Point the “Service Selector” handle to the “EVAC Service” position.
3. Connect the open-ended adaptor hose to the end of the units black vacuum service hose, located in the Right Side of the Chassis.
4. Connect the open-ended “Clear” adaptor hose to the end of the unit’s clear service hose, located on Left side of the machine.
5. Locate and remove the vehicles overflow –tank hose (small black tube, usually located on the side of the radiator fill neck). **DO NOT REMOVE RADIATOR CAP AT THIS TIME!**
6. Connect the open-ended “Black” vacuum hose to the radiator-overflow nipple at the radiator fill neck, and turn unit’s Service Pump Toggle Switch to the “On” position. **NOTE:** Prior to removing cap, always follow the vehicle manufacturer’s directions or instructions printed on top of the radiator cap.
7. Slowly lift the release lever on the vehicle’s radiator cap (if applicable). Using gloves and a shop towel, slowly loosen radiator cap to the first safety notch, allowing system pressure to be diverted out of the overflow nipple on the fill neck, and into the machines black vacuum hose for removal.
8. With the unit’s “Service-Pump” switch still in the “On” position, carefully remove the radiator cap.
9. Remove the machines open-ended vacuum hose from the overflow nipple, and reattach the vehicles overflow-tank hose to the nipple and secure.
10. Locate, and remove cap from vehicles overflow tank (if equipped), and insert the open-ended hose to evacuate the Used-Coolant.
11. Once the Over-flow-tank, or the Remote-Fill-Tank, are empty, turn the unit’s “Service-Pump” switch to the “OFF” position.

D) Radiator Hose Hook-Up

1. Place a shop drain pan under the vehicle to contain any coolant spills.
2. Attach pinch pliers to upper radiator hose halfway between radiator and engine block.
3. The “Service Selector” handle should still be pointing toward to the “EVAC Service” position...
4. Insert machines open-ended adaptor hose into the radiator fill neck and evacuate fluid until coolant level has dropped below the upper radiator- hose fitting on radiator.

NOTE: On large systems, retain this fluid in an external container, to use for topping off system prior to actual fluid exchange.

5. Disconnect the open-ended adaptor from the black vacuum hose (to prevent siphoning), and disconnect the clear open-ended adaptor hose from the clear service hose.
6. Loosen the hose clamp, and disconnect the vehicles upper radiator hose from the radiator.
7. Locate the proper size Male Radiator Adaptor, and install into the open- end of the vehicles radiator hose. Secure with the proper size hose clamp from radiator kit.

NOTE: Do not use pinch or squeeze type hose clamps during fluid exchange process. Use only worm gear/screw type clamps.

8. Locate the proper size Female Radiator Adaptor, (adaptor with 16” length of clear hose attached to adaptor), and install onto the radiator hose neck at the radiator using the proper size three inch (3”) cut hose and hose clamp from radiator kit.
9. Tighten all clamps securely, and verify that adaptors are secure.
10. Connect the Female adaptor hose to the Male adaptor, using the female and male quick disconnects attached to both.
11. Remove the pinch pliers from the upper radiator hose, then using the same pinch pliers, pinch off the vehicle’s overflow hose between the radiator overflow nipple, and the overflow tank.
12. Top off radiator if necessary with used fluid from earlier.
13. Reinstall the vehicles radiator cap securely.

E) Flush Service Procedure

Note: Before starting engine, check that all hose adapters, tools, and towels are clear of the vehicles moving components and exhaust system.

1. Switch the vehicles heater control valve to full “On” Position, and turn blower fan to the “Low” position.
2. Start the vehicles engine, and check all connections for leaks. If leaks are found, turn off engine and repair before continuing.

3. Allow engine to operate until thermostat opens, and coolant flows through clear Female Hose Adaptor. This indicates that coolant is flowing.
4. Turn the “Service Selector” handle so that the handle is pointing toward the “Flush Service” position.
5. Verify that the machines “New-Fluid-Tank” still remains at a capacity equal or greater than that of the vehicle being serviced.
6. Place and secure the open end of the clear Drain Hose into the ‘Used- Coolant Tank’ (or specified waste container or drum). Verify that the waste container is either empty, or that it has enough space to hold the capacity of the vehicles waste coolant.

NOTE: On large vehicles with systems holding more than 24 quarts, a drum should be used to collect the used coolant to avoid overflowing the waste container.

7. Turn the vehicle’s engine “OFF”.

CAUTION: The upper radiator hose adaptors and fittings will be HOT. Use shop towel and/or gloves to protect from injury.

8. Disconnect the clear Female adaptor hose from the Male radiator hose adaptor on the vehicle. Connect the machine’s clear service hose to the Female adaptor, which is connected to the radiator.
9. Connect the clear used coolant Drain Hose to the Male radiator hose adaptor, which is secured into the vehicles radiator hose. Verify that the machines “Service Pump” toggle switch is in the “On” position. At this time, the machine may begin pumping new coolant to the vehicles radiator.
10. Immediately start the vehicle, and the coolant displacement/exchange will begin.
11. During the coolant exchange, as the vehicles thermostat opens and closes, the machine will automatically cycle on and off, to protect the system from over-pressurization.
12. **IMMEDIATELY** turn “OFF” the vehicles engine when the process complete light and buzzer come on. This indicates that the fluid exchange process is complete.
13. Turn the “Service Pump” switch to the “OFF” position,
14. Carefully remove radiator cap, so that you can view the coolant level in the radiator. When fluid level drains down below the upper radiator hose level, **IMMEDIATELY** disconnect the used coolant Drain Hose from the Male radiator adaptor.
15. Immediately disconnect the used coolant Drain Hose from the Male radiator hose adaptor.

CAUTION: If the used coolant drain hose is left connected, damage may occur to vehicle due to excessive siphoning/lowering of coolant in cooling system.

F) Disconnect Procedures

1. Attach pinch pliers to upper radiator hose halfway between radiator and engine block.
2. If additional fluid needs to be removed from radiator, insert machines open-ended hose into the radiator fill neck and evacuate fluid until coolant level has dropped below the upper radiator-hose fitting on radiator.
3. Remove both Female and Male adapters from the vehicle, and re-attach the vehicles upper radiator hose to the radiator. Tighten hose clamp securely.
4. Remove pinch pliers from radiator hose.
5. Add radiator treatment to the radiator, and verify if top off is needed.
6. If additional fluid is needed for topping off radiator and/or overflow tank need fluid, verify that the New-Fluid Tank has Fluid in it.
7. Attach the clear open-ended adaptor hose onto the clear service hose, and insert hose into the radiator fill neck, or overflow tank.
8. Then push and hold the “Top Off” switch on the face panel to add extra coolant to either the radiator or the overflow tank.
9. Start engine with the radiator cap removed, and allow coolant to circulate and purge any remaining air.

NOTE: If any vehicle being serviced requires air-bleeding procedures refer to the manufacturer’s service manual for proper directions.

10. Recheck fluid levels, then re-attach the radiator cap securely.
11. Allow engine to operate 3 to 4 minutes and check for leaks before shutting off engine.

G) To Clean Out Machine For Use With Alternate Coolant Types

1. Attach machine to vehicle battery, or battery charger by connecting the machines red battery clip to the positive (+) battery terminal, and the black battery clip to the negative (-) battery terminal.
2. Point the “Service- Selector” handle toward the “Flush Service” position.
3. Connect the clear open-ended adaptor hose to the machines clear service hose, and place into a clean container.
4. Place the machines “Service Pump” toggle to the “On” position.
5. After all fluid has been purged from the lines, turn Service Pump toggle switch to the “Off” position.
6. Fill the New-Fluid tank with fresh alternate fluid, and purge system by placing the clear open-ended hose into the Used-Fluid Tank, and switch the unit’s “Service Pump” toggle switch to the “On” position. Observe the flow through the clear service hose, until a solid stream of the clean alternate fluid is flowing through the service hose.
7. Disconnect the open-ended clear adaptor hose from the end of the machines clear service hose, and leave the main “Service Pump” toggle switch to the “Off” position.
8. Verify that the machines new fluid tank still remains at a level equal to or greater than the capacity of the vehicle being serviced. Machine is now ready.