

Safety Recommendations:

- Use extreme safety measures when working on a hot cooling system.
- Never remove the radiator cap from a pressurized system.
- Always use safety glasses.
- It is a good idea to wear insulated gloves.



Hose Identification:

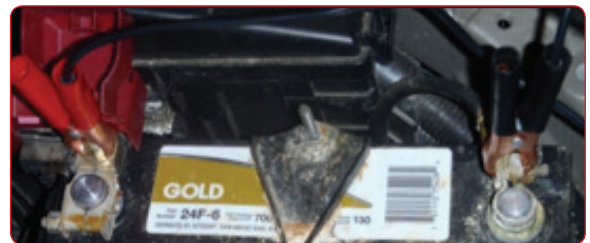
- Left (Black) is the vacuum and waste hose.
- Right (Red) is the service hose.



Machine Preparation:

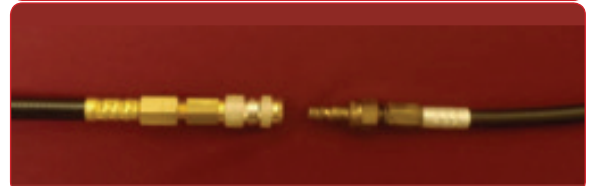
- Power the machine by first attaching the RED to positive and then BLACK to negative battery clamps, using a 12 volt DC power supply, preferably the vehicle's 12 volt DC system battery.

NOTE: For the machine to operate correctly requires a minimum of 12 volts DC.



Depressurize the Cooling System:

- Attach the RED service hose to the waste fluid nipple on the back of the machine.
- Attach the machine's BLACK vacuum hose with open end adapter to the vehicle's overflow nipple at the radiator cap.



Depressurize the Cooling System: (continued)

- Set the machine to "EVAC."
- Turn the machine's "POWER" to "ON."
- At this time, vacuum should be applied to the overflow nipple.



Depressurize the Cooling System: (continued)

- As you turn the pressure cap, it has two steps; if you carefully turn it ¼ to ½ turn to the first step, it will begin to relieve the pressure but the cap cannot come off. The vacuum that is being applied to the nipple will relieve the pressure safely into the machine.



Depressurize the Cooling System: (continued)

- When the system has been depressurized, you should be able to easily squeeze the radiator hose shut between your thumb and finger.



Coolant Look-Up:

- Look up the type and quantity of coolant for the vehicle in a coolant specification guide, electronic data base or other source.

2.5L	1987-00	12	12	EG
4.0L	1987-01	12.5	12.5	EG
4.0L	1993	12	12	EG
	1994-98	13	13	EG
	1999-00	14	14	(28)
	2001-03	13		
4.7L	1999-00	14		
	2001-03	14		
5.2L, 5.9L	1993-98			
4.0L	1993			
4.2L	1987-88	12.5		
		14.0		

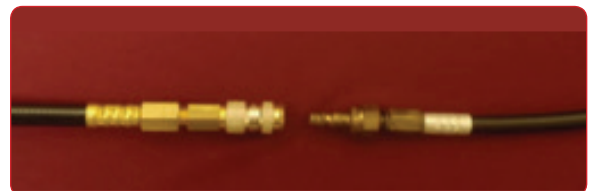
Prepare the Machine:

- Remove the fill cap on the new coolant tank and fill the machine with the appropriate solution of antifreeze (coolant)/water.
- Always use the machine's measuring scale for quantity. The tank holds extra coolant for top off reasons, so you may need to replenish.



Evac old Coolant:

- Begin the service by attaching the open end Black adapter hose to the machine's Black Vacuum hose.
- Next, attach the RED service hose to the waste fluid nipple on the back of the machine.



Evac old Coolant: (continued)

- The black hose can now be used to suction out the overflow reservoir and reduce the radiator level to reduce spillage when you disconnect the radiator hose. To do this, set the machine's switch to "EVAC," turn the power button on and suction where needed.

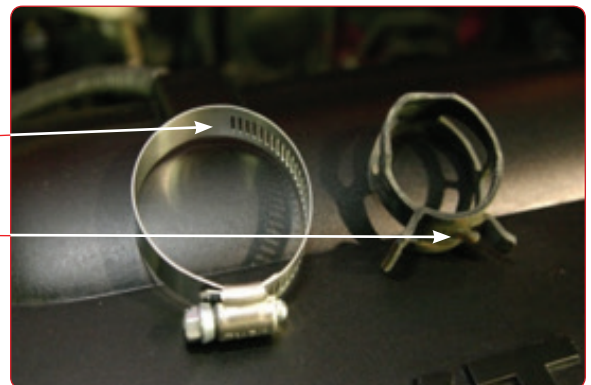
NOTE: *The service hose must be connected, or the suction tool won't work. When suctioning the overflow reservoir, do not try to pull out solids that may have accumulated in the bottom. To clean these solids may require reservoir removal and off-car cleaning.*



NOTE: *For the next steps, always use worm gear style clamps to secure the adapter. Never use pinch type clamps for this process!*

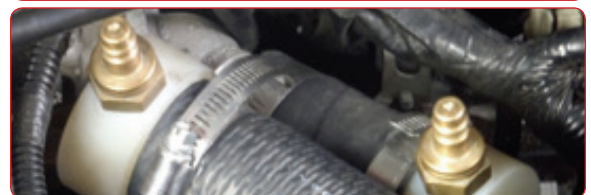
Worm gear – Okay to use

Pinch type – Do not use



Adapter Connection & Thermostat Identification:

- Attach the adapters to the open end of the hose and either the radiator neck or vehicle goose neck, whichever is available.
- Attach the BLACK waste hose to the other adapter.
- Locate the thermostat housing and attach the RED service hose at the hose end toward the thermostat. See illustration.



Preparing the Cooling System for Service:

- Pour the entire contents of a "Cooling System Cleaner" into the radiator.
- Top off the cooling system with water and secure the radiator cap.
- With pinch pliers, block the overflow and remote reservoir hoses.
- Set the heat to high and the blower to the lowest setting.



Performing the Loop Service:

- Set the machine to "LOOP."
- Start the engine and set idle at 1200 to 1500 rpm (use "Throttle Depressor Tool" or other means) and allow the engine to reach operating temperature. You will know when this occurs by observing coolant flow through the "Flow Indicator" on the machine faceplate.
- Allow the engine to run an additional 10 minutes. This allows the cleaner to do its job.

NOTE: *After the cleaner has time to neutralize acids and remove rust and scale, remove the "Throttle Pedal Depressor" tool or return to idle speed as applicable and turn the engine off.*



Performing the Service:

- Set the machine to "SERVICE."
- Turn the machine's "POWER" switch to "ON."
- During the Service the Thermostat will be held open by pressure from the machine's pump; this will allow new coolant to be pushed into the cooling system and used coolant will be pushed to the machine's waste tank.



Service Complete:

- When the coolant level in the machine reaches the 2 quart level, the pump stops, the "SERVICE COMPLETE" light glows and an audible alarm sounds.
- Turn the machine "OFF."
- Carefully disconnect the RED service hose and BLACK waste hose from the vehicle.



Return Vehicle to Normal Operation:

- Carefully proceed with disconnecting the machine and adapters, reconnect the radiator hose.
- Add any additional products at this time.
- Top off radiator and fill the overflow reservoir.
- Perform system air bleeding as necessary.
- Allow vehicle to run; check for leaks, check for overheating.

