

## USER'S MANUAL

### Have Technical Questions?

If you have questions, or require technical service, please contact our trained service technicians at:

1-314-679-4200 ext. 4782

Monday - Friday 7:30 am to 4:15 pm CST

Visit our website at [www.mityvac.com](http://www.mityvac.com) for new products, catalogs and instructions for product use.

### Need Service Parts?

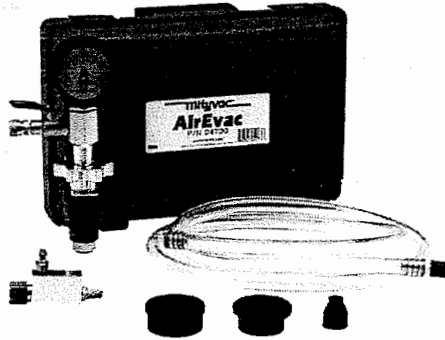
To order replacement or service parts, visit us online at [www.mityvacparts.com](http://www.mityvacparts.com) or call toll free 1-800-992-9898.

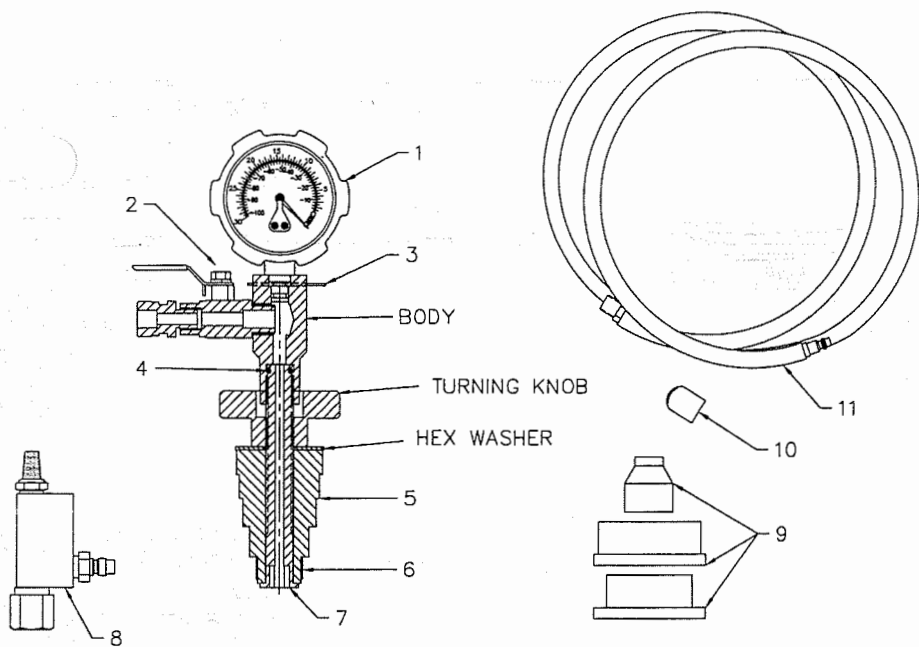
### SPECIFICATIONS:

Air Inlet Size: 1/4" NPT

Min. Inlet Air Pressure: 90 PSI (6.2 Bar)

Max. Inlet Air Pressure: 120 PSI (8.3 Bar)





	PART NO.	DESCRIPTION
1	823321	VACUUM GAUGE
2	823484	FLOW CONTROL VALVE
3	823483	RETAINING CLIP
4	823482	O-RING
5	823479	RUBBER ADAPTER KIT
6	823480	METAL RING
7	823481	BRASS BOLT
8	823491	VACUUM PUMP ASSEMBLY
9	823486	RUBBER BUSHING KIT
10	823487	SCREEN CAP
11	823485	HOSE ASSEMBLY

**CAUTION!****TO AVOID PERSONAL INJURY AND/OR VEHICLE DAMAGE:**

While some precautions are specified in this manual, and should be noted to avoid personal injury or vehicle damage, it is not possible for these cautions to cover all conceivable ways in which service or testing might be done, or all possible hazardous consequences of each way, nor could Lincoln possibly know or investigate all such ways. It is therefore the responsibility of anyone using this manual or any other Mityvac product, to satisfy him or herself completely that neither personal safety nor vehicle safety will be jeopardized by the service methods selected. Any such injury or damage is entirely the user's responsibility. This device is not to be used in any manner on the human body.

### Instructions for Evacuating the Cooling System and Checking for Leaks

**Important:** This kit is designed for servicing a variety of vehicles in a safe, convenient manner. However, differences in radiator and expansion tank filler necks prevent its use on every possible make and model. The procedures below are to serve as guidelines for the use of this equipment, in addition to these guidelines, always follow the manufacturer's recommended procedures when servicing each unique vehicle.

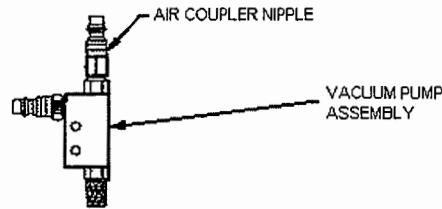


## WARNING

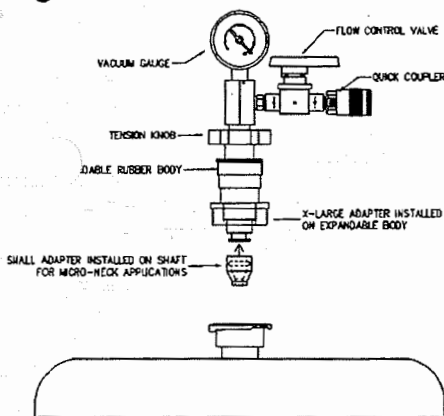
Never remove the radiator cap or expansion tank cap while the engine is at operating temperature. Always allow the engine to cool before removing the radiator cap or expansion tank cap. The cooling system is under pressure. Failure to allow the engine to cool before opening the cooling system could result in serious injury.

1. Properly position the vehicle for service access to the radiator or coolant expansion tank. Turn on the heater control, and set it to its highest temperature setting.
2. Thread a ¼" NPT air coupler nipple (not included) compatible with your compressed air system, into the Vacuum Pump Assembly.

**Figure 1**



3. After ensuring the engine and cooling system are cool, cautiously remove the cap from the radiator or coolant expansion tank.
4. Turn the tension knob on the Cooling System Adapter Assembly counter-clockwise until all tension has been relieved from the expandable rubber body. (See Figure 2.)
5. Insert the expandable rubber body of the Cooling System Adapter Assembly into the filler neck of the radiator or coolant expansion tank until the largest possible diameter fits snugly. Note: In case none of the diameters on the expandable rubber body fits snugly, two additional bushings have been provided. These bushings install over the second step of the rubber body, and allow a snug fit with larger diameter filler necks. A third "micro-neck" rubber adapter has also been included, and can be installed onto the head of the shaft on the adapter, below the expandable rubber body. (See Figure 2.)

**Figure 2**

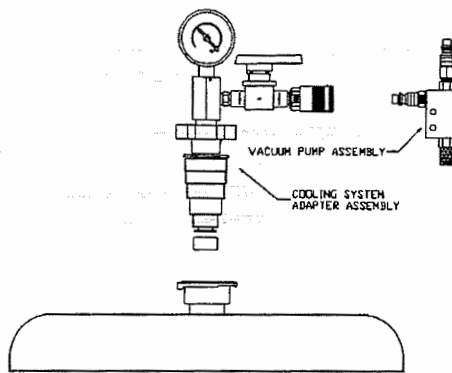
6. Turn the tension knob clockwise to expand the rubber body until it comes into firm contact with the interior wall of the radiator or expansion tank filler neck.

7. Check the connection by holding the radiator or expansion tank stable while carefully attempting to pull up on the adapter. If the adapter comes free or is not snug, increase the tension by further rotating the tension knob.

**Caution: Some late-model vehicles are equipped with radiators or coolant expansion tanks made of plastic. Excessive over-tightening (expansion) of the rubber adapter could result in cracking the radiator or expansion tank. Use caution when tightening the expandable rubber adapter.**

8. Utilizing the quick coupler connection, connect the Vacuum Pump Assembly to the Cooling System Adapter Assembly. (See Figure 3.)

9. Connect clean, dry, regulated compressed air between 90 and 120 psi (6.2 to 8.3 bar), to the Vacuum Pump Assembly by means of the previously installed air coupler nipple.

**Figure 3**

10. Turn on the compressed air, and open the flow control valve on the Cooling System Adapter Assembly. The venturi action of the vacuum pump will make a hissing noise as air is removed from the cooling system. If the cooling system is not empty, coolant may be sucked through the vacuum pump and sputter from the muffler.

11. While watching the gauge, allow the vacuum pump to pull air from the cooling system until it reaches 24 to 26 in. Hg (81 to 88 kPa). This process should take less than a minute. Note: As air is evacuated from the cooling system, it is normal for radiator hoses to collapse. If the system fails to pull a vacuum, check to see if there are any overflow hoses that need to be clamped off in order to produce a closed system.

12. Once the cooling system has reached 24 to 26 in. Hg (81 to 88 kPa) vacuum, close the valve on the Cooling System Adapter Assembly, disconnect the air supply, and then disconnect the Vacuum Pump Assembly.

13. Watch the gauge for at least 30 seconds. It will maintain the 24 to 26 in. Hg (81 to 88 kPa) reading if the system does not leak.

Follow the procedures below to properly refill the cooling system before relieving the vacuum from the system.

#### Refilling the cooling system

1. Follow the procedure above to evacuate and check the cooling system for leaks. If the system has a leak, repair it and re-evacuate the system.
2. With a vacuum of 24 to 26 in. Hg (81 to 88 kPa) on the system, connect the Coolant Hose Assembly to the Coolant System Adapter Assembly. (See Figure 4.)
3. Submerge the free end of the coolant hose into a supply of coolant. Ensure there is enough coolant to refill the system, or air will be pulled back into the system, and the system will not fill to the proper level.
4. Open the flow control valve on the Coolant System Adapter Assembly, and the system will refill with coolant.
5. When the vacuum gauge reading reaches zero (0), the cooling system is full.
6. Remove the Cooling System Adapter from the radiator or expansion tank by turning the tension knob counter-clockwise.
7. Start the engine and allow it to reach operating temperature.
8. Top-off the coolant level in the radiator or expansion tank as required, and reinstall the cap.

Figure 4

