A/C System Orifice Tubes

Global Parts Distributors, LLC

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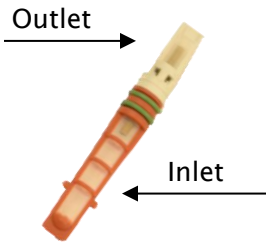
What is an Orifice Tube?

The orifice tube creates a restriction to drop the pressure/temperature (30°F) but also needs to allow enough liquid refrigerant through to easily flood the evaporator. It is a fixed device with a known diameter at the outlet with no ability to control the refrigerant flow, so it works with the compressor to maintain low side pressure at a sufficient level to keep the evaporator flooded.

Where is the Orifice Tube Located?

The orifice tube can be located in different places in the A/C system. Check the specifications of the vehicle you are working on to find its correct location.



- Some systems are designed so that the orifice tube is mounted in the high side of the liquid refrigerant line in the evaporator.
- In some systems, the orifice tube can be mounted in the condenser outlet, which can soften the hissing noises that traditionally are produced when this type of A/C system is turned off.

Quick Tips:

- The "t-top" orifice tubes are designed to be placed in the condenser, whereas other orifice tubes are evaporator mounted.

- The small side (outlet) always faces the evaporator.
- System debris will clog an orifice tube, and sometimes the orifice tube can be very helpful with the diagnosis of compressor/system issues. A clogged orifice tube will starve the compressor of oil, causing it to fail.

Figure 1.1 • The color of the orifice tube identifies the diameter size.

- When deciding which orifice tube you should use, remember that color is important. <u>Orifice tube colors identify orifice diameters. (See Figure 1.1)</u> Substitution of different color orifice tubes will not work. For example, a white orifice tube cannot be substituted for a yellow orifice tube or a red for blue. Always follow the manufacturer's recommendations for the exact color and fit.

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Tips For Installation and Removal of Orifice Tube:

Figure 1.2

- Sometimes, removing the orifice tube can be close to impossible. If you try and wiggle them with a tool when they seem stuck, the tube can be bent out of shape, making it impossible for the new orifice tube to seal correctly. (See Figure 1.2) Instead, try using heat to soften the o-rings to be able to easily remove the orifice tube. This can help prevent from damaging the line.

Figure 1.3

- Some liquid lines are serviceable and are able to be opened to remove the orifice tube, but some already have the orifice tube mounted and cannot be removed. This is easy to identify by crimp marks on the line. In this instance, we recommend you replace the line. (See Figure 1.3)

Figure 1.4
Inline Filter
(3441243)

Figure 1.5
Orifice Tube
(3411241)

- On some late model GM, Ford, and Toyota vehicles, an inline filter (See Figure 1.4) is used on the outlet of the condenser. Techs not familiar with this type of system can get confused and think it is an orifice tube (See Figure 1.5) because of the similarities in the design. These inline filters will always need to be replaced each time the system is opened.