

DOC'S BLOCKS
AUTOMOTIVE AIR CONDITIONING REPAIR

Question:

How does an orifice tube fail?

Answer:

An orifice tube is nothing more than a piece of tubing. It is encased in plastic that also has screens on both ends. The outlet screen is a finer mesh than the inlet screen. This is to filter out particles that could restrict the tubing. The hole in the tubing is a size arrived at by the size of the evaporator. Sizes vary from .072 inches inside diameter down to .047 inches. The purpose is to control flow into the evaporator allowing it to be properly filled. Each size tube is a different color. This assembly is referred to as an orifice tube and is installed in one piece.

The orifice tube fits into the liquid line somewhere between the condenser and the evaporator. The pull-tabs location near the end of the tube will determine if the tube is in the condenser or in the liquid line. An o-ring is on the orifice tube to seal between the orifice tube and the liquid line pipe. Many orifice tubes are serviced with replacement of the liquid line.

There are only two things that will happen to the orifice tube. The first, and most common, are a restriction on the orifice tube screen. Material that ground up in the compressor passes out and through the system. The tube, because it is a restriction, catches this material. The tube can't be cleaned, so must be replaced. If the o-ring were to get cut while installing the tube, this would cause the system not to operate. The uncommon thing to happen is the liquid line pipe is damaged and the orifice tube o-ring is not sealing.

Technicians working on a system that has failed will inspect the orifice tube to determine the extent of contamination in the system.