

## *DOC'S BLOCKS*

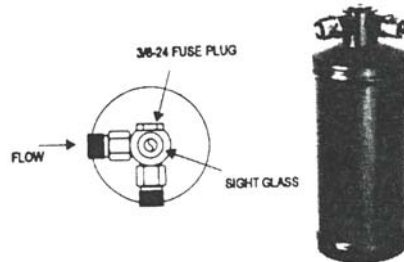
# AUTOMOTIVE AIR CONDITIONING REPAIR

### **Question:**

If the system has a sight glass can it be used?

### **Answer:**

For the first thirty years of automotive air conditioning, the systems had a sight glass in the liquid line. The theory of service was to clear the sight glass of bubbles and add one-half-pound of refrigerant. Bubbles were formed as the results of a low charge of refrigerant passing through the receiver dryer carrying oil. The bubbles would clear in the sight glass when the dryer was about ¼ full. The added refrigerant acted as a reserve to the system.



American Motors vehicles were the first not to use a sight glass. Most glasses were and are located in the receiver dryers. The orifice tube system has never used the sight glass. Although there are still some vehicles made in latter years with a sight glass, most have stopped using them.

The reasoning behind the elimination of the sight glass was that it is not accurate to achieve the correct charge. Even before the use of R-134a, the redesign of the systems caused the system to be overcharged if the sight glass was used. When it was determined that refrigerant harmed the ozone, systems that leaked or were involved in a collision, still released too much refrigerant into the atmosphere. As early as the mid to late eighties, systems were being downsized to reduce the amount of AC charge. Redesign of the receiver dryers and the style of desiccant used, made the sight glass unusable. There used to be a block or beads of desiccant used. Now there are bags of desiccant used that take up more room in the dryer. Desiccant is the drying agent used inside the dryer.

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### **AUTOMOTIVE AIR CONDITIONING REPAIR**

During service, if the sight glass is cleared, high side pressures will increase as much as fifty pounds. The air delivery temperature will be about fifty to fifty-five degrees.

The sight glass can be used as reference to flow but the glass should not be cleared.