When to replace a Receiver Dryer

The receiver dryer is a filtering unit, located on the high-pressure side of the AC loop, between the condenser and the expansion valve. The receiver dryer's main role is to filter particles and debris in the AC circuit, as well as to absorb any moisture in the system. Nissens explains receiver dryer problems, handling tips and when to replace the dryer.

Problem

The receiver dryer is crucial for optimal system operation and provides protection for the compressor. Absorbing moisture in the AC system prevents interior corrosion, and ensures proper system/compressor lubrication. In addition, particles, debris, metal chips, and other materials flowing in the loop are filtered by the receiver dryer and are kept away from the system components, preventing them from clogging the condensor, expansion valve and evaporator or seizing the compressor).

If the receiver dryer is worn out, damaged or not operating, it will eventually lead to circuit clogs, abnormal system pressures and a lack of performance. This will seriously affect other system components, especially the compressor.

Under normal running conditions, both inlet and outlet lines of the dryer should feel warm to the hand, and be more or less of the same temperature. A cold outlet line on the dryer, or any frost spots, indicates a dryer failure.

Recommended Solution

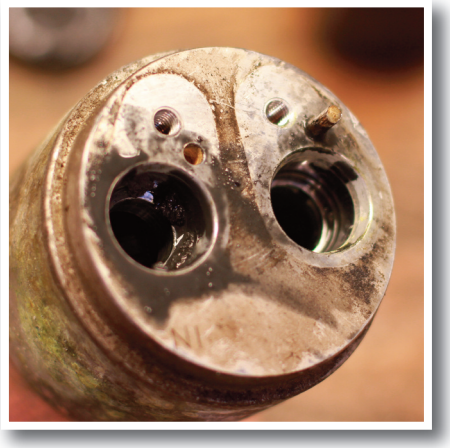
The receiver dryer must be regularly replaced. It is recommended to replace the receiver dryer every second year, or whenever the AC circuit has been opened.

Always install a new receiver dryer when the compressor is replaced, and always when a serious leakage has been noticed and repaired. During service procedures, such as flushing the system, the part must be bypassed and replaced after the procedure is completed. Follow user manuals and manufactures guidelines whenever applying additives such as UV dye agent, stop-leak, and/or flushing agents. Excessive volume or improper use of additives and/or oil will spoil the receiver dryer.

Avoid exposing a new dryer to ambient air by, for example, removing sealing caps or leaving the circuit open without seals.

What can effect receiver dryer function?

Wear - Filtering and desiccant layers are normally worn out after a period of time. This will cause the dryer to lose its ability to properly filter the refrigerant and absorb moisture.



Contamination of the inlet or outlet will cause the receiver dryer to clog

Worn out desiccant and filtering layers inside the receiver dryer

The desiccant layer inside this receiver dryer is overflowing

Worn out insert bag dryer - desiccant soaking by too much UV agent added to the system

System opening - If the system is opened during service procedures or the system is leaking, the extremely hygroscopic desiccant will quickly extract moisture from the air, thus lose it's ability to remove any humidity from the system when sealed. Running the system empty, due to leakage, will also negatively impact the dryer.

Excessive AC contamination - Particles produced by chemical reactions caused by inappropriate use of additives (flushing, stop-leak agents), wrong oil mixtures, particles from a compressor seizure, inner corrosion and/or carbonised oil caused by overheating, can quickly soil and clog the receiver dryer.

Too much oil in the system - If the recommended lubricant volume is exceeded, it reduces the dryer's ability to filter the system properly, as the desiccant and filter layers will overflow. Too much UV agent or flushing agent residues in the system will have the same effect on the receiver dryer.

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