TECH TIPS

COMPRESSOR FAILURE

Follow all local, state, and federal regulations when servicing auto A/C systems.

The technician installing a compressor needs to comply with the manufacturer's recommendations, ensuring that the proper amount of lubricant and refrigerant have been installed after the a/c system has been flushed and the necessary components have been replaced.

- ***When a compressor is operating normally, not all of the lubricant stays in the compressor, but rather, the lubricant flows through the a/c system alongside the refrigerant.***
- ***A/C systems with an improper amount of refrigerant can impact the flow of lubricant.***
- ***An un-diagnosed problem in the condenser that impedes or stops the proper flow of the lubricant will result in a premature compressor failure.***
- ***When installing a replacement compressor, remember that improper mounting to the compressor mounting bracket can also contribute to leaks and/or noise.***

Lubricant/Refrigerant

Presently, one of the most common failures in new compressors exists when a compressor begins operating without the proper amount of lubricant and/or refrigerant. If the installer does not follow the manufacturer's recommendations, the compressor could be damaged.

- If there is **not enough refrigerant** in the system, the movement of lubricant will be greatly affected. There will not be enough lubricant moving alongside the smaller amount of refrigerant.

- If the system is over-charged with **too much refrigerant**, the flow of lubricant can be affected by the higher head pressure, resulting in the possibility of pooling in the condenser and/or drier.

- If a refrigerant leak develops anywhere in the pressurized system, the oil will also leak out. A considerable amount of oil can leak out in a very short period of time, and in many of today's A/C systems, a compressor failure can occur after only a very small oil leak.

- The industry standard of adding oil is to install ½ of the recommended oil amount into the compressor and the other ½ into the accumulator. Concerning the receiver/drier systems, the industry standard is to add ½ the oil charge to the compressor and the rest throughout the system.

TECH TIPS

Condenser

Pay special attention to the cause of any compressor failure, for that same failure may have a negative, residual impact on the replacement compressor. When a condenser has been subjected to a heavy load of contaminants from the previous compressor, the Installer usually flushes the condenser to begin an assessment.

- Common assumptions would correlate a clean flush with a good condenser, however, most modern condensers are “dual pass,” with passages the size of a common ballpoint pen tip. This means that the discharge line from the compressor to the condenser splits into, at least, two parallel passages at the top.

- If one of these passages happens to be clean while the others are clogged, the flush will take the path of least resistance, flowing through the open side unimpeded. This leaves a large amount of contaminants in the system, unnoticed by the installer.

- If a significant amount of these compressor contaminants leave the condenser, they will flow to other components and will potentially cause the slowing or stoppage of the lubricant.