

UAC 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.

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.

