

TECH TIP

Replacing the A/C Compressor Assembly vs Clutch Assembly

When diagnosing a failed A/C compressor/clutch assembly, keep in mind that there are several possible causes for the failure, and that the least expensive repair may not completely and permanently fix the A/C system.

An example of this is when an A/C clutch is replaced. What may appear as a simple clutch failure is very often the result of other system problems, such as oil starvation (due to loss of refrigerant or restricted flow), low voltage to the clutch coil or extreme high pressure (due to clogged condenser, non-operating condenser fan, improper refrigerant or overcharge). If high-side pressure climbs to any excessive amount, the compressor will get extremely hot, and the grease will melt out of the clutch bearing and cause rapid failure. These conditions will damage internal compressor components, and just replacing the clutch assembly will lead to another failure. The only way to properly repair this type of failure is to diagnose the entire system, replace the compressor/clutch assembly, replace related items (accumulator/filter drier, orifice tube/expansion valve etc.) and thoroughly flush the system.

Also be aware that a clutch failure for any reason can damage the compressor shaft seal, nose, and bearing, and this damage may not be immediately visible. The heat generated by a clutch failure can distort the nose on any aluminum compressor, which will cause the replacement clutch assembly to fail. In these cases, the entire compressor/clutch assembly should be replaced, along with complete system repair.