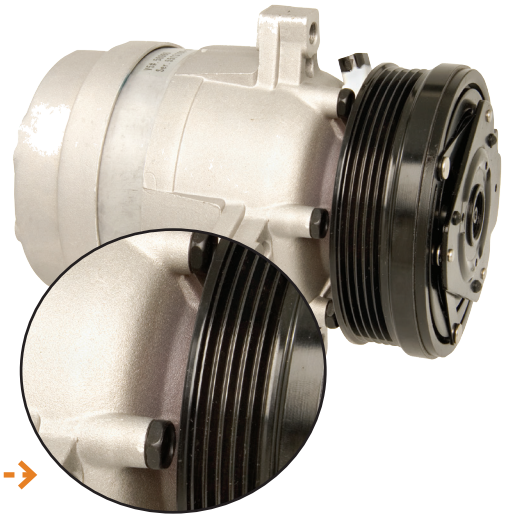




# QUICK TIPS

## 1. FRONT SEAL LEAK

It is normal to see a small amount of lubricant at the front seal upon initial installation, however it does not necessarily mean the compressor leaks. Front seal leaks on a new compressor are most commonly caused by lack of proper lubrication prior to start up. To reduce potential for a leak, prop the compressor with the front seal down for 5 - 10 minutes just prior to installation. This will ensure that the lubricant reaches the front seal. Once the compressor is mounted on the vehicle, rotate the compressor shaft using a spanner wrench a minimum of 10 times. This will properly seat the front seal and move the excess liquid lubricant out of the compressor.



## 2.



## CASE LEAKS

Some compressors are designed with two case halves and a center seal (GMs H6 variants for example). It is crucial that these compressors sit flush on the mounting surface to avoid distorting the case. To check the mounting surface to compressor fit, set the compressor on its mount and try to rock it from corner to corner. If it moves, shimming may be required to restore a proper fit. Be sure to evenly torque the mounting bolts per the manufacturers' recommendations.

## 3.

## NOISY COMPRESSOR

Some compressor designs are inherently noisier than others. Excessive noise does not automatically mean the compressor is bad. Use a refrigerant identifier to check the system for NCDs (Non-Condensable Gas) such as air. As little as 2% air in a system can cause the compressor to make excessive noise. Also check for a loose or warped compressor mount. A compressor that is not properly secured can make noise as well. Finally, perform a temperature drop test to ensure that there are no restrictions in the system. A restriction can cause excessive system pressure and lead to a loud compressor.



# QUICK TIPS

## LACK OF LUBRICATION

4.



Proper lubrication is crucial in today's A/C systems. Modern compressors do not contain an oil sump and rely on an unrestricted flow of the proper refrigerant charge to move lubricant through the system. To illustrate just how critical the capacities have become, consider this: a 1998 Suburban with rear A/C took 11 ounces of oil and 64 ounces of refrigerant. Did you know the A/C system in a 2008 Scion TC contains only 3½ ounces of lubricant and 17 ounces of refrigerant? "Guesstimating" capacities or charging from 12 ounce cans is no longer an option if the intended result is reliable A/C system performance.

Another critical and often overlooked area is lubricant viscosity. Do you put the same oil in a small block Chevy as you do in a 2.0L turbocharged VW? Why not? A/C compressors should be viewed in the same light. Different compressor designs have different lubrication needs. Certain designs have tighter clearances, higher wear potential, different cooling rates, etc. that require using a specific viscosity (or weight) of oil. Using the wrong oil in the wrong system could lead to catastrophic results. For example, hybrid vehicles have no tolerance for oil that conducts electricity; they require a special non-conductive lubricant. So remember the next time you're doing an A/C job on a Toyota Prius, don't put regular PAG oil in it or you'll ruin it.

5.

## CONDENSER AIR FLOW

A common customer complaint is that their A/C doesn't blow cool air when their vehicle is stopped in traffic. This could be caused by inadequate airflow across the condenser. The condenser helps the system remove heat from the cabin to the ambient air using airflow across the unit to transfer the heat. Without proper airflow, the heat remains in the system causing the A/C to blow warmer as well as increasing system pressures and temperatures leading to premature compressor failure. To ensure proper condenser airflow, make sure that the fins are not bent and they are free of debris or obstructions. Additionally, make sure that the fan or fan clutch is functioning correctly and that the fan shroud or air dams are not damaged. Proper air flow across the condenser will help the A/C system dissipate the heat leaving you with a cool customer.



6.



## CHECK YOUR VOLTAGE

Voltage drop is an often overlooked issue in compressor replacement. If the symptom is a burnt clutch, bear in mind that something led to this failure. Merely replacing the clutch or compressor and not properly diagnosing the problem leaves you vulnerable for repeat failures of the same problem. It is important to make sure there is proper voltage going to the clutch after installation. If the voltage is insufficient, the clutch is prone to slipping and will start to overheat. The excessive heat will melt the grease out of the clutch bearing causing noise and rapid failure. This can be avoided by checking the voltage to the clutch after installation. Using a Volt/Ohm meter check the voltage to the positive side of the clutch coil. It should fall within 1 volt of the system voltage, never falling less than 12 volts. Anything less than 12 volts opens the possibility of slippage.