

AUTOMOTIVE AIR CONDITIONING REPAIR

Question:

Can fan blades, mounted on the water pump shaft, cause compressor failure?

Answer:

Yes, most definitely.

Fan clutches and heavy-duty blades can cause havoc with a compressor.

Highway speed driving causes the fan blade to turn so fast in the fan shroud that no air can enter the condenser or radiator. The engine may overheat, but it just might make it run hotter than normal. This action would cause the high side pressure to increase and in turn, damage the compressor.

Fan clutches can freeze up and become direct drives which means that at higher engine RPM, the fan blade will turn so fast inside the fan shroud, that it forms a solid wall.

If this condition is not addressed, several compressors may be installed on the vehicle and they will fail within thirty days.

Another down side to a frozen fan clutch is that the water pump shaft may twist in half as a result of the weight of the blade.

Fan clutches were first used to reduce parasitic drag on the engine. Heavy duty fan blades were first used to increase airflow across the condenser when operating at slower speeds.

A six or seven bladed fan or a frozen fan clutch causes the same problem. Reduced airflow at higher engine RPM.

Of course, if the fan clutch is frozen, replace it. If it is desired to run the direct drive blade, drill three or four one inch holes in the fan shroud and this will relieve the pressure and allow airflow.