

# COMPRESSOR INSTALLATION INSTRUCTIONS

## Always Practice Safety First!

- Air Bags (Caution)
- No Smoking
- Wear Eye Protection
- Work in a well ventilated area
- Wear Skin Protection (gloves)
- Recover refrigerant before making repairs

**WARNING: THIS COMPRESSOR MAY BE UNDER PRESSURE. TO AVOID POSSIBLE INJURY, WEAR EYE PROTECTION AND SLOWLY UNSCREW SHIPPING CAPS OR PLATE TO RELEASE PRESSURE. IF EQUIPPED WITH A SWITCH PORT PLUG, DO NOT REMOVE THE SNAP RING UNTIL PRESSURE HAS BEEN RELEASED.**

### **Follow all Federal, State and Local Regulations.**

Proper A/C performance is dependent on all systems performing properly. Make certain that the engine cooling system is at peak operation, and that the cooling fan / fan clutch is operating properly. Worn belts, idlers and tensioners can cause poor cooling system performance due to belt slippage. Low voltage at the A/C clutch assembly can cause premature compressor failure.

Contaminated refrigerant continues to be one of the most significant problems facing the A/C service industry today. Use a refrigerant identifier to verify that the refrigerant in the system is not contaminated with a blend refrigerant or has a high concentration of air.



### Tip!!!

When mounting the replacement compressor to the vehicle, the compressor must fit or rest with even contact at each mounting point. Warped brackets must be completely straightened or replaced. Leave mounting bolts loose until all bolts are in place. Tighten bolts equally according to torque specs for that specific compressor. **Do Not Over-Tighten.** (Over-Tightening Causes Leaks)

### Replace the Filter Drier or Accumulator

All **Filter Driers** and **Accumulators** contain a desiccant material. This material is designed to absorb the moisture that has seeped into the A/C system. Moisture in an A/C system can form corrosive contaminants that will cause rapid system failure. It is very important to remove all moisture from the A/C system before charging.

### REPLACE OR INSPECT THE CONTROL DEVICES

The **orifice tube** is a control and filter device for accumulator systems, and should always be replaced to ensure proper refrigerant and oil flow through the system. The **thermal expansion valve** is the control device for systems using a receiver/drier. It should be examined and replaced, if found to be contaminated.

### A Clean A/C System is Imperative

When a compressor fails, tiny internal particles mix with oil and spread throughout the entire system. This contaminated oil, as well as moisture and other corrosives must be removed to avoid premature failure of the replacement compressor. Clean the entire system thoroughly with an effective cleaning agent and/or replace contaminated parts. Air alone does not remove contaminants. Two methods used today are effective in removing oil and contaminants:

#### (1) liquid cleaning with an effective **cleaning agent**

Flushing with Dura Flush II or similar non-oil based flush designed specifically for automotive A/C use, is a proven method to clean A/C system components when used with a flush cylinder and pressurized air.

Closed loop flushing with a power flush machine and the machine manufacturer's approved solvent is an effective method to clean A/C system components. This cleaning method is utilized by several major OE service providers.

#### (2) **Closed loop power cleaning** using a refrigerant.

### Note

1996 and up condenser designs are difficult, if not impossible to thoroughly clean, and in many cases must be replaced.


### Proper Evacuation

The A/C system must be free of moisture and air to work properly. Removing the air and moisture with an A/C system **vacuum pump** for a minimum of forty-five minutes to an hour, is necessary to deliver proper long lasting A/C performance.



### Lubrication

The only moving component in the A/C system is the compressor, and adequate lubrication is critical. If oil or refrigerant charges are incorrect, internal damage to the compressor will occur! If uncertain about the proper lubricant type or amount, refer to the under hood decal, an O.E. service manual, by application on the on the ecatalog at [www.4s.com](http://www.4s.com) or the SMP mobile app, or the Capacity Guide.

Scan QR code for the application specific oil type and charge capacity guide. 



To ensure proper compressor lubrication, for compressors **without** an oil plug, install half the required system oil in the suction side. This may require turning the compressor shaft as the oil is installed. On compressors **with** an oil plug, remove the oil plug and add half the required system oil. The remaining amount of required system oil should be installed in the accumulator or low side of the system.

**To ensure that the front seal is lubricated and does not leak, after the oil is installed, the compressor must be placed or held with the front seal down for 1 to 3 minutes, to allow oil to coat the seal. If this seal is not lubricated before installation, refrigerant may leak.**

This compressor has a color coded label over the ports with instructions indicating whether it should be drained prior to installation or not. **In all cases, add the correct type and amount of lubricant per manufacturer specifications.**

**Yellow label** = Drain oil from compressor. **Pink label** = Pre-charged with 3 oz of PAG oil

#### Use only the recommended Refrigerant Type and Amount

As technology has evolved, it is very important to check the manufacturers recommendation for refrigerant and oil type and amount. They are not all the same, some of the same applications may have two different types of refrigerant and oil. The correct amount of charge is critical for system efficiency and durability, because the refrigerant carries the lubricant through the system. Specifications can be found in the Capacities Guide, the under hood decal or an O.E. service manual.

#### Tip!!!

Dual A/C systems require additional refrigerant and oil, check vehicle specifications.

#### Compressor Rotation

Always rotate the compressor shaft at least 10 revolutions after the hoses are connected and prior to starting the engine. This will pump the excess liquid lubricant out of the compressor cylinders and into the system.

#### Clutch

Clutch coil voltage should be within one volt of system operating voltage. Anything less weakens the magnetic force of the clutch allowing slippage, increased heat, and failure. Clutch air gap (between hub and pulley) is important and should be checked before installation to ensure no changes have occurred during shipping and handling. Ask your suppliers for air gap specifications.



#### TIP!!!

After installation, with the engine idling, switch the compressor off and on 10 to 12 times. This will burnish the hub and pulley face removing any machining glaze or rust inhibitors and enhance complete surface contact.

#### Verify the Repair

Use an **electronic leak detector** or **fluorescent dye** to check for leaks. A leak will cause system failure. When repairs are finished, ensure that the job is done right the first time by doing temperature drop testing.

Suggested A/C tools & equipment:

- A/C O-Ring Lube
- Charging Cylinder
- Gauge Set
- Leak Detector
- Refrigerant Identifier
- Spanner Wrench
- Vacuum Pump

This compressor is warranted to be free from defects in materials and workmanship at the time of its manufacture. See your supplier for details of the terms and conditions of this warranty.

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\*Tech Tips can be found at [www.4s.com](http://www.4s.com) Product & Installation information can be found at [www.4s.com](http://www.4s.com)