



## It's All a Balancing Act

Why Oil Balancing is Critical When Replacing a Compressor

**Tech Tip** When installing a new service compressor on a vehicle it is important to make sure the compressor is oil balanced correctly with the correct type and amount of lubricant. The purpose of oil balancing is to make sure the amount of oil in the air conditioning system remains at the correct level.

The first thing to consider when performing the process is the amount of oil contained in the replacement compressor. This can vary from a full charge of oil (8 oz. (236 mL)), to a half charge of oil or no oil at all. If oil is contained in the replacement compressor it will have to be removed and reinstalled in the correct amount to properly balance the system.

### 1 Follow The Instructions

When performing a compressor oil balance, always follow the instructions provided with the compressor or in the vehicle service manual to know how much oil to add to the compressor prior to vehicle installation.

### 2 Add Correct Amount

Most times oil balancing involves draining and measuring the oil from the failed compressor, followed by adding a specific volume of new oil to the replacement compressor.

The amount of oil to be added to the compressor is specified by the compressor manufacturer.

### 3 Oil Viscosity

In addition to adding the correct amount of oil to a replacement compressor, keep in mind oil viscosity.

Use the viscosity of oil recommended by the compressor manufacturer. If the compressor requires heavier weight oil, such as PAG 150, but PAG 46, which is a lighter weight, is used, the result could be noisy compressor operation and premature wear.

### 4 Rotate The Compressor Clutch

After adding the oil to the compressor, a good service tip is to rotate the compressor clutch at least four turns prior to compressor installation. This serves two purposes. Rotating the clutch circulates oil through the compressor, which reduces the potential of compressor damage due to dry bearings, and it reduces initial torque when the clutch is

first engaged. By design some compressors have a high initial torque. If the torque is high when the compressor is engaged, the torque that is created could cause the compressor drive belt to snap or cause the engine to stall.

Rotating the compressor clutch is usually done by hand or with a spanner wrench.

Another option to the spanner wrench is the compressor turning tool. On direct drive compressors, the pulley and clutch are one and the same.

## **5 The Turning Tool**

The turning tool performs the same function as the spanner wrench, but it is installed on the threaded hub of the clutch.

After the turning tool is installed, use a wrench to turn the tool and clutch. The turning tool can be used on some clutches that cannot accept a spanner wrench because of clutch design, or where a solid grip by the spanner wrench cannot be achieved.

The turning tool can also be used in place of the spanner wrench, providing an easier method of clutch rotation, and it can be done off or on the vehicle.

## **6 Never Use A Socket**

Never use a socket on the shaft nut or bolt to rotate the clutch.

Doing so may affect the air gap between the clutch driver and compressor pulley, resulting in compressor issues.