

## Coil Testing

*The clutch coil on a compressor is an electro-magnetic coil, which pulls the clutch hub into contact with the spinning clutch pulley. A defective clutch coil can be diagnosed very easily.*

To properly diagnosis clutch coils:

### Step 1. Resistance Checks:

- Unplug the coil connector and read the resistance of the coil using an ohmmeter. Normal resistance of the coil is 3.0 to 5.0  $\Omega$  (ohms).
- If the coil resistance is incorrect, replace the coil, otherwise continue to step two (2).

### Step 2. Operational Voltage:

- Plug the coil connector back into the compressor.
- Start the engine and initiate the air conditioning system in the maximum power position.
- Using a multi-meter, back-probe the positive side of the clutch coil connector with the positive probe and the negative side of the clutch coil connector with the negative probe.
- The measurement of the clutch coil should be within 1-volt of charging voltage.
- An excessive drop in the available voltage can make the coil develop excessive heat, which can lead to premature failure of the clutch. If the operational voltage is not correct, utilize a wiring diagram and/or voltage drop testing to find the cause of the excessive resistance.

### Step 3. Voltage Drop Testing Feed (Positive) Circuit:

- Start the engine and place the air conditioning system in the maximum power position.
- Using a multi-meter, place the positive lead on the battery's positive post and back-probe the negative lead with the positive side of the clutch coil connector.
- The multi-meter should show 1.0 volts or less. Readings higher than 1.0 volts indicate excessive resistance in the circuit. The cause for the resistance will need to be found and corrected using the vehicles wiring diagram.

