

HAND-HELD TEMPSELECT COMPRESSOR DRIVER TOOL INSTRUCTION SHEET

69636 / 419635



Failure to follow directions for proper tool use will damage the unit and void the warranty.

Contents

- 1 Hand-held TempSelect Compressor Driver Tool
- 1 Tool Main Lead Set
- 13 Female Connectors, 11 Application Specific and 2 Universal Connectors
- 17 Male Connectors, 15 Application Specific and 2 Universal Connectors
- 1 Plastic Case

See back page for add-on interface adapter accessory.

WHY YOU NEED THE TEMPSELECT ECV COMPRESSOR DRIVER TOOL

Many vehicles today are equipped with an electronically controlled variable (ECV) displacement compressor. The pumping displacement of an ECV compressor is completely computer controlled, which can make it difficult to determine if an air conditioning problem is a computer control issue or a refrigeration system problem.

The TempSelect ECV Compressor Driver Tool enables you to quickly determine if the problem is an air conditioning performance issue or a computer control system issue. The tool enables manual control of compressor pumping displacement independent of the vehicle computer.

Diagnostic Capabilities

- Measures the resistance of the ECV control solenoid
- Monitors and displays the ECV duty cycle command from the vehicle's computer to the ECV solenoid in Normal mode
- Manually control compressor displacement to monitor system pressures thus confirming compressor function
- Can be used to confirm compressor function when ambient temperatures may not allow the compressor to reach maximum displacement
- **Note:** The maximum command from the tool is 84% to prevent excessive head pressure

The lead set has:

- Power supply for the tool (power & ground)
- Control circuit that connects to the displacement control solenoid on the compressor
- Lead set that connects to the vehicle's harness when it is disconnected from the ECV solenoid
- **Note:** If an application specific male/female pigtail is not available for the vehicle you are working on, you will need to use one of the universal pigtails. Before using one of these pigtails, you will need to determine if the compressor solenoid is ground or positive side controlled and connect the solenoid pigtail to the appropriate terminals of the solenoid.
- **WARNING:** Failure to determine correct polarity may result in tool damage and void the warranty. Use of a voltmeter may be required.

USING THE TOOL

Note: Perform steps 1 through 10 below BEFORE starting the engine. Always connect the tool power and ground lead BEFORE connecting the solenoid and ALWAYS disconnect the power and ground leads LAST when disconnecting the tool from the vehicle.

1. Connect a set of air conditioning gauges to the high and low side service ports.
2. Refer to the ECV solenoid pigtail application guide on the Four Seasons e-catalog and select the appropriate male and female pigtails for the vehicle you are working on.

HAND-HELD TEMPSELECT COMPRESSOR DRIVER TOOL INSTRUCTION SHEET

69636 / 419635

3. Connect the tool's positive battery lead to battery positive (+) and ground lead to ground (-).
4. Disconnect the vehicle harness from the compressor ECV solenoid.
5. Connect the tool solenoid harness to the solenoid using the selected female pigtail.
6. Connect the vehicle harness to the tool via the selected male pigtail.
7. Check that all leads are clear of all moving parts and are not touching hot engine parts.
8. Turn the tool on by pressing any button. The tool will turn on in Normal mode.
9. Before starting the engine, check the ECV solenoid resistance by pressing "Check Resistance" ("Ω") button on the tool. The screen will display the resistance value in ohms (Ω). Refer to your electronic repair information for the solenoid resistance specification. Typical solenoid resistance is 8 to 14 ohms. Additional diagnosis is required if solenoid ohms out of spec.
Note: Resistance can vary depending on engine compartment and/or ambient temperature.
10. With the tool in Normal mode, start the vehicle and turn on the air conditioning.
11. In Normal mode, the vehicle's air conditioning should operate normally. The screen will display the current duty cycle command being sent from the vehicle's ECU to the ECV solenoid.
12. Monitor ECV command value by varying the heat load on the system (e.g. increase/decrease blower speed, open or close doors, etc).
Note: The computer looks at many parameters (more than 20 in some cases) to determine appropriate duty cycle command to the solenoid. Key inputs are typically evaporator temperature, system pressure, A/C control settings, etc.
13. As heat load increases and the command value is zero or low in Normal mode and does not change, then suspect a computer control issue. Use a scan tool to check for diagnostic trouble codes.
14. Switch the tool to "Manual" mode. The tool will default to 0% command initially. The ECV solenoid can now be controlled directly by the tool by pressing the up/down buttons.
15. The first commanded value above zero is 18%. The command can be increased in approximately 2% increments up to 84.3%.
16. By increasing the command value, the solenoid should respond, causing the compressor to increase system pressures. This verifies compressor operation signifying a control issue, requiring further diagnosis. If the compressor does not respond, additional diagnosis of the A/C system is required.

Always power down the tool when not in use.

Interface Adapter, P/N 69702 / 412923 Supplement Your ECV Diagnostic Tool



- Perform tests on both positive and ground side controlled solenoids
- Monitor the duty cycle command signal in "normal" mode
- Confirm compressor operation and function in "manual" mode
- Directly measure ECV control solenoid resistance
- Confirm high speed cooling fan operation by controlling high side pressure