

	<p>1 Measure the resistance between:</p> <p>Vehicles with 2.5 and 3.0L engine -</p> <ul style="list-style-type: none"> pins 123 and 124 of the ECM. <p>Vehicles with 2.0L petrol engine -</p> <ul style="list-style-type: none"> pins 88 and 89 of the ECM. <p>Vehicles with 2.0L diesel engine -</p> <ul style="list-style-type: none"> pins 54 and 73 of the ECM.
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	<p>Is the resistance between 110 and 140 ohms?</p> <p>Yes GO to D13.</p> <p>No Please check part is not on any form of prior authorisation before replacement.</p>
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D13: CHECK FOR LOSS OF TERMINATION WITHIN THE IC

	<p>1 Measure the resistance between pins 17 and 18 of the IC.</p>
	<p>Is the resistance between 110 and 140 ohms?</p> <p>Yes Possible intermittent fault. Recheck DTCs.</p> <p>No INSTALL a new instrument cluster. REFER to: Instrument Cluster (413-01 Instrument Cluster, Removal and Installation). CLEAR the DTC, test the system for normal operation.</p>

PINPOINT TEST E : P1642; P1643; P1797: CAN NETWORK MALFUNCTION, ECM

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
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E1: CHECK THE ECM FOR DAMAGE

	<p>1 Inspect the ECM.</p>
	<p>Does the ECM indicate any signs of damage?</p> <p>Yes Please check part is not on any form of prior authorisation before replacement.</p> <p>No GO to E2.</p>

E2: CHECK CAN + FOR SHORT CIRCUIT TO GROUND

	<p>1 Measure the resistance between the diagnostic connector, pin 06, (Y) and GROUND.</p>
	<p>Is the resistance less than 10,000 ohms?</p> <p>Yes REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation.</p> <p>No GO to E3.</p>

E3: CHECK CAN + FOR SHORT CIRCUIT TO BATTERY

	<p>1 Measure the resistance between the diagnostic connector, pin 06, (Y) and pin 16 (OY).</p>
	<p>Is the resistance less than 10,000 ohms?</p> <p>Yes REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation.</p> <p>No GO to E4.</p>

E4: CHECK CAN - FOR SHORT CIRCUIT TO GROUND

	<p>1 Measure the resistance between the diagnostic connector, pin 14 (G) and GROUND.</p>
	<p>Is the resistance less than 10,000 ohms?</p> <p>Yes REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation.</p> <p>No GO to E5.</p>

E5: CHECK CAN - FOR SHORT CIRCUIT TO BATTERY

	<p>1 Measure the resistance between the diagnostic connector, pins 14 (G) and 16 (OY).</p>
	<p>Is the resistance less than 10,000 ohms?</p> <p>Yes REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation.</p> <p>No GO to E6.</p>

E6: CHECK FOR SHORT CIRCUIT BETWEEN CAN + AND CAN -

	<p>1 Measure the resistance between the diagnostic connector, pins 06 (Y) and 14 (G).</p>
	<p>Is the resistance less than 10,000 ohms?</p> <p>Yes REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation.</p> <p>No GO to E7.</p>

E7: CHECK FOR OPEN CIRCUIT ON CAN + BETWEEN THE DIAGNOSTIC CONNECTOR AND THE ECM

	<p>1 Disconnect the battery negative terminal.</p> <p>Vehicles with 2.5 and 3.0L engine -</p> <ul style="list-style-type: none"> Disconnect the ECM connector, EN16. Measure the resistance between IP22 pin 06 (Y) and EN16, pin 124 (Y). <p>Vehicles with 2.0L petrol engine -</p> <ul style="list-style-type: none"> Disconnect the ECM connector, EN65.
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	<ul style="list-style-type: none"> ● Measure the resistance between IP22 pin 06 (Y) and EN65, pin 89 (Y). <p>Vehicles with 2.0L diesel engine -</p> <ul style="list-style-type: none"> ● Disconnect the ECM connector, DL01. ● Measure the resistance between the diagnostic connector, pin 06 (Y) and DL01, pin 54 (Y).
	<p>Is the resistance greater than 5 ohms?</p> <p>Yes REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation.</p> <p>No GO to E8.</p>
E8: CHECK FOR OPEN CIRCUIT ON CAN - BETWEEN THE DIAGNOSTIC CONNECTOR AND THE ECM	
	<p>1 To test:</p> <p>Vehicles with 2.5 and 3.0L engine -</p> <ul style="list-style-type: none"> ● Measure the resistance between the diagnostic connector, pin 14 (G) and EN16, pin 123 (G). <p>Vehicles with 2.0L petrol engine -</p> <ul style="list-style-type: none"> ● Measure the resistance between the diagnostic connector, pin 14 (G) and EN65, pin 88 (G). <p>Vehicles with 2.0L diesel engine -</p> <ul style="list-style-type: none"> ● Measure the resistance between the diagnostic connector, pin 14 (G) and DL01, pin 73 (G).
	<p>Is the resistance greater than 5 ohms?</p> <p>Yes REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation.</p> <p>No GO to E9.</p>
E9: CHECK FOR CORRECT BUS TERMINATION	
	<p>1 Reconnect the ECM connector.</p> <p>2 Measure the resistance between the diagnostic connector, pins 06 (Y) and 14 (G).</p>
	<p>Is the resistance between 50 and 70 ohms?</p> <p>Yes Please check part is not on any form of prior authorisation before replacement.</p> <p>No GO to E10.</p>
E10: CHECK CONTINUITY OF THE CAN + CIRCUIT	
	<p>1 To test:</p> <p>Vehicles with 2.5 and 3.0L engine -</p> <ul style="list-style-type: none"> ● Disconnect the ECM connector, EN16, and the IC connector, IP10. ● Measure the resistance between EN16, pin 124 (Y) and IP10, pin 17 (Y). <p>Vehicles with 2.0L petrol engine -</p> <ul style="list-style-type: none"> ● Disconnect the ECM connector, EN65, and the IC connector, IP10. ● Measure the resistance between EN65, pin 89 (Y) and IP10, pin 17 (Y). <p>Vehicles with 2.0L diesel engine -</p> <ul style="list-style-type: none"> ● Disconnect the ECM connector, DL01, and the IC connector, IP10. ● Measure the resistance between DL01, pin 54 (Y) and IP10, pin 17 (Y).
	<p>Is the resistance greater than 5 ohms?</p> <p>Yes REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation.</p> <p>No GO to E11.</p>
E11: CHECK CONTINUITY OF THE CAN - CIRCUIT	
	<p>1 Measure the resistance between:</p> <p>Vehicles with 2.5 and 3.0L engine -</p> <ul style="list-style-type: none"> ● EN16, pin 123 (G) and IP10, pin 18 (G). <p>Vehicles with 2.0L petrol engine -</p> <ul style="list-style-type: none"> ● EN65, pin 88 (G) and IP10, pin 18 (G). <p>Vehicles with 2.0L diesel engine -</p> <ul style="list-style-type: none"> ● DL01, pin 73 (G) and IP10, pin 18 (G).
	<p>Is the resistance greater than 5 ohms?</p> <p>Yes REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation.</p> <p>No GO to E12.</p>
E12: CHECK FOR LOSS OF TERMINATION WITHIN THE ECM	
	<p>1 Measure the resistance between:</p> <p>Vehicles with 2.5 and 3.0L engine -</p> <ul style="list-style-type: none"> ● pins 123 and 124 of the ECM.

	<p>Vehicles with 2.0L petrol engine -</p> <ul style="list-style-type: none"> pins 88 and 89 of the ECM. <p>Vehicles with 2.0L diesel engine -</p> <ul style="list-style-type: none"> pins 54 and 73 of the ECM.
	<p>Is the resistance between 110 and 140 ohms?</p> <p>Yes GO to E13.</p> <p>No Please check part is not on any form of prior authorisation before replacement.</p>
E13: CHECK FOR LOSS OF TERMINATION WITHIN THE IC	
	<p>1 Measure the resistance between pins 17 and 18 of the IC.</p>
	<p>Is the resistance between 110 and 140 ohms?</p> <p>Yes Possible intermittent fault. Recheck DTCs.</p> <p>No INSTALL a new instrument cluster. REFER to: Instrument Cluster (413-01 Instrument Cluster, Removal and Installation). CLEAR the DTC, test the system for normal operation.</p>

PINPOINT TEST F : P1699: CAN NETWORK MALFUNCTION, ELECTRONIC AUTOMATIC TEMPERATURE CONTROL (EATC) MODULE

TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
F1: CHECK THE EATC MODULE FOR DAMAGE	
	<p>1 Inspect the EATC module for damage.</p>
	<p>Does the EATC module indicate any signs of damage?</p> <p>Yes INSTALL a new EATC module. REFER to: Climate Control System (412-00 Climate Control System - General Information, Description and Operation). CLEAR the DTC, test the system for normal operation.</p> <p>No GO to F2.</p>
F2: CHECK CAN + FOR SHORT CIRCUIT TO GROUND	
	<p>1 Measure the resistance between the diagnostic connector, pin 06 (Y) and GROUND.</p>
	<p>Is the resistance less than 10,000 ohms?</p> <p>Yes REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation.</p> <p>No GO to F3.</p>
F3: CHECK CAN + FOR SHORT CIRCUIT TO BATTERY	
	<p>1 Turn the ignition switch to the OFF position.</p> <p>2 Measure the resistance between the diagnostic connector, pin 06 (Y) and pin 16 (OY).</p>
	<p>Is the resistance less than 10,000 ohms?</p> <p>Yes REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation.</p> <p>No GO to F4.</p>
F4: CHECK CAN - FOR SHORT CIRCUIT TO GROUND	
	<p>1 Measure the resistance between the diagnostic connector, pin 14 (G) and GROUND.</p>
	<p>Is the resistance less than 10,000 ohms?</p> <p>Yes REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation.</p> <p>No GO to F5.</p>
F5: CHECK CAN - FOR SHORT CIRCUIT TO BATTERY	
	<p>1 Measure the resistance between the diagnostic connector, pin 14 (G) and pin 16 (OY).</p>
	<p>Is the resistance less than 10,000 ohms?</p> <p>Yes REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation.</p> <p>No GO to F6.</p>
F6: CHECK FOR SHORT CIRCUIT BETWEEN CAN + AND CAN -	
	<p>1 Disconnect the battery negative terminal.</p> <p>2 Measure the resistance between the diagnostic connector, pins 06 (Y) and 14 (G).</p>
	<p>Is the resistance less than 10,000 ohms?</p> <p>Yes REPAIR the short circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation.</p> <p>No GO to F7.</p>
F7: CHECK FOR OPEN CIRCUIT ON CAN + BETWEEN THE DIAGNOSTIC CONNECTOR AND THE EATC MODULE	
	<p>1 Disconnect the EATC module connector, IP101.</p> <p>2 Measure the resistance between the diagnostic connector, pin 06 (Y) and IP101, pin 22 (Y).</p>
	<p>Is the resistance greater than 5 ohms?</p> <p>Yes REPAIR the high resistance circuit. For additional information, refer to the wiring diagrams. CLEAR the DTC, test the system for normal operation.</p> <p>No</p>