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## 1990 FORD Scorpio Sedan OEM Service and Repair Workshop Manual

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<b>No</b>	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.
<b>A9 CHECK FOR CORRECT PCM (POWERTRAIN CONTROL MODULE) OPERATION</b>	
<ul style="list-style-type: none"> <li>• Ignition OFF.</li> <li>• Disconnect and inspect all PCM (powertrain control module) connectors.</li> <li>• Repair: <ul style="list-style-type: none"> <li>• corrosion (install new connector or terminals – clean module pins)</li> <li>• damaged or bent pins – install new terminals/pins</li> <li>• pushed-out pins – install new pins as necessary</li> </ul> </li> <li>• Reconnect the PCM (powertrain control module) connectors. Make sure they seat and latch correctly.</li> <li>• Operate the system and determine if the concern is still present.</li> </ul>	
<b>Is the concern still present?</b>	
<b>Yes</b>	CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, REFER to: <a href="#">Powertrain Control Module (PCM)</a> (303-14C Electronic Engine Controls - 3.5L EcoBoost (BM), Removal and Installation).
<b>No</b>	The system is operating correctly at this time. The concern may have been caused by module connections. ADDRESS the root cause of any connector or pin issues.

## PINPOINT TEST B : P06A6, P06A7, P06B1

### NOTE

The Inverter System Controller (ISC) is referred to as the SOBDMC (Secondary On-Board Diagnostic Control Module C) in the scan tool.

### Normal Operation and Fault Conditions

REFER to: [Electric Powertrain Control - Component Location](#)(303-14F Electric Powertrain Control - 3.5L V6 PowerBoost (CN), Description and Operation).

<b>Yes</b>	GO to <a href="#">B3</a>
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<b>No</b>	<p>INSTALL a new 12-volt battery.</p> <p>REFER to: <a href="#">Battery</a> (414-01 Battery, Mounting and Cables, Removal and Installation).</p>
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### **B3 CHECK FOR INVERTER SYSTEM CONTROLLER (ISC) DIAGNOSTIC TROUBLE CODES (DTCs)**

- Using a diagnostic scan tool, retrieve all Inverter System Controller (ISC) diagnostic trouble codes (DTCs).

#### **Are any Inverter System Controller (ISC) diagnostic trouble codes (DTCs) present?**

<b>Yes</b>	For DTC (diagnostic trouble code) P06A6:00, P06A7:00 or P06B1:00 GO to <a href="#">B4</a> For all other Inverter System Controller (ISC) diagnostic trouble codes (DTCs), REFER to the DTC (diagnostic trouble code) chart in this section.
<b>No</b>	The system is operating correctly at this time. The DTC (diagnostic trouble code) may have been set due to high network traffic or an intermittent fault condition.

### **B4 CLEAR AND CHECK INVERTER SYSTEM CONTROLLER (ISC) DIAGNOSTIC TROUBLE CODES (DTCs)**

- Using a diagnostic scan tool, clear all Inverter System Controller (ISC) diagnostic trouble codes (DTCs).
- Using a diagnostic scan tool, retrieve all Inverter System Controller (ISC) diagnostic trouble codes (DTCs).

#### **Are diagnostic trouble codes (DTCs) P06A6:00, P06A7:00 or P06B1:00 present?**

<b>Yes</b>	<p>CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new Inverter System Controller (ISC).</p> <p>REFER to: <a href="#">Inverter System Controller [SOBDMC]</a> (303-14F Electric Powertrain Control - 3.5L V6 PowerBoost (CN), Removal and Installation).</p>
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C1458A-K3		Ground
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**Is the voltage greater than 10.5 V?**

<b>Yes</b>	GO to <a href="#">C2</a>
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<b>No</b>	<p>REFER to: <a href="#">Charging System - 2.7L EcoBoost (238kW/324PS)/3.5L EcoBoost (BM)</a>(414-00 Charging System - General Information, Diagnosis and Testing).</p> <p>To diagnose the low voltage symptom.</p> <p>Using a diagnostic scan tool, clear the Inverter System Controller (ISC) diagnostic trouble codes (DTCs).</p>
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## **C2 CHECK THE INVERTER SYSTEM CONTROLLER (ISC) CIRCUIT FOR VOLTAGE**

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C1458A-K3		Ground

**Is the voltage less than 16V?**

<b>Yes</b>	GO to <a href="#">C3</a>
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<b>No</b>	<p>REFER to: <a href="#">Charging System - 2.7L EcoBoost (238kW/324PS)/3.5L EcoBoost (BM)</a>(414-00 Charging System - General Information, Diagnosis and Testing).</p> <p>To diagnose the high voltage symptom.</p> <p>Using a diagnostic scan tool, clear the Inverter System Controller (ISC) diagnostic trouble codes (DTCs).</p>
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## **C3 CHECK FOR INVERTER SYSTEM CONTROLLER (ISC) DIAGNOSTIC TROUBLE CODES (DTCs)**

SOBDMC (secondary on-board diagnostic control module C) P060A:86	Internal Control Module Monitoring Processor Performance: Signal Invalid	This DTC (diagnostic trouble code) sets when an internal error occurs.
SOBDMC (secondary on-board diagnostic control module C) P060A:88	Internal Control Module Monitoring Processor Performance: Bus Off	This DTC (diagnostic trouble code) sets when an internal error occurs.

### Possible Sources

- Inverter System Controller (ISC) calibration
- Inverter System Controller (ISC)

## D1 CHECK FOR INVERTER SYSTEM CONTROLLER (ISC) DIAGNOSTIC TROUBLE CODES (DTCs)

- Using a diagnostic scan tool, carry out the Inverter System Controller (ISC) self-test.

**Are any Inverter System Controller (ISC) diagnostic trouble codes (DTCs) other than P0600:49, P0600:88, P060A:86 or P060A:88 present?**

<b>Yes</b>	DIAGNOSE all other Inverter System Controller (ISC) diagnostic trouble codes (DTCs), REFER to the DTC (diagnostic trouble code) chart in this section.
<b>No</b>	For DTC (diagnostic trouble code) P0600:49, P0600:88, P060A:86 or P060A:88 only GO to <a href="#">D2</a>

## D2 VERIFY THE INVERTER SYSTEM CONTROLLER (ISC) CALIBRATION LEVEL

- Verify the Inverter System Controller (ISC) is at the latest calibration level.

**Is the Inverter System Controller (ISC) at the latest calibration level?**

<b>Yes</b>	GO to <a href="#">D3</a>
<b>No</b>	UPDATE the Inverter System Controller (ISC) to the latest calibration level.

## D3 CLEAR AND CHECK INVERTER SYSTEM CONTROLLER (ISC) DIAGNOSTIC TROUBLE CODES (DTCs)

- Using a diagnostic scan tool, clear the Inverter System Controller (ISC) diagnostic trouble codes (DTCs).

## E1 CLEAR AND CHECK THE INVERTER SYSTEM CONTROLLER (ISC) DIAGNOSTIC TROUBLE CODES (DTCs)

- Using a diagnostic scan tool, clear the Inverter System Controller (ISC) diagnostic trouble codes (DTCs).
- Using a diagnostic scan tool, carry out the Inverter System Controller (ISC) self-test.

### Is DTC (diagnostic trouble code) P0607 present?

Yes	<p>CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new Inverter System Controller (ISC).</p> <p>REFER to: <a href="#">Inverter System Controller [SOBDMC]</a> (303-14F Electric Powertrain Control - 3.5L V6 PowerBoost (CN), Removal and Installation).</p>
No	<p>The system is operating correctly at this time. The DTC (diagnostic trouble code) may have been set due to high network traffic or an intermittent fault condition.</p>

## PINPOINT TEST F : P060A:44, P060A:47

### NOTE

The Inverter System Controller (ISC) is referred to as the SOBDMC (Secondary On-Board Diagnostic Control Module C) in the scan tool.

### Normal Operation and Fault Conditions

REFER to: [Electric Powertrain Control - Component Location](#)(303-14F Electric Powertrain Control - 3.5L V6 PowerBoost (CN), Description and Operation).

### DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
SOBDMC (secondary on-board diagnostic control module C) P060A:44	Internal Control Module Monitoring Processor Performance: Data Memory Failure	This DTC (diagnostic trouble code) sets when an internal error occurs.
SOBDMC (secondary on-board diagnostic control module C)	Internal Control Module Monitoring Processor Performance:	This DTC (diagnostic trouble code) sets when an internal

FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new Inverter System Controller (ISC).

REFER to: [Inverter System Controller \[SOBDMC\]](#)

(303-14F Electric Powertrain Control - 3.5L V6 PowerBoost (CN), Removal and Installation).

**No**

The system is operating correctly at this time. The DTC (diagnostic trouble code) may have been set due to high network traffic or an intermittent fault condition.

## PINPOINT TEST G : P060A:4A

### NOTE

The Inverter System Controller (ISC) is referred to as the SOBDMC (Secondary On-Board Diagnostic Control Module C) in the scan tool.

### Normal Operation and Fault Conditions

REFER to: [Electric Powertrain Control - Component Location](#)(303-14F Electric Powertrain Control - 3.5L V6 PowerBoost (CN), Description and Operation).

### DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
SOBDMC (secondary on-board diagnostic control module C) P060A:4A	Internal Control Module Monitoring Processor Performance: Incorrect Component Installed	This DTC (diagnostic trouble code) sets if the Inverter System Controller (ISC) software version is incorrect.

### Possible Sources

- Inverter System Controller (ISC) calibration

## G1 VERIFY THE INVERTER SYSTEM CONTROLLER (ISC) CALIBRATION LEVEL

- Verify the Inverter System Controller (ISC) is at the latest calibration level.

**Is the Inverter System Controller (ISC) at the latest calibration level?**

## H1 CHECK FOR INVERTER SYSTEM CONTROLLER (ISC) DIAGNOSTIC TROUBLE CODES (DTCs)

- Using a diagnostic scan tool, carry out the Inverter System Controller (ISC) self-test.

**Are any Inverter System Controller (ISC) diagnostic trouble codes (DTCs) other than P060B:47 or P060B:62 present?**

<b>Yes</b>	DIAGNOSE all other Inverter System Controller (ISC) diagnostic trouble codes (DTCs), REFER to the DTC (diagnostic trouble code) chart in this section.
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<b>No</b>	For DTC (diagnostic trouble code) P060B:47 or P060B:62 only GO to <a href="#">H2</a>
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## H2 VERIFY THE INVERTER SYSTEM CONTROLLER (ISC) CALIBRATION LEVEL

- Verify the Inverter System Controller (ISC) is at the latest calibration level.

**Is the Inverter System Controller (ISC) at the latest calibration level?**

<b>Yes</b>	GO to <a href="#">H3</a>
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<b>No</b>	UPDATE the Inverter System Controller (ISC) to the latest calibration level.
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## H3 CLEAR AND CHECK THE INVERTER SYSTEM CONTROLLER (ISC) DIAGNOSTIC TROUBLE CODES (DTCs)

- Using a diagnostic scan tool, clear the Inverter System Controller (ISC) diagnostic trouble codes (DTCs).
- Using a diagnostic scan tool, carry out the Inverter System Controller (ISC) self-test.

**Are diagnostic trouble codes (DTCs) P060B:47 or P060B:62 present in the Inverter System Controller (ISC)?**

<b>Yes</b>	<p>CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new Inverter System Controller (ISC).</p> <p>REFER to: <a href="#">Inverter System Controller [SOBDMC]</a> (303-14F Electric Powertrain Control - 3.5L V6 PowerBoost (CN), Removal and Installation).</p>
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### Possible Sources

- Inverter System Controller (ISC) calibration
- Inverter System Controller (ISC)

### I1 CHECK FOR INVERTER SYSTEM CONTROLLER (ISC) DIAGNOSTIC TROUBLE CODES (DTCs)

- Using a diagnostic scan tool, carry out the Inverter System Controller (ISC) self-test.

**Are any Inverter System Controller (ISC) diagnostic trouble codes (DTCs) other than P060C:41, P060C:42, P060C:44, P060C:47 or P1A0E:61 present?**

Yes	DIAGNOSE all other Inverter System Controller (ISC) diagnostic trouble codes (DTCs), REFER to the DTC (diagnostic trouble code) chart in this section.
No	For DTC (diagnostic trouble code) P060C:41, P060C:42, P060C:44, P060C:47 or P1A0E:61 only GO to <a href="#">I2</a>

### I2 VERIFY ALL CAN MODULE CALIBRATION LEVELS

- Verify all CAN (controller area network) modules are at the latest calibration level.

**Are all CAN (controller area network) modules are at the latest calibration level?**

Yes	GO to <a href="#">I3</a>
No	UPDATE the Inverter System Controller (ISC) to the latest calibration level.

### I3 CLEAR AND CHECK THE INVERTER SYSTEM CONTROLLER (ISC) DIAGNOSTIC TROUBLE CODES (DTCs)

- Using a diagnostic scan tool, clear the Inverter System Controller (ISC) diagnostic trouble codes (DTCs).
- Using a diagnostic scan tool, carry out the Inverter System Controller (ISC) self-test.

**Are diagnostic trouble codes (DTCs) P060C:41, P060C:42, P060C:44, P060C:47 or P1A0E:61 present in the Inverter System Controller (ISC)?**

Yes	CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and
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diagnostic trouble codes (DTCs), REFER to the DTC (diagnostic trouble code) chart in this section.

**No**

The system is operating correctly at this time. The DTC (diagnostic trouble code) may have been set due to high network traffic or an intermittent fault condition.

## **J2 VERIFY THE INVERTER SYSTEM CONTROLLER (ISC) CALIBRATION LEVEL**

- Verify the Inverter System Controller (ISC) is at the latest calibration level.

**Is the Inverter System Controller (ISC) at the latest calibration level?**

**Yes**

GO to [J3](#)

**No**

UPDATE the Inverter System Controller (ISC) to the latest calibration level.

## **J3 CLEAR AND CHECK THE INVERTER SYSTEM CONTROLLER (ISC) DIAGNOSTIC TROUBLE CODES (DTCs)**

- Using a diagnostic scan tool, clear the Inverter System Controller (ISC) diagnostic trouble codes (DTCs).
- Using a diagnostic scan tool, carry out the Inverter System Controller (ISC) self-test.

**Is DTC (diagnostic trouble code) P0613:86 the only DTC (diagnostic trouble code) present in the Inverter System Controller (ISC)?**

**Yes**

CHECK OASIS (Online Automotive Service Information System) for any applicable service articles: TSB (Technical Service Bulletin) , GSB (General Service Bulletin) , SSM (special service message) or FSA (Field Service Action) . If a service article exists for this concern, DISCONTINUE this test and FOLLOW the service article instructions. If no service articles address this concern, INSTALL a new Inverter System Controller (ISC).

REFER to: [Inverter System Controller \[SOBDMC\]](#)

(303-14F Electric Powertrain Control - 3.5L V6 PowerBoost (CN), Removal and Installation).

**No**

DIAGNOSE any other remaining Inverter System Controller (ISC) diagnostic trouble codes (DTCs).