- Inspect the high current BJB connections.
- Verify the BJB fuse 60 (5A).
- Verify the BJB fuse 30 (30A).
- Inspect the passive key.
- Inspect the CPP switch (manual transmission only).

DIAGNOSIS AND TESTING > STARTING SYSTEM > PINPOINT TEST(S) > PINPOINT TEST A : ENGINE DOES NOT CRANK > PINPOINT TEST A : ENGINE DOES NOT CRANK

A1 PERFORM INSPECTION AND VERIFICATION

> *NOTE: Make sure battery voltage is greater than 12.2 volts prior to and during this pinpoint test.*

> *NOTE: If it is necessary to leave the battery charger connected during testing, do not leave it on its highest or boost setting. The highest settings can exceed 16 volts, resulting in false test results and setting of DTCs.*

Perform Inspection and Verification .

Was an obvious cause for an observed or reported concern found?

Yes	CORRECT the cause as necessary.

No	GO to A2

A2 CHECK FOR NO KEY DETECTED MESSAGE IN THE MESSAGE CENTER

> *NOTE: There are certain areas inside the vehicle where the passive key may not be detected and the message center displays NO KEY DETECTED. If the passive key is in the far outside edges of the interior (like in a door map pocket or above a sun visor) it might not be detected. Move the passive key to a different location and try to start the vehicle again.*

Check the message displayed in the message center while pressing the engine start/stop switch.

Is NO KEY DETECTED displayed?

Yes	DIAGNOSE the NO KEY DETECTED concern. REFER to: Passive Anti-Theft System (PATS) .

No	GO to A3

A3 VERIFY THE BCM (BODY CONTROL MODULE), IPC (INSTRUMENT PANEL CLUSTER) AND PCM (POWERTRAIN CONTROL MODULE) PASS THE NETWORK TEST

Ignition ON.

Using a diagnostic scan tool, perform the Network Test.

Did the BCM, IPC and PCM pass the Network Test?

Yes	GO to A4

No	REFER to: MODULE COMMUNICATIONS NETWORK .

A4 RETRIEVE BCM (BODY CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

Using a diagnostic scan tool, perform BCM self-test.

Are any BCM Diagnostic Trouble Codes (DTCs) present?

Yes	For DTC P0830:11 GO to A26 For all BCM Diagnostic Trouble Codes (DTCs), REFER to the BCM DTC Chart in DTC Charts .

No	GO to A5

A5 RETRIEVE PCM (POWERTRAIN CONTROL MODULE) DIAGNOSTIC TROUBLE CODES (DTCS)

Using a diagnostic scan tool, perform PCM self-test.

Are any PCM Diagnostic Trouble Codes (DTCs) other than P06E9 present?

Yes	REFER to the PCM DTC Chart in DTC Charts .

No	With automatic transmission, GO to A6 With manual transmission, GO to A11

A6 CHECK THE OPERATION OF THE STOPLAMPS

While observing the stoplamps, apply the brake pedal.

Do the stoplamps illuminate?

Yes	GO to A7

No	DIAGNOSE All the Stoplamps are inoperative. REFER to: Stoplamps .

A7 CHECK THE BRAKE PEDAL POSITION (BOO1) PID (PARAMETER IDENTIFICATION)

Using a diagnostic scan tool, view PCM Parameter Identifications (PIDs).

Monitor the PCM B001 PID while applying the brake pedal.

Does the PID read On?

Yes	GO to A9

No	GO to A8

A8 CHECK THE BPP (BRAKE PEDAL POSITION) SWITCH CIRCUIT FOR VOLTAGE AT THE PCM (POWERTRAIN CONTROL MODULE)

Ignition OFF.

Disconnect PCM C1551B .

While applying the brake pedal, measure:

Positive Lead	Measurement / Action	Negative Lead
C1551B-66		Ground

Is the voltage greater than 11 volts?

Yes	GO to A28

No	REPAIR the circuit.

A9 CHECK BCM (BODY CONTROL MODULE) IGN_SW_STATE PID (PARAMETER IDENTIFICATION)

Using a diagnostic scan tool, view the BCM Parameter Identifications (PIDs).

Make sure the transmission is in PARK or NEUTRAL.

Monitor the BCM PID IGN_SW_STATE while pressing the engine start/stop switch and the brake pedal.

Does the PID change from Off to Start when the ignition switch - push button start and brake pedal are pressed?

Yes	GO to A10

No	DIAGNOSE No power in ON. REFER to: Steering Wheel and Column Electrical Components .

A10 CHECK THE PCM (POWERTRAIN CONTROL MODULE) IN GEAR-TRANSMISSION IS APPLYING A LOAD TO ENGINE (IN_GEAR) PID (PARAMETER IDENTIFICATION)

Using a diagnostic scan tool, view the PCM Parameter Identifications (PIDs).

Monitor the PCM PID IN_GEAR, while placing the gear selector in PARK and then NEUTRAL.

Does the PID read No in both positions?

Yes	GO to A12

No	REFER to: Diagnostic Trouble Code (DTC) Charts and Pinpoint Tests - 2.3L EcoBoost (201kW/273PS) .

A11 CHECK THE PCM (POWERTRAIN CONTROL MODULE) CLUTCH PEDAL AT OR NEAR BOTTOM OF TRAVEL (CPP_BOT) PID (PARAMETER IDENTIFICATION)

Using a diagnostic scan tool, while viewing the PCM PID CPP_BOT, fully apply the clutch pedal and release.

Does the PID change from NO to YES when the clutch pedal is fully applied?

Yes	GO to A12

No	GO to A23

A12 CHECK THE PCM (POWERTRAIN CONTROL MODULE) ENGINE CRANKING (ENG_CRANK) PID (PARAMETER IDENTIFICATION)

Make sure the transmission is in PARK or NEUTRAL.

Using a diagnostic scan tool, view the PCM Parameter Identifications (PIDs).

Monitor the PCM PID ENG_CRANK while pressing the engine start/stop switch and the brake pedal (with automatic transmission) or fully apply the clutch pedal (with manual transmission).

Does the PID change from Inactive to Active?

Yes	GO to A13

No	GO to A28

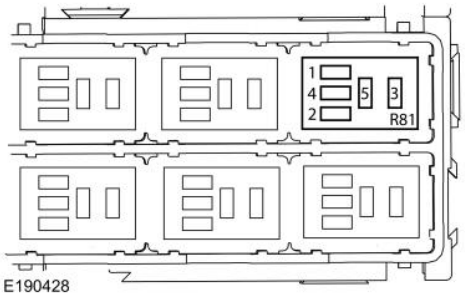
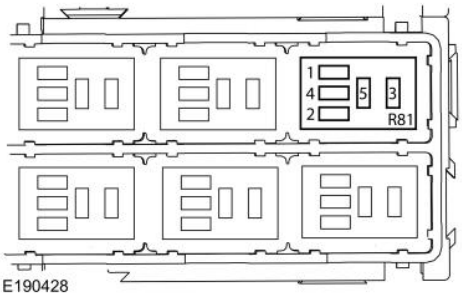
NOTE: The following step uses a test light to simulate normal circuit loads. To avoid connector terminal damage, use the Flex Probe Kit for the test light probe connection to the vehicle. Do not use the test light probe directly on any connector.

A13 CHECK THE STARTER RELAY CONTROL OPERATION

Remove the BJB starter relay.

Measure:

Positive Lead	Measurement / Action	Negative Lead

 BJB starter relay pin 1		 BJB starter relay pin 2

Make sure the transmission is in PARK or NEUTRAL.

While pressing the engine start/stop switch and the brake pedal, observe the test light.

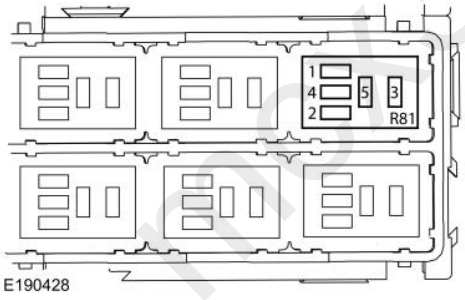
Does the test light illuminate when the engine start/stop switch is pressed?

Yes	GO to A14

No	GO to A21

A14 CHECK THE VOLTAGE TO THE STARTER RELAY

Measure:

Positive Lead	Measurement / Action	Negative Lead
 BJB starter relay pin 3		Ground

Is the voltage greater than 11 volts?

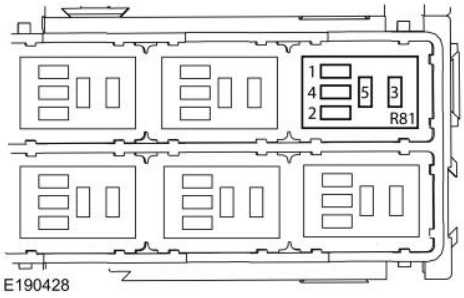
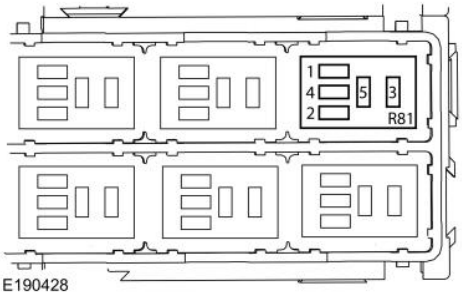
Yes	GO to A15

No	VERIFY BJB fuse 30 (30A) is OK. If OK, REPAIR the circuit for an open. If not OK, REFER to the SYSTEM WIRING DIAGRAMS to identify the possible causes of the circuit short.

A15 CHECK THE STARTER MOTOR OPERATION AT THE STARTER RELAY

Ignition OFF.

With the transmission in PARK or NEUTRAL, momentarily connect a fused jumper wire:

Positive Lead	Measurement / Action	Negative Lead
 BJB starter relay pin 3		 BJB starter relay pin 5

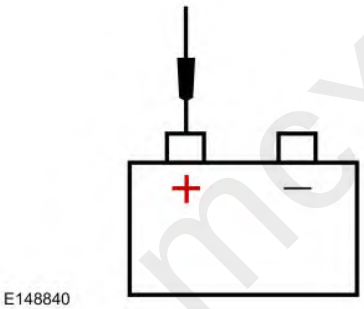
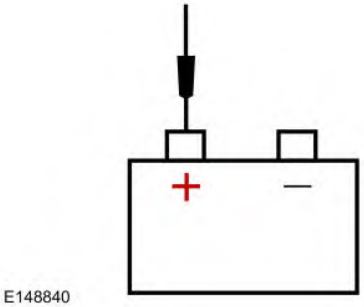
Did the starter engage and the engine crank?

Yes	INSTALL a new starter relay.

No	GO to A16

A16 CHECK THE BATTERY GROUND CABLES

Measure:

Positive Lead	Measurement / Action	Negative Lead
		Ground G106
		Ground G108

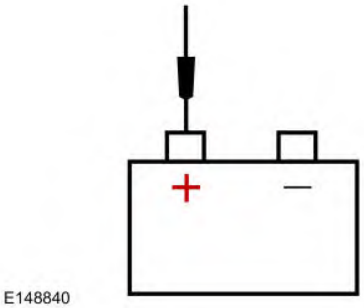
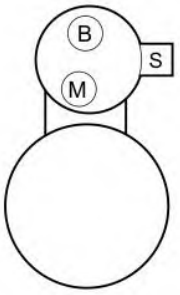
Are the voltages greater than 11 volts?

Yes	GO to A17

No	CLEAN or INSTALL new negative battery cables as necessary. REFER to: Battery Cables - 2.3L EcoBoost (201kW/273PS) .

A17 CHECK THE STARTER MOTOR GROUND

Measure:

Positive Lead	Measurement / Action	Negative Lead
		 Starter motor case

Is the voltage greater than 11 volts?

Yes	GO to A18

No	CLEAN the starter motor mounting flange and MAKE SURE the starter motor is correctly mounted. REFER to: Starter Motor .

A18 CHECK THE VOLTAGE TO THE STARTER MOTOR

Measure:

Positive Lead	Measurement / Action	Negative Lead
C197A-1 ("B" terminal)		Ground

Is the voltage greater than 11 volts?

Yes	GO to A19

No	INSTALL a new positive battery cable. REFER to: Battery Cables - 2.3L EcoBoost (201kW/273PS) .

A19 CHECK THE STARTER MOTOR FOR CORRECT OPERATION

Perform Starter Motor - Positive Circuit Test in Component Test(s) .

Was an obvious cause found?

Yes	Correct the cause as necessary.

No	GO to A20

A20 CHECK FOR START INPUT AT THE STARTER

Connect BJB starter relay.

Disconnect Starter solenoid C197A .

While holding the key in the START position, measure:

Positive Lead	Measurement / Action	Negative Lead
C197C-1 ("S" terminal)		Ground

Is the voltage greater than 11 volts?

Yes	CLEAN the starter solenoid "S" terminal and starter solenoid connector. CHECK the wiring and the starter motor for a loose or intermittent connection.

No	REPAIR the circuit for an open.

A21 CHECK THE PCM (POWERTRAIN CONTROL MODULE) STARTER RELAY CIRCUITS FOR A SHORT TO GROUND

Ignition OFF.

Disconnect BJB starter relay.

Disconnect PCM C1551B .

Measure:

Positive Lead	Measurement / Action	Negative Lead
C1551B-43	Ω	Ground
C1551B-62	Ω	Ground

Are the resistances greater than 10, 000 ohms?

Yes	GO to A22

No	REPAIR the affected circuit.

A22 CHECK THE PCM (POWERTRAIN CONTROL MODULE) STARTER RELAY CIRCUITS FOR AN OPEN

Measure:

Positive Lead	Measurement / Action	Negative Lead
C1551B-43	Ω	BJB starter relay pin 2
C1551B-62	Ω	BJB starter relay pin 1

Are the resistances less than 3 ohms?

Yes	GO to A28

No	REPAIR the affected circuit.

A23 CHECK THE CPP (CLUTCH PEDAL POSITION) SWITCH OPERATION

Ignition OFF.

Disconnect PCM C1551B .

While fully applying the clutch pedal, measure:

Positive Lead	Measurement / Action	Negative Lead
C1551B-30	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to A28

No	GO to A24

A24 CHECK THE CPP (CLUTCH PEDAL POSITION) GROUND CIRCUIT FOR AN OPEN

Disconnect CPP switch C2353 .

Measure:

Positive Lead	Measurement / Action	Negative Lead
C2353-2	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to A25

No	REPAIR the circuit.

A25 CHECK THE CPP (CLUTCH PEDAL POSITION) SWITCH CIRCUIT FOR AN OPEN

Measure:

Positive Lead	Measurement / Action	Negative Lead
C1551B-30	Ω	C2353-1

Is the resistance less than 3 ohms?

Yes	INSTALL a new CPP switch. REFER to: CLUTCH PEDAL POSITION (CPP) SWITCH - 2.3L EcoBoost (231kW/314PS).

No	REPAIR the circuit.

A26 CHECK FOR DTC WITH CPP (CLUTCH PEDAL POSITION) SWITCH DISCONNECTED

Ignition OFF.

Disconnect CPP switch C2353 .

Ignition ON.

Using a diagnostic scan tool, perform BCM self-test.

Was DTC P0830:11 retrieved during on-demand self-test with the CPP switch disconnected?

Yes	GO to A27

No	INSTALL a new CPP switch. REFER to: CLUTCH PEDAL POSITION (CPP) SWITCH - 2.3L EcoBoost (231kW/314PS).

A27 CHECK THE CLUTCH BOTTOM OF TRAVEL CIRCUIT FOR A SHORT TO GROUND

Ignition OFF.

Disconnect BCM C2280A .

Disconnect PCM C1551B .

Measure:

Positive Lead	Measurement / Action	Negative Lead
C1551B-30	Ω	Ground

Is the resistance greater than 10, 000 ohms?

Yes	GO to A29

No	REPAIR the circuit.

A28 CHECK FOR CORRECT PCM (POWERTRAIN CONTROL MODULE) OPERATION

Ignition OFF.

Disconnect and inspect all PCM connectors.

Repair:

corrosion (install new connectors or terminals - clean module pins)

damaged or bent pins - install new terminals/pins

pushed-out pins - install new pins as necessary

Reconnect the PCM connectors. Make sure they seat and latch correctly.

Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern, INSTALL a new PCM. REFER to: POWERTRAIN CONTROL MODULE (PCM) - 2.3L EcoBoost (231kW/314PS).

No	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.

A29 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

Ignition OFF.

Disconnect and inspect all BCM connectors.

Repair:

corrosion (install new connectors or terminals - clean module pins)

damaged or bent pins - install new terminals/pins

pushed-out pins - install new pins as necessary

Reconnect the BCM connectors. Make sure they seat and latch correctly.

Operate the system and determine if the concern is still present.

Is the concern still present?

Yes	CHECK OASIS for any applicable Technical Service Bulletins (TSBs). If a TSB exists for this concern, DISCONTINUE this test and FOLLOW the TSB instructions. If no Technical Service Bulletins (TSBs) address this concern,

No	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.