

Condition	Possible Sources	Actions
The remote start has poor range performance	• Passive Key or battery • After market systems • High power devices • TV/radio transmission towers • RTM	Diagnose The RKE Transmitter Has Poor Range Performance, REFER to: Locks, Latches and Entry Systems (501-14 Handles, Locks, Latches and Entry Systems, Diagnosis and Testing).

Pinpoint Test(s)

☐ [PINPOINT TEST A : ENGINE DOES NOT CRANK - WITHOUT PUSH-BUTTON START](#)

☐ [PINPOINT TEST B : ENGINE DOES NOT CRANK - WITH PUSH-BUTTON START](#)

☐ [PINPOINT TEST C : UNUSUAL STARTER NOISE](#)

☐ [PINPOINT TEST D : C113A:11, C113A:15](#)

☐ [PINPOINT TEST E : DTC P2535 \(WITHOUT PUSH BUTTON START\)](#)

☐ [PINPOINT TEST F : DTC P2535 \(WITH PUSH BUTTON START\)](#)

☐ [PINPOINT TEST G : DTC P06EF DEGRADED CRANK](#)

☐ [PINPOINT TEST H : DTC U0120](#)

☐ [PINPOINT TEST I : BISG FAILURE](#)

☐ [PINPOINT TEST J : BATTERY ISOLATION / VOLTAGE CONTROL CIRCUIT](#)

☐ [PINPOINT TEST K : BATTERY ISOLATION/VOLTAGE STABILIZATION CONTROL CIRCUIT PERFORMANCE](#)

☐ [PINPOINT TEST L : BATTERY ISOLATION/VOLTAGE CONTROL CIRCUIT LOW](#)

☐ [PINPOINT TEST M : BATTERY ISOLATION / VOLTAGE CONTROL CIRCUIT HIGH](#)

☐ [PINPOINT TEST N : DTC U041A, U061E](#)

☐ [PINPOINT TEST O : DTC P06E4](#)

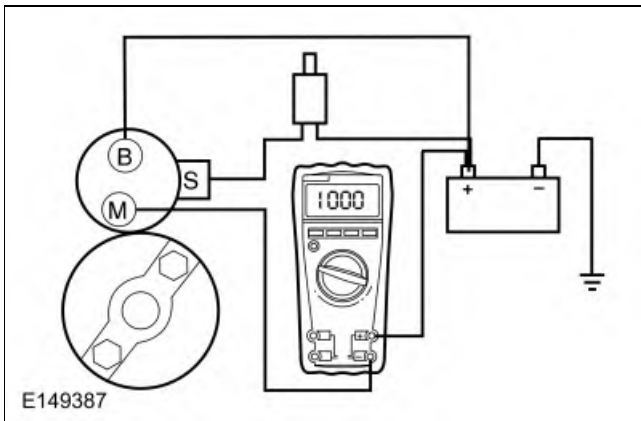
☐ [PINPOINT TEST P : DTC P162F](#)

Component Test(s)

Starter Motor - Positive Circuit Test

NOTE: Always make the multimeter connection at the component terminal rather than at the wiring end of the connector. Making a connection at the wiring end of the connector could result in false readings because the meter will not pick up a high resistance between the wiring connector and component.

1. Make sure the battery is fully charged.
REFER to: Battery Charging (414-01 Battery, Mounting and Cables, General Procedures).
2. Perform a battery drain test.
REFER to: Battery Drain Check (414-01 Battery, Mounting and Cables, General Procedures).
3. Connect a remote starter switch between starter solenoid "B" terminal and the battery positive terminal.
4. Connect the multimeter positive lead to the battery positive post. Connect the negative lead to the starter solenoid "M" terminal.



5. Place gear selector lever in Park or Neutral.
6. Engage the remote starter switch. Read and record the voltage. The voltage reading should be 0.5 volt or less.
7. If the voltage reading is 0.5 volt or less, perform Starter Motor - Ground Circuit Test in this section.
8. A voltage reading greater than 0.5 volt is an indication of excessive resistance in the connections, the positive battery cable or in the starter solenoid. Remove the cables from the solenoid "B", "S" and "M" terminals. Clean the cables and connections and reinstall the cables to the correct terminals. Repeat Steps 3 through 6.
9. If the voltage reading is still greater than 0.5 volt when checked at the "M" terminal, move the multimeter negative lead to the starter solenoid "B" terminal.
10. With the gear selector lever in Park or Neutral, engage the remote starter switch. Read and record the voltage.
11. If the voltage reading at the "B" terminal is lower than 0.5 volt, the concern is in the connections at the starter solenoid or in the solenoid contacts. Install a new starter motor.
REFER to: Starter Motor (303-06C Starting System - 3.3L Duratec-V6, Removal and Installation).
12. If the voltage reading taken at the solenoid "B" terminal is greater than 0.5 volt after cleaning the cables and connections at the solenoid, the concern is in the positive battery cable connection or in the positive battery cable itself. Clean the positive battery cable connection. If this does not resolve the concern, install a new positive battery cable.
REFER to: Battery Cables - 3.3L Duratec-V6 "Hybrid (BP)" (414-01 Battery, Mounting and Cables, Removal and Installation).

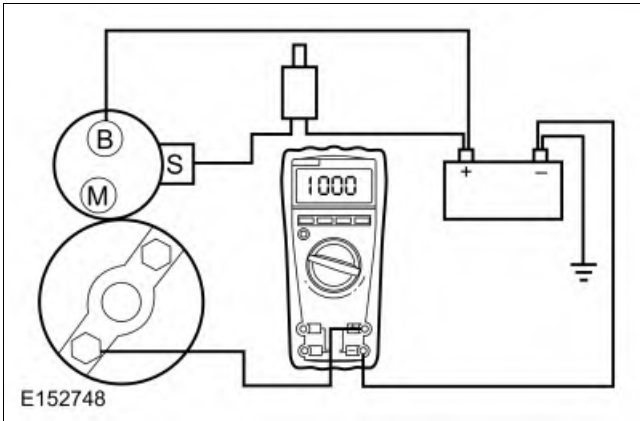
Starter Motor - Ground Circuit Test

A slow cranking condition can be caused by resistance in the ground or return portion of the cranking circuit. This procedure checks the voltage drop in the ground circuit.

1. Connect a remote starter switch between starter solenoid "S" terminal and the battery positive terminal.
2. Connect the multimeter positive lead to the starter motor housing (the connection must be clean and free of rust or grease). Connect the negative lead to the negative battery terminal.

3. Place gear selector lever in Park or Neutral.

4. Engage the remote starter switch and crank the engine. Read and record the voltage reading. The reading should be 0.5 volt or less.



5. If the voltage reading is greater than 0.5 volt, clean the negative cable connections at the battery, the body ground connections and the starter ground connection. Retest.

6. If the voltage reading is greater than 0.5 volt, install a new negative battery cable.

REFER to: Battery Cables - 3.3L Duratec-V6 "Hybrid (BP) (414-01 Battery, Mounting and Cables, Removal and Installation).

7. If the voltage reading is less than 0.5 volt and the engine still cranks slowly, install a new starter motor.

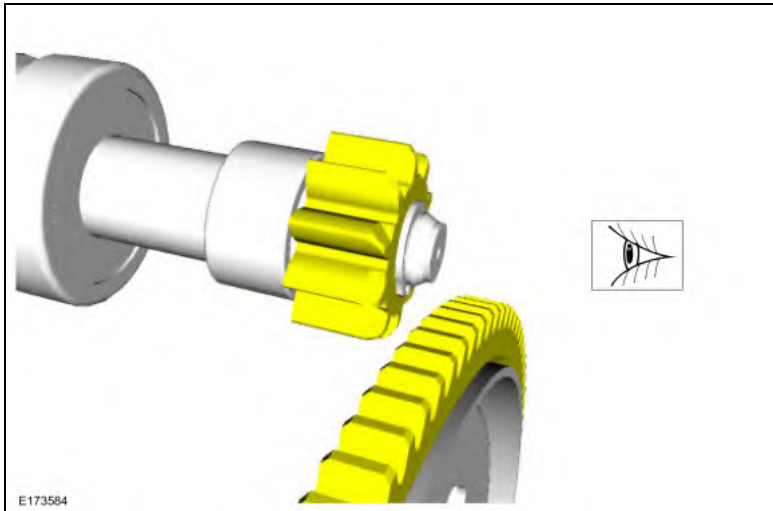
REFER to: Starter Motor (303-06C Starting System - 3.3L Duratec-V6, Removal and Installation).

General Procedures

Starter Motor Drive Gear and Flywheel Ring Gear Inspection

Inspection

1. Remove the starter motor.
Refer to: Starter Motor (303-06D Starting System - 3.3L Duratec-V6 â€“ Hybrid (BP), Removal and Installation).
2. Check the wear patterns on the starter drive gear and the flywheel or the flexplate ring gear. If the wear pattern is normal, then install the starter motor.
Refer to: Starter Motor (303-06D Starting System - 3.3L Duratec-V6 â€“ Hybrid (BP), Removal and Installation).



3. If the starter motor drive gear and the flywheel or the flexplate ring gear are not fully engaging and the starter motor drive gear is scored or damaged, then install a new starter motor.
Refer to: Starter Motor (303-06D Starting System - 3.3L Duratec-V6 â€“ Hybrid (BP), Removal and Installation).
4. If the teeth on the flywheel or the flexplate ring gear are scored or damaged, then install a new flywheel or flexplate.
Refer to: Flexplate (303-01C Engine - 3.3L Duratec-V6, Removal and Installation).