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2018 FORD Focus ST 5 Doors OEM Service and Repair Workshop Manual

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C2383A-14	Ω	C4360-4
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Is the resistance less than 3 ohms?

Yes REPAIR the video (-) signal circuit.

No REPAIR the video (+) signal circuit.

A14 CHECK THE LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR A SHORT TO VOLTAGE

- Disconnect BCM (body control module) C2280E .
- Disconnect DC (direct current) / AC (alternating current) inverter C3889A .
- Ignition ON.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
C2280E-37	\bar{V}	Ground

Is any voltage present?

Yes REPAIR the circuit.

No GO to [A15](#)

A15 CHECK THE LIN (LOCAL INTERCONNECT NETWORK) CIRCUIT FOR AN OPEN

- Ignition OFF.
- Measure:

Positive Lead	Measurement / Action	Negative Lead
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- Operate the system and determine if the concern is still present.

Is the concern still present?

<p>Yes</p>	<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 camera.</p> <p>REFER to: Rear Parking Aid Camera (413-13B Parking Aid - Vehicles With: Parking Aid Camera, Removal and Installation).</p> <p>If the concern is still present after camera replacement, GO to A18</p>
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<p>No</p>	<p>The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.</p>
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A18 CHECK FOR CORRECT BCM (BODY CONTROL MODULE) OPERATION

- Ignition OFF.
- Disconnect and inspect the BCM (body control module) connectors.
- Repair:
 - corrosion (install new connector or terminals – clean module pins)
 - damaged or bent pins – install new terminals/pins
 - pushed-out pins – install new pins as necessary
- Reconnect the BCM (body control module) connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

<p>Yes</p>	<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 BCM (body control module) .</p> <p>REFER to: Body Control Module (BCM) (419-10 Multifunction Electronic Modules, Removal and Installation).</p>
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Positive Lead	Measurement / Action	Negative Lead
C4360-1	V	Ground

Is the voltage greater than 11 volts?

Yes	GO to B3
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No	INSPECT BJB (battery junction box) fuse 25 (10A). If the fuse is OK, repair the circuit for an open. If the fuse is not OK, REFER to the Wiring Diagrams manual to identify the possible causes of the short circuit.
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B3 CHECK THE CAMERA GROUND CIRCUIT

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C4360-5	Ω	Ground

Is the resistance less than 3 ohms?

Yes	GO to B4
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No	REPAIR the circuit.
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B4 CHECK THE VIDEO SIGNAL AND SHIELD CIRCUITS FOR A SHORT TO VOLTAGE

- Disconnect APIM (SYNC module) C2383A .
- Ignition ON.
- Measure:

No	REPAIR the circuit in question.
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B6 CHECK THE VIDEO SIGNAL CIRCUITS FOR A SHORT TO THE VIDEO SHIELD

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C4360-3	Ω	C4360-5
C4360-4	Ω	C4360-5

Are the resistances greater than 10,000 ohms?

Yes	GO to B7
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No	REPAIR the circuit in question.
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B7 CHECK VIDEO SIGNAL CIRCUITS FOR AN OPEN

- Measure:

Positive Lead	Measurement / Action	Negative Lead
C4360-3	Ω	C2383A-15
C4360-4	Ω	C2383A-14

Are the resistances less than 3 ohms?

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 camera.

REFER to: [Rear Parking Aid Camera](#)

(413-13B Parking Aid - Vehicles With: Parking Aid Camera, Removal and Installation).

No

The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.

PINPOINT TEST C : THE VISUAL PARK AID ALERT IS INOPERATIVE - WITHOUT IPMA (IMAGE PROCESSING MODULE A)

Normal Operation and Fault Conditions

REFER to: [Parking Aid - System Operation and Component Description](#)(413-13B Parking Aid - Vehicles With: Parking Aid Camera, Description and Operation).

Possible Sources

- Rear parking aid camera
- PAM (parking assist control module) concern
- BCM (body control module) concern

Visual Inspection and Pre-checks

- If the rear parking aid camera is not configured after replacement, some video functions will be inoperative. Turn the ignition on for 5 minutes to allow the camera/ BCM (body control module) calibration to complete.

C1 CARRY OUT A NETWORK TEST

- Ignition ON.
- Using a diagnostic scan tool, carry out a network test.

Do all modules pass the network test?

Yes

GO to [C2](#)

No

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 camera.</p> <p>REFER to: Rear Parking Aid Camera (413-13B Parking Aid - Vehicles With: Parking Aid Camera, Removal and Installation).</p>
No	<p>The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.</p>

PINPOINT TEST D : THE GUIDELINES ARE INOPERATIVE OR DO NOT OPERATE CORRECTLY - WITHOUT IPMA (IMAGE PROCESSING MODULE A)

NOTE

If the battery has been disconnected or discharged, or a module is disconnected or replaced, the active guidelines may be inoperative until the vehicle is driven on a flat and smooth road at 32 km/h (20 mph) or more, with hands placed loosely on the steering wheel and minimal steering correction for approximately 30 seconds. If the guidelines remain inoperative, it may be necessary to disconnect the battery for 5 minutes with the driver's door open, then drive the vehicle for 8 kilometers (5 miles) in normal city driving before carrying out the procedure described above.

Normal Operation and Fault Conditions

REFER to: [Parking Aid - System Operation and Component Description](#)(413-13B Parking Aid - Vehicles With: Parking Aid Camera, Description and Operation).

Possible Sources

- Communication network concern
- Video camera not configured after replacement
- Tailgate position ajar concern
- Steering wheel position data concern (active guidelines only)
- Rear parking aid camera
- ABS (anti-lock brake system) module concern (active guidelines only)
- PSCM (power steering control module) concern (active guidelines only)
- APIM (SYNC module)

Visual Inspection and Pre-checks

No	For an active guideline concern, GO to D4 For a fixed guideline concern, GO to D6
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D4 CHECK THE DIAGNOSTIC TROUBLE CODES (DTCs) FROM THE ABS (ANTI-LOCK BRAKE SYSTEM) MODULE SELF-TEST

- Using a diagnostic scan tool, carry out the ABS (anti-lock brake system) module self-test.

Are any ABS (anti-lock brake system) module Diagnostic Trouble Codes (DTCs) retrieved?

Yes	REFER to: Anti-Lock Brake System (ABS) and Stability Control (206-09 Anti-Lock Brake System (ABS) and Stability Control, Diagnosis and Testing).
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No	GO to D5
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D5 CHECK THE DIAGNOSTIC TROUBLE CODES (DTCs) FROM THE PSCM (POWER STEERING CONTROL MODULE) SELF-TEST

- Using a diagnostic scan tool, carry out the PSCM (power steering control module) self-test.

Are any PSCM (power steering control module) Diagnostic Trouble Codes (DTCs) retrieved?

Yes	REFER to: Steering Wheel and Column Electrical Components (211-05 Steering Wheel and Column Electrical Components, Diagnosis and Testing).
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No	GO to D6
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D6 CHECK FOR CORRECT REAR PARKING AID CAMERA OPERATION

- Ignition OFF.
- Disconnect and inspect the rear parking aid camera connector.
- Repair:
 - corrosion (install new connector or terminals – clean module pins)
 - damaged or bent pins – install new terminals/pins
 - pushed-out pins – install new pins as necessary
- Reconnect the rear parking aid camera connector. Make sure it seats and latches correctly.

No	The system is operating correctly at this time. The concern may have been caused by a loose or corroded connector. ADDRESS the root cause of any connector or pin issues.
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PINPOINT TEST E : THE MANUAL ZOOM IS INOPERATIVE - WITHOUT IPMA (IMAGE PROCESSING MODULE A)

Normal Operation and Fault Conditions

REFER to: [Parking Aid - System Operation and Component Description](#)(413-13B Parking Aid - Vehicles With: Parking Aid Camera, Description and Operation).

Possible Sources

- Communication network concern
- Video camera not configured after replacement
- Rear parking aid camera
- APIM (SYNC module) concern

Visual Inspection and Pre-checks

- If the rear parking aid camera is not configured after replacement, some video functions will be inoperative. Verify the rear video camera configuration using the diagnostic scan tool.

E1 CARRY OUT A NETWORK TEST

- Ignition ON.
- Using a diagnostic scan tool, carry out a network test.

Do all modules pass the network test?

Yes	GO to E2
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No	See the Symptom Chart: Communication Network.
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E2 CHECK FOR RECORDED DIAGNOSTIC TROUBLE CODES (DTCS) FROM THE APIM (SYNC MODULE) SELF-TEST

- Using a diagnostic scan tool, carry out the APIM (SYNC module) self-test.

Are any Diagnostic Trouble Codes present?

Yes	For DTC (diagnostic trouble code) C1001:01, GO to Pinpoint Test A For all other Diagnostic
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- The rear parking aid camera delay feature is disabled
- TR (transmission range) input concern
- APIM (SYNC module) concern

Visual Inspection and Pre-checks

- Verify the video delay feature is turned on in the settings menu. Refer to the Owner's Literature.

F1 CARRY OUT A NETWORK TEST

- Ignition ON.
- Using a diagnostic scan tool, carry out a network test.

Do all modules pass the network test?

Yes	GO to F2
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No	See the Symptom Chart: Communication Network.
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F2 CHECK THE FOR CORRECT GEAR INPUT

- Apply the parking brake.
- While monitoring the reversing lamps, rotate to each GSM (gear shift module) position (P, R, N, D, S).

Do the reversing lamps illuminate only when reverse gear is selected?

Yes	GO to F3
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No	DIAGNOSE the reversing lamps. REFER to: Reversing Lamps (417-01 Exterior Lighting, Diagnosis and Testing).
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F3 CHECK FOR DIAGNOSTIC TROUBLE CODES (DTCs) FROM THE APIM (SYNC MODULE) SELF-TEST

- Using a diagnostic scan tool, carry out the APIM (SYNC module) self-test.

Are any Diagnostic Trouble Codes (DTCs) retrieved?

Yes	• For DTC (diagnostic trouble code) C1001:01, GO to Pinpoint Test A • For all other Diagnostic Trouble Codes (DTCs), REFER to the Master DTC (diagnostic trouble code) Chart.
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