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2006 FORD Focus Wagon OEM Service and Repair Workshop Manual

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- Ignition OFF.
- Disconnect and inspect all IPMA (image processing module A) 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 IPMA (image processing module A) 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	<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 IPMA (image processing module A) .</p> <p>REFER to: Image Processing Module A (IPMA) (419-07 Lane Keeping System, 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 O : B1B36:96, B1B38:96, B1B40:96, B1B42:96

NOTE

Before disconnecting the IPMA (image processing module A) or any of the parking aid sensors, verify the connectors are properly seated and latched.

Refer to Wiring Diagrams Cell 145 for schematic and connector information.

Normal Operation and Fault Conditions REFER to: [Parking Aid - System Operation and Component Description](#) (413-13A Parking Aid - Vehicles With: Rear Parking Aid, Description and Operation).

DTC Fault Trigger Conditions

DTC (diagnostic trouble code)	Description	Fault Trigger Condition
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O2 CHECK THE PARKING AID SENSOR DISTANCE PARAMETER IDENTIFICATIONS (PIDS) WITH NO OBJECTS IN FRONT OF THE VEHICLE

NOTE

Make sure the area around the vehicle is clear of anything that can activate the parking aid system.

- Clean the front bumper and sensors with high-pressure water.
- Make sure the parking aid sensors are flush-mounted in their bezel.
- Ignition ON.
- Using a diagnostic scan tool,

Access the IPMA (image processing module A) and monitor the LFI_DIST (Left Front Inner Parking Aid Sensor Distance) (cm) PID (parameter identification)

Access the IPMA (image processing module A) and monitor the LFO_DIST (Left Front Outer Parking Aid Sensor Distance) (cm) PID (parameter identification)

Access the IPMA (image processing module A) and monitor the RFI_DIST (Right Front Inner Parking Aid Sensor Distance) (cm) PID (parameter identification)

Access the IPMA (image processing module A) and monitor the RFO_DIST (Right Front Outer Parking Aid Sensor Distance) (cm) PID (parameter identification)

The PID (parameter identification) reads 2,540mm (100in) on a correctly functioning sensor.

Does the PID (parameter identification) read 2,540mm (100in)?

Yes	GO to O3
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No	GO to O4
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O3 CHECK THE PARKING AID SENSOR DISTANCE PARAMETER IDENTIFICATIONS (PIDS) WITH A TEST OBJECT IN FRONT OF THE VEHICLE

NOTE

Make sure the area around the vehicle is clear of anything that can activate the parking aid system.

- Using a diagnostic scan tool,

Access the IPMA (image processing module A) and monitor the LFI_DIST (Left Front Inner Parking Aid Sensor Distance) (cm) PID (parameter identification)

Access the IPMA (image processing module A) and monitor the LFO_DIST (Left Front Outer Parking Aid Sensor Distance) (cm) PID (parameter identification)

- 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 IPMA (image processing module A) 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 IPMA (image processing module A) . REFER to: Image Processing Module A (IPMA) (419-07 Lane Keeping System, Removal and Installation).</p>
<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>

PINPOINT TEST P : B1B36:98, B1B38:98, B1B40:98, OR B1B42:98

DTC Fault Trigger Conditions		
DTC (diagnostic trouble code)	Description	Fault Trigger Condition
IPMA (image processing module A) B1B36:98	Right Front Outer Sensor: Component Or System Over Temperature	A continuous and on-demand DTC (diagnostic trouble code) that sets when the RHF (right-hand front) outer parking aid sensor detects an over temperature event.
IPMA (image processing module A) B1B38:98	Right Front Inner Sensor: Component Or System Over Temperature	A continuous and on-demand DTC (diagnostic trouble code) that sets when the RHF (right-hand front) inner parking aid sensor detects an over temperature event.

- Make sure the suspect parking aid sensor(s) is flush-mounted in the bezel.
- Check for damage, debris or any aftermarket air dams that may restrict sensor ventilation.

Is there any damage or aftermarket parts restricting the ventilation to the sensor(s)?

Yes	REPAIR or REMOVE the parts as needed.
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No	GO to P3
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P3 CHECK THE PARKING AID SENSORS

- Ignition OFF.
- Install a known good sensor for the suspect parking aid sensor.
REFER to: [Front Parking Aid Sensor](#)(413-13A Parking Aid - Vehicles With: Rear Parking Aid, Removal and Installation).
- Ignition ON.
- Using a diagnostic scan tool, clear the Diagnostic Trouble Codes (DTCs) and repeat the IPMA (image processing module A) self-test.

Is the concern still present?

Yes	GO to P4
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No	The cause of the concern was an inoperative parking aid sensor. The system is now operating correctly.
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P4 CHECK FOR CORRECT IPMA (IMAGE PROCESSING MODULE A) OPERATION

- Ignition OFF.
- Disconnect and inspect all IPMA (image processing module A) 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 IPMA (image processing module A) connectors. Make sure they seat and latch correctly.
- Operate the system and determine if the concern is still present.

Is the concern still present?

Possible Sources

- Aftermarket parts
- Damage to the rear bumper or sensor
- Rear parking aid sensor
- IPMA (image processing module A)

Q1 CHECK THE DIAGNOSTIC TROUBLE CODES (DTCs) FROM THE IPMA (IMAGE PROCESSING MODULE A) SELF-TEST

- Ignition ON.
- Using a diagnostic scan tool, carry out the IPMA (image processing module A) self-test.
- Check the parking aid Diagnostic Trouble Codes (DTCs) from the self-test.

Are parking aid Diagnostic Trouble Codes (DTCs) recorded?

Yes	For Diagnostic Trouble Codes (DTCs) B1B44:98, B1B46:98, B1B48:98 or B1B50:98, GO to Q2 For all other Diagnostic Trouble Codes (DTCs), REFER to the DTC (diagnostic trouble code) Chart in this section.
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No	The system is operating correctly at this time.
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Q2 CHECK THE PARKING AID SENSOR FOR PROPER VENTILATION

NOTE

The operating temperature range for the parking aid sensors is -40°C (-40°F) to 85°C (176°F).

- Clean the rear bumper and sensors with high-pressure water.
- Make sure the suspect parking aid sensor(s) has its heat shield and is flush-mounted in the bezel.
- Check for damage, debris or any aftermarket air dams that may restrict sensor ventilation.
- Check for aftermarket exhaust or other aftermarket parts.

Is there any damage or aftermarket parts restricting the ventilation to the sensor(s)?

Yes	REPAIR or REMOVE the parts as needed.
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(419-07 Lane Keeping System, 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 R : CONTINUOUS OR INTERMITTENT TONE WHEN NO OBSTACLES OR FAULT CODES ARE PRESENT

Refer to Wiring Diagrams Cell 14 for schematic and connector information.

Normal Operation and Fault Conditions REFER to: [Parking Aid - System Operation and Component Description](#)

(413-13A Parking Aid - Vehicles With: Rear Parking Aid, Description and Operation).

Possible Sources

- Dirty or iced over parking aid sensor(s)
- Parking aid sensor(s) installed incorrectly
- Parking aid sensor(s) alignment
- Isolator ring missing, damaged or misaligned
- Open tailgate

R1 VERIFY THE CONCERN

- Verify the concern

Is there continuous or intermittent tone when no obstacles or fault codes are present?

Yes

Dirty or iced over parking aid sensor(s). CLEAN the front and rear bumper and sensors with high-pressure water.

Ice between parking aid sensor(s) and bezel(s). ALLOW time for the ice between the parking aid sensor(s) and bezel(s) to melt.

Parking aid sensor(s) locked into the rear bumper incorrectly. INSTALL the parking aid sensor(s) into the bezel(s) correctly.

Make sure Long term park aid has been turned off for vehicles not equipped with TRM (trailer module)

. Refer to Owner Literature for additional information.

Parking aid sensor(s) are not aligned correctly. CARRY OUT the elevation system check.

REFER to: [Elevation System Check](#)

(413-13A Parking Aid - Vehicles With: Rear Parking Aid, General Procedures).

Azimuth System Check

413-13A Parking Aid - Vehicles With: Rear Parking Aid	2022 F-150
General Procedures	Procedure revision date: 10/30/2020

Azimuth System Check

Check

1. **NOTE**

The object used in this system check can be fabricated using a 9 cm diameter (3 in I.D.) pipe, 100 cm (39 in) in length (available as Polyvinyl Chloride (PVC) pipe, or similar from a hardware or plumbing supply.

NOTE

The following system check should be carried out with the vehicle on a level surface.

NOTE

Actual sensor arrangement may differ from the configuration shown.

Distribute the test objects evenly across the bumper as shown. Refer to the specifications in this section.

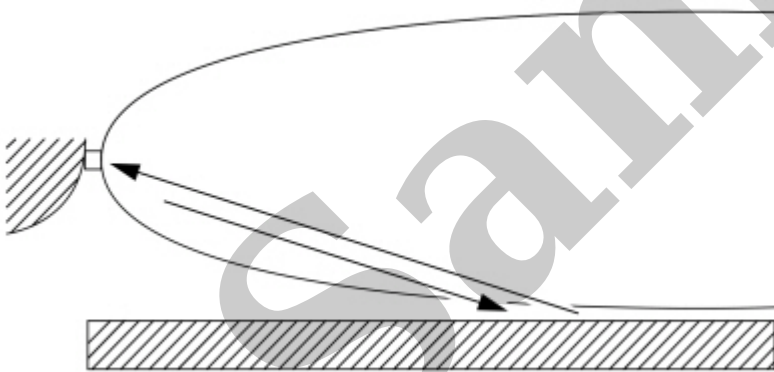
Elevation System Check

413-13A Parking Aid - Vehicles With: Rear Parking Aid	2022 F-150
General Procedures	Procedure revision date: 10/30/2020

Elevation System Check

Check

1. Turn the ignition ON, engine OFF.



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2. Set the parking brake.
3. Place the gearshift in REVERSE (R) for rear parking aid sensors.
4. Place the gearshift in DRIVE (D) for front parking aid sensors.
5. Using a diagnostic scan tool, monitor the parking aid sensor distance Parameter Identifications (PIDs) to verify no objects are detected.



Front Parking Aid Sensor

413-13A Parking Aid - Vehicles With: Rear Parking Aid	2022 F-150
Removal and Installation	Procedure revision date: 10/2/2020

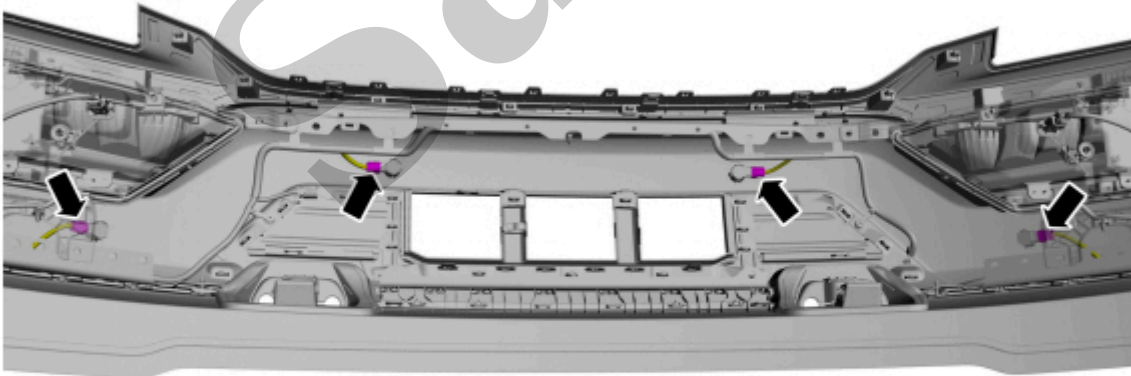
Front Parking Aid Sensor

Removal

1. Remove the front bumper.

Refer to: [Front Bumper](#)(501-19 Bumpers, Removal and Installation).

2. Disconnect the electrical connector.



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