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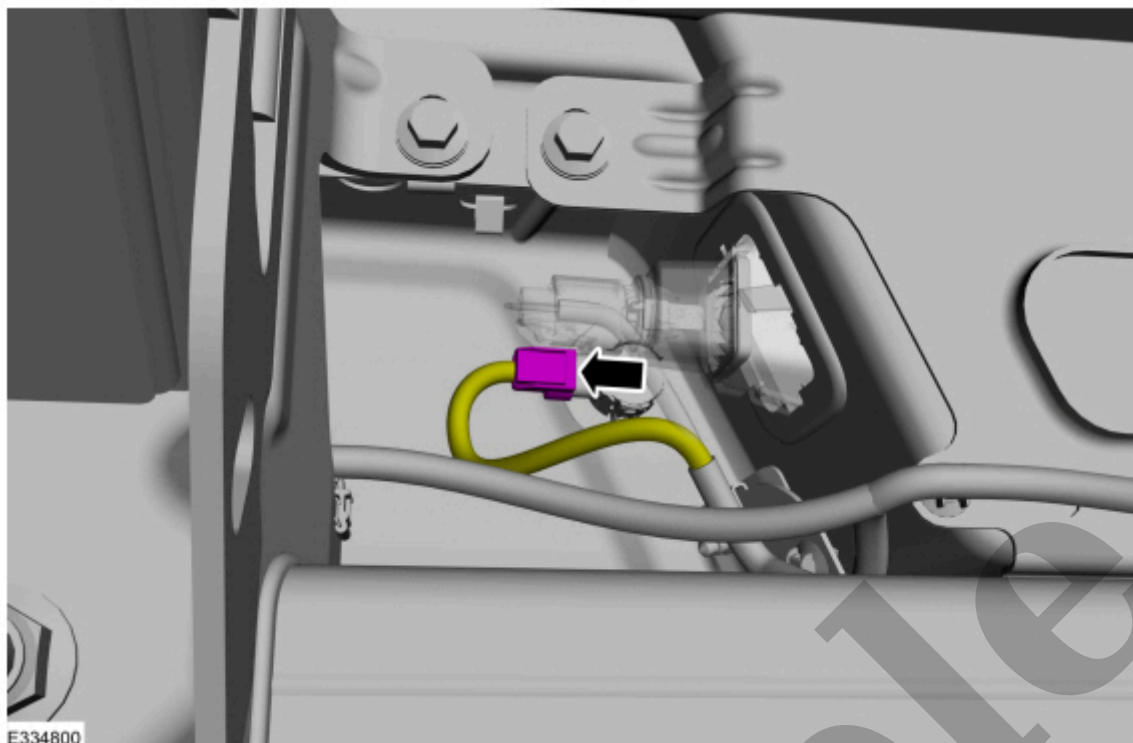
2005 FORD Focus Wagon OEM Service and Repair Workshop Manual

[Go to manual page](#)

Refer to: [Parking Aid](#)(413-13A Parking Aid - Vehicles With: Rear Parking Aid, Diagnosis and Testing).

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Sample



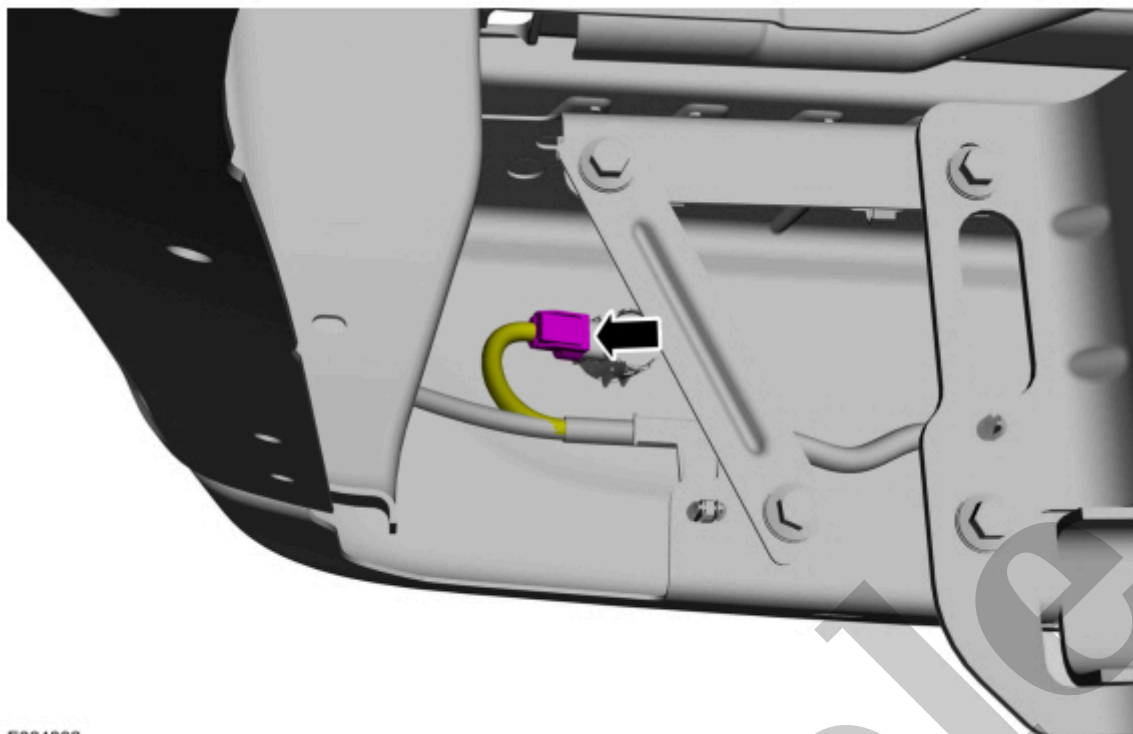
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3. **NOTE**

On both sides.

Remove the inner rear parking aid sensor.

- Release the tabs.
- Slide the inner rear parking aid sensor out of the bracket.



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5. **NOTE**

On both sides.

Remove the outer rear parking aid sensor.

- Release the tabs.
- Slide the outer rear parking aid sensor out of the bracket.



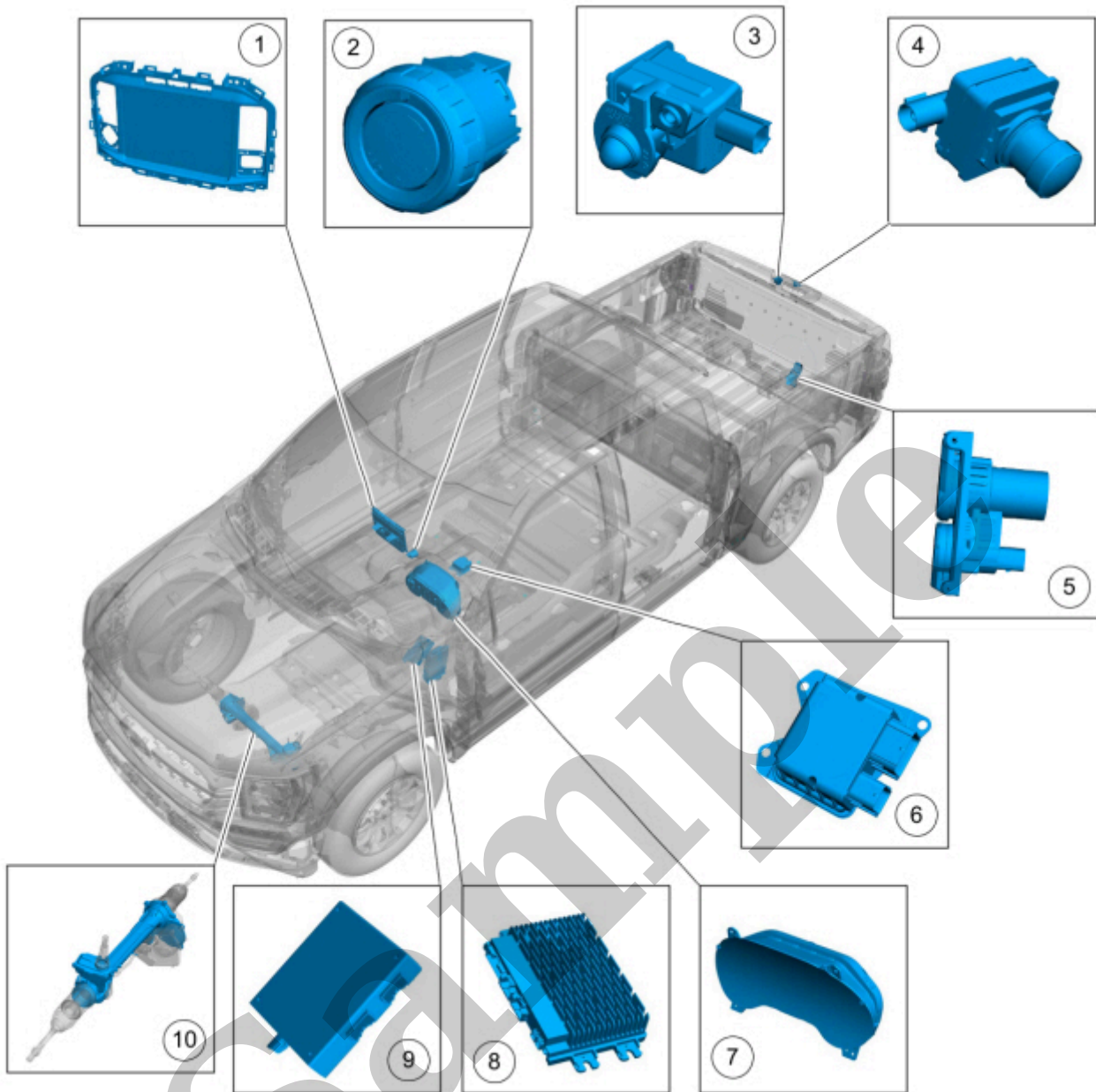
Specifications

| | |
|--|--|
| 413-13A Parking Aid - Vehicles With: Rear Parking Aid | 2022 F-150 |
| Specifications | Procedure revision date: 11/12/2014 |

Specifications

General Specifications - Rear Parking Aid

| Item | Specification |
|--|----------------|
| Test object position 1 (P1) and position 5 (P5), distance from rear bumper | 25 cm (10 in) |
| Test object position 2 (P2) and position 4 (P4), distance from rear bumper | 50cm (20 in) |
| Test object position 3 (P3), distance from rear bumper | 150 cm (59 in) |



E347348

| Item | Description |
|------|---|
| 1 | Audio system display |
| 2 | PTBA (Pro Trailer Backup Assist) control knob |
| 3 | Trailer lamp |
| 4 | Rear parking aid camera |
| 5 | 7/12 pin trailer connector |



Parking Aid - Overview

| | |
|--|---|
| 413-13D Parking Aid - Vehicles With: Trailer Back Up Assist (TBA) | 2022 F-150 |
| Description and Operation | Procedure revision date: 11/4/2020 |

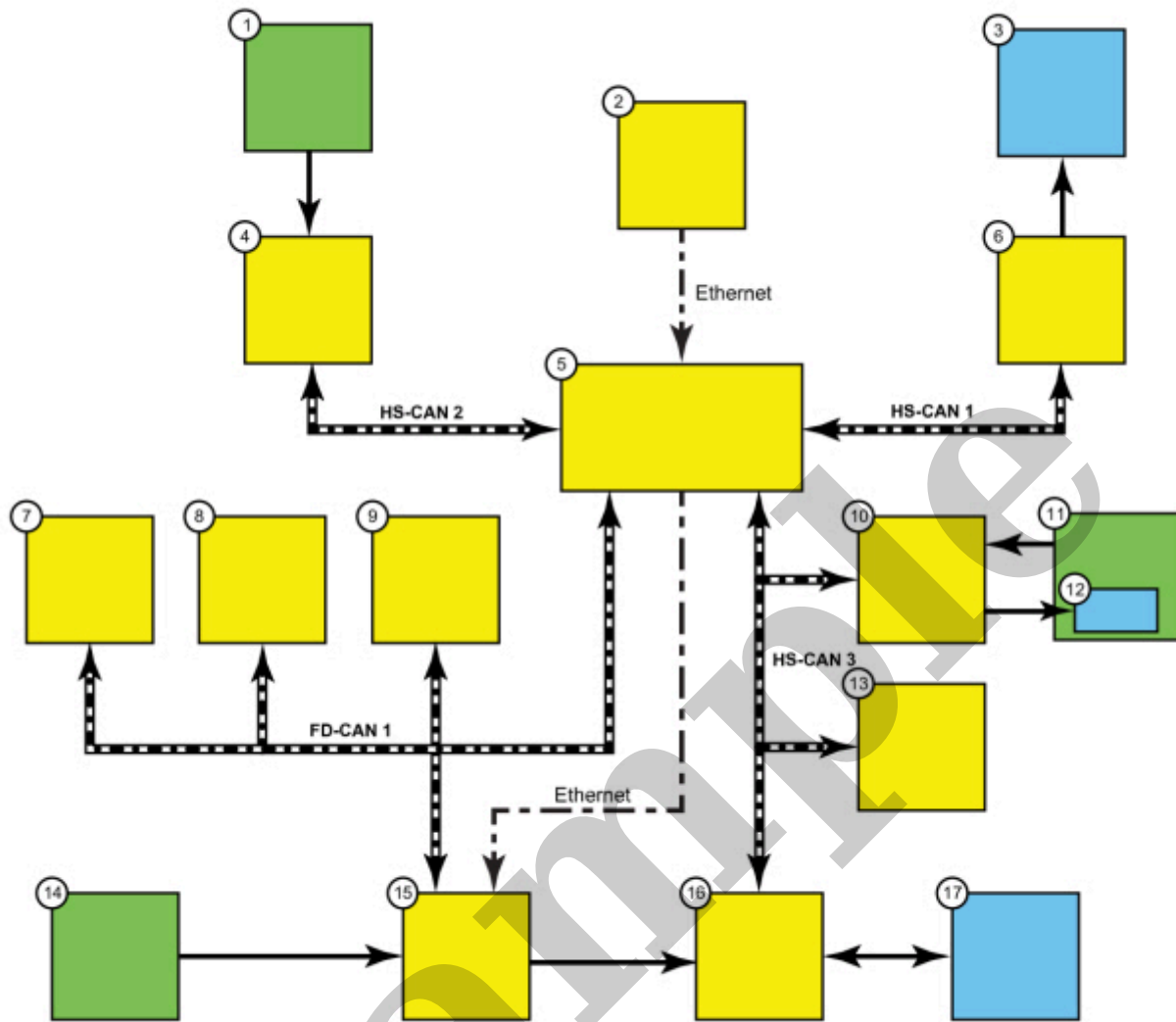
Parking Aid - Overview

Overview

Pro Trailer Backup Assist™

The PTBA (Pro Trailer Backup Assist) system aids the driver to steer the vehicle with a trailer attached while reversing or reverse parking. The PTBA (Pro Trailer Backup Assist) control knob, located in the dashboard, allows the driver to control the direction of the trailer and control how much the system should turn the trailer. The PTBA (Pro Trailer Backup Assist) system automatically steers the vehicle to turn the trailer the desired amount by taking over the steering while the driver remains in control of the accelerator and brakes. The system may limit vehicle speed to enhance the comfort and control over a variety of road surfaces.

When using the target sticker the system is using the camera to track the angle of the trailer vs the position of the vehicle. When the tracking is lost it can be caused by the sticker being dirty, camera dirty and/or scratched, bright light washing out the camera image or too much shadowing causing the algorithm to loose the target. When using the yaw rate sensor if the tracking isn't correct it could be the 12 pin connector is not fully seated, the sensor is not properly installed (tilted, not straight up and down) or the sensor is bad. You can switch from one to the other if a trailer is not suited for a particular version, the environment makes a version spotty / inoperable, or one is more convenient to use. If the target sticker version seems off delete the setup for that specific trailer and go through the setup and calibration section. The system might need better calibrations on that specific trailer.



E344123

| Item | Description |
|------|-------------------------------------|
| 1 | Trailer yaw rate sensor |
| 2 | TCU (telematic control unit module) |
| 3 | Trailer assist lamp |
| 4 | RCM (restraints control module) |
| 5 | GWM (gateway module A) |

| | | |
|---------------------------------------|-------------------------------------|--|
| Power mode/ignition state | BCM (body control module) | Ensures the ignition state is appropriate for PTBA (Pro Trailer Backup Assist) operation. |
| Trailer backup assist enabled request | APIM (SYNC module) | Enables the PSCM (power steering control module) for PTBA (Pro Trailer Backup Assist) operation for the trailer chosen by the user. |
| Trailer backup assist available | PCM (powertrain control module) | Provides the current PTBA (Pro Trailer Backup Assist) control knob position and button status (pressed/not pressed). |
| Trailer backup assist switch request | TRM (trailer module) | Provides the current PTBA (Pro Trailer Backup Assist) control knob position and button status (pressed/not pressed). |
| Trailer data | APIM (SYNC module) | Provides the trailer data for the current active trailer. Includes the trailer ID and trailer type stored in the APIM (SYNC module) . |
| Trailer speed limiting status | PCM (powertrain control module) | Provides the status of the PCM (powertrain control module) ability to support the speed limiting request from the PSCM (power steering control module) . |
| Trailer angle data | IPMA (image processing module A) | Provides the trailer angle data to the PSCM (power steering control module) . Includes trailer angle data and the status of the IPMA (image processing module A) ability to track the trailer. |
| Trailer yaw rate sensor data | RCM (restraints control module) | Provides the trailer yaw rate data to the PSCM (power steering control module) . Includes hitch angle data and the trailer yaw rate sensor ID. |
| Vehicle speed | ABS (anti-lock brake system) | Input to the PTBA (Pro Trailer Backup Assist) controller in the PSCM (power steering control module) . |
| Wheel speed data | ABS (anti-lock brake system) module | Confirms vehicle movement and calculates distance traveled during PTBA (Pro Trailer Backup Assist) maneuvers. |
| Wheel rotation data | ABS (anti-lock brake system) module | Confirms wheel rotation during PTBA (Pro Trailer Backup Assist) maneuvers. |

| Broadcast Message | Originating Module | Message Purpose |
|-----------------------|--------------------------------------|---|
| Trailer backup status | PSCM (power steering control module) | Illuminates the status indicator in the PTBA (Pro Trailer Backup Assist) control knob button when system is on. |

PCM (powertrain control module) Module Network Input Messages

| Broadcast Message | Originating Module | Message Purpose |
|--------------------------------|--------------------------------------|--|
| Powertrain Speed Limit Request | PSCM (power steering control module) | Limits the vehicle speed and throttle response when PTBA (Pro Trailer Backup Assist) is in use. |
| Trailer backup assist enabled | PSCM (power steering control module) | Provides the current PTBA (Pro Trailer Backup Assist) control knob position and button status (pressed/not pressed). |

ABS (anti-lock brake system) Module Network Input Messages

| Broadcast Message | Originating Module | Message Purpose |
|-------------------|--------------------------------------|--|
| Brake request | PSCM (power steering control module) | Activates the vehicle brakes to control speed during PTBA (Pro Trailer Backup Assist) maneuvers. |

APIM (SYNC module) Network Input Messages

| Broadcast Message | Originating Module | Message Purpose |
|--|--------------------------------------|--|
| Gear lever position | PCM (powertrain control module) | Input used for the park requirement for trailer set up in the message center. |
| Trailer backup assist text message request | PSCM (power steering control module) | Provides the trailer information message displays in the message center. |
| Trailer angle data | IPMA (image processing module A) | Provides trailer specific target data found during setup that must be stored in the APIM (SYNC module) . |