Park Assist

Jaguar XF is the first Jaguar to adopt the latest Electric Power Steering technology. This technology enables the implementation of the new Park Assist features, enhancing the current Parking Aid System.

Park Assist enables the driver to park and drive their vehicle in and out of tight parking spaces. Once the system has identified a parking space using its ultrasonic sensors, it automatically steers the vehicle into place while the driver operates the accelerator, brake and gear selection. Informative graphics and messages are displayed in the instrument cluster message center, guiding the driver through each stage of the maneuver.

The Park Assist System offers the following features:

- Parallel Park – maneuvering the vehicle into a parallel space
- Perpendicular Park – maneuvering the vehicle into a perpendicular space
- Park Exit – exiting a parallel parking space

The driver selects the Park Assist mode of their choice using the Park Assist Switch:

- One press selects Parallel Park
- Two presses selects Perpendicular Park
- Three presses selects Park Exit

The Instrument Cluster displays the selected Park Assist mode.

The optional Park Assist functions are an extension of the standard Parking Aid System, using extra sensors (Park Assist Sensors) mounted forward of the front wheel arches in conjunction with Parking Aid Sensors, front and rear. During the Park Assist maneuver, front, rear and 360 Parking Aid sensors are active. The Park Assist function can be switched on or off at any time by the driver using the Park Assist Switch.

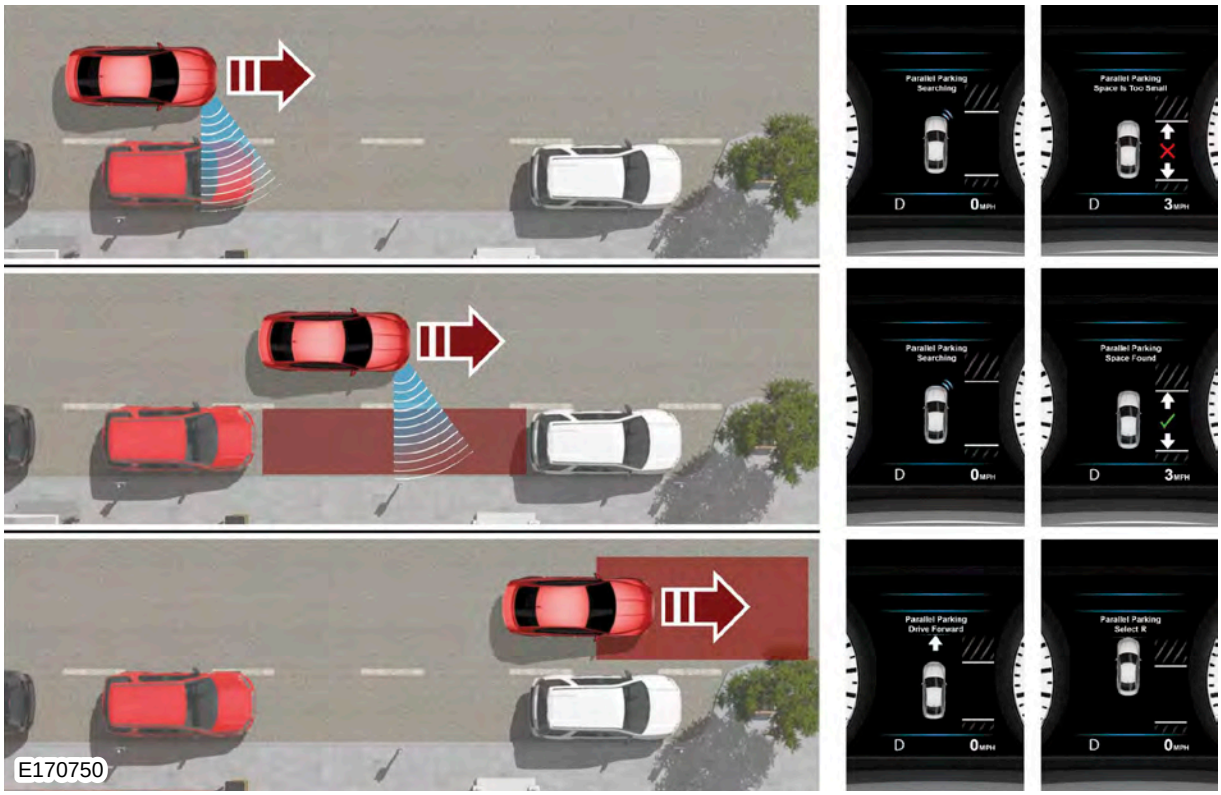
Parallel Park

To parallel park, the driver switches on the Park Assist function prior to identifying a potential parking space and slowly drives past the space. The front Park Assist sensors scan the size of the parking space as the vehicle is driven past it. The Park Assist control system informs the driver if the parking space is big enough to park the vehicle. The driver is alerted to a suitable parking space on the passenger side via a graphical representation in the Instrument Cluster Message Center. If the driver decides to park on the driver's side of the vehicle, the direction indicator must be operated. This action will prioritize driver's side parking space information, which will be presented to the driver in the message center.

If there is sufficient space, the driver stops the vehicle, selects reverse gear and lets go of the steering wheel.

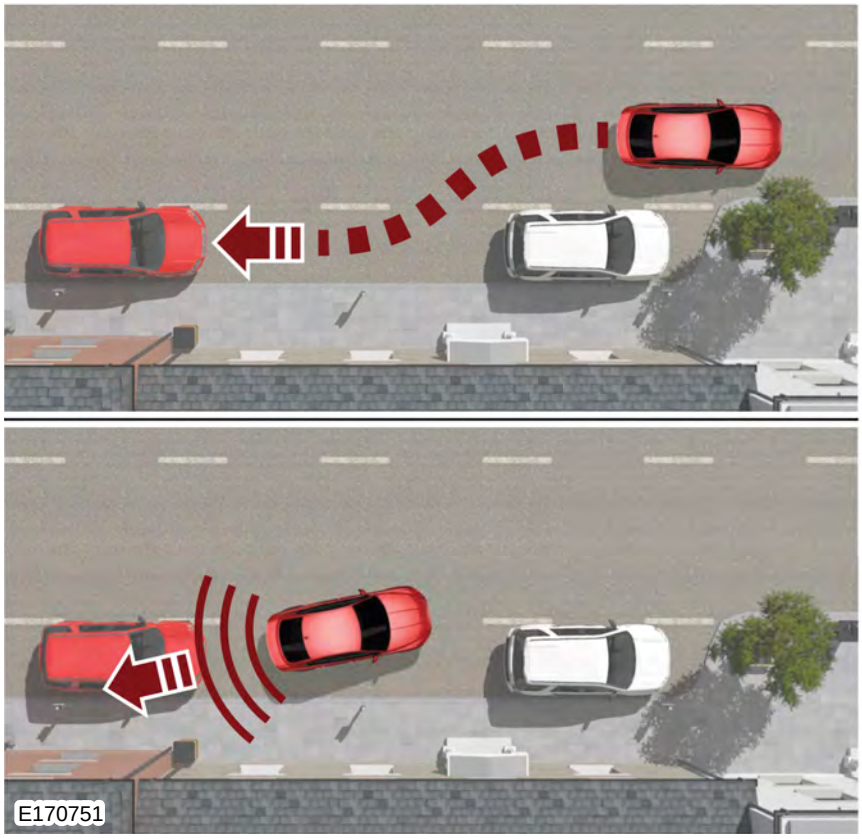
Parking Space Search and Location

Park assist system activated, searching for space. Park assist detects and measures the space. The vehicle comes to the end of the space and stops, ready for the next state.



Intended Reverse Path

The message center displays instructions and the projected path. Park assist then actively supports the driver by taking over control of the steering wheel.

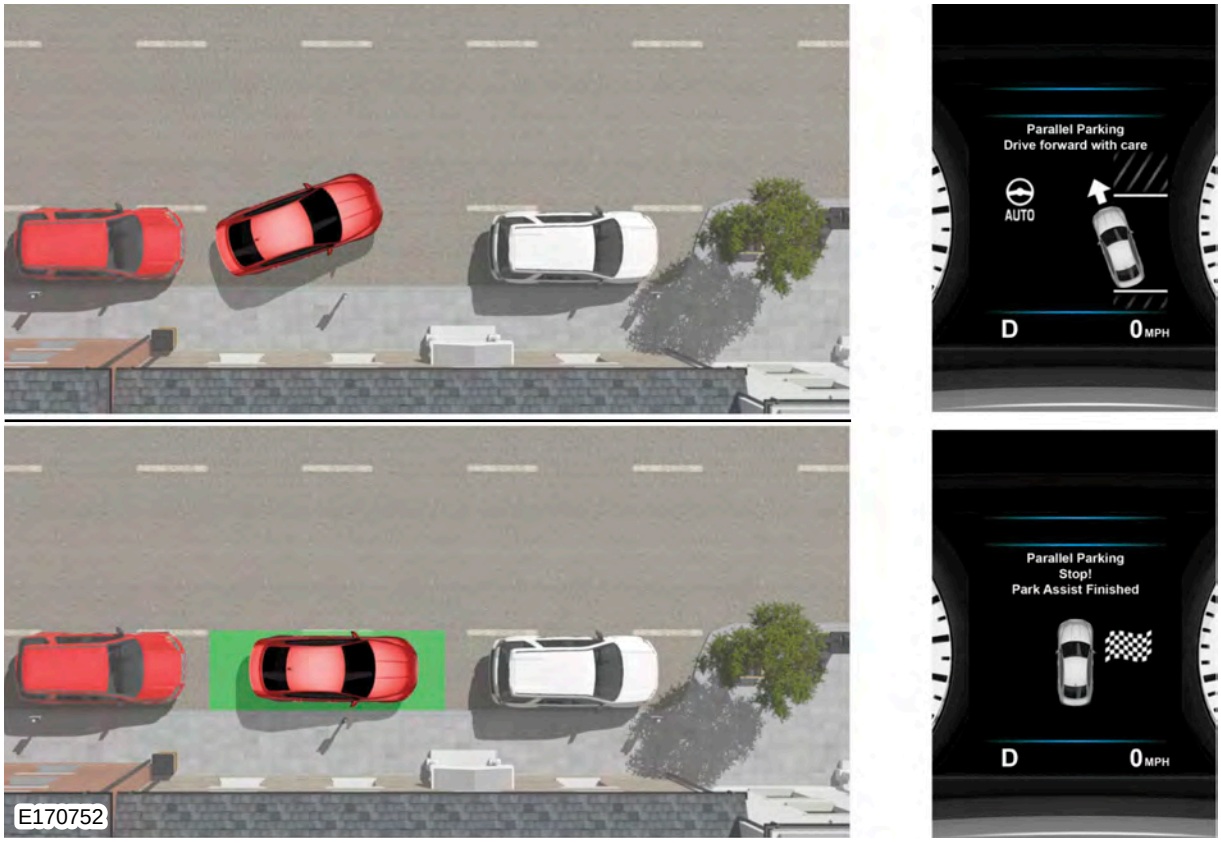


The driver is further assisted during the parking maneuver with front, rear and 360° Parking Aid functions, plus the rear camera view (if fitted), to warn the driver of objects in close proximity to the vehicle. The driver continues to brake, accelerate, and select the correct gear when parking the vehicle in the available space.

Park assist will instantly de-activate if vehicle speed is too high or if the driver takes control of the steering wheel.

Parking the Vehicle

If the vehicle is not in the correct position after the initial reversing maneuver, the driver is instructed to select a forward gear. When the forward gear is selected, the Instrument Cluster Message Center displays the appropriate parking instructions. If the vehicle is parking in a smaller space, more shuffling may be required to complete the parking maneuver.



Once the system has detected the vehicle is parked in the final position, the message center informs the driver the Park Assist function is complete. The driver selects neutral/park gear position and switches off the engine.

Restrictions of the Park Assist system include:

- The vehicle must be in a forward gear and travelling below 18 mph (30 km/h) to activate the Parallel Park search function
- The system de-activates at any speed above 18 mph (30 km/h), only re-activating when the speed drops back below the set speed threshold
- The search system is not active in reverse gear
- During the Parallel Park reverse and forward maneuvers, the system is only active up to a vehicle speed of 5 mph (8 km/h). The system de-activates above this predetermined speed
- The system will cancel if any force is placed on steering wheel

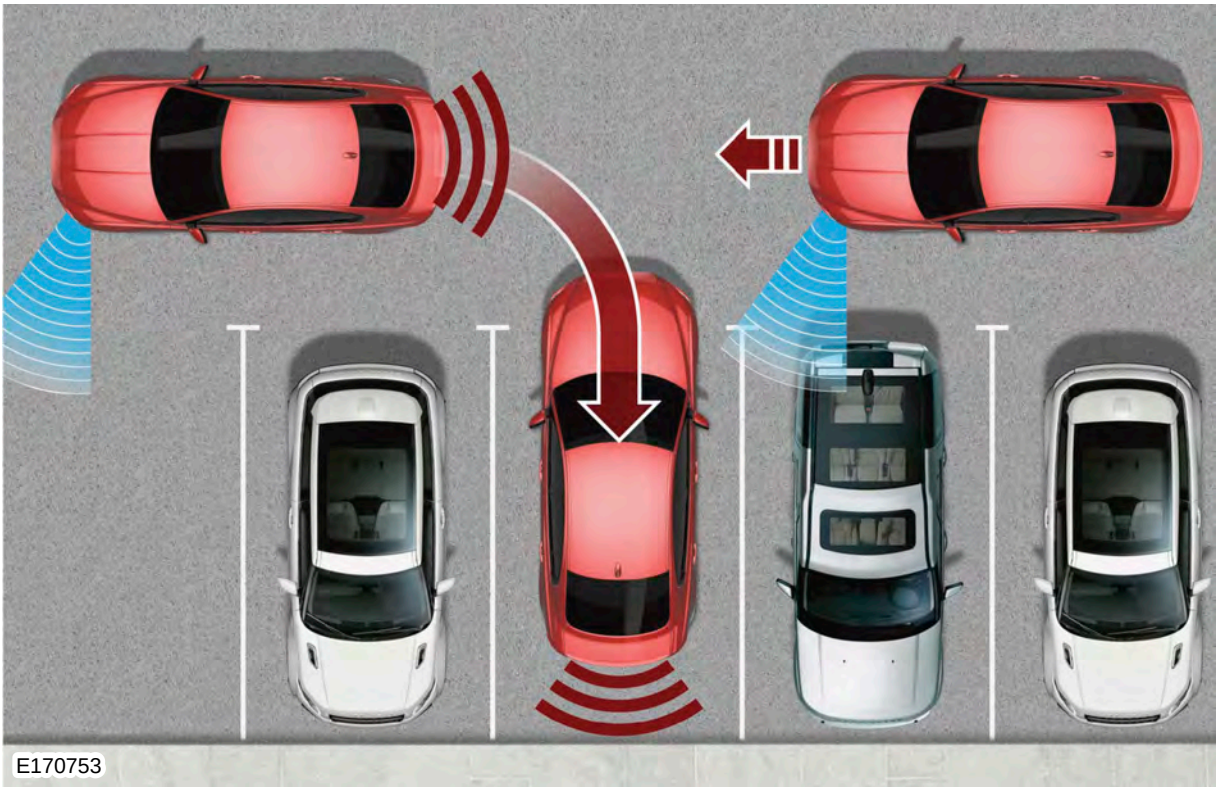
Perpendicular Park

Perpendicular Park extends the function of the Park Assist System to help the driver reverse into a perpendicular space. The system uses the ultrasonic sensors to identify a suitable space where the vehicle can be parked and the doors on each side opened safely.

Similar to Parallel Park, to activate the Perpendicular Park assist 'search for a space' function, the vehicle must be in a forward gear and travelling below 18 mph (30 km/h). Above this speed the system de-activates, only re-activating when the speed drops back below the set speed threshold.

NOTE: The search system is not active in reverse gear.

Any suitable parking space found during the search for a space will be retained for a distance of up to 8 meters once the vehicle has passed the parking space. Once a parking space has been found, the driver is informed, and prompted to engage reverse gear. As with the Parallel Park function, the Electric Power Steering System controls the steering while the driver controls vehicle acceleration, braking and gear selection.



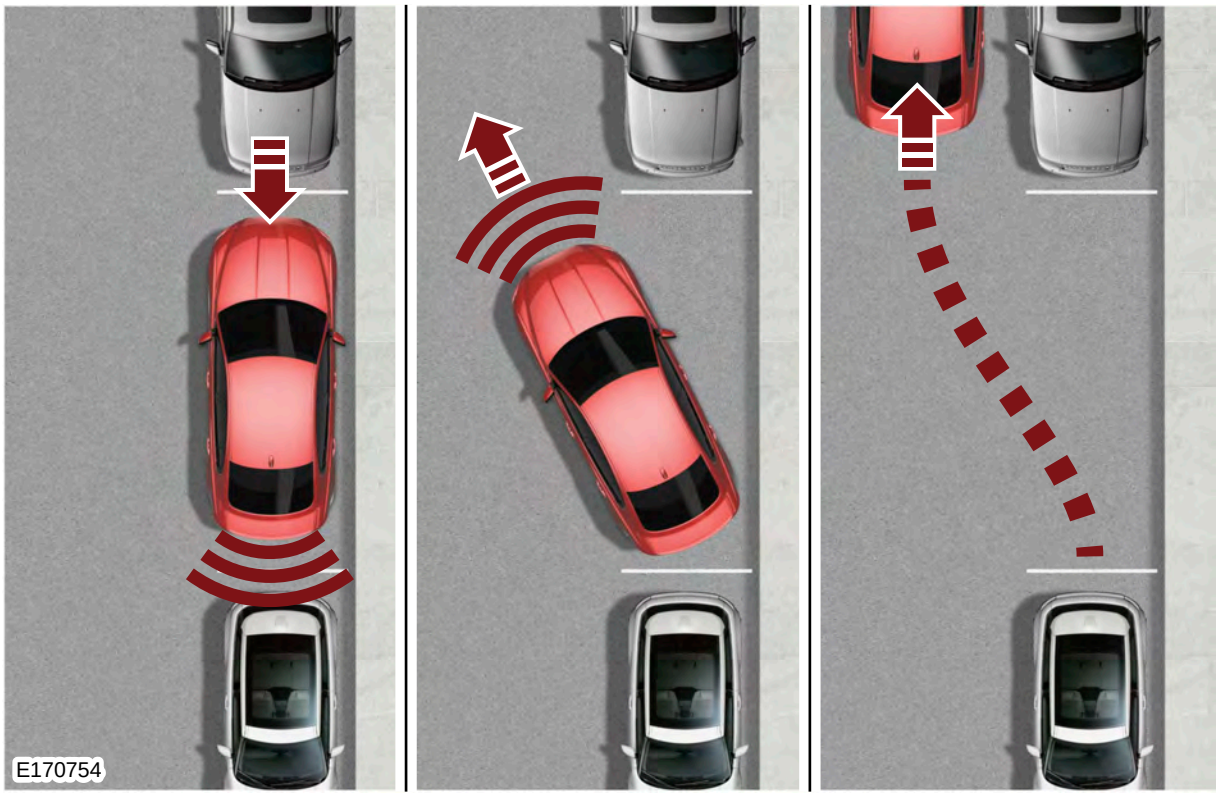
Multiple shuffles may be required to complete the parking maneuver safely.

The system is designed to work with parking spaces where there are one or two adjacent vehicles. During the perpendicular park assist reverse and forward maneuvers, the system is only active up to a vehicle speed of 5 mph (8 km/h).

As with Parallel Park, the system will cancel if any force greater than 2.3 Nm is placed on the steering wheel during any part of the parking maneuver. Front, rear and 360° Parking Aid controls and the rear view camera (if fitted) may also help warn the driver of objects in close proximity during the maneuver.

Park Exit

Park Exit is part of the Parallel Park function, and aids the driver by providing complete steering automation to maneuver the vehicle out of a parallel parking space, where other vehicles or objects may be parked in close proximity. Having judged that there is sufficient space to exit the parking space, the system prompts the driver to select reverse. The system operates the steering, while the driver controls vehicle acceleration, braking and gear selection. The driver is in control at all times. During the Park Exit reverse and forward maneuvers, the system is only active up to a vehicle speed of 4 mph (7 km/h).



The maneuver may involve multiple shuffles backwards and forwards to safely exit the space. Front, rear and 360° Parking Aid controls and the rear view camera (if fitted) may also help warn the driver of objects in close proximity during the maneuvers. As with Parallel and Perpendicular Park, the system will cancel if any force greater than 2.3 Nm is placed on steering wheel during any part of the parking maneuver.

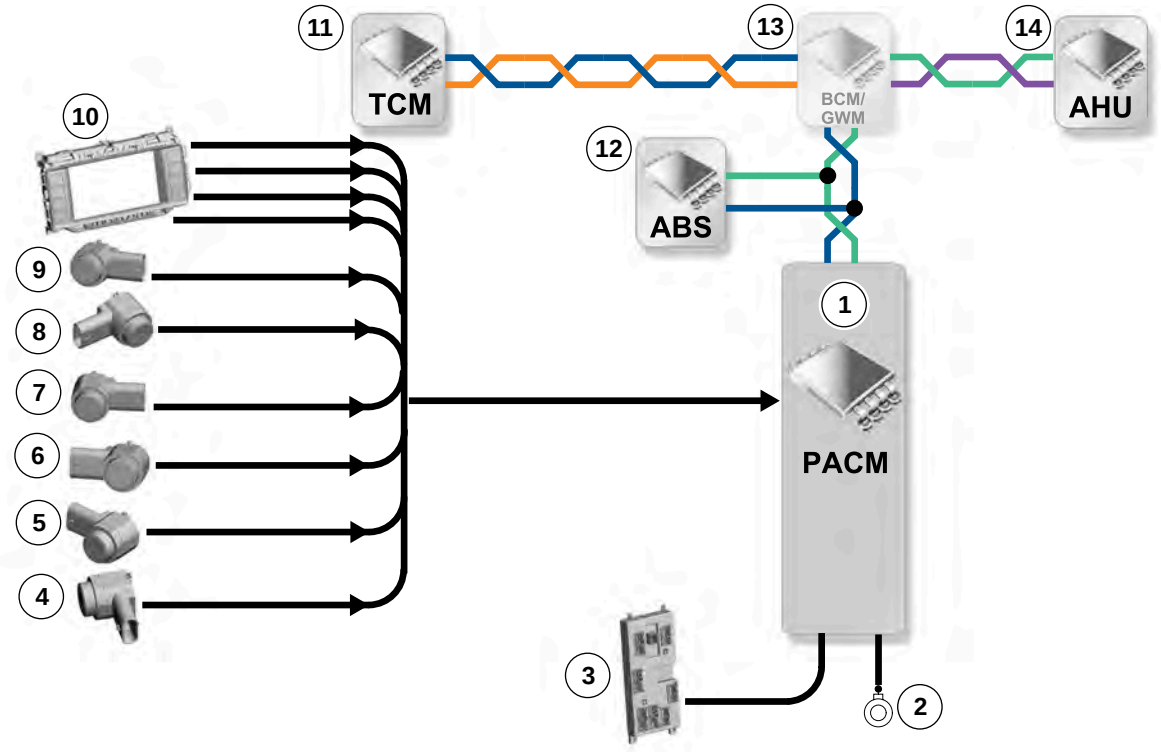
NOTE: Park Exit is only suitable for Parallel Park exit. Damage may occur if selected after Perpendicular Park. If the steering is restricted or vehicle speed is increased above a pre-determined threshold while using Park Assist, the maneuver is cancelled.

Park Assist Limitations

The following conditions may inhibit the accurate performance of the system:

- The size or shape of the parking space changes after it was measured
- There is an irregular curb alongside the parking space or the curb is covered with leaves, snow, etc.
- The vehicle is being used to transport a load that extends beyond the perimeter of the vehicle
- One of the parked vehicles has an attachment at a raised height, such as a flatbed, snow plow or cherry picker
- The parking space is located on a corner or curve
- The sensors are dirty or covered in mud, ice or snow
- The weather is foggy, raining or snowing
- The system encounters an obstruction that is thin or wedge-shaped

Parking Aid and Park Assist Control Diagram



Item	Description	Item	Description
1	Parking Aid Control Module	10	Switchpack
2	Ground	11	Transmission Control Module
3	Body Control Module/Gateway Module	12	Anti-Lock Brake System Control Module
4	Park Assist Sensor – Left Side	13	Body Control Module/Gateway Module
5	Distance Control Sensor (x2)	14	Audio Head Unit
6	Distance Control Sensor (x2)	A	Hardwired
7	Distance Control Sensor (x2)	AM	Chassis HS CAN
8	Distance Control Sensor (x2)	AN	Powertrain HS CAN
9	Park Assist Sensor – Right Side	AP	Comfort HS CAN