



# Technical Journal

TITLE:

**Parking Assistance System (PAS) enhanced troubleshooting**

<b>REF NO:</b> TJ 26753.4.0	<b>ISSUING DEPARTMENT:</b> Technical Service	<b>CAR MARKET:</b> United States and Canada	
<b>PARTNER:</b> 3 US 7510 Volvo Car USA		<b>ISSUE DATE:</b> 2020-09-23	<b>STATUS DATE:</b> 2020-09-29
<b>FUNC GROUP:</b> 3871	<b>FUNC DESC:</b> Parking assistance	Page 1 of 15	

“Right first time in Time”

## Vehicle Type

Type	Eng	Eng Desc	Sales	Body	Gear	Steer	Model Year	Plant	Chassis range	Struc Week Range
1XX							2007-9999		0000001-0999999	200605-999952
2XX							2007-9999		0000001-0999999	200620-999952
3XX							2007-9999		0000001-0999999	200620-999952
5XX							2007-9999		0000001-0999999	200620-999952

## CSC Customer Symptom Codes

Code	Description
KS	Front/rear park assist/Does not work

## DTC Diagnostic Trouble Codes

Rows beginning with \* are modified

Note! If using a printed copy of this Technical Journal, first check for the latest online version.

### DESCRIPTION:

PAS= Parking Assistance System

DTC= Diagnostic trouble code

VIDA= Vehicle Information and Diagnostics for Aftersales

It has been noticed on requested materials that it has replaced many PAS sensors without finding any fault on the parts. As a help to the troubleshooting on parking assistance system, we have developed some points of possible actions in case of problems, see service below.



## SERVICE:

In case of customer complaints for false warnings and/or false diagnosis.

False detection may be caused by:

- Water and/or dirt can be stuck between the sensor and the sensor holder.  
Verify that the holder is clean and test that water can easily be drained away via drain hole and clean the sensor. For cleaning of sensors and holder use Isopropanol.
- The sensor is not centred in the bumper hole and therefore its membrane is in contact with the bumper. If so, the conduction of sound can be transmitted to a nearby sensor. The reason for this misalignment can be that the sensor cable is pulling the sensor so the sensor is tilted or the holder is not properly centred over the bumper hole.  
Verify that the sensor is centred in the middle of bumper hole, that is not tilted and the sensor does not press on either side and that the cable is not taut.
- If the rubber ring around the sensor is folded, damaged or over painted, this can lead to false warnings.  
Remedied by installing an unpainted rubber ring unfolded around the sensor.
- Loose sensor or loose sensor holder can lead to a false warning or that failure warning will be missing.  
Remedied by mounting the loose detail properly according to Volvo instruction.
- The sensor membrane can be damaged by stones/blasting and corrosion can occur. This can cause an increased risk of false warning or missing failure detection.  
Remedied by paint or change the sensor.
- Verify that no accessories, not original parts or damaged outer parts of the car can be in the ultra-sound spreading region from the sensor.
- DTC are registered as internal diagnostics of the sensor or control unit (PAM) if something is wrong, sometimes it can set incorrect DTC.  
Verify by switching the sensor position between the right and left side symmetrically and erase DTC. If the error code was moved to the new sensor position, replace the sensor. If the DTC is the same with the new sensor at the original position, control cabling to the sensor and placement for holder.
- In case of false warnings without any DTC from a specific sensor.  
Verify by switching the sensor position between the right and left side symmetrically to check if symptom follow the sensor or place.  
\* Verify that the registration plate or its holder is not in the area for detecting of the ultrasonic sensors.
- Interruptions can disturb the control unit (PAM) and can cause DTC for several/all sensors at the same time.  
Verify if the DTC can be found in PAM for cabling, remedied or replace cable harness and erase the DTC.



See also owners manual for technical limitations of the parking assistance system to inform the customer.

- Snow and ice can get stuck around/behind the sensor. This can lead to a false warning.
- Snow in front of the sensor can lead to attenuation of the ultrasound, this can lead to failure detection. Snow in front, around or behind the sensor can also lead to icing, this can cause or increase probability of false warnings of the system.
- Water splash at the sensors (for example when splashing water from passing car at an intersection) can lead to a false warning.
- When driving on uneven road conditions for example; cobbles, tractor road or bumpy driveway can result in false warning because of the ultrasound bouncing off the road bumps.
- Heavy rain can result in false warnings when the emitted ultrasound by the water drops, or that the rain itself creates ultrasound which will be wrongly interpreted as objects by the sensor.
- Ultrasound originating from e.g. workplaces, pressurized air, cleaning machines, brake press release from trucks. These sounds can cause false warning or failure detection.
- If ice forms around the sensor membrane on the sensor it can cause or increase the likelihood of false warning system. This is because the sound is passed over to the bumper which then can be reflected backwards to the sensor or to a nearby sensor

### **VEHICLE REPORT:**

Yes, please submit a Vehicle Report if the service solution described in this TJ has no effect. Use concern area "Vehicle Report" and sub concern area "Support not needed", use function group 3871.