

V O L V O

Volvo Car USA LLC

Technical Journal

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Car Market United States and Canada	Partner 3 US 7510 Volvo Car USA	Function Group 3900	
Function Description Media, navigation and communication		Page Page 1 of 13	

Attachment

File Name	File Size
CUSTOMER DESCRIPTION QUESTIONNAIRES_IHU (2).pdf	1.3571 MB

Rows beginning with * are modified

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

DESCRIPTION:

*Updated information on latest software and customer questionnaire

NOTE: Your warranty claim might be rejected if the procedure in this Technical Journal (TJ) is not followed.

In many cases the Infotainment Head Unit (IHU) does not need to be replaced and can be retained by following the fault tracing in VIDA. As a last step, support can be provided by your local technical helpdesk or from Volvo Cars Central Technical Helpdesk.

Due to this, we are issuing a **Prior Approval requirement for all IHU replacements.**

*The attached Customer Description Questionnaire is a tool, it is NOT required to have completed

NOTE: This TJ applies to IHU replacements for all ICUP vehicles (VDN code RP03).

List of abbreviations:

IHU - Infotainment Head Unit

VDN - Variant Designation Number

ICUP - Infotainment Connectivity Unit Program

CSD - Center Stack Display

SPJ - Service Product Journals SP - Software Product

PIE - Product Information Exchange, a Volvo Cars system

CSC Customer Symptom Codes

Code	Description
ZY	Electrical system/Component electrical system wrong installation/missing
N7	Instrument panel/dashboard/Other instrument panel/dashboard problems
1Z	Service/repair/Software update failed
7B	Starting/Engine does not start/Engine does not turn/No clicking sound at start attempt
LM	12 V main battery/Dead battery

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Code	Description
2Y	Turn signals/Does not work/no indication
4W	Lounge Console/Tablet does not work
KS	Front/rear park assist/Does not work
HE	Gauges/Other gauge problems
YF	Graphic information display/Wholly or partly dimmed
KD	Head Up Display HUD/Does not work
32	Infotainment/System reboots
2X	Park assist camera/Does not work
7G	Text window and warning symbol/Yellow symbol and text message
IV	Text window and warning symbol/Text message
GH	Trip computer/Does not work
GI	Trip computer/Other trip computer problems
8M	Warning lights and chimes/Other warning/chime problems
DL	Warning lights and chimes/Malfunction Indicator Light ("Check engine" light) indication/no indication
9U	AUX panel/Does not work
ER	App/Does not work
2E	Audio other/Keypad on center console does not work
8Y	Audio other/Volume changes unexpectedly
DO	Audio other/Audio unit (complete) does not work
EV	Audio other/Steering wheel audio controls do not work
FC	Audio other/Other audio problems
XD	Audio other/Audio unit display does not work
4M	Bluetooth/Problem to add/pair cellular phone
4N	Bluetooth/Phonebook synchronization problems
4P	Bluetooth/Interrupted Bluetooth communication
61	Bluetooth/Audio streaming does not work
62	Bluetooth/Telephony does not work
6B	Buttons/control knobs on centre console (Media, communication and navigation)/No/reduced/incorrect function
7D	CD player/Other CD player problems
7J	Cellular phone/Other party cannot be heard/Handsfree
7M	Cellular phone/Other party cannot hear/Handsfree
7S	Cellular phone/Other cellular phone problems
II	Cellular phone/Voice control does not work
14	Exterior artificial sound creation/Does not work
EM	Internet Connection/Does not work
6N	Mobile app Volvo Cars/Other communication problems
7N	Navigation/Other navigation problems
EO	Navigation/Does not work
HP	Navigation/Navigation system gives incorrect directions

Code	Description
IC	Navigation/Updates of information slow/does not work
IJ	Navigation/Voice guidance does not work
IP	Navigation/Error message on screen
IT	Navigation/Locations cannot be stored/disappears
7W	Radio/Interference/FM and DAB
DP	Radio/Does not work
FE	Radio/Setting frequency (station or pre-set) does not work
HQ	Radio/Poor reception/FM and DAB
52	Remote update/Does not work
2P	Satellite radio/Does not work
39	Sounds and speakers/Warning and notification sounds not audible
FW	Speakers/Crackly sound
FY	Speakers/Distorted sound
IB	Speakers/Does not work
3J	TV/Does not work
3K	TV/Other problems
HY	TV/TV reception poor/does not work
KE	Touch input/Does not work
9S	USB unit/Does not work
25	Visual driver information/Traffic information: Does not work
KF	Visual driver information/Home button on center console display does not work
KY	Volvo On Call/Does not work
TC	Blower fan/Does not work
6C	Buttons/control knobs on centre console (Climate)/No/reduced/incorrect function
TB	Temperature control/A/C does not work
TN	Temperature control/Heater does not work
6E	Driver information/Wrong/missing

DTC Diagnostic Trouble Codes

Vehicle Type

Type	Eng	Eng Desc	Sales	Body	Gear	Steer	Model Year	Plant	Chassis range	Struc Week Range
224							2023-9999		-	202217-999952
225							2023-9999		-	202217-999952
227							2023-9999		-	202217-999952
234							2022-9999		-	202122-999952
235							2022-9999		-	202122-999952
236							2022-9999		-	202122-999952

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Type	Eng	Eng Desc	Sales	Body	Gear	Steer	Model Year	Plant	Chassis range	Struc Week Range
238							2021-9999		-	202122-999952
246							2022-9999		-	202122-999952
256							2023-9999		-	202222-999952
536	EB	E400V23					2025-9999		-	202409-999952
536	EC	E400V5					2022-9999		-	202146-999952
536	ED	E400V6					2021-9999		-	202037-999952
536	EF	E400V2					2022-9999		-	202146-999952
536	EH	E400V8					2024-9999		-	202317-999952
536	EP	E400V16					2024-9999		-	202317-999952
536	ER	E400V12					2024-9999		-	202317-999952
536	EY	E400V19					2025-9999		-	202417-999952
536	EZ	E400V22					2026-9999		-	202517-999952
536	K7	BK7KERS					2023-9999		-	202217-999952
536	K8	BK8KERS					2023-9999		-	202150-999952
536	K9	BK9KERS					2023-9999		-	202222-999952
536	L1	BL1KERS					2023-9999		-	202217-999952
536	L3	BL3KERS					2023-9999		-	202222-999952
536	L5	BL5KERS					2023-9999		-	202222-999952
539							2022-9999		-	202122-999952

SERVICE:

In most cases, the IHU does not need to be replaced and can be retained by following the fault tracing in VIDA.

If the normal fault tracing is unsuccessful, and the next step is to replace the IHU, this TJ must be followed.

NOTE: Always ensure that the vehicle is updated to the latest software baseline before initiating any fault tracing.

The latest software release is **5.1.17, this software contains IHU logic. Please verify vehicles are on this or a later software before fault tracing.*

For some cases a manually triggered IHU restart may resolve a symptom, i.e., long-pressing the home button at the Center Stack Display (CSD) until the screen becomes dark and the Volvo logo appears. In some cases this procedure may need to be repeated a second or a third time.

Before replacing any IHU hardware, the following steps must **always** be followed.

The action list below can also be found in the VIDA fault tracing - IHU component test.

If the customer is experiencing issues with the infotainment system, perform the following instructions one by one.

Verify that the hardware- and serial numbers of the IHU can be read in VIDA by following the steps below:

1. In VIDA, navigate to the “Software Installation” tab.
2. Go to the “Advanced Test” tab.
3. Select the Infotainment Head Unit (IHU).
4. Click on the “Enable Programming mode” button.
5. Attempt to read the hardware and serial numbers of the IHU.

If the hardware and serial numbers can be read, it indicates that the Infotainment Head Unit does not need to be replaced.

If the IHU hardware and serial number can be read in VIDA, according to the section above, proceed with the steps below:

NOTE! All customer settings will be lost during the following process.

1. In VIDA, order the software product “IHU Restoration” (see model specific part numbers under “**Failing Part**” below) and follow the instructions in VIDA.

If it is not possible to read the IHU hardware and serial number, follow the steps below:

1. Perform a 12 V reset by disconnecting the battery connections on the main battery, wait for 10 min and then reconnect the battery.
2. Ensure that all connections to the control module are secure, including power, ground and communication connectors.

If the IHU still does not respond, it indicates that there may be issues with the IHU. **Contact Technical Support for further assistance.**

NOTE: The listed VST Operation No: 99927-2 in this TJ is only allowed to be claimed when the hardware and serial number cannot be read in VIDA.

After completing all steps above:

- If the symptom cannot be reproduced, return the vehicle to the customer.
- If the symptom persists or if the vehicle returns with the same symptom, **contact Technical Support for further assistance.**

How to obtain Prior Approval

To obtain Prior Approval before replacing the IHU hardware, please follow:

- Follow the instructions in this TJ
- Create a Vehicle Report, support needed, addressed to your local technical helpdesk. Please describe the symptom in detail, include all VIDA diagnostic log files (refer to SPJ 1002481) and a detailed description of the diagnostics performed.
- If the symptom is judged as a hardware-related issue, the Technical Support will provide the Prior Approval as an answer in the Vehicle Report.

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The IHU component test in VIDA can be accessed by following these steps:

1. Connect the vehicle to VIDA
2. Use the guided fault tracing by selecting the customer symptom and customer function relevant to the symptom the customer is experiencing.
3. Follow the instructions in the component test for the Infotainment Head Unit (IHU).

Warranty claim info:

- Prior Approval is required.
- To have a warranty claim accepted for a job described in this TJ, use the corresponding **VST OP number** stated in this TJ.
- Note that both the **TJ number** and the **Vehicle Report number** must be included in the **repair order text**.

Failing Part:

Software Product: "IHU Restoration"

Use the model-specific part number as indicated below:

- 32477106 - S90/V90/V90CC
- 32477107 - S90L
- 32477108 - XC90/XC60
- 32477109 - S60/V60/V60CC/S60L
- 32477110 - XC40/EX40/C40/EC40

VST Operation Number

VST Operation Number	Description
98800-3	Software product download acc. to TJ
99927-2	General Reimbursement acc. to TJ (only to be used when the hardware and serial number cannot be read in VIDA)
36001-2	Diagnostic trouble codes read/ reset

VEHICLE REPORT:

Yes, if all bullets under "Service" in this TJ have been performed but the symptom is remaining, please submit a Vehicle Report. Use concern area "Vehicle Report" and sub concern area "Support needed", use function group 3900.

To view TJ attachments continue to next page. This TJ has one attachment.

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Doc Name: Symptom Description Questionnaires		

SYMPTOM DESCRIPTION QUESTIONNAIRES

INTRODUCTION

WHY

Identifying the customer's symptoms successfully is the first step to satisfying customers on the first try. However, gaining a full understanding of the customer's symptoms is usually a very difficult task given the customer's inability to describe the symptoms in adequate detail. Further probing by the Service advisor is generally necessary to understand the symptoms.

The **"Symptom Description Questionnaire"** is an additional support tool that allows the Service advisor to ask detailed probing questions to understand customer's symptoms in full detail.

With the addition of connected car features such as Apple CarPlay, Android Auto, and the variety of apps available on the Google Play store in ICUP infotainment systems, there is an increased risk of compatibility issues. Outdated mobile phone software, application versions, or third party apps and devices can contribute to customer concerns making it critical to gather this information, including whether or not the customer uses any aftermarket insurance trackers or dongles.

HOW

By following a standardized data sheet, the Service advisor or appointment coordinator will be able to probe and capture the necessary details about the symptoms. The completed data sheets will provide the rest of the service team with adequate details to understand the nature and location of symptoms.



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SYMPTOM DESCRIPTION QUESTIONNAIRES

Finally, it is important to note that the **"Symptom Description Questionnaire"** is a support tool for the Service advisor to assist him in customer interviews and that there may be circumstances where it is not appropriate to use the questionnaire. **Not all questions may be applicable to the customers situation.**

WHEN

The **"Symptom Description Questionnaire"** should be used when the customer describes or inquires about symptoms that are not familiar to the Service advisor. **The Service advisor should then take the initiative to locate the appropriate section of the questionnaire and walk the customer through the relevant questions.** The customer should be assisted by the service adviser/manager while filling out the questionnaire.

These questionnaires should be located in the write-up or appointment scheduling area, ideally in a digital format to allow attachment to a vehicle if necessary, and accessible to customer contact personnel, i.e. Appointment Coordinators or Service Advisors. This questionnaire should NOT be provided to the customer.

Doc Name: Symptom Description Questionnaires

Infotainment

Electrical symptoms

1. Is the customer concern regarding a display? The instrument cluster (the screen in front of the steering wheel) or the infotainment screen (the screen in the center of the dash)?
2. Are they losing audio when this happens?
3. Does the concern happen with more than one key or driver?
4. When was the last time it happened?
5. How often does it happen? (daily, weekly, only once?)
6. How long did the symptom last?
7. Did a Volvo banner appear after the screen concern?
8. What was done to restore the screen's operation?
9. Was CarPlay/Android Auto used?
10. Was anything connected to the USB ports in the vehicle?
11. Did this happen after an Over The Air (OTA) update?
12. How is this vehicle stored? Exposed to the hot sun? Carport? Garage? Parking structure?
13. Did the symptom occur right after a vehicle started or was the vehicle driven? For how long?
14. If it occurred after a start-up, how long was the vehicle parked for?
15. Did the screen go blank after a change of cabin lighting? (ex. going under a tunnel)
16. Any photos or media of the symptom? (please collect if available)
17. Any messages displayed in the IHU or DIM?
18. Does the customer utilize apps that have been downloaded to the vehicle? If so, please identify them.
19. Have the customer try and describe their 'normal' process upon entering the car; how they interact with the infotainment system, how/if they connect their phone, any apps in use, navigation, etc.

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Steps for the service writer and technician:

Symptom description _____

Conditions when symptom occurs

Environment:

Type of weather:

Outside temperature:

Are there any dashboard warning lights coming on?

Which ones? _____

Yes

No

Can symptom be easily duplicated by the customer?

Yes

No

Does the symptom occur suddenly?

Yes

No

Does the symptom occur gradually?

Yes

No

When was the symptom first noticed? _____

1. Inspect the center console for spillage.
2. Sticky knobs or buttons?
3. Sticky residue on/around the CCD?
4. Residue on the IHU itself?
5. Inline connectors under it for residue.
6. Water or moisture in the floorboard?
7. Inspect inline connectors for any damages.
8. Inspect the OBD2 and behind the OBD2 for any signs of GPS dongles or OBD2 inline accessories.
9. Anything in the USB ports?
10. Inspect the vehicle for anything aftermarket.
11. Any third party applications installed in the IHU? (Games, streaming apps, etc)

Customer Mobile Phone Questions

1. Is the customer symptom specific to the Volvo Cars App, CarPlay, Android Auto, or Bluetooth functionality?
2. Is the issue specific to the customers phone? Does it occur with any other phones within the customers family?
3. What is the make, model, and current operating system version of the customers phone?
4. What is the current app version of the Volvo Cars App installed on the customers phone?
5. Is the customers phone paired to the vehicle and the Volvo Cars App?
6. Are the data permissions enabled both on the customers phone **and** in the center console display?
7. If CarPlay/Android Auto related, has the customer made their current cable available for you to inspect/test? Has the charging port on the customer phone been inspected for debris/damage?
8. For Apple CarPlay symptoms, is the cord being used a genuine Apple product?
9. How often to the symptoms related to the mobile device occur?
10. Does the customer connect their device with the cable prior to starting the vehicle?
11. Is the vehicle software up to date?
12. Have we tried to connect with a similar phone/alternate phones? Have we had alternate phones connected while driving (CarPlay, bluetooth, etc) to replicate the customers usage scenario?

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SYMPTOM NOT FOUND

Below is a list of thought starters for procedures to be followed when a technician cannot verify a customer's symptom.

- Ensure that the service writer is requesting all information from the customer regarding the symptom at the initial write-up:
 - a) Does it happen when the car is cold, hot, etc.?
 - b) If possible, someone should drive the car with the customer for an actual demonstration of the problem.
- **Service writer should not make diagnosis at the time of the write-up.**
- Technician should review the customer's symptom and history with the service writer to ensure that all details are listed on the R/O.
- Service advisor (if applicable) should assist the technician in duplicating the customer's symptom.
- Service writer to contact customer by phone, if possible, to explain the difficulty in duplicating the symptom and attempt to ascertain more specifics from the customer.
- Dealer should make all attempts to duplicate the symptom, such as requesting a night drop-off for a cold start problem, that the customer leave the car running to show technician the problem on hot running conditions, etc.



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SYMPTOM NOT FOUND

- If symptom cannot be duplicated, request that the customer demonstrate the problem for the technician or shop foreman.
- Retailer may request permission from the customer to have a retailer employee actually drive the vehicle home for a reasonable period of time to try and duplicate the symptom.
- If the condition cannot be duplicated, DO NOT attempt a repair. The first step in any repair is verification of the symptom and no further steps should be taken until verification has been accomplished.
- Never indicate "no symptom found" on the *RO* without stating what procedures were followed and completed. *RO* should indicate that neither the retailer nor the customer could duplicate the symptom at this time. Will continue to monitor the condition to assure customer satisfaction.