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MESSAGE CENTER

INFORMATION AND MESSAGE CENTER (G2409968)

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PRINCIPLES OF OPERATION

For a detailed description of the information and message centre system and operation, refer to the relevant Description and Operation section of the workshop manual. REFER to: [Message Center](#) (413-08 Message Center, Description and Operation).

INSPECTION AND VERIFICATION

 CAUTION:

Diagnosis by substitution from a donor vehicle is **NOT** acceptable. Substitution of control modules does not guarantee confirmation of a fault, and may also cause additional faults in the vehicle being tested and/or the donor vehicle.

 NOTES:

- If a control module or a component is suspect and the vehicle remains under manufacturer warranty, refer to the Warranty Policy and Procedures manual, or determine if any prior approval programme is in operation, prior to the installation of a new module/component.
- Generic scan tools may not read the codes listed, or may read only 5-digit codes. Match the 5 digits from the scan tool to the first 5 digits of the 7-digit code listed to identify the fault (the last 2 digits give extra information read by the Jaguar Land Rover approved diagnostic equipment).
- When performing voltage or resistance tests, always use a digital multimeter that has the resolution ability to view 3 decimal places. For example, on the 2 volts range can measure 1mV or 2 K Ohm range can measure 1 Ohm. When testing resistance always take the resistance of the digital multimeter leads into account.
- Check and rectify basic faults before beginning diagnostic routines involving pinpoint tests.
- Inspect connectors for signs of water ingress, and pins for damage and/or corrosion.
- If DTCs are recorded and, after performing the pinpoint tests, a fault is not present, an intermittent concern may be the cause. Always check for loose connections and corroded terminals.

1. Verify the customer concern.

2. Visually inspect for obvious signs of mechanical or electrical damage.

Visual Inspection

MECHANICAL	ELECTRICAL
■ Touch screen ■ Head Up Display (HUD) control module	■ Fuses ■ Wiring harness ■ Electrical connector(s) ■ Battery condition, state of charge ■ Touch screen ■ Instrument Cluster (IC) ■ Head Up Display (HUD) control module

3. If an obvious cause for an observed or reported concern is found, correct the cause (if possible) before proceeding to the next step.

4. If the cause is not visually evident check the system for any logged Diagnostic Trouble Codes (DTCs) and refer to the DTC Index.

5. Check JLR claims submission system for open campaigns. Refer to the corresponding bulletins and SSMS which may be valid for the specific customer complaint and carry out the recommendations as required.

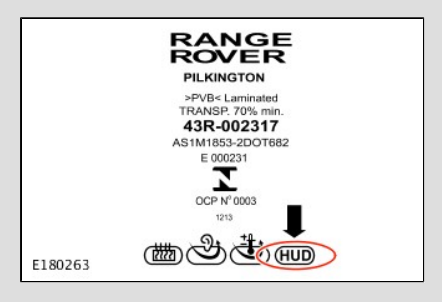
SYMPTOM CHART

SYMPTOM	POSSIBLE CAUSES	ACTION
■ Head up display image shows a secondary image - HUD image does not look sharp	■ Protective film still covering HUD lens ■ Incorrect seat and HUD display position ■ Windshield damage in HUD projection area ■ HUD windshield has not been tested by the glass manufacturer ■ Non HUD windshield installed in the vehicle	■ Check and remove the protective film from the HUD lens as required ■ GO to Pinpoint Test A. HUD Image distorted - Seating position ■ GO to Pinpoint Test A. HUD Image distorted - windshield check ■ GO to Pinpoint Test A. HUD Image distorted - Test Result Check ■ GO to Pinpoint Test A. HUD Image distorted - Logo and trademark check
■ Head up display projected image brightness does not adjust	■ Windshield covered in dirt/dust ■ Incorrect rain/light sensor installed	■ Clean the windshield ■ GO to Pinpoint Test B. HUD Brightness - Rain/Light Sensor Check
■ Head up display does not project image	■ Item covering HUD projector unit ■ Head up display internal failure	■ Remove any items covering the projector unit ■ GO to Pinpoint Test C. HUD - Inoperative

Head up display navigation display not operational	- CCF or system settings require adjustment - APIX2 circuits disconnected - Head up display internal failure	- GO to Pinpoint Test D. - GO to Pinpoint Test C. HUD - Inoperative
Head up display traffic sign recognition display not operational	- CCF or system settings require adjustment - Head up display internal failure	- GO to Pinpoint Test E. - GO to Pinpoint Test C. HUD - Inoperative

PINPOINT TESTS

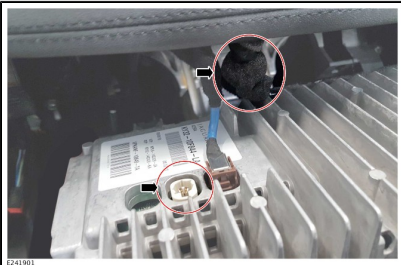
PINPOINT TEST A : HEAD UP DISPLAY (HUD) WINDSHIELD PROJECTED IMAGE DISTORTED	
A1: HUD IMAGE DISTORTED	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Sitting in the drivers seat, inspect the HUD display lens at the rear of the instrument panel
	Has the protective film been removed from the HUD lens? Yes GO to A2. No Check and remove the protective film from the HUD lens as required
A2: HUD IMAGE DISTORTED - SEATING POSITION	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
 NOTE: If comparing HUD displays between two vehicles you must compare the same models, e.g. L663 to L663	
	1 The driver must be SITTING IN THE CORRECT POSITION (see owners manual) to view the HUD display
	2 When seated correctly the HUD adjustment can be made by selecting HUD Position from the Head up Display menu and follow the on-screen instructions
	3 With the driver sitting in the CORRECT position and the HUD adjusted correctly, view the HUD projected image on the windshield
	Is the HUD projected image distorted? Yes GO to A3. No Advise the customer correct seat and HUD position (see owners manual)
A3: HUD IMAGE DISTORTED - WINDSHIELD CHECK	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Inspect the windshield for stone chip or crack damage, at the HUD projection area

A3: HUD IMAGE DISTORTED - WINDSHIELD CHECK	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	Has the windshield sustained any stone chip or crack damage, at the head up display projection area? Yes Install a new HUD windshield as required No GO to A4.
A4: HUD IMAGE DISTORTED - LOGO AND TRADEMARK CHECK	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Look for the correct HUD trademark on the windshield
	Does the windshield have the correct HUD trademark? The symbol circled in the manufactures brand logo, is the HUD trademark and defines it as a HUD variant windshield. Depending on the model and glass manufacturer this position may change Yes GO to A5. No Incorrect windshield is fitted. Install the correct HUD windshield as required
A5: HUD IMAGE DISTORTED - TEST RESULT CHECK	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Refer to the relevant section of the workshop manual and remove the rear view mirror mounting bracket plastic trim
	2 With the rear view mirror mounting bracket plastic trim removed, the windshield manufactures test results are printed/attached to the windshield ■ Pilkington print the test results on a white label and is attached it to the windshield ■ The test result is the sequence number and the date/time the image was tested
	Is the manufactures test results printed/attached on to the windshield? Yes Windshield image distorted checks now complete. The following pinpoint tests cover the rain/light sensor checks GO to Pinpoint Test B. No Incorrect windshield is fitted. Install the correct HUD windshield as required

PINPOINT TEST B : HEAD UP DISPLAY (HUD) RAIN/LIGHT SENSOR	
B1: HUD - WINDSHIELD	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Inspect the windshield directly above the rain/light sensor for dirt/dust
	Is the windshield directly above the rain/light sensor clean? Yes GO toB2. No Check and clean the windshield as required
B2: HUD BRIGHTNESS - MANUAL ADJUSTMENT CHECK	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
 NOTE: The customer may have reported that driving at night, the HUD brightness will not adjust using the instrument cluster panel light dimmer switch	
	1 Using the steering wheel switchpack (menu control), select HUD brightness from the Head up Display menu and follow the on-screen instructions
	2 Switch on the exterior lights and operate the instrument cluster panel light dimmer switch
	Is it possible to adjust the HUD brightness with the steering wheel switchpack (menu control), or with the instrument cluster panel light dimmer switch? Yes Advise the customer HUD brightness can be adjusted with either the steering wheel switchpack (menu control), or with the vehicle lights switched on using the instrument cluster panel light dimmer switch No GO toB3.
B3: HUD - RAIN/LIGHT SENSOR CHECK	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Refer to the relevant section of the workshop manual and remove the rear view mirror mounting bracket plastic trim (the part number label is now visible)
 E180265	2 Check the label for a large capital letter (printed on the bottom right hand corner) ■ A denotes non HUD rain/light sensor ■ B denotes HUD rain/light sensor
	Has the sensor a large capital 'B' printed on the bottom right hand corner? Yes Using the Jaguar Land Rover approved diagnostic equipment, check the central junction box for related DTCs and refer to the relevant DTC index No Incorrect sensor fitted, check and install the correct rain/light sensor as required

PINPOINT TEST C : HEAD UP DISPLAY (HUD) CONTROL MODULE	
C1: HUD - INOPERATIVE	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Using the Jaguar Land Rover approved diagnostic equipment, check the Head Up Display control module for related DTCs and refer to the relevant DTC index
	Are any relevant DTCs set? Yes Perform the relevant corrective action No Check and install a new head up display control module as required

PINPOINT TEST D : HUD NAVIGATION DISPLAY CHECKS	
D1: CHECK IF AN APPROPRIATE NAVIGATION SYSTEM IS FITTED TO THE VEHICLE	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Confirm if the vehicle is fitted with a Jaguar Land Rover-approved navigation system
	Is the vehicle fitted with a Jaguar Land Rover-approved navigation system? Yes GO toD2. No HUD navigation display will not operate
D2: CHECK THE CAR CONFIGURATION FILE (CCF) SETTINGS	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Using the Jaguar Land Rover approved diagnostic equipment, check the car configuration file (CCF) parameters
	Is the ruleset of CCF parameter 127 set to "fitted"? Yes GO toD3. No Set the ruleset of CCF parameter 127 to "fitted". Then, GO toD3.
D3: CHECK THE HUD MENU (VIA THE INSTRUMENT CLUSTER) FOR HUD NAV DISPLAY OPTIONS	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Check the options available in the HUD option menu displayed via the instrument cluster
	Is the HUD Navigation Display option available from the HUD option menu displayed via the instrument cluster? Yes GO toD5. No GO toD4.
D4: HUD NAVIGATION DISPLAY OPTION IS NOT AVAILABLE FROM THE HUD OPTION MENU	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Using the Jaguar Land Rover approved diagnostic equipment, check the car configuration file (CCF) parameters
	Is the ruleset of CCF parameter 516 set to "fitted"? Yes

D4: HUD NAVIGATION DISPLAY OPTION IS NOT AVAILABLE FROM THE HUD OPTION MENU	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	Check the instrument cluster for related DTCs and refer to instrument cluster diagnostic processes No Check regional availability of HUD Navigation Display. If available, the correct CCF settings are required to enable the display. Check CCF settings are correct and amend as required
D5: ENABLE THE HUD NAVIGATION DISPLAY OPTION FROM THE HUD OPTIONS MENU	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Enable the HUD Navigation Display option from the HUD options menu via the instrument cluster
	Is the HUD Navigation Display option enabled in the HUD option menu displayed via the instrument cluster? Yes GO toD6. No Switch on the HUD Navigation Display option from the HUD options menu via the instrument cluster. Then, GO toD6.
D6: CHECK FOR NAVIGATION DISPLAY ON THE INSTRUMENT CLUSTER AND HUD DISPLAY	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Check for navigation information displayed on the instrument cluster
	Is navigation information now displayed on the instrument cluster? Yes If the HUD navigation display is now also operational, no further action is required. If the HUD navigation display is still unavailable, check the connection and integrity of the AIPX2 circuits to the rear of the cluster and the HUD control module GO toD7. No Check the instrument cluster for related DTCs and refer to navigation system diagnostic processes
D7: APIX2 WIRING HARNESS CHECKS	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
 2241902	1 Check the connection and integrity of the APIX2 circuits to the rear of the instrument cluster. The connector(s) may be disconnected and still wrapped in protective tape. Remove the tape and reconnect as required
 2241901	2 Check the connection and integrity of the APIX2 circuits to the HUD control module. The connector(s) may be disconnected and still wrapped in protective tape. Remove the tape and reconnect as required

D7: APIX2 WIRING HARNESS CHECKS	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	Are all APIX2 cables connected securely to the rear of the cluster and the HUD control module? Yes GO to Pinpoint Test C. No Reconnect the APIX2 cables as required. Recheck the HUD navigation display. If the HUD navigation display is now operational, no further action is required. If the HUD navigation display is still unavailable GO to Pinpoint Test C.

PINPOINT TEST E : HUD TRAFFIC SIGN RECOGNITION (TSR) DISPLAY CHECKS	
E1: CHECK IF A TRAFFIC SIGN RECOGNITION (TSR) SYSTEM IS FITTED TO THE VEHICLE	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Confirm if the vehicle is fitted with a Jaguar Land Rover-approved traffic sign recognition system
	Is the vehicle fitted with a Jaguar Land Rover-approved traffic sign recognition system? Yes GO to E2. No HUD traffic sign recognition display will not operate
E2: CHECK THE HUD MENU (VIA THE INSTRUMENT CLUSTER) FOR HUD NAV DISPLAY OPTIONS	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Check the options available in the HUD option menu displayed via the instrument cluster
	Is the HUD Traffic Sign Recognition Display option available from the HUD option menu displayed via the instrument cluster? Yes GO to E4. No GO to E3.
E3: HUD TRAFFIC SIGN RECOGNITION (TSR) DISPLAY OPTION IS NOT AVAILABLE FROM THE HUD OPTION MENU	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Using the Jaguar Land Rover approved diagnostic equipment, check the car configuration file (CCF) parameters
	Is the ruleset of CCF parameter 98 set to "fitted"? Yes GO to E4. No Update the ruleset with the correct values. Then, GO to E4.
E4: ENABLE THE HUD TRAFFIC SIGN RECOGNITION (TSR) DISPLAY OPTION FROM THE HUD OPTIONS MENU	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Enable the HUD Traffic Sign Recognition Display option from the HUD options menu via the instrument cluster
	Is the HUD Traffic Sign Recognition Display option enabled in the HUD option menu displayed via the instrument cluster? Yes

E4: ENABLE THE HUD TRAFFIC SIGN RECOGNITION (TSR) DISPLAY OPTION FROM THE HUD OPTIONS MENU	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	GO toE5. No Switch on the HUD Traffic Sign Recognition Display option from the HUD options menu via the instrument cluster. Then, GO toE5.
E5: CHECK FOR TRAFFIC SIGN RECOGNITION (TSR) DISPLAY ON THE INSTRUMENT CLUSTER	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Check for Traffic Sign Recognition information displayed on the instrument cluster
	Is Traffic Sign Recognition information now displayed on the instrument cluster? Yes If the HUD Traffic Sign Recognition display is now also operational, no further action is required. If the HUD Traffic Sign Recognition display is still unavailable, check the operation of the HUD system, GO to Pinpoint Test C. No Switch on the instrument cluster Traffic Sign Recognition Display option from the instrument cluster options menu. Then, GO toE6.
E6: RECHECK FOR TRAFFIC SIGN RECOGNITION (TSR) DISPLAY ON THE INSTRUMENT CLUSTER AND HUD DISPLAY	
TEST CONDITIONS	DETAILS/RESULTS/ACTIONS
	1 Check for Traffic Sign Recognition information displayed on the instrument cluster
	Is Traffic Sign Recognition information now displayed on the instrument cluster? Yes If the HUD Traffic Sign Recognition display is now also operational, no further action is required. If the HUD Traffic Sign Recognition display is still unavailable, check the operation of the HUD system, GO to Pinpoint Test C. No Check the instrument cluster for related DTCs and refer to the Traffic Sign Recognition system diagnostic processes

DTC INDEX

For a list of Diagnostic Trouble Codes (DTCs) that could be logged on this vehicle, please refer to Section 100-00.
REFER to:(100-00 General Information)

[Diagnostic Trouble Code Index - DTC: Instrument Panel Cluster \(IPC\) Control Module](#) (Description and Operation),
[Diagnostic Trouble Code Index - DTC: Instrument Panel Cluster \(IPC\) Control Module - Midline Plus](#) (Description and Operation),
[Diagnostic Trouble Code Index - DTC: Head Up Display \(HUD\)](#) (Description and Operation).

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