

Parking brake warning message in instrument cluster - Moisture ingress in Electronic Stability Program (ESP) connection

Topic number	LI42.20-P-063685
Version	2
Design group	42.20 Parking brake
Date	06-08-2016
Validity	Model 205 LHD/RHD with code 805. Model 205 LHD with code 806. Model 253 LHD/RHD with code 806.
Reason for change	Part number A 002 545 01 41 is incorrect. A 002 546 01 41
Reason for block	

Complaint:

- Parking brake warning message in instrument cluster.
- Parking brake cannot be released.

If there is any moisture in the immediate vicinity before the connector is opened, this must be removed, e.g. using a heat gun, air gun or a dry rag. Otherwise erroneous conclusions may be drawn in the subsequent assessment of the complaint.

Workshop findings (area around connector dry):

Corrosion/moisture ingress in the connection (pins, female contacts) to the "Electronic Stability Program (ESP)" control unit.

Please always create a PTSS case with title "ESP Connector - Moisture Entry" and record any corrosion, verdigris and/or moisture ingress with photos, at the pins on the ESP control unit and at the female contacts in the ESP connector, and follow the instructions in this LI document.

Cause:

Water/moisture in connector for the "Electronic Stability Program (ESP)" control unit.

Attachments	
File	Description
Wasserableiter - Water baffle.pdf	Water baffle

Remedy:

1st option - Repair of the wiring harness

Requirements:

- No more than 10 female contacts in the connector are corroded or damp.
- The copper strands of the electrical lines are not corroded or damp after the firewall grommet (distance from connector to firewall grommet approx. 220mm).

The up to 10 (affected) female contacts must be removed from the connector using the release tool.

XENTRY TIPS

Then work your way along the line with a wire stripper until bare and uncorroded copper is visible (exception: female contacts 1, 14 and 30 [for M177 (AMG) see note]).

Never strip the female contacts 1, 14 and 30 [for M177 (AMG) see note] because these are lines with a cross section of 6mm² (not repairable).

If the requirements are met, repairs can be performed at the ESP connector as necessary using the following components:

- Line (sold by the meter)
- Female contacts
- Single-wire seals
- Terminal solder connectors

Pay attention to the additional operation at F32/3 - C3!

2nd option - Replacement of the frame floor system (FFS) main wiring harness

- If the requirements for the 1st option are not satisfied, the frame floor system harness must be replaced.

Pay attention to the additional operation at F32/3 - C3 to help avoid a reoccurrence of the complaint!

Hydraulic unit (N30/4)

If the pins at the ESP control unit are corroded, the hydraulic unit must be replaced. If the pins (up to 10) are merely damp, they can be dried using a heat gun.

Additional operation at F32/3 - C3:

- If the 1st option is used or
- If the new frame floor system main wiring harness of the 2nd option with single-wire seals at connector C3 (F32/3) is supplied,

the following work must be performed (see photos in attachment "F32.3 - C3"):

1. Production configuration: Connector C3 closed.
2. Open connector C3 by pressing the primary catch down.
3. Open the secondary catch of connector C3 (1st position "closed", 2nd position "open") by pressing the catch towards the outside of the housing using a screwdriver.
4. Use blade W 220 589 01 99 56 and blade holder W 220 589 01 99 50 to remove one female contact from the housing.
5. Take the female contact(s) out of the housing.
6. Pull back the single-wire seal(s). (This will allow water to drain out of the bottom of the connector.)
7. Use side cutting pliers to remove (snip off) the insulation crimp.
8. Remove the insulation crimp (stretch and remove) with pliers carefully so as not to damage the line.
9. Cut the heat-shrinkable tubing A 004 546 84 30 in the middle (supplied in lengths of 65mm) because heat-shrinkable tubing is required for both lines (32.5mm per line).
10. Pull the heat-shrinkable tubing over the female contact. Position the heat-shrinkable tube 1.5 to 2mm below the edge of the female contact (pull the single-wire seal further down if necessary; the single-wire seal must not touch the heat-shrinkable tubing).
11. Use a heat gun to heat the heat-shrinkable tubing until it lies evenly and snugly over the repair point (see also AR00.19-P-0100-08A).
12. The adhesive must protrude at both ends.
13. Put the female contact back in the housing. Important: The single-wire seal should no longer be in contact with the housing; the heat-shrinkable tubing prevents this.
14. Repeat all the steps from 4 to 13 for the second female contact. Then close the secondary catch.
15. Final state (single-wire seals not in contact with housing).

XENTRY TIPS

Note on ESP connector in M177 (AMG):

In the M177 (AMG) this is a 38-pin connector to which no lines with a cross section of 6mm² are connected.

The only difference is pin 1 and the ground point pin, both MCP6.3 - 4mm² female contacts.

Attachments	
File	Description
F32.3 - C3.pdf	F32.2 - C3

Symptoms
Chassis/suspension / Brake system / Parking brake / Indicator lamp / Parking brake / lit
Chassis/suspension / Brake system / Parking brake / Function / General
Chassis/suspension / Brake system / Parking brake / Function / Does not open/trigger
Chassis/suspension / Brake system / Parking brake / Indicator lamp / Parking brake / Illuminates red
Chassis/suspension / Brake system / Parking brake / Indicator lamp / Parking brake / Illuminates yellow
Chassis/suspension / Brake system / Parking brake / Display message / Parking brake - apply brake
Chassis/suspension / Brake system / Parking brake / Display message / Parking brake - release brake
Chassis/suspension / Brake system / Parking brake / Display message / Parking brake - Parking brake see Owner's Man.
Chassis/suspension / Brake system / Parking brake / Display message / Parking brake - Parking brake inoperative Visit workshop
Chassis/suspension / Brake system / Brakes/traction regulation system / Antilock Brake System ABS / Display message / Antilock braking system - visit workshop
Chassis/suspension / Brake system / Brakes/traction regulation system / Electronic Stability Program ESP / Display message / Display text, yellow/white / Electronic stability program - visit workshop
Chassis/suspension / Brake system / Brakes/traction regulation system / Electronic Stability Program ESP / Indicator lamp / lit

Control unit/fault code		
Control unit	Fault code	Fault text
N30/4 - Electronic stability program (ESP®) (ESP205) (C (205))	B23AC64	The switch 'Electric parking brake' has a malfunction. There is an implausible signal.
N30/4 - Electronic stability program (ESP®) (ESP205) (C (205))	C100B77	The electric parking brake has a malfunction. The commanded position cannot be reached.
N30/4 - Electronic stability program (ESP®) (ESP205) (C (205))	B23AA72	The left brake caliper has a malfunction. The actuator does not close.
N30/4 - Electronic stability program (ESP®) (ESP205) (C (205))	B23AA73	The left brake caliper has a malfunction. The actuator does not open.
N30/4 - Electronic stability program (ESP®) (ESP205) (C (205))	B23AB72	The right brake caliper has a malfunction. The actuator does not close.
N30/4 - Electronic stability program (ESP®) (ESP205) (C (205))	B23AB73	The right brake caliper has a malfunction. The actuator does not open.

XENTRY TIPS

N30/4 - Electronic stability program (ESP®) (ESP205) (C (205))	B23AC49	The switch 'Electric parking brake' has a malfunction. There is an internal electrical fault.
N30/4 - Electronic stability program (ESP®) (ESP205) (C (205))	B23AC2F	The switch 'Electric parking brake' has a malfunction. There is an erratic signal.
N30/4 - Electronic stability program (ESP®) (ESP205) (C (205))	B23AC2A	The switch 'Electric parking brake' has a malfunction. There is no signal change.
N30/4 - Electronic stability program (ESP®) (ESP205) (C (205))	C100BFA	The electric parking brake has a malfunction. _
N30/4 - Electronic stability program (ESP®) (ESP205) (C (205))	C100BFC	The electric parking brake has a malfunction. _
N30/4 - Electronic stability program (ESP®) (ESP205) (C (205))	C100BFD	The electric parking brake has a malfunction. _
N30/4 - Electronic stability program (ESP®) (ESP205) (C (205))	C100BFE	The electric parking brake has a malfunction. _
N30/4 - Electronic stability program (ESP®) (ESP205) (C (205))	C100BFF	The electric parking brake has a malfunction. _

Parts						
Part number	ES1	ES2	Designation	Quantity	Note	EPC
			Frame floor system main wiring harness	1	The relevant part number must be found in the EPC: Category 54, Sub-category 545, Item 10.	
			Hydraulic unit	1	The relevant part number must be found in the EPC: Category 42, Sub-category 064, Item 10.	
W22058901995 6			Blade	1	Release tool F32/3 - C3. Also for M177 (AMG) ESP connector for pin 1 and ground point.	
A 004 546 84 30			Heat-shrinkable tubing with pressure-melt element	1	Single-wire seal removed/ fitting of heat-shrinkable tubing	X
W22058901995 0			Blade holder for release tool	1		
A 169 543 02 31			Line 0.5mm ²		Also suitable for the 0.35mm ² female contacts. Sold by the meter (yellow): 100m roll	X
A 169 543 06 31			Line 2.5mm ²		Sold by the meter (yellow): 50m roll	X
A 021 545 17 26			Female contact 0.35mm ² MCP1.2 LL	10	Also suitable for the 0.5mm ² female contacts. Max. quantity 10. Female contact with catch spring.	X
A 014 545 82 26			Female contact 2.5mm ² MCP2.8	4	Max. quantity 4. Female contact with catch spring.	X

XENTRY TIPS

A 000 545 68 80		Single-wire seal 0.35mm ²	10	Also suitable for the 0.5mm ² female contacts. Max. quantity 10.	X
A 000 545 29 39		Single-wire seal 2.5mm ²	4	Max. quantity 4.	X
A 001 546 99 41		Terminal solder connector 0.35mm ²	10	Raychem cable connector with hot-melt adhesive, immersion-proof.	X
A 002 546 01 41		Terminal solder connector 2.5mm ²	4	Raychem cable connector with hot-melt adhesive, immersion-proof. Max. quantity 4.	X
W00058913993 0		Blade MCP2.8	1	Release tool	
W22058904993 0		Blade MCP1.2	1	Release tool	
W22058904991 0		Crimping set MCP1.2 ELA	1	In combination with hand crimper W220589019910.	
W22058901998 1		Crimping set MCP2.8 ELA	1	In combination with hand crimper W220589019910.	
A 000 982 72 26		Female contact 4mm ² MCP6.3	2	M177 (AMG) only. ESP connector pin 1 and ground point.	X
A 002 545 34 80		Single-wire seal	2	M177 (AMG) only. ESP connector pin 1 and ground point.	X
W93058900990 7		Crimping set MCP6.3 - 4mm ²	1	M177 (AMG) only. ESP connector pin 1 and ground point.	

Operation numbers/damage codes

Op. no.	Operation text	Time	Damage code	Note
			51081 74	K/Z*, engine compartment prefuse box

WIS-References

Document number	Title	Note	Allocation
AR00.19-P-0100-08A	Protect repair point after line repair	Protection of repair point with heat-shrinkable tubing	Remedy

Validity

Vehicle	Engine	Transmission
C (205)	*	*
GLC (253)	*	*