

Climate control system improper operation with fault codes B10A207, B105C07, B109F07 and/or B113600 in ACC control unit

Topic number	LI83.10-N-071291
Version	5
Function group	83.10 - Ventilation
Date	12/11/22
Validity	Model 907
Reason for change	Change to order of remedy and title

Complaint

Various customer concerns of Climate Control system operating inadequately.

Cause

Stepper motor linkage in the heater case may cause a mechanical fault during actuation during unfavorable environmental conditions.

NOTE: If the vehicle is equipped with H13 (rear additional heat exchanger), There is an additional stepper motor in the rear heater case under the vehicle. This stepper motor can influence the normalization process.

May include fault code: B1A9C07 the output for control valve "Left water valve" has a malfunction. There is a mechanical fault.

The component is called N29/12 (rear additional heat exchanger) .

Remedy

Remedy 1

1.Update software for N10 - SAM control unit and N22/1 - AAC control unit

Software levels:

- N10 (SAM): 907 902 44 04 or higher
- N22/1 (AAC): 907 902 45 04 or higher

2.Follow WIS to gain access to front ac stepper motors

- a. Recirculation flap (AR83.10-D-2041TS)
- b. Blend air flap (AR83.10-D-2026TS)
- c. Distribution flap (AR83.10-D-2040TS)

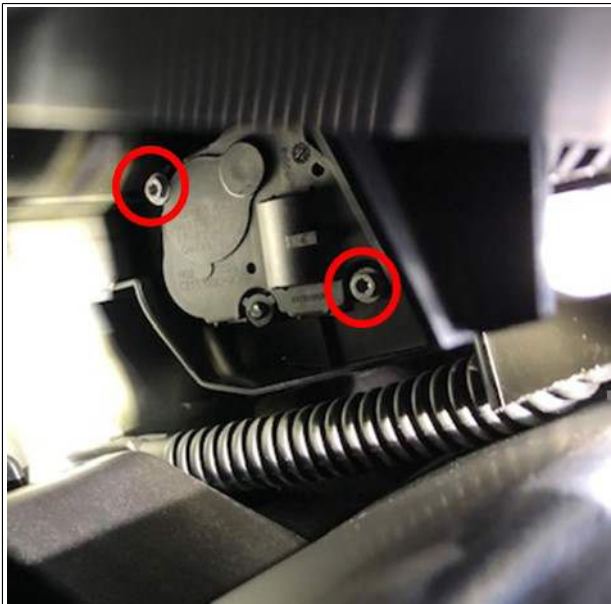
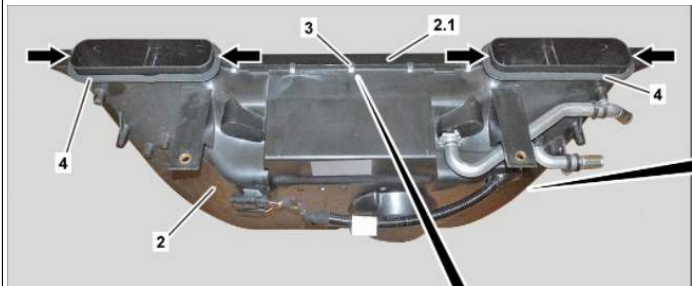
XENTRY TIPS

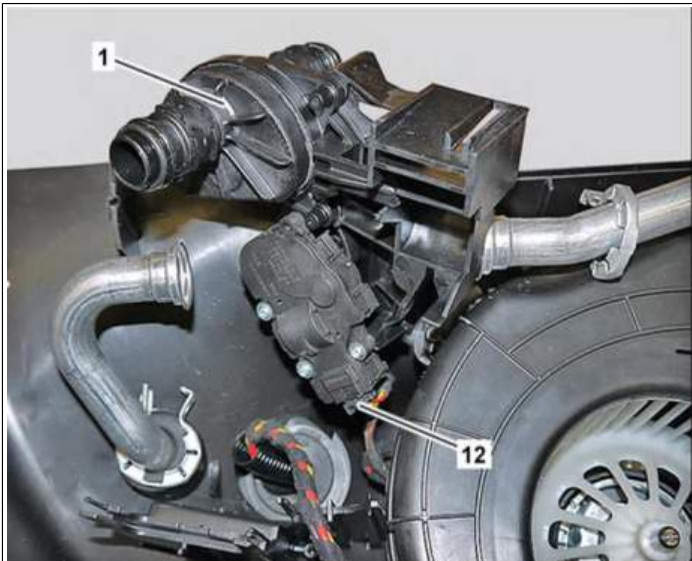
- 3.Remove all three front ac stepper motors. While removed, check linkage manually for proper movement (if concern is related to temperature, please make sure temperature is achievable by manually moving the blend linkage)
- 4.Reinstall stepper motors (torque stepper motors to case at 1.8Nm)
- *** Follow correct torque to prevent binding of stepper motors***
- 5.Connect XENTRY diagnosis and perform teach-in then normalization of stepper motors.
- If normalization is unsuccessful, continue to Remedy 2.

Remedy 2

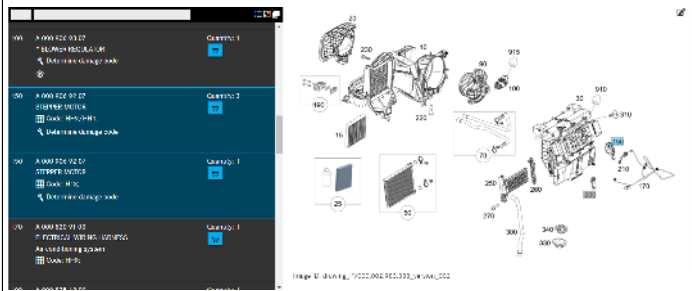
- 1.In control unit view N22/1, actuate each stepper motors with Xentry actuation to locate actuator that is unresponsive to input
- If all three front ac actuators are functioning, please check stepper motor in N29/12 (WIS doc. - Left water valve (AR83.60-D-0003TSR))
- 2.Create TIPS case for further instruction. Please include findings from remedy 2 step 1.

Attachments	
File	Description
remedy 2 motor location.jpg	Air recirculation flap actuator motor
	
remedy 2 motor removal.jpg	Air recirculation flap actuator motor removal

	
remedy 2 linkage orientation.jpg	Linkage orientation
	
Rear additional heat exchanger.PNG	N29/12
	
H13 stepper motor1.PNG	Stepper motor in N29/12



XPPI-stepper motor.PNG



XPPI- Stepper motor for N29/12 located with the other

WIS-References		
Document number	Title	Note
AR83.10-D-2026TS	Remove/install blend air flap actuator motor	
AR83.10-D-2040TS	Remove/install air distribution flap actuator motor	
AR83.10-D-2041TS	Remove/install fresh air/recirculated air flap actuator motor	
AR83.60-D-0003TSR	Remove/install regulation valve for heat exchanger of hot-water auxiliary heater	Stepper motor is connected to regulation valve but is available separately.

Symptoms
Body > Air conditioning > Heater > Malfunction, air distribution

Control unit/fault code	
Control unit	Fault text
N22/1 - Air conditioning (AAC) (HVAC177)	B1A9C07 - The output for control valve "Left water valve" has a malfunction. (Additional rear heat exchanger) There is a mechanical fault.

XENTRY TIPS

	B105C07 - The actuator motor for the air recirculation flap has a malfunction. There is a mechanical fault. (HVA-C_F907) B113600 - The measurement run for actuator motors for air flaps has a malfunction. _ (HVAC_F907) B10A207 - The actuator motor for the left blend air flap has a malfunction. There is a mechanical fault. (HVA-C_F907) B109F07 - The actuator motor for air distribution flap "Defroster vent/center air vent/footwell vent" has a malfunction. There is a mechanical fault. (HVAC_F907)
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Operation numbers/damage codes				
Op. no.	Operation text	Time	Damage code	Note
540650	ON-BOARD POWER SUPPLY VOLTAGE MAINTAIN (WHEN CHECKING/TESTING AND TROUBLESHOOTING)	0.1		
541011	PERFORM QUICKTEST	0.2		
833117	PERFORM NORMALIZATION OF ACTUATOR MOTORS ON HEATING/VENTILATION/AC HOUSING	0.2	8046073	
833139	FRESH AIR/RECIRCULATED AIR FLAP ACTUATOR MOTOR REMOVE AND REINSTALL WITH LINKAGE CORRECTION	0.2		Only claim when performing remedy 2
833151	REPLACE AIR DISTRIBUTION FLAP ACTUATOR	0.2		Only claim when performing remedy 2
833138	REPLACE ACTUATOR MOTOR OR AIR MIXING FLAP	0.2		Only claim when performing remedy 2