
Water entry into vehicle interior through roof air conditioner (H08)

Topic number	LI83.50-N-059306
Version	1
Design group	83.50 Rear air conditioning
Date	07-08-2014
Validity	TYP 906.6/7 with CODE H08
Reason for change	
Reason for block	

Complaint:

Water entry into vehicle interior through roof air conditioner (H08).

Cause:

Water entry between evaporator unit and vehicle roof. Entry of condensation due to unfavorable pressure conditions.

Remedy:

1. Drain roof air conditioner. The following safety information and notes must be observed: AS83.00-Z-0001-01A, AH83.30-N-0004-01A, AH83.30-N-0003-01A.

Note: Protect air conditioning circuit and components from moisture when carrying out repair work.

Note: The test and filler connections of the refrigerant circuit of the roof air conditioner are located on the right of the longitudinal member in the engine compartment (viewed in direction of travel) (see picture 01.jpg).

Info: To do so, unscrew the protective caps (30 and 31) on the test and filler connection of the high-pressure line (C) and low-pressure line (D) (see picture 01.jpg). Connect AC service unit (R134a AC service unit, gotis://E_83_05.0) (see picture 01.jpg) and extract refrigerant. Note down the quantity of compressor oil extracted.

2. Disconnect AC service unit (R134a AC service unit, gotis://E_83_05.0) and screw on protective caps (30 and 31) on test and filler connection of high-pressure line (C) and low-pressure line (D) (see picture 01.jpg).

3. Remove interior cover of evaporator unit (see AR83.50-D-5010B).

4. Remove air duct of air conditioning (roof equipment) (see AR83.50-D-4000-01B).

5. Replace AAC control and operating unit (S98) (see AR83.25-D-1124C).

6. Remove center headliner (17) (see picture 03.jpg and picture 04.jpg).

Note: Picture and information illustrate/describe vehicle with CODE D03 (High roof), CODE T16 (Right sliding door) and CODE FY1 (Interior protection).

Info: To do so, unclip interior sensor (M) and disconnect electrical connector. Partially unclip B-pillar trim on driver side and passenger side (21 and 20) in upper area (see AR68.30-D-4700A). Unclip clips (19) of front headliner (16) in rear area. Remove expansion rivets (18) of center headliner (17) in front area. Unclip clips (22) of center headliner (17) in rear area and in area of evaporator unit. Remove expansion rivet (15) on passenger-side C-pillar. In order to unhook the center headliner (17) from the body and remove it, press the center headliner (17) upwards with a plastic wedge

and pull it slightly inwards in the process. This should be done on the left (viewed in direction of travel) between each of the cutouts of the center headliner (17) (see picture 04.jpg (green arrows)).

7. Remove refrigerant lines (G and H) from expansion valve (see picture 05.jpg).

Info: To do so, remove insulation (2) in connection area of refrigerant lines (G and H). Remove nuts (3 and 4) and detach refrigerant lines (G and H) from expansion valve.

Important: Seal the openings on the expansion valve and on the refrigerant lines (G and H) with stop plugs (W129 589 00 91 00), otherwise damage can be caused by moisture entering.

8. Unclip clips (K) which attach condensation hose (F) to rear AAC air recirculation unit (A32/3) and disconnect condensation hoses (F and E) from rear AAC air recirculation unit (A32/3) (see picture 05.jpg).

9. Remove cable ties (5), disconnect electrical connectors (6, 7 and 8) on rear AAC air recirculation unit (A32/3) and unclip retaining clip (1) (see picture 05.jpg).

10. Remove mounting screws/bolts of rear AAC air recirculation unit (A32/3) and remove frame (see picture 06.jpg).

11. Remove outer cover on condenser unit (see AR83.50-D-5000B).

Warning: Use a suitable working platform for the specified work. If persons or materials fall from the vehicle roof, there is a risk of injury or even death.

12. Remove left (12) and right (10) air grilles. Unscrew nut (14) of refrigerant line (9) on strut (11). Remove screws/bolts (13) on left and right of strut (11). Remove strut (11) (see picture 07.jpg).

Warning: Use a suitable working platform for the specified work. If persons or materials fall from the vehicle roof, there is a risk of injury or even death.

13. Remove rear AAC air recirculation unit (A32/3). Info: Have a second person help you.

Warning: Use a suitable working platform for the specified work. If persons or materials fall from the vehicle roof, there is a risk of injury or even death.

14. Clean roof panel in area of contact surface of rear AAC air recirculation unit (A32/3) with approved MB cleaning agents. Important: The surface of the sealing area must be clean and free of grease.

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15. Replace sealing frame (23) on rear AAC air recirculation unit (A32/3) (see picture 08.jpg) (only use the specified part number).

Info: To do so, remove the old sealing frame (23) and clean bonding area for new sealing frame (23) on rear AAC air recirculation unit (A32/3). Start by bonding the shorter sealing frame section (23) at the position indicated (see red arrow) (see picture 08.jpg). Only remove as much protective foil of the sealing frame (23) as can be stuck on in one go. Make sure you avoid getting the adhesive side of the sealing frame (23) dirty. The joints of the sealing frame (23) must not be in the radius area. The sealing frame (23) must not be separated from/have a gap (26) between the end stop/edge (see picture 08.jpg).

If the sealing frame (23) is too long, the joint must be shortened accordingly to match the original L-shape.

Note: Stick on sealing frame (23) without tension otherwise the sealing cross-section is reduced.

16. Insert rear AAC air recirculation unit (A32/3) in vehicle roof and align (see picture 09.jpg).

Info: The rear AAC air recirculation unit (A32/3) is aligned based on the end stops (27 and 28) (in direction of travel) and end stop (29) (passenger-side). These must contact the roof cutout (see picture 09.jpg).

Warning: Use a suitable working platform for the specified work. If persons or materials fall from the vehicle roof, there is a risk of injury or even death.

17. Install installation frame (see picture 06.jpg). Important: Make sure you observe the torque (4 Nm) and tightening sequence (see picture 06.jpg), arrow (blue) indicates direction of travel.

18. Replace fluid reservoir (see AR83.50-D-5080B).

Warning: Use a suitable working platform for the specified work. If persons or materials fall from the vehicle roof, there is a risk of injury or even death.

19. Install strut (11). Tighten screws/bolts (13) on left and right of strut (11) to specified torque (13.5 Nm). Screw on nut (14) of refrigerant line (9) on strut (11). Install left air grille (12) and right air grille (10) (see picture 07.jpg).

Warning: Use a suitable working platform for the specified work. If persons or materials fall from the vehicle roof, there is a risk of injury or even death.

20. Install outer cover on condenser unit (see AR83.50-D-5000B).

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21. Install condensation hoses (E and F) on rear AAC air recirculation unit (A32/3) (see picture 05.jpg).

22. Check drain hoses for condensation for unobstructed flow (see picture 02.jpg).

Info: To do so, introduce water through the opening on the filter of the rear AAC air recirculation unit (A32/3) with a hose (34). Water must be seen exiting the outlet points (32 and 33) of the condensation hoses, otherwise the water drainage system must be reworked.

23. Perform a rain test for a period of at least 10 minutes.

Note: If water again enters the vehicle interior, create a TIPS case to clarify the further procedure.

24. Connect electrical connectors (6, 7 and 8) on rear AAC air recirculation unit (A32/3), fit cable ties (5) and clip in retaining clip (1) (see picture 05.jpg).

25. Install refrigerant lines (G and H) on expansion valve. Important: Replace sealing rings and observe torque of threaded connections (6 Nm).

26. Refit insulation (2) in area of expansion valve and refrigerant lines (G and H).

27. Remove protective caps (30 and 31) on test and filler connection of high-pressure line (C) and low-pressure line (B). Connect AC service unit (R134a AC service unit, gotis://E_83_05.0).

28. Evacuate the roof air conditioner, fill it and then check for proper operation and leaks.

Note: Observe the compressor oil quantity noted down earlier. If the quantity of compressor oil is measured incorrectly, the refrigerant compressor can be damaged.

Info: Observe BF83.30-N-1003-01H, BF83.30-N-1001-01H, AS00.00-Z-0005-01A.

29. Disconnect AC service unit (R134a AC service unit, gotis://E_83_05.0) and screw on protective caps (30 and 31) on test and filler connection of high-pressure line (C) and low-pressure line (D) (see picture 01.jpg).

30. Replace dust filter of roof air conditioner (see AP83.50-D-8386H).

31. Install center headliner (17) (see picture 03.jpg and picture 04.jpg).

32. Install air duct of roof air conditioner (see AR83.50-D-4000-01B). 33. Install interior cover of evaporator unit (see AR83.50-D-5010B).

Attachments	
File	Description
01.jpg	Drain roof air conditioning, evacuate and recharge the system and check for operation and leaks
02.jpg	Water drain hoses
03.jpg	Center headliner
04.jpg	Center headliner
05.jpg	Air circulation unit (A32 / 3) Connections
06.jpg	Remove mounting screws/bolts of rear Air circulation unit (A32/3)
07.jpg	Condenser Unit
08.jpg	Install seal for the Air circulation unit (A32/3)
09.jpg	Reinstall Air circulation unit (A32/3)

Symptoms
Body / Body/Cab / Body sealing / Water entry

Parts							
Part number	ES1	ES2	Designation	Quantity	Note	EPC	Other make part
A 000 835 22 00			Sealing Frame (Bottom)	1	Two-piece seal. Bond the edges of the seal on the straight edge of housing.	X	
A 013 997 42 45			Sealing Ring	1	Check EPC	X	
A 013 997 40 45			Sealing Ring	1	Check EPC	X	
A 001 835 87 47			Filter Mat	1		X	
A 020 997 76 45			O-Ring	1	Check EPC	X	
A 140 997 06 45			Sealing Ring	1		X	
A 001 835 90 47			Dryer Cartridge	1	Up to VIN: E 035949 date: 10/31/2008 Up to VIN: S 260881 date: 01/11/2008	X	
A 002 835 09 47			Drying Insert	1	From VIN: E 035950 date: 10/31/2008 From VIN: S 260882 date: 01/11/2008	X	
A 002 997 24 90			Cable Tie	1		X	
A 906 906 33 00			Operating Unit	1		X	

Work units

Op. no.	Operation text	Time	Damage code	Note
83-1770	DRAIN, EVACUATE AND REFILL A/C SYSTEM FOR PROPER OPERATION AND LEAKS (ROOF AIR CONDITIONING)		83673 04	

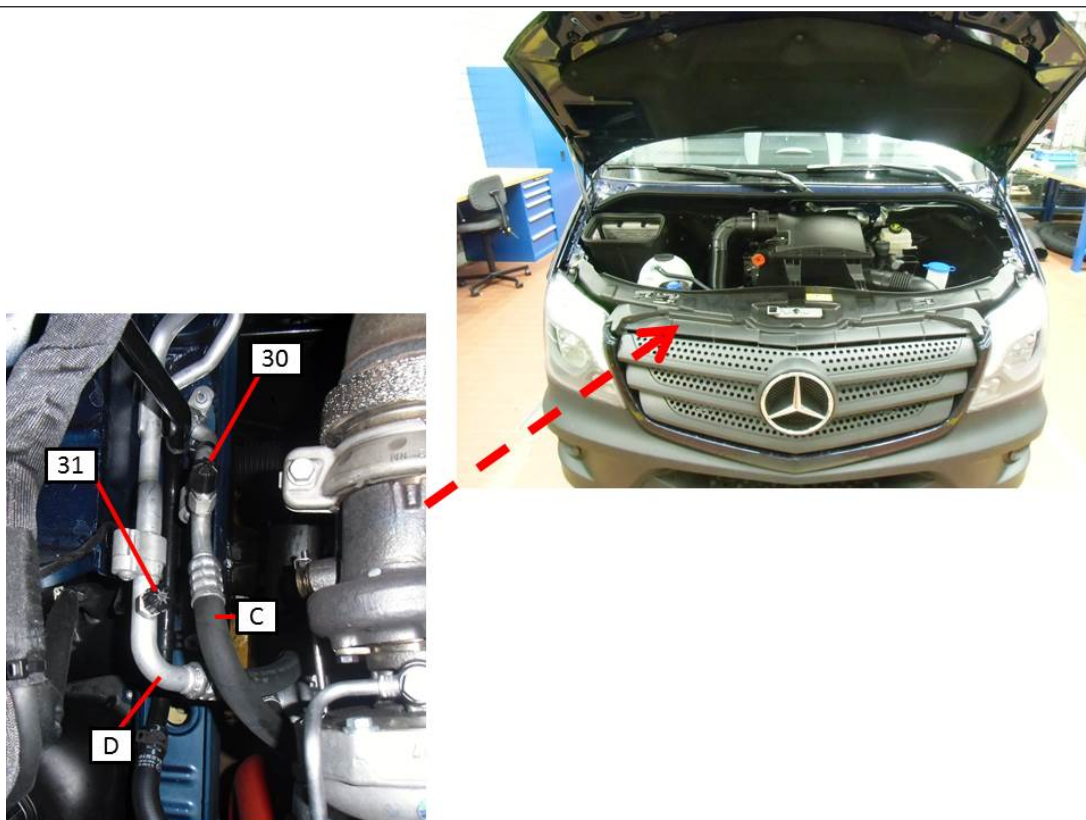
WIS-References			
Document number	Title	Note	Allocation
AS83.00-Z-0001-01A	Risk of explosion caused by welding or soldering work on closed air conditioning system. Risk of poisoning caused by inhaling overheated refrigerant vapors. Risk of injury to skin and eyes caused by contact with liquid refrigerant.		Remedy
AR83.30-D-1760D	Drain, evacuate, and recharge air conditioning, check for proper operation and check for leaks		Remedy
AR83.50-D-5010B	Remove/install evaporator unit paneling		Remedy
AR83.50-D-5000B	Remove/install condenser unit paneling		Remedy
AR83.50-D-5080B	Remove/install the air conditioning's fluid reservoir (roof equipment)		Remedy
AR83.50-D-4000-01B	Remove/install the air duct for the air conditioning (roof equipment)		Remedy
AH83.30-N-0004-01A	Procedure for a damaged or leaky air conditioning system		Remedy
AH83.30-N-0005-01A	Protect air conditioning circuit and components from moisture when carrying out repair work		Remedy
AH83.30-N-0003-01A	Notes on handling refrigerant R134a		Remedy
BF83.30-N-1003-01H	Total compressor oil filling capacity of air conditioning system (including AC compressor)		Remedy
BF83.30-N-1001-01H	Total filling capacity, refrigerant		Remedy
AS00.00-Z-0005-01A	Risk of accident from vehicle starting off by itself when engine running. Risk of injury (bruises and burns) result-		Remedy

	ting from working on the engine while it is being started or when it is running.		
AR68.30-D-4700A	Remove/install paneling on B-pillar		Remedy
AR83.25-D-1124C	Remove and install air conditioning control and operating unit		Remedy

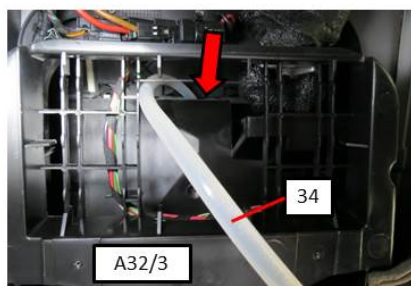
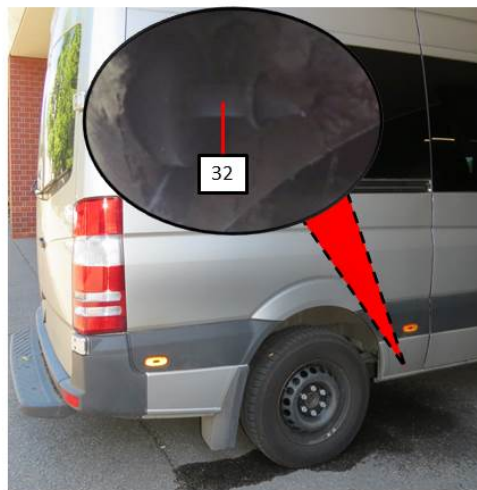
Validity		
Vehicle	Engine	Transmission
Sprinter III	*	*

Attachments

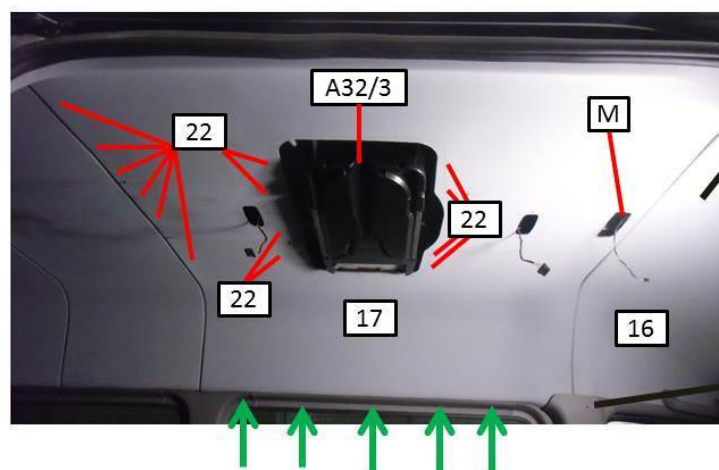
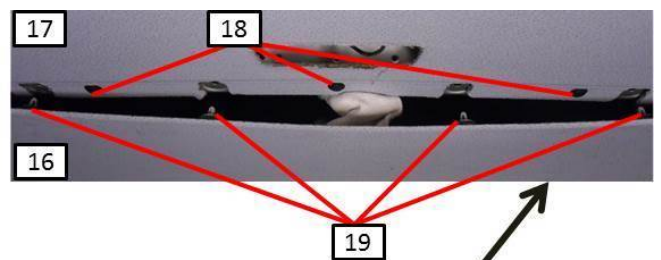
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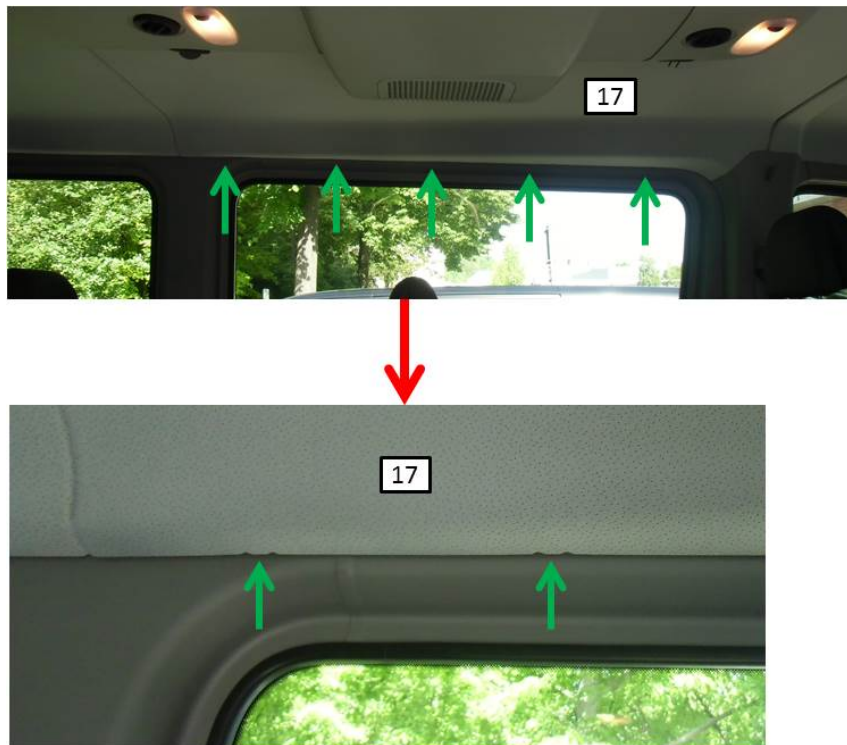
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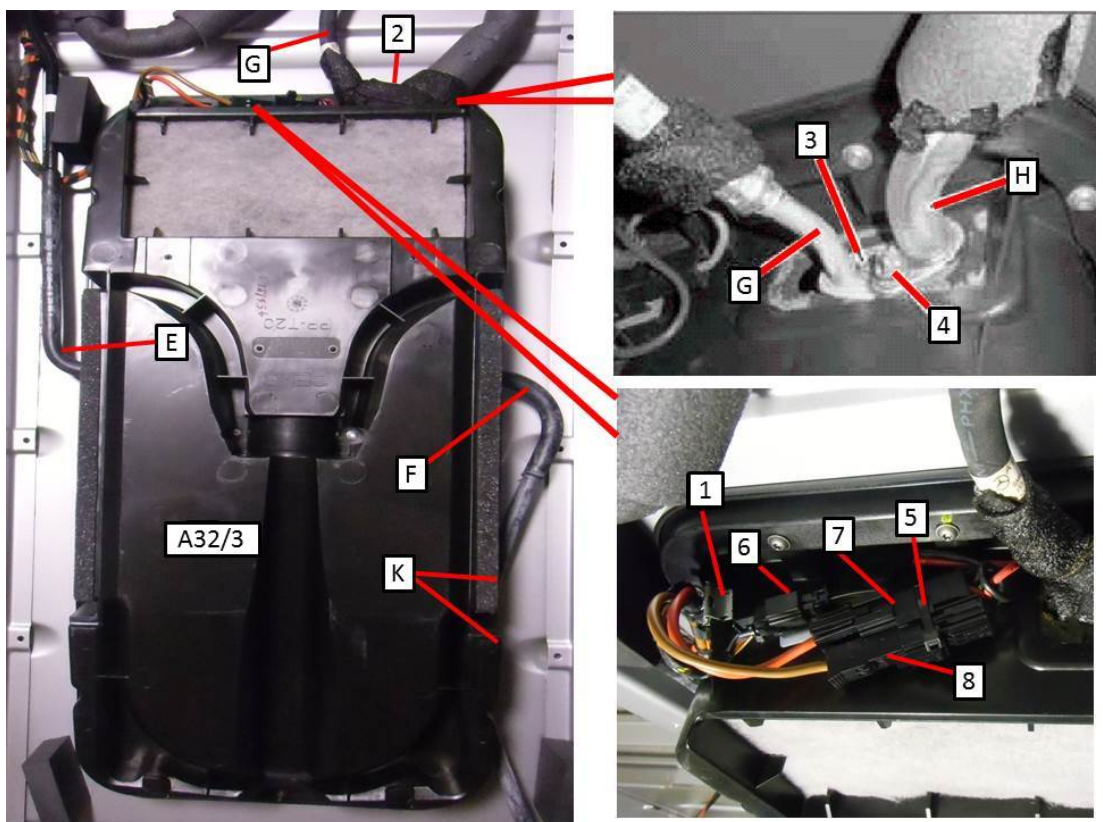
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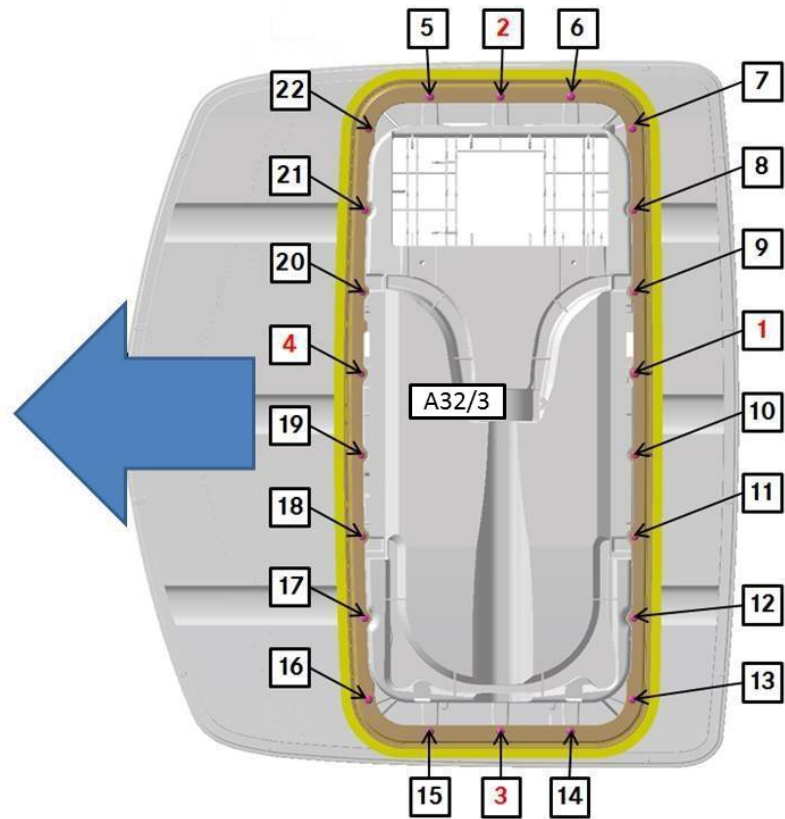
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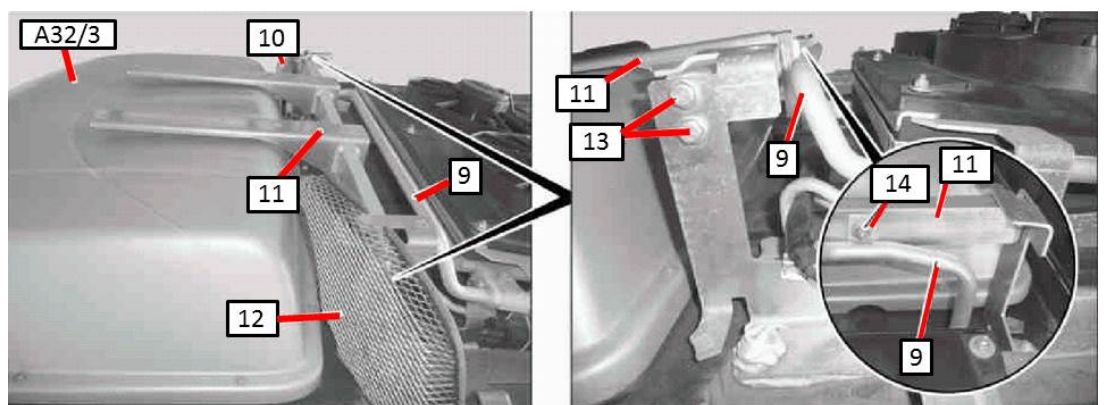
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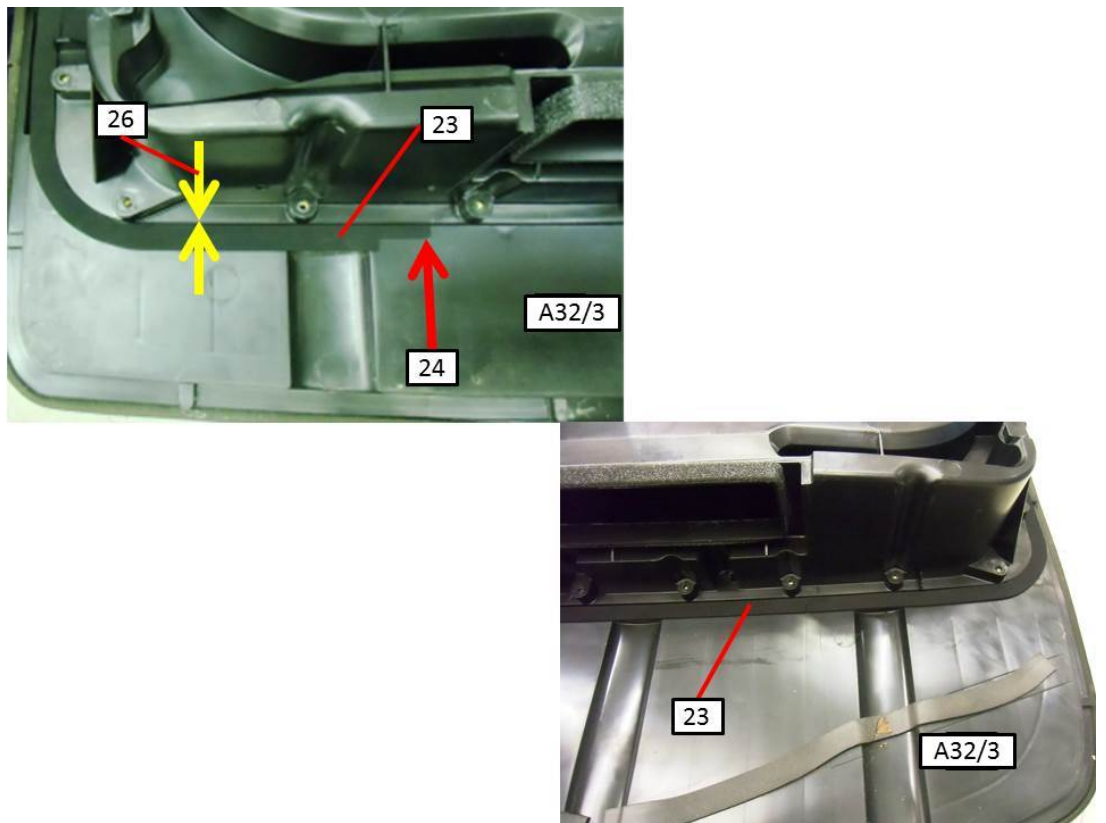
06.jpg:



07.jpg:



08.jpg:



09.jpg:

