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Model(s)	Year	Eng. Code	Trans. Code	VIN Range From	VIN Range To
Golf, Golf GTI	2015	All	All	AU_FM082335	AU_FM500000
Golf, Golf GTI	2016	All	All	AU_GM000001	AU_GM500000
Golf, Golf GTI	2017	All	All	AU_HM000001	AU_HM012965

Condition

60 16 10 December 6, 2016 **2045403** Supersedes Technical Bulletin V601608 dated November 22, 2016 due to updated title with applicable model clarification, clarification definition of Panoramic Sunroofs and corrected VIN range.

Water leak from the Sunroof (Panoramic Roof) on Golf and GTI models



Note:

This bulletin must be read in its entirety before beginning repair.

This bulletin is applicable ONLY for Golf and GTI model vehicles equipped with a sunroof. Golf Sportswagen and Alltrack are not affected.



Tip:

The term Panoramic Sunroof refers to a sunroof that is larger than a standard sunroof and is typically the width of the vehicle from roof pillar to roof pillar. It does not specify the difference between a single pane and a dual pane panoramic roof.



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Verify the customer complaint. Water leaks occur near the A-Pillars in the corners of the sunroof water channel.



Figure 1 (Water leaking through corner of water channel)



Note:

Some of the plastic rivets/buttons may be missing from the steel reinforcement plate as illustrated by the white outline in Figure 1. This will not affect the structure of the water channel. DO NOT attempt to repair or seal the openings caused by the missing rivets.

Remove the wind deflector, inner sunroof seal and thoroughly clean the water channel with isopropyl alcohol, a microfiber cloth and compressed air prior to inspecting for cracks.

Inspect the sunroof water channel for stress cracks (see figure 2). There are a total of 8 areas to inspect for cracks which are outlined in Figure 3 below. (More than 1 crack may be found).



Figure 2 (Examples of stress cracks in water channel)



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Figure 3 (Inspections zones for stress cracks / application zones and sequence for foil application)

Technical Background

A difference in the expansion rate between the plastic water channel and steel reinforcement plates may cause stress cracks to occur at the edges of the reinforcement plates.

Production Solution

Updated parts in production as of VIN AU_HM012965.



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Service

Install Sunroof Water Channel Repair Kit



Note:

In most cases there will be stress cracks in multiple locations of the water channel. Care must be taken to ensure all cracks are identified, sealed and that all 8 foil patches are installed correctly. Failure to seal all cracks and install all 8 foil patches will result in a repeat failure.

1. Move the front seats forward and tilt the seat backs forward to allow room to work on the roof by standing through the sunroof opening from the rear of the vehicle (See Figure 4).



Note:

Care must be taken not to damage center console by kneeling or leaning against it during repair process.



Figure 4



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2. Remove the inner sunroof seal from around the front of the sunroof opening and lay it back over the sunroof glass (See figures 5 and 6).

 **Tip:**

Masking tape can be used to hold the seal in place on top of the sunroof glass for the duration of the repair.



Figure 5 (Inner Sunroof Seal)



Figure 6 (Inner sunroof seal draped over sunroof glass)

3. Remove the wind deflector according to the repair manual in ELSA.



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4. Thoroughly clean the water channel with isopropyl alcohol, a microfiber cloth and compressed air. Use a bone tool or the squeegee supplied with the repair kit to clean the area underneath the sunroof trim panel by pushing the cloth underneath the trim (See Figure 7).

 **Note:**

Any dirt or debris will prevent the repair from being performed properly.



Figure 7

5. Wait at least 10 minutes after cleaning the water channel before proceeding to allow alcohol to evaporate.

6. Use masking tape to lift and compress the outer sunroof seal to provide additional access to the water channel underneath the sunroof trim panel (See Figures 8 and 9).



Figures 8 and 9



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7. For all cracks, put a 1 mm bead of sealant (Teroson MS-930, part number D 172090A2) over any existing cracks, 1 at a time. Start the sealant bead as far under the sunroof trim as possible and pull the bead to the end of the crack.

 **Note:**

The nozzle supplied with the sealant is already cut to a 1 mm opening.

Only work on 1 crack at a time due to the short cure time of the sealant.



Figures 10 and 11 (Sealant application)

8. Using the squeegee supplied with the repair kit, spread the sealant pushing it underneath the trim panel from the inside edge of the roof opening to completely cover the crack.



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9. Remove all excess sealant from the water channel. There must not be any excess sealant that may prevent the foils from being applied completely flat to the water channel. The crack should be filled with sealant with no excess sealant around the crack (See figures 12 and 13).

 **Tip:**

Cleaning solution (part number D 00940104) can be used to remove any sealant smears in the surrounding areas.



Figures 12 and 13 (Spread sealant working from sunroof opening to underneath the trim panel. Sealant should fill crack and there should be no excess sealant on the water channel.)

10. Repeat process for all cracks in frame.

11. Wait 30 minutes for sealant to cure before applying the foils to the water channel.



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12. Apply the foil tapes one at a time according to the sequence shown in Figure 14.

Note:

Foil tapes must be applied in all 8 positions regardless if there is a crack or not.

Tip:

For foil positions 2 and 4, it is more important to apply the foil as far underneath the trim panel as possible then attempting to align the foil with the seal channel. Foil positions 3 and 4 should not overlap each other. DO NOT cover the water drain hole or the witness line around the water drain with the foil in positions 3 or 4 (See Figure 15).

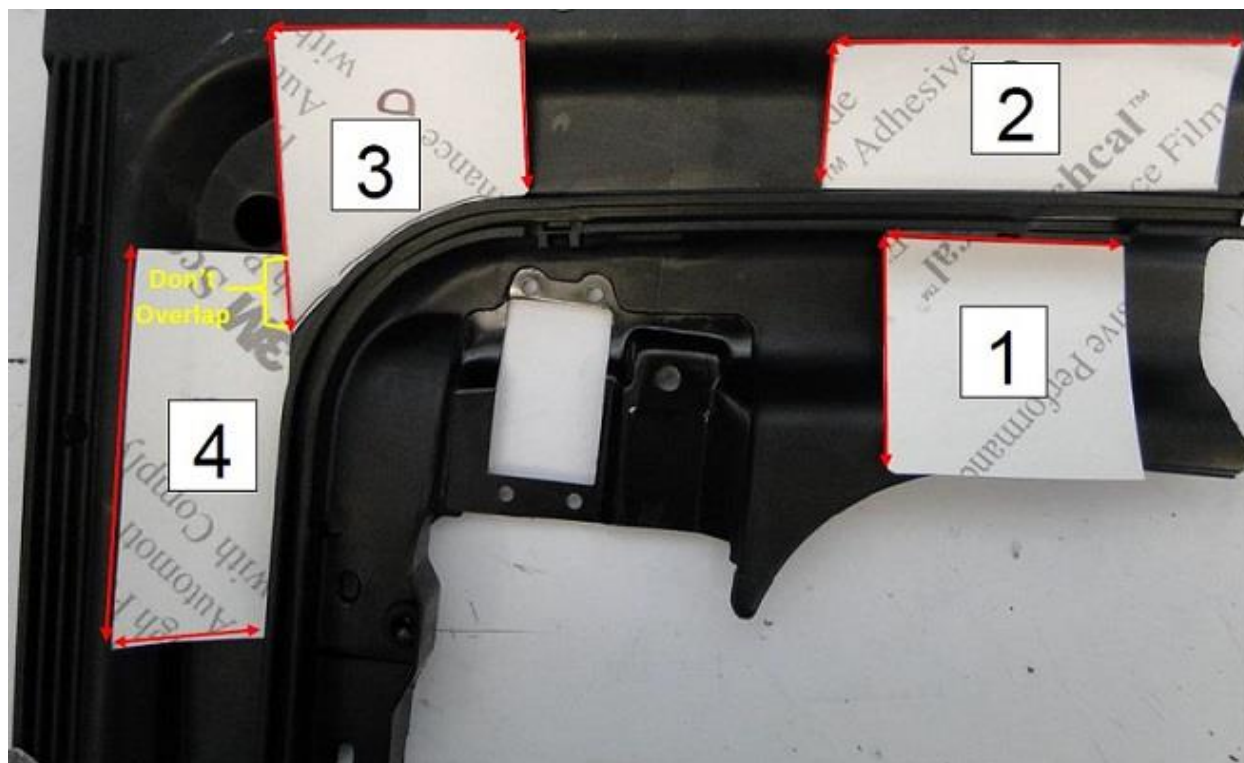


Figure 14 Foil application sequence (Both sides of water channel).



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Figure 15 Drain hole and witness line.

13. Starting in position 1, peel half of the backing tape off the foil and fold it over to use to hold the foil during application. Align the foil with the inner edge of the water channel and apply the foil, working it forward using the included squeegee to ensure there are no air bubbles, wrinkles and that there are no gaps under the foil. Peel backing tape off as you work forward. Use the squeegee to work the tape down as smooth as possible.



Note:

Position 1 is required solely for reinforcement of the water channel.



Figure 16 Peel half of backing tape off foil and fold in half to use to hold the foil as it is applied.



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i **Tip:**

There may be a burr on the water channel in this location that appears to be an air bubble. This is normal and an acceptable condition after applying the foil (Figure 17).

i **Tip:**

The foil positions are designed to cover witness lines in the water channel. It is normal to see a line in the foil after it is applied.



Figure 17 Burr under foil position 1.



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14. In position 2, peel half of the backing tape off the section of foil to be placed underneath the trim panel and fold it over to use to hold the foil during application. Ensure the tape is as far underneath the trim panel as possible before beginning to adhere it to the water channel. Apply the foil working it toward the rear using the included squeegee to ensure there are no air bubbles or wrinkles and that there are no gaps under the foil. Peel backing tape off as you work. Use the squeegee to work the tape down smooth and as far underneath the trim panel as possible (Figure 18).



Figure 18 Foil positions 1 and 2 fully applied.



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15. In position 3, peel half of the backing tape off starting at the pointed edge in the radius and fold it over to use to hold the foil during application. Carefully align the radius of the foil to the radius of the seal channel and ensure the drain hole and witness mark around the drain will not be covered. Apply the foil working it forward using the included squeegee to ensure there are no air bubbles or wrinkles and that there are no gaps under the foil. Peel backing tape off as you work. Use the squeegee to work the tape down smooth and as far underneath the trim panel as possible (Figure 19).

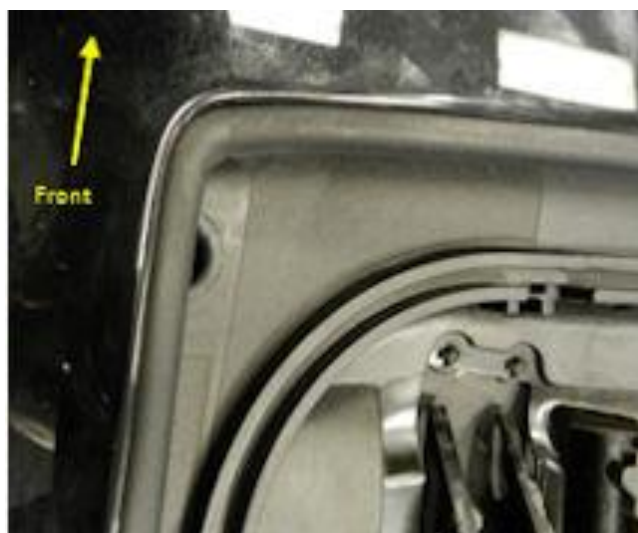


Figure 19 Foil position 3 fully applied.



Figure 20 Foil position 3 incorrectly applied covering witness line around drain.

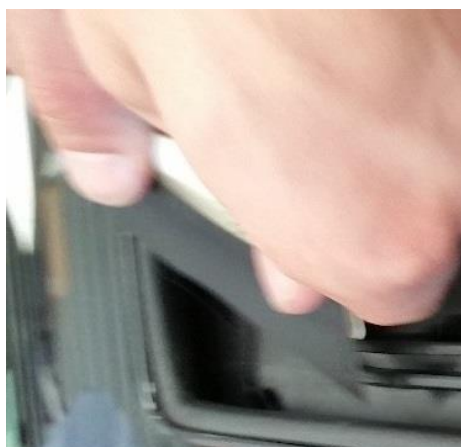


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i **Tip:**

Foil position 4 is the most difficult position to install. The foil must not overlap the foil in position 3, it must not cover the witness line around the drain, and it is difficult to place under the trim due to the limited work space. This position is very easily folded over due to this.

16. In position 4, peel half of the backing tape off the section of foil to be placed underneath the trim panel and fold it over to use to hold the foil during application. Use a pivoting motion to swing the foil underneath the trim. Ensure the tape is as far underneath the trim panel as possible before beginning to adhere it to the water channel. Apply the foil working it from underneath the trim toward the sunroof opening. Use the included squeegee to ensure there are no air bubbles or wrinkles and that there are no gaps under the foil. Peel backing tape off as you work. Use the squeegee to work the tape down smooth and as far underneath the trim panel as possible (Figures 21 and 22).



1.



2.



3.



4.

Figure 21 Use a pivoting motion to work foil underneath trim panel in position 4.



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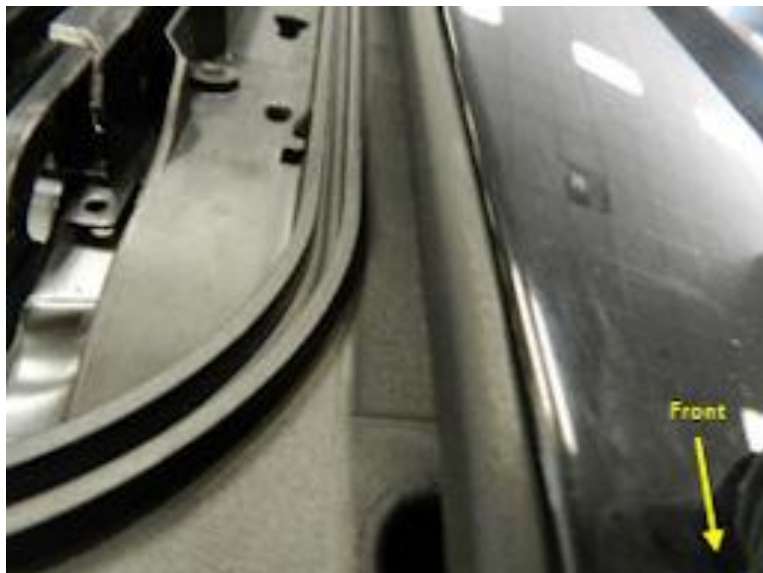


Figure 22 Foil position 4 fully applied.

 **Tip:**

It is more important that the foil in position 4 be applied as far underneath the trim panel as possible versus attempting to align it to the edge of the seal channel.

17. After all four foils have been applied to one side of the water channel, repeat steps 12-16 on the opposite corner of the water channel.



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18. Once all 8 foils have been applied to the water channel, inspect the foils to ensure they are completely flat to the water channel and that there are no air bubbles or gaps underneath the foil. Use the squeegee to help push out any defects (Figures 23 and 24).



Tip:

Use a flashlight at different angles to help identify any air bubbles. If any foil needs to be removed and reinstalled, discard the foil and use a new piece (Figures 25 and 26).



Figures 23 and 24 Air bubble under foil, air gap underneath foil.



Figure 25 and 26 use a flashlight to help identify any air bubbles in the foils and use the squeegee to work out any defects.



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 **Tip:**

The foil must be fully applied underneath the trim panel. If the foil is folded over, it should be removed and a new piece applied (see figure 27). Use the squeegee to work the foil down on to the water channel as far underneath the trim panel as possible.



Figure 27 Foil folded and not adhered underneath trim panel

19. Reinstall the wind deflector and sunroof seal.

20. Close the sunroof and water test the vehicle to ensure there are no additional leaks. During the water test, pour water through each of the 4 sunroof drains to ensure the drains are flowing properly.



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Warranty

To determine if this procedure is covered under Warranty, always refer to the Warranty Policies and Procedures Manual ¹⁾					
Model(s)	Year(s)	Eng. Code(s)	Trans. Code(s)	VIN Range From	VIN Range To
Golf, Golf GTI	2015	All	All	AU_FM082335	AU_FM500000
Golf, Golf GTI	2016	All	All	AU_GM000001	AU_GM500000
Golf, Golf GTI	2017	All	All	AU_HM000001	AU_HM012965
SAGA Coding					
Claim Type:	Use applicable Claim Type ¹⁾				
Service Number:	Damage Code	HST		Damage Location (Depends on Service No.)	
6052	0050	--		Use applicable when indicated in Elsa (L/R)	
Parts Manufacturer	Golf, Golf GTI			3YK ²⁾	
Labor Operation ³⁾ : Install Sunroof Water Channel Repair Kit			60524199 = 170 TU		
Labor Operation ³⁾ : Water Test			60520399 = 20TU		
Causal Part:			5GM898041		
Diagnostic Time ⁴⁾					
GFF Time expenditure	01500000 = 00 TU max.			NO	
Road Test	01210002 = 00 TU 01210004 = 00 TU			NO	
Technical Diagnosis	01320000 = 20 TU max.			YES	



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Claim Comment: Input "As per Technical Bulletin 2045403" in comment section of Warranty Claim.

- 1) Vehicle may be outside any Warranty in which case this Technical Bulletin is informational only
- 2) Code per warranty vendor code policy.
- 3) Labor Time Units (TUs) are subject to change with ELSA updates.
- 4) Documentation required per Warranty Policies and Procedures Manual.

Required Parts and Tools

Part No:	Part Description	Quantity
5GM 898 041	Repair Kit	2
D 172 090 A2	Sealant	1

No Special Tools Required.

Additional Information

All part and service references provided in this Technical Bulletin are subject to change and/or removal. Always check with your Parts Dept. and Repair Manuals for the latest information.

Document Control Revision Table			
Instance Number	Published Date	Version Number	Reason For Update
2045403/3	12/6/16	V601610	Updated VIN range and Panoramic roof definition.
2045403/2	11/22/16	V601608	Updated title and model clarification.
2045403/1	9/28/16	V601606	Original Publication.