

# W168 Webasto Segmented Roof

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*Tips from some amateur who repaired it ....*



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## 1. Introduction

This manual is based on the Webasto manual that is part of the A 1687800405 repair kit and my own recent experience. This repair kit is used to repair most common problems like broken gliders (gleitschlittenbruch), segment driver (lamellenantrieb), and more. The manual contained in this kit can be found on several places on the Internet.

<http://www.google.nl/search?q=w168+lamellendach+pdf>

During a sunny day I opened the roof and heard something snap. The roof would not close. Searching the Internet made me a little wiser, but most people who solved the problem did not document it well / at all. So I write this document hoping that it will help you fix your roof.

After disassembly of the roof, I found two broken gliders (lamellenantrieb). This is the component that pulls and pushes the segments back and forth. It's aluminum and broke off on both sides.



Figure 1 - Broken glider

The bad news is that this component can't be ordered separately. You must order the repair kit (A1687800405), which contains a lot of components you don't need. That makes this an expensive repair. It will set you back around 350-400 EUR, and it is a lot of work. I spend about three weekends to get it done, but also repainted the segments ;)

The good news is that this repair is fairly simple and can be done. To replace the gliders, the entire roof needs to be removed from the car and disassembled. After disassembly you can change the part and reassemble the entire roof and place it in the car.

Good Luck!



Figure 2 - New gliders

## **2. Before you start**

This document will refer to the steps of the Webasto manual, and give you more information regarding the steps. Webasto pages are referred to with [p:1] and the repair kit component numbers are referred to with [c:7.9.1]. As mentioned earlier, you can find the manual online. The overview with all the parts is added as an appendix to this document.

### 3. Disassembly

|                                                                                                                                                                                                                                                           |                                                                                      |
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| <p>1. Remove the faltenhimmel from segment 5-2.</p> <p>Start with the front strip. Pry it loose on the sides with a large screwdriver. Once it's loose, you can start on the clips.</p> <p>Pointy tipped pliers will help you open the plastic clips.</p> |   |
| <p>2. Open first segment</p> <p>I had this segment open when I started, and did not close it (as mentioned in step 4).</p>                                                                                                                                |                                                                                      |
| <p>3. Remove the faltenhimmel from velcro band on the last segment (5).</p> <p>Remove the (grey) plastic cover from the first segment.</p>                                                                                                                |  |
| <p>4. Close the first segment</p> <p>I did not close it.</p>                                                                                                                                                                                              |                                                                                      |

5. Remove the 4 screws at the hinges.
- On both sides of the segment.



6. Open the first segment and remove the metal blocks on both sides, to remove the segment from the roof.
- Move the block in the direction of the arrow.



7. Remove the other segments by removing 4 screws per segment.
- To reach the last segment, you should move the segments (if you can) in such a way, that you can reach the screws from the last segment(s) by opening the plastic caps in the roof (see picture).



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                          |
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| <p>You can align the segments above the plastic caps.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                        |
| <p>8. Completely close the roof again</p> <p>I could not close the roof because of the broken segment drivers.</p>                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                          |
| <p>9. Remove the sunroof from the car and place it on a table.</p> <p>To do so, you must first remove the soft inside roof cover. Start by removing the plastic caps from the safety belts, and then the belts themselves.</p> <p>Also remove the sunscreens above the windshield, and the handlebars on the side (above the windows of each seat).</p> <p>Remove the night lights, and roof control unit. It is attached with one screw and a few metal clips along the edge (windscreen side).</p> |   |

Then remove all the plastic posts from left and right front sides and sides of the car. They are clamped and you need to pull them loose. It will help if you open the metal clips that are underneath the rubber sealing.



I only loosened the back posts enough to be able to remove the roof interior. I did not need to remove them completely.

Once the inner roof is out, you can see the bolts that hold the sunroof in place.

First disconnect the rubber hoses from the four corners of the sunroof.

Loosen all screws. Don't bet on it, but the roof will probably stick to your car, since it's hanging on butyl ;)



Slowly build up force to push the roof down. The butyl will slowly loosen and the roof will come out.

Leaving you with a open roof in your car ;)



10. Remove the primary sealing for easier access.

Both the secondary sealing (still partially on your car) and the primary sealing (wide rubber / felt band) will be replaced.



Above, the secondary seal still partially on the car.

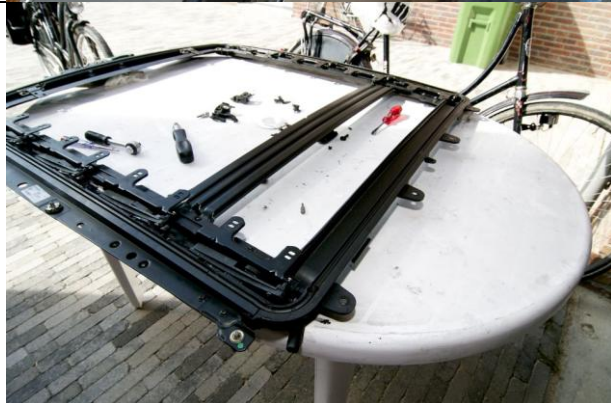
Below, the primary seal

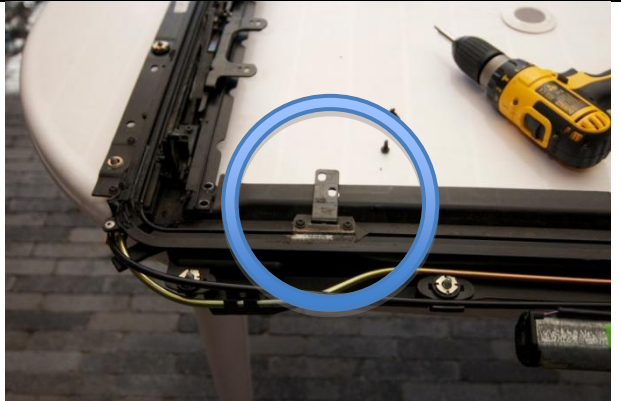


11. Remove all the gliders from the rail.

To do so, you need to remove the back of the window frame first. And to do so, you need to remove the bearing [c:7.19]. the Ausstelhebel [c:7.13] and the Mitnehmerplatte [c:7.14] on both sides.

Remove the Gewindeplatten. If they are plastic they will be replaced.



|                                                                                                                                                                                            |                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <p>12. Remove the motor and the motor holderplate.</p>                                                                                                                                     |    |
| <p>13. Remove the cable from the black plastic pipes.</p>                                                                                                                                  |    |
| <p>14. Disassembly black plastic pipes.</p> <p><b>(Note: I did not do this)</b></p>                                                                                                        |                                                                                      |
| <p>15. Remove the front hinges</p>                                                                                                                                                         |  |
| <p>16. Remove the 8 screws that hold the front of the sunroof onto the rails.</p>                                                                                                          |                                                                                      |
| <p>17. Bend the metal tubes the cables run through.</p> <p><b>(Note: I did not do this!!)</b></p> <p>I could remove the front part of the sunroof without bending the metal tubes. But</p> |                                                                                      |

|                                                                                                                                              |                                                                                                                            |
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| <p>you can do so if you want, because the entire front can be replaced with a new front from the repair kit. Including both metal tubes.</p> |                                                                                                                            |
| <p>18. Gently pull the front off. This sticks with butyl to the rail, so pull gently.<br/>You can use a screwdriver to help.</p>             |                                                                                                                            |
| <p>19. Remove both gliders (Gleitschlitten) [c:7.3.1 and 8.3.1], they can be renewed.</p>                                                    |                                          |
| <p>20. Remove both driver cables [c:7.7 and 8.7], they can be renewed.</p>                                                                   |  <p>There we have the broken parts.</p> |

|                                                                                           |                                                                                                                                                                                                              |
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|                                                                                           |                                                                                                                            |
| <p>21. Remove all the remaining butyl from the sunroof and smooth the remaining bits.</p> | <p>Removing the butyl is messy. If you use any solvents it will dilute the butyl, but won't come off easy.</p> <p>You can remove butyl with Duckt tape. For small bits you can also use cleaning spirit.</p> |
| <p>22. Remove all the segment gliders from the rear and separate them.</p>                |                                       |
| <p>23. Clean the rail and remove the remains of the secondary sealing.</p>                |                                                                                                                                                                                                              |

## 4. Assembly

|                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 24. Lubricate all parts of the rails                                                                                                                                                                                                                                                                                                  | I borrowed some lubricant from the Mercedes dealer.                                                                                                                         |
| 25. Lubricate the segment driver glider (Gleiter Antrieb) control tweel (riegelstein) and insert it into the rail.<br><br><b>(Note: I combined this step with step 1 (after 26) of the assembly)</b>                                                                                                                                  |                                                                                                                                                                             |
| 26. Lubricate each segment glider on the glacis and insert it back into the rail. Starting with the first segment glider, then 2-4.<br><br>The gliders can be hooked into on another.<br><br>Remove the screws from the first segment glider, so we can slide it over the segment driver glider, once it's inserted in the next step. | <br> |

1. Assemble the new driver cable end together with the segment driver glider and the control tweel.



Insert this block into the rail at once. This will go easier than inserting the segment driver glider first and then the cable.



Now slide the first segment glider over the driver glider. Replace the glider part that was removed and tighten the screws.



Test the driver by pulling and pushing the cable. The segment gliders should move along the rail.

2. Lubricate the new front gliders (Gleitschlitten) with a new control tweel.

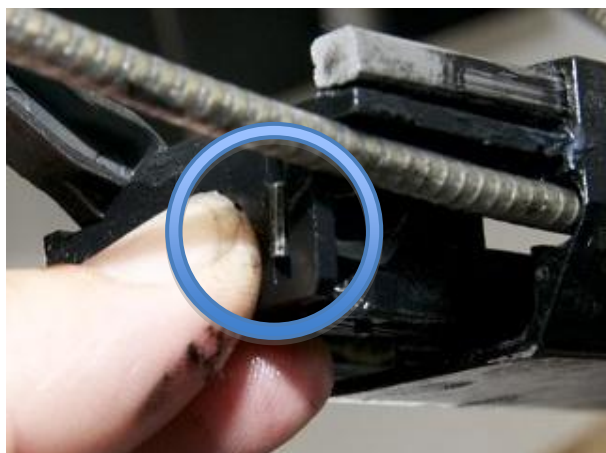
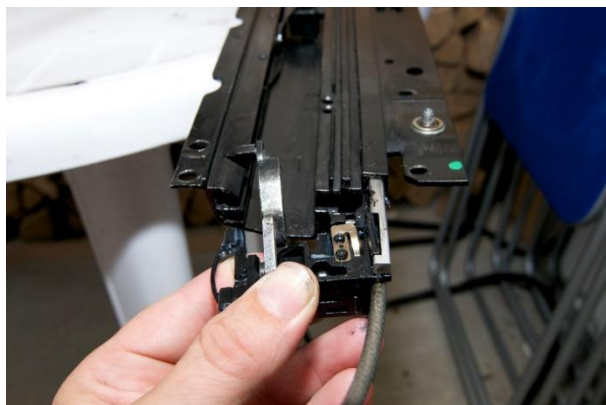
Examine this part closely since your understanding of how it works will help you. Especially move the small metal rail and the control tweel. You will see the tweel can move if you push the metal rail up.

Hook them in the aluminum bars and push them into the rail.

The tricky part is to push the control tweel to the side. This can only be done if the metal clip is pushed up! When the clip is pushed up, and the tweel is pushed to the side, you can slide the glider in.

Now push the glider into the rail to the point where there is an opening. The control tweel should fall into this hole.

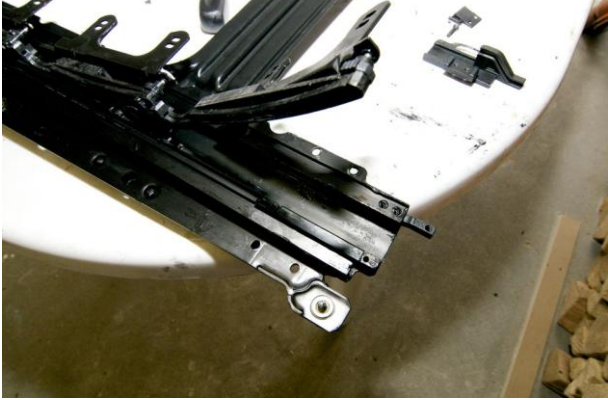
If it doesn't you can use a small screwdriver to move the control tweel into place. See step 4.



- 3.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                      |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                      |
| <b>ACHTUNG!!</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                      |
| 4. Use a screw driver to push the control wheel of the glider into the opening. The metal clip (see step 2) will now click down.                                                                                                                                                                                                                                                                                                                                       |                                                                                      |
| 5. Important: You can test the mechanism again by pulling and pushing the cable. But be careful not to pull the cable and the front glider out of the rail again.<br><br>If you push the cable it should move the segments back.<br>When you pull the cable it should move the segments forward up until it reaches the front glider. Then it will magically disconnect from the segments and will move the glider, so the banana like part of the front glider sinks. |                                                                                      |
| 6. Assemble the new front part of the sunroof using sikaflex (8-10mm)<br><br>Note: I used a few strings of the butyl string that was in the repair kit. Beware not to use too much, since you need it later.<br><br>Press the parts together so the screw holes match. Screw the parts together with the 8 screws.                                                                                                                                                     |  |
| 7. Pull the cable on both sides to the until they stop.<br>Both banana handles sink.<br><br>Insert the cables into the new metal cable tubes and bolt them to the window.                                                                                                                                                                                                                                                                                              |                                                                                      |

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| <p>Check again to see the cables are at their stops (all the way in front). Pull them again if necessary.</p>                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                      |
| <p>8. Assemble the front hinges.</p>                                                                                                                                                                                                                                                     | <p>See step 15 of the disassembly</p>                                                                                                                                                                                                                                                                                                                                                                                  |
| <p>9. Insert the cables into the black plastic tubes. At one end the cables are longer than the black tubes and the position of the tubes is different in the new front part of the sunroof.<br/>You can cut it off at the end attached to the sunroof and insert it into the clips.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p>10. Assemble the motor with the new cable .</p>                                                                                                                                                                                                                                       | <p>If you also experienced a broken gleiterantrieb, the motor position is no longer correct. When opening the roof, the motor stops after the first segment is opened. So before attaching the motor, you need to get it into the stopped position and the first segment in the up position.</p> <p>I removed the motor once the roof was build in the car again to get it to open the first segment just right ;)</p> |
| <p>11. Check if everything functions by hooking the motor up to a battery.</p> <p>Important: Check to see if the null position is correct.</p>                                                                                                                                           | <p><b>Note: I did not do this. I checked the function by hand, through the inbus opening in the motor.</b></p> <p><b>The motor test with battery was when the roof was back in the car.</b></p>                                                                                                                                                                                                                        |

|                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>12. Assemble the rear part of the sunroof. Insert the (Gewindeplatte) [c:7.16], the Ausstellkulisie [c:7.11]. Insert the Mittnehmerplatte [c:7.14] into the Verbindungsstange [c:7.10] and Ausstellkulisie.</p> <p>Lubricate the Ausstellhebel [c:7.13] and insert it into the cradle [c:7.12]. Put the glider pin into the rail of the Ausstellkulisen [c:7.11].</p> |  <p>My parts where aluminum so I kept them.</p> <p>Fasten all the screws of the cradle. See to it that the white plastic tips along the side of the segment glider glides.</p> <p>When the parts are plastic replace them.</p> |
| <p>13. ....</p>                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                  |
| <p>14. Test the roof function again to confirm that all the segments holders open and close as intended.</p>                                                                                                                                                                                                                                                             | <p>Open and close the roof to see everything moves like it should.</p> <p>Be careful not to push too hard. Especially since the segments are not mounted yet, and thus the segment gliders can move freely and might collide with one another, and get stuck.</p>                                                |
| <p>15. Push the primary sealing into place.</p>                                                                                                                                                                                                                                                                                                                          | <p>Check if it's spread evenly. If it bulges up after inserting, keep pushing it in (anti) clockwise. It will even out nicely eventually.</p>                                                                                                                                                                    |
| <p>16. Clean the flange of the roof of the car. And put the new butyl cable in place.</p> <p>You should have enough left ;)</p> <p>Tip!: Removing butyl from car or other parts is easy with Duckt Tape.</p>                                                                                                                                                             |  <p><b>(Important: I mistakenly put the butyl cable on the secondary sealing. Don't! If you misplace the sunroof during assembly you are in butyl hell! So put it on the car!)</b></p>                                       |

|                                                                                                                                  |                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>17. Put the secondary sealing into place.</p>                                                                                 |  <p>The sticky string goes on the roof under the flange.</p>                                                                                                                                                                              |
| <p>18. Screw the sunroof back into the car</p>                                                                                   | <p>The same way it came out. Best not do this alone, because once you touch the secondary sealing it sticks like...butyl!</p>                                                                                                                                                                                               |
| <p>19. Screw the segments into place</p> <p>Check the function of the roof again before putting the faltenhimmel into place.</p> | <p>I installed some segments when the roof was not yet installed in the car. It's no problem and only makes the entire frame a little heavier.</p>   |
| <p>20. Put the faltenhimmel back into place</p>                                                                                  | <p>I had to clean it, because of some black fungus caused by water.</p>                                                                                                                                                                                                                                                     |

|                                            |                                                                                                                                        |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
|                                            |                                                      |
| 21. Check the function of the roof again.  |                                                                                                                                        |
| 22. Check the spacing between the segments | You can check the spacing with something of the desired size. I used some 3mm spacers to make all the spacing even.                    |
| 23. Check to see if the roof is watertight | <p>I carefully hosed the roof down, with someone inside checking for leaks. First gently then heavy.</p> <p>Everything stayed dry!</p> |
| 24. You're done!                           |                                                     |

## 5. Appendix A

The contents of the repair kit.



