

Sunroof

Installation Instructions

H300 Entry / Comfort



1	Introduction, dimensions and preparations	6
2	Marking sunroof location	7
3	Removing headlining	9
4	Cutting sunroof aperture	10
5	Sunroof module installation	12
6	Wiring harness	16
7	Installation of trimshell	18
8	Softwrap version	19
9	Initialisation procedure and reset procedure	20
10	Checking	21
11	Checklist.	22
12	Declaration of Conformity	23
13	Wiring diagram	24



Improper installation or repair of Webasto sunroof systems can lead to serious injury or death.

To install and repair Webasto sunroof systems you need to have completed a Webasto training course and have the appropriate technical documentation, special tools and special equipment.



Only genuine Webasto parts may be used. See also accessories catalogue and spare parts lists.

NEVER try to install or repair Webasto sunroof systems if you have not completed a Webasto training course, you do not have the necessary technical skills and you do not have the technical documentation, tools and equipment available to ensure that you can complete the installation and repair work properly.

ALWAYS carefully follow Webasto installation and repair instructions and heed all WARNINGS.

Webasto rejects any liability for problems and damage caused by the system being installed by untrained personnel.

SYMBOLS



WARNING:

Indication of danger of injuries or accidents



ATTENTION:

Indication of danger of damaging the product



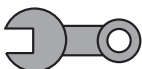
Further information can be found in following documents



Note on a special technical feature



Watch carefully



Mechanical tasks



Electrical connections

PERSONNEL

The H300 sunroof can be installed by one person.

PROTECTION



Improper use of tools can lead to injuries or damage to the vehicle or sunroof!

Thoroughly read tool instructions prior to using.

Before using any special tools, make sure to know all rules and regulations for this equipment in your country.

Substances like glue, initiator or primer can be inflammable or harmful to your health when being touched or inhaled. Carefully follow the instructions on the package of the product. Check and act according to the laws and regulations in your country with reference to the use of this substance.

Wear a respiratory mask, make sure that the workplace is well ventilated and a good functioning aspiration system is obliged.

Wear protective clothing like ear protection, safety shoes, safety goggles and protective gloves.

Cover parts of the interior and exterior of the vehicle with protection materials (covers, cloths, etc.) to reduce the risk of damaging the vehicle.

APPLICATION DATA

Check one of the following websites whether or not this sunroof can be installed in the vehicle for intended use:



USA: <http://www.techwebasto.com>

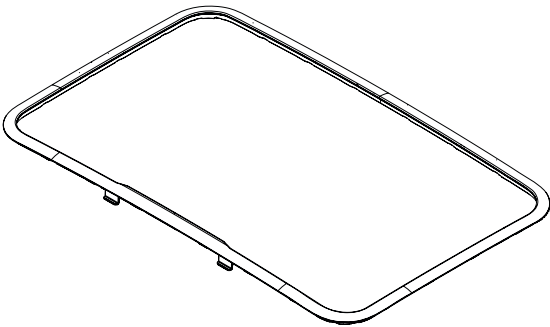

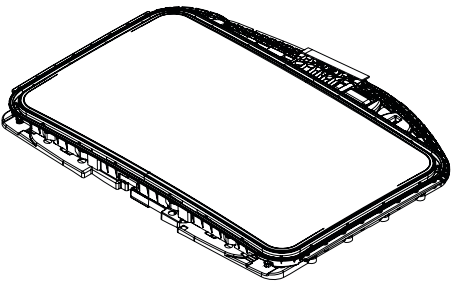
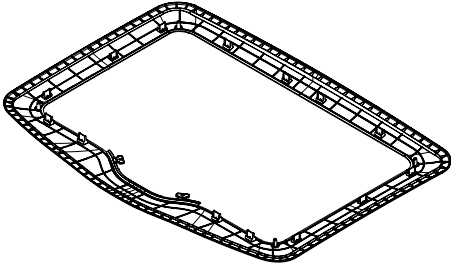
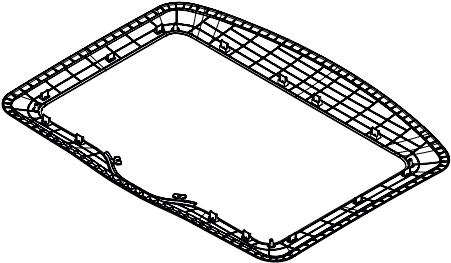


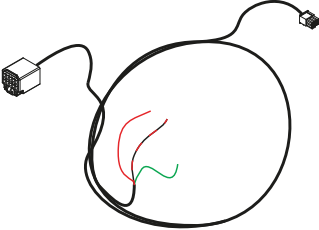
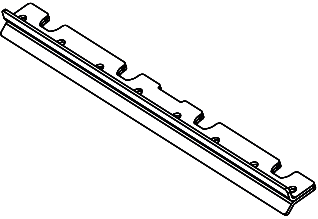
Others: <http://dealers.webasto.com>

For application data (e. g. front distance) and vehicle specific installation instructions see (not for USA):

<http://dealers.webasto.com>

User name and password are required for this section.

Contact your Webasto subsidiary.

	Front Drive	Rear Drive
1		
2		
3		
4		
5		
6		
7	 2x	

SCOPE OF DELIVERY

Check contents of box "sunroof module":

- 1) Roof moulding
- 2) Sunroof module
- 5) Technical Documentation: Kraftfahrt-Bundesamt Type Approval and Operating Instructions
- 6) Wiring harness

Check contents of box "trimshell":

- 3) Trimshell assembly:
 - Entry (Flocked surface)
 - Comfort (Fabric in several colours)
 - Bare trimshell (for softwrap version)
- 4) Trimshell cover with turtle switch
- 7) Check contents of box "Roof Stiffener Replacement (RSR)"
(Optional, depending on vehicle specific installation instructions):
 - Mounting flange (2x)
 - Hardware
 - Torx screw (16x)

OTHER MATERIALS REQUIRED

Rear drive sunroof:

- Wiring harness clips, Webasto nr. 3396172 (3395318 100x)

All versions:

- Masking tape
- Insulation tape
- Sandpaper
- Anti corrosion primer (e. g. 1K etch primer from spray can (suppliers are Akzo Nobel (Lesonal), Dupont (Spies Hecker) and others)
- Fuse 20 A
- Fuse holder, add-a-circuits etc.

Additional for softwrap version:

- Soft headliner material
- Glue for soft headliner material
- Profile for headliner

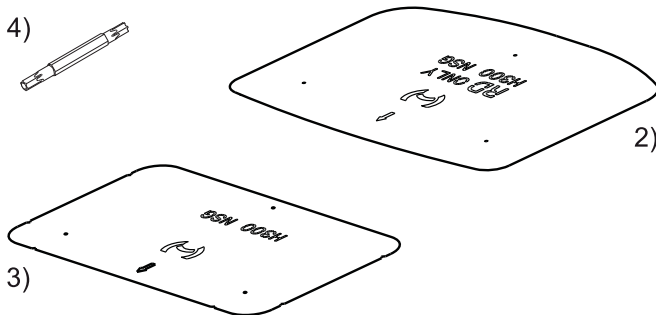
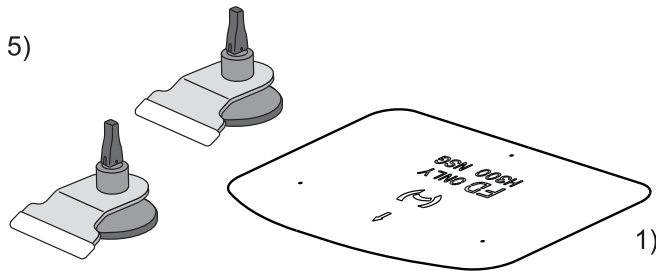
Depending on vehicle specific installation instructions:

- Add-a-circuit mini-fuse
- Add-a-circuit fuse

H300

NECESSARY TOOLS

H300 special tools:.



H300 special tools (for installation):

- 1) Cutting template (inside, front drive)
- 2) Cutting template (inside, rear drive)
- 3) Cutting template (outside)
- 4) Torx® T25 long tool bit
- 5) Clamp tool with suction cup (2 pcs)

General tools:

- Awl
- Utility knife
- Scissors
- Marker
- Drilling machine
- Drills
- Filing knife with rounded corners
- Electric metal shears
- Oscillating saw
- Tin snips
- File
- Measuring tape
- Torque wrench / torque screw driver
- Torx® screw drivers or tool bits (with long shaft, at least 50 mm)
- Digital multimeter
- Wire cutters
- Wire stripping tool
- Brushes for primer

1 Introduction, dimensions and preparations

Introduction

The H300 is an electrically operated spoiler sunroof and is available in ENTRY and COMFORT, both Front and Rear Drive. There are multiple completion methods for the headlining to choose from.

It is suitable for the majority of the car brands.

The sunroof is equipped with a protective Venus® glass panel against UV radiation and solar heat.

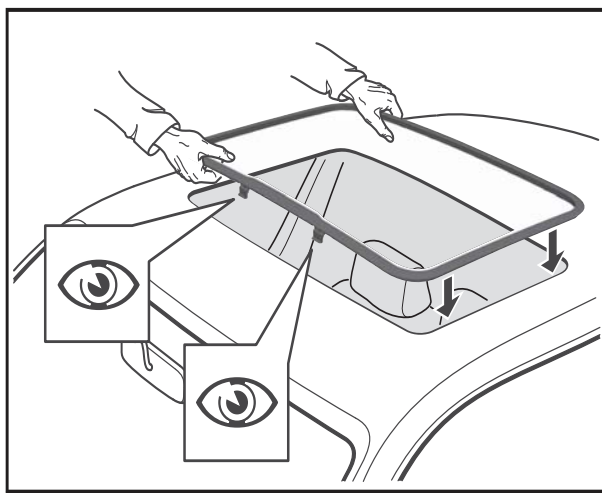
The sunroof can be operated by a 3 button turtle switch.

Dimensions Unit/frame

[mm]

Model/type	H300
Curvature (cross)	5,500
Curvature (longitudinal)	6,500
Roof width	794
Roof length	494
Roof depth	60

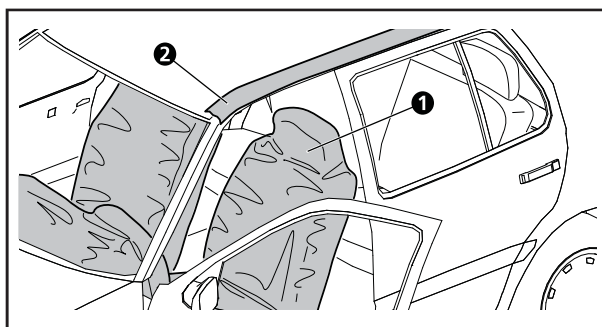
Preparations



Download and read application data:

USA: <http://www.techwebasto.com>

Others: <http://dealers.webasto.com>



Cover vehicle interior and exterior

① Seat covers

② Masking tape

2 Marking sunroof location

NOTE!

Softwrap version only:

A bare trimshell carrier (FD or RD) is installed to hold the new headlining material. If necessary you may modify (cut) the bare trimshell carrier slightly.

Careful!: do NOT cut off mounting clips!

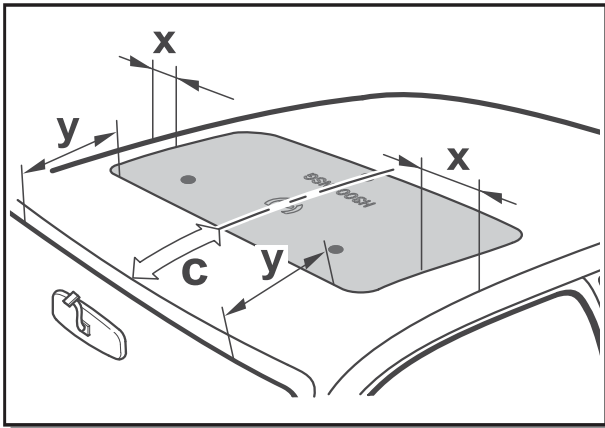


Check technical website.

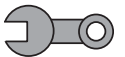
In case application data ARE available on technical web site:

Place outside cutting template:

- front distance **c** (from technical website);
- centred: same distance (**x**) at sides;
- straight: left and right same distance (**y**) template to windshield.



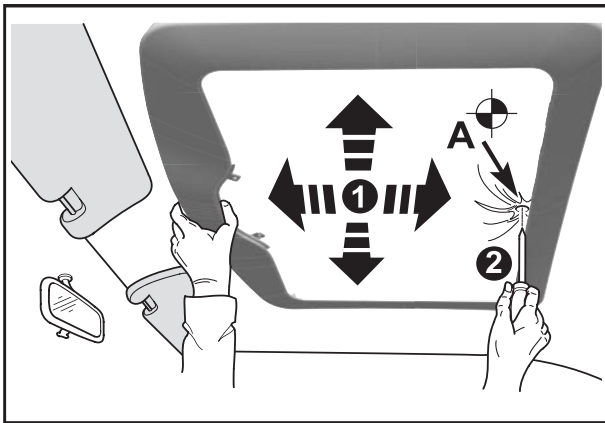
In case application data are NOT available on technical web site:



- (1) Place trimshell (**FD or RD**) against headliner of vehicle and determine the best possible sunroof location.

- Note position of:
- wiring harnesses
 - roof stiffeners
 - roof console
 - hand grips
 - interior lights
 - sun visors
 - air bags, etc.

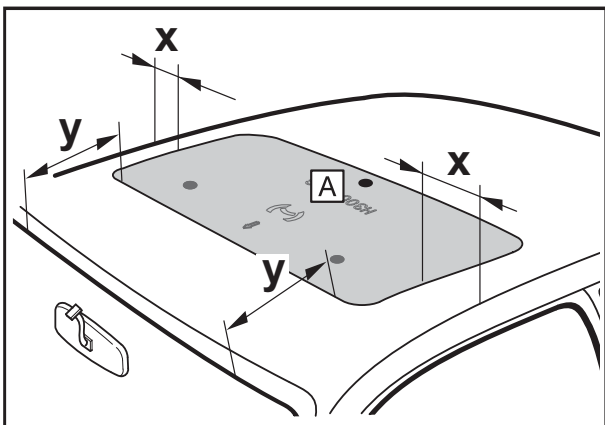
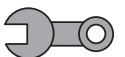
Also check available space at outside of vehicle.

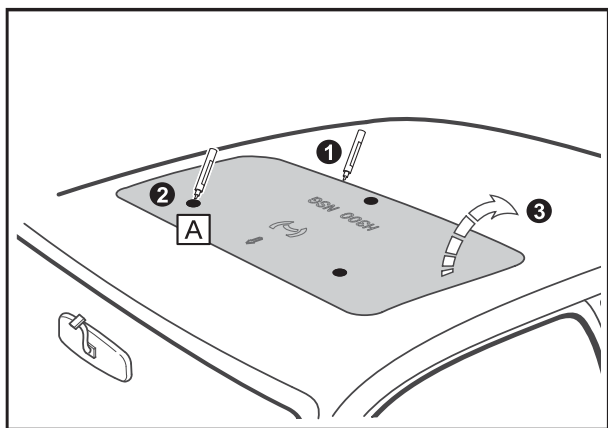
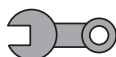


- (2) Use an awl to mark a reference point "A":
 - against inside of trimshell assembly
 - in the middle.

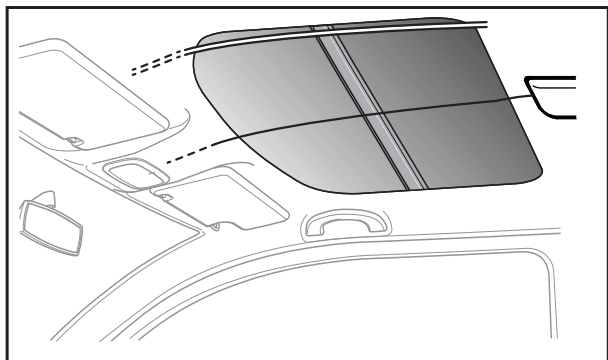
- (3) Place outside cutting template:

- centred: same distance (**x**) at sides;
- straight: left and right same distance (**y**) from template to windshield;
- reference point "A" on rear of template corresponding with reference point "A", made in previous step (2).





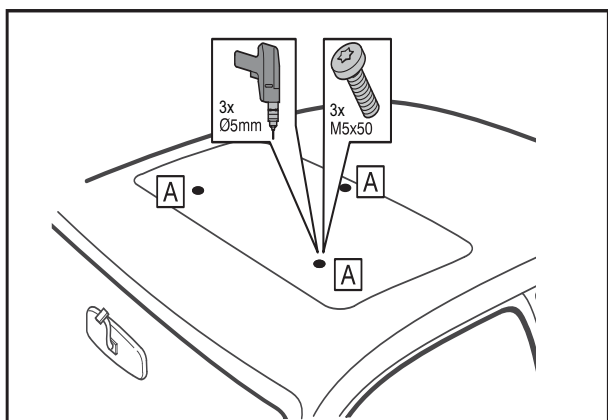
- (1) Mark cut line with a fine marker (exactly against the outside cutting template).
- (2) Mark 3 reference points "A".
- (3) Remove outside cutting template.



ATTENTION!

Before drilling, do not damage hidden parts. Always verify the location of:

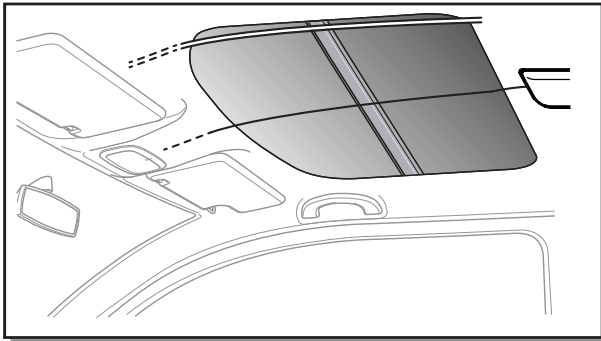
- vehicle wiring harnesses.
- rear window washer hoses.
- roof stiffener(s).



Drill three $\varnothing 5$ mm holes through roof skin and headlining at reference points "A".

Place three screws M5.

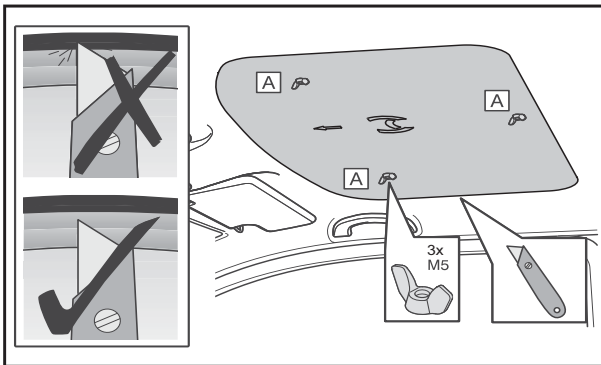
3 Removing headlining



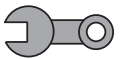
ATTENTION!

Before drilling, do not damage hidden parts. Always verify the location of:

- vehicle wiring harnesses.
- rear window washer hoses.
- roof stiffener(s).



Temporarily attach inside cutting template to headlining with screws and nuts M5.



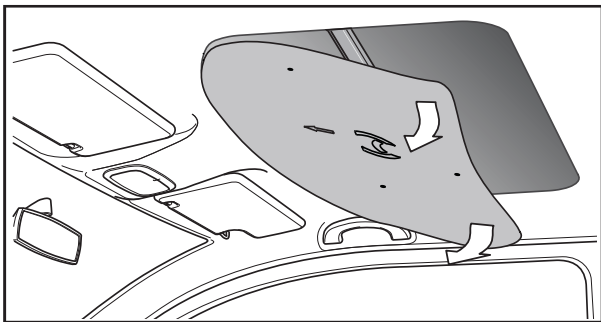
ATTENTION!

There are 2 different inside cutting templates. One for front drive and one for rear drive sunroofs. **Ensure to use the correct template!**



Do not damage roof skin!

Cut out headlining with utility knife.

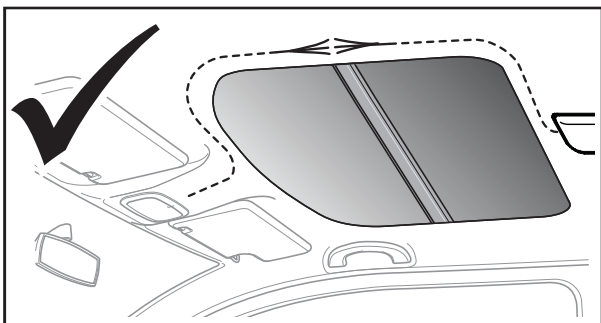


Remove headlining using cutting template.

Remove sound absorbing material if present.

NOTE!

RSR only: Mark cutting position on the roof stiffener.



Separate wires of vehicle wiring harness.

Cut wires separately to avoid short circuits.

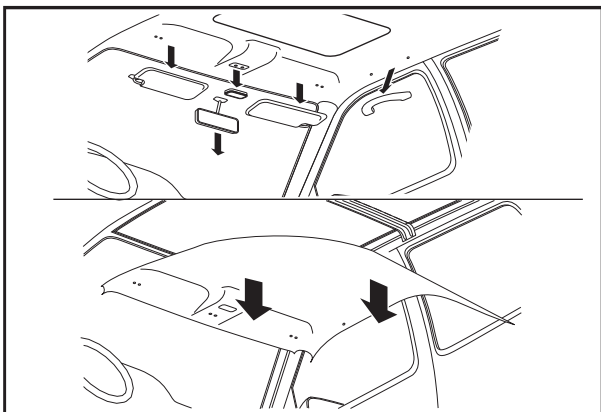
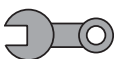
Extend wiring harness and insulate.



Guide wiring harness and hoses around aperture. Fixate wiring harness and hoses to roof skin or headliner appropriately (to avoid interior noises when driving).

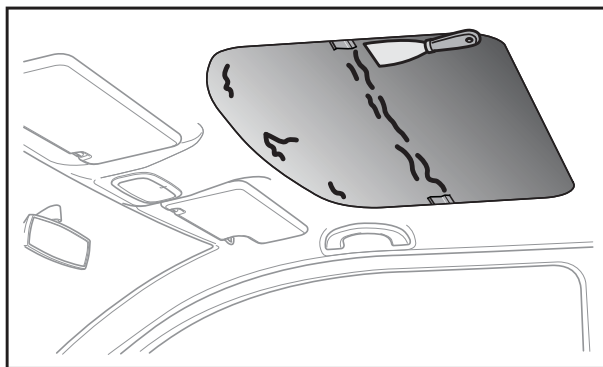
Softwrap version only:

Remove hand grips, sun visors, interior lights, etc.

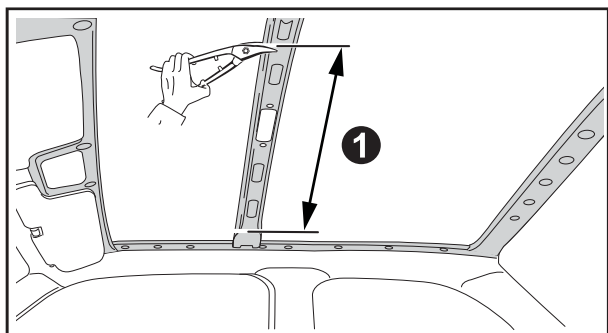
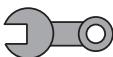


Remove headliner.

4 Cutting sunroof aperture

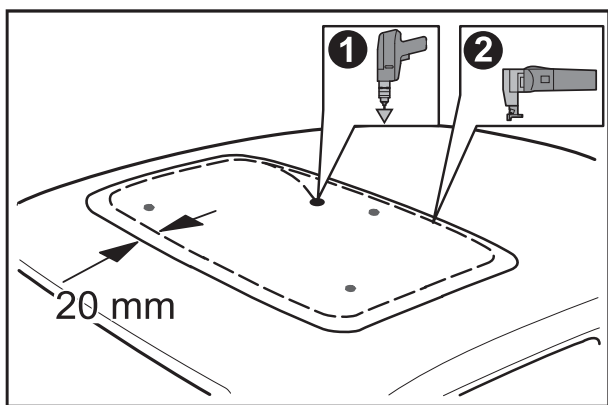


Clean mastic remains around the cutting line from inside of vehicle.



In case application data **ARE** available on **technical web site** or if approved by Webasto otherwise.

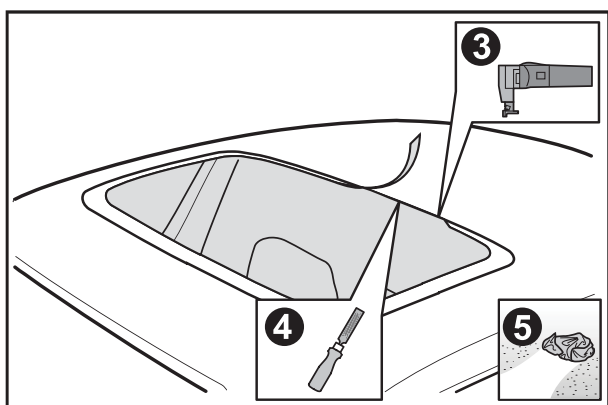
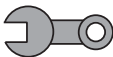
Cut and remove the roof stiffener (on the previously marked position) according to the application data. Opening (1): Between 814 and 818 mm. See page 13, RSR Install requirements. File off and sand edges.



WARNING!

Keep approx. 20 mm distance from cut line to prevent distortion.

(1) Drill hole and (2) cut out sunroof aperture in vehicle roof.



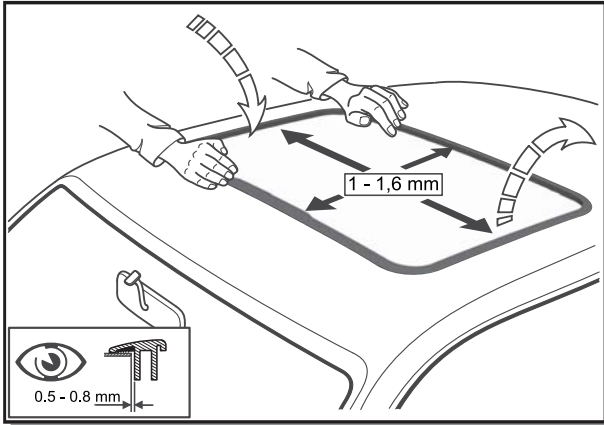
WARNING!

Excess sheet metal can cause injuries

(3) Cut hole along **inner edge of cut line.**

(4) File off edges of aperture.

(5) Sand edges of aperture.



NOTE!

Check from inside of vehicle!



ATTENTION!

Do not damage the hydrophobic seal of the roof moulding while checking the aperture.

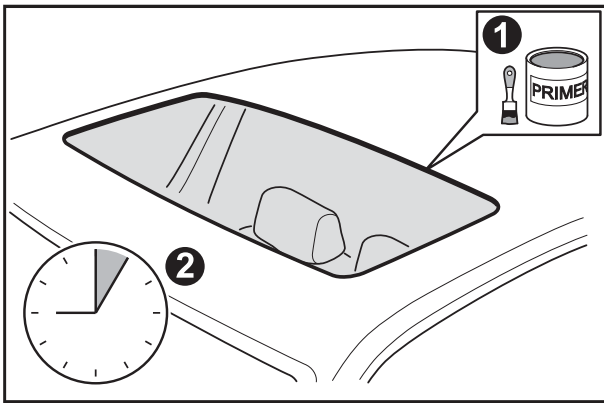
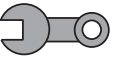


Check aperture size with roof moulding.



Clearance on each side must be 0.5 to 0.8 mm. More than 0.8 mm will cause leakage.

Enlarge aperture if clearance is not enough.

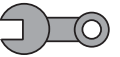


NOTE!

Please inform yourself about the best fitting primer at your local distributor.

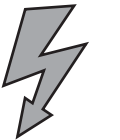


(1) Apply anti corrosion primer to cutting edge (and roof stiffener cut out if RSR system is to be fitted).



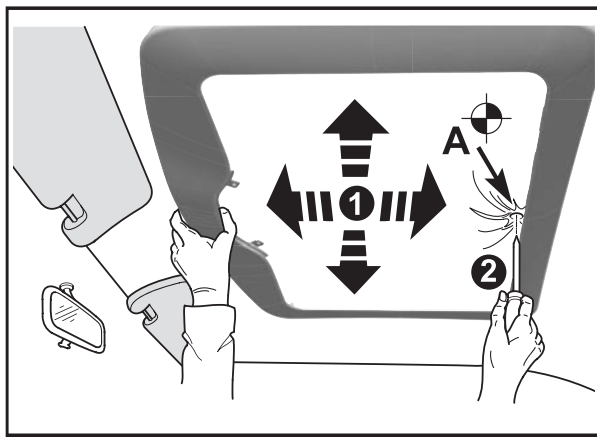
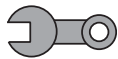
(2) Let primer dry.

During drying process of the primer, fit the wiring harness from the sunroof drive motor to the vehicle fuse box.

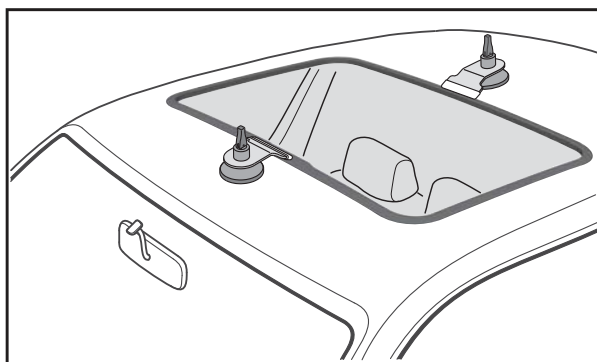


See page 16.

5 Sunroof module installation



Place roof moulding into roof aperture.

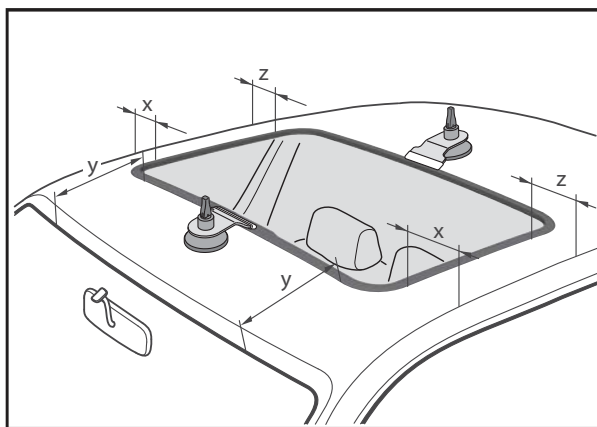


NOTE!

Clean and degrease vehicle roof before placing clamp tools.

Place clamp tool 2x with suction cup on vehicle roof
1x in front of roof moulding / roof aperture
1x behind roof moulding / roof aperture.

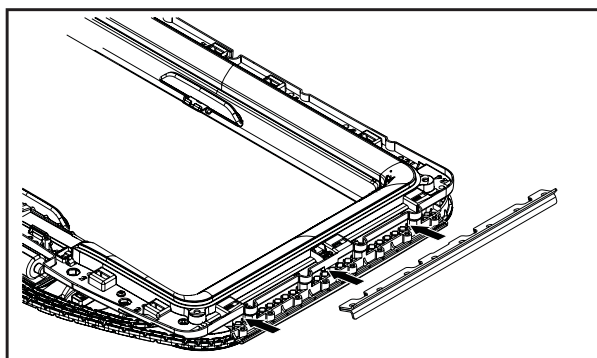
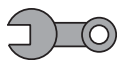
Use suction cups to attach tools to vehicle roof.
Adjust tools in such a way, that roof moulding is
securely positioned on vehicle roof.



Check position of roof moulding:

- centred: distance **(x)** and distance **(z)** same at both sides;
- straight: left and right same distance **(y)** to wind-shield.

Correct position of roof moulding if necessary.

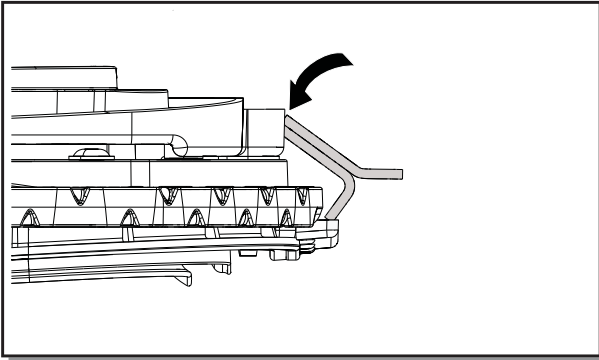


RSR System (if necessary):

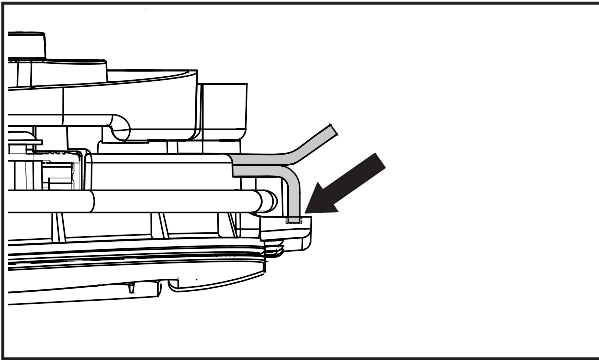
Fit the RSR mounting flanges on both sides of the sunroof module .

Position the sunroof module upside down.

Fit the RSR mounting flange from the side with the straight edge down.



Position the lower part of the RSR mounting flange against the sunroof module then carefully turn the RSR mounting flange forward.

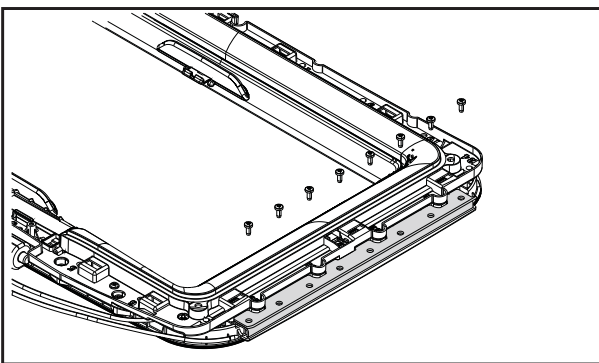


Fit the RSR mounting flange into the opening of the sunroof module.

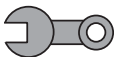


ATTENTION!

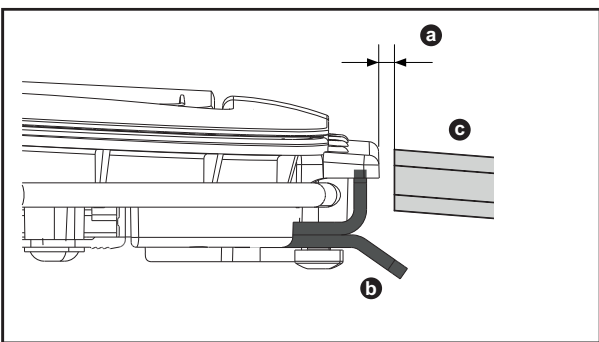
Make sure the RSR mounting flange fits correctly inside the sunroof module before tightening the bolts.



Fit and tighten the bolts (8x)



RSR mounting flange to Sunroof module:
Torque setting: 5 Nm



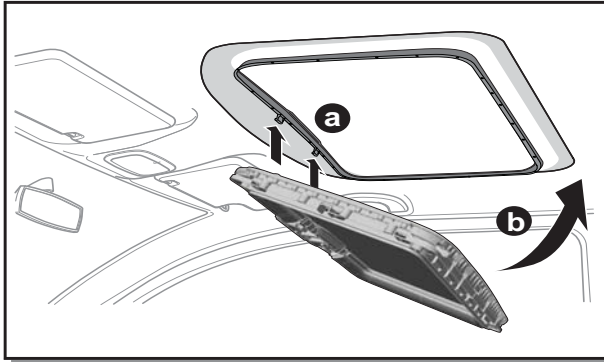
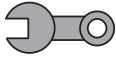
NOTE!

RSR mounting flange install requirements:



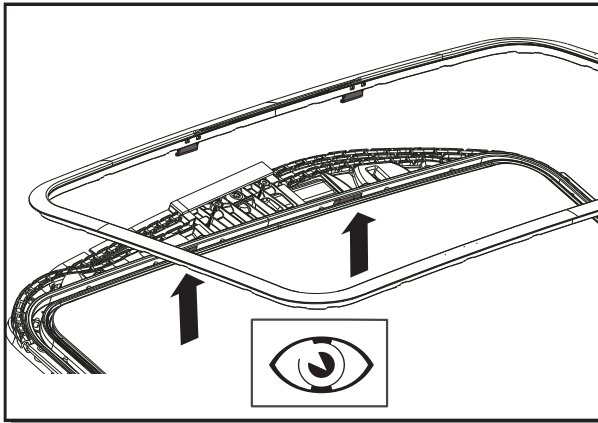
- (a) Distance **MAX.** 2 mm.
Make sure sunroof module or RSR mounting flange never come into contact with roof stiffener.
- (b) RSR mounting flange.
- (c) Roof stiffener of vehicle.





Install sunroof module:

- (a) Engage 2 mounting hooks of roof moulding with sunroof module.
- (b) Lift rear part of sunroof module.



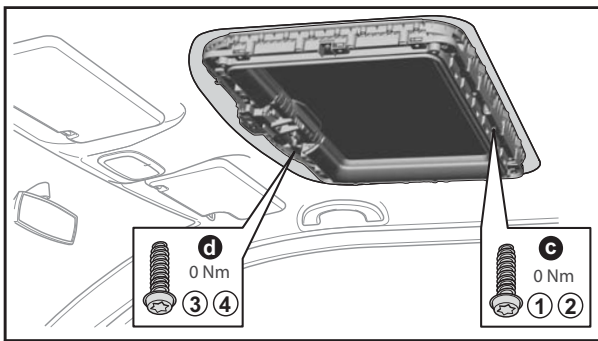
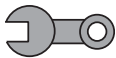
NOTE!

Webasto recommends to move the front passenger seat to a more forward position. This enables the installer to lean against the passenger seat while sitting on the driver seat. While lifting the sunroof module, the installer should look along the side to observe the 2 mounting hooks.

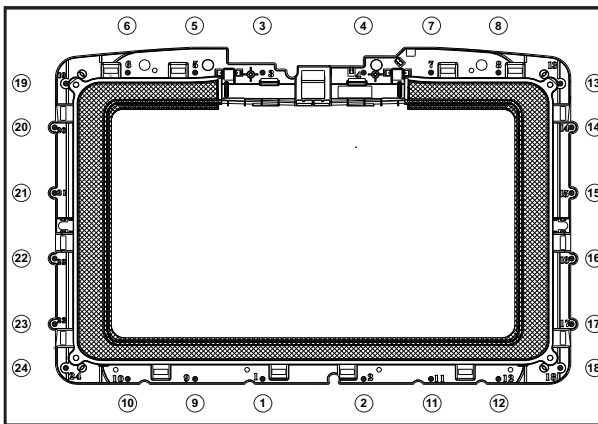


NOTE!

Screws are pre-assembled in sunroof module.

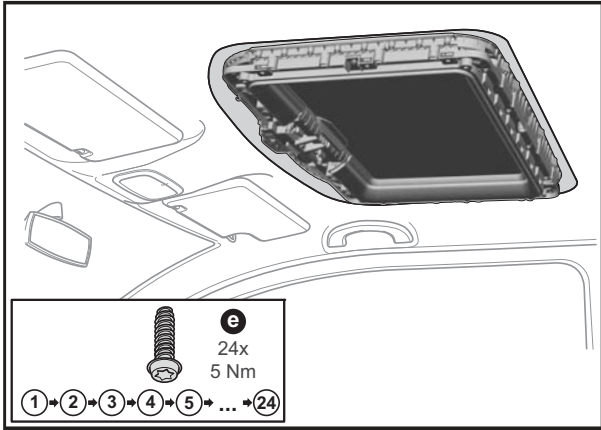


- (c) Thread in 2 screws at the rear: No. 1 and No. 2. Just a few turns, do not tighten
- (d) Thread in 2 screws at the front: No. 3 and No. 4. A few turns, do not tighten! The sunroof module will stay in position.

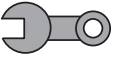


NOTE!

Thread numbers and correct sequence of tightening screws are marked on sunroof module.



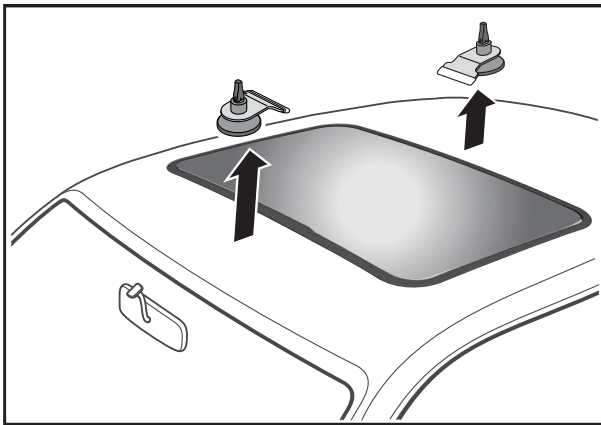
(e) Tighten screws 1 to 24 in the correct sequence to 5 ± 0.5 Nm.



1 ⇒ 2 ⇒ 3 ⇒ 4 ⇒ ⇒ 22 ⇒ 23 ⇒ 24.

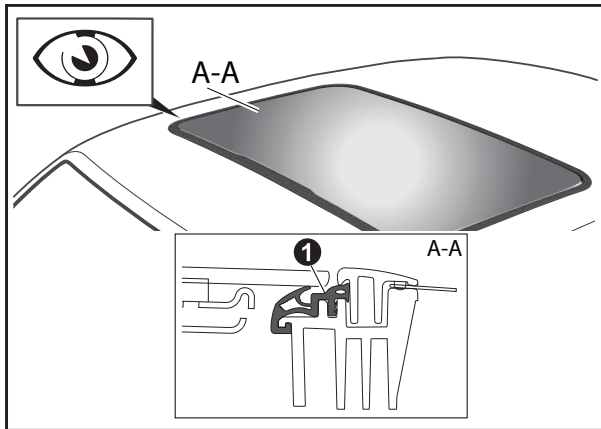
ATTENTION!

Use torque wrench or torque screw driver.



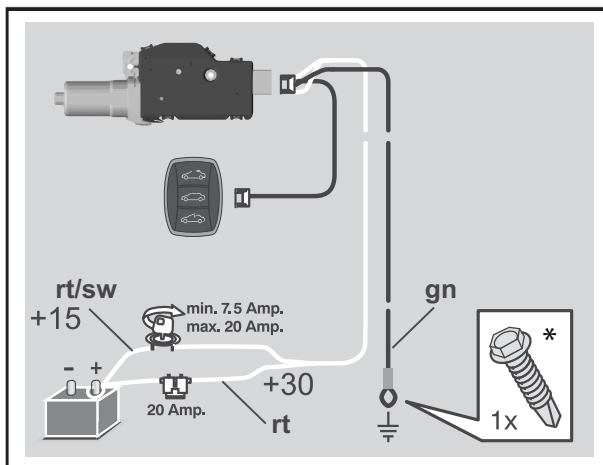
Remove clamp tools.

If necessary remove stains caused by clamp tools.



Follow the frame seal (1) around the glass panel and check for correct fit.

6 Wiring harness



Connect wiring harness:

NOTE!

Fixate wiring harness (to avoid noises).

Webasto recommends to use "Add-a-circuit" mini-fuse" or "Add-a-circuit" fuse (can be ordered separately).

See our technical web site for the separate installation instruction:

USA: <http://www.techwebasto.com>
 Others: <http://dealers.webasto.com>

Red (rt) wire: + 12 V DC (+30), continuous, with fuse 20 A

Red/black (rt/sw) wire: + 12 V DC (+15), ignition, with fuse (of vehicle) 7.5 - 20 A

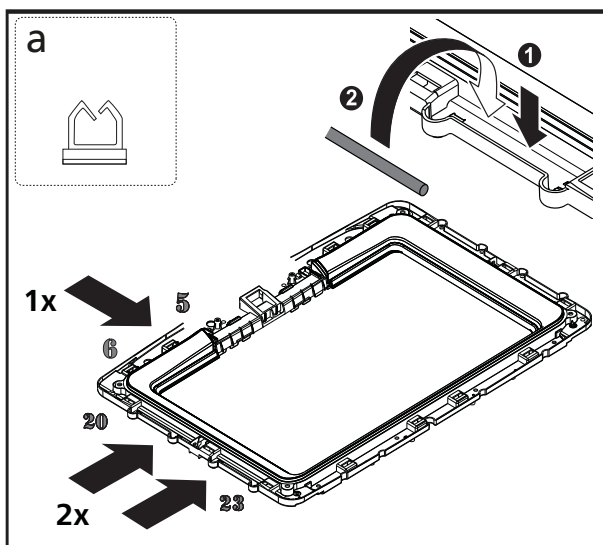
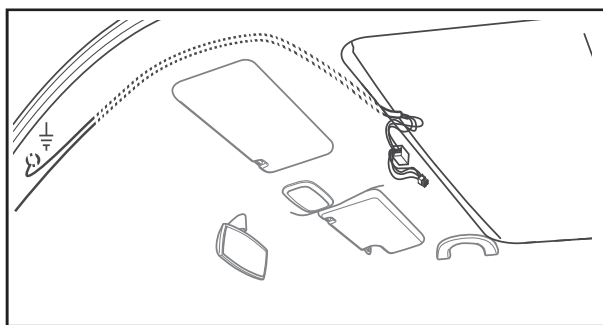
Green (gn) wire: -, ground (31)

* Self-drilling screw, not in delivery scope

Install wiring harness:

(Front drive motor version shown):

Guide and attach wiring harness from the sunroof drive to the vehicle fuse box.



Rear drive sunroof:

NOTE!

Fixate the sunroof drive motor wiring harness (to avoid noises).

Degrease the sunroof module surface.

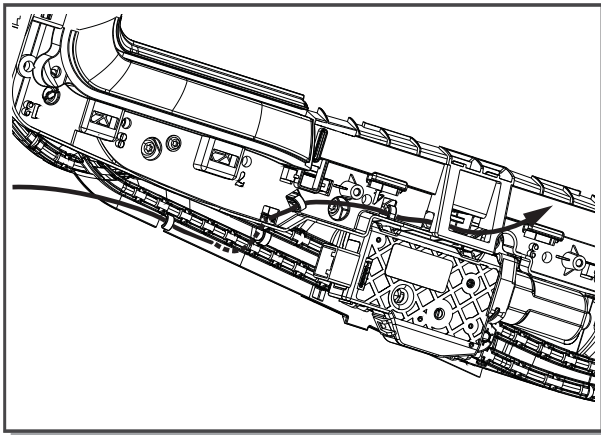
Attach the sunroof drive motor wiring harness to the side of sunroof module with adhesive wiring harness clips (a, available from Webasto).

- 2 clips between screws "20" and "23"
- 1 clip between screws "5" and "6"

Alternatively insulation tape can be used.

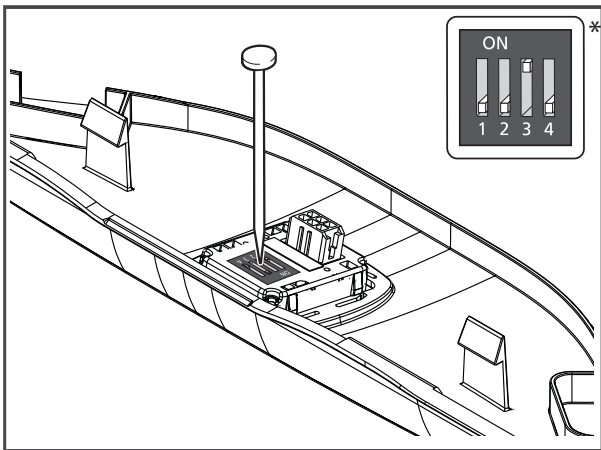
All sunroof versions:

Plug 10 pin connector of wiring harness into sunroof drive motor.



Turtle switch wiring:

Guide the wiring harness for turtle switch (with 6 pin connector) through openings in sunroof assembly.



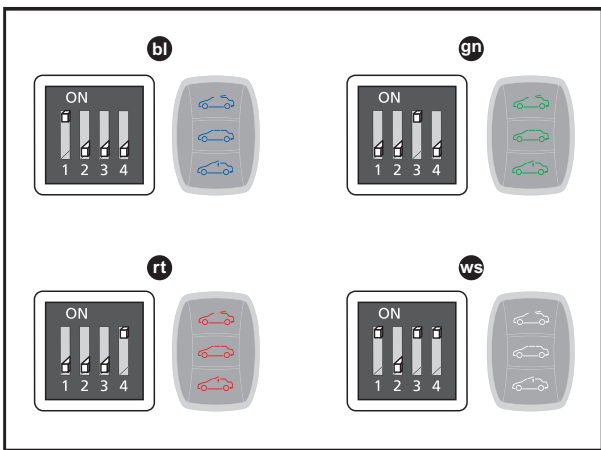
"Comfort" turtle switch only:

Select LED illumination colour of turtle switch, matching with instrument panel.

The 4 small (DIP) switches on the backside have to be moved up or down to select the desired illumination colour.

Use a needle or suitable tool to move the small switches.

* Example



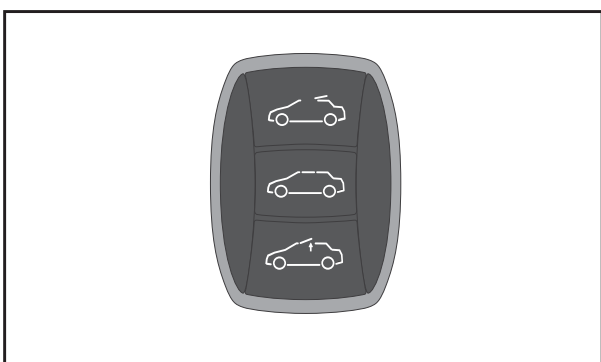
bl: Moving "1" up ("ON") and "2", "3" and "4" down makes the illumination blue.

gr: Moving "3" up ("ON") and "1", "2" and "4" down makes the illumination green.

rt: Moving "4" up ("ON") and "1", "2" and "3" down makes the illumination red.

ws: Moving "1", "3" and "4" up ("ON") and "2" down makes the illumination white.

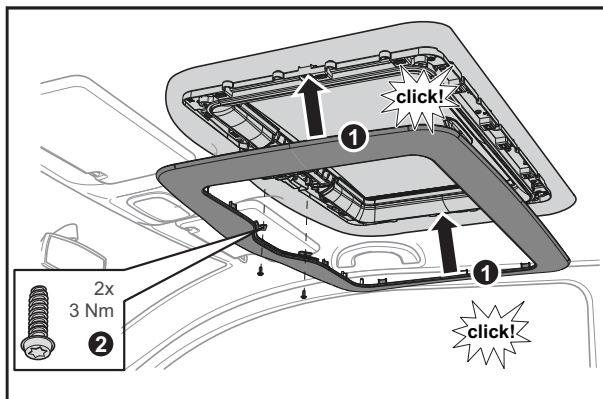
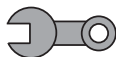
- 1 "on" = blue (bl)
- 3 "on" = green (gr)
- 4 "on" = red (rt)
- 1, 3 and 4 "on" = white (ws)



Operate the turtle switch to perform initialisation procedure.

See Chapter "Initialisation procedure and reset procedure" page 20.

7 Installation of trimshell



NOTE!

Perform initialisation procedure before installing the trimshell. See Chapter "Initialisation procedure and reset procedure" page 20.

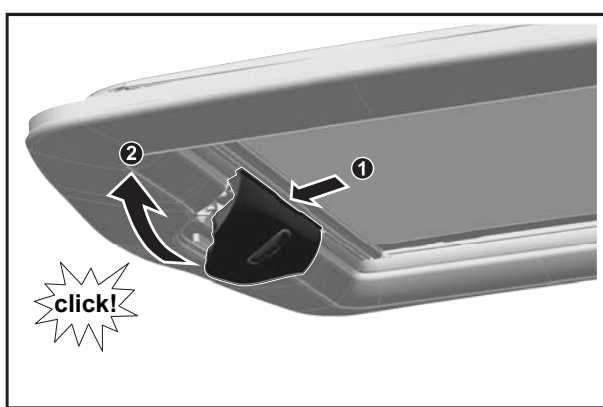
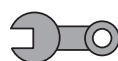
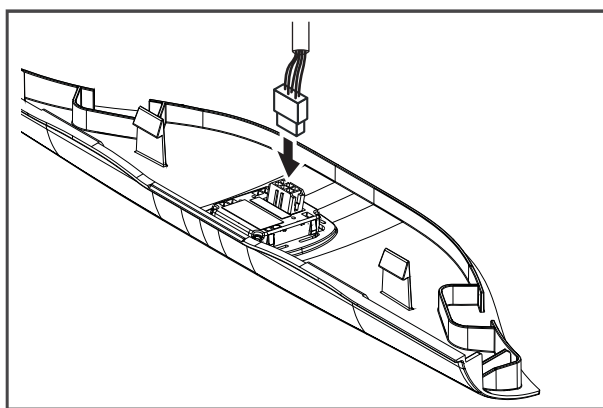
- (1) Position trimshell against existing headliner. Reduce gap to a minimum.
- (2) Press trimshell assembly into sunroof module (whole circumference).
- (3) Fit 2 screws at front side of trimshell assembly. Tightening torque 3 ± 0.5 Nm.

Softwrap version:

See Chapter 10, Softwrap version.

"Entry" and "Comfort" versions:

Plug 6 pin connector of wiring harness into turtle switch.



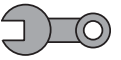
Route the wiring harness trough the trimshell cover.

- (1) Hook back side of trimshell cover with turtle switch (pre-assembled in trimshell cover) on edge of sunroof module.
- (2) Move front side of trimshell cover with turtle switch upwards and carefully click it into sunroof module.

8 Softwrap version

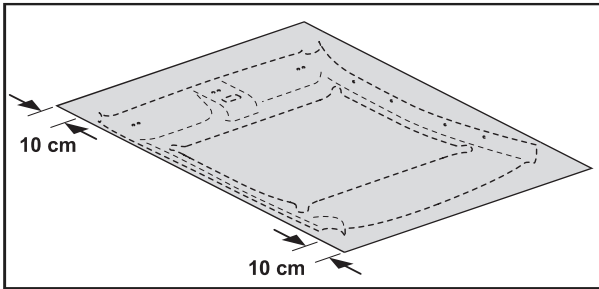
The vehicle headliner assembly will be covered with a new fabric.

Cover original headliner with new soft headliner material. Cut as shown.

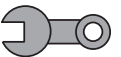


Use glue to fit the fabric onto the original headliner.

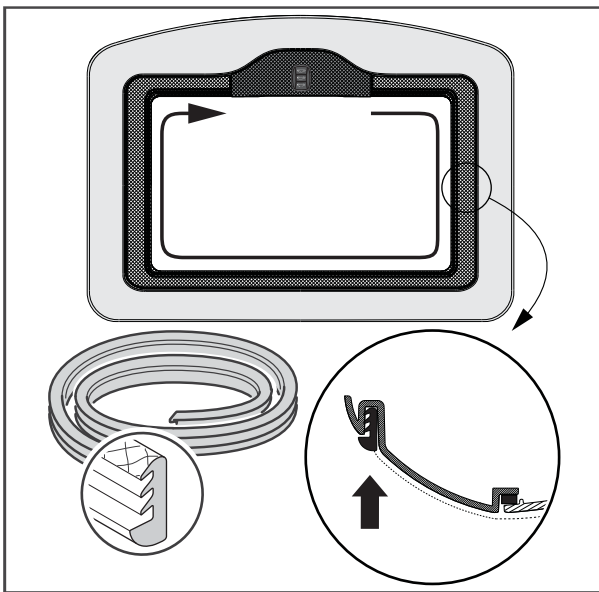
At the opening in the original headliner, cut the fabric in such a way that it fits properly into the groove of the trimshell.



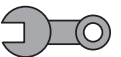
After installing the original headliner into the vehicle, fixate the fabric and finish the installation .



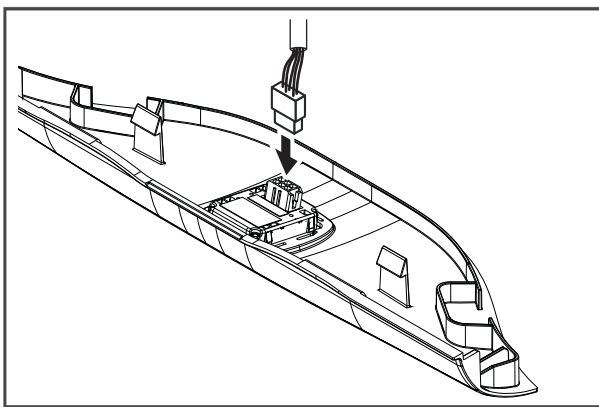
1. Install headliner.
2. Fixate fabric into groove.
3. Fit profile for headliner by pressing it into the groove of the sunroof module.



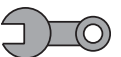
Plug 6 pole connector of wiring harness into turtle switch.



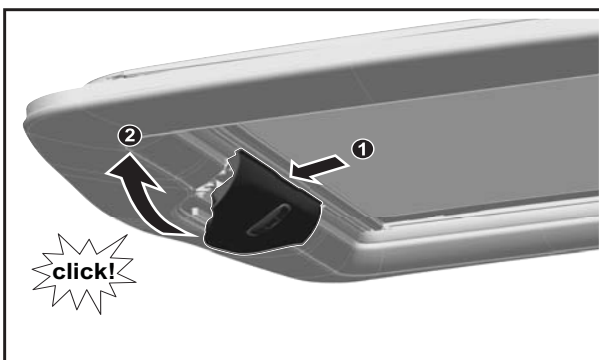
When the H300 Comfort turtle switch is available, see page 19 to set the colour.



Route the wiring harness trough the trimshell cover.



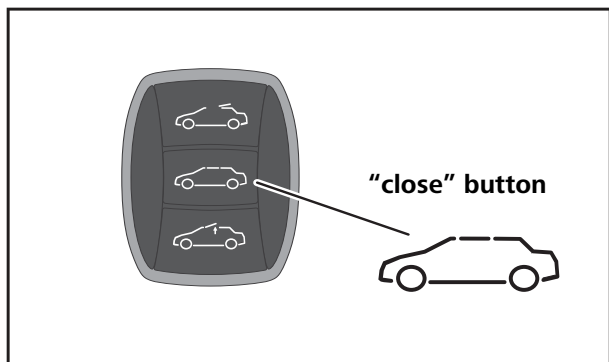
- (1) Hook back side of trimshell cover with turtle switch (pre-assembled in trimshell cover) on edge of sunroof module.
- (2) Move front side of trimshell cover with turtle switch upwards and carefully click it into sunroof module.


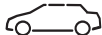


9 Initialisation procedure and reset procedure

Initialisation procedure



In case power supply has been disconnected, reconnect wiring harness of drive motor, power supply and turtle switch.



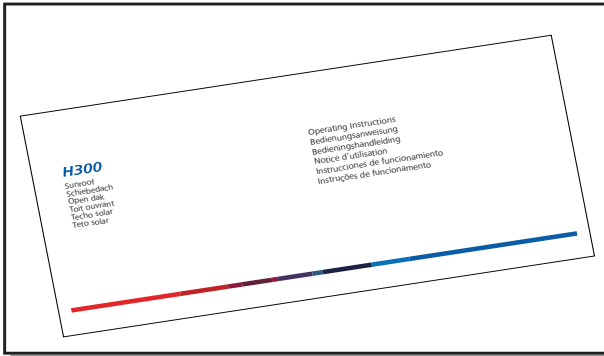
- Start initialisation procedure with glass panel in "full closed" position.
- Turn ignition key to "RUN" position (ideally a running vehicle engine to obtain maximum battery voltage).
- Press button  (close) continuously. After approx. 10 sec. the glass panel will
 - move to "full slide open" position
 - move to "full closed" position
 - move to "full slide open" position
 - move to "full closed" position.
- Release button  (close). Now the sunroof system has been initialised.
- If the initialisation is not successful, check if the sunroof installation is done correctly. Then, turn the ignition key to "OFF" and back to "RUN" position and try initialisation again.

Reset procedure

Once the initialisation procedure has been performed and the sunroof needs to be reset (e. g. after sunroof failure, replacing the battery, car accident), follow the reset procedure.

- Start reset procedure with glass panel in "full closed" position.
- Turn ignition key to "OFF" and back to "RUN" position (ideally a running vehicle engine to obtain maximum battery voltage).
- Press button  (close) continuously. After approx. 10 sec. the glass panel will
 - move to "full slide open" position
 - move to "full closed" position
 - move to "full slide open" position
 - move to "full closed" position.
- Release button  (close). Now the sunroof system has been reset.

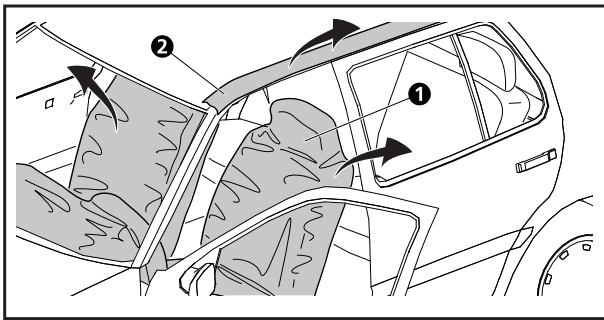
10 Checking



Check installation and functionality.

Also see Operating Instructions.

Follow checklist at end of this manual.



Remove protection: from vehicle interior and exterior

- ① Seat covers
- ② Masking tape

Remove all glue residues.

For warranty purposes register required data (sunroof serial number, sunroof model, vehicle model, ...) in Webasto online warranty system.

USA: <http://www.techwebasto.com>

Others: <http://dealers.webasto.com>

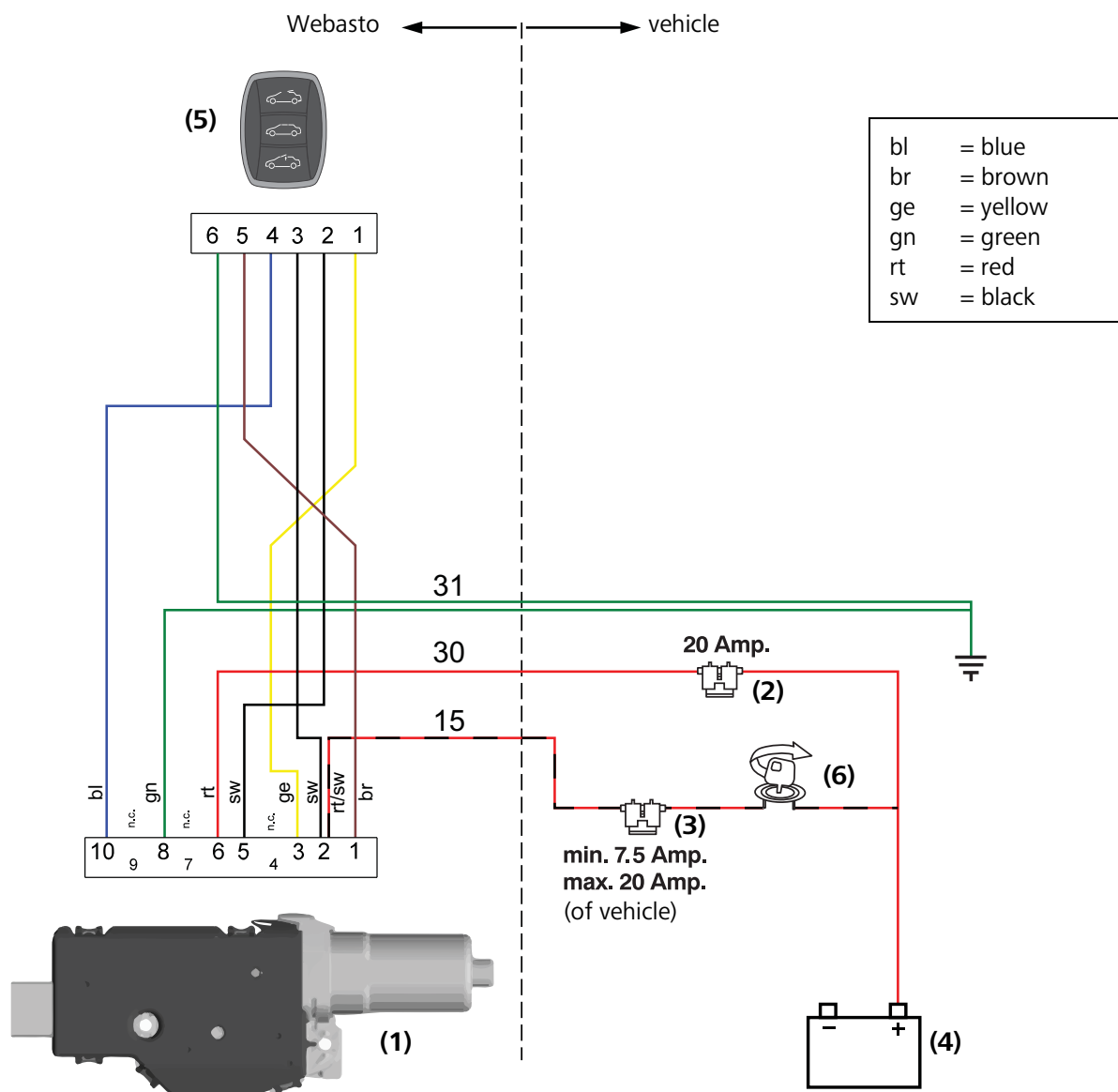
11 Checklist

During the installation and before delivery to the customer the installation should be checked (Preferably by a colleague).

In case of softwrapped headlining finish some checks should be done prior to this soft wrapping because of the limited access to perform corrective actions.

	Inspection before headliner installation (softwrap)	Final inspection (if not done before)
Installation:		
• Power supply	<input type="checkbox"/>	
• Power and ground connections; correctly fused	<input type="checkbox"/>	
• Roof moulding position	<input type="checkbox"/>	
• Sunroof module position, screw fastening, check vehicle interior noise prevention	<input type="checkbox"/>	
• Clearance for curtain airbags (if available)	<input type="checkbox"/>	
• Re-assembly (and possible electrical connection) of disassembled vehicle components	<input type="checkbox"/>	
• RSR system (if indicated in <u>application data</u> (technical web site))	<input type="checkbox"/>	
Sunroof functionality:		
• Soft touch function ("Comfort" only)	<input type="checkbox"/>	<input type="checkbox"/>
• Open to "full tilt"	<input type="checkbox"/>	<input type="checkbox"/>
• Open to "full slide open"	<input type="checkbox"/>	<input type="checkbox"/>
• Close to "full closed"	<input type="checkbox"/>	<input type="checkbox"/>
• Auto-close function ("Comfort" only)	<input type="checkbox"/>	<input type="checkbox"/>
• Anti-pinch protection	<input type="checkbox"/>	<input type="checkbox"/>
Leakage:		
• Using a water spray gun	<input type="checkbox"/>	

13 Wiring diagram



- (1) = motor with sunroof control unit
- (2) = fuse 20 A
- (3) = fuse 7.5 - 20 A (of vehicle)
- (4) = battery 12 V DC
- (5) = turtle switch
- (6) = ignition

Red wire: + 12 V DC, continuous, with fuse 20 A

Red/black wire: + 12 V DC, ignition, with fuse 7.5 - 20 A

Green wire: - (ground)

Cut and lengthen wires if necessary.
All wiring must be able to handle 20 A.

Connector to sunroof motor:

Pin	Wire colour	Description
1	br: (brown)	turtle switch signal open
2	rt/sw: (red/black) sw: (black)	+15, ignition
3	ge: (yellow)	LIN-Bus / K-Line
4	-	
5	sw: (black)	turtle switch signal close
6	rt: (red)	+30, battery, continuous power supply
7	-	
8	gn: (green)	31, ground
9	-	
10	bl: (blue)	turtle switch signal tilt

In multilingual versions the English language is binding.

The telephone number of the respective country is shown on the Webasto service center leaflet or can be found on the website of your Webasto subsidiary.

Webasto Thermo & Comfort SE
Postfach 1410
82199 Gilching
Germany

Visitors Address:
Friedrichshafener Str. 9
82205 Gilching
Germany

Technical Extranet: <http://dealers.webasto.com>



www.webasto.com

