VELA POP UP ROOF SYSTEM (EU)

OEM INSTALLATION MANUAL

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Introduction

The Vela Pop Up Roof System is a manually operated, roof-mounted sleeper extension. The Vela Pop Up Roof System has a hard roof with a canvas body that includes screened windows for added ventilation and comfort.

For information on the assembly or individual components of this product, please visit: lippertcomponents.eu

Note: Images used in this document are for reference only when assembling, installing and/or operating this product. Actual appearance of provided and/or purchased parts and assemblies may differ.

Safety

Read and understand all instructions before installing or operating this product. Adhere to all safety labels.

This manual provides general instructions. Many variables can change the circumstances of the instructions, i.e., the degree of difficulty, operation and ability of the individual performing the instructions. This manual cannot begin to plot out instructions for every possibility, but provides the general instructions, as necessary, for effectively interfacing with the device, product or system. Failure to correctly follow the provided instructions may result in death, serious personal injury, severe product and/or property damage, including voiding of the Lippert limited warranty.

⚠WARNING

The "WARNING" symbol above is a sign that a procedure has a safety risk involved and may cause death or serious personal injury and/or severe product or property damage if not performed safely and within the parameters set forth in this manual.

⚠WARNING

Failure to follow instructions provided in this manual may result in death, serious personal injury and/or severe product and property damage, including voiding of the component warranty.

⚠WARNING

Make sure unit is fully supported and secured per manufacturer's recommendations before working on or underneath the unit or death, serious personal injury and/or severe product and property damage, including voiding of the component warranty, may occur.

⚠CAUTION

The "CAUTION" symbol above is a sign that a safety risk is involved and may cause personal injury and/or product or property damage if not safely adhered to and within the parameters set forth in this manual.

⚠CAUTION

Always wear eye protection when performing service, maintenance or installation procedures. Other safety equipment to consider would be hearing protection, gloves and possibly a full face shield, depending on the nature of the task.

⚠CAUTION

Do NOT stand up OR step on the pop up. The pop up roof system is NOT designed for external loads. Standing up on the pop up, or using the pop up as a step, will cause product and/or property damage, possible personal injury and void the limited warranty.

⚠CAUTION

Do NOT load the pop up roof system with ANY kind of cargo for storage OR transportation. Cargo stored or transported in the pop up roof system can cause product and/or property damage, possible personal injury and void the limited warranty. The pop up roof system is NOT designed for cargo storage or for transportation of cargo.

⚠CAUTION

Do NOT glue the solar panel directly to the roof of the pop up's upper shell. Gluing the solar panel directly to the roof can result in product and/or property damage caused by high temperatures. Place thermal insulating material between the roof and the solar panel to prevent product and/or property damage caused by high temperatures.

Resources Required

- 2-3 persons, depending on task
- Cordless or electric drill
- Assorted drill bits
- Caulking gun
- BETACLEAN™ 3350 (cleaner)
- BETAPRIME™ 5404 (primer)
- BETAMATE™ 1100N-1F (adhesive)
- Merbenit® SF50 adhesive
- Lint-free wipes
- Kiwi® Camp Dry water repellent
- Scaffolding
- Cutting pattern/jig
- Cutting tool for sheet metal
- Permanent marking method

Preparation

Note: Unless otherwise specified, all dimensions are ISO Metric.

Pop Up Roof System Preparation

1. Make sure van chassis is level.
2. Make sure van chassis is properly supported and secured.
   A. Engage brakes.
   B. Chock all tires.
   C. Open van side doors to provide access to roof from inside.
3. Construct and position scaffolding (Fig. 1) to safely access and work on van chassis roof.

Fig. 1

4. From inside the van, using the van ceiling frame as a reference, drill a 10 mm diameter hole through the roof to aid in the positioning of the cutting mask (Fig. 2).
   A. Using the drilled reference hole, position the cutting mask onto the van chassis roof.
   B. Use a permanent marking method to outline the cutting mask.

Fig. 2

5. There are two different size roof cutouts; 1150 mm or 1050 mm. Use an appropriate cutting tool and follow the cutting mask outline to create a 1150 mm or 1050 mm (+/- 4 mm) x 630 mm (+/- 4 mm) opening.

Note: The 1050 mm cutout is offset to the right side of the camper van by 100 mm off the centerline.

   A. For long and mid-length vans, refer to dimensions in figure 3 (1150 mm cutout) and figure 4 (1050 mm cutout).
   B. For short length vans, refer to dimensions in figure 5 (1150 mm cutout) and figure 6 (1050 mm cutout).
   C. De-burr and clean the cut edges.
   D. Coat the cut, de-burred and cleaned edges with an anti-corrosive material.

Fig. 3

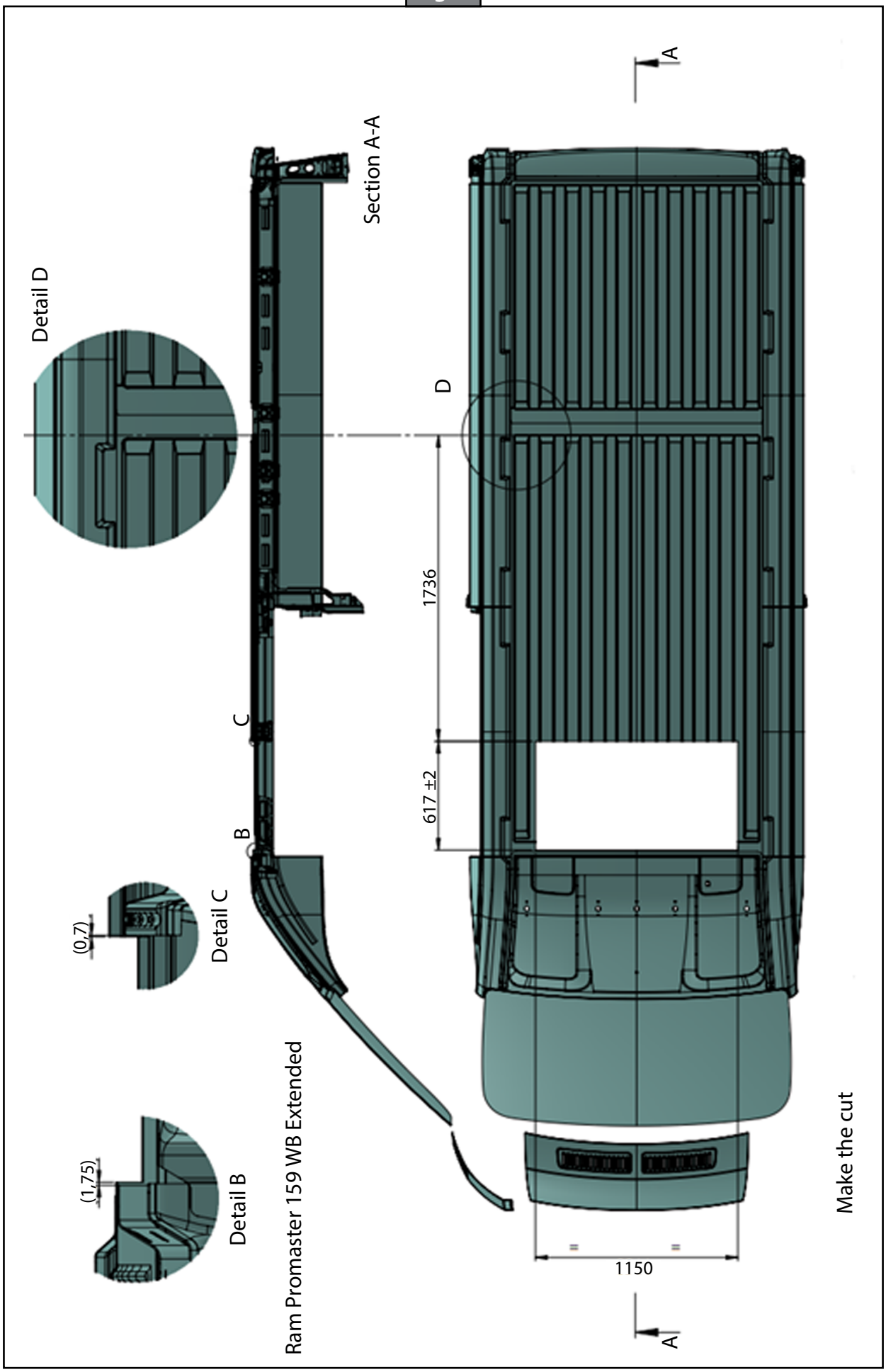

A
Section A-A
Detail D
D
1736
617 ±2
C
B
Detail C
(0,7)
Detail B
(1,75)
Ram Promaster 159 WB Extended
1150
Make the cut
A

Fig. 4

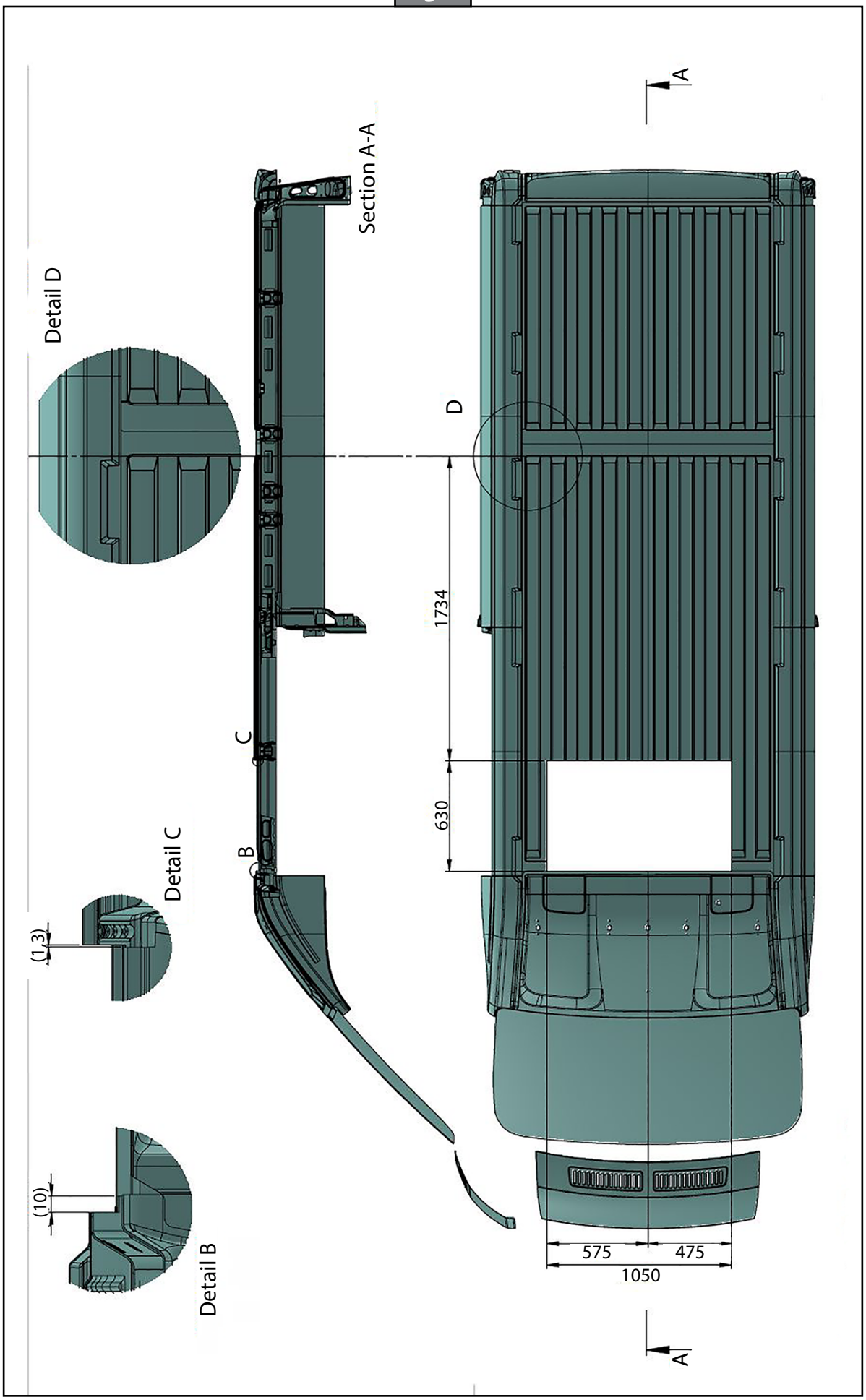

Section A-A
A
A
D
Detail D
C
B
Detail C
Detail B
1734
630
575
475
1050
(1,3)
(10)

Fig. 5

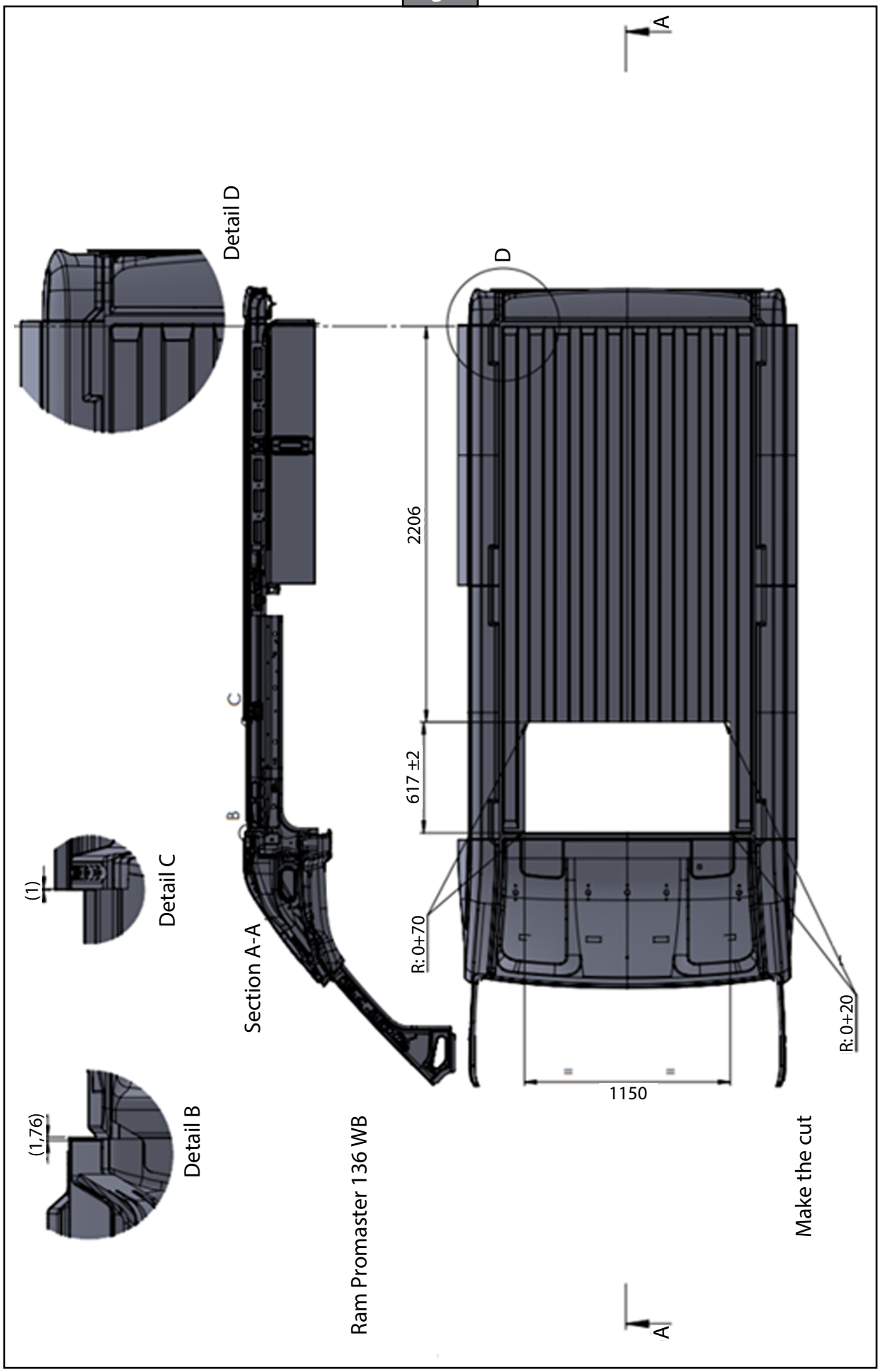
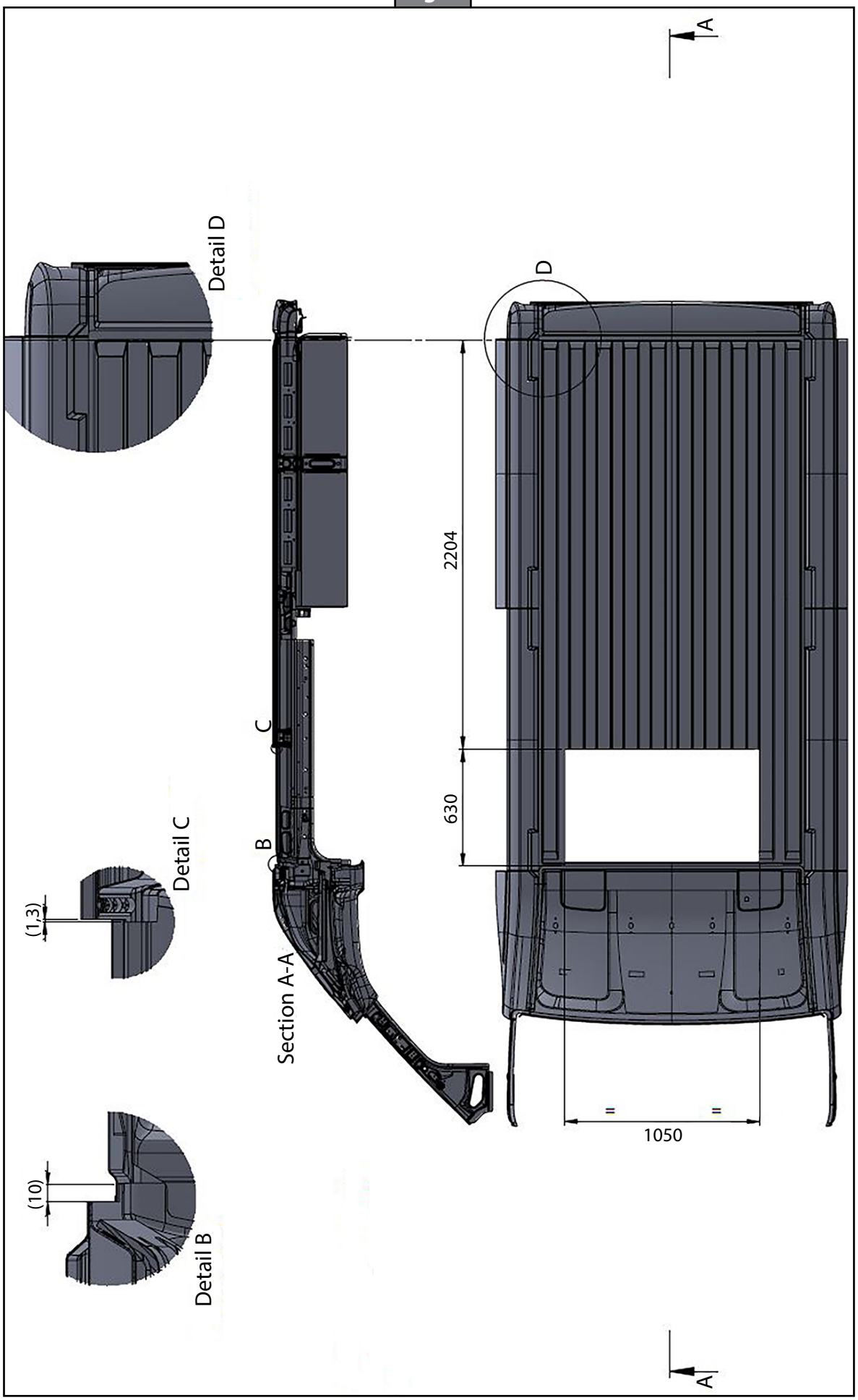
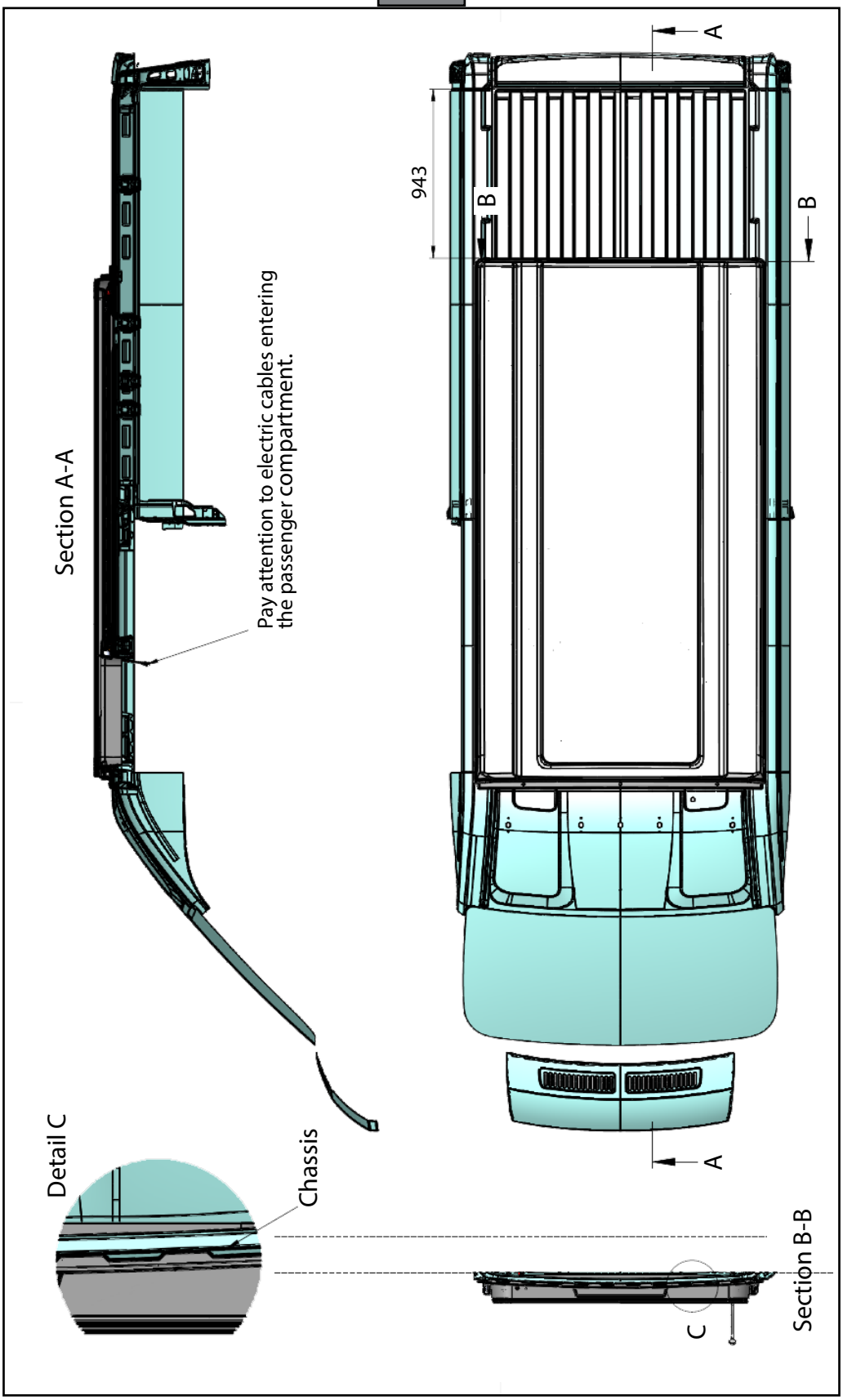

A
Detail D
D
2206
617 ±2
C
B
(1)
Detail C
Section A-A
R: 0+70
R: 0+20
1150
(1,76)
Detail B
Ram Promaster 136 WB
Make the cut
A

Fig. 6


A
A
Detail D
D
2204
630
C
B
Detail C
(1,3)
Section A-A
1050
(10)
Detail B

6. Use the lower pop up component (the base) as a locating template. Position the template +/- 3 mm on each side. Refer to dimensions in figures 3-7.
7. Use adhesive tape to mark the outline of the template. Leave at least a 6 mm gap between the template and the tape all around. This creates a bonding area for future sealant. Refer to the dimensions in figures 3-7.

Fig. 7



Pop Up Roof System Assembly Preparation

1. Place the pre-assembled pop up component upside down on a clean work table.

Note: Make sure the work surface is clean of dirt and debris to protect the top component from acquiring blemishes and scratches.

   A. Before applying cleaner to the lower pop up component, refer to figures 8 and 9 for cutout openings. Use BETACLEAN 3350 cleaner and lint-free wipes to prepare the mating surfaces of the lower pop up component.
   B. Before applying cleaner to the camper van roof, refer to figures 10 and 11 for cutout openings. Use BETACLEAN 3350 cleaner and lint-free wipes to prepare the mating surfaces of the camper van roof.
   C. Before applying primer to the lower pop up component, refer to figures 10 and 11 for cutout openings. Apply BETAPRIME 5404 primer to the previously cleaned mating areas of the lower pop up component as follows:
      I. Before using, shake the primer can at least one full minute until the rattling of the internal mixing spheres can be heard.
      II. Apply the primer only one time in the same direction. Avoid primer overlapping.

2. With the lower pop up component still in its upside down position, refer to figures 8 and 9 for the cutout opening's appropriate adhesive pattern.
   A. Use BETAMATE 1100N-1F to create two continuous beads of adhesive, as defined in figure 12.
   B. Apply enough BETAMATE 1100N-1F adhesive so that when the lower pop up component is installed onto the van roof the adhesive will spread out far enough to also act as a sealant.
   C. Additionally, create an adhesive loop across the back (rear) corners of the lower pop up component as follows:
      I. Start applying adhesive along a side 300 mm away from a rear corner, then run the bead of adhesive down to the corner.
      II. Continue applying the adhesive across the backside of the component and around the opposite corner.
      III. Then, continue applying the adhesive up 300 mm along the side.
      IV. Finally, continue applying the adhesive back across to the beginning of the bead.
      V. Connect the adhesive beads to complete the loop.

Fig. 8

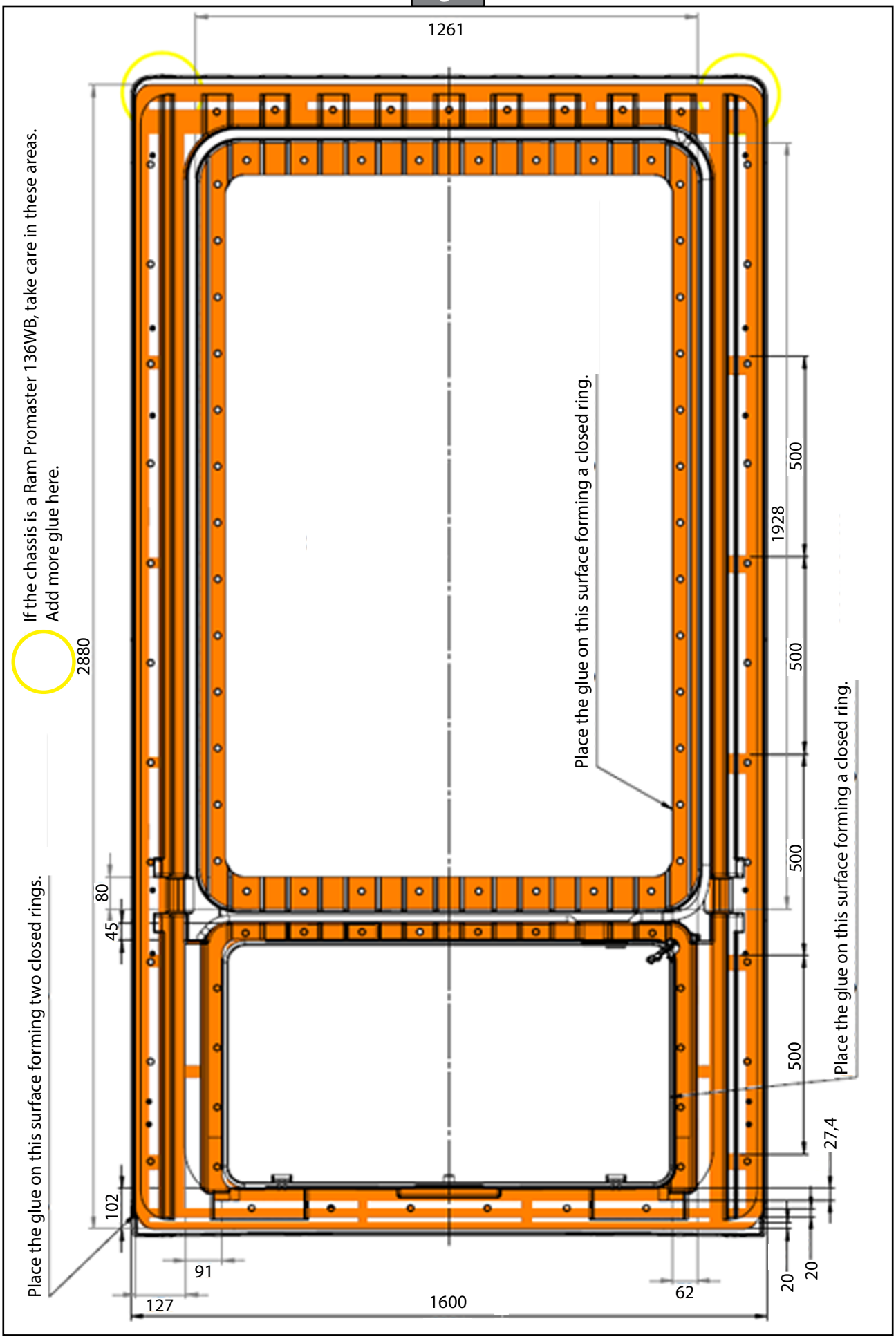

1261
If the chassis is a Ram Promaster 136WB, take care in these areas.
Add more glue here.
2880
Place the glue on this surface forming a closed ring.
1928
500
500
500
500
Place the glue on this surface forming a closed ring.
80
45
Place the glue on this surface forming two closed rings.
102
27,4
20
20
91
62
127
1600

Fig. 9

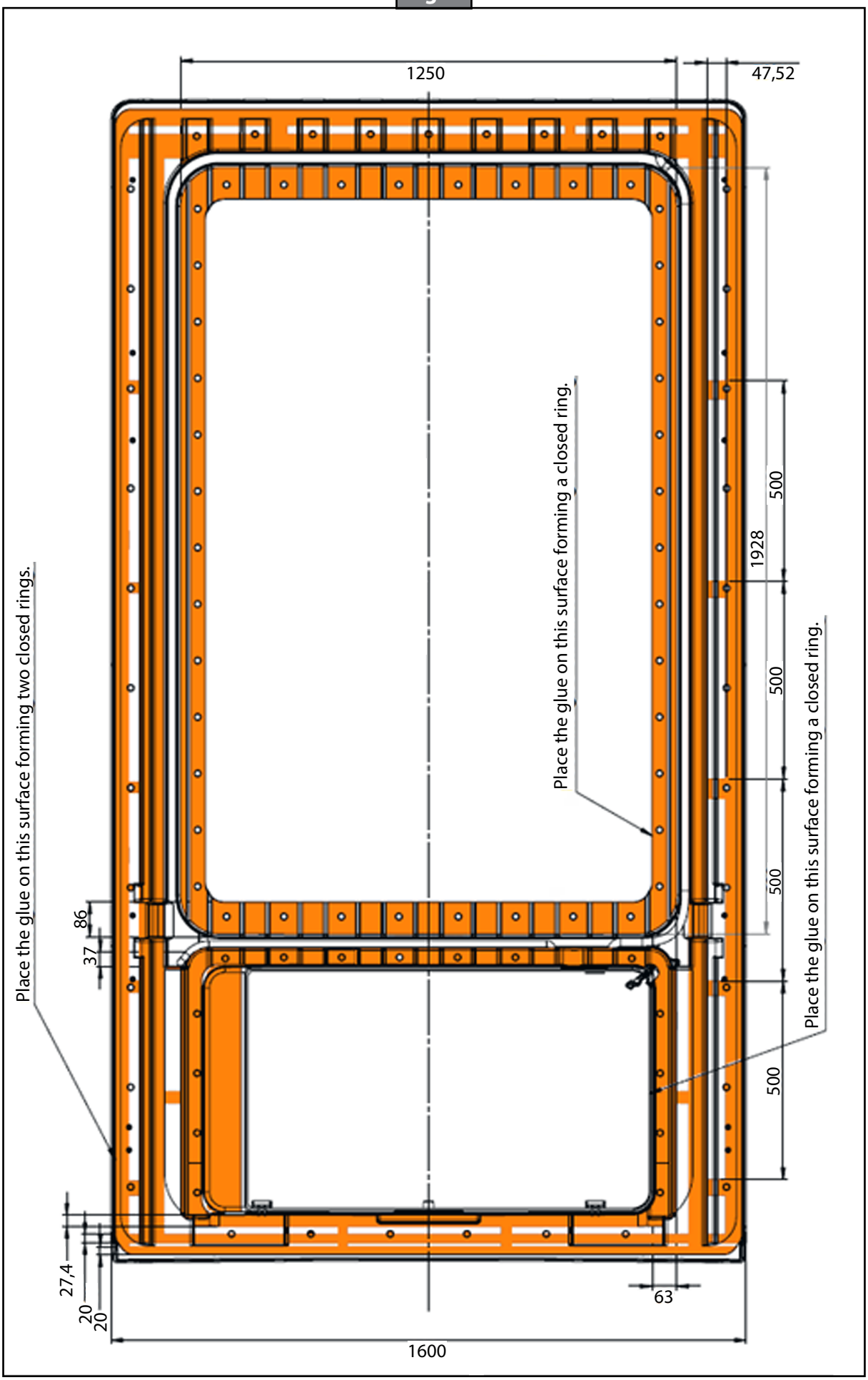

1250
47,52
1928
500
500
500
500
Place the glue on this surface forming a closed ring.
Place the glue on this surface forming two closed rings.
Place the glue on this surface forming a closed ring.
86
37
27,4
20
20
63
1600

Fig. 10

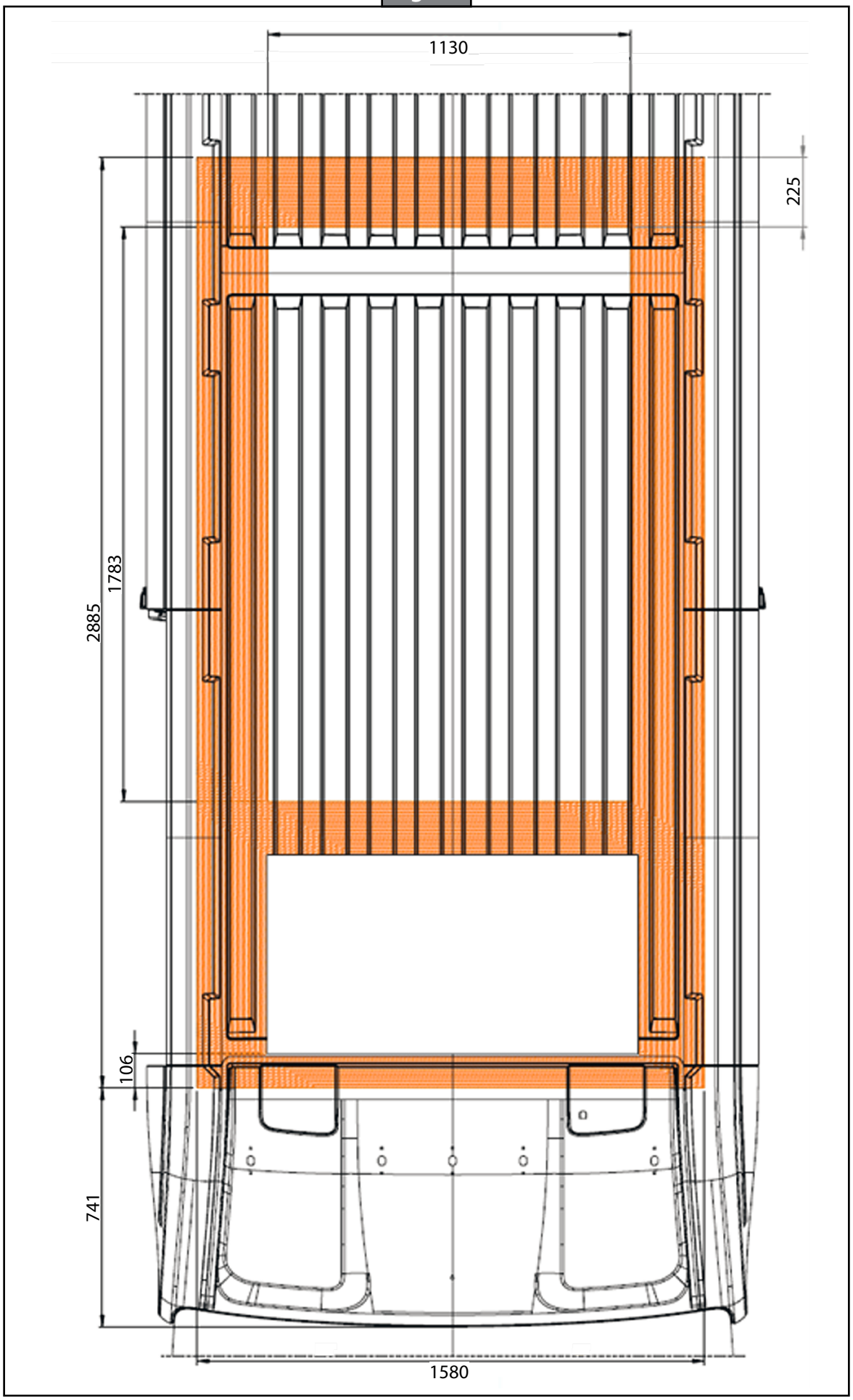


Fig. 11

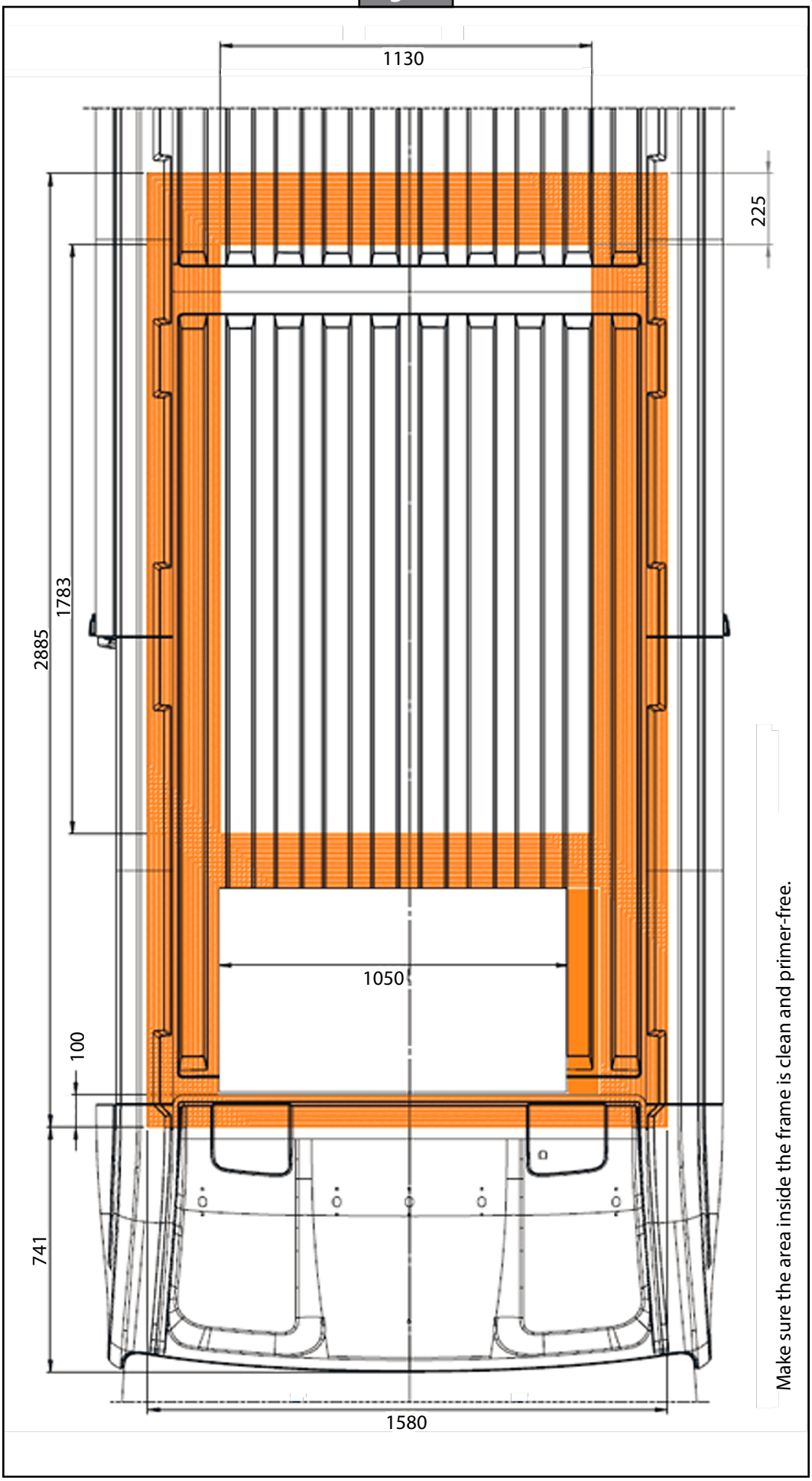
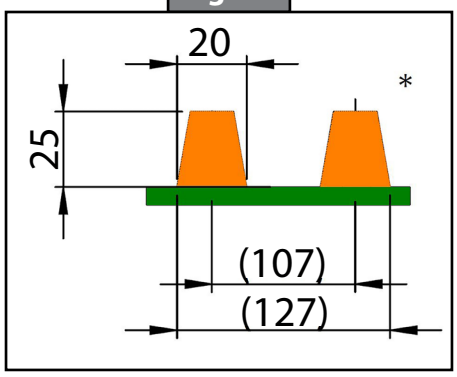

1130
225
2885
1783
1050
100
741
1580
Make sure the area inside the frame is clean and primer-free.

Fig. 12



Installation

⚠ CAUTION

Do NOT glue the solar panel directly to the roof of the pop up's upper shell. Gluing the solar panel directly to the roof can result in product and/or property damage caused by high temperatures. Place thermal insulating material between the roof and the solar panel to prevent product and/or property damage caused by high temperatures.

Pop Up Roof System Assembly

In addition to using the prepared cut out for the positioning, also use the references—adhesive tape or permanent markers—performed in step 7 of the Pop Up Roof System Preparation procedure in the Preparation section.

1. Lift the pop up assembly over the van chassis roof (Fig. 13), positioning it over the prepped cut out.
2. Lay the pop up assembly onto the van roof. For additional positioning information, refer to figure 15 for long and mid-length vans and figure 16 for short vans.
3. Adjust the pop up assembly into position. Make sure the pop up is firmly seated (pushed down) (Fig. 14). Remove the vacuum lift and open the top.
4. While wearing nylon gloves, use a finger to spread adhesive that has oozed out around the perimeter of the top. Make sure to add more adhesive to close any gaps.
5. Remove the adhesive tape from the pop up that was used to mark the layout.
6. Use straps across the front and back of the pop up to hold the top in place while adhesive is curing.
7. Lower the top back down and position the vacuum lift back on top for added weight.
8. Apply pressure to the assembly (Fig. 14). Make sure enough adhesive spreads out around the pop up assembly to act as a sealant.

Fig. 13

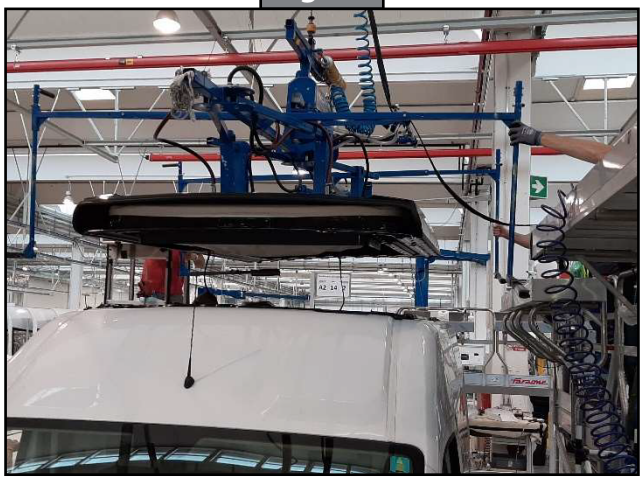


Fig. 14

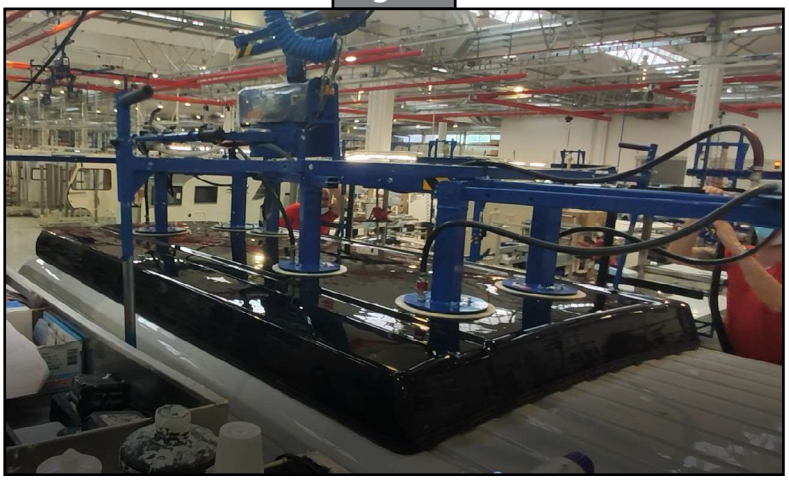
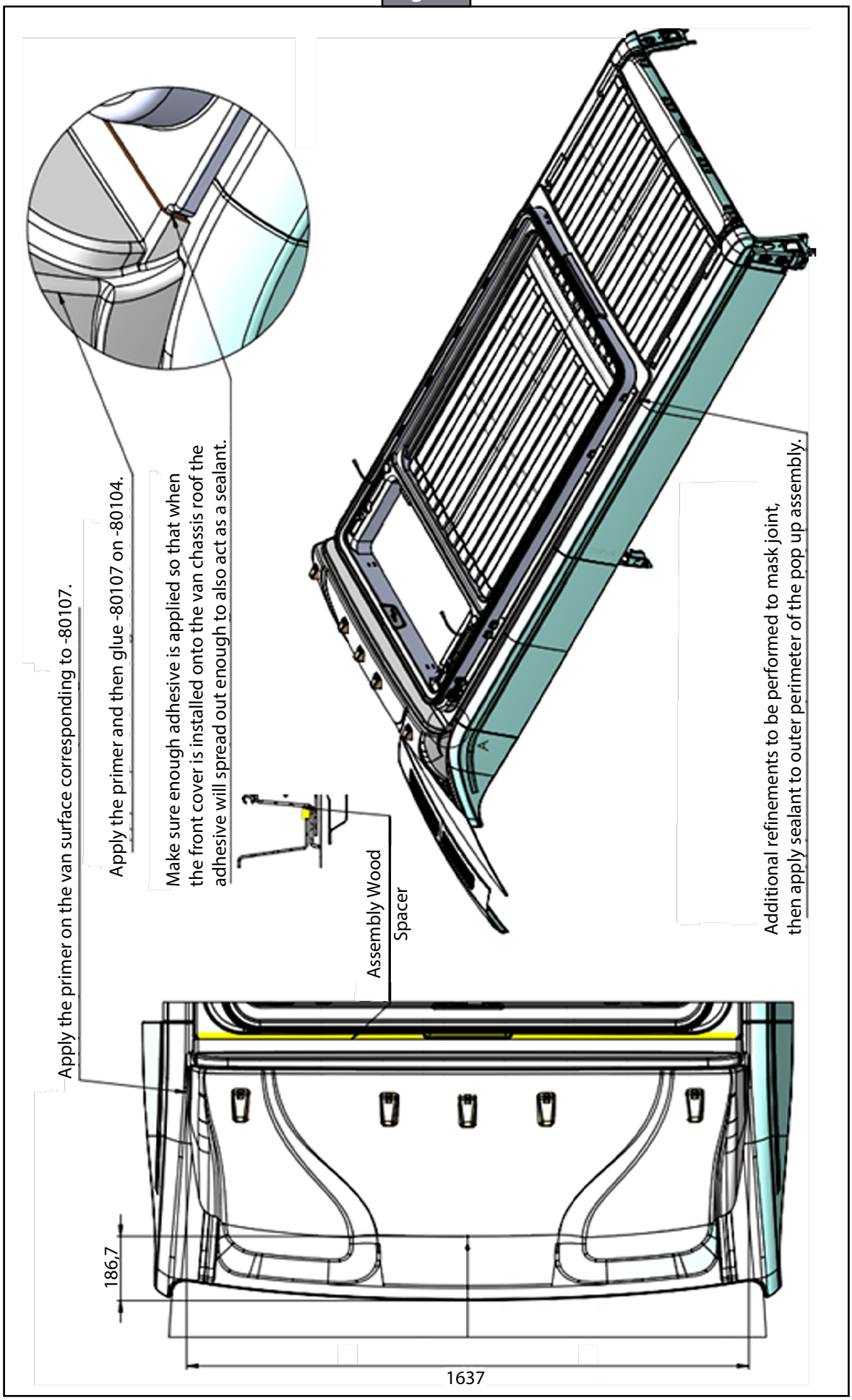
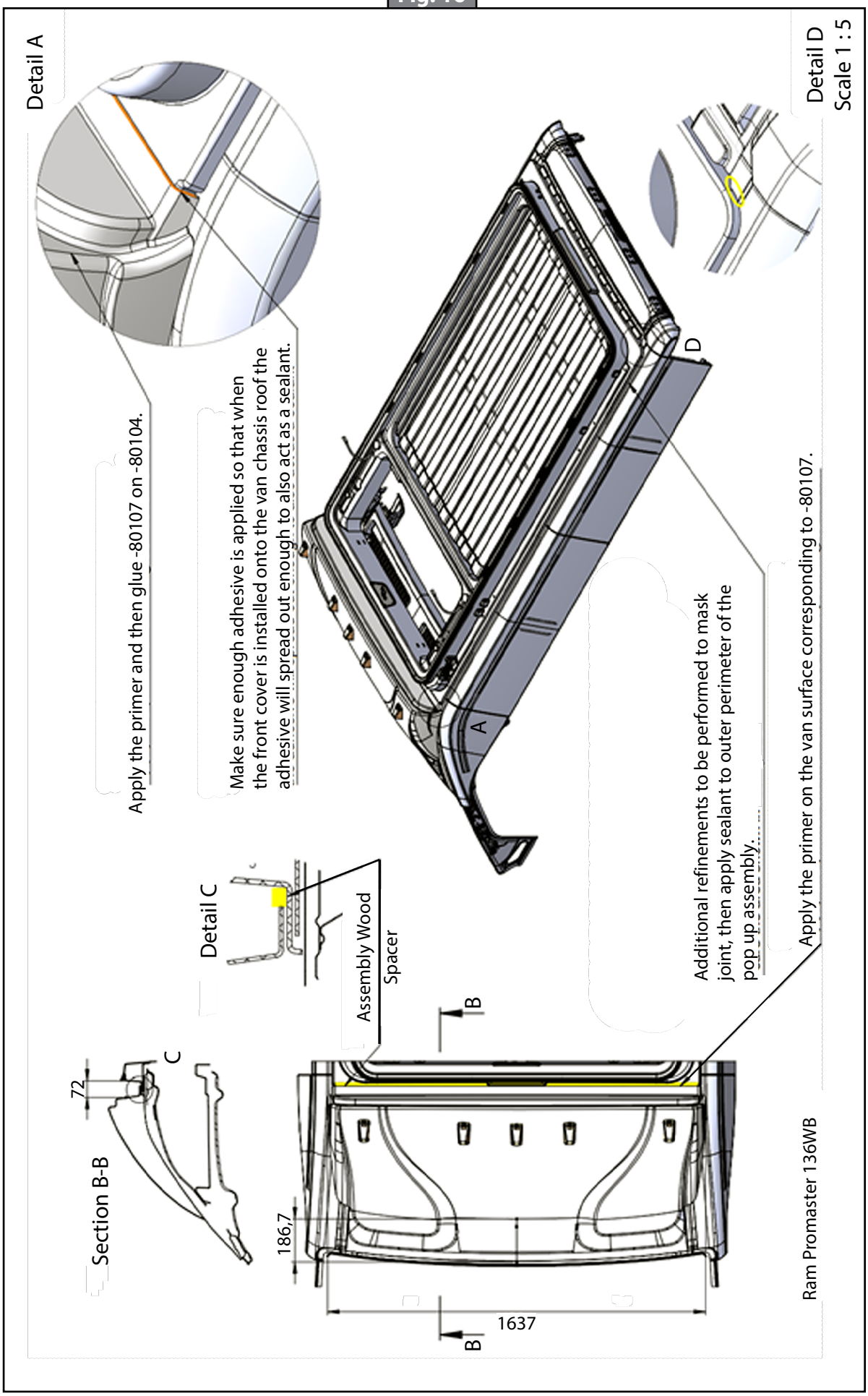


Fig. 15


Apply the primer on the van surface corresponding to -80107.
Apply the primer and then glue -80107 on -80104.
Make sure enough adhesive is applied so that when the front cover is installed onto the van chassis roof the adhesive will spread out enough to also act as a sealant.
Assembly Wood Spacer
Additional refinements to be performed to mask joint, then apply sealant to outer perimeter of the pop up assembly.
186,7
1637


Detail A
Apply the primer and then glue -80107 on -80104.
Make sure enough adhesive is applied so that when the front cover is installed onto the van chassis roof the adhesive will spread out enough to also act as a sealant.
A
D
Detail D
Scale 1 : 5
Additional refinements to be performed to mask joint, then apply sealant to outer perimeter of the pop up assembly.
Apply the primer on the van surface corresponding to -80107.
Detail C
Assembly Wood Spacer
B
C
72
Section B-B
186,7
1637
B
Ram Promaster 136WB

Front Brow

1. Test fit brow on van to make sure there are no large gaps to seal. If there are gaps, change brows and recheck.
2. With brow properly positioned, use adhesive tape to outline the area to be cleaned and primed. Leave a minimum of 5 mm gap around the brow for additional sealant if needed.
3. Place the front brow upside down on a clean work table.

Note: Make sure the work surface is clean of dirt and debris to protect the front brow from acquiring blemishes and scratches.

   A. Use BETACLEAN 3350 cleaner and lint-free wipes to prepare the mating surfaces of the front brow (Fig. 17) and the camper van roof.
   B. Apply BETAPRIME 5404 primer to the previously cleaned mating areas of the front brow (Fig. 17).

4. Apply BETAMATE 1100N-1F adhesive to the front brow where indicated in figure 17.

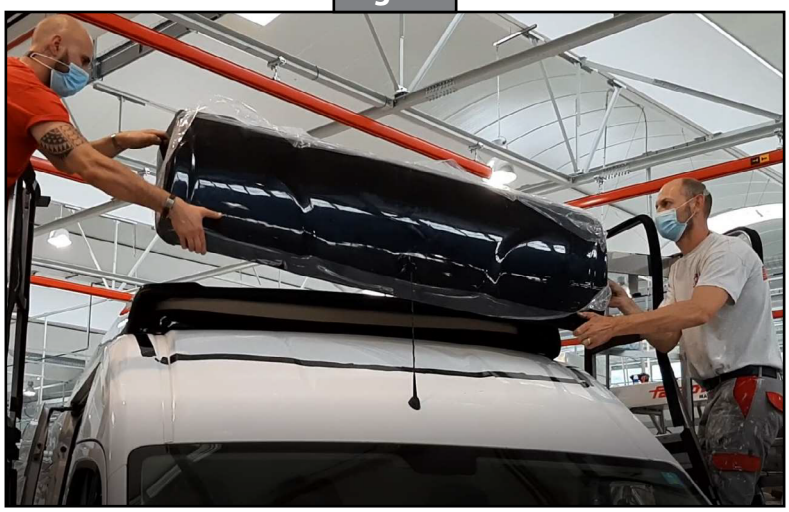
Note: Make sure enough adhesive is applied so that when the front brow is installed onto the van chassis roof the adhesive will spread out enough to also act as a sealant.

Fig. 17

Areas for the primer and glue application.

5. Lift the front brow over the front of the van roof (Fig. 18).
6. Position the front brow in front of the installed pop up assembly. For additional positioning information, refer to figure 15 for long and mid-length vans and figure 16 for short vans.

Fig. 18



7. Apply pressure to the front brow. Make sure enough adhesive spreads out around the pop up roof assembly to act as a sealant.
8. Use BETACLEAN 3350 cleaner and lint-free wipes to prepare the mating surfaces along the perimeter of the lower component. Apply BETAPRIME 5404 primer to the previously cleaned mating areas and then apply a bead of BETAMATE 1100N-1F or Merbenit SF50 adhesive along the same perimeter (Figs. 19 and 20).

Fig. 19

Fig. 20

9. Use BETACLEAN 3350 cleaner and lint-free wipes to prepare the mating surfaces along the perimeter of the brow. Apply BETAPRIME 5404 primer to the previously cleaned mating areas and then apply a bead of BETAMATE 1100N-1F or Merbenit SF50 adhesive along the perimeter of the brow (Fig. 21).

Fig. 21

10. Use BETACLEAN 3350 cleaner and lint-free wipes to prepare the mating surfaces between the lower component and the front brow. Apply BETAPRIME 5404 primer to the previously cleaned mating areas and then apply a bead of BETAMATE 1100N-1F or Merbenit SF50 adhesive between the same areas (Fig. 22).

Fig. 22

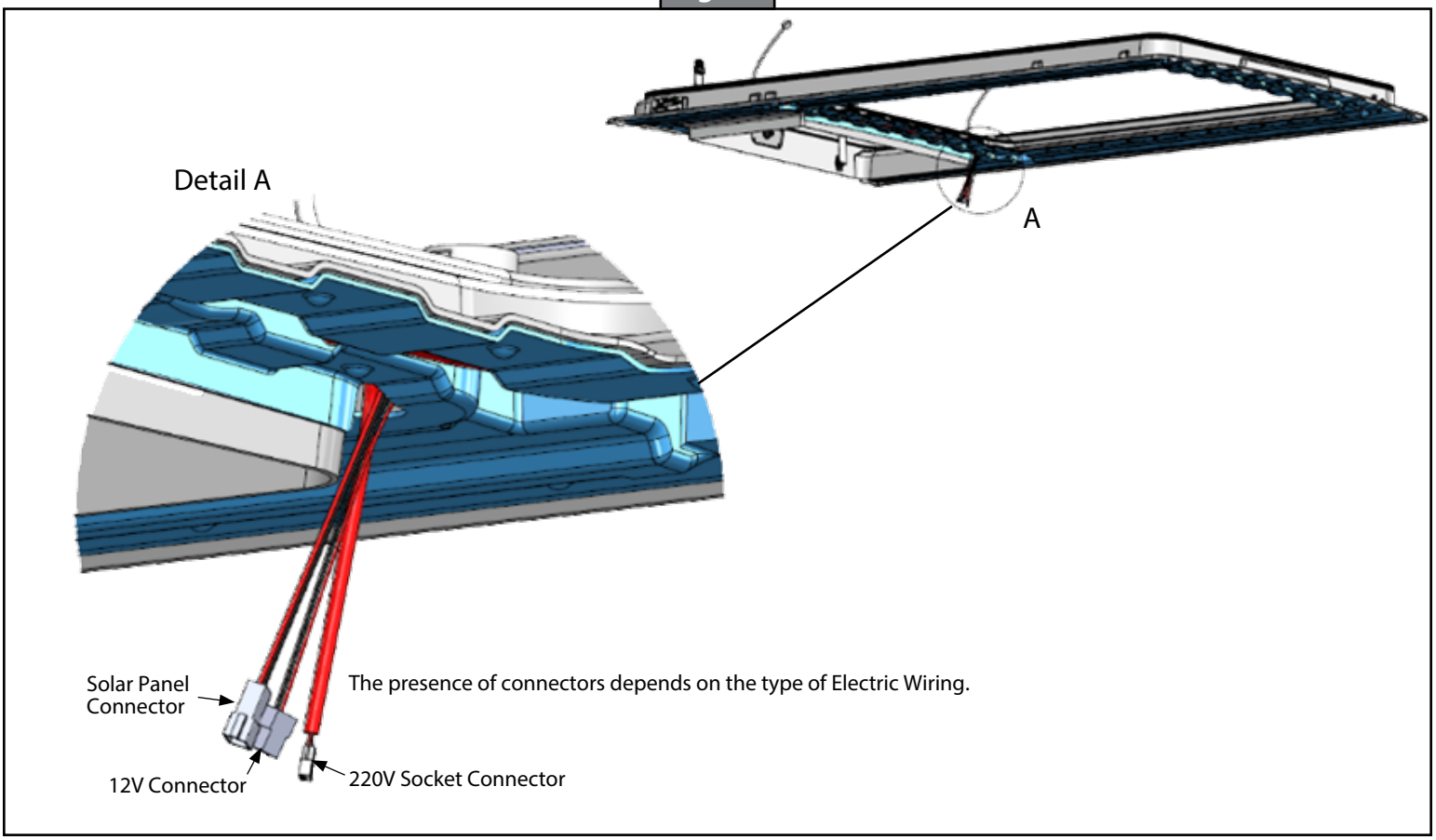
Allow 5-6 hours for the adhesive to cure before performing any operational checks of the Pop Up Roof System.

Electrical Connections

Note: Pay attention to electric cables entering into the passenger compartment.

Locate the connectors and cables extending from the pop up assembly (Fig. 23). Mate the pop up's connectors with the camper van's corresponding connectors. Refer to the Wiring Diagram section for additional information to complete the necessary electrical connections.

Fig. 23



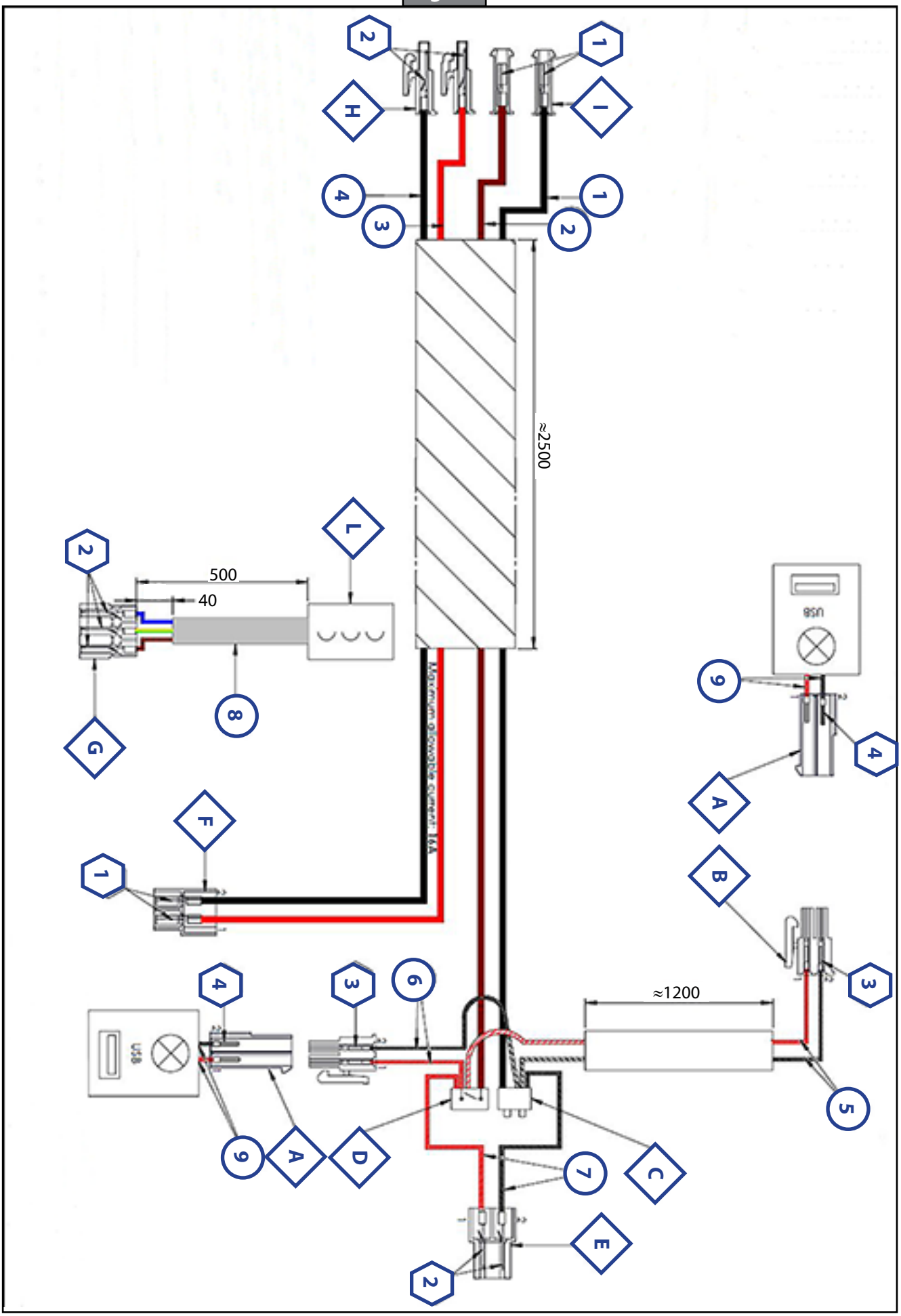
Legend for Main Harness (Fig. 24)		
Callout	**Length**	**Description**
1	2650	Black, 1.5 mm^2, H05V-K
2	2650	Brown, 1.5 mm^2, H05V-K
3	2700	Red, 2.5 mm^2, H05V-K
4	2700	Black, 2.5 mm^2, H05V-K
5	1300	Red/Black, 0.75 mm^2, H05V-K
6	540	Red/Black, 0.75 mm^2, H05V-K
7	500	Red/Black, 1.5 mm^2, H05V-K
8	500	Blue-Y/G-Brown, 1.5 mm^2, H05 VV-F
9	30	Red/Black, 0.75 mm^2, H05V-K

Callout	Description
1	Female terminal lug, 6.35 x 0.81
2	Male terminal lug, 6.35 x 0.81
3	Female Mini-Fit terminal lug
4	Male Mini-Fit terminal lug

Legend for Main Harness (Fig. 24) - cont'd	
Callout	**Description**
A	2-way Female MiniFit Connector, 4.2, Nylon, Natural
B	2-way Male MiniFit Connector, 4.2, Nylon, Natural
C	Mammouth, terminal board
D	ON-OFF Switch for Roof LED Lamps
E	2-way Faston Female Connector, 6.3, Nylon 66, Natural
F	2-way Faston Male Connector, 6.3, Nylon 66, Natural
G	3-way MiniFit Connector, 6.3, Nylon 66, Natural
H	1-way Faston Male Connector, 6.3, Nylon 66, Natural
I	1-way Faston Female Connector, 6.3, Nylon 66, Natural
L	Socket, 220V

Bottom Harness - Version 1 (full optional)

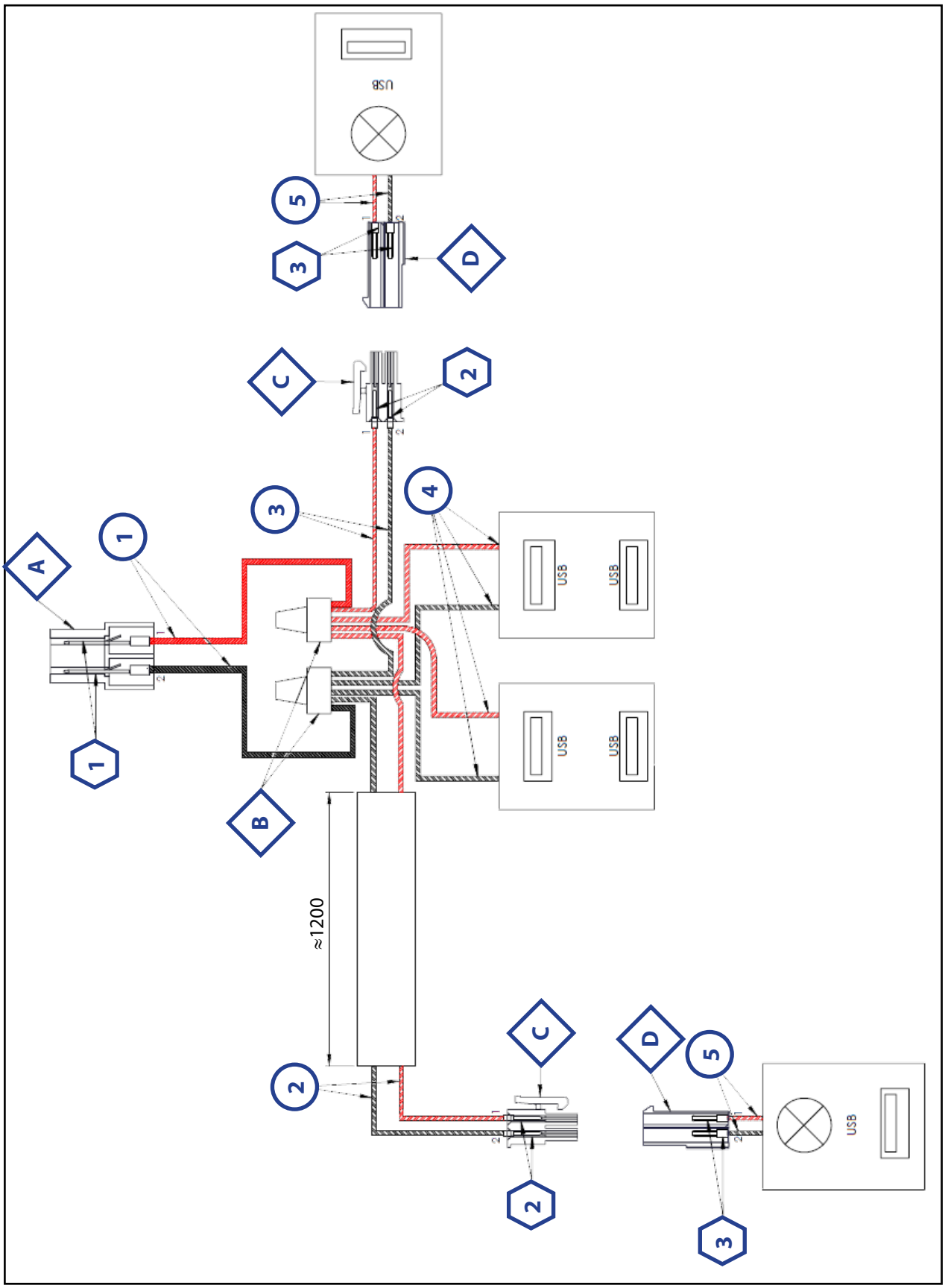
Fig. 24



Legend for USB Harness (Fig. 25)		
Callout	**Length**	**Description**
1	500	Red/Black, 1.5 mm^2 H05V-K
2	1300	Red/Black, 0.75 $mm^2$05V-K
3	540	Red/Black, 0.75 mm^2 H05V-K
4	20	Red/Black, 0.75 mm^2, H05V-K
5	30	Red/Black, 0.75 mm^2, H05V-K
Callout	**Description**	
1	Male terminal lug, 6.35 x 0.81	
2	Female Mini-Fit terminal lug	
3	Male Mini-Fit terminal lug	
A	2-way Faston Female Connector, 6.3, Nylon 66, Natural	
B	Insulated Head Joint	
C	2-way Male MiniFit Connector, 4.2, Nylon, Natural	
D	2-way Female MiniFit Connector, 4.2, Nylon, Natural	

Fig. 25

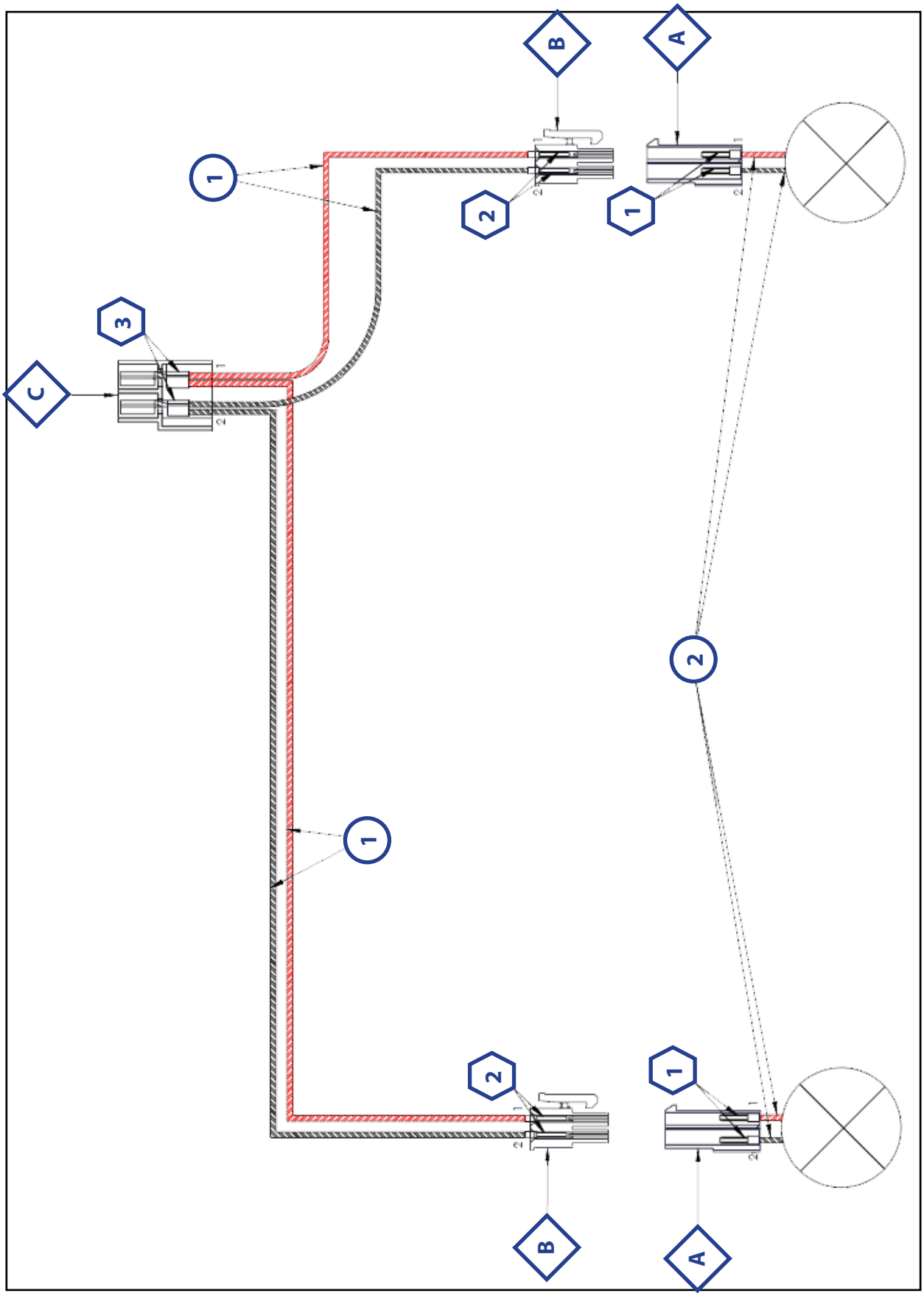
Bottom Harness - Version 2



Legend for TOP Interconnect Harness (Fig. 26)		
Callout	**Length**	**Description**
1	2000	Red/Black, 0.75 mm^2, H05V-K
2	30	Red/Black, 0.75 mm^2, H05V-K
Callout	**Description**	
1	Male Mini-Fit terminal lug	
2	Female Mini-Fit terminal lug	
3	Male terminal lug, 6.35 x 0.81	
A	2-way Female MiniFit Connector, 4.2, Nylon, Natural	
B	2-way Male MiniFit Connector, 4.2, Nylon, Natural	
C	2-way Faston Female Connector, 6.3, Nylon 66, Natural	

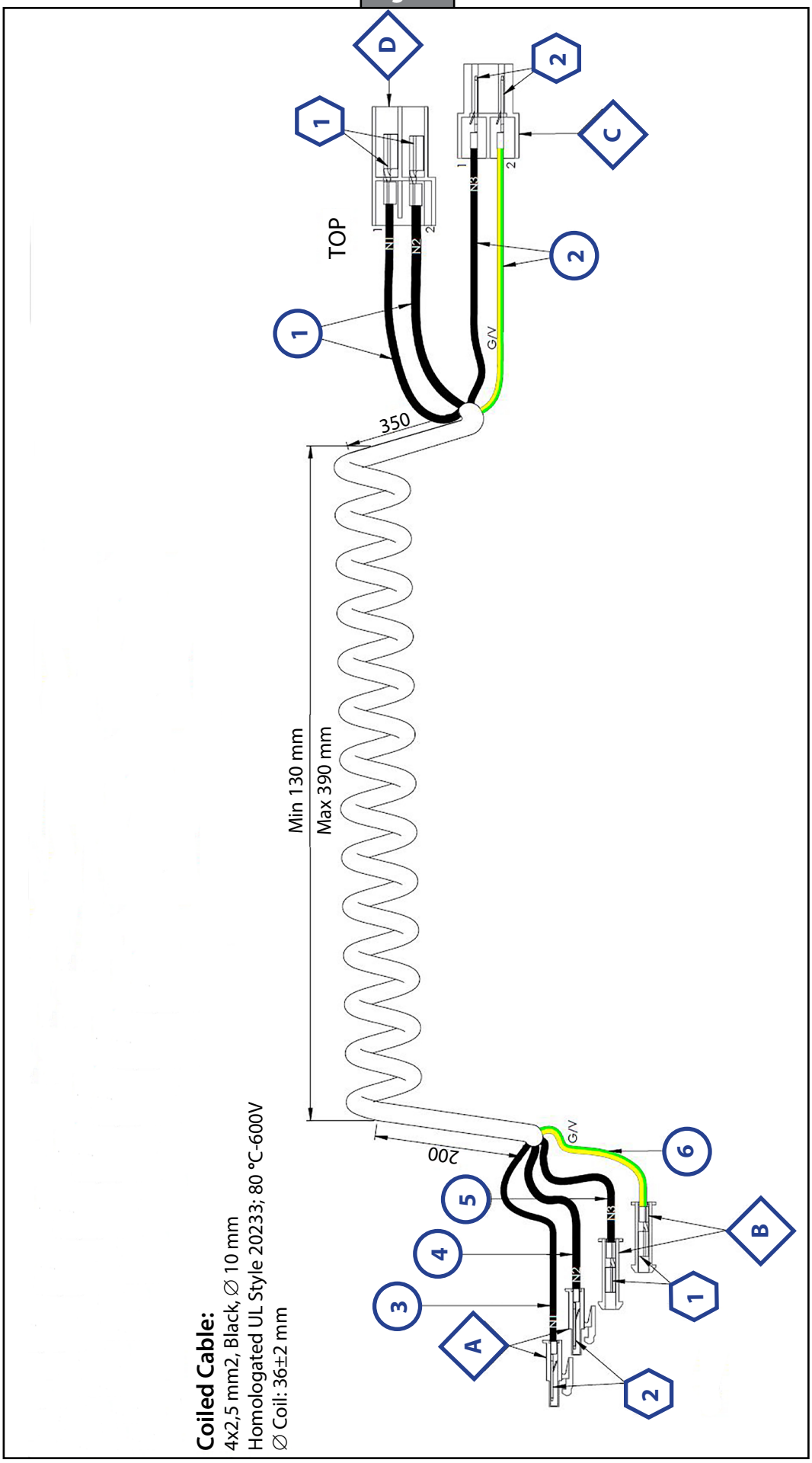
Fig. 26

TOP Interconnect Harness



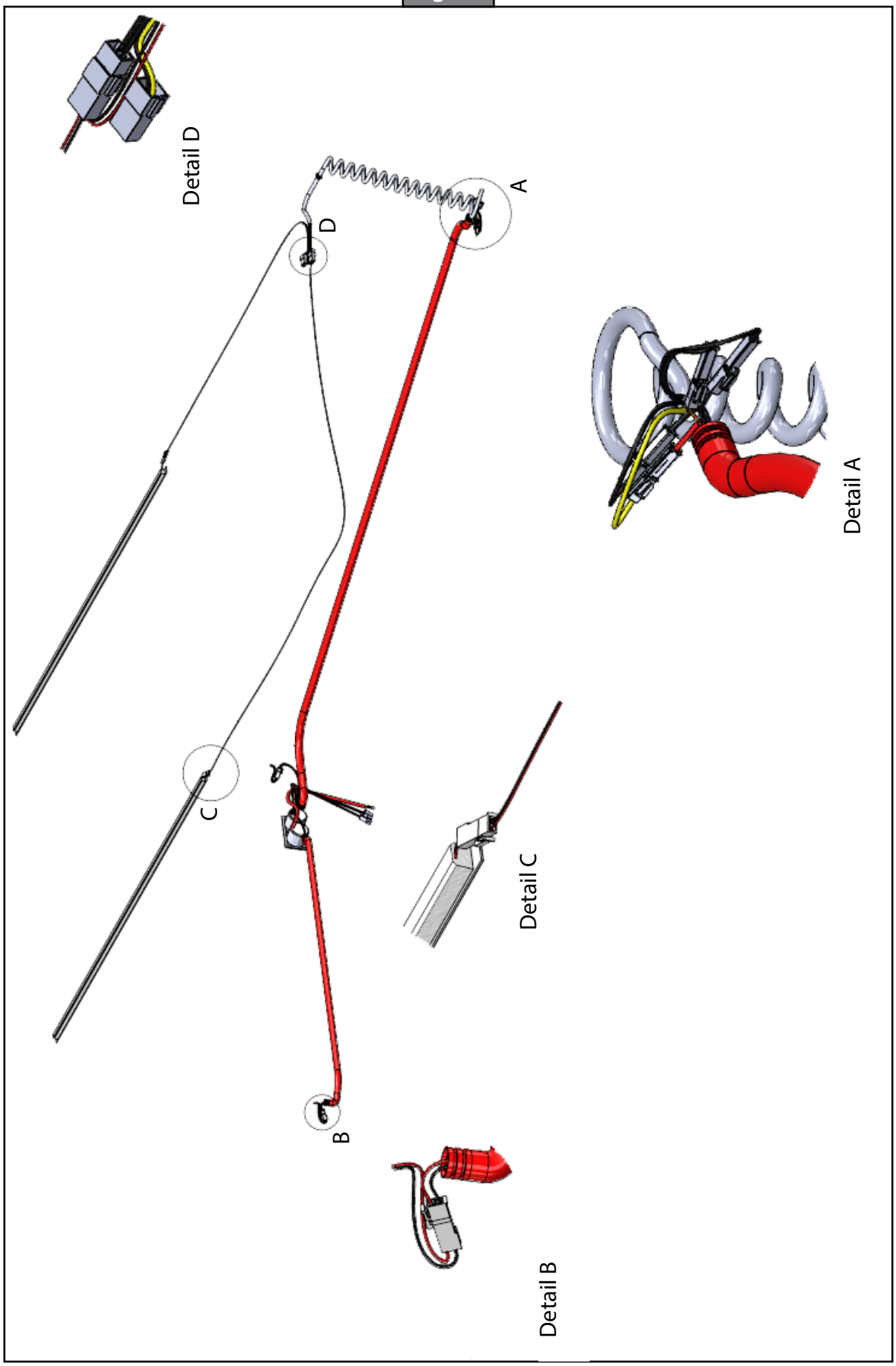
Legend for Coiled Cable Harness (Fig. 27)		
Callout	**Length**	**Description**
1	30	Black, 2.5mm^2
2	100	Black-Y/G, 2.5mm^2
3	100	Black, 2.5mm^2
4	65	Black, 2.5mm^2
5	40	Black, 2.5mm^2
6	20	Y/G, 2.5mm^2
Callout	**Description**	
1	Female terminal lug, 6.35 x 0.81	
2	Male terminal lug, 6.35 x 0.81	
A	1-way Faston Female Connector, 6.3, Nylon 66, Natural	
B	1-way Faston Male Connector, 6.3, Nylon 66, Natural	
E	2-way Faston Female Connector, 6.3, Nylon 66, Natural	
F	2-way Faston Male Connector, 6.3, Nylon 66, Natural	

Fig. 27



Coiled Cable:
4x2,5 mm2, Black, ∅ 10 mm
Homologated UL Style 20233; 80 °C-600V
∅ Coil: 36±2 mm

Fig. 28



Operation

Post Installation Check

1. After adhesive has fully cured, inspect the outer mating edges of the pop up and cover for any gaps or excessive adhesive.
   A. First, remove any excessive adhesive so there remains an even, consistent bead around the pop up and cover to act as a sealant. If necessary, clean any adhesive residue from the camper van roof.
   B. Second, fill any adhesive gaps along the mating edges of the pop up and cover to form an even, consistent bead to act as a sealant.
      I. If necessary, clean any adhesive residue from the camper van roof.
      II. Allow the new adhesive to fully cure before performing any operational checks of the pop up.
2. After adhesive has fully cured, extend and retract the Pop Up Roof System as follows:
   A. From inside the camper van, if necessary, release the clips on the two safety belts (Fig. 29A) by pressing on both sides of the clip (Fig. 29B). The upper portion of the pop up will move freely (Fig. 29C).
   B. Attach the ladder supplied to the specific hooks (Fig. 30).

Fig. 29

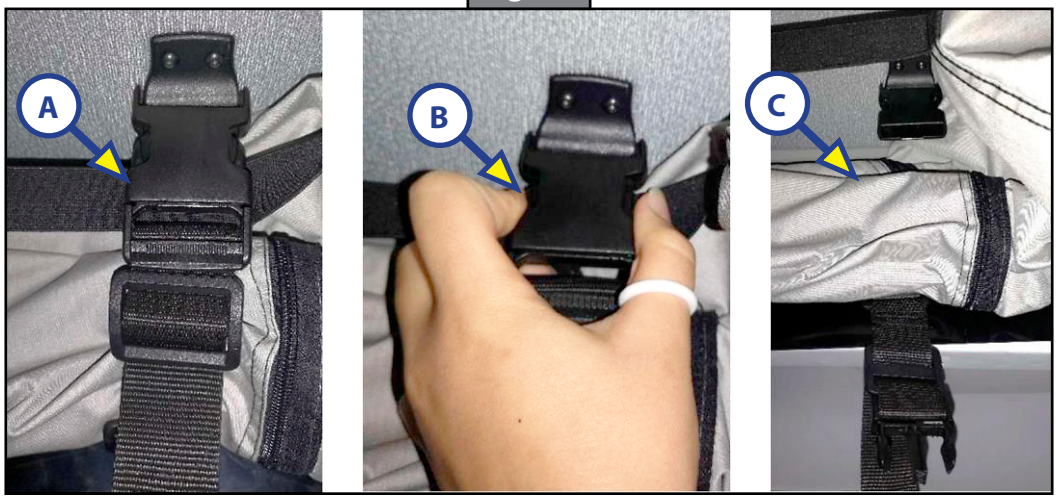
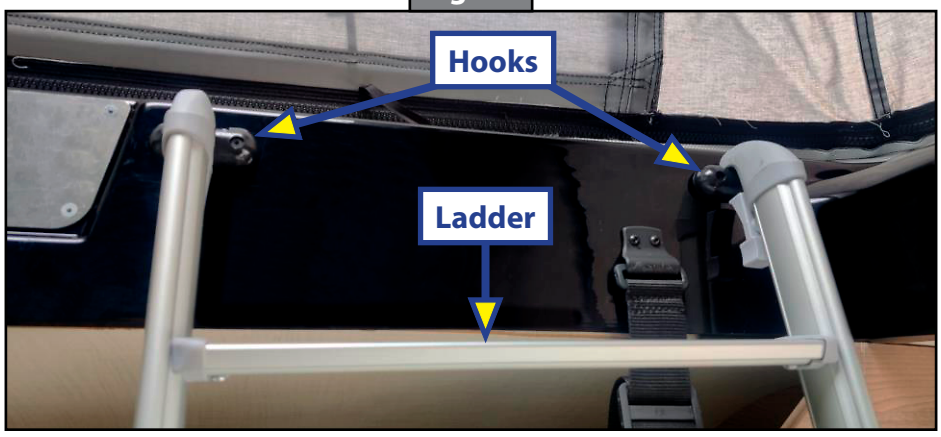
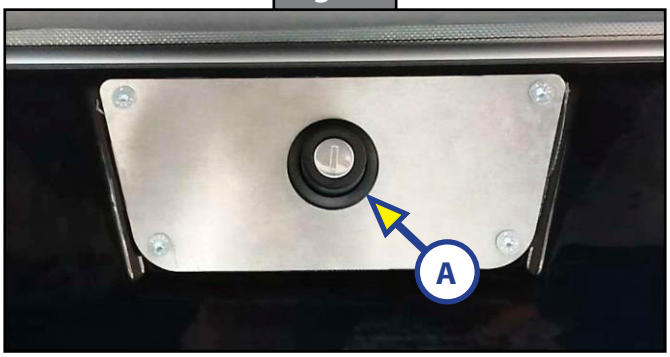


Fig. 30



C. Climb the ladder to reach the release button (Fig. 31A).

Fig. 31

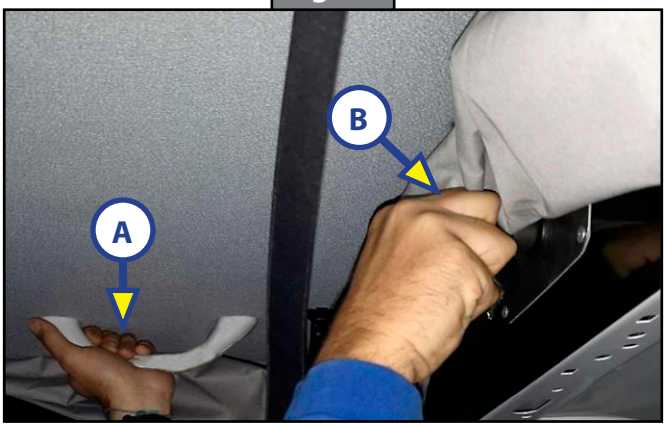


⚠ CAUTION

Moving parts can pinch, crush or cut. Keep clear and use caution.

D. Grab the handle with one hand (Fig. 32A), then at the same time press the release button (Fig. 32B) and push the handle upwards.

Fig. 32



E. After unlocking the roof, grab both handles and push the roof upwards.

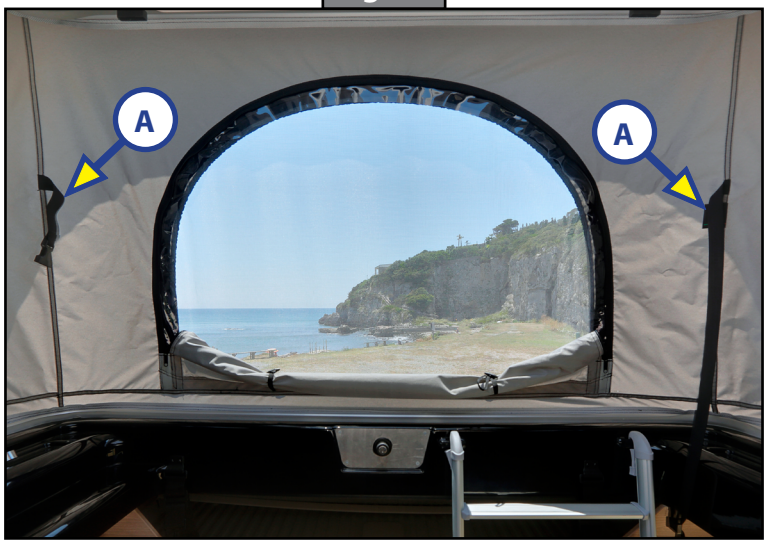
3. Inspect the outer sealant bead (Fig. 33A) around the pop up to make sure no gaps were created or loosening of the adhesive occurred. If gaps appear or portions of the adhesive are loose, do as follows:
   A. For gaps, clean any adhesive residue from the camper van chassis roof. Fill the adhesive gap, forming the adhesive to match the remaining bead.
   B. For loose adhesive, remove the loose adhesive and clean any adhesive residue from the camper van roof. Fill the area with adhesive, forming the adhesive to match the remaining bead.

Fig. 33

C. Allow any newly applied adhesive to fully cure before retracting the pop up.
D. Air springs will maintain the roof in its open position (Fig. 33B).

4. Retract the Pop Up Roof System as follows:
   A. If necessary, attach the supplied ladder on the hooks (Fig. 30).
   B. Climb the ladder to inspect the pop up roof to make sure the windows are properly closed (Fig. 33C). If necessary, zip the windows closed.

Fig. 34



C. Locate the two front strap ends (Fig. 34A) by the front window.

Fig. 35

Taut Front Strap
(1165 mm)

⚠ CAUTION

Keep the front strap drawn taut. A loose front strap can cause the pop up's fabric to be loose and not provide the space, comfort or protection for which the roof system was designed.

D. Connect the strap and pull taut to 1165 mm across the canvas width (Fig. 35).
E. If the front strap is loose across the canvas width, measuring approximately 1250 mm (Fig. 36), tighten the strap 5 cm minimum.

Fig. 36

Loose Front Strap
(1250 mm)

⚠ CAUTION

Moving parts can pinch, crush or cut. Keep clear and use caution.

F. Grip both roof handles and pull down as evenly as possible. Do **NOT** completely close the pop up roof at this point.
G. Make sure that the canvas is folded correctly inside to prevent jamming of the built-in mechanism or the locking latch.
H. Walk around the vehicle and visually inspect the pop up roof for any canvas material sticking out of the frame. If necessary, carefully tuck in any protruding material.
I. From inside the vehicle, continue to lower the roof until it's completely closed.

Note: A clicking sound should be heard, signifying the locking system has engaged.

5. To make sure the pop up's locking system has been engaged, perform the following test:
   A. Grab the handles on the roof with both hands and push upwards.
   B. If the upward pressure on the roof does not change its position significantly on both sides, then the locking system is properly engaged.
   C. If the roof changes position, the locking system is not properly engaged. Repeat step 4 then check the locking system again for proper engagement. Repeat locking procedure as necessary until the pop up locking systems works correctly.
6. Clip the safety belts (Fig. 29A) closed to secure the roof.
7. Inspect the outside of the Pop Up Roof System to make sure it's completely closed.
8. Do a final adhesive sealant inspection of the pop up and cover to make sure no gaps or loose adhesive areas were created during the Pop Up Roof System extend/retract operation.

Notes

Please recycle all obsolete materials.

For all concerns or questions, please contact Lippert
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