



**VELA POP UP
ROOF SYSTEM
CLASS B**

OEM INSTALLATION MANUAL
L I P P E R T
C O M P O N E N T S®

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Introduction

The Lippert Pop Up Camper Van is a manually operated, roof-mounted sleeper extension. The Pop Up Camper Van 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:

<https://support.lci1.com/beds/>

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.

Resources Required

- 2-3 persons, depending on task
- Cordless or electric drill
- Assorted drill bits
- Caulking gun
- BETACLEAN™ 3350 (cleaner)
- BETAPRIME™ 5405 (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: All dimensions are in inches.

Pop Up Van Roof 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 3/8" 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. To create an 43 5/16" cutout, use an appropriate cutting tool and follow the cutting mask outline to create a 45 5/16" (+/- 5/32") x 24 13/16" (+/- 5/32") opening.
 - A. For long and mid-length vans, refer to dimensions in figure 3.
 - B. For short length vans, refer to dimensions in figure 4.

Fig. 3

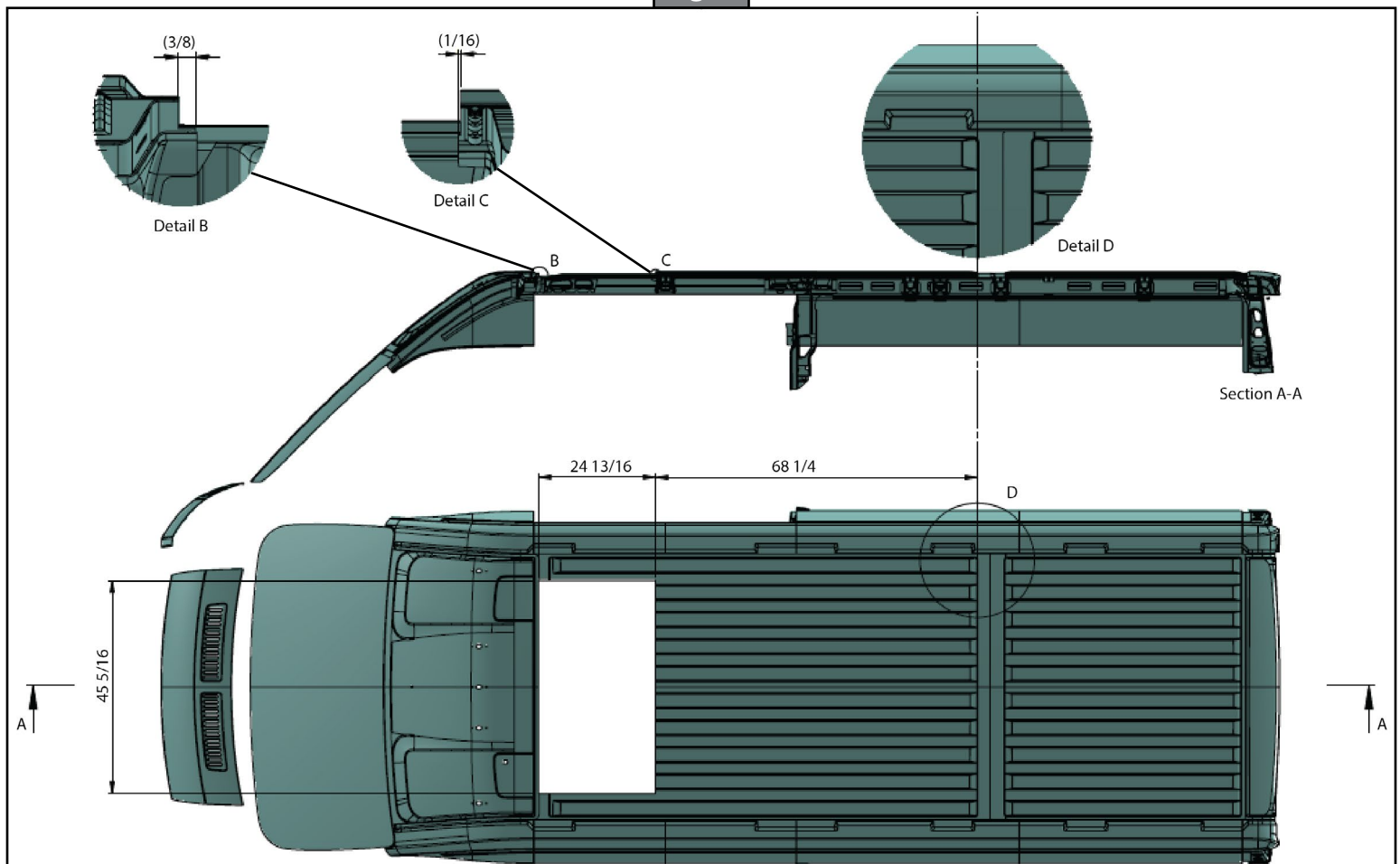
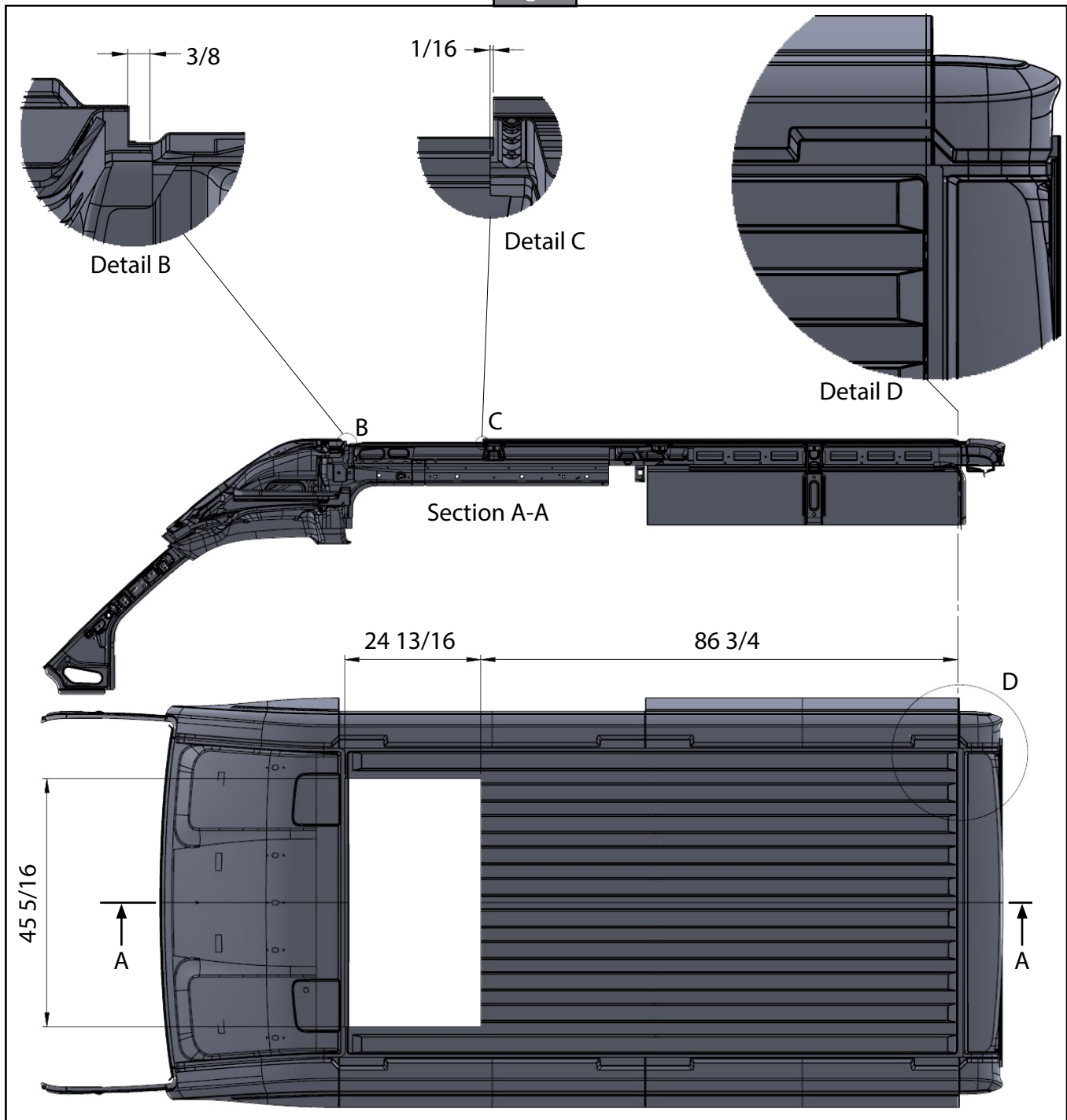
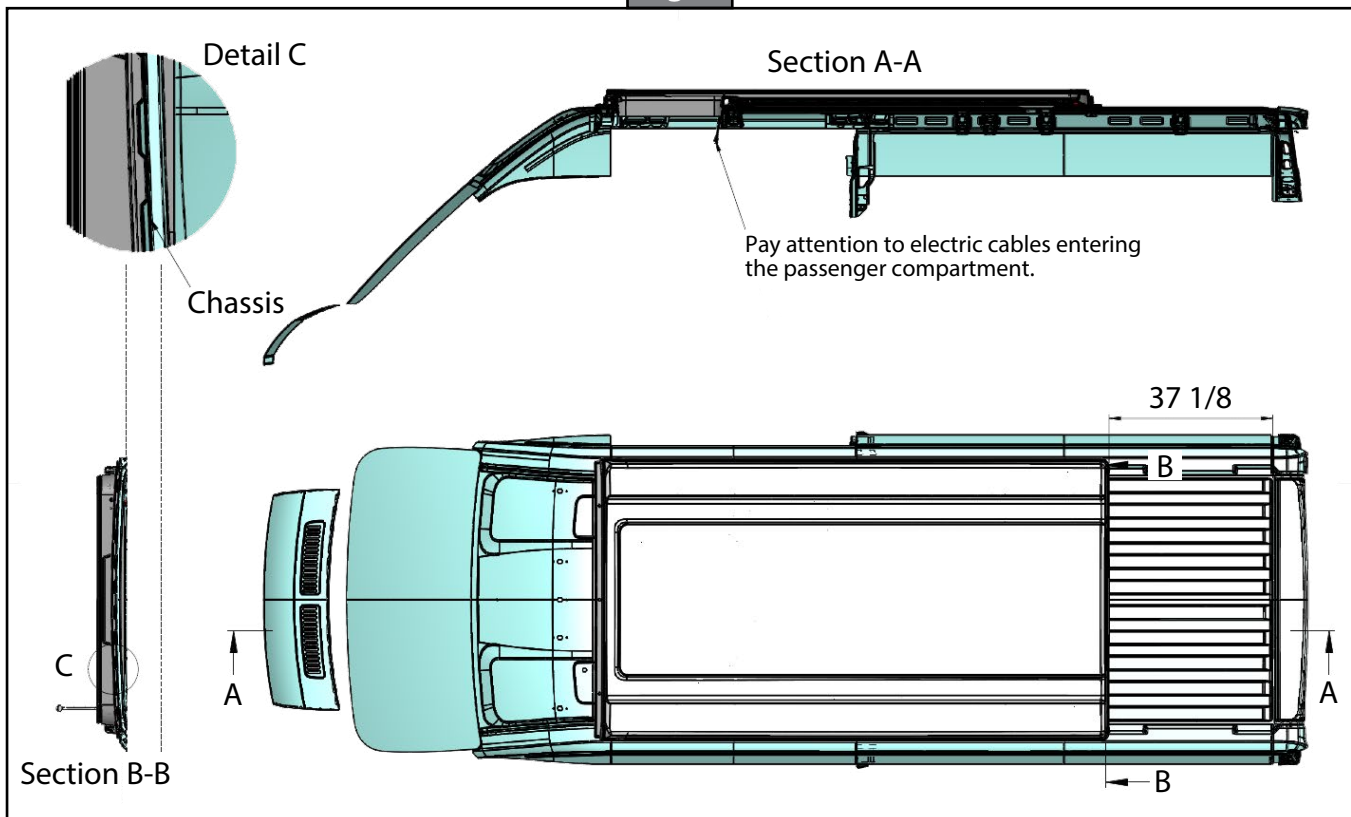


Fig. 4



- C. De-burr and clean the cut edges.
- D. Coat the cut, de-burred and cleaned edges with an anti-corrosive material.
- 6. Use the lower pop up component (the base) as a locating template. Position the template +/- 1/8" on each side. Refer to dimensions in figures 3-5.
- 7. Use adhesive tape to mark the outline of the template. Leave at least a 1/4" gap between the template and the tape all around. This creates a bonding area for future sealant. Refer to the dimensions in figures 3-5.

Fig. 5

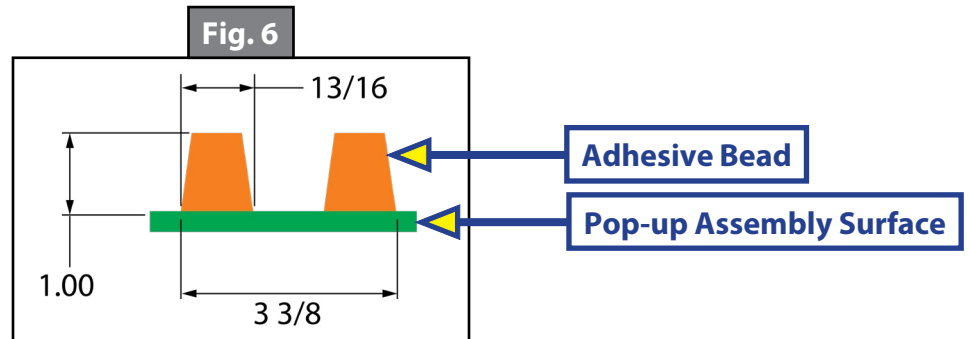
Pop Up Van Assembly Preparation

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 figure 7 for a $43 \frac{5}{16}$ " wide cutout opening and figure 8 for a $39 \frac{3}{8}$ " wide cutout opening. 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 figure 9 for a $43 \frac{5}{16}$ " wide cutout opening and figure 10 for a $39 \frac{3}{8}$ " wide cutout opening. 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 figure 9 for a $43 \frac{5}{16}$ " wide cutout opening and figure 10 for a $39 \frac{3}{8}$ " wide cutout opening. Apply BETAPRIME 5405 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 figure 6 for a $43 \frac{5}{16}$ " wide cutout opening and figure 7 for a $39 \frac{3}{8}$ " wide cutout opening for the appropriate adhesive pattern.
- A. Use BETAMATE 1100N-1F to create two continuous beads of adhesive, as defined in figure 6.



- 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:
- Start applying adhesive along a side 12" away from a rear corner, then run the bead of adhesive down to the corner.
 - Continue applying the adhesive across the backside of the component and around the opposite corner.
 - Then, continue applying the adhesive up 12" along the side.
 - Finally, continue applying the adhesive back across to the beginning of the bead.
 - Connect the adhesive beads to complete the loop.

Fig. 7

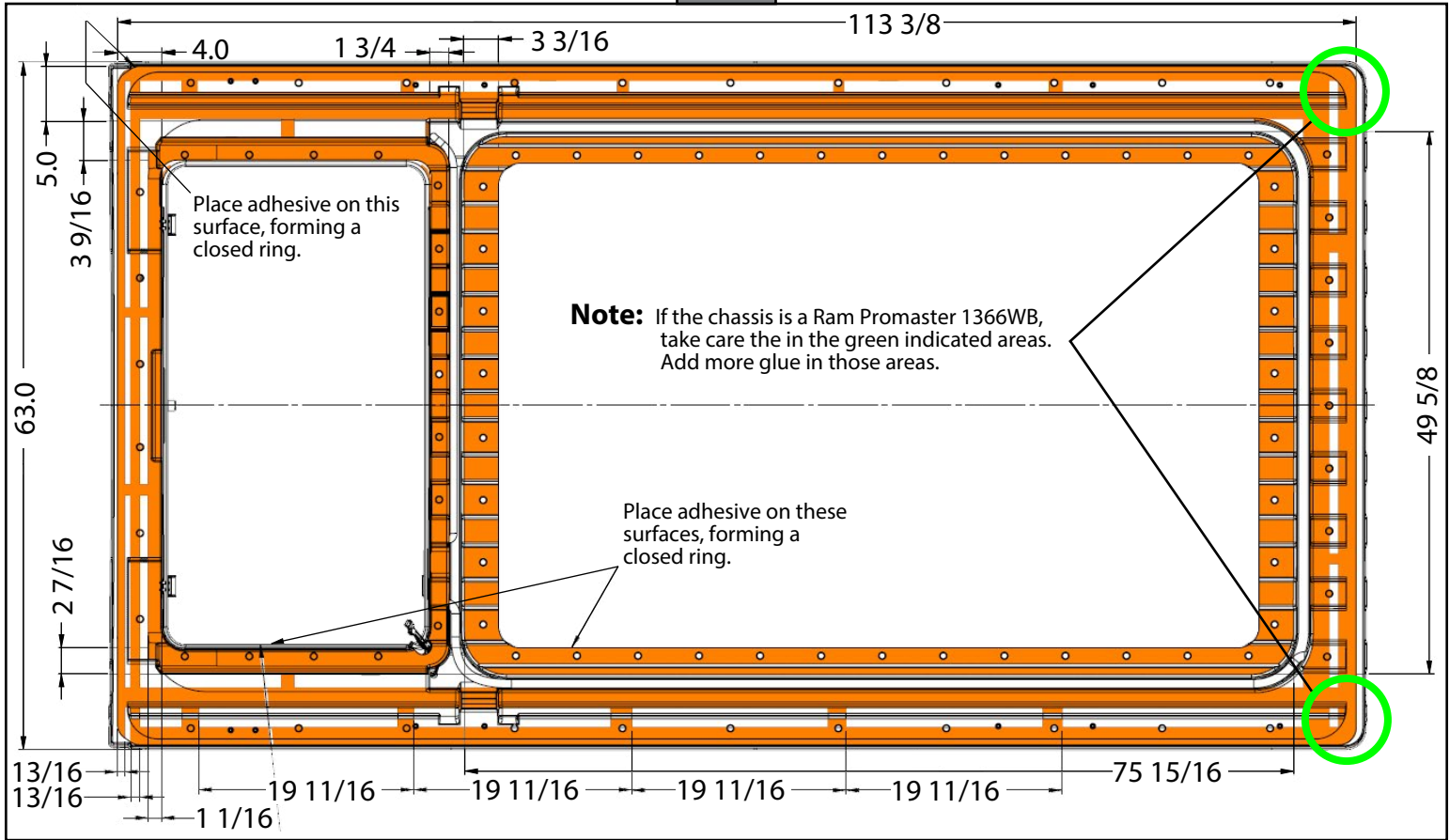


Fig. 8

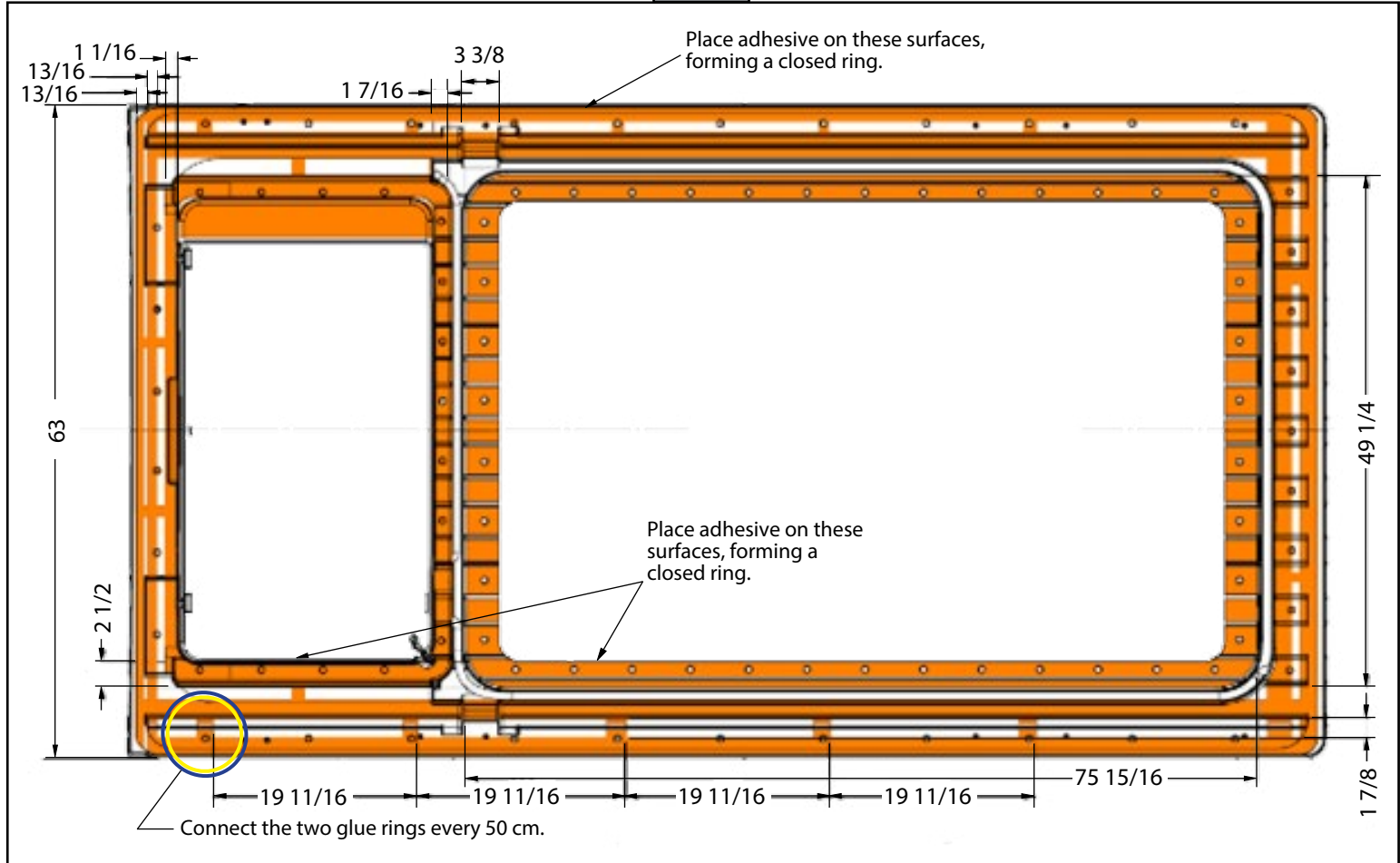


Fig. 9

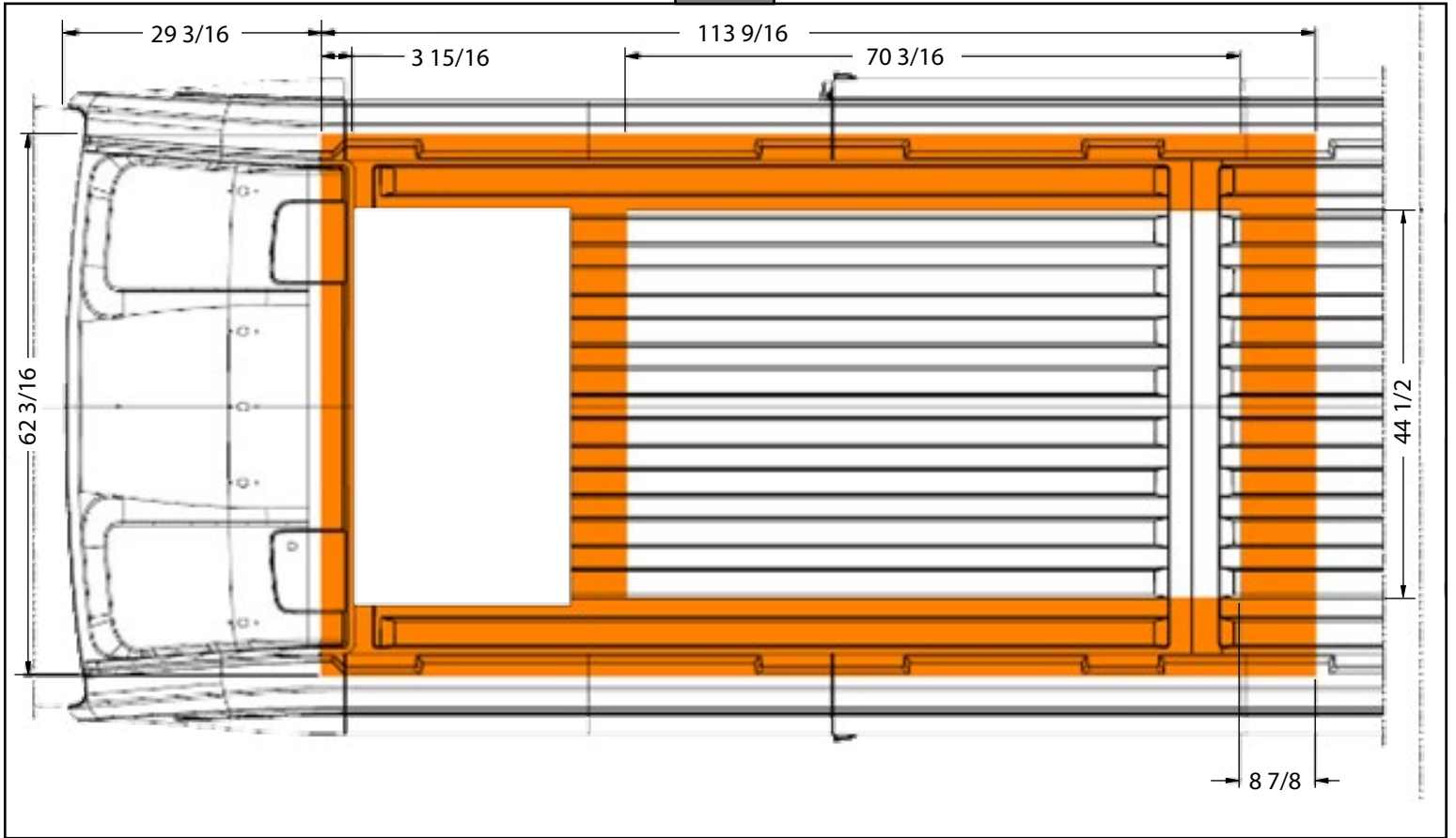
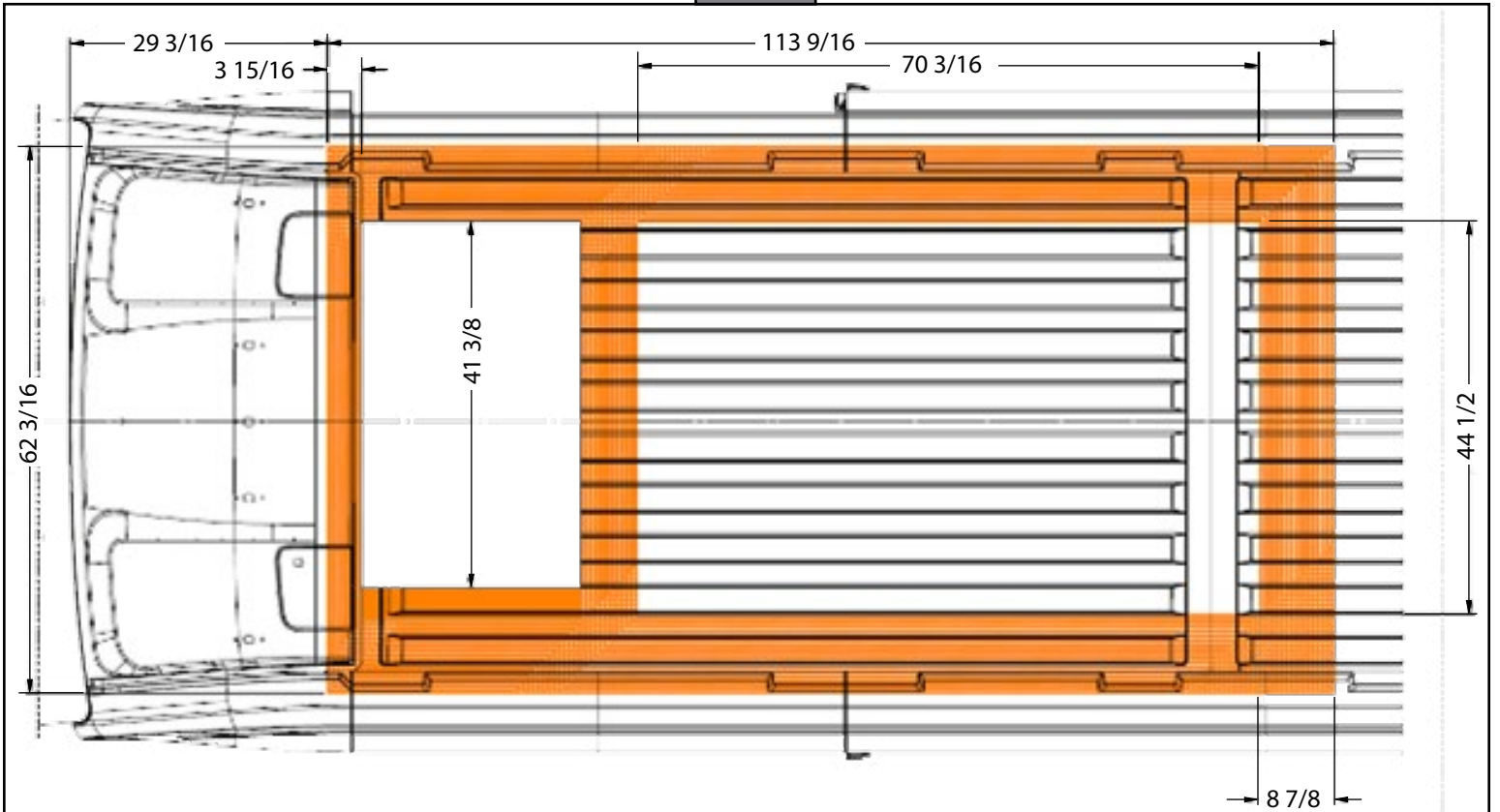


Fig. 10



Installation

Pop Up 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 Van Roof Preparation procedure in the Preparation section.

1. Lift the pop up assembly over the van chassis roof (Fig. 11), positioning it over the prepped cut out.
2. Lay the pop up assembly onto the van roof. For additional positioning information, refer to figure 13 for long and mid-length vans and figure 14 for short vans.
3. Adjust the pop up assembly into position. Make sure the pop up is firmly seated (pushed down) (Fig. 12). Remove the vacuum lift and open the top.
4. While wearing nylon gloves, use your finger to spread all of adhesive that has oozed out around the perimeter of the top. Make sure to add more adhesive to close all 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. 12). Make sure enough adhesive spreads out around the pop up assembly to act as a sealant.

Fig. 11



Fig. 12



Fig. 13

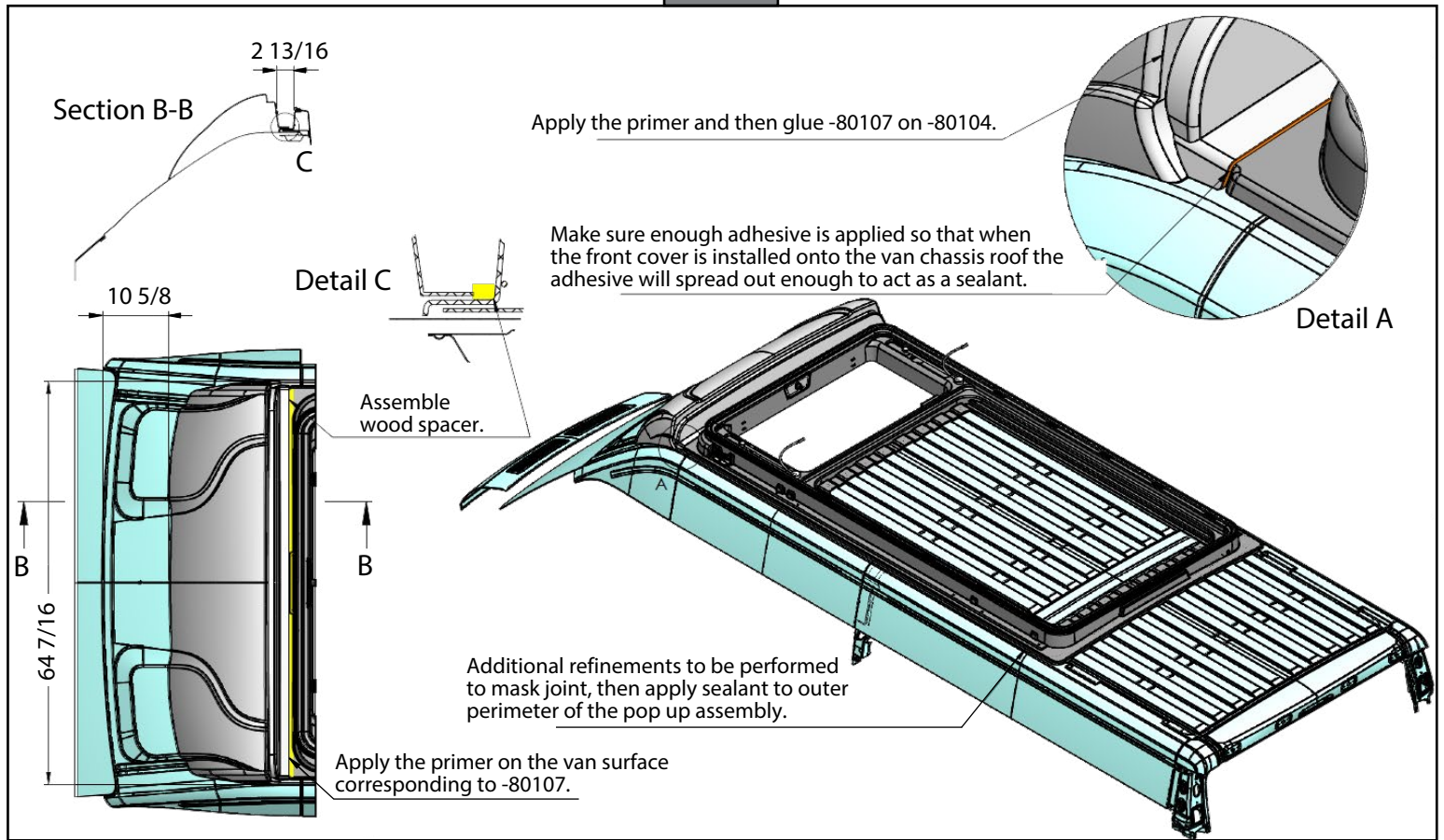
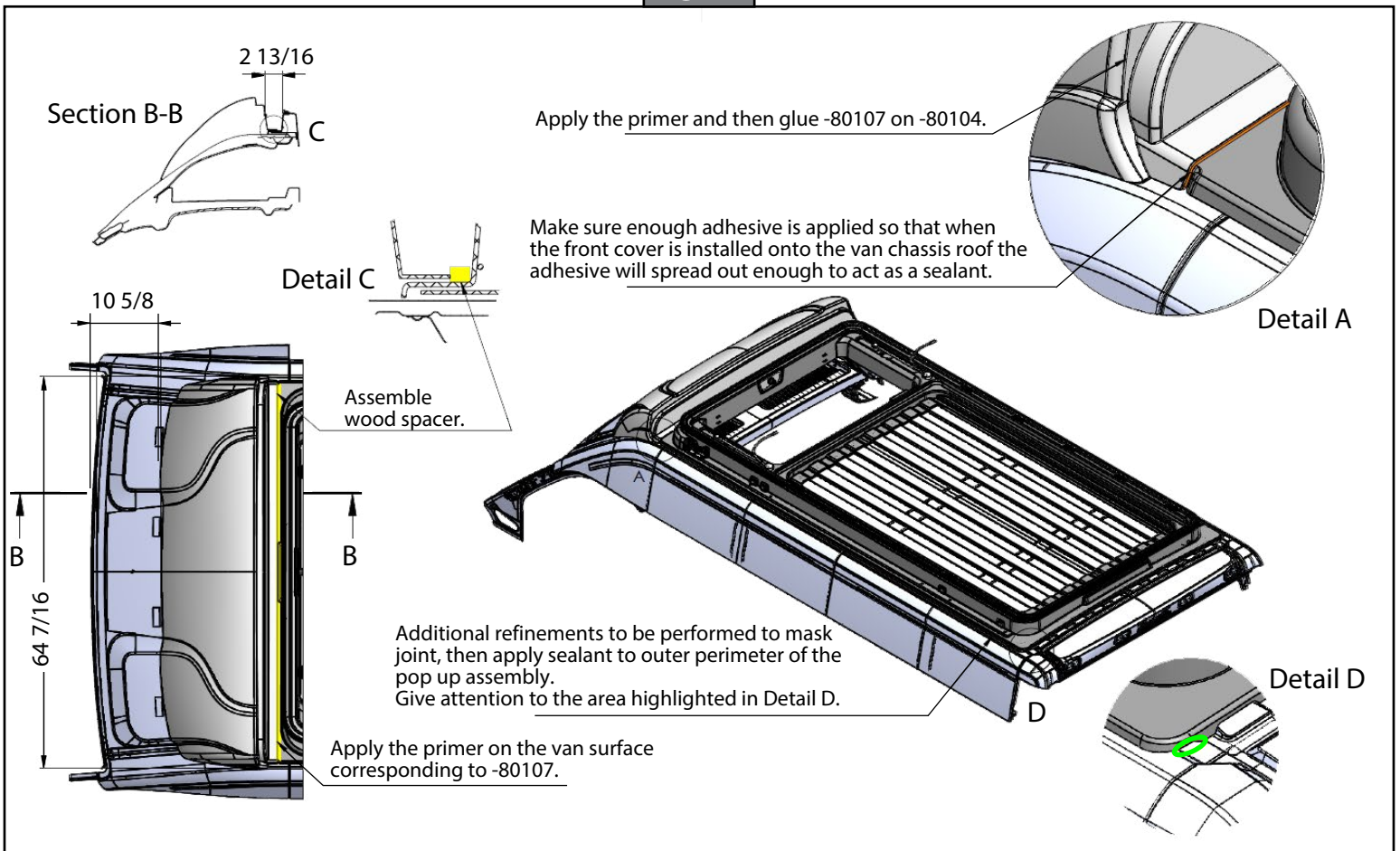


Fig. 14



Front Brow

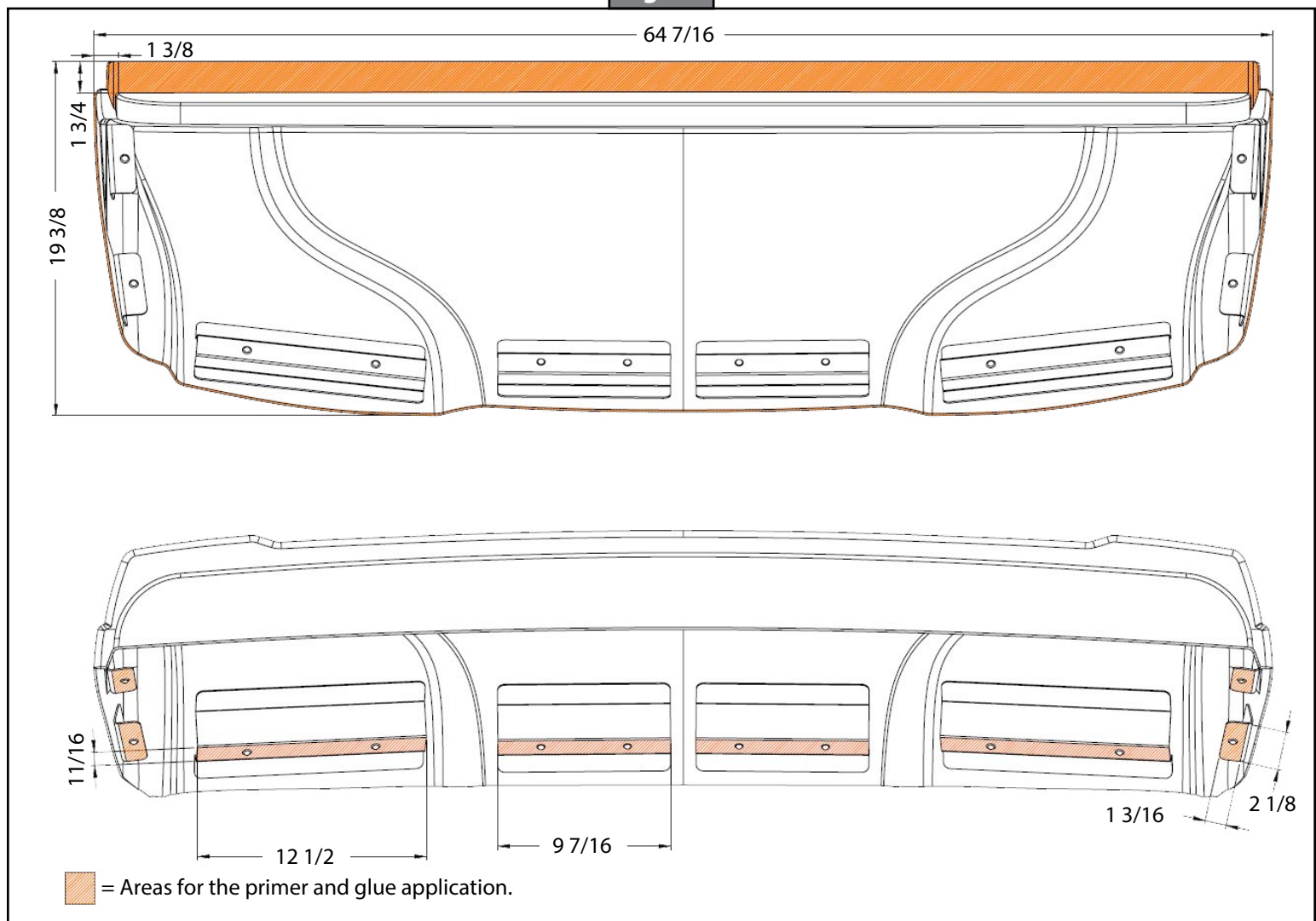
1. Test fit brow on van to make sure there are no large gaps to seal. If there are change brows and recheck.
2. With brow properly positioned, use adhesive tape to outline the area to be cleaned and primed. Leave a minimum of 1/4" gap around the brow for additional sealant if needed.
3. Place the front 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. 15) and the camper van roof.
 - B. Apply BETAPRIME 5405 primer to the previously cleaned mating areas of the front brow (Fig. 15).
4. Apply BETAMATE 1100N-1F adhesive to the front brow where indicated in figure 15.

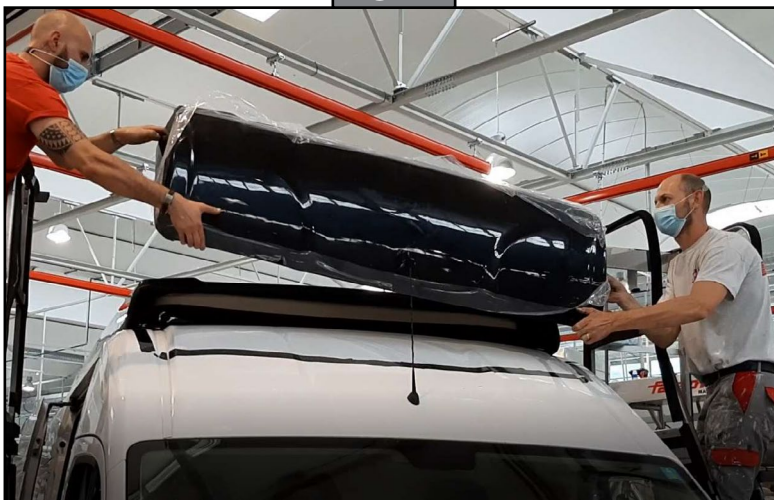
Note: Make sure enough adhesive is applied so that when the front brow is installed onto the van chassis roof the adhesive will spread out enough to also act as a sealant.

Fig. 15



5. Lift the front brow over the front of the van roof (Fig. 16).
6. Position the front brow in front of the installed pop up assembly. For additional positioning information, refer to figure 13 for long and mid-length vans and figure 14 for short vans.

Fig. 16



7. Apply pressure to the front brow. Make sure enough adhesive spreads out around the pop-up 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 5405 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. 17 and 18).

Fig. 17



Fig. 18



9. Use BETACLEAN 3350 cleaner and lint-free wipes to prepare the mating surfaces along the perimeter of the brow. Apply BETAPRIME 5405 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. 19).

Fig. 19



10. Use BETACLEAN 3350 cleaner and lint-free wipes to prepare the mating surfaces between the lower component and the front brow. Apply BETAPRIME 5405 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. 20).

Fig. 20



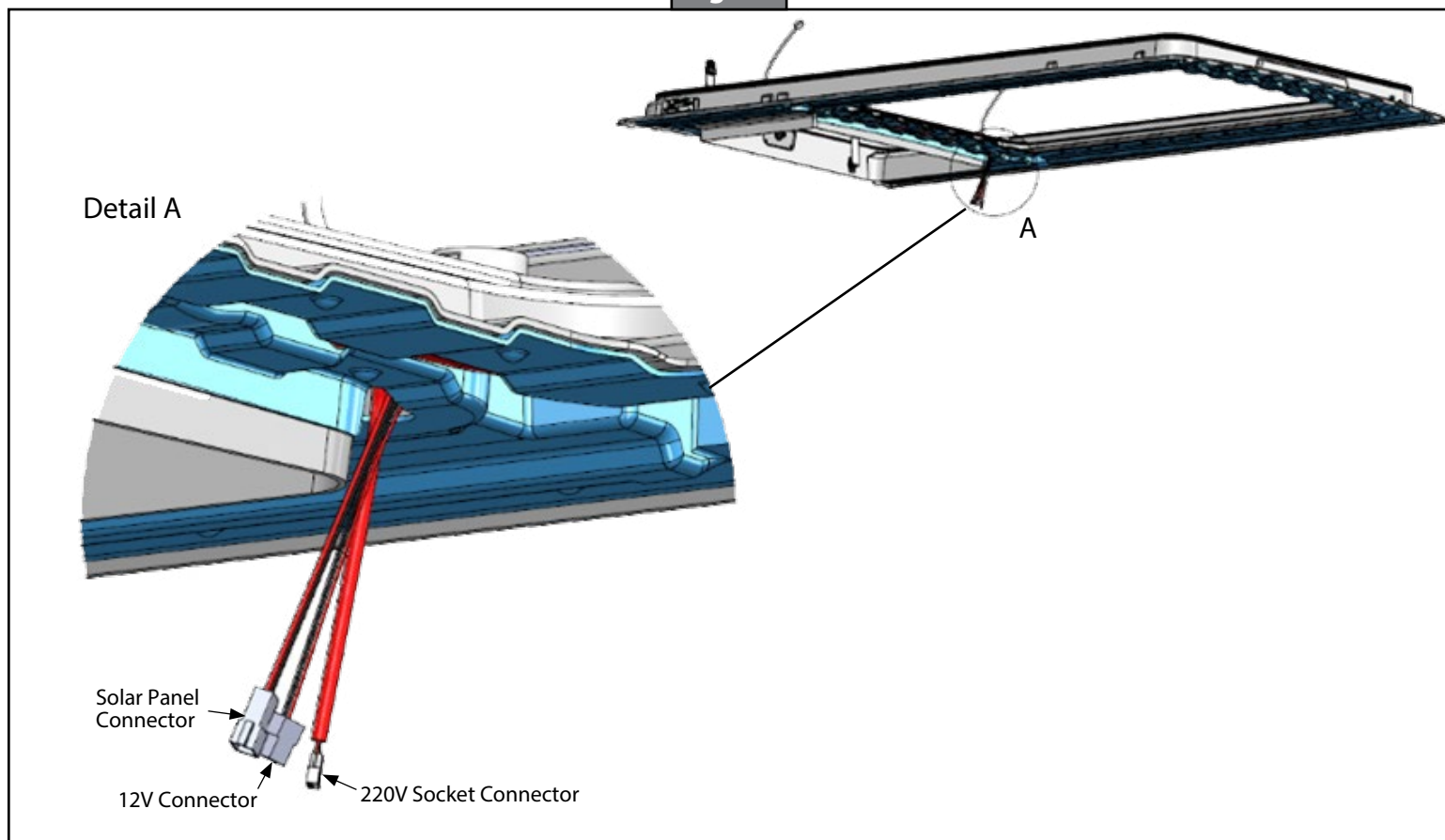
Allow 5-6 hours for the adhesive to cure before performing any operational checks of the Pop Up Camper Van.

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. 21). 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. 21

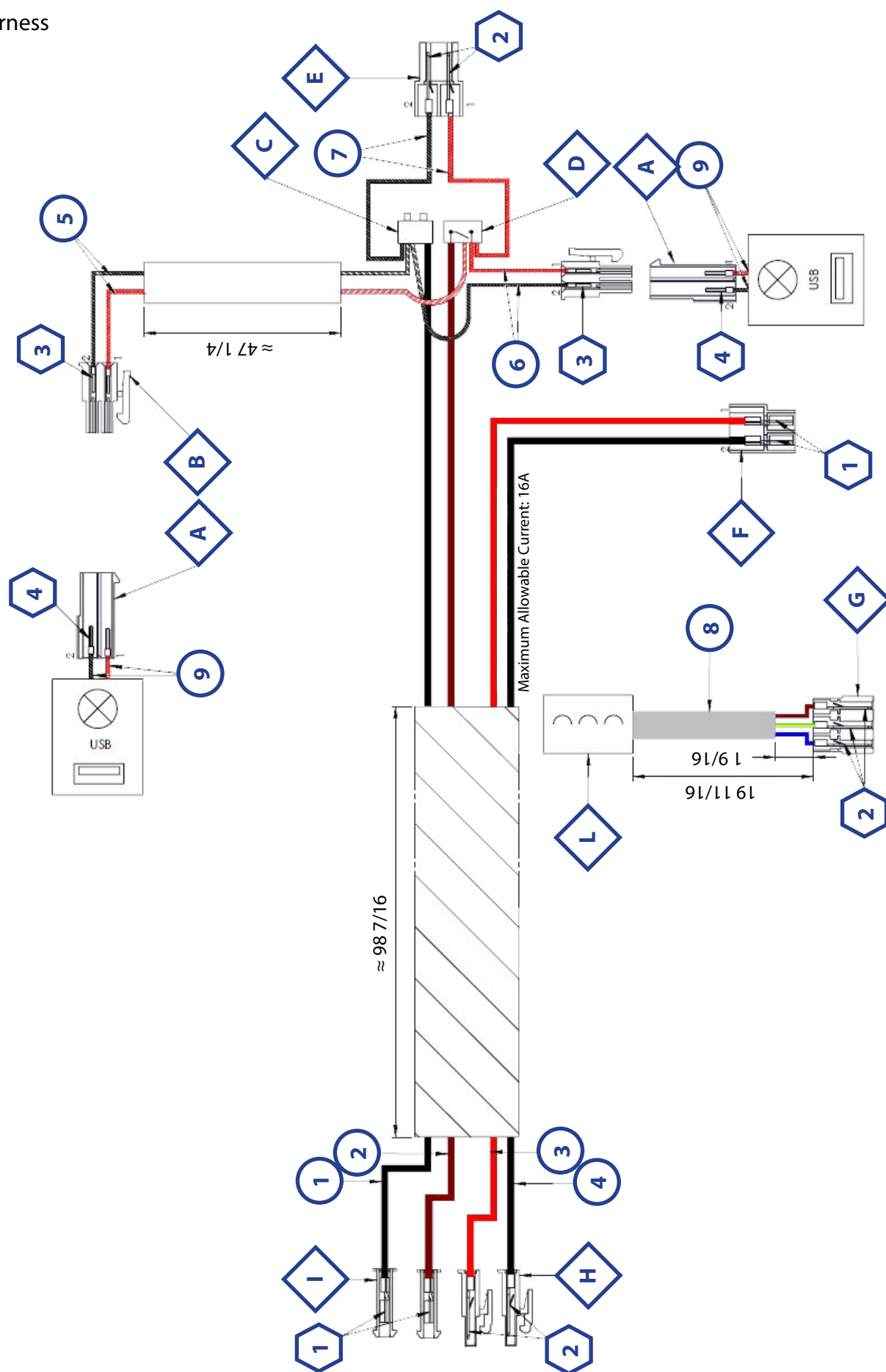


Legend for Main Harness (Fig. 22)		
Callout	Length	Description
	104 5/16	Black, 0.062 Dia., H05V-K
	104 5/16	Brown, 0.062 Dia., H05V-K
	106 5/16	Red, 0.080 Dia., H05V-K
	106 5/16	Black, 0.080 Dia., H05V-K
	51 3/16	Red/Black, 0.039 Dia., H05V-K
	21 1/4	Red/Black, 0.039 Dia., H05V-K
	19 11/16	Red/Black, 0.062 Dia., H05V-K
	19 11/16	Blue-Y/G-Brown, 0.062 Dia., H05 VV-F
	1 3/16	Red/Black, 0.039 Dia., H05V-K
Callout	Description	
	Female terminal lug, 1/4 x 1/32	
	Male terminal lug, 1/4 x 1/32	
	Female Mini-Fit terminal lug	
	Male Mini-Fit terminal lug	

Legend for Main Harness (Fig. 22) - cont'd	
Callout	Description
	2-way Female MiniFit Connector, 3/16, Nylon, Natural
	2-way Male MiniFit Connector, 3/16, Nylon, Natural
	Mammouth, terminal board
	ON-OFF Switch for Roof LED Lamps
	2-way Faston Female Connector, 1/4, Nylon 66, Natural
	2-way Faston Male Connector, 1/4, Nylon 66, Natural
	3-way MiniFit Connector, 1/4, Nylon 66, Natural
	1-way Faston Male Connector, 1/4, Nylon 66, Natural
	1-way Faston Female Connector, 1/4, Nylon 66, Natural
	Socket, 220V

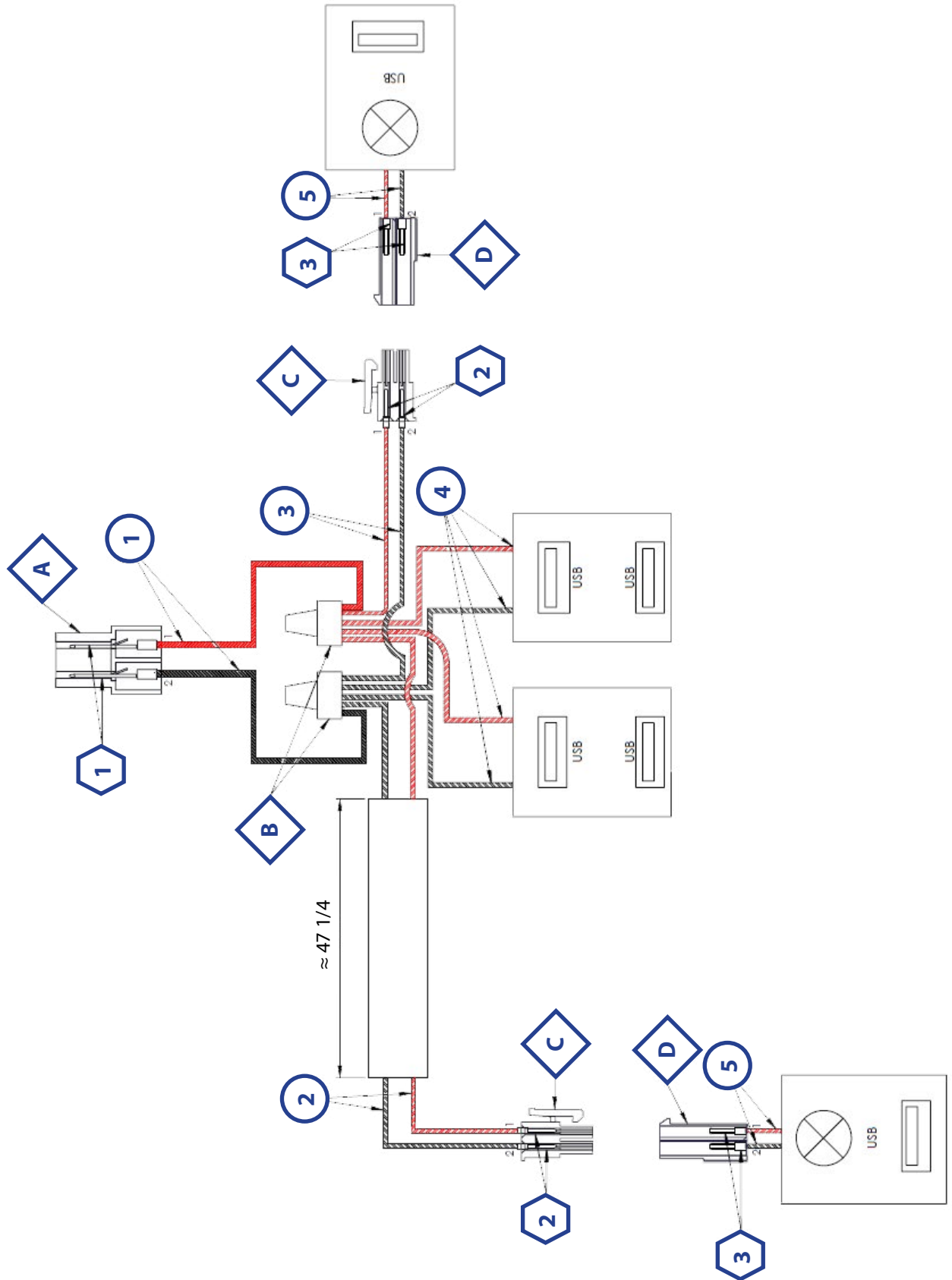
Fig. 22

Main Harness



Legend for USB Harness (Fig. 23)		
Callout	Length	Description
	19 11/16	Red/Black, 0.062 Dia., H05V-K
	51 3/16	Red/Black, 0.039 Dia., H05V-K
	21 1/4	Red/Black, 0.039 Dia., H05V-K
	13/16	Red/Black, 0.039 Dia., H05V-K
	1 3/16	Red/Black, 0.039 Dia., H05V-K
Callout	Description	
	Male terminal lug, 1/4 x 1/32	
	Female Mini-Fit terminal lug	
	Male Mini-Fit terminal lug	
	2-way Faston Female Connector, 1/4, Nylon 66, Natural	
	Insulated Head Joint	
	2-way Male MiniFit Connector, 3/16, Nylon, Natural	
	2-way Female MiniFit Connector, 3/16, Nylon, Natural	

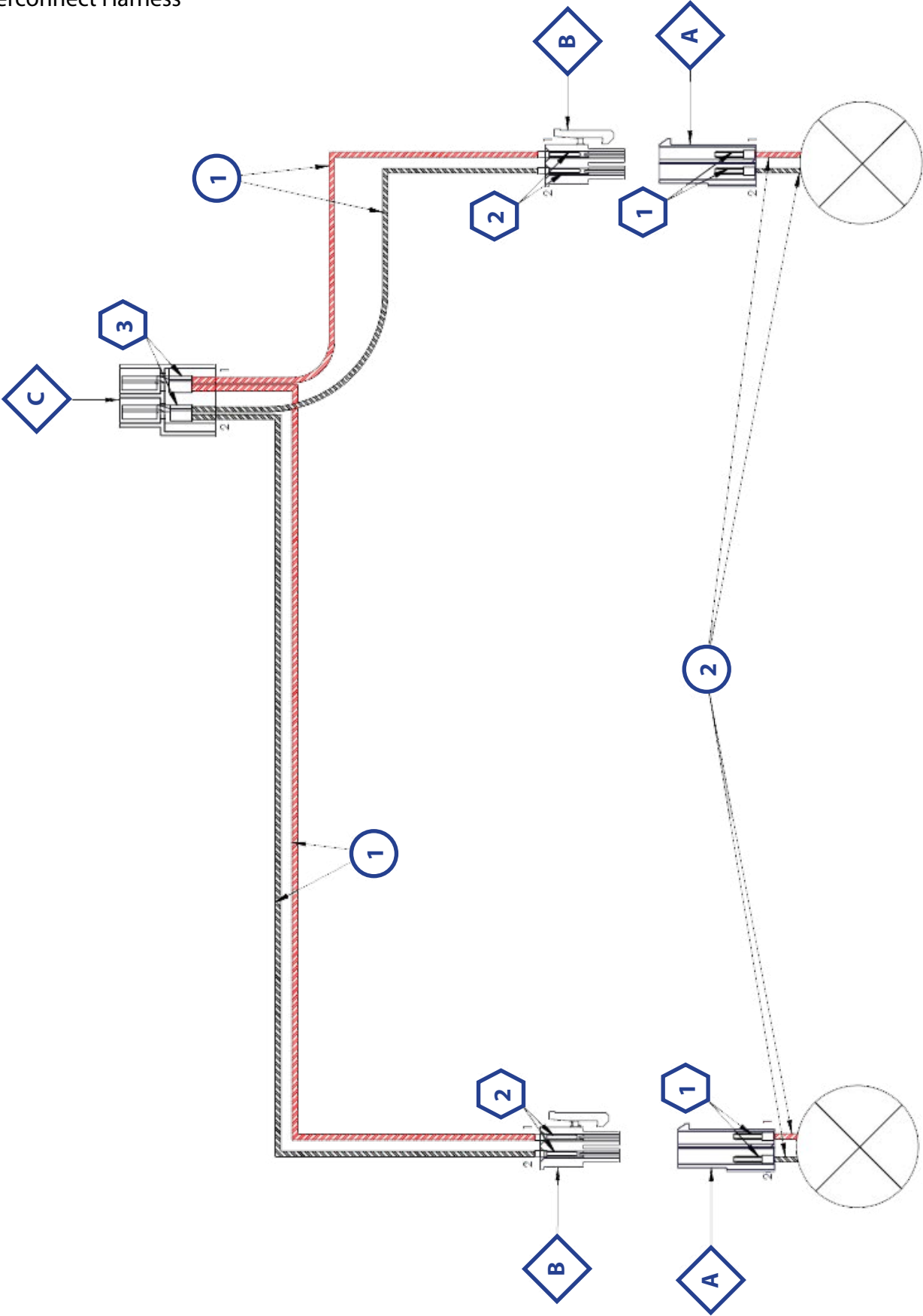
Fig. 23



Legend for TOP Interconnect Harness (Fig. 24)		
Callout	Length	Description
	78 3/4	Red/Black, 0.039 Dia., H05V-K
	1 3/16	Red/Black, 0.039 Dia., H05V-K
Callout	Description	
	Male Mini-Fit terminal lug	
	Female Mini-Fit terminal lug	
	Male terminal lug, 1/4 x 1/32	
	2-way Female MiniFit Connector, 3/16, Nylon, Natural	
	2-way Male MiniFit Connector, 3/16, Nylon, Natural	
	2-way Faston Female Connector, 1/4, Nylon 66, Natural	

Fig. 24

TOP Interconnect Harness



Legend for Coiled Cable Harness (Fig. 25)		
Callout	Length	Description
	1 3/16	Black, 0.080 Dia.
	3 15/16	Black-Y/G, 0.080 Dia.
	3 15/16	Black, 0.080 Dia.
	2 9/16	Black, 0.080 Dia.
	1 9/16	Black, 0.080 Dia.
	13/16	Y/G, 0.080 Dia.
Callout	Description	
	Female terminal lug, 1/4 x 1/32	
	Male terminal lug, 1/4 x 1/32	
	1-way Faston Female Connector, 1/4, Nylon 66, Natural	
	1-way Faston Male Connector, 1/4, Nylon 66, Natural	
	2-way Faston Female Connector, 1/4, Nylon 66, Natural	
	2-way Faston Male Connector, 1/4, Nylon 66, Natural	

Coiled Cable Harness

Fig. 25

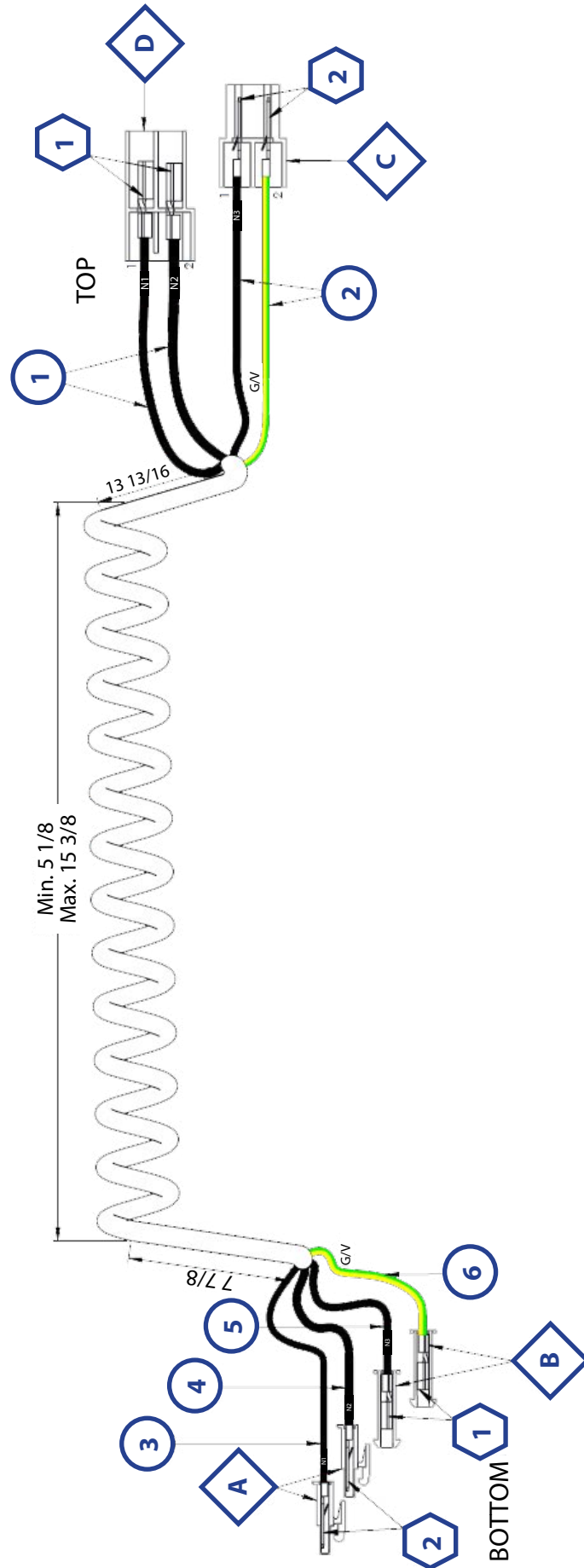
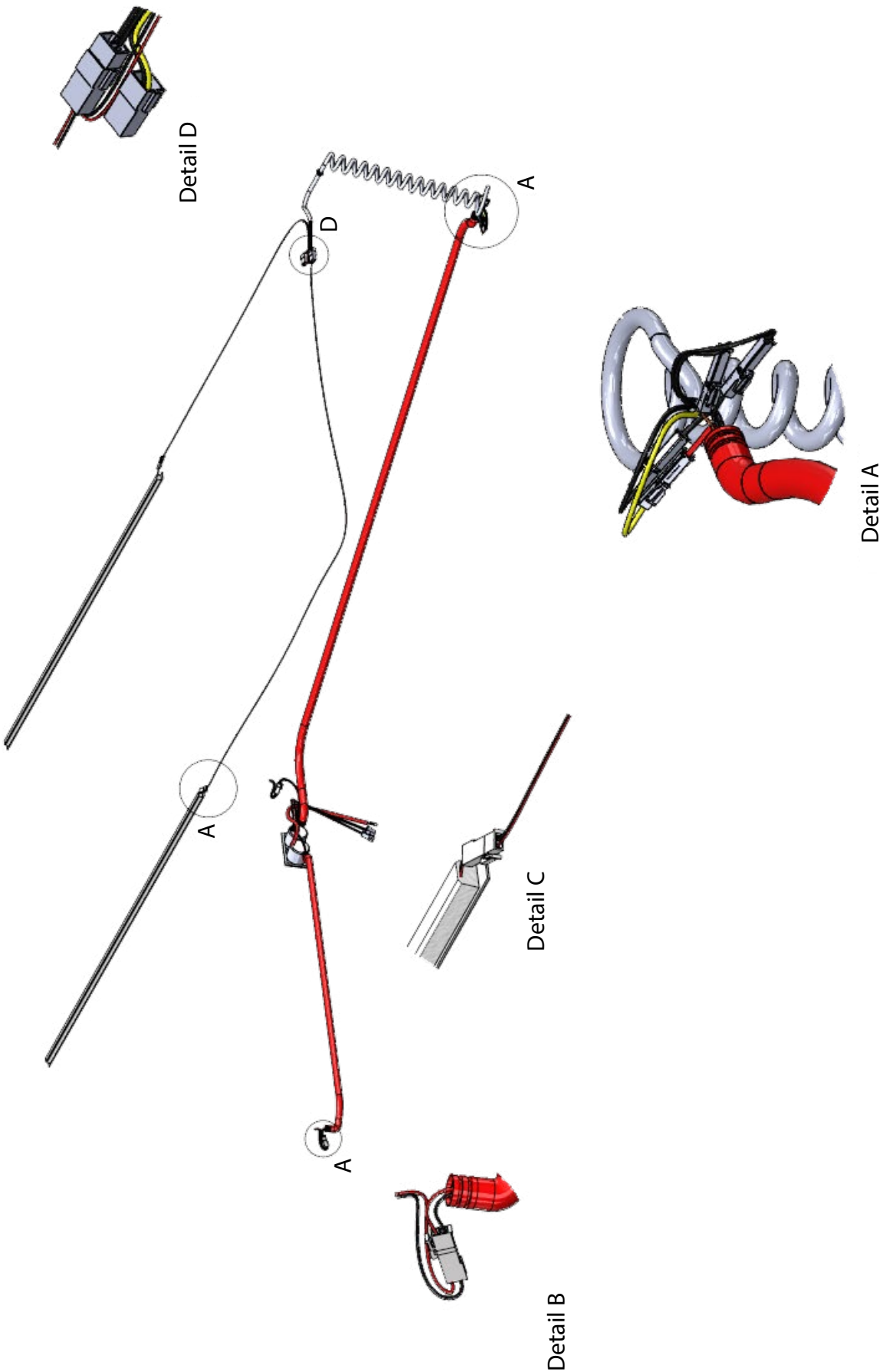


Fig. 26

Bar-light Interconnect



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 Camper Van as follows:
 - A. From inside the camper van, if necessary, release the clips on the two safety belts (Fig. 27A) by pressing on both sides of the clip (Fig. 27B). The upper portion of the pop up will move freely (Fig. 27C).
 - B. Attach the ladder supplied to the specific hooks (Fig. 28).
 - C. Climb the ladder to reach the release button (Fig. 29A).

⚠ CAUTION

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

- D. Grab the handle with one hand (Fig. 30A), then at the same time press the release button (Fig. 30B) and push the handle upwards.

Fig. 27

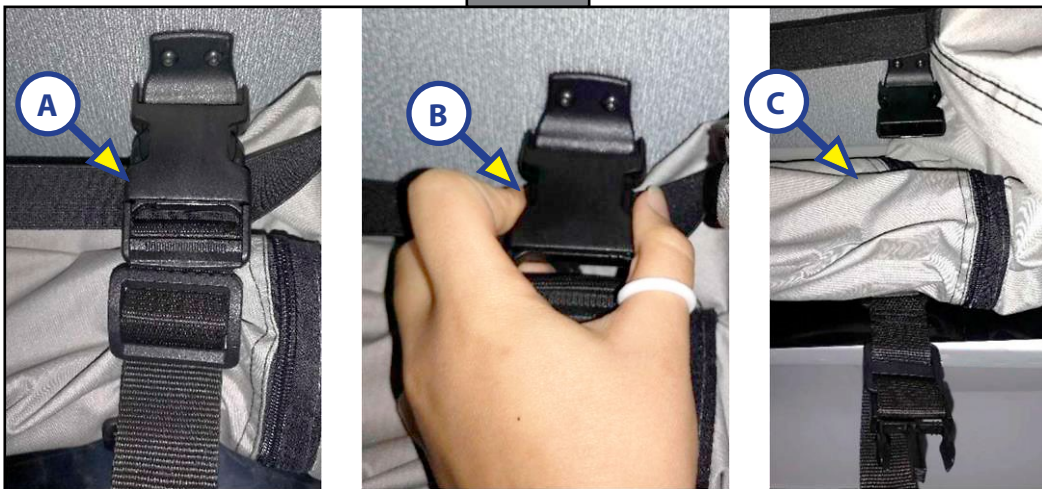


Fig. 28

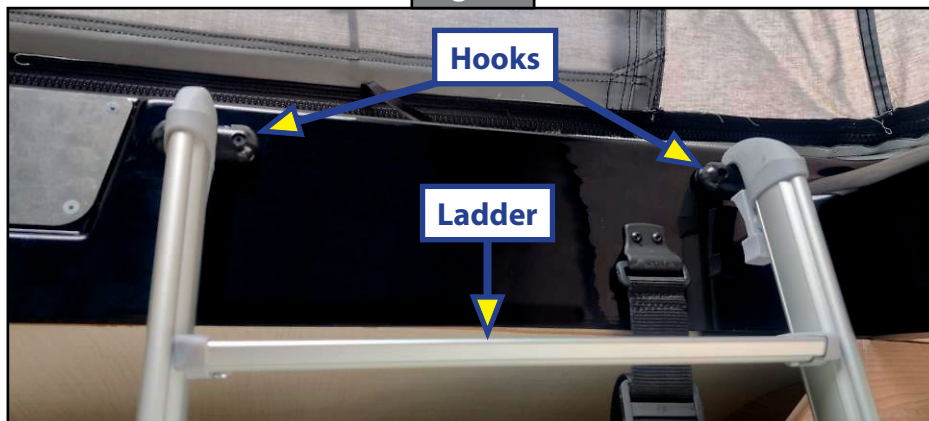


Fig. 29

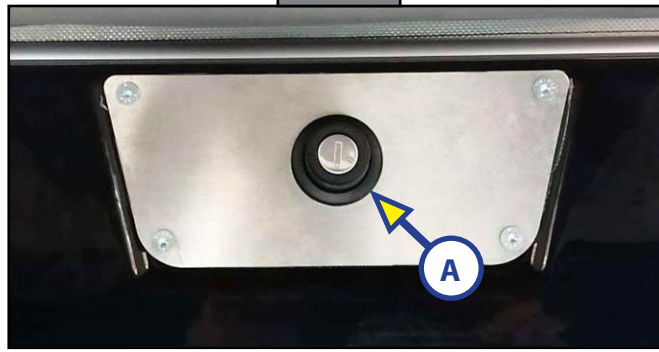
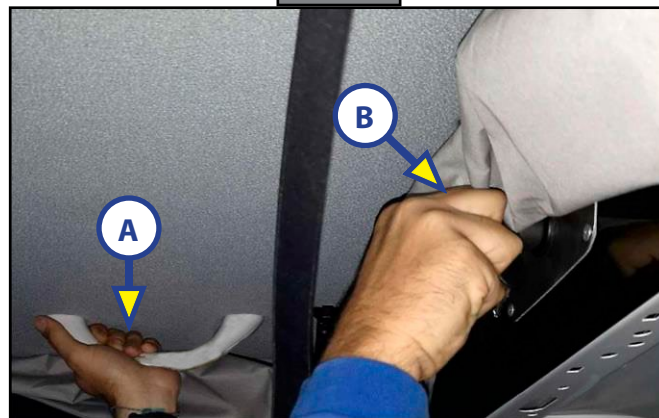


Fig. 30



- E. After unlocking the roof, grab both handles and push the roof upwards.
- F. Air springs will maintain the roof in its open position (Fig. 31A).

Fig. 31



- 3. Inspect the outer sealant bead (Fig. 32A) 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.
 - C. Allow any newly applied adhesive to fully cure before retracting the pop up.
- 4. Retract the Pop Up Camper Van as follows:
 - A. If necessary, attach the supplied ladder on the hooks (Fig. 28).
 - B. Climb the ladder to inspect the pop up roof to make sure the windows are properly closed (Fig. 31B). If necessary, zip the windows closed.

Fig. 32



⚠ CAUTION

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

- C. After making sure all windows are closed, grip both roof handles and pull down as evenly as possible. Do **NOT** completely close the pop up roof at this point.
- D. Make sure that the canvas is folded correctly inside to prevent jamming of the built-in mechanism or the locking latch.
- E. 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.
- F. 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. 27B) closed to secure the roof.
- 7. Inspect the outside of the Pop Up Roof System to make sure it has 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 Camper Van extend/retract operation.



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