



40" Front Flares

FORD SuperDuty Gen 5

NEW PRODUCT

Please visit www.aev-conversions.com to view the most current installation guide for this product.

This is a new product and we want to make sure that you receive the latest and most accurate information based on customer feedback, product revisions, and/or model year updates. We value customer feedback, so we encourage you to contact our Technical Support department if you have any suggestions on how to make the installation of this product easier or if you have any questions regarding the installation of this product. AEV's Technical Support can be reached by email at tech@aev-conversions.com or by giving us a call at (248)-926-0256.

PLEASE READ BEFORE YOU START

To guarantee a quality installation, we recommend reading these instructions thoroughly before beginning any work. These instructions assume a certain amount of mechanical ability and are not written nor intended for someone not familiar with auto repair.

INCLUDED PARTS	QTY	REQUIRED TOOLS
Front Flare Kit	1	1/8" Drill Bit
Front Mount Kit	1	3/16" Drill Bit
Hardware Pack 'A'	1	3/4" Step Bit
Hardware Pack 'B'	1	Angle Grinder/Cut-off Wheel
Hardware Pack 'C'	1	Body Saw
Side Marker Light	1	Metal Rivet Tool
		Plastic Rivet Tool
		SEM (39357) Automotive Panel Adhesive
		Rust Inhibitor
		Automotive Cavity Wax
		Automotive Underbody Paint
		Automotive Seam Sealer
		Anti-Seize Lubricant
		Blue LockTite
		De-burring Tool
		1/2" Width Automotive Masking Tape
		Common Hand Tools



CHAPTER LIST

- I. VEHICLE PREPARATION - PG 10
- II. FACTORY COMPONENT REMOVAL – PG 11-13
- III. FENDER REMOVAL – PG 14-16
- IV. FRONT-END STRUCTURE MODULE (FESM) CUTTING – PG 17-19
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- XII. FLARE INSTALLATION – PG 39-45
- XIII. FACTORY HEADLAMP REINSTALLATION – PG 46
- XIV. WIRING – PG 47-49
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- XVI. FACTORY HARNESS RELOCATION BRACKET – PG 55
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- XVIII. GRILLE INSTALLATION – PG 59
- XIX. VEHICLE COMPLETION – PG 60

REQUIRED FINAL TORQUE SPECS WHEN INSTRUCTED

M6x1.0 = 8Nm – 6 ft-lb

M8x1.25 = 23 Nm – 17 ft-lb



44060002AA EXPLODED VIEW – FRONT FLARE KIT W/O MOUNT KIT

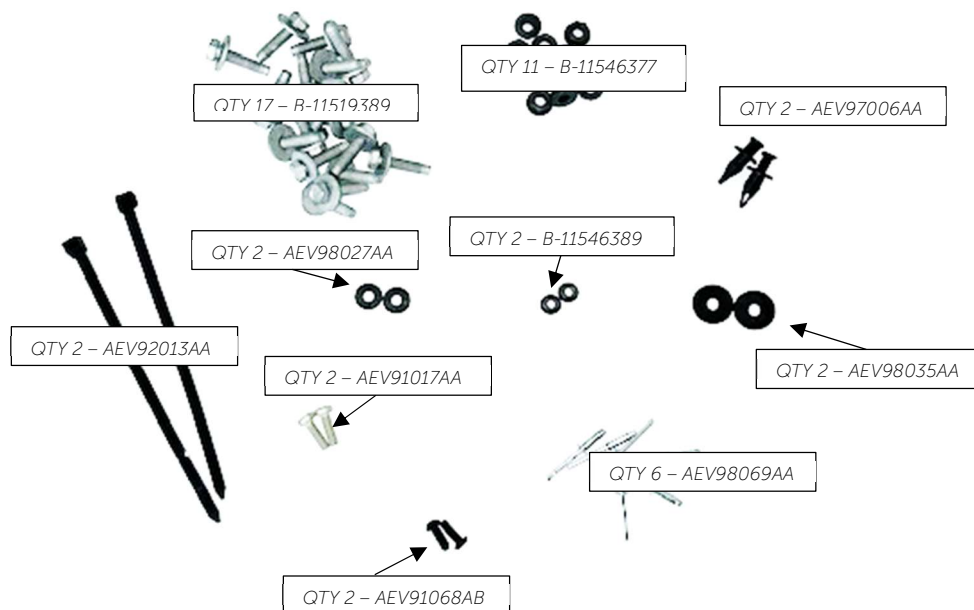




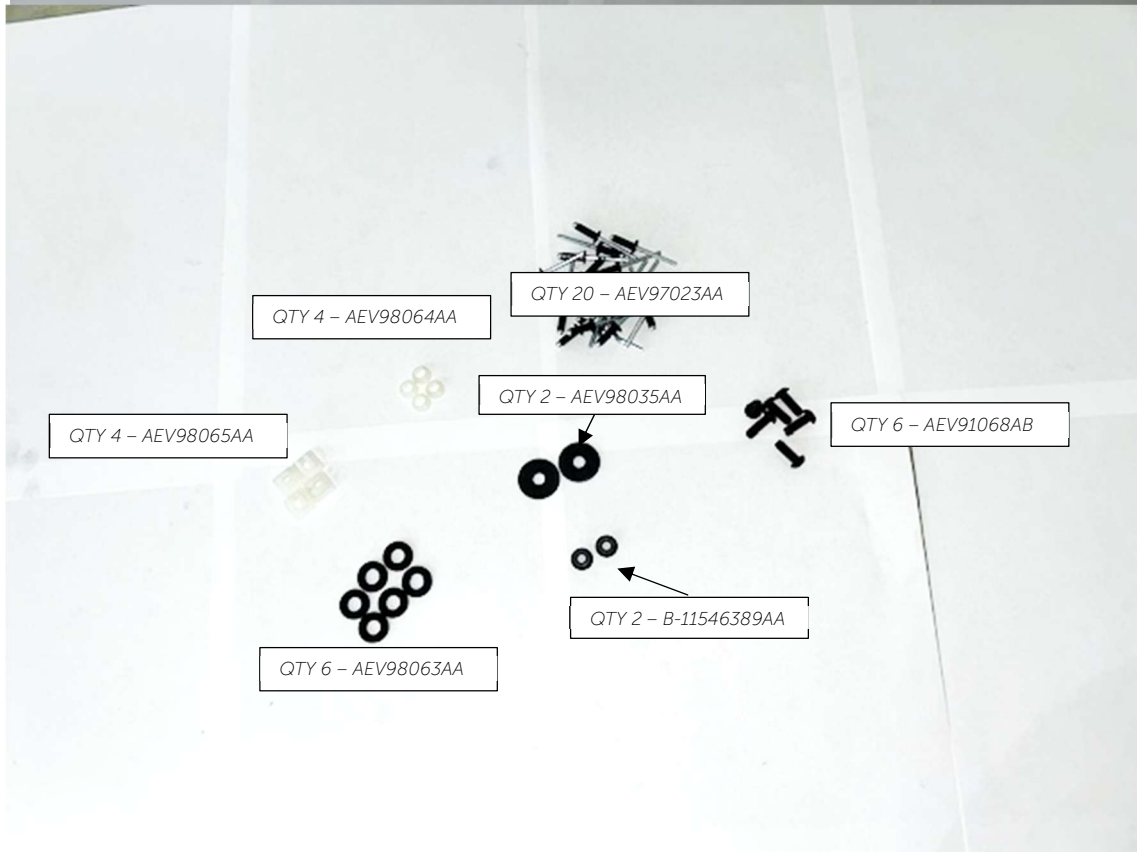
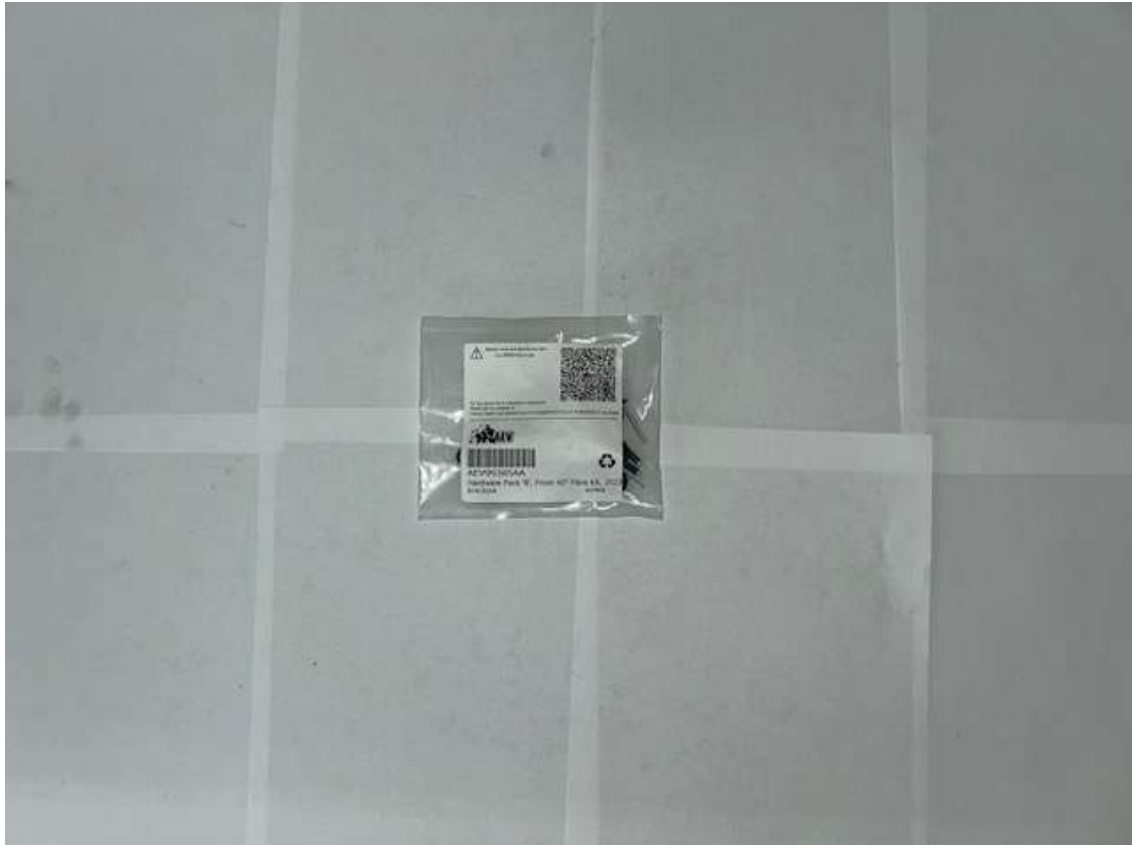
AEV99377AA EXPLODED VIEW – FRONT MOUNT KIT



AEV99378AA EXPLODED VIEW – HARDWARE PACK 'A'



AEV99385AA EXPLODED VIEW – HARDWARE PACK 'B'



AEV99386AA EXPLODED VIEW – HARDWARE PACK 'C'





AEV99105AA EXPLODED VIEW – MARKER LIGHT ASSEMBLY



I. VEHICLE PREPARATION

1. WASH VEHICLE THOROUGHLY
 - a. Marking and masking fenders are important for flare installation.
2. REMOVE FENDER DOOR BOLT
 - a. With vehicle still on ground, open both doors to remove fender bolt near mirror.
 - b. If bolt is not removed, difficulty removing fender while vehicle on hoist possible in Chapter III.

Figure 1

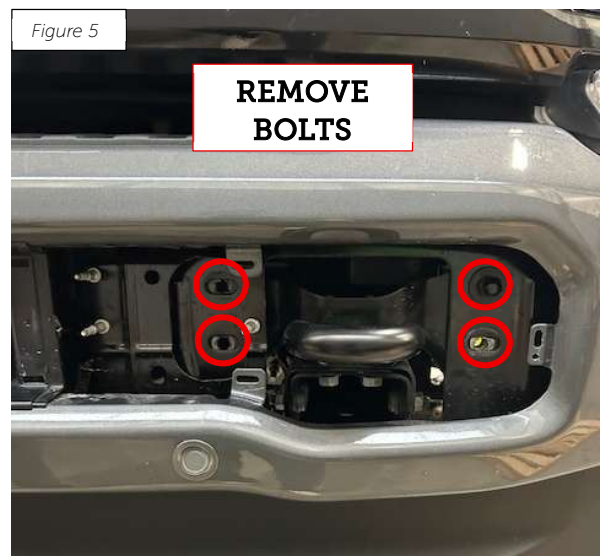
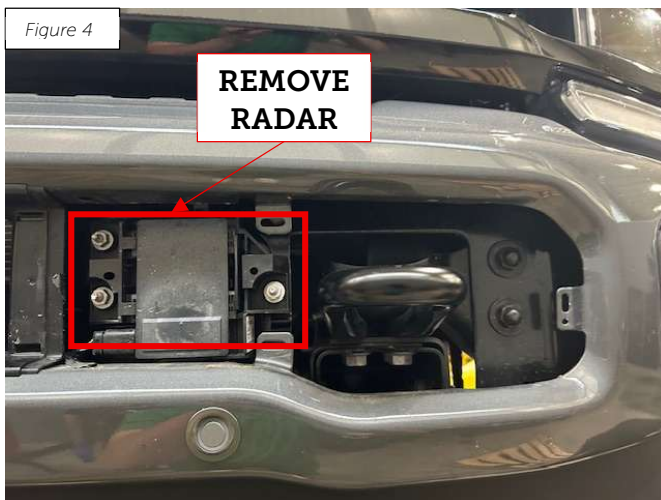


3. RAISE VEHICLE ON HOIST
 - a. Ensure vehicle weight is proportioned correctly
4. REMOVE FRONT WHEELS
5. REMOVE FRONT WHEEL LINER

II. FACTORY COMPONENT REMOVAL

1. BUMPER REMOVAL

- a. Remove LH/RH truck pencil braces from vehicle
- b. Remove bumper trim plastic to gain access to bumper studs.
 - i. Disconnect radar, if applicable
- c. Disconnect radar harness from backside of bumper
- d. Remove bumper bolts
 - i. Bumper will become loose, assistance required for safe dismount.



2. FRONT GRILLE REMOVAL

- a. Remove upper grille trim panel gaining access to grille bolts
- b. Remove upper and lower grille bolts
 - i. 2 grille bolts are hidden behind grille fascia pieces, remove fascia pieces to gain access. *See Figure 7*
- c. Disengage plastic clips to remove grille
 - i. 8 clips exist on each side of headlamp. *See Figure 8*
 - ii. Using plastic clip remover, start at top row of each headlamp and walk down, working down for clean removal without damage
- d. Disconnect camera harness before fully removing. *See Figure 10*

Figure 6



Figure 7



Figure 8

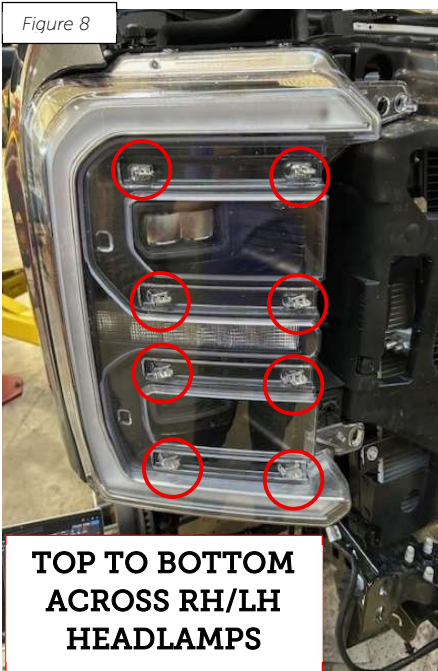


Figure 9



Figure 10



3. HEADLAMP REMOVAL

- a. Remove two upper fasteners
- b. Remove Lower Fastener near wheel opening. *See Figure 11*
- c. Gently pull headlamp forward to release push clip. *See Figure 11*
- d. With headlamp removed, unplug harness connector.
- e. Retain all fasteners for reinstallation

Figure 11



Figure 12



III. FENDER REMOVAL

1. FENDER ADHESIVE REMOVAL

- a. Fender adhesive can be accessed through wheel well opening. Foam block behind fender badge can be removed.
- b. See Figures below for fender adhesive location. To remove fender adhesive, use a extended utility blade or sharp knife no more than 3" to cut adhesive **closest to body** . Plastic support structure needs be retained on the fender.
- c. Repeat Process on other side of vehicle

Figure 13



Figure 14

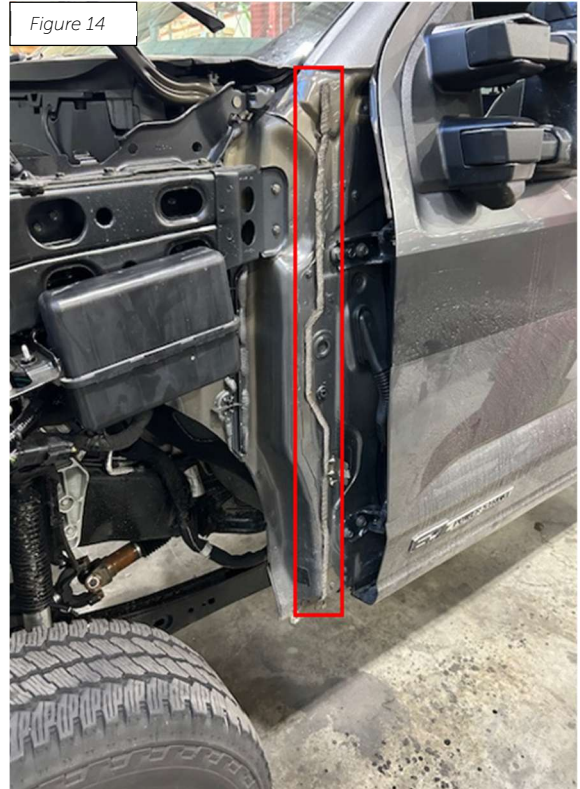


Figure 15



2. FENDER FASTENER REMOVAL – Retain all hardware for reinstallation

- a. Rear fasteners are covered by windshield cowl and door. Antenna will need to be unscrewed to access fastener under windshield cowl. Door will need to be slightly opened for removal if not completed in Chapter I. See Figure 18 & 19.

NOTE: IF VEHICLE IS EQUIPPED WITH AUTOMATIC SIDE STEPS, ENSURE THAT THERE IS ADEQUATE CLEARANCE TO HOIST BEFORE OPENING DOOR IF NEEDED.

- b. Fender will be able to remove from vehicle once fasteners are removed due to adhesive to body removal. Set fender aside for later steps.

Figure 16

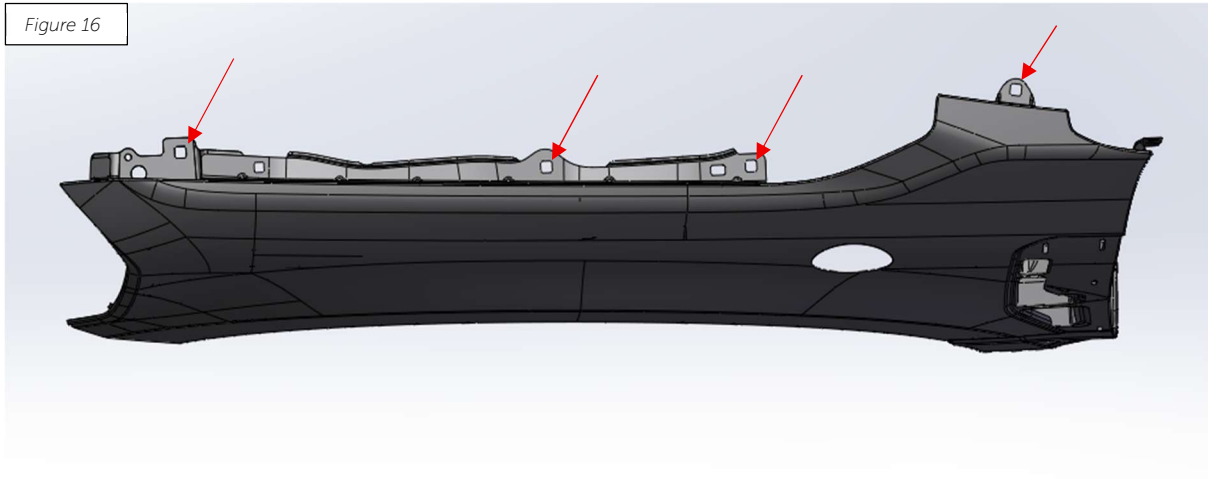


Figure 17

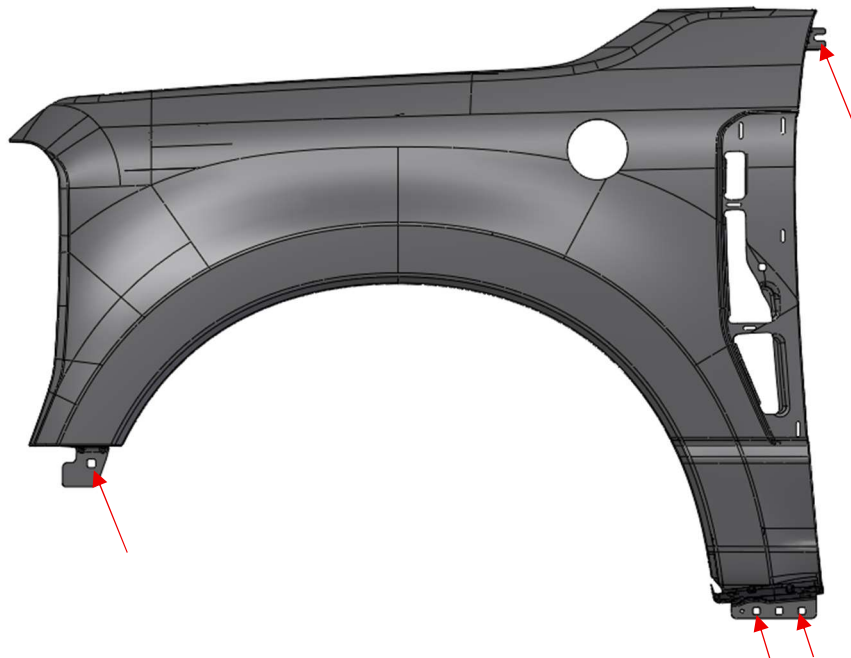
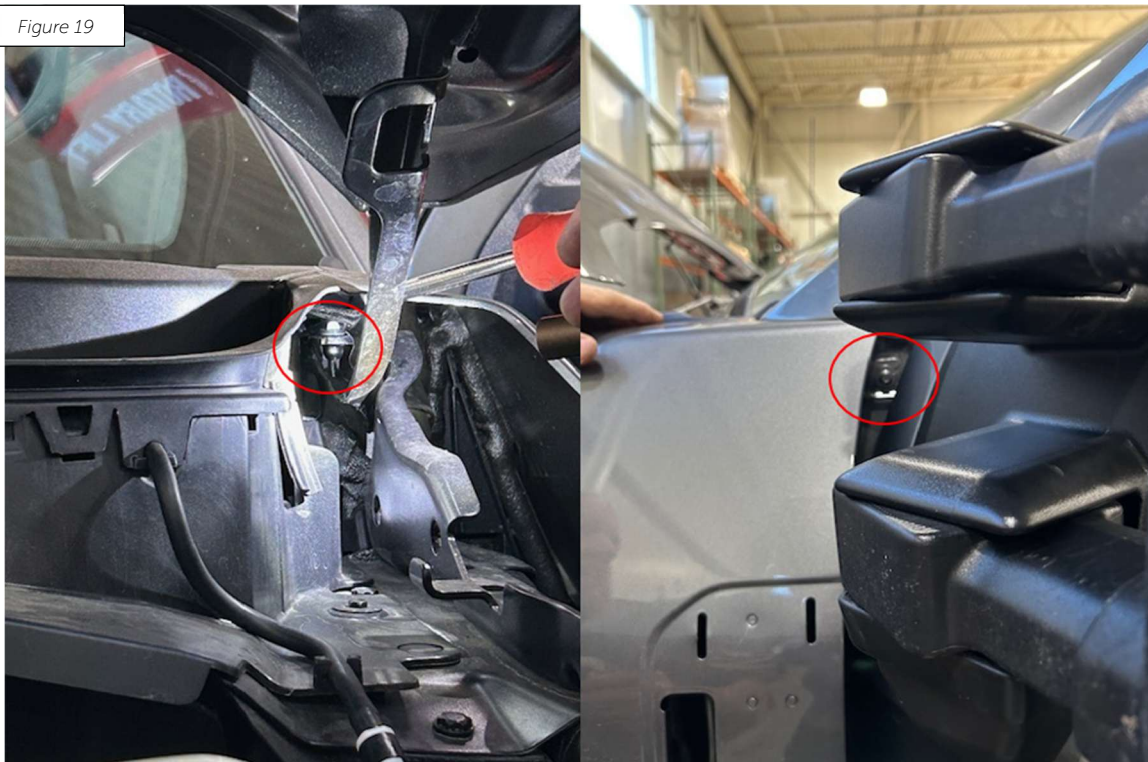




Figure 18



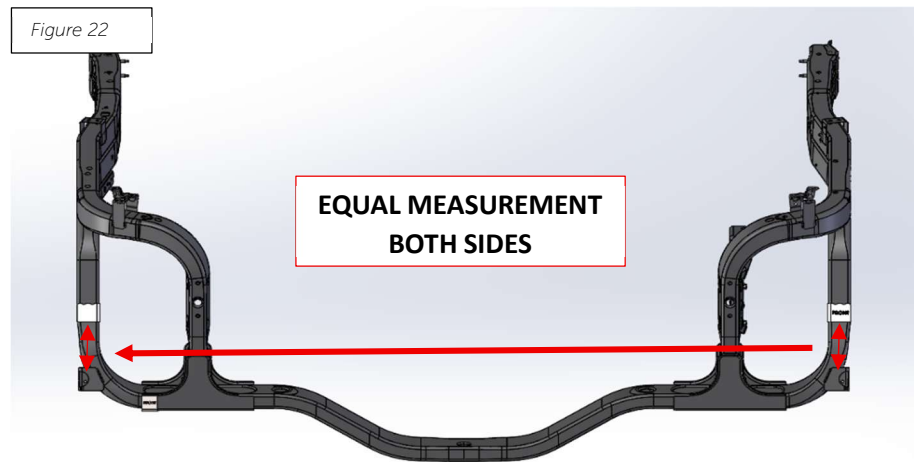
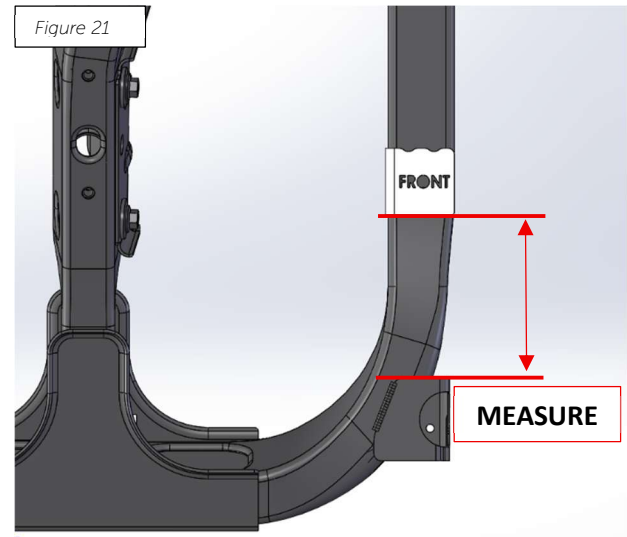
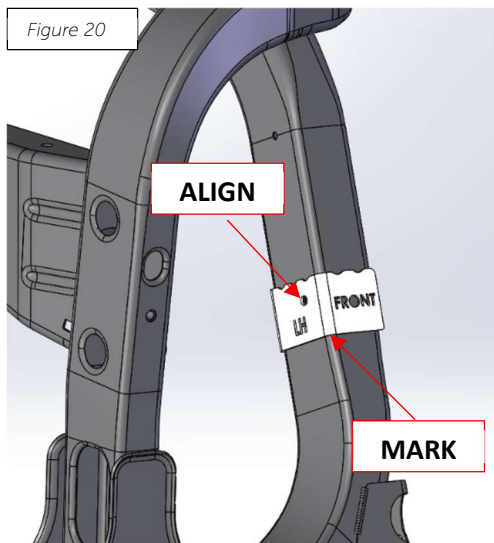
Figure 19



IV. FRONT-END STRUCTURE MODULE (FESM) CUTTING

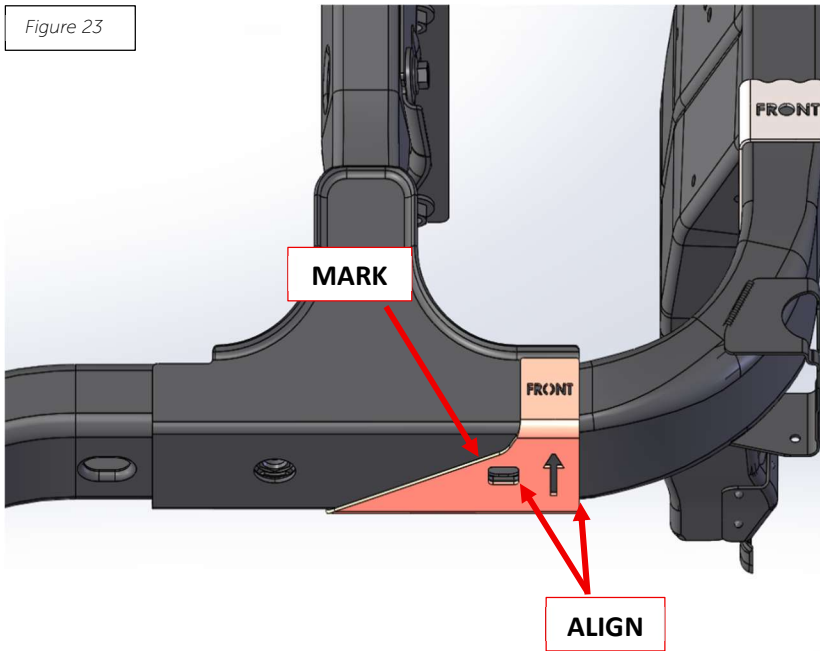
1. UPPER FESM MARKING

- Begin with left hand side – **Do not cut vehicle until all stencil marks are in place**
- Remove wire harness push clip on inboard side of FESM
- Using Metal trim guide provided (FD5F1046AA), align hole in bracket with hole from harness clip. Ensure that face marked "FRONT" is facing forward. See *Figure 20*
- Mark lower flat edge around the three sides with a marker. You may flip the trim guide to mark the fourth side.
- Clamp the trim guide in place for next step.
- Measure from FESM bracket to bottom of trim guide. Place the right hand FESM trim guide (FD5F1045AA) at the same distance from bracket to ensure both trims are symmetrical. See *Figure 21*
- Mark lower flat edge of right hand trim guide around FESM



2. LOWER FESM MARKING

- Begin with left hand side – **Do not cut vehicle until all stencil marks are in place**
- Place Trim Guide (FD5F1044AA) on vehicle. Ensure Trim Guide marked LH is on correct side of vehicle. Ensure arrow marked on Trim Guide is facing forward in vehicle. *See Figure 23*
- Align square hole on bottom side of Trim Guide to square hole on FESM.
- Mark on edge shown below. Mark all three faces of FESM.
 - Rear of Trim Guide, mark around square nut. *See Figure 24*
- Repeat for right hand side of FESM using RH Trim Guide (FD5F1047AA)



3. FESM TRIM

NOTE: ENSURE PROPER PPE WORN WHILE TRIMMING/DRILLING METAL. EYEGLASSES, P100 FILTERED FACIAL MASK, GLOVES.

- Once FESM has been marked, remove all trim guides.
- Using a Body Saw and/or Cut-Off Disc, cut along stencil lines.
- Remove and discard cut pieces.
- Debur all edges and apply rust-inhibitor to trimmed areas or any exposed metal.
- See figures on next sheet for cut FESM.



Figure 25

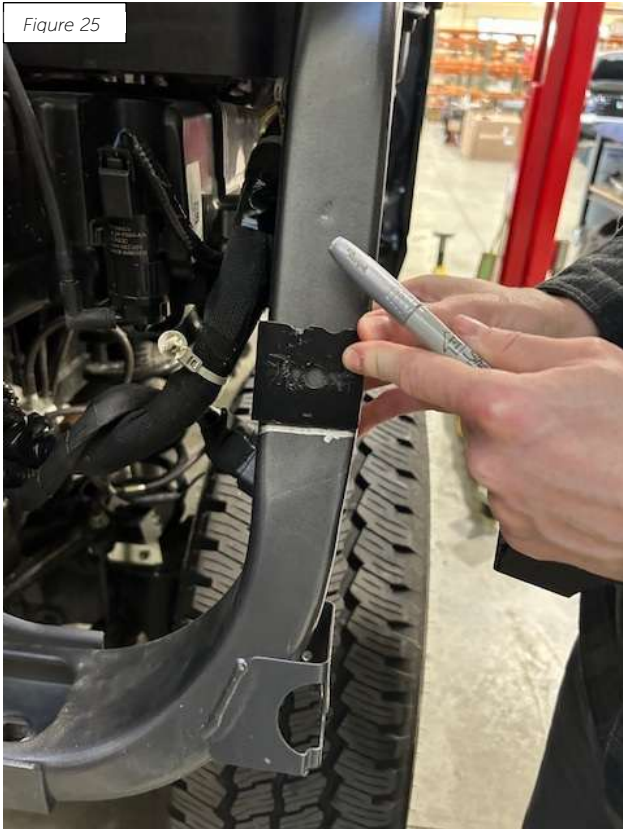


Figure 26

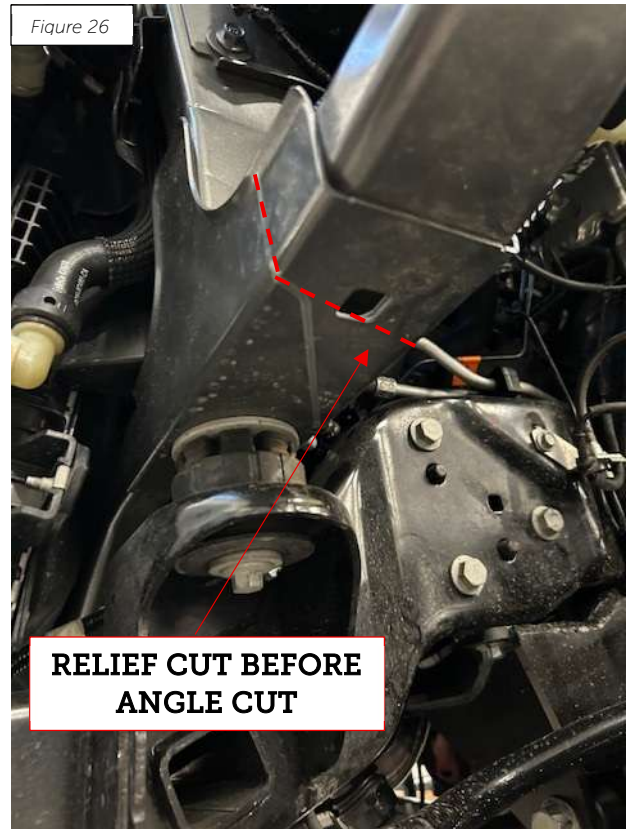


Figure 27



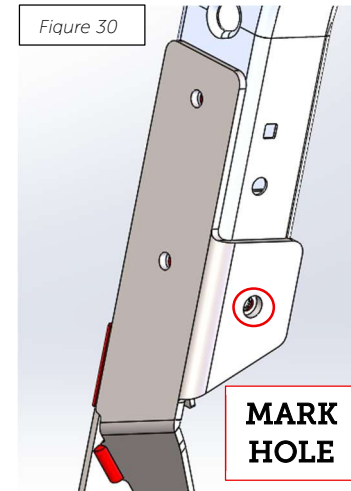
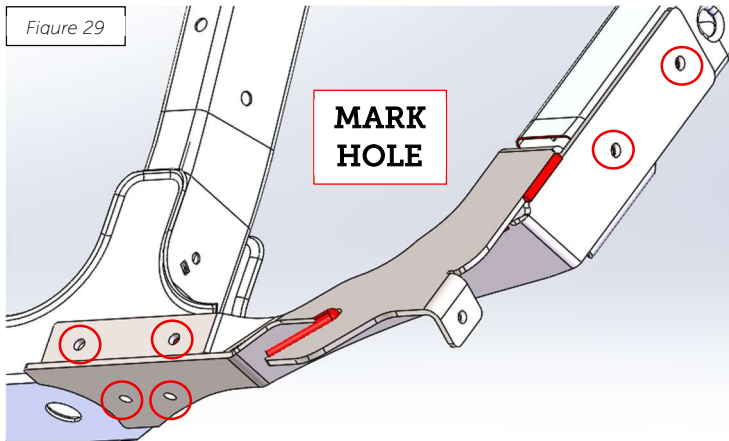
Figure 28



V. FESM INSTALLATION

1. PREPARE COMPONENTS

- a. Using Hardware Pack 'A' locate the following:
 - i. QTY 14: M8 Bolts – B-11519389
 - ii. QTY 8: M8 Flanged Nuts – B-11546377
- b. Begin with left hand side. Place FESM Bracket (FD5F0101AA) on vehicle.
- c. Mark hole locations onto vehicle structure.
- d. Repeat Process on right hand side.



2. FESM BRACKET INSTALLATION

NOTE: ENSURE PROPER PPE WORN WHILE TRIMMING/DRILLING METAL. EYEGLASSES, P100 FILTERED FACIAL MASK, GLOVES.

- a. Remove FESM Bracket and drill 11/32" holes in marked locations. Quantity of 7 holes per side. Refer to images below.
- b. Deburr all edges and apply rust-inhibitor to trimmed areas or any exposed metal.
- c. Before FESM Bracket is installed, Nut Plate Bracket (FD5F0103AA) flag is to be installed through slot opening on FESM bracket. *See Figure 31*
- d. Install FESM Bracket and Nut Plate Bracket onto vehicle.
 - i. On upper area of FESM Bracket, install three M8 fasteners through FESM Bracket into Nut Plate Bracket. It may help to enlarge holes to 1/2" for ease of assembly
 - ii. Remove X-mas tree fastener if interfering with Nut Plate, this fastener is no longer needed. *See Figure 32*
- e. On lower area of FESM Bracket, install four M8 Fasteners through FESM Bracket into 4 Flanged Nuts on opposing side.
- f. Torque all M8 Fasteners to 17 ft-lb.
- g. Repeat Process on right hand side.

Figure 31

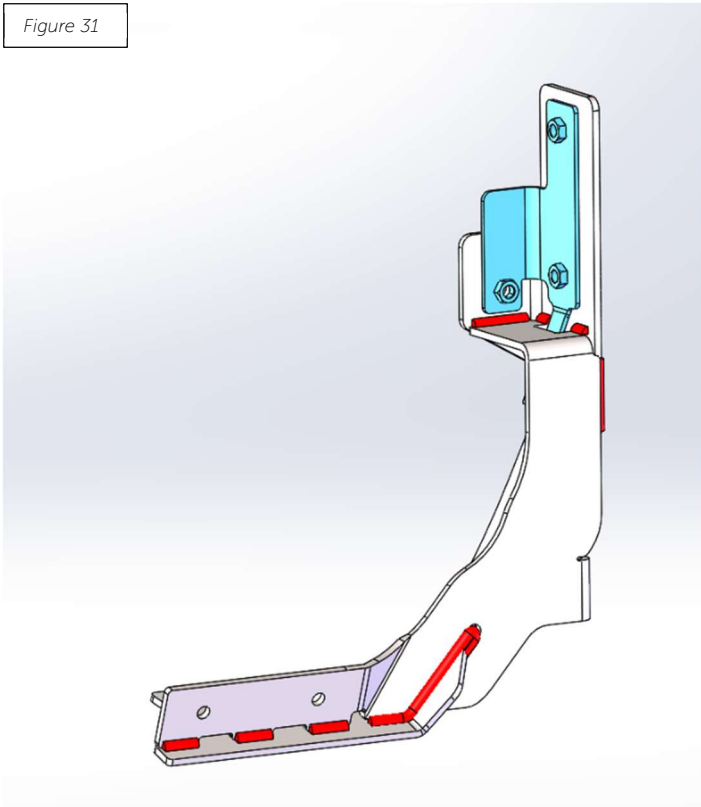


Figure 32

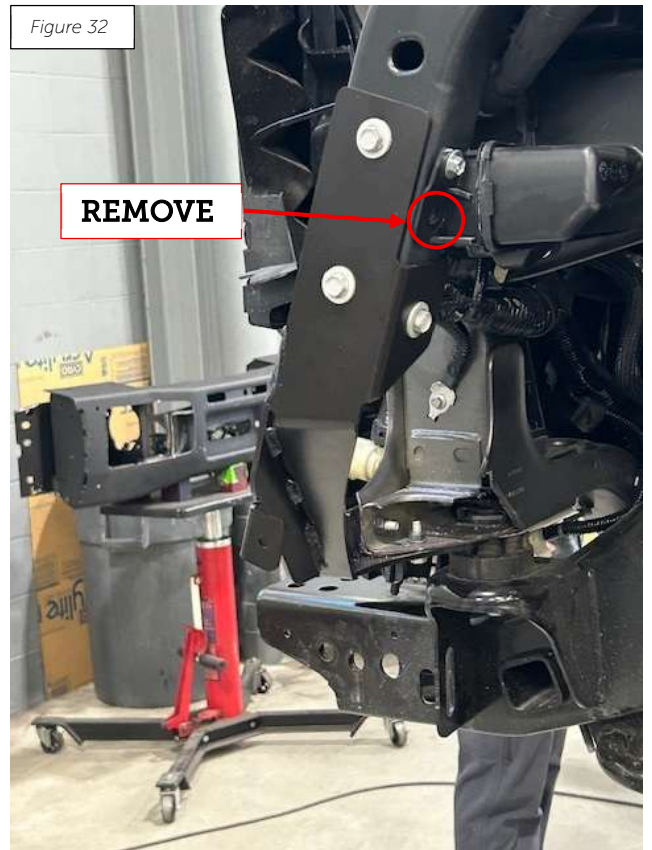


Figure 33

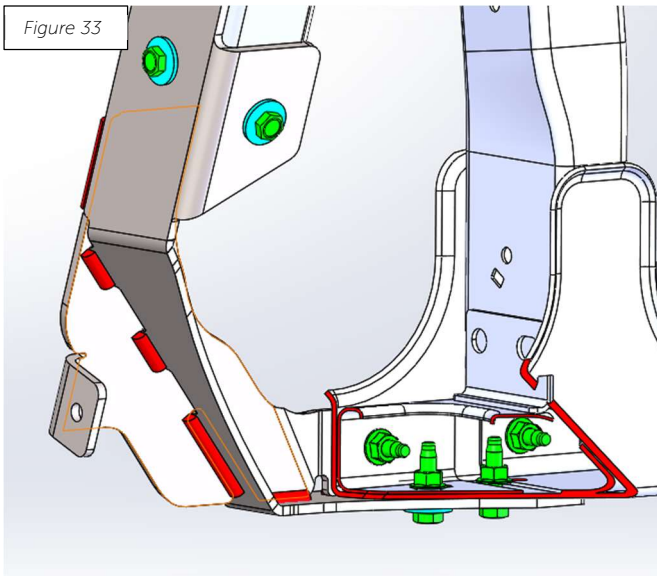
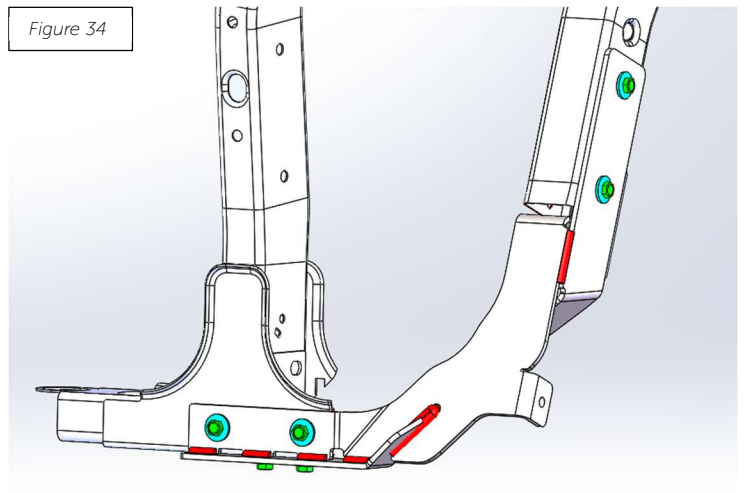


Figure 34



VI. PATCH PANEL INSTALLATION

1. PATCH PANEL MARKING

- Begin with left hand side – Do not cut vehicle until all stencil marks are in place
- Locate plastic trim guides shown below (FD5F1040/41/42/43AA), align inner and outer plastic trim guides to corner of body.
- Clamp trim guides into place on the lower vertical flange of vehicle.
- Mark edge around the bodyside with a marker.
- Repeat on right hand side

2. PATCH PANEL CUTTING

NOTE: ENSURE PROPER PPE WORN WHILE TRIMMING/DRILLING METAL. EYEGLASSES, P100 FILTERED FACIAL MASK, GLOVES.

- Remove trim guides
- Using a cut off disc, cut around the marking. Ensure that the lower fastener and U-nut shown below is not cut or damaged during this process.
- Remove and dispose of cut piece
- Using Patch Panel (FD5F1016/17AA), test fit on vehicle to ensure proper fitment. Trim any additional material necessary for part fit-up.
- Debur all edges and apply rust-inhibitor to trimmed areas or any exposed metal.

Figure 35

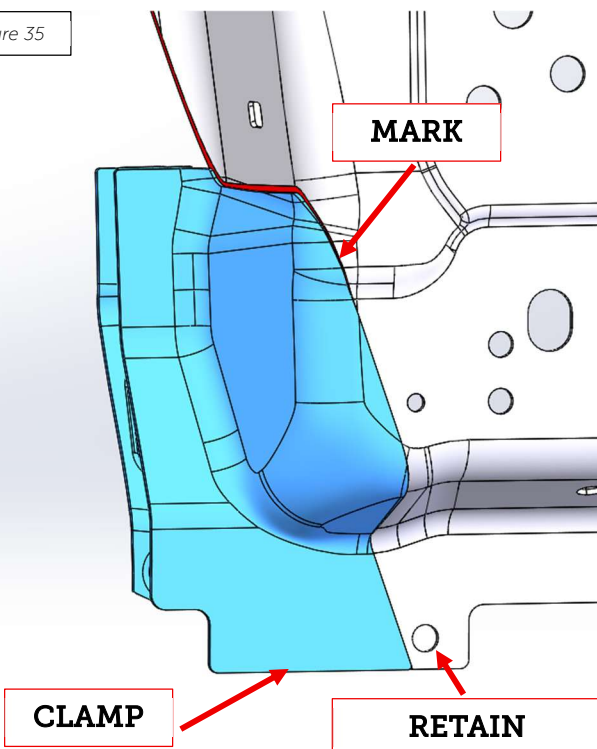


Figure 36

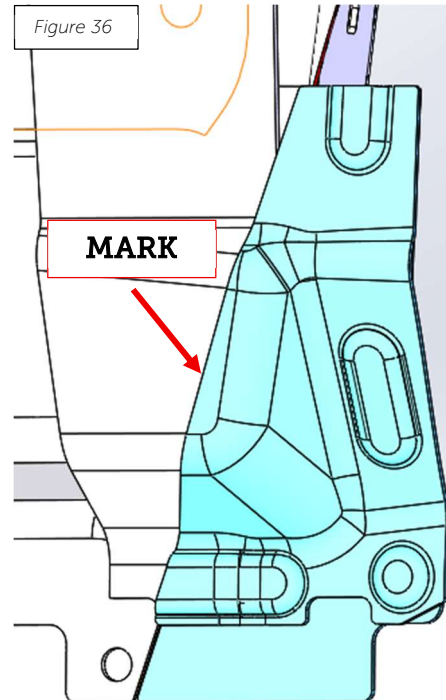


Figure 37



Figure 38



Figure 39



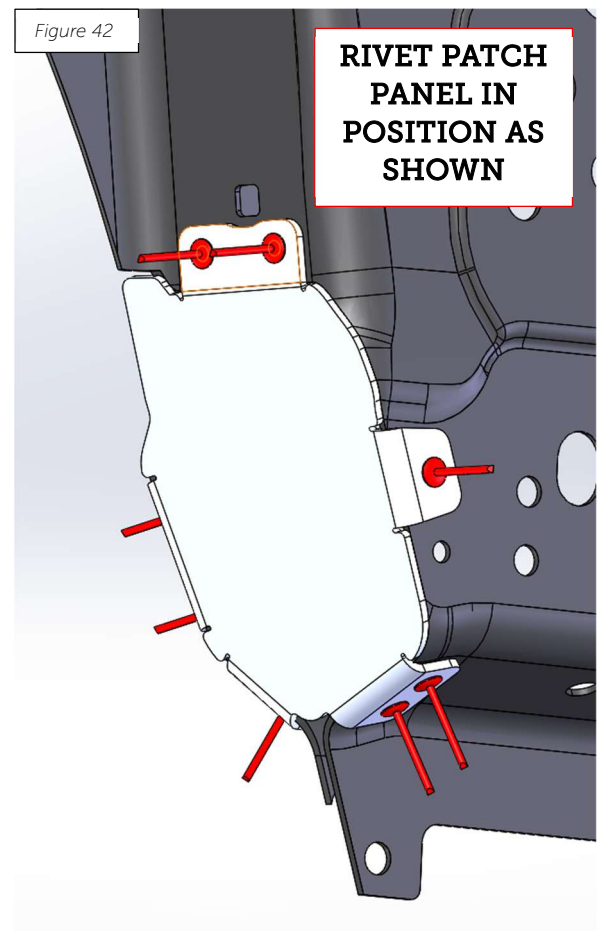
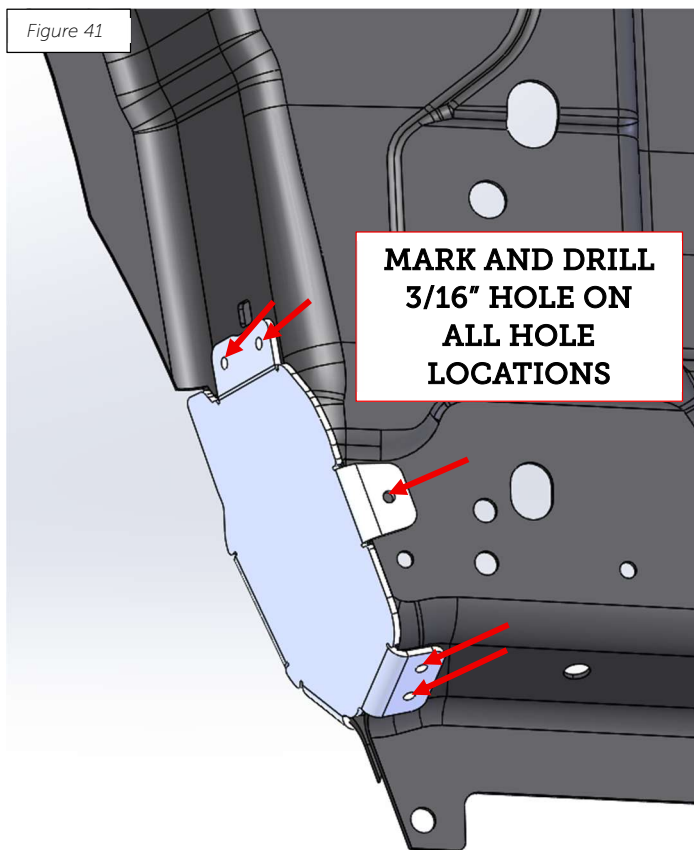
Figure 40



3. PATCH PANEL INSTALLATION

NOTE: ENSURE PROPER PPE WORN WHILE TRIMMING/DRILLING METAL. EYEGLASSES, P100 FILTERED FACIAL MASK, GLOVES.

- a. Using Hardware Pack 'B' locate the following:
 - i. QTY 16: 3/16" Aluminum Rivets (AEV97023AA)
- b. Fit Patch Panel (FD5F1016/17AA) on vehicle.
 - i. Trim any excess pinch weld or sheet metal so Patch Panel sits flush.
- c. Using patch panel as template, drill 3/16" holes at each hole location.
 - i. Install AEV97023AA rivet after each drill using rust inhibitor
 - ii. Do not move to next drill location until rivet is installed to prevent movement
- d. Rivet patch panel to vehicle.
- e. Repeat on opposite hand side





4. PINCH WELD CLEARANCE

NOTE: ENSURE PROPER PPE WORN WHILE TRIMMING/DRILLING METAL. EYEGLASSES, P100 FILTERED FACIAL MASK, GLOVES.

- Starting on left hand side, measure **3 inches** from top of patch panel and mark a horizontal line on pinch weld seam. *See Figure 43*
- Mark 3 other equally spaced horizontal lines between the bottom of pinch weld and the upper horizontal line.
- Using a cut-off disc, make 4 horizontal cuts into pinch weld. *See Figure 44*
- Using a mallet, bend 4 pinch weld tabs **inboard of vehicle** until relatively flat. Cut internal liner necessary. *See Figure 45*
- Debur all edges and apply rust-inhibitor to trimmed areas or any exposed metal.
- Repeat on right hand side.

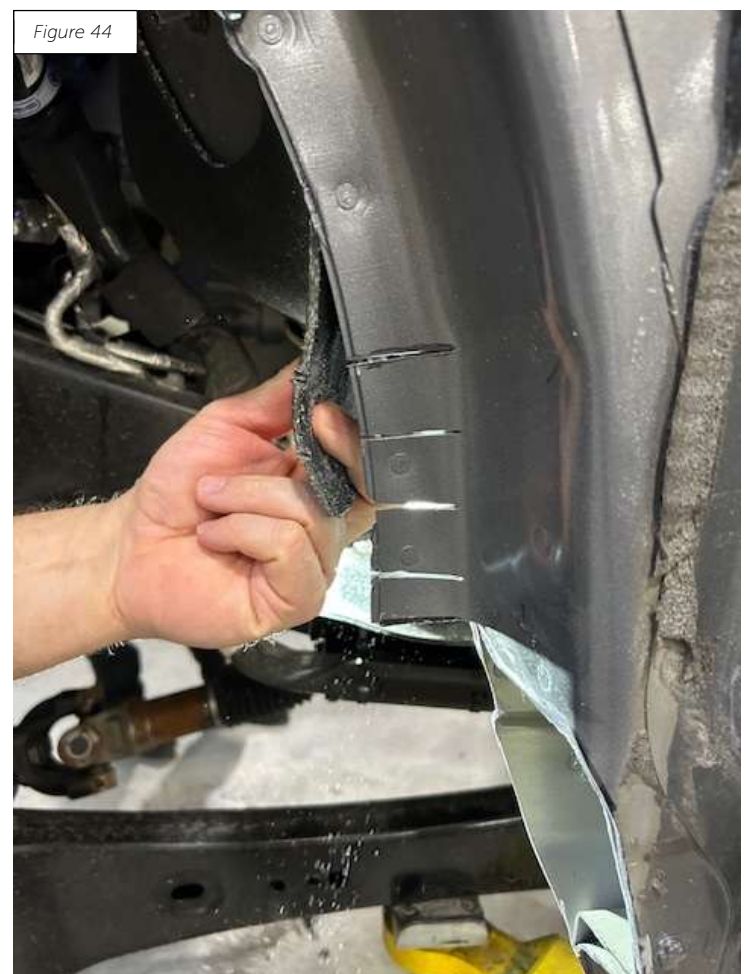
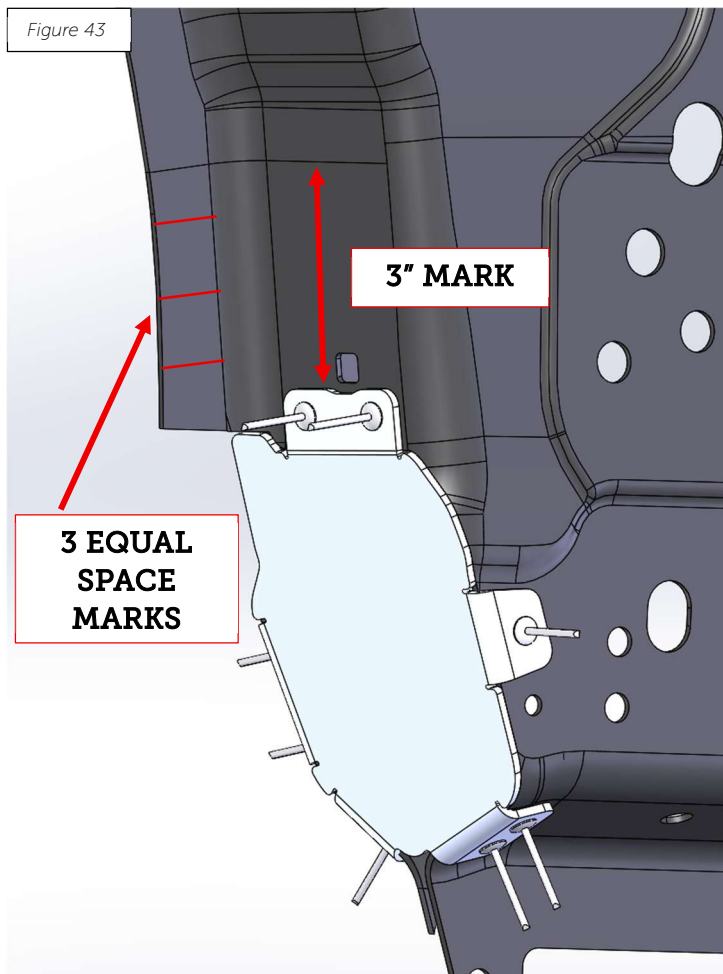




Figure 45



Figure 46



5. FINISHING

- a. Using masking tape, section off area around the patch panel and pinch weld.
- b. Apply seam sealer around patch panel and pinch weld. *See Figure 46*
 - i. Using a brush, smooth out seam sealer for professional appearance.
- c. Spray over with liberal amount of automotive underbody paint. *See Figure 46*
- d. Inside rocker guard, spray liberal amount of cavity wax to coat inside area trimmed.

PRO TIP: AEV RECOMMENDS NORTON RSG PREMIUM RUBBERIZED UNDERCOATING 91029 & 3M 08852 CAVITY WAX PLUS & SEM29392 BLACK SEAM SEALER

VII. FENDER REINSTALLATION

1. FENDER PREPARATION

- a. With fender off the vehicle, using a utility blade, remove excess body adhesive from both vehicle and fender support structure.
- b. Locate all previously uninstalled fender fasteners to reassemble.

2. FENDER INSTALLATION

- a. Reinstall the fender to the vehicle with previously removed fasteners. Do not fully tighten fasteners at this time. Some fasteners will no longer be needed as they have been removed during the FESM structure and patch panel installation. See Figure 49
- b. Slowly close and open both the hood and doors of vehicle to ensure proper body gaps are achieved. Once this has been completed the fasteners can be fully tightened.

Figure 47



Figure 48

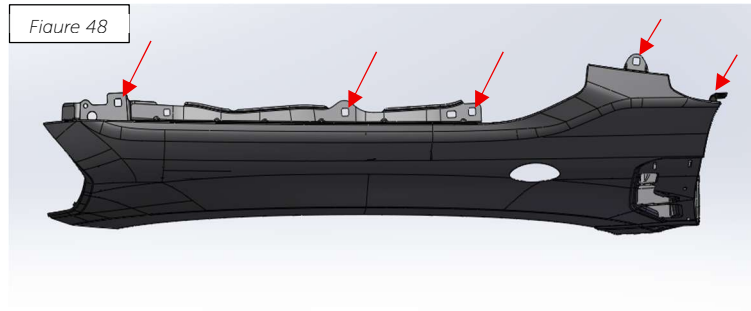
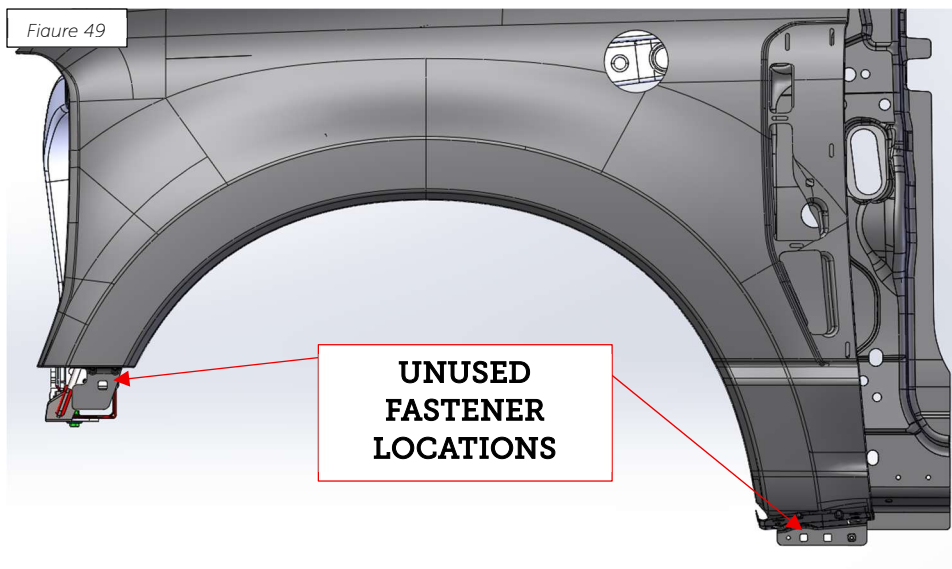


Figure 49



VIII. FENDER CUT MARKING

NOTE: THESE NEXT STEPS REQUIRE MULTIPLE PEOPLE TO ENSURE FENDER FLARE IS LOCATED CORRECTLY AND TRIM MARKING IS ACCURATE. AEV RECOMMENDS THREE PEOPLE FOR ALIGNMENT & MARKING SECTION.

1. FENDER ALIGNMENT

- a. Locate the fender flares (FD5F1000/01AA) and remove the wood packaging support.
- b. The flare can now be placed on fender and aligned on vehicle.
 - i. For Vertical alignment, align the rear section of the flare to the body line feature of the vehicle. Align the front of the flare at the top of the small radius of the fender. See *Figures 50 & 51*.
 - ii. For fore/aft alignment, there should be equal spacing between the fender badge/flare and the headlamp cutout/flare. See *Figures 52 & 53*

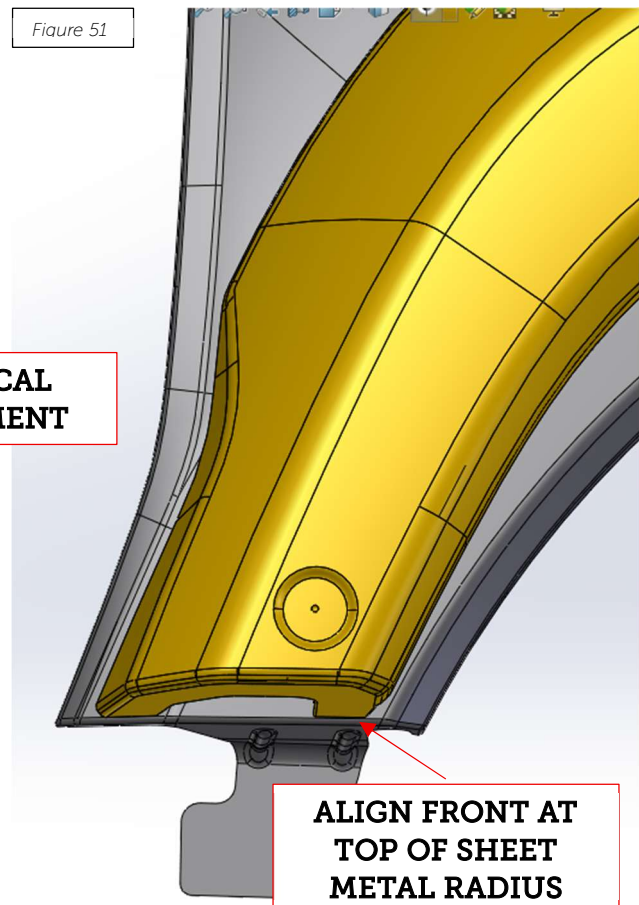
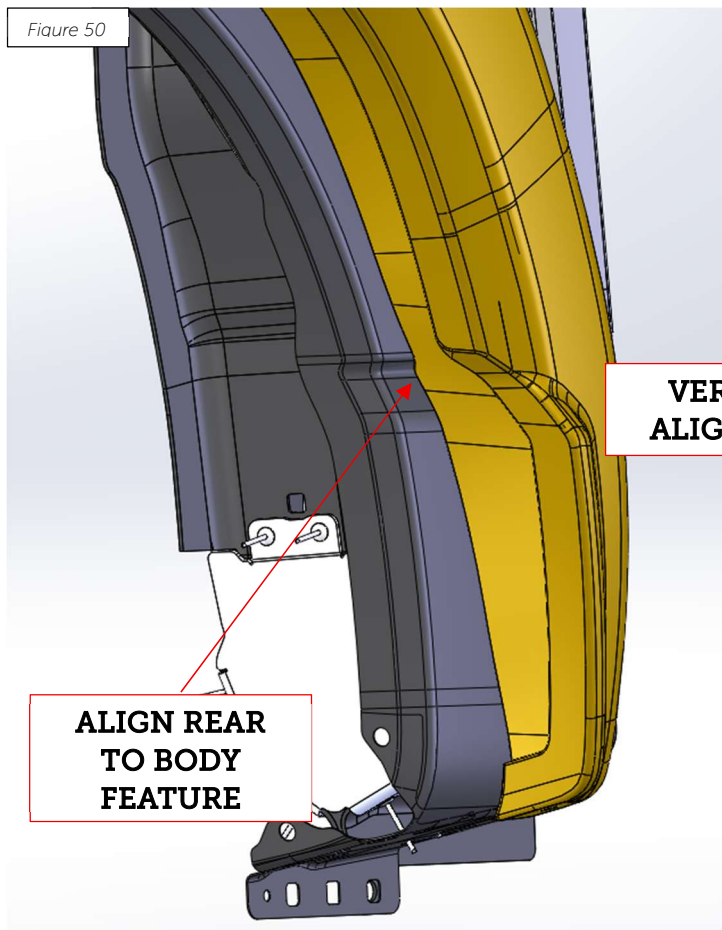


Figure 52

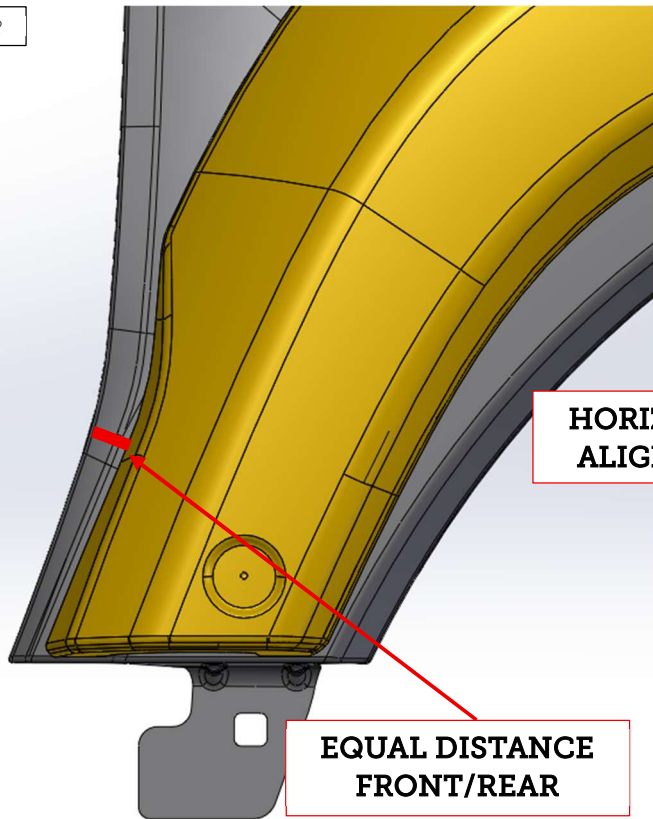
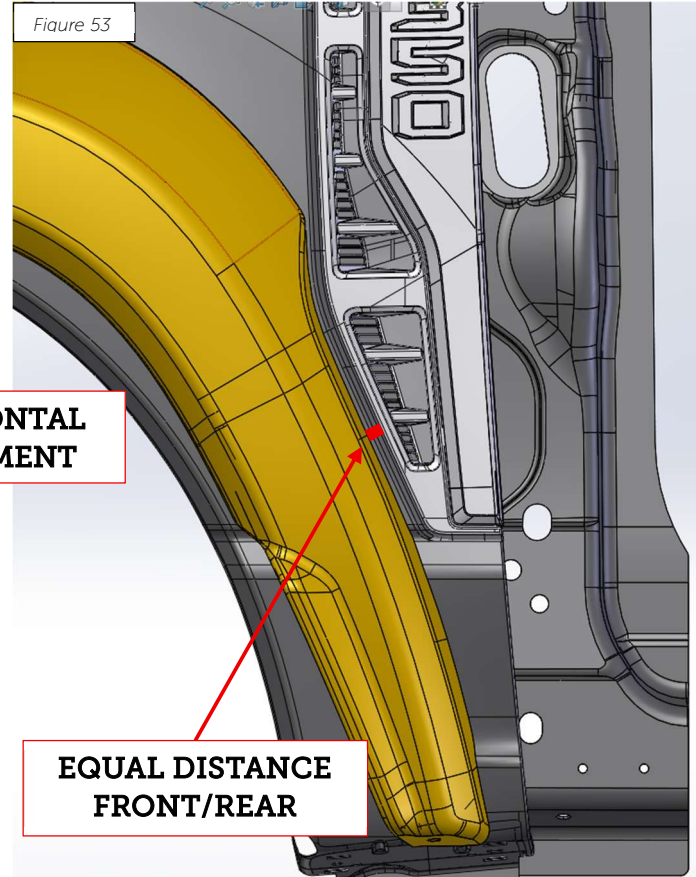


Figure 53



2. FENDER MARKING

- Once flare is aligned to vehicle, you may now mark the fender for trimming. **Do not cut vehicle until all trim marks are in place.**
- Start at the front of the flare. Using a permanent marker, trace the flare opening around the inside area of the fender to be trimmed. Stop your mark at the rear notch shown in image. The flare can now be removed from the vehicle and set aside for later steps. See Figure 54.
- To finish the fender trim marking, extend the marking through the rest of the fender and align $\frac{1}{2}$ " offset from previous cut body structure from patch panel. See Figure 55.
- Using $\frac{1}{2}$ " automotive masking tape, start at the front of the fender and place the tape on the outside of the line marked previously. See Figure 56.

NOTE: THE OUTER SIDE OF THE MASKING TAPE (AWAY FROM WHEEL) WILL BE THE LINE THAT WILL BE TRIMMED FROM VEHICLE.



Figure 54

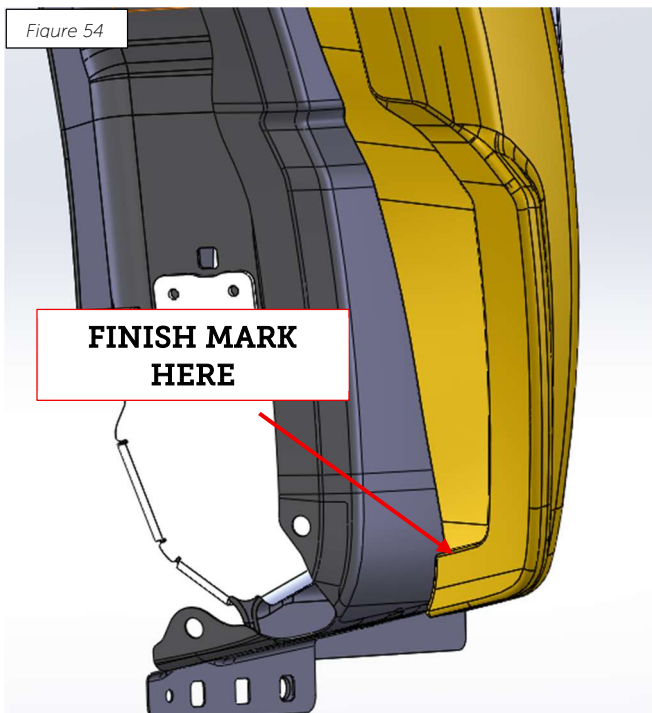


Figure 55

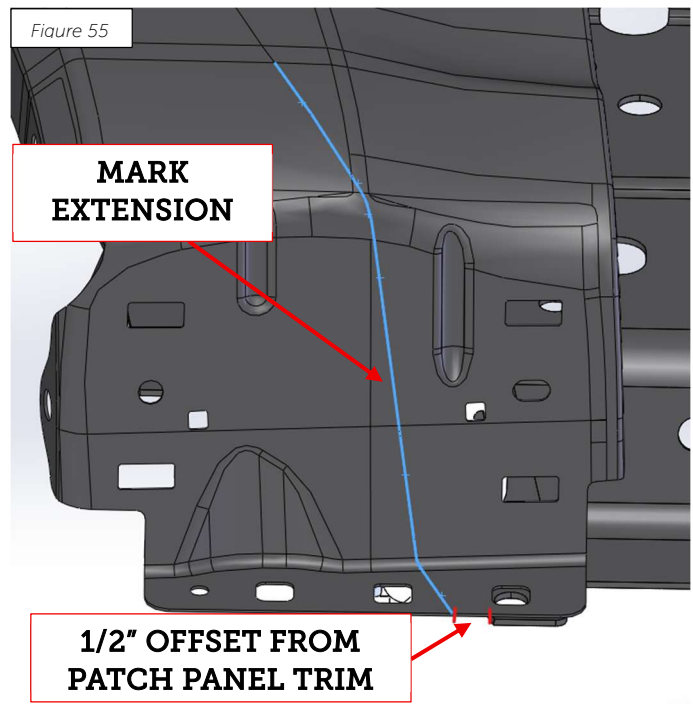
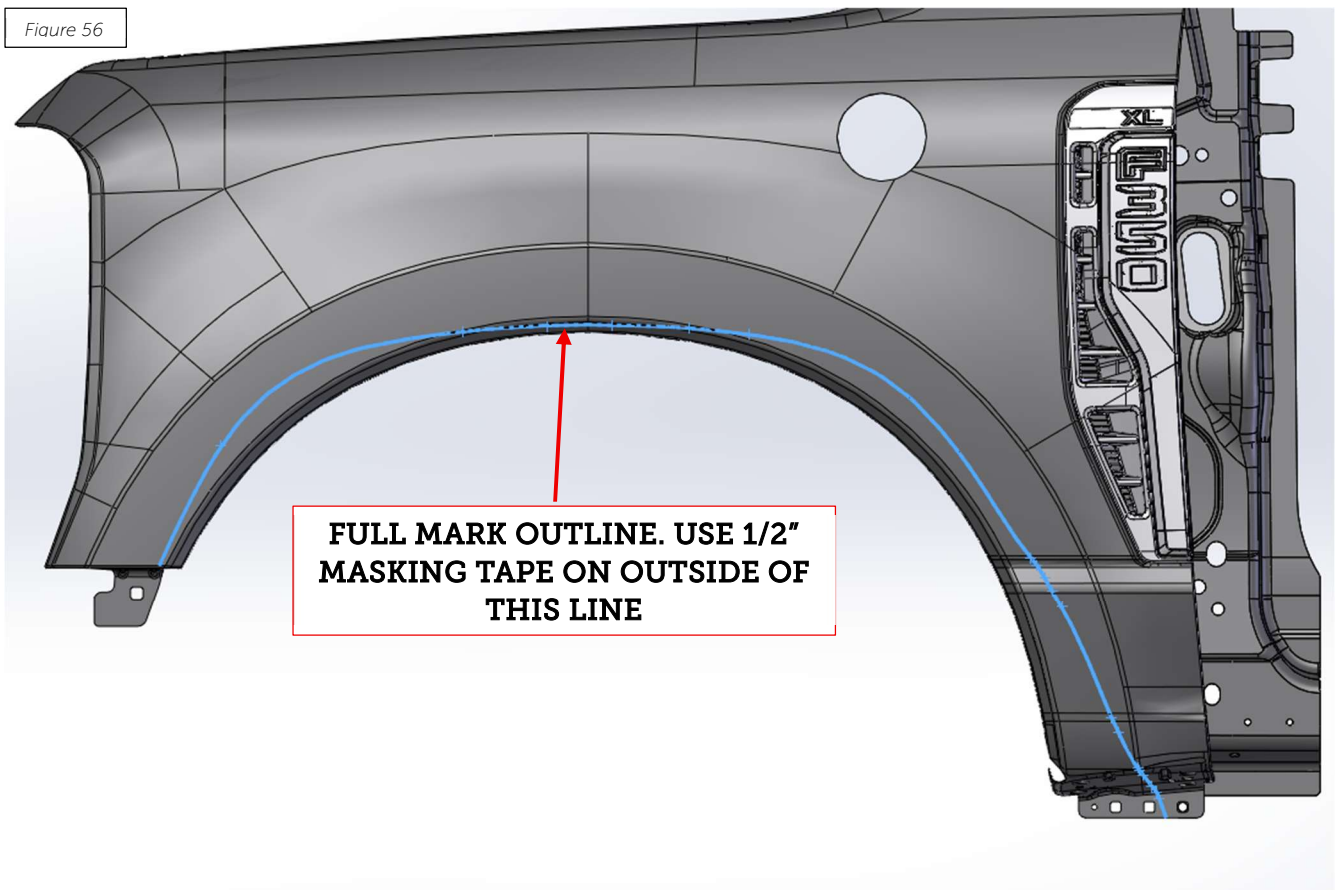
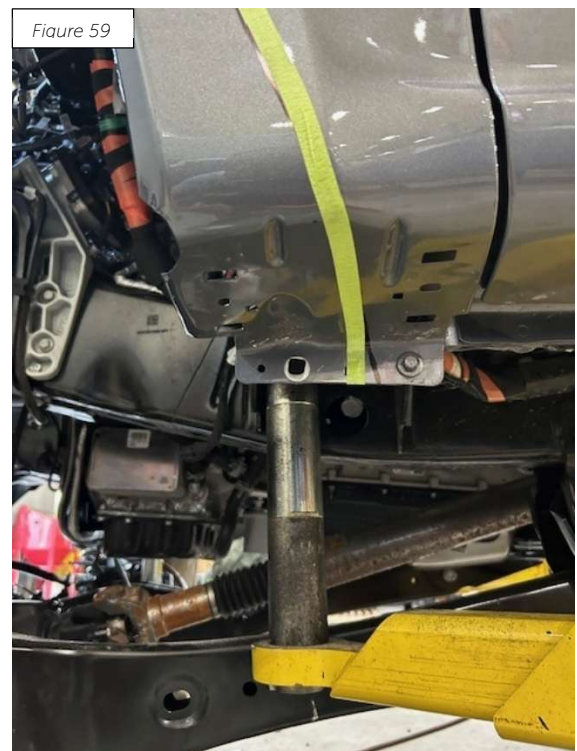
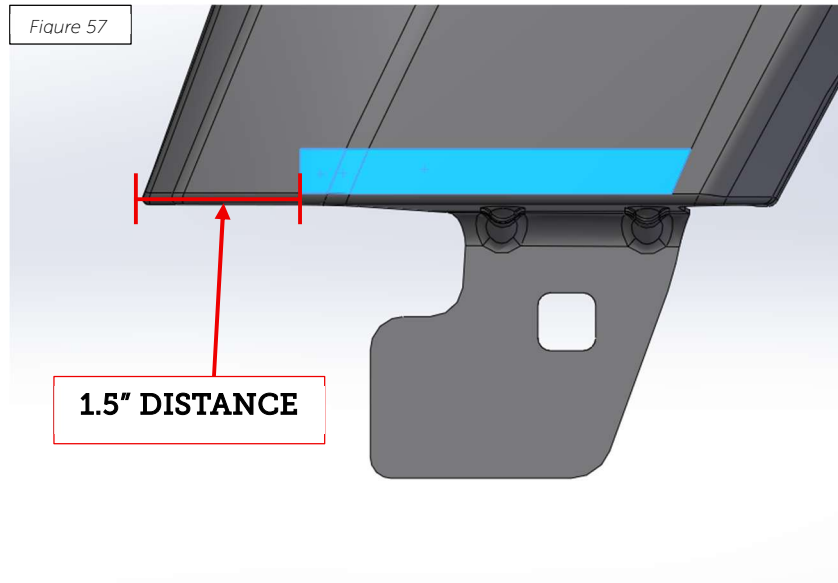


Figure 56



3. FENDER MARKING – FLARE BRACKET CLEARANCE

- The front of the fender will need to be clearance for a future bracket. See steps below for trim guide.
- Measure 1.5" from the front point of the fender and mark with a permanent marker.
- Place a strip of ½" masking tape from marked location along the top of the small radius of the sheet metal. Extend this strip to overlap with existing masking tape.



IX. FENDER HOLE MARKING

1. FLARE PREPARATION

- Position flares on a table to view the threaded inserts on backside.
- Locate the drill transfer templates (ARMZ0110AA). Remove the square backing and place on each insert aligning insert hole with hole on transfer template.
- Place a template on the small dimple in backside of part, this is for the wire harness.
- When placing templates, ensure the long "tail" of the template is facing into the flare opening. *See Figure 62*
PRO TIP: REDUCE TACKINESS OF FLARE-SIDE ADHESIVE WITH FINGER TO AID STICKING ON FENDER SHEET METAL.
- Once all templates have been placed, **fold** the "tail" outward of flare. The flare is now prepped to transfer templates onto fender.

2. DRILL TEMPLATE TRANSFER

- Reposition the flare onto the fender of the vehicle using the automotive masking tape from the previous step for alignment.
- Once the flare is re-aligned to the fender, gently push the flare maintaining pressure and pull the "tails". Repeat this process for all transfer templates.
- Once complete, the flare may be stuck to the fender. Gently peel the flare off the fender, ensuring transfer templates adhere to fender. If some of the transfer templates stay on the flare, add a secondary transfer template on top of the original and repeat the process until all templates are on fender.
- The flare can now be placed aside for later steps.

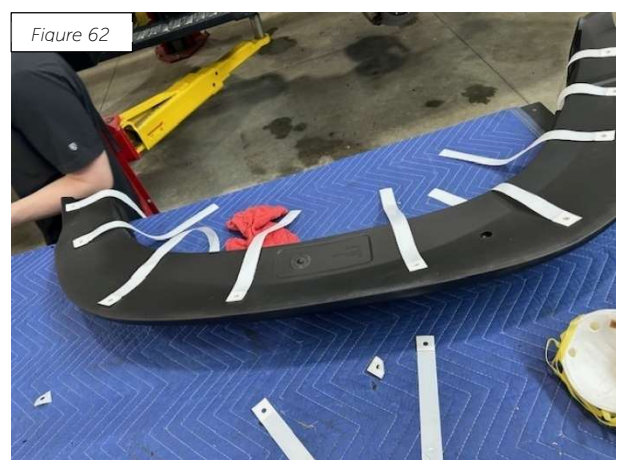




Figure 63



Figure 64



Figure 65



Figure 66





X. FENDER CUTTING

NOTE: ENSURE PROPER PPE WORN WHILE TRIMMING/DRILLING METAL. EYEGLASSES, P100 FILTERED FACIAL MASK, GLOVES.

1. HOLE DRILLING – **DO NOT CUT VEHICLE UNTIL ALL TRIM MARKS ARE IN PLACE.**
 - a. Using a permanent marker, mark each of the holes in the center of the drill transfer templates.
 - b. Carefully remove drill transfer templates. It is okay if some residue or material is remaining on fender. This can be cleaned later.
 - c. Once marked, center punch and drill a 1/8" pilot hole in each marking.
 - d. Once all pilot holes are drilled, use a 3/4" step bit and drill each hole to 3/4".
 - e. Debur all edges. You may clean any excess transfer template material if needed at this time.
 - f. Apply rust-inhibitor to trimmed areas or any exposed metal.
2. FENDER CUTTING
 - a. Clamp front flange of fender to installed FESM bracket to reduce vibration and movement of the fender while trimming.
 - b. Using a body saw, cut fender along the outside of the tape line. **NOTE: ENSURE THERE IS ADEQUATE CLEARANCE FROM ANY VEHICLE COMPONENTS ON THE BACK SIDE OF FENDER.**
 - c. At the front section of the fender trim, there are multiple layers of material to cut through. Please ensure that all layers are cut and removed. *See Figure 69*
 - i. Fender has vertical tab for headlamp and FESM attachment. These are to be removed, cut flush with front fender marking in area. *See Figure 70*
 - d. At the Rear section of the fender trim, ensure that you do not cut the inner plastic structure. This can be pushed rearward in vehicle to gain appropriate clearance for cutting. Fender will be cut on the front side of the inner plastic structure.
 - e. Debur all edges and apply rust-inhibitor to trimmed areas or any exposed metal.

Figure 67



Figure 68

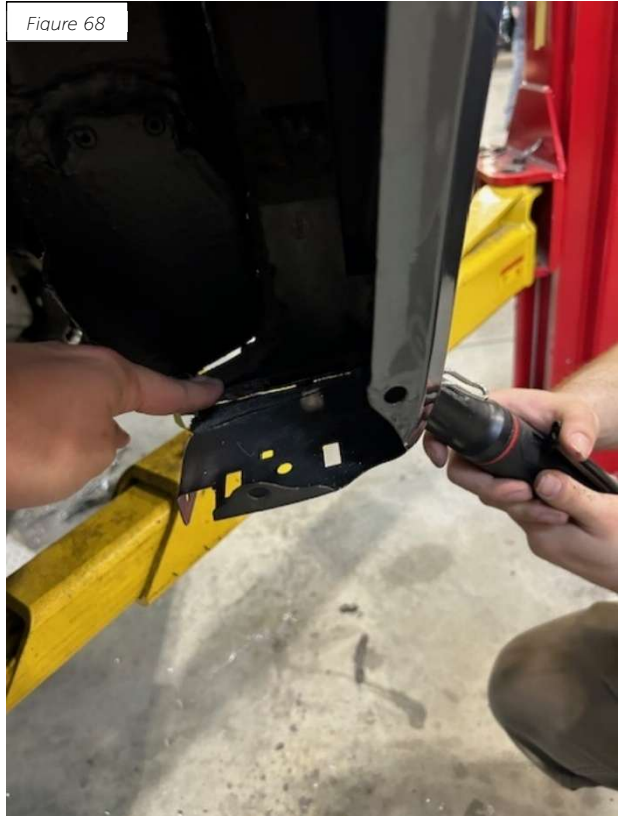


Figure 69



Figure 70

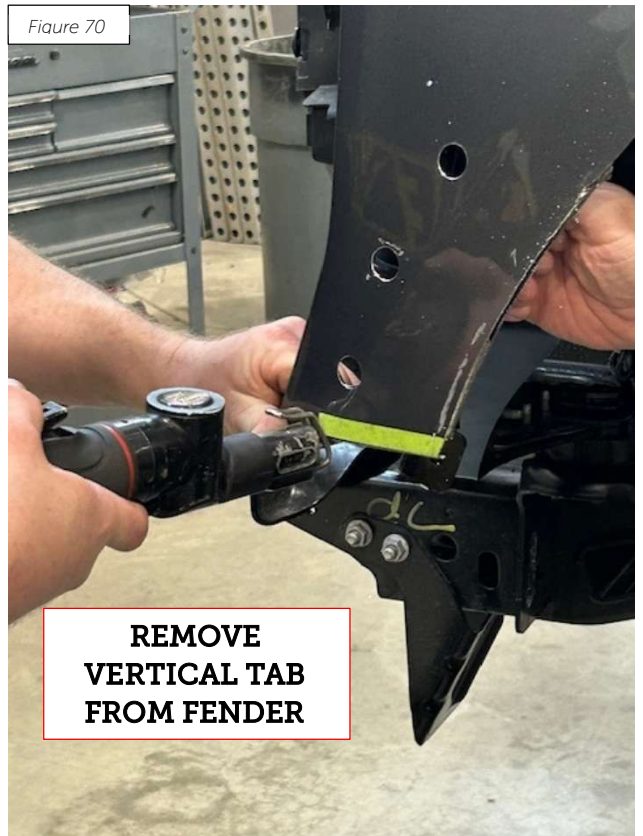


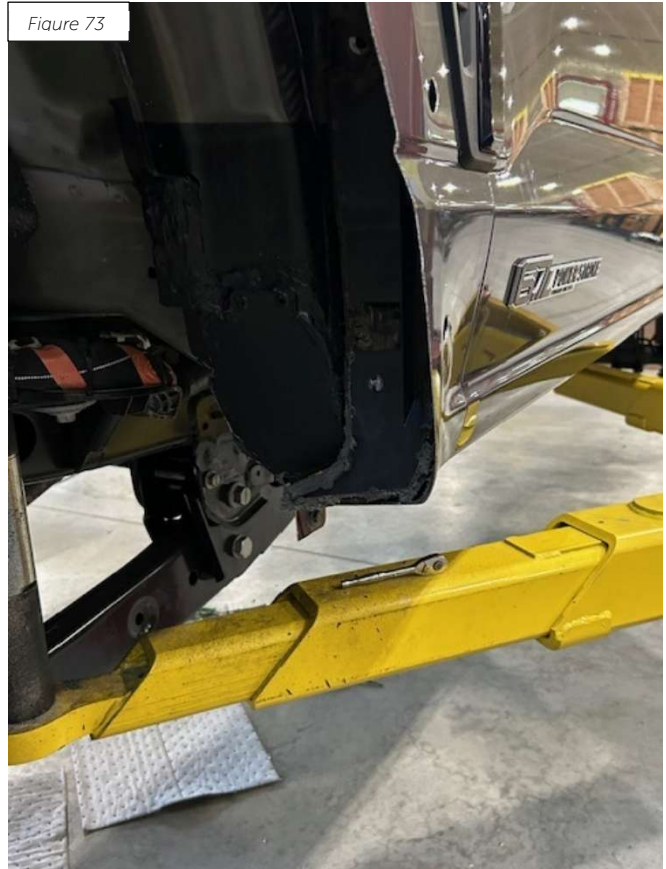
Figure 71



Figure 72



Figure 73



XI. FACTORY WHEEL LINER TRIM

1. WHEEL LINER MARKING – **DO NOT CUT UNTIL ALL MARKINGS PRESENT**
 - a. With the Factory Wheel Liners removed, mark a line that removes outward flange of wheel liner.
 - b. At rear section, mark 1" from outer edge and connect a straight line between all points. See *Figure 74 & 75*
 - c. At front section, finish mark line through flanged section. Retain hole. See *Figures 76*
 - d. Connect rear and front following highest point of flange's radius of factory wheel liner.
2. Wheel Liner Cutting
 - a. Once parts are properly marked, using tin snips cut through marking made in previous step. Discard trimmed section.





Figure 76



Figure 77



XII. FLARE INSTALLATION

1. SIDE MARKER LIGHT INSTALLATION

- a. Locate the Marker Light kit AEV91105AA. Two $\frac{3}{4}$ " holes will need to be drilled in the flare for the Marker Light.
- b. On the inside of the flare, there is a small molded-in dimple to locate the hole position. Drill this hole using a $\frac{3}{4}$ " step bit.
- c. On the outside of the flare, there is a small molded-in dimple to locate the hole position. Drill this hole using a $\frac{3}{4}$ " step bit.
- d. Remove any excess plastic from drilled holes.
- e. Install the rubber grommet out the outer hole.
- f. Using one of the tie-straps provided, tape one end to one of the connectors of the harness and fish the wire through the two drilled holes.
- g. Press the Marker Light in place.



Figure 78



Figure 79



Figure 80

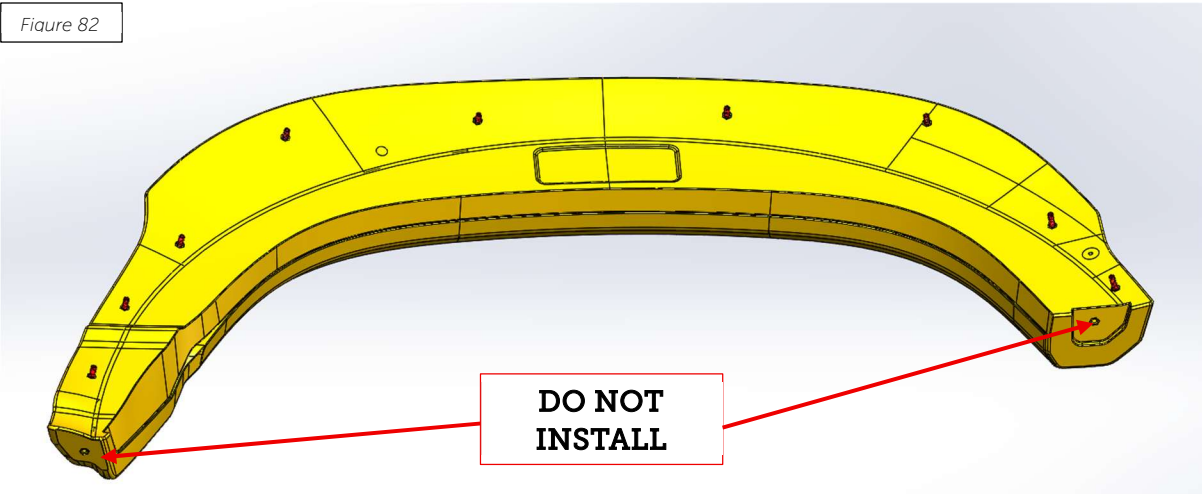


Figure 81

2. STUD INSTALLATION

- a. Using Hardware Pack 'C', locate the following
 - i. QTY 18: M6x1 studs (AEV91165AA)
- b. Using 3mm Allen Wrench, Install the M6 studs into the molded inserts of the flare as shown below. Apply anti-seize to all studs. Torque to 6 ft-lbs.
NOTE: DO NOT OVERTIGHTEN AS THIS WILL RISK FAILURE OF MOLDED INSERT
- c. Do not install inserts on the front and rear ends of the flare as shown below.

Figure 82



3. FLARE INSTALLATION

- a. You may now install the flare onto the vehicle.
- b. Using Hardware Pack 'C', Locate the following:
 - i. QTY 16: Aluminum Fender Washers (AEV98062AA)
 - ii. QTY 16: M6 Nuts (B-11546389)
- c. Hold the flare up to the fender and pass the Marker Light harness through the Marker Light hole drilled.
- d. Hand tighten the fender washers and nuts per side as shown. Do not fully torque at this time.

NOTE: THERE IS ONE STUD PER SIDE OF VEHICLE THAT WILL NOT RECEIVE A WASHER AND NUT AT THIS TIME. SEE IMAGES FOR DETAIL.

Figure 83

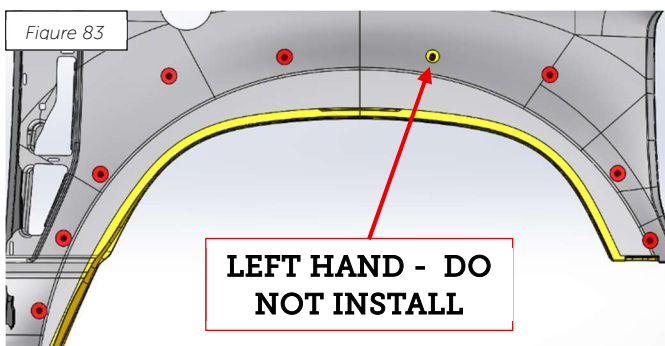
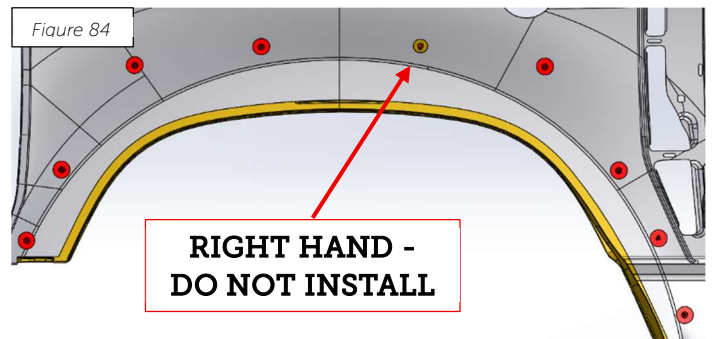


Figure 84





4. FRONT FLARE BRACKET INSTALLATION

- a. Locate the LH/RH front flare brackets (FD5F1018/19AA)
- b. Using Hardware Pack 'A' locate the following:
 - i. QTY 2: M6x1.0 Button Head Cap Screw (AEV91068AB)
 - ii. QTY 2: M6x1.0 Hex Cap Screw (AEV91017AA)
 - iii. QTY 2: M6x1.0 Nut (B-11546389)
 - iv. QTY 2: M6x18 Washer (AEV98027AA)
 - v. QTY 2: 1/4"x1" Washer (AEV98035AA)
- c. Assemble the bracket and fasteners as shown below. Do not fully torque fasteners at this time.

Figure 85

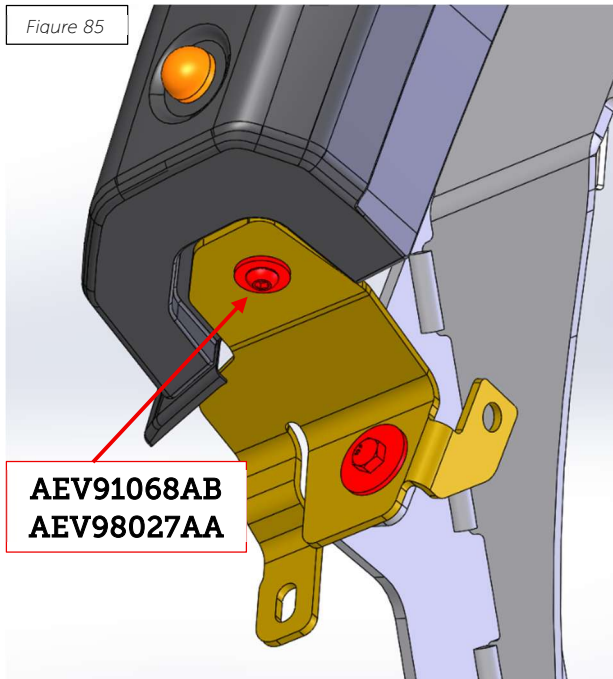


Figure 86

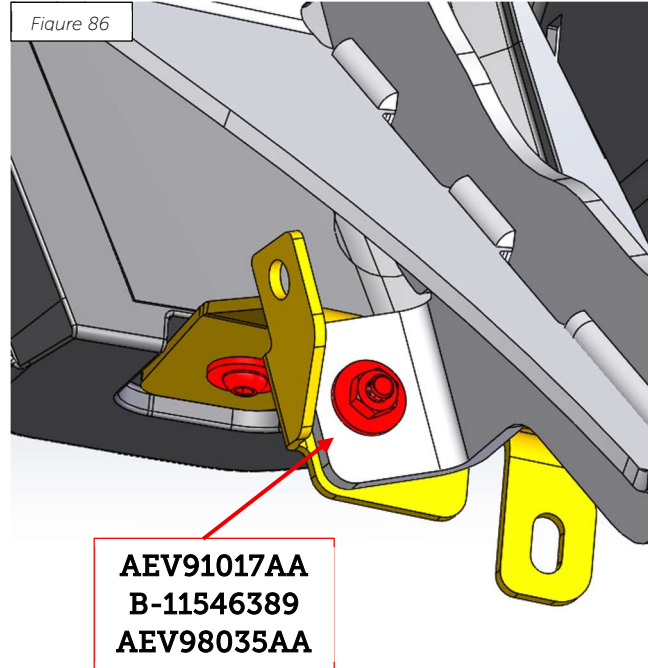


Figure 87



5. REAR FLARE BRACKET INSTALLATION

- a. Locate the LH/RH Rear Flare Bracket (FD5F1020/21AA)
- b. Using Hardware Pack 'B', locate the following:
 - i. QTY 4: M6x1.0 Button Head Cap Screw (AEV91068AB)
 - ii. QTY 4: M8x18 Nylon Washer (AEV98063AA)
 - iii. QTY 4: M6 Nylon Insulation Shoulder Washer (AEV98064AA)
 - iv. QTY 4: #10 Nylon Snap-in Nuts (AEV98065AA)
- c. Assemble the brackets and hand tighten fasteners. *See Figure 88.* See detailed views for further information. Ensure the correct shoulder spacer and nylon washers are used as to prevent hardware corrosion in this zone. Blue Locktite recommended for Rear Flare Bracket bolts. *See Figure 89*
NOTE: YOU WILL NEED TO OPEN THE DOOR FOR THIS STEP. IF VEHICLE IS EQUIPPED WITH AUTOMATIC SIDE STEPS, ENSURE THAT THERE IS ADEQUATE CLEARANCE TO HOIST BEFORE OPENING DOOR.
- d. Assemble the Press in Nuts (AEV98065AA) in the brackets. *See Figure 90*



6. FLARE INSTALLATION COMPLETE

- a. At this time, ensure that the flares are positioned correctly on vehicle and do not require any adjustments.
- b. All fasteners can be torqued at this time

7. FENDER ADHESIVE INSTALLATION

- At this time, the fender adhesive can be reapplied. Ensure body lines are matching throughout.
- Using (SEM 39357), reapply adhesive between the plastic fender support bracket and the body.

Figure 91



Figure 92



8. FENDER SUPPORT BRACKET INSTALLATION

- a. Locate the left hand Fender Support Bracket (FD5F1026AB)
NOTE: THESE WILL BE INSTALLED ON THE FLARE STUDS WITHOUT WASHER/NUT FROM CHAPTER XII FIGURE 83 & 84
- b. Using Hardware Pack 'A', locate the following:
 - i. QTY 4: SS 3/16" Rivets (AEV98069AA)
- c. Using Hardware Pack 'C', locate the following:
 - i. QTY 2: Washers (AEV98035AA)
 - ii. QTY 2: M6 x 1.0 nuts (B-11546389)
- d. Starting on the left hand side, install the bracket as shown. Torque to 6 ft-lb.
- e. Using a marker, mark the two holes from the bracket to the vehicle structure.
- f. With the bracket installed, match drill both holes using a 3/16" drill.
NOTE: ENSURE CLEARANCE IS MAINTAINED TO ANY SENSITIVE ELECTRONICS/WIRE HARNESSSES. AN EXTENDED DRILL BIT IS RECOMMENDED FOR THESE HOLES.
- g. Debur all edges and apply rust-inhibitor to trimmed areas or any exposed metal.
- h. Reinstall the bracket and install rivets in the two holes.
- i. Locate the right hand Fender Support Bracket (FD5F1027AA)
- j. Repeat process on right hand side.

Figure 93



Figure 94





Figure 95



Figure 96



XIII. HEADLAMP INSTALLATION

1. REINSTALL FACTORY HEADLAMP
 - a. Using hardware saved, re-install headlamp in original vehicle position
 - b. Front flare brackets (FD5F1018/19AA) will hold lower bolt of headlamp that was removed from fender cutting.

Figure 97



Figure 98



XIV. WIRING

1. UNRAVEL WIRE PROTECTION FROM ELECTRICAL CONNECTOR IN HEADLAMP
2. LOCATE CAVITY 1&8 ON LEFT HAND SIDE CONNECTOR
 - a. Green/Black and Green/Blue wires. *See Figure 99*
3. DISCONNECT BOTH FROM CAVITY
 - a. Remove cavity protector
4. CENTER SPLICE WHITE (GROUND) FROM HARNESS PACK ONTO CAVITY 1 (Green/Black)
 - a. Solder splice and wrap in protective sleeve. *See Figure 100*
5. CENTER SPLICE BLACK (POSITIVE) FROM HARNESS PACK ONTO CAVITY 8 (Green/Blue)
 - a. Solder splice and wrap in protective sleeve. *See Figure 101*
6. REWRAP HARNESS IN PROTECTIVE SLEEVE
 - a. Allowing newly spliced wires access to flare marker harness. *See Figure 102*
7. CUT AND SPLICE FLARE WIRE HARNESS TO PREFERRED LENGTH. *See Figure 103*
8. CONNECT WIRE HARNESSES TOGETHER. *See Figure 104*
9. REPEAT PROCCES ON PASSENGER SIDE.
 - a. Cavity 7&8 will be used
 - b. Light Brown splices with white and Green/Black splices with black.

Figure 99

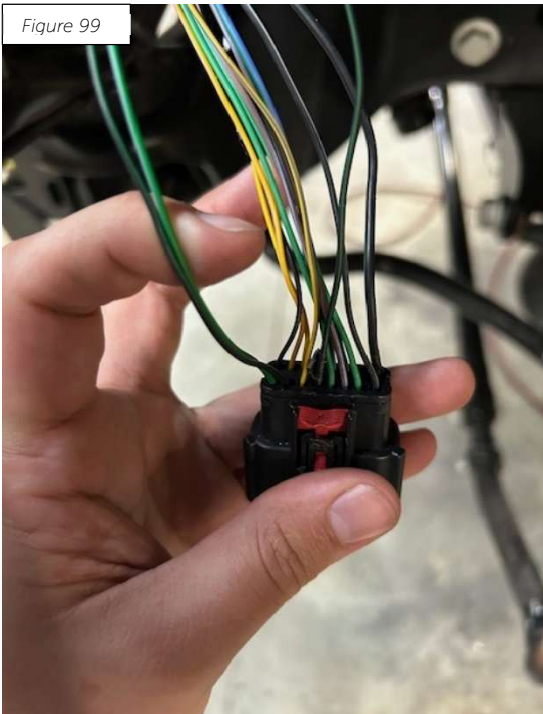


Figure 100

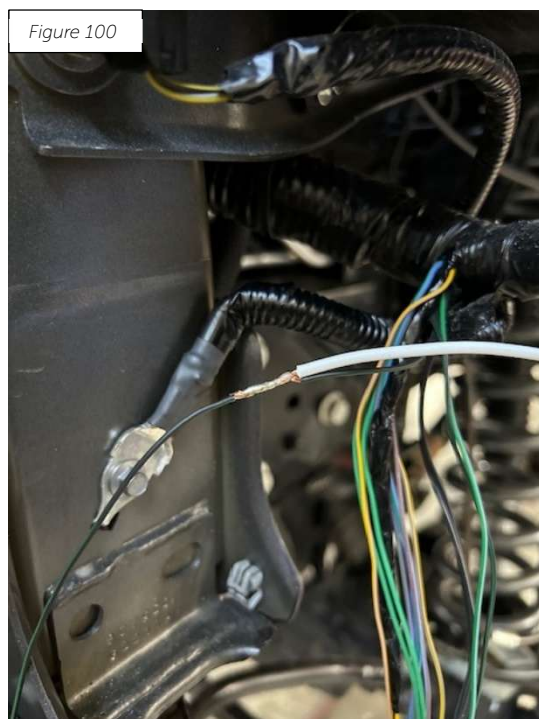


Figure 101

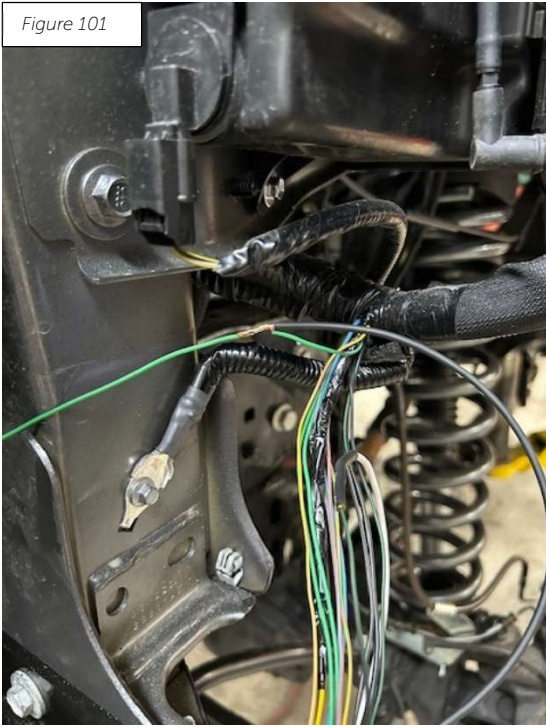


Figure 102

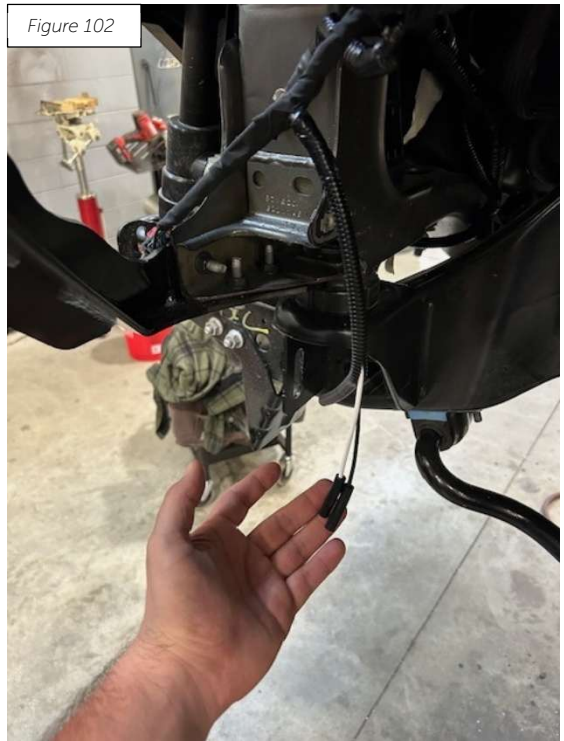


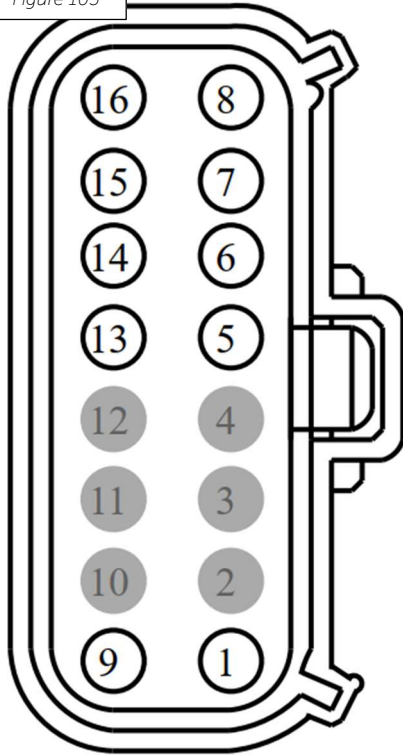
Figure 103



Figure 104



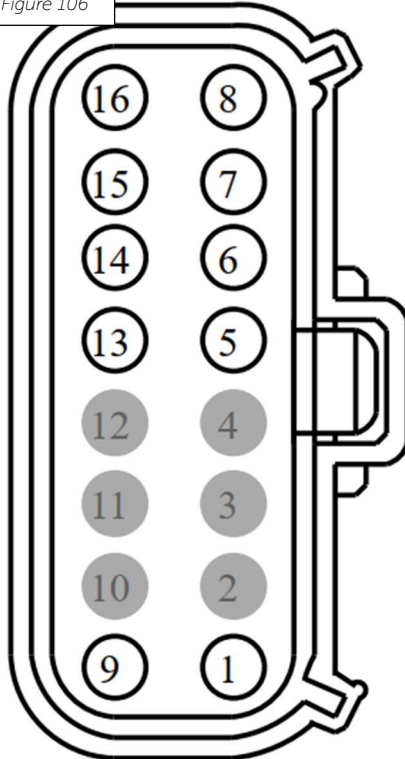
Figure 105



Pin	Circuit	Gauge	Circuit Function	Qualifier	Terminal Part Number
1	GD129(BK-WH)	20	GROUND - HEADLAMP PANEL/ GOR LEFT		N/A
2	CBB22(GN)	20	FUSE - 22 OR CIRCUIT BREAKER		N/A
3	CLF04(BN-BU)	20	ECU - BEAM LOW LEFT		N/A
4	CBB22(GN)	20	FUSE - 22 OR CIRCUIT BREAKER		N/A
5	GD129(BK-GN)	20	GROUND - HEADLAMP PANEL/ GOR LEFT		N/A
6	CLS56(YE-BU)	22	LAMP - TURN FRONT LEFT OR COMMON# SIGNAL OUT		N/A
7	GD129(BK-GN)	14	GROUND - HEADLAMP PANEL/ GOR LEFT		N/A
8	CLS06(GN-VT)	20	ECU - PARK FRONT LEFT OR FRONT/REAR LEFT		N/A
9	GD129(BK-GN)	20	GROUND - HEADLAMP PANEL/ GOR LEFT		N/A
10					N/A
11	CLF61(GY-VT)	20	ECU - DAYTIME RUNNING LIGHT LEFT		N/A
12	CLS21(BU-GN)	16	ECU - TURN LAMP LEFT FRONT		N/A
13					N/A
14	VLF01(YE)	22	ECU - LIN BUS # HCM 1		N/A
15	VDN14(YE-VT)	22	ECU - LIN BUS # BCM 6		N/A
16	DLF01(BK)	22	ECU - LIN BUS # HCM 1 SHIELD		N/A

LEFT-HAND HEADLAMP

Figure 106



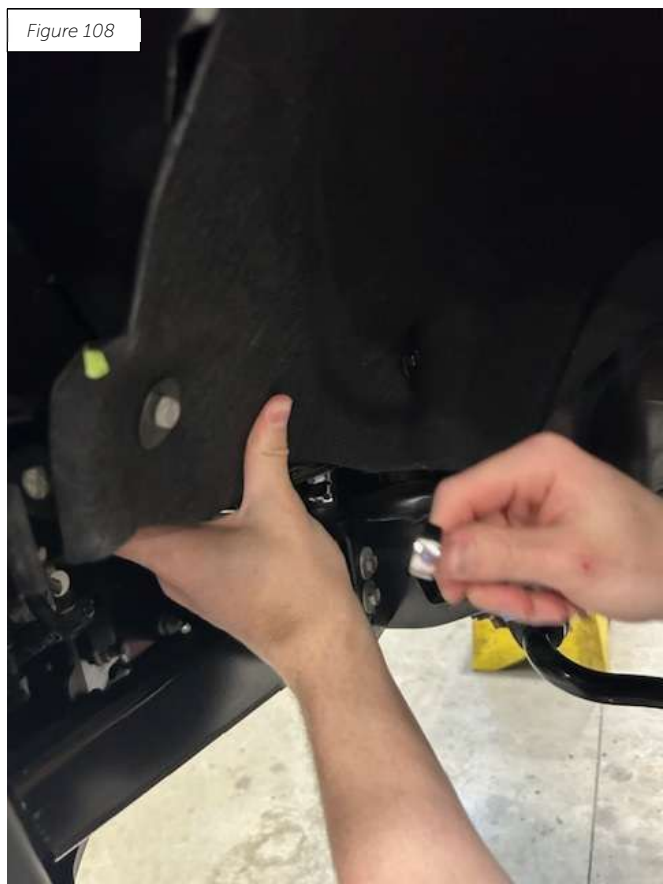
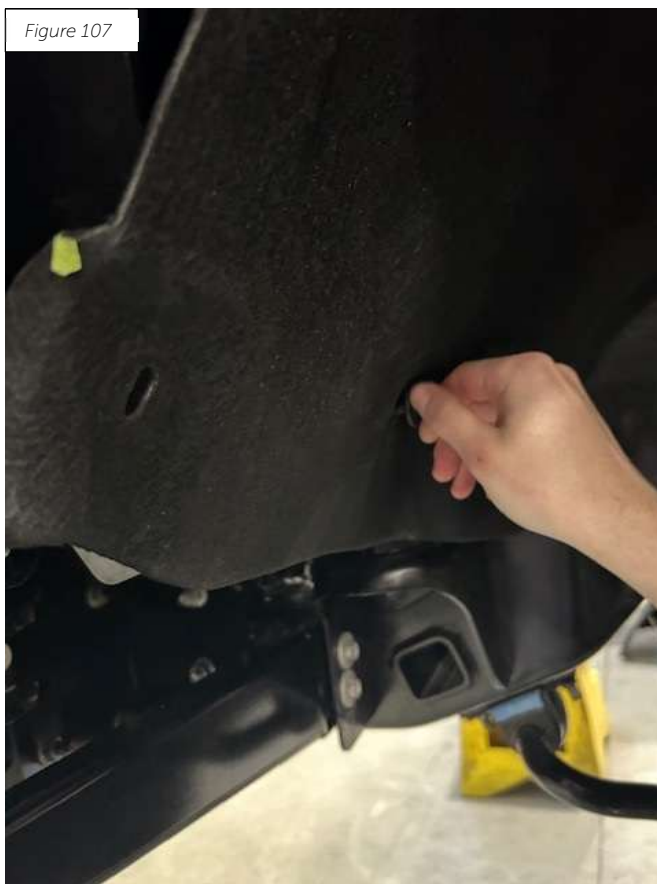
Pin	Circuit	Gauge	Circuit Function	Qualifier	Terminal Part Number
1	GD131(BK-GN)	20	GROUND - HEADLAMP PANEL/ GOR RIGHT		N/A
2	CBB23(BN-BU)	20	FUSE - 23 OR CIRCUIT BREAKER		N/A
3	CLF05(BU-GY)	20	ECU - BEAM LOW RIGHT		N/A
4	CBB23(BN-BU)	20	FUSE - 23 OR CIRCUIT BREAKER		N/A
5	GD131(BK-GN)	20	GROUND - HEADLAMP PANEL/ GOR RIGHT		N/A
6	CLS58(BU)	22	LAMP - TURN FRONT RIGHT # SIGNAL OUT		N/A
7	CBB23(BN-BU)	20	FUSE - 23 OR CIRCUIT BREAKER		N/A
8	CLS07(BN)	20	ECU - PARK FRONT RIGHT OR FRONT/REAR RIGHT		N/A
9	GD131(BK-GN)	20	GROUND - HEADLAMP PANEL/ GOR RIGHT		N/A
10					N/A
11	CLF62(VT-GN)	20	ECU - DAYTIME RUNNING LIGHT RIGHT		N/A
12	CLS25(YE-GY)	20	ECU - TURN LAMP RIGHT FRONT		N/A
13					N/A
14	VLF02(GY)	22	ECU - LIN BUS # HCM 2		N/A
15	VDN14(YE-VT)	22	ECU - LIN BUS # BCM 6		N/A
16	DLF02(BK)	22	ECU - LIN BUS # HCM 2 SHIELD		N/A

RIGHT-HAND HEADLAMP

XV. VEHICLE CLOSEOUT

1. FACTORY WHEEL LINER INSTALLATION

- a. Locate modified Factory Wheel liners and reinstall on vehicle. There will be a gap between the trimmed area of the closeout and the fender flare. This will be addressed in later steps.
- b. Using Hardware Pack 'A', locate the following:
 - i. QTY 2: M6x1.0 Hex Bolts (AEV91017AA)
 - ii. QTY 2: 1/4x1" Fender Washer (AEV98035AA)
 - iii. QTY 2: M6x1.0 U-nuts (B-11548583)
- c. At Front section;
 - i. Install U-Nut onto front flare bracket. (FD5F1018/19AA)
 - ii. Using the existing wheel liner hole, push the wheel liner up and forward in vehicle and fasten bolt from factory liner. *See Figure 108*
 - iii. Install M6 bolt and washer through U-nut recently attached in same area. Torque to 6 ft-lb
- d. Install rest of factory bolts



2. AEV CLOSEOUT INSTALLATION

- a. Locate the LH/RH Wheel Liner Closeout (FD5F1050/51AA)
- b. Using Hardware Pack 'C', locate the following
 - i. QTY 30: #10 Screws (AEV98033AA)
 - ii. QTY 30: #10 Washers (AEV98035AA)
- c. Starting from the rear section of the flare, loosely fasten two #10 Screws and washers into the nylon push nuts of rear flare bracket. Torque to (FD5F1020/21AA)
- d. Using the inner channel of the flare as a guide, press the liner against the flare and drill a 1/8" hole through the center of the first hole.
- e. Fasten a #10 screw and washer into the first hole.
- f. Repeat this process and work from the rear side of the flare to the front side. Ensure the wheel liner stays within the channel of the flare. It is critical that each fastener is installed consecutively to allow proper fitment of liner



Figure 111



3. FULL CLOSEOUT ASSEMBLY

- a. Using Hardware Pack 'C' locate the following:
 - i. QTY 30: Plastic Rivets (AEV99325AA)
- b. Using a permanent marker, mark the front and rear inboard holes to the factory wheel liner.
- c. Using a 3/16" drill size, drill and rivet 2 inboard holes on the front and rear of the liner. See Figure 112 & 113
- d. At the top, choose one of the holes to install rivet. See Figure 114
NOTE: TAKE CAUTION WHEN DRILLING BLIND HOLES IN WHEEL LINER TO AVOID CONTACT WITH ANY ELECTRICAL MODULES AND HARNESES.
- e. Remove both the AEV closeout and OEM wheel liner together.
- f. Drill and rivet the remaining holes to create the full closeout subassembly. See Figure 115 & 116
- g. Reinstall full closeout assembly on vehicle. Follow previous steps of AEV closeout assembly for reinstallation.
 REMINDER: WHEN REFASTENING LINER, WORK FROM REAR SIDE OF FLARE TOWARDS FRONT AS PER PREVIOUS INSTALLATION INSTRUCTIONS.
- h. Ensure that all wire harness clips are reinstalled in the wheel liner.

Figure 112

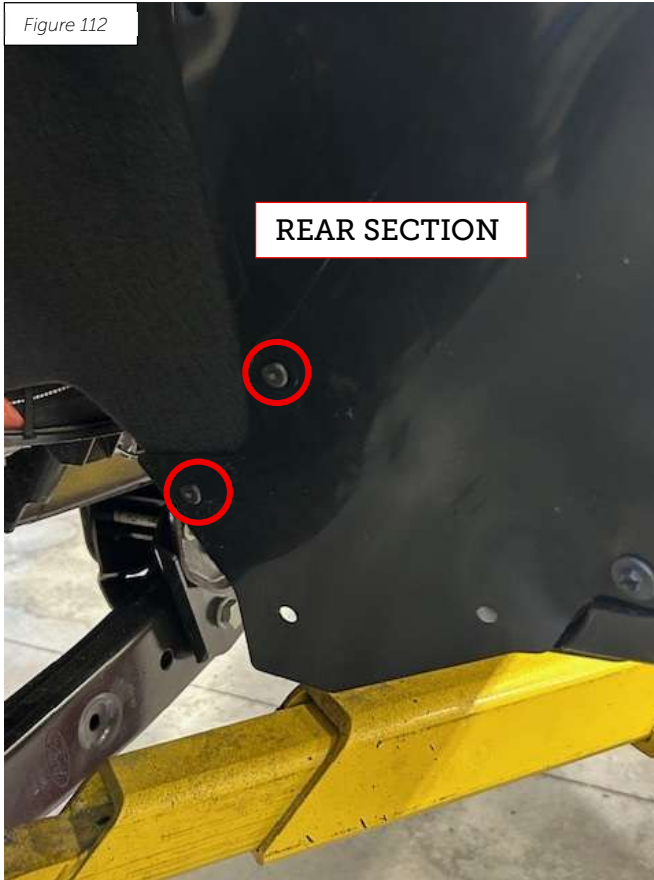


Figure 113

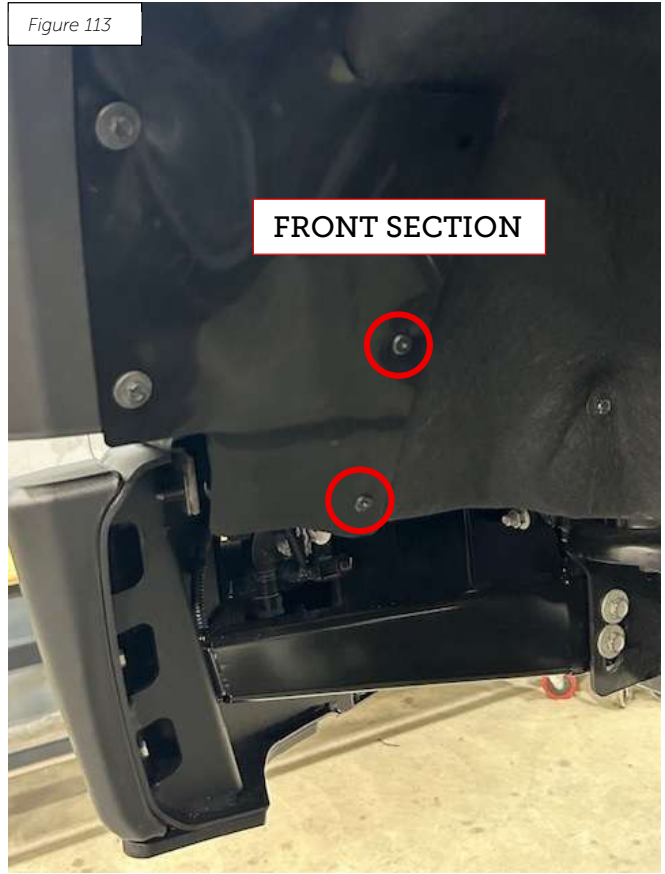


Figure 114





Figure 115



Figure 116



XVI. FACTORY HARNESS RELOCATION BRACKET

1. Locate FD5F1022AA in kit provided.
2. In Hardware Pack 'A', locate the following:
 - a. QTY 3: M8x1.25 Hex Cap Bolt w/ Washer (B-11519389)
 - b. QTY 3: M8x1.25 Flange Nut (B-11546377)
 - c. QTY 2: Tie Strap (AEV92013AA)
3. Install FD5F1022AA with harness inside on driver side of vehicle. *See Figure 117*
4. With tie strap, tie harness securely into harness bracket to prevent moving.



XVII. FLARE EXTENSION INSTALLATION (AEV/FACTORY BUMPER)

AEV BUMPER; AEV FLARE EXTENSION INSTALLATION

1. Please refer to AEV Front Bumper Instruction Manual for Bumper Installation.
2. Locate FD5F1006/07AA from Front Flare Kit.
3. Locate from Hardware Pack 'C' the following:
 - a. QTY 6: M6x1.0 Hex Cap Screw (AEV91118AA)
 - b. QTY 6: M6x1" Fender Washer (AEV98035AA)
4. Install cap screw and washer assembly through three locations on backside of AEV corner bumper section, attaching each extension through AEV Front Bumper. See *Figure 118*
5. Repeat on opposite side.

Figure 118



Figure 119



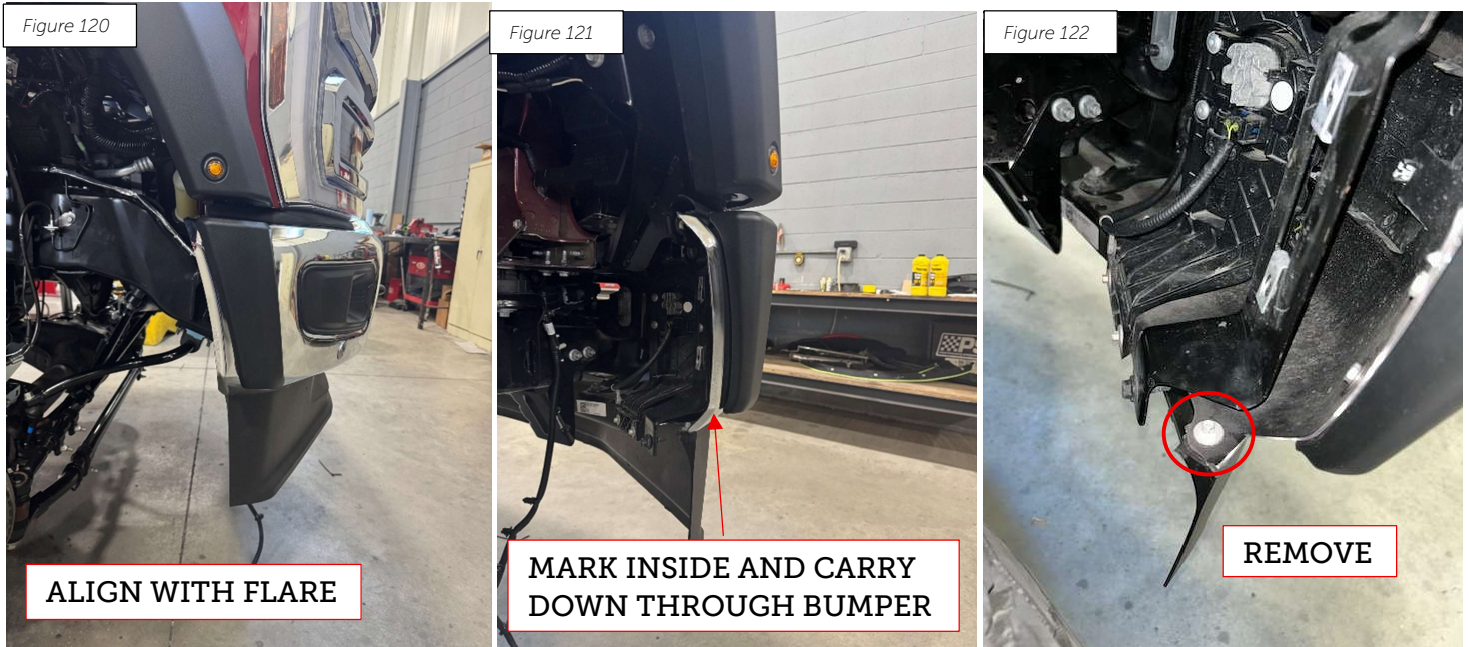
FACTORY BUMPER; AEV FLARE EXTENSION INSTALLATION

1. Re-install factory bumper following steps from Chapter II.

FACTORY BUMPER; MARKING

2. Apply extra drill transfer templates to backside of AEV Flare Extensions – this will mark holes needed to drill through factory bumper for hardware.

3. Align AEV Flare Extension in bumper position to match AEV Front Flare recently installed. Mark the inside edge of flare extension down through factory bumper. See *Figure 120 & 121*
 - a. One fastening position is removed from each side. See *Figure 122*
4. AEV recommends uninstalling Air-Ram attached to lower bumper, but you can extend trim down through Air-Ram if wanting to keep attached.
5. Remove AEV Flare Extension, ensuring drill transfer template remain adhered to factory bumper.
6. Mark drill transfer templates and remove sticky adhesive from factory bumper once marked.



FACTORY BUMPER CUTTING

7. Drill each hole marking to 3/4".
8. Cut bumper along mark line recently created so bumper is flush with AEV Flare Extension.

AEV FLARE EXTENSION INSTALLATION

9. Locate FD5F1006/07AA from Front Flare Kit.
10. Locate from Hardware Pack 'C' the following:
 - a. QTY 6: M6x1.0 Hex Cap Screw (AEV91118AA)
 - b. QTY 6: M6x1" Fender Washer (AEV98035AA)
11. Install cap screw and washer assembly in three location through backside of AEV corner bumper section, attaching each extension through AEV Front Bumper.
12. Repeat on opposite side.



Figure 123





XVIII. GRILLE INSTALLATION

1. Replace factory grille by reversing steps of removal found in Chapter II.



XIX. VEHICLE COMPLETION

1. Replace Front Wheels
2. Take off hoist

REMINDER: IF FRONT FENDER BOLT WAS NOT REPLACED, ENSURE TO INSTALL WHEN VEHICLE OFF HOIST (CHAPTER I STEP 2 ; CHAPTER VII STEP 2)