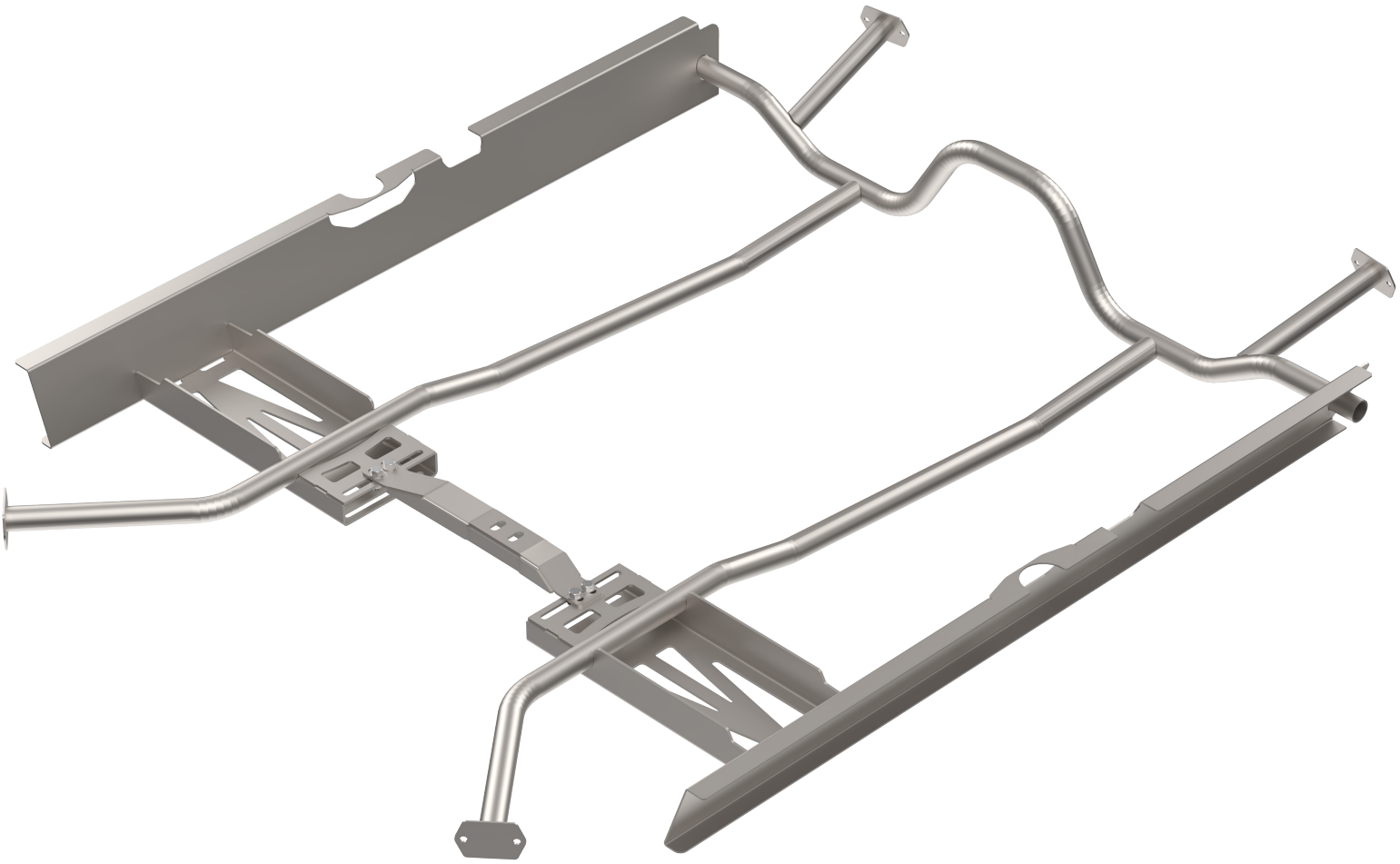
Speedtech PERFORMANCE



71-76 GM B-BODY FRAME BRACE KIT

INSTALLATION INSTRUCTIONS: 60710

WELCOME TO SPEEDTECH PERFORMANCE!

OUR COMMITMENT

Congratulations on purchasing this high-quality Speedtech Performance Frame Brace Kit for your 71-76 GM B-Body vehicle! It is engineered to the highest standards, utilizes the finest materials, and is built with exceptional craftsmanship and attention to detail.

While we understand your eagerness to start your build, please remember that your safety is our utmost priority. Always use an approved and appropriately rated jack, jack stand, or automotive lift, and take all necessary safety precautions to ensure the job is completed safely and correctly.

The team at Speedtech Performance is genuinely excited to see your project come to life and the results of your hard work. We also enjoy seeing our customers' progress as they work through their builds, so join the **Team Speedtech** group on Facebook and share your pictures and story.

Remember, we're here to support you every step of the way and are committed to ensuring your installation process is successful and enjoyable. We wish you all the best!

OUR COMMITMENT

Before you begin, make sure to read and understand all instructions thoroughly.

You can assemble and set up your new frame brace kit in your home garage with standard hand tools and welding equipment.

To simplify installation, Speedtech recommends the removal of the body and transmission. Additionally, remove the engine from the frame if necessary. You will need to reunite the frame and body several times during the installation.

Though not required, a two-post style lift will make the job go smoothly and easily.

This kit requires fitting and welding. If you lack access to welding equipment, make arrangements to have it available during installation.

If you feel uncertain about your abilities during the build and need help or have any questions, please seek the assistance of a qualified fabricator or autobody workshop.

If you have any product questions or need guidance, please don't hesitate to call and speak with Speedtech Performance technical support at 435-628-4300.

As a final step, review each assembly step and make sure any fasteners are correctly secured and torqued to specification.

ABOUT THIS MANUAL

PURPOSE

These instructions outline the frame brace kit designed to work with your factory subframe or frame. The images shown in the instructions may vary slightly from your vehicle.

ITS CONTENTS

The information that follows is described in this instruction set:

- Required tools and supplies.
- Safety, hazard, and warning rules.
- Product overview and included parts.
- Installation and the setup procedures required for use.

Pages with images will have paragraphs and sentences with callout numbers that refer to their respective images, steps, and parts.

Procedures, once described in the text, are generally not repeated. When it is necessary to refer to another procedure, the page and step reference will be given.

REQUIRED TOOLS AND SUPPLIES

- SAE Wrench Set
- SAE Socket Set
- Torque Wrench (lb-ft)
- Floor Jack
- Jack Stands
- Welding Equipment
- Grinder
- Measuring Tape
- Weld Through Primer
- Welding Blanket
- Spark Deflection Paper

SAFETY FIRST

- Work on your frame in an appropriate location.
- Assemble your frame on a level surface.
- Always support your frame with jack stands.
- Wear personal protection like safety glasses and gloves.
- Never use compressed air to clean dust, oil, or ground metal from suspension components.
- Dispose of damaged or old parts in accordance with local laws. Do not throw any hazardous waste in the trash.

BEFORE INSTALLATION

Before beginning the sheet metal installation, it is crucial to read and understand these instructions carefully.

When welding around your vehicle, take the necessary precautions. Utilize welding blankets and spark deflection paper to prevent sparks from reaching the fuel tank, fuel and brake lines, and other exterior components while welding and grinding.

Make sure to ventilate combustible vapors and remove any nearby flammable materials.

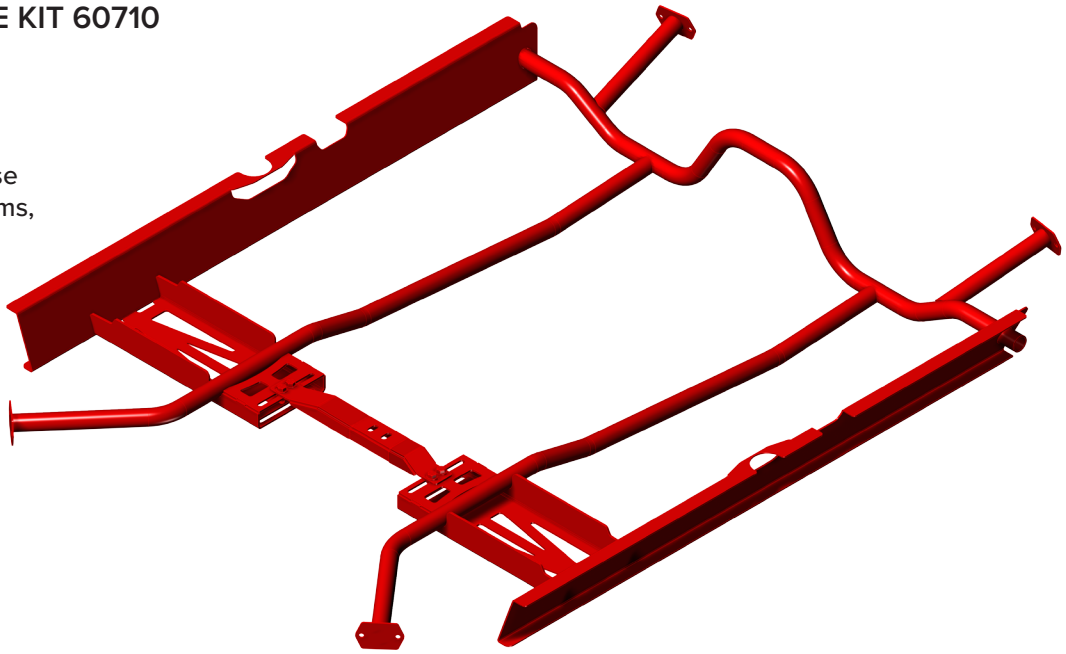
It is equally important to wear the appropriate personal protective equipment (PPE). However, the responsibility does not end there. Follow the manufacturer's instructions for safe use when working with power tools, and be cautious and responsible in your work.

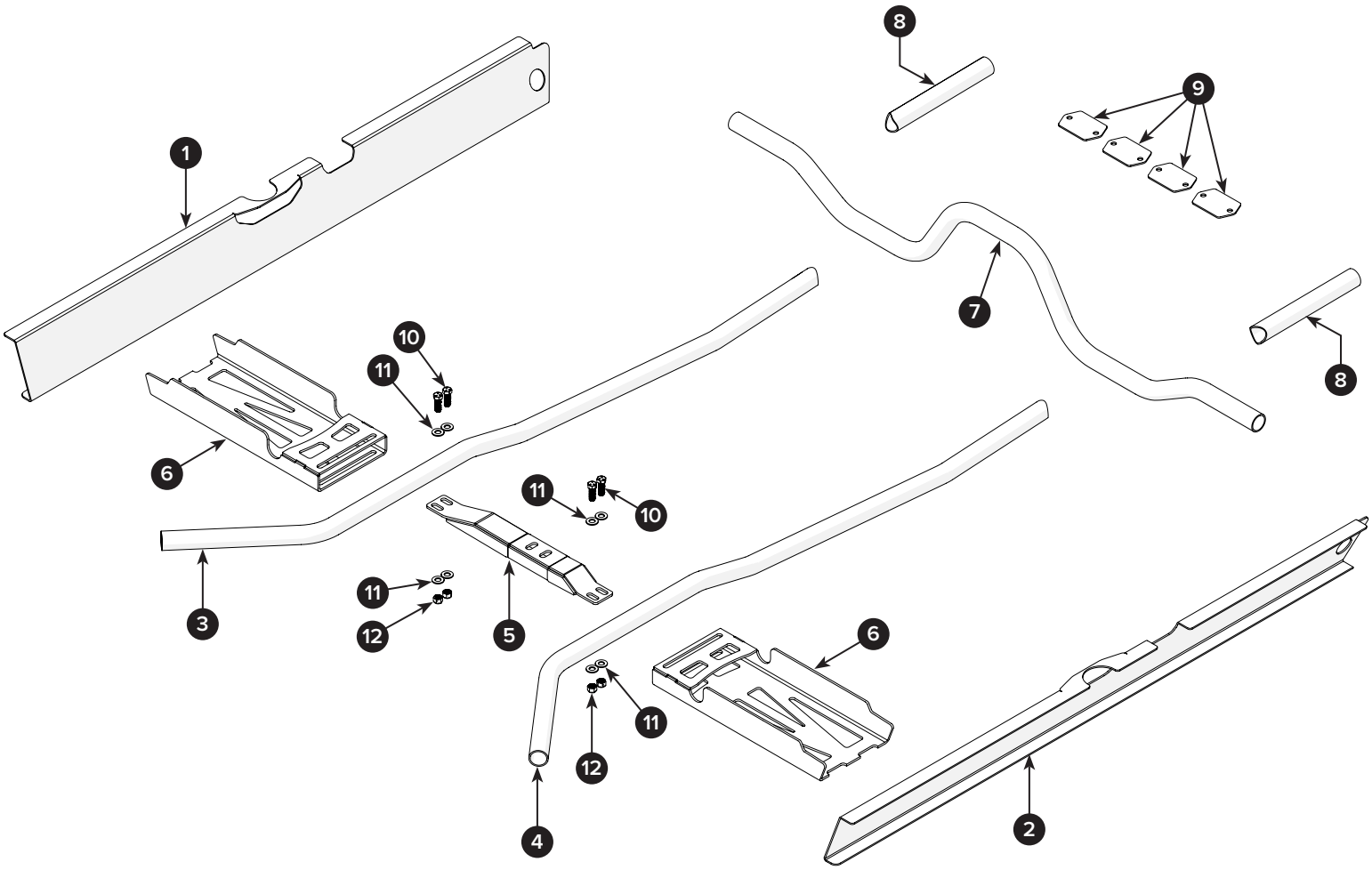
CONTENTS

71-76 GM B-BODY FRAME BRACE KIT 60710

Note: The frame brace kit shown is for illustrative purposes and represent the parts included in this kit.

While your parts may look different, these instructions apply across various platforms, and the kit is assembled using the same procedures as outlined.





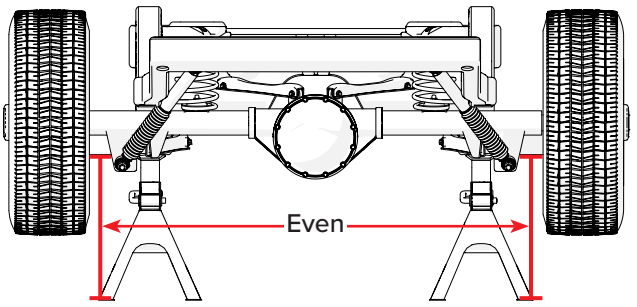
71-76 GM B-BODY FRAME BRACE KIT 60710				
POSITION	PART #	DESCRIPTION	QTY	TORQUE SPECIFICATION
1	830030-08R	Frame Rail Boxing Plate (RH)	1	—
2	830030-08L	Frame Rail Boxing Plate (LH)	1	—
3	820251R	Main Brace Tube (RH)	1	—
4	820251L	Main Brace Tube (LH)	1	—
5	912210-03	Transmission Crossmember	1	—
6	830030	Transmission Crossmember Side Supports	2	—
7	820250	Rear Crossmember	1	—
8	820252	Rear Brace Tubes	2	—
9	912212-09	Brace-to-Frame Plates	4	—
10	2000330*	Bolt, 7/16” x 2”, Transmission Mount	4	40 lb-ft
11	2000388*	Flat Washer, 7/16”, Transmission Mount	8	—
12	2000387*	Nut, Nylock, 7/16” Transmission Mount	4	—

*This hardware is included in Transmission Crossmember Hardware Kit PN 1007949.

Notice: The part positions listed above will be called out in this installation manual as a visual reference to their respective positions during the installation procedure. Refer to these pages during the installation.

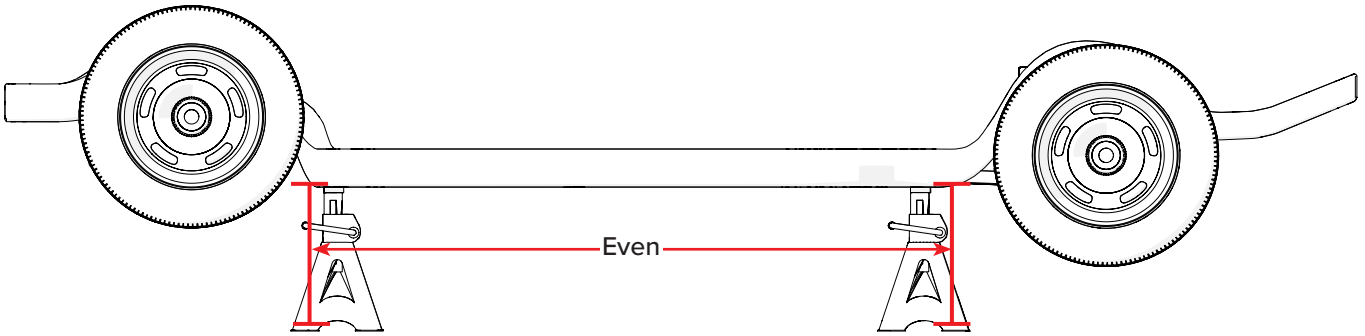
Print pages 4 and 5 for a quick parts reference guide.

Installer's Note: *This guide uses images of the '68-'72 B-body frame brace kit. Your application may have a slightly different shape; the part is functionally the same and is installed in the same manner described.*



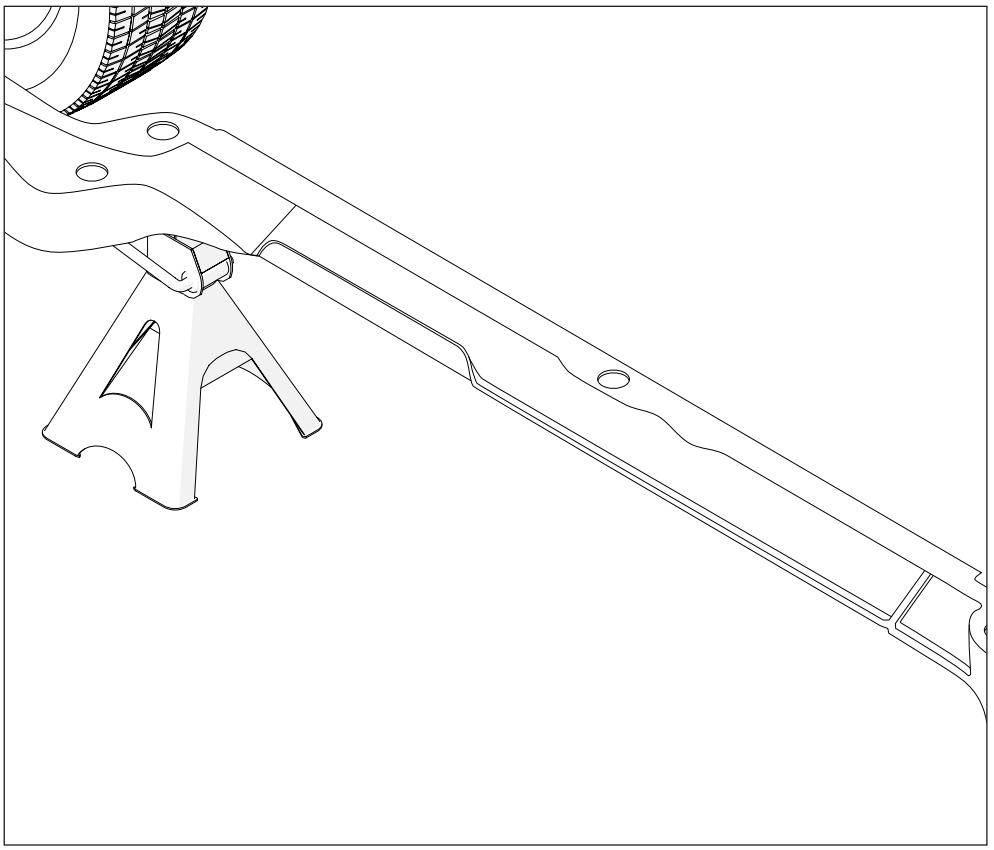
1 Remove the body from the frame, then set the frame on jack stands (shown) or a chassis table on a flat and true surface. Support the front crossmember and rear axle to prevent frame distortion from the weight during mock-up.

Once the chassis is lifted and supported, the measurements must be the same from the left to right sides and from the front to rear sides.



2 Remove the fuel and brake lines from the inner frame channels.

Then clean the frame's painted surfaces and remove rust and contaminants from areas where welding will occur.



3

First, hold the boxing plate against the frame to ensure the pre-cut holes align with the bushing mount hole and notches.

If the frame is uneven, straighten it to match the boxing plate, then tape it in place.

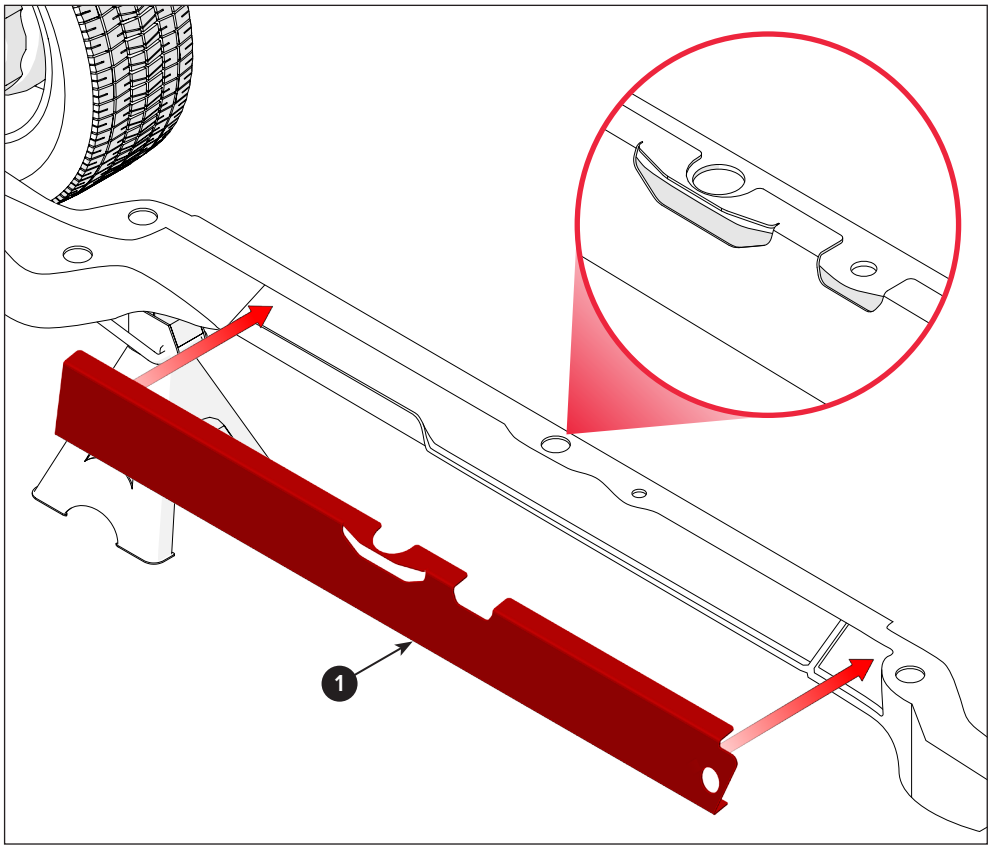
Use the plate as a guide to mark the frame and grind it to fit.

Remove the plate and continue trimming until you achieve the best fit.

Reattach the plate to ensure it lies flat.

For convertible or boxed frames, with the plate in place, align both sides and mark the hole.

Then, cut a 2-inch clearance hole in the inner panel for the rear crossmember tube.



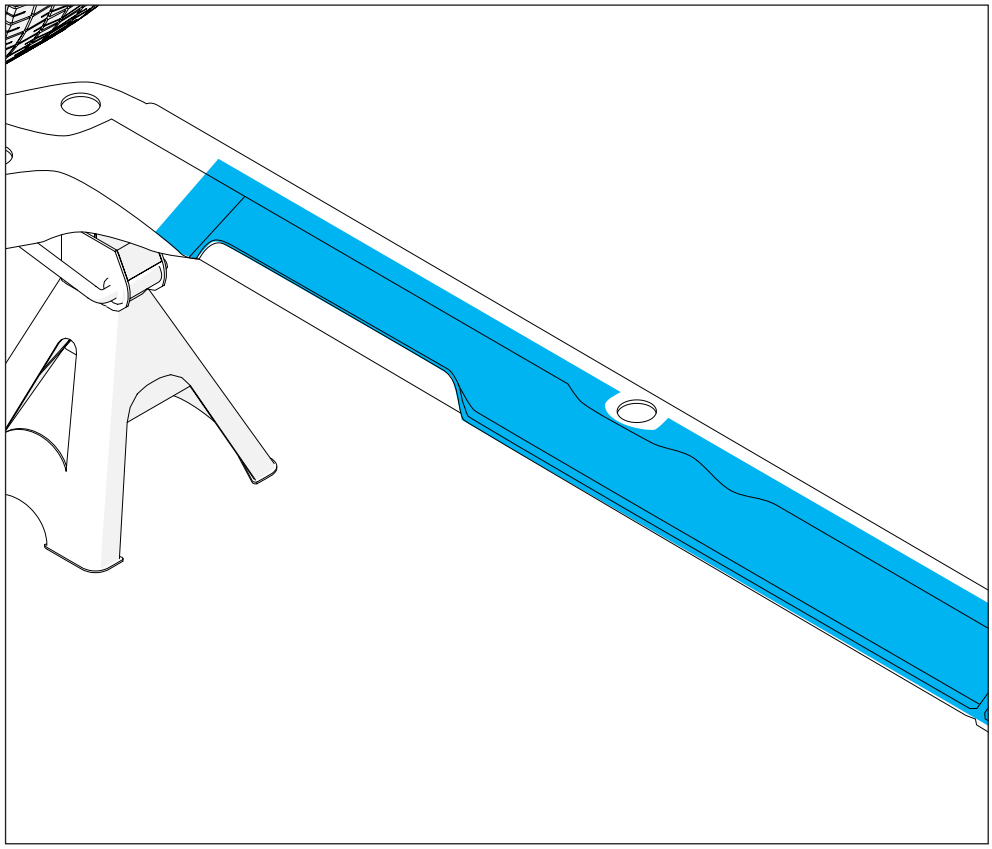
4

Once the boxing plate fitment is complete, prepare the frame for rust prevention. Proper metal preparation is crucial for quality, long-lasting welds.

First, grind the areas (highlighted in blue) to remove any paint, oxidation, and surface rust.

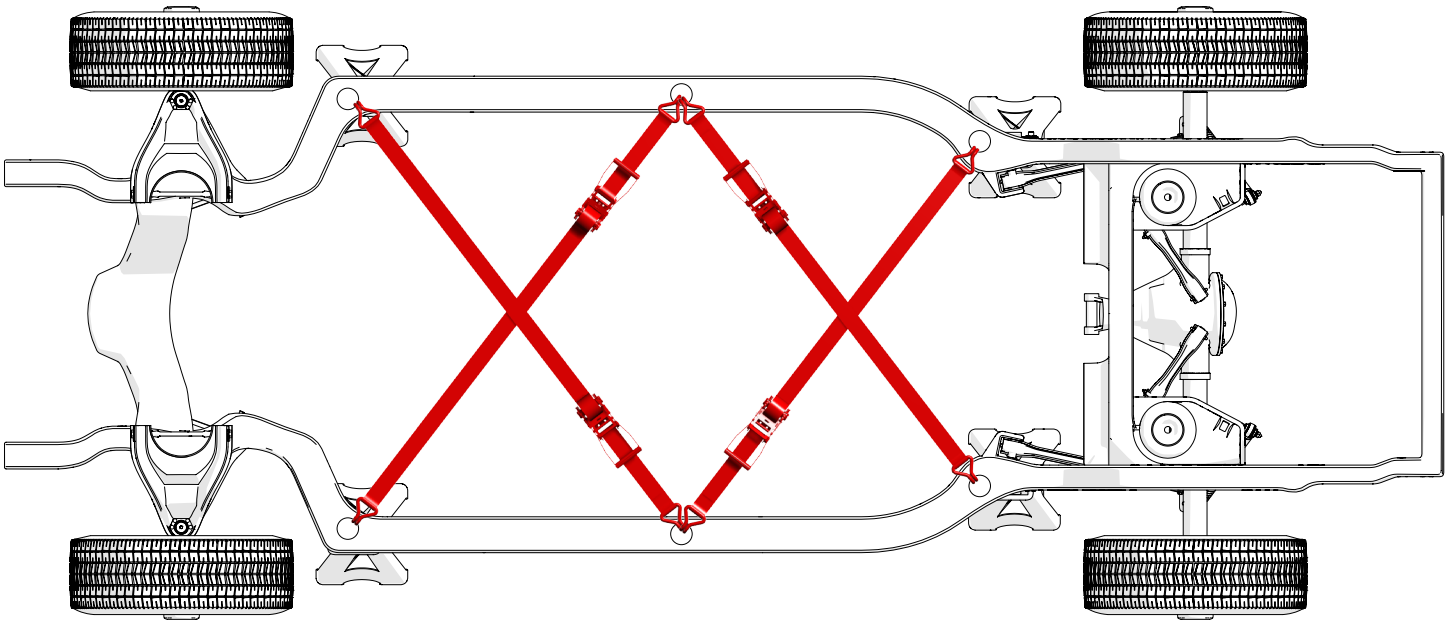
Next, use a prep solvent to wipe down all metal surfaces that will be welded.

Then, allow the solvent to dry completely.



5 Welding can cause metal distortion and warping. When welding, the frame must remain square and true.

To remain square, triangulate the tension with ratchet cable winches or ratchet straps as shown below.



6 The top and bottom of the right hand frame rail boxing plate (1) have 90° bends, which creates a strong, flat bottom edge.

Note: The frame rail boxing plate shown is rotated for visual clarity. The large hole will face the rear of the frame when installed.

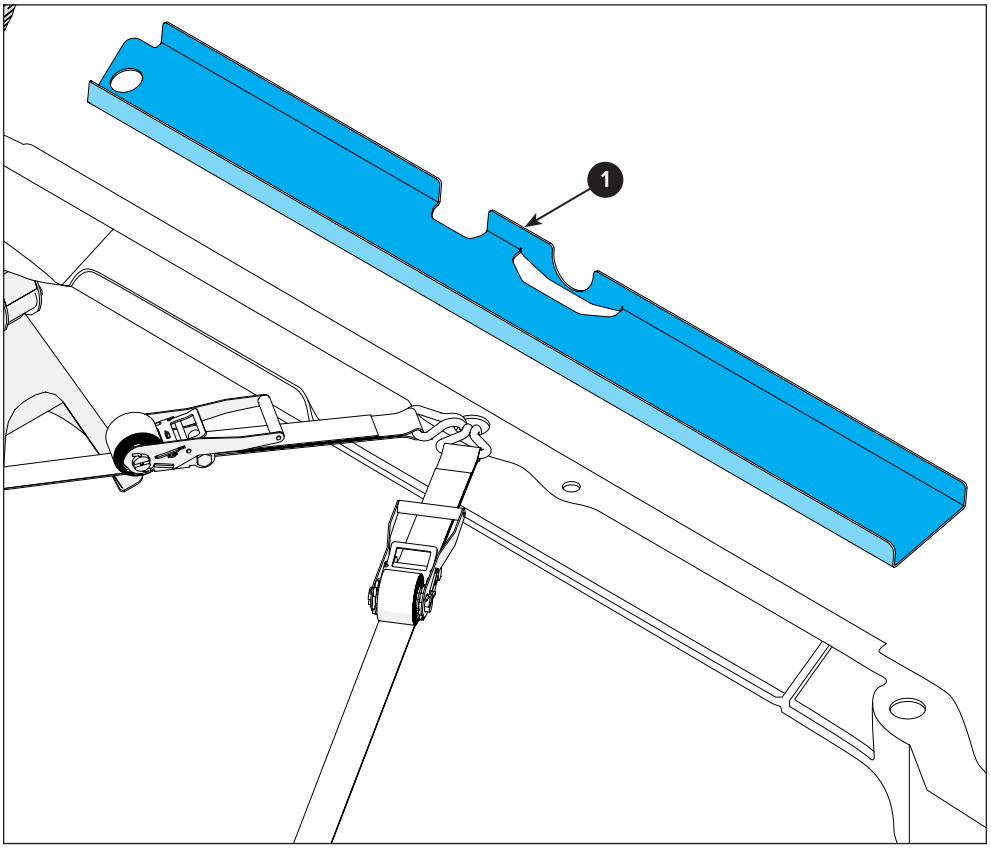
The slight bends are positioned outside of the frame's top and bottom faces.

Grind the areas to remove any surface rust or oxidation.

Now use a prep solvent and wipe down the surfaces where welding will occur. Let the solvent throroughly dry.

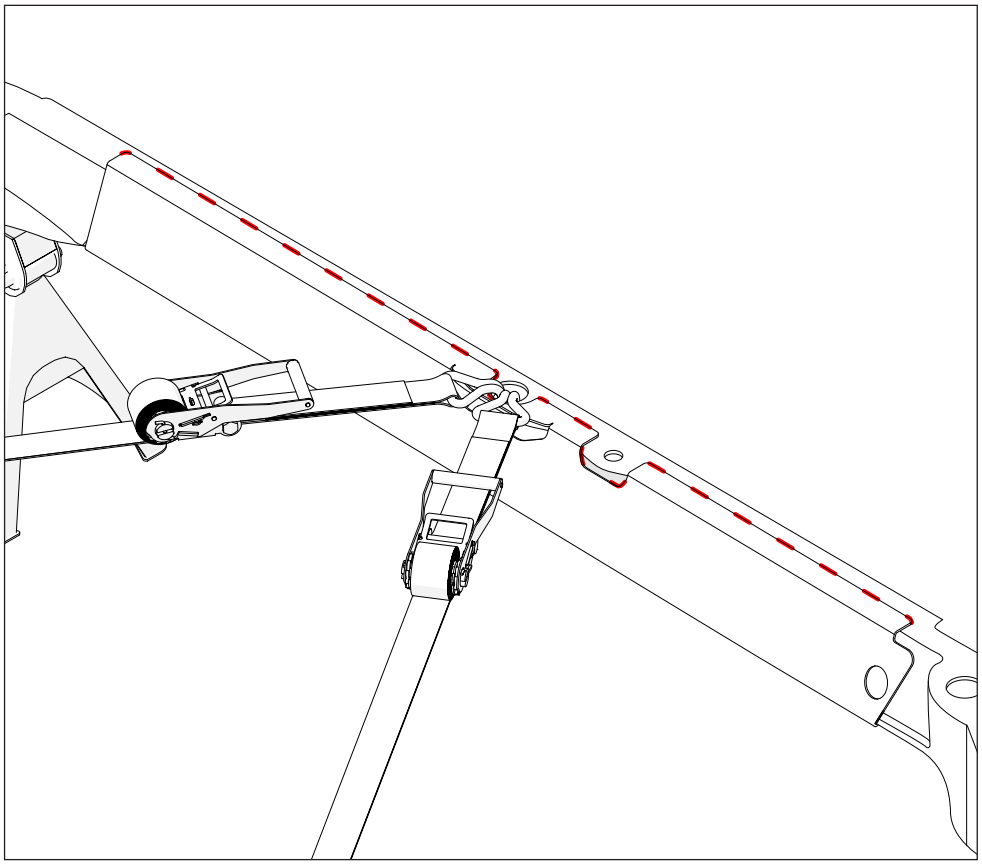
To prevent rust between the metal parts, it's recommended to apply weld-through primer in the areas that will touch as indicated in blue.

Notice: Follow the manufacturer's directions for the proper use of the weld-through primer.



7 Fit the top edge of the boxing plate against the top of the frame, then tack-weld the plate alomg the edge to hold it in place.

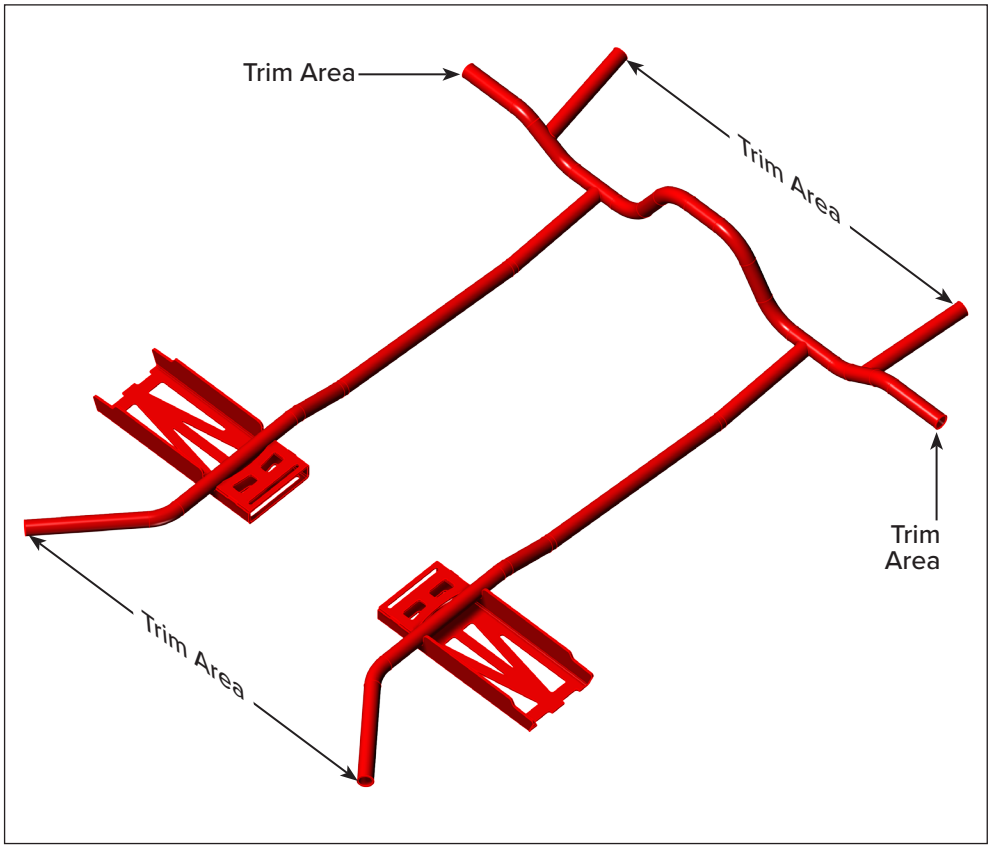
Note: Welding produces a lot of heat that can distort metal. Alternate the tack-weld locations to prevent panel distortion from heat. When an area is cool enough to touch, it is okay to weld again.



8 Frame brace installation requires custom fitment of the main brace tubes to your particular frame.

Each area where the brace tubes need customized fitment will have extra trim-to-fit material (Trim Area).

Always measure twice and cut once!

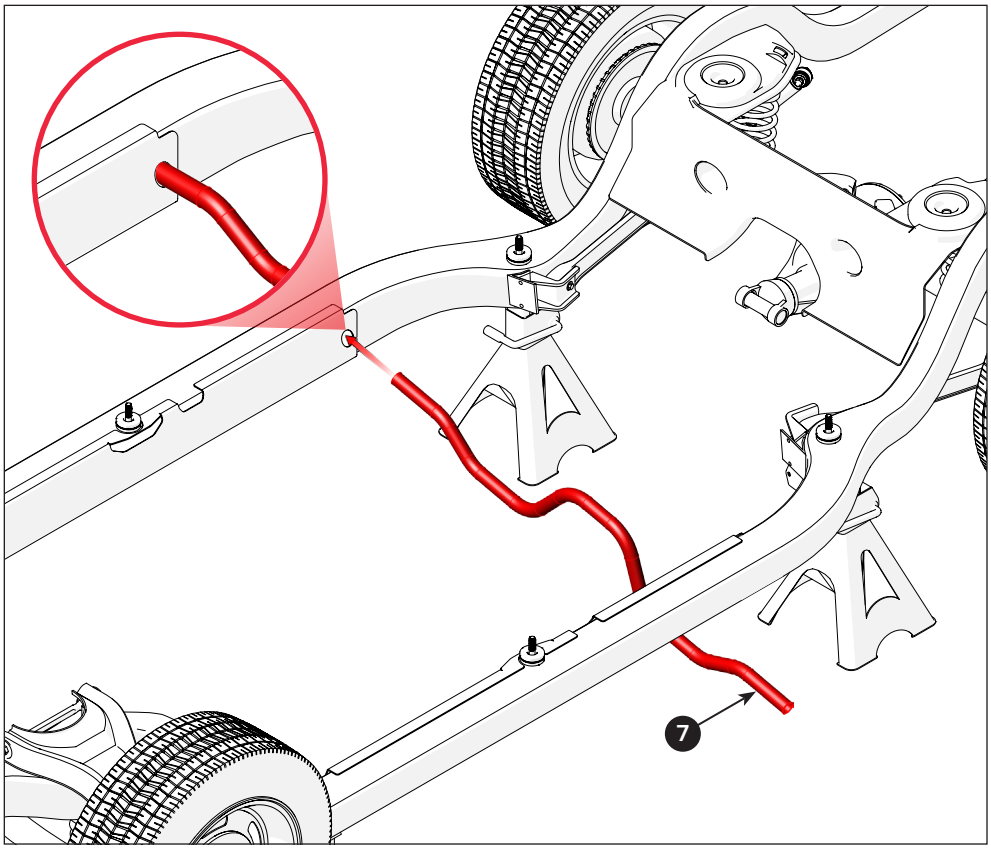


Installer's Note: *Only tack-weld the pieces into place once the correct size and parts placement are determined.*

Note: *Because this kit is used for multiple applications, some pieces must be trimmed to fit your exact application.*

9 Put the rear crossmember (7) in place between the frame channels.

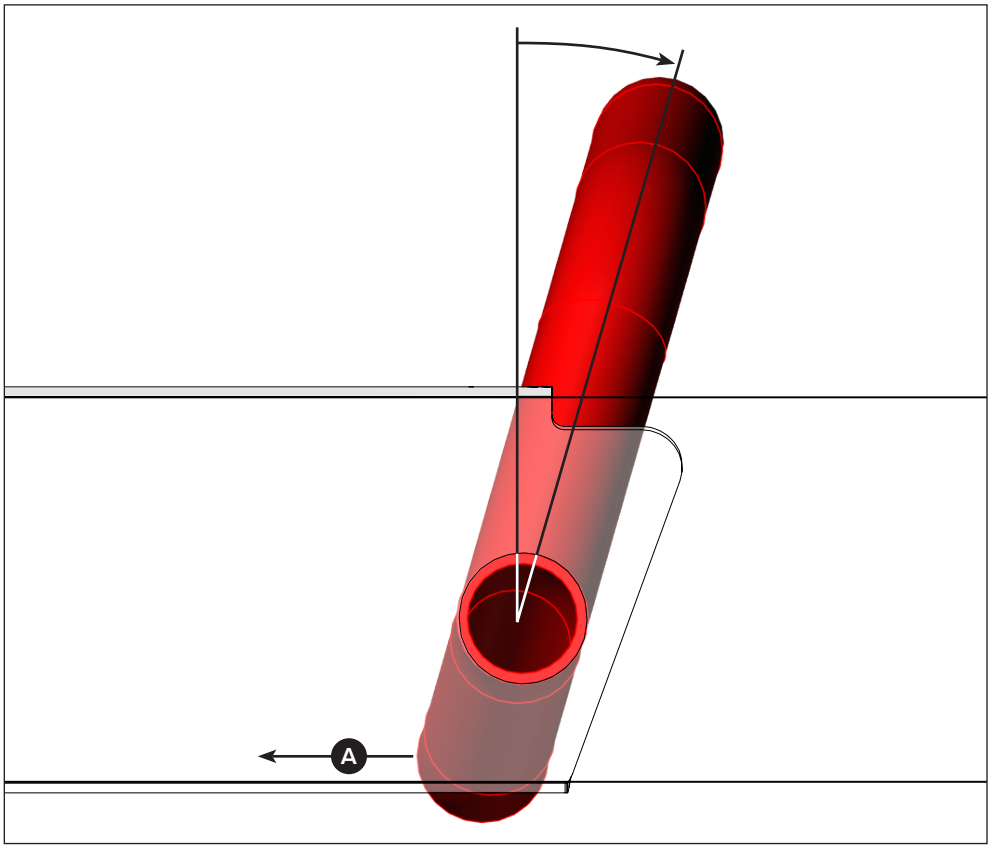
Note: If the crossmember does not fit, the ends are long enough to be trimmed. If needed, equally rough trim the ends to fit between the frame channels.



10 Now, center the crossmember hoop at the top of the tunnel.

Note: The crossmember is designed slightly offset from the center toward the vehicle's passenger (RH) side.

When correctly installed, the lower portion (A) of the crossmember angles forward and follows the contour of the rear floor to allow for optimum muffler clearance.

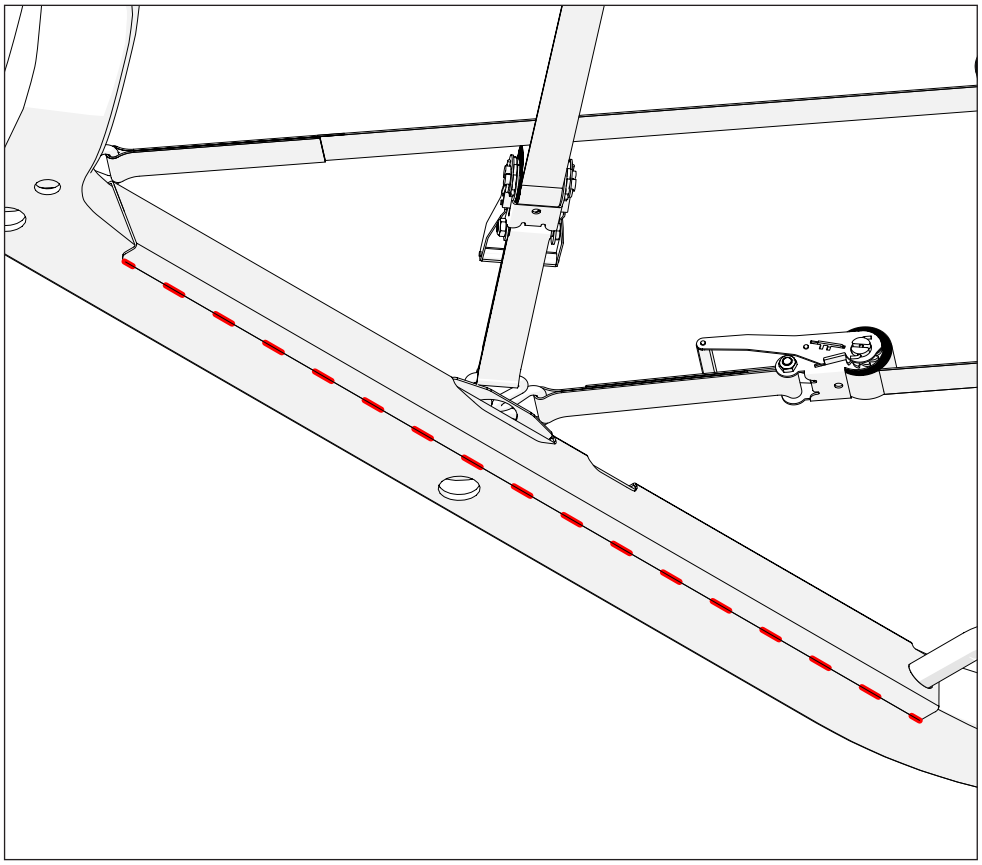


11 There will likely be gaps along the frame and boxing plate bottom edges. Work these areas so the bottoms of the frame and plate match.

Now, with the crossmember fitted between the rail boxing plates, tack-weld the boxing plate to the frame.

Repeat the tack-weld procedure toward each end of the boxing plates until they are fully attached to the frame.

Note: Welding produces a lot of heat that can distort metal. Alternate the tack-weld locations front-to-rear, and left-to-right to prevent panel distortion from heat. When an area is cool enough to touch, it is okay to weld again.



In the majority of this installation, the body will need to be mounted to the frame for fitment and tack-welding. This ensures correct body-to-frame alignment after the final welding is completed.

12 After tack-welding, remove the ratchet straps once the frame is cool and position the body bushings and place the body on the frame, attaching it with fasteners.

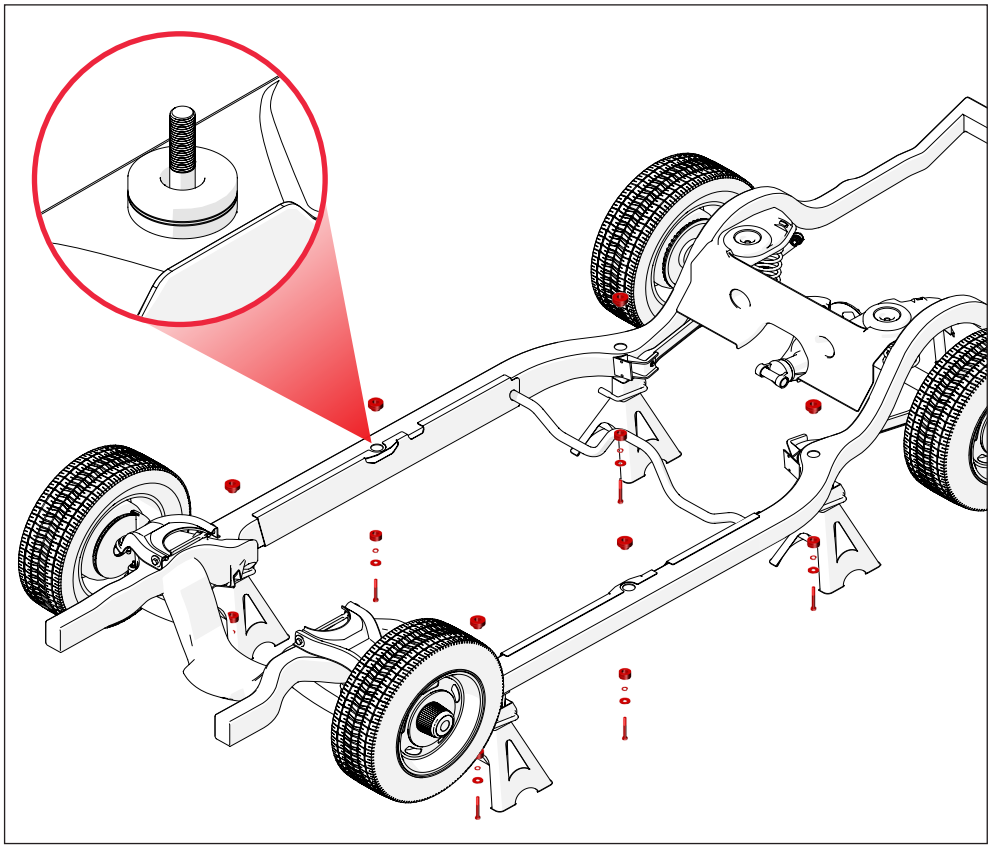
Make sure the crossmember fits into the floor pan for proper alignment. The frame brace components are now ready for installation.

PRO BUILD TIP

For optimum performance, Speedtech recommends the use of our solid body bushings.

This secure connection ensures proper body-to-frame alignment and sufficient clearance for the floor pan. The frame brace components are now ready for installation.

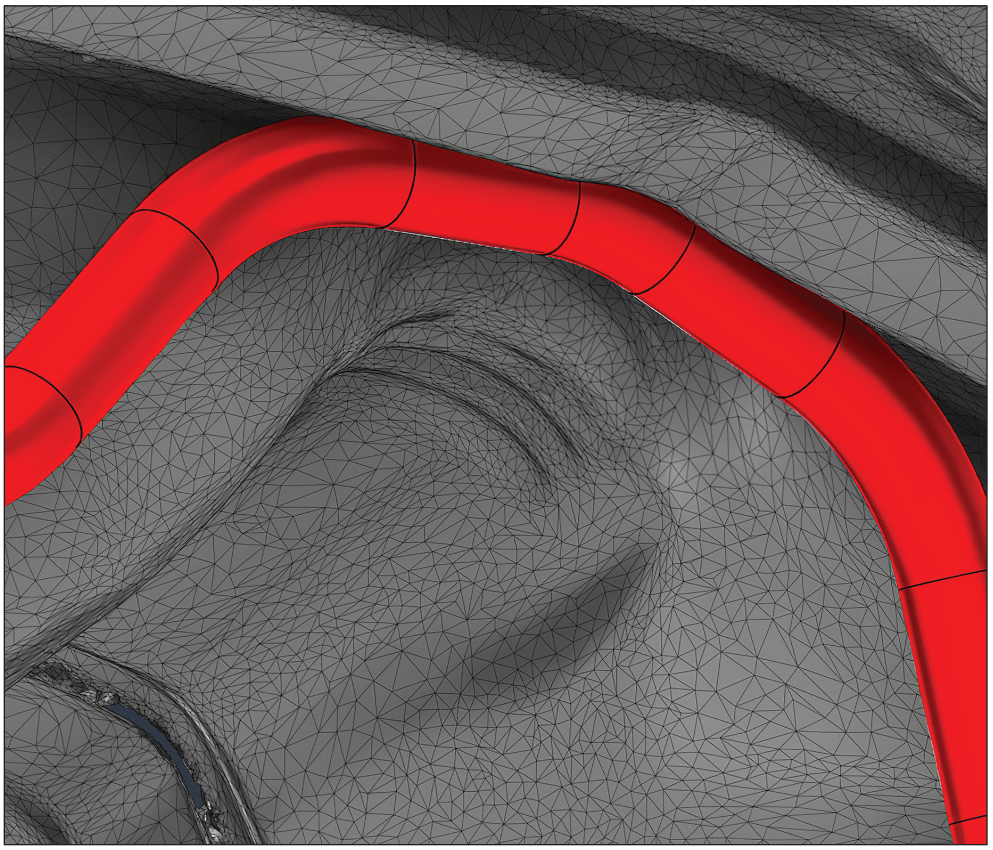
Installer's Note: *This kit applies to multiple B-body vehicles, so this manual does not show the body to retain visual clarity.*



13 When correctly positioned, the rear crossmember will fit snugly against the floor, just in front of the brace that supports the floor hat channel directly under the rear seat area.

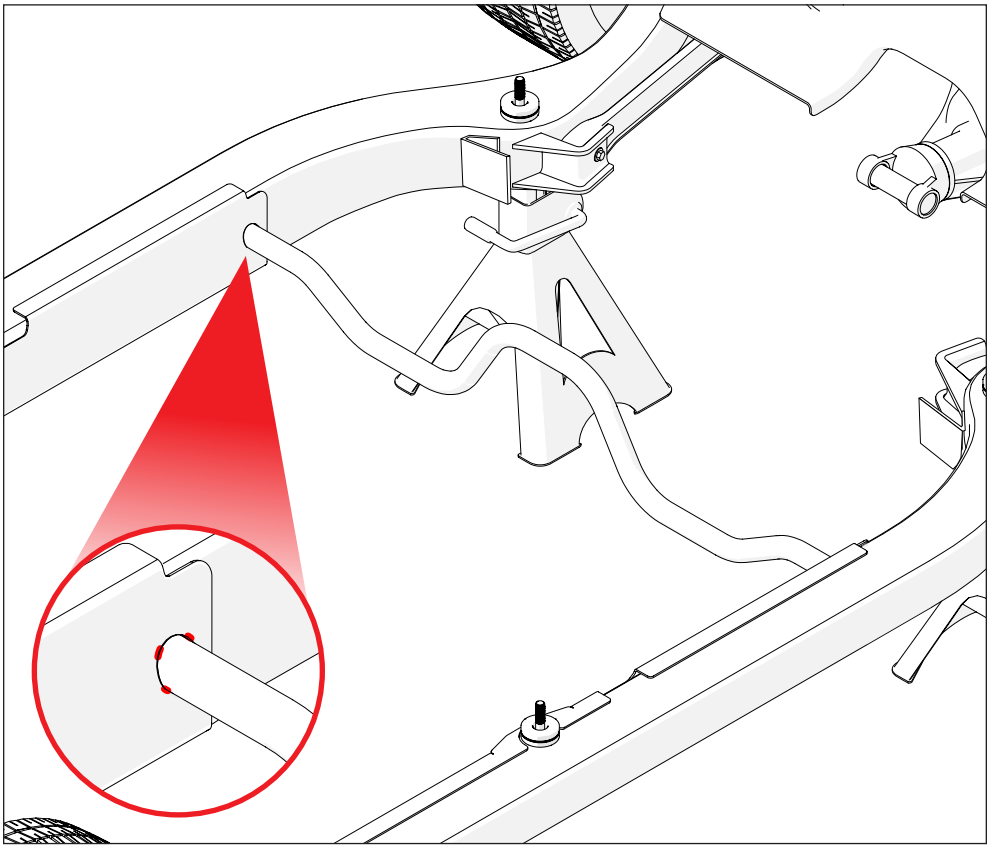
Note: Some vehicles will need some floor pan modification to tightly tuck the rear crossmember up and into its coordinating pocket in the floor pan.

This modification is most commonly needed on earlier model B-body vehicles.



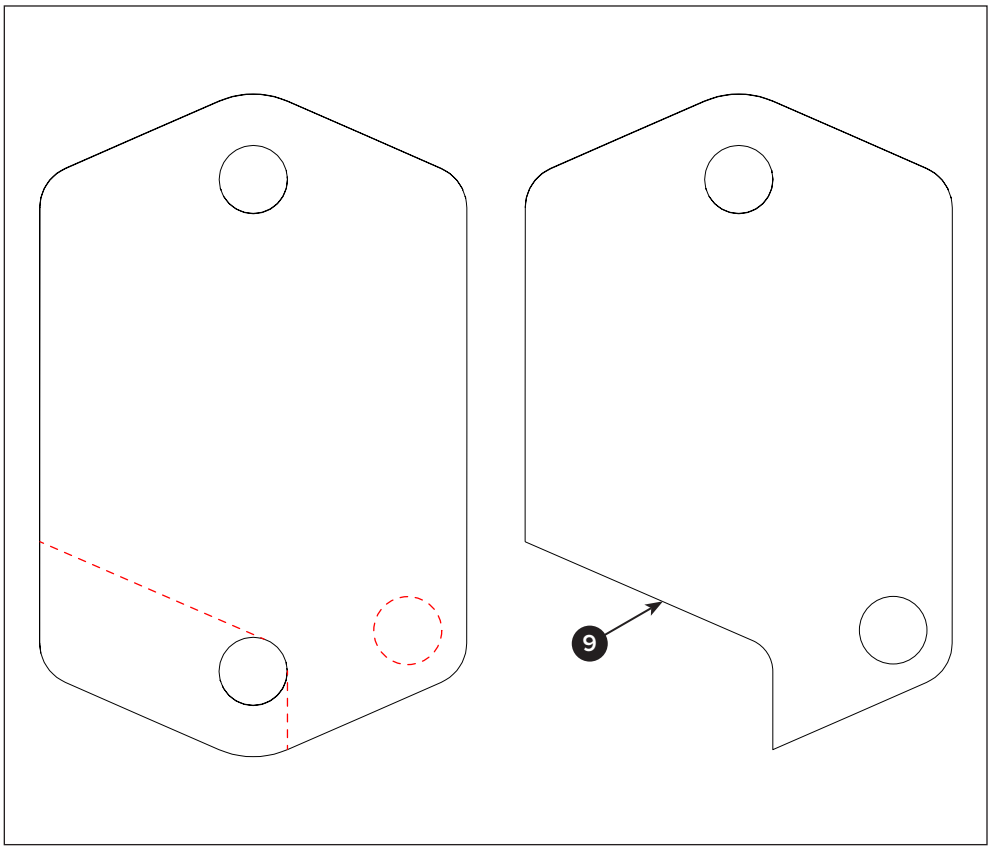
Installer's Note: *For visual clarity, the body is not shown for the remainder of these instructions.*

14 Once aligned, tack-weld the crossmember to the frame rail boxing plates.



15 The rear brace mount plates (9) are located at the factory cable mount used for the parking brake.

To reuse the factory brake cable system, notch the mount plate for the frame brace and drill a new hole as necessary (shown in red).



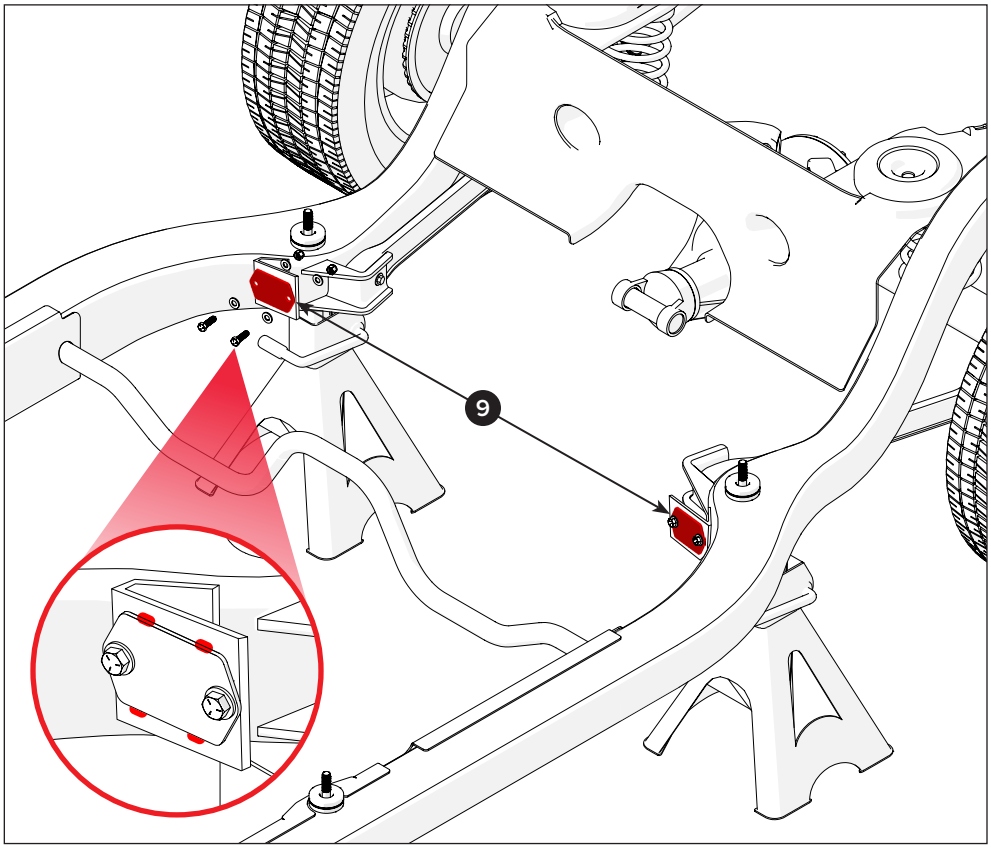
16 The plates can be temporarily secured using fasteners provided by the customer.

First, position two brace-to-frame plates (9) at the rear of the lower trailing arm mounts.

Then, use appropriately sized bolts, flat washers, and nuts to attach the brace plates through the e-brake cable hole at the top.

Note: For clarity in the illustrations, the remaining images in this manual show the rear brace plates as unnotched, which differs from the notched version described in step 15.

Use the notched brace plate to use the factory parking brake cable.

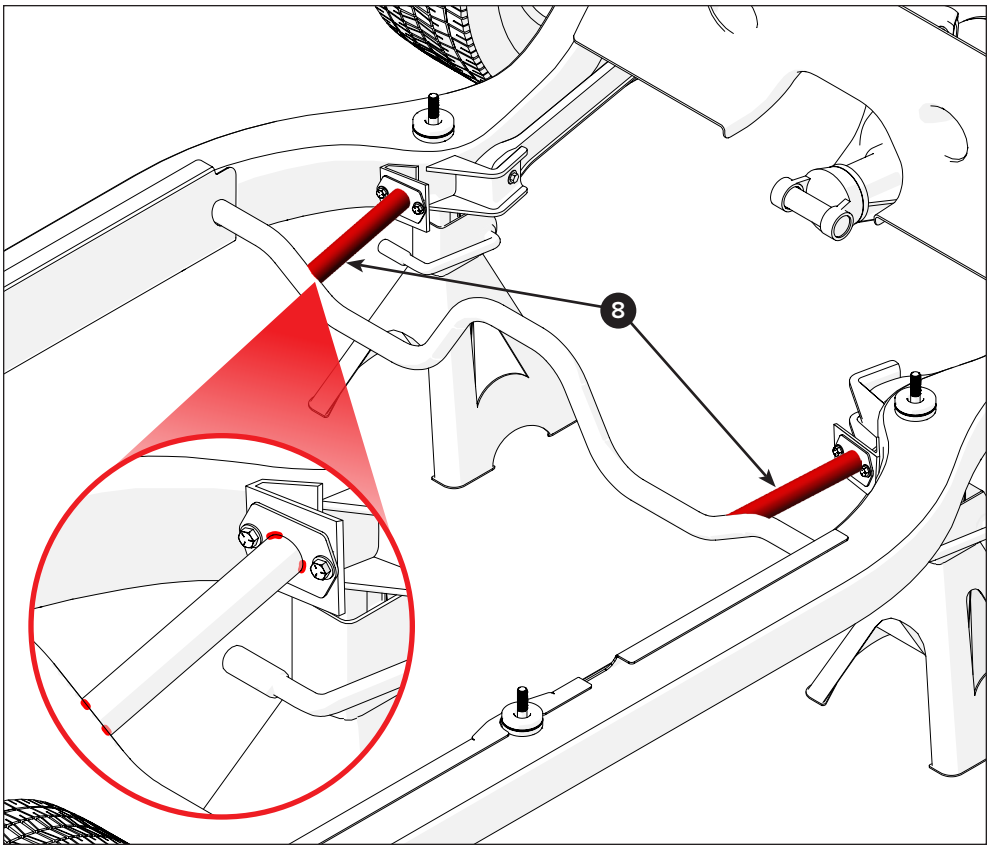


Installer's Note: *For all installation steps after step 17, it is crucial to know the final engine and transmission combination used to determine the best placement of the transmission crossmember.*

17 Position the rear brace tubes (8) and tack-weld them to the plates at the rear of the tubes and the crossmember.

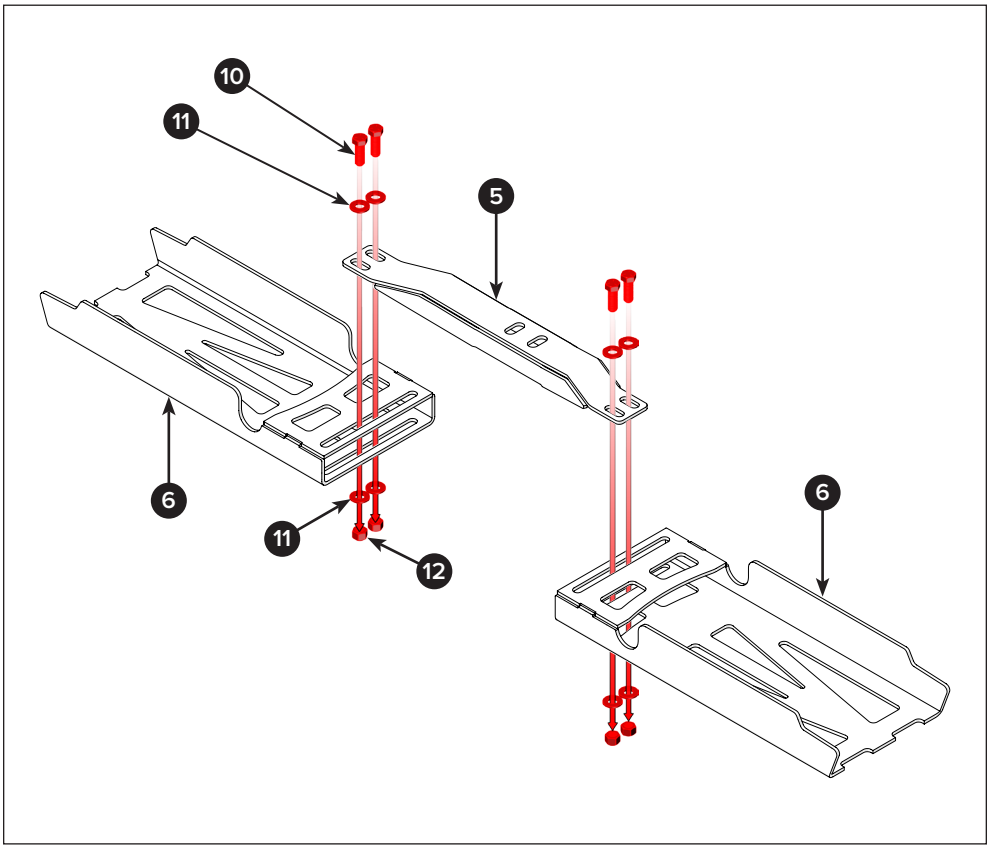
The front of the brace tubes are notched to fit the rear crossmember snugly.

Note: The brace ends are long enough to trim if the rear brace tubes do not fit.



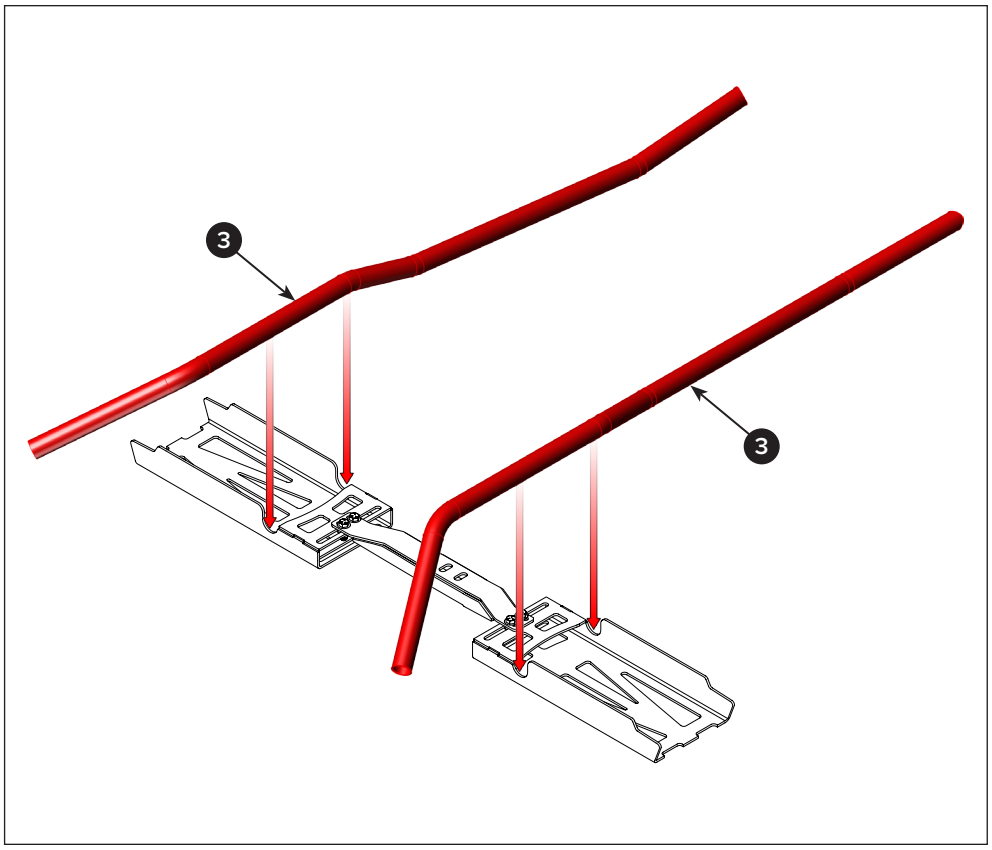
18 Assemble the transmission support with the transmission crossmember (5) and side supports (6) with four hex bolts (10), eight washers (11), and four Nylock nuts (12).

Snug, but do not tighten the fasteners.



19 Insert the main brace tubes (3) into the designated tube reliefs on the transmission crossmember side supports.

Note: Test fit the tubes in place. Trim the tubes to fit correctly and allow sufficient space between the tube and chassis for the frame plate.



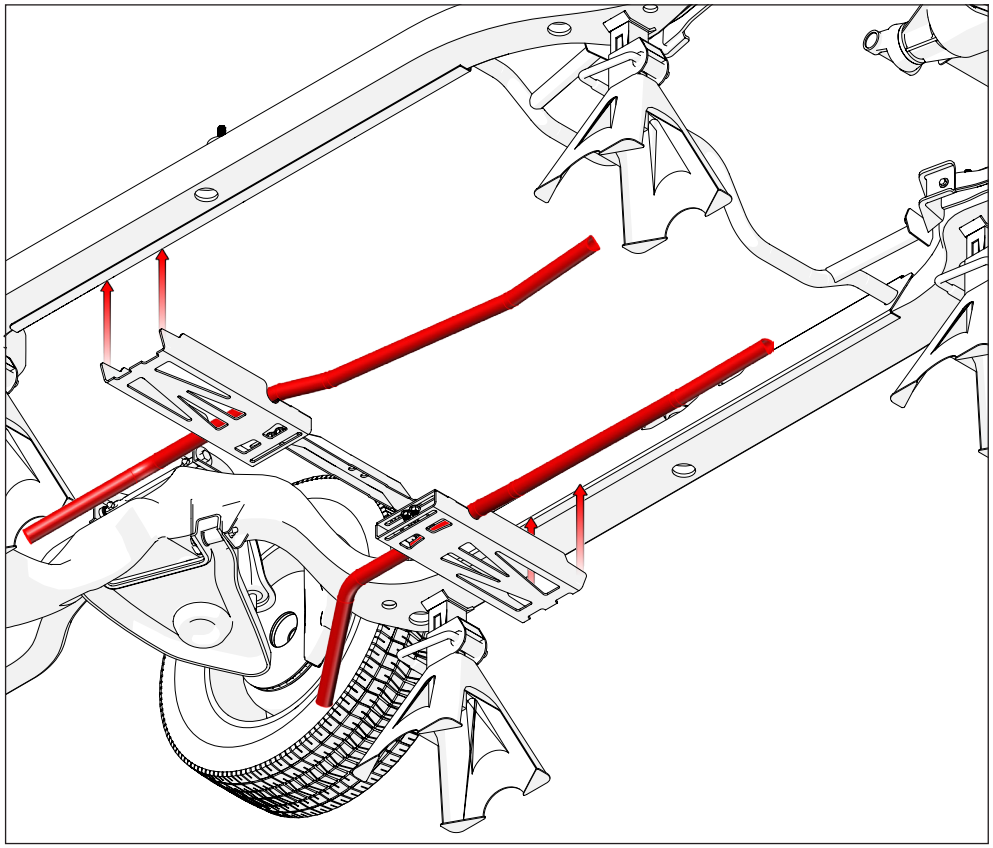
Installer's Note: *A support bar or plate (not shown) with spacers at the bottom of the chassis is essential. Stock engine and transmission setups should be positioned at the center of the old crossmember location to keep the side supports level during installation.*

20 Assemble the transmission crossmember to the side supports and align it with the frame rail boxing plates. Make sure the front horn contacts the frame and the notched end of the main brace tube fits snugly against the rear crossmember.

Note: Adjustments in the rear footwell may be needed to fit the side tubes properly.

The factory crossmember's center is about seven inches from the front edge of the new side bracing plate, so center the new support with the old crossmember.

Note: Adjust side supports as needed for your engine and transmission setup.

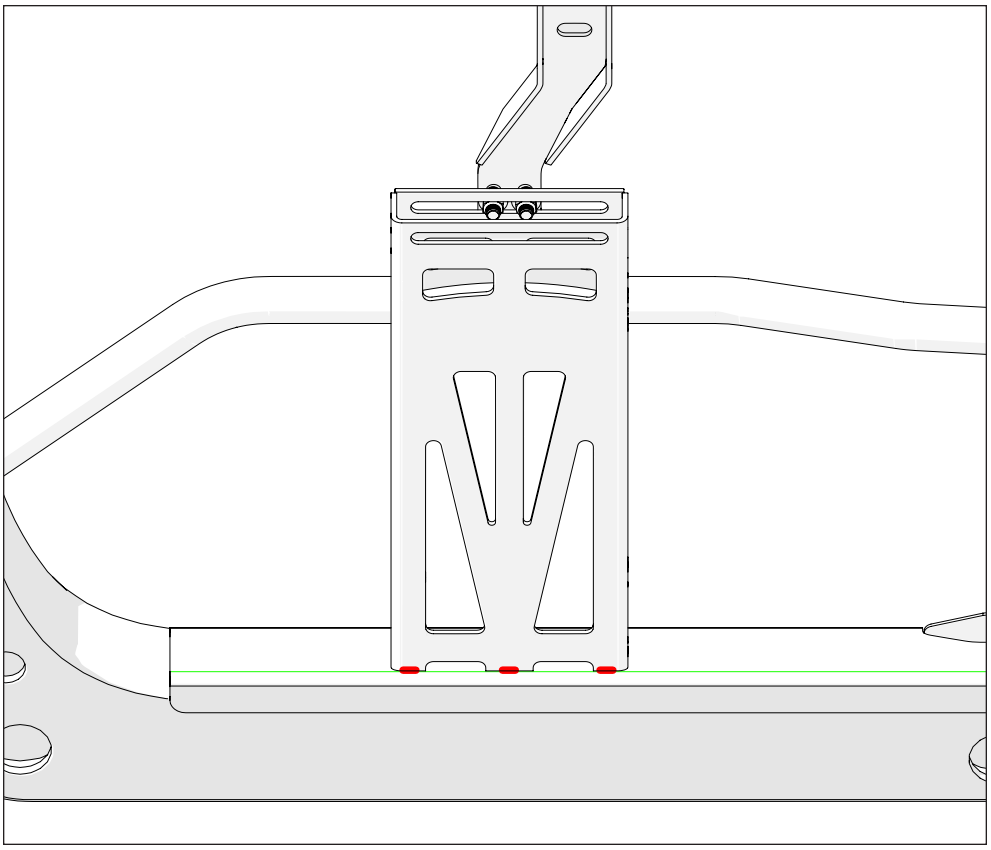


21 Trim the front end of the brace tube for a custom fit, and allow room for the brace plate between the frame and the brace tube.

The bottom of the crossmember will line up with the top of the radius-bend of the side plate (shown with the green line).

Once in position and aligned, tack weld the side support to the side boxing plate.

Repeat steps 18 and 19 to install the LH transmission crossmember side support (6).

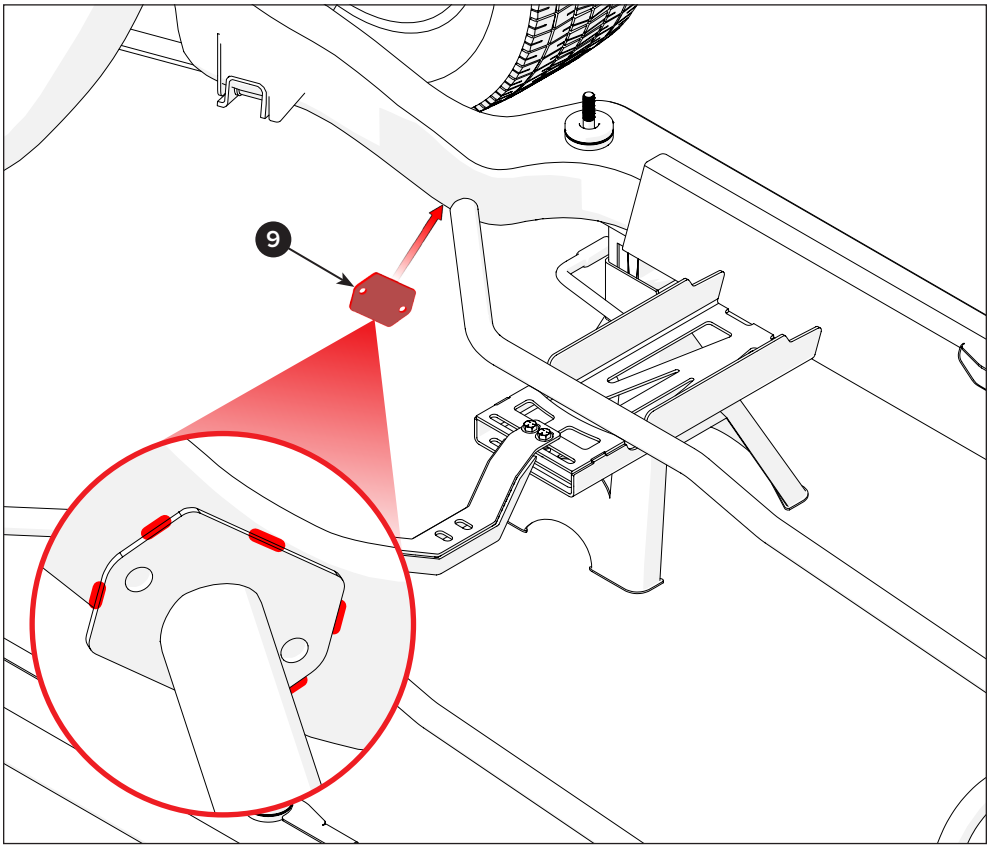


Installer's Note: *The main brace tubes must be parallel to the frame and to each other for maximum strength and structural rigidity.*

22 The front horn of the main brace tube must be welded to the frame-to-brace plates (9).

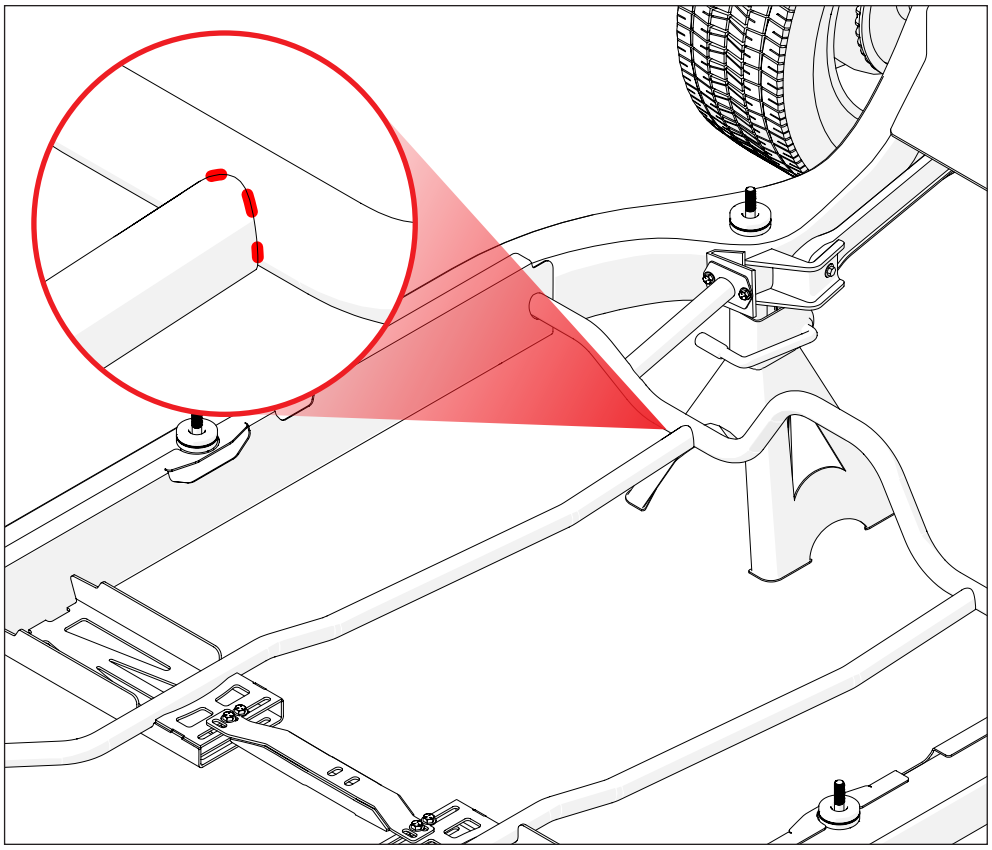
Tack-weld or use a self-tap screw to keep the plate in position.

Note: If needed, slightly bend the plate to match the contour of the frame.



23 The rear of the main brace tube is notched for a tight fit to the rear crossmember.

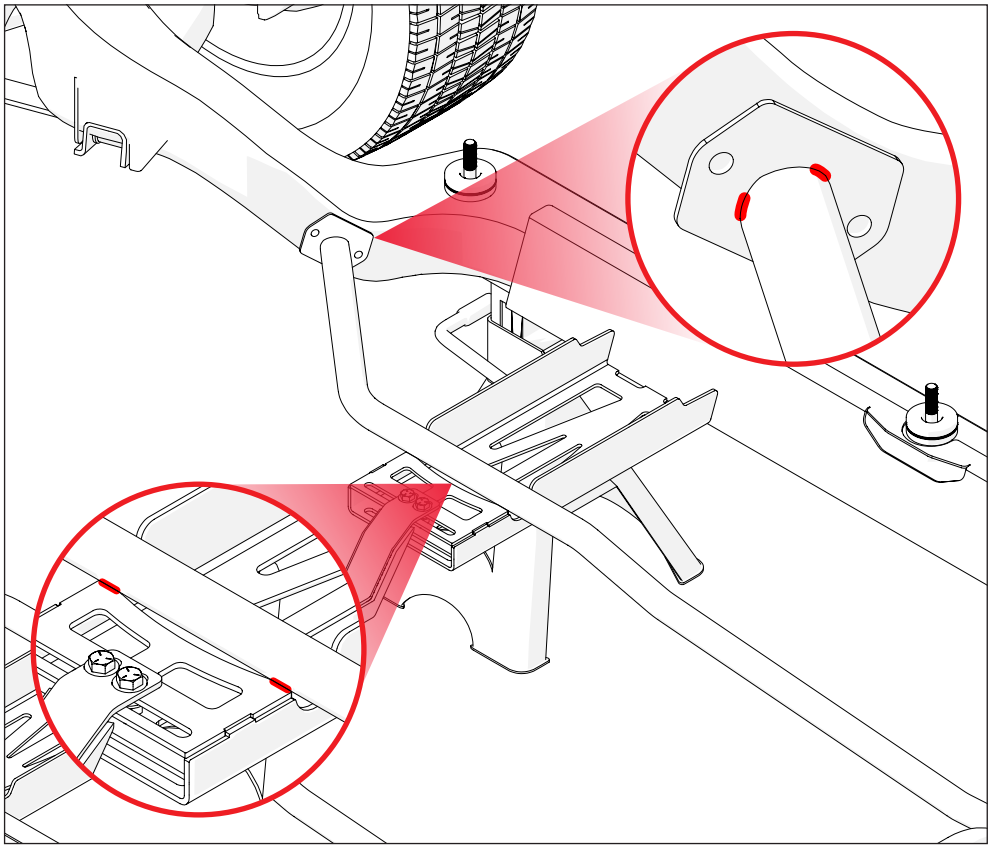
Once aligned, tack-weld the notched rear of the main brace tube to the rear crossmember.



24 Tack-weld the front of the main brace tube to the mount plate.

Repeat steps 22 through 24 to install the LH main brace tube (4).

Now tack-weld the tube to the transmission crossmember support at this time.

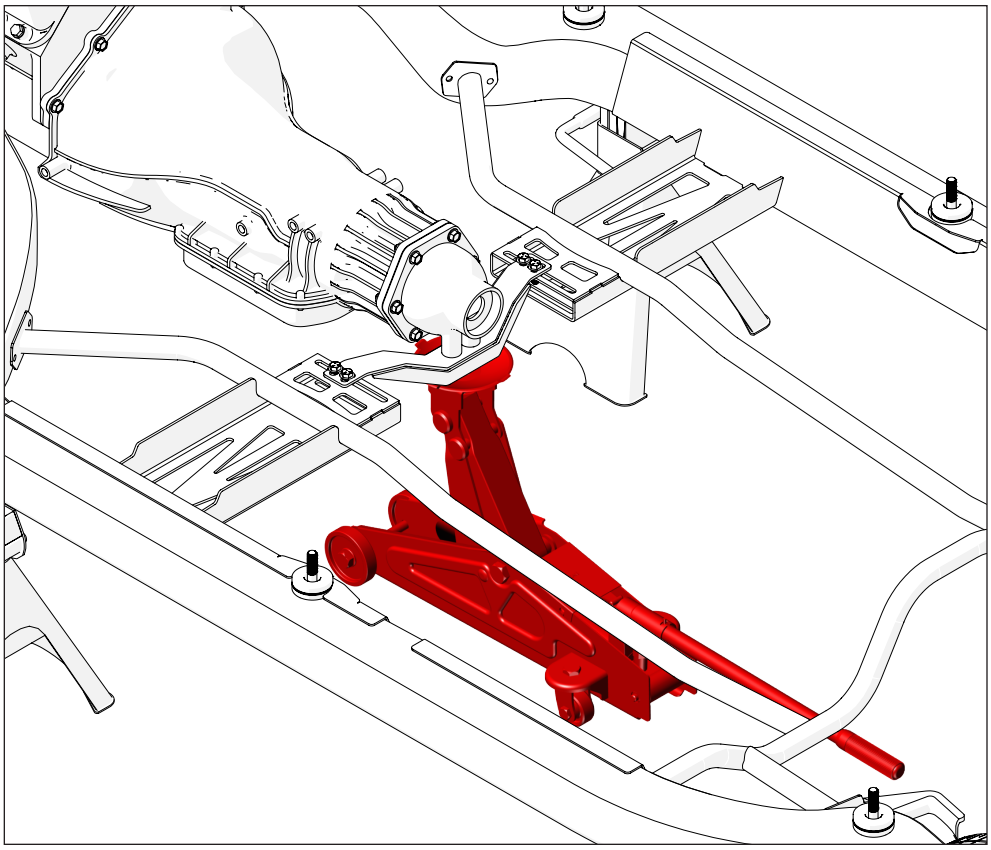


25 Before final welding, and to verify the accuracy of the measurements, place a floor jack or jack stands under the crossmember to support the engine and transmission assembly.

Install the engine and transmission assembly into the frame.

Alternatively, measure the distance to the location where the transmission mount will be installed.

Note: If the engine and transmission are installed, they must be supported underneath the crossmember. Such support will prevent any frame distortion or side support misalignment from the weight until all welding is completed.

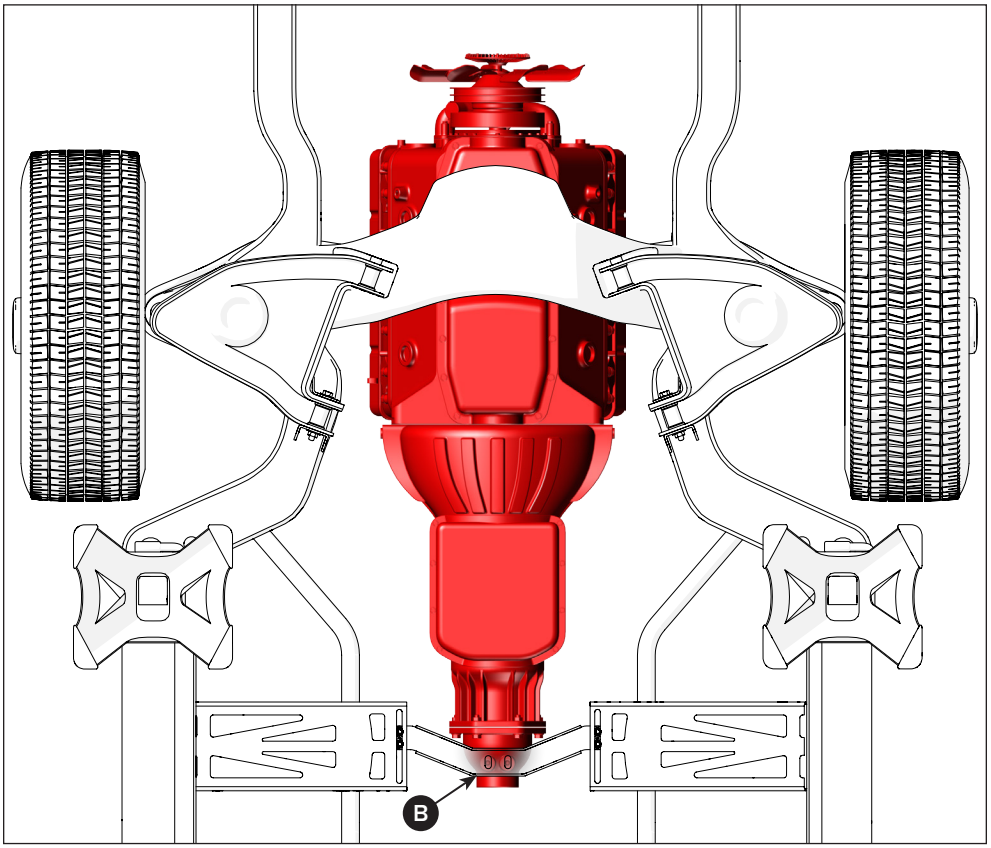


26 Now align the center crossmember with the transmission mount pad.

Make sure the transmission crossmember side supports and crossmember is centered in line with the transmission mount pad (B).

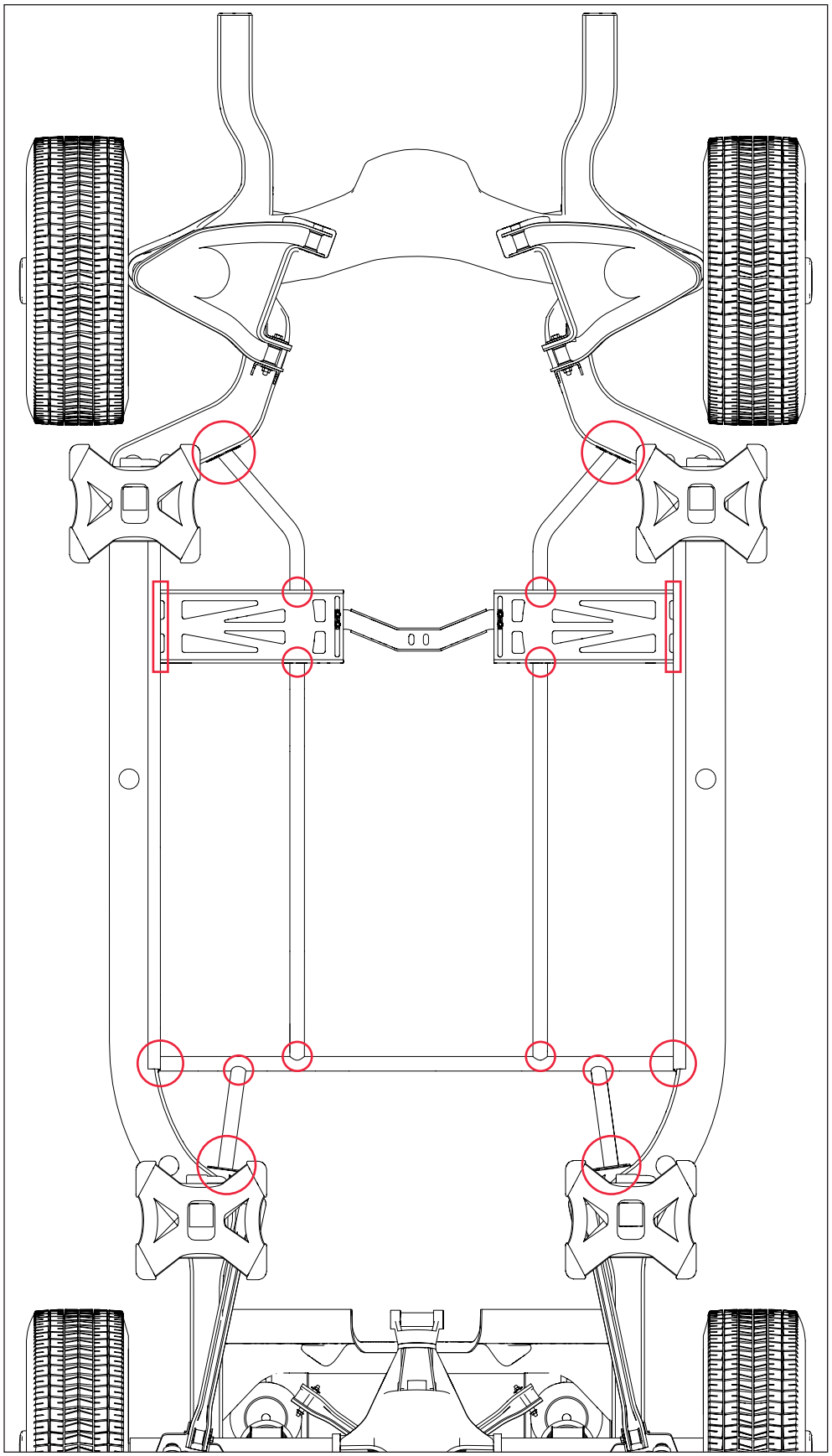
When positioned correctly, the bolt slots on the crossmember will align with the bolt holes in the transmission mount pad. This alignment allows for adjustment flexibility for any future transmission changes.

Finally, torque the crossmember support fasteners to 40 lb-ft.



27 Examine all joint locations circled in red to make sure they are securely tack-welded together before the body is removed for final welding.

Once all tack-welds are confirmed, remove the body, engine, and transmission for final welding.



28 It is advisable to reattach the straps to triangulate the frame.

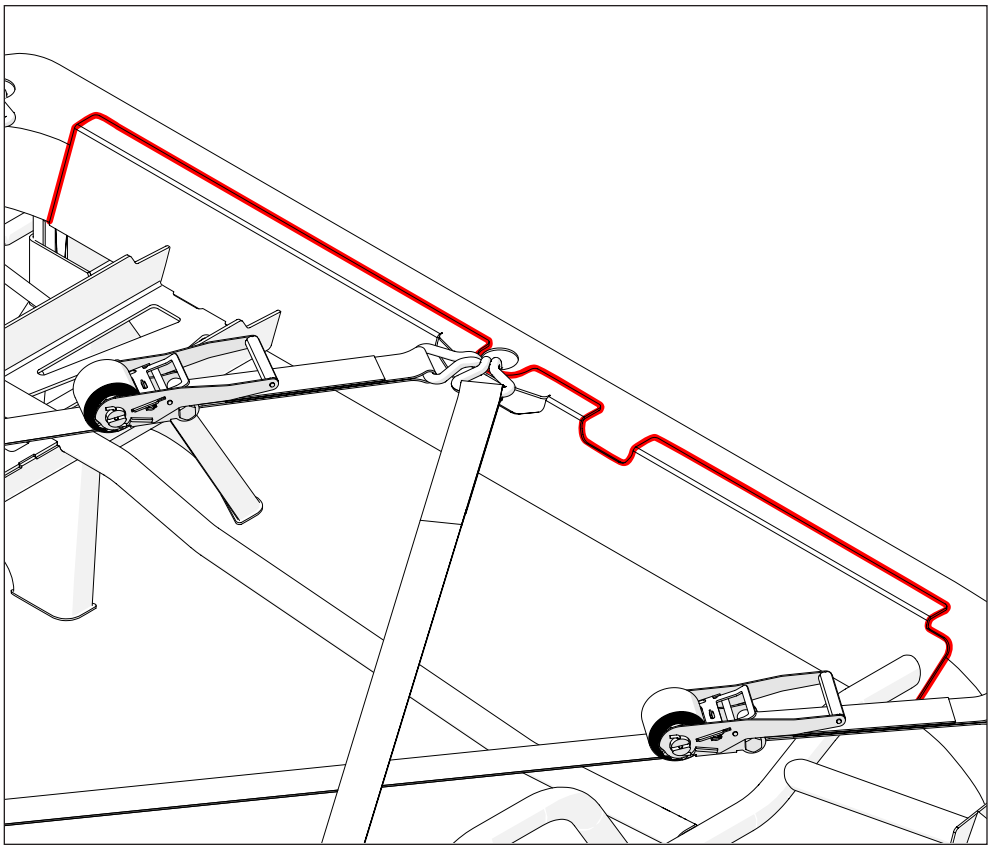
This frame triangulation prevents frame movement or warpage of the frame when the body is removed.

With the body removed and the straps reattached, proceed to the final welding (marked in red).

Weld along the top edge of the boxing plate to the frame.

Move from front to back and side to side as you weld in 2-3” increments. Take breaks as necessary and let the metal cool to the touch during this final welding procedure.

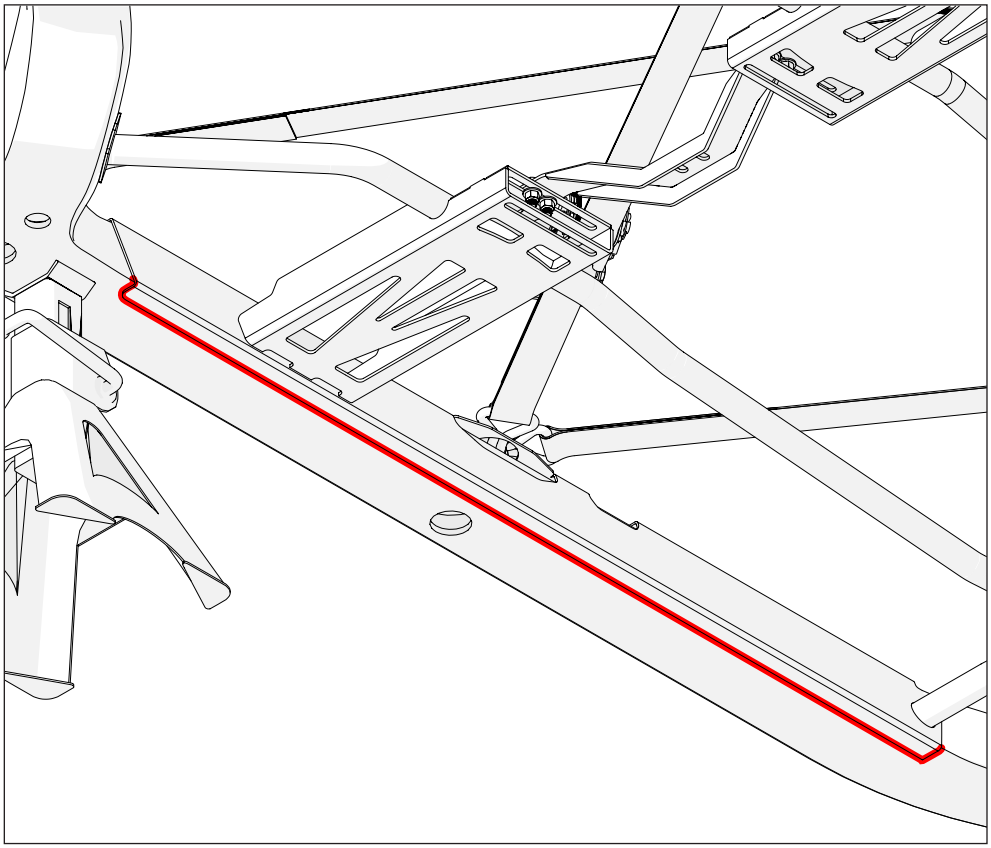
Note: Do not weld large areas all at once, as this will cause the frame metal to distort or warp and cause frame-to-body misalignment.



29 Weld along the bottom edge of the boxing plate to the frame.

Move from front to back and side to side as you weld in 2-3” increments. Take breaks as necessary and let the metal cool to the touch during this final welding procedure.

When the frame box welding is done, use the grinder to smooth the welds if desired.

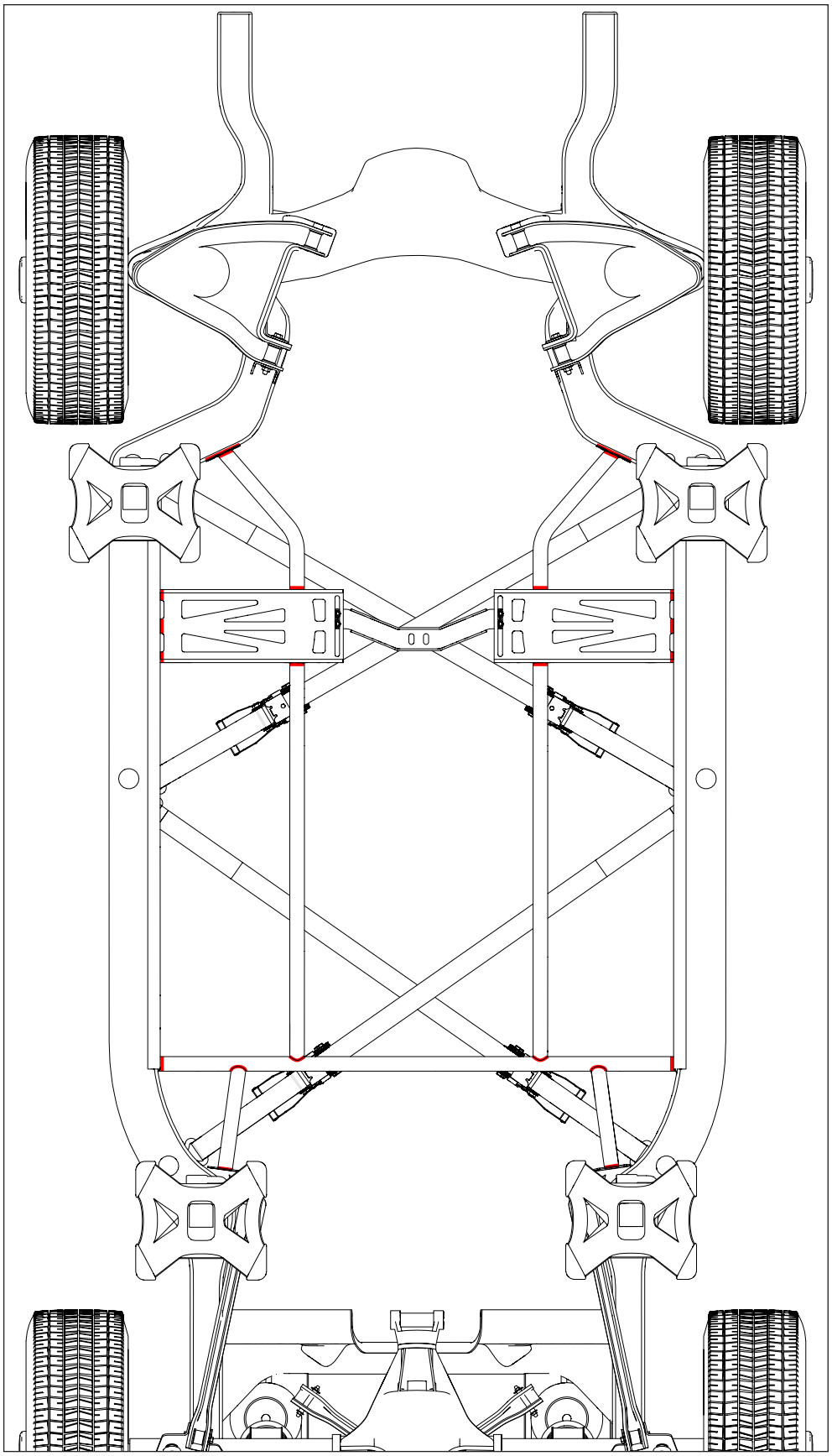


30 Now, weld all the frame brace locations marked in red. For the exact locations, refer to step 30.

After welding is completed, protect your newly installed frame brace kit: Clean, prep, and paint it!

Alternatively, this would be a good time to have the entire frame blasted and powder-coated.

Note: Remember to weld in smaller increments and move around from front to back and side to side. This welding technique lets the welded areas cool to prevent distortion.



FINAL NOTES

It is important to complete the items listed below before the body is set on the frame or the vehicle is driven:

First, verify that all measurements are accurate and that all components have sufficient clearance throughout the suspension's travel range.

Now is the time to check for any loose suspension bolts and ensure they are tightened properly.

We advise that you fill all grease fittings at this time. Though we recommend using Permatex Ultra Slick Synthetic Grease, any high-quality frame grease will be suitable.

Complete these items listed below after the body is set on the frame:

Install the vehicle body onto the frame, then torque the body bolts to specification.

Now verify and torque the transmission center mount fasteners installed during step 23 to 40 lb-ft.

Recommended steering gear maintenance after the body is set on the frame:

If your frame is equipped with a Sweet power rack and pinion, we recommend using Sweet or Jones brand full synthetic power steering fluid to avoid overheating standard use fluids during performance driving. These brands will provide the best performance and protection to your equipment.

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