Level 2 Chassis Stiffening Kit

Mopar A, B and E-body: every Level 2 kit

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BEFORE YOU START

- Read each section all the way through before you cut, drill or weld anything.
- Support the car on a lift or on jack stands rated for its weight. Never work under a car held up only by a jack.
- Disconnect the battery before welding. Remove the seats, carpet and anything that can burn near the weld areas, and keep a fire extinguisher close by.
- Wear eye protection, gloves and proper welding gear. If you are not comfortable welding, have a qualified welder or shop do the welding.

Questions during your install? Call Bergman Auto Craft.

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The step-by-step instructions on the following pages are supplied by the kit's manufacturer and are included unchanged. Guide compiled by Bergman Auto Craft, November 2026.

WWW.USCARTOOL.COM

USCT Motorsports Frame Connector Instructions

Short Version
1. Remove the seats (Front & Rear) and the carpet
2. Safely lift the car
3. Test fit the frame connectors to the floor
4. Modify the driver side connector for the emergency brake cable (if necessary)
5. Clean contact area of undercoating and / or paint
6. Adjust as necessary by grinding the high spots or pressing down on the floor
7. Place car weight on the suspension and check fitment
8. Hold in place with screws or tack welds
9. Weld into position, 1" at a time moving 12" away and cooling weld areas

Long Version
Thank you for purchasing the finest frame connectors available. USCT Motorsports takes great pride in producing the best tools and products possible. If you have any questions about one of our products or a suggestion for how we can make something better, please do not hesitate to call. You can also call just to say Hi, or tell us how the installation went. We're car folks too!

Remove the Seats and Carpet

You will be welding the frame connectors to the floor, in between the front torsion bar support and the rear frame rail. Most of the floor area that you will weld to is in direct contact with the carpet, so it really does need to be removed. Taking the seats out is to provide access to the carpet for removal and it is also a great time to clean the interior! If you plan to screw or tack weld the connectors into place and then take you car to a muffler shop or welding shop to be welded in, you can skip this step until you are ready to do the welding, but it is a lot easier to take all the stuff out now, then put just the driver seat back in for the drive!

Safely lift the front of the car

If you have access to a lift, installing the frame connectors can be easily done with your car on a lift, either a frame lift or a four post drive on style. If you do not have access to a lift, it is best to raise the car in the air to provide adequate access to the floorboard and torsion crossmember area. Please use jack stands and be safe.

Visualize how you will install the connectors and look for any potential tight spots. Can you get all the parts in without dropping the exhaust system? You will need a plan to deal with the emergency brake cable. Also consider any routine maintenance that might be best performed now. Do you need to change the front U-joint or install a driveshaft loop? This is the perfect time!

Clean contact area of undercoating and / or paint

Mark the area on the floor pan where the frame rail connector will be in contact with the floor and remove any undercoating or paint. You may need to test fit the connector again after this step. Try to get the tightest fit you can get to the floor. We have had good results using a wire wheel and a scraper to remove the undercoating, but it is a messy / dirty job under the best of circumstances. Be careful, wear eye protection and be careful of fumes and open flames!!

Adjust as necessary by grinding the high spots or pressing down on the floor

You want the gap between the frame rail connector and the floor pan to be as small as possible. This may mean you will have to grind away some of the high spots on the connector. Hold the connector in place (use a floor jack from below with slight upward pressure) and measure the gap. If you have no gap along the seams (inboard and outboard) then proceed with the next step. If there are gaps, take the high points (no gap area) down a little at a time with a grinder until the connector fits tightly up against the floor pan. Use a sharpie marker to mark the high spots and then remove the connector and grind the high spots a little at a time. Remember, adding metal back is harder than grinding it off!

Place car weight on the suspension and check fitment

If you are using a frame lift or have the car on jack stands under the frame, remove the car from them and lower it onto the tires. This will “load” the suspension and with the car at its correct ride height, you can check the fitment of the frame connectors. If you are using a 4-post lift and the tires are in contact with the “runways” or have jack stands positioned under the suspension, you are already at the ride height and have the suspension loaded.

If your car is not fully assembled, no worries in the case where the engine, transmission and rear end are removed you will need to support the car with jack stands/lift in an area of the frame where no substantial weight will be “hanging/not supported”

Example: If you have your access to 4 or more jack stands, placing them under the frame rails in these positions will eliminate any flex/bow of the chassis.

Front: In front of torsion bar crossmember right behind the section of frame-rail that starts to curve upward.

Rear: Behind the rear spring hanger mount on the section of frame-rail or on the pinch weld of the rocker in the same area.
Hold in place with screws or tack welds

Once you have the connector fitted nicely to the floor pan, you can tack weld in position, or use some sheet metal screws to hold it in position. Test fit the frame connectors to the floor

Hold the connector up to the floor pan under the car. There is a left and a right connector, they are not marked, but you can only install the right connector on the car's right side. Chances are that the connector will be close but not perfect and will need some grinding on the high spots. Production tolerances, prior floor repairs or replacement make the floor pans just a little different on every car. We have found that using a floor jack under the frame connector to hold it upwards with "slight" pressure helps to evaluate the fit. It can also help to add some weight to the car to force the floor pan down slightly – CAREFUL the car is on jack stands, be safe!!

All frame connectors have slots cut into the bend lines for minor adjustment during Installation these slots need to welded fully.

The E-Body frame connectors are shipped with a front & rear lower "flap" that is not welded. This allows you to adjust for individual car fitment. After final fitment, tack weld the flaps in position and seam weld the flap to the sides using the same method described below to weld the sides to the original car floorpan.

The E-body Frame Connectors are designed to be installed following the angle of the rear frame rails, NOT parallel to the rocker sill. The front of the E-Body frame connectors will be approximately ¾" outboard of the torsion bar socket when it is installed in the design location.

B-Body frame connectors have notches at the front inner edge of the frame connectors. These notches allow the frame connector to clear the factory fuel line on one side and the factory brake line on the other side. You may want to remove those lines and add a splice connector to re-install them after the frame rail is welded in place. It will be difficult to maneuver the factory lines in or out after the frame connectors are welded in, so think about it now!

A-Body frame connectors have a rear "flap" and several areas along the frame connector that are an inch or more away from the floor. These areas are designed to clear the fuel and brake lines as run by the factory on some A-body cars (there is no lack of structural strength, even with these drop outs). Almost every year has a different routing for the brake and fuel lines, so you will most likely need to reroute yours. Plan now before you weld in the frame connectors!

65-66 Mustang frame connectors have a rear plate included to cap the back section of the frame connector.

Modify the driver side connector for the emergency brake cable (if necessary)

If you are running an emergency brake, the cable will want to pass right through one of the frame connectors. You can drill two holes to permit the cable to pass through the frame rail connector. Most of the time, you will be able to get the frame rail connector in place and the cable will run beneath it – mark the entry and exit points and drill a sizeable (3/4") hole at these points to permit the cable to pass through.
Weld into position, 1" at a time moving 12" away and cooling weld areas

Before you begin to perform the welding, be sure there are no flammable materials touching the top of the floor (like carpeting) or you will surely have a fire inside the car. You will be welding about one sixteenth of an inch away from the carpet (if it is left in the car) and it will catch on fire.

Weld small areas, no more than a 1" bead and cool the area around the weld with a damp rag. Move to the other end of the frame connector and weld no more than a 1" bead. Go around the connector and check for any warping as you are welding. Continue to move around the frame connector until you have completely welded it to the front torsion cross member, the floor pan and the rear frame rail.

Hint #1. Welding overhead can be a lot tougher than it looks. If you are not 100% positive in your ability to weld overhead, consider taking the car to a local muffler shop. They weld overhead all the time and are used to welding 12 and 14 gauge material. They almost always have a 4-post style drive on lift with runways, so the suspension will be fully loaded, plus they will probably think your car is pretty cool and give you a break on the welding $$.

Hint #2. Do not weld your car with the frame supported on jack stands and the tires hanging in mid air. Support the car on the suspension (under the rear axle tube and front lower control arms is a good spot for Mopars) so it is "loaded" and have the doors closed while you weld the frame connectors in.

If you need pictures to help on your installation, there are pictures on our website under the pictures section.

Questions or comments?

Call your dealer or call us – we'll help!

USCT Motorsports
www.uscartool.com
919-855-8200

WWW.USCARTOOL.COM

USCT Motorsports Torque Box Instructions

Short Version
1. Remove the seats (Front & Rear) and the carpet
2. Safely lift the car
3. Test fit the Torque Boxes to the Car
4. Clean contact area of undercoating and / or paint
5. Adjust as necessary by grinding the high spots or pressing down on the floor
7. Place car weight on the suspension and check fitment
8. Hold in place with screws or tack welds
9. Weld into position, 1" at a time moving 12" away and cooling weld areas

Long Version

Thank you for purchasing the finest Torque Boxes available. USCT Motorsports takes great pride in producing the best tools and products possible. If you have any questions about one of our products or a suggestion for how we can make something better, please do not hesitate to call. You can also call just to say Hi, or tell us how the installation went. We're car folks too!

Remove the Seats and Carpet

You will be welding the Torque Boxes to the floor. Most of the floor area that you will weld to is in direct contact with the carpet, so it really does need to be removed. Taking the seats out is to provide access to the carpet for removal and it is also a great time to clean the interior! If you plan to screw or tack weld the torque boxes into place and then take you car to a muffler shop or welding shop to be welded in, you can skip this step until you are ready to do the welding, but it is a lot easier to take all the stuff out now, then put just the driver seat back in for the drive!

Safely lift the front of the car

If you have access to a lift, installing the frame connectors can be easily done with your car on a lift, either a frame lift or a four post drive on style. If you do not have access to a lift, it is best to raise the car in the air to provide adequate access to the floorboard and torsion crossmember area. Please use jack stands and be safe.

Once the car if safely lifted and supported, place the Torque Boxes into position and mark around the exterior for a guide line to grind/clean are to be welded.

If you have already installed or plan to install our frame connectors along with torque boxes we suggest that you install the frame connectors first. You will achieve a better fit this way. Most of the torque boxes will have to slightly modify where they come into contact with our frame as they are manufactured to install on their own.

Once the area you have ground/cleaned is prepped we suggest using a weld able primer in the area that the torque box is going cover once installed and one the back side of the torque box to prevent rust from forming.

We suggest using clamps to hold into position as to create a better fit.

Tack weld into position.

In some situations where a clamp is not possible you might need an extra hand to push area of the torque box that is not in contact with the car into position for welding.

Once desired fit is achieved weld in small sections as to not create too much heat in one general area. Our suggestion is tack all the boxes in place and then weld one section of each box at a time.

Most of our torque boxes have a section that has been left not welded for minor adjustment, once the torque box is installed on the car this slot will need to be welded and ground smooth.

Once all torque boxes are welded fully and cooled down, at this point you can use a coating of your choice to protect them from rust.

Re-installed all previously removed parts on your car and enjoy your cars new stiffness!

If you need pictures to help on your installation, there are pictures on our website under the pictures section.

Questions or comments?

Call your dealer or call us – we'll help!

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US Car Tool Inner Fender Brace Instructions

The USCT Motorsports Inner fender braces are designed and engineered to add stiffness and strength to the front end of your car's unibody. They connect the inner fender sheet metal to the stamped steel shock tower and add a continuous gusset/brace travelling rearward to the firewall.

This system is designed to allow suspension forces to be dissipated into the unibody rather than causing a bending motion in any single component. Stated plainly, your frame rails will not bend as much after install the USCT inner fender braces!

Short Version

- Remove Fenders and any items in engine compartment that may interfere with welding like wiring or AC/Heater lines.
- Remove Firewall insulation and any items that may interfere with welding in passenger compartment.
- Fit part and clean area of any undercoat or paint.
- Install plates on shock tower and tack weld in place.
- Fit Inner fender brace before welding shock tower plates.
- Fully weld shock tower plates.
- Re-fit and tack weld inner fender brace.
- Fully weld inner fender brace.
- Repeat on other side.

Long Version

- Prepare the car for the installation. Before you jack up the car and remove the tire, consider washing the under fender area to remove road grime and dirt. Place the car on secure jack stands and remove the tire. Be safe and make sure the car is not going to tip or fall off the jack stands!

- Take off the shock absorber. You do not have to remove all the suspension components to install the kit, but you should remove the shock absorber. You will be welding around the suspension components and weld spatter will make a mess of the shock absorber shaft and damage the seal, so take out the shock!

- Remove fenders and any items in engine compartment that may interfere with welding. You are going to be welding to the inner fender so there will damage to the engine compartment side of

the inner fender. Care is needed as to not burn or catch anything on fire. Also, you will be welding to the firewall area of the car, so care is need as to not burn or catch anything on fire. You may need to remove things such as the firewall insulation and other items located in the passenger compartment.

- Do a dry fit of the inner fender brace kit components onto the car and be sure you understand where each piece fits. There are one or more parts to box in the shock tower, tie the shock tower in to the inner fender and finally the large brace that connects the shock tower, inner fender and firewall.

- Cleaning the area that you will be welding to is very important as you will not get a very good finished product if the area is not prepped well. If the car has undercoat, we usually find the easiest way to remove the undercoat is with a propane torch and a scraper. If the car is just painted removing the paint is usually either done with a grinder or a chemical. Placing the part temporally on the car will give you a good indication of where cleaning is necessary.

- At this point you want to correctly support your car for welding. If your car is completely disassembled, you will want to support on jack stands under the frame rails of the car in multiple spots. If the car is on a rotisserie you will need to lower it down and support with jack stands. You do not want to weld these in place with the car supported only by the rotisserie. If your car is completely assembled you can install these with the car sitting on all four wheels as it would be normally. These steps will ensure that the body does not flex while installing the inner fender braces.

- Install shock tower plates, the plates are contour cut to fit so there is a front and rear plate plus a plate that ties both the front and rear plate together. Install each piece separately. Install front and rear plates first. Once the plates are tack welded in place, you will want to fit the inner fender brace to make sure plates are not going to interfere with fit.

- Once you have the fit that you desire, remove the inner fender brace and fully weld shock tower plates in place. Once welded re-fit inner fender brace. Depending on your welding you might have to grind some of the weld areas for proper fitment of the inner fender brace.

- We suggest that you use a weld through primer to coat the backs of the inner fender brace and plates in order to keep the rust from forming.

- Once the plates are welded and you have fit the inner fender brace and happy with the fit. Tack weld the inner fender brace in place and double check all the areas of fitment. There should be areas where the inner fender brace does not touch; these are intended for drain holes. At this point you can fully weld the inner fender brace to the car.

- Once you are finished welding both sides now it’s up to you to decide how to coat the area that was affected paint, undercoat, there are many different options choose the best for you application.

E-Body

		
Locate, test fit and clean paint off surfaces to be welded, the brace can go over the factory brace	Shock tower plates and brace welded in.	Fully welded. Trim the splash shield as needed.

- The factory inner fender brace lip may have to be trimmed to fit our inner fender brace correctly.
- The front and rear shock tower plates are installed first, then the inner fender brace is fitted. Once in place then fit the large shock tower brace, this plate fits and welds against the bottom of the inner fender brace.
- The e-body inner fender braces are designed to install over top of the factory cowl to shock tower brace.
- The e-body shock tower plates are extremely important to fit first before fitting and welding the inner fender brace in.
- The e-body factory splash shield will need to be trimmed to fit after installing our inner fender braces.

B-Body

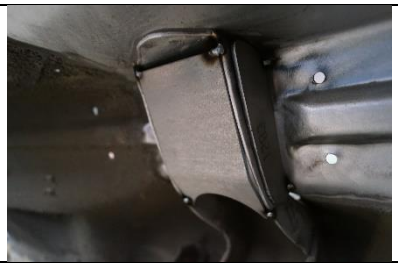

Clean and prep the car


Locate, adjust and weld the brace


Weld fully and prime

- The B-body inner fender braces are designed to use shock tower braces that are integral to the inner fender brace itself. There are no separate shock tower braces for the B-Body.
- Adjustments, grinding and trimming are usually required to fit the Brace to your unique car.
- The B-body braces have extra slots to allow for welding the brace to the factory shock tower brace.
- You will likely need to trim the “Wing” gusset of the inner fender brace a bit for the original splash shields to fit. Trim now before you remount the fender.

A-Body

		
Remove Fender, locate, adjust and clean surfaces to be welded	Install shock tower brace	Fully weld

- The a-body braces weld directly to the firewall and will need extra caution in the interior of the car as not damage or burn anything.

Thanks for purchasing USCT's Inner Fender Braces!

If you have any questions or concerns please feel free to contact us at (919) 855-8200

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www.uscartool.com

Install Instructions for Core Support Stiffener

The USCT Motorsports Core Support Stiffener is designed and engineered to add stiffness and strength to the front end of your car's unibody. This system is designed to allow suspension forces to be dissipated into the unibody rather than causing a bending motion in any single component. Stated plainly, your frame rails will not bend as much after install the USCT core support stiffener!

Basic install procedure

1. Dry fit all the components, adjust as necessary for close, weld able fit.
2. Tack Weld In Position
3. Weld core support stiffener fully in position.

Detailed install instructions

1. Prepare the car for the installation. Before you jack up the car and remove the tire, consider washing the under fender area to remove road grime and dirt. Place the car on secure jack stands and remove the tire. Be safe and make sure the car is not going to tip or fall off the jack stands!
2. Remove Radiator, front fenders, front valence, and any other items that might be subject to damage during installation.
3. Do a dry fit of the core support stiffener onto the car and be sure you understand where it fits. Clean the area where you will be welding. Remove undercoating etc. You need bare metal for the welds to penetrate and hold.
4. Look at the other side of the areas you will be welding. Be sure there is nothing flammable or plastic touching the core support in the engine compartment! The welds will penetrate all the way through the core support sheet metal. If you have your wiring harness held in place while you are welding on the core support, you will melt the wires together and probably the plastic clips that hold it in place. Check the engine compartment side of the core support and move things out of the way.
5. The order of installation is as follows:
    a. Clamp core support in position, the piece is meant to fit tightly so you may have to use a rubber mallet to work the piece in place.
    b. Tack weld core support stiffener in place.
    c. Weld core support fully including inside the flanged holes.
6. Let cool, undercoat or prime/paint the weld areas, re-install all parts removed for installation and go for a test ride with your new stiffer and stronger car!

B-Body

The factory bracket that mounts the k-frame to core support bracket and grill support has to be removed. To do this you will need to drill the spot welds. It can be re-installed in the same location after the new core support is installed.

E-Body

The core support has slots and a hole for the existing holes used for mounting front grill support and k-frame to core support bracket.

We have seen some E-Bodies have a 45 degree chamfer on the factory lower core support bracket. This chamfer does not allow the USCT Motorsports core support brace to sit flush and does not provide a surface to weld through the dimple die holes. We include a flat "backer" that is welded between the factory core support bracket and the USCT Motorsports core support brace to provide the support needed to weld fully.

A-Body

The core support has slots and a hole for the existing holes used for mounting front grill support and k-frame to core support bracket.

We have installation pictures available on our website under the pictures section.

Any questions or concerns feel free to give us call at (919) 855-8200