

1960-64 BODY TO FRAME MOUNT INSTALLATION

I know we hate to think about it, but it's that time of year when many of our Chevys go into hibernation for the winter. The good thing about this is that winter gives us an opportunity to make needed improvements on our Chevys before that first ride in the spring!

We've made a number of great safety, performance and reliability modifications on Project '63. This month we'll deal with the body-to-frame mounts; these are the obscure little rubber or cardboard cushions and hardware that connect the body to the frame.

Tools Needed:

Hydraulic Floor Jack

Miscellaneous Pieces Of Solid Lumber 2"x4" or 4"x4"

Approximately 6" To 8" Long

Four Tall Jack Stands

Four Short Jack Stands

Impact Wrench (Air or Electric)

Impact Duty Deep Well Impact

Socket Set

Safety Glasses

Gloves

Hearing Protection

Air Hammer

Drill & 1/4" and 5/16" Bits

Torch Or Cut Off Saw

Punch Tool (Optional)

Welding/Cutting Torch With

Appropriate Safety Gear

Welder

Four Inch Grinder

Fire Extinguisher

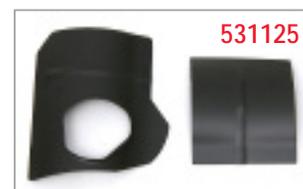
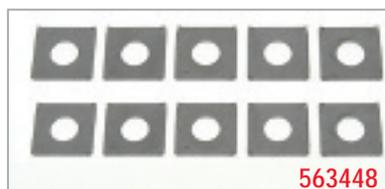
Time Frame:

A Weekend Project.

First, you need to locate the frame mounts on your Chevy. The assembly manual shows illustrations on three pages (in the '63 assembly manual you'll find this information in section #1 sheets 19-21). I also included some photos of a give-away car we rebuilt some time ago and some technical illustrations. The mounts are shown on the restored car for clarity. On hardtops and sedans, the body is secured to the frame with eight mounts, four per side. Convertibles, however, utilize 12 mounts, six per side.

On a hardtop, like Project '63, the mounts are located as follows: under the firewall (III#1), over the frame hump above the rear axle (III #4), just behind the rear wheel (III #5) and on the rear of the car at the end of the frame (III#6).

Convertibles have two additional mounts in the middle of the car (III#2/3). Depending upon how "complete" your car is will determine the degree of difficulty in getting to the body mounts. Since the Project '63 was disassembled, most of the mounts were readily accessible.



Parts Needed:

- 533006 60-64 Body Mount Kit, Hardtop/Sedan
- 533010 61-64 Body Mount Kit, Convertible
- 533009 60-64 Body Mount Bolt Kit- Carbon Steel - Hardtop/Sedan
- 533028 60-64 Body Mount Bolt Kit- Stainless Steel - Hardtop/Sedan
- 533011 61-64 Body Mount Bolt Kit - Carbon Steel - Convertible
- 533029 61-64 Body Mount Bolt Kit- Stainless Steel - Convertible
- 563448 55-64 Body To Frame Metal Shims
- 563566 Super Weather-Strip Adhesive
- 531125 61-64 Rear Wheel Well Brace Covers
- 531179 61-64 Rear Body To Frame Support, Left
- 531180 61-64 Rear Body To Frame Support, Right
- 535277 Wrench & Socket Tool Kit
- 564020 Torque Wrench

- * Penetrating Oil
- * Anti-Seizing Compound/Thread Lubricant
- * Assembly Manual
- * Seam Sealer

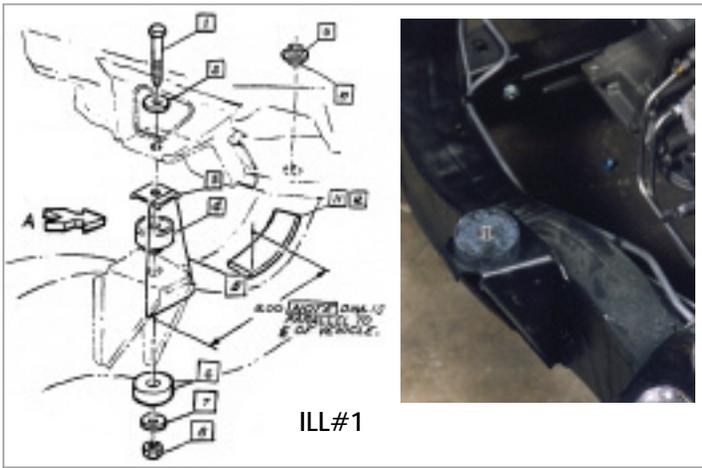


Photo #1a & 1b: First, you'll want to jack the car up off of the ground and place a set of short jack stands under the frame (Photo 1a). These stands must sit on a solid level surface on all four corners. Now, let the jack down slowly. Once resting on the stands, give the car a couple of shakes to ensure it is held solid and steady by the jack stands. Make sure the car is as level as possible. With the car up in the air, you can now get underneath to do your work. If the bolts and nuts that connect your mounts are still in good enough condition to loosen, liberally coat them in penetrating oil, then, using your hand wrenches or impact gun, attempt to remove the nuts. Don't forget to wear your hearing protection, gloves and safety glasses. If your mounts are a big ball of rust, like most are after all the years on the car, then you will have to cut them off (Photo 1b). You can use a cutting torch or reciprocating saw to cut the mounting bolts.

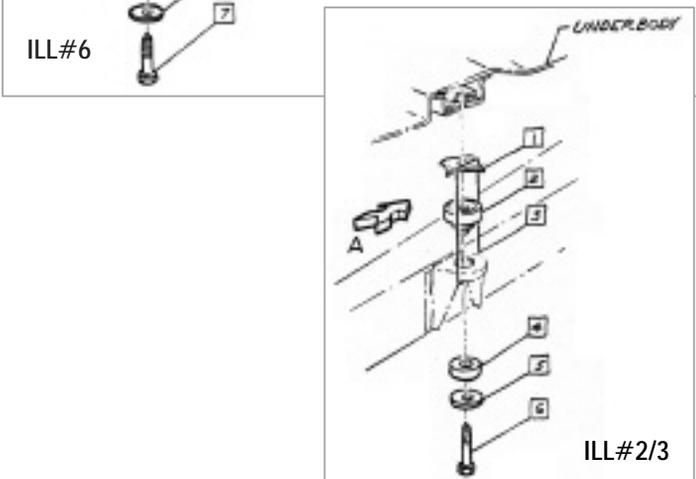
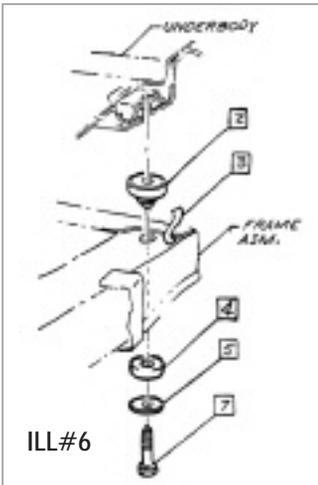
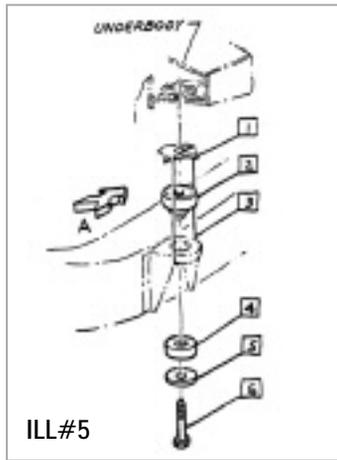
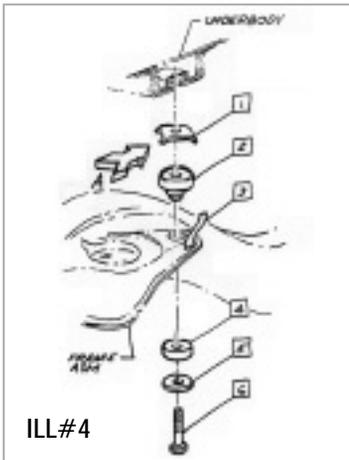


Photo #2a, 2b, 2c, 2d, 2e, 2f & 2g: With all of the body mount bolts cut, we're ready to jack up the body to gain adequate space between the frame and the body to work. Using a piece of scrap lumber and your floor jack, begin to slowly separate the body from the frame (Photo 2a). This piece of wood will

insulate the jack from the body and should lessen the chances of damage to the car. Select a solid jacking point under the car (Photo 2b), the pinch weld at the rocker to floor pan or a floor pan support will work well (Photo 2c). Jack the car slowly, working on one side at a time. Be mindful of the brake and fuel lines, wires and anything else that may become stretched or broken during the jacking process. I found that I needed to loosen the brake lines from the clips to prevent damage to the brake system (Photo 2d). You will only need a few inches clearance between the frame and the body. To prevent damage, you can place another scrap of wood between the jack stand and the body of the car (Photo 2e). For extra support, you can place 4"x4" blocks of wood between the frame and the floor of the car in conjunction with the jack stands in these locations (Photo 2f & 2g). Don't be alarmed if the body hangs up a bit when jacking the first side. Just be sure every mount is loose and there are no snags from lines or wires. Jack the car carefully and slowly. Place your first jack stand under the body and proceed to jack up the other side. Soon the body will be up and even. Be sure your stands are placed so the body is as level as possible.

Eckler's Late Great Chevy offers two choices in mounting hardware kits. There is an original carbon steel kit and a rust resistant stainless steel kit. The difference between convertible kits verses hardtop and sedan kits is the number of parts included. Convertibles use twelve body mounts while hardtops and sedans use eight.



GM use shims between the Chevy frame and Fisher's body to adjust the tolerance heights. The carbon steel body-to-frame shim kit, for 1955-1964 hard tops, sedans & convertibles is P/N 563448 and this shim kit comes with ten carbon steel shims. Sorry, there is not a stainless shim kit available at this time. You will also need one rubber body cushion kit, for 1960-1964 hardtops and sedans and the P/N is 533006. For the 1960-1964 convertible, use P/N 533010.

It's time for an important, but dry, blurb on metallography. Carbon steel is classified as any steel not containing a percentage of chromium in the alloy. In a nutshell, carbon steel readily rusts. Rust is produced by the chemical reaction at the molecular level between the iron (FE) in the steel and the oxygen (O) in the air and water. The result is the compound known to chemists as iron oxide. The rest of us just call it rust. Iron oxide film is active and accelerates corrosion by forming more iron oxide with the passage of time. It's kind of like a nuclear fusion bomb. Once it starts it's just a little difficult to stop. Stainless steel, on the other hand, has sufficient amount of chromium present so that a passive film of chromium oxide forms, which actually prevents further corrosion. So with that said, if you want to be original or if an escalating molecular reaction under your Chevy doesn't bother you, use the carbon steel. Otherwise, opt for the stainless hardware.

Photo #3: Since the radiator core support is not on our car, I began with the mounts under the firewall. Refer to **Illustration number one, from the shop manual specifically for your car (Ill# 1)**. Once you have removed the old rubber cushions and hardware, you should be looking at something like this (Photo 3). If you have the luxury of having the original mounts still installed, you'll be able to see how many shims if any were installed on the mounts. Put back the same amount of shims as you removed. The rest of us will have to judge by trial and error. If you have trouble aligning your doors, hood or trunk lid with the surrounding body panels, or trouble closing them properly no matter how much you adjust them, you'll need to add or subtract shims. There is not a formula for this. It's just a matter of trial and error.



Photo #4a, 4b, 4c, 4d, 4e, 4f & 4g: There are two washers in the hardtop/sedan kit that are smaller than the rest. Per illustrations in the assembly manual, these washers only go on the bolts used at the firewall. The larger washers go on the bolts first on all other mounts. All of the bolts in the kit are the same length. Install the washer to the bolt and slide it through the hole on the body side (Photo 4a). Install the shims (if any) tang side down (Photo 4b) over the cushion (Photo 4c). Each mount has an upper and lower cushion. The cushion that goes on the top of the frame is the upper cushion. This cushion has a little "nub" on one side (Photo 4d). This nub goes down into the opening in the frame away from the body side (Photo 4e). The lower cushion is the smaller of the two and does not have the nub on one side. It is installed from the underside of the frame side. Next install a washer, this washer will nearly cover the entire lower cushion, and then, install the nut. (Photo 4f & 4g).



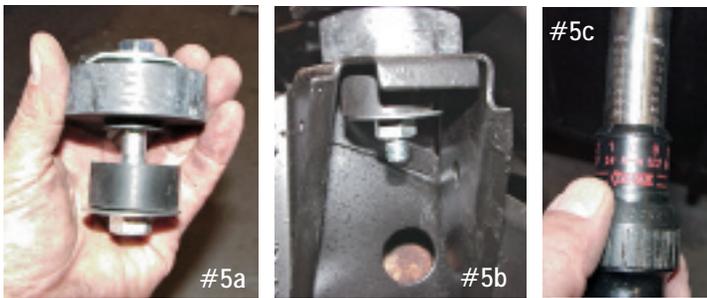
It's a good idea to use some ant-seize compound on carbon steel bolts when assembling them into the cushions. Using the

the anti-seize will make your life a lot easier if you ever have to take them apart in the future. It also allows the nuts to torque properly during assembly. Your local parts house or hardware store can direct you to the anti-seizing compounds.

I also like to put a bit of 3M Super Weather Strip Adhesive P/N 563566 on these parts to aid assembly in hard to



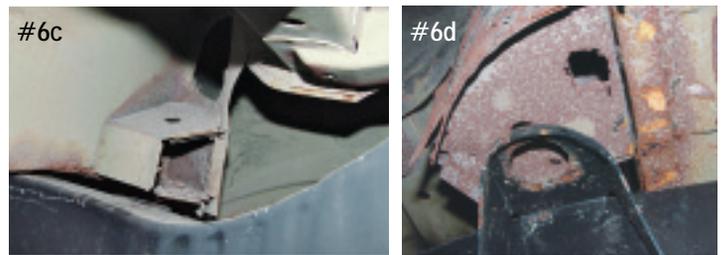
reach areas. This is especially handy if you have an assembled car where clearances are at a premium. The adhesive holds everything together while moving and twisting your hands and the parts during the assembly process. The assembly manual shows a similar thing using rubber bands (ILL 1A). However, this method has a knack for coming apart at the most inopportune times. I guess 3M had not invented Super Weather Strip Adhesive in 1963.



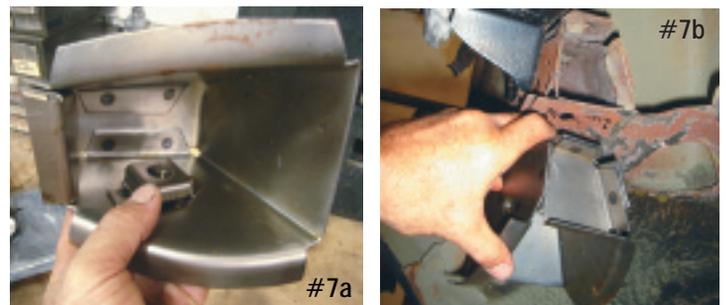
Photos #5a, 5b, 5c & 5d: Your assembly should look like this, if it was put together off of the car (Photo 5a). If you need to install multiple shims, stagger them. This means place each shim on top of each other so the tangs are next to and not on top of each other (ILL 1A). Your assembled mount should look like this on the car (Photo 5b). Adjust the torque wrench to 40-50 foot-pound torque setting (Photo 5c). Lastly, using your 5/8" hand wrench and a deep well socket on your torque wrench, torque the nut while holding the bolt (Photo 5d). Repeat this process on all other mounting points; they all go together in a similar fashion.



If you are using stainless steel hardware, you must, must, must use anti-seizing compound or a thread lubricant specifically for stainless steel on the bolts. If you do not, you will gall the fasteners. The nut will permanently seize to the bolt!



Photos #6a, 6b, 6c, 6d & 6e: Now, the nuts to the two-rear body-to-frame mount supports just behind the rear wheels are encapsulated in support boxes (sometimes referred to as flower pots). Water and fine debris get trapped in these support boxes and cause rust issues. The rust then eats away at the caged nut inside and seizes the body bolts making removal of the bolts impossible. In other words, a hole has to be cut in order to access these two body bolts. That is, if there is any of the body-to-frame box left! As you can see, our left rear body to frame support resembles Swiss cheese. No, that cavernous hole is not supposed to be there (Photo 6a & 6b). Damage of this magnitude requires replacement of the mount support boxes before we can safely replace the rubber cushions. This is a photo of the mount looking into the hole made to access the body mounting bolt (Photo 6c). This is a photo showing the mounting point encapsulated (Photo 6d). This photo shows part of the plate that needs to be removed to access mounting bolts, (Photo 6e).



Photos #7a & 7b: Eckler's Late Great Chevy has replacement rear body-to-frame mount supports available. These quality reproductions come complete with the cage nut securely in place. These are first class reproduction parts. The fit, spot welding and heavy gauge steel are works of reproductive art (Photo 7a). For illustration purposes, I held the two up next to each other. You can see how time, rust and corrosion have damaged our body-to-frame supports, (Photo 7b).

Photos #8a & 8b: Before you attempt to replace the rear body to frame mount supports, you will need to keep the car jacked and as level as possible. I found that I needed to lift the body up off of the frame further to provide additional clearance between the body and the frame in the area shown (Photo 8a). Chances are that if you are replacing the rear body-to-frame supports, you will also need to replace the rear wheel box



brace covers as well. When you begin to remove the mount supports, you will find that the wheel box covers are thin and too weak to reuse. Or, if you're like me, you might have a little too much fun with the air chisel and really booger the covers up. Eckler's Late Great Chevy has quality replacement covers as well. These come in a set of two and are heavy gauge black phosphate coated steel **P/N 531125**. The larger of the two is the one with the hole for the gas tank filler neck. This goes on the left side. If our car had a gasoline filler pipe, it would pass through the left quarter panel and the hole in the left side wheel box brace cover, (Photo 8b).



Photos #9a, 9b, 9c & 9d: To begin the installation, choose a side and stay on that side until you have everything back together. Then, begin on the other side. You may find that you need the opposite side intact for reference in the event you have a memory lapse regarding how things should go back together. Hold your new parts up against the old ones to get oriented before removing anything from the car (Photo 9a). The body of your Chevy was spot welded together at the factory. You will need to separate the remains of the old rusty parts by dislodging the spot welds. Most likely, you will need to remove the undercoating first. With the under coating removed, the seams where each panel is installed against an adjacent panel will be visible (Photo 9b). When you see where the factory seams are and have an idea of what needs to be removed, put on your safety goggles, gloves and hearing protection. Use your air hammer with chisel bit and begin to separate the pieces (Photo 9c & 9d). Many times you can locate the welds by using the air chisel method. Then, use a drill with a bit approximately the same size as the spot weld (generally 1/4" to 5/16") and carefully drill through the first layer of metal until the part comes loose.



Photos #10a, 10b, 10c & 10d: When you have the panels removed, make notes or a drawing of the positions of the original spot welds. Hold your new parts in place. Now, mark one half inch in on your new parts and one half inch out on the panel that the new parts will be welded to. Mark holes in this one half of an inch parameter approximately where the old spot welds were. This is where the parts overlap. Space your marks approximately two inches apart (Photo 10a). This is the same spacing they were welded from the factory and this is the same spacing that the reproduction panels are welded (Photo 10b). Remove the preservation coating (that's the oily substance) from the new body to frame supports. Using your punch flange tool or drill bit, drill holes in the new panels where your welds will go. Generally, the holes will be 1/4" to 5/16" (Photo 10c & 10d). Using your four-inch grinder, clean up the metal around the openings. Remove any leftover metal from the parts you just chiseled out and grind out any burrs or rust. Remove about a half inch of the black phosphate coatings from around the edge of the new wheel box brace covers. This will give you a good surface to weld to. Align your panels in place. Use "C" clamps to hold them where you want them. At this point, it's a good idea to have an "ABC" rated fire extinguisher nearby before you begin welding. You know all about Murphy and his law, right? That Murphy guy could be just around the corner. Let's get prepared. Fire extinguishers work really well as a Murphy repellent.

Now it's time for our monthly technical science blog... this month's topic is welders. I like to use GMAW, gas metal arc welding, for automotive work. The familiar one in the category is the metal inert gas, or MIG welder. MIG welding uses argon gas to shield the arch from the atmosphere. This makes a much cleaner weld than another subtype known as a flux core arc welder, FCAW. This welder uses MIG type wire but it is cored, not solid wire like the MIG. It has a flux core center. This wire is similar to flux core solder where the flux is integrated into the solder. The flux serves the same purpose as the argon gas. Both types of welders are readily available and will work sufficiently well. Small units are rather inexpensive to purchase and hold up remarkably well. If you go shopping for a welder, keep in mind that both subtypes will probably be marketed as MIG's. Check to see if the welder

has a provision for a gas regulator or not. FCAW-only welders do not have a provision to attach a gas regulator for an argon bottle. Conversely, some welders can use both types of wire. It's a matter of personal choice. However, I do not recommend the old school use of acetylene and oxygen torches. Bracing and gas welding was great in the old days, simply because that's all you had to work with. I personally feel that for home shops or novices, gas welding creates undo opportunity for catastrophe. There is a greater risk of ruining sheet metal and creating fire hazards. Go electric.

Weld the panels to the car by making your own spot welds of sort. Weld through the holes you made until the entire diameter of the hole has been welded. Grind back the welds until flush with the four-inch grinder. If the panel pops loose, your welds do not have enough penetration. If you're not comfortable with your welding skills, you may want to bargain with a buddy to weld these in place for you. I would bet that some good food and a few quality cold ones would sweeten the deal. Caution, only celebrate with the latter of the two bribes AFTER the welds are in place! I use seam sealer over all the new seams to keep the water and debris out. Seam sealer can be found at most of your automotive chain stores or at local body supply houses. Paint and undercoat your repair. When you have both sides complete and the car back down on all four tires, you'll enjoy that extra degree of confidence while cruising in your solidly mounted Chevy Classic! 