



# INSTALLATION GUIDE

## LS ENGINE SWAP MOTOR MOUNTS FOR '68-72 GM A-BODY with TH350 or 700R4 (Chevelle, El Camino, GTO, Cutlass)

### PART # 4601

#### READ ENTIRE INSTALLATION GUIDE BEFORE BEGINNING THIS INSTALLATION!

These mounts are designed specifically for installing an LS engine into 1968-72 GM A-Body cars (i.e. Chevelle, El Camino, GTO) with a TH350 or 700R4 transmission.

This is a complex engine swap project that may require cutting, drilling or other modification to the vehicle, not related to the installation of this kit. There are many installation factors to consider when performing this engine swap and exact steps may vary from model to model, or year to year. This installation guide offers general instructions for the proper installation of the engine mounts only. For further details regarding any other aspect of the engine swap, we recommend the use of a published how-to guide, dedicated to the engine swap project you are about to perform. This is an advanced user project. If you're uncomfortable with any aspect of it, we suggest you consult with a certified mechanic.

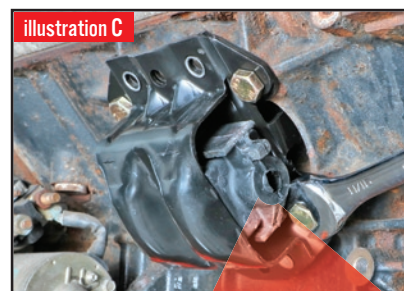
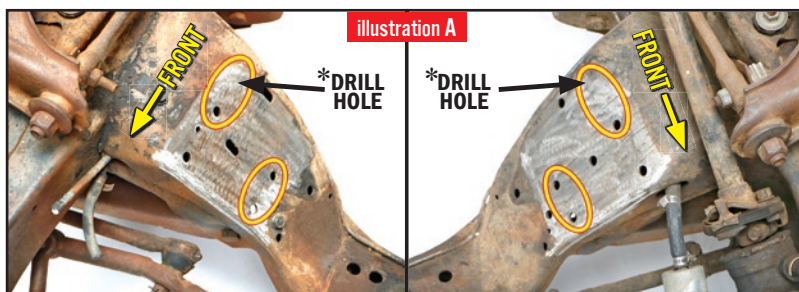
The brackets and adapter plates in this kit are shipped with a temporary black finish to protect the components from corrosion while awaiting installation. This finish is not intended to be the final finish. Thoroughly clean these components to the bare metal before applying any final coating or paint finish.

#### THIS KIT CONTAINS

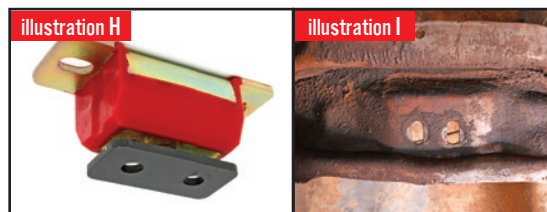
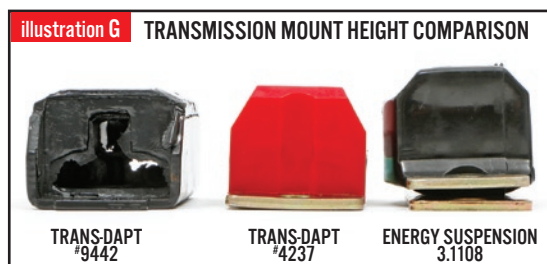
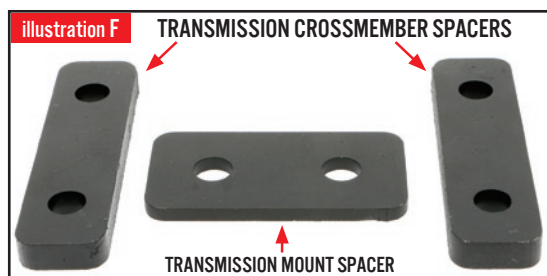
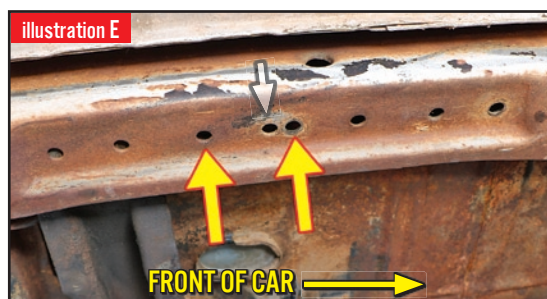
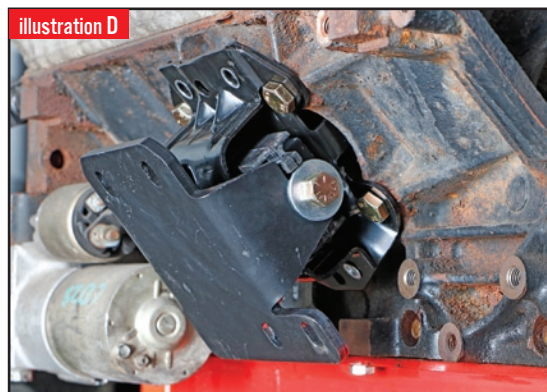
1 pr	Frame Brackets
1 pr	Rubber Mount Pads
2 pcs	7/16"-14 x 5-1/2" Hex Bolts (Grade 8)
2 pcs	7/16"-14 Nylon Lock Nut
2 pcs	7/16" Split Lock Washer
2 pcs	7/16" Flat Washer
8 pcs	3/8"-16 x 1 Hex Head Bolt (Grade 8)
8 pcs	3/8"-16 Nylon Lock Nut
8 pcs	10mm-1.5 x 30mm Hex Bolts (Grade 10.9)
1 pr	Transmission Crossmember Spacers
1 pc	Transmission Mount Spacer

**This installation guide assumes that all chassis components are factory stock, and that the installation is being performed prior to chassis painting or powder-coating. Proper preparation of the installation areas for finishing should be considered during the initial installation of this kit.**

1. Remove the engine and transmission from the vehicle.
2. Remove the frame mounts from the factory K-member.
3. Using the k-member holes circled (see *Ill. A*), loosely attach the driver and passenger side frame brackets onto the K-member using a 3/8"-16 x 1" hex bolt and nylon lock nut in the two bottom and top front bolt holes. Refer to photo (see *Ill. B*) for the proper orientation of the frame brackets on the k-member.
4. The top rear hole on each side will need to be drilled into the k-member to allow for the installation of the fourth bolt. (see *Ill. A*). Position the frame brackets so the 3 installed bolts are centered in the bracket's bolt holes. Drill the top rear hole (13/32" or X bit) for each bracket, making certain the bolt hole is centered in the top rear hole of each frame bracket.
5. Insert a 3/8"-16 x 1" bolt into each newly drilled hole and loosely install a 3/8"-16 lock nut.
6. Bolt a rubber engine pad to each side of the engine being installed using four 10mm-1.5 x 30mm hex bolts per mount pad. Apply removable threadlocker to these bolt following the manufacturer's instructions. Refer to photo (see *Ill. C*) for proper orientation of the rubber pads on the block. Make certain the tab shown is above the hole (see *Ill. C2*). Torque the engine mount to engine block bolts to 37 ft. lbs.
7. Bolt a new transmission mount pad to the transmission housing (*not included*).
8. Unbolt the factory Chevelle transmission crossmember from the frame rails.
9. Using an engine hoist, carefully lower the engine/transmission package into the engine bay. Align the engine mount pad with the frame brackets and connect them using one 7/16"-14 x 5-1/2" hex bolt, 7/16"-14 nylon lock nut, 7/16" lock washer and 7/16" flat washer per side, as shown in (see *Ill. D*). Torque the 5-1/2" bolts connecting the mount pads and frame brackets to 70 ft. lbs.
10. Raise and support the transmission tailshaft high enough to provide clearance between the transmission mount and crossmember for proper positioning.



11. If a Trans-Dapt #9442 (rubber) or #4237 (polyurethane), Prothane 7-1604, or O.E. rubber pad, has been installed on the transmission housing, place the transmission mount spacer (see III. F) between the transmission crossmember and transmission pad (see III. H). Align the spacer bolt holes with the two bolt holes in the mount pad and slots on the crossmember.
12. Loosely bolt the transmission mount/transmission to the crossmember mounting holes (see III. I) using the fasteners provided with the transmission mount pad (*not included*). When properly installed, the transmission mount spacer will be sandwiched between the crossmember and transmission pad.  
**IMPORTANT!** If using an Energy Suspension polyurethane transmission pad, **DO NOT USE** the transmission mount spacer. The Energy Suspension pad uses a preload plate, which increases the overall height of the pad, eliminating the need to use the transmission mount spacer provided with this kit (see III. G).
13. Inspect the rubber transmission crossmember isolators to ensure they are properly installed on the ends of the crossmember. Replace if missing or damaged.
14. Place a Transmission crossmember spacer (see III. F) on each frame rail, aligning its bolt holes with the frame rail holes highlighted by yellow arrows (see III. E). These holes will be used for most TH350 and 700R4 transmission installations.
15. Align the cross member bolt holes with the frame rail spacer and framerail holes, and lower the transmission with crossmember onto the framerails. Insert four attachment bolts (*not included*) through the crossmember, crossmember spacer, and framerail. Loosely fasten the bolts with nuts and lockwashers (*not included*). The bolt slots in the transmission crossmember (see III. I) are 1" long and will allow for fine tuning of the crossmember position. The 700R4 transmission housing's pad mounting location is slightly rearward of the TH350, and may require minor elongation of these transmission pad slots in the crossmember to allow for proper alignment. Another option is to move the crossmember back one hole (see III. E, white arrow) and drill a new hole in the frame rail to accommodate the new crossmember position.
16. Now that all engine and transmission points are loosely connected, the engine must be adjusted so it is level in the chassis, and the pinion angle set to be within the required 3-5°. Once the optimum engine and transmission position is achieved, tighten the frame bracket to k-member bolts to (37 ft.lb.). Next, tighten all fasteners, including; mount pad to engine block bolts (37 ft.lb.), frame bracket to engine mount connector bolts (70 ft.lb.), transmission mount pad to crossmember bolts (30 ft.lb.), transmission mount to transmission housing bolts (25 ft.lb.), and transmission crossmember to framerail bolts.
17. Remove the engine hoist, if it is still attached to the engine.
18. The process of securely bolting the LS engine and TH350 or 700R4 transmission into your 1968-72 GM A-Body chassis is now complete.



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