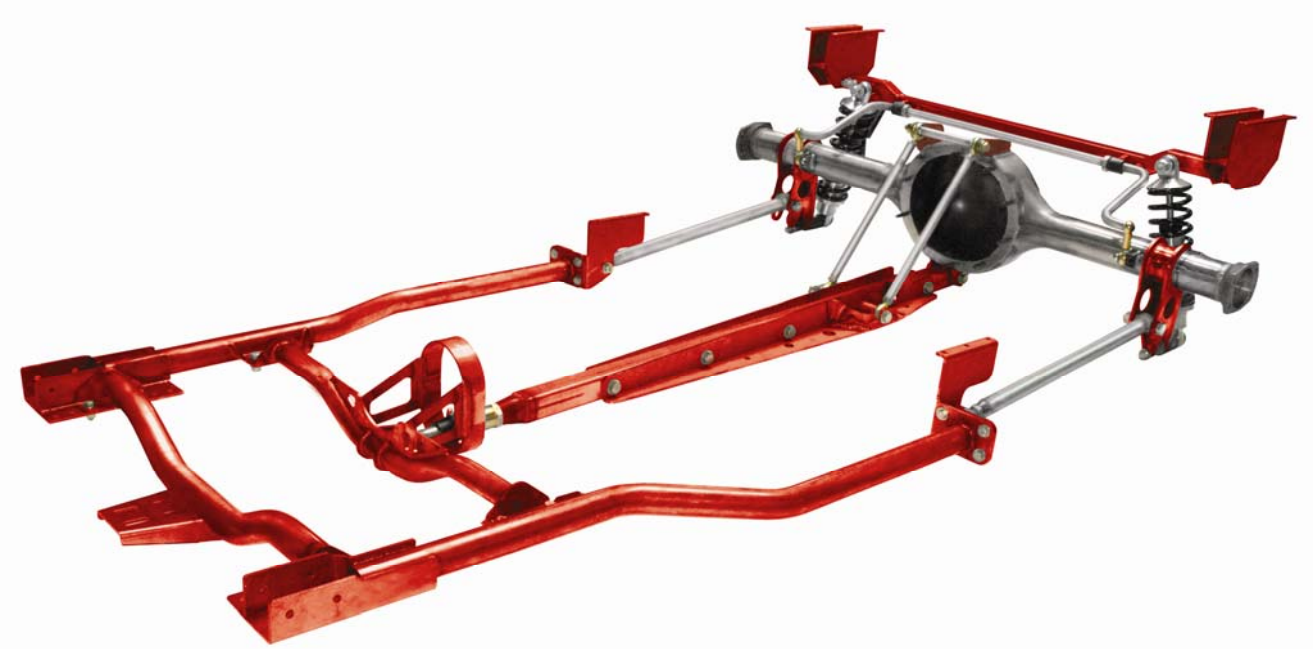
TCIE239

1962-1967 Nova Pro-Touring
Torque Arm Install Instructions
1-800-984-6259
www.totalcostinvolved.com



REAR COIL-OVER CRS [428-4202-00]

Includes:

1	62-67 NVA TA R. SHK CRS **[428-4202-TA]**
1	PANHARD BKT (CRS SIDE) **[529-5180-00]**
1	PANHARD BKT (R/E SIDE) **[528-5173-00]**
2	TORQUE ARM AXLE BKTS **[530-5078-00]**
1	NVA R. TA CRS BLT KIT **[BOLT_KIT_025]**

Includes:

2	RE-ENFRC PLT
12	5/16-24 * 7/8 BTN HD
12	5/16 FLAT WASHER
12	5/16-24 NUT NYLOX
1	1/2 -20*3 G8 HEX HD
2	½ SAE WASHER
1	½-20 NUT NYLOX G8

TORQUE TUBE ASSY [529-5110-00]

Includes:

1	MAIN TA W/ SLIDER ASY **[TORQUE_ARM_02]**
1	TA 3-LINK STRUT KIT **[BOLT_KIT_019]**

Includes:

1	UPPER TORQ TUBE SPCR
2	TORQ TBE ADJ STRUTS
2	½ MALE LH END w/ JAM
2	½ MALE RH END w/ JAM
2	TORQ TUBE LWR SPCR
2	½-20* 8" G8 HEX HD
4	½ SAE WASHER
2	½ -20 NUT NYLOX
1	TA INSTL BLT KIT **[BOLT_KIT_020]**

Includes:

1	½-20 * 3" G8 HEX HD
1	½-20 * 3 ½ " G8 HEX HD
4	½ SAE WASHER
1	½-20 NUT NYLOX
1	½-20 NUT NYLOX JAM

SUB-FRAME ASSY [SUBFRAME_ASY_01]

Includes:

1	SUBFRAME TUBES **[SUBFRAME_01]**
1	SUBFRAME BOLT KIT **[BOLT_KIT_026]**

Includes:

4	3/8-24 * 3" G8 HEX HD
24	3/8 FLAT WASHER
4	3/8-24 NUT NYLOX
8	3/8-16 * 1" G8 HEX HD
8	3/8-16 NUT NYLOX
2	RND TUBING INSERT

TORQ ARM CRS MBR [528-5104-00]

Includes:

1	TORQ TBE CRS MBR **[TORQUE_TUBE_CRS]**
1	TORQ ARM CRS BLT KIT **[BOLT_KIT_027]**

Includes:

4	3/8-16 * 1" G8 HEX HD
8	3/8 FLAT WASHER
4	3/8-16 NUT NYLOX

LINK BARS [528-5115-00]

Includes:

2	TA 2-LNK BAR ASSY **[BAR R 34 ASY]**
1	TRACK BAR (33 ¾) **[TRACK BAR 20]**
1	PANHARD BLT KIT **[529-5153-00]**

Includes:

1	5/8 MALE RH END w/ JAM
1	5/8 MALE LH END w/JAM
2	½-20 * 2 G8 HEX HD
4	½ WASHER SAE
2	½-20 NUT NYLOX
1	TA 2-LNK BLT KIT **[BOLT_KIT_024]**

Includes:

2	5/8-18 * 2 ¾ BTN HD
2	5/8 NUT NYLOX
2	½-20 * 3" G8 HEX HD
4	½ SAE WASHER
2	½ -20 NUT NYLOX

BRACKETS [528-5113-00]

Includes:

1	DRIV SIDE BKT
1	PASS SIDE BKT
1	TA BKT BOLT KIT **[BOLT_KIT_023]**

Includes:

6	5/16-24 *7/8 BTN HD
6	5/16 FLAT WASHER
6	5/16-24 NYLOX
2	RE-ENFRC PLT

OPTIONS

SHOCKS

ALL-AMERICAN PNT
ALL AMERICAN CRM
BILLET ADJ C/O PLN
BILLET ADJ C/O POL

2-LINK & TRK BAR

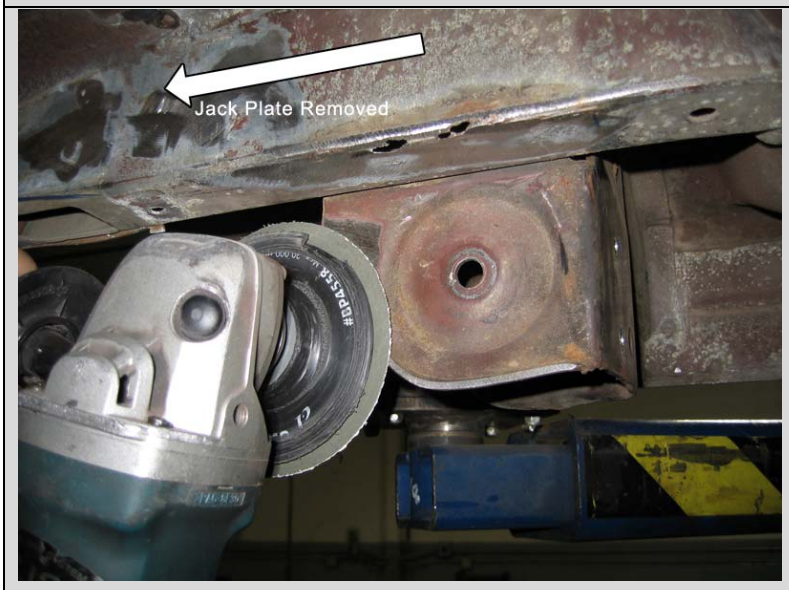
STEEL
CHROME
POLISHED

SWAY BAR KIT

PLAIN [428-4854-00]
CHROME [428-4854-01]

The car needs to be securely positioned and level as possible from side to side and on tall jack stands or preferably a hoist to facilitate removal of the old components and much easier installation of new components. Temporarily remove the rear seat to facilitate drilling through the floor for the reinforcing plate.

It is highly recommended that all components be fitted and installed first before painting or powder coating. The cars are 40 years old plus and the under carriage can shift and move over time and minor adjustments may have to be made. On this car the left side spring hanger had shifted slightly. That is why the link bar bracket is slotted where the ½ inch bolt attaches the link bar to compensate for minor shifting.

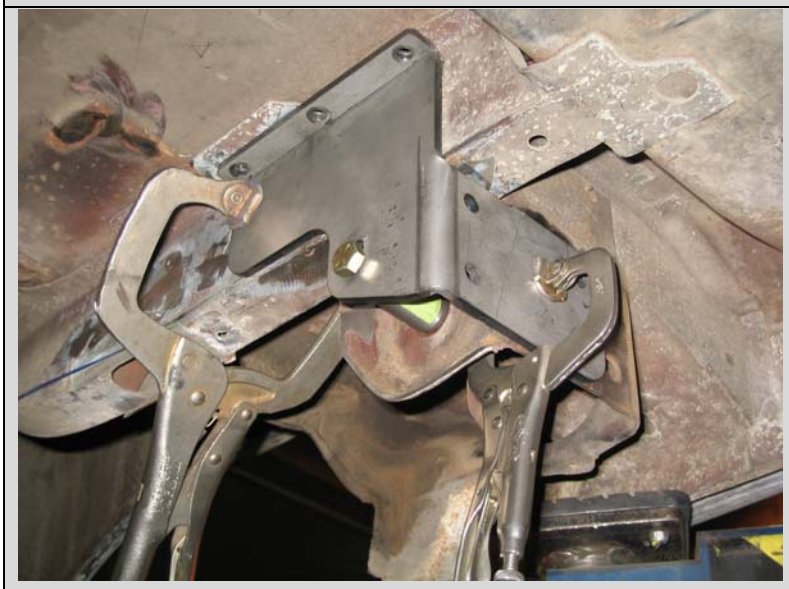


1. Removing Flange on Stock Spring Hanger.

The stock spring hanger has a 7/16 inch hole. This will have to be drilled or reamed to ½ inch to accept the ½ inch bolt used on the adjustor end of the link bars.

The jack plates will have to be removed for bar clearance as shown with arrow.

The inside flange on the stock spring hanger will interfere with the 1¼ inch link bar when installed and needs to have the flange partially removed for clearance.
Attach one of the bars to the bracket with the ½ inch bolt and check for clearance and remove only as much material as needed so as to retain rigidity. A small portion of the flange should remain.



2. Mounting Link Bar Bracket.

Note: There is a left and right hand link bar bracket. The left side (driver's side) is shown on the picture.

Position the bracket as picture flush against the front side of the stock spring bracket and against the frame rail with the top flange pressed up against the floor. Use the previous ½ inch bolt and the inner sleeve from the stainless adjustor and fasten the bracket to the stock hanger. Clamp bracket as picture before drilling top holes.

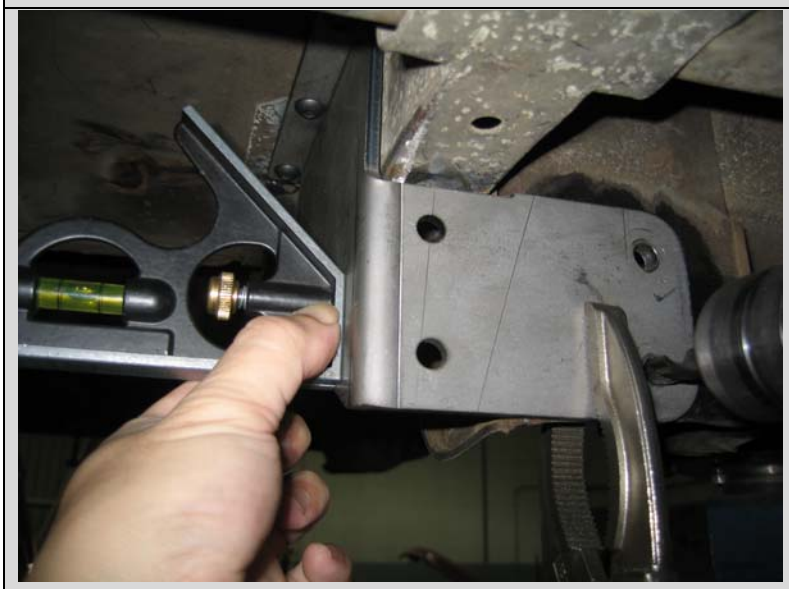
3. Drilling Link Bar Bracket Holes.

With the bracket securely clamped, use a long 5/16 drill bit and drill one hole and install one of the 5/16 button head bolts, temporally install nut on the bolt on the inside of the trunk and tighten. This will keep all the holes aligned as you finish drilling the remaining holes.

4. Installing the Inside Reinforcing Plates.

After all the holes are drilled remove the temporary nut and place the 3-hole reinforcing plate over the holes and install the remaining button head bolts, washers and lock nuts and tighten.

Note:
The 5/16 inch button head bolts can be installed as shown or reversed with the nut on the bottom.



5. Drilling 3/8 inch Holes in Stock Spring Hanger.

With the car level from side to side place a level on the side of the bracket to make sure it is 90 degrees square to the ground and clamp securely as pictured. On this car one side was perfect but on the other side I had to pry the bracket down on the outside edge to get it level before clamping. A straight edge aligned across the bottom edge of the bracket works also. This is critical because the sub-frame connectors will not be clocked correctly.

Transfer punch a center and drill the bottom hole first with a ¼ inch then out to 3/8 inch. Install 3/8 inch bolt, tighten and drill remaining top hole.

6. Installing Sub-Frame Connectors.

Note: There is a left and right hand sub-frame connector. The left side (driver's side) is shown.

Position the rear flange against the new frame bracket and install the 2 lower 3/8 inch bolts and lightly tighten. Using a soft hammer tap the front saddle over the front frame rail and install the 2 remaining bolts and tighten.

Note: The rear floor pan on the driver's side on this car had drooped and needed to be pushed up 1/4 inch for sub-frame connector clearance.

7. Drilling Frame Rail for Front of Sub-Connector.

Using an adjustable stand or jack push the front of the sub-frame connector saddle up until the top of the saddle presses against the upper floor flange on the frame rail.

Using a 3/8 inch drill bit and using the bracket as a guide drill one hole as pictured. Temporarily place a short 3/8 inch bolt in the hole to retain hole alignment and drill the second hole. Repeat process on the opposite side. Install the 3/8 x 3½ inch bolts, washers, lock nuts and tighten.

8. Locating and Installing Coil-Over Cross-Member.

The cross-member will only fit one way due to the taper of the frame rails. The cross-member is wider at the rear and narrower at the front plus the ½ inch hole in the 1½ square section mounts the panhard bracket on the right (passenger) side. Push the cross-member over the frame rails up tight against the frame rail floor flange and support with adjustable stands. Clamp a flat bar to the front face of the cross-member and measure level as pictured to the center of the ½ inch frame bracket hole 30¼ inches. Tap cross-member for or aft to get correct measurement. Repeat process on opposite side and **double check both sides twice**.

9. Drilling Cross-Member Bracket Holes.

Using a long 5/16 inch drill bit drill one hole and install a 5/16 in bolt to retain hole alignment. Do the same to the opposite side. Drill the remaining holes.

Note:

You will have to drill the inside center hole from the trunk area after you have partially installed the 6 hole reinforcing plate as pictured. Finish by installing the 5/16 inch button head bolts, washers and locknuts in desired direction.

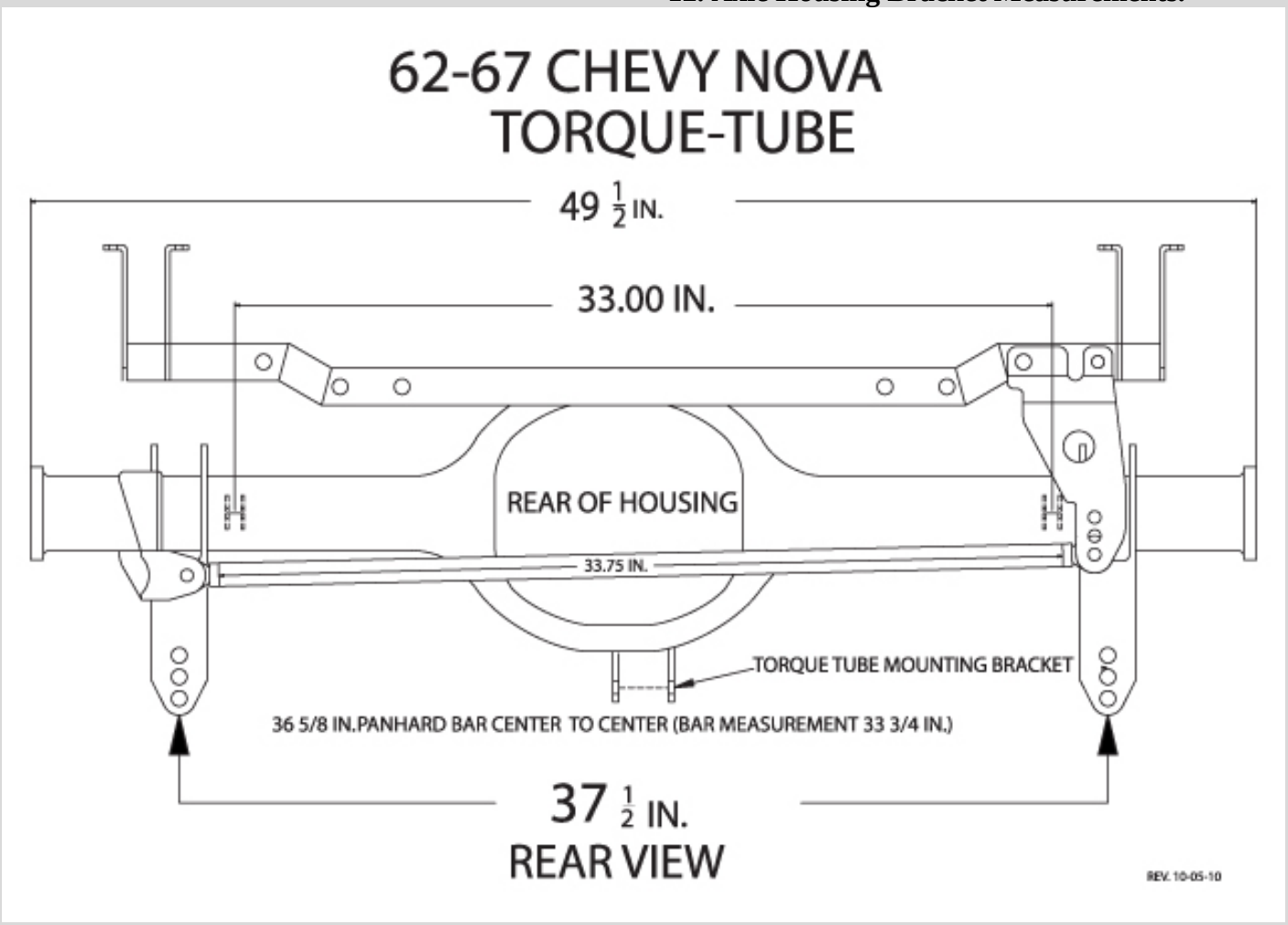
10. Installing Transmission Cross-Member.

The transmission cross-member is installed with the end angle tabs **sitting on top** of the front sub-frame connector bracket flanges with multiple holes for a variety of transmission applications. Using the 3/8 x 1 inch bolts, washers and locknuts, fasten the cross-member as per your transmission application as pictured.

11. Installing the Torque Arm Cross-Member.

The Torque Arm cross-member is installed with the end angle tabs on the **bottom side** of the brackets that are welded to the sub-frame connectors with the driveshaft loop facing rearward. Install the 3/8 x 1 inch bolts, washers and lock nuts. Center the driveshaft loop in the tunnel before tightening bolts.

12. Axle Housing Bracket Measurements.



<u>1962-67 Nova</u>
Housing width-------49½ inches; Axle flange to axle flange 54½ inches

13. Installing Two Link Brackets & Panhard Bracket.

The axle brackets are designed to slide over a 3 inch axle tube before the bearing flange housings are installed. If the bearing ends are already on the axle bracket the 3 inch ribs can be cut 90 degrees to the flat shock mounting face and re-attached after the bracket is tacked on. The brackets are positioned on 37½ inch centers.

The flat rear surface of the axle bracket is **parallel** with the front mounting surface of the 3rd member.

The panhard bar bracket is installed onto the back of the driver's side axle bracket with the channel facing out and the inner curved radius inside the outer axle bracket rib up against the 3 in axle tube rotated down against the rear face of the axle bracket.

14. Installing Torque Arm Tabs on Housing.

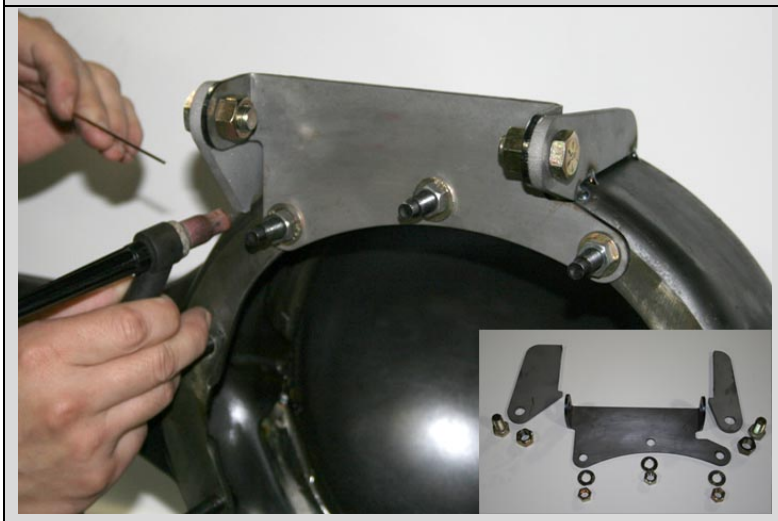
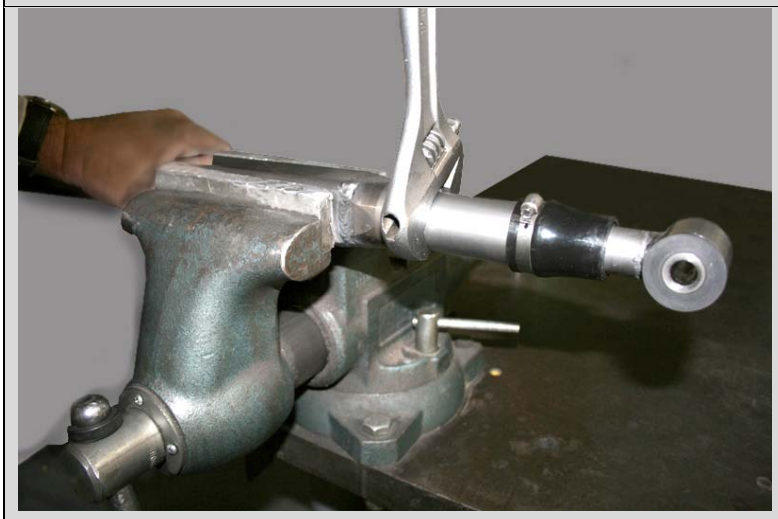
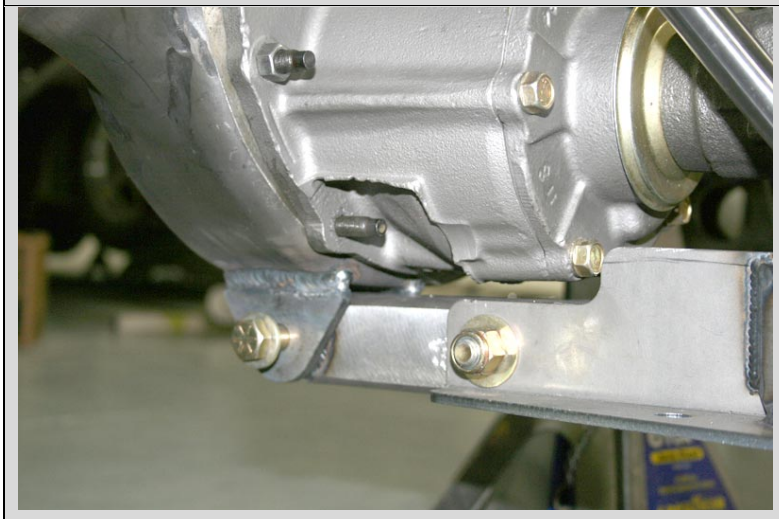
The torque arm tabs are welded on by using the supplied fixture tool. Bolt fixture to the lowest 2 third member bolts flat against the housing flange. Bolt on the two supplied tabs using the ½ by 3½ inch bolt and with the longer tab to the passenger side of the housing. Bottom of tabs may need sanding to fit. Weld outside and wrap welds also to the inside.

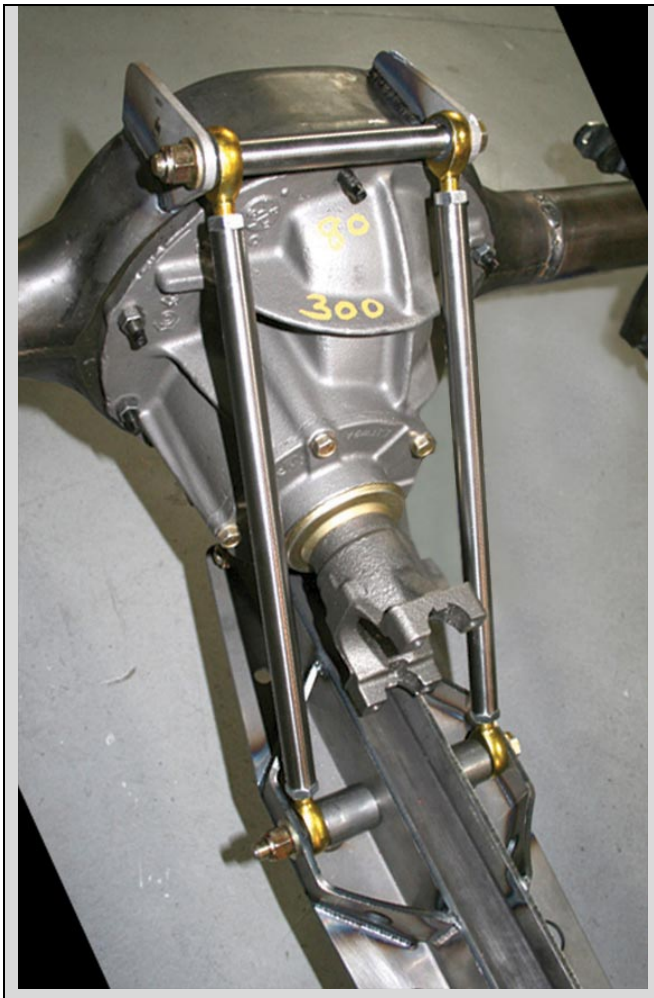
Note:
Housing picture upside down for ease of welding tabs.

15. Welding Axle and Panhard Brackets.

Finish welding the axle brackets and the panhard bar bracket as pictured.

If an **optional** sway bar is being used the sway bar brackets are located on the front of the axle tubes at axle centerline on 33 inch centers.

	**16. Installing Pinion Support Brackets.** The pinion support brackets are installed next. Using the furnished fixture tool, using the three 3/8 by 24 nuts, bolt the fixture onto the top three studs of the third member housing with the locating tabs facing forward. Bolt the ¼ inch laser cut brackets to the outside of the fixture tool using the two ½ inch bolts with the wider bracket on the passenger side and the shorter bracket on the driver side. Note; Some fitting may be required to get the bracket flush with the top of the third member. The distance between the 2 brackets should be 6.45 inches after welding. Because of the distortion from welding the housing will need to be straightened at this time.
	**17. Installing Torque Arm Slider Assembly.** The Torque Arm is shipped with the slider assembly separate to facilitate packaging. The slider has pre-assembled with Teflon bushings and has been installed in the Torque Arm to check for proper fit. We use anti-seize on the threads to prevent galling. When painting or powder coating the assembly, tape the threads on the slider and plug the hole in the Torque Arm tube. Install the slider into the Torque Arm using anti-seize and be careful not to cross thread and tighten. I used a vise and a 12 inch crescent wrench to make sure it was tight.
	**18. Installing Torque Arm to Housing.** Install the rear of the Torque Arm to the tabs on the bottom of the rear end housing using a ½ inch by 3½ inch bolt, washers and nut. Lightly tighten.



19. Installing Pinion Adjustment Support Tubes.

The pinion support tubes have left and right hand rod ends to facilitate pinion angle adjustment. Adjust the tubes to approximately the same length with an equal amount of threads showing on each rod end. Install the tubes with the right hand rod ends on the inside of the top brackets using the ½ by 8 inch bolt, washers, 5.2 inch spacer in between rod ends and Nylock nut.

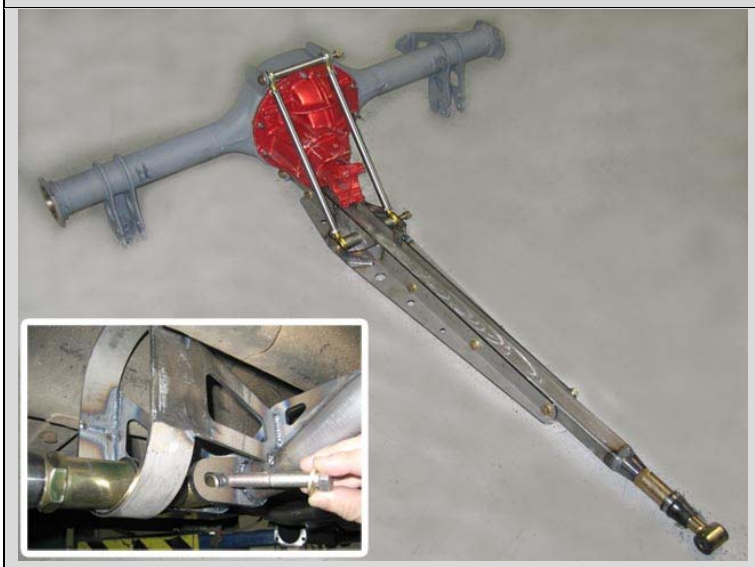
The left hand end of the tube is installed on the inside of the Torque Arm bracket with the spacer between the rod end and the Torque Arm tube. Install the ½ by 8 inch bolt through the bracket, rod ends, tube and spacers. Install Nylock nut and tighten. Now, tighten the nut on the bottom of the housing.

To adjust the pinion angle after installation is complete; the tubes can be rotated simultaneous clockwise to raise the pinion or counter-clockwise to lower the pinion. I adjusted the pinion one degree down from the drive shaft. Tighten lock nuts top and bottom.

20. Installing the Link Bars.

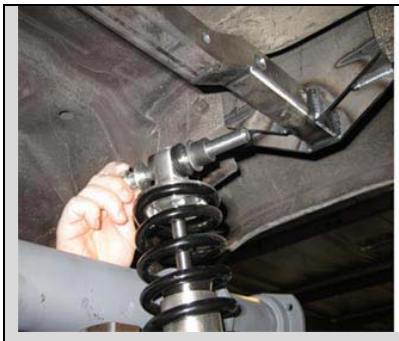
The link bar centers need to be adjusted to 23 1/8 inches. Accomplish this by turning the stainless ¾ inch adjustor in or out. Double check measurement after tightening jam nut.

Install the adjustor end between the stock spring hanger bracket and the new installed link bar bracket. Install ½ x 3 inch bolt, washers and locknut and tighten.



21. Installing the Axle Housing/Torque Arm Assembly.

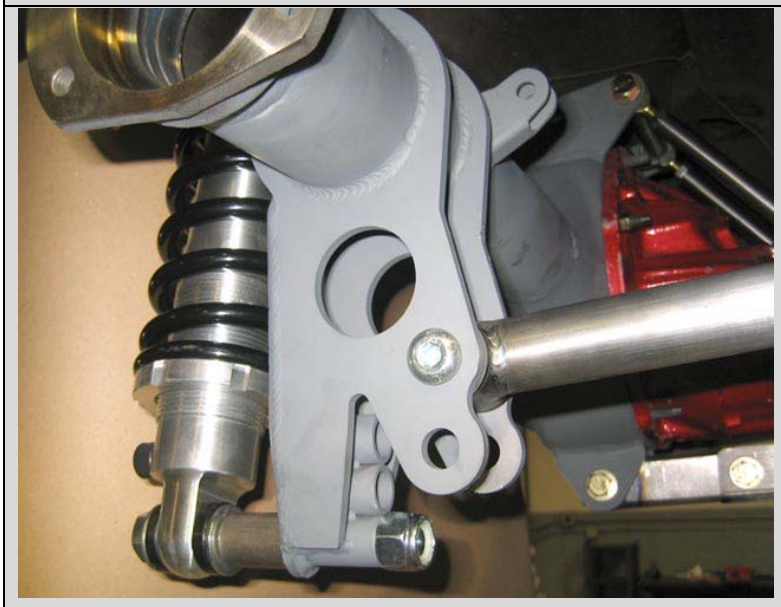
There is several ways to tackle installing the rear axle assembly. It is easier to assembly the whole unit on the floor and get several buddies to help lift. But when there is a weight issue, the coil-over shocks can be hung first then the bare housing can be lifted up and hooked to the coil-over's and then the link bars hooked to the axle brackets. Then the 3rd member installed. Then the torque arm slider assembly end is slid into the slotted bracket on the torque arm cross-member as picture then the rear of the arm is bolted to the housing and then the pinion support assembly is installed. The process is a little more difficult doing it in the car but there is less weight to fight.




22. Installing Coil-Over Shocks.

The top of the shock is installed first with a 5/8 washer on each side of the bushing, a 5/8 x 5 inch bolt and a 5/8 inch spacer mounted to the front cross-member. Leave lock nut off of the passenger side bolt.

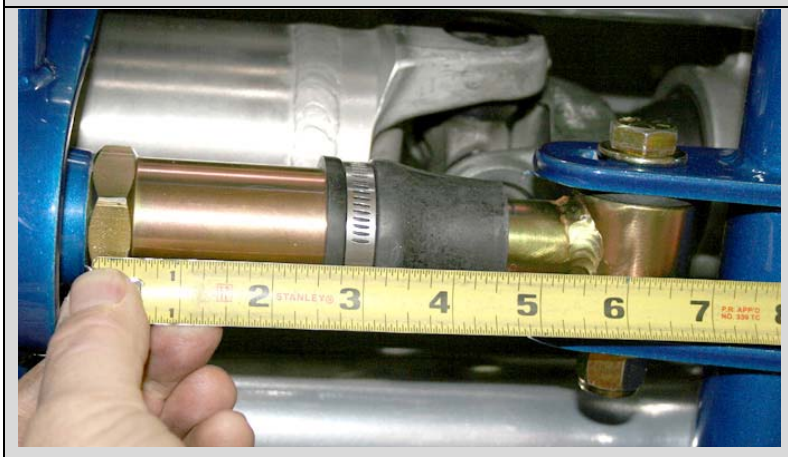
The bottom uses a 5/8 x 5½ inch bolt with a 1 3/8 inch spacer. Install the bolt in the desired height hole and tighten.



23. Installing Link Bar on Axle Bracket.

There are two positions on the axle bracket to mount the link bar depending on the ride height and purpose of your car. With the bar in the top hole the bar will be closer to level at ride height.

Position the rear of the link bar in the desired hole on the front of the axle bracket. The bracket sides may have pulled together during welding and will require to be spread slightly with a soft hammer. This is why everything is assembled first and fitted before paint or powder coating.



24. Centering Slider Shaft.

The slider shaft travels in and out very little but still needs to be positioned in the slots 6¼ inches from the back of the wrench flats on the housing to the center of the sleeve with the bushing in it. This adjustment allows the slider shaft to be in the middle of its travel. Tighten the Nylock nut.



25. Installing Optional Sway Bar Assembly.

Assemble the sway bar assembly by first sliding the brackets with the 3/8 x 2½ inch bolts and washers installed onto the sway bar as pictured, next slide the split urethane bushing over the bar and next the aluminum lock ring. Push the bushing into the bracket and leave lock ring loose. Attach brackets to the front side of the cross-member, attach washers, lock nuts and tighten. Attach rod end links using the 3/8 x 1¼ inch button head bolts as pictured. Center the bar, checking for clearance and push the lock ring against the bushing and tighten the set screw.

26. Installing Panhard Bracket & Adjustable Bar.

Install the panhard bracket on the right side of the cross-member over the 5/8 shock mounting bolt. Install the ½ x 3 inch bolt in the outer hole and tighten securely.
Attach the panhard bar as pictured using the ½ x 2 inch bolts, washers and locknuts.
The bar has LH and RH rod ends. Turn the bar clockwise or counter clockwise to center the rear axle assembly.

The assembly completely installed less rear axles and brakes. All parts and assemblies have been fitted and installed. Now after components have been painted or powder-coated final assembly will be much faster and no tweaking will be necessary.

When the Torque-Arm suspension is totally installed and the car is on the ground and you have the coil-over height adjusted where you want; the panhard bar needs to be adjusted as close to level as possible by raising or lowering the right end of the bar on the 3 adjustment holes on the right side bracket.

The optional sway bar needs to be adjusted to neutral (no preload) with the driver in the car by adjusting one of the rod end links connecting the sway bar to the bracket on the axle housing. This allows the sway bar to exert the same amount of control on both left and right hand turns.