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INSTALLATION INSTRUCTIONS

QA1 P/N 52614-D600, 52614-S600 '61-'71 D100 (2WD) Front Suspension (standard height spindles)
 QA1 P/N 52615-D600, 52615-S600 '61-'71 D100 (2WD) Front Suspension (2" drop spindles)
 QA1 P/N 52831 '61-'71 D100 Front Sway Bar

TOOLS AND SUPPLIES REQUIRED

- Floor Jack • Two (2) Jack Stands • Drill with 3/8" & 1/2" drill bits • SAE Wrench Set • Rear Sump Oil Pan
- Anti-seize • Loctite (blue) Thread Locker • Ratchet & SAE Socket Set • Torque Wrench

NOTE:

This suspension system will require using a rear sump oil pan. For small block LA engines use Dorman p/n 264-210 or Milodon p/n 30981. All other engines- use a rear sump truck style pan. Use the appropriate oil pickup for the pan used.

DISASSEMBLY-

1. Disconnect both front brake hoses from the frame. **(Figure 1)**
2. Using a plumb bob, run the line from the center of the hole in the frame that the brake line passed through. The brake line hole is the basis for mounting the crossmember and the holes should line up to within 3/8" of the center of the I-beam axle. If your brake line frame holes do not fall within this tolerance call QA1 before proceeding. **(Figure 1)**
3. Raise the front of the truck and support it with jack stands on a stable surface.
4. While it is not necessary to remove the front wheels to remove the front suspension, note that the factory passenger side lug nuts use a (traditional) right hand thread and the drivers side lug nuts use a left hand thread (clockwise to loosen). Keep in mind your wheel studs may have previously been swapped out to right hand threaded studs.
5. Remove the front sway bar (if equipped) frame mounts. It is not necessary to remove the sway bar end links to remove the front suspension.
6. Bend the brake lines away from the hole in the frame to make room for the QA1 cross-member.
7. Remove the drag link from the steering arm.
8. Remove the steering gear (and hoses if the truck came with power steering) from the frame rails.
9. Remove the rag joint at the steering column/steering box. **(Figure 2)**
10. Support the I-beam without lifting the truck off of the jack stands.
11. Remove both shocks.
12. With the I-beam still supported, remove the rear leaf spring mounting bolt. **(Figure 3)**



Figure 1



Figure 2



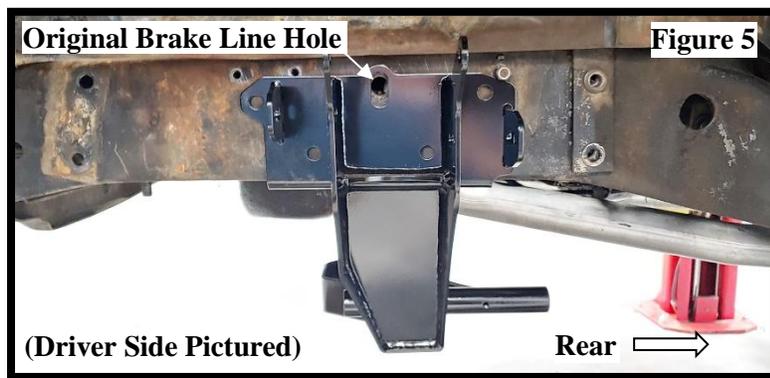
Figure 3

- Remove both connections of the front leaf spring shackle and remove the front suspension from the truck. **(Figure 4)**
- Now is a good time to clean the frame of any rust or imperfections, painting if desired.



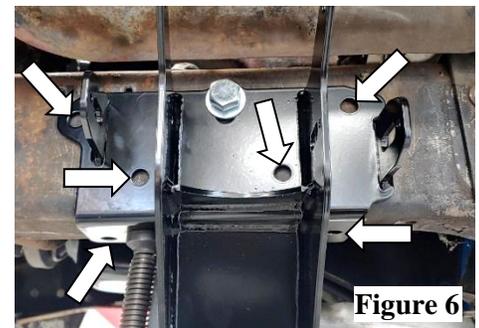
INSTALLATION-

- Install the rear sump oil pan & pickup of your choosing.
- Lift the cross-member into place matching the slotted hole of the cross-member to the original brake line hole. The frame rails taper from front to rear so the cross member will only go in one way. Due to frame variations it might be easiest to lift the cross member into place forward of the installed position. The lower control arm post mounts will be pointed toward the rear of the truck and the steering rack (boxed mounts) will be toward the front. Temporarily secure using a 5/8"-18 bolt and nut on each side. Do not fully tighten at this time. **(Figure 5)**



NOTE:
On some '66-'68 trucks there are two rivets on the side of the frame rail that will prevent the cross-member from being mounted flush. If these rivets are present they will need to be ground off and welded or secured using counter-sunk bolts.

- Clamp the cross-member tight to the bottom of the frame. If any frame rail gaps of 1/16" or more are present, shim them with sheet metal as to keep from distorting the frame when the cross-member is fully bolted into place.
- Mark and drill the remaining holes of the cross-member (six per side) using a 1/2" drill bit. **(Figure 6)**
- Install the 1/2" X 1-3/4" hardware with two washers per connection to secure all twelve bolt holes in the cross-member. Torque to 50 lb. ft.



Lower Control Arms

- Lightly coat the lower control arm pivot shaft with anti-seize. The pivot shaft has a flat slot machined into it. The shorter end from the machined flat will go towards the rear of the truck. The cross-member has a threaded hole for a set screw where the pivot shaft flat will be positioned. **(Figure 7)**
- Slide the pivot shaft in the correct orientation through the front control arm bushing and install one 5/8" washer before sliding the pivot shaft into the crossmember.
- Install one 5/8" washer after the pivot shaft goes through the crossmember and before going through the rear control arm bushing.



9. Center the pivot shaft in the cross-member by looking through the set screw hole of the crossmember and lining up the flat of the pivot shaft. **(Figure 8)** Install the set screw with blue Loctite and torque to 13 lb. ft.
10. With the arm in its final position, install one 5/8" washer on each outer control arm bushing and one 5/8" nylock nut on each outer. The lower control arms should be final torqued at ride height to 90 lb. ft.
11. Refer to the coil-over assembly instructions included with your shocks and assemble the spring onto the shock.
12. Install the lower shock connection to the lower control arm using the included 3/8" hardware and nylock nuts. Torque to 31 lb. ft. **(Figure 9)**
13. Install the upper shock connection with one 1.5" spacer on both sides of the shock eyelet. **(Figure 10)** Secure to the crossmember using 1/2" X 5-1/4" hardware with two washers and nylock nut. Torque to 50 lb. ft.



Figure 8

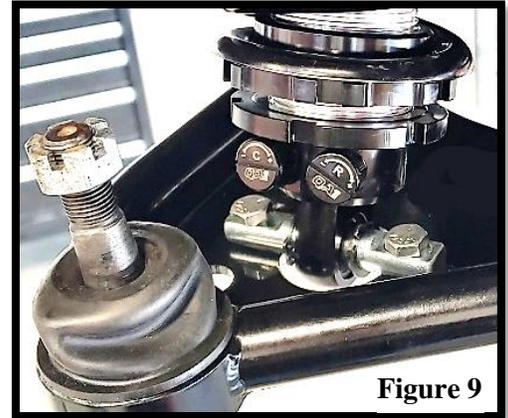


Figure 9



Figure 10

Upper Control Arms

14. Identify the Driver (left) and Passenger (right) upper control arms by the stickers placed on the arms. **(Figure 11)**
15. In preparation for installing the upper control arm, thread the 5/8" jam nuts onto the 5/8" male rod ends. Thread the jam nut so that three threads are showing between the jam nut and the head of the rod end. **(Figure 12)**
16. Apply anti-seize to the threads of the rod end and thread them into the upper control arms. Leave the jam nuts loose until the arms are installed to allow alignment with the mounting bolts.
17. This system comes with four stepped spacers that measure .755" wide, four stepped spacers that measure .345" wide, and sixteen thin shims that measure .015" thick. Install the wider spacers on the inner rod end connections (two per side) with two thin shims. The narrower stepped spacers will be used on the outsides of the rod end connection also with two thin shims. **(Figure 13)**

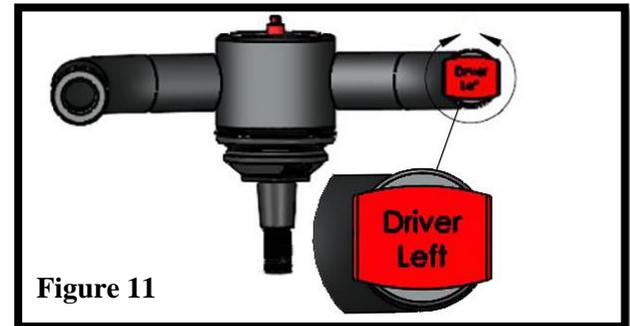


Figure 11



Figure 12

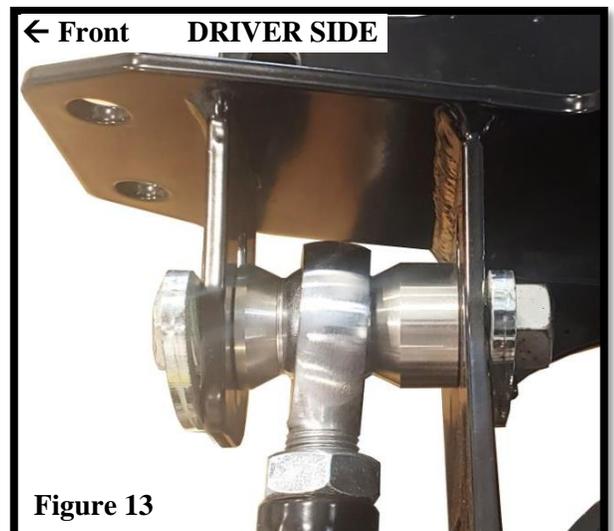
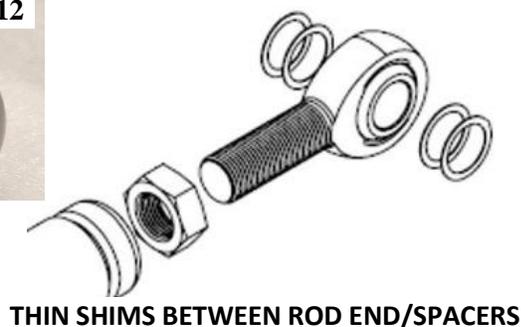


Figure 13

18. Secure the upper control arm to the cross-member using the eccentric cam hardware and plates in the “wing up” orientation shown. These will be used to adjust camber and caster. (Figure 14) Torque hardware to 55 lb. ft.

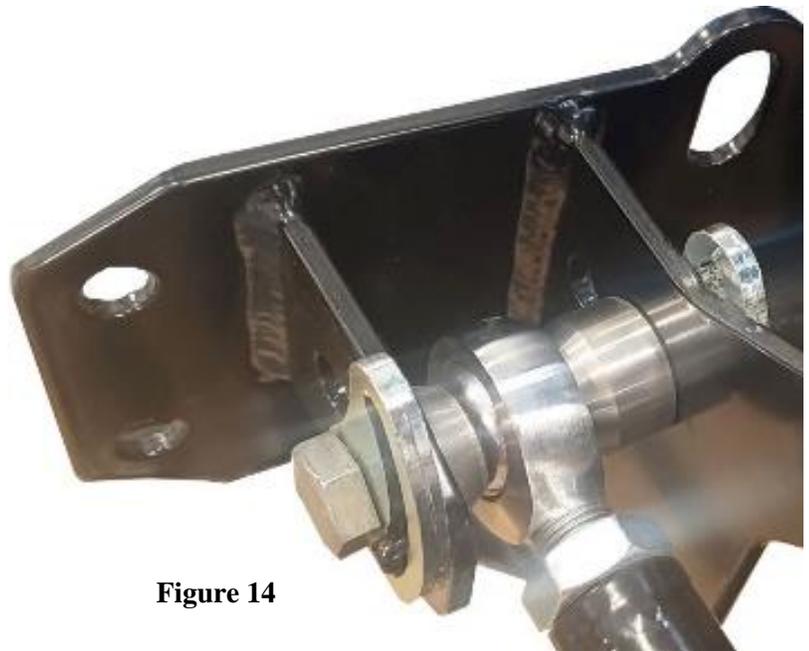


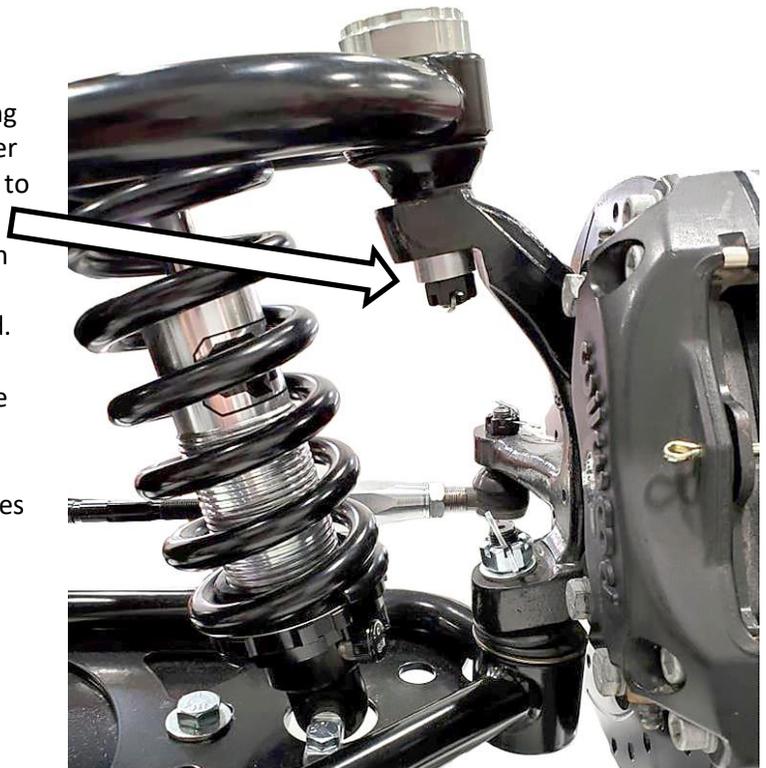
Figure 14

NOTE:

The bolt head is the adjustment and the nut is the tightening.

Spindles/Brakes

19. Install the spindles with the steering arm forward using one 9/16” yellow zinc (1.88” thick) spacer on the upper ball joint stud followed by the 1/2” castle nut. Torque to 50 lb. ft. Continue tightening to line up the cotter pin hole. Never loosen the castle nut to find the cotter pin hole.
20. Install the 9/16” castle nut on the lower ball joint stud. Torque to 55 lb. ft. Continue tightening to line up the cotter pin hole. Never loosen the castle nut to find the cotter pin hole.
21. Install the brake rotors and calipers according to the manufactures instructions. This suspension system uses standard or drop spindles based on the Mustang II.



Steering Rack

NOTE:

The power rack included with this suspension system needs the included rack extension kit installed before installation. (see step 22)

IF CONVERTING TO MANUAL STEERING-

The mounting is different for manual and power steering racks. QA1 crossmember is drilled with mounting holes for power steering rack and pilot holes for manual rack location.

To convert to manual steering rack, you will need to drill out the pilot holes to 5/8” diameter. The hole on the driver side will end up overlapping the power rack mounting hole. Use a step drill bit on this hole to avoid catching the drill bit in the original hole. Manual rack to use is Speedway Motors part# 91034344 and rack extension kit part# 910-34345-MAN. This manual rack will use a different input spline and will need a 9/16”, 26 spline u-joint. (Speedway Motors part number 91032290)

22. Remove the dust boots from the steering rack.
23. Run the steering rack out on the geared end and place in a vice. **(Figure 15)**
The geared end of the rack does not pass through any seals. DO NOT PUT THE SMOOTH END OF THE SHAFT IN THE VICE OR DAMAGE THE TEETH ON THE RACK
24. Remove the tie rod ends by unthreading them. The tie rods will be tight. Using a lever through the rack mount will help gain leverage on the tie rod.
25. Using a small amount of red Loctite thread the rack extensions onto the rack.
26. With a small amount of red Loctite, re-install the inner tie rod onto the rack extension. Set the roll pins in the extension and inner tie rod connection. **(Figure 16)**
27. Once the rack extensions are installed on both sides of the rack, install the new dust boots and secure with ties.
28. Install the power rack to the cross-member using 5/8" x 3.75" hardware with one 5/8" washer on the under the nut and bolt head. Torque to 90 lb. ft.



Figure 15

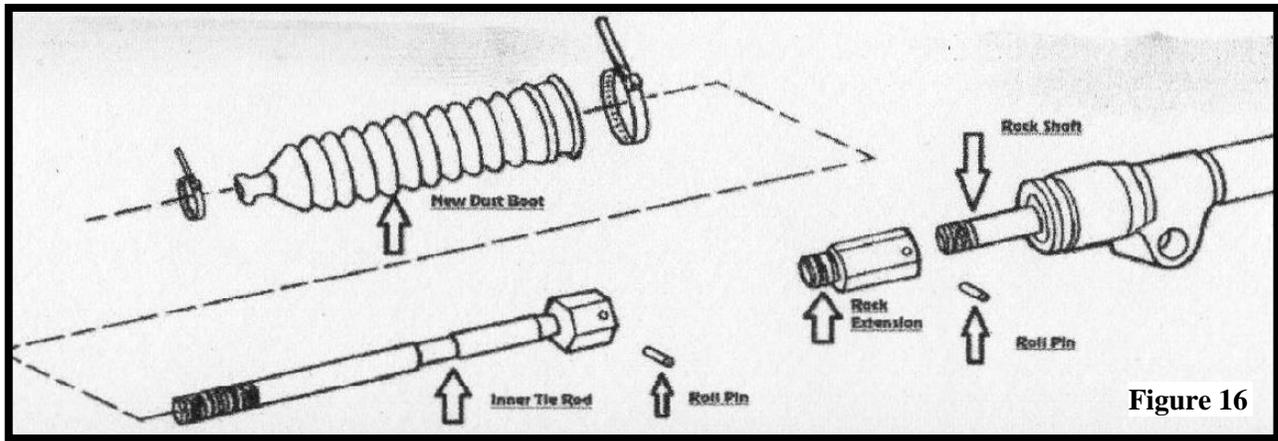


Figure 16

Steering shaft

29. Use the machined steering adapter held up where the factory rag joint was. Mark the holes from the column flange to the steering adapter and drill them out to 5/16". It may be necessary to enlarge one of the holes to 3/8" to match the bolt size on the column.
30. Secure the steering adapter to the factory rag joint using 5/16 x 1.25" hardware, with washers and nylock nut. Torque to 15 lb. ft. **(Figure 17)**
31. Install the included 36 spline universal joint onto the steering rack and the DD universal joint onto the steering adapter. The u-joints will need to be loosely installed at this time to fit the shaft. **(Figure 18)**

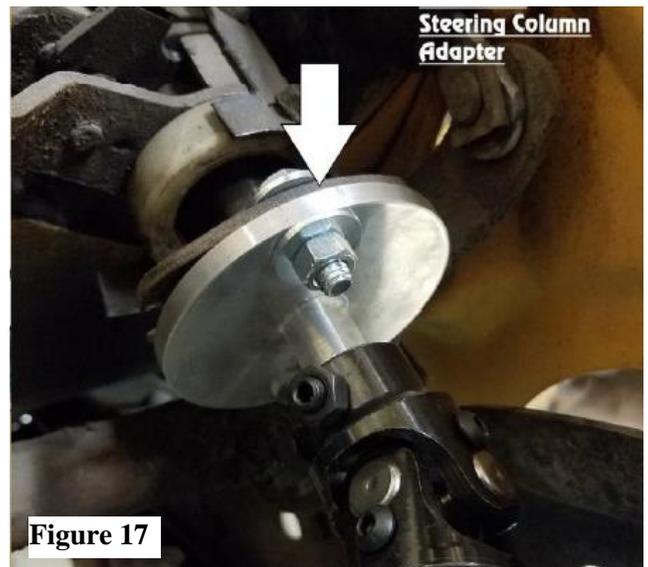


Figure 17

32. With the two DD universal joints facing each other, measure for the steering shaft length needed. Measure to the inside of both joints. The intermediate shaft should end flush with the inside of the joint. It is best to cut the shaft 1/2" longer than measured, install and trim if necessary. **Do not let the shaft protrude into the yoke of the u-joint. This will cause binding.**

33. Once the steering shaft is the correct length, remove it and install the support bracket with the rod end loosely fit onto the shaft. **(Figure 19)**

NOTE:

The DD shaft should always have dimple holes drilled where the U-joint set screws will tighten up against to prevent the DD shaft from possibly moving in the event a set screw loosens slightly.

34. With the steering rack in the mid-stroke position and the steering wheel in the straight forward position, install the shaft into the upper and lower universal joints. A small amount of Loctite should be used before torquing to 11 lb. ft.

35. Position the stud of the CMR12-757 rod end near the middle of the slotted support bracket fastened loosely using two jam nuts and washers.

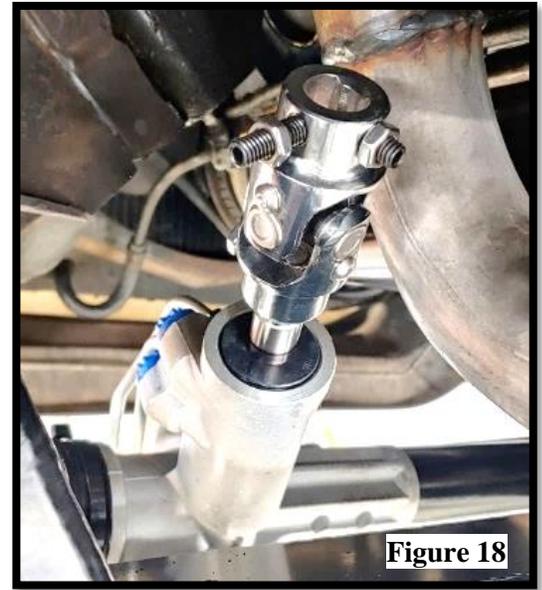


Figure 18



Figure 19

36. Slide the support bracket into the frame rail and clamp it in place.

37. Drill the support bracket holes into the frame using a 3/8" drill bit.

38. Fasten the bracket to the frame using 3/8" x 1.25" bolts with two washers and nylock nut per connection. Torque to 31 lb. ft.

39. Check the position of the rod end in the frame support by turning the steering wheel lock to lock, ensuring bind free operation.

40. Reposition the rod end if necessary before torquing the jam nuts to 65 lb. ft. **(Figure 20)**

41. Thread one left hand threaded jam nut onto the included outer tie rod. The left-hand threaded jam nut has a slots at the hex corners to signify left hand. **(Figure 21)**

42. Thread one right-hand jam nut onto the steering rack followed by the tie rod adjuster sleeve **(Figure 22)** until the threads bottom out.

43. Thread the outer tie rod into the adjustment sleeve until the threads have bottomed out in the sleeve.



Figure 20

44. With the steering wheel and front wheels in the straight-forward position, hold the outer tie rod end and adjust the sleeve to extend the tie rod to the correct length. The outer tie rod should have a minimum of 1" of thread engagement. Install the tie rod ends into the steering arm from the bottom. Torque the castle nut to 50 lb. ft. Continue tightening to line up the cotter pin hole. Never loosen the castle nut to find the cotter pin hole.
45. Tighten the jam nuts to the tie rod sleeve.



Figure 21

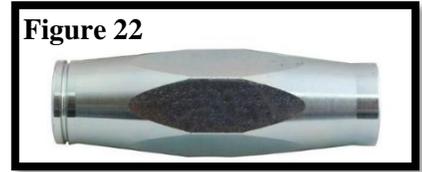


Figure 22

Power Steering Connections

- The steering rack included with this suspension is based on a Fox body mustang. The rack has a 9/16"-18 pressure port and 5/8"-18 return.
- Adapter fittings to convert the rack to -6 AN can be found at Speedway Motors as p/n 910-4047. Custom -6 AN hoses will be needed.
- The Saginaw PS pump is a common OE pump that can be used. For the 5/8" inverted flair on the pressure side use Summit Racing p/n 961947ERL to convert to -6 AN.
- The factory Gen 3 Hemi pump puts out too much pressure for the included steering rack. Bouchillon Performance offers a reduced pressure pump or can modify your pump to be used with this rack.



Optional Sway Bar Installation

NOTE:

If your truck came with a factory sway bar you can use the factory frame mounts and install the end links to the lower control arms. Use the following instructions to install the QA1 52831 front sway bar:

46. With the lower control arms at ride height, install the end links to the bar then to the lower control arms. **(Figure 23)**
47. Install the frame mounts to the sway bar.
48. Raise the sway bar into position and center the brackets on the frame rails.
49. Mark the mounting holes onto the frame.
50. Drill the holes using a 3/8" drill bit.
51. Mount the sway bar frame brackets using 3/8" x 1" hardware with two washers and nylock nut per connection. Torque to 31 lb. ft. **(Figure 24)**

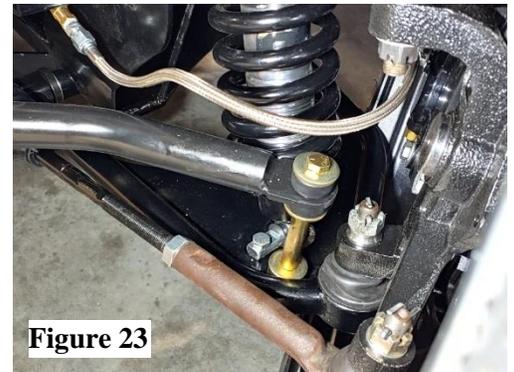


Figure 23

Finalizing the Installation

52. Double check all work before adjusting the coil-over collars to the desired ride height. The recommended shock length at ride height is 10.75" to 11.25" measured center to center on the shock mounting bolts at ride height. —————→





Figure 24

A professional four-wheel alignment is required before driving the vehicle.

Recommended Alignment Specs

Caster	+4° to +7°
Cross Caster	±0.5°
Camber	-0.5° ±0.5°
Toe	+0.10° ±0.15°



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