



INSTALLATION INSTRUCTIONS

QA1 P/N R120-170, R120-200, R120-250
R220-170, R220-200, R220-250
'65-'72 F100 Rear Coil-over Conversion System

TOOLS AND SUPPLIES REQUIRED

- Floor Jack
- Two (2) Jack Stands
- Drill with 1/4" & 7/16" drill bits
- SAE Wrench Set
- Ratchet & SAE Socket Set
- Torque Wrench
- Grinder or Air Chisel
- Anti-seize

PRE INSTALLATION NOTES:

This rear suspension system can be installed without removing the bed, although removing the bed is recommended.

1. Place the truck securely on jack stands behind the rear leaf spring mount to allow enough room for installation. If using a lift, place the rear arms just forward of the front leaf spring mount on the frame. **(Figure 2)**
2. Remove drive shaft, rear brake line, and taillight wiring.
3. Remove brake line junction from the rear axle. Unbolt leaf springs from the leaf spring mounts and remove the leaf springs and the axle.
4. Slot and remove the 13 driver side rivets pictured, including both leaf spring mounts. Three additional rivets on the underside of the frame rail will also need to be removed. Factory bump stops should also be removed. **(Figure 1 & 2)**



Figure 1

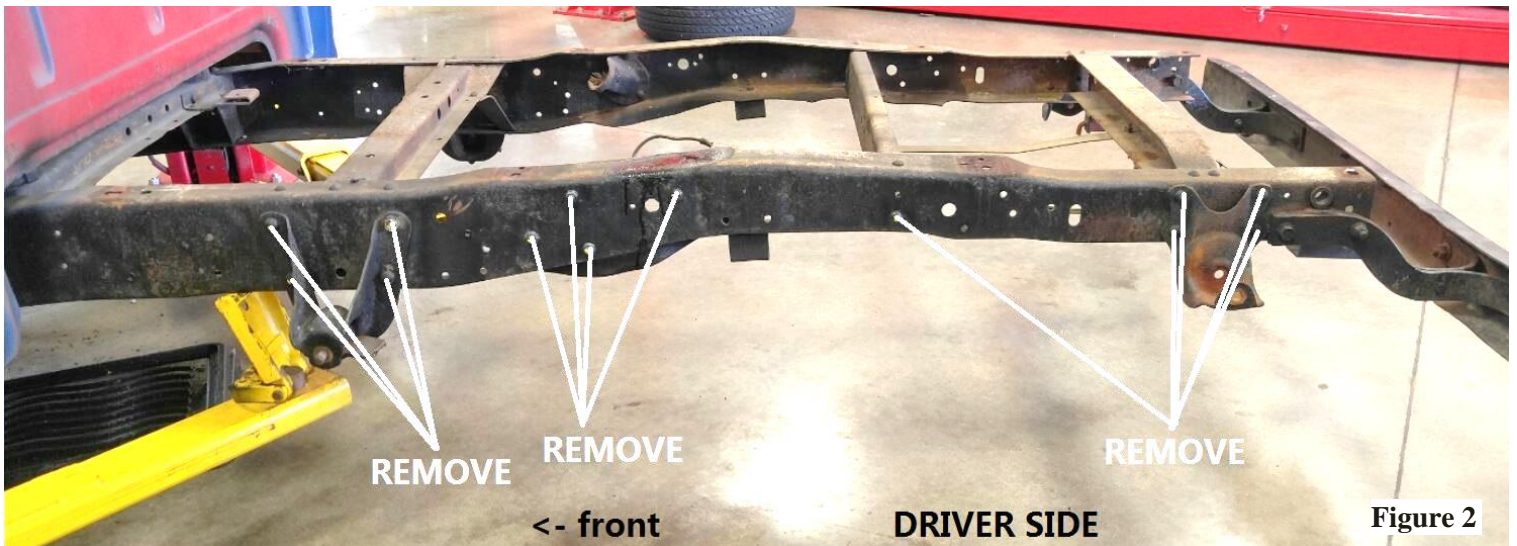
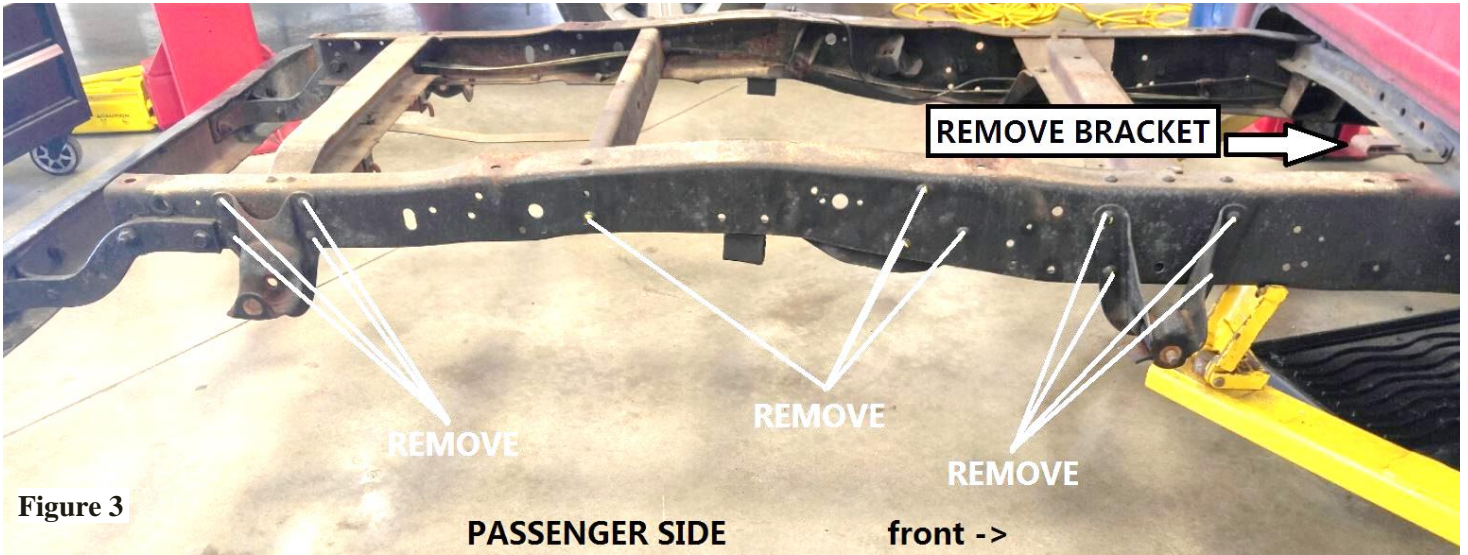


Figure 2

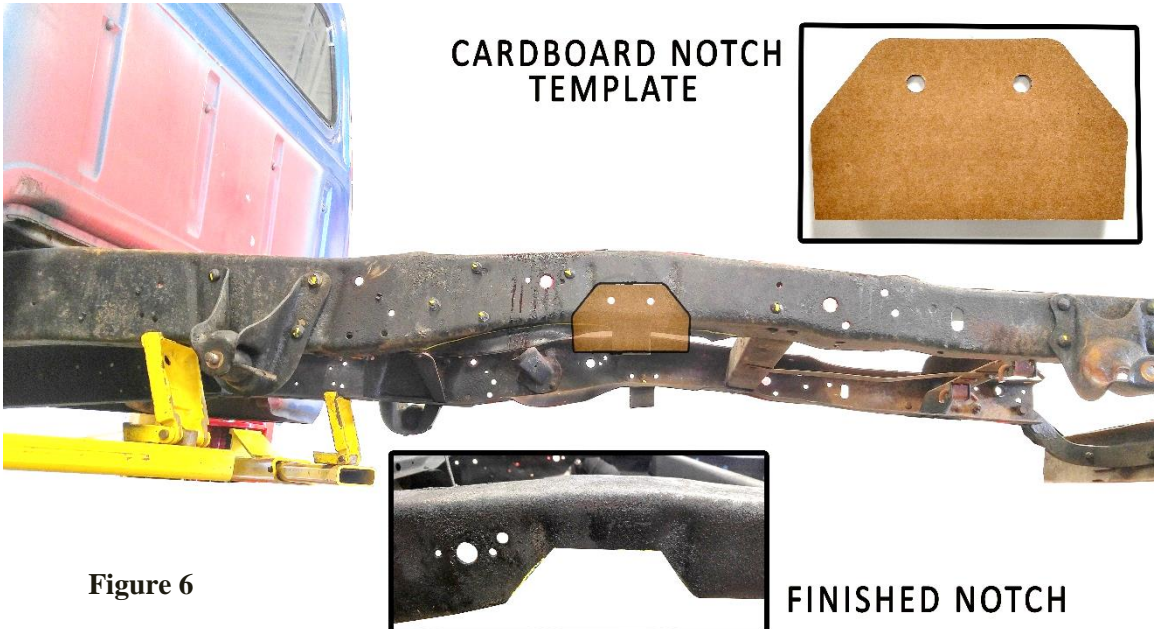
- Slot and remove 12 passenger side rivets and the e-brake cable bracket pictured next to the cab mount. **(Figure 3)** Three rivets on the underside of the frame will also need to be removed.



- A section of the lower frame rail on both the driver and passenger side curls downward. Mark and cut complete downward curling section. **(Figure 4)** After cutting the curled section and installing the notch your frame rail will look like **Figure 5**.



- Line up the two existing frame holes with the two holes in the notch template that is included with your suspension system. This template is symmetrical and can be used on both sides of the truck. **(Figure 6)**

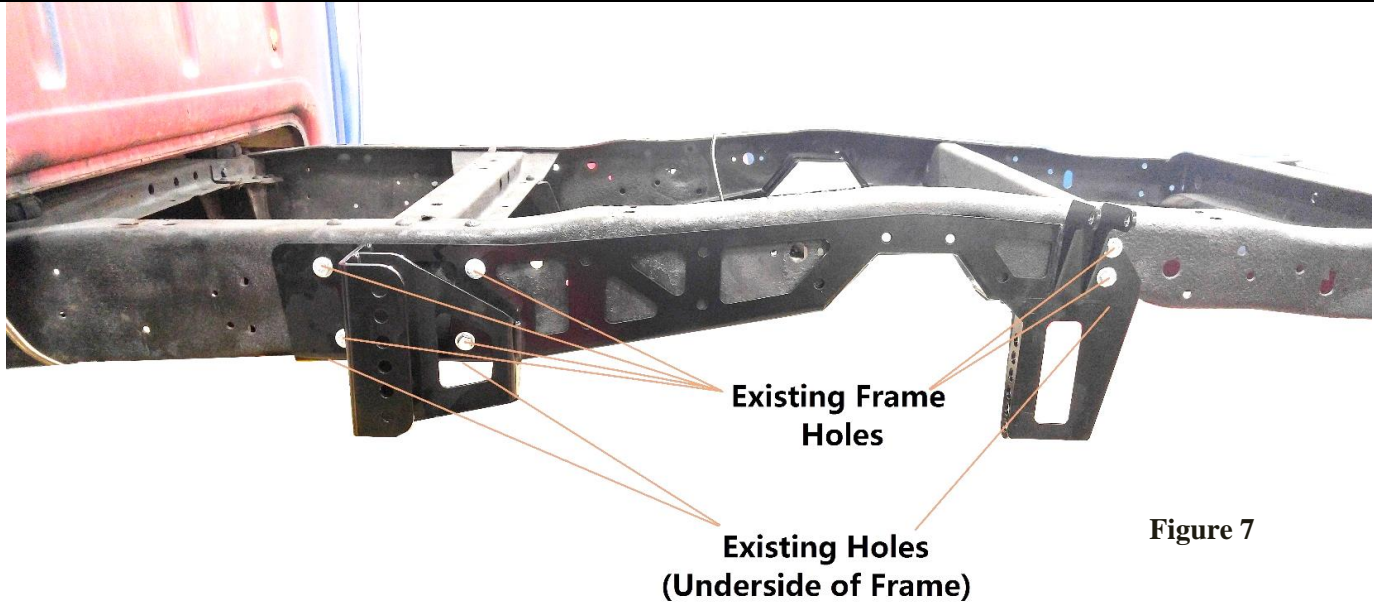


- Clean the frame of dirt, rust and under coating to allow the QA1 notch bracket to fit tightly to the frame. Paint as desired.
- Fit notch bracket to frame using the nine existing chassis holes pictured. Some frames may not have the two rear bolt holes. Evenly draw notch bracket to frame using 7/16" x 1.25" hardware. The use of clamps to draw the bracket tight to the frame may be helpful before drilling any new holes. **(Figure 7)**

INSTALL NOTE:

This hardware kit will include extra hardware that will not be used for the installation.

1st Description	2nd Description	Qty.
BOLT, 7/16-14 X 1.25"	GRADE 5, CLEAR ZINC	48
WASHER, SAE, 7/16	GRADE 5, CLEAR ZINC	96
NUT, NYLOCK, 7/16-14	GRADE 5, CLEAR ZINC	48

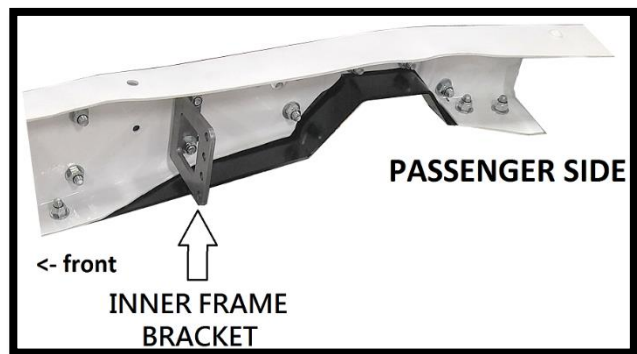
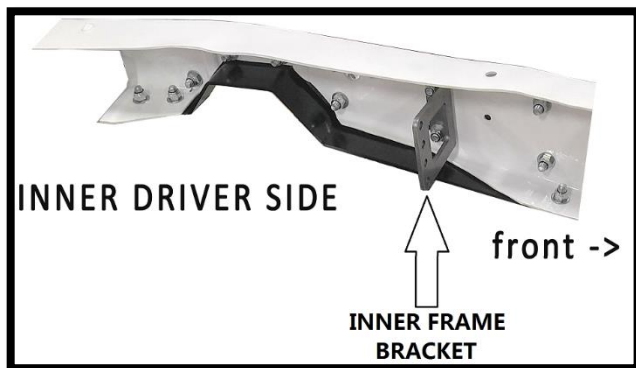


- With notch bracket drawn in tight to the frame, drill remaining notch bracket holes using a 7/16" drill bit.

INSTALL NOTE:

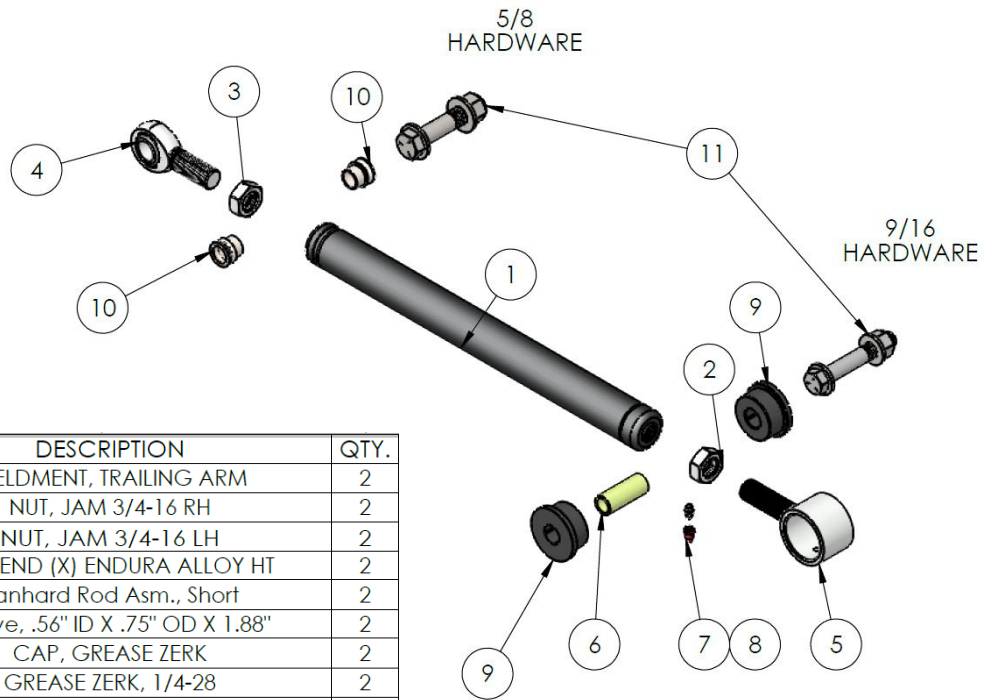
Refer to Step 11 if you will be running the QA1 (52866) Rear Sway Bar. Trucks not using the rear sway bar skip to Step 12.

- Mount one Inner Frame Bracket on driver and passenger side using same 7/16" hardware. Mount bracket forward and mounting bolts towards rear for both driver and passenger side. Refer to sway bar instructions to complete install.



- Evenly tighten all 7/16" hardware. Torque to 49 lb. ft.

13. Using anti-seize on the threads, loosely screw rod end with jam nut into trailing arm as far as possible.
14. Insert bushing halves into fixed rod end and insert metal sleeve through center.
15. Loosely screw fixed rod end into trailing arm as far as possible.



BALLOON #	ITEM #	DESCRIPTION	QTY.
1	9037-729	WELDMENT, TRAILING ARM	2
2	JNR12S	NUT, JAM 3/4-16 RH	2
3	JNL12S	NUT, JAM 3/4-16 LH	2
4	XML12	ROD END (X) ENDURA ALLOY HT	2
5	7039-157	Panhard Rod Asm., Short	2
6	9033-317	Sleeve, .56" ID X .75" OD X 1.88"	2
7	9023-116	CAP, GREASE ZERK	2
8	9023-119	GREASE ZERK, 1/4-28	2
9	9032-169	Bushing, Energy 2042G	4
10	SG12-106	High Misalignment Spacer, SS	4
11	7039-230	HARDWARE KIT, TRAILING ARM	2

16. With an even amount of thread engagement for both rod ends, set center to center on the trailing arms to 20" and tighten jam nuts to trailing arm.



17. Install bushing end of trailing arm into third hole from the top of the notch bracket using 9/16" x 3.5 hardware in the Trailing Arm Hardware Kit (p/n 7039-230). **(Figure 8)** Final torque of 85 lb. ft. should be applied only with the truck at final ride height. Changing the instant center by raising or lowering the trailing arm on this bracket should be parallel to the ground can be adjusted after final ride height is determined.

HARDWARE KIT #7039-230	
Description	Qty.
BOLT, 9/16-12 X 3.5"	2
NUT, NYLOCK, 9/16-12	2
WASHER, 9/16, SAE	4
BOLT, 5/8-11 X 3.5"	2
NUT, NYLOCK, 5/8-11	2
WASHER, 5/8, SAE	4

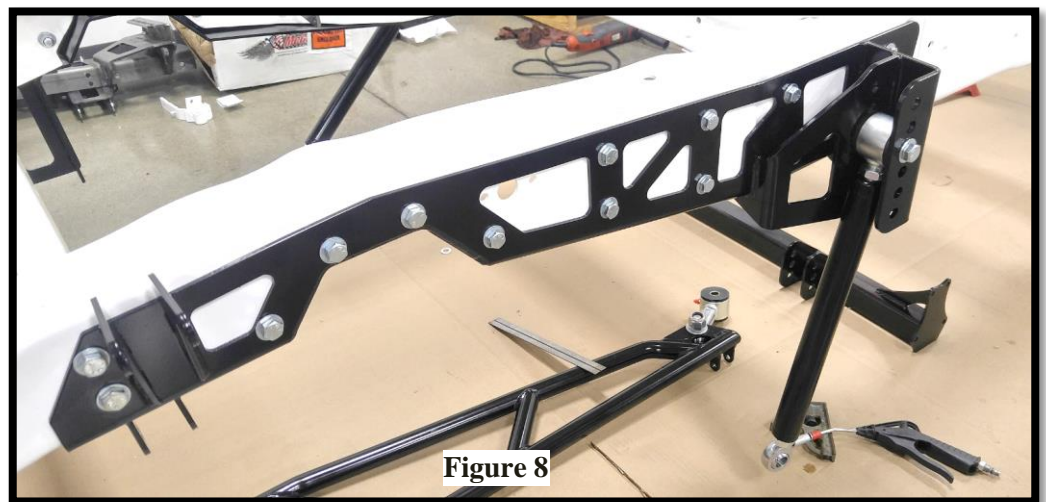
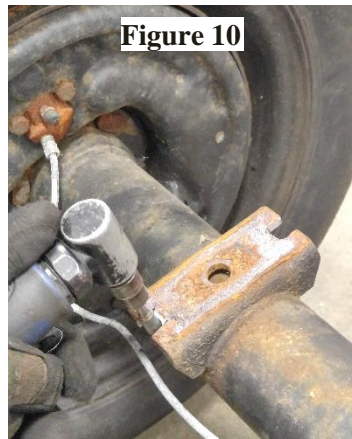


Figure 8

18. Moving to the rear axle you will need to prep the leaf spring perch to mount the QA1 axle pad. Place the QA1 axle pad plate on top of the axle leaf spring perch. **(Figure 9)** Mark the openings and grind out the leaf spring perches. **(Figure 10 & 11)**

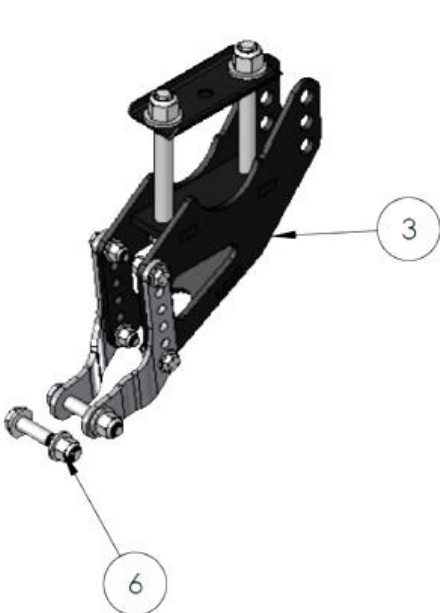


19. Install left and right axle mount bracket (#3 & #4) onto axle using 5/8" x 5.5" bolts with one 5/8" washer under the 5/8" nylock nut from the Axle Mount Hardware Kit (p/n 7039-235). Torque to 90 lb. ft.

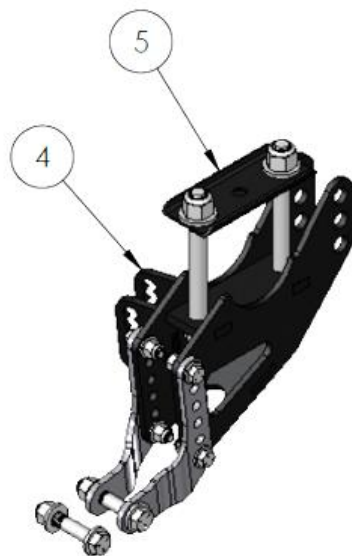
BALLOON #	ITEM #	DESCRIPTION	QTY.
1	9037-654	BRACKET,SHOCK MOUNT, LEFT, BOLT ON	2
2	9037-655	BRACKET, SHOCK MOUNT, RIGHT, BOLT ON	2
3	9037-718	WELDMENT, DRIVER SIDE AXLE MOUNT	1
4	9037-722	WELDMENT, PASSENGER SIDE AXLE MOUNT	1
5	9037-727	PLATE, TOP MOUNT, AXLE PAD	2
6	7039-235	HARDWARE KIT, AXLE MOUNT	1

20. Install left and right shock mount onto each axle mount using 3/8" x 1.25" hardware. **(Figure 12)** Torque to 31 lb. ft. (1/2" hardware to be used to install coil-over shocks)

Description	Qty.
BOLT, 3/8-16 X 1.25"	8
NUT, NYLOCK, 3/8-16	8
WASHER, 3/8, SAE	16
BOLT, 1/2-13 X 2.75"	4
NUT, NYLOCK, 1/2-13	4
WASHER, 1/2, SAE	8
BOLT, 5/8-11 X 5.5"	4
NUT, NYLOCK, 5/8-11	4
WASHER, 5/8, SAE	4



DRIVER SIDE



PASSENGER SIDE

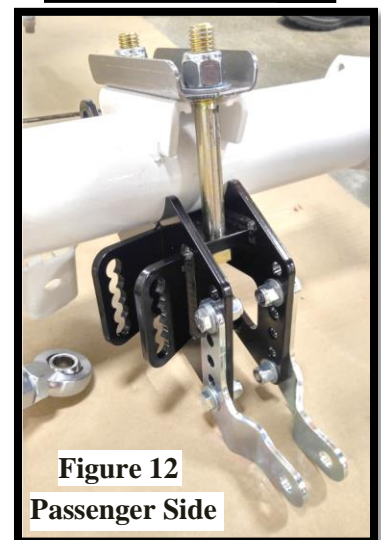


Figure 12
Passenger Side

21. Position axle under the frame and connect coil-overs to notch bracket and axle mount using 1/2" x 2.75" bolts, washers and nylock nuts from the Axle Mount Hardware Kit (p/n 7039-235) Torque to 65 lb. ft. **(Figure 13)**
22. Refer to instructions included with coil-over shocks for shock and spring assembly.
23. Support axle under the frame and connect trailing arm to the center hole in the axle bracket using 5/8" x 3.5" bolt, washers, and nylock nut from Trailing Arm Hardware Kit (p/n 7039-230). Final torque of 90 lb. ft. should only be applied at final ride height. Changing the instant center by raising or lowering the arm on this bracket can be adjusted after final ride height is determined. **(Figure 14)**



Figure 13



Figure 14

24. Mount the torque arm bracket to the differential by removing the four drivers side nuts from the front side of the differential. **(Figure 15)** Mount torque arm bracket using shouldered nuts from Torque Arm Hardware Kit (p/n 7039-232) Torque to 37 lb. ft. **(Figure 16 & 17)**

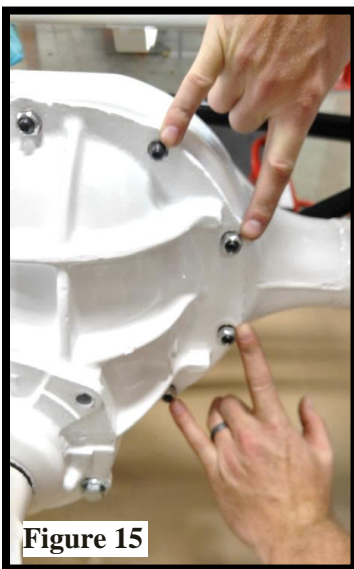


Figure 15



Figure 16

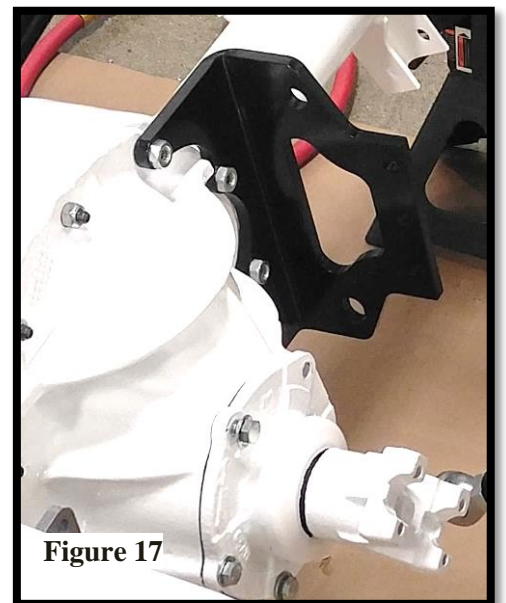
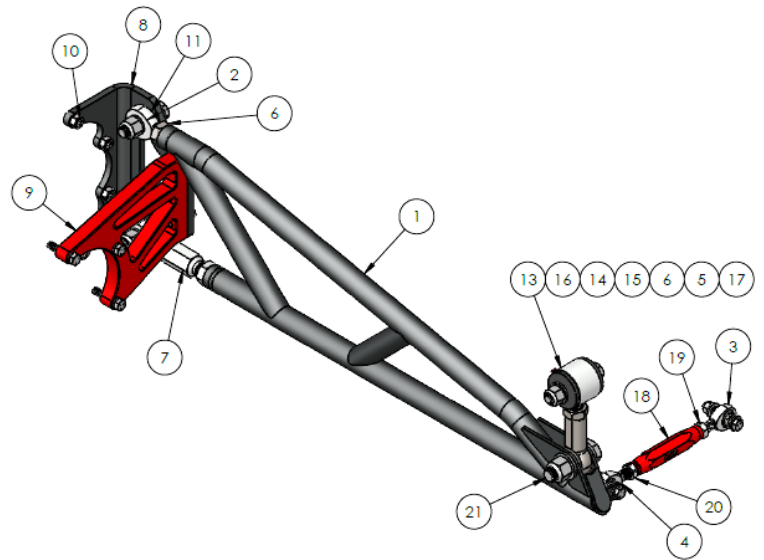


Figure 17

BALLOON #	ITEM #	DESCRIPTION	QTY.
1	9037-691	WELDMENT, TORQUE ARM	1
2	XMR10-12	ROD END (X) ENDURA ALLOY HT	2
3	XMR8	ROD END (X) ENDURA ALLOY HT	1
4	XML8	ROD END (X) ENDURA ALLOY HT	1
5	XFR12	ROD END (X) ENDURA ALLOY HT	1
6	JNR12S	JAM NUT, 3/4-16 RH	3
7	AS12-12	LINKAGE ADJUSTER STEEL 3/4-16	1
8	9037-731	PLATE, REAR, 4 BOLT	1
9	9037-679	BRACKET, FRONT PINION MOUNT	1
10	9037-735	NUT, SHOULDER, 3/8-16 X 5/8 HEX	4
11	SG104	SPACER ROD END SS	2
12	SG8-64	High Misalignment Spacer, SS	4
13	7039-157	Panhard Rod Asm., Short	1
14	9032-169	Bushing, Energy 2042G	2
15	9033-317	Sleeve, .56" ID X .75" OD X 1.88"	1
16	9023-116	CAP, GREASE ZERK	1
17	9023-119	GREASE ZERK, 1/4-28	1
18	9033-459	SLEEVE, .875" HEX ALUMINIUM ANODIZED	1
19	JNR8S	Jam Nut, Right Hand Thread	1
20	JNR8S	Jam Nut, Left Hand Thread	1
21	7039-232	HARDWARE KIT, TORQUE ARM	1



25. Install XMR10-12 rod end (#2) with JNR12S jam nut (#6) into rear upper connection of torque arm. Screw rod end fully into torque arm.
26. Install AS12-12 male to female linkage adjuster (#7) with left hand jam nut into lower torque arm connection. Thread in the remaining XMR10-12 rod end (#2) with jam nut. This linkage adjuster will be your pinion angle adjustment.
27. Install rear torque arm connection to the inside of torque arm bracket with one SG104 spacer, small diameter towards torque arm. Connect torque arm to bracket using 5/8" x 2.5" bolts, washers, and nylock nuts.
28. Install the two bushing halves (#14) then 5/8" sleeve (#15) into large rod eye assembly (#13) for front torque arm assembly.
29. Install 3/4" jam nut (#6) onto the large rod eye (#13) followed by the XFR12 female rod end (#5).
30. Install assembled rod eye into front torque arm connection using 3/4" x 2.75" bolt, two 3/4" washers, and 3/4" nylock nut. (Figure 18)
31. Install 1/2" right hand threaded jam nut (#19) onto XMR8 rod end (#3). Screw rod end into right hand threaded red aluminum adjuster sleeve (#18).

1st Description	Qty.
BOLT, 9/16-12 X 3.25"	1
NUT, NYLOCK, 9/16-12	1
WASHER, 9/16, SAE	2
BOLT, 3/4-10 X 2.75"	1
NUT, NYLOCK, 3/4-10	1
WASHER, 3/4, SAE	2
BOLT, 5/8-11 X 2.5"	2
NUT, NYLOCK, 5/8-11	2
WASHER, 5/8, SAE	4
BOLT, 3/8-16 X 2.25"	2
BOLT, 3/8-16 X 1.25"	3
BOLT, 3/8-16 X 1.75"	3
NUT, NYLOCK, 3/8-16	2
WASHER, 3/8, SAE	7
WASHER, 3/8	3



Figure 18

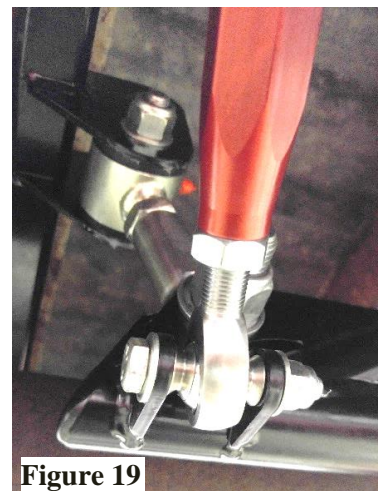
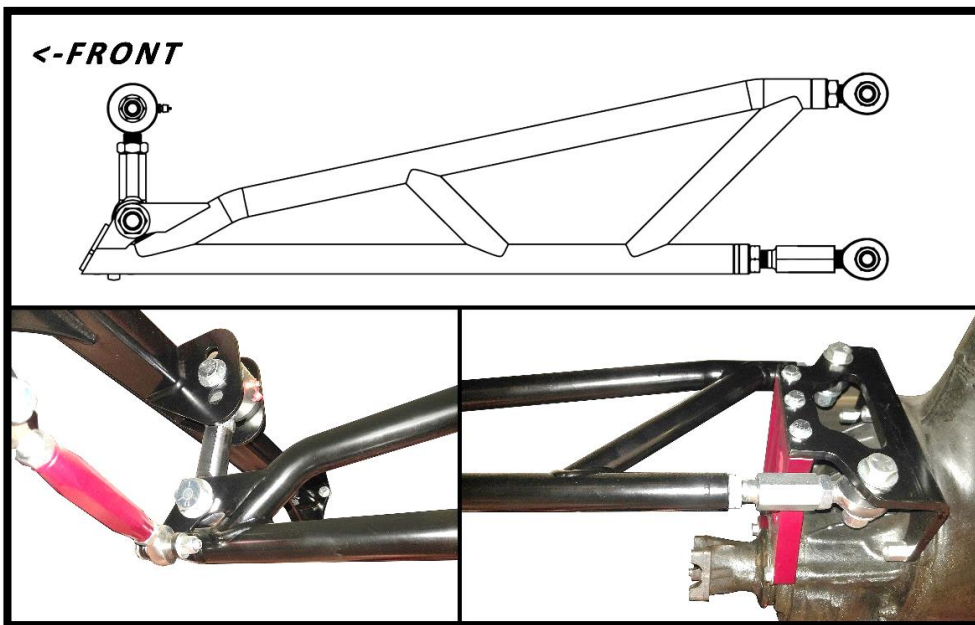


Figure 19

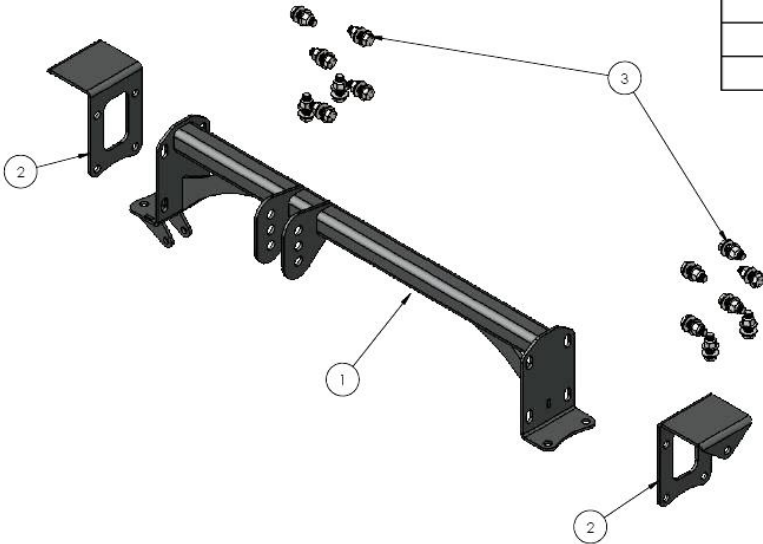
32. Install left hand XML8 rod end (#4) with JNL8S left hand jam nut (#20) into the LH threaded end of the adjuster sleeve (#18).
33. Install the assembled adjuster sleeve (#18) into the front side bracket of the torque arm with two 1/2" SG8-64 High Misalignment Spacers (#12) installed in both sides of the rod end. **(Figure 18)** Secure to torque arm using 3/8" x 2.25" bolt, two washers, and nylock nut.
34. Install anodized red Front Pinion Mount to torque arm bracket using 3/8" x 1.25" bolts and washers. Bolt the Pinion Mount to differential using three 3/8" x 1.75" bolts and washers. **(Figure 20)**



Figure 20

BALLOON #	ITEM #	DESCRIPTION	QTY.
1	9037-681	WELDMENT, CROSS MEMBER, TORQUE ARM	1
2	9037-687	PLATE, FRAME MOUNT	2
3	7039-231	HARDWARE KIT, CROSS MEMBER	1

HARDWARE KIT, CROSS MEMBER	
Description	Qty.
BOLT, 7/16-14 X 1.25"	14
WASHER, SAE, 7/16	28
NUT, NYLOCK, 7/16-14	14



35. Set front cross-member frame plates (#2) on the frame approximately 10" from the center of the rivet shown in **Figure 22**.

36. Raise cross-member into place and loosely bolt the frame brackets to the front cross-member using 7/16" x 1.25" bolts, washers, and nylock nuts. **(Figure 21)**
37. Bolt torque arm front connection to the center mounting hole of the front cross-member using 5/8" x 2.5" bolts, washers, and nylock nut.



Figure 21

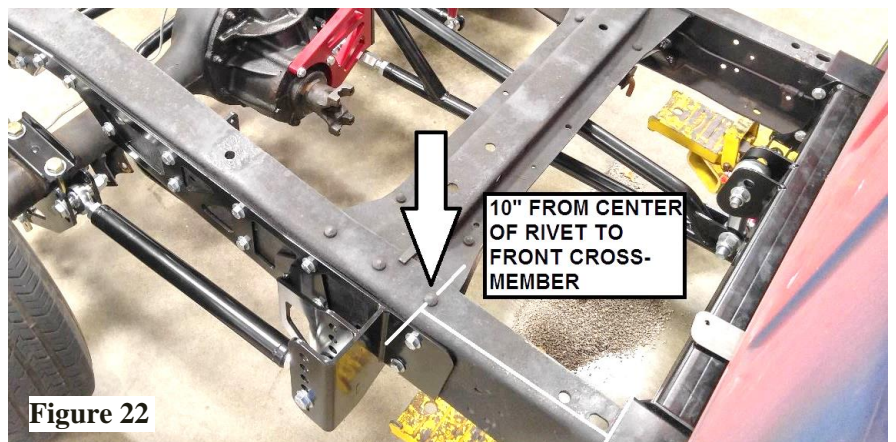


Figure 22

38. 10" from the center of the frame rivet is a starting position for the front cross-member. Before drilling and mounting the cross-member, slide cross-member until the torque arms front connection is vertical. **(Figure 23)** Once the connection is vertical, torque the cross-member to frame bracket hardware, then drill the frame for cross-member mounting holes and torque all 7/16" x 1.25" hardware to 49 lb. ft.

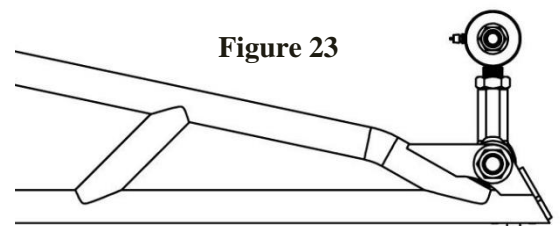
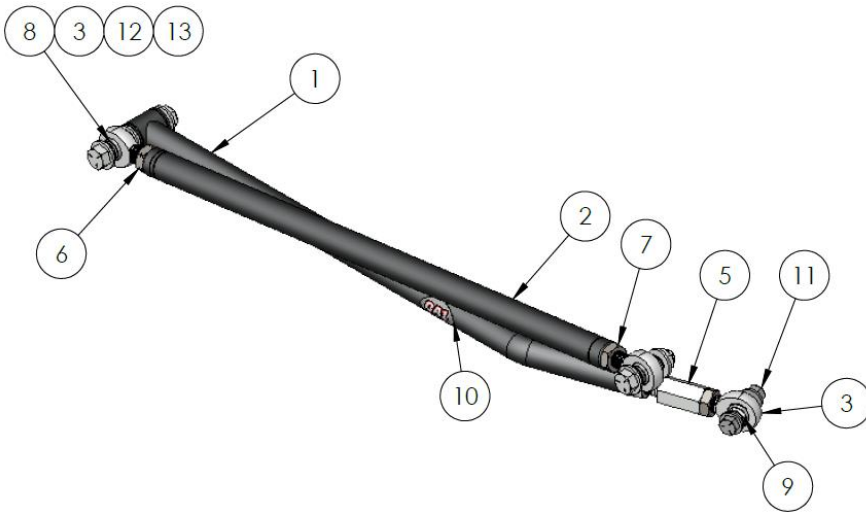


Figure 23

39. Connect red anodized torque arm stabilizer to the front cross-member using 3/8" x 2.25" hardware. Torque to 37 lb. ft.
40. Install a JNR12S right hand jam nut (#7) onto one XMR10-12 right hand rod end (#3) into the right hand threaded end of the Brace Bar (#2).
41. Install left hand JNL12S jam nut (#6) onto left hand XML10-12 rod end (#4) and thread into left hand threaded end of the Brace Bar (#2).
42. Install AS12-12 linkage adjuster (#5) with jam nut into the left hand threaded (bent end) of panhard bar. Install XMR10-12 rod end (#3) with jam nut into female end of linkage adjuster.

BALLOON #	ITEM #	DESCRIPTION	QTY.
1	9037-733	WELDMENT, PANHARD BAR	1
2	9037-566	WELDMENT, BRACE BAR	1
3	XMR10-12	ROD END (X) ENDURA ALLOY HT	2
4	XML10-12	ROD END (X) ENDURA ALLOY HT	1
5	AS12-12	LINKAGE ADJUSTER STEEL 3/4-16	1
6	JNL12S	JAM NUT, STEEL 3/4-16 LH	1
7	JNR12S	JAM NUT, 3/4-16 RH	2
8	SG104	SPACER ROD END SS	4
9	SG10-84	High Misalignment Spacer, SS	2
10	9093-122	DECAL, SUSPENSION DECAL, USA	1
11	7039-210	HARDWARE KIT, PANHARD BAR	1
12	9032-395	BUSHING, .875	2
13	9033-457	SLEEVE .625" ID x 0.875" OD x 1.75"	1



43. Insert one end of Brace Bar and the straight end of the panhard bar into the third hole down on the driver side mounting bracket using 5/8" x 4.25" bolt, washers, and nylock nut. Install the rod end of the brace bar with two SG10-84 spacers. Install a 5/8" washer between the rod ends spacer and the bushing of the panhard bar. The panhard bar will mount in this connection in front of the brace bar.

HARDWARE KIT, PANHARD BAR	
Description	Qty.
Bolt, 5/8-11 X 4.25"	1
Bolt, 5/8-11 X 2.5"	1
Bolt, 1/2-13 X 2.75"	1
Washer, SAE, 5/8	5
Washer, SAE, 1/2	2
Jam Nut, Nylock, 5/8-11	2
Nut, Nylock, 1/2-13	1

44. Adjust the brace bar length to attach to the passenger side mount using SG104 spacers on both sides of the rod end securing with 5/8" x 2.5" bolt, washers, and nylock nut.
45. Adjust linkage adjuster in panhard bar to install into middle hole of passenger side bracket. Install SG10-84 high misalignment spacers (#9) on both sides of the rod end before securing to bracket using 1/2" x 2.75" bolt, washers, and nylock nut. **(Figure 24)** Torque to 90 lb. ft.

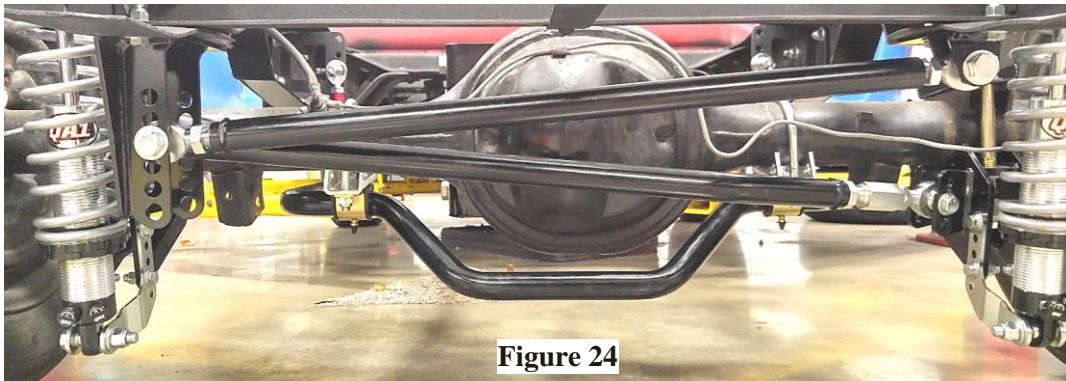
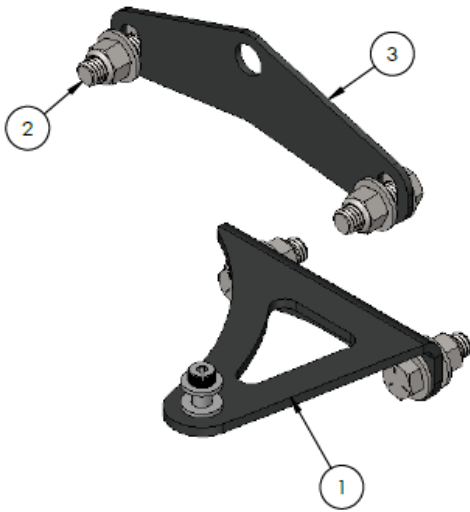


Figure 24

INSTALL NOTE:

After final ride height is set the panhard bar mounting location can be changed so that the panhard bar is parallel to the ground. Be sure to snug up all jam nuts after final adjustment.



BALLOON #	ITEM #	DESCRIPTION	QTY.
1	9037-744	BRACKET, E-BRAKE PIVOT	1
2	9037-745	HARDWARE KIT, E-BRAKE PIVOT	1
3	9037-746	PLATE, BRAKE LINE MOUNT	1

HARDWARE KIT, E-BRAKE PIVOT,

1st Description	Qty.
SHOULDER BOLT, 5/16 X .500", 1/4-20	1
WASHER, SAE, 5/16	2
BOLT, 7/16-14 X 1.25"	4
WASHER, SAE, 7/16	8
NUT, NYLOCK, 7/16-14	4
NUT, NYLOCK, 1/4-20	1

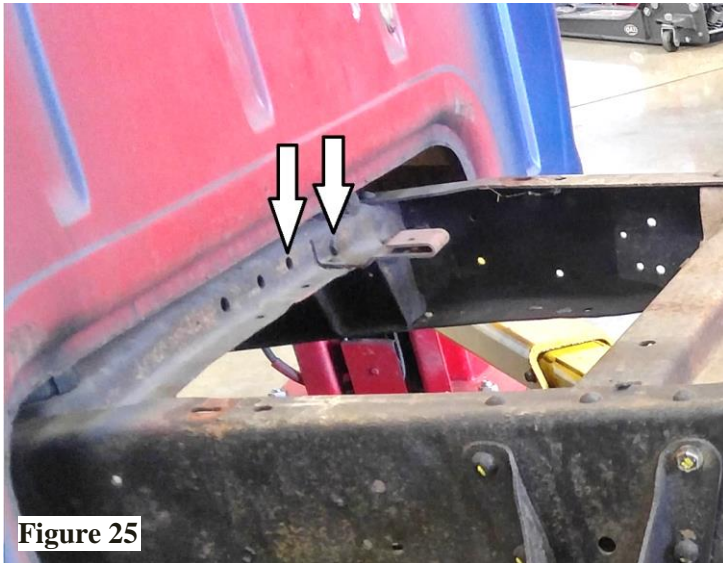


Figure 25

46. Remove rivets from factory e-brake cable support. Use existing holes to mount e-brake pivot bracket (#1). **(Figure 25)**

47. Mount e-brake pivot bracket (#1) to cross-member using 7/16" x 1.25" bolt, washers, and nylock nut. **(Figure 27)** Torque to 49 lb. ft.

48. Install brake line mount (#3) to the front side of cross-member using 7/16" x 1.25" bolts, washers, and nylock nuts. **(Figure 26)** Torque to 49 lb. ft.

49. Pass e-brake cable through brake line mount and secure factory e-brake lever assembly to the e-brake pivot using 5/16" shouldered bolt, washers, and nylock nut. **(Figure 27)**

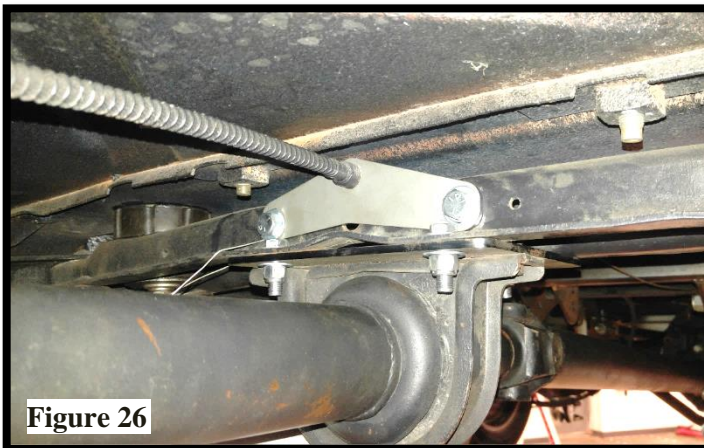


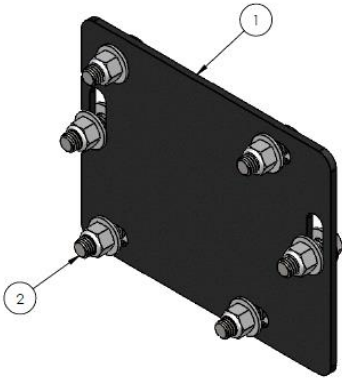
Figure 26



Figure 27

INSTALL NOTE:

The following install of the **carrier bearing support** is applicable to **LONG BED TRUCKS ONLY**.



BALLOON #	ITEM #	DESCRIPTION	QTY.
1	9037-740	PLATE, BEARING CARRIER	1
2	7039-236	HARDWARE KIT, CARRIER BEARING MOUNT	1

1st Description	Qty.
BOLT, 7/16-14 X 1.25"	6
WASHER, SAE, 7/16	12
NUT, NYLOCK, 7/16-14	6

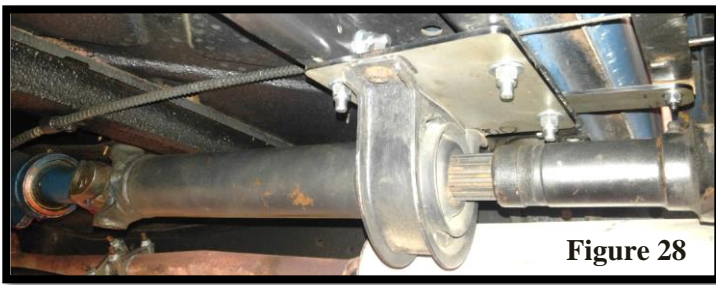


Figure 28

1. Remove rivets from factory carrier bearing support.
2. Bolt in new carrier bearing support using 7/16" x 1.25" bolts, washers, and nylock nuts. **(Figure 28)** Torque to 49 lb. ft.

FINALIZING THE INSTALL:

1. Adjust the QA1 coil-overs to your desired ride height.
2. Re-install brake lines and bleed brake system.
3. Make any changes to the trailing arm and panhard bar mounting points to ensure both are parallel to the ground.
4. Adjust torque arm front support so the torque arm is parallel with the frame rails.
5. Make final pinion angle adjustments.
6. Double check all hardware connections and snug all jam nuts

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





Technical Support Line: (952) 985-5675 Email: Info@QA1.net

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Lakeville, MN 55044
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READ ALL INSTRUCTIONS CAREFULLY AND THOROUGHLY PRIOR TO STARTING INSTALLATION. PRODUCTS THAT HAVE BEEN INSTALLED ARE NOT ELIGIBLE FOR RETURN. USE THE PROPER JACKING LOCATIONS. DEATH OR SERIOUS INJURY CAN RESULT IF INSTRUCTIONS ARE NOT CORRECTLY FOLLOWED. A GOOD CHASSIS MANUAL, AVAILABLE AT YOUR LOCAL PARTS STORE, MAY ALSO AID IN YOUR INSTALLATION.

• **DISCLAIMER / WARRANTY** •

QA1 WARRANTS THAT THE PRODUCTS WILL BE FREE FROM DEFECTS IN MATERIAL AND WORKMANSHIP FOR ONE YEAR FROM DATE OF SALE TO THE ORIGINAL PURCHASER. QA1 MAKES NO OTHER WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. QA1 SHALL HAVE NO OBLIGATION UNDER THE FOREGOING WARRANTY WHERE THE DEFECT IS THE RESULT OF IMPROPER OR ABNORMAL USE, YOUR NEGLIGENCE, VEHICLE ACCIDENT, IMPROPER OR INCORRECT INSTALLATION OR MAINTENANCE, NOR WHEN THE PRODUCT HAS BEEN REPAIRED OR ALTERED IN ANY WAY. QA1'S LIABILITY IN THE CASE OF DEFECTIVE PRODUCTS SUBJECT TO THE FOREGOING WARRANTY SHALL BE LIMITED TO THE REPAIR OR REPLACEMENT, AT QA1'S OPTION, OF THE DEFECTIVE PRODUCTS.

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Dedicated Technical Support Team

QA1 is dedicated to providing quality support and instructions. We employ passionate racers and car enthusiasts that know our products and the industry to better serve you.

Give our tech support line a call at **1.800.721.7761**

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- Frequently Asked Questions
- Quick Tips
- Install Information
- Tuning and Repair Guides
- Other Technical Information

Our technical support and order lines are open **Monday – Friday, 8 am to 5 pm CST.**



