

INSTALLATION INSTRUCTIONS

88043

Rev E

FOR RANCHO SUSPENSION SYSTEM RS6543: CHEVROLET K1500

READ ALL INSTRUCTIONS THOROUGHLY FROM START TO FINISH BEFORE BEGINNING INSTALLATION



IMPORTANT NOTES!

WARNING: This suspension system will enhance the off-road performance of your vehicle. It will handle differently, both on and off-road, from a factory equipped passenger car or truck. Extreme care must be used to prevent loss of control or vehicle rollover during abrupt maneuvers. Failure to drive this vehicle safely may result in serious injury or death to the driver and passengers. **ALWAYS WEAR** your seat belts, **REDUCE** your speed, and **AVOID** sharp turns and other abrupt maneuvers.

A. Before installing this system, have the vehicle's alignment and frame checked at a state approved facility. The alignment must be within factory specifications and the frame of the vehicle must be sound (no cracks, damage or corrosion).

B. Do Not install a body lift kit with Rancho's suspension system or interchange parts from this system with components from another manufacturer. Use the following Rancho shock absorbers with this system: RS5244 or RS9244 (front), RS5227 or RS9227 (rear)

C. Compare the contents of this system with the parts list in these instructions. If any parts are missing, including fasteners, contact the Rancho Technical Department at 1-734-384-7804. Each hardware kit in this system contains fasteners of high strength and specific size. Do not substitute a fastener of lesser strength or mix one hardware kit with another.

D. Apply **THREAD LOCKING COMPOUND** to all bolts during installation. One drop on the exposed threads of each bolt before installing the nut is sufficient to provide an adequate bond. **CAUTION:** Thread locking compound may irritate sensitive skin. Read warning label on container before use.

E. Install all nuts and bolts with a flat washer. When both SAE (small OD) and USS (large OD) washers are used in a fastener assembly, place the USS washer against the slotted hole and the SAE washer against the round hole.

F. Unless otherwise specified, tighten all bolts to the standard torque specifications listed at the end of the note's section. Do not use an impact wrench to tighten any of these bolts. They tend to over tighten smaller bolts and under tighten larger bolts. **USE A TORQUE WRENCH!!!**

G. Do not powdercoat, chrome, cadmium, or zinc plate any of the components in this system. If you wish to change the appearance of components, enamel paint can be applied over the original coating.

H. This suspension system is a "bolt on assembly". Do not weld any of these components to the vehicle. If any component breaks or bends, contact your local Rancho dealer or Rancho for replacement parts.

I. Some of the service procedures require the use of special tools designed for specific procedures. The following tools and supplies are recommended for proper installation of this system.

- Chevrolet Service Manual
- Torsion Bar Unloading Tool (J 36202)
- Steering Linkage Puller (J 24319-01)
- Tie Rod Remover (J 6627-A)
- Knockout Removal tool (J 38794)
- New Prevailing Torque Nuts (for steering linkage)
- Die Grinder
- Drill motor
- Drills: 1/8", 21/64", 3/8", 7/16", 1/2"
- Torque Wrench (250 FT-LB capacity)
- 1/2" Drive Ratchet and Sockets
- Assorted Combination Wrenches
- Assorted Hex-Key Wrenches
- Heavy Duty Jack Stands
- Wheel Chocks (wooden blocks)
- Hydraulic Floor Jack
- Center punch
- File
- Large "C" Clamps and Bench Vise
- Hacksaw
- Hammer
- Wire Brush (to clean bracket mounting surfaces)
- Silicone Spray Lubricant
- Tape Measure
- Brake Fluid (DOT 3)
- Safety Glasses**--Wear safety glasses at all times

J. It is extremely important to replace torsion bars, CV flanges, and front drive shaft/pinion relationships as original. Be sure to mark left/right, front/rear, and indexing of mating parts before disassembly. A paint marker or light colored nail polish is handy for this.

K. Suspension components that use rubber or urethane bushings should be tightened with the vehicle

at normal ride height. This will prevent premature failure of the bushing and maintain ride comfort.

L. The exhaust crossover pipe requires modification to provide adequate clearance for the front drive shaft. Have an exhaust shop fabricate and install the necessary pipe in accordance with your state and local emission regulations.

M. On some vehicles (due to an OEM design change) the barrel end of a newly installed front shock may contact the upper control arm at full droop. If your vehicle has the newer designed upper control arm and shock clearance is a problem, install the shock with the barrel end at the top and the rod end at the bottom.

N. The required installation time for this system is approximately 7 to 8 hours. Check off the box () at the beginning of each step when you finish it. Then when you stop during the installation, it will be easier to find where you need to continue from.

O. Important information for the end user is contained in the consumer/installer information pack. If you are installing this system for someone else, place the information pack on the driver's seat. Please include the installation instructions when you finish.

P. Thank you for purchasing the best suspension system available. For the best installed system, follow these instructions. If you do not have the tools or are unsure of your abilities, have this system installed by a certified technician. **RANCHO SUSPENSION IS NOT RESPONSIBLE FOR DAMAGE OR FAILURE RESULTING FROM AN IMPROPER OR MODIFIED INSTALLATION.**

STANDARD BOLT TORQUE SPECIFICATIONS						
INCH SYSTEM			METRIC SYSTEM			
Bolt Size	Grade 5	Grade 8	Bolt Size	Class 9.8	Class 10.9	Class 12.9
5/16	15 FT-LB	20 FT-LB	M6	5 FT-LB	9 FT-LB	12 FT-LB
3/8	30 FT-LB	35 FT-LB	M8	18 FT-LB	23 FT-LB	27 FT-LB
7/16	45 FT-LB	60 FT-LB	M10	32 FT-LB	45 FT-LB	50 FT-LB
1/2	65 FT-LB	90 FT-LB	M12	55 FT-LB	75 FT-LB	90 FT-LB
9/16	95 FT-LB	130 FT-LB	M14	85 FT-LB	120 FT-LB	145 FT-LB
5/8	135 FT-LB	175 FT-LB	M16	130 FT-LB	165 FT-LB	210 FT-LB
3/4	185 FT-LB	280 FT-LB	M18	170 FT-LB	240 FT-LB	290 FT-LB

BOLT IDENTIFICATION	
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>1/2-13x1.75 HHCS</p> <p>D T L X</p> </div> <div style="text-align: center;"> <p>Grade 5 Grade 8</p> </div> <div style="text-align: center;"> </div> </div> <p>G = Grade Marking (bolt strength) L = Length (inches) D = Nominal Diameter (inches) X = Description (hex head cap screw) T = Thread Pitch (threads per inch)</p>	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>M12-1.25x50 HHCS</p> <p>D T L X</p> </div> <div style="text-align: center;"> <p>P -10.9</p> </div> <div style="text-align: center;"> </div> </div> <p>P = Property Class (bolt strength) L = Length (millimeters) D = Nominal Diameter (millimeters) X = Description (hex head cap screw) T = Thread Pitch (thread width, mm)</p>

PARTS LIST

<u>P/N</u>	<u>DESCRIPTION</u>	<u>QTY.</u>	<u>P/N</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
15080	4" Riser Block	2		9/16-12 Stover Nut	2
170011	Bump Stop Spacer	2		9/16 SAE Washer	2
170080	Brake Hose	2		9/16 USS Washer	2
176060	Right Axle Tube Drop Bracket	1	860119	UCA Drop Bracket Hardware Kit	1
176061	Differential Drop Bracket	1	176070	Flanged Sleeve	2
176062	Subframe Aft Brace	2		D-Washer	2
176063	Right Torsion Bar Drop Bracket	1		9/16-18x3.5 HHCS	4
176064	Left Torsion Bar Drop Bracket	1		9/16-18 Stover Nut	4
176065	Relay Rod	1		9/16 USS Washer	8
176066	L. Upper Control Arm Drop Brkt	1		1/2-13x1.5 HHCS	2
176067	R. Upper Control Arm Drop Brkt	1		1/2-13 Stover Nut	4
176068	Differential Brace	1		1/2 USS Washer	4
176073	Aft Brace Bracket	2		1/2 SAE Washer	4
176071	Skid Plate Drop Bracket	1		1/2-13x5.5 HHCS	2
176257	Subframe	1		1/2x2.0 Shim Washer	8
740014	U-Bolt	4		.5cc Thread Lock	3
8063	CV Flange Hardware Kit	1	7877	M14-2.0 Stover Nut	4
	M10-1.5x25mm SHCS	12	860120	T-Bar Drop Brkt Hardware Kit	1
	Washer	12		3/8-16x1.0 HHCS	8
8102	U-Bolt Hardware Kit	1		3/8-16 Nyloc Nut	10
	9/16-18 Nyloc Nut	8		3/8 USS Washer	10
	9/16 SAE Washer	8		3/8 SAE Washer	10
8514	Drop Bracket Bushing Kit	1		3/8-16x2.25 HHCS	2
585	Bushing	4		7/16-14x1.0 HHCS	8
7869	.75x.2.23 Sleeve	2		7/16-14 Stover Nut	8
8574	Riser Block Pin Kit	1		7/16 USS Washer	12
	Pin	2		7/16 SAE Washer	4
860070	Shim Kit	1	860121	Differential Hardware Kit	1
	9/16-2.5 Shim Washer	16		9/16-12x4.5 HHCS	1
860086	Brake Hose Gasket Kit	1		9/16-12 Stover Nut	2
170078	Copper Washer	4		9/16 SAE Washer	3
860114	Subframe Hardware Kit	1		9/16-12x3.5 HHCS	1
420032	1.25x3.25 Sleeve	2		9/16 USS Washer	1
420033	1.25x2.395 Sleeve	2		1/2-13x1.25 HHCS	1
	5/8-18x4.5 HHCS	2		1/2-13 Stover Nut	1
	5/8-18 Stover Nut	4		1/2 SAE Washer	2
	5/8 SAE Washer	8	860122	Aft Brace Hardware Kit	1
	5/8-18x5.5 HHCS	2		9/16-12x4.0 HHCS	4
860115	Idler Hardware Kit	1		9/16-12 Stover Nut	4
420034	Threaded Sleeve	1		9/16 SAE Washer	8
602611	Rod End	2	860123	Aft Brace Bracket Hardware Kit	1
	5/8-18x3.5 HHCS	1		1/2-13x1.25 HHCS	2
	5/8-18 Stover Nut	2		1/2-13 Stover Nut	2
	5/8 SAE Washer	4		1/2 SAE Washer	4
	5/8-18x2.0 HHCS	1	860124	Rear Brake Line Hardware Kit	1
	5/8-18 Jam Nut	2	170014	Brake Line Bracket	1
860117	Rear Bump Stop Hardware Kit	1		5/16-18x1.25 HHCS	1
1417	Bump Stop	2		5/16-18 Nyloc Nut	1
	7/16-14x1.0 HHCS	4		5/16 SAE Washer	1
	7/16-14 Stover Nut	4	860125	Aft Brace Bushing Kit	1
	7/16 USS Washer	8	457	.75x.2.605 Sleeve	4
	5/16-24 Nyloc Nut	4	553	Bushing	8
	5/16 SAE Washer	4	860126	Sway Bar Hardware Kit	1
860118	Right Axle Tube Hardware Kit	1		3/8-16x1.0 SHCS	4
	9/16-12x1.5 HHCS	2		3/8 -16 Nyloc Nut	4

PARTS LIST

<u>P/N</u>	<u>DESCRIPTION</u>	<u>QTY.</u>	<u>P/N</u>	<u>DESCRIPTION</u>	<u>QTY.</u>
860127	Steering Stabilizer Hardware Kit	1		3/8 USS Washer	2
1771	Bracket	1		3/8-16x1.0 HHTS	2
45313	Sleeve	2	860419	Front Bump Stop Hardware Kit	1
	3/8-16x2.5 HHCS	2	1412	Droop Stop	2
	3/8-16x1.25 HHCS	2		5/16-24 Nyloc Nut	2
	3/8-16 Nyloc Nut	2		5/16 SAE Washer	2
	3/8 SAE Washer	8	94180	Information Pack	1
860128	Skid Plate Hardware Kit	1	780281	Rancho Decal	1
	3/8-16x1.25 HHCS	2	88043	Installation Instruction	1
	3/8-16 Nyloc Nut	2	94119	Consumer/Warranty information	1
	3/8 SAE Washer	2	94177	Warning Sticker	1

FRONT SUSPENSION

Vehicle Preparation & Torsion Bar Removal

1. Park the vehicle on a level surface. Set the parking brake and chock rear wheels. Measure and record the distance from the center of each wheel to the top of the fender opening. See figure #1.

LF: _____ RF: _____

LR: _____ RR: _____

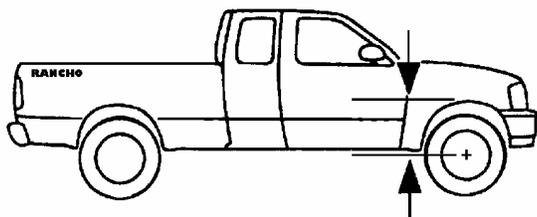


Figure #1

2. Raise the front of the vehicle and support the frame with jackstands. Remove the front wheels and set them aside.

3. Make reference marks on the torsion bars, the adjustment arms, and the lower control arms. Measure and record the length of the torsion bar adjusting bolts. See figure #2.

Left side: _____ Right side: _____

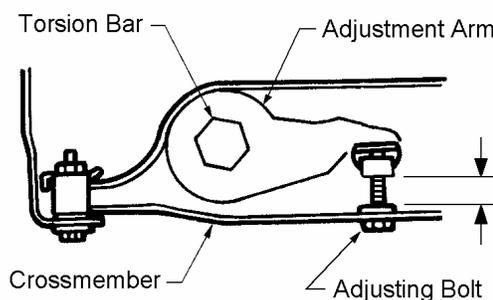


Figure #2

4. Install the GM torsion bar unloading tool (J 36202) and increase the tension on the torsion bar. Remove the adjusting bolt and retaining plate. Relieve the tension on the torsion bar and remove the tool.

5. Slide the torsion bar forward and remove the adjustment arm.

6. Repeat steps 4 and 5 for the other side.

7. Remove the 6 bolts (three on each side), that hold the torsion bar crossmember to the frame rails. Slide the crossmember rearward and remove the torsion bars.

NOTE: If you find it necessary to raise the support crossmember to remove a torsion bar, be careful not to damage the exhaust system.

Sway Bar & Relay Rod Removal

1. Remove the front skid plate, if equipped.

2. Remove the front shock absorbers.

3. Separate the sway bar from the lower control arms and the frame. See figure #3. Remove the sway bar.

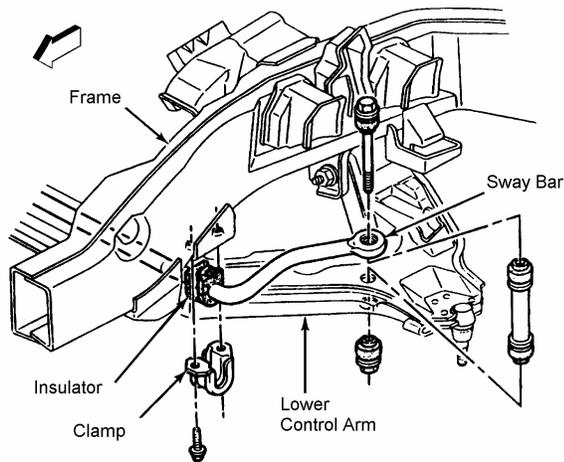


Figure #3

4. If applicable, separate the steering shock absorber from the relay rod and the frame mount. Remove the steering shock absorber.
5. Remove the attaching nuts from the inner tie rod ends. Separate the inner tie rod ends from the relay rod with Chevrolet tool J 6627-A.
6. Remove the idler and pitman arm attaching nuts. Separate the relay rod from the Idler arm and the pitman arm using Chevrolet tool J 24319-01. Remove the relay rod.

Control Arm & Steering Knuckle Removal

1. Remove the front brake caliper and rotor. Secure the caliper up and out of the way. If equipped with ABS brakes, disconnect the wheel sensor electrical wire and remove the clamp securing the wire to the frame.
2. Reference mark the CV joint flange and remove the 6 mounting bolts. See figure #4.. Do Not remove the CV boot or disassemble the CV.
3. Support the control arm and steering knuckle assembly with a floor jack.
4. Remove the lower control arm pivot bolts then the upper control arm pivot bolts. Carefully remove the control arm and steering knuckle assembly.

CAUTION: When lowering the control arm and knuckle assembly, secure it to the jack to keep it from falling.

5. Repeat steps 1 through 4 for the other side.

Front Differential Removal

1. If applicable, remove the differential carrier skid plate and bracket. Save plate, bracket and hardware for reuse.
2. Reference mark the front drive shaft to the front differential carrier and the transfer case. Remove the drive shaft. See figure #4. Do not separate a two piece shaft at the slip yoke and tape the U-joint bearing caps to keep them from falling.

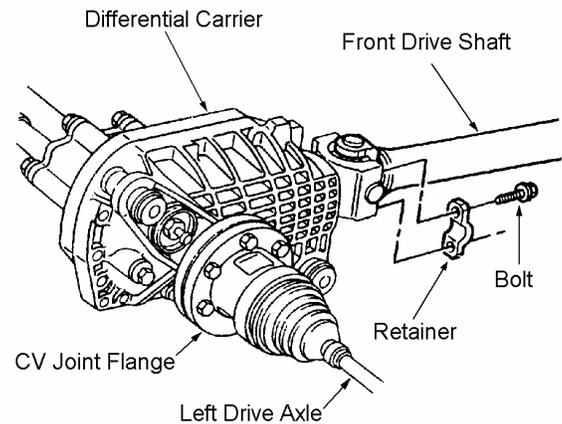


Figure #4

3. Disconnect the axle vent hose and plug openings to prevent contamination. Unplug the electrical connectors located on the right axle tube.
4. Remove the differential carrier lower mounting nut and bolt. Using a hacksaw or die grinder, cut off the differential carrier lower frame mount as shown in figure #5.

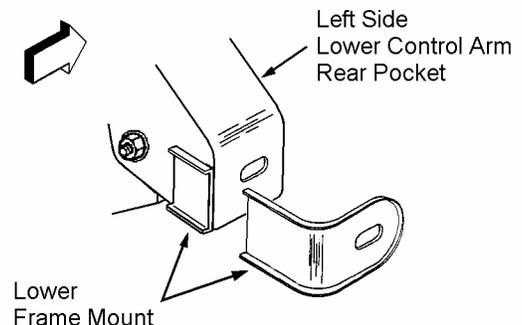


Figure #5

5. Remove the right axle tube mounting bolts. See figure #6.

6. Support the front differential with a floor jack and remove the differential carrier upper mounting nut and bolt. Carefully lower and remove the front differential assembly.

CAUTION: When lowering the front differential secure it to the jack to keep it from falling.

7. Remove the right axle tube mounting bracket.

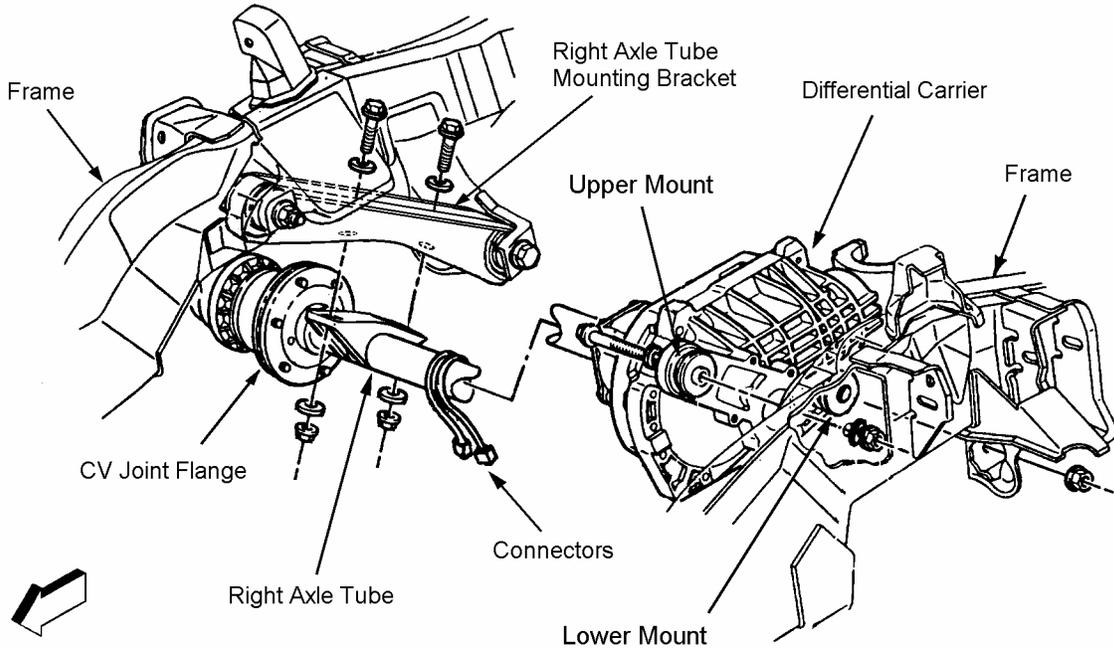


Figure #6

Front Differential & Drop Bracket Installation

1. Lubricate (with a silicone spray) and press two bushings and a sleeve from kit 8514 into each end of right axle tube drop bracket 176060.

2. Attach stabilizer bracket 1771 to the drop bracket with hardware from kit 860127. See figure #7.

3. Place the drop bracket assembly into the right axle tube frame pockets and install the original hardware. Tighten the nuts and bolts to 80 FT-LBS.

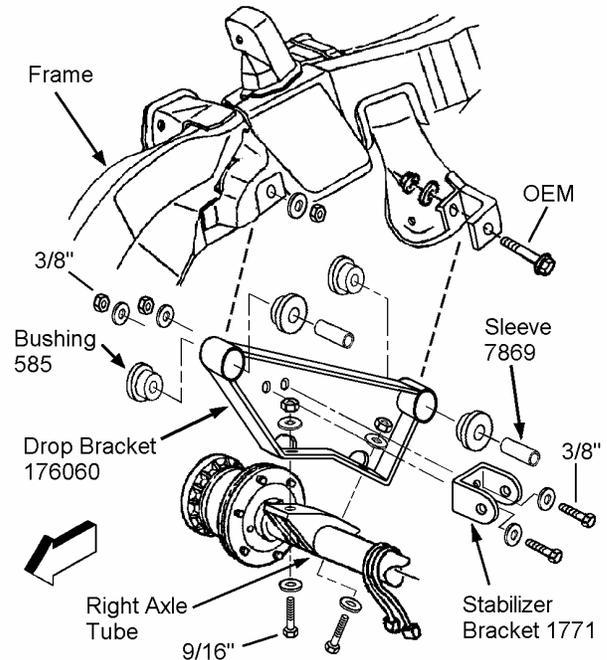


Figure #7

4. □ Loosely attach drop bracket 176061 to the differential carrier upper frame mount with the original hardware. See figure #8.

5. □ Reposition the differential carrier assembly under the vehicle. Carefully raise the differential assembly with a floor jack and insert the upper mount into bracket 176061. Install a 9/16" bolt and washer (from kit 860121) as shown in figure #8.

6. □ Attach one end of support bracket 176068 to the left side of the drop bracket and the other end to the back of the lower control arm pocket. See figure #8. Use hardware from kit 860121 but do not tighten.

NOTE: During installation, the left side of the differential carrier may contact the lower control arm frame pocket. Grind off just enough of the carrier cooling fins to provide clearance (figure #8).

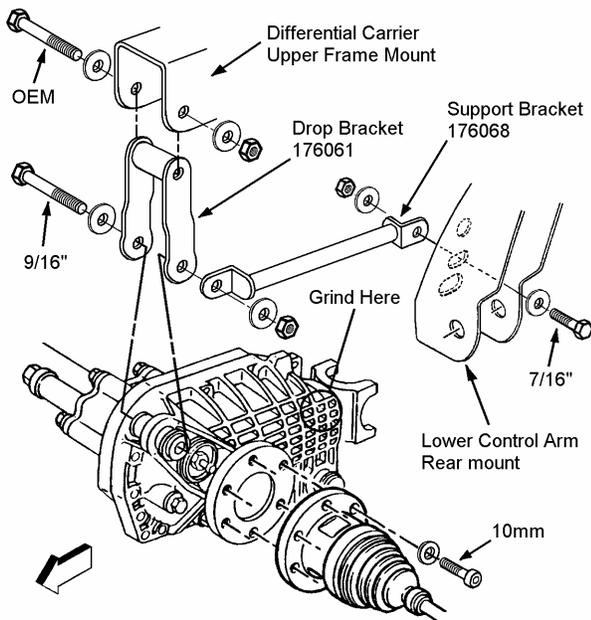


Figure #8

7. □ Loosely attach the right axle tube to bracket 176060 with hardware from kit 860118 (figure #7).

Subframe Installation

1. □ Rotate the two clamps and insulators on the sway bar 180°.

2. □ Loosely attach the sway bar to subframe 176257 with the 3/8" hardware from kit 860126. See figure #9.

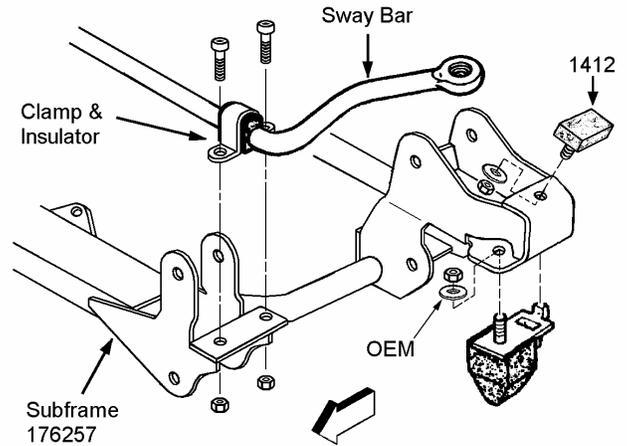


Figure #9

3. □ Place the subframe on a piece of 1/2" plywood and slide the assembly under the front of the vehicle (sway bar to the front). Carefully lift the subframe assembly with a floor jack, and insert the mounting brackets into the lower control arm pockets.

4. □ Insert the longer sleeves (420032) from kit 860114 and attach the rear of the subframe to each lower control arm rear frame pocket. See figure #10. Use the original hardware but do not tighten.

5. □ Insert the shorter sleeves (420033) and attach the front of the subframe to each lower control arm front frame pocket. See figure #10. Tighten all the subframe mounting bolts to 121 FT-LBS. Remove floor jack.

NOTE: If you are reinstalling a differential carrier skid plate, the OEM bracket must be modified so that it fits flush on the subframe carrier mount. Use a bench vise to flatten the tabs or cut them off as shown in figure #10.

6. □ Attach the lower mount of the differential carrier to the subframe with the 9/16" bolt from kit 860121. If applicable, install the modified skid plate bracket. Tighten the carrier bolts and the differential drop bracket hardware to 80 FT-LBS.

7. □ Tighten the right axle tube bolts to 75 FT-LBS and the support bracket bolt to 45 FT-LBS. Reconnect the vacuum hose and the electrical connectors.

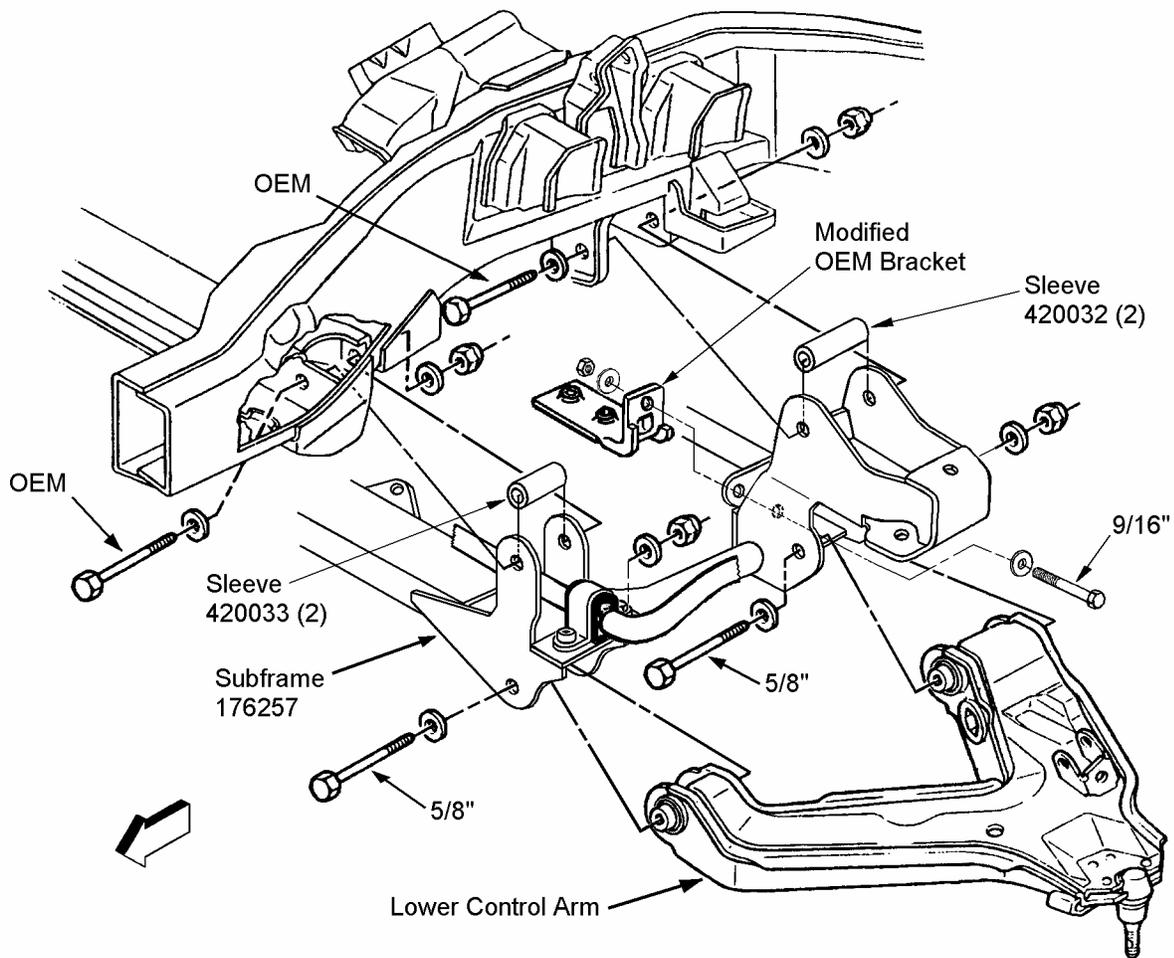


Figure #10

Relay Rod & Idler Link Installation

1. Position relay rod 176065 so that the stabilizer mount is on the top and left side. See figure #11.
2. Attach the relay rod to the pitman arm and the idler arm with NEW prevailing torque nuts. Tighten the nuts to 52 FT-LBS.
3. Thread a jam nut from kit 860115 onto each idler link rod end (602611). Thread the rod ends into sleeve 420034.
4. Center the steering and attach one end of the idler link assembly to the relay rod using the longer 5/8" bolt from kit 860115. See figure #11.

5. Adjust the length of the idler link assembly and attach the other end to the top of the subframe bracket. Use the remaining 5/8" hardware from kit 860115 and tighten both mounting bolts to 75 FT-LBS.
6. Level the rod ends and tighten the jam nuts on the idler link assembly.
7. Install new Rancho steering stabilizer with the sleeves and hardware from kit 860127.

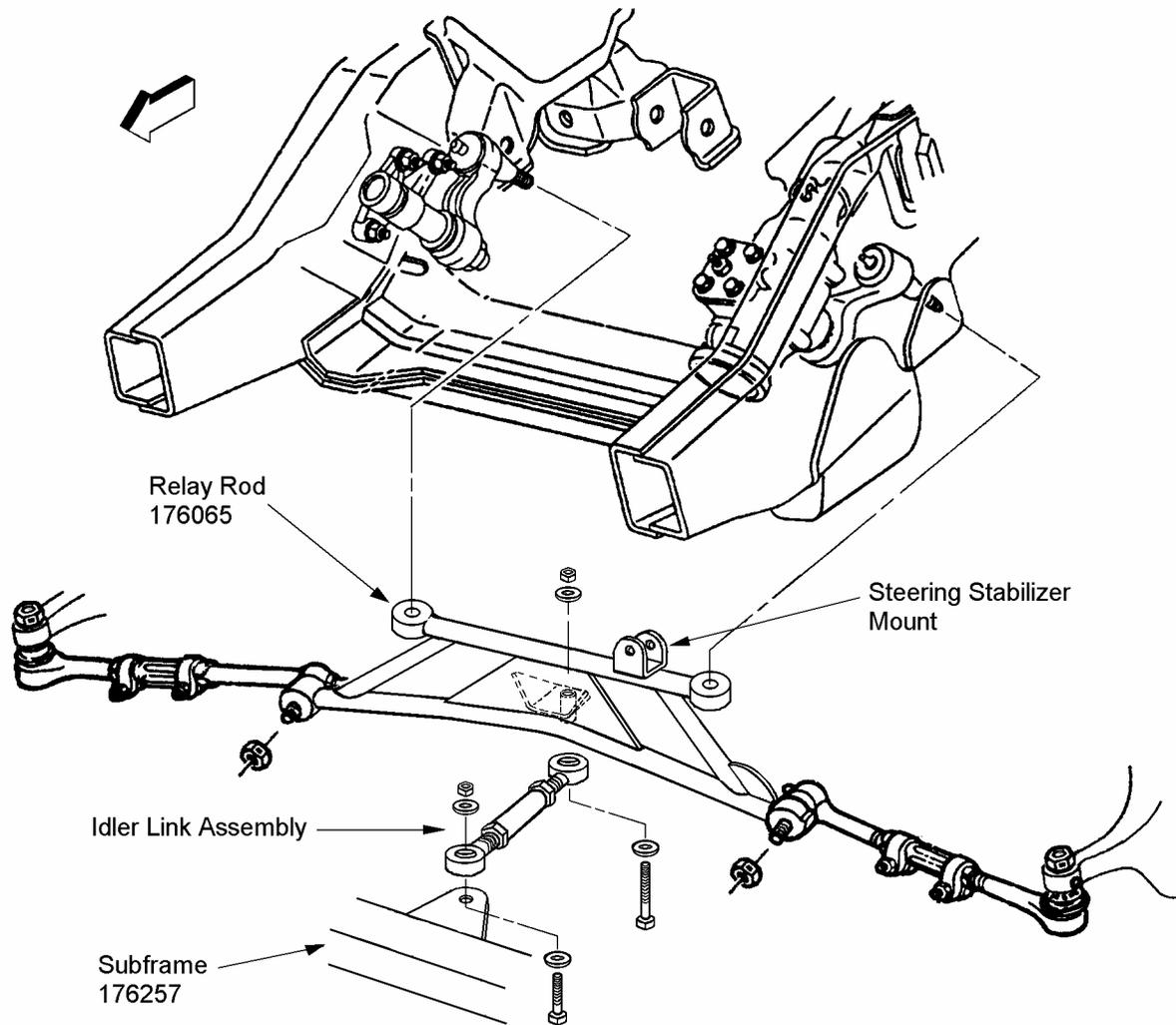


Figure #11

Upper Control Arm Drop Bracket Installation

1. □ Remove the knockouts from the left upper control arm frame pockets. See figure #12. Use GM tool J 38794 and if necessary a small die grinder. Be careful not to damage the frame pockets.
2. □ Remove the bump stop and save for reuse. Cut off the bump stop frame bracket as shown in figure #12. Grind the remaining part of the bracket flush with the tabs of the lower control arm mount. Smooth rough edges and paint exposed metal. Do not grind into the frame or remove any part of the lower control arm pocket.

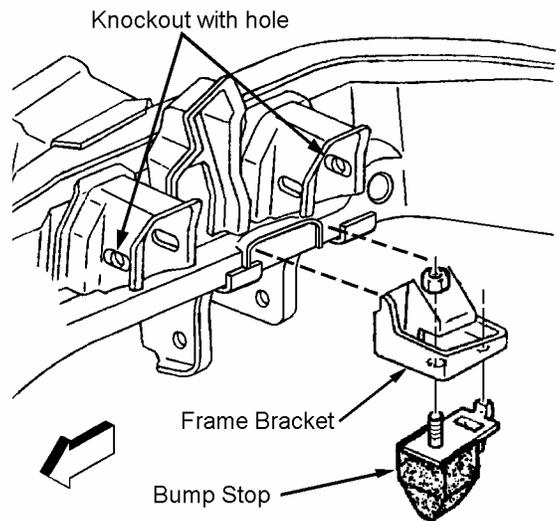


Figure #12

3. □ Insert flanged sleeve 176070 into the existing frame hole as shown in figure #13. Attach left drop bracket 176066 to the upper control arm frame pockets with the 9/16" hardware from kit 860119. Insert shim washers (from kit 860070) to help center the drop bracket in the pockets.

4. □ Using the drop bracket as a template, mark and center punch the additional mounting hole on the frame. See figure #13. Drill the 1/2" hole at the marked location.

5. □ Insert two shim washers (from kit 860119) and attach the front of the drop bracket to the frame as shown in figure #13. Attach the rear of the drop bracket with the 1/2" hardware from kit 860119. Tighten the 1/2"bolts to 90 FT-LBS and the 9/16" bolts to 130 FT-LBS.

6. □ Repeat steps 1 through 6 for the right side using right upper control arm drop bracket 176067.

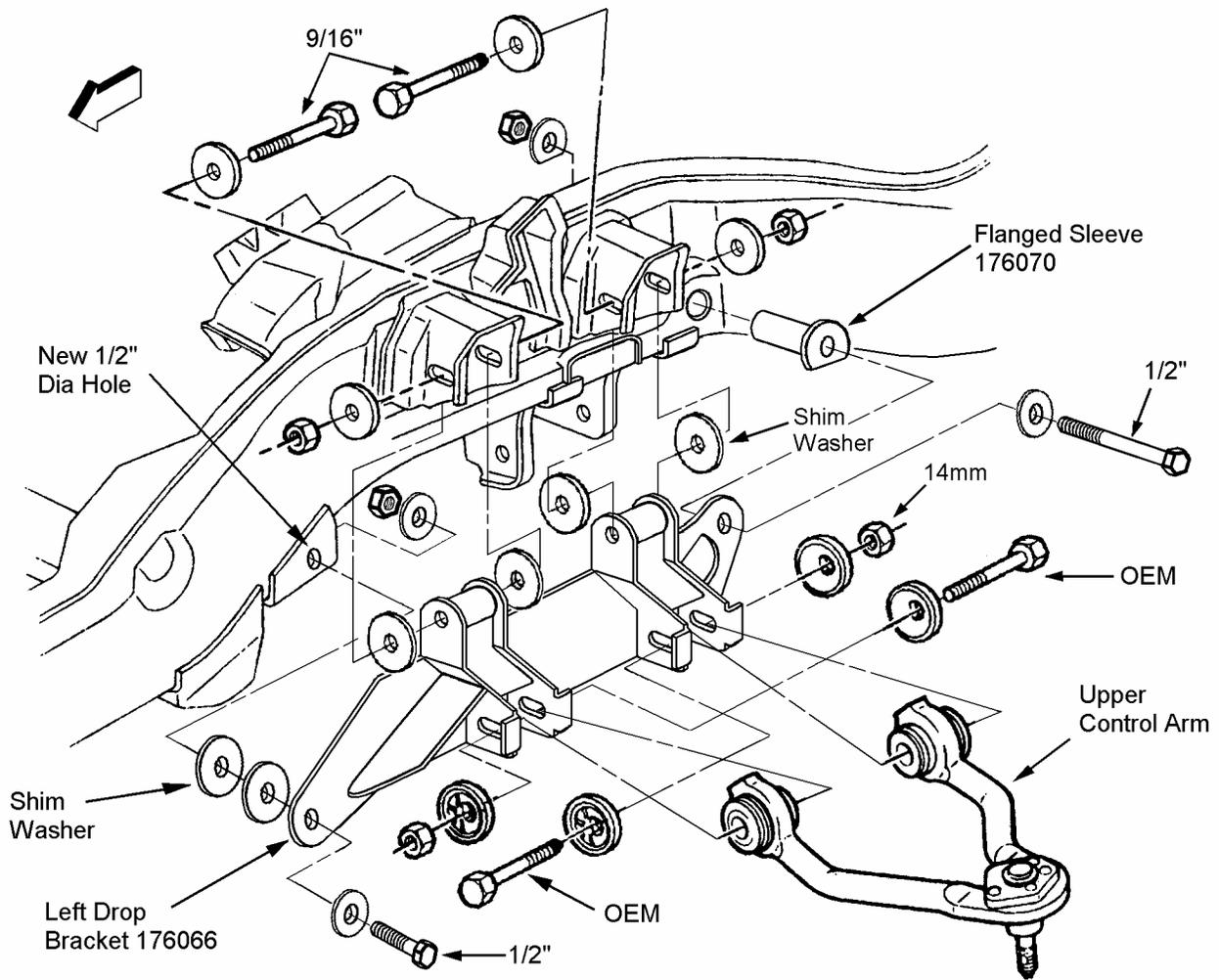


Figure #13

Control Arm & Steering Knuckle Installation

1. □ Support the left control arm and knuckle assembly with a floor jack.

CAUTION: When raising the control arm and knuckle assembly secure it to the jack to keep it from falling.

2. □ Attach the lower control arm to the subframe with the 5/8" hardware from kit 860114. Refer back to

figure #10. Do not tighten the pivot bolts until the vehicle is at normal ride height.

3. □ Attach the upper control arm to the drop bracket with the original bolts, cam washers, and NEW prevailing torque nuts (7877). Insert the bolts with washers as shown in figure #13. Rotate the cam washers to a center position and tighten the nuts until they are snug.

4. Attach droop stop bumper 1412 to the left side of the subframe with the 5/16" hardware from kit 860419. Attach the original bump stop with the original hardware. Refer back to figure #9.

5. Align reference marks and reconnect the CV flanges with the 10mm hardware from kit 8063. Apply thread lock and tighten the bolts to 60 FT-LBS.

6. Attach the inner tie rod end to the relay rod with a NEW prevailing torque nut. Tighten the nut to 40 FT-LBS.

7. Reattach the sway bar to the lower control arm with the original link assembly. Insert the link bolt from the top and tighten the nut to 13 FT-LBS. Tighten the sway bar to the subframe.

8. If applicable, reconnect the ABS sensor wire and reinstall the frame clamp.

9. Install a NEW Rancho front shock. Verify that there is ample clearance between the shock barrel and the upper control arm at full droop. It may be necessary to invert the shock and install the rod end at the bottom. See "Important Note M".

10. Repeat steps 1 through 9 for the right side.

Brake Hose Replacement

1. Remove the clip from the brake line bracket at the upper control arm frame pocket. Separate the brake hose from the brake line and plug the line to prevent brake fluid leakage.

NOTE: To keep the brake bleeding process to just the front calipers, do not allow the brake fluid to drain completely from the master cylinder reservoir.

2. Remove the brake hose from the caliper and cover caliper inlet (to prevent contamination). Reinstall the brake rotor and caliper. Tighten the mounting bolts to 38 FT-LBS.

3. Attach brake hose 170080 to the caliper with the original bolt and two NEW copper washers from kit 860086. Position the hose upward and tighten the bolt to 32 FT-LBS. See figure #14.

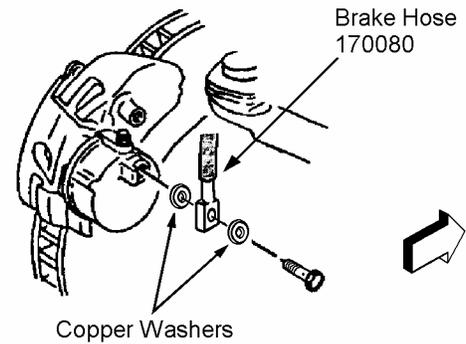


Figure #14

4. Route the hose over the upper control arm and insert it into the brake line bracket.. Attach the hose to the brake line and install the bracket clip. Tighten the fitting to 18 FT-LBS. Make sure the brake hose does not become twisted.

5. Loosely attach the brake hose to the rear leg of the upper control arm with a tie wrap.

6. Repeat steps 1 through 5 for the other side.

7. Refill the master cylinder with approved brake fluid. Bleed the front brakes as follows:

- Relieve the vacuum reserve from the booster by applying the brakes several times with the engine off.
- Attach a hose to the right front caliper bleeder valve and immerse the other end into a container of clean brake fluid.
- Have an assistant slowly apply the brake pedal one time and hold.
- Loosen the bleeder valve to purge the air from the caliper.
- Tighten the bleeder valve and slowly release the pedal.
- Wait 15 seconds and repeat the procedure until all air is purged from the caliper.
- Attach the hose and container to the left caliper and repeat the bleeding process.
- Check the pedal for "sponginess" and the brake warning lamp for an indication of pressure imbalance. Bleed the system again if either of these conditions is present.

NOTE: If the master cylinder reservoir was allowed to empty and air entered the system, follow the manufacturer's instructions for bleeding the entire brake hydraulic system.

Subframe Aft Brace Installation

1. Lubricate (with a silicon spray) and press two bushings and a sleeve from kit 860125 into each end of the subframe aft braces (176062).
2. Attach the aft brace brackets (176073) to the transmission crossmember at the locations shown in figure #15. Use the 1/2" hardware from kit 860123, but do not tighten.

3. Attach one end of each aft brace assembly to the rear of the subframe (176257) and the other end to the bracket on the transmission crossmember. Use the 9/16" hardware from kit 860122. See figure #15.

4. Tighten the aft brace mounting bolts to 80 FT-LBS then the bracket to crossmember bolts to 65 FT-LBS.

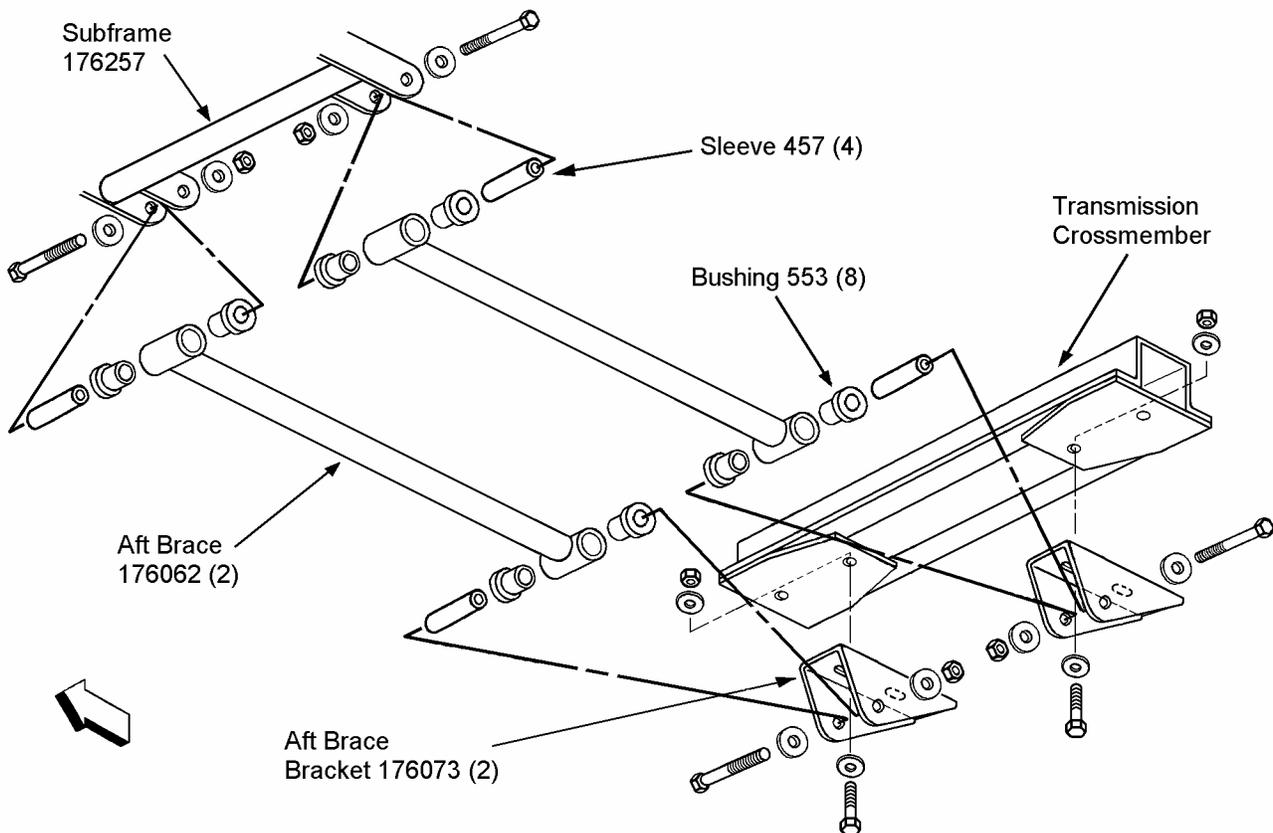


Figure #15

Torsion Bar & Drop Bracket Installation

1. Align the reference marks and install the left and right torsion bars into their respective lower control arms. Temporarily push them forward of the normal position.

NOTE: If you are installing NEW Rancho torsion bars follow the instructions (RS8776) in torsion bar kit RS640.

2. Loosely attach the torsion bar drop brackets (176063, 176064) to the crossmember with hardware from kit 860120. See figure #16.

3. Using a floor jack carefully raise the

crossmember assembly until the horizontal faces of both drop brackets contact the frame rails. Align the holes in the brackets with the original mounting holes in the frame.

4. Attach drop brackets 176063 and 176064 to the bottom of the frame rails with hardware from kit 860120. See figure #16. Snug mounting bolts but do not tighten.

5. Using the drop brackets as templates, drill three additional mounting holes through the outside edge of each frame rail.

CAUTION: Be careful not to damage any tubing or wiring attached to the frame.

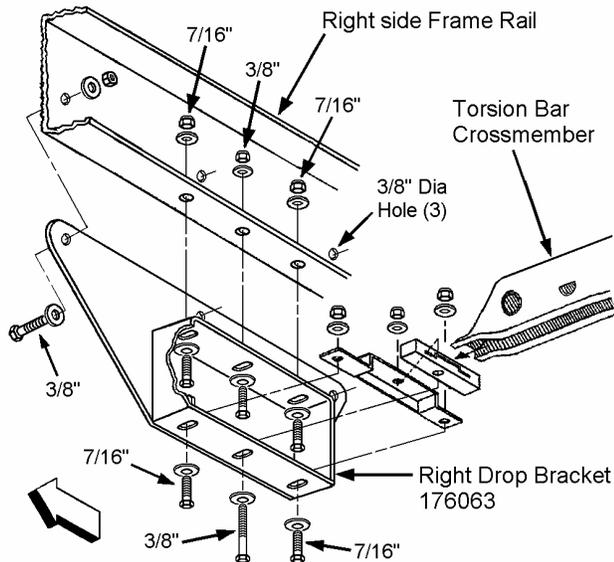


Figure #16

6. Attach the drop brackets to the outside edge of the frame rails with the 3/8" hardware from kit 860120. Tighten the drop bracket side bolts then the bottom bolts to specifications.

7. Tighten the crossmember to drop bracket outer bolts to 46 FT-LBS and the center bolts to 18 FT-LBS.

8. Slide a torsion bar rearward through the crossmember while holding the adjustment arm in proper position. Verify that the reference mark on the adjustment arm matches the mark on the end of the torsion bar.

9. Install the torsion bar unloading tool and increase the tension on the torsion bar.

10. Reinstall the adjusting bolt and retaining plate. Thread the adjusting bolt to its original depth and remove the unloading tool.

11. Repeat steps 8 through 10 for other side.

12. If applicable, reinstall the front skid plate in its original position and install the differential skid plate as follows:

- Attach drop bracket 176071 to the top front of the skid plate with the 3/8" hardware from kit 860128. See figure #17.
- Attach the rear of the skid plate to the modified frame bracket with the original hardware.
- Using the drop bracket as a template drill two 21/64" holes into the subframe.
- Attach the drop bracket to the subframe with the self-tapping screws from kit 860128.

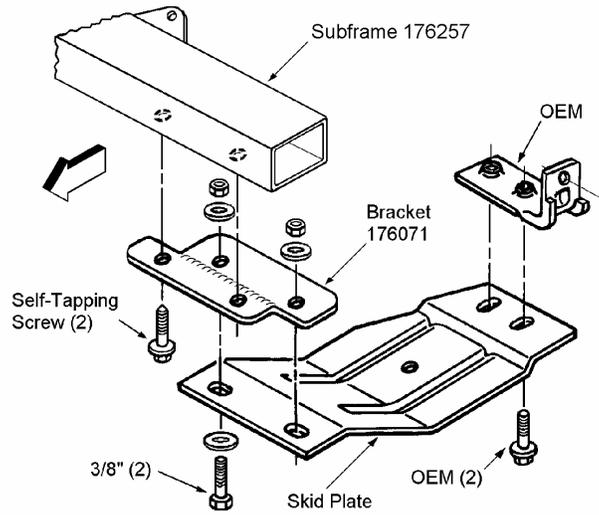


Figure #17

13. Install front wheels and lower the vehicle to the ground. Tighten the lug nuts to 120 FT-LBS.

14. Tighten the upper control arm pivot bolts to 140 FT-LBS and the lower control arm pivot bolts to 135 FT-LBS.

NOTE: Do not install the front propeller shaft until the exhaust crossover pipe has been modified.

REAR SUSPENSION

Brake Line Bracket Installation

1. Chock front wheels. Raise the rear of the vehicle and support the frame with jack stands. Remove the rear wheels.

2. Support the rear axle assembly with a hydraulic jack. Remove both rear shock absorbers. Do not reuse OEM shock absorbers.

3. Disconnect the vent hose and brake line junction block from the rear differential housing bracket. Disconnect the right brake line from the differential housing and the left brake line from the axle.

4. Remove the junction block bracket from the rear differential housing and replace it with bracket 170014. Install the bracket (with original hardware) as shown in figure #18.

- Carefully adjust brake line tubing, and position the junction block on top of bracket 170014. Attach the junction block and vent hose to the bracket with hardware from kit 860124. Reattach the brake lines to the axle and differential housing. Be careful not to damage the brake line tubing. See figure #18.

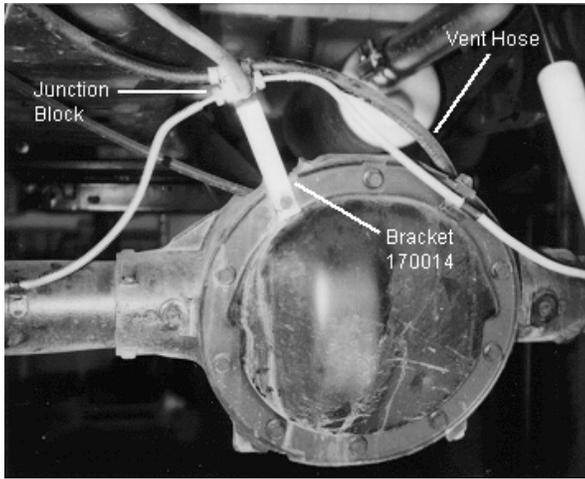


Figure #18

Riser Block Installation

- Loosen (do not remove) the rear leaf spring U-bolts on both sides of the vehicle.
- Remove the two U-bolts on the left side of the vehicle and carefully lower the rear axle approximately 6". Do not allow the axle to hang by the brake hose.

NOTE: Skip step 3 if the vehicle occasionally hauls loads or tows trailers.

- (OPTIONAL) Secure the spring pack with two large C-clamps and remove the center pin bolt. Carefully relieve the tension in the spring pack by removing the C-clamps. Turn the bottom helper spring upside down and reinstall the C-clamps and center pin bolt. Tighten the center pin nut to 20 FT-LBS. Remove the C-clamps.
- Insert a block pin from kit 8574 into the bottom of a new riser block (15080). Place the block assembly onto the axle pad. See figure #19. The riser block is labeled up and back, make sure it is positioned correctly
- Carefully raise the rear axle until the riser block makes contact with leaf spring. Make sure the spring center bolt head aligns with the hole in the top of the riser block.

- Install two new U-bolts over the spring spacer, leaf spring, and axle. Install the anchor plate and attach the axle to the leaf spring with hardware from kit 8102. See figure #19. Do not tighten.
- Repeat steps 2 through 6 for right side.
- Install new Rancho rear shock absorbers.

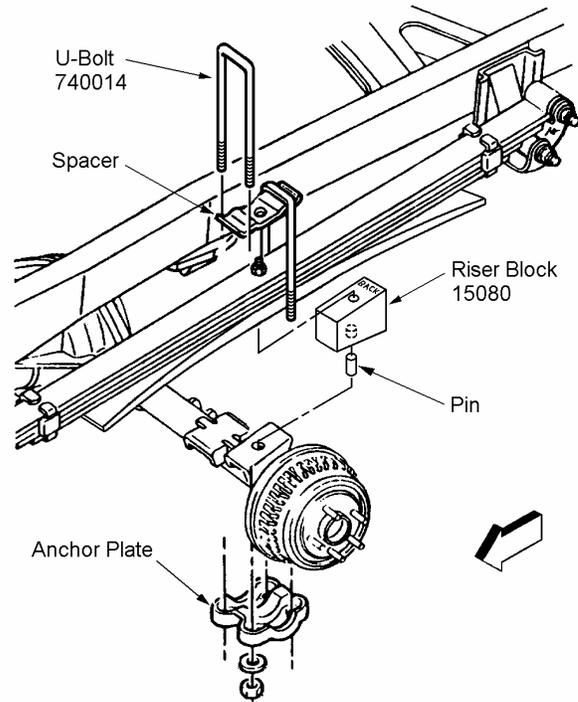


Figure #19

Bump Stop Spacer Installation

- Remove the left rear rubber bump stop from the frame bracket.

NOTE If the bump stop frame bracket is slotted, no modification is necessary. If the bracket has four mounting holes, enlarge the first and third holes (from the front) to 1/2".

- Attach bump stop spacer 170011 to the frame bracket with the 7/16" hardware from kit 860117. See figure #20. If there is a slot in the frame bracket, slide the spacer forward. Tighten the nuts and bolts to 45 FT-LBS.

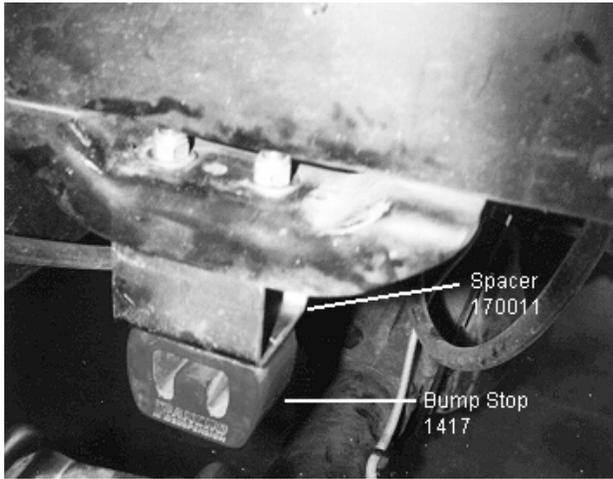


Figure #20

3. Attach bump stop 1417 to the installed spacer (170011) with the 5/16" hardware from kit 860117. Tighten the nuts to 15 FT-LBS.
4. Repeat steps 1 through 3 for right side.
5. Install rear wheels and tighten lug nuts to 120 FT-LBS.
6. Lower the vehicle to the ground. Tighten U-bolt nuts to 75—115 FT-LBS.

FINAL CHECKS & ADJUSTMENTS

1. Jounce suspension and move the vehicle to normalize ride height. Verify that the front spindle to fender height is 25.5" and that both sides are equal. If necessary, reinstall GM tool J 36202 and adjust the tension on the torsion bars to correct the height.
2. Turn the front wheels completely left then right. Verify adequate tire, wheel, and brake hose clearance. Inspect steering and suspension for tightness and proper operation.
3. Ensure that the vehicle brake system operates correctly. If new brake hoses were installed, verify that each hose allows for full suspension movement.
4. Readjust headlamps. Have vehicle Aligned at a certified alignment facility.

Recommended Alignment Specifications

Caster (degrees): $3.0^{\circ} \pm 1.0^{\circ}$
 Camber (degrees): $0^{\circ} - .3^{\circ}$
 Sum Toe In (degrees): $.24^{\circ} \pm .2^{\circ}$

NOTE: If a more positive camber is needed to reach specifications, more shim washers can be added between the upper control arm drop bracket and the frame. These extra washers are in hardware kit 860119.

5. Have the exhaust crossover pipe modified (as shown in figure #21) at an exhaust and muffler shop. The modification must comply with local emission regulations.

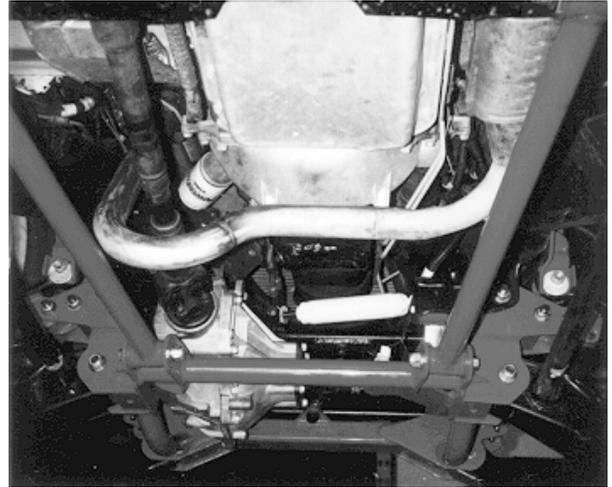


Figure #21

6. Reinstall the front drive shaft. Rotate and inspect the shaft for any binding or clearance problems.

NOTE: It may be necessary to flip the front drive shaft and attach the slip yoke end to the front differential.

Please retain this publication for future reference. See Important Note O.