



2265 Crosswind Drive • Prescott, AZ 86301  
(928) 636-3175

## C4108 & C4108SSV

00-03 Chevrolet Tahoe/Suburban 4x4 (6 lug)

00-03 GMC Yukon/Yukon XL 4x4 (6 lug)

4" Suspension Lift

## INSTALLATION INSTRUCTIONS



### WARNING

1. Read and understand all instructions, warnings and cautions in these instructions, your owner's manual and related service manuals before the installation or use of this product. DO NOT install or use this product if there is anything you do not understand in these instructions or related materials.
2. Certain Trail Master products are intended to improve off-road performance. Modifying your vehicle for off-road use may result in the vehicle handling differently than a factory equipped vehicle. Use of oversize tires, suspension lifts, body lifts and other suspension modifications may raise your vehicle's center of gravity resulting in an increased tendency for the vehicle to pitch and roll during sudden turns or abrupt maneuvers. Extreme care must be used to prevent loss of control or vehicle roll over. Failure to drive your modified vehicle safely may result in serious injury or death. Drive at reduced speeds to ensure your ability to maintain control of the vehicle under all driving conditions. **Always** wear seat belts.
3. DO NOT combine suspension lifts, body lifts or other lift devices. Combined use of lifts may result in unsafe and/or unexpected handling characteristics (see enclosed product safety WARNING label).
4. Many states now have laws restricting vehicle modifications such as lift, bumper height or other alterations. Consult your state vehicle equipment laws to determine if the installation of this system or other modifications are permitted.
5. The use of larger tire and wheel combinations may reduce the effectiveness of the braking system (including ABS equipped). Drive at reduced speeds and allow for extra stopping distance. Stopping distance may be increased with the use of a larger wheel and tire combination. Discuss this issue with your tire and wheel dealer before installing larger tires.
6. Supplied in this system is a safety WARNING label. Install this label inside the cab of the vehicle where it will be highly visible to all operators of the vehicle.



### WARNING

7. We strongly recommend using the Trail Master shocks that were engineered to be used with this system. If you use other shocks, they **MUST** match the full extended and full collapsed lengths of the Trail Master units **EXACTLY**. The use of longer or shorter shocks than recommended may cause damage to the vehicle suspension and could result in sudden loss of control of the vehicle and personal injury. Contact Trail Master for the exact lengths of the front and rear shocks that must be used with this suspension system.



### CAUTION

1. Proper installation of Trail Master products requires knowledge of recommended procedures for disassembly/assembly of OE vehicles and components (i.e. steering tie rods, control arms, brake calipers, etc.). Access to OE shop manuals and special tools is required. Attempting to install this system without knowledge of these procedures may affect the safety of your vehicle and/or the performance of these components. Trail Master strongly recommends that this system be installed by a certified mechanic with off-road experience.
2. Use the appropriate tool for the job and be sure that tools are in good condition. Failure to use proper tools and/or tools in good condition may result in personal injury.
3. Always wear safety glasses while installing this system to avoid eye damage from debris, broken tools, etc.
4. Use Loctite® 242/ 243 or equivalent thread locker on all metal fasteners (per the manufacturers directions) unless otherwise noted in these instructions. Failure to use thread locker may result in fasteners becoming loose over time.
5. The components included in this system require periodic inspection for wear or damage. Visually inspect the suspension, braking and steering components after every six months of normal on-road driving and after **EVERY** off-road excursion. Re-torque all fasteners at these same intervals. Refer to the attached torque chart or specific instruction step for torque values. Worn, damaged or loose parts can fail suddenly resulting in loss of control of the vehicle and personal injury.



# CAUTION

On some variations of this vehicle, it may be necessary to modify exhaust crossover pipe for clearance with front driveshaft. Before installing this system be sure to check appropriate government laws relating to modifications to your exhaust system to ensure full compliance with all laws and regulations.

## PRE-INSTALLATION NOTES



# WARNING

1. Properly block and secure vehicle prior to installation.

**Compare parts included in your system with enclosed parts list. Placing hardware with components before you start may reduce installation time. Contact your Trail Master dealer if any parts are missing or appear to be different than those indicated on parts list.**

## GLOSSARY OF TERMS

TM	Trail Master
DRV	Drivers side of the vehicle
PASS	Passengers side of the vehicle
OE	Original equipment
SRS	Supplemental Restraint System

## FASTENERS

Adhere to recommendations when replacement fasteners, retainers and keepers are called out in the OE service manual. When reassembling vehicle it is recommended by vehicle manufacturer that certain fasteners are replaced in order to maintain proper retaining characteristics. This system may not include all replacement hardware as recommended by the OE service manual. Additional replacement hardware should be obtained prior to installation of this system to meet the requirements of the OE service manual.

## TORQUE SPECIFICATIONS

See OE manual for torque values and procedures when reusing an OE fastener.

BOLT SIZE	GRADE 5	GRADE 8
1/4"-20 FASTENER	10 ft. lbs.	10 ft. lbs.
1/4"-28 FASTENER	10 ft. lbs.	12.5 ft. lbs.
5/16"-18 FASTENER	17 ft. lbs.	22.5 ft. lbs.
5/16"-24 FASTENER	20 ft. lbs.	25 ft. lbs.
3/8"-16 FASTENER	30 ft. lbs.	40 ft. lbs.
3/8"-24 FASTENER	35 ft. lbs.	45 ft. lbs.
7/16"-14 FASTENER	50 ft. lbs.	65 ft. lbs.
7/16"-20 FASTENER	55 ft. lbs.	70 ft. lbs.
1/2"-13 FASTENER	75 ft. lbs.	100 ft. lbs.
1/2"-20 FASTENER	80 ft. lbs.	110 ft. lbs.
9/16"-12 FASTENER	105 ft. lbs.	135 ft. lbs.
9/16"-18 FASTENER	115 ft. lbs.	150 ft. lbs.
5/8"-11 FASTENER	150 ft. lbs.	195 ft. lbs.
5/8"-18 FASTENER	160 ft. lbs.	210 ft. lbs.
3/4"-16 FASTENER	175 ft. lbs.	225 ft. lbs.

## ADDITIONAL NOTES

1. Computer controlled functions such as speedometer and ABS system may require recalibration if tires you choose are larger than stock. For information and service, consult your GM Service Department.
2. Due to increased diameter of larger than stock tires, engine RPM may be reduced. Operation of vehicle in this condition, may risk transmission damage due to overheating. Operating vehicle in "drive" instead of "overdrive" may help this condition by reducing amount of shifting required to maintain speed.
3. After installation, some vehicles may experience drive line vibrations. To eliminate these conditions, drive line angles may require adjustment. Drive shafts may need to be lengthened and/or turned and Universal Joints may require more frequent replacement.
4. Thoroughly inspect all vehicle components to ensure that vehicle is in excellent mechanical condition. Make repairs or replacements as necessary prior to installation of this system. Do not install this system if vehicle is not in excellent mechanical condition. If you are not capable of performing this inspection, take vehicle to a reputable automotive service shop or technician.
5. Inspect vehicle for aftermarket changes to the steering and suspension components. This suspension system is not to be installed in conjunction with any aftermarket steering or suspension modifications. If you are not capable of performing this inspection, take vehicle to a reputable automotive service shop or technician.
6. Retain this instruction booklet, complete with vehicle measurements, proof of purchase and all other documents pertaining to this system and it's installation, with your vehicle's permanent records. **PROOF OF PURCHASE IS REQUIRED FOR WARRANTY PARTS ASSISTANCE.**
7. If you are a professional installer, please be certain that all documentation pertaining to this installation is forwarded to vehicle owner.
8. If technical assistance is required, please have following information readily available:
  - A. Instruction booklet complete with all stock height and lifted vehicle measurements and data.
  - B. Proof of purchase.
  - C. Wheel Alignment results.
9. Do not begin installation of this system until you have verified that all components as listed on the parts list are included with your system.

## SPECIAL LITERATURE & TOOLS

10. An OE service manual for model and year of your vehicle is required. Refer to this manual for proper disassembly/reassembly procedures of OE and related components. Additional tools: **REQUIRED:** Torsion bar unloading tool #J36202 available from GM dealer or from Kent Moore Tool Group phone #(800) 345-2233, order part #J-22517-C.



# WARNING

OE wheels cannot be used with this suspension system. You must use wheels and tires with the following specifications:

- A. Minimum wheel diameter: 16"
- B. Maximum wheel backspacing: 4-1/2"
- C. Maximum tire diameter: 33"  
(35" with minor bumper trimming)

DO NOT USE WHEEL SPACERS.

Brake Line Extension Hardware Bag (C4105BAG9) .....	1
8MM-1.25 x 50MM LG Hex Bolt (08M050H125) .....	2
8MM SAE Flat Washer (W8MS) .....	3
.500 OD x .083 Wall x 1.325 LG Sleeve (43) .....	2
.562 OD x .095 Wall x .180 LG Sleeve (112) .....	1
Crossmember Support Hardware Bag (CMBRBAG) .....	1
3/8-16 UNC x 2-1/4 LG Hex Bolt (38214CHHC) .....	4
3/8-16 UNC Stover Hex Nut (N38CS8) .....	4
3/8 SAE Flat Washer (W38S) .....	8
Mid Hardware Bag (C4107BAGM) .....	1
"A" Torsion Bar Brk Support Tab (200701) .....	2
"B" Torsion Bar Brk Support Tab (200702) .....	2
Straight Busing 3/4 ID (SB43BBK) .....	2
.750 OD x .562 ID x 1.5 LG Sleeve (131) .....	2
.750 OD x .120 W x .25 L Sleeve (132) .....	2
9/16-12 UNC x 3 LG Hex Bolt (96300CHHC) .....	2
9/16-12 UNC Stover Hex Nut (N96SCL) .....	2
9/16 SAE Flat Washer (W96S) .....	4
1/2-13 UNC x 2 1/2 LG Hex Bolt (12212CHHC) .....	2
1/2-13 UNC Stover Hex Nut (N12CS8) .....	2
1/2 SAE Flat Washer (W12S) .....	4
3/8-16 UNC x 1 1/4 LG Hex Bolt (38114CHHC) .....	4
3/8-16 UNC Stover Hex Nut (N38CS8) .....	4
3/8 SAE Flat Washer (W38S) .....	8
Rear Hardware Bag (C4108BAGR) .....	1
Rear End Links Hardware Bag (C4107BAG2) .....	1
3/4 ID Straight Bushing (SB43BBK) .....	4
.750 OD x .510 ID x 1.50 LG Sleeve (26) .....	4
1/2-13 UNC x 3 LG Hex Bolt (12300CHHC) .....	2
1/2-13 Stover Hex Nut (50CNUCZ) .....	2
1/2 USS Flat Washer (W12F) .....	4
Coil Spacer & Brake Line Brkt Hdwre Bag (C4108BAG1) .....	1
9/16-12 UNC x 3 1/2 LG Hex Bolt (96312CHHC) .....	2
9/16 USS Flat Washer (W96F) .....	4
9/16-12 UNC Stover Hex Nut (N96SCL) .....	2
3/8-16 UNC x 1 1/4 LG Hex Bolt (38114CHHC) .....	1
3/8-16 UNC Stover Hex Nut (N38CS8) .....	1
3/8 SAE Flat Washer (W38S) .....	2
Front SSV Shocks (75630) .....	2
Rear SSV Shocks (72510) .....	2
Warning Label (WL002) .....	1
6" Trail Master Color Logo Decal (DC07) .....	2
Trail Master White Die Cut Decal (DC24W) .....	1
Instruction Sheet .....	1

## PARTS LIST

Differential Bracket, Pass. (202506) .....	1
Differential Bracket, Driver (202507) .....	1
Torsion Bar Crossmember Drop Bracket (200506) .....	2
Axle Spacer, (202511) .....	2
Crossmember Brace (201012) .....	2
Knuckle, DVR (202501) .....	1
Knuckle, PASS (202502) .....	1
Crossmember, FWD (202503) .....	1
Crossmember, AFT (202504) .....	1
Rear Sway Bar End Link (2001701) .....	2
Coil Spacer (201235) .....	2
Spacer Retainer (201518) .....	2
Front Hardware Bag (C4105BAGF) .....	1
Crossmember Hardware Bag (C4105BAG1) .....	1
5/8-11 UNC x 5 1/2 LG Hex Bolt (58512CHHC8) .....	2
5/8-11 UNC x 4 1/2 LG Hex Bolt (58412CHHC8) .....	2
9/16-12 UNC x 3 3/4 LG Hex Bolt (96334CHHC8) .....	1
5/8 HRDN SAE Flat Washer (W58H) .....	8
9/16 HRDN SAE Flat Washer (W96H) .....	2
5/8-11 UNC Stover Hex Nut (N58CS8) .....	4
9/16-12 UNC Stover Hex Nut (N96CS8) .....	1
Front Diff Hardware Bag (C4105BAG2) .....	1
9/16-12 UNC x 3 3/4 LG Hex Bolt (96334CHHC8) .....	1
9/16-12 UNC x 1 3/4 LG Hex Bolt (96134CHHC8) .....	2
10MM-1.50 x 80MM LG Hex Bolt (10M080CHHC10) ..	1
10MM-1.50 x 60MM LG Hex Bolt (10M060CHHC10) ..	4
9/16 HRDN SAE Flat Washer (W96H) .....	6
10MM HRDN SAE Flat Washer (W10MH) .....	6
9/16-12 UNC Stover Hex Nut (N96CS8) .....	3
10MM-1.50 Stover Hex Nut (N10MCS10) .....	1
.735 ID x 1.32 OD x 1.06 LG Bushing (201018) .....	2
.750 OD x .095 Wall x 2.17 LG Sleeve (139) .....	1
Front End Links Hardware Bag (C4105BAG3) .....	1
0.5 ID x 1.38 OD Bushing (201022) .....	8
0.5 ID x 1.38 OD Formed Washer (201021) .....	8
.750 OD x .134 Wall x 9.00 LG Sleeve (136) .....	2
7/16-14 UNC x 14 LG Hex Bolt (761400CHHC8) .....	2
7/16-14 UNC Stover Hex Nut (N76CS8) .....	2
Axle Spacers Hardware Bag (C4105BAG4) .....	1
10MM-1.50 x 60MM LG Hex Bolt (10M060CHHC10) ..	12
10MM SAE Flat Washer (W10MS) .....	12
Loctite .5 mil (242) .....	1
Front Bumpstop Hardware Bag (C4105BAG5) .....	1
3/8 SAE Flat Washer (W38S) .....	2
3/8-16 UNC NY-Lock Hex Nut (N38CL) .....	2
Bumpstop, Pancake Style (BS9102) .....	2

## FRONT DISASSEMBLY

1. Measure ride height with the vehicle supporting its own weight on level ground. Vehicle should be driven forward at least 10 feet immediately prior to taking this measurement to settle suspension. Ride height is measurement from the center of axle straight up (vertical) to fender lip. Record this measurement for all four wheels on worksheet, page 15. You will be taking these measurements again after installation, please measure “before” and “after” in same manner.
2. Raise vehicle per OE service manual instructions. If working without a shop hoist, put vehicle in park, set the emergency brake and chock both rear wheels in front and behind tires. Loosen front wheel lug nuts. Place floor jack under lower control arm’s front crossmember and raise vehicle until both front wheels are off of the ground. Place safety jack stands under frame rails behind front wheel wells and lower vehicle onto stands. Remove front wheels.
3. Remove torsion bar assembly. See warning below.



### CAUTION DANGEROUS PROCEDURE

Torsion bars are under extreme torsional load. Use a J36202 torsion bar tool for unloading bars. Keep hands and fingers clear of crossmember, adjusting arm, adjusting bolts and unloading tools as much as possible. This will lessen possibility of injuries in the event that the tool would slip or break. **DO NOT** put your fingers through retaining plate hole in crossmember when removing or installing retaining plate. Follow the instructions specifically as stated in OE manual and literature included with torsion bar unloading tool for completing this procedure.

- A. Measure and record length of exposed thread on torsion bar adjusting bolts. **Fig. 1**

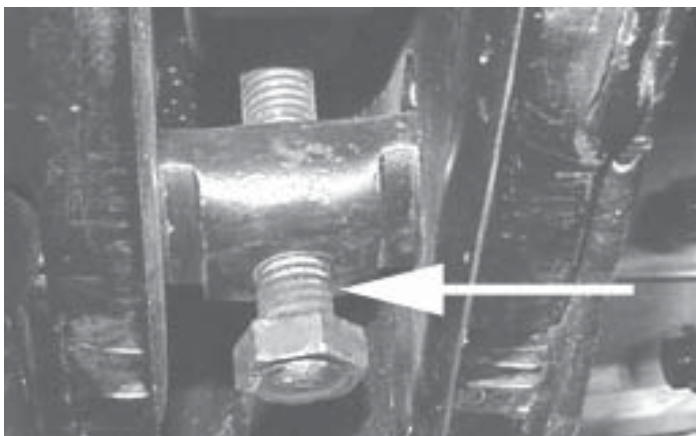


Fig. 1

- B. Using J36202 shown in **Fig. 2** or an equivalent torsion bar unloading tool, unload torsion bars. **DO NOT REMOVE TORSION BARS OR ADJUSTERS AT THIS TIME.**

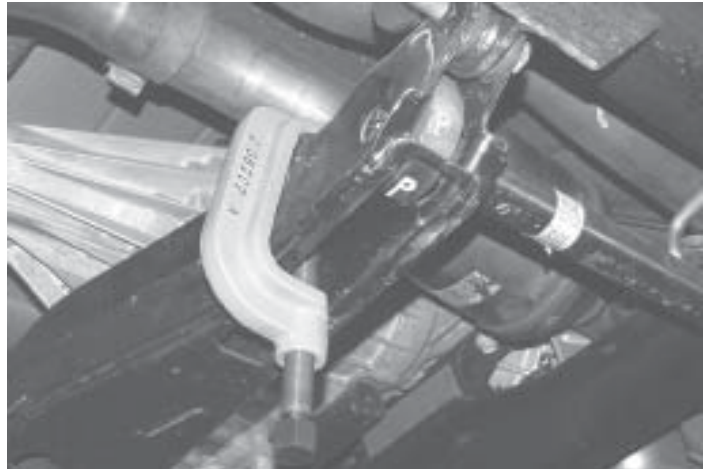


Fig. 2

- C. When load has been relieved from torsion bars, mark torsion bars using a paint pen to indicate driver and passenger side bars. **Fig. 3**
- D. Mark torsion bars to indicate front or rear control arm end of bars.
- E. Mark control arms and front end of torsion bars to indicate indexing of bars relative to control arms. **Fig. 3**



Fig. 3

- F. Mark adjusting arms and rear end of bars to indicate indexing of bars relative to adjusting arms. **Fig. 4**
- G. Remove adjusting bolts. **Refer to Fig. 1**
- H. Remove retaining plates. **Fig. 5**

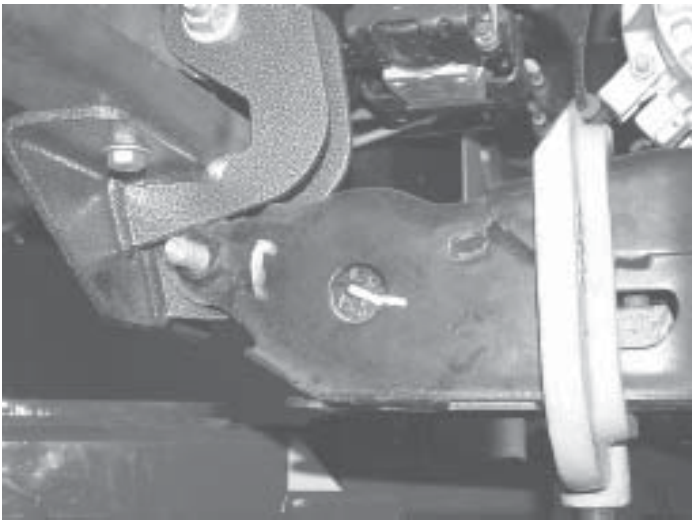


Fig. 4

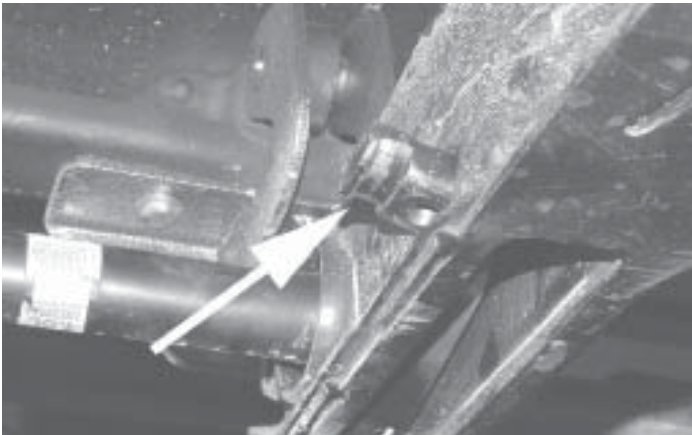


Fig. 5

**CAUTION DANGEROUS PROCEDURE**

Pushing torsion bars forward will disengage torsion bar adjusters from ends of torsion bars. This will allow adjusters to fall free of the vehicle if not supported. Use caution to prevent adjusters from falling or it may be damaged or cause personal injury. **Fig. 6**

- I. Remove adjusting arms by pushing or driving bars forward, through lower control arms until adjusters and rear of bars are forward of crossmember.



Fig. 6

4. Remove torsion bar crossmember by removing two bolts that connect crossmember to frame. These fasteners will be re-used during re-assembly. With crossmember out of the way, torsion bars can be dislodged from lower control arms and removed.
5. Remove both front shock absorbers.
6. Detach existing front bumpstops from upper mounting cups.
7. Remove both anti-sway bar links, which connect bar to lower control arms. **Fig. 7**

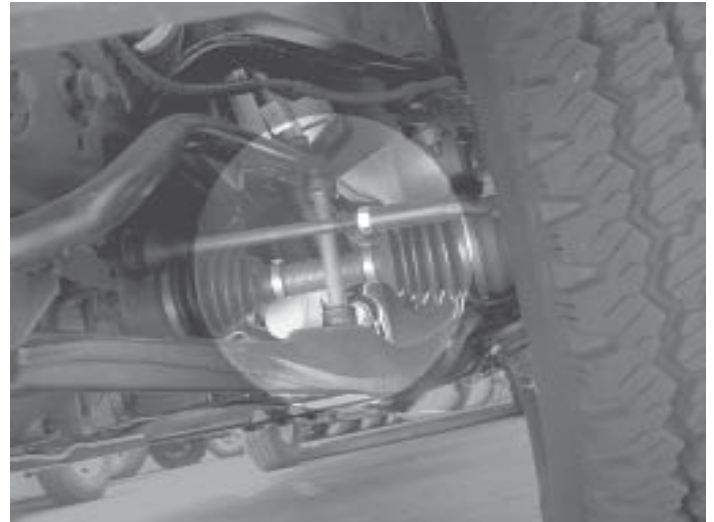


Fig. 7

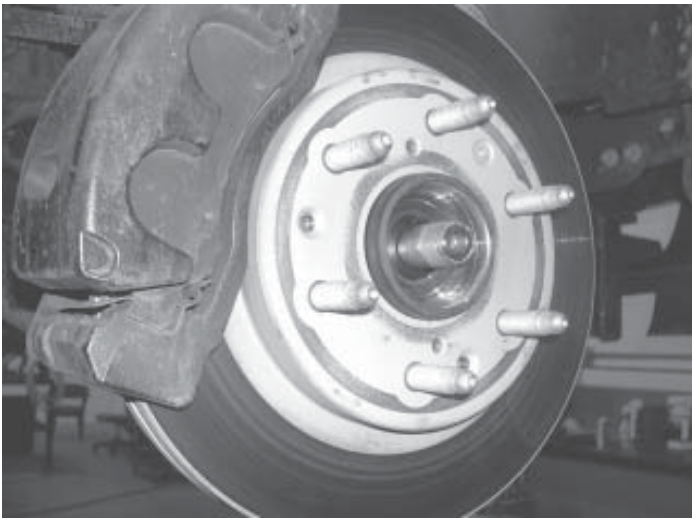
8. Remove drive axles.
  - A. Mark differential flange and drive axle flange with index marks for same orientation later (both driver and passenger side) **Fig. 8**



Fig. 8

- B. Remove nut and washer from hub (**Fig. 9**). Remove six bolts that fasten drive axle to differential. Pull drive axle out of hub through lower control arm.

**NOTE:** Be careful not to damage drive axle boots. Repeat on other side.

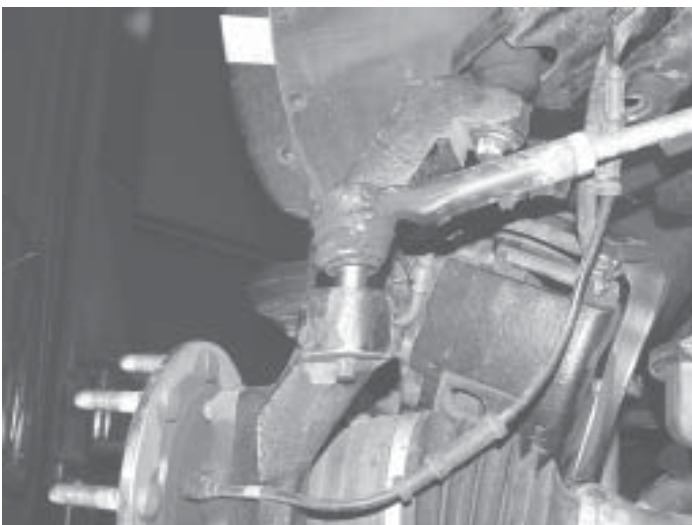


**Fig. 9**

9. Remove brake calipers and rotors.
  - A. Locate then disconnect brake hose bracket.
  - B. Locate two caliper mounting bracket bolts attaching brake caliper to backside of front spindle. Remove the bolts.
  - C. Remove caliper and bracket as an assembly. Use a length of wire to secure caliper assembly out of the way and to prevent damage to brake lines.
  - D. Remove brake rotor. Repeat on other side.

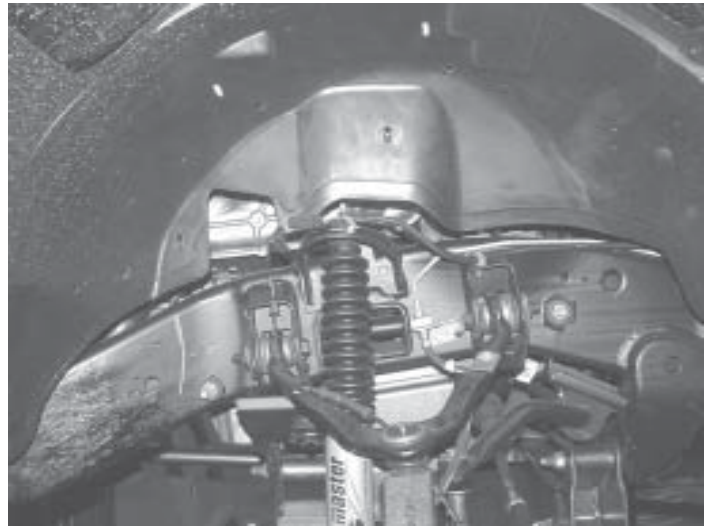
	<h2 style="margin: 0;">CAUTION</h2>
<p>Do not allow brake caliper to hang by brake hose.</p>	

10. Locate outer tie rod end and remove nut. Attach Universal Steering Link Puller (J24319) and separate tie rod end from front knuckles. Repeat on opposite side. **Fig. 10**



**Fig. 10**

11. If applicable, separate ABS sensor plug at frame near upper control arm. (Both sides) **Fig. 11**



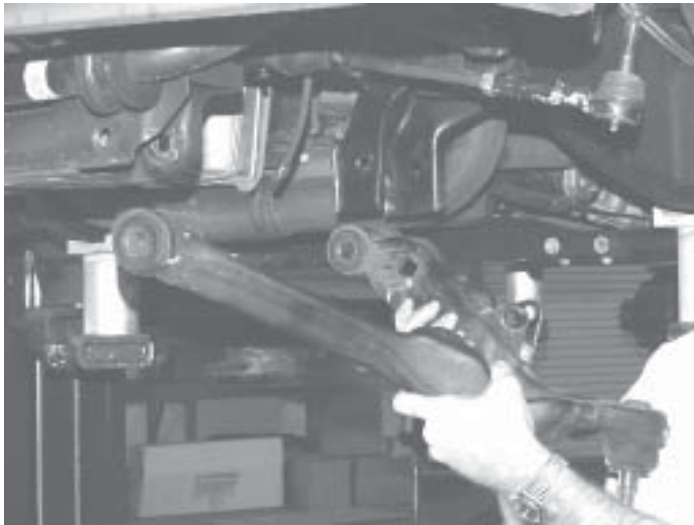
**Fig. 11**

12. Remove knuckle and hub assemblies.
  - A. Locate front lower ball joint and remove nut from ball joint. Using Ball Joint Separator Tool (J43631) apply pressure on tool until ball joint breaks loose from lower part of front knuckle.
  - B. Locate front upper ball joint. Remove nut from ball joint. Using Ball Joint Separator Tool (J43631) apply pressure on tool until ball joint breaks loose from upper part of front knuckle.
  - C. Remove front knuckle with hub and bearing assembly attached, set aside. **Fig. 12**
  - D. Repeat on other side.



**Fig. 12**

13. Remove lower control arm pivot bolts and remove lower control arm. **(Fig. 13)** (Save these fasteners for use during re-assembly). Repeat on other side.



**Fig. 13**

14. Remove differential skid plate, if vehicle is so equipped.

15. Remove front driveshaft.

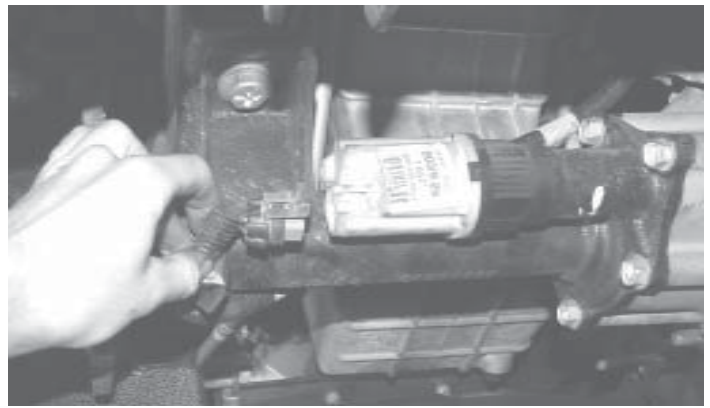
- A. Locate front drive shaft U-joint to differential yoke. Place an index mark for installation reference on both drive shaft U-joint and differential yoke. **Fig. 14**
- B. Remove hardware from yoke and **CAREFULLY** slide shaft rearward to disengage. Tape bearing cap assemblies and secure shaft out of the way.



**Fig. 14**

16. Remove front differential assembly.

- A. Disconnect electrical connector **(Fig. 15)** and vent hose **(Fig. 16)**.
- B. Remove OE cross brace located between rear lower control arm mounts.
- C. Support differential with a floor jack and remove mounting hardware. Slowly lower differential and place on floor.

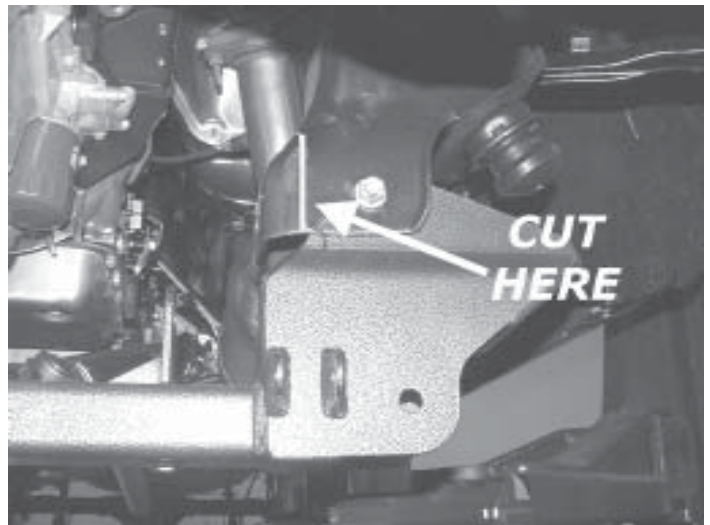


**Fig. 15**



**Fig. 16**

17. Using a suitable cutting tool (not a torch), cut off driver side differential mount bracket per illustration. **(Fig. 17)**. If equipped, remove bolt on cross brace. Deburr sharp edges. Paint exposed metal.



**Fig. 17**

18. Locate upper mount on front differential housing. Cut off upper mount **(Fig. 18)**. If necessary, remove material from left side of differential to provide 1/4" clearance for lower control arm frame mount, so that differential can be centered on vehicle. **Fig. 19**

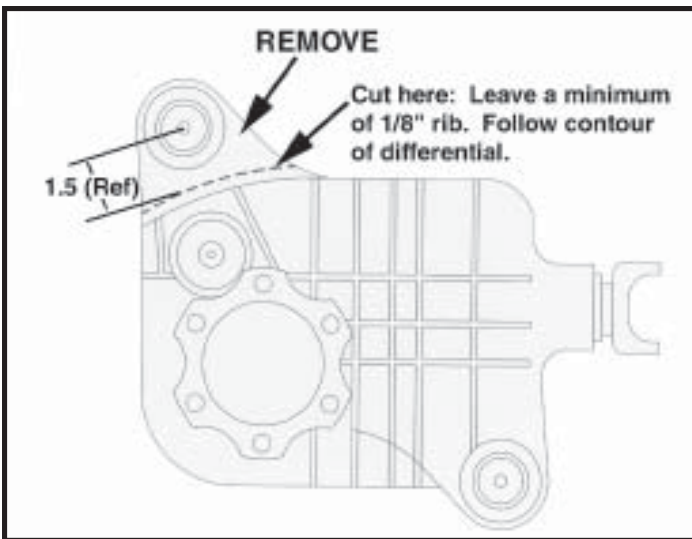


Fig. 18



Fig. 19

## FRONT INSTALLATION

1. Install front differential driver side support bracket.
  - A. Install bushings (201018) and sleeve (139), into differential support bracket (202507) from Bag 2. **Fig. 20**

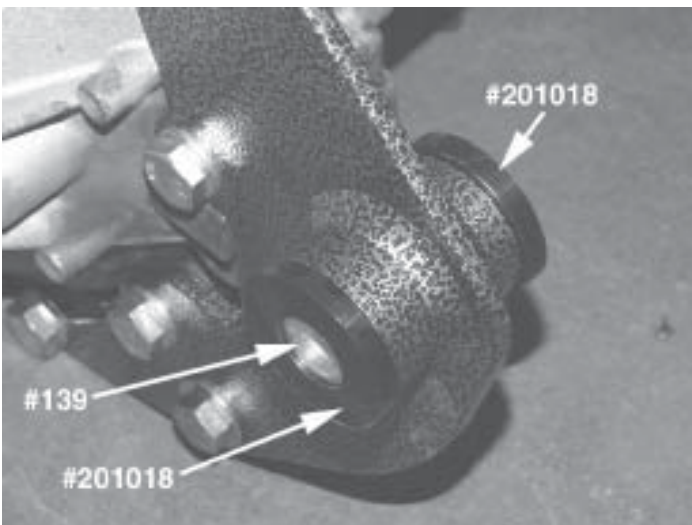


Fig. 20

**NOTE:** Gear oil may leak out of differential case during operation 1B. Place unit over an oil drain pan to catch any oil that spills. **DO NOT** re-use spilled oil. Add one pint of new factory approved lubricant to differential after completion of step 1B.

- B. Attach differential support bracket assembly (1A) to front differential using new hardware provided. **(Fig. 21)**. Use thread locker on all threads and torque to 45 ft. lbs.

### FROM C4105BAG2 USE:

- (1) 9/16-12 UNC x 3 3/4 LG Hex Bolt (96334CHHC8)
- (1) 10MM-1.50 x 80MM LG Hex Bolt (10M080CHHC10)
- (4) 10MM-1.50 x 60MM LG Hex Bolt (10M060CHHC10)
- (2) 9/16 HRDN SAE Flat Washer (W96H)
- (6) 10MM HRDN SAE Flat Washer (W10MH)
- (1) 9/16-12 UNC Stover Hex Nut (N96CS8)
- (1) 10MM-1.50 Stover Hex Nut (N10MCS10)
- (2) .735 ID x 1.32 OD x 1.06 LG Bushing (201018)
- (1) .750 OD x .095 Wall x 2.17 LG Sleeve (139)

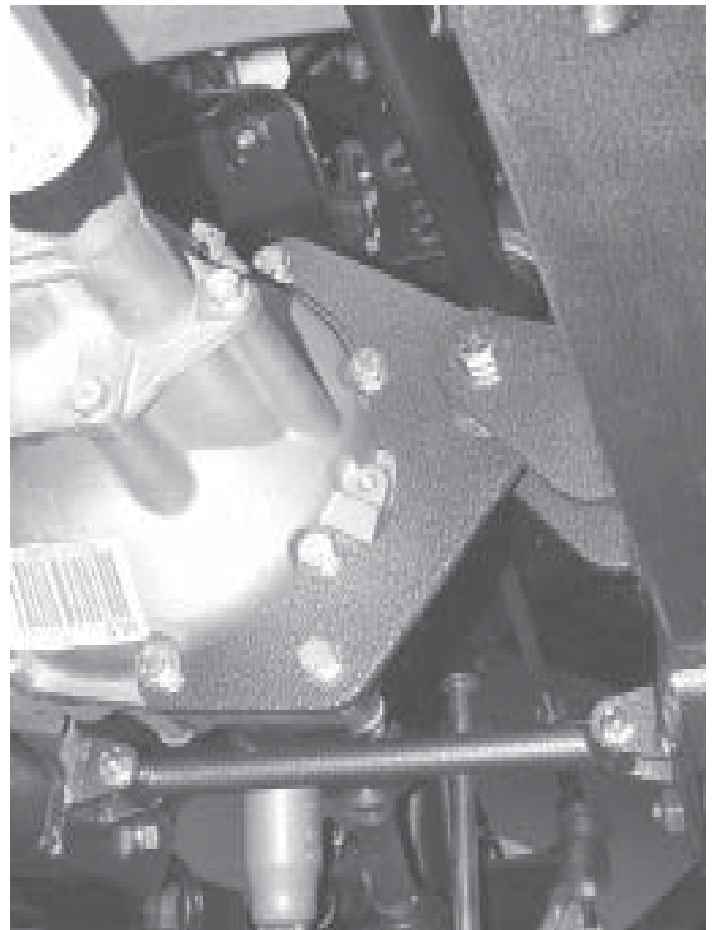
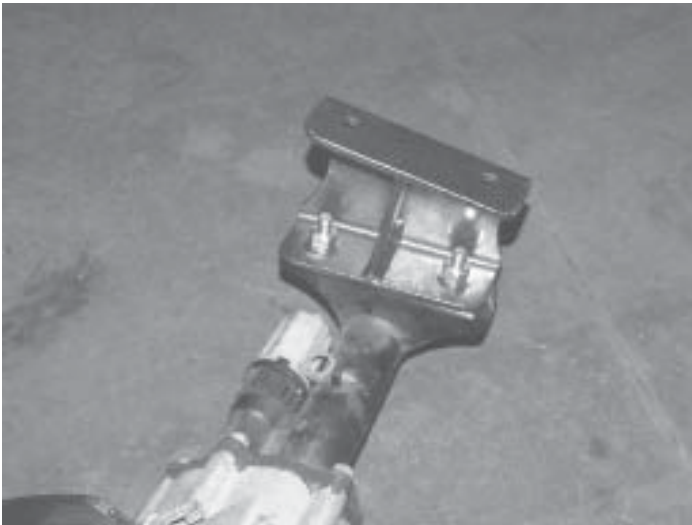


Fig. 21

- Loosely attach passenger side differential drop bracket (202506) to differential axle. Use hardware provided. **Fig. 22**

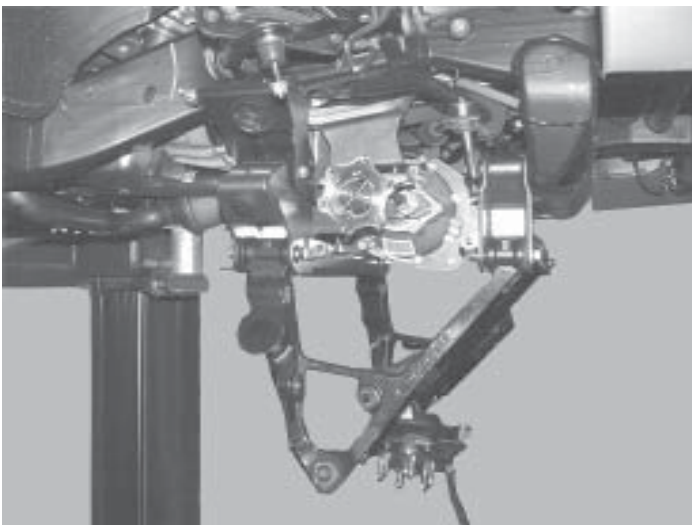
**FROM C4105BAG2 USE:**

- (2) 9/16-12 UNC x 1 3/4 LG Hex Bolt (96134CHHC8)
- (4) 9/16 HRDN SAE Flat Washer (W96H)
- (2) 9/16-12 UNC Stover Hex Nut (N96CS8)



**Fig. 22**

- Install rear crossmember (202504) into existing rear lower control arm mounting pockets, use existing OE hardware previously removed. Make sure bolt heads are facing to front of vehicle (**Fig. 23**). **Do not tighten at this time.**



**Fig. 23**

- Attach bumpstops to aft crossmember bumpstop pad using hardware provided in bag C4105BAG5. Torque to OE specifications.

**FROM C4105BAG5 USE:**

- (2) 3/8 SAE Flat Washer (W38S)
- (2) 3/8-16 UNC NY-Lock Hex Nut (N38CL)
- (2) Bumpstop, Pancake Style (BS9102)

- Support front differential assembly with a floor jack. Slowly raise differential assembly into position.
- Install front crossmember (202503) into existing front lower control arm mounting pockets using existing OE hardware previously removed. Make sure bolt heads are facing to front of vehicle. **Do not tighten at this time.**
- Place front driver side differential support bracket between tabs located on front crossmember. Position rear driver side differential mount to rear crossmember differential mount. Install passenger side differential drop to frame bracket using existing OE hardware. Use existing OE hardware to attach differential support bracket to front crossmember. Attach rear differential mount to rear crossmember using OE hardware. **Do not tighten at this time.**

**FROM C4105BAG1 USE:**

- (1) 9/16-12 UNC x 3 3/4 LG Hex Bolt (96334CHHC8)
- (2) 9/16 HRDN SAE Flat Washer (W96H)
- (1) 9/16-12 UNC Stover Hex Nut (N96CS8)

**NOTE:** Check to make sure differential is centered in vehicle. Measure left to right and front to back to ensure differential is centered.

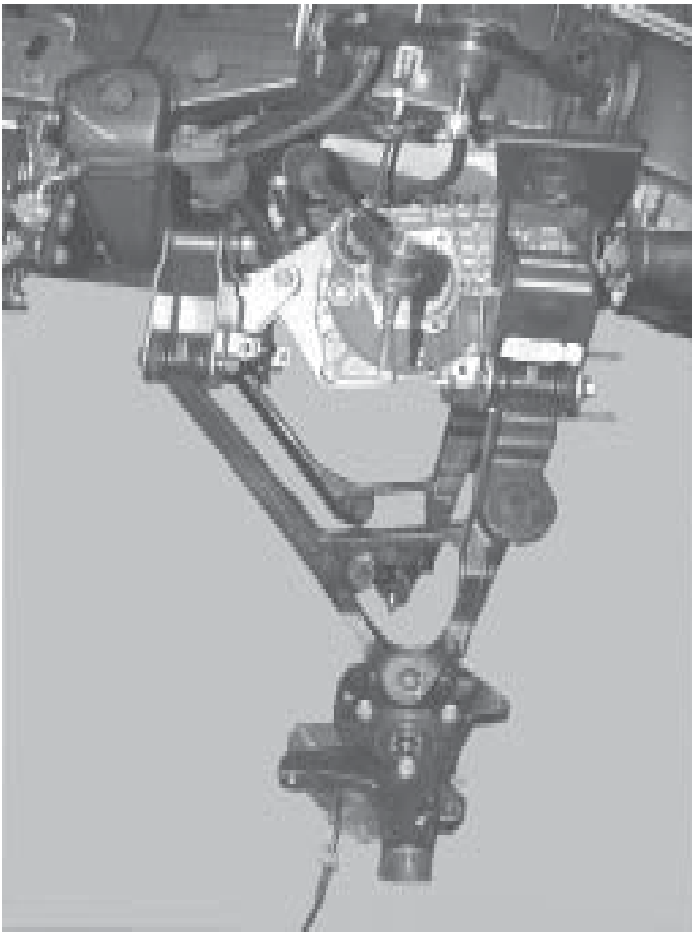
- Reconnect differential vent hose and electrical connector. **Refer to Figs. 15 and 16.**

**NOTE:** There should be a minimum of 1/2" clearance between front driveshaft and exhaust crossover pipe. If there is less than 1/2" clearance, crossover pipe must be modified to obtain 1/2" of clearance. Be sure to comply with national, state and local laws and regulations whenever modifying your exhaust system.

- Align marks made on front driveshaft U-joint and yoke and reinstall using OE hardware. Torque driveshaft fasteners per OE specifications.
- Install OE lower control arms into front and rear crossmembers using new 5/8" hardware supplied. (**Fig. 24**) **Do not tighten at this time.**

**FROM C4105BAG1 USE:**

- (2) 5/8-11 UNC x 5 1/2 LG Hex Bolt (58512CHHC8)
- (2) 5/8-11 UNC x 4 1/2 LG Hex Bolt (58412CHHC8)
- (8) 5/8 HRDN SAE Flat Washer (W58H)
- (4) 5/8-11 UNC Stover Hex Nut (N58CS8)

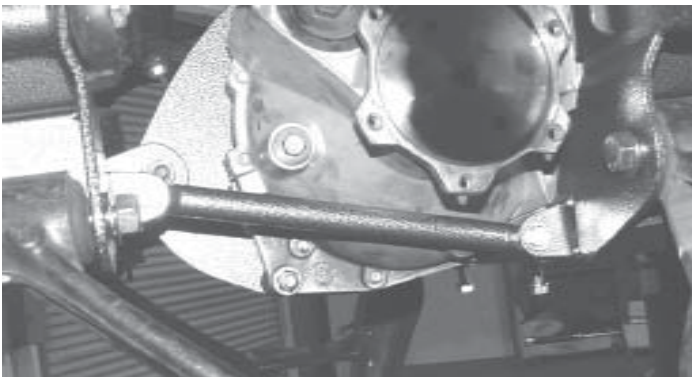


**Fig. 24**

11. Install crossmember supports (201012) between new crossmembers (202503) and (202504) using new hardware supplied. **Fig. 25**

**FROM CMBRBAG USE:**

- (4) 3/8-16 UNC x 2 1/4 LG Hex Nut (38214CHHC)
- (8) 3/8 SAE Flat Washer (W38S)
- (4) 3/8-16 UNC Stover Hex Nut (N38CS8)



**Fig. 25**

- 12. Torque all fasteners previously installed EXCEPT lower control arm pivot bolt fasteners.
  - A. Torque front and rear crossmember upper fasteners to 121 ft. lbs.
  - B. Torque front differential (driver and passenger side) fasteners to 75 ft. lbs.
  - C. Torque crossmember support fasteners to 45 ft. lbs.
- 13. Remove existing O-ring (if present), splash shield, ABS wires, hub and bearing assembly from front spindle. Reinstall O-ring (if present), splash shield and hub and bearing assembly to new front knuckle (202501) and (202502). **Fig. 26**

**NOTE:** Make sure hub and bearing assemblies are reinstalled on same side they were removed from. Apply threadlocker compound to existing fasteners. Torque hub bolts to 133 ft. lbs.



**Fig. 26**

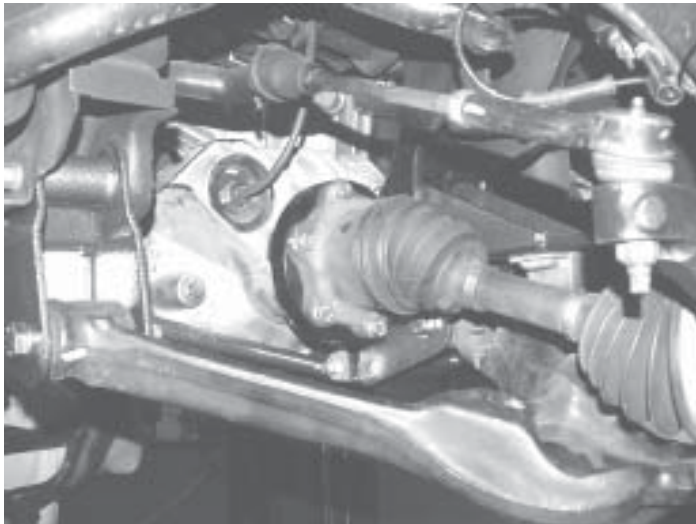
- 14. Connect driver side front knuckle assembly to upper and lower control arm ball joints. Torque upper ball joint nut to 37 ft. lbs. Torque lower ball joint nut to 74 ft. lbs.
- 15. Loosen each (Driver & Passenger sides) tie rod end jam nut and thread tie rod inward two complete turns. Retighten jam nut and attach tie rod to front spindle. Torque nut to 46 ft. lbs.
- 16. Reinstall drive axle into front knuckle using nut and washer previously removed.

**NOTE:** Do not lubricate drive axle splines or front spindle with grease.

17. Place axle spacer (202511) against differential flange (**Fig. 27**). Align reference marks on the axle flange and differential flange. Make sure all mounting holes are aligned with each other. Attach using thread locker compound and hardware provided, torque bolts to 58 ft. lbs. Rotate axle assembly to make sure spacer bolt heads clear frame. Clearance frame if necessary.

**FROM C4105BAG4 USE:**

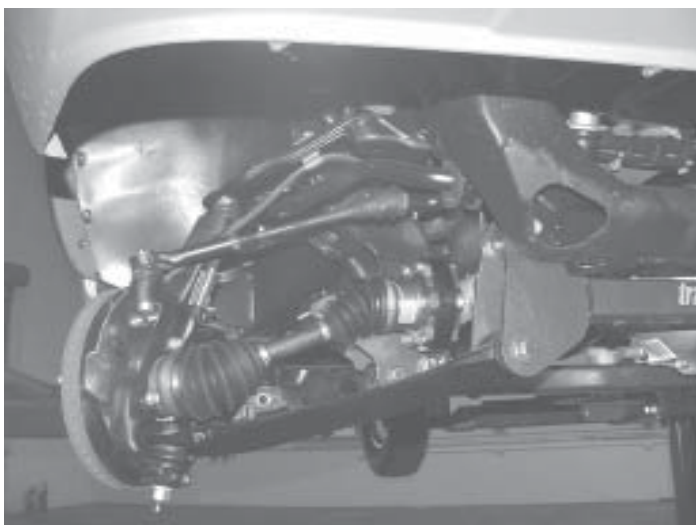
- (12) 10MM-1.50 x 60MM LG Hex Bolt (10M060CHHC10)
- (12) 10MM SAE Flat Washer (W10MS)
- (1) Loctite .5 mil (242)



**Fig. 27**

18. Install brakes.
- A. Install brake rotor.
  - B. Attach front caliper assembly with previously removed existing hardware. Torque 14mm caliper-to-knuckle mounting bolts to 129 ft. lbs.
  - C. Position brake lines and sensor wires so that they do not rub or get pinched during suspension and steering travel and secure using tie wraps supplied.

**Fig. 28**



**Fig. 28**

19. Torque axle hub nut to 165 ft. lbs.

20. Install front shock absorbers (75630 or see WARNING).

Front extended length: 20 7/8"

Front collapsed length: 13 3/4"



## WARNING

We strongly recommend using Trail Master shocks that were engineered to be used with this kit. If you use other shocks, they **MUST** match full extended and full collapsed lengths of Trail Master units **EXACTLY**. The use of longer or shorter shocks than recommended may cause damage to vehicle suspension and could result in sudden loss of control of vehicle and personal injury. Contact Trail Master for exact lengths of the front and rear shocks that must be used with this suspension kit.

21. Cycle front suspension through full travel and all steering positions and check for adequate clearance between shocks, bumpstops and brake line hoses. Do this with and without front wheels/tires mounted.
22. Assemble and install torsion bar relocation brackets (200506).
- A. Install urethane bushings (SB43BBK) into tube portion of both brackets. **NOTE:** Spray some silicone lubricant on bushing for easier installation. Carefully press 1-1/2" long sleeve (131) into bushing.
  - B. Using (1) 1/2" x 2-1/2" bolt, (2) 1/2" washers and a 1/2" locknut, loosely assembly support tabs (200701, 200702) and support sleeve (132) to bottom hole of each bracket. Be sure support sleeve is assembled between bracket flanges to avoid distorting bracket when torqued to specifications.



## CAUTION

Check frame behind where you will be drilling and move any items (fuel lines, brake lines, etc.) out of the way that could be damaged during drilling.

- C. Install each loosely assembled bracket to OEM torsion bar mount hole with (1) 9/16" x 3" bolt, (2) 9/16" flat washers and (1) 9/16" locknut. Using support tabs as a template, mark and drill 13/32" holes in horizontal flanges of factory crossmember frame brackets. Secure support tabs to frame using (2) 3/8" x 1-1/4" bolts, (4) 3/8" flat washers and (2) 3/8" locknuts. Torque 3/8" bolts first to 30 lb. ft. then 1/2" bolt to 75 lb. ft. and 9/16" bolt to 105 lb. ft. **Fig. 29**
- D. Attach OEM crossmember to new mount using OEM hardware. Torque to 70 lb. ft.

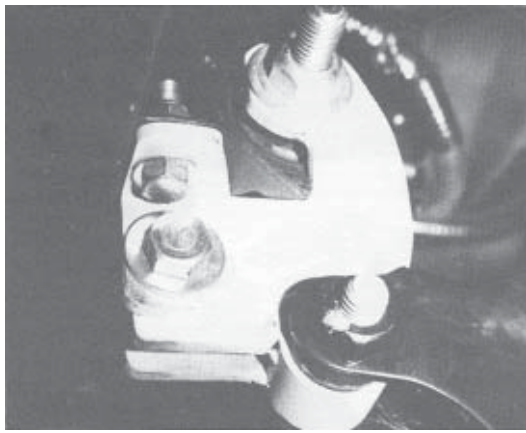


Fig. 29

23. Place torsion bars into lower control arms in same orientation they were removed. Slide them fully forward.
24. Slide torsion bar rearward through torsion bar crossmember while holding adjustment arm in proper position. Verify that reference marks on adjustment arm and torsion bar match.
25. Install torsion bar unloading tool (J36202). **Be very careful while increasing tension on torsion bar.**
26. Reinstall retainer plate and adjusting bolt. Thread adjusting bolt in until exposed length approximately matches length before removal. The final adjustment to ride height will be made after kit is fully installed and when vehicle is supported by its own weight on level ground.
27. Install front wheels and lower vehicle to ground.
28. When vehicle is at ride height torque lower control arm to front and rear crossmember's pivot nuts to 107 ft. lbs.
29. Reinstall existing sway bar to lower control arm using sway bar sleeve (136) and hardware provided. **Fig. 30**  
**FROM C4105BAG3 USE:**
  - (8) 0.5 ID x 1.38 OD Bushing (201022)
  - (8) 0.5 ID x 1.38 OD Formed Washer (201021)
  - (2) Sway bar link (204020)
  - (4) Shoulder bolt (10STCP-0500300)

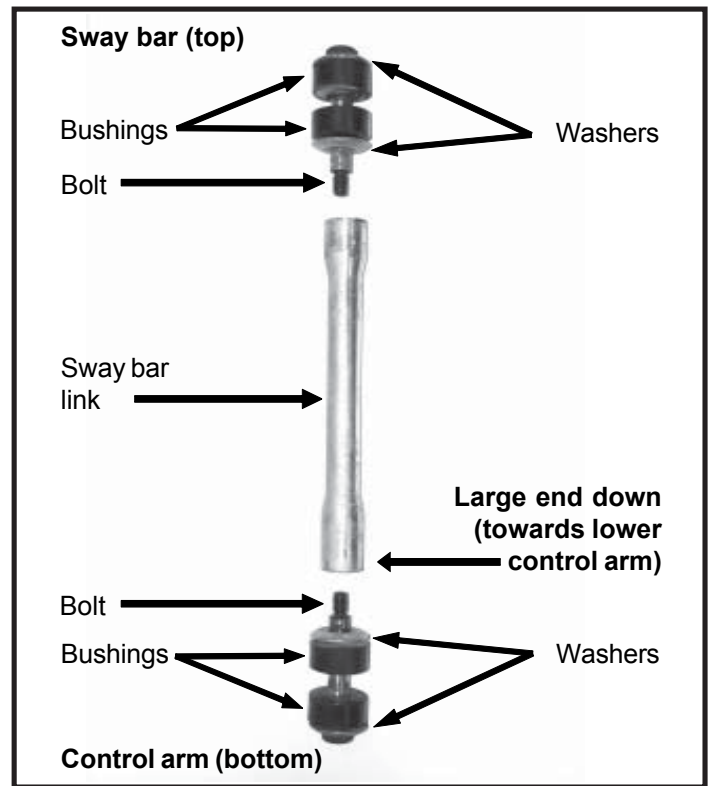


Fig. 32

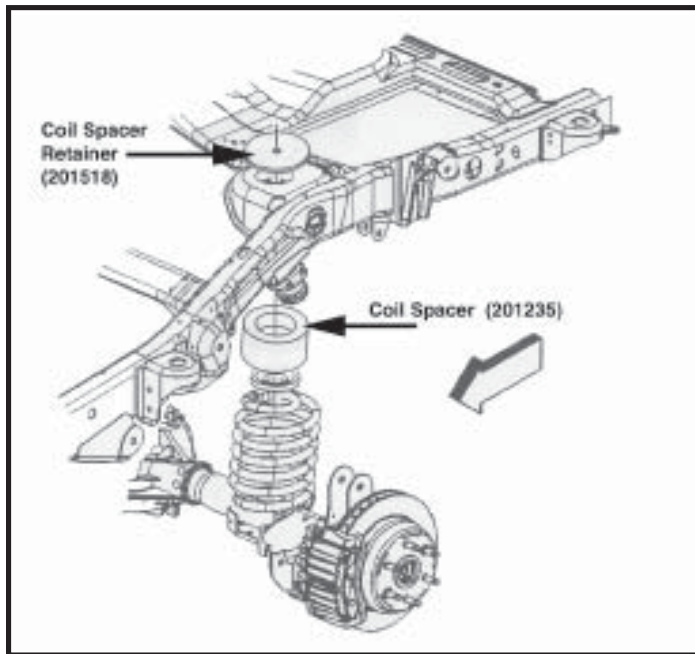


## CAUTION

Install sway bar link with the larger end towards lower control arm.

# REAR INSTALLATION

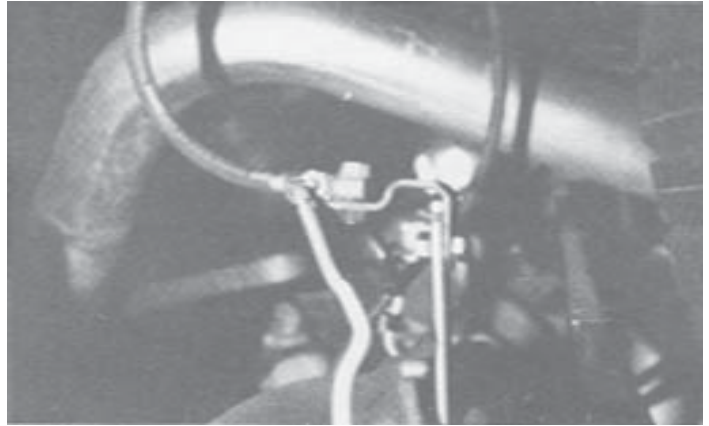
1. Block and secure vehicle.
2. Raise rear of vehicle and remove rear wheels and tires.
3. Using jack stands, support axle.
4. Remove shock absorbers. Retain hardware for reuse.
5. Disconnect sway bar end links. Save hardware for reuse.
6. Unbolt rear brake line bracket from differential housing. Retain bolt for reinstallation.
7. Disconnect hardware that mounts rear track bar from axle mount. Save mounting hardware and support track bar, but out of the way, as necessary.
8. Disconnect rear links from axle.
9. Carefully lower rear axle until coil springs are loose. Note orientation of coil insulators and remove coils from vehicle.
10. Install coil spacers (201235) and coil retainers (201518) using hardware from C4108BAG1. See **Fig. 31**



**Fig. 31**

11. Re-install OE coils and insulators and carefully lift rear axle enough to re-connect rear links.  
**DO NOT TIGHTEN AT THIS TIME.**
12. Re-install rear track bar.  
**DO NOT TIGHTEN AT THIS TIME.**

13. Install brake line extension bracket (200703) to differential housing using OEM bolt. Attach OEM bracket to Trail Master extension bracket using (1) 3/8" x 1-1/4" bolt, (2) 3/8" washers and a 3/8" lock nut from C4108BAG9. Tighten to 30 lb. ft. **Fig. 32**



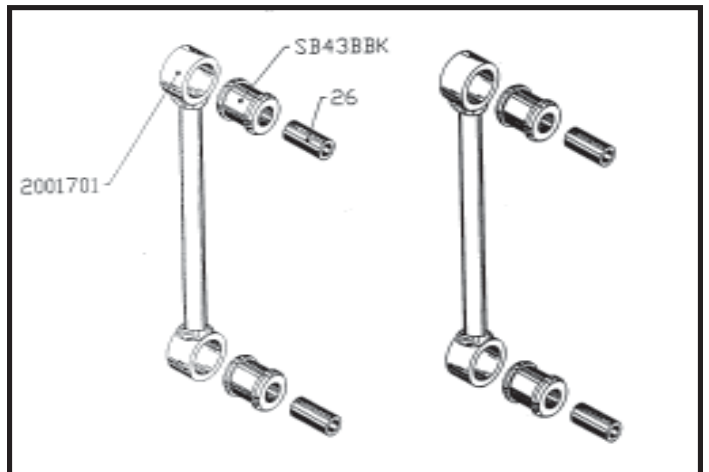
**Fig. 32**

14. Install new rear shock absorbers (72510) using OEM hardware.

**⚠ WARNING**

We strongly recommend using Trail Master shocks that were engineered to be used with this kit. If you use other shocks, they **MUST** match full extended and full collapsed lengths of Trail Master units **EXACTLY**. The use of longer or shorter shocks than recommended may cause damage to vehicle suspension and could result in sudden loss of control of vehicle and personal injury. Contact Trail Master for exact lengths of the front and rear shocks that must be used with this suspension kit.

15. Install new rear anti-sway bar end links (2001701) per **Fig. 33** using hardware from C4107BAG2. Torque to OE specs.



**Fig. 33**

16. Install rear wheels and tires. Torque to OEM specifications.
17. Carefully raise axle and remove jack stands, then lower vehicle to ground.
18. Bounce vehicle several times to settle the suspension then tighten all hardware not previously tightened.  
**BE SURE TO TORQUE UPPER REAR LINK PIVOT BOLTS (77 FT LBS), LOWER REAR LINK PIVOT BOLTS (89 FT LBS) AND TRACK BAR PIVOT BOLT (77 FT LBS).**
19. Recheck all fasteners on both front and rear of vehicle. Turn steering fully in both directions and check for any clearance issues. Test brakes for proper feel before driving any distance.
20. After driving vehicle a short distance and while on level ground, confirm that front spindle-to-fender measurement is 4" higher than OE measurement. Adjust torsion bar adjuster screws if necessary. Complete information on worksheet on page 15.

## PRODUCT SAFETY LABEL

Supplied in kit is a safety warning label. Install label inside cab. Locate label in a highly visible location to all operators of this vehicle. If label becomes lost or damaged, contact Trail Master at (928) 636-3175 for a replacement.



## WARNING

The suspension of this vehicle has been modified to improve off-road performance. As a result, this vehicle may handle differently than factory equipped vehicles. Extreme care must be used to prevent loss of control or roll over during sharp turns or abrupt maneuvers. Failure to drive this vehicle safely may result in serious injury or death. Do not drive this vehicle unless you are familiar with its unique handling characteristics and are confident of your ability to maintain control under all driving conditions. Consult the instructions accompanying this product and the vehicle owner's manual for additional product safety warnings. Always wear seat belts, reduce your speed and drive safely.

## POST-INSTALLATION NOTES



## WARNING

1. Check all fasteners for proper torque before driving the vehicle for the first time with this kit, after the first 500 miles, after each off-road use and during routine vehicle servicing. Worn, damaged or loose parts can fail suddenly resulting in loss of control of the vehicle and personal injury.
2. In ALL steering and suspension positions, check to ensure that there is adequate clearance between ALL rotating, moving, fixed and heated members. Ensure adequate clearance around steering components, exhaust components, brake lines, fuel lines, fuel tank and electrical wiring.
3. Visually inspect components for wear or damage after each off-road use and during routine vehicle servicing. Worn, damaged or loose parts can fail suddenly resulting in loss of control of the vehicle and personal injury.
4. Trail Master does not recommend a particular tire and wheel combination for use with its products and assumes no responsibility for customer choice of tires and wheels. Consult your owner's manual for recommended tire sizes and warnings related to use of oversize tires and wheels. In general, larger tire and wheel combinations may increase stress and wear on steering components leading to increased maintenance and greater risk of component failure, including loss of steering control. Property damage or personal injury may result. Large tire and wheel combinations may also alter speedometer calibration, reduce braking effectiveness and alter vehicle center of gravity height (See product safety warnings). Check with an experienced off-road shop for the tire and wheel combinations that work best on your truck. Remember, **BIGGER** isn't necessarily better.
5. Trail Master's goal is to provide you with the best system possible for a reasonable cost. It must be noted that the components in your Trail Master system do not eliminate OE component weaknesses.
6. Perform headlight adjustment.
7. Set vehicle alignment within OE specifications. The size of rim and tire combinations should be considered when making front end adjustments.
8. Retain this and all information regarding your altered vehicle for future reference. Thank you for choosing Trail Master. For questions, contact our Technical Assistance Department at (928) 636-3175.

# INSTALLATION WORKSHEET

## 1. Trail Master product information

- A. Trail Master product part number \_\_\_\_\_
- B. Purchased from \_\_\_\_\_
- C. Attach copy of original receipt to this page.

## 2. Vehicle identification information

- A. Vehicle make \_\_\_\_\_
- B. Model \_\_\_\_\_
- C. Year \_\_\_\_\_
- D. VIN number \_\_\_\_\_
- E. Mileage \_\_\_\_\_
- F. Engine \_\_\_\_\_

## 3. Owners information

- A. Name \_\_\_\_\_
- B. Address \_\_\_\_\_
- C. City \_\_\_\_\_
- D. State \_\_\_\_\_ Zip \_\_\_\_\_

## 4. Vehicle measurements

### A. Center of wheel to fender: (on level ground)

Stock                      Lifted

- Right front \_\_\_\_\_
- Right rear \_\_\_\_\_
- Left front \_\_\_\_\_
- Left rear \_\_\_\_\_

### B. Bump stop to contact point (with kit at ride height):

- Right front \_\_\_\_\_
- Right rear \_\_\_\_\_
- Left front \_\_\_\_\_
- Left rear \_\_\_\_\_

## 5. Tire information (with lift):

- A. Tire size \_\_\_\_\_
- B. Tire brand \_\_\_\_\_
- C. Actual diameter (measure) \_\_\_\_\_

## 6. Wheel information (with lift):

- A. Wheel size \_\_\_\_\_
- B. Wheel brand \_\_\_\_\_
- C. Style \_\_\_\_\_
- D. Backspacing \_\_\_\_\_

## 7. List other equipment or accessories

\_\_\_\_\_

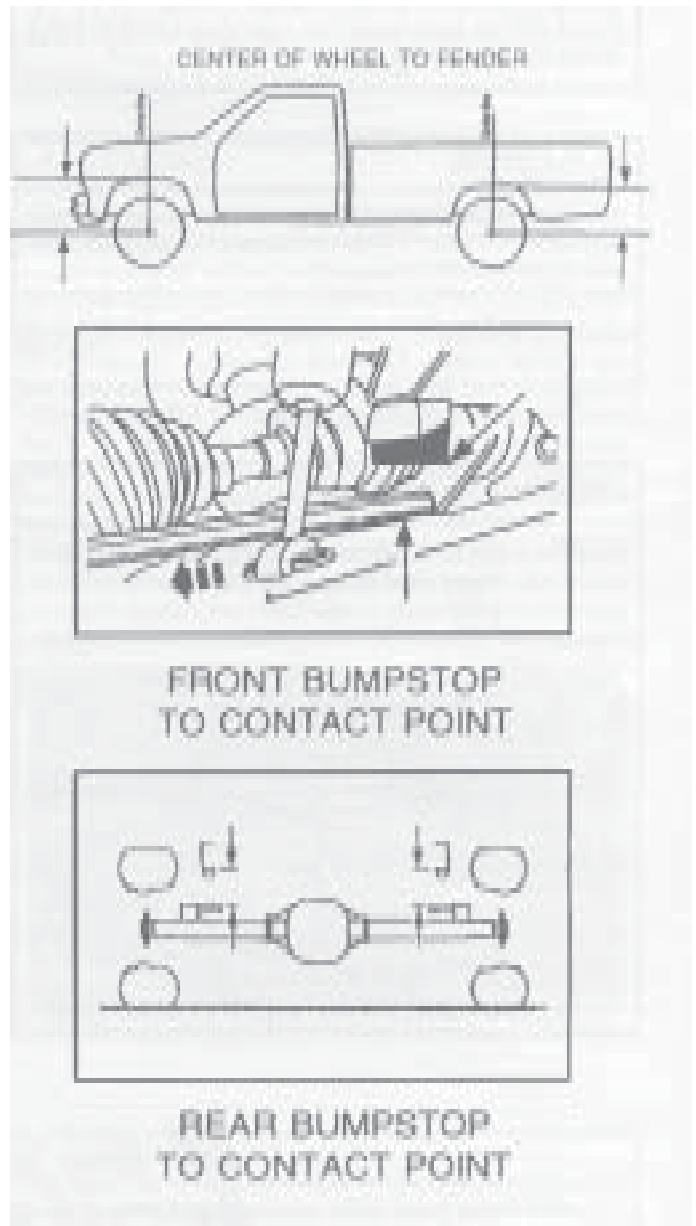
\_\_\_\_\_

## 8. Installer information

- A. Name of installer \_\_\_\_\_
- B. Name of shop \_\_\_\_\_
- C. Address \_\_\_\_\_
- D. City \_\_\_\_\_
- E. State \_\_\_\_\_ Zip \_\_\_\_\_
- F. Phone \_\_\_\_\_

## 9. Wheel alignment information

Attach a copy of the wheel alignment results.





2265 Crosswind Drive • Prescott, AZ 86301  
(928) 636-3175  
[www.trailmastersuspension.com](http://www.trailmastersuspension.com)