

GROUND FORCE

00-09 GM 2500/3500 FRONT TORSION BAR LEVELING KEY KIT INSTALLATION

GM 2WD AND 4WD 2500/3500 WITH TORSION BARS AND 8 LUG WHEELS

READ INSTRUCTIONS COMPLETELY THROUGH BEFORE STARTING
FAILURE TO ADHERE TO THE INSTRUCTIONS WILL VOID ANY GROUND FORCE WARRANTY
IT IS RECOMMENDED THAT INSTALLATION BE DONE BY A QUALIFIED MECHANIC
REPLACE ALL STOCK PARTS THAT ARE DAMAGED OR WORN
INTERMIXING OF PARTS IS NOT RECOMMENDED AND WILL VOID THE WARRANTY
ALWAYS WEAR EYE PROTECTION

CHECK TO SEE THAT ALL PARTS LISTED ARE INCLUDED:

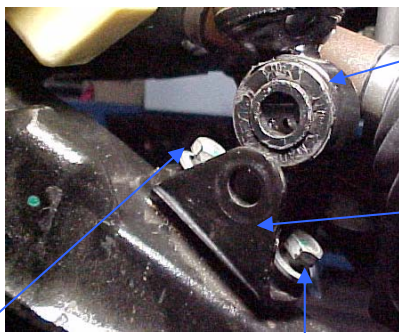
2- TORSION BAR KEY ADJUSTERS 1- WARNING DECAL
1- INSTRUCTION 2- LOWER SHOCK BRACKETS

MEASURE AND DOCUMENT THE VEHICLE HEIGHT FROM FLOOR TO FENDER LIP.

LF _____ RF _____ LR _____ RR _____

FRONT INSTALL

1. BEFORE GETTING UNDER VEHICLE, JACK THE FRONT OF VEHICLE UP AND PLACE JACK STANDS UNDER THE FRAME RAILS. LOWER THE VEHICLE ONTO JACK STANDS AND MAKE SURE STANDS ARE SECURELY HOLDING THE VEHICLE.
2. REMOVE THE FRONT TIRE AND WHEEL ASSEMBLY.
3. SUPPORT THE LOWER CONTROL ARM.
4. REMOVE THE LOWER SHOCK HARDWARE AND REMOVE THE SHOCK FROM THE FACTORY LOWER MOUNT.
5. REMOVE THE TWO FACTORY BOLTS HOLDING THE LOWER SHOCK BRACKET TO THE LOWER CONTROL ARM AND REMOVE THE FACTORY LOWER SHOCK BRACKET FROM THE VEHICLE. SAVE THIS HARDWARE. **NOTE:** THESE BOLTS ARE GOING TO BE VERY TIGHT BECAUSE THEY HAVE HAD THREAD LOCKER APPLIED ON THEM AT THE FACTORY.



LOWER SHOCK BEING REMOVED
FROM THE FACTORY LOWER SHOCK MOUNT.

FACTORY LOWER SHOCK MOUNT.

LOWER SHOCK BRACKET HARDWARE.

6. REMOVE THE FACTORY LOWER SHOCK BRACKET AND DISCARD.



FACTORY LOWER SHOCK MOUNT BEING REMOVED FROM THE LOWER CONTROL ARM.

7. INSTALL THE SUPPLIED SHOCK BRACKET TO THE LOWER CONTROL ARM WITH THE ANGLE ON THE BRACKET GOING TOWARD THE CENTER OF THE VEHICLE.



NEW LOWER SHOCK MOUNT BEING INSTALLED TO THE LOWER CONTROL ARM WITH THE ANGLE GOING TOWARD THE CENTER OF THE VEHICLE.

(PASSENGER SIDE SHOWN
LOOKING TOWARD THE
FRONT OF THE VEHICLE.)

- A. APPLY THREAD LOCKER TO THE FACTORY HARDWARE AND TORQUE THE LOWER SHOCK MOUNT TO LOWER CONTROL ARM HARDWARE TO SPEC.

8. INSTALL THE LOWER SHOCK AND SHOCK HARDWARE TO THE NEW MOUNT AND TORQUE TO SPEC.



LOWER SHOCK INSTALLED TO THE NEW LOWER SHOCK MOUNT. PASSENGER SIDE SHOWN.

MAKE SURE TO CHECK THE CLEARANCE AROUND THE SHOCK AND THE NEW SHOCK MOUNT. ADJUST IF NECESSARY.

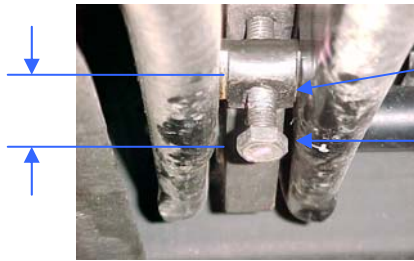
9. REPEAT THE LOWER SHOCK BRACKET INSTALLATION TO THE OTHER SIDE OF THE VEHICLE.
10. LOCATE THE FACTORY TORSION BAR KEYS IN THE CROSS-MEMBER AT THE END OF THE TORSION BAR UNDER THE CAB.

WARNING: THE TORSION BARS ARE UNDER PRESSURE. EXTREME CARE MUST BE TAKEN WHEN REMOVING AND INSTALLING THE TORSION BAR ADJUSTERS TO AVOID INJURY. FOLLOW THE TORSION BAR TOOL MANUFACTURERS LOADING / UN-LOADING INSTRUCTIONS.

11. TORSION BAR ADJUSTER REMOVAL PROCEDURE. MAKE SURE THE JACK STANDS ARE SECURE UNDER THE VEHICLE FRAME.

A. MARK THE TORSION BARS LEFT OR RIGHT AND FRONT OR REAR.

B. MEASURE AND DOCUMENT THE DISTANCE FROM THE OUTSIDE OF THE HEAD OF THE TORSION BAR ADJUSTING BOLT UP TO THE TORSION BAR RETAINING PLATE. DOCUMENT BOTH LEFT AND RIGHT ADJUSTING BOLT HEAD HEIGHTS.



TORSION BAR ADJUSTER
BOLT RETAINING PLATE.

TORSION BAR ADJUSTER
BOLT HEAD.

BOLT HEAD HEIGHT

L_____ R_____

C. USING A PROPERLY RATED TORSION BAR LOADER / UN-LOADER TOOL (KENT MOORE PART NO. 36202 OR ITS EQUIVALENT) INCREASE THE TENSION ON THE STOCK TORSION BAR ADJUSTING ARM. (FOLLOW THE TOOL MANUFACTURERS INSTRUCTIONS) .

D. REMOVE THE ADJUSTING BOLT AND RETAINING PLATE.

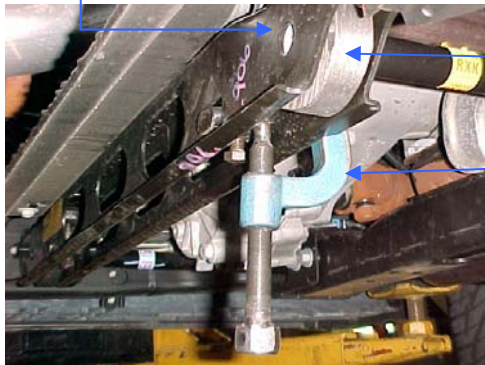
E. REMOVE THE TORSION BAR UN-LOADER TOOL.

F. SLIDE THE TORSION BAR FORWARD.

NOTE: YOU MAY HAVE TO TAP ON THE END OF THE TORSION BAR TO GET IT TO POP LOOSE FROM THE FACTORY KEY AND LOWER CONTROL ARM, AN AIR CHISEL WITH A PUNCH BIT WORKS WELL.

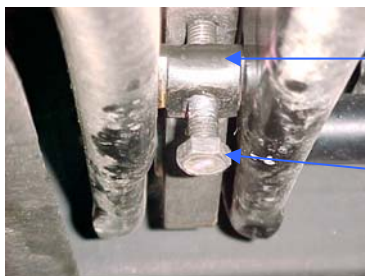
G. REMOVE THE STOCK TORSION BAR KEY.

H. REPEAT TO OTHER SIDE OF VEHICLE.



TORSION BAR KEY

TORSION BAR LOADER /
UN-LOADER



TORSION BAR ADJUSTER BOLT
RETAINING PLATE.

TORSION BAR ADJUSTER BOLT HEAD.

12. NEW RE-INDEXED TORSION BAR KEY INSTALLATION PROCEDURE.
 - A. INSTALL THE NEW TORSION BAR KEY UP INTO THE CROSSMEMBER WITH THE BOTTOM OF NEW TORSION BAR ADJUSTER JUST HANGING OUT FROM THE BOTTOM OF THE CROSSMEMBER.
 - B. SLIDE THE TORSION BAR BACK INTO THE NEW TORSION BAR KEY.
 - C. USING THE TORSION BAR LOADER / UN-LOADER TOOL INCREASE THE TENSION ON THE NEW TORSION BAR KEY (FOLLOW THE TOOL MANUFACTURES INSTRUCTIONS).
 - D. INSTALL THE STOCK RETAINER PLATE THROUGH THE CROSSMEMBER WITH THE **NOTCHES** IN THE RETAINER POINTING **DOWN**.
 - E. INSTALL THE STOCK ADJUSTING BOLT UP INTO THE RETAINING PLATE AND TURN THE TORSION BAR ADJUSTING BOLT IN UNTIL THERE IS ABOUT THE SAME AMOUNT OF THREADS SHOWING THAT WAS DOCUMENTED IN **STEP 11B**.
13. REPEAT TORSION BAR KEY INSTALLATION PROCEDURE TO THE OTHER SIDE OF VEHICLE.

NOTE: THE VEHICLE HEIGHT WILL NEED TO BE ADJUSTED WITH THE TIRES AND WHEELS THAT WERE ON THE VEHICLE WHEN MEASURED BEFORE KIT INSTALLATION.

NOTE: IF THE STOCK TORSION BAR ADJUSTING BOLTS WERE ADJUSTED FROM THE FACTORY SETTING YOUR ADJUSTMENT MAY VARY.
14. CHECK CLEARANCE OF ALL FRONT COMPONENTS WHILE SWEEPING THE STEERING COMPLETE LEFT TO RIGHT LOCK.
15. RECHECK THE TORQUE ON ALL NUTS AND BOLTS AFFECTED BY THIS PROCEDURE.
16. MAKE A SMALL TEST DRIVE TO GET THE VEHICLE SETTLED INTO POSITION.
17. THE VEHICLE HEIGHT SHOULD NOT BE CHANGED MORE THAN 2.0 FROM THE FACTORY SETTING. OVER ADJUSTING THE TORSION BAR KEY ADJUSTING BOLTS WILL AFFECT RIDE QUALITY AND MAY CAUSE DAMAGE TO THE VEHICLES FRONT CV HALF SHAFTS, THEREFORE IT IS NOT RECOMMENDED.
- 18 THE FRONT HEIGHT CAN BE ADJUSTED BY TURNING THE FACTORY TORSION BAR ADJUSTING BOLTS (IN TO LIFT OUT TO LOWER) TO GET THE VEHICLE TO THE DESIRED HEIGHT AND LEVEL SIDE TO SIDE.
 - A. CLEARANCE BETWEEN THE **BOTTOM OF THE UPPER CONTROL ARM** AND THE **TOP OF THE FRAME DROOP STOP** AT RIDE HEIGHT SHOULD BE NO LESS THAN **5/8"**.



BOTTOM OF THE UPPER CONTROL ARM

MINIMUM CLEARANCE OF 5/8" BETWEEN THE BOTTOM OF THE UPPER CONTROL ARM AND THE TOP OF THE FRAME DROOP STOP AT RIDE HEIGHT.

FRAME DROOP STOP

NOTE: PHOTO IS SHOWN WITH SUSPENSION @ FULL COMPRESSION SO WE CAN CLEARLY SHOW THE MEASURING POINTS.

NOTE: MAKING A HEIGHT ADJUSTMENT OF 1/8" AT THE TORSION BAR ADJUSTING BOLT HEAD WILL MAKE ABOUT 1/2" OF CHANGE AT THE WHEEL.

NOTE: IF YOU ARE INSTALLING THE HD KEYS TO COMPENSATE FOR THE ADDED WEIGHT OF A WINCH OR AFTERMARKET ACCESSORIES MAKE SURE TO HAVE THE ADDED ACCESSORIES ON THE VEHICLE WHILE MAKING THE FINAL ADJUSTMENTS TO THE TORSION BAR ADJUSTING BOLTS.

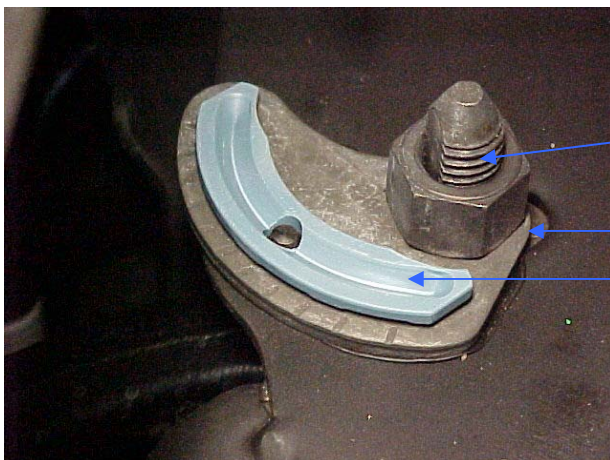
19. GO BACK AND CHECK THAT ALL INSTALLATION STEPS HAVE BEEN COMPLETED. CHECK THE TORQUE OF ALL NUTS AND BOLTS AFFECTED BY THIS PROCEDURE. RECHECK ALL NUTS AND BOLTS FOR TIGHTNESS AFTER THE FIRST 300 MILES AND AT EVERY REGULAR SERVICE INSPECTION.

20. ROAD TEST VEHICLE.

NOTE: IF ANY TORSION BAR ADJUSTMENTS ARE MADE, THE VEHICLE MUST BE TEST DRIVEN TO GET THE SUSPENSION HEIGHT SETTLED IN BEFORE RE-MEASURING.

NOTE: MAKE ALL TORSION BAR ADJUSTMENTS BEFORE HAVING THE VEHICLE FRONT END ALIGNMENT DONE.

21. THE VEHICLE NEEDS TO HAVE A FRONT END ALIGNMENT PERFORMED IMMEDIATELY AFTER THE INSTALLATION OF THIS KIT.



FACTORY UPPER CONTROL ARM TO FRAME ALIGNMENT ADJUSTING BOLT SHOWN.

FACTORY ADJUSTING SLOT

FACTORY PLASTIC CAM BOLT INSERT THAT MUST BE REMOVED DURING ALIGNMENT.

NOTE: YOUR HEADLIGHTS WILL NEED TO BE ADJUSTED TO THE PROPER SETTING AFTER THIS INSTALLATION IS COMPLETE.