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Specializing in Suspension Lifts & Accessories

2001-2004 GM 1500HD / 2500HD / 3500HD Torsion Key

Before you begin please make sure you are installing these keys on an HD series Chevrolet or GMC truck. These keys will not work on a standard 1500 series ½ ton Silverado or Sierra. These are for HD models only!

*** SAFETY ***

Working with torsion bars can be dangerous! Follow ALL precautions when installing the leveling keys. The methods described in this guide should be performed by a professional. PerformanceLifts.com will hold no liability or responsibility for injuries or damage that occur due to the use of this guide. Working with torsion bar suspension systems can be extremely dangerous and injury or death can occur. PerformanceLifts.com strongly suggests having a professional install the torsion leveling keys.

What is included in this kit?

The leveling kit includes a pair of torsion bar adjusting keys and installation instructions. The new keys have a slightly different receiving socket that allows the stock torsion bars to provide additional suspension lift. The benefit of using the leveling keys is additional lift while maintaining the factory adjusting bolt in the stock setting.

Tools required for installation:

To install these leveling keys you will need access to a good hydraulic floor jack and jack stands, a GM style torsion bar unloading tool, (or similar puller) and a metric socket / wrench set. The total time required to install these keys is generally less than two hours. If you live in the “rust belt” it is a good idea to apply rust penetrant onto the keys / adjusting bolt and torsion bar HEX shaped areas before beginning to make removal and installation easier.

Will my vehicle need to be aligned once it has been leveled?

The answer is YES! The front end alignment MUST be checked and adjusted as needed once the leveling keys have been installed. Most vehicles will require a slight toe adjustment (increase toe in) to ensure your alignment is as the factory intended it to be. We recommend for those that install the leveling keys at home to have the alignment checked as soon as possible to prevent any uneven tire wear or poor vehicle handling.

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1) PREPARE VEHICLE...

Park vehicle on level ground. Put transmission in neutral, set parking brake, and chock rear tires. Using a hydraulic floor jack, raise the front of the vehicle enough to get the front tires off the ground. Secure a jack stand beneath each frame rail behind the lower control arms. Ease the frame down onto the stands and place transmission in PARK. Check to make sure the rear tire chocks are in position. Check that front tires hanging freely above the ground – this ensures the suspension is at full extension and reduces tension from the torsion bars. Removal of the front tires is not necessary.

2) UNLOADING THE TORSION BARS…

WARNING: Be extremely careful when loading and unloading the torsion bars; there is a tremendous amount of energy stored in them. Keep your hands and body clear of the adjuster arm assembly and the puller tool in case anything slips or breaks. Mark the torsion bars at the control arm in such a way that it is easy to see this mark as it will be necessary to re-install the torsion bars in a similar position later on. This mark is to indicate their relation to the lower control arms PerformanceLifts.com recommends using the purpose built GM torsion bar puller tool to unload the torsion bars. This tool can be purchased and in some cases borrowed from a GM repair center. **NOTE:** Because of the

extreme loads generated by the torsion bars on these vehicles a standard two-jaw puller tool may bend the "lips" of the crossmember (which it uses for attachment) and may pop out of place. We have had the best results using a C-clamp type puller tool – a tool rented at most auto parts stores. If one cannot be found locally, this tool (PN J-22517-C) is available from the Kent Moore Tool Group. **Please Note: The torsion bar is under extreme load. Substituting a tool for an actual torsion bar tool may result in injury.** If you only have access to a standard 2-Jaw puller please use EXTREME CAUTION to keep your hands and face away from the crossmember while releasing the torsion bar tension and installing your new keys!

(The red circle indicates a dimple on the key. This dimple is where you locate the tip of the unloading tool.)

Take the 2-jaw puller and hand tighten the threaded part of the puller against the dimple in the stock torsion key. This only needs to be snug and should not require tools to generate the necessary fit and tightness. The orientation of the puller is shown in the photo below.

Using an 15mm or 18mm socket you can remove the stock adjustment bolt by turning it counter-clockwise until it is easily removed. **!!! CAUTION !!! AVOID USING YOUR HANDS TO REMOVE ITEMS – IF THE PULLER SLIPS YOU COULD SERIOUSLY INJURE YOURSELF – USE PLIERS AND KEEP A SAFE DISTANCE FROM THE PULLER AND CROSSMEMBER WHEN REMOVING THIS BOLT!!!**

Once the bolt has been removed it is time to remove the backing piece that held the bolt in. **AGAIN - DO NOT USE YOUR HANDS TO DO THIS!** You can use a ratchet or screwdriver to push it out

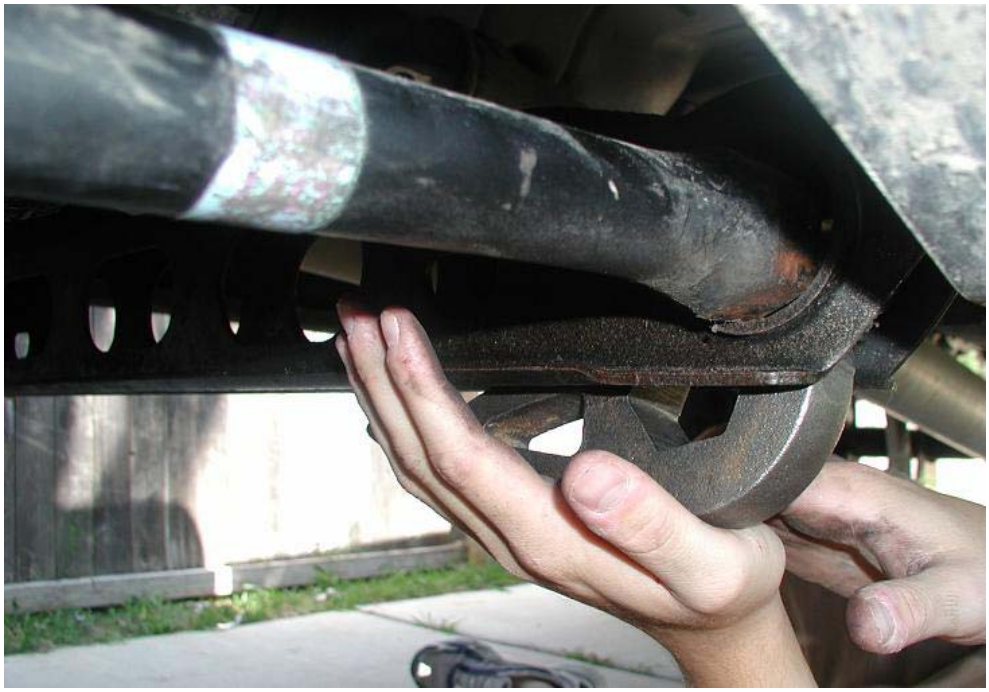
through to the other side as shown in the photo below.

Now that this adjusting bolt has been removed 100% of the energy and tension is now being placed on the puller. If the puller should slip serious injury could occur if any part of your body is near the puller should it come loose! **USE EXTREME CAUTION WHEN WORKING AROUND THE PULLER, CROSSMEMBER, AND TORSION BAR INDEXING KEYS!!!** To release the tension on the puller slowly and carefully turn the threaded portion of the puller in a counter clockwise direction. When the puller spins freely the torsion bar should be unloaded.

3) REMOVING THE TORSION KEYS…To remove the key you must push the torsion bar forward (toward front of vehicle) The torsion bar may require a rust penetrant and in some cases may require force to remove.

4) INSTALLING YOUR NEW TORSION LIFT KEYS… Installation of your new keys is the reverse of removal. If the torsion bar slid to far forward during removal of the key now is the time to guarantee it

is re-installed in the correct position. You should be able to verify the torsion bar is properly indexed by aligning the mark you made before beginning the disassembly. and exited the lower control arm now is the time to re-align the torsion bar with the marks you previously made. Slide the new torsion lift key into the crossmember. This key will only install one way. Now is a good time to lubricate the dimpled area of the key where the adjusting bolt makes contact, the entire adjusting bolt, and the hex shaped areas on the torsion bar and the new torsion lift key. Lubricating these items ahead of time will make assembly and adjustment easier later on.



Try to center the key in the crossmember – the more centered it is the easier it will be to slide the torsion bar back into the key. Slide the torsion bar into the crossmember and into the torsion lift key. Make sure the torsion key is centered in the crossmember once the torsion bar has been inserted. Place the puller back onto the crossmember and insert the threaded end of the puller back into the dimple of the new torsion lift key.

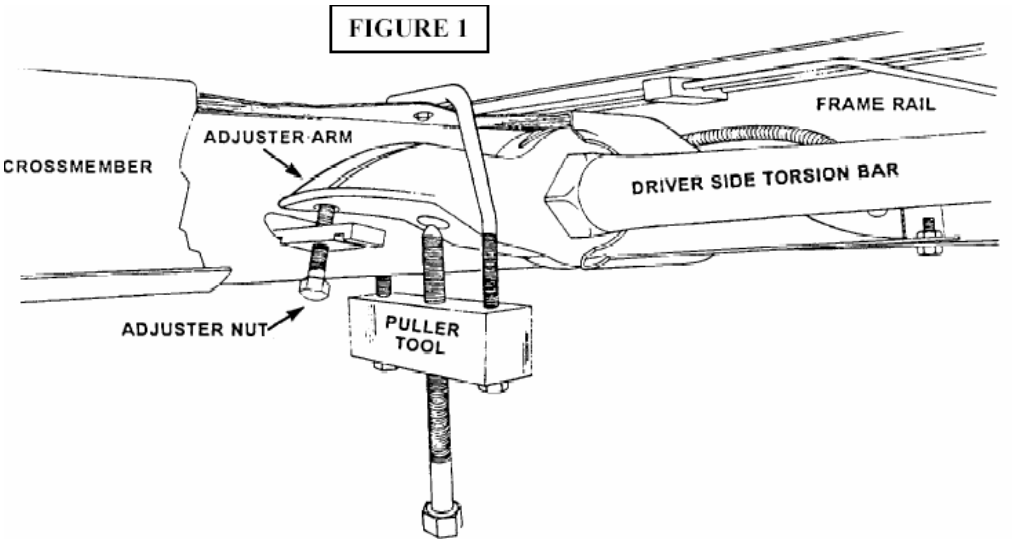
Continue to tighten the puller (pushing against the torsion lift key) until it is possible to re-install the adjustment bolt holder back into the crossmember. ***** CAUTION ***** – **DO NOT USE YOUR HANDS**

– USE PLIERS AS SHOWN!!! If the bolt retainer does not fit all the way that is ok. Install it as far as possible – this is done to prevent injury should the puller release without warning.

Tighten the puller until you are able to fully insert the torsion adjusting bolt holder. **DO NOT USE YOUR HANDS FOR THE NEXT STEP!!!** At this point you should be able to insert the torsion bar adjusting bolt using the 15mm or 18mm socket and an extension if needed. Thread the bolt until it appears to have the same amount of thread remaining as when you started the disassembly. Once the torsion bar adjusting bolt has been threaded so that the same amount of threads are showing you can slowly release the tension on the puller. Once all tension is removed from the puller you can remove it from the vehicle.

5) POST INSTALLATION ADJUSTMENTS… Once you have installed the new torsion keys you can set the vehicle back down on the ground. It is advised you check the vehicle ride height after driving the vehicle a short distance to make sure everything has settled and is installed properly. If you have a 4wd HD truck it is recommended that no more than 2” inches of lift be gained using these torsion keys. To adjust the vehicle ride height you need to either tighten or loosen the torsion bar adjusting bolt. Try doing this one full revolution of the bolt at a time. Fine tuning will allow you to set the driver side and passenger side ride height. Once you have the vehicle leveled or lifted to a height you want it’s suggested you drive the truck again to ensure the ride height is satisfactory. Once you are satisfied with the ride height you must have the front alignment checked and adjusted as needed. Remember, small changes to ride height can affect alignment and this will affect tire wear and handling. A properly aligned vehicle is a must!

Additional Images:



This cutaway illustration shows an alternate method to properly remove and install a torsion key.