

trail master



SUSPENSION

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GM SILVERADO 6-LUG GM 1500 2WD & 4WD 2 1/4" FRONT SPACER KIT 2007– 2013 KIT# TM101 & TM101N

WARNING

Installation of a Trail Master suspension lift kit will change the vehicle's center of gravity and handling characteristics both on- and off-road. You must drive the vehicle safely! Extreme care must be taken to prevent vehicle rollover or loss of control, which could result in serious injury or death. Avoid sudden sharp turns or abrupt maneuvers and always make sure all vehicle occupants have their seat belts fastened.

WARNING

Before you install this kit, read and understand all instructions, warnings, cautions, and notes in this instruction sheet and in the vehicle owner's manual.

CAUTION

Proper installation of this kit requires knowledge of the factory recommended procedures for removal and installation of original equipment components. We recommend that the factory shop manual and any special tools needed to service your vehicle be on hand during the installation. Installation of this kit without proper knowledge of the factory recommended procedures may affect the performance of these components and the safety of the vehicle. We strongly recommend that a certified mechanic familiar with the installation of similar components install this kit.

WARNING

This kit should only be installed on a vehicle that is in good working condition. Before you install the kit, thoroughly inspect the vehicle for corrosion or deformation of the sheet metal. If the vehicle is suspected to have been in a collision or misused, do not install this kit. Off-road use of your vehicle with this kit installed may increase the stress applied to the factory components. Failure to observe this warning may result in serious personal injury and/or severe damage to your vehicle.

WARNING

Many states and municipalities have laws restricting bumper heights and vehicle lifts. Consult state and local laws to determine if the changes you intend to make to the vehicle comply with the law.

WARNING

The installation of larger tires may reduce the effectiveness of the braking system.

WARNING

Always wear eye protection when operating power tools.

WARNING

Before you install this kit, block the vehicle tires to prevent the vehicle from rolling.

WARNING

DO NOT combine suspension, body, or other lift devices. Use of vehicle with combined lifts may result in unsafe and/or unexpected handling characteristics.

NOTE

Lift height may vary depending on vehicle configuration, engine size, additional accessories, the factory suspension package, and vehicle's condition.

NOTE

Trail Master recommends using thread locking compound on the threads of all kit nuts and bolts unless specified otherwise in these instructions.

INSTALLATION WORKSHEET—SAVE WITH VEHICLE RECORDS

Product Information

Part Number:	Date Purchased:	Purchased From:
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Vehicle Information

Make:	Model:	Year:
VIN:	Mileage:	Engine:

Owner Information

Name:		
Address:		
City:	State:	Zip:

Vehicle Measurements

Axle Center to Fender Lip (on level ground, at ride height):	OE	Kit Installed
Right Front		
Right Rear		
Left Front		
Left Rear		

Bump Stop to Contact Point (on level ground, at ride height):	OE	Kit Installed
Right Front		
Right Rear		
Left Front		
Left Rear		

Tire & Wheel Information

Tire Size:	Tire Brand:	
Actual Tire Diameter (measured):	Wheel Size:	
Wheel Style:	Wheel Brand:	Wheel Backspacing:

Other Equipment and/or Accessories

Installer Information

Shop Name:	Installer:	
Address:		
City:	State:	Zip:
Phone Number:	Fax Number:	

Attach: Copy of Purchase Receipt
 Copy of Vehicle Wheel Alignment Results

Before Starting Installation

NOTE

Kit parts are prefaced by the word *kit* and appear in **bold print**.

1. Carefully read all warnings and instructions completely before beginning.
2. Verify all parts have been received in this kit by checking the parts list at the end of this document.
3. **Only install this kit on the vehicle for which it is specified.** If anytime during the installation you encounter something different from what is outlined in the instructions, call technical support at **(877) 695-7812**.
4. Park vehicle on a clean, dry, flat, level surface and block tires so vehicle cannot roll in either direction.
5. Measure ride height with the vehicle supporting its own weight on level ground. To settle the suspension, the vehicle should be driven forward at least 10 feet immediately prior to taking these measurements. Ride height is the measurement from the center of the axle straight up (vertical) to the fender lip. Record this measurement for all four wheels.

NOTE

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

Engine Compartment

1. Disconnect both battery cables. Disconnect negative cable first, then positive cable.

Wheel & Tire Requirements

The factory wheel and tire combination will fit once this kit is installed.

Torque Specifications:

See factory service manual for torque values when reusing OE fasteners.

See factory service manual for torque values when re-using OE fasteners.

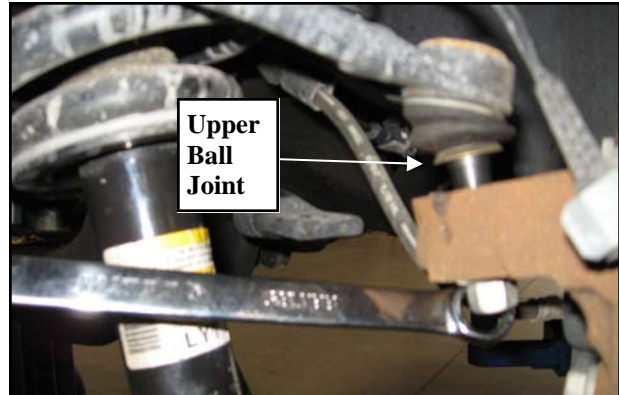
Bolt Size	Grade 5 (ft.-lbs.)	Grade 8 (ft.-lbs.)
1/4"-20	10	10
1/4"-28	10	12.5
5/16"-18	17	22.5
5/16"-24	20	25
3/8"-16	30	40
3/8"-24	35	45
7/16"-14	50	65
7/16"-20	55	70
1/2"-13	75	100
1/2"-20	80	115
9/16"-12	105	135
9/16"-18	115	150
5/8"-11	150	195
5/8"-18	160	210
3/4"-16	175	225

Install Front Suspension

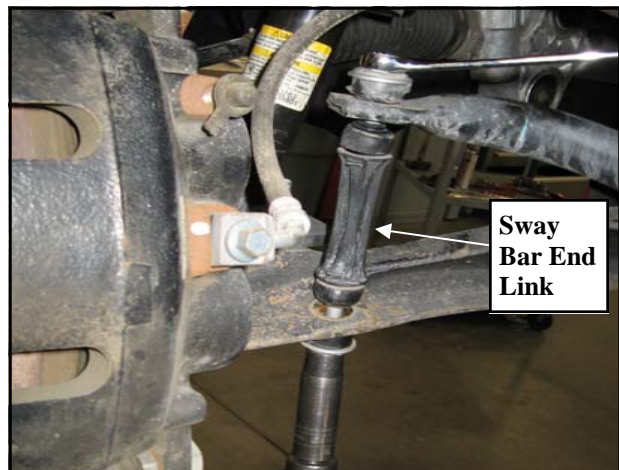
1. Position your vehicle on a smooth, flat, hard surface (i.e. concrete or asphalt). Block the rear tires and set the emergency brake.
2. Unbolt and remove the skid plate from the vehicle. Save for reinstallation.
3. Place the vehicle in neutral. Place your floor jack under the front crossmember and raise the vehicle. Place jack stands under the frame rails and lower the frame onto the stands. Remove the jack and place the vehicle back in gear, set the emergency brake, and place blocks both in front and behind the rear wheels.
4. Disconnect the wheel speed sensor cable from the retainers on the control arms and the spindles.
5. Unbolt the brake line bracket from the upper A-arm.



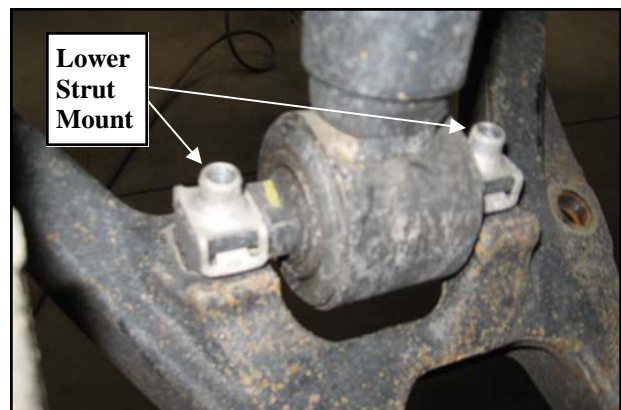
6. Using the proper tool carefully separate the upper ball joint from the knuckle. Loosen but ***DO NOT*** remove the retaining nut from the upper ball joint.



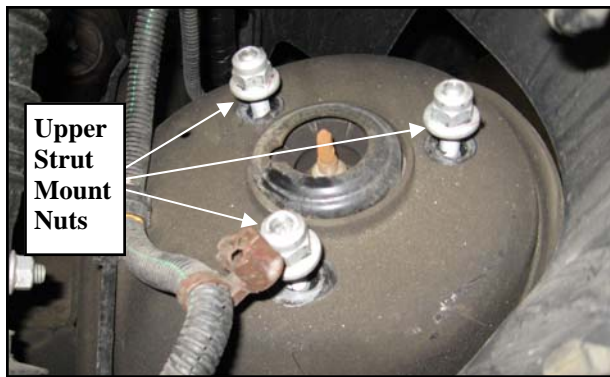
7. Unbolt and remove the sway bar end links from the vehicle.



8. Support the lower control arm with a jack and unbolt the lower strut mounting bolts from the lower control arm mount.



9. Unbolt the nuts on the upper strut mounting studs. Carefully remove the strut from the vehicle.

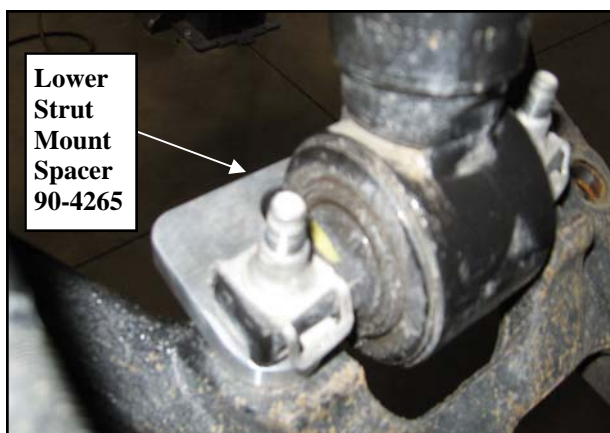


10. Install the upper strut spacer (90-4183m) onto the OE studs on the strut.

NOTE: Because this kit retains the use of the OE studs the vehicle can easily be returned to it's stock form.



12. Install the strut assembly into the strut tower and secure using the supplied **10mm** flange nuts. Leave the bolts hand tight only at this point.
13. Place a jack the lower control arm with and raise it up. Install the **3/8"** lower strut mount spacer (90-4265) over the factory lower shock mount holes.



14. Install the strut and nut clips over the spacer and secure the lower strut to the control arm using the previously removed **OE** hardware.
15. Torque the upper and lower strut mounting hardware to manufacturers specifications.
16. Reinstall the spindle to the upper ball joint. Torque the upper ball joint nut to manufacturers specifications.
- NOTE:** It may be necessary to pry the upper control arm down, using a pry bar inserted into the coil spring, to force the ball joint stem into the spindle.
17. Reinstall the sway bar end link to the lower control arm and secure top the sway bar. Torque according to manufacturers specifications.
18. Reinstall the brake line bracket to the control arm using the previously removed hardware.
19. Reinstall the wheel speed sensor cables into the factory harnesses.
20. Repeat the steps 5 Through 19 On the remaining side of the vehicle.
21. Install the front tires/wheels and lower the vehicle onto the ground.
22. Reinstall the **OE** skid plate to the vehicle using the previously removed **OE** hardware.
23. Torque all bolts to factory specifications. Re-torque all bolts after 500 miles.

IMPORTANT! BE SURE TO BRING THE VEHICLE IMMEDIATELY TO A REPUTABLE ALIGNMENT SHOP TO BE ALIGNED!

Fender Modification for clearance of 285/70/R17 Tires mounted on a 17x8 wheel with 4.5" of backspacing.

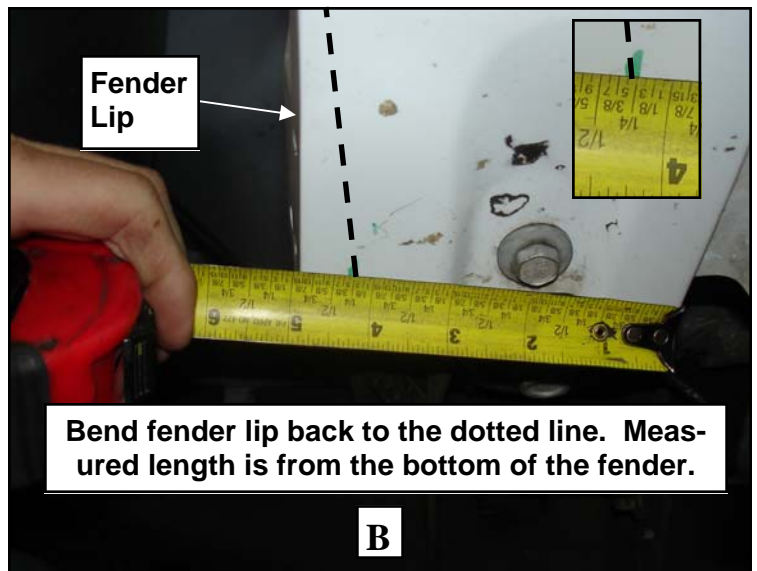
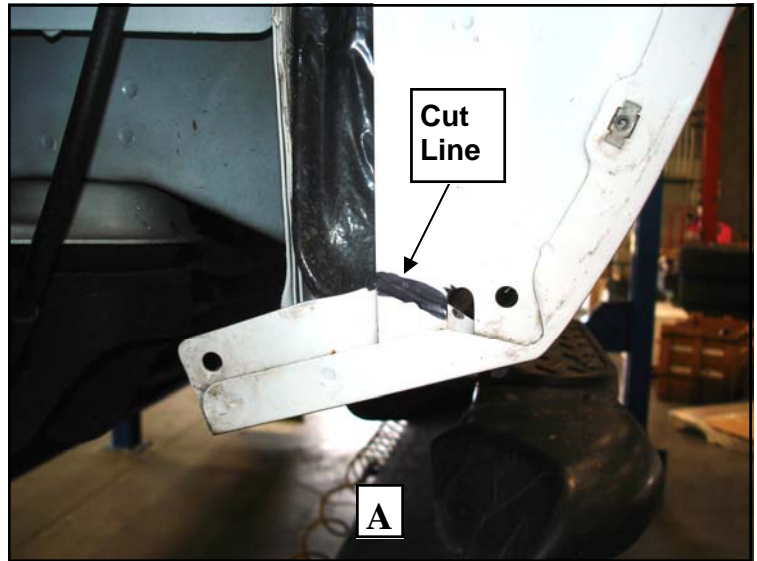
1. Position truck on a flat surface and lift vehicle by the frame so that the front wheels are off the ground using a floor jack and jack stands or a (2) two post lift if available.
2. Remove (2) OE screws and (2) plastic push pin retainers located on the bottom of the front fender rear plastic liner.
3. Using a cut of wheel or another suitable tool, trim the fenders along the cut line in picture A.
4. Using a plastic or rubber mallet, **CAREFULLY** bend the inside of the fender lip back to provide tire clearance. Use the measurement and dotted line in picture B as a guide line for bending. See Picture B.

NOTE: The dotted line is only to be used as a guide line and the fenders may require additional modification.

IMPORTANT!: Make sure the bottom fender bolt is tight prior to flattening the inside fender to avoid movement.

IMPORTANT!: Pay close attention to the spacing between the fenders and the front doors prior to flattening the inner fender. Make sure you haven't reduced this spacing, while flattening out the inner fender, or the doors will make contact with the fenders when opened.

5. Mask any painted areas of the fender. Prep the trimmed or modified areas for paint and using a paint primer, prime the prepared area and let dry. Undercoat the primed area of the fender. Let undercoating dry properly before removing the masking and reinstalling the plastic inner fender liner back onto the lower portion of the fender using the previously removed OE hardware.



Disclaimer:

It is the vehicle owner's sole responsibility to ensure that all precautions are taken when performing any body or mechanical work. These instructions are only recommendations and not requirements. This type of work should only be performed by a licensed professional. Trailmaster assumes no responsibility and/or liability for any modification to your vehicles inside fender well/wells.

Install Rear Suspension

1. Block the front tires and raise the rear of the vehicle. Support the frame with jack stands forward of the rear springs.
2. Remove the rear wheels.
3. Unbolt the rear shock mounting bolts on both sides of the vehicle. It may be necessary that you slightly raise the axle to unload the shocks for removal.
4. Install the new Trailmaster rear shocks (**TM75830W**) to the upper and lower mounting points. Torque shock hardware to manufacturers specifications.
5. Check all hardware at this time to ensure that everything is tight. Check for adequate clearance on all repositioned brake lines and emergency brake cables. Make sure you check with the suspension fully extended, and compressed.
6. Reinstall the wheels and lower the vehicle to the ground. Torque the lug nuts according to the wheel manufacturers recommendations.
7. Torque all bolts to factory specifications. Re-torque all bolts after 500 miles.

Engine Compartment

1. Connect both battery cables. Connect positive cable first, then negative cable.

Miscellaneous

1. Apply kit label (warning) onto dashboard in plain sight of all vehicle occupants.

2. Adjust headlights.

3. Check all fasteners to ensure they are tight.

4. Ensure all wires, hoses, cables, etc. are properly connected and there is ample slack.

WARNING

If the engine cooling system is hot, the coolant will be HOT and UNDER PRESSURE. To prevent serious personal injury, wait until the cooling system is completely cool before removing the cap from the radiator.

5. Start engine and top off cooling system. Purge air from cooling system according to manufacturer's instructions. Install radiator cap.

6. Align vehicle

Dynamic Vehicle Check

1. Check steering and suspension in all positions to ensure that there is no bind and adequate clearance between all moving, fixed, and heated members. Check operation of clutch, brake system, and parking brake. Check operation of transmission and transfer case. Ensure there is full engagement in all gears and 4WD ranges. Check battery connections and electrical component operations. Test-drive vehicle.

WARNING

Retorque all fasteners after 500 miles and after off road use. All suspension lift components should be visually inspected and fasteners retorqued during routine vehicle servicing.

Troubleshooting

1. Once the vehicle has been lifted, some vehicle vibration may become more apparent to the driver. The reason for the vibration may be due to the angle at which the driveline operates. A suspension lift increases the operating angle of the driveline and normal vehicle vibration is amplified. Some vibration characteristics are as follows:

a. Acceleration vibration: vibration felt during acceleration of the vehicle and caused by the rear axle pinion angle being too high.

b. Deceleration vibration: vibration felt during deceleration of the vehicle and caused by the rear axle pinion angle being too low.

c. General vibration: vibration caused by rear pinion angle in relation to the transfer case output shaft.

WARNING

Re-torque all fasteners after 500 miles and after off road use. All suspension lift components should be visually inspected and fasteners re-torqued during routine vehicle servicing.

Caution:

Larger wheel and tire combinations increase stress and wear on steering and suspension components, which leads to increased maintenance and higher risk for component failure. Larger wheel and tire combinations also alter speedometer calibration, braking effectiveness, center of gravity, and handling characteristics. Consult an experienced local off road shop to find what wheel and tire combinations work best with your vehicle.

Parts List:

KIT TM101

BOX TM101		1
90-4183m	UPPER STRUT SPACER	2
90-6638m	HARDWARE PACK	1
	10MM - 1.5 10.9 METRIC FLANGE NUTS	6
90-4265	LOWER STRUT MOUNT SPACER	2

KIT TM101N

BOX TM101		1
90-4183m	UPPER STRUT SPACER	2
90-6638m	HARDWARE PACK	1
	10MM - 1.5 10.9 METRIC FLANGE NUTS	6
90-4265	LOWER STRUT MOUNT SPACER	2
TM75830W	REAR SHOCKS	2

Notice to Owner Operator, Dealer and Installer:

Vehicles that have been enhanced for off-road performance often have unique handling characteristics due to the higher center of gravity and larger tires. This vehicle may handle, react and stop differently than many passenger cars or unmodified vehicles, both on and off-road. You must drive your vehicle safely! Extreme care should always be taken to prevent vehicle rollover or loss of control, which can result in serious injury or even death. Always avoid sudden sharp turns or abrupt maneuvers and allow more time and distance for braking! **Trail Master Suspension** reminds you to fasten your seat belts at all times and reduce speed! We will gladly answer any questions concerning the design, function, maintenance and correct use of our products.

Please make sure your Dealer/Installer explains and delivers all warning notices, warranty forms and instruction sheets included with Trail Master Suspension product.

Application listings in this catalog have been carefully fit checked for each model and year denoted. However, **Trail Master Suspension** reserves the right to update as necessary, without notice, and will not be held responsible for misprints, changes or variations made by vehicle manufacturers. Please call when in question regarding new model year, vehicles not listed by specific body or chassis styles or vehicles not originally distributed in the USA.

Please note that certain mechanical aspects of any suspension lift product may accelerate ordinary wear of original equipment components. Further, installation of certain **Trail Master Suspension** products may void the vehicle's factory warranty as it pertains to certain covered parts; it is the consumer's responsibility to check with their local dealer for warranty coverage before installation of the lift.

Warranty and Return policy:

Trail Master Suspension warranties its full line of products to be free from defects in workmanship and materials. **Trail Master Suspension's** obligation under this warranty is limited to repair or replacement, at **Trail Master Suspension's** option, of the defective product. Any and all costs of removal, installation, freight or incidental or consequential damages are expressly excluded from this warranty. **Trail Master Suspension** is not responsible for damages and / or warranty of other vehicle parts related or non-related to the installation of **Trail Master Suspension** product. A consumer who makes the decision to modify his vehicle with aftermarket components of any kind will assume all risk and responsibility for potential damages incurred as a result of their chosen modifications. Warranty coverage does not include consumer opinions regarding ride comfort, fitment and design. Warranty claims can be made directly with **Trail Master Suspension** or at any factory authorized **Trail Master Suspension** dealer.

IMPORTANT! To validate the warranty on this purchase please be sure to mail in the warranty card.

Claims not covered under warranty-

- Parts subject to normal wear; this includes bushings, bump stops, ball joints, tie rod ends and heim joints
- Discontinued products at **Trail Master Suspension's** discretion
- Bent or dented product
- Finish after 90 days
- Leaf or coil springs used without proper bump stops
- Products with evident damage caused by abrasion or contact with other items
- Damage caused as a result of not following recommendations or requirements called out in the installation manuals
- Products used in applications other than listed in **Trail Master Suspension's** catalog
- Components or accessories used in conjunction with other manufacturer's systems
- Warranty claims without "Proof of Purchase"
- **Trail Master Suspension** accepts no responsibility for any altered product, improper installation, lack of or improper maintenance, or improper use of our products.

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