



## 3036– 2007-PRESENT, MERCEDES SPRINTER 3500, OPTI-RATE REAR LEAF SPRINGS

Version 1.1

### General Notes

- For the most up to date and current instructions, please visit our website at [www.vancompass.com](http://www.vancompass.com)
- Please read all instructions thoroughly before starting installing Van Compass products.
- These leaf springs can be installed with basic hand tools.
- These springs can be completely removed, allowing the vehicle to be returned back to the stock spring configuration if desired.
- The following instructions document installation on a 2022 VS30 4x4 3500 170" WB van. Installation on other 3500 chassis configurations will be similar.
- These springs are designed to restore the factory nose down "rake" no matter the weight configuration of the vehicle.
- Note; these springs can be installed on a RWD Sprinter. These springs should not be used on a RWD Sprinter weighing less than 7800lbs.
  - These springs will net an approximate .750" of rear lift on a RWD van equipped with the factory block.
  - These springs will net approximately 2.75" of rear lift on a RWD van not equipped with a factory block and **MUST** be paired with our complete Striker lift kit for proper suspension geometry.
- These springs ship in their fully assembled "Max Spring Rate" configuration. Refer to the spring configuration chart at the end of these instructions to set-up the springs properly per the weight of the vehicle.
  - Note, the chart is to be used as a guide, ultimately it is up to the installer & end user to tailor the springs to their liking for both ride quality and ride height.

### Parts List

#### **3036 – 2007-PRESENT, MERCEDES SPRINTER 3500, OPTI-RATE REAR LEAF SPRINGS**

- |                         |   |
|-------------------------|---|
| • (2) 303601            | OPTI-RATE REAR LEAF SPRINGS                               |
| • (4) UB-750-2100       | 75MM DIAMETER X 210MM LONG, M14X1.50" THD, U-BOLT         |
| • (8) NLM14-1.50        | M14-1.50 LUG NUT  |
| • (4) 306502-01         | OPTI-RATE SPRING, OVERLOAD BASE PUCK (INSTALLED)          |
| • (8) 306502-02         | OPTI-RATE SPRING, OVERLOAD SLIDER PAD (INSTALLED)         |
| • (1) 3071-01           | MERCEDES SPRINTER 3500, BUMP STOP AXLE BRACKET, DR SIDE   |
| • (1) 3071-02           | MERCEDES SPRINTER 3500, BUMP STOP AXLE BRACKET, PASS SIDE |
| • (4) SM10-1.50-80-12.9 | SOCKET CAP SCREW, M10-1.50 X 80MM LONG                    |
| • (4) NSM10-1.50        | M10-1.50 STOVER NUT                                       |
| • (8) WF-M10            | M10 FLAT WASHER   |

## Tools Needed

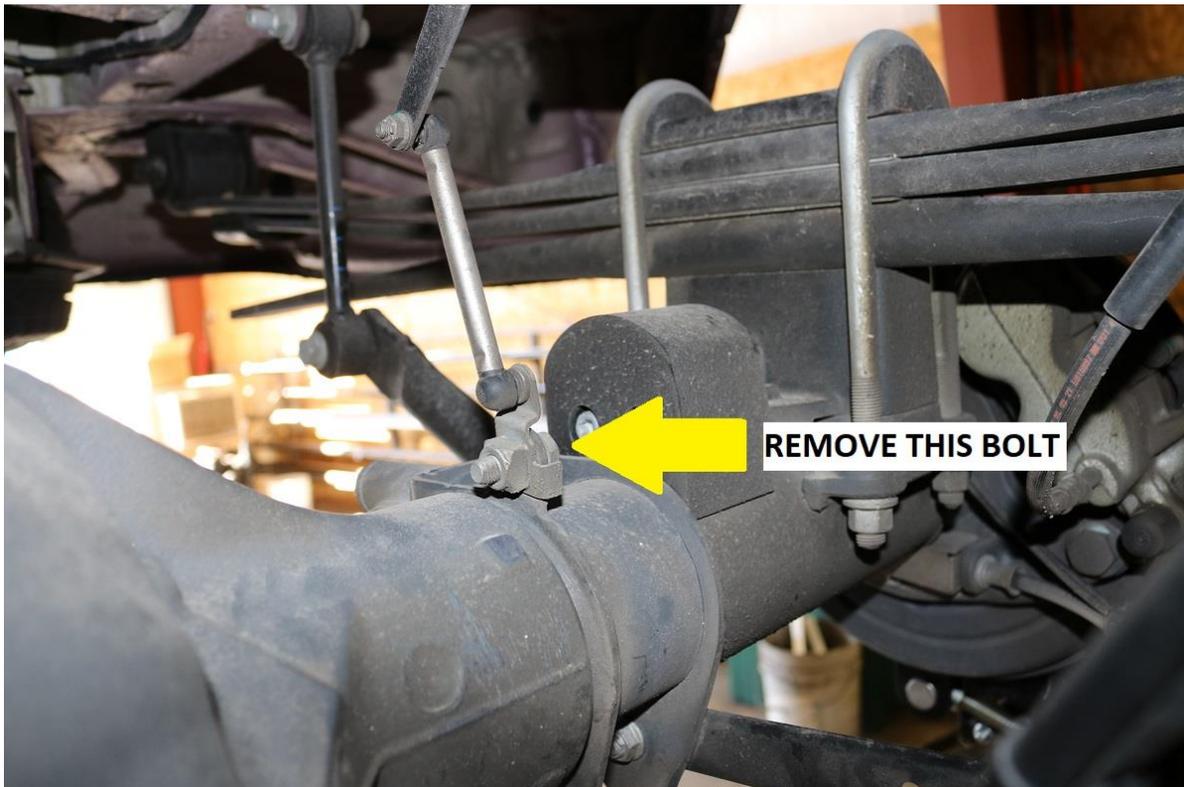
- Quality jacks and 2 jack stands.
  - Optional – Automobile lift and screw jack
- Simple hand tools:
  - Torque Wrench
  - Dykes or similar tool for cutting zip ties.
  - Basic wrench and socket set:
    - Metric sizes: 16mm, 17-19mm, 21mm
    - SAE sizes: 9/16"
    - Torx bit – T-55
    - Allen – 8mm, 7/32"

## Approximate Installation Time

- Professional shop with automotive lift: 1-2 hours
- Driveway install with jack and jack stands: 2-4 hours

## Installation

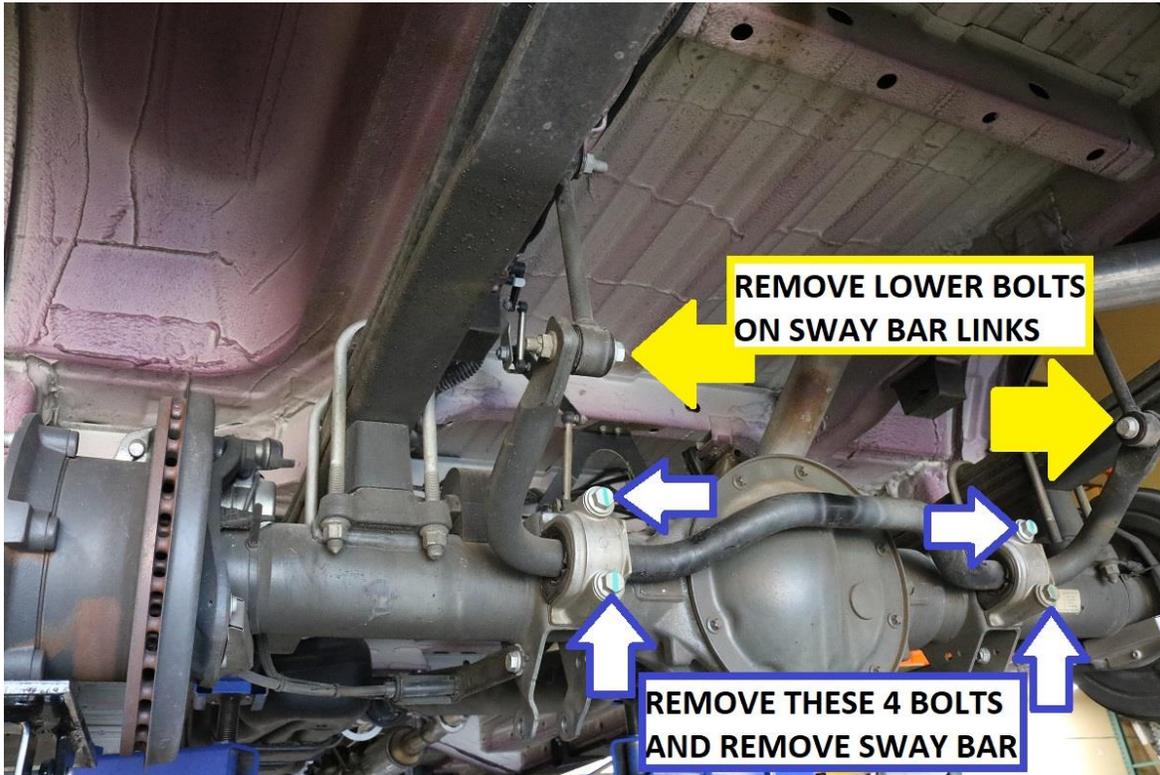
- 1) Begin by safely supporting the vehicle so that the rear suspension can hang free. This can be done with an automobile lift or a quality jack and a pair of jack stands.
- 2) With the rear suspension hanging free, remove the rear wheels / tires.
- 3) Unless otherwise stated, work on one side of the vehicle at a time.
- 4) If equipped, disconnect the headlight adjuster bracket at the axle by removing the 16mm bolt securing the link to the axle.



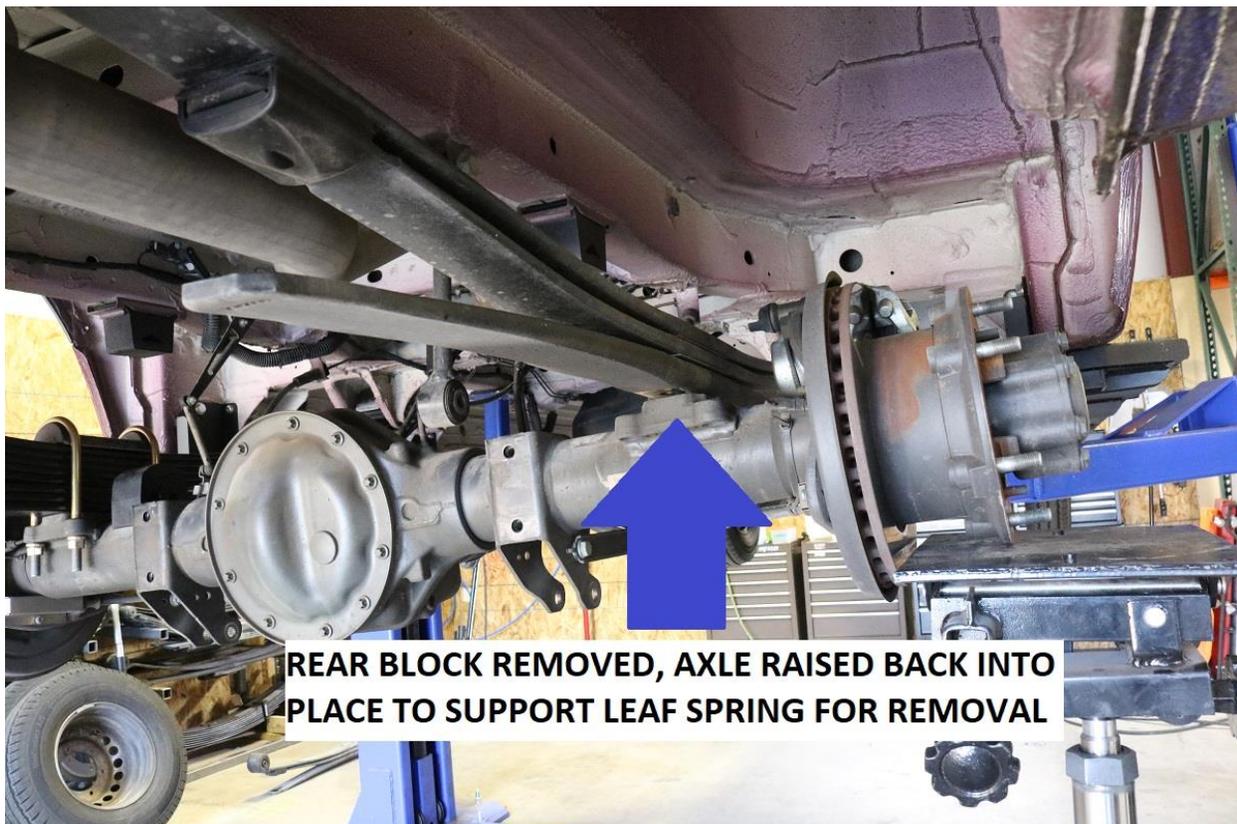
- 5) Support the axle and disconnect the lower shock bolt. Use a 21mm socket and wrench for removal. Once the shock is removed, allow the axle to hang freely again. Note that the springs will limit the downward travel with the shocks removed.
  - a. Retain the lower shock bolt / nut as it will be re-used.



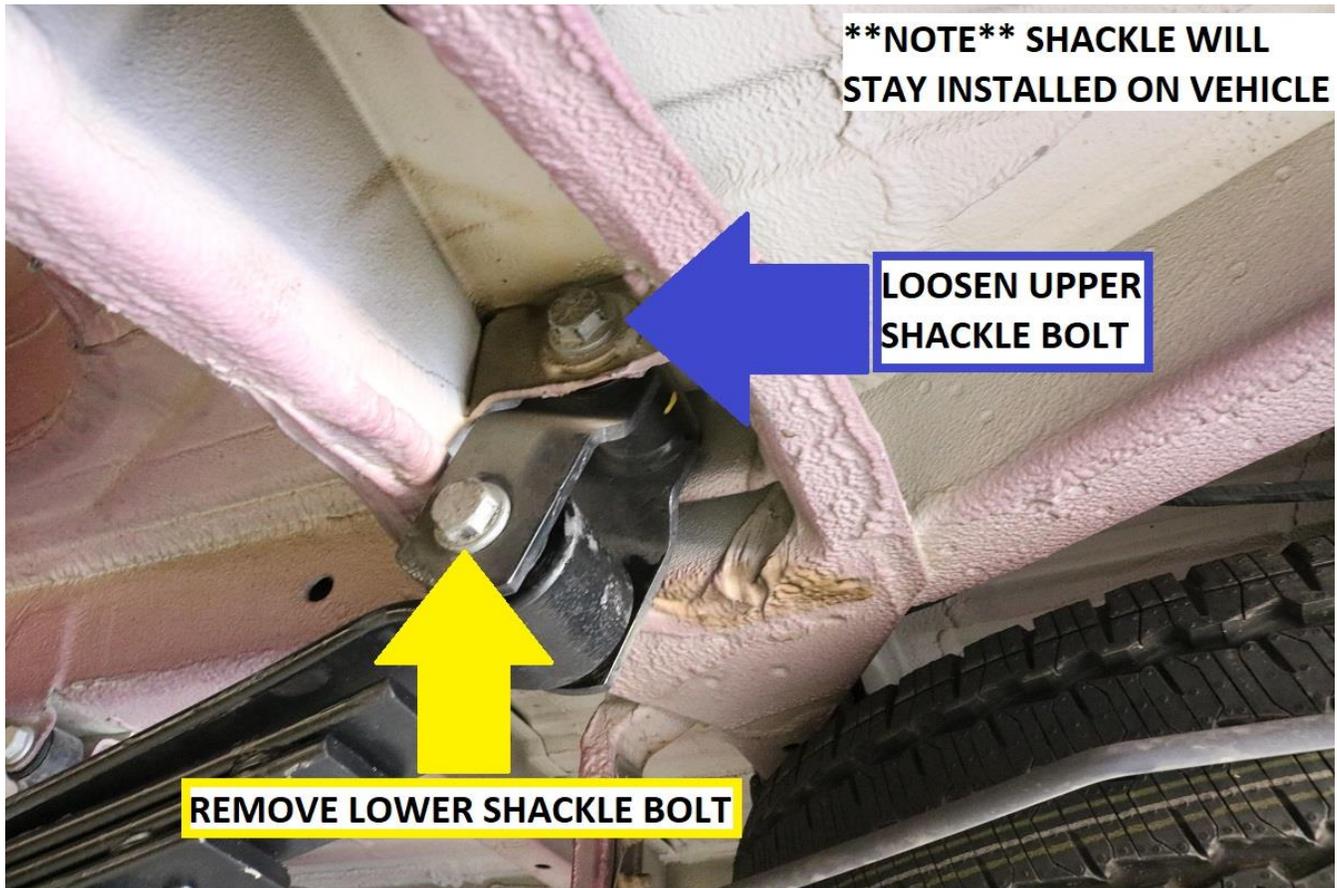
- 6) With the lower bolt removed, proceed to removing the upper bolt. Again, use a 21mm socket / wrench and retain the hardware as it will be reused.
  - a. Remove the shock from the vehicle.
- 7) Remove the lower sway bar link bolt on both sides of the vehicle. Use an 18mm socket / wrench for removal.
  - a. With the lower sway bar link bolts removed, remove the 4 bolts securing the sway bar to the rear axle and remove the sway bar itself from the vehicle. Again, use an 18mm socket / wrench for removal. See image below for reference.



- 8) Support the rear axle again with a floor jack or trans jack and remove the 4 u-bolt nuts securing the leaf spring to the axle housing. Use a 19mm socket for U-bolt nut removal.
- 9) Lower the rear axle on the driver's side until the factory rear block can be removed.
  - a. Remove the block (if equipped) and raise the axle back up to the point of near contact of the spring again. Note, the OEM lift block will not be re-used unless these springs are being installed along with the front and rear Striker 2.0" lift kit components.



- 10) Remove the forward leaf spring bolt using a 21mm socket / wrench.
- 11) Loosen the upper shackle bolt but do not remove it.
- 12) Remove the lower shackle bolt and lower the axle while carefully balancing / supporting the leaf spring and remove the leaf spring from the vehicle.

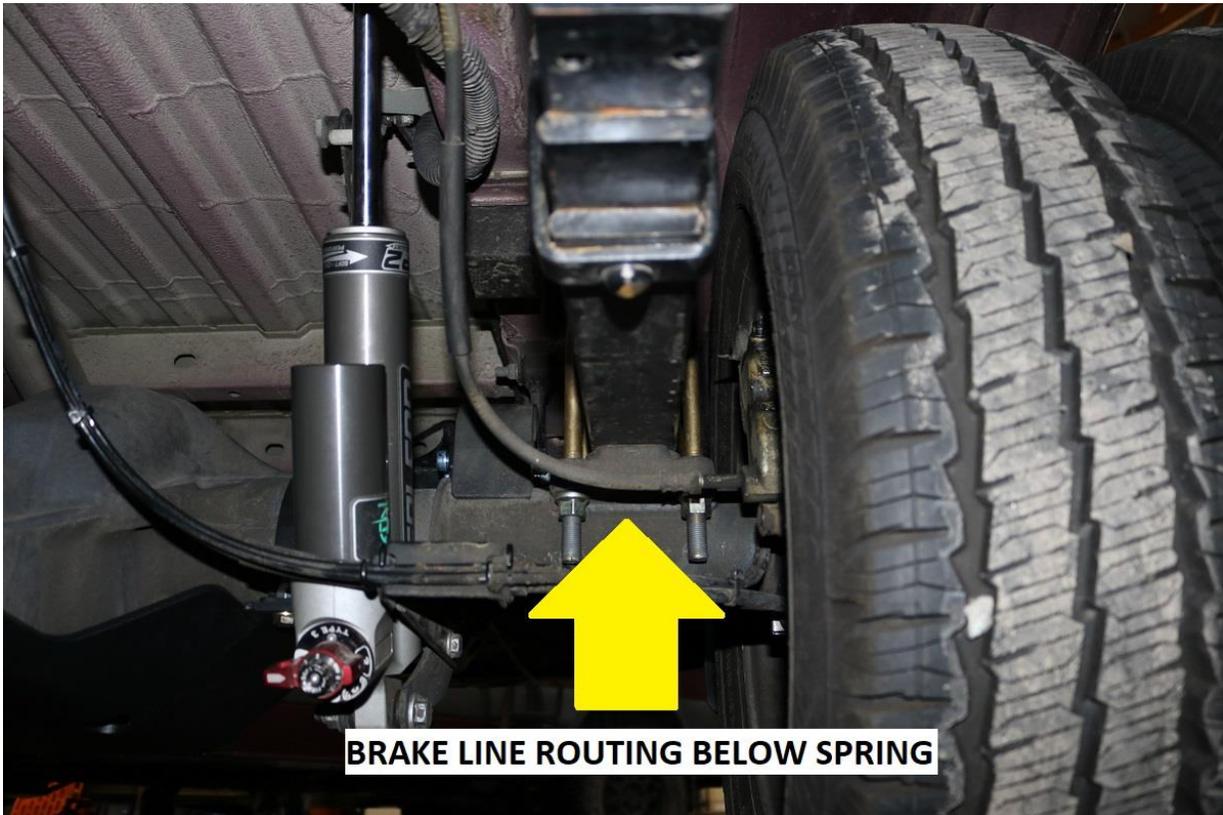


- 13) Take note of the double military wrap on one side of the new Opti-rate leaf spring, this is the front of the spring and is to be installed towards the front of the vehicle.

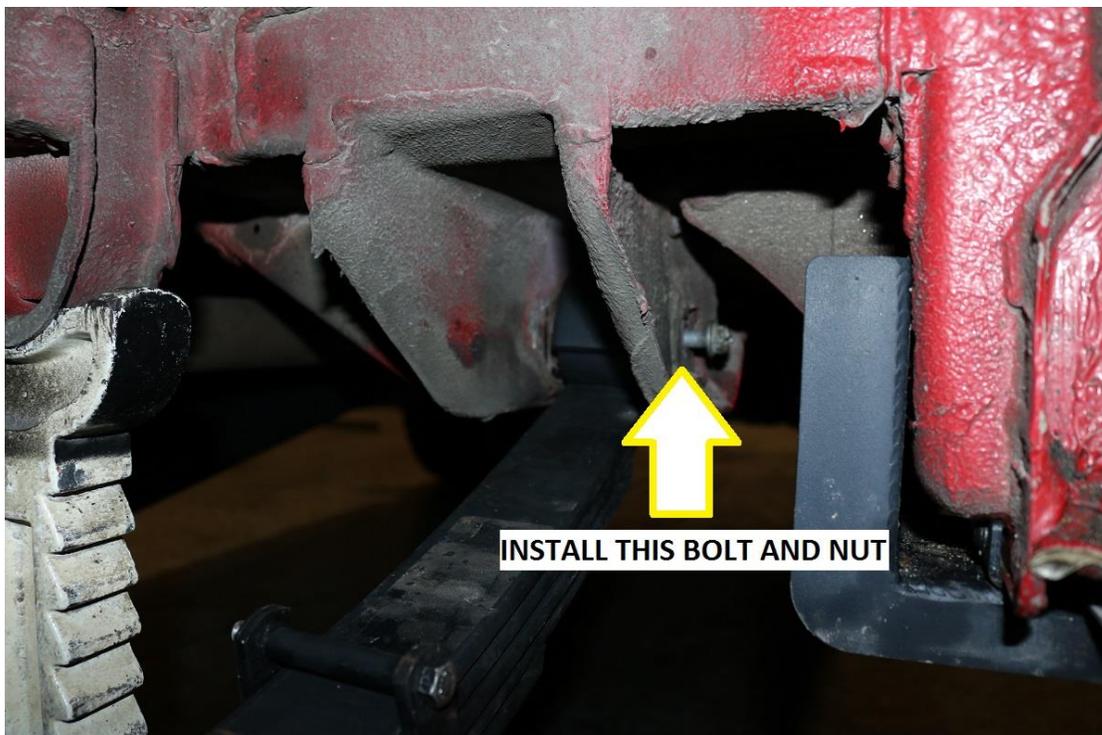


14) Install the leaf springs into the vehicle. We have found it easiest to install the springs upside down and then rotating them up into position once under the vehicle.

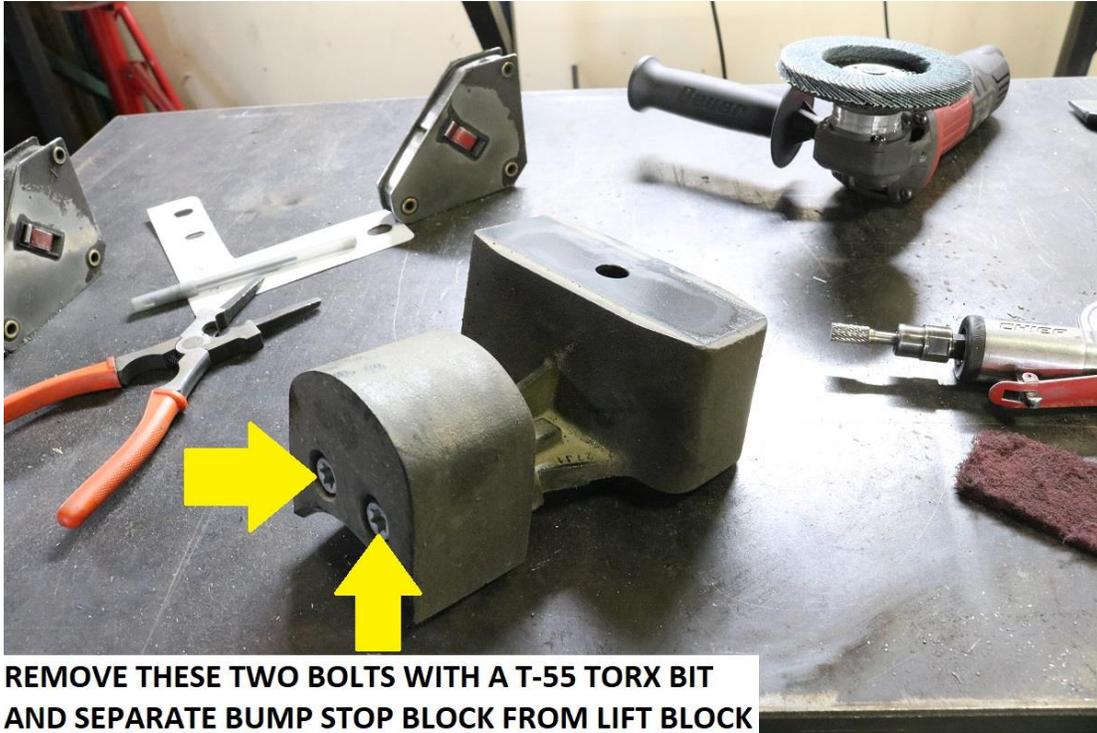
- a. **NOTE:** Be sure to route the brake line under the leaf spring same as the factory configuration.
- b. **NOTE:** RWD vans without a factory lift block will require 4008 brake line drop brackets to be installed. Refer to those instructions now if they haven't been installed.



15) Once the springs are rotated into position. Install the forward spring bolt in the spring hanger, install the nut but do not fully tighten at this time.

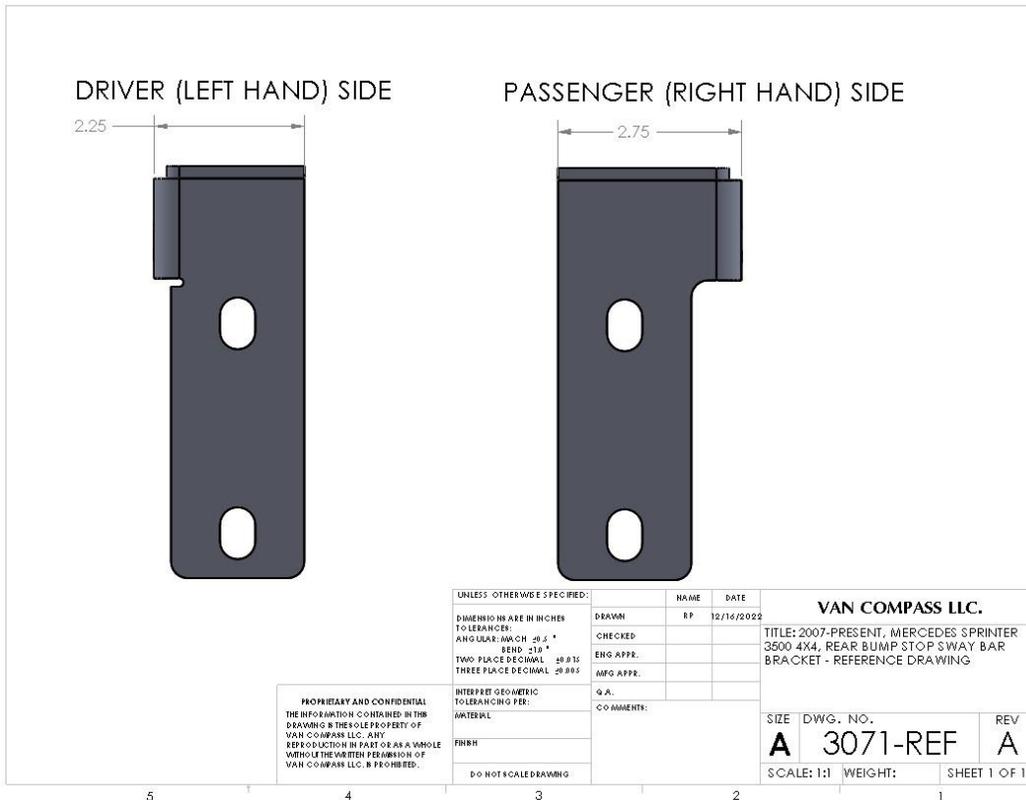


- 16) Jack the axle up or down accordingly to be able to install the lower shackle bolt. Once aligned, install the bolt and nut but do not fully tighten at this time.
- 17) Make sure the leaf spring center pin falls into the spring perch pocket on the axle and jack up the axle to the point where the leaf spring takes on some load.
- 18) At this point, install the new U-bolts and nuts included with the kit. Snug up all the nuts but do not fully tighten at this time. Use a 19mm socket / wrench to tighten.
- 19) Repeat this procedure for the passenger side.
- 20) Refer back to the factory lift block removed previously and locate the two T-55 torx bolts securing the OEM bump stop block to the lift block. Remove the bump stop block from the factory lift block.

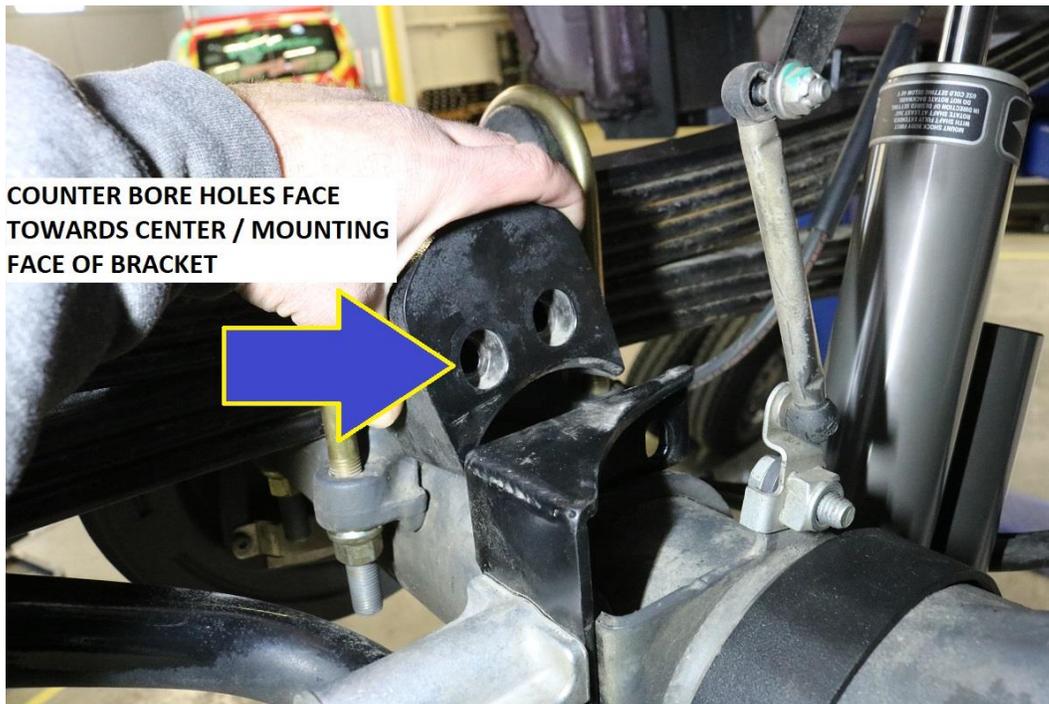


**REMOVE THESE TWO BOLTS WITH A T-55 TORX BIT  
AND SEPARATE BUMP STOP BLOCK FROM LIFT BLOCK**

- 21) Identify LH & RH sides for the 3071 bump stop brackets included in the kit. Use the image below for identification.



- 22) Fit the 3071 bump stop brackets to their respective sides of the vehicle and re-install the rear sway bar to the axle using the OEM bolts attaching it to the axle in step 7. Start the bolts but do not fully tighten at this time.
- 23) Fit the OEM bump stop block to the top of the axle. Make sure the counterbore holes on the bump stop block face inwards towards the mounting face of the 3071 brackets as shown below.



- 24) Re-install the lower bolt for the sway bar link. Snug bolt but do not fully tighten.
- 25) Install the included M10-1.50 x 80mm long socket cap screws as shown below. Use a washer under both the bolt head and stover nut.

- a. Ensure the block is sitting flat on the axle tube and snug all bump stop bracket / sway bar mounting hardware.
- b. Use an 18mm wrench to tighten the sway bar clamp / mounting hardware. Torque to 81 ft-lbs (110 N.m)
- c. Use an 8mm allen socket and 17mm standard socket to tighten the bump stop block hardware. Torque to 43 ft-lbs (58 N.m)



26) Re-install the lower shock bolt.

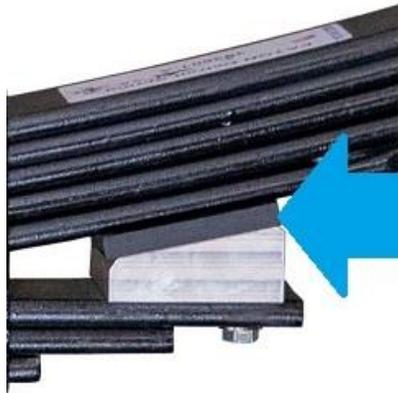
- a. For 3500 DRW vans: torque to 125 ft-lbs. (169 N.m)

27) If an approximate weight is known for the vehicle, now is the time to configure the overload block engagement. The following chart is to be used as a guide but ultimately it is up to the installer / end user to configure the springs to their preference for both ride height and ride quality.

MERCEDES SPRINTER 3500 OPTI-RATE SPRING CONFIGURATION	
WEIGHT OF VEHICLE	OPTI-RATE CONFIGURATION
8,500 LBS & UNDER	NO OVERLOAD ENGAGEMENT BLOCK INSTALLED
8,501 LBS - 10,000 LBS	OVERLOAD BLOCK + 1 SLIDER PAD INSTALLED
10,001 LBS & UP	OVERLOAD BLOCK + 2 SLIDER PADS INSTALLED



**NO OVERLOAD BLOCK  
8,500 LBS & UNDER**



**OVERLOAD BLOCK  
WITH SINGLE PAD:  
8,501-10,000LBS**



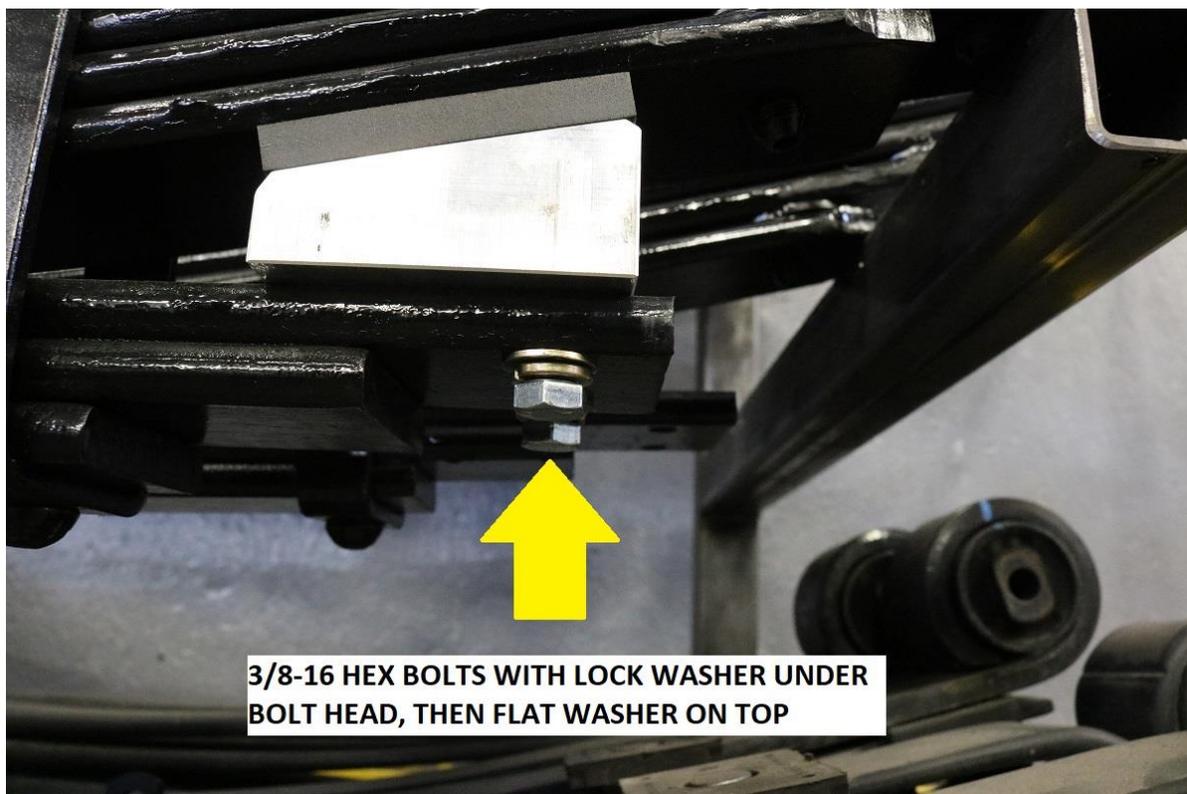
**OVERLOAD BLOCK  
WITH 2X SLIDER PAD:  
10,001 LBS & UP**

28) Note; **ALWAYS** install the slider pad with the countersunk holes on top as shown below.

- a. Torque countersunk bolts to 15 ft-lbs (20 N.m) with a 7/32" allen wrench.



- b. Torque the aluminum overload block to the leaf spring with a 9/16" socket to 20 ft-lbs (27 N.m) Be sure to use a washer and lock washer under the bolt head as shown.



- 29) Re-install wheels / tires and lower van to ground. OEM torque spec for wheel studs on factory steel wheels are as follows:
  - b. 3500 DRW: 140-150 ft-lbs (190-200 N.m)
- 30) Torque the lower shackle bolt and front leaf spring bolt as follows:
  - c. For 3500 DRW vans: torque to 125 ft-lbs. (169 N.m)
- 31) Torque the U-bolt nuts to 125 ft-lbs (169 N.m).
- 32) Torque lower sway bar link bolt to 81 ft-lbs (110 N.m)
- 33) Once on the ground and sitting at ride height, adjust overload engagement pucks as needed for optimum ride height and ride quality.

34) Double check all torque specs after 100 miles of driving.

Installation is Complete

RELEASE OF LIABILITY

I, the customer, do hereby release and forever discharge Van Compass LLC, their agents, employees, successors and assigns, and their respective heirs, personal representatives, affiliates, successors and assigns, and any and all persons, firms or corporations liable or who might be claimed to be liable, whether or not herein named, from any and all claims, demands, damages, actions, causes of action or suits of any kind or nature whatsoever, whether known or unknown, fixed or contingent, which I now have or may hereafter have or claim to have, as a result of or in any way relating to the following: Parts sold & installed by Van Compass LLC or parts sold & installed by end-user; any parts sold online, any parts sold online or installed by a re-seller, any parts installed by an installation shop.

It is understood and agreed that this payment is made and received in full and complete settlement and satisfaction of the aforesaid actions, causes of action, claims and demands; that this Release contains the entire agreement between the parties; and that the terms of this Agreement are contractual and not merely a recital. Furthermore, this Release shall be binding upon the undersigned, and his respective heirs, executors, administrators, personal representatives, successors and assigns. This Release shall be subject to and governed by the laws of the State of Idaho.

**PRODUCT SAFETY WARNING:**

Van Compass LLC strongly recommends the installation of products be done by a certified mechanic. If this does not occur, be certain the person(s) installing the product read, understand and follow all instructions and warnings pertaining to the application before installation. Do not add, alter, or fabricate any factory or aftermarket parts to increase vehicle height over the intended height of the Van Compass LLC product purchased. Mixing component brands is not recommended.

Installation of suspension lift kits or any other lifting kits or devices will raise the center of gravity. For this reason, Van Compass LLC urges that extreme caution be used when encountering driving conditions which may cause vehicle imbalance. Furthermore, the driver's field of vision and judgment will not be as good due to the height of the vehicle. Due to the installation of larger tires, the speedometer will read slower than the actual speed being traveled and more distance will be required to stop the vehicle. It is the owner's responsibility to caution and warn any potential driver of the vehicle about these driving and handling conditions. Van Compass LLC will not be held liable or responsible for damages or personal injuries resulting from the use of lifting devices and or related products. The tires and rims should be changed to sufficiently increase the vehicle's total overall width and stability to help accommodate lifting devices.

Van Compass LLC aftermarket suspension products and accessories modify a vehicle for uses which exceed conditions anticipated by the vehicle manufacturer. The uses include the high performance demands required during off-road. These conditions vary in the degree of extremity and cannot be controlled by the vehicle or product manufacturer. If the components within the suspension system or accessories become worn due to frequent and/or extreme use, the safety and reliability of the vehicle is at risk. The maintenance of aftermarket equipment to ensure the vehicle occupants safety is entirely your responsibility. Do not purchase Van Compass LLC products unless you are willing to accept this responsibility. Do not install any Van Compass LLC

suspension products or accessories unless you feel competent at installing the product without causing present or future injury to yourself or other vehicle occupants; seek an authorized installation center.

Most states have some type of law limiting vehicle height. The amount of lift allowed, and how the lift can be achieved, varies greatly. Several states offer exemptions for farm and commercial registered vehicles. It is the vehicle owner's responsibility to check state and local laws to ensure that their vehicle will be in compliance. Van Compass LLC reserves the right to make changes in design, materials and specifications as deemed necessary without prior notice and without assuming obligation to modify any product previously manufactured. Obligation or liabilities will not be assumed with respect to similar products previously advertised.

This Release of Liability and Product Safety Warning has been read and fully understood by the undersigned and has been explained to me.