ARROW
SUSPENSION

OWL INSTALL GUIDE

2015-UP MERCEDES SPRINTER 3500 12-PACK LEAF SPRING KIT

UPDATED FALL 2025

NOTES

For the most up-to-date and current installation instructions, please visit our website at **www.owlvans.com**

- Please read all instructions carefully before installing Owl products on your vehicle.
- This is a bolt-on spring kit designed for easy installation using basic hand tools.
- The Owl 12-Pack Springs are shipped in their fully assembled “Max Spring Rate” configuration. Refer to the Spring Configuration Chart at the end of these instructions to properly set up the springs according to the vehicle’s weight.
- Note: The chart serves as a general guide—final adjustment should be made by the installer and end user to achieve the desired balance of ride quality and ride height.
- This spring kit is fully removable, allowing the vehicle to be returned to its original stock configuration if desired.

PARTS LIST

2015-Up, Mercedes Sprinter 3500 12- Pack Leaf Spring Kit

PART	P/N	QTY.	✓
MERCEDES SPRINTER 3500 12 PACK LEAF SPRINGS		2	
U-BOLT 12 PACK		4	

2015-Up, Mercedes Sprinter 3500 Rear Bump Stop Bracket

PART	P/N	QTY.	✓
MERCEDES SPRINTER 3500 BUMP STOP BRACKET DRIVER	SP-RBSM-3500-D	1	
MERCEDES SPRINTER 3500 BUMP STOP BRACKET PASSENGER	SP-RBSM-3500-P	1	
SOCKET CAP SCREW, M10-1.50 X 80MM		4	
M10-1.50 STOVER NUT		4	
M10 FLAT WASHER		8	

TOOLS NEEDED

1. Quality jack and two jack stands
2. Basic hand tools:
    - Wrench and socket set, including:
    - Metric sizes: 16mm, 17-19mm, 21mm, 24mm
    - SAE sizes: 9/16”
    - Torx bit: T-55
    - Allen: 8mm, 7/32”
3. Torque wrench
4. Dykes or similar tool for cutting zip ties.

INSTALLATION

These instructions show installation on the driver's (left-hand) side. Passenger side installation is similar; any differences will be noted in the steps.

1.
Loosen lug bolts then safely support the vehicle on an appropriate lift or jack stands so the **rear suspension** can hang freely. Ensure the support method follows the vehicle manufacturer's specifications.

2.
With the suspension supported, remove the rear wheels and tires. Factory lug bolts typically have a **19mm** head.

3.
If the vehicle is equipped with a **headlight adjuster bracket**, disconnect it at the axle by removing the **16mm nut** securing the **L-bracket to the axle**. Retain the nut for reinstallation later in the process.

4.
Support the rear axle with a **jack or stand**, then remove the lower shock bolt using an **21mm socket and wrench**. This allows the axle to droop freely for leaf spring removal.

5.
With the lower shock bolt removed, proceed to remove the upper shock bolt using a **21mm socket**. Retain all OEM hardware, as it will be reused during installation. Once both bolts are removed, remove the shock assembly from the vehicle.

6.
Using an **18mm socket and wrench,** remove the lower sway bar end link bolt on both sides of the vehicle.
Retain all hardware, as it will be reinstalled during assembly.

7.

Support the **rear axle** using a **floor jack or transmission jack**, then remove the **four U-bolt nuts** securing the leaf spring to the axle housing. Use a **19mm socket** for removal. Ensure the axle remains securely supported throughout this step to prevent sudden movement.

8.
Slowly lower the rear axle on the driver's side until the factory rear lift block can be removed.
If equipped, remove the block and then raise the axle back up until it is just below contact with the leaf spring.
Note: The **OEM lift block** will **not be reused** unless these springs are being installed in conjunction with the **Owl 2.0" front and rear lift kit components**.

9.
Using a **24mm socket or wrench**, remove the **forward leaf spring bolt** from the spring hanger.
Note: On certain motorhome builds, components or accessories may be mounted in a way that obstructs removal of the forward spring eye bolt. In these cases, the **bolt head may need to be cut off** and removed toward the center of the vehicle to allow extraction.

10.
Loosen the **upper shackle bolt** to allow movement of the leaf spring during removal and installation, but **do not remove the bolt completely** at this stage.

11.
Remove the lower shackle bolt, then slowly lower the axle while carefully balancing and supporting the leaf spring. Once unloaded, remove the leaf spring assembly from the vehicle.

12.
Note the difference between the **front and rear spring eyes** on the **Owl leaf spring**:

- The **rear spring eye** has the **main leaf centered** with the **bushing**.
- The **front spring eye** has the **bushing positioned above** the **main leaf**.

This distinction ensures the **correct orientation** during installation.

13.
Position the **Owl leaf springs** under the vehicle. The easiest method is to install the springs upside down, then rotate them up into place once aligned with the mounts.
Notes:

- Ensure the **brake line is routed under the leaf spring**, matching the **factory configuration**.
- On **RWD vans without a factory lift block**, the **Owl Brake Line Drop Brackets** must be installed. If not yet completed, **refer to the drop bracket installation instructions** before proceeding.

14.
With the leaf springs rotated into position, install the **forward spring bolt** through the spring hanger and thread on the nut. Leave the hardware **loose** for now—**do not fully tighten** until the vehicle is at ride height to prevent premature bushing preload.

15.
Raise or lower the rear axle as needed to align the lower shackle mount with the leaf spring. Once aligned, install the lower shackle bolt and nut, **but do not fully tighten at this time.** Final torque will be applied at ride height to ensure proper bushing alignment and suspension articulation.

16.
Ensure the **leaf spring center pin** is properly seated in the spring perch pocket on the axle. Once aligned, jack up the axle slowly until the leaf spring begins to take load, confirming the spring pack is securely positioned in the perch.

17.
Install the new U-bolts and nuts provided with the kit over the axle and leaf spring assembly. Using a **19mm socket or wrench**, snug all nuts evenly, but **do not** fully torque at this stage. Final tightening will be performed once the vehicle is resting at ride height.

18.
Repeat this procedure for the passenger side.

Note: Steps **19-23** should **not** be performed if a **2" Lift Kit** is being installed.
For non-2" lift setups, **reinstall the factory lift block** between the **new Owl leaf spring** and the axle, positioning it **exactly as it was removed** from the vehicle. Ensure the center pin is properly seated in the block and axle perch before proceeding.

19.
Locate the **factory lift block** removed earlier and identify the **two T-55 Torx bolts** securing the **OEM bump stop block** to it. Using a **T-55 Torx bit**, **remove both bolts** and separate the bump stop block from the lift block.

20.
Identify the left-hand (LH) and right-hand (RH) Owl 3071 Bump Stop Brackets included in the kit.
Refer to the **image below** for proper identification and orientation before installation.

21.
Position the **Owl Bump Stop Brackets** on their respective sides of the vehicle. Reinstall the rear sway bar to the axle using the OEM bolts removed in **Step 6**. Start all bolts by hand but **do not fully tighten** at this stage—final torque will be applied after alignment verification.

22.
Position the OEM bump stop block on top of the axle, ensuring proper alignment. The counterbore holes on the bump stop block **must face inward**, toward the mounting face of the Owl brackets.

23.
Reinstall the **lower sway bar link bolt** and **snug it securely**, but **do not fully tighten** at this time. Final torque will be applied once the vehicle is at ride height to ensure proper sway bar alignment.

24.
Install the included **M10-1.50 x 80mm socket cap screws** as shown below, placing a washer under both the bolt head and the stover nut.
Ensure the bump stop block sits flat on the axle tube, then snug all bump stop bracket and sway bar mounting hardware.

- **Sway bar clamp hardware:** Tighten using an **18mm wrench** and **torque to 81 ft-lbs (110 N·m)**.

- **Bump stop block hardware:** Tighten using an **8mm Allen socket** and **17mm standard socket**, then **torque to 43 ft-lbs (58 N·m)**.

25.
Reinstall the **lower shock bolt** and torque according to vehicle configuration:

- **3500 DRW vans:** Torque to **125 ft-lbs (169 N·m)**.

Ensure the shock bushing is properly seated before tightening.

26.
If equipped, **reinstall the headlight adjuster bracket** onto the **rear axle**, using the **hardware removed in Step 3**.
Ensure the bracket is properly seated and that the linkage moves freely through the full range of suspension travel.

27.
If the approximate vehicle weight is known, now is the time to configure the Adjustable Preload Spacer (APS) engagement. Refer to the APS Setup Chart at the end of this manual as a baseline guide.
Note: The chart provides a **recommended starting point**— final adjustment should be made by the **installer or end user** to achieve the desired **balance of ride height and ride comfort**.

28.
Note: Always install the slider pad with the countersunk holes facing upward, as shown below.
Torque the **countersunk bolts** to **15 ft-lbs (20 N·m)** using a **7/32" Allen wrench**.
Torque the **Adjustable Preload Spacer (APS)** to the **leaf spring** using a **9/16" socket** to **20 ft-lbs (27 N·m)**.
Ensure both a **flat washer** and a **lock washer** are installed under each **bolt head.**

29.
Reinstall the wheels and tires, then lower the van to the ground. Torque all wheel studs on factory steel wheels to the following specification:

- **3500 DRW: 140–150 ft-lbs (190–200 N·m)**

Tighten in a **crisscross pattern** to ensure even seating and proper clamping force.

30.
Torque the upper and lower shackle bolts and the front leaf spring bolt to **125 ft-lbs (169 N·m)** on **3500 DRW vans.**
Verify that the vehicle is at **ride height** before tightening to ensure proper bushing preload and long-term suspension performance.

31.
With the vehicle at **ride height**, torque all **U-bolt nuts** evenly to **125 ft-lbs (169 N·m)** using a **crisscross pattern**. This ensures uniform clamping of the leaf spring pack to the axle and prevents distortion.

32.
Torque the **lower sway bar link bolt** to **81 ft-lbs (110 N·m)** using an **18mm wrench**. Confirm that the **bushings are properly seated** and the sway bar is in a neutral position at ride height before tightening.

33.
On some 3500 full-bodied vans, the exhaust pipe may be close to or contact the driver-side shackle. Inspect the clearance between the exhaust and shackle after installation. If contact is present or clearance is minimal:

- Have a **helper pull down on the tailpipe** near the hitch.
- Use a **C-clamp** to **slightly oval the tailpipe** in the area near the shackle to gain the necessary clearance.

34.
With the vehicle on the ground at ride height, adjust the overload engagement pucks as needed to achieve optimal ride height and ride quality. Fine-tuning puck engagement ensures smooth transition under load and balanced suspension performance.

35.
After 100 miles, recheck bolt torques.

CONGRATS!
YOUR INSTALLATION IS COMPLETE.

RELEASE OF LIABILITY

I, the customer, do hereby release and forever discharge Owl Vans 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 Owl Vans 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:

Owl Vans 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 Owl Vans 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, Owl Vans 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. Owl Vans 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.

Owl Vans 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 Owl Vans LLC products unless you are willing to accept this responsibility. Do not install any Owl Vans 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.

Owl Vans 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.