SuperStructure Panel Kit (Sprinter 170)

Assembly & Installation Instructions (v1.12.6)

Fits Mercedes Benz Sprinter 170 2010-2023” high roof

SuperStructure Panel Kit Parts:

- Floor: 1001-S170-2019+: v1.6
- Passenger Wall: 1002-S170-2019+: v1.7
- Driver Wall: 1003-S170-2019+: v1.7
- Ceiling: 1004-S170-2019+: v1.6

Patent Pending Products & Documentation
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Designed, Engineered, and Fabricated
in San Diego, CA USA
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Introduction

The SuperStructure Panel Kit consists of the floor, passenger wall, driver wall and ceiling - the foundation of all van builds. It is designed to help you jumpstart your build without you having to figure out all of the hard stuff - the *New Way Van Life* team did that for you. Make sure to carefully read through these instructions before you begin and follow the steps outlined to succeed.

Before Getting Started...

Basic tool knowledge and handy/DIY building skills are required for the best experience. Please note that you are going to need extra hands for the installation of the floor and the ceiling assemblies.

Review the RivNut education pages carefully before installing any RivNuts into your vehicle.

Always use a drill stop with the included bushing when drilling any holes and make sure the cutting depth will never penetrate the outside of the vehicle.

Vans can vary slightly and may require kit modifications in some instances. Please feel free to reach out to *New Way Van Life* customer service with any issues regarding the installation of the kit so our team can share assembly, installation, and Mercedes chassis experience and knowledge as guidance during the troubleshooting process.

⚠ RivNut EDU: Essential Information Before You Begin

Why RivNuts Matter

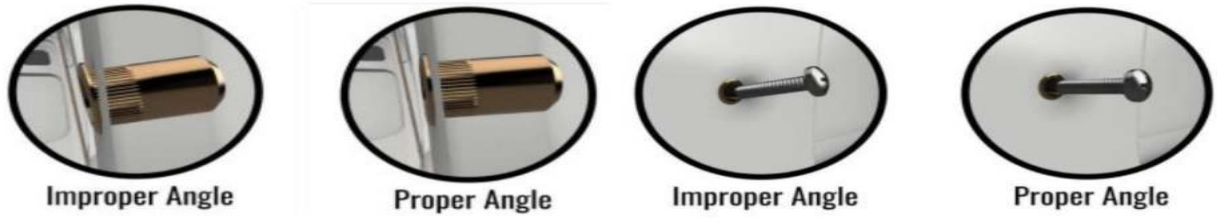
Incorrect or misaligned installation of even a single RivNut can lead to **major problems throughout the entire build**. RivNuts serve as the foundation of your installation, so understanding their **potential failures** and knowing **how to address these failures** is crucial. One improperly installed RivNut can ripple through the process, causing significant alignment issues and potential damage down the line.

RivNut Installation Objective

Your objective is to install each RivNut **precisely and securely** to avoid failure. The most critical issue to prevent is a **RivNut "spinner"**, where the RivNut spins freely inside the sheet metal. This catastrophic failure can be nearly impossible to fix, especially if a panel or SuperStructure bar has already been installed on top of it. Preventing RivNuts from spinning at all costs is key to a successful build.

⚠ Here's What You Need to Know Before You Start

- **Drill Square Holes:** Make sure each hole—whether new or pre-existing—is drilled perpendicular and square to the surface. Proper hole alignment is crucial for RivNut security and prevents future issues like spinning AND/OR panel/bar misalignment.
- **Always use JB Weld**: Apply JB Weld to every RivNut during installation to help bond it to the vehicle's sheet metal, prevent spinning, and act as a rust preventative.
- **Ensure perfect thread alignment**: Each RivNut must be perfectly **perpendicular** to the vehicle's surface. Misaligned RivNuts will lead to cross-threading and possible failure.



- **Hand-thread bolts**: Always **seat the bolt properly** in the RivNut threads before tightening. Do this by turning the bolt slowly to the left (counterclockwise) until you feel the threads seat, then thread the bolt into the RivNut.
- **Test each RivNut**: After installation, thread a bolt into each RivNut to confirm proper alignment. Correct any minor misalignment immediately.
- **Set your tools properly**: Test your pneumatic tool's air pressure settings on extra RivNuts to ensure you're using the correct pressure for installation. Too much pressure can break the bolt; too little can cause loose RivNuts that may spin.

RivNut Installation Process

Follow these steps to install RivNuts correctly:

1. **Drill the Hole:** You will be drilling two types of holes: **factory holes** (which may need to be drilled out to the correct size) and **non-factory holes** (which you will create). It's especially important to ensure that non-factory holes are drilled square and perpendicular to the surface. When using a panel or bar as a drilling "jig," take extra care to maintain alignment. A misaligned or uneven hole can cause RivNuts to spin or fail. Use the correct drill bit size and a guide or spacer if available for precision.
2. **Thread the RivNut onto the tool's mandrel.** Some tools have an auto-spin function to assist with this.
3. **Insert the RivNut into the pre-drilled hole.** Maintaining pressure against the RivNut, activate the tool to begin compressing the RivNut, which will bulge out and anchor firmly in place.
4. **Remove the tool:** The RivNut tool will either automatically or manually back out, leaving the RivNut installed and ready for use.
5. **Confirm alignment:** After the RivNut is installed, ensure the threads are perfectly perpendicular to the surface of the vehicle. Use a bolt to check alignment.

6. **Inspect the pneumatic RivNut driver bit**: The driver head of the tool, also called the mandrel, contains a driver bolt (1/4"-20 or 5/16”-18 for this kit). After setting multiple RivNuts, the driver bolt may begin to wear or deform. **Regularly inspect** the mandrel, and if you notice any deformation, replace the driver bolt. You can check for deformation by operating the tool without a RivNut and visually inspecting the spinning bolt for irregularities.

⚠ What to Do if You Cross-Thread a RivNut

- **Problem**: If a bolt becomes difficult to thread, it is likely starting to cross-thread. This often leads to a RivNut spinner if left unchecked.
- **Solution**:
    1. **Back out the bolt immediately:** inspect the threads of the bolt to ensure the is no damage present. If there it will need to be replaced (and could be the culprit).
    2. **Ensure alignment**: If possible, remove the panel or bar and check that the RivNut is aligned correctly. Misalignment can easily cause cross-threading. *If not possible move to step 3.*
    3. **Use a tap tool**: If the alignment is correct, use a tap tool to create the needed threads inside the RivNut and reinsert the bolt. *In some instances, a misaligned RivNut maybe need to complete the install*

What to Do if a RivNut Spins?

If a RivNut begins to spin despite all precautions, follow these steps to correct the issue:

1. **Access the backside**: If possible, access the backside of the RivNut and gently hold it with pliers while backing the bolt out. Do not squeeze too tightly to avoid deforming the RivNut.
2. **Drill it out**: If you cannot access the backside or the RivNut is too deformed, carefully drill out the RivNut. Be mindful not to enlarge the hole, as you’ll need to install another RivNut in the same location.

3. **Use a tap**: Once the RivNut is removed, use the included tap to clean up or rethread the hole before installing a new RivNut or re-threading the bolt back into the RivNut.

Additional Tips for Success

- **Use a pneumatic tool:** For this many RivNuts, a pneumatic tool is highly recommended for consistency and ease. Manual tools are harder to control and may result in uneven installations.
- **Test your RivNut tool:** Before installing RivNuts in your van, test the tool's settings (especially air pressure for pneumatic tools) with the extra RivNuts included in the kit. Too much pressure can break bolts; too little won't secure the RivNut properly.
- **Be precise with drilling:** Always use the provided drill stop and spacer to avoid over-penetrating the van's sheet metal. Accidental drilling through to the exterior of the vehicle is a common mistake.

⚠ Final Reminder: Precision is Everything

The quality of your van build relies on the precision of each step. RivNuts are the foundation of this kit, and every step must be executed with care and attention to detail. Each correctly installed RivNut sets the stage for the next step, contributing to the overall success of your build. Cutting corners on RivNut installation will lead to problems down the line that could derail your project.

Take your time, follow these instructions carefully, and make sure every RivNut is installed correctly the first time.

⚠ Safety

Ensuring your safety during installation and operation is of the utmost importance. Follow these guidelines to reduce the risk of injury or damage.

1. **Wear Proper Protective Gear**:
   Always wear appropriate safety gear, including:
   - Safety glasses or goggles to protect your eyes from debris.
   - Work gloves to protect your hands from cuts or abrasions.
   - Hearing protection when using loud power tools.
   - Dust masks or respirators in areas with poor ventilation or when cutting materials.
2. **Tool Safety**:
   - Use each tool according to its manufacturer's instructions. Always follow best safety practices to avoid accidents.
   - Ensure tools are in proper working condition before use. Worn or damaged tools should be repaired or replaced.
   - **Exercise caution**: Keep hands and body parts clear of moving parts on power tools, and never use tools at an angle or speed outside of their specifications.
3. **Work Area Safety**:
   - Keep your work area clean and well-lit to avoid tripping hazards or mistakes.
   - Secure the vehicle and materials: Ensure the van is parked on a flat surface and that all materials are properly secured before installation.
   - Never work under unsupported heavy objects. Use proper jacks or stands when lifting parts of the vehicle.
4. **Electrical and Wiring Precautions**:
   - If working with the van's electrical system, **disconnect the vehicle battery** to avoid shock or accidental damage.
   - Follow the wiring instructions carefully to avoid creating fire hazards or damaging sensitive components.
5. **Proper Installation Techniques**:
   - Always use the appropriate tools for the job. Incorrect tools can damage the product or lead to personal injury.
   - **Do not rush**: Each step in this manual is designed to ensure a secure, long-lasting installation. Rushing or skipping steps may result in product failure or vehicle damage.
6. **Product Usage**:

- This product must be securely fastened to the vehicle to prevent injury or damage during operation.
- Ensure that load-bearing parts, like SuperStructure bars, are properly installed and inspected before use.

7. **Liability Disclaimer**:
   - *New Way Van Life, LLC.* disclaims any liability for injuries or damages arising from improper installation, misuse, or failure to follow these safety guidelines. The installer assumes full responsibility for ensuring the safe installation and operation of the product.

⚠ Maintenance

Comprehensive Care

Your responsibility as the installer and owner is to stay in touch with your vehicle and the installed kit. **An attentive, present eye** on your van, its parts, and its overall health is the best indicator of when maintenance is needed. While we provide maintenance schedules and guidelines, **ultimate responsibility lies with you** to monitor and address any issues as they arise. Regular inspection and proactive care are key to preventing larger problems.

Remember: Maintenance isn't just about checking things on a schedule—it's about staying vigilant and catching any potential issues before they escalate. A loose bolt or unusual sound can be the early sign of a bigger problem, so keeping a close watch on your vehicle is essential.

Maintenance Intervals and Recommendations

Now that you understand the importance of active responsibility, here are the recommended maintenance intervals and checkups to help guide your care of the kit:

Initial Post-Installation Maintenance

After the kit is installed, it will undergo a "settling in" period as the vehicle is driven and exposed to environmental factors. This causes materials to expand and contract, and fasteners may shift slightly.

- **100 Miles**:
    - Perform a comprehensive inspection. Focus on tightening all fasteners, particularly those on the **Panels** and **SuperStructure bars**. Use **Loctite** on any bolts that show signs of loosening.
- **250 Miles**:
    - Recheck all fasteners and adjust as necessary. Ensure all bolts remain tight, especially in areas that experienced movement during the first 100 miles. Tighten and **Loctite** if necessary.
- **500 Miles**:

    - Conduct another full inspection. Pay close attention to any fasteners that have loosened. Apply **Loctite** to prevent further loosening.
- **1000 Miles**:
    - Perform a final checkup after the initial settling period. Inspect all components and ensure no fasteners are loose. Tighten and **Loctite** if necessary.

Ongoing Maintenance Schedule

Once the initial "settling in" period is complete, ongoing maintenance is required to ensure the kit's longevity and performance.

- **Every 6-12 months** (or approximately every 5,000-10,000 miles):
    - Inspect all fasteners securing the **Panels** and **SuperStructure bars**.
    - Tighten any bolts that have come loose. Reapply **Loctite** if necessary.
    - Check for signs of wear, rust, or material degradation.
- **Additional Care Tips**:
    - Stay alert for any unusual noises, vibrations, or visible signs of wear during daily use.
    - If you drive on rough terrain or in extreme weather conditions, consider performing maintenance checks more frequently.

Proactive Preventative Maintenance

While these time and mileage intervals are useful, nothing beats consistent monitoring. **Being proactive** about checking your vehicle and the kit will prevent larger issues from developing over time.

- **Keep in mind**: Every vehicle and installation is different. If you notice any changes in performance, inspect your kit immediately and address any issues without delay.

Tools Included with Kit
3/16” Ball-Hex Screwdriver
5/32” Ball-Hex Screwdriver
5/32” Ball-Hex T-handle Screwdriver
1/4" Ball-Hex Screwdriver
3/16” Impact Driver Hex Bit
5/32” Impact Driver Hex Bit
1/4" Impact Driver Hex Bit
3/16” Hyper-Step Drill Bit
9/32” Hyper-Step Drill Bit
9/32” hyper-Step Drill Bit
25/64” Hyper-Step Drill Bit
17/32” Drill Bit
9/32” Drill Bit Bushing & Stop
25/64” Drill Bit Bushing & Stop
1/4"-20 Tap
5/16”-18 Tap
Tap Chuck
Reverse Clamp
Loctite
JB Weld
JB Weld Applicator Brushes
Chisel
Mallet
Socket Cap Bolts for RivNut Gun (1/4"-20 & 5/16”-18)
Extra RivNuts (1/4"-20 & 5/16”-18)

Tools Required by Installed
RivNut Gun (Pneumatic recommended) with 1/4"-20 & 5/16”-18 attachments
Impact Drill
Drill
Ratcheting 3/8" Drive Wrench (for tap)
Phillips Screwdriver
Drill Alignment Tool (Strongly recommended for drilling out floor but not required)
Pry Bar (Not required but recommended for alignment assistance)

Build Steps

1. Prep & Remove Factory Trim / Components
2. Install Sound Deadening
3. Install RivNuts
4. Install Pre-Cut Insulation Kit
5. Install Wiring Harness
6. Install Upholstery: Wheel Well, C & D Pillar
7. Assemble & Install Ceiling Kit
8. Install Middle & Upper Driver Wall Panel Kit
9. Install Middle & Upper Passenger Wall Panel Kit
10. Assemble & Install Floor Kit
11. Install Lower Driver & Passenger Wall Kits

1. Prep & Remove Factory Trim / Components

1. Disassemble the rear cargo area of factory trim pieces, this includes:
    a. Factory wall panels
        i. *Note: If your van has the lower wall trim panels on the driver and passenger side trim panels installed, you do not need to remove them as the kit is designed to fit around these parts (shown below)*

    b. Flooring and subfloors
        i. Seat hardware, bolts, and general hardware installed on the floor
            1. *Note: Do not remove the rear step trim piece (shown below)*

    c. Courtesy lights
        i. Courtesy light bracket/housing above passenger sliding door
        ii. Courtesy light in rear of van above D-pillar
    d. Factory wiring harness covers
    e. Unclip the factory wiring harness from the body of the vehicle
        i. This harness will later be run with the NWVL *Universal Wiring Harness* through the Electrical Access Panel Gussets that get installed with the ceiling assembly
    f. B-pillars (the tall upright trim pieces directly behind the captains chairs)
    g. Remove cockpit headliner
        i. Carefully bag and tag all components for ease of future reassembly
    h. Rear doors & slider door panels

i. *Note: Only necessary if planning to sound deaden & insulate these (strongly recommended), or installing the New Way Van Life Rear Door Upper Panels*

2. A completely disassembled vehicle rear is an ideal time to inspect and address:
    a. Rust
    b. Delamination
        i. It's common to see Sprinter ceiling ribs and the uprights in the window cavity become detached from the walls and ceiling of the van
            1. Use automotive polyurethane adhesive to address any delamination
    c. Existing RivNuts
        i. Drill out any pre-installed RivNuts that are installed in the floor or walls to prevent kit interference (if necessary)
3. Protect captains chairs now - during future drilling steps, chips get hot!
    a. Large garbage bags or sheets work well
    b. Consider protecting the dash using similar methods

2. Install Sound Deadening

Follow the instructions in the accompanying "*Sound Deadening Instructions*" document now to achieve desired sound deadening coverage.

Remember to follow these instructions closely for the best experience when installing the SuperStructure Panel Kit. Overlapping sheets of sound deadening can present challenges when installing panels, and covering the three main floor channels can cause issues with the floor installation in future steps.