Vanistan Seat Tilt Kit 1-30-24

Custom hardware package to attach to a VW/Westfalia (or possibly other unknown make) swiveling seat base that makes it able to be tilted forward for access to the space underneath for storage, or to mount auxiliary equipment, and for easier battery access. Latches at rear lock the seat base down. A prop bar can be engaged in the seat track to hold the seat in the up-tilted position.

Kit Contains:
Moving hinge strap
Prop bar moving hinge strap
(2) Stationary hinge straps (identical)
Latch bar left
Latch bar right
Prop bar

Fasteners kit contains:
(2) M8 flanged button head Allen bolts
(2) M8 nylon Belleville (conical) washers
(2) M8 nylock hexnuts
(3) M6 x 40mm Allen bolts
(3) M6 nylock nuts
(2) M6 x 20mm hexbolts
(2) M6 square nuts
(6) M6 flat washers
(2) M6 wave washers
(4) M5 x 12mm hexbolts
(4) M5 hexnuts
(4) M5 flat washers
(2) 2" pcs. 3/4" antifriction tape

Tools needed:
Drill
Drill bits:
pilot (1/8" (3mm) or smaller),
13/64" (5mm),
21/64" (8mm)
Small countersink bit to deburr holes (optional)
13/64 (5mm) transfer punch* and/or common center punch
8mm and 10mm sockets and combination wrenches
5mm Allen (aka: in-hex or hex socket head) driver
Vise-grip or other clamp
Tape (cloth, thick) (optional)
Thin non-magnetic pick, small screwdriver, wooden skewer or other implement
Razor knife

*The most accurate way to mark holes to match one part to another is with transfer punches. If you work with this sort of thing much we recommend having a set of these. Available at Harbor Freight, item #3577:
https://www.harborfreight.com/28-piece-transfer-punch-set-3577.html
Without the reliably accurate center placement of a transfer punch, if your drilled holes don't align well enough for the M5 bolts to fit thru, you may need a rat-tail file to shift a hole, or to drill slightly larger.

Note: All directions are from the driver's point of view: Front, or fore, is always toward the front of the vehicle; Rear, or aft, is always toward the rear of the vehicle; Left is always to the driver's left, etc. Outboard is away from the longitudinal centerline of the vehicle or subcomponent, inboard is closer to the longitudinal centerline.

Note: The VW/Westfalia factory swivel seat base assembly must have first been removed from the vehicle. The middle circular retaining plate with latching rod and the top turntable with seat tracks are removed and set aside; all work on this kit will be done solely on the bottom component of the 3-piece swivel assembly, which we will call the "base plate". This was originally welded in between the pedestal seat tracks in a Westfalia camper. The welds must be ground or cut out, leaving as much of the raised side flanges of the base plate as possible, such that the base plate will sit on the pedestal inside the pedestal seat tracks and nearly reach the inboard sides of the seat tracks on both sides, within about 1/8" along both sides. If the base plate was cut further inboard, so that there is much more than a 1/8" gap between both side flanges and the seat rails, it may be impossible to fit this kit.

Westfalia Campers note: Most Westfalia Campmobiles sold in N. America had some sheet metal pieces Westfalia added around one or both seat pedestal battery compartments, to create an enclosure that would purportedly seal the battery off and vent it externally. This was done so the campers could be sold as RV's, the regulation required vehicle batteries be outside of or isolated from the living space. It was a ruse to overcome a regulatory requirement, and serves no necessary or useful function (the far larger number of non-camper vans have no battery ventilation provisions, because there is simply no need to vent a battery this small). The faux enclosure may interfere with the swivel seat base when the Seat Tilt Kit is installed, in particular the rear-edge angled strip of metal that supported a battery hold-down bracket (there is a stud in the seat pan directly below it for the non-camper hold-down bracket, which can be used instead). In order to fit the Seat Tilt Kit, we recommend removing the enclosure pieces entirely, which will greatly improve service access to the battery, or cutting off the angle strip if that will attain clearance in your particular application. We will provide no specific guidance other than this warning.

Note: For clearer photography, some of these pictures are made with a swivel seat assembly turntable standing in for an actual van's seat pedestal, because the seat tracks and spacing are identical, so positions shown here will be exactly the same positions on your van's seat pedestal tracks. Just pretend it's the actual seat pedestal you're looking at!

1. Prepare seat pedestal:
On the left side of all 4 seat pedestals' seat tracks, a few inches from the front end of the track, is a short tab of metal that must be removed from the right rail of any pedestal where a swivel seat base has not yet been installed (the left tab is outside the area the base plate must fit within so does not have to be removed). Pointed out in this picture, having been removed and repainted:

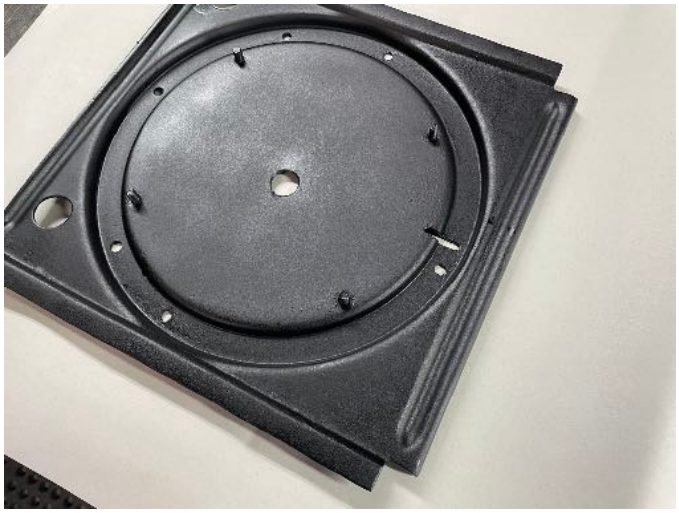
If there is a plastic bushing like shown above-right in the left track of the seat pedestal, it must be removed, and can be discarded (there should be one in the turntable tracks, too, which can stay):

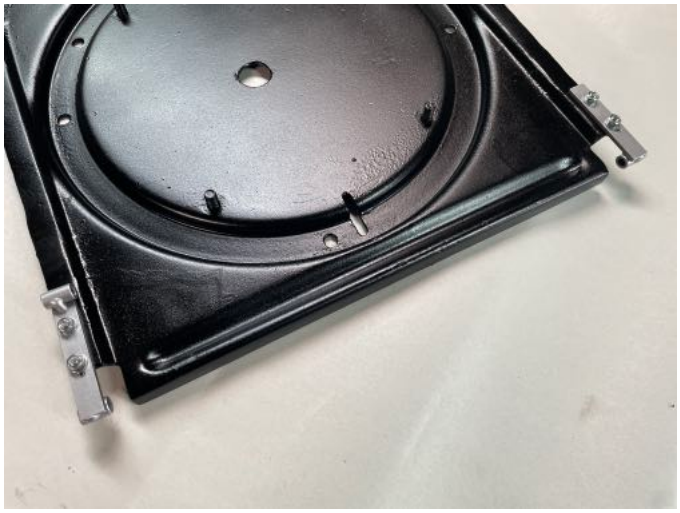
2. Attach moving hinge straps to base plate:
There are two moving hinge straps, the prop bar strap has an extra short tubular "eye" welded to the aft end of the strap. They are otherwise identical.

First decide which side of the seat you would like the prop bar to be located, the prop bar moving hinge strap will be attached on that side. We prefer the prop bar to be on the outboard side so the seat tilt can be operated thru the open front door while standing outside the van. In this guide it will be shown being installed on the right side.

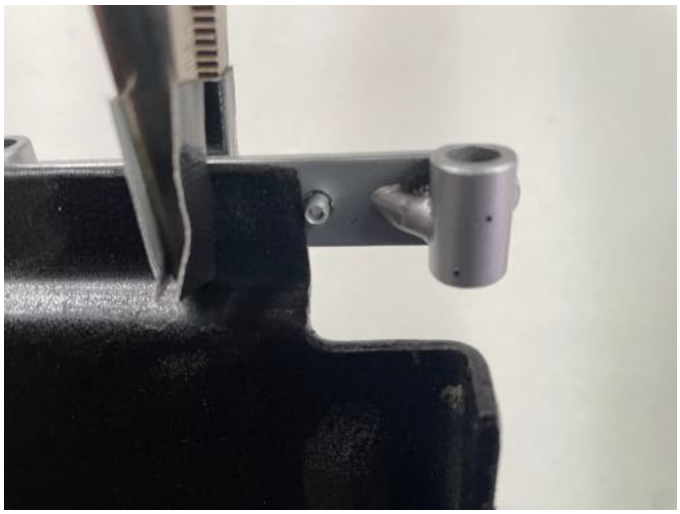
Below left is a bare swivel assembly base plate. Remember that the front edge of the plate has the long notch for the turntable latch bar, it is to the right in this picture.

Below right is the base plate with both moving hinge straps bolted in place, where the prop bar is to be on the right side of the seat. The hinge straps' positions would be reversed if the prop bar was to be on the left side of the seat.



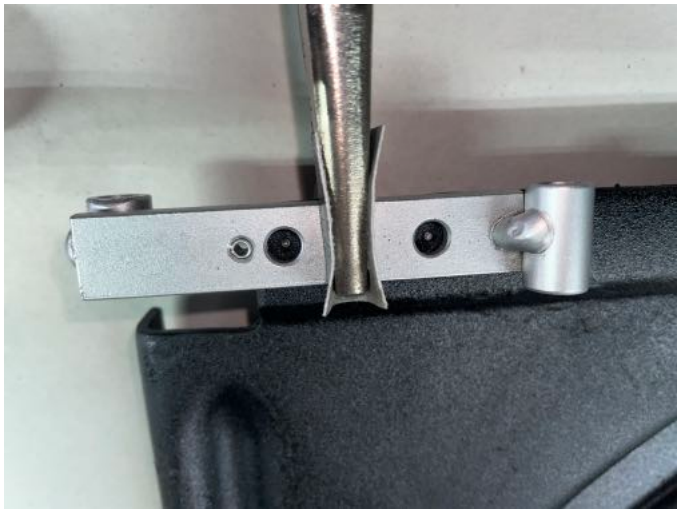


Each moving hinge strap has a 1/8" roll pin pressed into it, this denotes the forward end of the strap. Place each strap flat on top of the base plate side flange, flush with the outboard edge of the base plate as shown below left, and move it back until the roll pin butts against the forward edge of the base plate flange as shown below right, from below.



Clamp in position with vise grip or other clamp. To avoid marring the parts, cover the clamp jaws with one or two layers of heavy tape.

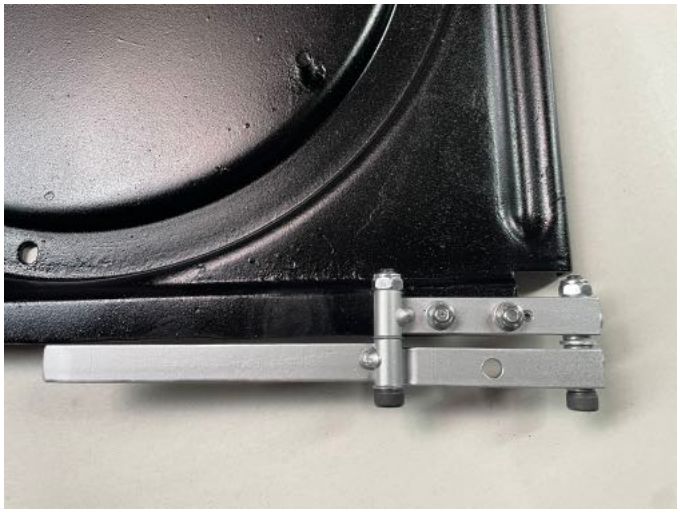
Check alignment carefully. Mark thru the strap's holes to establish the centers for the bolt holes (a 13/64" transfer punch is shown below left). Centered punch marks are shown below right.



Set the hinge straps aside. Use a center punch to deepen the center marks enough to positively center your pilot drill bit. Pilot drill all 4 holes, then drill out to final size of 13/64" (5mm). Deburr with countersink top and bottom.

Reposition both moving hinge straps and fasten to base plate with four M5 x 16mm hexbolts inserted from below with no washers, then washers and nuts on top, as shown below and in the picture on the previous page.

3. Assemble hinges:
The stationary hinge straps have an ell bent in their aft ends, the ell must face downwards. Assemble each stationary hinge strap to the outboard side of each moving hinge strap with one M6 x 40mm Allen bolt, with one M6 flat washer between the tubular eyes, and one M6 nylock nut. Tighten the bolt and nut so there is some friction between the hinge straps such that the stationary strap moves smoothly but remains wherever you position it.



4. Attach prop bar to moving hinge strap:
The prop bar assembles to the prop bar moving hinge strap's eye in the same way, except instead of one M6 flat washer, use the two M6 wave washers on either side of the prop bar's eye, as shown above right. Tighten so the prop bar has enough friction to remain wherever it is positioned.

5. Install base plate on seat pedestal:
On the van's seat pedestal, insert one M6 square nut into the front opening of each track as shown. Slide the nut back into the track and using a small non-magnetic implement from above, center the nut below the hole in the top of the track ridge.

Place the base plate assembly onto the van's seat pedestal and align the holes in the stationary hinge straps with the track holes under which you positioned the square nuts. The down-facing ells in the stationary hinge straps should drop into the second notch back on the tracks as shown below left. Move the assembly to align the holes in the stationary straps above the tracks so you can sight down thru to the square nuts below.

Place *two* M6 flat washers on each of the two M6 x 20mm hexbolts. Carefully insert each bolt straight down into the stationary strap to find the square nut below, gently feel for the bolt to center up in the nut, and turn the bolt by hand to engage the nut threads, If you're not sure the threads have engaged, you can confirm by pulling up on the bolt. Get both bolts started, then run them down and tighten evenly to secure the hinged base plate assembly.

The hinged base plate should look like this. Check that the hinging works smoothly and the base plate comes to rest centered between the pedestal seat tracks with an even narrow gap on both edges.

Test function of the prop bar with base plate lifted, the bent end can be placed in any of the seat track notches for the desired height of tilt, as shown above right.

6. Install latch bars:
About 4" forward of the rear end of both seat tracks is a nearly-8mm hole in the top of the track's center ridge. These holes must be slightly enlarged with the 21/64" (8mm) drill bit.

Deburr the holes with a countersink, or a flat file or sandpaper. Feel for any burrs, the top surface should be smooth for the latch bar to slide over.

Wipe the surface clean with Brakleen or other fast-drying solvent. Then peel the backing film off the anti-friction tape and apply the 2" strip to the top of the seat track center ridge, using the latch bar as a guide as shown, so that the tape will be underneath the latch bar for its full range of motion. Press and smooth the tape down, then use a sharp knife point to cut out the tape inside the hole.

Using a suitable implement, slide an M8 nylock hexnut into the rear opening of the seat track center ridge, nylon locking side of the nut down. Slide forward until the nut is in position directly under the hole.

Place the latch bar on the track hump, the bar's handle extension runs inboard of the seat track. Fasten down with a M8 button head screw with a nylon Belleville washer, concave side down as shown:

Tighten the M8 button head screw until snug, then loosen about a half-turn. Try to slide the latch bar fore and aft and loosen the screw in small increments until you can just slide the latch bar both ways by hand but with some resistance.

The rear edge of the base plate must clear the forward end of the latch bars in their rearmost positions as shown above. Test function that the latch bars can be slid onto the base plate to lock it down, and pulled back by hand to unlatch. The best adjustment is often where the base plate needs to be pushed downward a bit to slide the latch bar to the latched position, this will leave some residual tension that keeps the assembly latched.

Finally, install the turntable and retaining plate with their plastic glide blocks, adjust the swiveling drag, and put the seat on the turntable tracks.

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