

Serpent Medius X26 Assembly recommendations V1.0

By Luis García



Step1.

Gears processing. It is very important to remove any material left from the moulding process. Use a hobby knife/scalpel and carefully trim the 6 gears. In addition, it is important to sand the back of every pinion so that its surface is homogeneous and without any recess.



The green bearing seal (Serpent 401784) is recommended for additional differential smoothness and sealing. In the following image, both original black and optional bearing seals are shown side by side.



When installing the bearing seal, it is important to lube its holder and main hole. Differential oil can be used, in the picture 50cts oil from Arrowmax was used and applied with a brush.

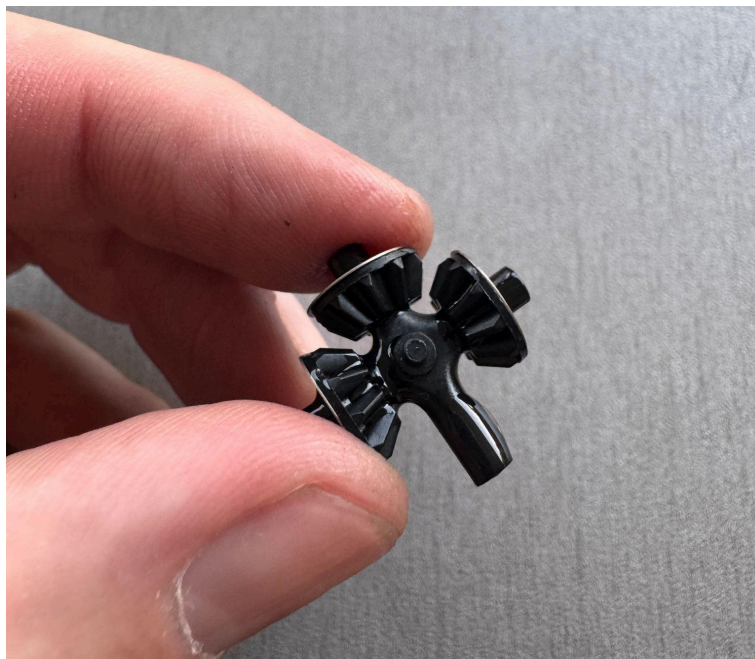


Check for the correct orientation of the bearing seal.



Prior to inserting the outdrive shaft into each differential half, drop a small amount of the selected density differential oil in the area the outdrive shaft will sit in. This avoids having air cavities or bubbles in the back of the outdrive shaft for a consistent differential running.

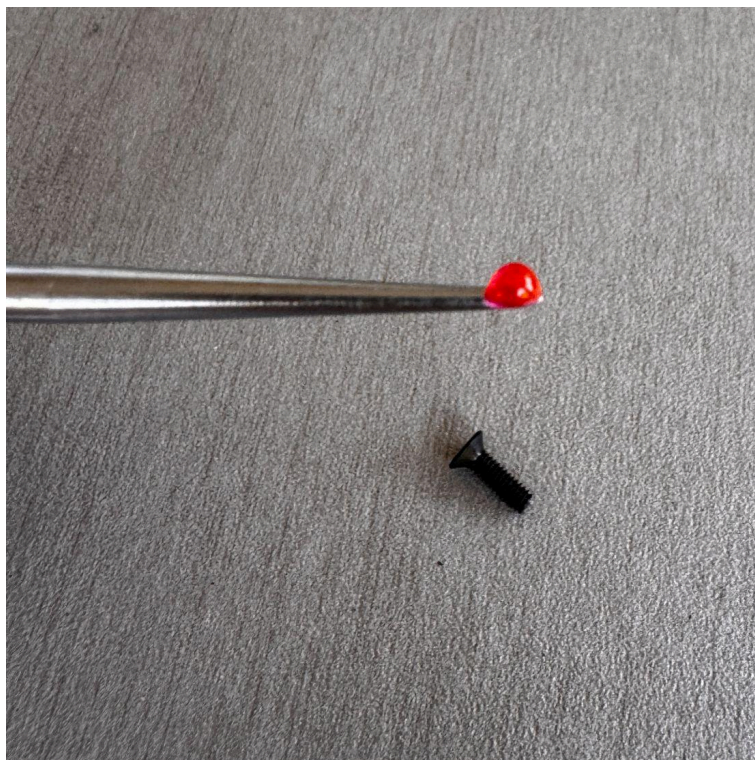
When assembling the gears into the x-shaft, apply a small amount of differential oil to help keep the different moving parts together. This is pretty helpful mainly for the shims sitting in the back of the gears.



The use of threadlocker is recommended for both the outdrive fixing screws and differential closing screws. For these particular ones, I used Vibra-tite VC-3. This kind of threadlocker needs to be applied in advance, minutes before the installation. It is pretty recommended for such small screws, to effectively keep them in place while allowing to easily remove them.



Apply a small drop of threadlocker covering approx 1-1.5 times the screw diameter and let it cure for 20-30 minutes.



Step 3 and 4.

Upgrading bladders to bearings is a nice optional upgrade (Serpent 110529 for the 1.5x4x2mm bearings and 110312 for the e-clips).



When assembling the coupler at the end of the shafts, use the provided pin, keep it centered and apply a very small amount of hard/bearing threadlocker through the small shaft's hole as indicated in the manual.

As happened in the previous versions of the car, check the differential outdrives as they randomly come with a slighter tighter fit with the bladder/bearing. If necessary, use a rotating tool and remove some material to guarantee a smooth coupling at any rotation position and suspension extent.

Carbon chassis preparation

It is always important for carbon made chassis to seal the external side of it. Use medium cyano glue applying it with cotton ear swabs.



Step 5.

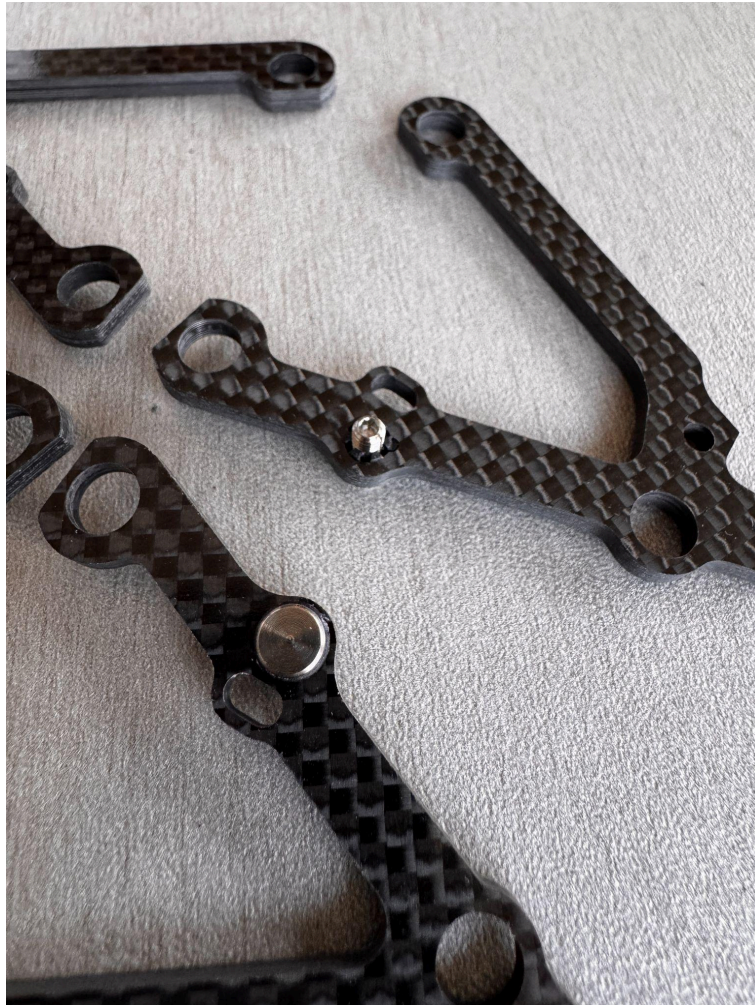
In order to have a smooth wishbones articulation, it is very important to trim any excess from the wishbone inserts coming from the plastic injection process. Any protuberation kept in the external side surface of the wishbone insert, once inserted into the carbon fiber wishbone will create a pressure point that will affect the articulation. I have seen multiple videos where in case of hard or inconsistent articulation, it is recommended to apply force with pliers till it perfectly works. For me this approach is wrong and as far as the wishbone inserts are well trimmed and the carbon fiber wishbone hole is kept nice and clean, the articulation will be smooth.

In addition, it is recommended to not insert at this point the wishbone inserts into the wishbones, clip them into the pivot balls in step 6 and slide the wishbones through and check for correct functioning. In case any hard spot is detected, remove the wishbone, improve the insert trimming and try again.

It is a good practice to pre-drill a couple of thread fillets into the plastic parts. In this particular assembly of the lower wishbones, do it for the downstop screw holes and the holes where the pivot balls will be installed.



For this assembly T-works titanium downstop screws were used, not for its material or weight but due to a better/larger contact with the chassis itself and better adjustability without damaging the carbon fiber surface.

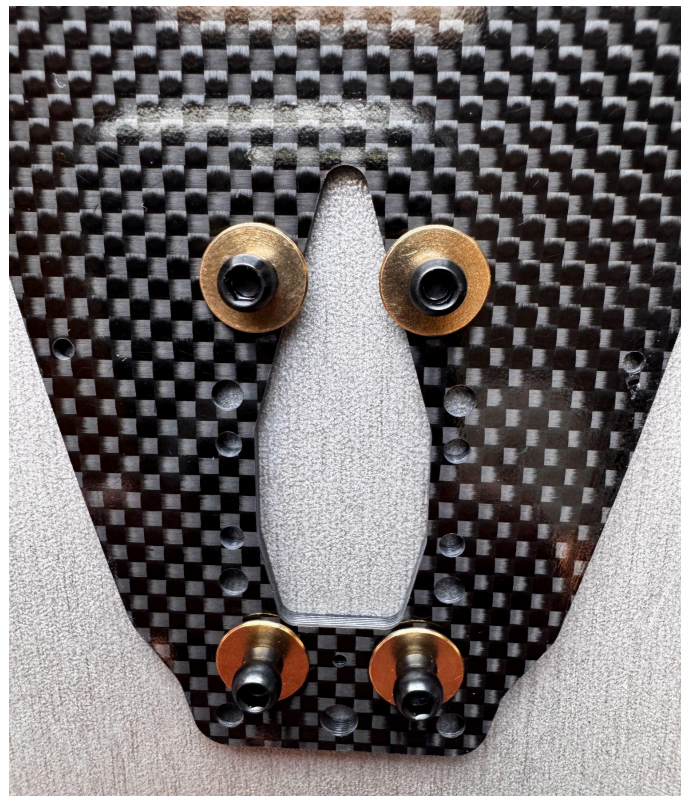


Step 6.

At least for the carbon kit, the rear wishbones pivot balls are assembled into the chassis using 1.5mm shims. The manual doesn't illustrate this correctly as in the figure, they appear to be orange and 6mm diameter, being in reality black and 5mm diameter. In the exploded views this is correctly displayed, but not in the assembly process. Just a warning.



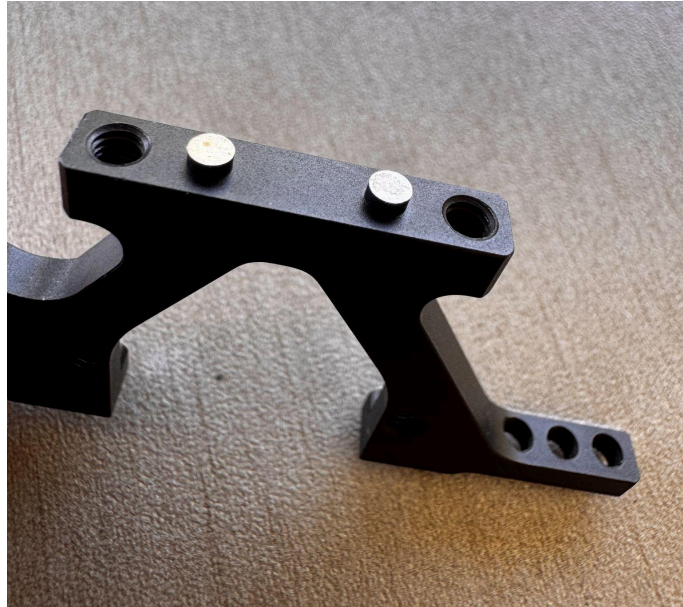
For this particular assembly, T-works brass suspension arms washers were used with the goal of increasing a bit the overall weight while lowering the CoG. They were installed with the chamfer side down to not limit the chassis flexibility.





Step 7.

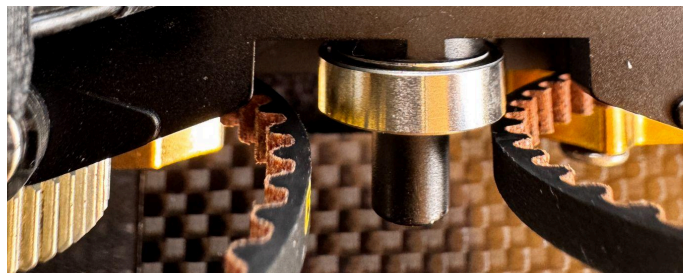
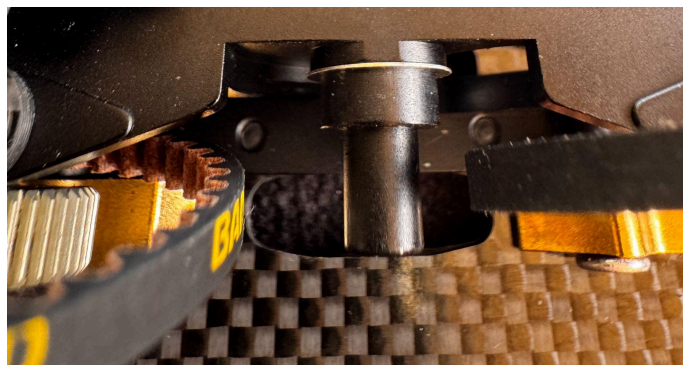
Bearing blocks, motor mount and servo support come with processed alignment tabs in both carbon and steel chassis versions, meaning that if you bought a carbon kit and you want to give a try to the steel chassis, it is not necessary to trim the tabs to avoid them showing below the lower chassis surface.



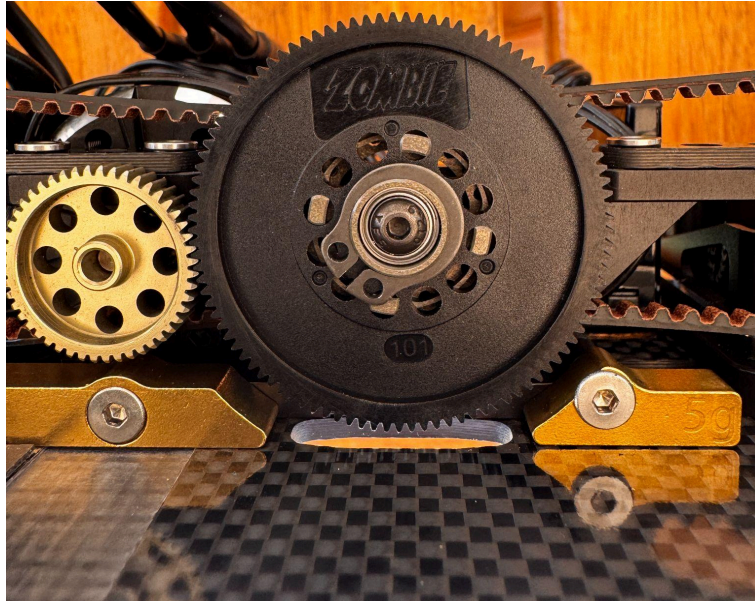
Step 8.

The 8x12x3.5 mm bearing sitting in the back of the mid-shaft pulley comes with a tiny play. In order to deal with it, it is recommended to use 8.1x10 mm shims to get the play under control. It is really important for the shim to be max 10mm outer diameter in order to avoid touching the external race of the bearing. Depending on your particular kit tolerances it could be necessary between 0,1 and 0,2 mm of shimming to get it perfect. There are several accessory vendors like T-works and MR33 selling shimming kits like the one shown in the picture, these kits are very handy and recommended, more specifically for our cars the 6 mm and 8 mm versions.

I've seen other recommendations leading to glueing the bearing to the holder but I prefer the shimming option being cleaner and way less risky.



With every new kit, I replace the original R9 c-style circlip with the equivalent external circlip. Special pliers need to be used for assembly/disassembly but it is way easier this way without the risk of damaging the pulley every time the main gear needs to get replaced.



Step 9.

Contrary to the previous versions of the Medius car and due to the belt length change, it seems that the initial position of the bearing excenters, instead of being centered like it was before, it is now 3-4 points to give more tension to the belt.

Step 11.

The X26 comes with link-style upper arms. In order to allow smooth link length adjustments, avoiding links popping out during the adjustment process, it is recommended to grease every thread.



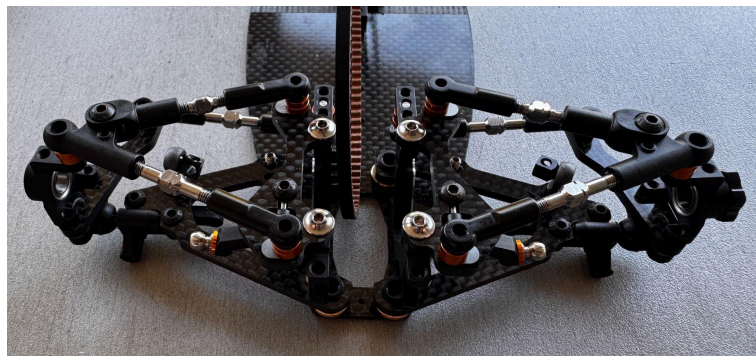
The manual displays all the rods oriented with the turnbuckle mark pointing out. By installing them this way, every time an adjustment is needed, even for the same axle, it is necessary to think how the particular turnbuckle needs to be turned to obtain the decided effect. This feels very confusing and prone to errors.

While adjusting camber and caster I always place the car's axle to be adjusted in front of me. Doing it this way, I always like that by turning the wrench to me the link extends and the other way around.

For the used T-works titanium turnbuckles, the mark indicates the left handed threaded side, meaning that for my preference, all the marks are pointing right while looking at the car from the front (for the front axle) or from the back (for the back axle).

Please consider that the mark convention is not the same for the different brands. For example, for the original aluminium turnbuckles from Serpent, the mark indicates the right handed threaded side.

This whole thing can be considered something minor but it will make your life lots easier. Feel your preferred convention and do it always in the same way and you will save lots of time.



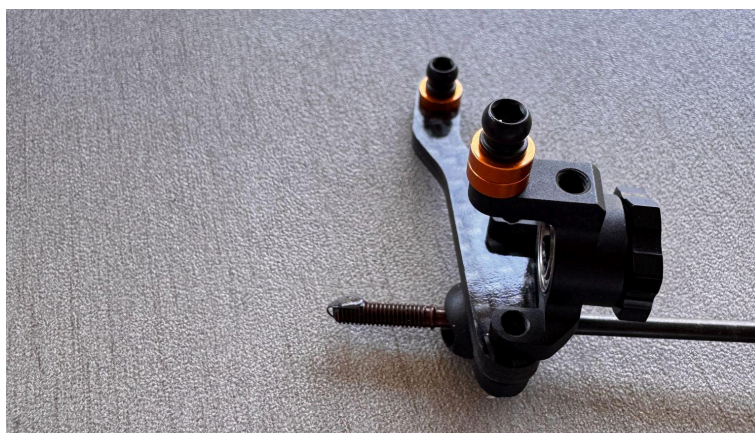
Step 12. and 15.

For an easier setup, without the risk of removing the setscrew from the aluminium steering block while trying to adjust the shimming, soft threadlocker is recommended to keep the setscrew in place.



Something to be attentive to is that the pivot ball hole from the plastic steering block mount isn't long enough, meaning that to avoid deforming/damaging the steering block when trying to adjust the manual's indicated track width, it is necessary to trim the pivot ball's thread about 1-2mm.

As mentioned in step 11, for smooth adjustment of the track width, it is important to put some grease in the pivot ball thread prior to threading it into the plastic wishbone terminal.



Step 18.

Different parts from the steering rack are rarely disassembled, meaning that using soft threadlocker in the pivot balls from the steering mechanism would be a nice recommendation to stay on the safe side. Even if disassembled for changing the shimming, as it is a small amount of soft threadlock, it will be very easy to remove. VC-3 threadlocker can also be used in case you play a lot with the steering rack shimming.



Step 21.

In order to obtain a perfect alignment with the spur gear, for larger diameter pinions, the rear carbon top-deck should be slightly trimmed to avoid contacting the pinion. Use a rotating tool to trim it allowing the necessary clearance.



Step 25.

Two modifications are recommended for the setscrews locking the shocks to the wishbones. Longer setscrews M3x10mm are recommended, using some soft threadlocker to avoid them rotating while unscrewing the shocks for maintenance.



Step 26.

To avoid losing the pin when assembling/disassembling the new front body support, you can use some thin tape in the pin-holder area.

Step 27.

In this case, it is a simple warning as the manual illustrates bushings to raise the carbon rear bodymount from the bearing holders. There were no bushings/spacers included with the kit.