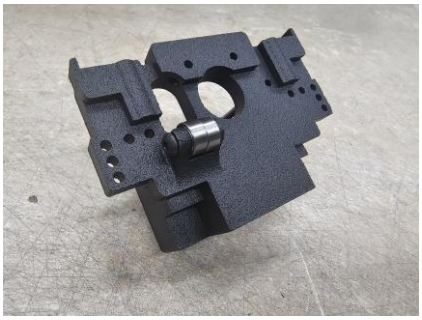
Factory WORKS TEN4.1

THE BUILD....

It is best to familiarize yourself with our manual before you start in. Make sure you have all the necessary components, tools, and beverages ready. If you are not very familiar with the RC10 design as well as vintage RC in general, this might not be a good kit for you.

Notes! You will need a few pieces to complete this conversion. First, you will need to make sure you have a steath transmission with the idler bearings in the case- the rere worlds from 2013 or so will NOT work, and since FanRc used that as his base, his wont either. AE currently sells these cases, part number 6565. You will also need a complete 2.25 stealth diff assembly. For this, you can use the FanRC diff or an AE. You will need to piece it together at this time. It is HIGHLY recommended to use our chassis brace/shorty battery holder for runners, especially with the new chassis. They are really flimsy and will cause the belt to skip. We also highly recommend a shorty lipo pack or a 6 cell. The battery cup on the bulkhead isn't going to like a full size lipo as they are much larger than a old 6 cell that the car was designed for. You will probably need to cut the bottom area out to gain some room. We have increased the belt width and beefed up as much as we can given the very limited work area, however parts are still going to break just like with any hobby grade rc car. BE CAREFUL during assembly around the printed parts. Areas like the rear bulkhead bearing holders are delicate until bearings and a screw are installed. Lastly, you need to know your way around an RC10. Otherwise you are best off not attempting this build.

1) Starting at the rear of the car, remove the stock rear bulkhead and shock tower. Install the (2) 1/8" x 5/16" bearings using the 3x12mm screw. BE CAREFUL when installing so you don't bend over the inside tab. It offers just enough support but it doesn't like to bend. Install the new Ten4.1 shock tower. Note that we had to change the location of the left lower hole to clear the belt (both on the Worlds tower). The camber link ball joint can now be transferred. If you want to use the Worlds hole you will need to remove the lower left shock tower screw. That's fine, MIP didn't use a 4th screw either. Install the new bulkhead and tower. Remember our holes are designed for STOCK hardware, if you are going to 3mm ball joints make sure you drill the holes larger first!

2) Remove your stealth transmission and open it up. Remove the idler, and using a 3/16" drill bit drill out the hole using the idler bearing as a guide. Now pop out the bearing and ream the hole larger either with a drill bit, step bit, or xacto knife. Install the new idler and shaft. *Lightly* lube the gears (since they are metal to metal) using your favorite gear grease- JConcepts RM2, Valvoline Crimson, Lucas Red and Tacky, etc. Reassemble the trans and check for endplay on the idler. If you have a lot of movement, use the included shims. You don't need it to be perfect, a little endplay is just fine. I found one on each side is typically perfect. Remove the top bearing cap (if you have one) and trim it to clear the pulley. Now install the roll pin and pulley. Follow with a 4-40 x ¼" screw. Tighten securely. A little Loctite is a great idea. Reinstall the transmission. Note, if you have trouble installing the pulley, use a longer 4-40 screw with a plain nut and washer to push the pulley onto the idler shaft.

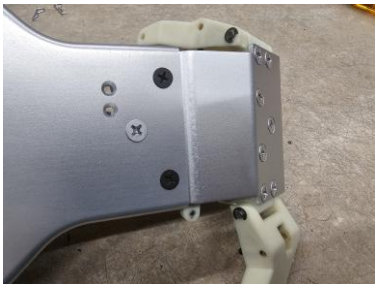



3) Ok now things will get a little harder. Let's preassemble some things to make final assembly easier. We will start by building the front transmission. Assemble the diff per your AE instruction manual. Install it using standard 3/8" x 5/8" bearings just like on the rear trans. Install the idler bearings and idler assembly just like the rear, and shim the same. Again you should run a light amount of grease on these metal gears. Close the trans case and install the (2) 4-40 x ½" socket head screws. Install the pulley using a roll pin and 4-40 x ¼" screw just like you did on the back.



4) Assemble the front CVD's using black grease or your favorite lube (the gear greases used above should be great for this). They build just like AE CVA's- Insert the barrel into the bone, fit that assembly into the axle and retain with the pin. You will now install the retaining ring to hold the pin in place. Install a pair of 5x10mm bearings into the steering knuckles, then insert the CVD. If using the short CVD's, you will need to add the shims now- one thick on the inside and and one thick on the outside seems to perfect, you can add an additional thin if needed. Center the pin in the hole, and install the clamping wheel hub. Once seated, install the locking screw. You will need to have this pretty tight for it to keep the hex on the axle, but that is its only purpose. If it isn't super tight it will not affect anything except its ability to stay in place when the wheel is removed. Now find the marking on the knuckles, I know this is going to sound weird but Kyosho did the same thing on their Mids… L goes on the right and R goes on the left. Find the "right" knuckle and left carrier as shown. Insert the caster hat bushings with the flange to the center. Slide the bone through the carrier slot and align the holes with the hat bushings. Install a 10mm screw and washer on the top and bottom, and make certain the steering pivots easily. Now assemble the left knuckle and right caster block.

5) Ok here is the part you have been looking forward to. Time for power tools. Step 5 is for people using a FULL noseplate. If you will be using a Worlds V cut noseplate skip to 5b. It is **highly** recommended to find a full noseplate. Remove the noseplate from your chassis and suspension. Looking at the bottom side, you will be countersinking the rear-most center hole and the two rear-most outer holes with a 100° countersink. These will be hidden so don't sweat it. The tensioner will use the two center holes, and it will be what the center screw through the chassis secures to. We need to slightly drill those center holes with a 5/32" bit so the screws do not thread into them. Lastly, lets bolt up the steering kit. Insert the 5/8" long screws up from the countersunk holes at the rear of the noseplate. Install a threaded post. Add a bearing, steering arm, and other bearing, and cap it off with a plastic nut. Do this for both sides of the steering. Install the center link with a 4-40 x 3/8" flat head screw using a shim between the link and the plastic steering arm. Tighten the flat head screw until snug, then back off until it pivots freely but doesn't have slop. Bolt the tensioner to the noseplate using the flat head screw in the countersunk hole. Keep it aligned while tightening. Bolt the noseplate to the chassis using the 8-32 x 3/16" screws in the front holes and a ½" screw in the center hole. This is the screw that is held by the tensioner. That's it. You are done. That wasn't so bad, was it?! The 5b guys don't have it this easy.



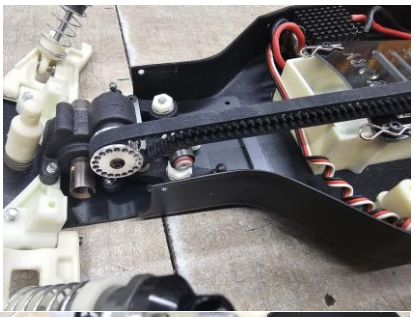
5b) Grab a beverage, we have some work ahead. We use the rear set of noseplate holes for our steering. Guess what you don't have. Yep. Those holes. Install your noseplate using the two short 3/16" screws in the normal holes. Take your drill template and slide it into place behind the noseplate. Make sure to keep it in one place while drilling. Drill the three holes with a 5/32" bit. Countersink them from the bottom of the chassis. Drill the center hole in the noseplate to 5/32" as well so the screw wont thread into it anymore. When countersinking the chassis be very careful as you will see the finish. Depending on the diameter of the countersink you purchased, going too deep can leave a stripe around the hole. Might want to practice on some metal first just to be safe. If you wish to drill the servo mount holes into the chassis for easier access you can do that now. Drill through the template and chassis and countersink for the smaller screws. If you are bolting in your servo, do it now before installing the extension. Now install the 8-32 x ¾" screws into the large rear holes. Secure on top of the new extension plate using a pair of steering posts. Install a bearing, steering arm, another bearing, and the plastic nut. Install the center link with a 4-40 x 3/8" flat head screw using a shim between the link and the plastic steering arm. Tighten the flat head screw until snug, then back off until it pivots freely but doesn't have slop. Bolt the tensioner to the noseplate using the 8-32 x 1/2" flat head screws. Ok you are now caught up with the rest of the class.



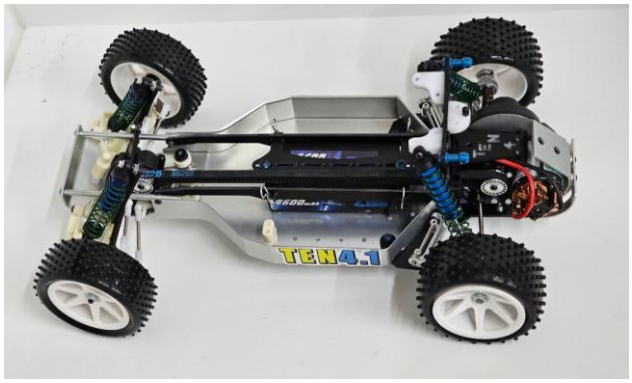


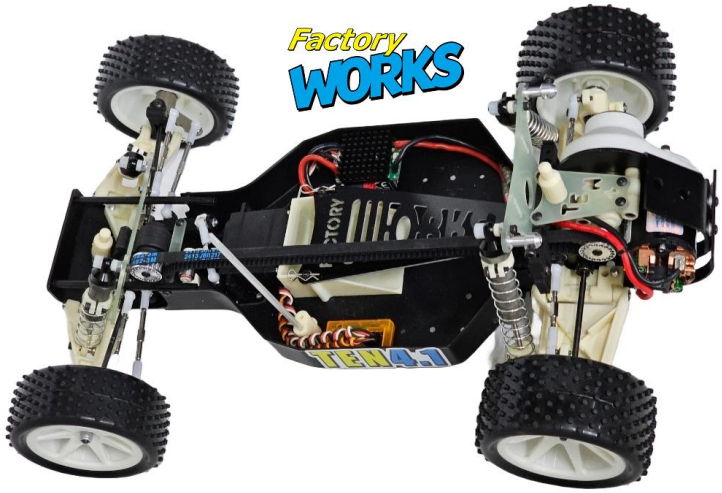
6) Ok things will be easier from here on out. Grab a beverage (5b guys are probably on their 3rd). Remove your stock front shock tower. Install the front suspension back onto the noseplate using only the outer screws. We will be drilling out the inner holes using the 5/32 drill from earlier. Now install the ten4 front gearbox using 8-32 x 5/8" screws. Don't overtighten, just snug. Drop the new ten4.1 shock tower down into place and fasten using 4-40 x 3/8" flat head screws. Reattach the shocks to the top of the shock tower. Install three of the ¼" x 3/8" bearings *edit- now 2 flanged and one non flanged* onto the tensioner post and follow with a E clip. Now attach the post to the tensioner arm using the 3x14mm screw. Note that it is slotted for tension, leave it as loose as possible until the end. Install the belt by pushing it from the front side of the rear bulkhead through the hole and around the rear pulley. Route it to the front pulley and around. Now reinstall your nose brace tubes. If you need a little more belt tension, you can add washers or spacers to the front of the nose brace tubes to stretch it out a little. The RC10 chassis have changed over the years, the modern rere chassis are very flexible compared to originals, and the dimensions have even changed a bit. Our Ten4.1 chassis brace is recommended and will help keep the belt tight. Adjust the tensioner to take up the slack in the belt. You don't need it tight, but you don't want it skipping under acceleration. Lastly, install your servo using double side tap, shoo goo, or screws if you are a step 5b builder. Starting to look like a 4wd eh?! Just wait till step 7.






7) You made it to the last step! Lets button this up. If you haven't already, remove your outer front suspension. Replace with the new caster block and steering knuckle assembly that you previously assembled. Install your old **4-40** ball ends into the new caster blocks. BE CAREFUL when installing to not crack the plastic. A long ball end is recommended to hold best. Again, do not use 3mm hardware unless you drill it to a larger size hole. Ask me how I know. Reinstall your camber links. Transfer over your steering ball joint to the new knuckles, follow with a stock nut just like the stock steering. These knuckles are pre-threaded to 3mm but you can easily install a 4-40 anyway, so long as you follow it with a nut on the other side. Reinstall your steering tie rods. Install the wheels and tires and admire for just a second. Don't take pics yet people will laugh at the weird camber and toe settings. Let's adjust those. Always adjust camber first. Once the camber is set, move on to the steering links and get those straight. Now you can take pics. After you are done bouncing around the suspension and driving the car around on the desk by moving the belt you can polish off that last beverage and take it for a spin. If you notice belt slip you may need to add those washers between the noseplate and the nose brace tubes. Add as many as needed to do the job.





TEN4.1 CONVERSION KIT