



### **Parts List for a WizzJet Build**

WJ01 – WizzJet Chassis - <https://wizzardho.com/wizjet-chassis-...>

TJF30 – Rocker Front End - <https://wizzardho.com/dynamic-rocker-...>

E85 – Dynamic Brushes - <https://wizzardho.com/dynamic-t-jet-b...>

E90 – PreBent Restricted Shoes - <https://wizzardho.com/pick-up-shoes-p...>

E84 – Pick Up Shoe Springs - <https://wizzardho.com/t-jet-pick-up-s...>

RT-HO Top Gears - <https://wizzardho.com/t-jet-cnc-top-g...>

RGT01 – Titanium Driven Shaft - <https://wizzardho.com/titanium-cluste...>

RGT09 – 9 Tooth Pinion Gear - <https://wizzardho.com/9-tooth-pinion-...>

RGT15 – 15 Tooth Crown Gear - <https://wizzardho.com/t-jet-crown-gear/>

TJA03 – Titanium Rear Axle - <https://wizzardho.com/t-jet/axles/>

TJA04 – Alternative Stainless Steel Rear Axle - <https://wizzardho.com/t-jet/axles/>

TJS003(size depicted by last 2 numbers) Bronze Spacers - <https://wizzardho.com/t-jet/spacers/>

TJT-330-BR Tires

Dynamic Armatures Dash 16 Ohm Armature

Dash Killer Bee Magnets

1. Peen Rear axle holes. Find a rear axle that doesn't have any movement (snug), but still free floats.
2. Check for chassis flatness with .064 gauge pins (doesn't 3 wheel)(.065 in front usually before peening)
  - a. Motor shaft and cluster shaft flatness check
  - b. Front & rear axle hole flatness check
3. Peen the chassis front axle holes, until both sides are slightly snug, then use a larger than .064 axle to work it a tad loose. (Same tightness as rear axle basically no movement up down front or back but will slide with minimal resistance).
4. Re-Check for chassis flatness with .064 gauge pins (doesn't 3 wheel). Usually not necessary and don't ruin your peen checking it!
5. Ream out the rear chassis back gear hole with an .068 reamer as it is not needed.
6. Use a VERY dull xacto, and cut a groove into a pair of brushes (lines up with brush tensioner). Brushes should be pretty level to each other.
7. Magnets should NOT be tight
8. Drop a motor in, 1 drop of oil on both top and bottom, attach top plate & clip, add power, and make sure it sounds good. Motor should move pretty freely up and down.
9. Peen top plate motor hole (on top of plate) if necessary. Check by seeing if motor spins freely in top plate. If there is too much rocking, peen it.
10. Check brush tension by putting a pair of shoes on the car, applying power, and lightly touching each brush tensioner and listening for increased motor pitch. If it increases, add tension.
11. Space the motor. Apply power to "see" where the motor wants to be. Take note of where the motor shaft is through the bottom of the chassis, and space it as such. (20-25 thou at the top, roughly, none on the bottom). Put a drop of oil on the top motor spacers.
12. Guide pin install, rough up surface that makes contact with the chassis, scratch the chassis surface, and use Goop to install. Thin layer on both surfaces.
13. Press the motor into the top plate gear by turning a quarter of a turn, spinning the motor a bit, turning a quarter of a turn, spinning the motor again, etc, etc, etc. Motor should have a little up and down movement, but spin FREELY!!!
14. Top gear axles have one end that is more chamfered, and use that end on the 9t side not the top gear side.
15. Peen the rear gear top plate hole on the. Should NOT be tight! No bind wanted! Want to create a 'bushing' by peening that the shaft will run on. **Only use the washer when peening the top, as the brass washer causes the bottom to swell and forces the pinion to rub the chassis.** The shaft should just float through but have no play.
16. Press the less chamfered side into the rear top plate gear. Does not need to be in the top plate for this. Turn in a bit, and turn the gear, rinse repeat.
17. Press the 9t pinion on. Push the shaft through the pinion until it is flush with the bottom of the pinion gear. PRE-OIL the top plate hole. Once pressed on the top plate gear should JUST BARELY move (1 to 2 thou play, but MUST spin freely).
18. Make sure there is no new drag/friction on the rear gear once attaching the top plate to the chassis. If there is, make sure the chassis rear hole is reamed AND free of burrs.
19. When putting the idler gear clip on, if it is too tight, it will cause a bind and a bad gear noise. Loosen up the clip a bit before installing.
20. The car with all the top plate gears on it should only pull **.09 to .1 amps @ 20 volts**. (This does change with difference grades of magnets, so its ok to be lenient, I wouldn't go higher than .012 however).
21. Crown gear. 10 spacer on back of crown, 23 spacers on front side of gear. Use oil to hold the spacers in place. Test the mesh without the idler gear, magnets and brushes. Just want to feel the mesh of the crown on the pinion. Use a smaller gauge pin to test the mesh of the

- crown gear on the pinion gear (RC uses an 054" pin). Should be NO wiggle in the crown gear. Ya, the axle/gear install looks stupid fun LOL.
22. Take the top plate off, and push the 'guide' axle back to the gear & install the spacers (@ .023") before pushing the rear axle onto the gear/chassis. Just want to space to the small gear 'box' of the chassis.
  23. Install the rear axle, make sure to hold pressure on the back of the 'guide' axle and press the rear axle through slowly making **certain** the axle lines up with the hole in the gear.
  24. Make sure axle is same distance on both sides of the chassis. Only push towards the inner gear boss. So, back side of the gear against the non-screw side of the press.
  25. Glom the Simichrome on the crown gear to break it in. Break it in at 7-8 volts. This takes much more time, but is safer than the Dremel method.
  26. Oil all spacers before and AFTER doing the Simichrome
  27. Around **.1 to .12 amps** with the crown gear in. (.14 max with dash arm, aurora tend to be .16 max).
  28. Minimal lash with the crown gear (while holding the top gear in place), but should free spin without top plate, and crown gear should NOT move side-to-side.
  29. Chamfer the rear axle slightly before installing rear tires
  30. Make sure front rims slide freely on the front axle. Use an .064 reamer to clean up the rim if it is tight.
  31. Clean up the edges of the plastic spacers by filing the inside ledge, and reaming with an .068 reamer.
  32. Rough up the ends of the front axle where the retainers will make contact, and use green Loctite sleeve retainer.
  33. Install one side of the axle, and slide the black retainer on the opposite side. If too tight, file the ledge some more. Repeat this process until the front axle floats nicely between both sides of the chassis. **Wizzard will soon have new plastic pieces in for this axle set that will remove this step.**
  34. Make sure front wheels are not pressed on too tight.
  35. Check car for 3-wheeling. Make sure there are no pick-up shoes on the car when checking for 3-wheeling. If when pressing on one front corner the opposite rear tire raises, you need to raise the front tire you pressed on slightly and check again.
  36. Sand shoes flat with very light pressure taking care not to bend the shoe.
  37. Need a parallel pair of pliers with a nice sharp edge to be able to grab the front of the shoe and bend it over for limiting travel more with .300ish front tire size. *The shoe should lift at the same time as the front tire lifts when tapping the rear of the chassis.* Meaning, lift **with** the chassis, not move with shoe travel. Repeat this as necessary until the shoes are perfect.  
<https://youtu.be/7cMnEUhepbo?list=PL0s5MuKXgui9DSQAZ0beOJGSNf6YxnCZQ&t=321>
  38. Choose your rail block, and start setting shoes for the rail height of the track you will be competing on. Shoes will usually start a tad heel heavy, so you will need to use your parallel pliers again to hold the shoe contact patch, and bend it accordingly to raise the middle of the shoe up some. The goal is to get the rail to run the entire length of the shoe contact patch.
    - a. WizzTracks – .014"-.015"
    - b. Plastic Tracks – Typically .014"
    - c. Viper Tracks – typically .013"
    - d. Max Trax – Typically .012"
    - e. Bowman Tracks - .010-.011"
  39. The shoe should lay flat on the rail block, and when pressing the rear of the chassis the shoe should still stay flat on the block.  
<https://youtu.be/7cMnEUhepbo?list=PL0s5MuKXgui9DSQAZ0beOJGSNf6YxnCZQ&t=991>
  40. Set shoe tension. Spring gauge, VRP tool, etc.

## TOOLS

Gage Pins - <https://www.mcmaster.com/gauge-pins/length~2inches/>

I, (Roger), bought a range from .60" to .645"

Parallel Pliers for Pick-up shoes -

[https://www.amazon.com/gp/product/B06W528R1F/ref=crt\\_ewc\\_title\\_huc\\_1?ie=UTF8&psc=1&smid=A30S4K4C207DC9](https://www.amazon.com/gp/product/B06W528R1F/ref=crt_ewc_title_huc_1?ie=UTF8&psc=1&smid=A30S4K4C207DC9)

### **RCs List of tools:**

#### ***Gear Installation Tool***

<https://wizzardho.com/t-jet-gear-installation-tool/>

RT-HO Direct Link - <http://www.rt-ho.com/tools.html>

FLR - <https://www.flrproducts.com/product-page/gear-installation-tool>

#### ***Tire Press***

(RT-HO currently backordered)

<https://wizzardho.com/wheel-press-by-rt-ho/>

RT-HO Direct Link - <http://www.rt-ho.com/tools.html>

Scale E <http://www.scaleengineering.com/Product%20Pages/TirePress1.htm>

#### ***Gear Removal Tool***

<https://wizzardho.com/t-jet-top-gear-removal-tool/>

RT-HO Direct Link - <http://www.rt-ho.com/tools.html>

***Peening Tool*** - currently just sold out, awaiting more

<https://wizzardho.com/t-jet-hole-peening-tool/>

#### ***Rail Height Pad Blocks***

<https://wizzardho.com/t-jet-rail-pad-block-012-015/>

<https://wizzardho.com/t-jet-rail-pad-block-008-011/>

RT-HO Direct Link - <http://www.rt-ho.com/tools.html>

#### ***Tire Puller***

<https://wizzardho.com/wheel-puller-from-rt-ho/>

RT-HO Direct Link - <http://www.rt-ho.com/tools.html>

#### ***Crown Gear Installation Kit from SE***

<http://www.scaleengineering.com/index.htm>

#### ***Crown Gear Moving Tool/Rear Axle Pusher***

<http://www.scaleengineering.com/index.htm>

### ***Pinion Removal Tool***

<https://www.flrproducts.com/product-page/pinion-gear-puller>

### ***Tech Block***

<https://wizzardho.com/tech-block-rt-ho/>

RT-HO Direct Link - <http://www.rt-ho.com/tools.html>

- **Tools I use less often but worthwhile to the best builders**

### ***Idler Post Expanding Tool***

<https://wizzardho.com/t-jet-idler-post-expanding-tool/>

RT-HO Direct Link - <http://www.rt-ho.com/tools.html>

### ***Gear Peening Screw***

<http://www.rt-ho.com/tools.html>

### ***Rivet Tightening Press***

<https://www.flrproducts.com/product-page/rivet-press>

Written/Compiled;

