Stalker assembly

Here is a step by step guide of how I assemble the chassis but first be sure to have the following items on hand:

- 36” of .062 piano wire
- 4” of .047 wire
- 6” of .055 wire
- 4” of .062 brass tubing
- 3” of 3/32” square and round tubing
- 3/32 X 3/16” axle bushing for jigging
- .812 jig wheels
- 2 pairs of pliers
- Small flat head screw driver
- X-acto knife
- Flat and round file
- 280 or 320 grit buffing wheel.
- Metal ruler/right angle square
- Duct tape
- Some card stock
- Oil
- 3/32 drill bit
- Precision drill bit (cleaning out and de-burring pin tubes)
- Reinforced fiberglass cut off wheel
- Sand paper
- 60/40 solder
- Flux (if using acid use a quality brand)
- Minimum 50 watt soldering iron
- A clean jig

1. Check to make sure the motor bracket is bent at 90 degrees at both corners. If you need to adjust use a pair of plier and place some tape over the teeth as this will prevent the bracket from being scratched. Next grip the bracket as shown in the picture and adjust each side as needed. Use your ruler or right angle to verify the angles.
2. Verify the front of the motor, jig wheels, and motor bracket are sitting flat. Use bushings while jigging the chassis.

3. Bend the upright up on the nose using the same method as described for the motor bracket. Check for flatness. Set your jig for 4.5” and place the nose piece in the jig with a axle in place. This will help keep the nose square to the motor bracket.

4. Sand and tin 4 pieces of .062 wire. Two pieces need to be 5-7/8” long and two pieces at 4-3/4” long. The two longer ones will go on the inner rails. Bend the long pieces at 1” from the end of the wire and place one of each on each side of the bracket. Adjust the width of the 1” wide section so they cleanly meet together. You can now adjust the length but ensure there is a minimum of 26/32" or 13/16” between the rear of the motor bracket and the front edge of the wire. Next lay the last two pieces of wire along side the inner rails and slide all four rails into the nose piece. Note there will be a little space between the end of the wire and the end of the slot of the nose. Use jig pins to hold the rails in place. Solder the rails behind the rear axle first then the rails to the nose. Let the pieces cool down for a couple of minutes and check to ensure all pieces are still flat.

5. Apply flux to the top and bottom of the rails. Applying flux to the bottom of the rails will help the solder flow between the rails. With even heat apply solder to the rails. Solder one side at a time and allow to cool before doing the other side. Be sure to go over the initial solder joints also to ensure a strong joint.
6. Use a file and de-bur the edges of the guide tongue. Set your guide lead to a maximum of ¾”. Apply flux to under the guide tongue and again on the edges. Remove the front axle and solder the tongue in place.

7. Sand and tin a 3” piece of .062 wire. Make a “U” brace for the motor bracket. Place a .032 shim under the motor bracket and place the brace on top of the shim. While holding the brace tack solder one side to the bracket and check for straightness. Finishing soldering the brace in place and remove the .032 shim. Trim off the excess wire from the brace.

8. If you want to install the rear weight/pan stops now is the time. De-bur the edges of the stops and tin 3” of .055 wire. Use the jig pins to place and hold the stops in place on your jig. Make a 90 degree bend and place the long end of the wire on top of the stops. Rotate the wire so the short end sits flat against the motor bracket. While holding the wire and stop in place tack solder the brace to the motor bracket. Next check to make sure the wire and stop are sitting flat against each other and on the jig. Use a small flat head screw driver and apply a small amount of pressure to the wire on top of the stop. Apply flux and solder only the wire to the stop. Keep pressure on the wire and allow the metal to cool for about 45 seconds. Apply flux between the stop and mail rail. Repeat for the other side.
10. Cut two pieces of 3/32” square tubing for pan stops on the nose piece where recessed. While holding in a pair of pliers use an X-acto knife to de-burr the inside of the tubing. Leave a little extra to be trimmed off after being soldered in into the recessed area. Apply flux to the recessed area and use a screw driver to hold in place while soldering. Repeat for the rear stops if installed and de-bur the inside of the tubing.

11. If you installed the rear stops trim the rear of the pan just behind the engraved line using the fiberglass reinforced cut off wheel in your dremel. You can always remove additional material to increase movement front to back if desired. Use a file to de-burr the edge and check with a square to ensure a 90 degree cut. Pan length should be about 2.765” after cutting. This will provide about .025 of front to back movement. Check side pans to ensure they are flat. Use jig pins to hole pans in place.

12. Cut four pieces of 3/32” round tubing ½” long and de-bur edges. Sand and tin about 7” of .062 wire. Measure approximately 9/16” from the end of the wire and make a 90 degree bend. Place the wire against the main rails and trim. Repeat this four times and leave a little extra as it can be trimmed off after all four hinges have been installed. Take two of the hinges and check for pan movement on both sides to ensure they are equal. Adjust pan length if desired.
13. Apply oil to the end of the wire that will be inserted into the tubing. Place the hinge against the main rails and push the pan against the the nose of the chassis. If you did not install rear stops set the front hinge to limit how much front to back movement the pan will have. Repeat for the rear hinge. Use a screw driver to hold the tubing in place while soldering. Solder the hinge to the pan and repeat for each hinge. Once all hinges are installed trim off any excess wire with a cut off wheel. Use a file to remove any burrs.

14. Sand and tin 4” of .047 piano wire. Make a 90 degree bend at the end of the wire and place on top of the pan. Measure and cut to length for the pan stop. Oil the end of the wire being placed into the square tube and apply flux to the pan where the wire stop will be soldered. Use a screw driver or X-acto knife to hold the wire in place. Check to make sure wire is sitting flat in the tubing. Don’t worry if you get a little solder in the engraved line for the pin tubes. Repeat three more times.

15. Install pin tubes on the pans. I prefer to use a length of .062 tubing then trim off excess after soldering. You can also trim to length before soldering. Apply flux to the engraving lines. Use a screw driver to hold the tubing in engraved lines while soldering. Use a small file to de-burr the tubing edge then run a precision drill bit through the tubing.
16. If any solder ran under the chassis now is a good time to get it cleaned up using a buffing wheel.

17. Next is to install the center weight. Some may prefer a fixed weight but here are the steps to install a removable one. First make sure the center weight fits easily between the main rails and that it is flat. Use a ruler and find the center line on the front edge of the center weight. Put the front edge on a flat surface and use a ruler to draw a line. Cut two ½” pieces of .062 wire and two pieces of .062 brass tubing. Place one of the .062 wire edges on the line you made on the center weight and tack solder in place. Place the second piece of .062 wire along side the soldered one and check to make sure they are on center. Make a second solder joint on top of the two wires then finishing soldering the second wire to the center weight. Use a screw driver to hold the tire in place while soldering. It’s also a good idea to lower the heat of your iron during this step. You may see a little discoloration on the engraved side because of soldering. Nothing to worry about as this will come clean with some steel wool.

18. Solder a piece of .062 tubing to the top of the .062 wire on the center weight. De-burr the tubing using the same method as on the pin tubes. Insert a new, straight body pin through the tubing on the center weight. Oil the pin and slide the second piece of .062 tubing onto the pin. Align the center weight between the main rails and let the second pin tube hang over the back edge of the nose of the chassis. This will allow free movement of the center weight. Solder in place. Cut two pieces of 3/32” square tubing to 3/16” long and de-burr. Sand, tin, and cut two pieces of .055 wire to 5/16” long. Solder the 3/32” square tubing to the inner rails behind the center weight. Position the square tubing to be back stops for the center weight. Place the .055 wire with oil into the square tubing. Solder the wire onto the center weight. Check to make sure the center weight moves freely.
19. Bring the chassis to the sink and give it a bath. If you installed a removable center weight remove it and place the pin in a safe place. Wet the chassis with hot water and apply comet. Scrub all joints with the brass wire brush then use the steel wool with comet over the rest of the chassis. Be sure to support the underside of the chassis when cleaning. Dry off and apply some polish.

20. Clean your jig with lighter fluid and a clean towel. Reinstall the jig pins and verify the chassis is flat. Make sure all burrs have been removed. Prepare to solder in the rear bearings. Rough up the rim of the bearings, insert into the motor bracket, and apply oil to the bearings and axle. Apply flux to the bearings and solder in place using .812 jig wheels.

21. Keep the rear axle in place and slide a 3/32 axle/piano wire cut to 3” long into the front uprights with one brass retainer to the inside of each upright. You can trim off the excess later once you have decided on the front wheels you want to use. The full length axle will also ensure it fits into the pegs for alignment. Verify the axle is sitting properly in the uprights and the jig wheels are sitting properly on the jig. If you need to adjust the holes use a small round file or a 3/32 drill bit. Be careful if you using the drill bit to not oversize the hole. Insert the drill bit into the upright before powering on your dremel or drill. It’s o.k. to use a 5/64” drill bit instead which is a little smaller and may be easier for you to use. Take the card stock and cut two slots so it can be slide under the front axle where you will be soldering. This will help keep the area clean as getting under the front axle to clean can be hard to reach. Apply flux the both sides of each upright and solder the axle in place first. Apply flux to the axle and upright then heat up the brass retainer and slide up against the upright. Let the metal cool before removing from the jig. Bring the chassis back to the sink and wash these two area’s again. Apply another coat of polish to the chassis and front axle.
22. Assembly the chassis and set the guide spacing. If you have already tried different tires you may need to add some weight. Start by adding weight to the center section (3/4” X ½” = 2.5 grams). The car should balance better exiting the turns. If the rear of the car is still loose or tilting out add weight (3/16” X ¾” = 1.0 grams) to the rear stops if installed or to the rear of the pan (3/8” X 3/8” = 1 gram) if stops are not installed. Make sure the weight does not interfere with the movement of the pans. When mounting your body make sure the body pins to not hit the hinge as this can restrict movement.