

## ***MLW S13 and RS23 Kit***

This instruction article documents an RS23 build, but S13 models are identical except for the truck side frames and the addition/omission of some of the details included.

Thank you for purchasing this kit. Before starting, make sure you have the tools and supplies required.

### **You will need:**

- Life Like SW switcher chassis or Micro Trains SW1500 switcher chassis. If you choose the MT model, make sure you get the one with AAR trucks. Also keep in mind, the later runs of Life Like and Micro Trains chassis with brass worms run more smoothly. A Kato worm can apparently be substituted with good results.
- Micro Trains 1015 couplers
- Pin vise with #80, #68, #65, and 3/32" bits
- CA glue
- Sprue nippers
- razor saw
- CA applicator
- sharp new hobby knife and cutting matt
- hobby files and 400 grit sandpaper
- Soldering iron, flux, solder
- horn of your choice- I simply could not produce this part. Working on it.

### **The following 3d printed parts are provided in this kit:**

- 1 body
- 1 frame
- 1 cab
- 1 fuel tank
- 2 sideframe units (RS23 kits only)

- 1 PGE watchman heater
- 1 CP RS23 watchman heater
- 2 footboard assemblies
- 1 bell and mount
- 1 horn mounting bracket
- 3 dual sealed beam lights
- 3 dual pyle lights
- 2 single beam lights
- 1 CN spare knuckle box
- 1 bell and mount
- 4 MU handrail braces
- 1 stack

**The following etched parts are included in this kit:**

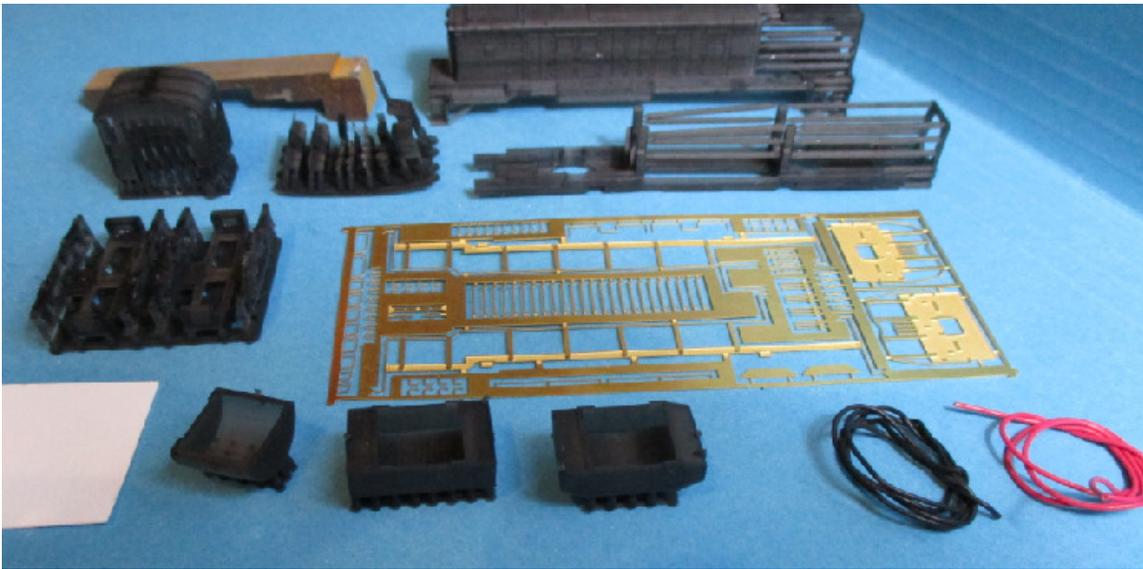
- 2 side sill/handrail units
- 2 pilot plate/handrail units
- 2 sunshades
- 6 windshield wipers
- 24 handrail stanchions
- 2 antennas
- 24 door handles
- 8 lift rings
- 10 assorted grab irons
- 4 wind deflectors
- 10 wind deflector mounting eyebolts
- 2 cut levers

- 2 pilot handrails
- 4 MU hose assemblies

Also included is:

- 2 peices of wire for wiring trucks (black) and motor (red)
- 1 water cut weight
- 1 window template
- 1 peice of clear styrene

1. Inspect the parts and familiarize yourself with the kit. This photo shows all parts, your kit will not have everything illustrated.

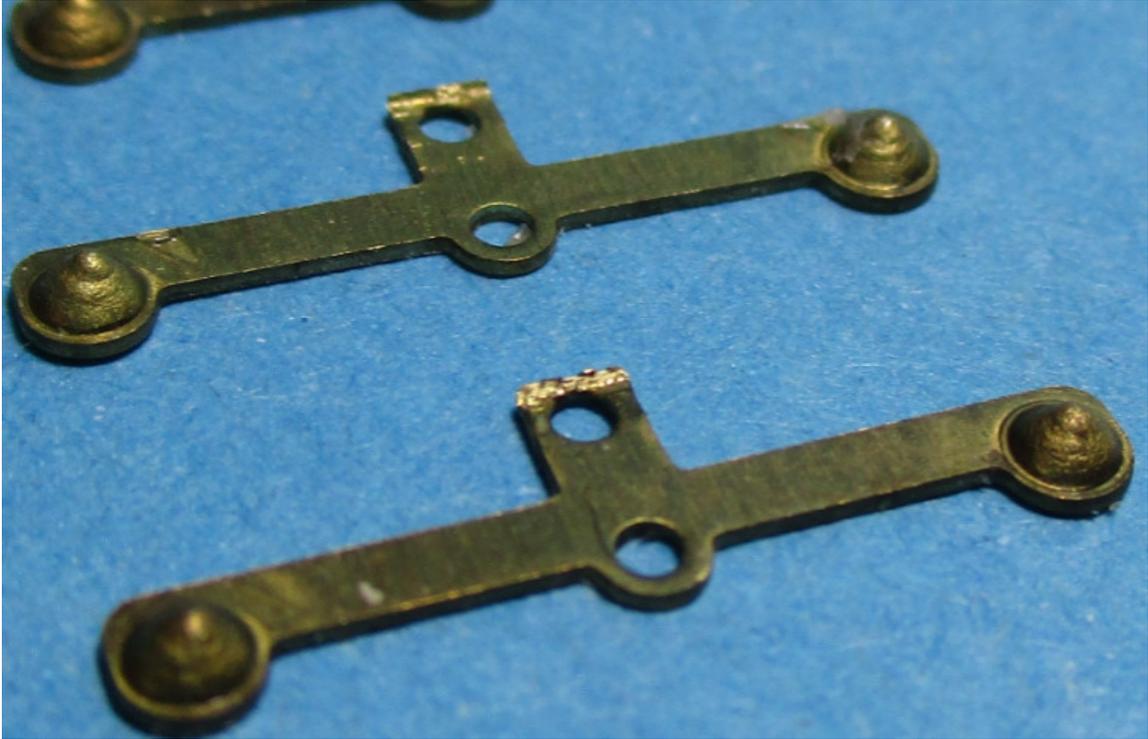


2. Remove the support structures from the 3d printed parts. I have designed this so you can use a hobby knife to cut through them at the point where they join to the parts. Use 400 grit sandpaper to clean up the attachment points. The roof of the model may have some print lines evident, these are very light and can be removed with a light sanding of 600 grit sandpaper.

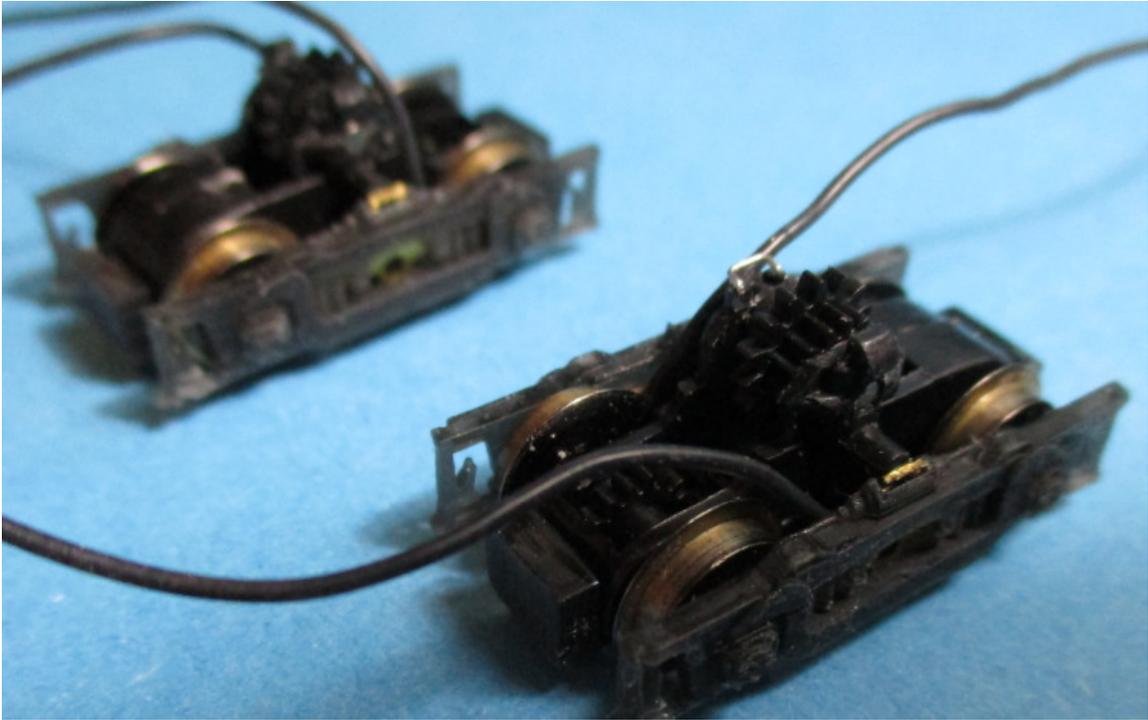
3. Disassemble the chassis. This photo shows the mechanical parts you need from the chassis. If you are building an S13 you need the complete truck/sideframe assemblies. Make sure you keep the tabs that contact the motor.



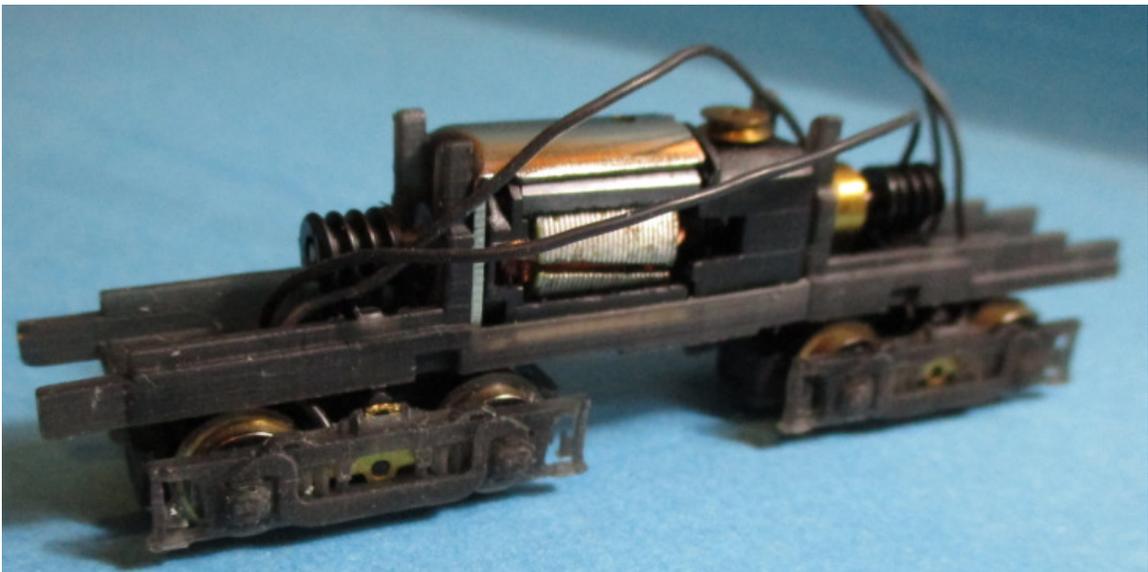
4. Cut off the top of the pickups above the top hole. I cut one off too short. Oops. Still works though. Solder wires to the truck pickups and to the motor tabs, as in the photo. I found I had to clean the brass contact strips well to get solder to stick.



5. If you are building an S13, reassemble the trucks with the wired pickups. If you are building a RS23, insert the axles in the gear boxes (make sure they are oriented properly), hold the pickup wipers on the axle ends, then GENTLY clip the side frame units over the gearboxes. This is the only stressed 3d printed part in this kit, and it is somewhat fragile. If it breaks during reassembly, glue the parts together with CA glue. In any case I decided it was a good idea to put some glue onto the sideframe units where they clip to the ends of the gearboxes.

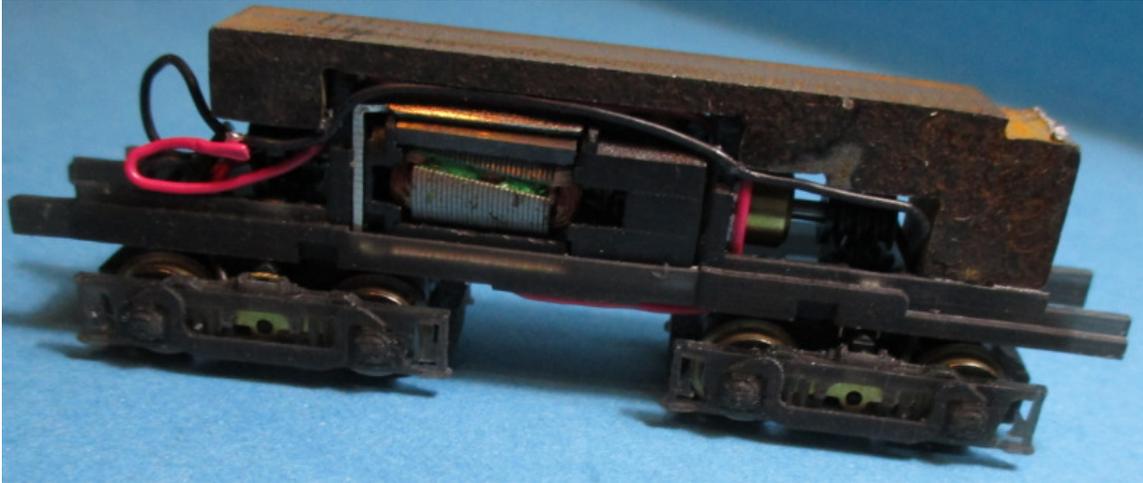


6. Insert the motor into the frame, until it clips into the motor mounts. Feed the wire you soldered to the bottom clip, up through the hole for it in the chassis. Feed the pickup wires through the slots in the frame, then insert the trucks into the frame at 90 degree angle and swivel them until they click straight.

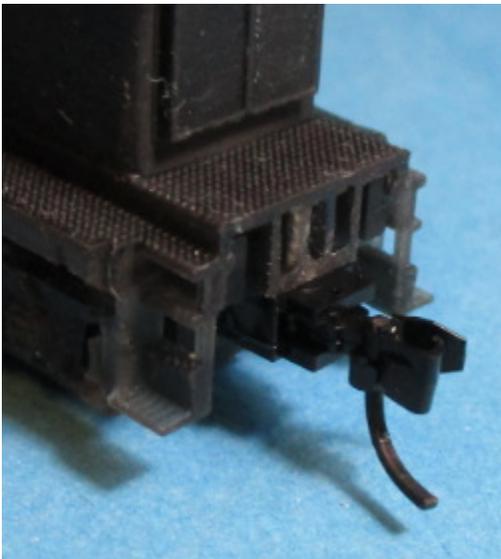


7. Wire the chassis for lights and DCC if you wish. Place the weight on the chassis and test run. I simply wired it for straight DCC for testing, but there is room provided in the front for lights,

and in the cab for a decoder. I also found it difficult to put it all together without the wires fastened in place a little more solidly, I tack glued the wires in position and the weight on top of the motor mount to make it easier on myself. You won't need to disassemble the chassis again, so you can make it more or less permanently together.



8. The Micro Trains 1015 couplers have some molding marks that interfere with later parts. Sand/file the round marks on the bottom and top of the coupler box until smooth. Drill the coupler pads #65 and install the MT 1015 short shank couplers in their boxes. Remove the boxes and set them aside. I glued the screws on mine and had issues later on with pilot install. So don't glue the screws.

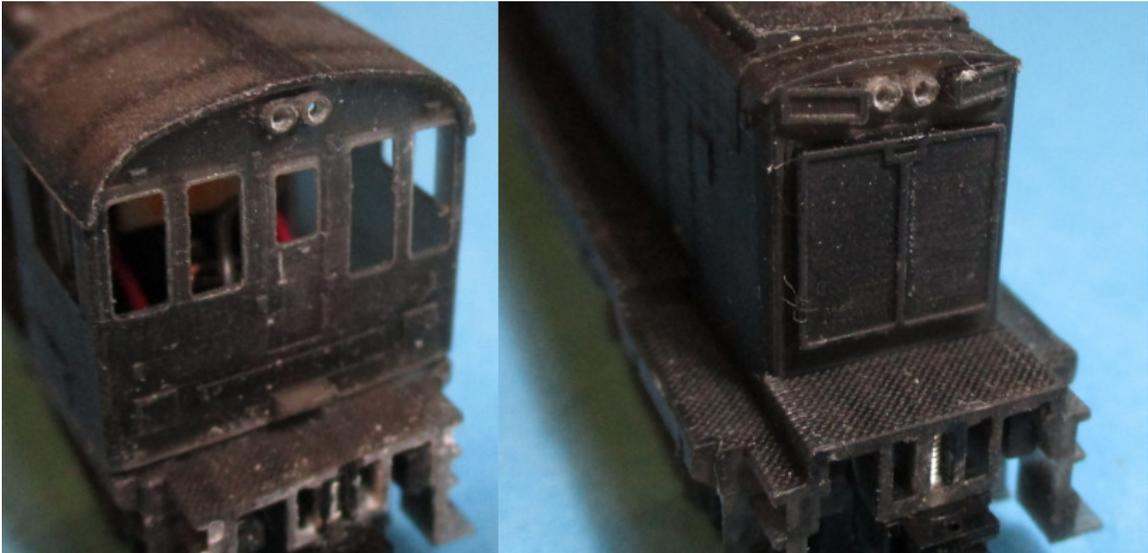


9. Check the fit of the shell on the frame. You need to remove the brace inside the front of the hood between the body mounting tabs...notice that there are four tabs that click into the frame. You may wish to file these down on the body to allow an easier fit, some people like a very secure fit, so I provided for both. You can see where I filed mine down to almost nothing, as I was going to be doing a lot of test fitting to make sure everything fit as I designed it to. I find

the shell presses on the chassis and is quite secure, without the fit of the nubs. When the body is seated properly on the chassis, the frame rails should be even with the bottom of the chassis.



10. The light housings on this model are designed to be lighted with lenses made from .030" fiber optic. Choose which light housings are correct for your prototype. If you are installing the large round barrel light, drill pilot holes #68, then 3/32, insert the housing, glue in place, then drill the center #68 for a fiber optic or whatever you wish to light it with. If you are using some of the smaller housings, drill the center location with #68, glue the housing in place, then drill the lenses #68 for fiber optic or whatever you wish to light it with.



11. With your hobby knife, remove the etched parts from the fret. Inspect the parts, particularly the side handrails. For S13 units, a high right handrail is etched in place with a low one for RS23 units, simply trim the undesired one from the assembly. I would recommend putting these all back into the bag they came in for safe keeping. In photos you can see I managed to cut both off during my testing. I will just replace it with a chunk of wire during the painting/finishing process.

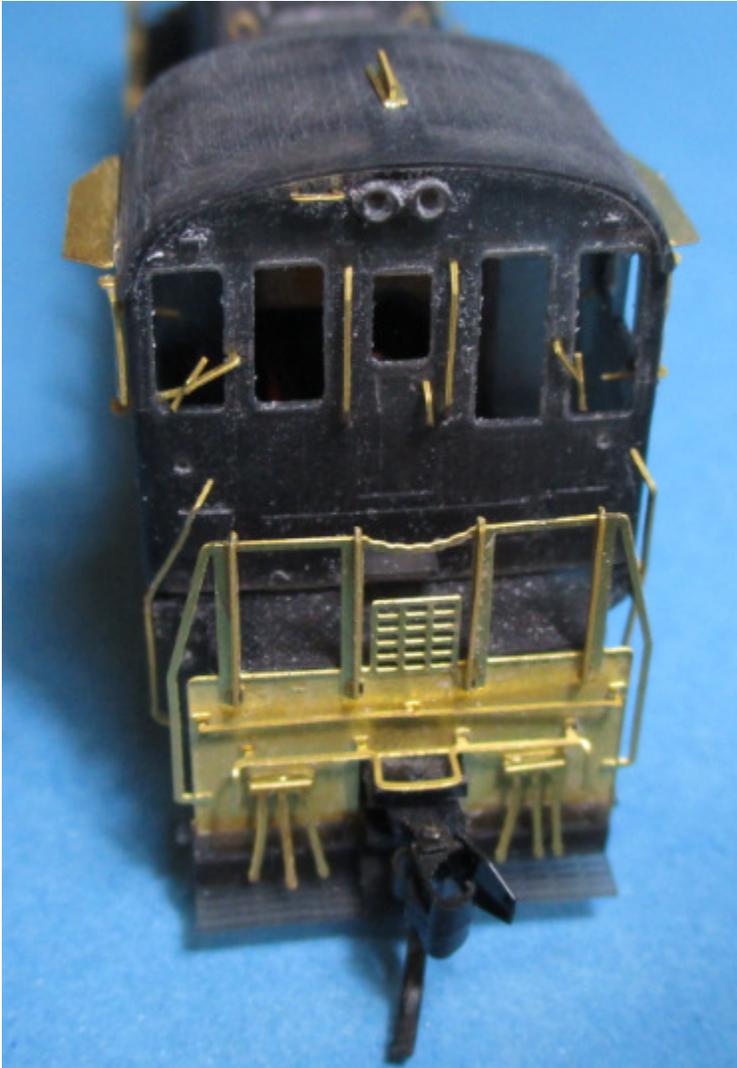
12. Drill all the holes in the body for the grab irons, lift rings, windshield wipers, sunshades,

antenna, and door handles #80, and install as desired. There are lift rings in place on the body if you can't make yourself drill holes and install them on an N scale model. There are also large handrails and cut levers to install on the pilots at this time. I would leave those off until later if you are modeling a tuscan and grey RS23. You may need to drill through the holes for the handrail mountings, because of glue leak. You can see on the model I built, I installed a watchman heater, then realized they were removed in later years, so I lost the grab bolt heads on the side, in front of the cab. Also, you will need to file the inside of the body smooth where the grab irons are glued in place, to clear the chassis.

13. I decided it was easier to install the major handrail units before painting. It does make masking a challenge, but it is almost impossible to assemble the handrail units off the model. Begin installation by gluing the pilot plates to the ends, and the side sill handrails to the sides of the deck. I use gap filling CA. Make sure when you glue the side etched parts on, that the recesses in the side of the deck match the locations of the holes in the etch for the stanchions, and that you don't plug those holes. Be aware the front and back pilots are DIFFERENT. This will be a bit of a pain, carefully file the opening in the plates. Once you have these parts glued in place, bend the ends to fit the model and fit into the holes in the body. Glue the stanchion angles in place using CA. Also at this time, glue the MU receptacle brackets between the end stanchions if your prototype is so equipped.







14. Glue the bell and mount to the top of the hood on the front of the model. I missed this at this point, so I will install mine later. Also install the horn at this time. I didn't have one at this step so I will install mine at the same time as the bell and mount. There is a mount provided for the horn, CP moved the horns into different locations on the RS23 so check your prototype.

15. If you are building a rebuilt CN unit, glue the knuckle box/step to the deck in front of the cab on the right side.

16. If you are building a unit with a watchman heater, glue it to the deck in front of the cab on the right side. It's the one with the stack. PGE/BCR units have a different box which I think is an electric heater.

17. Glue the footboard assemblies in place to the pilots. The bottom of them should be even with the bottom of the pilot plates. Also glue the MU hose assemblies to the pilots, unless you are modeling a tuscan red and grey RS23. I glued these parts on earlier as you could see from

the photos. I would leave them off next time so they don't get bashed.

1. Paint your model as desired. I am making this one into a Windsor and Hansport ex CP unit. Photos this close show the paint defects! Time to fix.



16. Peel the window template off it's backing, and stick it to the clear plastic. Cut it out with scizzors, peel off the sticker, and install the clear windows in the recesses behind the walls. I like to use MicroScale liquid decal film for this. Keep in mind some windows are not used for your model, this sheet provides for as built S13, rebuilt S13, and RS23 models.



You are finished your model! Thank you for purchasing this kit. Please visit [www.briggsmodels.ca](http://www.briggsmodels.ca) for information on exciting new products and updates to instructions.