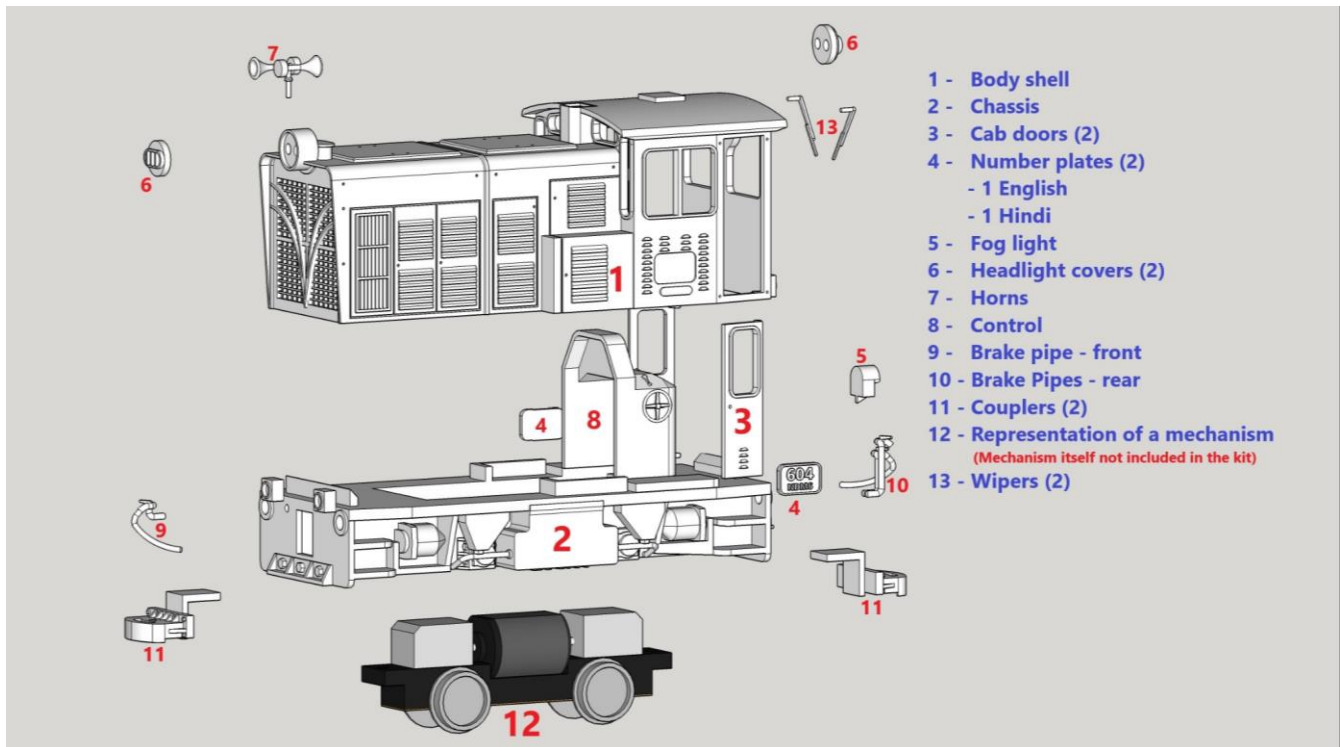


OO9 Kit: Motorization version

PLEASE READ BEFORE YOU BUILD



- 1 - Body shell
- 2 - Chassis
- 3 - Cab doors (2)
- 4 - Number plates (2)
 - 1 English
 - 1 Hindi
- 5 - Fog light
- 6 - Headlight covers (2)
- 7 - Horns
- 8 - Control
- 9 - Brake pipe - front
- 10 - Brake Pipes - rear
- 11 - Couplers (2)
- 12 - Representation of a mechanism
(Mechanism itself not included in the kit)
- 13 - Wipers (2)

Congratulations! You now own a unique Indian Railway model kit by Precision Model Works. We are so very happy that you chose to model something one of a kind and gave us the opportunity to help you make your dream model. Before you get started here are a few things that you should know.

Our models are 3D printed, in particular, resin 3D printed. As much as it looks just like any other plastic model kits, there are few nuances that you need to be aware of:

- Resin shrinks and expands during the printing and curing process. So, no matter how precise our designs are, mating parts might have slight differences in dimensions and tolerances. **You are expected to use a file and sand paper to prep your model wherever necessary.** We recommend a needle file set for rough adjustments and a 1000 grit sand paper for finishing.
- We use latest 3D printing technology to print in very high definition, but since 3D printing works in layers, it is impossible to avoid print lines and support marks in certain areas. While the support marks in our models are always in obscure places, **you might have to do very light sanding in some visible parts depending on your appetite of fit and finish.** We recommend at least 1000 grit sand paper, but 1500 grit will be better.
- Resin printed parts sands easier/faster than ABS. While it makes making models much easier, there is a risk that you might end up sanding too much. So, be gentle with your sanding and check the fit frequently.
- There is no alternate of a good primer! **We strongly recommend that you use a good primer, preferably airbrushed or spray painted on the model before you start painting.** A 24-hour minimum curing time should be given before painting.
- **Superglue / CA glue works the best to fix components.** We recommend using the gel type ones which will give you a little more time to set things before the glue cures. Use an accelerator for situations that need faster curing. Moderation is key.

Key Instructions:

- Familiarize yourself with the parts using the exploded diagram above.
- Check for fitment of all major parts before starting your assembly and gluing any parts. File /sand as necessary.
- For all handrail holes, make sure to drill the holes PRIOR to priming your model. These marks are very tiny and you might lose them if you don't drill the holes before applying the primer/paint.

Motorization:

We recommend using **Narrow Japan NG-WP2208** to motorize your **PMW OO9 NDM6 kit (NOT INCLUDED IN OUR KIT)**. This is a 'drop-in' mechanism that fits the dimension perfectly and we have also included two pins so that the mechanism is properly aligned without any extra effort (fig 1). The whole assembly is small enough to give you plenty of room for weights, DCC decoders, stay-alive and speakers – all in that tiny package (fig 2). So, depending on your appetite, sky is the limit! Once you install the mechanism, you need to glue the control desk in place making sure it is square and also leaves a gap for the shell to go in the designated groove for proper press fit – a steel ruler might come handy for both checks (fig 3).

Adding headlights:

If you wish to add lights to your model, you need to complete the following steps BEFORE painting the models. Once the lights are installed, put long term masking on the LEDs to ensure the LEDs don't get exposed to paint.

You need **4 pre-wired SMD LEDs** (available in eBay and many other places) – **0402** (preferred) or **0603** (Max size) – Fig 4.

- For the front headlights, drill two holes in the predefined round grooves for LEDs at an inward angle so that the two holes meet at the back of the headlight (fig 5).



Fig 1



Fig 2

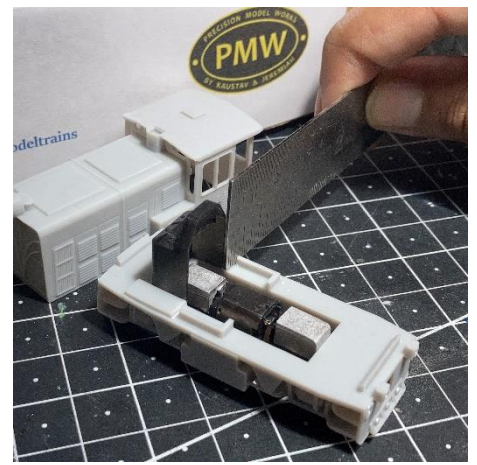


Fig 3

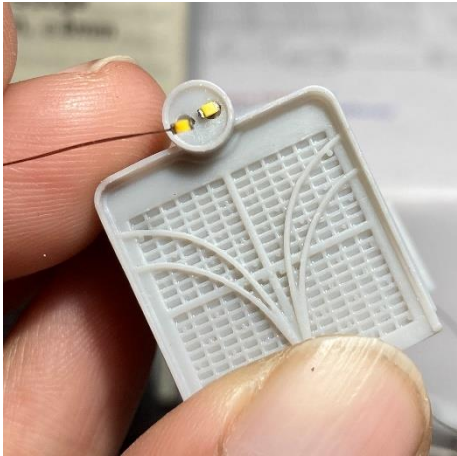


Fig 4

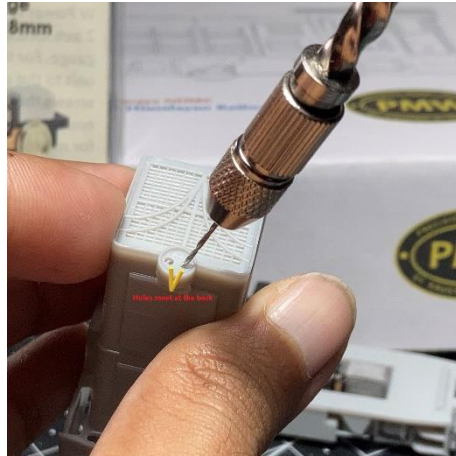


Fig 5



Fig 6

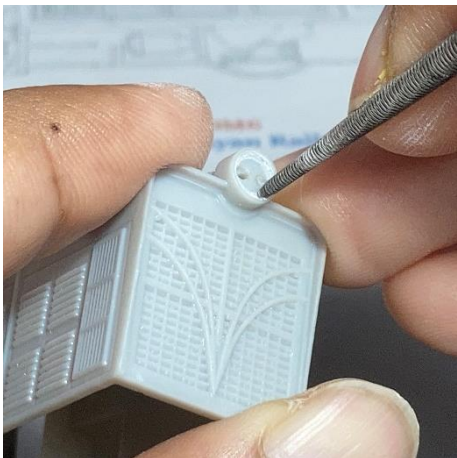


Fig 7

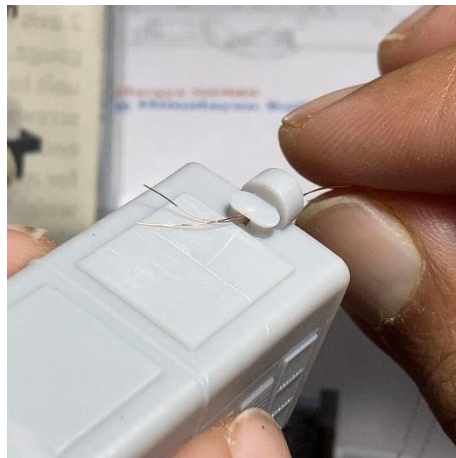


Fig 8



Fig 9

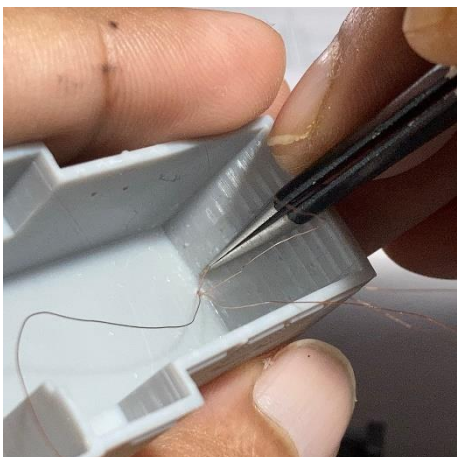


Fig 10



Fig 11

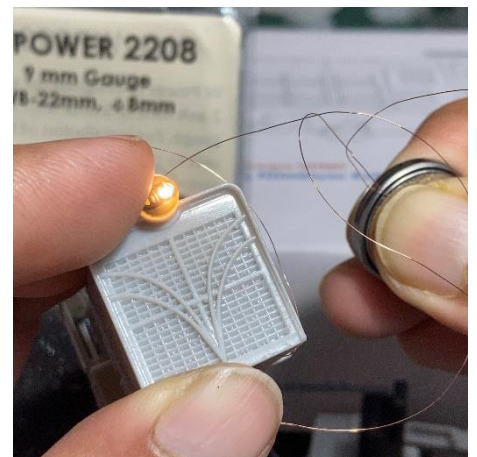


Fig 12

- Drill another hole from underside of the roof that meets the junction of the holes that you drilled from the headlight housing (fig 6).
- Use a needle file to smoothen the inside rim of the housing so that the headlight cover sits properly (fig 7)
- First push the wires of the LED through the holes to the other end of the hole behind the headlight (fig 8).
- Loop the end and push it down the vertical hole using a pair of tweezers (fig 9)
- Once the end come through the hole under the hood, pull that end all the way do this for both the wires of the LED till the LEDs are in their respective housing (fig 10).
- To install the cover, you need to align the holes in the housing so that the LEDs fit in the holes in the cover (fig 11). Note that you should be doing the final installation AFTER you finish painting the model and the headlight cover, but you should do test fitting at this stage.
- Before you fix the LEDs, make sure to test them (fig 12).
- Once your installation is complete. Seal the hole in the back using modeling putty (fig 13).
- For the rear headlights, simply push the wires through the holes in the housing (fig 14).
- Bend the wires using a tweezer so that the wires follow the roof and the walls (fig 15). You can put a tape on top of the wire and paint, or you can just paint the wires the same color as you decide to paint the cab interior.
- Once the body shell in place, the wires should exit the cab behind the control panels (fig 16).



Fig 13

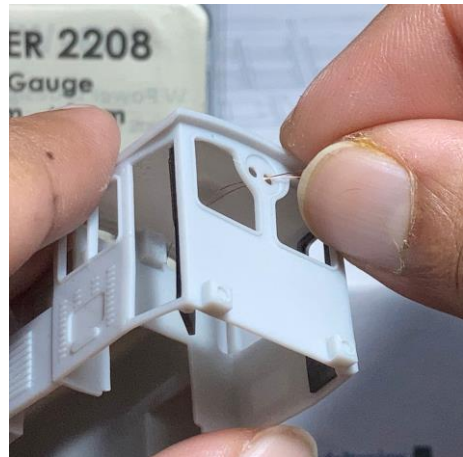


Fig 14

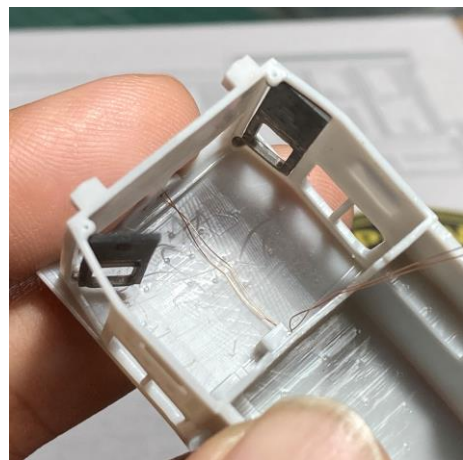


Fig 15



Fig 16

Instructions of how to wire your LEDs to a decoder or a blanking board is not in the scope of this document.

Positionable cab doors:

The instructions don't show a painted version, but it will be easier if you paint the model and the doors BEFORE you glue the doors.

The doors of the real NDM6 are almost never closed when in operation and we imagined that it will be a very appropriate feature in the model form too. To place the doors in a particular position,

- Add a small drop of CA glue on the small round hinges on the inside of the frame of the door – Fig 17 and 18.
- Take the door and place them on the hinges in the angle you desire and hold it for a few seconds (fig 19). Trick is to keep the door square and not move the joint till the glue takes hold.
- You can also decide to model the closed doors by following the same method, but possibly adding a small bead of glue on the inside of the door frame (fig 20).

Prototypical Couplers:

- You need to file the edges of the coupler as required to make it fit in the square groove. You also need to file the bottom of the chassis where you will glue the coupler.
- If you wish to use the prototypical couplers provided in the kit to run your trains, then you need two U pins that look like stapler pins with their arms 6mm apart from each other (fig 21).
- You put one arm in the round hole of one coupler and the other arm in the curved cutout of the other coupler. You use the other pin to do the same for the other set of holes – cutout pair (fig 22).

Handrails:

We have supplied a handrail making jig in the kit. Use that to make your handrails.

- Insert a pre-painted 0.3 – 0.5mm wire in the hole in the jig. Before starting, familiarize yourself with the number of the jig and the number of the handrail reference diagram – Fig 23.
- Bend 90 degrees along the engraved line, press hard to make sure the wire is perfectly straight
- Bend 90 degrees again at the edge, and cut at the bottom edge – Fig 24.
- Trim the ends before fixing them to the corresponding section matching the handrail guide. It should look like the one in Fig 25.
- Use tiny drop of superglue on the tip and insert the ends to the holes on the models that you drilled earlier.



Fig 17



Fig 18

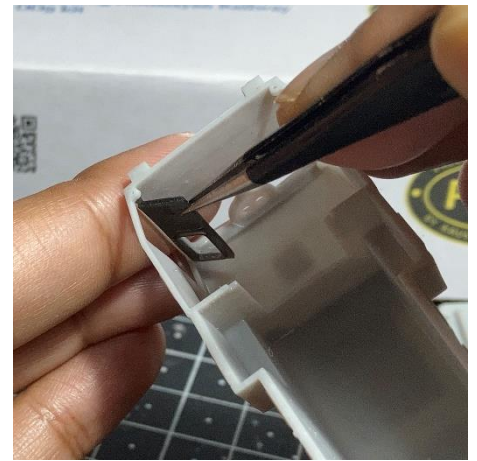


Fig 19

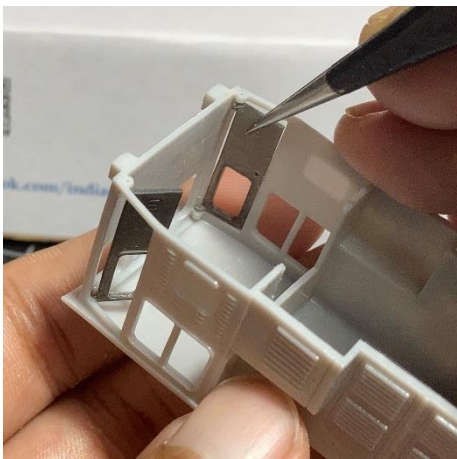


Fig 20



Fig 21

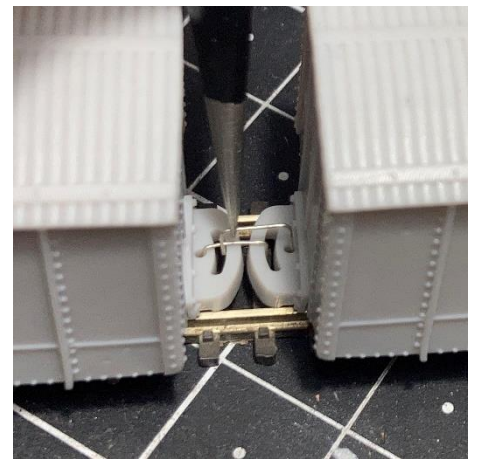


Fig 22

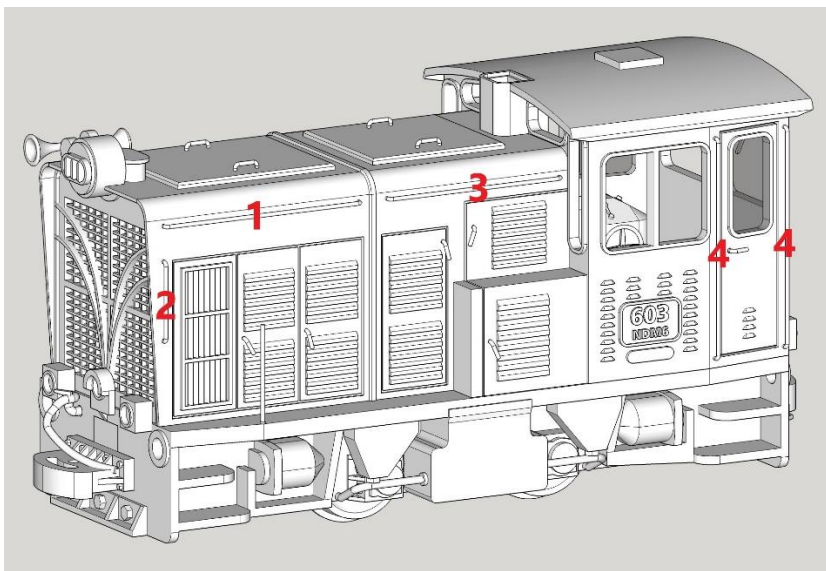


Fig 23

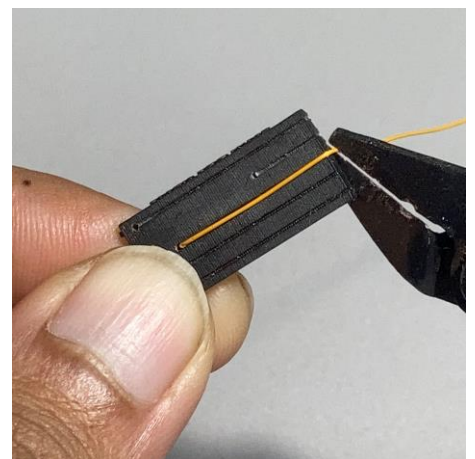


Fig 24

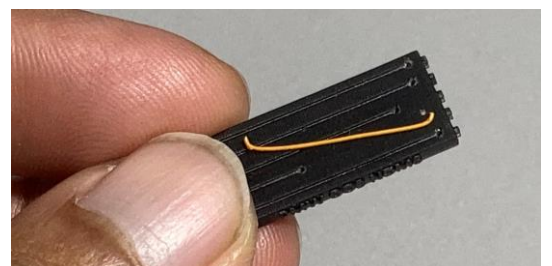


Fig 25

To install the other detail parts, please use the photos below as your reference along with the exploded diagram. Note that these photos show the unpainted raw parts, you are expected to paint these parts in the appropriate colour BEFORE you glue them in place. We strongly recommend that to obtain the prototypical look, please Google 'Darjeeling Himalayan Railways NDM6' and look for photographs of the real thing to familiarize yourself with the paints you need to start the project.

