

Hunslet Alice and Port class Instructions



Alice Parts list

Nuts, bolts and bushes

- 6x 1/8th Bush
- 6x M2 Bush
- 4x M3x6mm Cap Head
- 2x M3x10mm Philp
- 2x M3x12mm Philp
- 4x M3 Nuts
- 2x M2.5x4mm Philp (in Motor)
- 6x M2x6MM C/sink
- 28x M2 Half nuts
- 6x M2x10mm C/sink
- 14x M2x8mm Philps
- 2x M2x16mm C/sink
- 4x M3 Grubs

Metal Parts

- 2x 3x20mm Brass tube
- 2x 2x35mm Steel Rod
- 4x 2x46mm Square brass rod
- 1x 10x29mm Brass Tube
- 2x 1x50mm Brass rod
- 5x 1x42mm Brass rod
- 2x 1/8th Steel rod (59MM for 32MM)(72MM for 45MM)
- 1x MFA Motor
- 4x 30MM wheels and grubs
- 4x Metal cranks

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- 1x Red Switch
- 1x Battery Holder

3D Printed Parts

- 1x Gearbox housing
- 1x Motor Support
- 2x Cross Heads
- 2x Short connecting Rods
- 2x Long connecting rods
- 1X LH Cylinder
- 1x RH Cylinder
- 2x Piston end cylinder cover
- 2x Cylinder cover
- 1x LH Slide bar holder
- 1x RH slide bar holder
- 1x Front chassis spacer
- 1x Rear chassis holder
- 4x Buffer blocks
- 1X LH step
- 1x RH step
- 1x Steam Dome
- 1x Saddle tank top
- 4x Leaf springs
- 1x coal bunker
- 1x RH cab panel (Cabless only)
- 1x Back sliding doors
- 1x smoke box door darts
- 1x Hand brake stand
- 1x boiler
- 1x smoke box
- 1x firebox
- 4x spectacle rings (cabbed Only)
- 1x Safety valves

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- 1x Roof (cabbed only)

Resin Parts

- 2x Gauge glasses
- 1x Chimney Top
- 1x Chimney Bottom

Resin Cast

- 1x Smoke Box Door
- 1x Firebox Detail

Laser Cut

- 2x Frame rails
- 1x Foot plate
- 1x Front cab panel (Cabbed only)
- 2x Side cab panel (Cabbed only)
- 1x Rear cab panel (Cabbed only)

Tools required

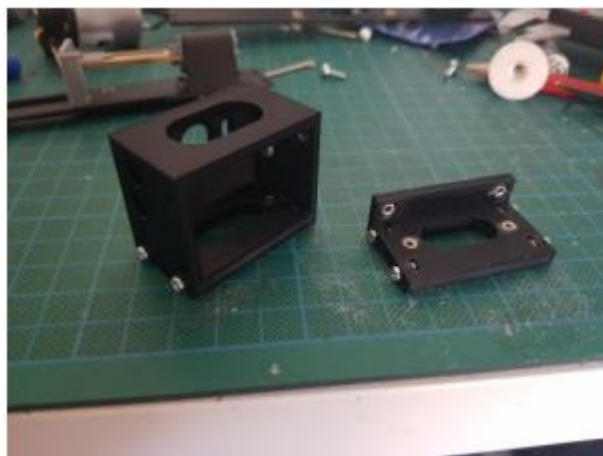
- Sandpaper
- Small file
- Super glue
- Plastic cement (not essential)
- Countersinking tool
- Drill and small drill bit for coupling fitment
- Philips screw driver
- 1.5MM Allen key
- Tweezers
- Soldering iron for wiring
- Biscuits and a cup of tea.

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Instructions

Thank you for buying this Loco kit. Please read all the instructions before assembly. We suggest for painting to rub down all the parts you are going to paint with sandpaper and a small file in awkward places to get the worst of the grain off. Then paint with a grey primer of your choice. Then rub down with 500grit wet and dry. After this spray primer again and rub down again until you get a smooth finish. Then paint with the colors of your choice. If there is any marks or imperfections rub down again with wet and dry. (Gloss paint will show this) then repaint. We Suggest applying the rivets at 5MM spacings using a liquid poly glue. It is best to attach the rivets before the final coat of primer so they will be included in the final coat of primer and blend nicely. Most of the time will be spent painting. The assembly time excluding paint will be under 3 hours.

1. Start off by taking the frame spacers and gluing in some 2mm nuts use the bolts to hold in places as the glue dry's.



2. Next paint the frames and buffer beams to your color choice.

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3. After paint insert the 1/8th Bushes into the frames making sure you have a handed pair. We suggest applying a little glue to the bushes. Make sure the top hat is on the outside.



4. DO NOT GLUE. Next take the cylinders push in the 3mm x 20mm brass tube leave about 7mm sticking out of the cylinder.



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5. DO NOT GLUE. Take the two square brass rods and push them into the square holes in the cylinder. After this slide over the piston end cylinder cover.



6. Insert the 2mm steel rods into the cross heads. The end of the rod should be flush with the end of the hole. Apply a little glue to these parts.



7. Attach the cylinders to the chassis frames with 2x M3x6mm cap head bolts either side.

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8. Slide cross head into cylinder.
9. Fit Slide bar holder and test how easy the cross head slides up and down. The cross head must move freely.
10. It is now time to glue the cylinder covers to the cylinders and dab a little glue to the slide bars in the cylinder and the slide bar holder and allow to cure.



11. Once the glue is cured remove the cylinder assemble from the frame.
12. Now countersink the small end of the connecting rods and insert the M2x6mm C/sink screw and fit to cross head securing with a m2 half nut. The connecting rod should be able to swivel freely in the cross head. You can apply a little thread lock or superglue just to retain the nut as it won't be tight on the cross head.

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13. Test the motor. If any adjustment is required loosen the two Philp head screws and adjust. Once happy the gearbox is running smooth apply a little oil.

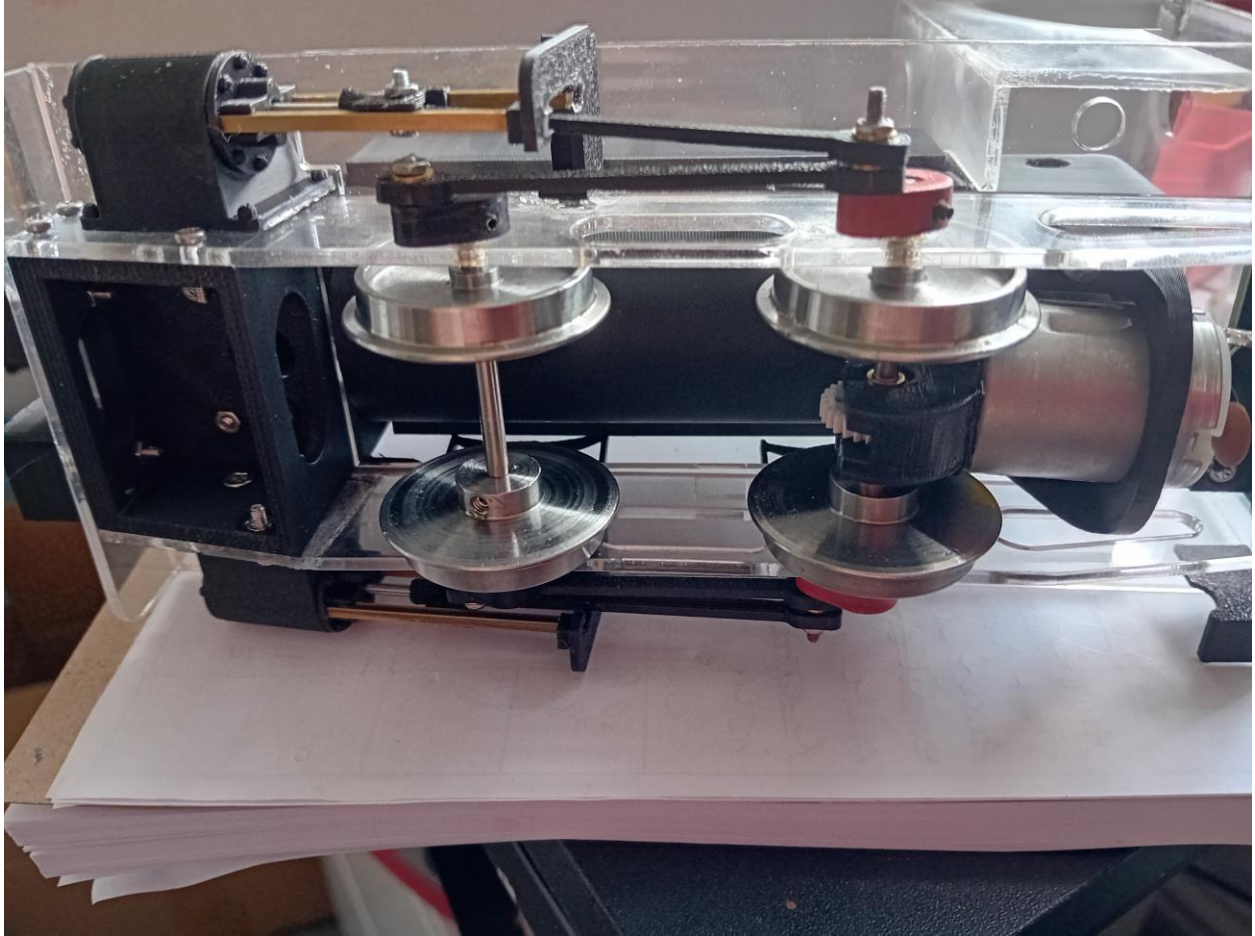
14. Next it is time to fit the wheels to the axles. Use the supplied gauge setter to set the back to back of the wheels. Once the gauge is set and the wheels are central on the axle tighten the grub screws in the back of the wheels using a 1.5MM allen key.

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15. Now reattach the cylinder to the frames using the cap head bolts again.
16. Next attach one frame rail to the chassis spacers using 5 M2x8mm Philp Head bolts.
17. Install the wheel sets into the frame rail you just attached to the chassis spacers.
The wheelset with the gearbox and motor is the rear wheel set as shown in the picture below.

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18. Now attach the opposite frame rail and secure with 5 more M2x8mm Philp head bolts.
19. Take 2x outside cranks and screw in 2x M2x10mm C/sink bolts.
20. Take the other 2 outside cranks and screw in the 2x M2x16mm C/sink bolts. Make sure all the counter sinks are sitting flush with the cranks to avoid them catching as they rotate.
21. Now take the cranks with the 10mm C/sink bolts and slide on a 2mm top hat bush (top hat away from crank) and secure with a M2 half nut. Once secure file the remaining thread flush.

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22. Now take the connecting rods and open the holes out so they fit freely onto the 2mm bushes.
23. Once all the holes fit freely Fit a connecting rod to each crank with the 10MM c/sink bolts. Apply a little glue to retain the nut once fitted.
24. Now attach the semi assemble crank and rod assemble to the front axle and gentle tighten the grub screw using a Allen key. Make sure the cranks are 90 degrees offset from each other.
25. Next fit two 2mm top hat bushes to each remaining crank and secure with a nut. We suggest filing the remaining threads back as it makes it look better later.
26. Now it is time to attach the last cranks to the axles. Make sure the cranks are in line with the front but still 90 degrees opposite to the other side. Better known as quartering. If you struggle with setting the cranks just have a quick search online. Don't forget to attach the connecting rods and secure the nut with a little glue.
27. It is time to test the chassis you will have to temporally hold the motor or support it in some way. Attach the motor to a power source and make sure the chassis turns

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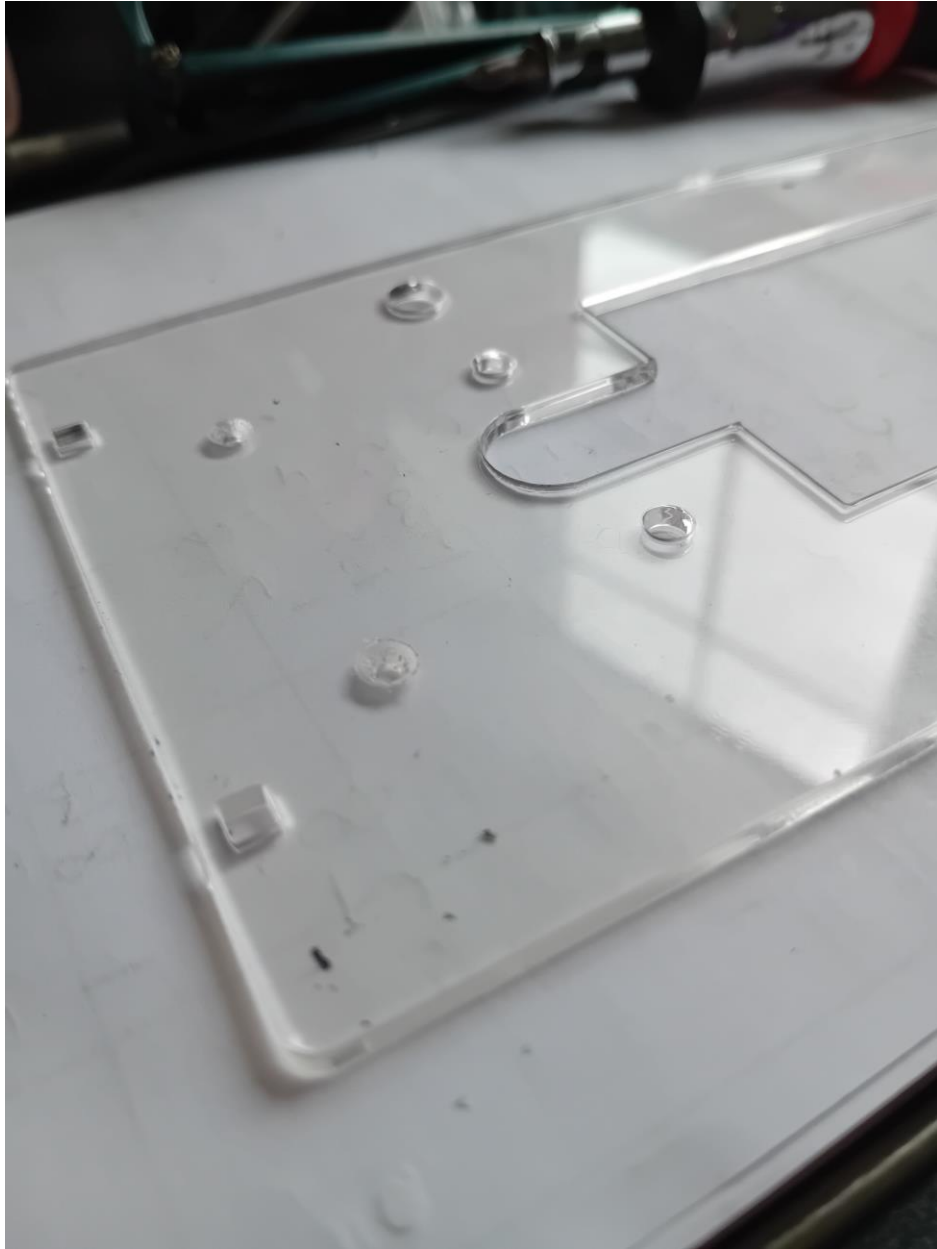
over freely with no tight spots. If you have a tight spot check your quartering and check the connecting rods aren't getting pinched. Another reason for a tight spot is some part of the motion work binding against another part. This may take some time to get it running perfectly but is worth doing as it will increase the life expectancy of the gearbox and motion work and prevent premature wearing out.



28. Once you have a smooth-running chassis it is time to fit the foot plate. This comes as a single piece of laser cut acrylic. You will need to countersink the 4 holes to take

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the M2x6mm countersink bolts as shown below. We suggest glueing the leaf springs to the inside of the footplate once attached. They have a lip either end which should sit flush with the top of the footplate.



29. You can now attach your buffer beams using 4 M2x10mm c/sink bolts securing through the chassis spacers with a M2 half nut. You will need to counter sink the buffer beam.

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30. Also, you can attach your motor cradle using 2 M3x12mm bolts and 2x M3 nuts securing through the footplate. You can now test the chassis on track.



31. Next glue the bottom of the chimney to the top of the smoke box. Once the glue has dried you can glue the 10MM brass tube on top and then fit and glue the top of the chimney.

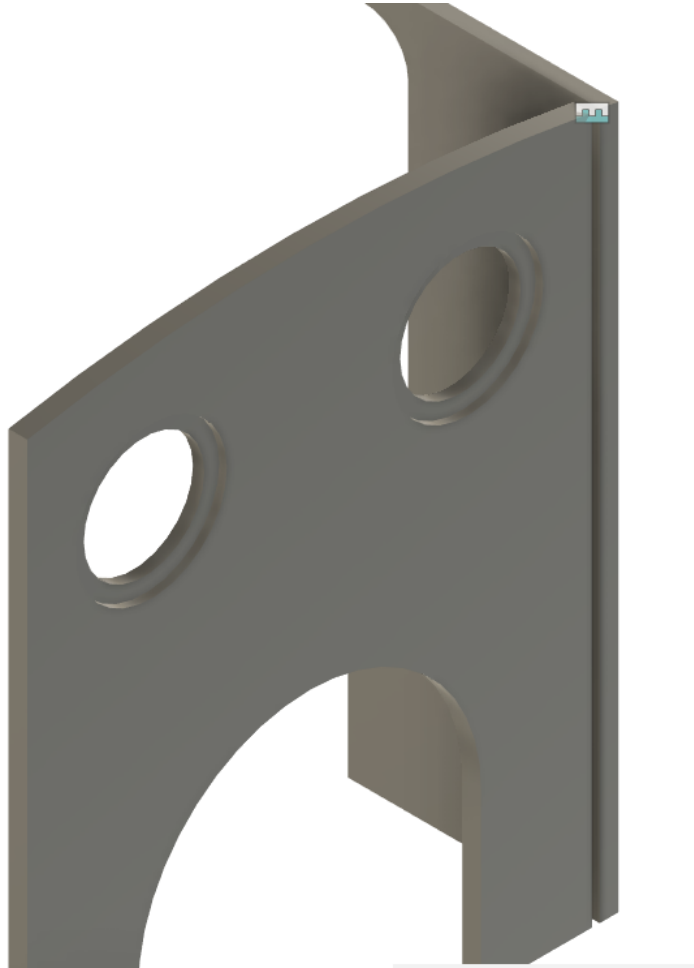
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32. You can add the smoke box door and smoke box dart to the front on the smokebox.
Once the glue has dried you can do your painting and leave to the side to dry.



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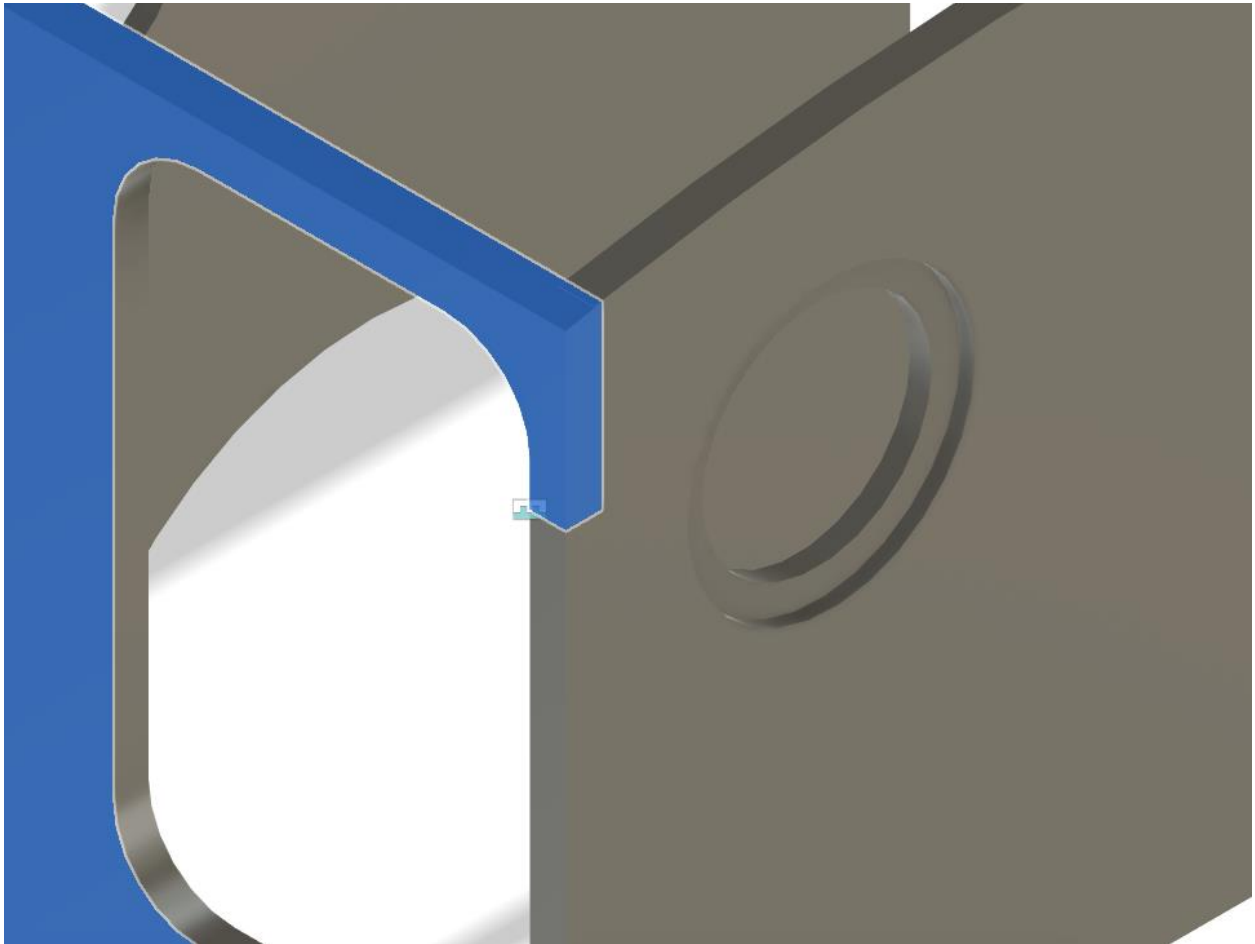
33. It is time to build the cab now if you have chosen this option. First glue the sides to the outside of the front cab sheet. Use a square while the glue dry's. We suggest using a plastic cement to stick these parts.



34. Once the sides and front have dried attach the back panel making sure the sides locate properly on the rear cab sheet as pictured. Then glue and let it dry. Once dry

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then it is time to paint the cab. If you want to paint before assembly either mask or sand your joints to allow plastic to plastic contact when glueing.

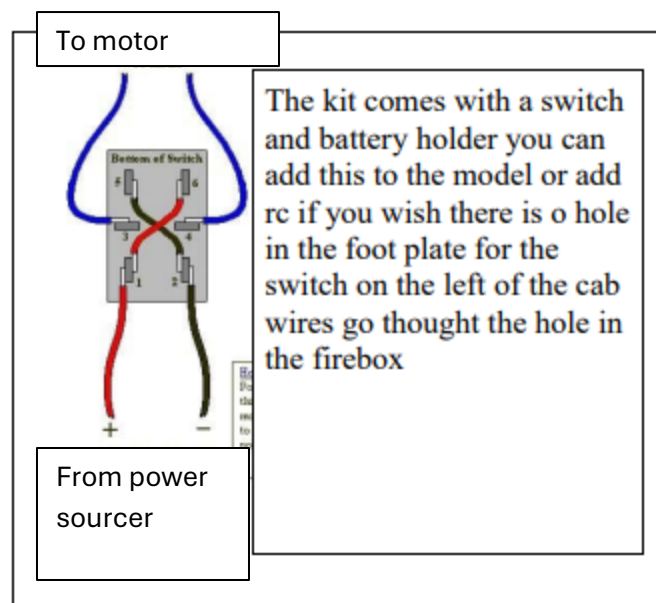


35. If you haven't already done so attach the saddle tank dome in place and glue the firebox detailing to the firebox. Once these have been attached then you can do your final paint. You can detail the cab as much as you want and we suggest using Cambrian model rail Mouldings if you want any extra details.
36. Now attach the firebox to the chassis using the 2x M3x12mm bolts used to secure the motor cradle and secure them using 2x M3 nuts that fit inside the firebox. You can add a little glue to these to hold them in place but not required. The motor wire feeds through the hole in the bottom of the firebox and into the boiler.
37. The boiler and saddle tank is held in place between the smoke box and firebox. Now you can fit one end of the boiler to the firebox. The boiler isn't the same at each end

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so make sure you have this the right way round. The square cut out goes at the firebox end.

38. Next secure the smoke box to the chassis using 2x M3x10mm bolts and secure with 2x M3 nuts that locate inside the smokebox. We suggest glueing these as you take the smokebox off to access the battery pack located inside the boiler.
39. Now you can add the detailing parts like buffers, springs, safety valves etc. When drilling the buffer beams to fit which ever coupling you choose don't apply a lot of force to the drill as it will catch and break the buffer beams.
40. All that is left is to wire the locomotive up. You can do these however you like depending on your set up. Below is a wiring diagram if you decide to use the supplied battery pack and switch that are included in the kit.



41. Now go and enjoy your beautiful new Hunslet.

Thank you for your purchase we hope you enjoyed. If you have any problems, please email:

info@pdf-models.co.uk.

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Maintenance

- After the first run just check all the bolts and nuts are still secure
- Periodically clean and reoil the gearbox.
- Do not leave batteries inside the model for long periods of time.