

Ultrascale Data Sheet

Issue: 001-120715

Hornby Class 2800/3800



Fitting Instructions: (Locomotive)

The conversion for the locomotive where possible is supplied as a fully assembled set of parts as shown above. It is recommended that the crank pins are kept on the wheels that they are supplied on and not removed until required to fit the coupling and connecting rods etc. We would also recommend that the balance weights that are supplied are fitted to the wheels before the wheels are fitted into the model as this will make the fitting of the balance weights much easier. Use the original wheels as a reference for the location of each weight.

The first thing that you will need to do is to separate the loco and the tender by un-plugging the wiring harness from the tender. Also remove any brake rods from the loco as this will allow greater access to the base plate screws.

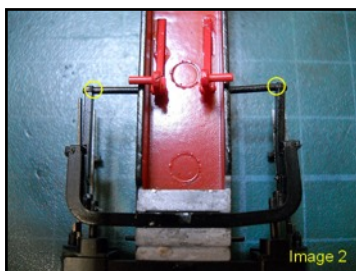
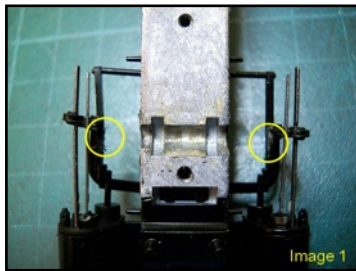
This conversion can be done without removing the chassis from the body for both 'OO' and EM conversions. However, due to other modifications that are required for the 18.83 conversion which will require the chassis and body to be separated, the method described here will be for the 18.83 conversion, But this method can also be applied to both the 'OO' and EM.

First you will need to separate the chassis from the body, to do this first you will need to remove the front bogie. This is done by removing the base plate screw just in front of the leading driving wheels. This will allow the base plate to flex enough to remove the bogie. Under the bogie is one of two screws that hold the body and chassis together the other screw is under the cab just in front of the draw bar pin. Remove these two screws and disconnect any pipe work that connects from the body to the chassis and the chassis can then be separated from the body. *(when removing the body be careful of the small rod that goes from the cross head to the Air Pump)*

Now you need to remove the original wheels from the chassis. First remove the connecting rods from the driving wheels by unscrewing the crank pins. (*driving wheels only at this stage*) Slide out the cross head and connecting rod assemblies and put to one side. Now remove the four screws that hold on the base plate. This will allow both the base plate with the brakes on to be removed and the wiper pick up plate to be moved out of the way to allow the wheels to be removed. Once the wheels have been removed you need to unscrew the rest of the crank pins and remove the coupling rods. Now refit the coupling rods to the new conversion pack wheels making sure that you get them in the correct order, from front to back the wheels should be recessed crank pin (small balance weight), recessed crank pin (medium balance weight), long crank pin (large balance weight) and short crank pin (small balance weight). Once the coupling rods are on the new conversion wheels cut the screws on each crank pin flush with the crank pin nut. At this stage do NOT cut the long crank pin screw back. (*We will secure the crank pins with a drop of Loctite and cut back the long crank pin once the conversion is complete*)

Special Note

At this stage there are some modifications that the modeller will need to make before fitting the new conversion wheels. These modifications really only apply to the 18.83 conversion, but the modeller may wish to check on this if using the other conversions.



Due to the large crank pin diameter used by Hornby, the crank pins when at top dead centre will foul on the Radius rod assembly which goes into the steam chest at the top of each of the cylinders. (*see Image 1*) To Make sure that there was enough clearance we removed these parts from the chassis completely. To do this you need to cut them where they are fixed to the chassis (*see image 2*) and then slid them out of the cylinders. This removes them as a complete assembly. (*see image 3*). The modeller may wish to try and clear this fouling problem by other means, such as thinning the parts down or removing a section of the Radius Rod were the crank pins fould. The choice is up to the modeller.



It is also a good idea to check the Motion Guides/Sliders to make sure that they are running parallel with the chassis. This will help to make sure that there is clearance between the crank pin and cross head.

Now your ready to reassemble the loco with the new conversion wheels. Fit the new wheels with the coupling rods fitted into the chassis making sure that the brass bearings on each of the axles fit into the bearing slits correctly. Your then need to position the wiper pick up plate back into place, making sure that the wipers contact the back of the tyres correctly, you may need to spread these out slightly for the wider EM and 18.83 gauge wheels also make sure that the wiring harness which connects to the tender is in the correct position or the wiper pick up plate will not fit down flat.

Now fit the base plate back on, make sure when you do this, that the copper wiper pickups underneath are in the correct position, otherwise the base plate will not sit down flat. Refit the screws and tighten up, but leave the front screw loose. Now reassemble both the cross head and connecting rod assemblies back into the Motion Guides/Sliders. Now fit the brass spacer that was fitted to the conversion crank pins on the driving wheels back over the long crank pin and then fit the connecting rod on to the long crank pin and secure with the round nut. The crank pin screw on these crank pins can now be cut back flush with the crank pin nut. You can also now put a very small amount of Loctite on each of the crank pin nuts to secure it in place.

While the Loctite goes off on the crank pins we will now convert the wheels on the front bogie. First you will need to pull one of the wheels off to remove the original set of wheels. These should easily come off by hand without the need for any other tools. Now fit the new bogie wheel and axle assembly into the bogie and fit the other new wheel on to the end, pushing the wheel on until the end of the axle comes flush with the front face of the wheel boss.

Once the Loctite on the crank pins has gone off, wipe of any excess and reassemble the body and chassis back together. (*again be careful of the small rod that goes from the cross head to the Air Pump*) Secure both parts with the two screws, one at the front and one at the back of the chassis. You can now refit the front bogie, gently lift the front of the base plate and slip in the front bogie, then do up the front base plate screw to secure the front bogie in place. The conversion of the loco is now complete.

Fitting Instructions: (Tender)

The conversion for the tender is supplied as a full assembled set of wheels, as shown on the first page of the data sheet.

To change the wheels on the tender, you will first need to remove the tender base plate. To do this remove the brake rods if they have been fitted and also the round cross member just in front of the centre set of wheels, this is removed by springing the tender side frames gently apart. Once this has been done you need to remove the three screws that hold the base plate in position. These are located just behind the front wheels, under the water scoop and under the tender coupling. Now remove the base plate and the original wheels from the tender and replace with the new conversion pack wheels., making sure that the wiper pick-ups are in contact with the back of the tyre. You may need to bend these out slightly when fitting the wider EM and 18.83 gauge wheels. Once the wheels have been changed refit the base plate and secure with the screws and refit any of the other parts that were removed during disassembly. The tender is now complete.

Please note

If you are not sure on how to disassemble the model then refer to the diagram or instructions sheet which comes with the model or any service sheets that may be available from the manufacturers web site.

Recommendations after conversion:

Minimum Radius: 3' 0" (914mm)

Availability:

This conversion is available in 'OO', EM and 18.83 gauges. For other details regarding this conversion please see our web site at www.ultrascale.com