

Heljan Class 16 EM Finescale Conversion



This is a simple conversion using Alan Gibson wheels from the bogie/tender range.

The Class 16 has 3' 7" diameter spoked wheels. The Heljan model has 8 spoked wheels, the nearest correct diameter Gibson wheel has 10 spokes.....so it is a slight compromise.

The wheel we used was G4844 - 3' 8" 10 spoke.

We would recommend dismantling and converting one bogie at a time.....just saves dropping wheels and gears onto the workshop Axminster needlessly!

Loco Conversion.

1. Invert the loco using a suitable support.. We use a foam cradle – the Peco loco service cradle being ideal.
2. Look underneath at the base plate cover in the middle of the bogie. You should see 4 semi circular cut outs, 2 on each edge. Down the side of these are square clips that need levering away from the chassis and upwards to release this cover.

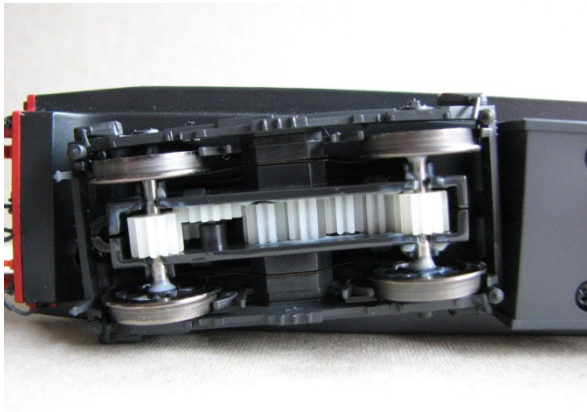


Base plate cover showing semi circular cut outs.

3. Remove this cover, and the drive train for that bogie will then be exposed.



Base plate cover showing square retaining clips.



Cover plate removed exposing wheels and gears.

4. Lift out the two wheel sets.
5. We now need to remove the wheels and recover the drive gears from each axle.
6. Remove the wheels from the driven axle by punching the axle through the wheels. We did this by using a small punch, or a suitable small nail would do equally well, supporting the wheel back on the slightly opened jaws of a vice. Similarly, the gear can be removed by tapping the axle through the gear, supporting the gear in the same manner – DO NOT TWIST the gear as it has to cross a splined surface at the axle end, and twisting may well damage the bore of the gear.
7. Place one of the Gibson replacement axles onto a cutting mat or similar, take a hand file of around 6 inches in length, and using the edge of the file with teeth, roll the axle across the mat using the file and a fair degree of pressure at the centre point of the new axle. This will provide a splined effect on the axle sufficient to grip the axle gear wheel we removed from the Heljan axle. Do not allow the file to wander as we do not want any more splines on the axle other than underneath the gear itself. The gear can be pressed onto the axle by holding in your fingers until the splined effect is reached, then hold vertically on a firm surface and push down with thumbs either side until the gear reaches the desired position. That is, dead centre! This is determined by simple measurement with a ruler until we have the same amount of axle each side of the gear. We found there was no need for any loctite or similar, the splines hold the gear well enough.



Use the spare pinpoint axle for practice!.



Axle itself after treatment.



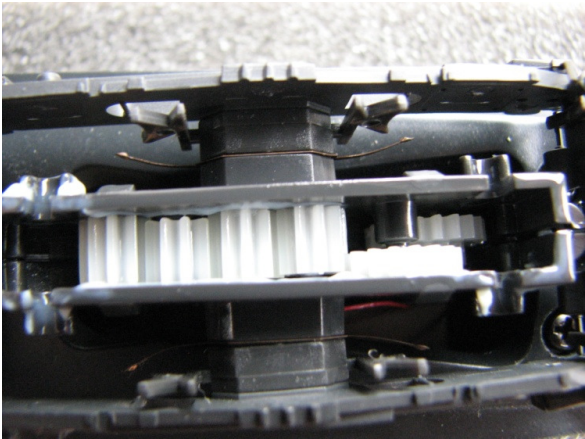
One axle with gear pressed on

8. Clean the wheel rears particularly carefully of packing oil/grease, as we shall be picking current from the rear rim face.
9. Carefully mount the wheels onto the axle, ensuring they are square and true.
As these wheels were designed for bogies and tenders, not for driving purposes, it is worth using a spot of loctite or similar when fitting the wheel to the axle. This will stop the axles from revolving in the wheel centres, should they try to do so.



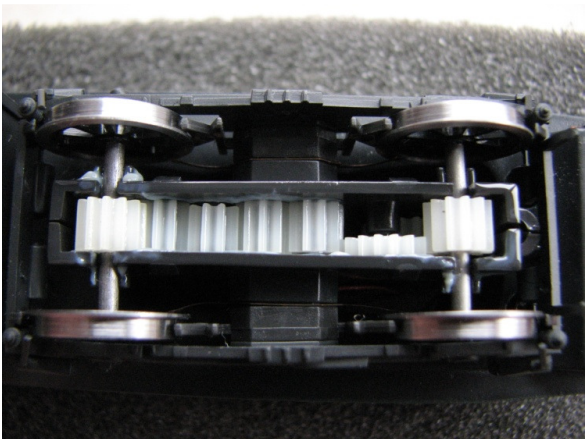
Wheels and gears ready for installation.

10. The pick up strips inside the bogie need a slight tweak outwards to accommodate the wider gauge.



Pick ups need adjustment..

11. The wheels can now be placed into the chassis, using a small screwdriver or similar to carefully move the pick ups out of the way as the wheels drop into place.



Replacement wheels installed.

12. Remarkably, we found that the brake shoes lined up perfectly....nothing seemed to catch or bind, so the base plate cover can now be replaced by gently pressing back into place and letting the square clips lock into position.



Base plate cover is re fitted .

13. That is one bogie completed.....

14. Repeat the above for the second bogie.



Converted bogie ready for track test.

15. Once the second bogie has been done, you are ready for the track test.

16. Job Done!!



Pete Hill, September 2013

Parts List

4x 4844