

# NPL-011 Bagnall side tank

Thank you for purchasing this Narrow Planet kit, we hope you enjoy building and operating it. Please read through the instructions thoroughly before beginning assembly.

Tools required:  
Sharp craft knife or scalpel  
Tweezers  
Flat nosed pliers  
Emery paper or boards  
Small files  
Superglue

Additional parts required:  
Glazing material  
Couplings

## Prototype Info

W.G. Bagnall Ltd's Castle Engine Works in Stafford turned out many narrow gauge locomotives from the late 19th century through to the works closing in the 1960s. From industrial concerns across the UK ranging from quarries to breweries and then abroad during the war, many survived to be re-sold and found use across the globe and as far away as India and Japan.

This Narrow Planet kit draws inspiration from the diminutive 3ft gauge Rye & Camber Tramway's 'Camber' as well as similar engines supplied to gas works in the early 20th century. Proportions and details are scaled from original drawings, although this model is based upon no particular prototype. It's simple construction rewards careful assembly and provides the modeller a good basis for further detailing.

## About the kit

The kit is comprised of a 3D printed plastic body shell, white metal boiler fittings and a fret of etched nickel silver detail parts. Only simple folding of these parts is required and they can all be glued in place. We recommend sparing use of liquid superglue for assembly, ideally using a bottle with a thin applicator nozzle.

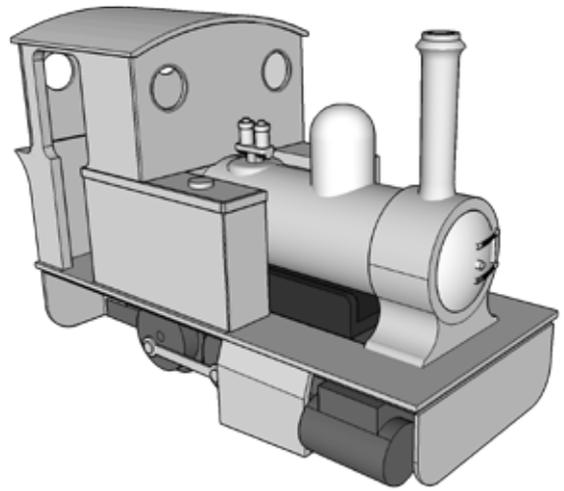
The kit is designed to fit a Minitrains Porter 0-6-0 chassis. The mechanism is well known for it's good running qualities. Please read assembly notes for details of how to fit the chassis. Replacement etched coupling and connecting rods are provided to convert the chassis from an 0-6-0 to more a representative 2-4-0, although note that this step is optional.

Due to the nature of the 3D printing process, some support wax material may still be present on the body shell. The plastic used is quite brittle so handle the raw print with care, yet it is easily cleaned up and smoothed with a sharp knife and fine wet and dry paper or emery boards - and then rinsed in white spirit.

Please note this is a scale model for adult collectors, and not intended for children under 14 years of age.

## Couplings

The kit is not supplied with couplings. We recommend either the Narrow Planet 'Bosna' style or either the Harrogate or Penrhyn styles from RT Models (preferably in white metal, as otherwise they can be difficult to fit).



## Preparing the body

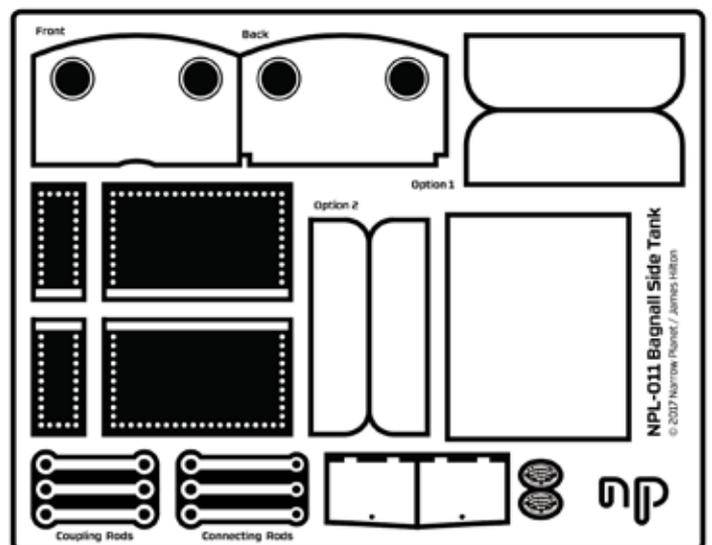
**1 • Clean up the 3D printed body.** Use a fine wet and dry paper (320 then 640 grade if possible) in water to achieve a smooth finish to the cab sides and tanks. Rinse the model in a white spirit to remove any traces of printing residue or grease from handling. Remove the parts from underneath the cab floor. These are 2 clack valves, that can be fitted to the side of the boiler if desired.

**2 • Check the donor chassis.** Before removing the body from your donor locomotive it is suggested you run the model in following the manufacturer's instructions. The body can be removed by unscrewing the funnel and gently pulling the saddle tank from the chassis, being careful to not damage the valvegear. The cab floor needs to be cut away, or the motor carefully removed to allow it to be removed in one piece. It is not required and can be discarded. Note once the body is removed the cylinders are no longer held in place so handle the chassis carefully. Retain the screw removed from the underside of the rear of the chassis, that held the back of the cab floor in place, as this will be required to secure the new body to the chassis.

**3 • Test fit the body.** Offer up the kit body to the chassis to check for alignment and fitting. No adjustment should be necessary, but if required remove a small amount of material with a sharp craft knife around the opening underneath the boiler.

**4 • Priming.** Remove the body from the chassis. It is suggested that a coat of primer is applied to the body at this stage. The model is printed in a material that should be safe to use with most model primers, however we recommend the use of the Halfords 'plastic' primer. Once dry any imperfections in surface finish can be addressed with more 640 grade wet and dry paper and a further coat of primer.

## Detail Parts NPL-011 v1.0



Carefully remove each part from the fret using a sharp knife on a cutting mat or similar hard surface to minimise the risk of damaging thin parts. Once removed from the fret the edges can be smoothed down using a needle file to remove traces of tabs.

## Detailing parts

**1 • Bufferbeams.** The buffer beams are simply glued to the braces at the front and back of the chassis. Note there are two styles provided, a short and a deep example – the choice is left to the modeller.

**2 • Cab front/rear.** The cab front and back sheet can be fitted next, it is best to apply the superglue to the framework of the cab, rather than to the etched metal. Be careful to get these neatly aligned, and if there is any overlap with the cab sides then carefully smooth this with a needle file.

**3 • Side tanks.** The side tank overlays are half etched and hence more delicate. It is important to gently bend these straight if there is any deformation in them from the etching process. Test fit them in position to get a feel for how to apply them (the beading goes along the top side) and then secure with superglue – again we find it easier to use a liquid glue with a longer setting time, and apply to the 3D print rather than the etch. Begin with the sides of the tanks, before adding the smaller end pieces.

**4 • Clack valves.** The optional clack valves, if required, will need a 1mm diameter hole drilling in the boiler. Careful study of prototype photos will give you the best idea of position, but just in front of the side tanks, at a mid-point of the boiler is a good basis otherwise. The pipework can be formed from the 0.45mm brass rod.

**5 • Handrails.** Cab side handrails are also formed from the 0.45mm brass rod and fit in the pre-drilled holes in the upper cab sides.

**6 • Chimney and dome.** These whitmetal parts may need very minor fettling to remove any mould lines or flash. Check they fit the holes in the boiler, adjusting the print if required and ensure the parts are vertical. Fit with superglue.

**7 • Valve gear covers.** The optional valve gear covers can be used to disguise the shortcomings in using an 0-6-0 chassis to represent an 2-4-0. They need a fold of about 30 degrees, keeping the half etched line on the inside of the fold. These can be glued to the underside of the footplate, but do so with the chassis in place to ensure that they clear the slide bars. Note that these parts are handed and the slope on the bottom edge should run upwards towards the cylinder.

**8 • Roof.** The roof needs gently rolling which can be done by hand, forming around a Pritt-Stik glue tube or something of a similar diameter. Again apply superglue to the 3D print rather than the etch.

## Optional chassis modifications

The chassis as supplied may need the cylinders modifying slightly to sit nicely under the footplate. We leave this modification to the modeller, take your time and keep checking the fit. It may also be advantageous to re-shape the cylinders to better match the prototype.

The kit includes parts to replicate the 2-4-0 wheel arrangement. If you wish to fit these please note that the chassis will require careful and patient adjustment of quartering to keep it's excellent performance. The existing coupling rod pins can be prised out with a flat bladed screwdriver. Note the position of washers. Re-assembly starts by replacing the connecting rod on the cross-head. The pin should be flush with the front face when replaced. This can then be fitted, along with the coupling rod and washers, to the centre wheel, and finally the coupling rod being attached to the rear wheel.

## Weight

To improve the performance of the model it is suggested that fluid lead or liquid gravity is added within the boiler and side tanks, both are open to the cab. These weighting materials are available from Eileen's Emporium or any plumbing supplier. It is recommended that it is secured with superglue as this does not react adversely with the lead material.

## Painting

There was no standard colour for these locomotives, but typical industrial examples were finished in lined green, with yellow, red and black lining. The cab interior was usually cream. The smokebox and cab roof should be painted matt black. Glazing material should be added from the underside of the body. A crew member can be added, a number of figures from the Dapol workmen range will fit with minor surgery.

The works plates should be painted black whilst attached to the fret, once the paint goes tacky (about 5 minutes if using Humbrol enamel) then flip the plate over on to a piece of white card and using gentle finger pressure rub the plate in a circular motion. You will remove all traces of paint from the raised surfaces without scratching the metal. These can be cut out carefully and secured on the model, using a small spot of superglue, or matt varnish, fitted to to the side of the coal bunker behind the cab door.

If you would prefer works plates to your own number, and/or etched nameplates or number plates, you can order these from the Narrow Planet website. Use the discount code **ETCH25\*** to receive a 25% discount on the listed prices of custom etched items.

Use a varnish or laquer to seal your model, before finally fitting the chassis. The screw used to retain the rear of the cab on the original chassis can be re-used through the same hole, to secure the body.

## About Narrow Planet

Narrow Planet was founded in 2010 and offers a custom etching service for unique nameplates, works plates and number plates for your model railway locos and stock. In any size or shape from 2mm:ft to 16mm:ft scales. Many manufacturers' styles are available, our full range and ordering information can be found on our website. If you have any queries about the model or instructions please get in touch.

## Contact Details

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