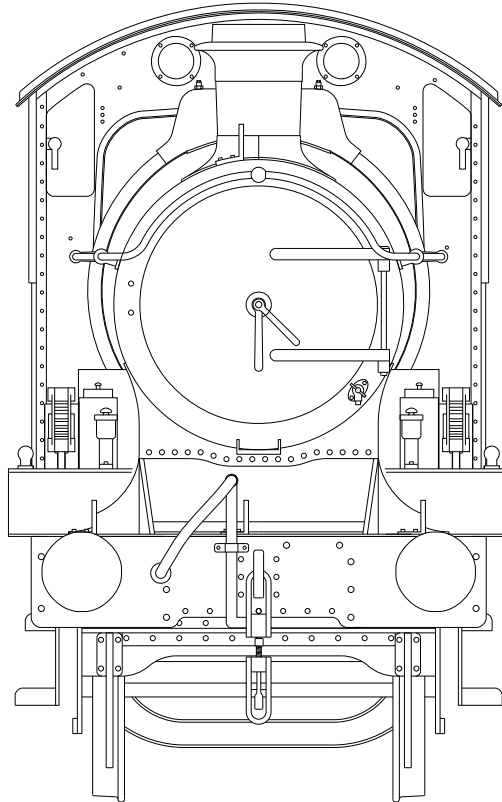


GWR ATBARA & FLOWER CLASS LOCOMOTIVE



CAUTION.

This product contains etched parts with very sharp edges and castings that may contain lead. Neither the Manufacturer, Distributor or Retailer can accept any liability for illness, injury or consequential damage caused when handling or building this product.

Read any instructions before assembly. Do not eat or drink whilst handling. Wash hands after use.

BRIEF HISTORICAL DETAILS

For a detailed history of these classes Part Seven of 'The Locomotives of the Great Western Railway' published by the RCTS is essential reading. Also useful are G.W.Engines Vol 2 by J.H.Russell, Standard Gauge G.W. 4-4-Os by O.S.Nock & Locomotives Illustrated 50 GWR double-framed 4-4-Os.

The following Swindon drawings were used in designing the kit:

17849	3/1901	Lots 126,141	General arrangement
35157	1/1908	Lot 176	Frame plan
	1/1910	Lots 125,126,141	Frame plan
58098	8/1919		Arrangement of smokebox
115623	10/1940		Inside motion

The locomotives were built under three Lots as follows:

Lot	Original Number	1912 Numbers	Cab	Built	Rear Step	Original Boiler	Nameplate
125	3373-3382	4120-4128+	1	1900	1	D0	Oval
125	3383-3392	4129-4138	2	1900	1	D0	Oval
126	3393-3395	4139-4141	3	1901	2	D0	Oval
126	3396-3412+	4142-4148	3	1901	2	D0	Standard
176	4101-4120	4149-4168	3	1908	2	D3	Standard

+ No.3382 cut up after the Henley-in Arden accident in 1911.

* Nos. 3400-3409 were rebuilt, becoming members of the City class, between 1902 and 1909.

The first locomotive, No. 3373, was named Atbara and all the locomotives of Lots 125 & 126, which have the standard depth of framing, are known as the Atbara class. The later engines of Lot 176, which have deeper frames, were given the names of flowers and are known as the Flower class.

The first ten engines of Lot 125 had a very high cab (Cab 1), whereas the remaining members of this lot had a standard height cab with a much smaller cut-out in the side sheets (Cab 2). Lots 126 and 176 had a standard height cab (Cab 3). Lot 125 differed from the later locomotives because of the curved rear steps (Rear Steps 1).

Two boilers are provided in the kit the D2 half coned and the D3 three-quarter coned. This means that Lots 125 and 126 cannot be built in their original condition with the D0 parallel boiler but can be built in slightly later condition, from 1904 when they were fitted with the D2 and D3 boilers. Lot 176 were built with the D3 boiler although several subsequently carried D2 boilers, including Nos. 4155 & 4164 as late as 1920. The engines rebuilt as Cities, with the larger No. 4 boiler, cannot be built from the kit in that form although several were fitted with the D2 or D3 boilers provided, before they became Cities, and so could be built in this form from the kit.

Atbaras originally had Dean 'swing-hanger' bogies with shallow framing, fluted coupling rods, steam brake and steam reverse whereas the Flowers were built with 'De Glehn' type bogies, plain coupling rods, vacuum brake and screw reverse. It is believed that all of the Atbaras were later rebuilt with screw reverse, the RCTS book stating 'quite a number' had been fitted by 1924.

There are also many detail differences both between individual locomotives and as the class changed through time.

VARIATIONS POSSIBLE WITH THE KIT

Chimneys. Three different types are provided.

Safety valve casing. Caters for with or without top-feed.

Bogies. Many rebuilt to 'De Glehn' type without swing-hangers and fitted with strengthening patches. Some built with beaded bogie splashers.

Frame strengthening. The locomotives acquired frame strengthening plates surprisingly quickly, probably during their first major shopping. Atbaras were first fitted with separate plates for each axle. Later larger, one piece plates were fitted to some of the class. The Flowers quickly acquired plates to the rear axle only.

Smokebox. Originally quite short and later front and back rings riveted.

Smokebox saddle. Early flush rivets, later snap head rivets.

Sandboxes. Originally fitted below the footplate on the leading coupled wheels only. Later, all except No. 4138, larger sandboxes were fitted above the footplate on all driving wheels. The Flowers were built with the larger type.

Cab roof: Initially a canvas covered wood affair, later changed to steel with two designs of rain strip.

Splashers: Initially built with beading, later the beading was removed and rivets visible.

Leading coupled wheel splasher: The Atbaras were built with a beaded splasher, below the footplate, on the leading coupled axle which were gradually removed by WW1.

Cab spectacle windows: Plated over during the late 1920's.

Vacuum pipe: Originally tall, later a shorter pattern was introduced.

TENDERS

When built most of the Atbaras were fitted with standard Dean 3000 gallon tenders with a few fitted with Dean 4000 gallon tenders. The Flowers were built with Churchward 3500 gallon tenders and some of the Atbaras subsequently acquired these tenders whilst a few of the Flowers received 3000 gallon tenders.

CHASSIS OVERVIEW

Note that many of the components for both chassis and body are handed left/right and care must be taken to ensure the correct component is used. Components are not always identified left/right separately but with care and common sense no problems should arise.

Before construction can commence you have to decide which particular chassis you are going to construct. The options are:

Gauge.

For Finescale, where little sideplay is required, the widest spacers can be used but they will need careful filing to make their width 26.0 mm. If you require your engine to negotiate sharp curves then the middle width spacers should be used.

The widest frame spacers supplied are suitable for Scaleseven and care will be needed to allow sufficient sideplay, especially in the leading axle to enable the model to negotiate moderate curves.

Suspension.

Rigid. The kit is supplied with top hat bearings to build a rigid chassis. Open out the main axle holes to accept top hat bushes and solder them in place. If the leading axle is 5/32" diameter then reduce the bearing diameter accordingly by fitting a sleeve from short lengths of the 3/16" tubing provided.

Sprung. If you are going to fit sprung horn blocks, you should open out the frame slots by cutting up the half etched lines and follow the manufacturers instructions.

Compensated. The simplest and most reliable suspension system is beam compensation and the necessary compensation beams are provided in the kit. Not provided are the hornblocks and bearings which are available as an extra item which includes instructions for aligning the hornblocks accurately.

Pickups. No pickup material is provided. The options are:

Scrapers. Attached to the middle frame spacer using printed circuit board.

Plunger. Open out holes P and fit according to the manufacturers instructions. It may not be possible to use plunger pickups if you wish to fit the inside motion because they may foul each other.

Split axle/frame. We leave this to you! Some useful information can be found at <http://www.euram-online.co.uk/tips/splitaxle/splitaxle.htm>.

COMPONENTS NOT SUPPLIED

WHEELS

Driving wheels - 6' 8 1/2" (6' 9"), 18 spoke, 3/16" diameter axle (2) Slater's Ref. 78810/C

Until the Finney7 cranks are available we recommend fitting the MOK outside cranks.

Bogie wheels - 3'7", 10 spoke, general pattern. Specify 2mm outside journals when ordering. Slater's Ref. 7843MF

MOTOR/GEARBOX

A Canon motor with a SDMP 40L/15 gearbox (available from Finney7) or an alternative such as an ABC VML2 gearbox.

CRANKPINS

Heavy duty crankpins are available from Finney7.

INSIDE MOTION

A separate kit is available from Finney7 to construct the working inside motion.

NAMEPLATES

We can supply some of the oval name and works plates fitted to some of the locomotives.

ATBARA	3373
ATBARA	4120
KHARTOUM	4125
KIMBERLEY	3379
KIMBERLEY	4126
LADYSMITH	3380
LADYSMITH	4127
KEKEWICH	4129
OMDURMAN	4130
POWERFUL	4131
PRETORIA	4135
TERRIBLE	4136
WHITE	4138
ADEN	4141