The 3mm Society - Class 66 Locomotive

Nearly **- Ready to Run**

This document covers aspects of the model, relevant instructions and a summary of the prototype configuration and fleet disposition.

THE MODEL

The model is a 12mm gauge dc. analogue controlled central motor powered chassis driving 2 axles on each bogie. It has a single piece bodyshell and a number of additional detail parts and ‘provisions for’ to enable the details to be added.

The model requires painting and some minor detailing (handrails etc).

As supplied it is based on the original standard locomotive with Wipac lighting clusters and standard drawhook and shackle. For prototype fleet and configuration information see the section CLASS 66 FLEET INFORMATION.

This makes it immediately suitable for 66/0 (EWS / DB Schenker / DB Cargo,) and a number of 66/5 (Freightliner).

Some modest front end modifications to lighting clusters open up the remaining fleet to being modelled with the following important exceptions:-

The T2 variant, low emission modifications are beyond the scope of the supplied model. It could be used as a base for a T2 variant but requires a comprehensive set of modifications.

Some European "series 66" locomotives were imported and converted to be UK compliant, these have all manner of detail differences, again the model could be used as a base, with appropriate modifications researched and implemented.

As always, when choosing a prototype locomotive to base the model on, reference to prototype photographs is always highly recommended not only for livery and weathering, but to double check the subtle differences that exist within the UK class 66 fleet. There are no shortage of suitable images that can be found by searching on the web.

INSTRUCTIONS

Bodyshell removal and refitting

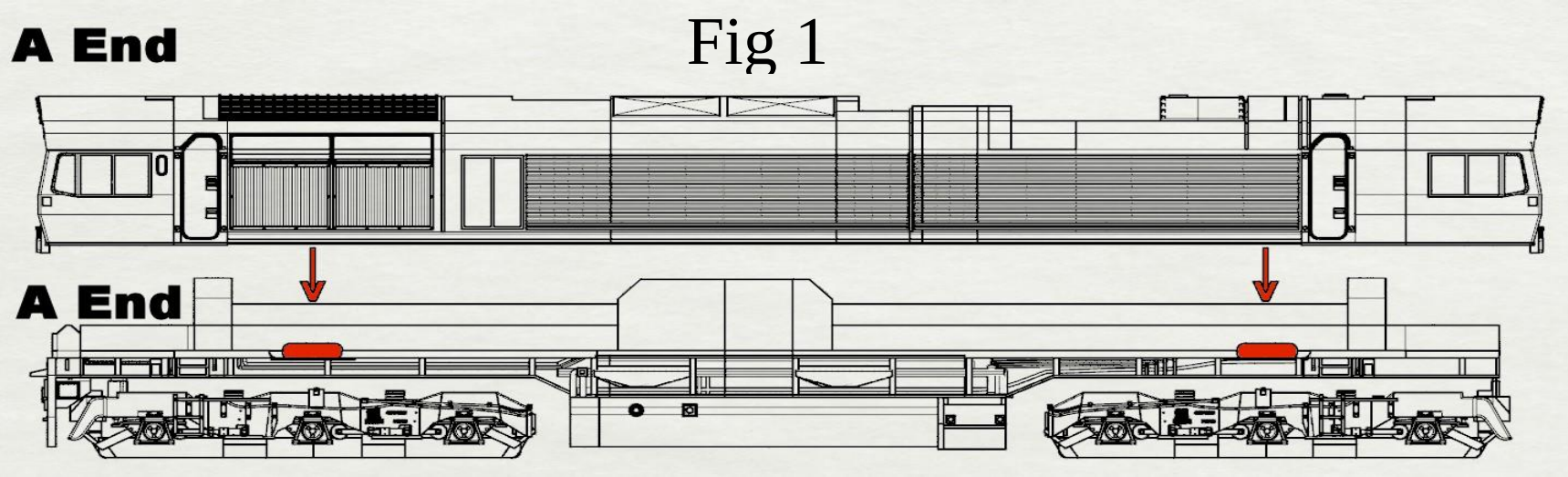
To remove the body from the chassis, hold the loco by the tanks, gently slide a thin flat screw-driver under the body at the red points shown on Fig 1, lightly lever the body from all points sequentially to release.

To reattach the body to the chassis, align the body as pictured in Fig 1 , the body is handed and only fits when the A End of the body is orientated to the A End of chassis. Hold the chassis by the tanks, align the body to the chassis and gently press the body until it clips into place at both ends.

The body is designed to be a solid clip fit to the chassis, if you wish you can lightly file the notches on the inside of the loco body to make it easier to remove and refit.

Caution: Care should be taken when handling the chassis as there is a lot of fine detail that can be damaged if not handled carefully, always hold the chassis by the tanks.

Fig 1



Additional details to fit

Bufferbeam & Couplings

The Class 66 chassis features changeable buffer beams, to allow you to have your loco setup with one, two or even no couplings if desired.

The chassis comes supplied with one full depth beam and one split buffer beam fitted, which comes with a Bachmann 36-061 short straight coupling plus one spare if couplers at both ends are required.

To swap buffer beam types, remove the body as detailed by Fig 1. Fig 2a, shows the split beam, Fig 2b, shows full beam, gently pull on the beam while levering in between the two red markers pictured with a small flat headed screwdriver until released.

To fit the alternate beam, gently push the new beam on to the metal dowels highlighted in Fig 2a/2b making sure it sits flush to the main chassis.

Fig 2c shows how the lower split beam locates centrally, insert the Bachmann coupling gently into the hole highlighted by the red line until it will go no further, this will retain the buffer beam. Caution: Take care when inserting the coupler prongs, long nose pliers help close the prongs. Do not push the sides of the buffer beam whilst inserting the coupler as it may snap.

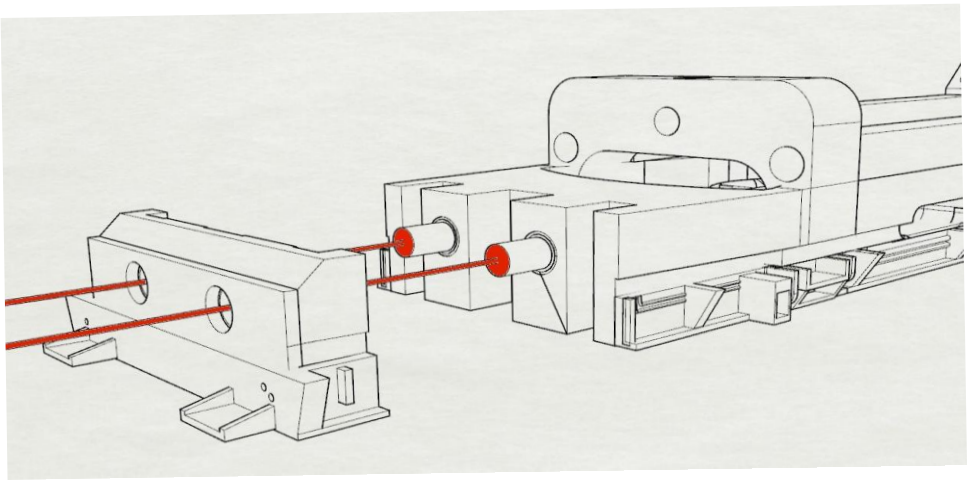


Fig 2a

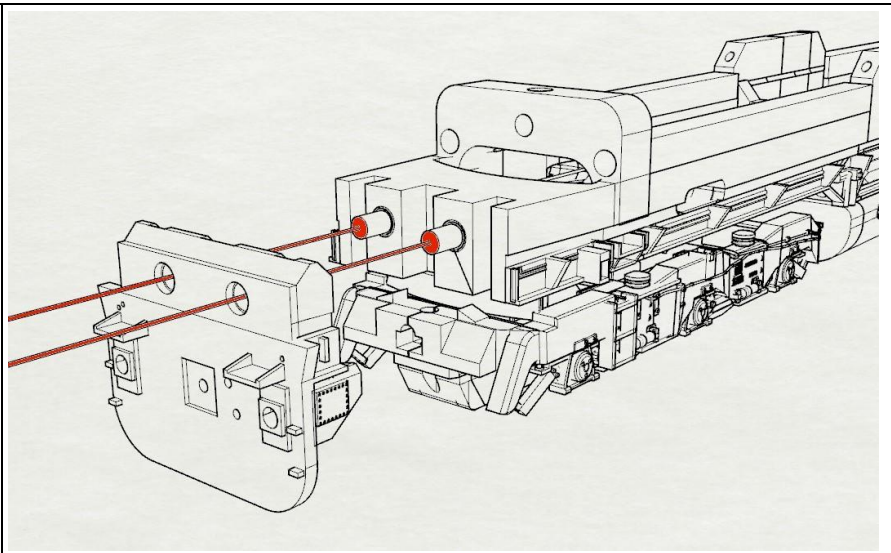


Fig 2b

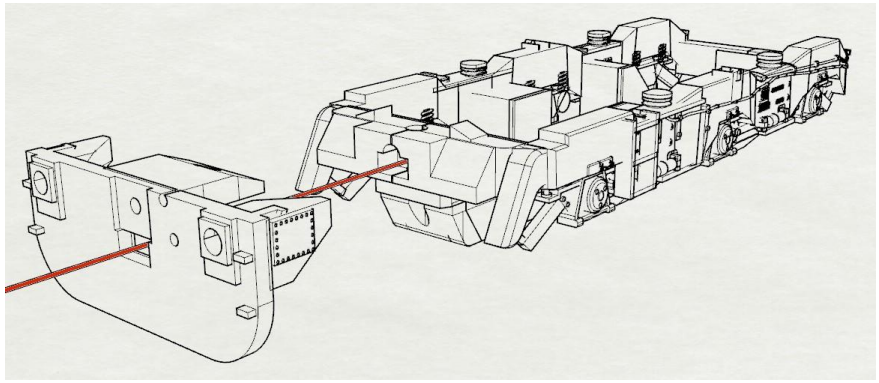


Fig 2c

Please note, when fitting the Bachmann 36-061 coupling, the plastic block ”pocket” (if fitted) should be discarded.

Glazing- Supplied

These are translucent 3d prints. If they are not flat, they can be straightened out by immersing in warm water and gently bending flat. Some of the excess carrier print may require trimming to enable fitting. To further enhance the appearance of the 3d printed glazing, gloss varnish can be painted on to the front face if desired.

Using a black CD marker pen / sharpie or matt black paint to blacken the sides of the glazing can help eliminate the prismatic effect, if desired.

The glazing is fitted from inside the cab, care should be taken when bonding them in place to avoid excessive bonding agent getting onto the visible glazed panels.

Details Sprue

This contains air brake pipes, buffers and drawhook & shackle.

These items are fragile, take great care, to liberate items from the sprue.

Exhaust silencer

A separate 3d print item. It can be painted as a separate item if desired, and the roof well on the main bodyshell is painted as part of the bodyshell painting. The finished silencer part can then be bonded in place on the body.

Provision for handrails - cab & front end

Pre-printed pilot holes are provided in the recesses for the cab door access hand rails, and around the front end for the grab rails. These holes accept up to 0.4mm diameter wire rod. Some holes may require cleaning out with a 0.35 mm or 4mm drill bit.

The handrails can be made from 0.3 to 0.33 mm diameter nickel silver wire rod are bent to shape and dry run tested for size before painting. Fig 3a shows the handrail bend dimensions.

The pilot holes may require clearing again with a 0.35mm or 4mm diameter drill bit after paint application to ease the final fitment of pre painted handrails. Note, the bottom two pilot holes next to the headlight clusters are blind holes due to the position. These should be checked to be at least 0.5mm deep, if not use a 0.35mm diameter drill to very carefully deepen to 0.5 to 0.75mm.

This location requires care to ensure the adjacent outer corner of the front end does not break out while drilling in this location as there is very little wall thickness.

The front end handrail is essentially a single piece inverted flattened out “U” shape. Figures 4, 5 and 6 of the prototype are a good reference. It is noted that the two vertical sections have a bend introduced at mid-point to allow it to follow the front end profile, again see Fig 3a for the measurement guide and Fig 3b showing an assembled front end handrail off the locomotive (together with a cab door handrail).

The handrail can be to be bent to its final shape and the extra fixings bonded or soldered in place on the handrail which would be quite challenging or to mount the additional fixings separately so they protrude an equal distance out of the three holes under the windscreen. The main handrail when mounted by its outer ends in the two lower holes can be bonded with a tiny drop of super glue to the additional fixings as seen in Fig 3b.

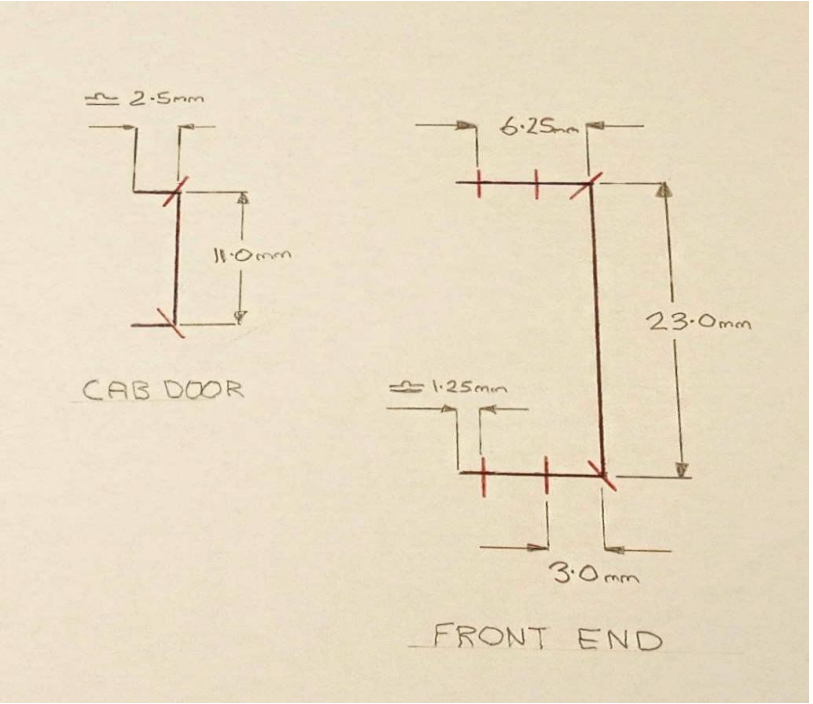


Fig 3 a

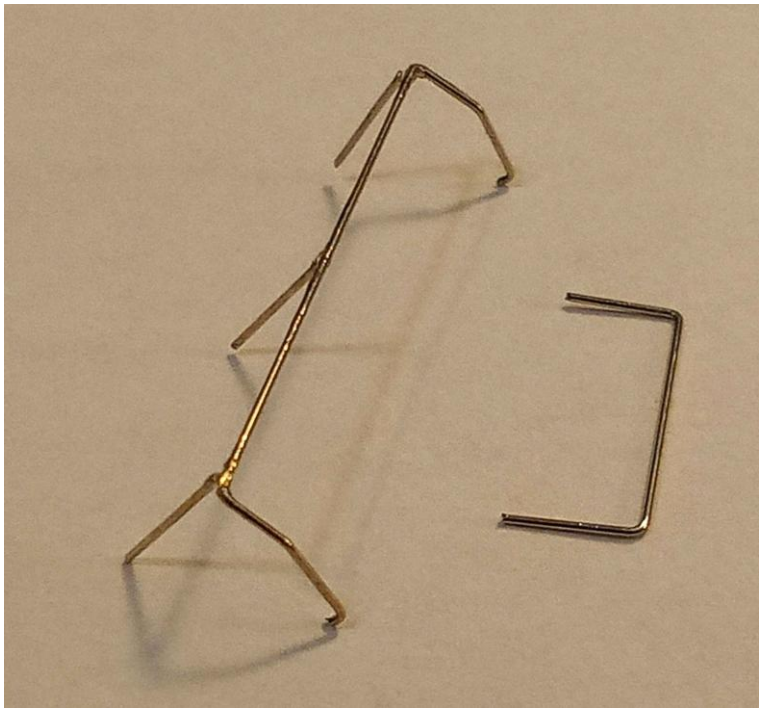


Fig 3 b

Notes on decals application

The corrugated centre bodyside area presents a challenge to the application of waterslide transfers. Therefore, these notes are provided as an aid in good faith, but it is acknowledged that modellers may adopt their own best practice from experience.

Most appropriate decals for the class 66 operators are at the time of writing available from Railtec Transfers.

Application of decals over the corrugations require the decal to be softened to aid its surface application and thus following the contours of the surface corrugations. Railtec Transfers recommend Humbrol Decal Fix (valid for decals produced from 2025 onwards but double check the Railtec instruction sheet in case the transfer material composition changes again) and also that the decal application surface is treated with gloss varnish first (and obviously dried and hardened off for a few days first).

Note: The use of Micro Sol is not recommended. The corrugations are too deep to ‘melt’ the decal into, and the decals end up curling at the edges and delaminating. These were the findings of transfer application tests on a spare bodyshell.

Release the transfer using Decal Fix. Treat the decal application surface with Decal Fix, and apply the transfer. A small paint brush / cocktail stick can be used to align the decal correctly. Very carefully, gently roll a slightly wetted cotton bud over the surface of the decal vertically so it follows the corrugations. If it becomes misaligned and won't easily be moved, work more decal fix to the edges with a fine brush, which should allow it to lift and float again. Wait, add more Decal Fix roll the cotton bud again, pay particular attention to the vertical edges of the decal. Leave approximately 6 to 8 hours to set.

Check again, it is likely some of the transfer has 'popped' out from the corrugations. Add more Decal Fix to soften the decal if possible just in the lifted areas not following the contours (easier to say than do). Use combination of fine brush / cotton bud to work back into the contours. Ultimately, if the vertical edges are following the contours, that is what the eye is drawn to.

It is individual choice to let it dry off and revisit again if required, but it is a balance of more re work vs potential decal damage.

It must be stressed that decal application over the corrugations should be approached with care and patience. Don't give up !

CLASS 66 FLEET INFORMATION

POTTED HISTORY

The approximately 500 strong Class 66 fleet was initially introduced from 1998 by the English Welsh & Scottish Railway (EWS), with Freightliner following with another sizeable order. Other freight operators followed suit, with examples seeing service with GB Railfreight (GBRf), Direct Rail Services (DRS) and Colas Rail Freight (Colas). Two short lived operators, Advenza Rail Freight and Fastline Freight also ran micro fleets of 66's, these locos have since been absorbed by the other operators.

Deliveries were completed in 2016 with the last loco, 66779 being finished in BR lined green, carrying the name "Evening Star", and going into service with GBRf.

Latterly, the UK ordered fleets have been supplemented by a small number of European Class 66's (Series 66), which have been imported and modified for UK operations.

The quarter century and counting of UK operations of the fleet has been complex, with numerous locomotive transfers between operators, sometimes more than once.

The core operators with the largest fleets are DB Cargo (formerly DB Schenker, EWS), Freightliner and GBRf respectively. Together with the smaller players, this has led to a multitude of 'base line' liveries, as the companies have re-invented themselves, plus a kaleidoscope of one off type special liveries, GBRf being especially prolific in this. Numerous locomotives also carry nameplates.

To provide details of each and every livery change would be a volume in itself, but the web is your friend with seemingly every nuance searchable.

FLEET CONFIGURATON

A basic overview of the fleet is given below and should be read in conjunction with the VISUAL DIFFERENCES section.

66001 - 66250	DB Cargo	The original standard locomotive. "A" headlights.
66301 - 66305	Fast Line Freight	Low emission variant (T2), main bodyside / roof grilles different sizes and moved slightly, 5th door and footsteps added to engine room and smaller fuel tank. Revised cab side windows. Locomotives now with DRS.
66411 - 66434	DRS	T2 Variant. Some locomotives from this batch now with Freightliner & GBRf.
66501 - 66537	Freightliner	Original standard locomotive." A" headlights.
66538 - 66572	Freightliner	Original standard locomotive. "B" headlights.
66585 - 66599	Freightliner	T2 Variant.
66601 - 66622	Freightliner	Lower geared high tractive effort variant of original standard locomotives. "B" headlights.
66625	Freightliner	Lower geared T2 Variant.
66651 - 66660	DB Cargo	Conversions from 66/0 to 66/6 high TE locomotives (2024 on) "C" headlights.
66701 - 66717	GBRf	Original standard locomotives. "B" headlights.
66718 - 66749	GBRf	Many are T2 Variants. Many are transferred from previous operators, various configurations.
66841 - 66844	Advenza	Locomotives now with Colas. Original standard locomotives. "B" headlights.
66846 - 66850	Colas	Came from Freightliner (ex 66573 - 66577), original standard locomotives. "B" headlights.
66951 - 66957	Freightliner	T2 Variant.

Key

Bold Underlined - This model

Bold - This model will require a headlight modification if absolute accuracy is desired.

T2 Variant - Beyond the scope of this model.

This is a general guide, it is strongly recommended to check photos of chosen locomotive to confirm the configuration.

VISUAL DIFFERENCES

There are two main sub types that have significant detail differences, the original standard locomotive and the low emission T2 variant. This model is based on the original standard locomotives. The T2 variant is beyond the scope of this model. Original standard locomotives have front end head, tail and marker light differences, with two principle types, original Wipac clusters from delivery, or revised larger plated area with bigger lights fitted to it. Both types were further modified after the Railway Group Standard change in 2016 which called for enhancements to the forward facing lights.

	Fig 4 – “A” Configuration The 66/0 and many of the 66/5 have the original Wipac light clusters (and some of the other batches may have some locomotives with this type as well). "A" configuration for clarity, seen in Fig 4.
	Fig 5 – “B” Configuration The later build 66/6 Freightliner, some 66/5 and many of the other operator batches have a revised larger plated area with separate light units, the headlight being much larger than the original Wipac cluster. The two footsteps below are also removed. "B" configuration for clarity, seen in Fig 5.

	Fig 6 – “C” Configuration Post 2016 railway group standard change, further revised lamp units were / are being fitted. The original Wipac unit ("A") now has a headlight and a duplex led marker / tail light. The small vertical rectangle marker light cut out is now covered over (actually a replacement cluster to the same overall dimensions), "C" configuration for clarity, seen in Fig 6 The later variant ("B") simply had the lamps / lenses changed, they are now bigger and slightly proud of the mounting area. “D” configuration for clarity. No image provided.

Swing head buckeye couplings. A great many of the original batch of 66/0 locomotives were fitted with this additional coupler, as the name implies, it swings clear when not in use to allow the conventional drawhook and shackle to be used. The swing head coupling would need to be separately modelled. See Fig 4 and 6.

Rear view mirrors on cab side quarter lights. Fitted to the DB Cargo fleet. See Fig 4 and 6. Not included with this bodyshell as too fragile to include as a print. This would need to be separately modelled.

Front end tie down brackets, see fig 4, 5 and 6. Not included as variable configuration, This would need to be separately modelled.

66055 to 66059 were additionally fitted with slip couplings and additional front end coupler illumination down lighters for Lickey Bank duties. No images provided.

Original Standard Locomotive Images

Fig 7

Side view from No1 end.

Fig 8

Side view from No2 end (inertial air filter side located No1 end drivers side).

Low Emission T2 Variant Image Beyond the scope of this model.

Fig 9

Side view from No2 end inertial air filter side (located No1 end drivers side).

Principle visual differences:- 5th door and footsteps on this side engine room access. Smaller fuel tank. Radiator bodyside inlet and roof outlet grills differences in size and position. Inertial filter grill mesh different. Revised cab side windows.

This guide has been produced by Dave Bates for the 3mm Society April 2025.