

# DESIGNED FOR SOUND

Bachmann's recently released, newly designed 'J72' 0-6-0T model reveals its advanced internal features to **PAUL CHETTER** as he installs sound and stay alive capacitors.

**S**OUND has often been an afterthought in model design, but recently this has been changing and manufacturers have been thinking about how the end user will want to modify or upgrade their locomotive to make the most of digital technology. The Bachmann 'J72' 0-6-0T, which touched down in late 2019, is a thoughtfully designed model and a joy to work with. After releasing two retaining screws the body comes away from the chassis without a fight giving direct access to the internal components.

The placement of the coreless motor in the boiler/smokebox area allows best use of the space within the boiler and side tanks for the electronics. A Next18

Bachmann's new 'J72' has been designed 'sound-ready' which makes it a very simple project to upgrade with a ZIMO sound decoder. A speaker is factory fitted by Bachmann while there are also connections for a stay alive capacitor.

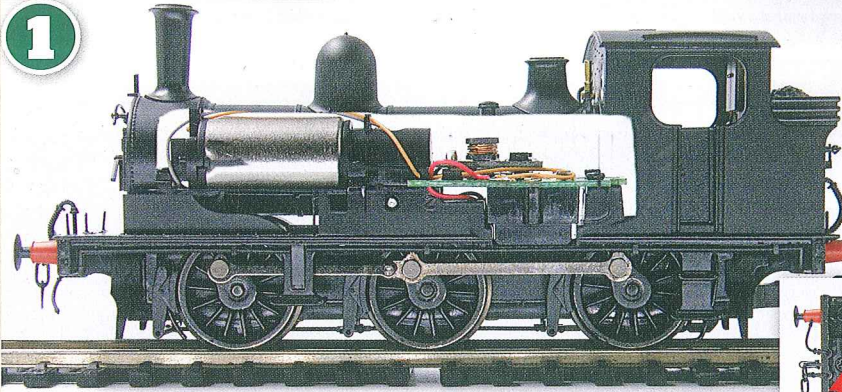




## STEP BY STEP INSTALLING SOUND AND STAY ALIVE INTO A BACHMANN 'J72' 0-6-0T

Intermediate  
Beginner **SKILL LEVEL** Advanced

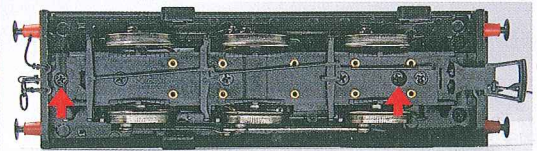
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Bachmann specified the layout of the 'J72' to be 'sound ready' from the outset which means it can easily be converted with just the addition of a decoder. This photograph shows the space available, and the factory fitted speaker which is mounted below the main Printed Circuit Board (PCB).

2

Access to the DCC socket is very simple. Remove the two cross-head retaining screws from below and lift the body straight up away from the chassis assembly.



## WHAT WE USED

PRODUCT	SUPPLIER	PRICE
ZIMO MX659N18 Sound Decoder	<a href="http://www.digitrains.co.uk">www.digitrains.co.uk</a>	£114.00
Digitrains Stayin'Alive capacitor pack	<a href="http://www.digitrains.co.uk">www.digitrains.co.uk</a>	£12.00

connector enables genuine 'plug and play' decoder installation, while the factory fitted speaker in all 'J72' models makes for very simple sound fitting.

Provision of solder pads for connection of capacitors or supercapacitors is a welcome addition to the model's PCB (Printed Circuit Board). We used a ZIMO MX659N18 miniature sound decoder but the ZIMO MX658N18 is very similar. Although a few millimetres longer, it fits comfortably within the model. In a fortuitous turn of events, Digitrains had already commissioned a series of miniature supercapacitor packs, each using similar components but arranged in different arrays. This gives the choice of 'long and thin', as used in this installation, 'short and fat' (similar shape but smaller than the TCS KA2 pack we used in the Hornby Ruston 48DS in HM150) or 'flat and wide'. We will use more of these in future issues to show their installation value.

Not usually mentioned, but in many ways the origin and quality of the sounds and control features included are as important to users' operating experience as the hardware which uses them. The 'J72' sound project is one of a new breed which enhances the driving experience by delivering realistic variations based upon real railway practices. They still

operate perfectly well by using the throttle alone, but for something more immersive, there are a number of optional features available at the touch of a button.

For example, if you engage F13, the decoder will play the sound of loose coupled wagons rattling and buffering as the locomotive pulls away. With high acceleration, similar sounds will play when the model is already in motion. Rapid deceleration, especially with the use of the active Brake Key (F2), will get them clanking again as they close up.

Other features include whistles which play differently depending upon road speed and direction, flange squeal which has different sounds depending upon road speed and more. We'll be demonstrating these features in a *Hornby Magazine* 'J72' video available via [www.hornbymagazine.com](http://www.hornbymagazine.com). Another useful feature of the ZIMO decoder family is that the sound and stay alive technology is also available to DC users.

The following step by step guide illustrates just how simple it is to equip Bachmann's new generation 'J72' with digital sound – a model which paves the way for a new round of digital capable locomotives being produced by Bachmann including the Class 158 two-car DMU which features in this issue's Review section. **Horn**

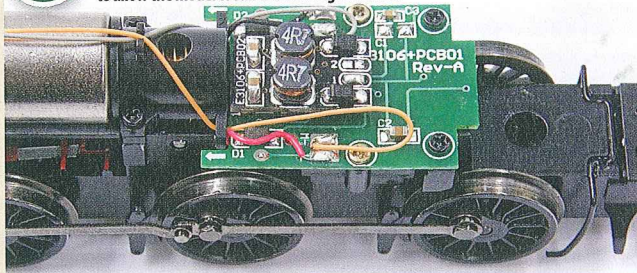
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TO SEE THIS IN ACTION



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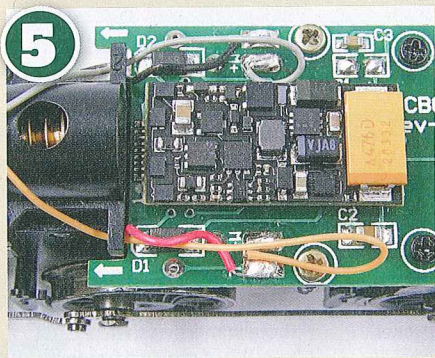
- 3** The model's PCB is easily located once the body has been removed and has a small black coloured blanking plate fitted. This is plugged into the Next18 decoder socket to allow the model to run with analogue control.



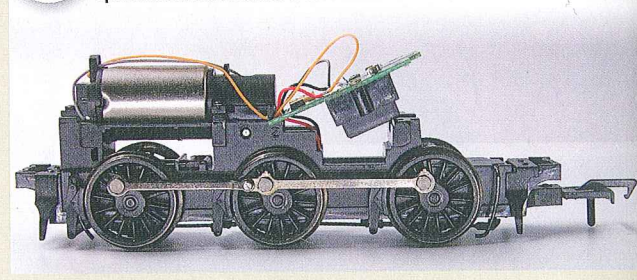
- 4** After removing the blanking plate, the Next18 connector becomes visible. The Next18 socket is very compact and saves space in both length and depth. Its pin layout is standard with pins 1 and 10 marked at each corner.



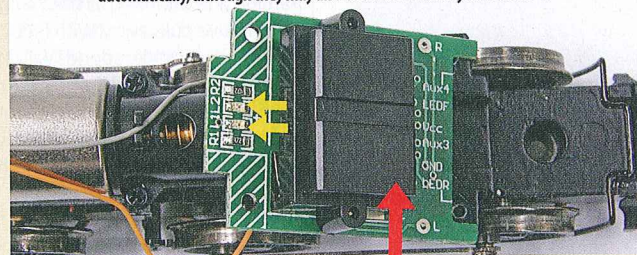
- 5** Plugging the decoder into the Next18 socket is a straightforward process as it will only fit one way. The image shows a ZIMO MX648N18 sound decoder, but the same process would apply equally to a non-sound type. The speaker will be automatically connected to the sound decoder so the installation could be complete at this point, requiring only reassembly of the body to the chassis to finalise.



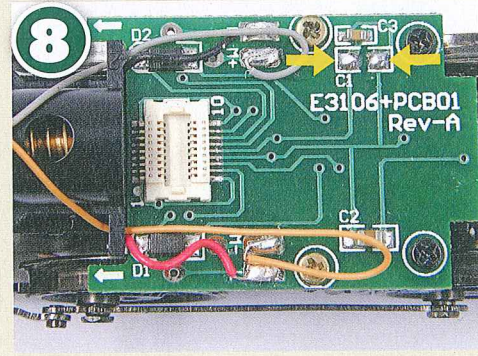
- 6** There is no need to disturb the model's PCB, but we've done so here to give you a preview of the interesting design aspects that Bachmann has incorporated. The speaker can be seen attached to the underside of the PCB.



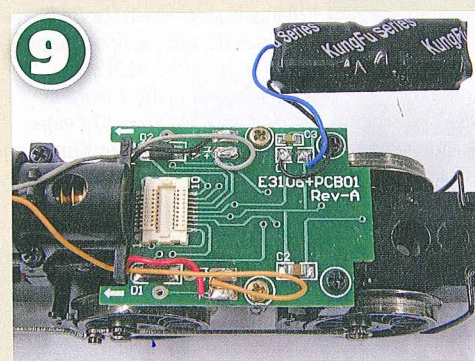
- 7** On the inverted PCB can be seen the speaker, arrowed in red and the Surface Mount Device (SMD) LEDs which simulate the function of the firebox flicker. Whenever the coal shovelling sound plays in the 'J72' sound project from Digitrains these LEDs flicker automatically, although they may also be activated at any time with FO.



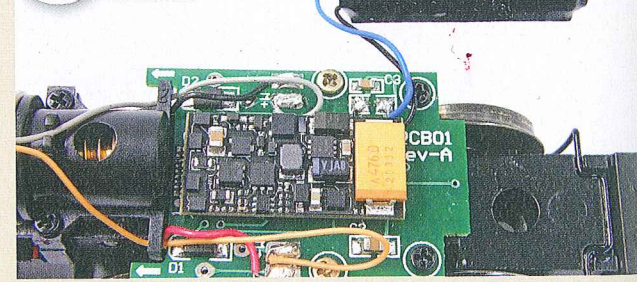
- 8** Many modellers are now choosing to fit stay alive capacitors for the added reassurance of smooth and uninterrupted running. Digitrains has a range of very small supercapacitors ideal for this purpose. In another positive move to help users, Bachmann have provided solder pads to which capacitors can be attached, arrowed in yellow.



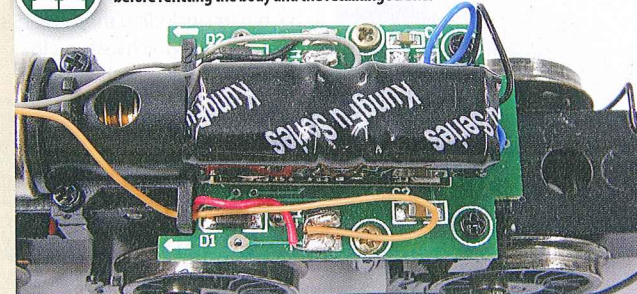
- 9** Shown here is Digitrains' most appropriate shape of supercapacitor pack for this model. Once charged, it will run both motor and sound for 10 seconds or more without track power. After trimming to the appropriate length the blue (positive) lead is connected to the right-hand pad and the black (negative) lead to the left.



- 10** The decoder can be refitted to the Next18 connector as it was before.



- 11** A couple of small spots of mastic are sufficient to hold the 'Stayin'Alive' pack in place before refitting the body and the retaining screws.



- 12** This cutaway shows the placement of the factory fitted speaker plus the installed decoder and supercapacitor pack in the completed locomotive which is now ready to run with full sound and stay alive capability.

