



Professional Broadcast Equipment

PAG Li-Ion Upgrade for AR Series 2 Chargers

Model No. 9670

FITTING INSTRUCTIONS

Why Upgrade My Charger?

Nickel-Cadmium, Nickel-Metal Hydride and Lithium-Ion batteries all have different charging requirements. This would normally mean the purchase of different chargers. However, this charger upgrade exploits the designed-in forward compatibility of PAG AR Series 2 chargers to handle them.

PAG Lithium-Ion batteries contain circuits that enable them to recognise an AR Series 2 charger. These intelligent batteries control the charging regime as appropriate, and can therefore be charged directly from the charger.

This upgrade will also allow the charging of other manufacturers' Lithium-Ion and certain Lead batteries. These batteries do not contain the intelligent circuits, and must therefore be charged via a range of PAG Intelligent Charge Adaptors currently under development.

The AR Series 2 Upgrade will allow the following batteries to be charged:

- ▶ Nickel-Cadmium batteries 4.8V to 14.4V, 1Ah to 10Ah.
- ▶ Nickel-Metal Hydride batteries 4.8V to 14.4V, 1Ah to 10Ah.
- ▶ PAG Lithium-Ion batteries.
- ▶ Other Lithium-Ion batteries via PAG Intelligent Charge Adaptor Model 9610.
- ▶ Lead Acid batteries via the appropriate PAG Intelligent Charge Adaptor.

Contents

The following components are included in this kit:

- ▶ Qty 1 AR Series 2 upgrade microcontroller.
- ▶ Qty 1 microcontroller extraction tool.
- ▶ Qty 1 Upgrade Identification Label.
- ▶ Qty 1 PP90 Connector Panel Label.
- ▶ Qty 4 self-adhesive rubber pads.
- ▶ Qty 1 Charger Instruction Manual.

Additionally, you will require a Pozidriv™ No. 2 screwdriver.

General

The upgrade procedure entails the replacement of the microcontroller IC and the fitting of a label to indicate that the charger has been upgraded. Please read these instructions fully before starting any disassembly of the charger. The procedure is not complex, but it is important for reasons of safety that the charger is reassembled correctly. If you are in any doubt about your ability to complete the upgrade procedure, please consult your PAG Dealer, who will be happy to undertake the work to the original factory standards.

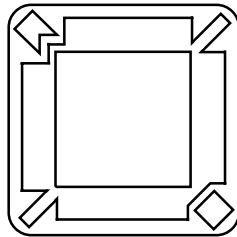
Upgrade Procedure

1. Disconnect the charger from the mains supply, and then unplug the mains input lead from the rear panel of the charger.
2. **IMPORTANT:** parts of the charger PCB assembly retain a high voltage even after the mains supply has been disconnected. Wait for a period of five minutes following disconnection before commencing disassembly.
3. Models 9792 & 9794: Unscrew and remove the screws that fix the folding feet onto the charger.

Model 9793: Prise the self-adhesive rubber pads out of the circular foot mouldings to reveal the case fixing screws. Unscrew and remove the fixing screws.

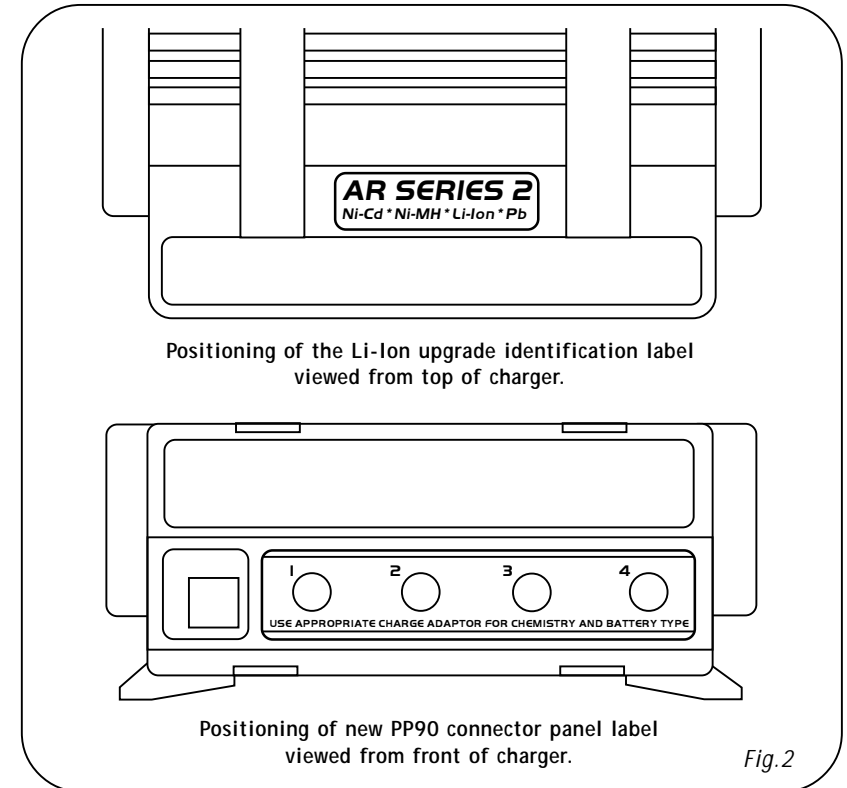
4. Remove the lid. It may be necessary to pry between the lid 'claws' and the front panel with a small screwdriver. Note the loose spacers that are fitted to the lid of Models 9792 and 9794.
5. Unplug the front panel ribbon cable from the charger PCB assembly. The microcontroller is situated underneath the ribbon cable.
6. Remove the microcontroller using the extraction tool supplied. Insert the claws of the extraction tool into two opposite slots in the carrier. Carefully squeeze the plastic arms of the tool to extract the microcontroller.

Fig.1



Orientation of chip
viewed from front of charger.

7. **IMPORTANT:** Note the polarisation of the microcontroller and the carrier. The microcontroller features one chamfered corner which mates with the corresponding feature in the carrier (facing to the front right of the PCB). Carefully insert the new microcontroller, observing the polarisation notes above. Plug the front panel ribbon cable firmly in to the mating connector.
8. Ensure that the loose spacers are correctly attached to the lid moulding (Models 9792 and 9794), and fit the lid. Check that the central nib on both the lid and base mouldings are located to the inside of the front panel.
9. Replace the fixing screws and tighten securely. (Model 9793: Fit the new rubber pads into the foot mouldings).
10. Fit the upgrade identification label and new PP90 connector panel label to the case in the positions shown in Fig.2 on the following page.
11. Connect the charger to the mains supply, and check that the display functions correctly.
12. **IMPORTANT:** Before using the charger, please read carefully the new Instruction Manual that is supplied with this kit.



Positioning of the Li-Ion upgrade identification label
viewed from top of charger.

Positioning of new PP90 connector panel label
viewed from front of charger.

Fig.2