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HA028909U100/3 (CN25572)

Service instructions
100mm Paperless chart recorder

INTRODUCTION

This document describes the disassembly of the 'front end' of a 100 mm paperless chart recorder, down as far as display backlight replacement. Removal of the main 'micro' board and backlight inverter board are included, but for replacement/retrofit instructions for input/output boards, power supply units and the serial communications and USB option boards, the document HA028908U100 should be referred to.

SAFETY PRECAUTIONS

Ensure that the recorder is isolated from supply voltage for at least 15 minutes before starting to work on it. This period allows the high voltages associated with the inverter board (if fitted) to dissipate safely, and also allows the power supply unit to cool down. The user should be aware however, that areas of high temperatures might still exist even after this period has elapsed.

STATIC ELECTRICITY

CAUTION

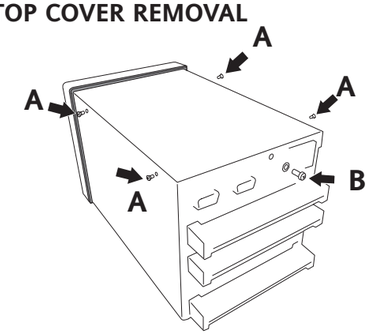
These procedures involve the handling of components which are susceptible to damage caused by the discharge of static electricity. All relevant personnel must be aware of static handling procedures. It is recommended that a static safe container be available into which any circuit board, removed from the recorder, may be placed.

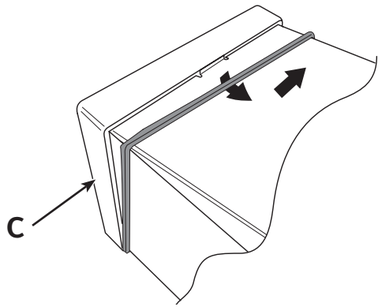
DUST INGRESS

When replacing the display or backlighting, it is essential to keep the front face of the display and the rear face of the touch screen as clean as possible. The use of polythene, or latex gloves is recommended when handling the display unit. If possible, the replacement procedure should be carried out in a clean area.

Particles of dust not only appear unsightly, but may also affect the performance of the touch screen, in extreme circumstances, causing a continuous 'press' to be perceived by the recorder,

TOP COVER REMOVAL



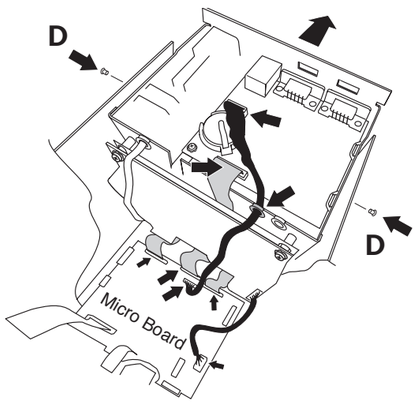


(1) With the recorder removed from the panel, remove the top plate, by removing the four Torx-headed screws 'A' and the pan-head Pozidriv screw 'B', and then lifting the cover up and out from under the gasket (C).

CARD CAGE REMOVAL

(2)

Remove screws 'D'. Avoiding any hot surfaces, and after taking appropriate static precautions, carefully lift the card cage away from the chassis, disconnecting all harnesses (looms) and ribbon cables as they become accessible. Place the card cage safely to one side for later re-assembly.

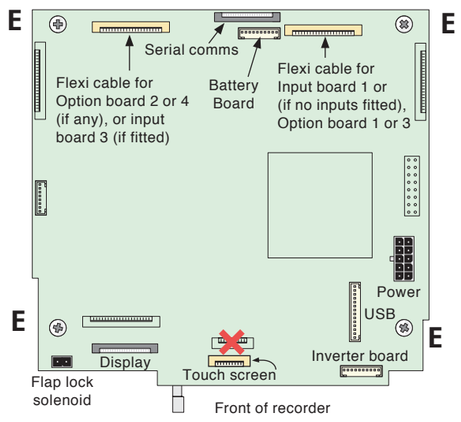


MAIN BOARD REMOVAL

(3)

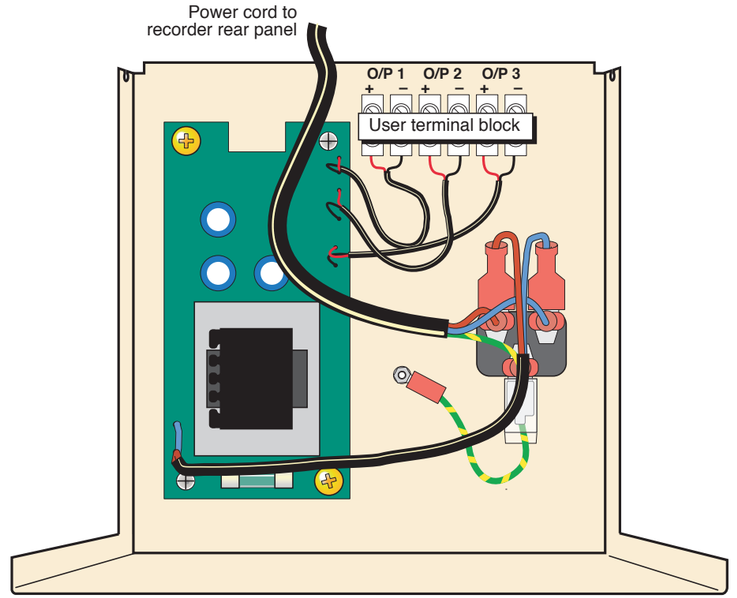
After taking appropriate static precautions, remove the main micro board by disconnecting all remaining looms, and then undoing the four securing screws (E).

If the main board is to be replaced, and no other work is to be done on the recorder fit the new board now, and re-assemble the recorder. Otherwise, place the board in a static safe container.



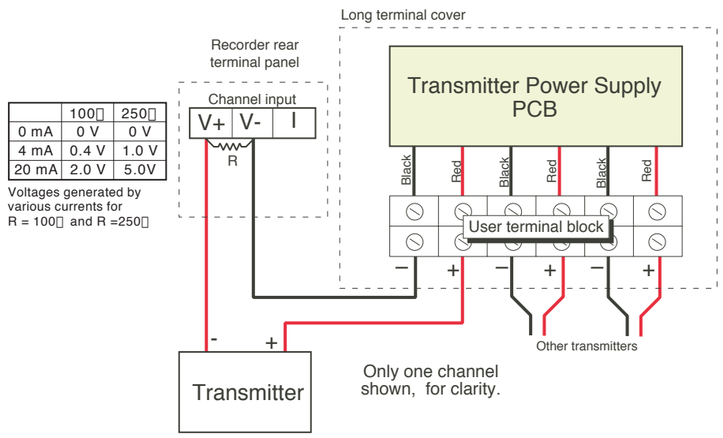
Note: If the type of memory device is to be changed (from Flash to SD card or **vice-versa**), a new media plate must be fitted - see page 4

TRANSMITTER POWER SUPPLY WIRING



Fit circuit board fuse according to the intended supply voltage (Fuse type = Type 'T')

Supply voltage	Fuse rating	Part Number
115V ac	100 mA	CH050012
230V ac	63mA	CH050630



	100Ω	250Ω
0 mA	0 V	0 V
4 mA	0.4 V	1.0 V
20 mA	2.0 V	5.0V

Voltages generated by various currents for R = 100Ω and R =250Ω

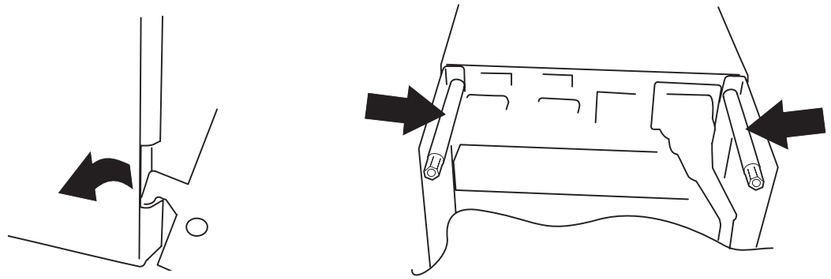
R (minimum spec) = 1.4W, ± 1%. 100Ω or 250Ω as required (see table)

TRANSMITTER POWER SUPPLY

The retrofitting of the transmitter power supply is carried out from the rear of the recorder.

CAUTION

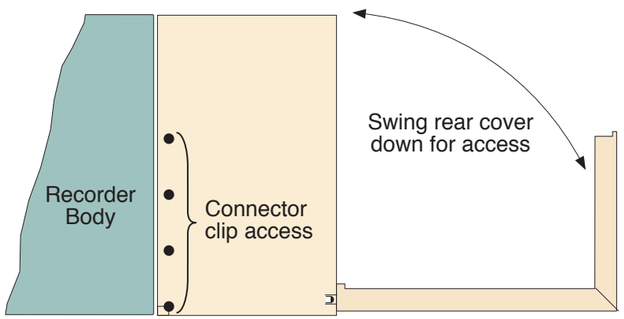
The Transmitter Power Supply option may not be used with low voltage or dc supplies.



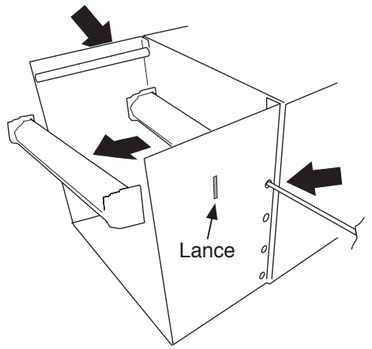
Fit the case extension, and secure using the standoff pillars.

Fit the rear cover and wire the power supplies as shown below.

Connect the supply voltage cable between the long terminal cover and the rear recorder panel, and use a cable tie to secure it to the lance inn the sideplate.



If required, connectors can be removed by inserting a suitable screwdriver through the relevant apertures to compress the connector side catches.

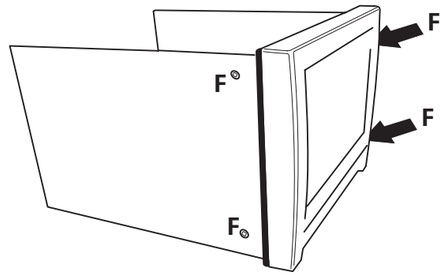


DISPLAY HOUSING REMOVAL

CAUTION.

The display housing must not be removed whilst the main board is still in position, as to do so may cause the stylus holder to damage components on the underside of the board.

4 Undo the four Torx-headed screws (F), and carefully lift the display housing away from the chassis.



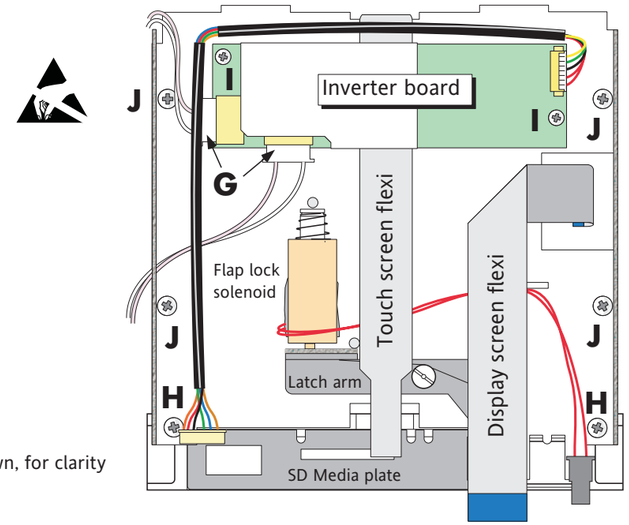
INVERTER BOARD REMOVAL

Note: due to a change in design, the inverter board is not fitted on recorders with status levels at or above K9 (6100A) or F5 (6100E).

5

Disconnect the two Backlight connectors (G)

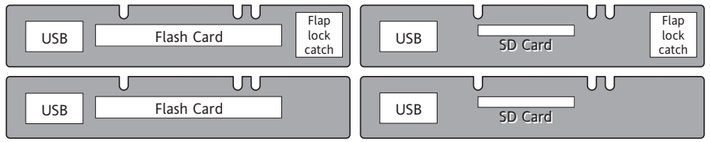
Remove the inverter board (secured by screws 'I'). Place the board in a static safe area for later use in re-assembly, or replace the board, and re-assemble the recorder.



Stylus holder not shown, for clarity

MEDIA PLATE

This item is designed to help the user to guide the flash or SD card into its connector on the main micro board. Fitted at the bottom of the display housing, and retained by the screen plate, this flexible strip also has cut-outs for the USB port and for the lock catch (if fitted) and also contains areas which allow the status LEDs to be viewed. The variants are shown below, as viewed from the inside of the recorder.



DISPLAY REPLACEMENT

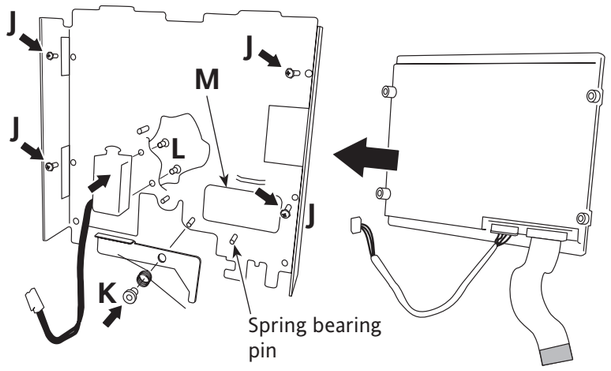
6

Peel the touch screen flexi cable away from the screen plate (double-sided, sticky pad). Undo the two securing screws (H).

Whilst taking care not to damage any of the harnesses or flexible cables, ease the screen plate/display assembly out of the housing. (If a flap lock is fitted, then disengage it before attempting to lift the assembly away from the fascia.)

7

Remove the display unit from the back plate (screws 'J'), and discard. If the status level of this recorder is K9 (6100A) / F5 (6100E) or higher, fit a new display, and continue at step 11. For older recorders continue at step 8.

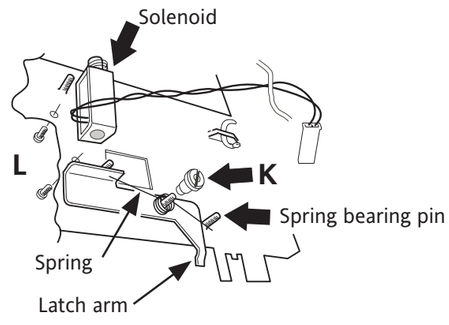


8

If a flap lock is fitted, make a note of the orientation of the flap spring, then remove the latch arm and spring by undoing the shouldered nut 'K'. Cut the cable tie securing the solenoid harness and remove the solenoid (screws 'L'). Discard the back plate.

9

Fit the flap lock components to the new back plate, ensuring that the spring is correctly oriented, and that it bears on the underside of the latch arm flange and on the underside of the spring bearing pin. Ensure that the smaller diameter portion of the nut passes through the hole in the latch arm, leaving the arm free to rotate. Secure the solenoid loom using a cable tie.



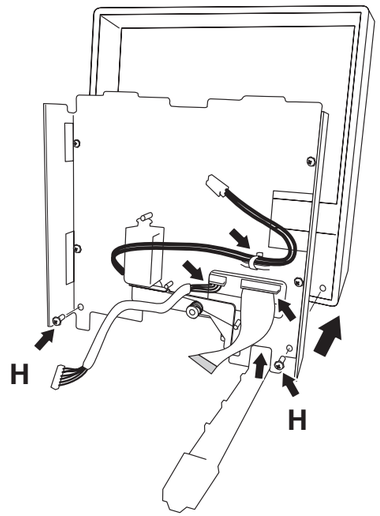
10

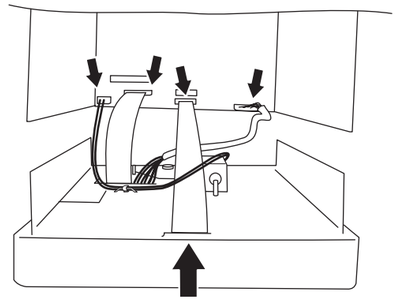
Ensuring that the two looms pass through aperture 'M', fit the new display to the back plate using screws 'J' previously removed, and any shake-proof washers previously fitted.

11

Ensure that the display and the inside surface of the touchscreen are free from dust and finger marks. As shown below, fit the stylus holder, and secure the new assembly to the display housing, using the two screws ('H') previously removed.

DISPLAY HOUSING REMOVAL (Cont.)





12

Re-fit the display housing to the recorder chassis, ensuring that all flexible cables, wire looms etc are correctly mated with their connectors.

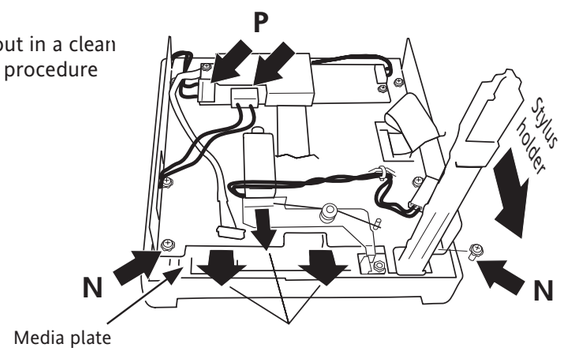
13

Reassemble the recorder and carry out the Touch screen calibration procedure as described in Annex B of the user guide.

BACKLIGHT REPLACEMENT

Applies only to recorders with status levels lower than 'K9' (6100A) or F5 (6100E)

It is recommended that this procedure be carried out in a clean environment, and that the person carrying out the procedure wear polythene or latex gloves.

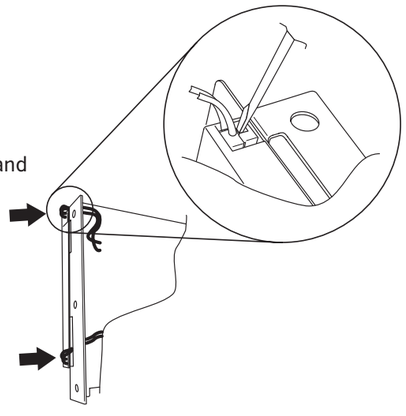


14

If not previously done, remove the display housing from the chassis as described in step 4, above. Remove screws 'N' and disconnect the backlight connectors 'P'.

Lift the display unit out of the housing. (If a flap lock is fitted, then disengage it whilst lifting the display unit away from the display housing.) The stylus holder can be removed for convenience (or replacement).

Observe the routing of the backlight harnesses.



At the left edge of the display unit, locate the two backlighting units, and carefully ease them out of their slots, as shown. The new units can now be slid into position, and the recorder re-assembled.

When reassembling, please ensure that the harness to the upper backlight follows the routing shown (i.e. it does not pass through the screen plate side aperture as the lower harness does).

After re-asembly, carry out the Touch screen calibration procedure as described in Annex B of the user guide.