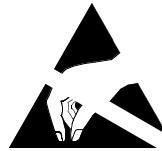


Conversion instructions

Model 4102

1. INTRODUCTION

These instructions are intended as an aid to those required to convert a non-configurable model 4102 recorder to the latest standard, with full user interface. The procedure involves replacing the display module and the PROM on the SBC board at the rear of the recorder.



Caution

The process involves the handling of circuit boards containing components which are sensitive to static electrical discharges of voltages as low as 60V. All relevant personnel must be aware of static handling procedures.

2. CHASSIS REMOVAL

1. Open the door of the recorder, and remove the cassette and pens/printhead as described in the User Guide.
2. Isolate the recorder from line power, then unscrew the jacking bolt (arrowed in figure 1) and carefully slide the chassis forwards, ensuring that the flexi cable at the rear of the writing system is not forcibly pulled out of its connector.
3. As shown in figure 2, release the flexi (by pulling the ears of the connector housing upwards), and remove the flexi from its connector. Remove the writing system from the case and place the writing system on a static-safe surface.

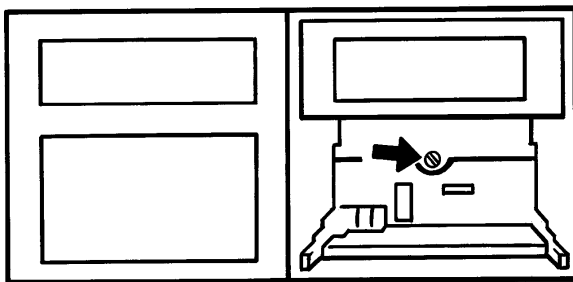


Figure 1 Option key and jacking bolt locations

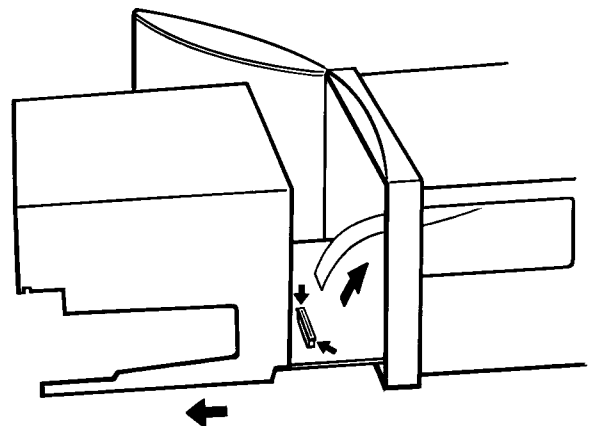


Figure 2 Flexi-cable removal

CONTROL (MICRO) BOARD REMOVAL

4. Remove the annotator and/or CIL board(s) if fitted, as shown in figure 3.

Annotator board

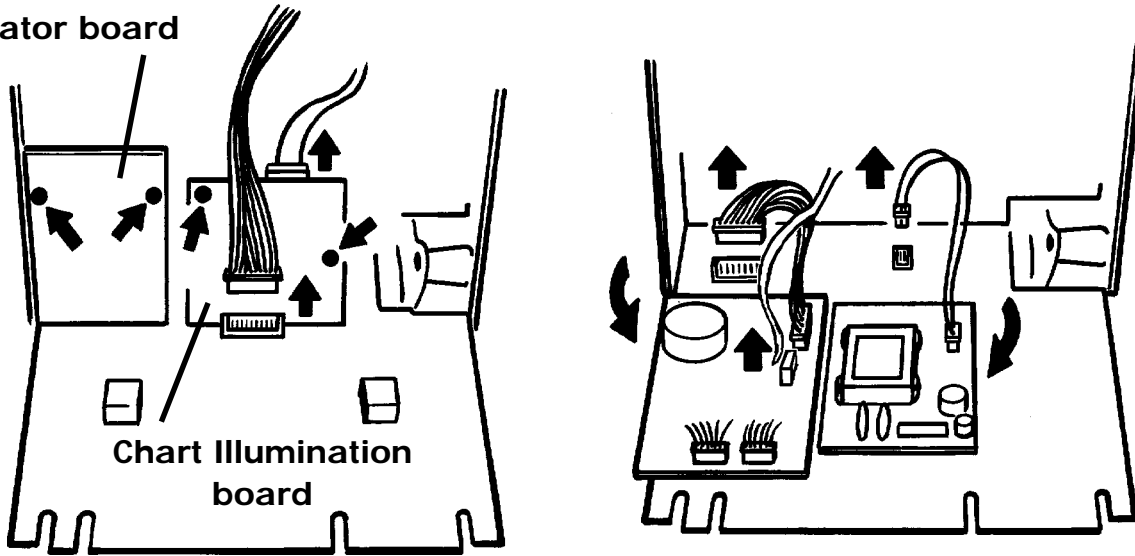


Figure 3 Removal of annotator and Chart illumination boards
(Continuous trace recorder shown) (Annotator board not fitted to multipoint recorders)

5. Turn the recorder upside down, remove the static earthing shim (secured by a plastic rivet) as shown in figure 4, and gently prise the control board off its mounting pillars as shown in figure 5.

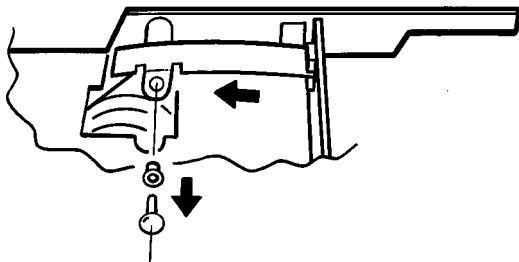


Figure 4 Static earthing shim removal

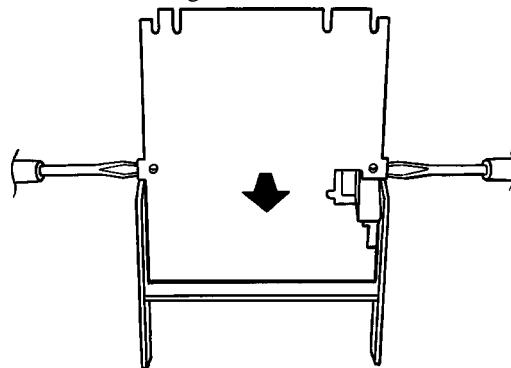


Figure 5 Releasing the control board from its mounting pillars

6. Turn the recorder the right way up again and remove all remaining connectors from the control board as shown in figures 6a/6b.

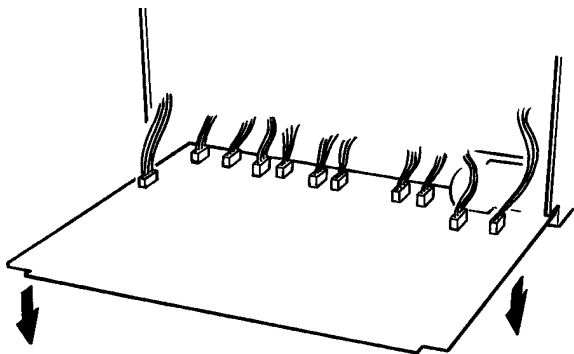


Figure 6a Connector removal (continuous trace recorders)

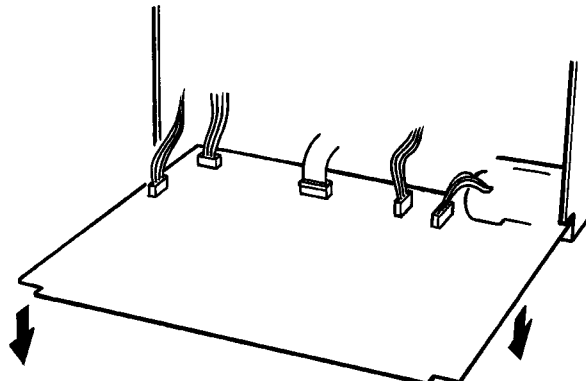


Figure 6b Connector removal (multipoint recorders)

PROM REPLACEMENT

7. Lay the control board flat on a static safe surface.
8. Note the position of the orientation pip on the existing PROM (Continuous-trace recorder PROMs are oriented differently from multi-point PROMS).
9. Use a PLCC extractor tool to remove the existing PROM.
10. Fit the new PROM, ensuring correct orientation (figure 7)

SWITCH ACTUATOR REMOVAL

11. Remove the two metal switch actuators from the chassis as shown in figure 8.

DISPLAY UNIT REPLACEMENT

12. Cut the tiwrap (A in figure 9) and release the cable form.
13. Remove the hinge pin (B in figure 9) and retain.
14. Fit the new display module, and re-fit the hinge pin.
15. Fit the cable form in its channel, and ensure that the display door can open and close freely, adjusting the cable form as necessary. Once satisfactory, tie-wrap the display harness and (for continuous-trace recorders only) the edge detect cables as before.

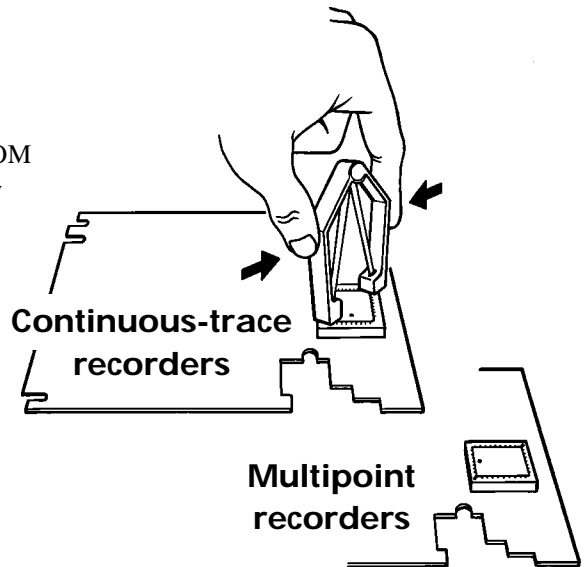


Figure 9 PROM removal and orientation

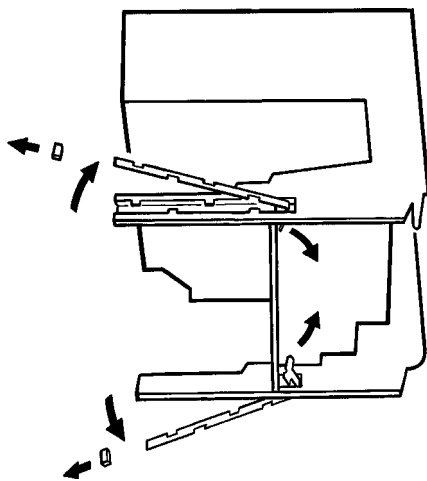


Figure 8 Switch actuator removal

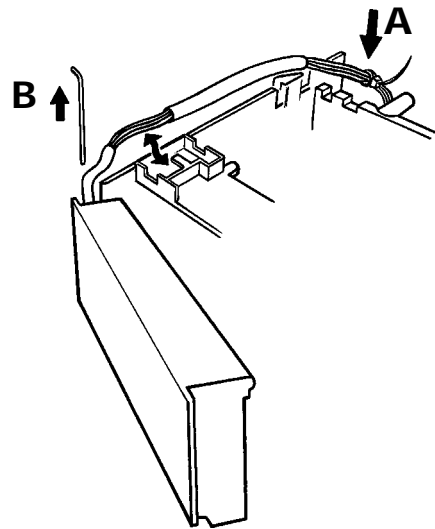


Figure 9 Operator interface replacement

REASSEMBLY

Note: Figures 10 and 11 show connections for the continuous-trace control board and for the annotator and chart illumination boards.

16. Remake all the connections between the writing system and the control board, then turn the recorder over and press-fit the board to the chassis.
17. Re-fit the grounding shim.
18. With the recorder the right way up again, fit the annotator and chart illumination boards (if fitted).
19. Return the chassis to the case, ensuring that the flexi cable to the I/O boards is fitted securely and that it is locked in place by pressing the 'ears' down towards the body of the connector.

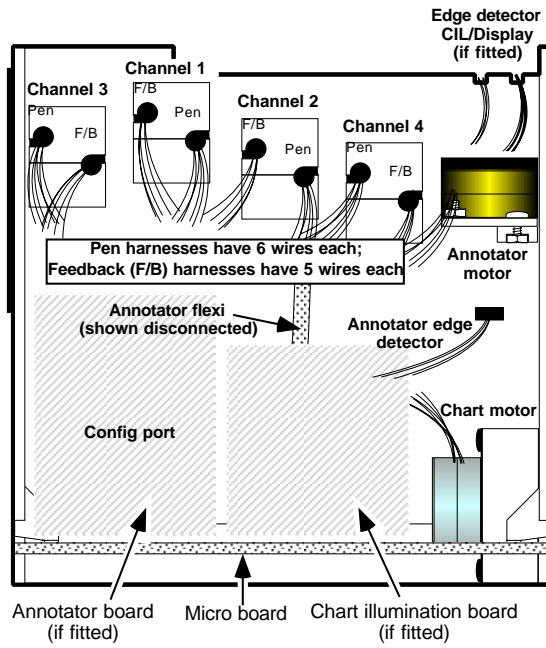


Figure 10 Rear bulkhead components - continuous trace recorders

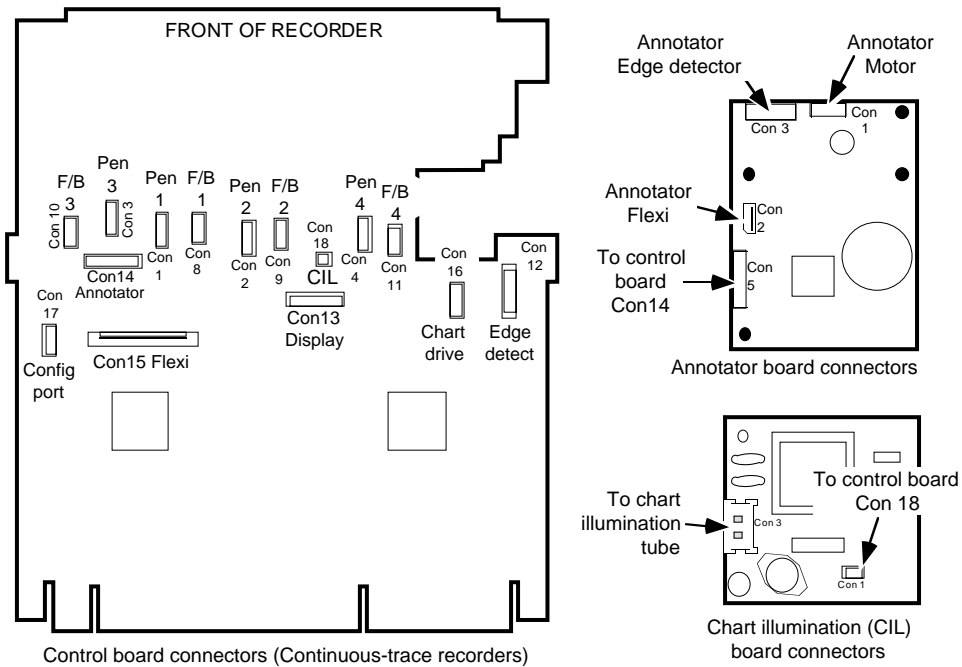


Figure 11 Connector locations



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