

Control board replacement instructions

100mm recorders



Caution

This procedure involves the handling of circuit boards containing components which are susceptible to damage resulting from electrostatic discharges of less than 60V. All relevant personnel must be aware of safe static-handling procedures.

These instructions show how to replace a recorder control board, sometimes referred-to as ‘the micro [processor] board’.

As the removal and re-fitting of the chart illumination board and the annotation board (if fitted) is a part of the procedure, these instructions may also be used for the retro-fitting or replacement of these boards.

The exact detail of the procedure depends on the recorder type and status level, and on the build level of the annotator board. The recorder status level is the last two or three characters of the recorder’s serial number which is printed on a label which is usually to be found on the rear terminal cover. The build level of the annotator board is determined as shown in figure 11.

Before starting this procedure, determine the type of recorder (e.g. multipoint with scale display) and compare the status level of your recorder with that given in the table below.

Trace type	Display type	Status level
Continuous trace	Digital	K18
Continuous trace	Scale	K17
Multi-point	Digital	K17
Multi-point	Scale	K16

Table 1 Relevant status levels

Notes:

- 1 Continuous trace recorders are fitted with four individual pens plus an annotator pen (if fitted). Multipoint recorders have a single dotting head which has six pen tips.
- 2 An example of a lower (earlier) status level would be J14; an example of a higher (later) status level would be L19’

CONTROL (MICRO) BOARD 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.
3. Unscrew the jacking bolt (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.
4. As shown in figure 2, release the flexi, by pulling the 'ears' at the ends of the connector in a direction away from the circuit board. The flexi may now be removed from the connector, and the writing system removed from the case and laid in a static safe area.
5. Remove the annotator and/or CIL board(s) if fitted, as shown in figure 3. Go to instruction 17 if you are only fitting a new annotator board - not replacing the control (micro) board.

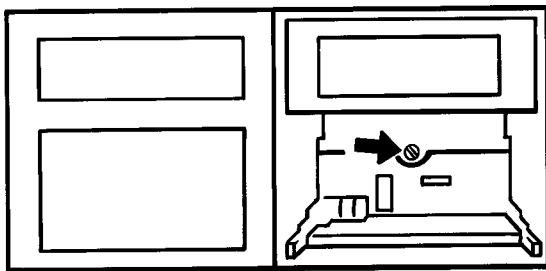


Figure 1 Jacking bolt location

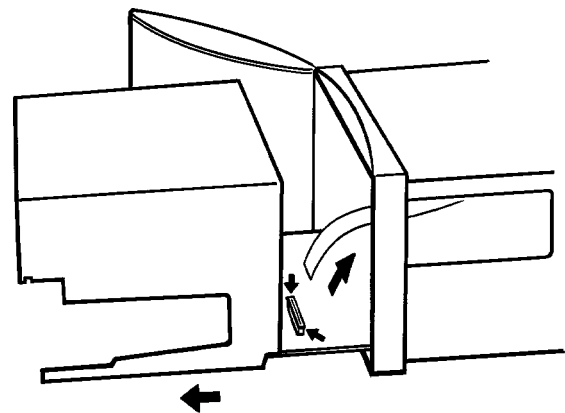


Figure 2 Flexi-cable removal

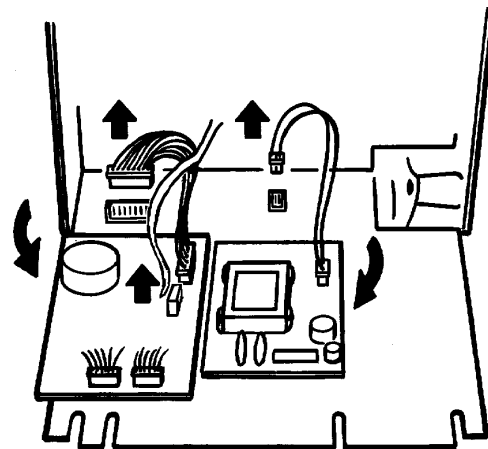
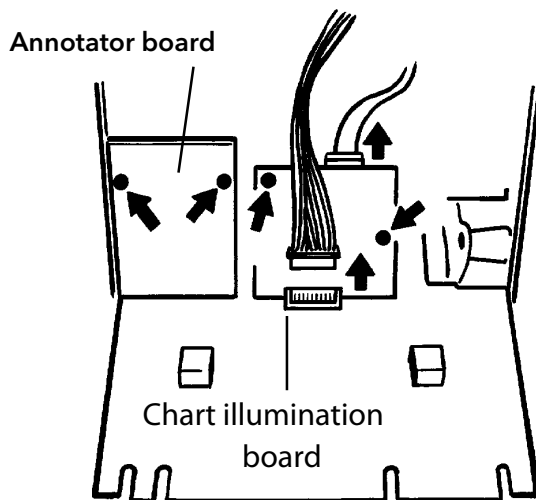


Figure 3 Removal of option boards

CONTROL BOARD REMOVAL (Cont.)

6. 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.

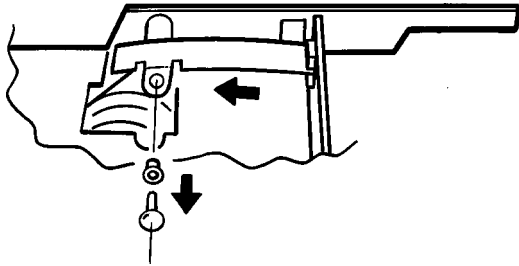


Figure 4 Static earthing shim removal

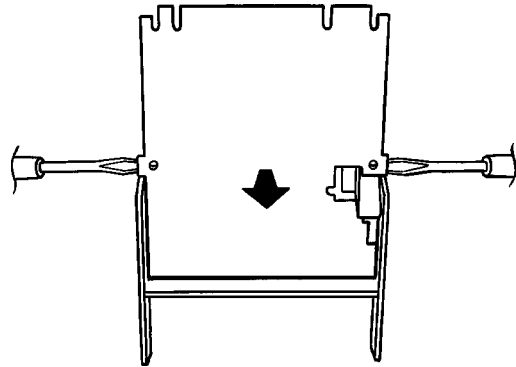


Figure 5 Release control board from mounting pillars

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

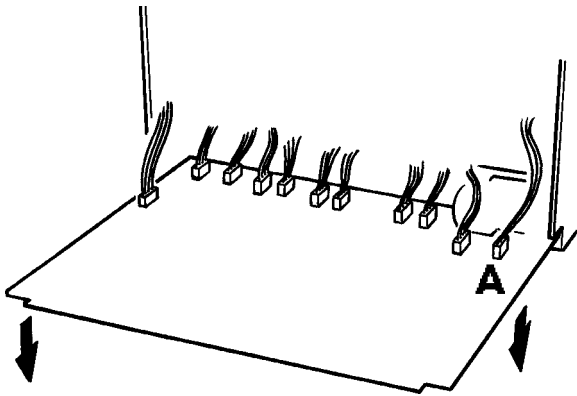


Fig6a Connector removal (Continuous-trace recorders)

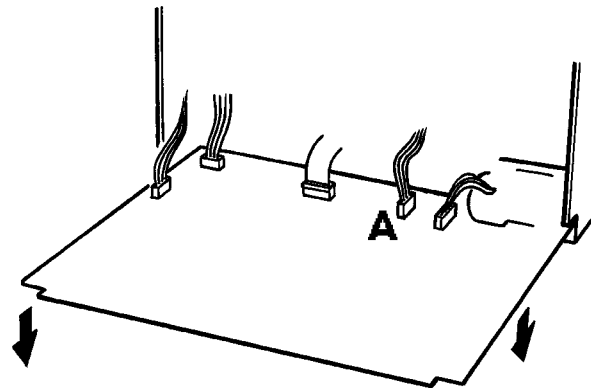


Fig6b Connector removal (Multi-point recorders)

CONTROL BOARD REPLACEMENT

8. Discard the old control board. If your recorder's status level is lower than that shown in table 1 (page 1), continue at instruction 11. If the status is the same as or higher than that shown in table 1 continue at instruction 9.

For current recorders

9. Take the new control board and remake all the connectors previously disconnected from the old board (See note below).
10. Turn the recorder over, and press-fit the control board onto its mounting pillars. Re-fit the static grounding shim previously removed. Turn the recorder back the right way up and continue at instruction 15.

For earlier recorders

11. Take the small square circuit board (interface board) supplied, and remove the protective backing from the double-sided sticky-pad on the reverse side of the board. Stick the board to the recorder bulkhead as shown in figures 7a and 7b.
12. Before mechanically fixing the new control board to the recorder chassis, reconnect all the connectors (except connector A in figures 6a/b) (See note below).
13. Turn the recorder over, and press-fit the control board onto its mounting pillars. Re-fit the static grounding shim previously removed
14. Remake connectors A using the interface (i/f) board as shown in figures 7a/b.

For all recorders.

15. Refit the Chart Illumination and Annotator board(s) (if fitted).
16. Return the recorder to the case, ensuring that the flexi cable is fitted securely and that it is locked in place (by pressing down on the connector 'ears'). Apply power and carry out a functional test.

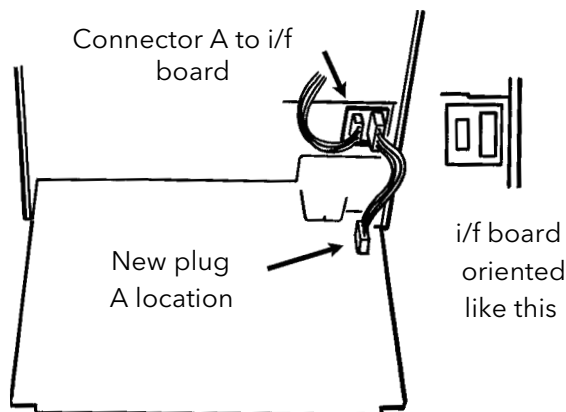


Figure 7a Reconnecting connector A
(Continuous-trace recorders)

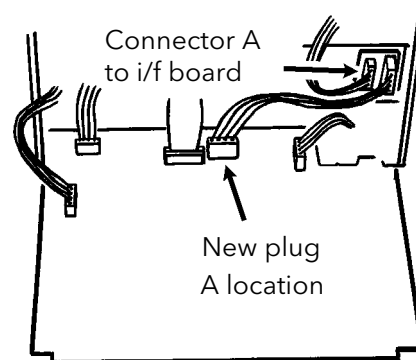


Figure 7b Reconnecting connector A
(Multi-point recorders)

Note:

In order to assist re-cabling, figures 8 and 9, below, show the various channel drive etc. locations and control board connector locations for continuous-trace recorders.

CONTROL BOARD REPLACEMENT (Cont.)

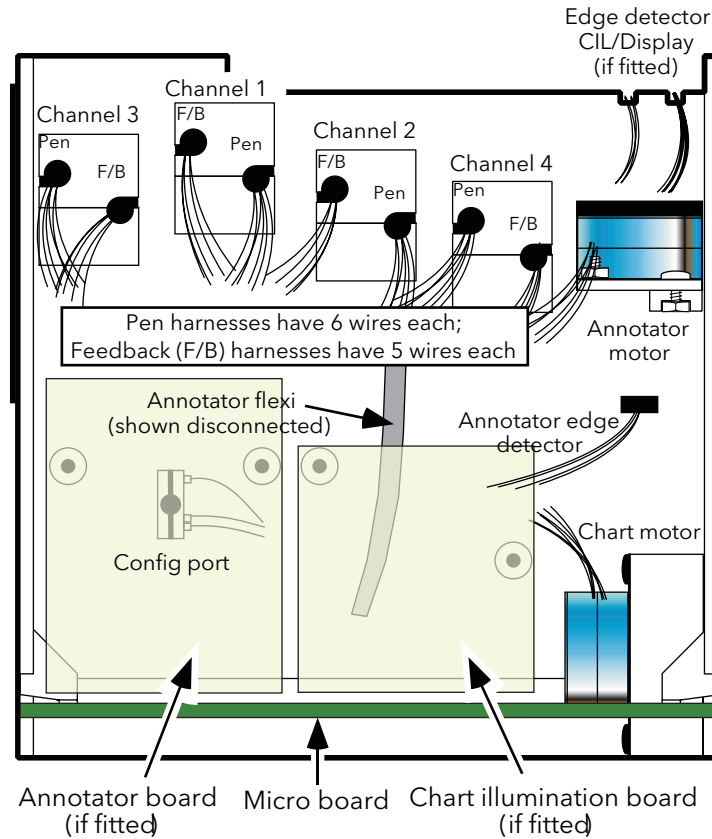


Figure 8 Rear bulkhead components - continuous trace recorders

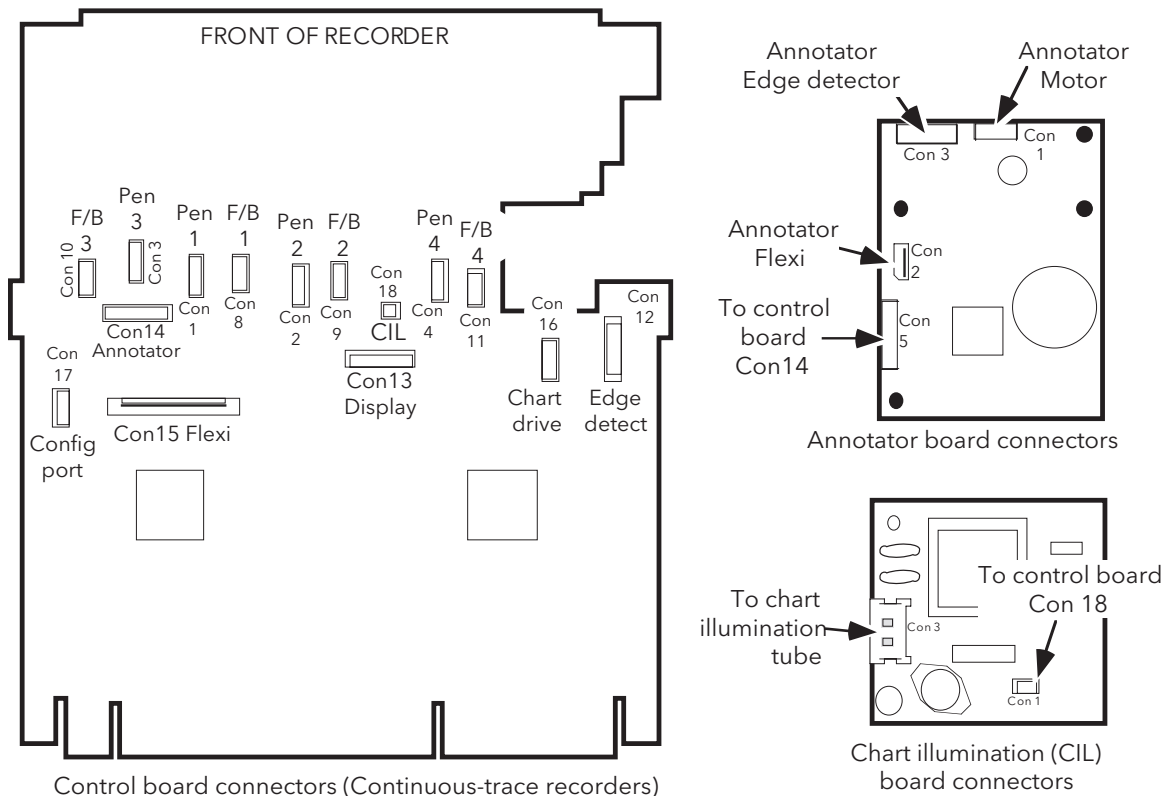


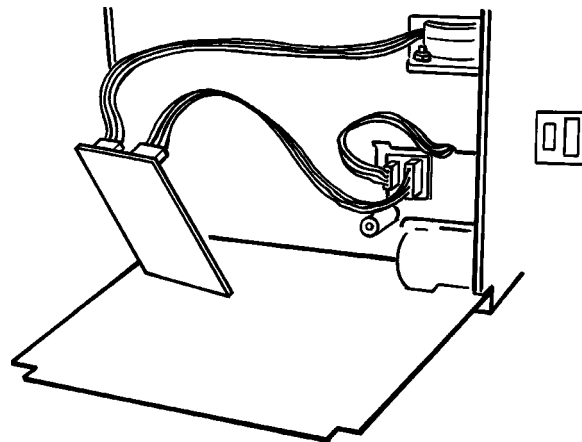
Figure 9 Connector locations

REPLACING AN ANNOTATOR BOARD

17. The procedure depends on the build level (issue number) - located as shown in figure 11, of the old annotator board. For build levels 11 or higher, go to instruction 18. For previous build levels go to instruction 21.
18. If you are replacing the control board as well, carry out instructions 6 to 16, 19 and 20 only. If, however, you are replacing only the annotator board:
19. Remove the harness from the old annotator board and fit it to the new one. Connect the new annotator board and the chart illumination board (if fitted), remaking all the connections previously removed.
20. Return the recorder to the case, ensuring that the flexi cable is fitted securely and that it is locked in place (by pressing down on the connector 'ears'). Apply power and carry out a functional test.

When replacing annotator boards which had build levels or issue numbers 1 to 10

21. Take the small square circuit board (interface board) supplied and offer it up to the recorder bulkhead as shown in figure 10, and mark a location for the board at which it will not foul the Chart illumination board when this is refitted. Remove the protective backing from the double-sided sticky-pad on the reverse side of the board and stick the board to the recorder bulkhead, ensuring correct orientation. If you are replacing the control board as well, carry out instructions 6 to 14, then 22 to 24. If, however, you are replacing only the annotator board:
22. Remove the harness from the old annotator board and fit it to the new one. Make the electrical connections as shown in figure 3b and figure 10, then physically attach the board to the chassis using plastic rivets.
23. Refit the Chart Illumination board (if fitted) (omitted from figure 10 for the sake of clarity).
24. Return the recorder to the case, ensuring that the flexi cable is fitted securely and that it is locked in place (by pressing down on the connector 'ears'). Apply power and carry out a functional test.



Ensure i/f board is oriented like this, and that it does not foul the Chart illumination board

Figure 10 Annotator interface board location and cable routing

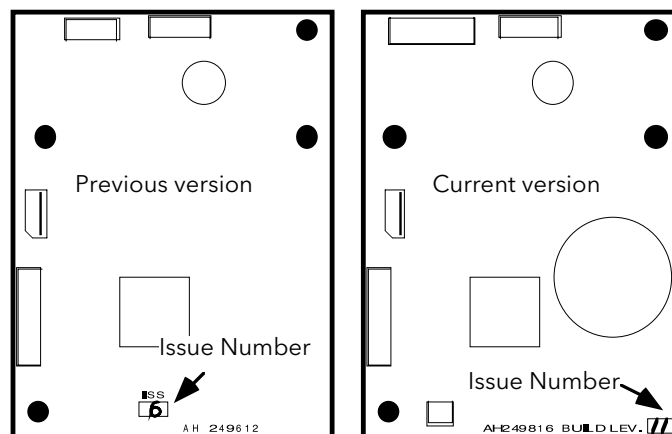


Figure 11 Annotator board build level/issue number location

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