



050-1441-02

M41472, M44151  
M45180

## INTERFACE CIRCUIT BOARD REPLACEMENT

For the following TEKTRONIX® Instruments:

5103N	Serial Numbers All	5112/R	Serial Numbers B090000 & Up
5110/R	Serial Numbers B100000 - B126108	5113/R	Serial Numbers B110000 - B116869
5111/R	Serial Numbers B110000 - B134579	5115/R	Serial Numbers B080000 - B094139

Interface circuit board, pn 670-1340-03, replaces Interface circuit board, pn 670-1340-00, pn 670-1340-01, or pn 670-1340-02, which is no longer available. In some instruments, use of the new Interface circuit board requires adding a 10k $\Omega$  resistor, R706, to the Dual Beam Auxiliary circuit board (5112/R, 5113/R) or two 4.3k $\Omega$  resistors, R705 and R708, to the Single Beam Auxiliary circuit board (5110/R, 5111/R, 5115/R).

## NOTE

If the serial number of your instrument is greater than those listed above, disregard the instructions and use Interface circuit board, pn 670-1340-03, as a direct replacement.

## PARTS INCLUDED IN PARTS REPLACEMENT KIT:

Ckt. No.	Quantity	Part Number	Description
R706*	1 ea	315-0103-00	Resistor, cmprsn, 10k $\Omega$ 5 pct 0.25W
R705, R708**	2 ea	315-0432-00	Resistor, cmprsn, 4.3k $\Omega$ 5 pct 0.25W
***	1 ea	670-1340-03	Circuit board, Interface
	1 ea		Label, 050-kit

\* Used in 5112/R, 5113/R

\*\* Used in 5110/R, 5111/R, 5115/R

\*\*\* A1 in 5112/R and 5113/R, A3 in 5110/R, A4 in 5111/R and 5115/R

## NOTE

The Interface circuit board has been modified to provide compatibility with the new 5D10 Waveform Digitizer plug-in. With the new circuit board installed, it is no longer possible to operate a time base plug-in in the right vertical compartment if the left vertical compartment is also being used. If this type configuration must be used, the 5D10 compatibility modification may be removed by disconnecting the three wires on the solder side of the Main Interface circuit board as shown in Fig. 1. However, the left plug-in feature of the 5D10 will be inoperable when used in this mainframe.

If the serial number of your instrument is greater than those listed below or if Parts Replacement Kit, pn 050-1442-XX or pn 050-1443-XX, has been installed, use the new Main Interface as a direct replacement for the old circuit board. After the new circuit board is installed, proceed to step 12 of the instructions.

5110/R SN B124444  
 5111/R SN B133249  
 5113/R SN B116464  
 5115/R SN B093964

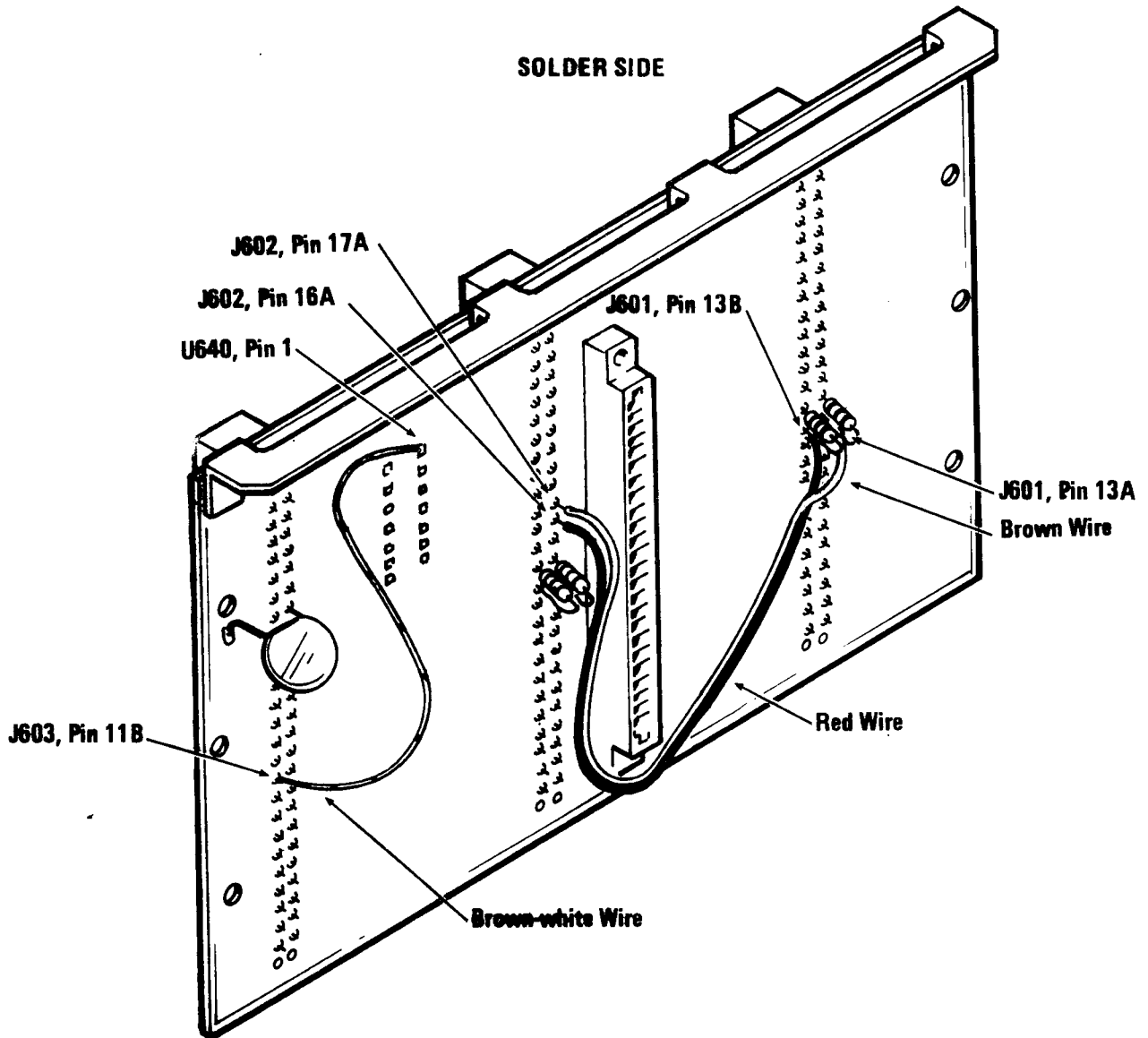


Fig. 1. 5D10 Compatability Modification  
(3 wires added).

INSTRUCTIONS:

**WARNING**

Before proceeding, ensure the POWER switch is off, then disconnect the instrument from the power source.

- ( ) 1. Remove the left side, right side, and bottom covers.
- ( ) 2. Disconnect the following from the component side of the Interface circuit board:
  - ( ) A. P612, a black, 2-wire connector (4-wire in 5112/R, 5113/R).
  - ( ) B. P611, a black, 8-wire connector.
- ( ) 3. Lay the instrument on its left side (as viewed from the front panel).
- ( ) 4. Unsolder the nine wires from the lower edge of the Interface circuit board, noting their color codes and locations for later reassembling.
- ( ) 5. Remove the three screws securing the front of the plug-in unit guides, slide the guides forward, and remove them.
- ( ) 6. Remove the four screws securing the Interface circuit board to the chassis. Remove the Interface and Auxiliary circuit boards as a unit.
- ( ) 7. Unplug the Auxiliary circuit board from the Interface circuit board. Discard the Interface circuit board.

NOTE

Perform step 8 for 5110/R, 5111/R, or 5115/R instruments (Single Beam Auxiliary circuit board) or step 9 for 5112/R or 5113/R (Dual Beam Auxiliary circuit boards). For 5103N Power Supply/Amplifier modules, determine whether a Single Beam or Dual Beam Auxiliary circuit board is used and refer to the appropriate step.

- ( ) 8. SINGLE BEAM AUXILIARY CIRCUIT BOARD. Add two 4.3k $\Omega$  resistors, R705 and R708, on the component side of the Single Beam Auxiliary circuit board as follows (refer to Fig. 2):
  - ( ) A. Solder R705, a 4.3k $\Omega$  resistor provided in the kit, between the emitter pad of Q701 and the emitter pad of Q703.
  - ( ) B. Solder R708, the remaining 4.3k $\Omega$  resistor provided in the kit between the emitter pad of Q711 and the emitter pad of Q713.

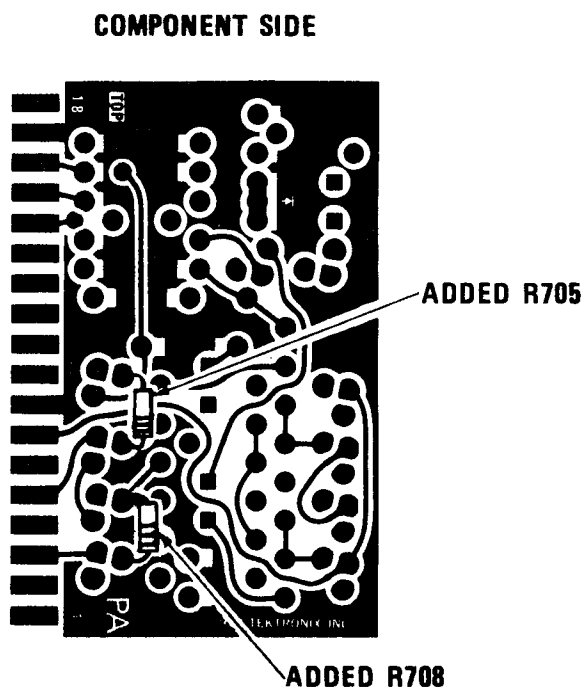


Fig. 2. Locations of Added Components on Single Beam Auxiliary Circuit Board.

- ( ) 9. DUAL BEAM AUXILIARY CIRCUIT BOARD. Add one 10k $\Omega$  resistor, R706, on the component side of the Dual Beam Auxiliary circuit board as follows (refer to Fig. 3):
  - ( ) A. Solder one lead of R706, the 10k $\Omega$  resistor provided in the kit, to the lead of R709 nearest the edge connector.
  - ( ) B. Solder the remaining lead to ground as shown in Fig. 3.

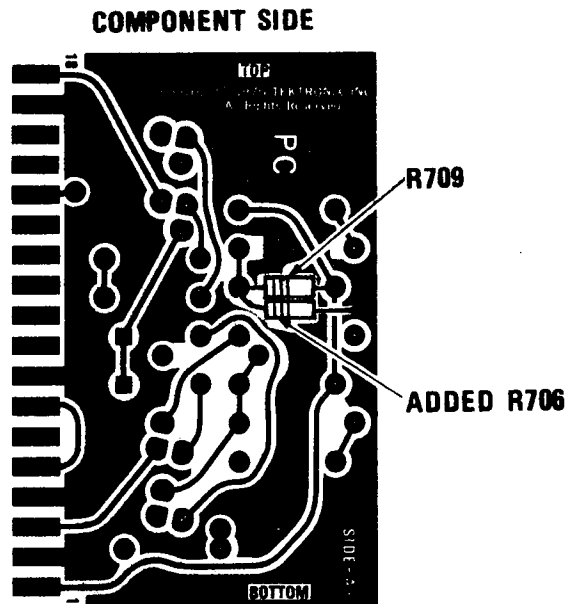


Fig. 3. Location of Added Component on Dual Beam Auxiliary Circuit Board

- ( ) 10. Install the Auxiliary circuit board in the connector on the new Interface circuit board. Be sure pin 1 of the circuit board edge connector is aligned with pin 1 of the Interface circuit board connector (J604).
- ( ) 11. Reassemble the instrument by performing the reverse of the procedure in steps 2 through 6.
- ( ) 12. Refer to the Calibration Section(s) of your Instruction Manual(s) and make any necessary checks and adjustments.
- ( ) 13. Remove the protective backing from the 050-kit label provided in the kit and apply the label to a clean, dry area on the rear panel.
- ( ) 14. For future reference, attach the following Instruction Manual Modification Insert in your Instruction Manual.