

# Instructions



**050-3047-11 and above**  
**Main or XROM Board Assembly Replacement**  
**1740A Series Waveform/Vector Monitor and**  
**1750A Series Waveform/Vector/SCH Monitor**  
**075-0785-01**

**Warning**

The servicing instructions are for use by qualified personnel only. To avoid personal injury, do not perform any servicing unless you are qualified to do so. Refer to all safety summaries prior to performing service.

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## **Contacting Tektronix**

Tektronix, Inc.  
14200 SW Karl Braun Drive  
P.O. Box 500  
Beaverton, OR 97077  
USA

For product information, sales, service, and technical support:

- In North America, call 1-800-833-9200.
- Worldwide, visit [www.tektronix.com](http://www.tektronix.com) to find contacts in your area.

# Service Safety Summary

Only qualified personnel should perform service procedures. Read this *Service Safety Summary* and the *General Safety Summary* in the product service manual or the instruction manual.

**Do Not Service Alone.** Do not perform internal service or adjustments of this product unless another person capable of rendering first aid and resuscitation is present.

**Disconnect Power.** To avoid electric shock, switch off the instrument power, then disconnect the power cord from the mains power.

**Use Caution When Servicing the CRT.** To avoid electric shock or injury, use extreme caution when handling the CRT. Only qualified personnel familiar with CRT servicing procedures and precautions should remove or install the CRT.

CRTs retain hazardous voltages for long periods of time after power is turned off. Before attempting any servicing, discharge the CRT by shorting the anode to chassis ground. When discharging the CRT, connect the discharge path to ground and then the anode. Rough handling may cause the CRT to implode. Do not nick or scratch the glass or subject it to undue pressure when removing or installing it. When handling the CRT, wear safety goggles and heavy gloves for protection.

**Use Care When Servicing With Power On.** Dangerous voltages or currents may exist in this product. Disconnect power, remove battery (if applicable), and disconnect test leads before removing protective panels, soldering, or replacing components.

To avoid electric shock, do not touch exposed connections.

**X-Radiation.** To avoid x-radiation exposure, do not modify or otherwise alter the high-voltage circuitry or the CRT enclosure. X-ray emissions generated within this product have been sufficiently shielded.



# Kit Description

The Main circuit board assembly included in this kit replaces the following circuit board assemblies:

- Main board 671-2355-11 and earlier versions.
- Main board 671-2978-xx.
- XROM board 671-2969-xx.

The functions of the XROM board have been added to the Main board. An updated manual is provided to support the latest firmware version on the new Main board.

When installing the new Main board, you must also make a change to the Vector board.

This document supports Tektronix modifications: 79283, 80298, 80578, 81012, 81314, 81435, 81919, 84684, 85086, 86050, 86036, 86587, 8994, ECO 746, and ECR30733.

## Products

**1740A Series**      B010100 – B016022  
**1750A Series**      B010100 – B016022

## Kit Parts List

Circuit/figure number	Quantity	Part number	Description
A3	1 EA	671-2355-xx	CIRCUIT BD ASSY; MAIN (389-1334-04)
A5R40	1 EA	307-1715-xx	THERMISTOR, PTC, 560 OHM, 5%, +4110PPM, 1206
-----	1 EA	346-0120-00	STRAP, TIEDOWN: 5.5 LONG, PLASTIC
-----	1 EA	070-8470-XX	MANUAL, TECH: OPERATORS; 1740A, 1750A SERIES
-----	1 EA	075-0785-01	KIT INSTRUCTIONS: 050-3047-XX; MAIN OR XROM CKT BD REPLACE



# Installation Instructions

These instructions are for personnel who are familiar with servicing the product. If you need further details for disassembling or reassembling the product, refer to the appropriate product manual. Contact your nearest Tektronix, Inc. Service Center or Tektronix Factory Service for installation assistance.



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**CAUTION.** *To prevent static discharge damage, service the product only in a static-free environment. Observe standard handling precautions for static-sensitive devices while installing this kit. Always wear a grounded wrist strap, grounded foot strap, and static resistant apparel while installing this kit.*

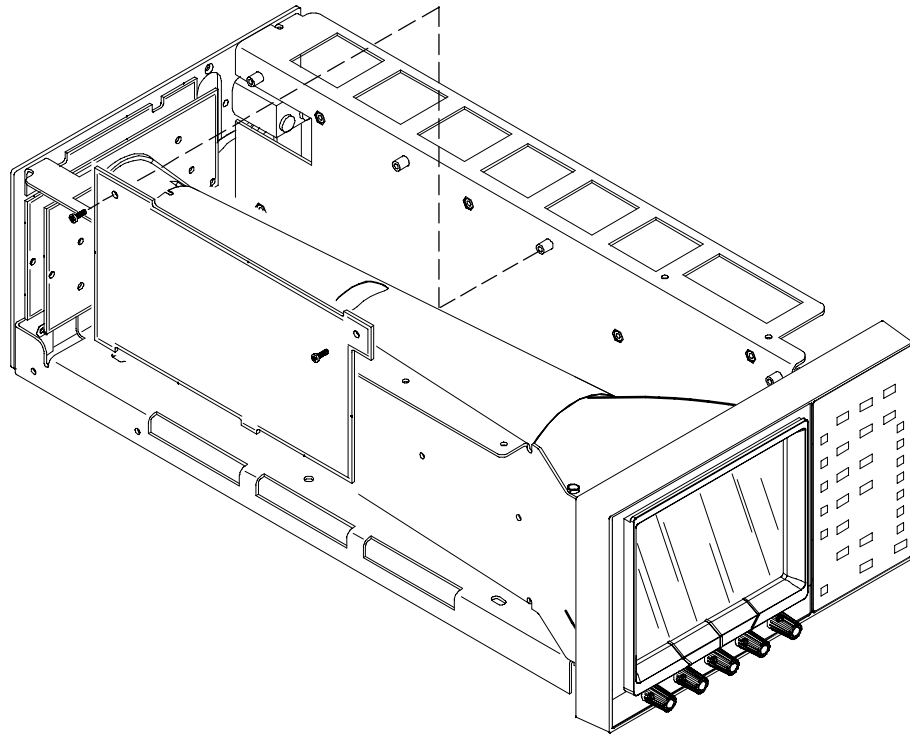
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## Remove

Remove the Main, XROM, and Vector circuit boards from the instrument, using the following procedures. If necessary, refer to the *1740A, 1750A, and 1760-Series Waveform/Vector Monitor Service Manual* for general remove/replace information.

### Remove the XROM Board (If Present)

1. Remove the instrument from the cabinet.
2. Unplug the connectors on J1 and J3 of the XROM board. See Figure 1 for board location.
3. Remove the two screws holding the XROM board in place.
4. Remove the XROM board from the instrument.
5. Remove and discard the cables interconnecting the XROM and Main boards.
6. Discard the XROM board.

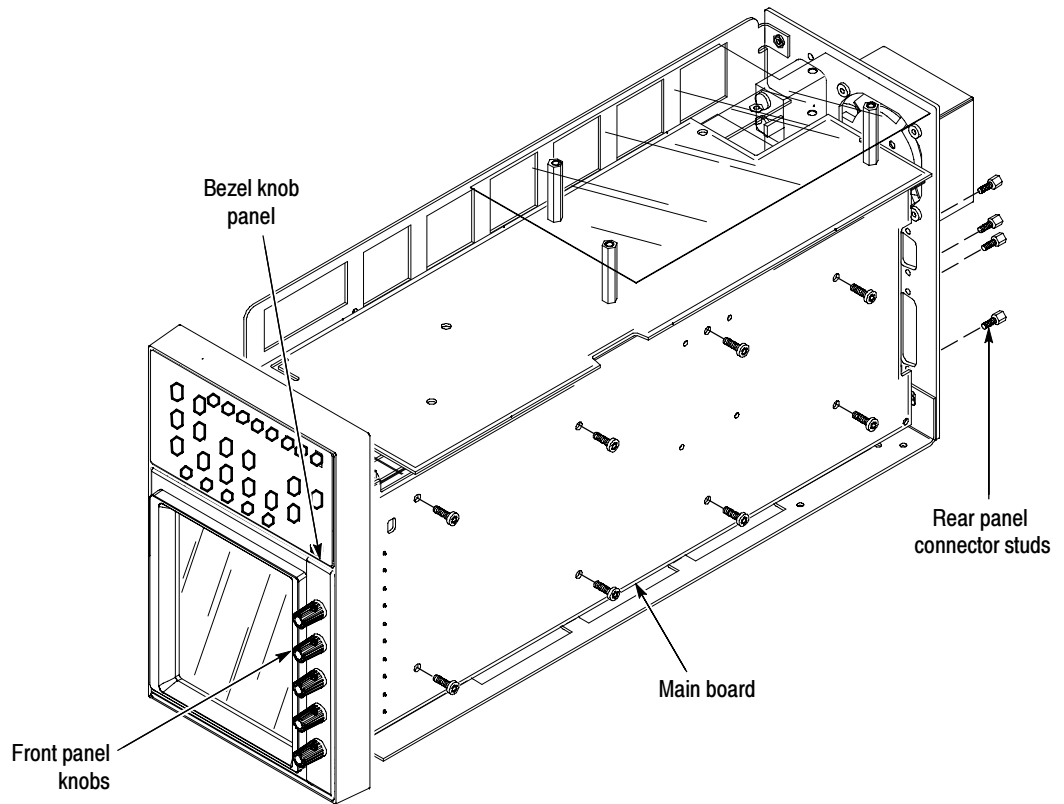


**Figure 1: Removing the XROM board**

**Remove the Main Board**

1. Unsolder (from the Main board) the two horizontal leads to the CRT (red and green) and the two vertical leads to the CRT (blue and brown). Note the CRT lead mounting locations prior to removal for ease of reassembly. See Figure 2 for the board location.
2. Clip off the tiedown strap then unplug the PCB ribbon cable from the Power Supply board at J4.
3. Unplug the 2-pin connector (red/black wires) from the pins labeled J3 (J3 is located on the Main board near the front of the instrument).
4. Unplug the gray ribbon cable from J1. (This cable interconnects the Main and Front Panel boards).
5. Unplug remaining interconnecting ribbon cabling - except J12. J12 can be unplugged more easily as the Main board is removed. Note the cabling connections prior to removal for ease of reassembly.
6. Use a  $\frac{3}{16}$ -inch nut driver or box end wrench to remove the hardware holding the RS-232 and REMOTE connectors to the rear panel. See Figure 2.





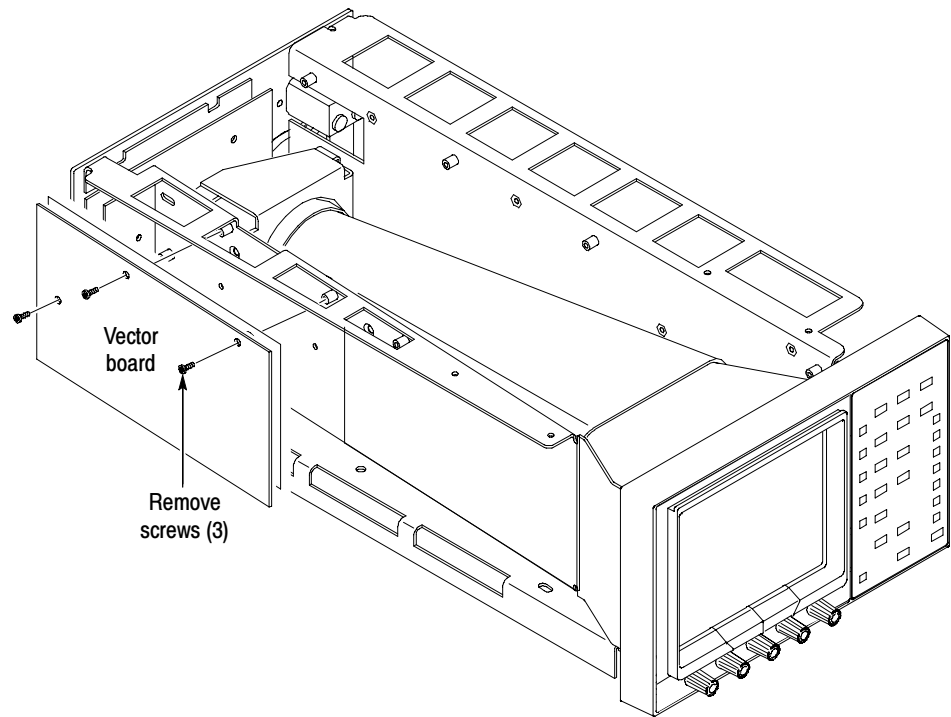
**Figure 2: Removing the Main board**

7. Remove the front-panel knobs and the bezel knob panel as follows:
  - a. Use a  $\frac{1}{16}$ -inch Allen wrench to remove the five front-panel knobs located below the CRT.
  - b. Remove the panel behind the knobs by using a screwdriver tip to push out on the inside of the center of the panel from behind the front panel.
8. Remove the Main board as follows:
  - a. Remove the eight screws attaching the Main board to the chassis.
  - b. Slide the Main board toward the front panel until the RS-232 and REMOTE connectors are free of the rear panel.

- c. Lift the rear of the Main board slightly (to clear the rear panel), and then slide the board toward the rear panel until the front of the board and knob control shafts clear the front panel.
- d. Lift the Main board from the instrument. At the same time, route the CRT and trace rotation leads and the 2-pin connector (red/black wires) through the appropriate holes in the Main board, and then unplug the ribbon connector from J12.

**Remove the Vector Board**

- 1. Unplug the cable to A3J9 (Main circuit board) and feed the cable and plug through the chassis.
- 2. If there is an SCH circuit board, unplug A5J1.
- 3. Remove the three T-15 screws holding the circuit board in place. See Figure 3.

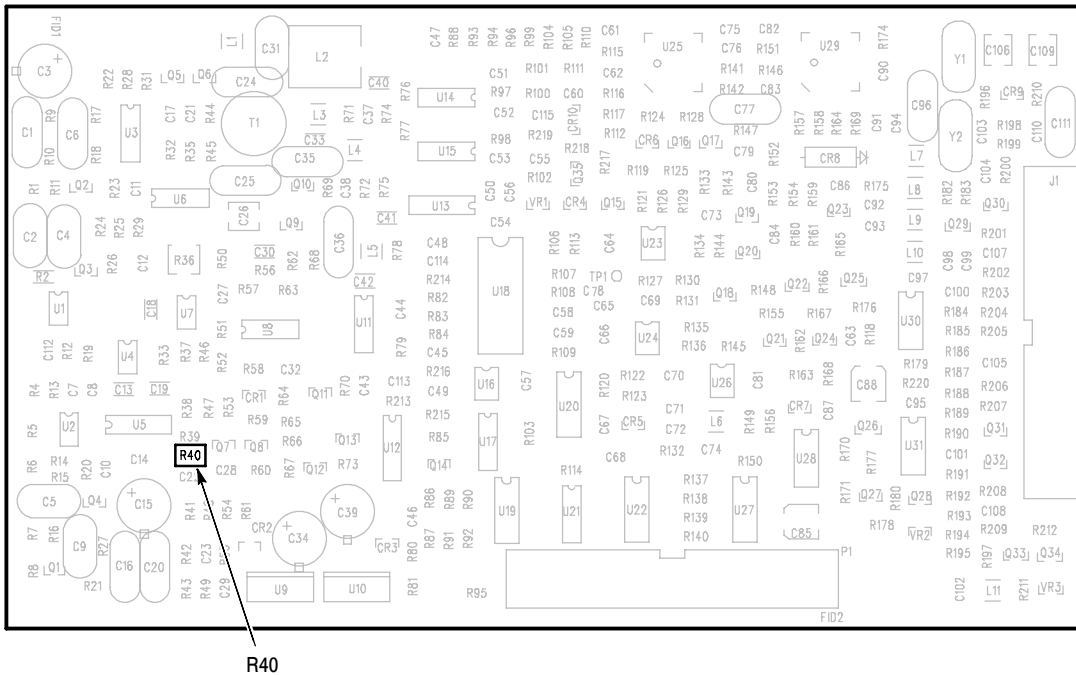


**Figure 3: Removing the Vector board**

- 4. Move top of circuit board out and up to remove, and place it on a static-free work surface.

**Update the Vector board**

1. Locate R40 on the Vector board (see Figure 4).
2. Replace R40 with the thermistor included in the kit.



**Figure 4: R40 location on the Vector board**

**Install**

Perform the following steps to install the replacement Main board:

1. Reinstall the updated Vector board by reversing the removal procedure.
2. Install the new Main board by reversing the removal procedure. Remember to plug in the ribbon connector to J12.
3. Solder the two horizontal leads (red and green) and the two vertical leads (blue and brown) to the Main board.
4. Plug in the PCB ribbon cable to J4 on the Power Supply board. Install the tiedown strap around J4.
5. Verify that all connections are properly made and that all hardware is tight.
6. Install the instrument in the cabinet.

## Verify Operation

Perform the entire *Adjustment* procedure, followed by the *Performance Verification* procedure.

Both procedures (and the necessary software) are provided in the *1740A/1750A/1760-Series Waveform/Vector Monitor Service Manual* (Tektronix part number 070-8469-XX).

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