

# Instructions



## **CSA8UP, TDS8UP, CSA8BUP, TDS8BUP, CSA82UP, and TDS82UP Option MU1**

### **TDS8000 and CSA8000 Series Instruments Memory Upgrade Kit**

**071-1784-00**

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

# General Safety Summary

Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it. To avoid potential hazards, use this product only as specified.

*Only qualified personnel should perform service procedures.*

While using this product, you may need to access other parts of the system. Read the *General Safety Summary* in other system manuals for warnings and cautions related to operating the system.

## To Avoid Fire or Personal Injury

**Use Proper Power Cord.** Use only the power cord specified for this product and certified for the country of use. Power cord needed only in the mainframe, not modules.

**Connect and Disconnect Properly.** Do not connect or disconnect probes or test leads while they are connected to a voltage source.

**Ground the Product.** The mainframe is grounded through the grounding conductor of the power cord. To avoid electric shock, the grounding conductor must be connected to earth ground. Before making connections to the input or output terminals of the product, ensure that the product is properly grounded.

**Ground the Product.** The modules are indirectly grounded through the grounding conductor of the mainframe power cord. To avoid electric shock, the grounding conductor must be connected to earth ground. Before making connections to the input or output terminals of the product, ensure that the product is properly grounded.

**Observe All Terminal Ratings.** To avoid fire or shock hazard, observe all ratings and markings on the product. Consult the product manual for further ratings information before making connections to the product.

Do not apply a potential to any terminal, including the common terminal, that exceeds the maximum rating of that terminal.

**Do Not Operate Without Covers.** Do not operate this product with covers or panels removed.

**Use Proper Fuse.** Use only the fuse type and rating specified for this product.

**Avoid Exposed Circuitry.** Do not touch exposed connections and components when power is present.

**Wear Eye Protection.** Wear eye protection if exposure to high-intensity rays or laser radiation exists.

**Do Not Operate With Suspected Failures.** If you suspect there is damage to this product, have it inspected by qualified service personnel.

**Do Not Operate in Wet/Damp Conditions.**

**Do Not Operate in an Explosive Atmosphere.**

**Keep Product Surfaces Clean and Dry.**

**Provide Proper Ventilation.** Refer to the manual's installation instructions for details on installing the product so it has proper ventilation.

**Symbols and Terms**

**Terms in this Manual.** These terms may appear in this manual:



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**WARNING.** *Warning statements identify conditions or practices that could result in injury or loss of life.*

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**CAUTION.** *Caution statements identify conditions or practices that could result in damage to this product or other property.*

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**Terms on the Product.** These terms may appear on the product:

DANGER indicates an injury hazard immediately accessible as you read the marking.

WARNING indicates an injury hazard not immediately accessible as you read the marking.

CAUTION indicates a hazard to property including the product.

**Symbols on the Product.** The following symbols may appear on the product:



CAUTION  
Refer to Manual



WARNING  
High Voltage



Protective Ground  
(Earth) Terminal



Mains Disconnected  
OFF (Power)



Mains Connected  
ON (Power)



Standby

# Service Safety Summary

Only qualified personnel should perform service procedures. Read this *Service Safety Summary* and the *General Safety Summary* before performing any service procedures.

**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 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.



# Kit Description

This kit option supports adding a second 256 MB memory module to the CPU board in the CSA/TDS8000 series of instruments, increasing the total amount of memory to 512 MB.

If installation service is desired, please contact the service center in your region to schedule installation.

This section contains instructions to check that the additional memory which you installed is functioning.

## Before You Begin

You can install this kit option whether installing the product software provided by the main kit or not. If you are installing the product software, install it before installing this kit option (see main kit instructions 071-1385-XX).

Instruments that already have 512 MB of total memory installed cannot use Option MU1 since they most likely have both memory slots occupied (2x256 MB). You can check your current memory size of your instrument by performing the procedure *Verify Operation* on page 15. If the memory size is 256 MB, you can install Option MU1.

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**NOTE.** *Installing the current version of kit Option CPU also increases total instrument memory to 512 MB, therefore, if you order/install kit Option CPU, do not order/install kit Option MU1. Upgrades using earlier versions of Option CPU left instrument memory size at 256 MB, so instruments upgraded can accommodate Option MU1. You can use the Verify Operation procedure as just described to see if your instrument will accommodate kit Option MU1.*

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## Products

<b>CSA8200 Series</b>	All serial numbers below B0100xxx
<b>TDS8200 Series</b>	All serial numbers below B0100xxx
<b>CSA8000B Series</b>	All serial numbers
<b>TDS8000B Series</b>	All serial numbers
<b>CSA8000 Series</b> <sup>1</sup>	All serial numbers
<b>TDS8000 Series</b> <sup>1</sup>	All serial numbers

<sup>1</sup> **If your instrument has been upgraded to Option CPU, see Note above before installing Option MU1.**

## Kit Parts List

Circuit/figure number	Quantity	Part number	Description
1	1 ea.	156-9074-00	IC, MEMORY; CMOS, DRAM; 32MEG X 64, 256MEG, SDRAM, PC100; MT16LSDT3264AG -10E, DIMM168
1	1 ea.	071-1784-XX	MANUAL, TECH; INSTRUCTION, OPTION INSTALLATION; TDS/CSA8UP, TDS/CSA8BUP, CSA/TDS82UP OPTION MU1



# Installation Instructions

This section contains the procedures needed to install the memory module in the CSA/TDS8000, CSA/TDS8000B, and CSA/TDS8200 Series instruments.

These instructions are a service procedure and should be performed by qualified service personnel. If you need further details for disassembling or reassembling the product, refer to the TDS8000 and CSA8000 Series Service manual. Contact your nearest Tektronix 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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## Preparation



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**WARNING.** *Before doing this or any other procedure in this manual, read the Safety Summaries found at the beginning of these instructions.*

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This subsection contains the following items:

- Preparatory information that you need to properly do the procedures that follow.
- A list of tools required.
- Procedures to disassembly the instrument and install the additional memory stick.



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**WARNING.** *Before doing any procedure in this subsection, disconnect the power cord from the line voltage source. Failure to do so could cause serious injury or death.*

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**Equipment Required.** Most modules in this instrument can be removed with a screwdriver handle mounted with a size T-15, Torx® screwdriver tip. Use this tool whenever a procedure step instructs you to remove or install a screw unless a different size screwdriver is specified in that step.

**Table 1: Tools required for module removal**

Item No.	Name	Description	Part number
1	Screwdriver handle	Accepts Torx®-driver bits	General Tool: 620-440
2	T-15 Torx tip	Used for removing most the instrument's screws.	General Tool: 640-247
3	T-20 Torx tip	Used for removing the handle screws.	General Tool: 640-250
4	1/4 inch flat-bladed screwdriver	Screwdriver for unlocking side panels.	Standard tool
5	#0 Phillips screwdriver	Screwdriver for removing small phillips screws.	Standard tool

The following procedures are found here and are listed in order presented.

- Trim (all)
- Bottom cover
- Left and Right covers

**Trim and Carrying Handle**

1. *Locate module to be removed:* Locate the Trim to be removed. See Figure 1, page 10.
2. *Remove the top cover trim:* Use Figure 1, page 10 as a guide.
  - a. Remove the accessory pouch; it snaps off.
  - b. Remove the four T-15 Torxdrive screws that secure the top cover trim to the instrument. The T-15 Torxdrive screws also secure the snap studs to the top cover.
  - c. Remove the top cover trim from the instrument.
3. *Remove the front panel trim:* Use Figure 1, page 10, as a guide.
  - a. Slide the flat end of a soldering aid (or flat screwdriver) into the side slot on the trim ring to help detach the side snaps.
  - b. Swing the bottom of the ring upward and off the front panel.
4. *Remove the acquisition trim:* Use Figure 1, page 10 as a guide.
  - a. Remove the six T-15 Torxdrive screws that secure the acquisition trim to the instrument.
  - b. Remove the knobs from the electrical and optical ejector levers. Grasp the knobs with your fingers and pull straight out.
  - c. Remove the acquisition trim from the instrument.
5. *Remove the carrying handle and the right/left side trim panels:* Use Figure 1, page 10 as a guide.
  - a. Remove the two T-20 Torxdrive screws that secure the handle to the instrument. Remove the handle from the instrument.



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**CAUTION.** *Over-tightening the handle screws may cause the handle to break off from the cabinet. When reinstalling the screws, use a torque wrench to tighten the screws to 8-10 in-lb.*

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- b. Slide the side trim panels towards the rear of the instrument allowing the tabs to clear the cover openings, then pull out to remove the panels from the instrument.
6. *Reinstallation:* Do in reverse steps 2 through 5 to reinstall the appropriate trim.

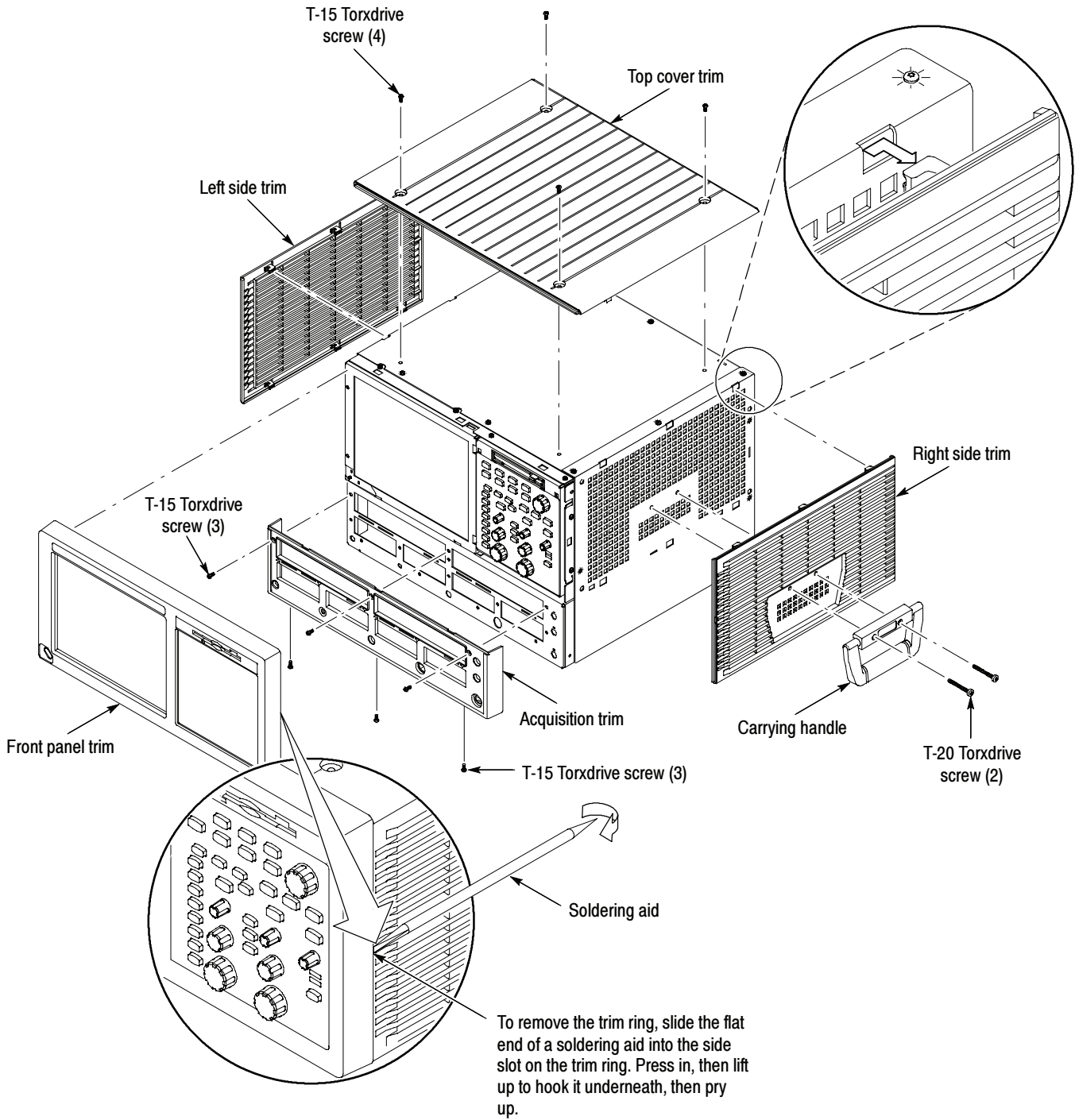
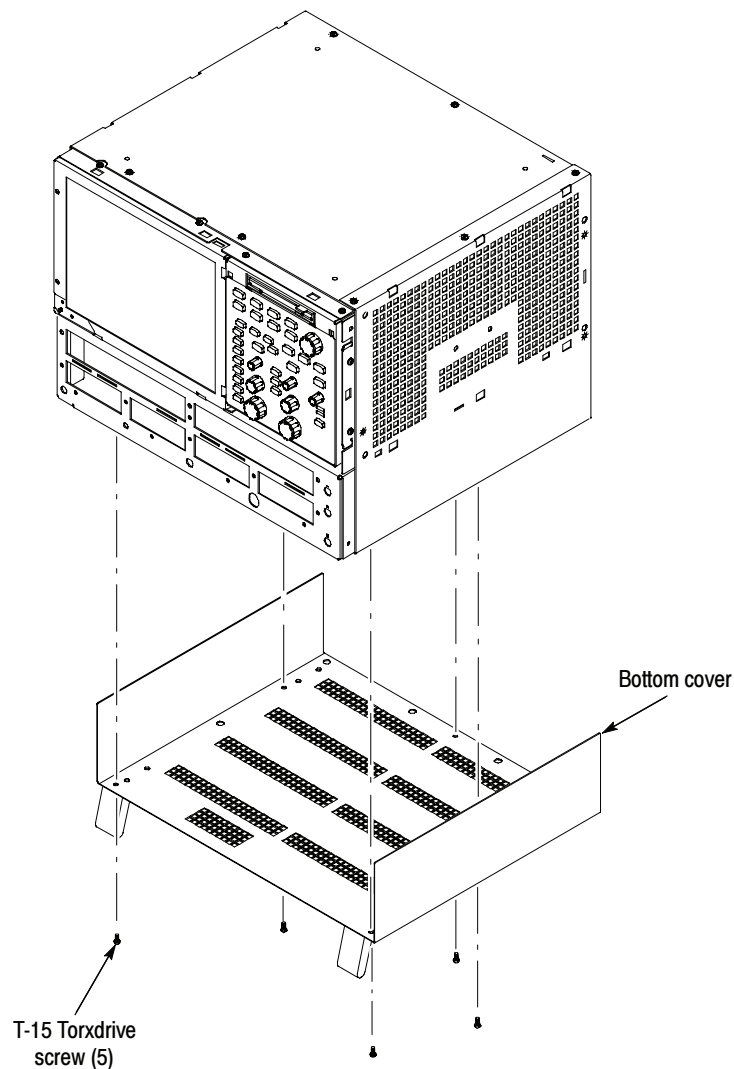


Figure 1: Trim removal

**Bottom Cover**

1. *Locate the module to be removed:* Locate the bottom cover. See Figure 2, page 11.
2. *Orient the instrument:* Set the instrument so its top is down on the work surface and its bottom is facing you.
3. *Remove the bottom cover:* Use Figure 2 on page 11 as a guide.
  - a. Remove the five T-15 Torxdrive screws that secure the bottom cover to the instrument.
  - b. Remove the bottom cover from the instrument.
4. *Reinstallation:* Do in reverse steps a and b to reinstall the cabinet feet.

**Figure 2: Bottom cover removal**

## Left and Right Covers

1. *Locate the module to be removed:* Locate the left and right covers. See Figures 3 and 4, pages 13 and 14
2. *Orient the instrument:* Set the instrument so its rear is on the work surface and the front of the instrument facing the technician.

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**NOTE.** *All mounting screw holes are indicated by a star etched around the mounting hole.*

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3. *Remove the left and right covers:* Use Figures 3 and 4 on pages 13 and 14 as a guide.
  - a. Remove the thirteen T-15 Torxdrive screws that secure the covers to the top and both sides of the chassis.
  - b. Remove the nine T-15 Torxdrive screws that secure the covers to the bottom of the chassis.
  - c. Pull the bottom-right cover down and slide to the right to remove from the instrument. Pull the top-left cover upward and slide to the left to remove from the instrument.

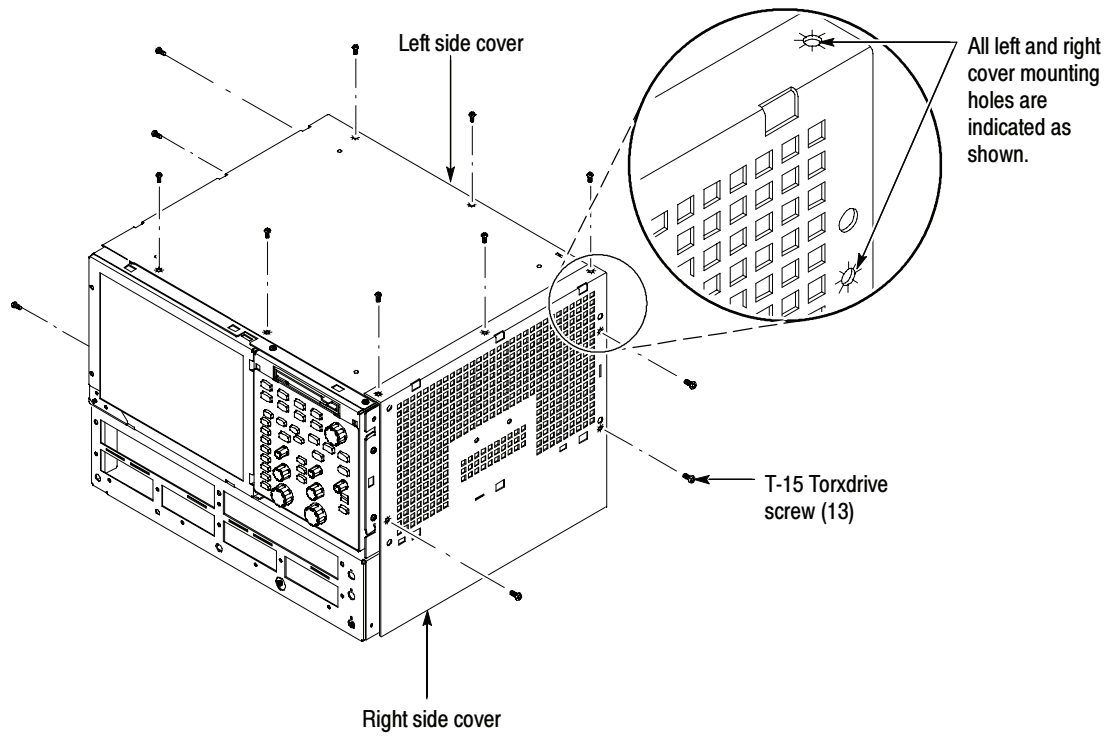


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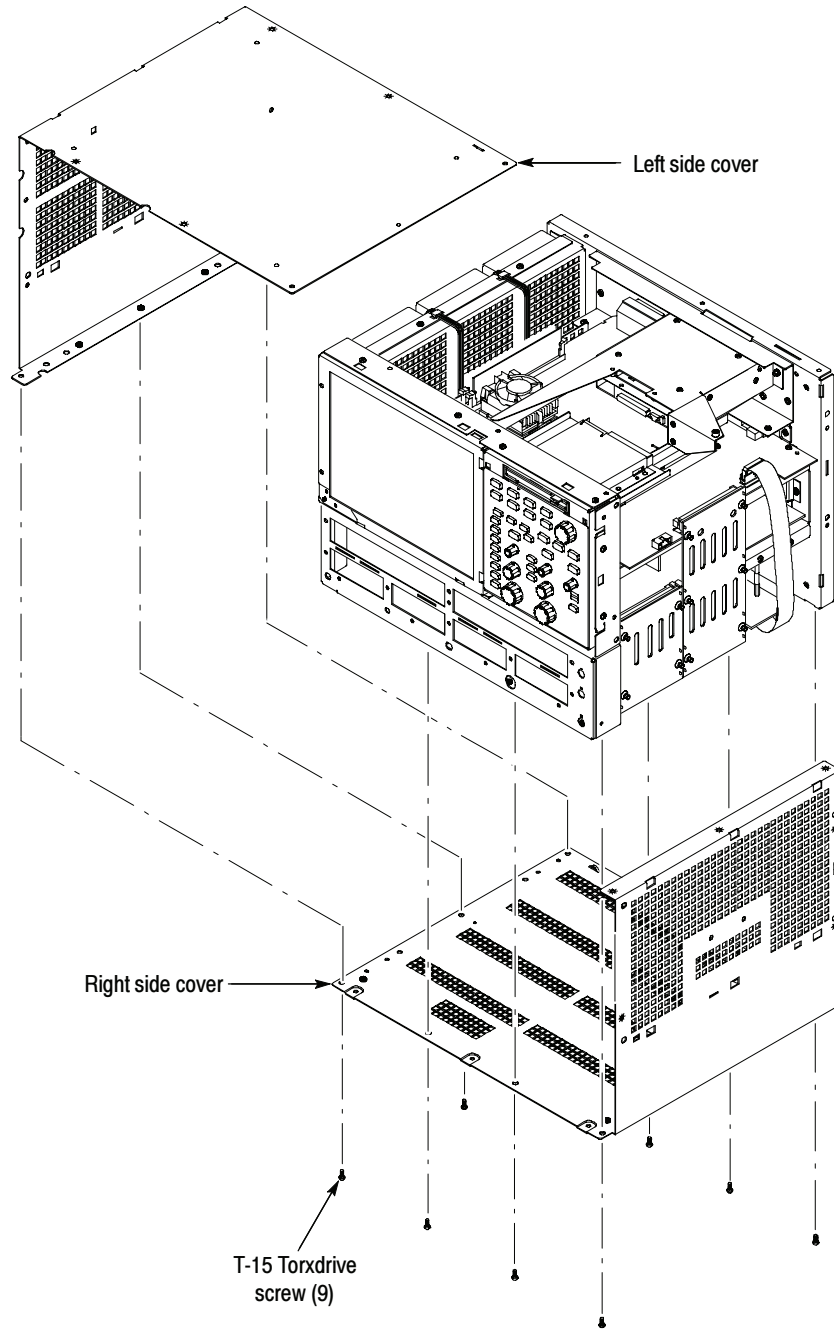
**CAUTION.** *Take care not to bind or snag the covers on the instrument's internal cabling as you remove or install.*

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4. *Reinstallation:* Do in reverse steps a through c to reinstall the cabinet.



**Figure 3: Cover removal**

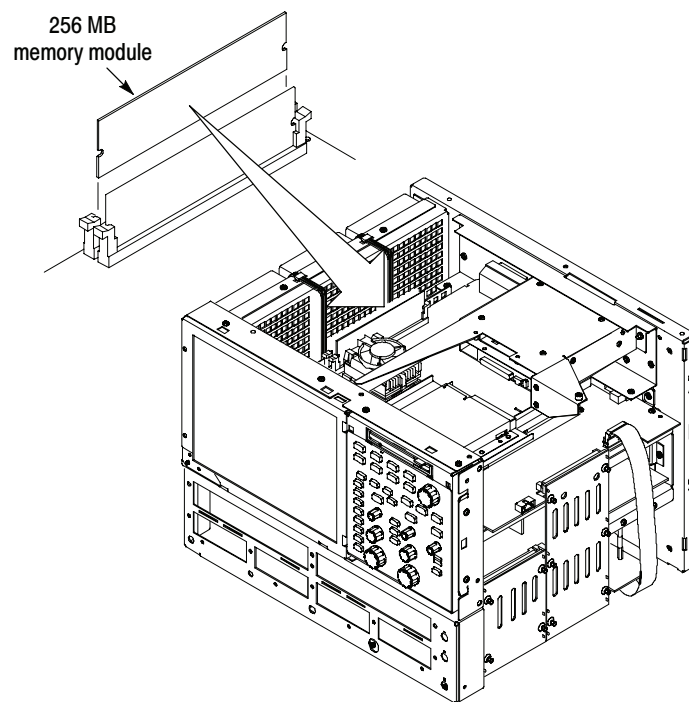


**Figure 4: Cover removal**



**Install and Reassemble**

1. *Locate the memory module slot.* See Figure 5 for the location of the memory slots.
2. Install the 256 MB memory module from the kit into the empty slot on the NLX circuit board.
3. Verify that the memory module is fully seated into the slot and that it is secured in place by the the tabs at each end of the memory module.
4. Reassemble the instrument by performing the steps in reverse order.

**Figure 5: 256 MB memory installation****Verify Operation**

This section contains instructions to check that the additional memory which you installed is functioning.

1. Connect the power cord to the rear panel of the instrument and to the mains power.
2. Switch the power switch on the rear panel to the on position.
3. Push the Standby/On button to power on the instrument.
4. After the instrument application opens, select Minimize from the File menu to minimize the application.

5. Right click on the My Computer icon.
  6. Select Properties from the pop-up menu.
  7. Select the Performance tab in the Properties dialog box.
  8. Check that Memory lists the correct amount of RAM.
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