Instructions

Tektronix

RSA34UP-06
Removable Hard Disk Drive
RSA3408A Real-Time Spectrum Analyzer

075-0883-00

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.

www.tektronix.com

075088300

Tektronix, Inc., P.O. Box 500, Beaverton, OR 97077

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.

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.

Ground the Product. This product 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.

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

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

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.

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:

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

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

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:

WARNING
High Voltage

Protective Ground
(Earth) Terminal

CAUTION
Refer to Manual

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, and 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 includes parts and instructions to add Option 06 Removable Hard Drive to the RSA3408A 8 GHz Real-Time Spectrum Analyzer. The internal hard disk is modified to be removable.

***NOTE**. For software upgrade, refer to the instructions (Tektronix part number 061-4308-XX) that ships with this kit.*

Products

RSA3408A Without Option 06

Minimum Tool and Equipment List

Required tools and equipment	Description
Screwdriver handle	Accepts ¼ inch hex-head driver tips
#1 Phillips tip	Phillips-driver bit for #1 size screw heads
#2 Phillips tip	Phillips-driver bit for #2 size screw heads
Wrench, 5 mm	Standard tool
Pliers	Standard tool
Needle-nose pliers	Standard tool
Cutter knife	Standard tool

Kit Parts List

Fig. & index number	Quantity	Part number	Description
1-1	1	437-0519-00	CABINET,ASSY:RSA3408A
1-2	1	200-4985-00	COVER,EXT/HDD,TOP W/SEREWS; RSA3408A OP–06
1-3	4.8 cm	348-1824-00	SHIELD,GASKET;ELEC CONDUCTIVE URETHANE FOAM,3MM X 3MM,W/ADHESIVE, (3102)
1-4	9.3 cm	348-1824-00	SHIELD,GASKET;ELEC CONDUCTIVE URETHANE FOAM,3MM X 3MM,W/ADHESIVE, (3102)
1-5	1	- - - - - - -	MARKER,IDENT:OPTION
1-6	1	- - - - - - -	MARKER,IDENT:SOFT KEY
1-7	2	200-2191-00	CAP,RETAINER;PLASTIC,SAFETY CON-TROLLED
1-8	4	348-1110-04	FOOT,CABINET;FRONT,FR110 BAYBLEND, TEK BLUE,FIRE RETARDANT,650–3595–01; TDS5/6/7XXX,SERIES
1-9	1	075-0883-XX	RSA34UP-06 KIT INSTRUCTIONS
1-10	1	167-0206-00	IC,MEMORY;FLASH;128MB OR MORE, MEMORY MODULE,USB FLASH DRIVE; SDCZ4–128–J65(A10)
1-11	1	061-4308-XX	SOFTWARE UPGRADE INSTRUCTIONS
1-12	1	063-3867-XX	SYSTEM & APPLICATION CD
2-1	4	211-A170-00	SCREW,MACHINE;M3X15MM L,PNH,STL, ZN–CM1,W/M–PLAIN & SPLIT WASHER
2-2	4	210-0949-00	WASHER,FLAT;0.141 ID X 0.5 OD X 0.062, BRS NP
2-3	4	210-A014-00	WASHER,PLAIN;#6,BRS NI PL
2-4	4	129-A593-00	SUPORT;PS–308
2-5	4	348-A144-00	DUMPER;DUMPER
2-6	1	407-5104-00	BRACKET,FDD & HDD;INSIDE
2-7	1	679-6095-00	CIRCUIT BD ASSY;A65 HDD CONNECTION LOWER,389–3793–00 WIRED
2-8	2	214-5084-00	PIN,EXT/HDD CONNECTOR BOARD
2-9	2	220-0269-00	NUT,LOCATE PIN
2-10	2	211-0497-00	SCREW,MACHINE;M3 X 5MM,PNH,STL ZN PL

Fig. & index number	Quantity	Part number	Description
2-11	2	210-A015-00	WASHER,LOCK;#3,SPLIT,STL MFZN–C; AWG400
2-12	1	407-5115-00	BRACKET,STOPPER,HDD CON–BD,RIGHT
2-13	1	407-5116-00	BRACKET,STOPPER,HDD CON–BD,LEFT
2-14	1	198-5868-00	WIRE KIT,ELEC:FLAT & RIBBON W/A64, BRACKET,SLEEVING;RSA3408A OP–06
2-15	1	407-5105-00	BRACKET,FDD & HDD;OUTSIDE,BACK
2-16	5 cm	348-A143-00	GASKET,SHIELD:FINGER TYPE, 15.2MMW X 5.6MMH X 7.2MML
2-17	2	211-0751-00	SCREW,ASSY,WSHR;M3 X 8,PAN, W/FLAT & LOCK WASHER
2-18	1	407-5114-00	BRACKET,CABLE MOUNT,HDD
2-19	2	211-1028-00	SCREW,MACHINE;M4 X 8MML,PNH,STL, MFZN–C,CROSS REC W/FLAT & LOCK WASHER
2-20	1	407-5106-00	BRACKET,FDD & HDD;OUTSIDE,FRONT
2-21	5.7 cm	252-0719-00	PLASTIC SH,CHAN;NULON,0.047 X 0.063 THK,1M L
2-22	6.3 cm	252-0719-00	PLASTIC SH,CHAN;NULON,0.047 X 0.063 THK,1M L
2-23	6	211-0941-00	SCREW MACHINE;M3 X 6MM L,FLH, STL ZN PL,CROSS REC;WFM1125
2-24	2	351-A169-00	GUIDE,CKT BD;NYLON BLACK,19MM L
2-25	1	407-5103-00	BRACKET,FDD & HDD
2-26	1	351-A168-00	GUIDE,CKT BD;NYLON BLACK,100MM L
2-27	1	407-5102-00	BRACKET,SHIELD:PC BOARD

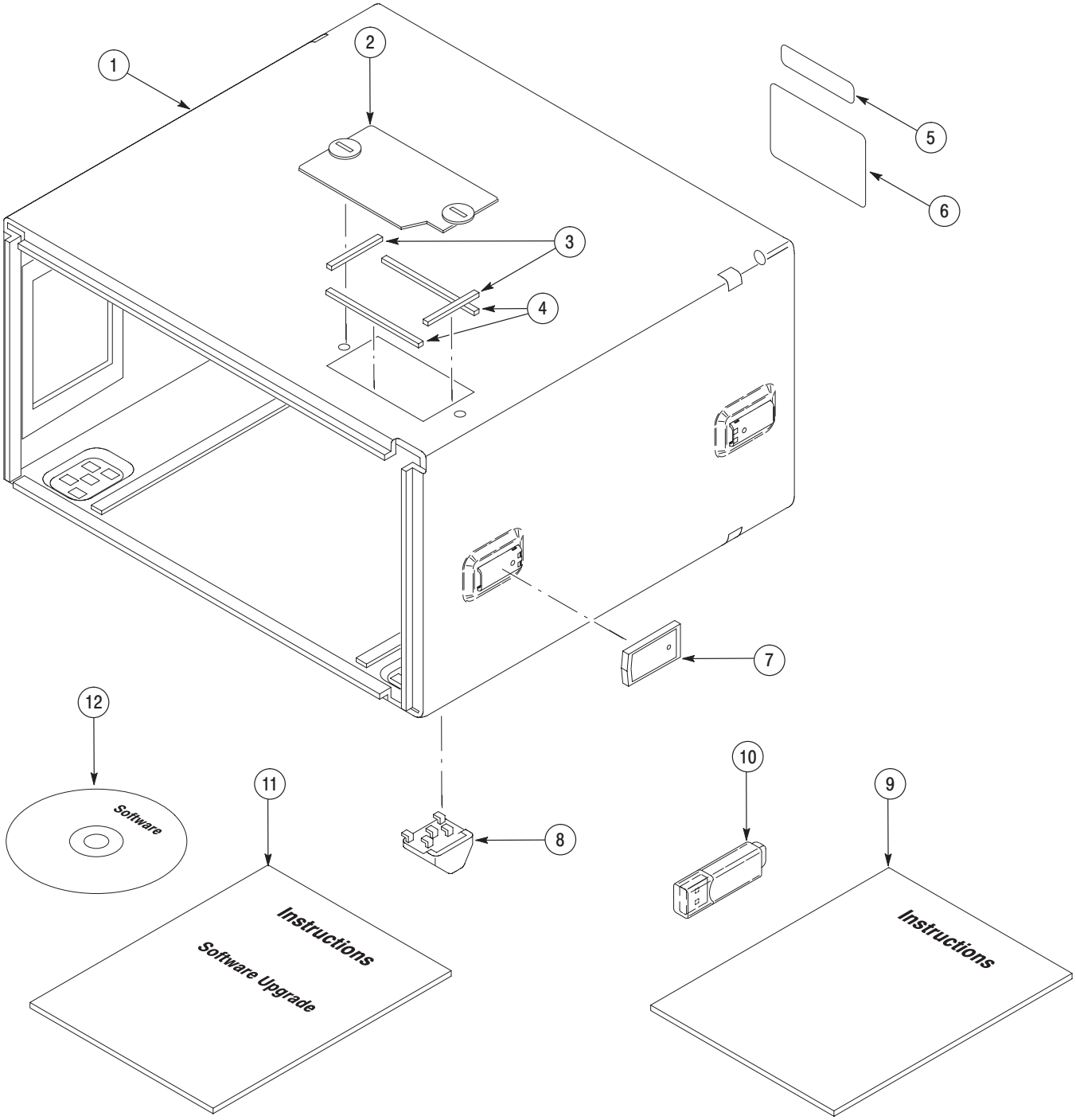


Figure 1: Kit parts, outer modules

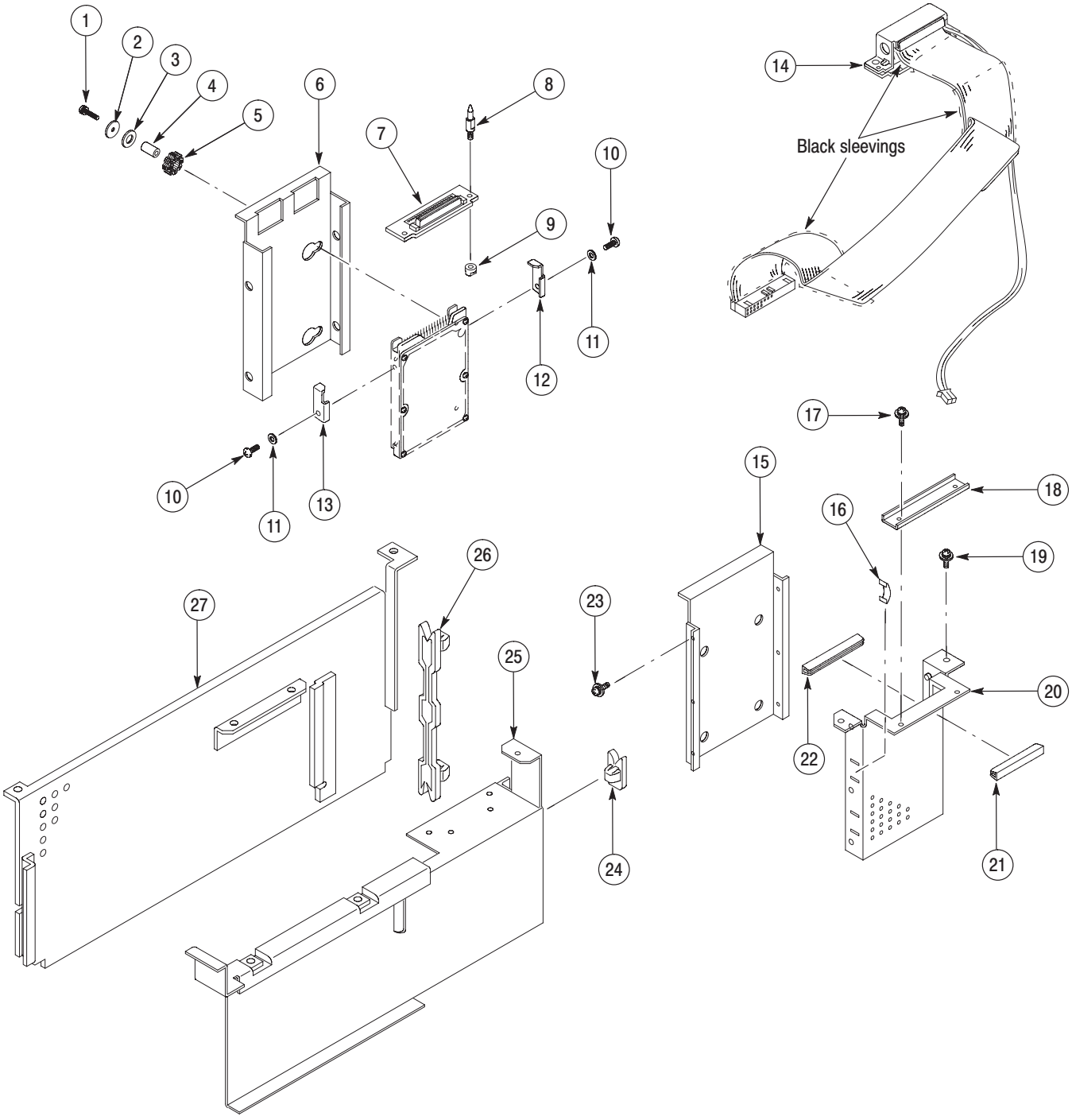
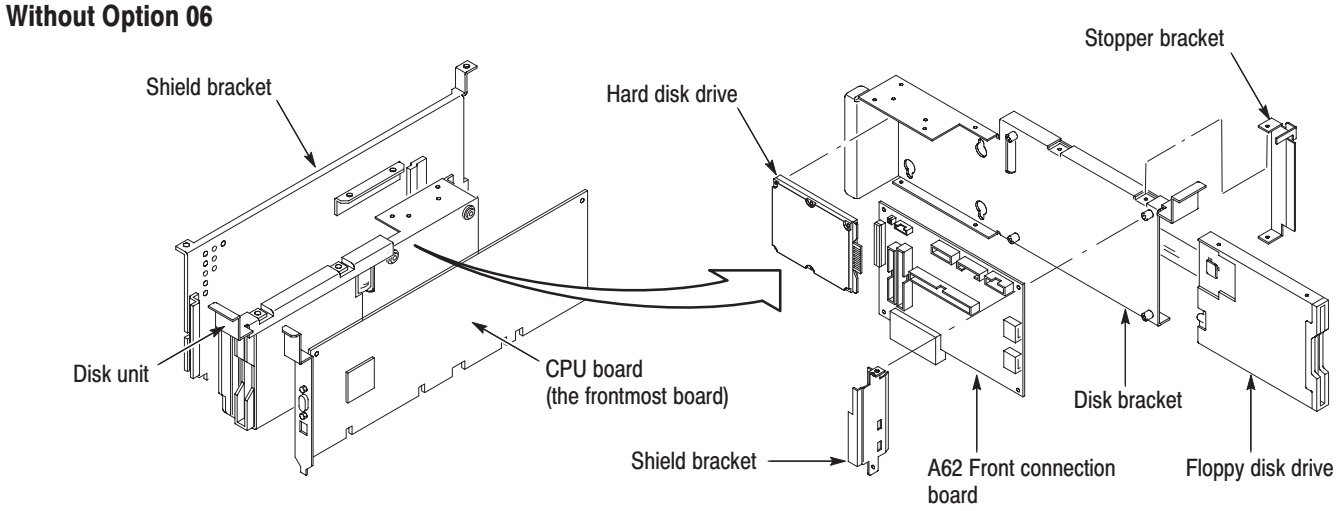


Figure 2: Kit parts, inner modules

Without Option 06



With Option 06

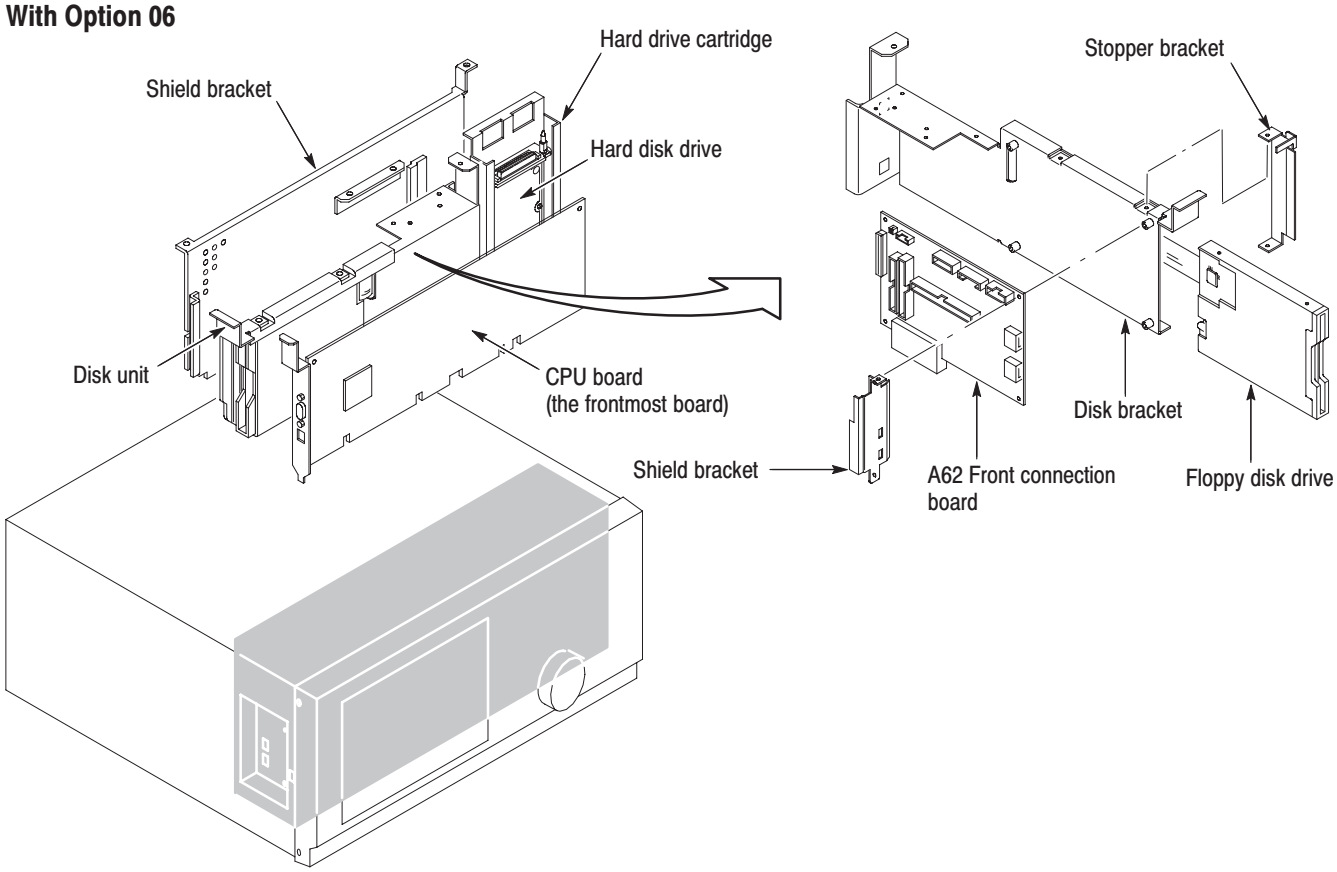


Figure 3: Locator diagram for major modules

Installation Instructions

These instructions are for qualified service 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.

CAUTION. *To prevent static discharge damage, service the instrument 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.*

For details on the analyzer operation, refer to the *RSA3408A User Manual*.

Preparation

Before installation, use the Windows Back Up tool to back up files stored on the hard disk. The Back Up tool is located in the System Tools folder in the Accessories folder. Start the tool and determine which files and folders to back up. Use the Windows on-line help for information on using the Back Up tool.

For the analyzer, the user-generated files consist of these four types of files, which have these extensions:

- .STA (Status file)
- .IQT (Data file)
- .TRC (Trace file)
- .COR (Amplitude correction file)

Remove

Perform the following steps to remove the outer and inner modules.

Outer Modules

Cabinet. *Equipment Required:* One #2 Phillips screwdriver.
See Figure 4.

1. Power off the instrument.
2. Disconnect all external cables and the power cord from the instrument.
3. Remove the one screw securing the rear cushion over the cabinet to the rear panel at each corner. Detach the cushions.
4. Remove the center two screws securing the cabinet to the rear panel.
5. Slide the cabinet backward. As you remove the cabinet, take care not to bind or snag it on the instrument's internal cabling.

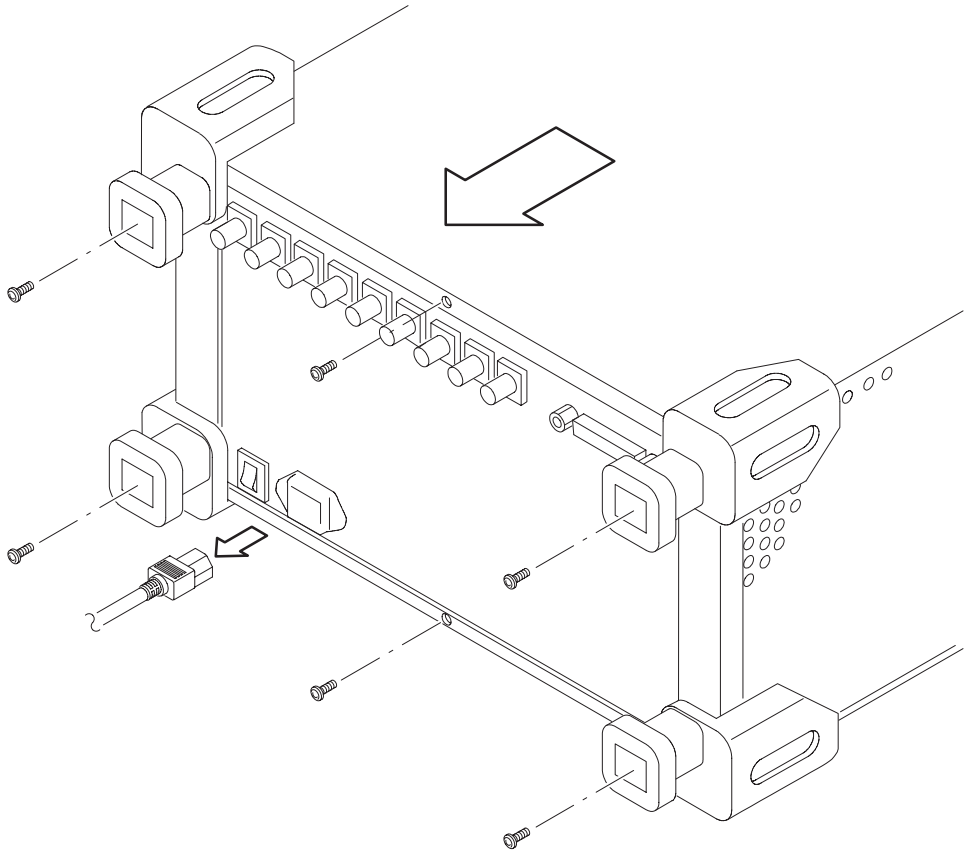


Figure 4: Cabinet removal

Left Front Cushion and Shield Bracket.
Equipment Required: One #2 Phillips screwdriver. See Figure 5.

1. Remove the two screws securing the left front cushion to the side panel. Lifting the front of the instrument slightly, move the front cushion away.
2. Remove the three screws securing the shield bracket to the side panel. Remove the shield bracket.

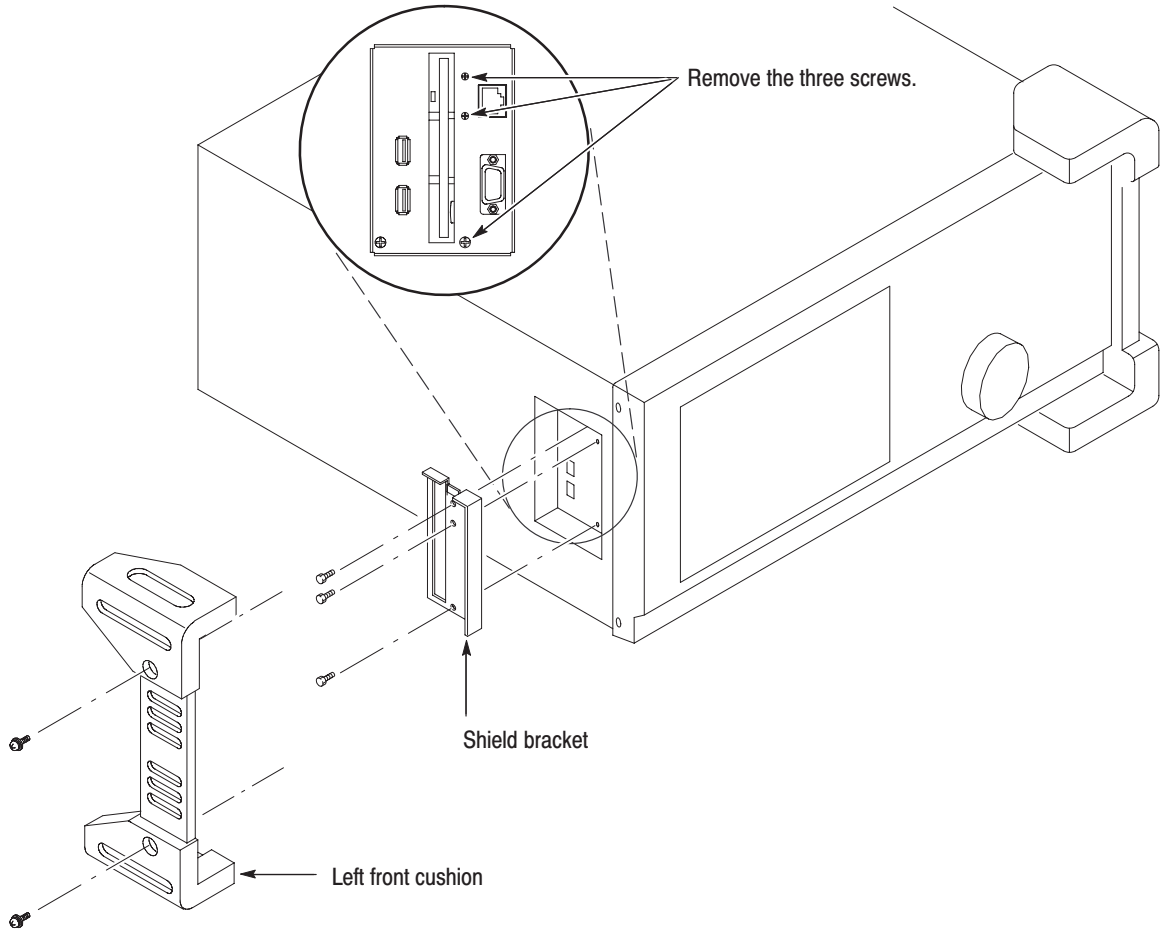


Figure 5: Left front cushion and shield bracket removal

Handle and Flip Stand. *Equipment Required:* A pair of needle-nose pliers. See Figure 6.

1. Remove the handle.
   a. Insert the tips of a pair of needle-nose pliers into the hole of either handle cap. Push and hold to depress the handle release.
   b. While holding the handle release, pull the handle out of the slot in the handle cap. Repeat the procedure to remove the handle from the other handle cap.
2. Remove the flip stand.
   a. Grasp the flip stand by both sides near where it joins each flip stand foot.
   b. Compress the flip stand until the flip stand ends clear the flip stand feet.
   c. To reinstall, compress the flip stand and insert it into the flip stand feet.

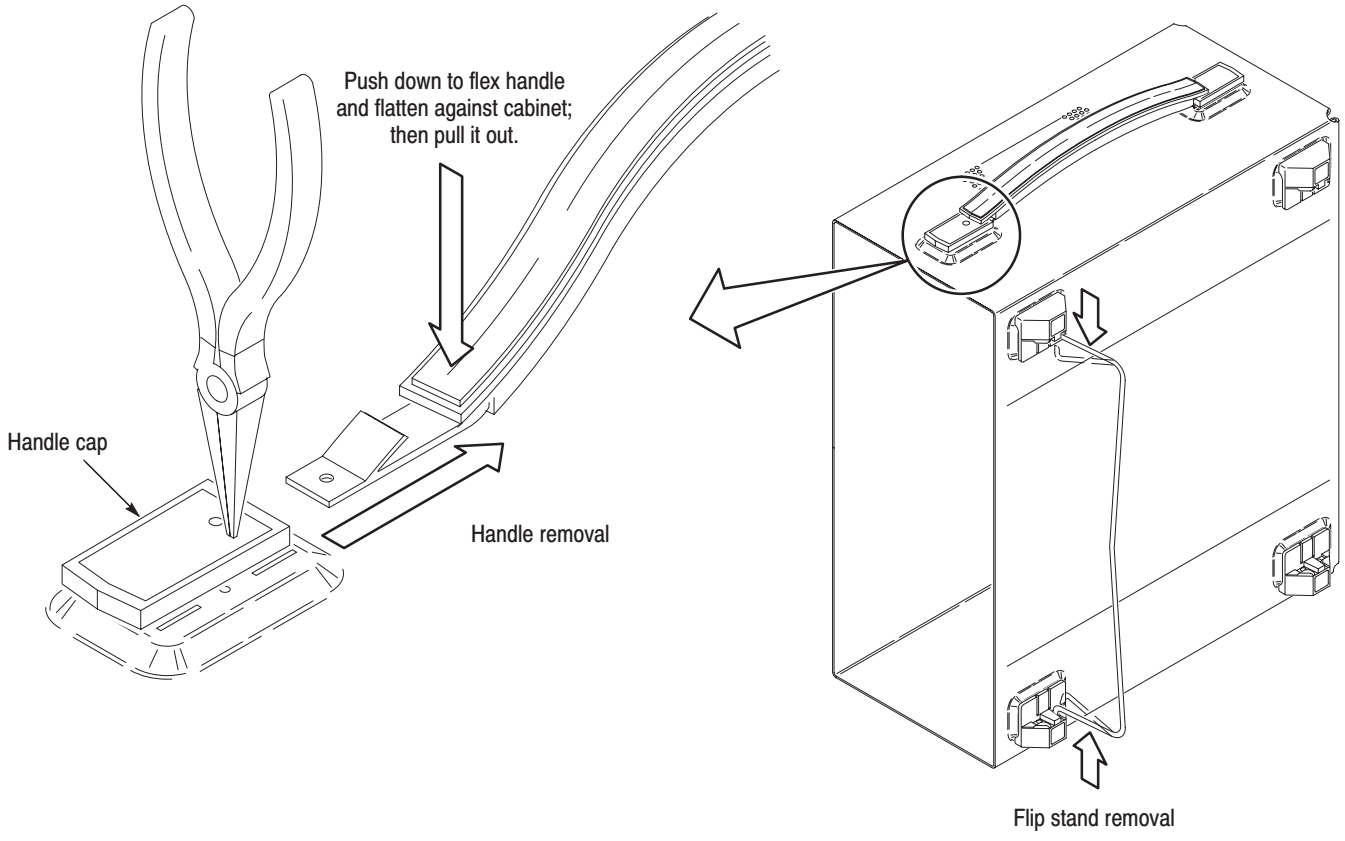


Figure 6: Cabinet module removal

Inner Modules

Memory Modules. *Equipment Required:* One #2 Phillips screwdriver.

1. Remove the two screws securing the board stopper bracket to the memory support bracket. Remove the board stopper bracket.
2. Remove the two screws securing the memory support bracket to the disk bracket. Remove the memory support bracket.
3. Remove the two memory boards from the CPU board.
   a. Open the lock at each side of the socket.
   b. Remove the memory board.

   Repeat these steps to remove another memory board.

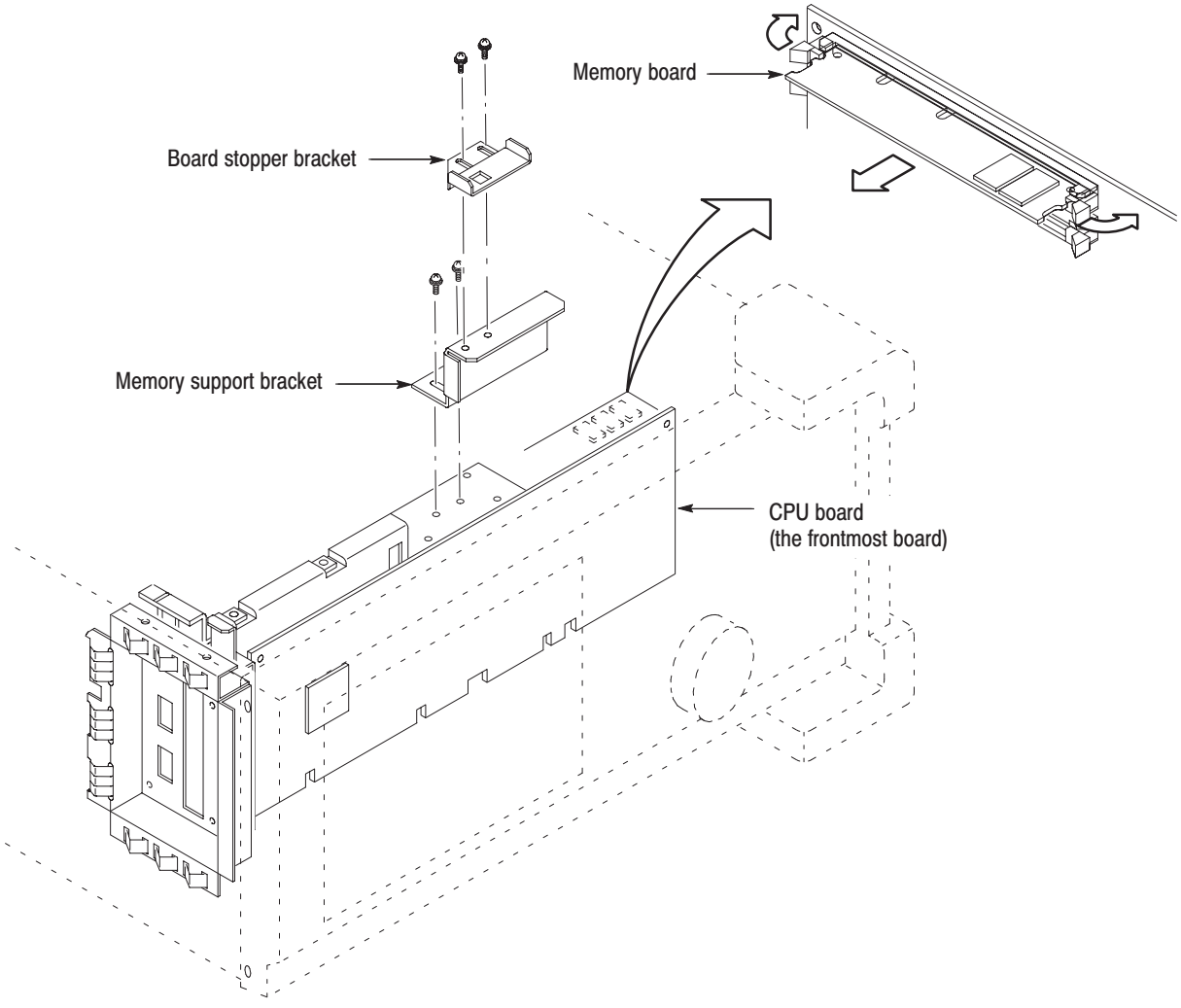


Figure 7: Memory modules removal

Disk Unit. *Equipment Required:* One #2 Phillips screwdriver.

1. Disconnect cables. Use Figure 8 as a guide.
   a. Unplug the cables from the connectors COM1, FDD1, and IDE1 on the CPU board.
   b. Unplug the cables from the connectors J114, J112, J120, and J122 on the A62 Front connection board.

   It is **not** necessary to unplug the other cables at this time.

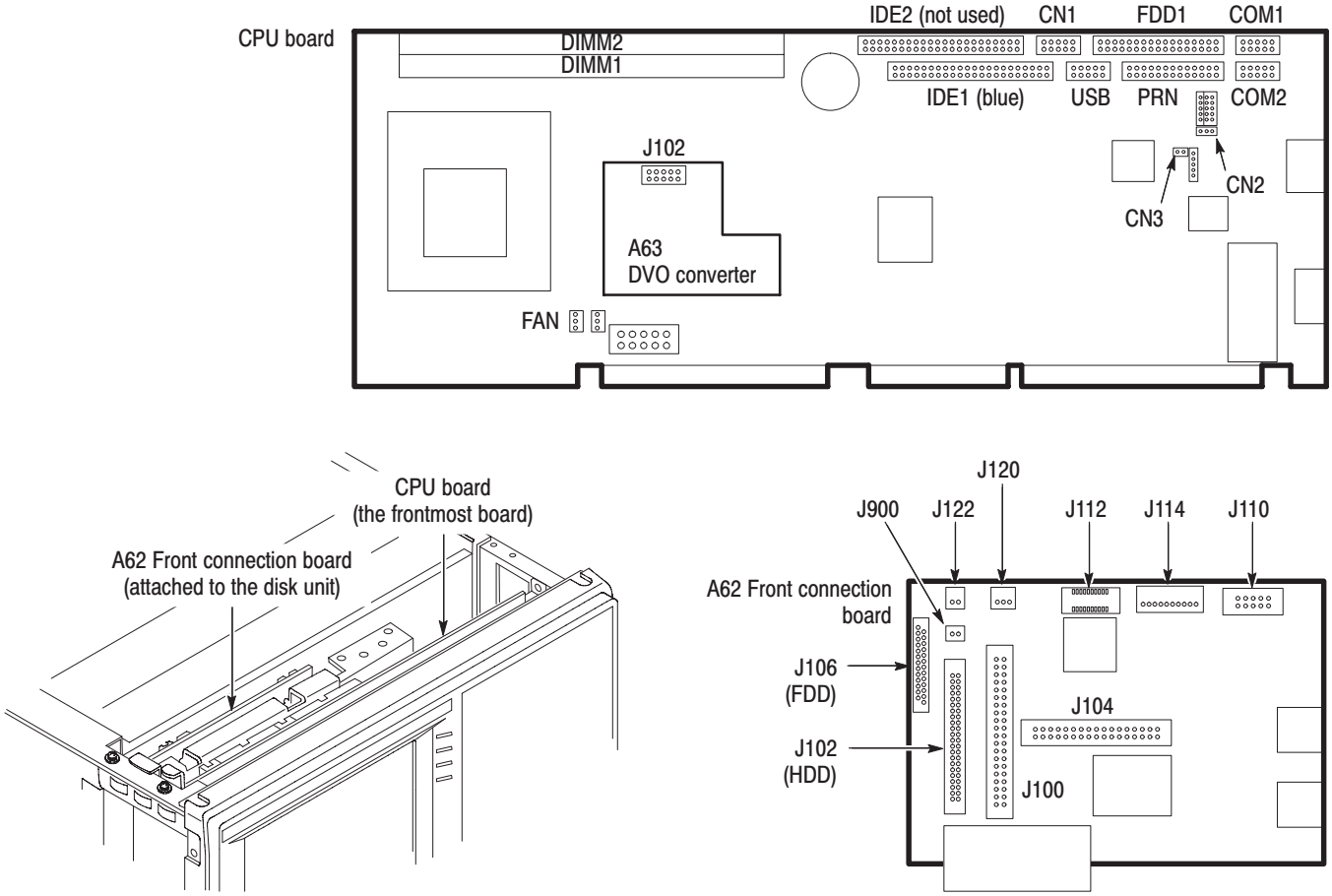


Figure 8: Connector location on the CPU and A62 boards

2. Remove the disk unit. See Figure 9.
   a. Remove the two screws securing the disk bracket to the shield bracket.
   b. Remove the two screws securing the disk bracket to the main chassis.

c. Lift up the disk bracket containing the hard disk drive, the floppy disk drive, and the A62 Front connection board.

d. Unplug the cable from the connector J100 on the A62 Front connection board (see Figure 8 on page 12). Discard this cable.

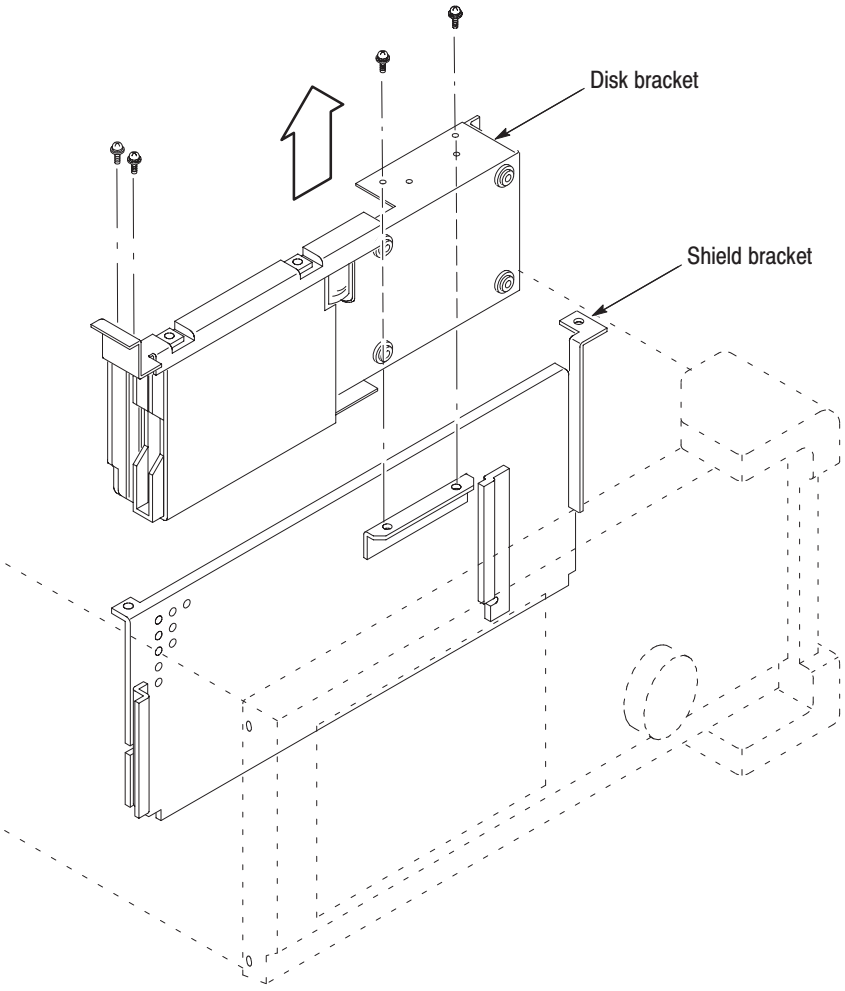


Figure 9: Disk unit removal

Hard Disk Drive. *Equipment Required:* One #2 Phillips screwdriver.
See Figure 10. See also Figure 3 Locator diagram on page 6.

CAUTION. *Be careful not to bend the hard disk drive connector pins when you unplug the cable.*

1. Remove the four screws securing the hard disk drive to the disk bracket.
2. Unplug the cable from J102 on the A62 Front connection board (see Figure 8 on page 12) and from the hard disk drive. Discard this cable.

A62 Front Connection Board. *Equipment Required:* One #2 Phillips screwdriver. See Figure 10.

1. Remove the two screws securing the shield bracket over the A62 board to the disk bracket.
2. Remove the two screws securing the A62 board to the disk bracket.
3. Unplug the floppy driver connector (ribbon interconnect cable) from J106 on the A62 board (see Figure 8 on page 12). Remove the board.

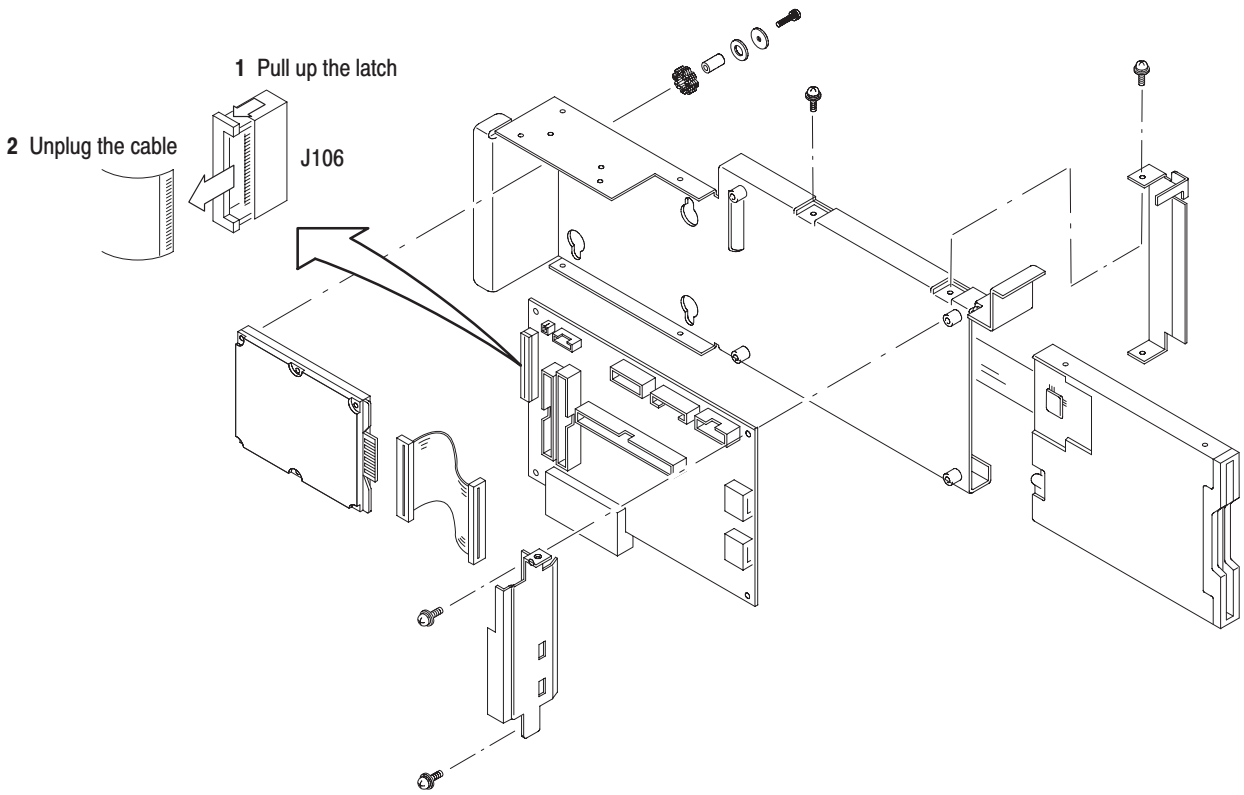


Figure 10: Disk module removal

Floppy Disk Drive. *Equipment Required:* One #1 Phillips screwdriver.
See Figure 10.

1. Remove the two screws securing the stopper bracket over the floppy disk drive to the disk bracket.
2. Remove the two screws securing the floppy disk drive to the disk bracket.
3. Pull out the floppy disk drive with the ribbon interconnect cable. It is **not** necessary to disconnect the cable from the drive.

Shield Bracket. *Equipment Required:* One #2 Phillips screwdriver.
See Figure 11.

1. Remove the two screws securing the shield bracket to the main chassis.
2. Lift the shield bracket up away.

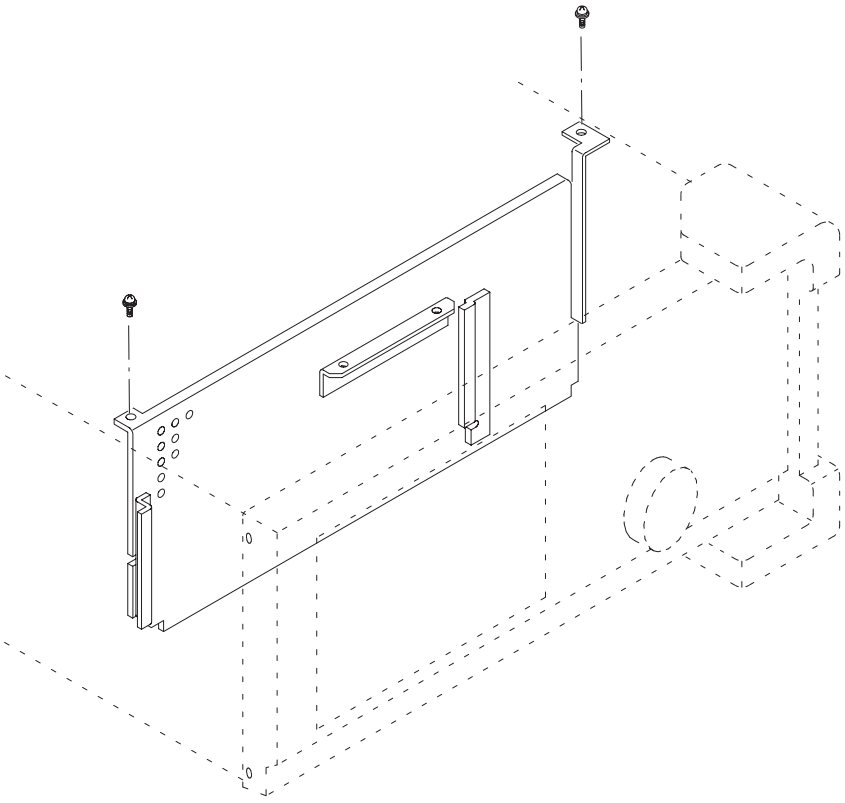


Figure 11: Shield bracket removal

Install

Perform the following steps to install the new inner and outer modules.

Inner Modules

Shield Bracket. Install the new shield bracket (407-5102-00 in this kit) by reversing the *Shield Bracket* procedure on page 15. Use the screws removed from the old assembly.

Disk Unit. Use the new disk bracket (407-5103-00 in this kit).
See Figure 12. See also Figure 3 Locator diagram on page 6.

1. Push the two board guides (351-A169-00 in this kit) into the holes on the right side of the new disk bracket.
2. **Floppy Disk Drive.** Install the floppy drive (removed from the old assembly) to the disk bracket by reversing the *Floppy Disk Drive* procedure on page 15.
3. **A62 Front Connection Board.** Install the A62 Front connection board (removed from the old assembly) to the disk bracket by reversing the *A62 Front Connection Board* procedure on page 14.

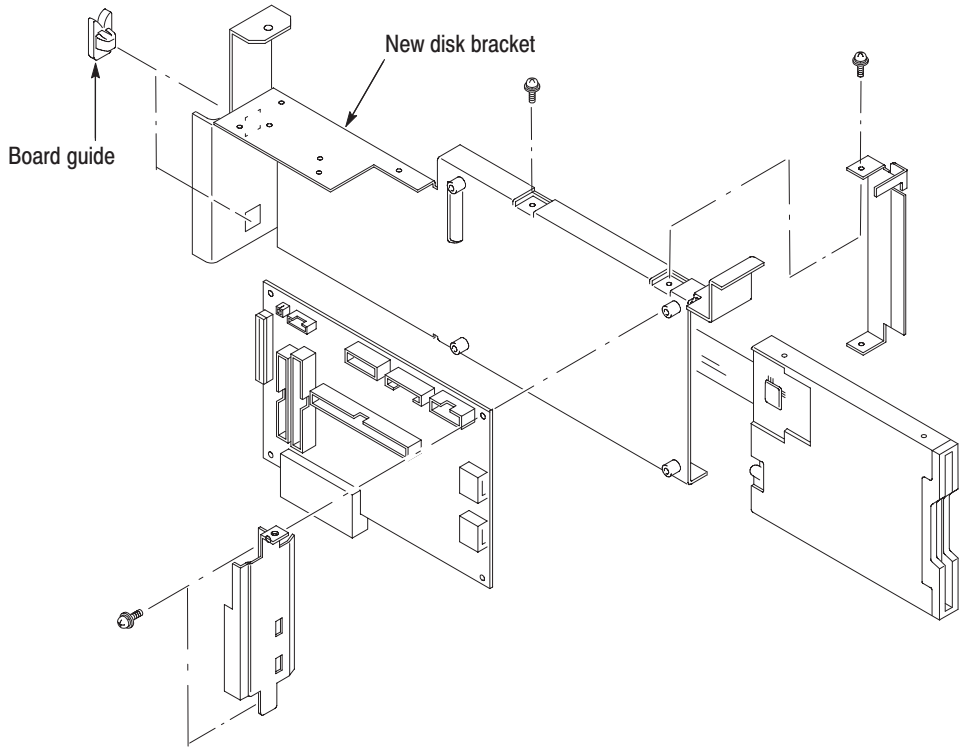


Figure 12: New disk unit assembly

4. **Disk Unit.** Install the new disk unit to the instrument.

   a. Install the screws (removed from the old assembly) by reversing step 2 in the *Disk Unit* procedure on page 12. See Figure 13 for the new unit.

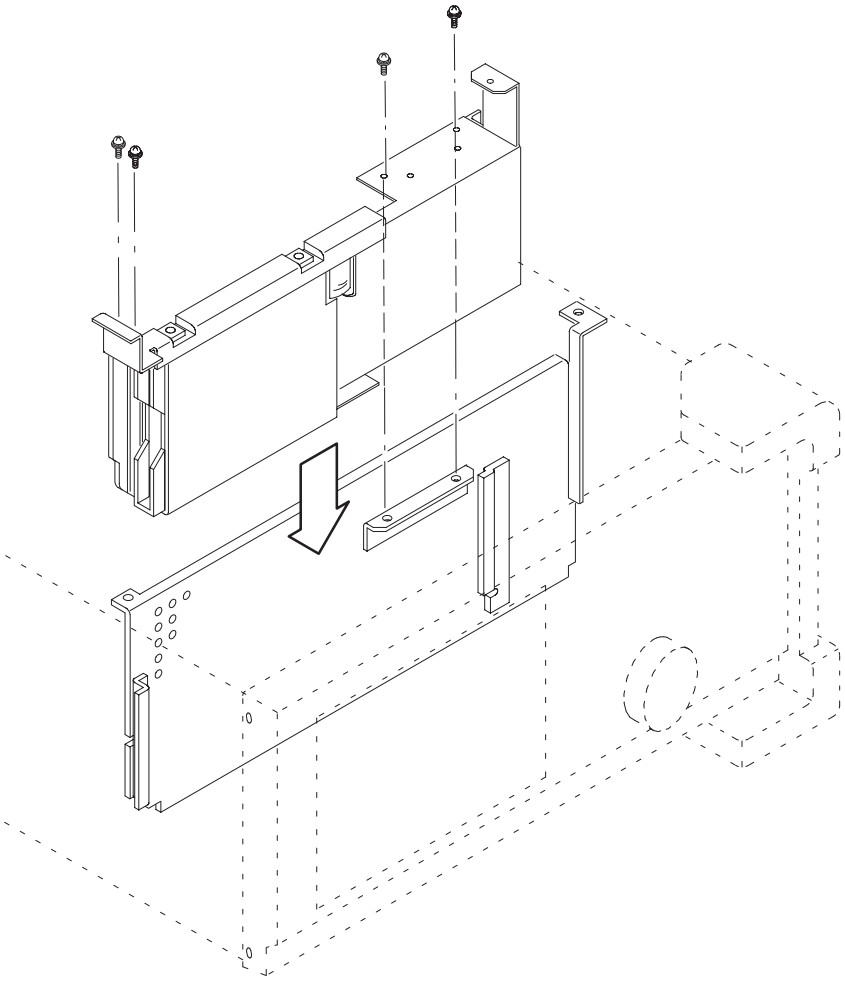


Figure 13: New disk unit installation

   b. Reconnect the cables by reversing step 1 in the *Disk Unit* procedure on page 12 except for the IDE1 connector on the CPU board which will be connected in the later procedure.

Memory Modules. Reinstall the two memory boards on the CPU board by reversing the *Memory Modules* procedure on page 11.

Outside HDD Bracket Assembly.
Equipment Required: One #2 Phillips screwdriver and a cutter knife.
See Figure 14. The all parts ship with this kit.

1. Push the board guide into the holes just in front of the shield bracket on the right side of the instrument.
2. Cut the edging that ships with this kit (252-0719-00) into two parts (63 mm and 57 mm length) using a cutter knife. Then attach them to the top edge of the front bracket as shown in the figure.
3. Attach the shield gaskets (seven in total) to the left, right, and bottom slits of the front bracket.

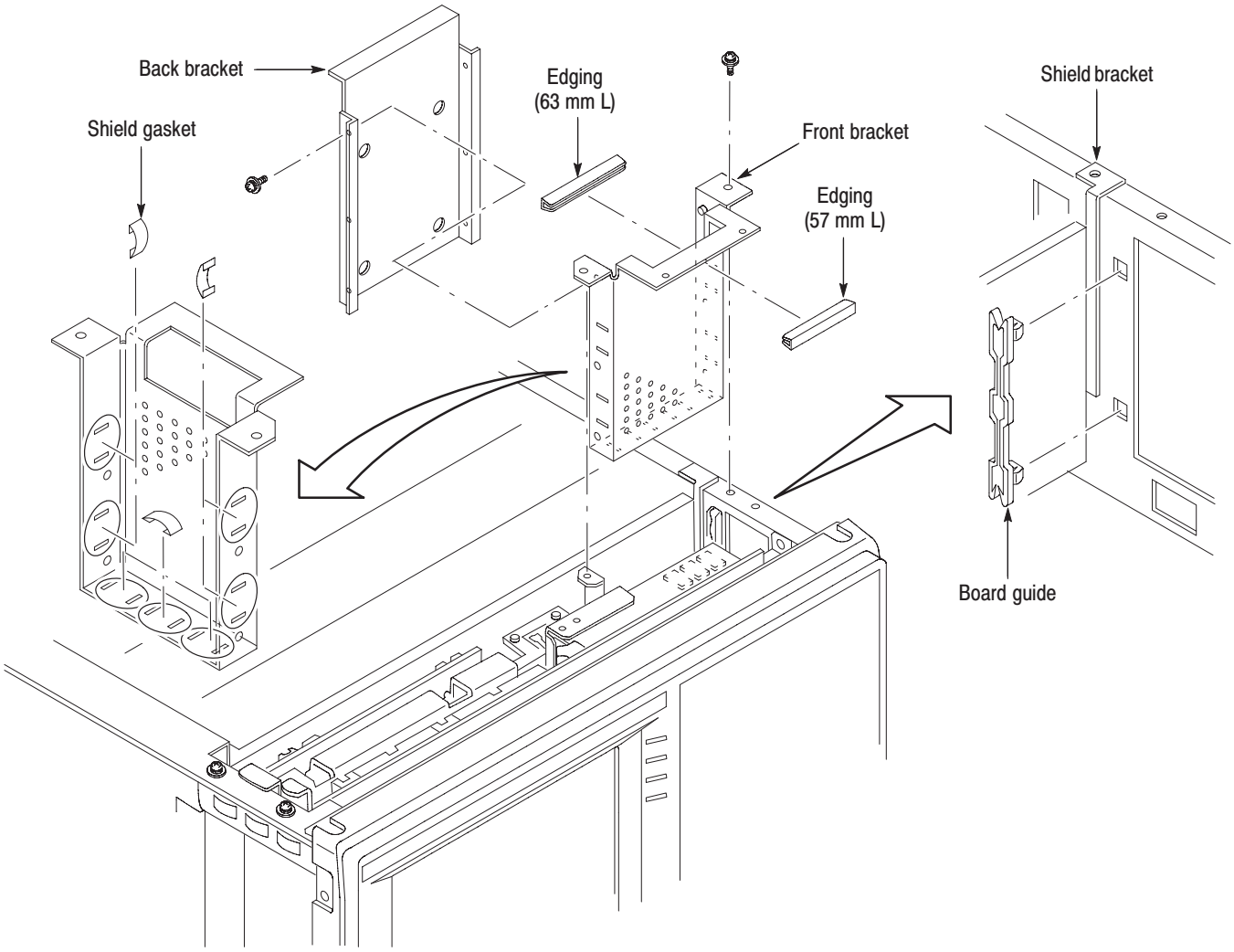


Figure 14: Outside HDD bracket assembly

4. Install the back bracket and the six screws that hold the back bracket to the front bracket.

5. Install the outside HDD bracket assembly and the two screws that hold the bracket assembly to the main chassis and the disk unit.

Hard Drive Cartridge.
Equipment Required: One #2 Phillips screwdriver, plier, and 5 mm wrench.
See Figure 15. Use the hard disk drive removed from the old assembly.
The other parts ship with this kit.

1. Install the two locating pins to the A65 HDD connection board with the nuts. Screw the nut with a 5 mm wrench while holding the pin with a plier.

2. Connect the A65 board to the hard disk drive.
Be aware that four pins for the drive address setting are not connected.

3. Install the left and right stopper brackets and the screws with washers that hold the stopper brackets to the hard disk drive.

4. Attach the four dumpers to the holes of the inside HDD bracket.

5. Install the hard disk drive and the screws with washers and supports that hold the hard disk drive to the inside HDD bracket.

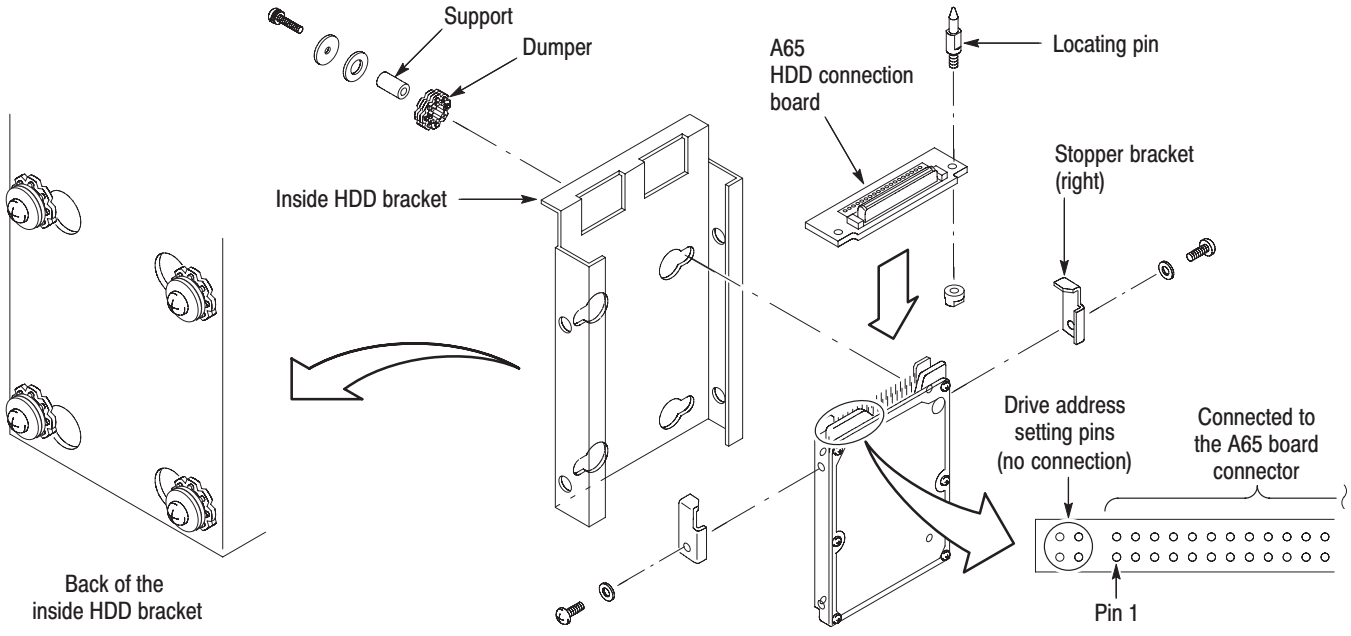


Figure 15: Hard drive cartridge assembly

Hard Disk Cable Assembly. *Equipment Required:* One #2 Phillips screwdriver. See Figure 16.

1. Insert the hard drive cartridge in the outside HDD bracket assembly (refer to page 18) until it stops.

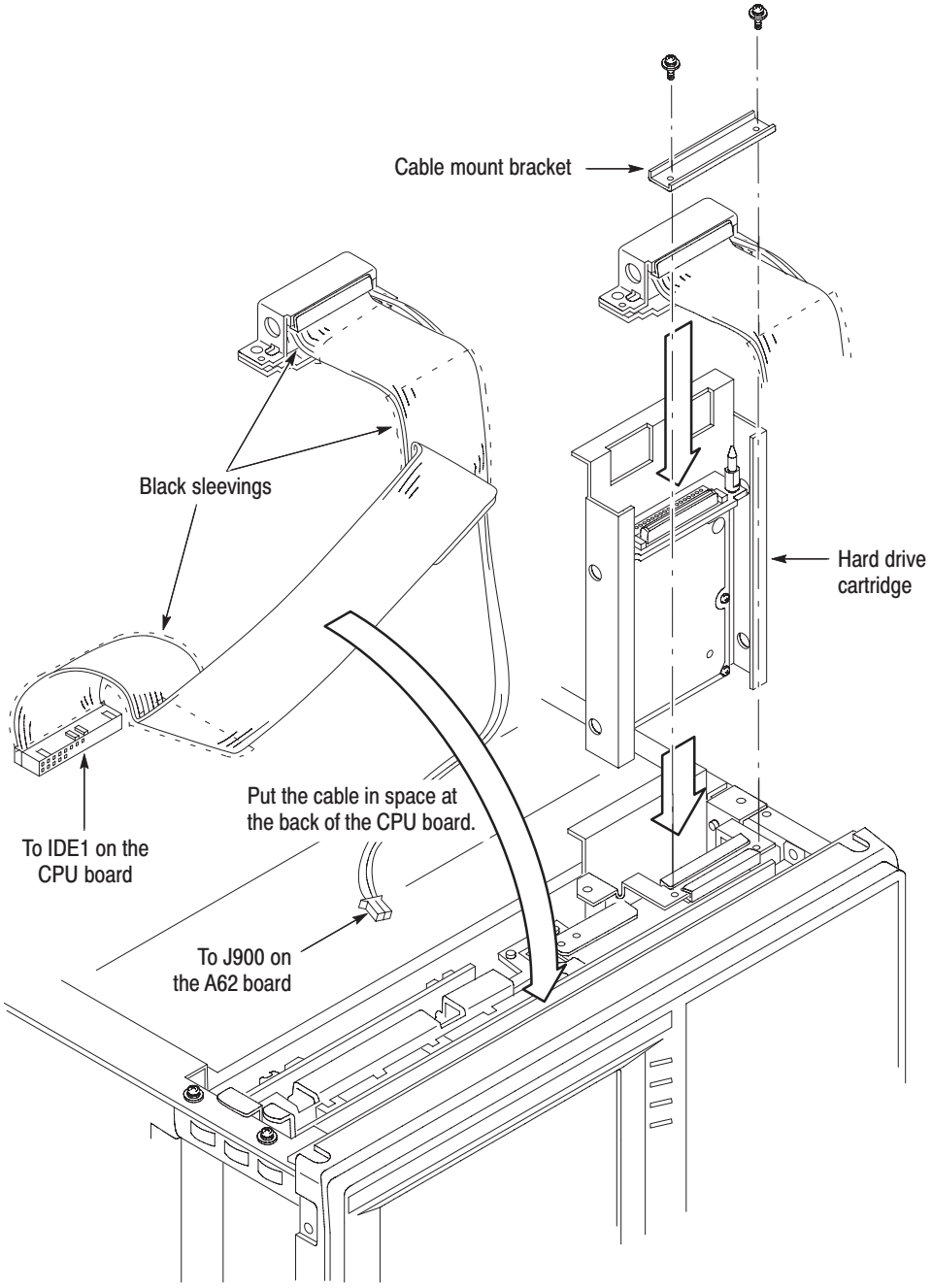


Figure 16: Hard disk cable assembly installation

2. Connect the hard disk cable assembly to the hard drive cartridge.
3. Install the cable mount bracket over the cable and the two screws that hold the cable mount bracket to the outside HDD bracket assembly.
4. Connect the hard disk cable assembly to the IDE1 connector on the CPU board and J900 on the A62 Front connection board. See Figure 8 on page 12 for the connector location.
5. Put the cable in space at the back of the CPU board.

Outer Modules

Handle Cap. Install the handle caps (200-2191-00 in this kit) to the new cabinet. To install the handle caps, push the caps on. See Figure 6 on page 10.

Handle and Flip Stand. Install the handle and flip stand to the new cabinet. Use the handle and flip stand that are removed from the old cabinet. Refer to the *Handle and Flip Stand* procedure on page 10.

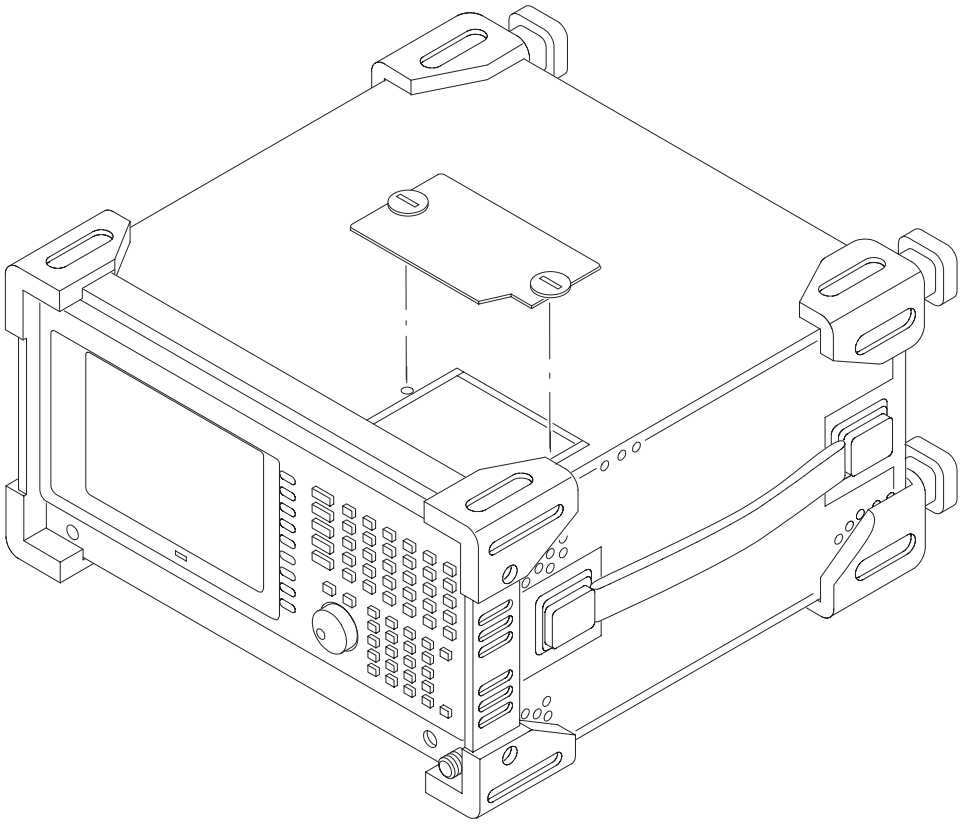


Figure 17: New cabinet installation

Left Front Cushion and Shield Bracket. Reinstall the left front cushion and shield bracket to the instrument by reversing the *Left Front Cushion and Shield Bracket* procedure on page 9.

Cabinet. *Equipment Required:* One #2 Phillips screwdriver.
See Figure 17 on page 21.

1. Install the new cabinet to the instrument by reversing the *Cabinet* procedure on page 8. Use the rear cushions, screws, and power cord that are removed from the old assembly.
2. Using a coin, screw the door (ships with this kit) on the top side of the cabinet.

ID Labels

After you finish the installation, affix the Soft Key and the ID labels (supplied with this kit) onto the rear panel of the instrument. Figure 18 shows the locations for these labels.

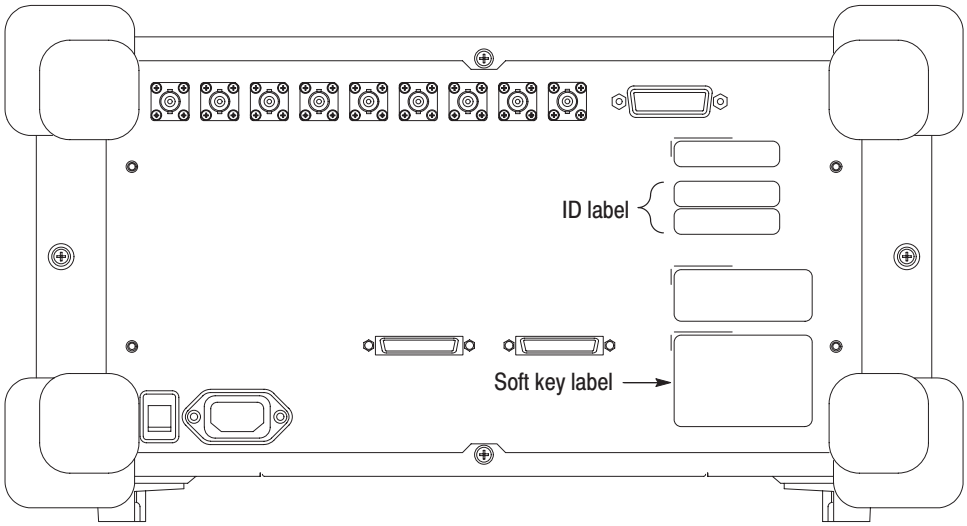


Figure 18: Soft key and the ID labels affix

Enabling the Removable Hard Drive Function

After you complete the hardware installation, enable the removable hard drive function using the following procedure.

Installing the USB Memory

You need the USB memory stick (ships with this kit) that includes the analyzer name, serial number, a copy of the factory calibration data and other information to operate the instrument with Option 06. Use the following steps to set up the USB memory.

1. Connect the USB devices.
   a. Connect the USB memory to either USB port on the analyzer side panel.

***NOTE**. Do **not** connect the USB memory to the USB port of the keyboard.*

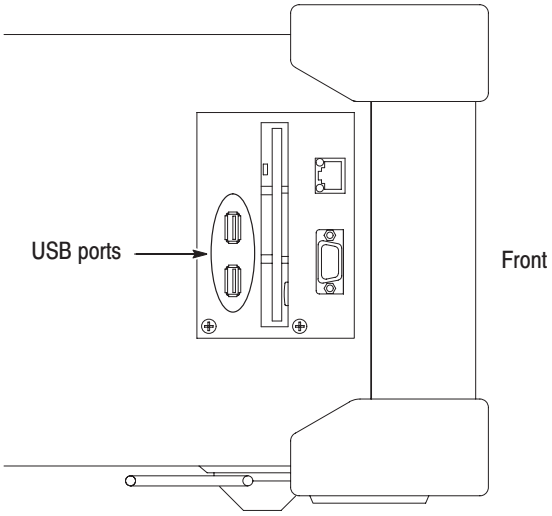


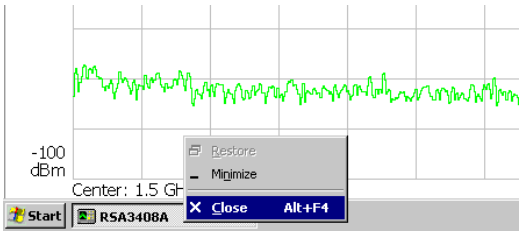
Figure 19: USB ports (side panel)

   b. Connect a USB keyboard to the USB port on the side panel.
   c. Connect a USB mouse to the USB port on the keyboard.
2. Power on the instrument.

3. Display the Windows XP desktop on screen of the instrument.
For details on the Windows operation, refer to your Windows manuals.

   a. Use the mouse to move the pointer to the bottom of screen.
   The task bar appears.

   b. Locate the pointer on the **RSA3408A** icon in the task bar and right-click.
   A menu appears.



   c. Select **Close** from the menu.

   The analyzer system program stops, and the Windows XP desktop displays.

4. Copy the *D:__RtsaCalData__* directory that contains the analyzer cal files to the USB memory (E drive by default).

5. From the task bar, select **Start** → **Program** → **TEK RTSA** to restart the analyzer system program.

***NOTE**. For normal operation, plug the USB memory stick to the USB connector on the analyzer side panel before turning on the analyzer. Do not unplug the memory stick while operating the analyzer.*

If you use a USB memory stick that includes a different serial number, the error message "UNCAL" will be displayed in red on the screen.

Entering the Soft Key Code

Enter the soft key code (indicated on the SOFT KEY label supplied with this upgrade kit) on the analyzer to activate the function.

1. Press the **SYSTEM** key on the front panel.
2. Press the **Versions and Installed Options...** side key.
3. Press the **Option Key** side key and then enter the soft key code using the USB keyboard or from the keypad of the analyzer.

***NOTE**. To input "–" (hyphen), press the "." (period) key.*

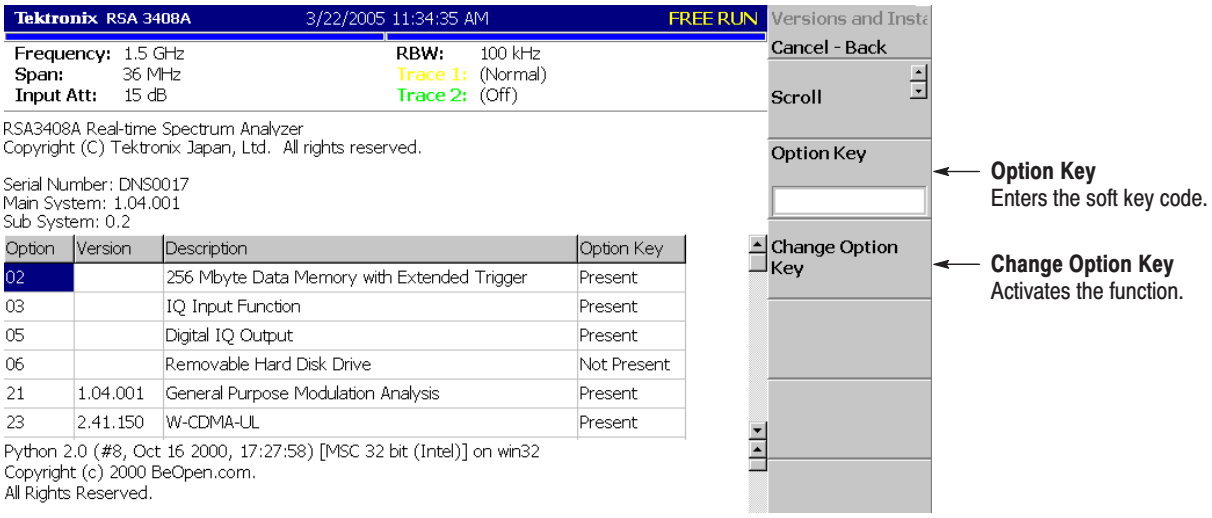


Figure 20: Entering the soft key code

4. After you enter the soft key code, press the **Change Option Key** side key to activate the function. The analyzer displays either of these two messages:

   - "Valid key entered. Please restart instrument"
     indicates that the optional function has been successfully enabled.
     Restart the analyzer.
     Refer to the *RSA3408A User Manual* for details on operation.
   - "Option key: Bad Keystring"
     indicates that you entered an incorrect value.
     Retry to enter the correct soft key code.

End of document