

E5023A Hard Disk Read/Write Test System and E5010C/E5013A Spinstand

Site Preparation and Installation Manual

third Edition



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Notices

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Manual Printing History

The manual's printing date and part number indicate its current edition. The printing date changes when a new edition is printed. (Minor corrections and updates that are incorporated at reprint do not cause the date to change.) The manual part number changes when extensive technical changes are incorporated.

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Safety Symbol







General definitions of safety symbols used on the instrument or in manuals are listed below.



Instruction Manual symbol: the product is marked with this symbol when it is necessary for the user to refer to the instrument manual.



Alternating current.

-  Direct current.
-  On (Supply).
-  Off (Supply).
-  In position of push-button switch.
-  Out position of push-button switch.
-  Frame (or chassis) terminal. A connection to the frame (chassis) of the equipment which normally include all exposed metal structure.

WARNING This warning sign denotes a hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed or adhered to, could result in injury or death to personnel.

CAUTION This Caution sign denotes a hazard. It calls attention to a procedure, practice, condition or the like, which, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product.

NOTE Note denotes important information. It calls attention to a procedure, practice, condition or the like, which is essential to highlight.

Typeface Conventions

Bold	Boldface type is used when a term is defined. For example: icons are symbols.
<i>Italic</i>	Italic type is used for emphasis and for titles of manuals and other publications.
[Hardkey]	Indicates a hardkey labeled “Hardkey.”
Softkey	Indicates a softkey labeled “Softkey.”
[Hardkey] - Softkey1 - Softkey2	Indicates keystrokes [Hardkey] - Softkey1 - Softkey2 .

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1 Overview

This chapter describes the organization of this manual and the installation procedure of the Agilent E5023A Hard Disk Read/Write Test System.

Manual Preamble

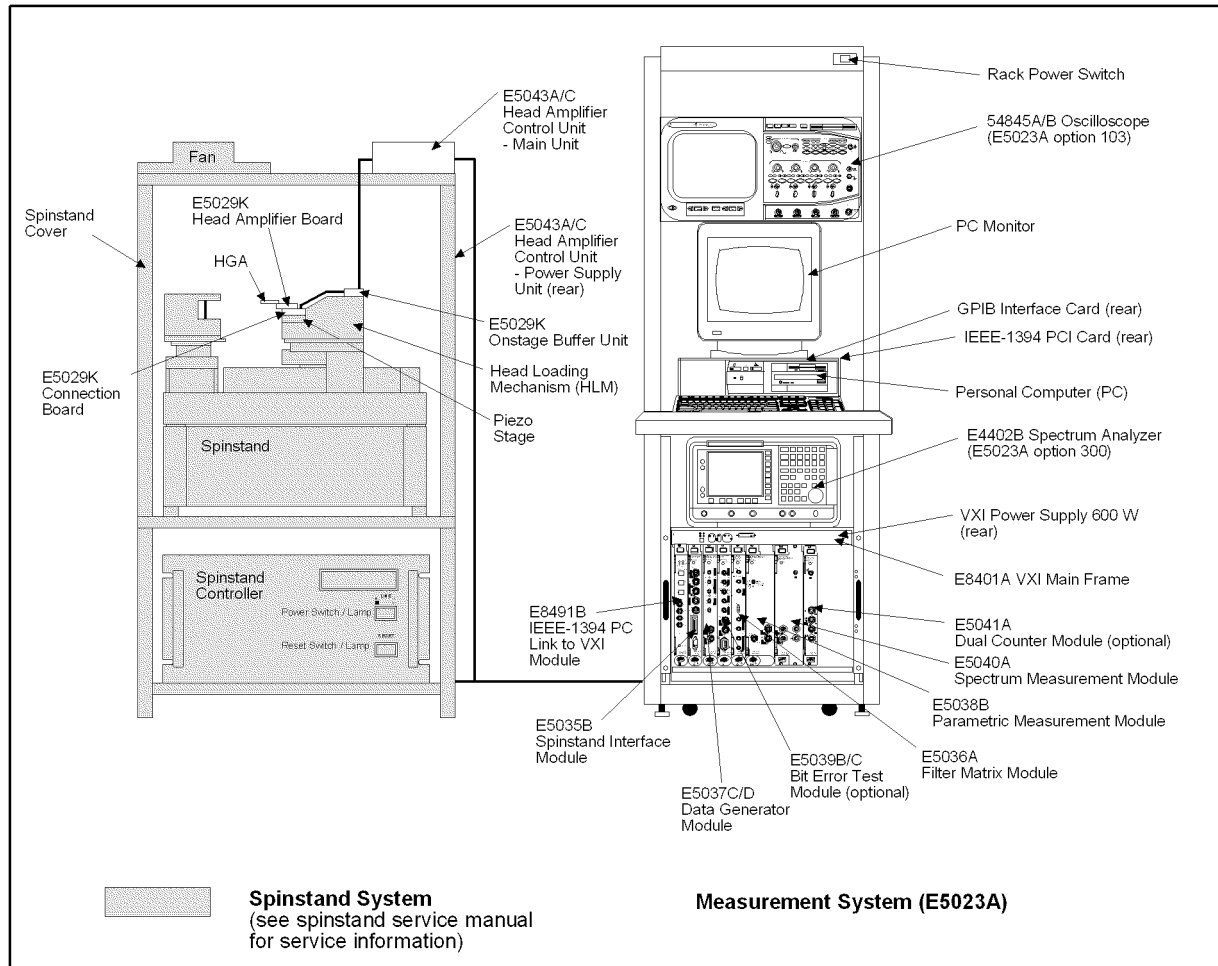
This manual describes topics related to installation of the Agilent E5023A Hard Disk Read/Write Test System and the Agilent E5010C, E5013A Spinstand. The information contained in each chapter is as follows.

- | | |
|-----------|--|
| Chapter 1 | This chapter describes the organization of this manual, the configuration of the system, and the overall installation process. It also includes the difference in the installation process depending on options and equipment required for the installation. Before installation, you need to understand this chapter. |
| Chapter 2 | This chapter describes site preparation procedure. |
| Chapter 3 | This chapter describes how to install the Agilent E5023A Hard Disk Read/Write Test System. It contains information on racking instruments, connecting the cables, and so forth. |
| Chapter 4 | This chapter describes how to install the Agilent E5010C Spinstand. It contains information on installing spinstand, supplying air to the spinstand, connecting the cables, and so forth. |
| Chapter 5 | This chapter describes how to install the Agilent E5013A Spinstand. It contains information on installing spinstand, supplying air to the spinstand, connecting the cables, and so forth. |

System Configuration

The Agilent E5023A Hard Disk Read/Write Test System is a system to test heads of hard disks, consisting of the components of the following basic configuration.

Figure 1-1 Example of System Configuration



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NOTE

Figure 1-1 shows the basic system configuration integrated into the system rack option (Option 701). For information about the system rack option, refer to the “System Rack Option” on page 13.

Hardware

Measurement Instruments (Agilent E5023A)

This part consists of various measurement instruments that measure signals from the spinstand and a PC used as a controller. All instruments except the spectrum analyzer are configured as VXI modules and will be stored in the VXI main frame. The E5023A option 415 covers measurements up to 1.5 Gbps bit rate, while the E5023A option 426 covers measurements up to 2.6 Gbps bit rate.

Spinstand (Agilent E5010C or E5013A)

This part emulates the internal mechanism of a hard disk drive. It consists of a spindle to rotate a disk, a head loading mechanism (HLM) to load/unload the head onto/from the disk, diagonal air stages to simulate the relative position of the hard disk and the head, and a spinstand controller to control motion of the air stages and the spindle.

Software

Software required to operate the system is pre-installed at the factory before shipped. For details on the software, refer to the Operation Manual and Programming Manual that come with the Agilent E5023A.

Options

The Agilent E5023A Hard Disk Read/Write Test System allows you to select various options to meet your installation environment and measurements. This section, among them, briefly describes the system rack option (option 700/701) and the oscilloscope option (option 103) on which the installation process depends. For details on the difference in the installation procedure depending on these options, refer to Chapter 3, “Installation for E5023A.”

System Rack Option

For the Agilent E5023A Hard Disk Read/Write Test System, the following two kinds of system rack options are available.

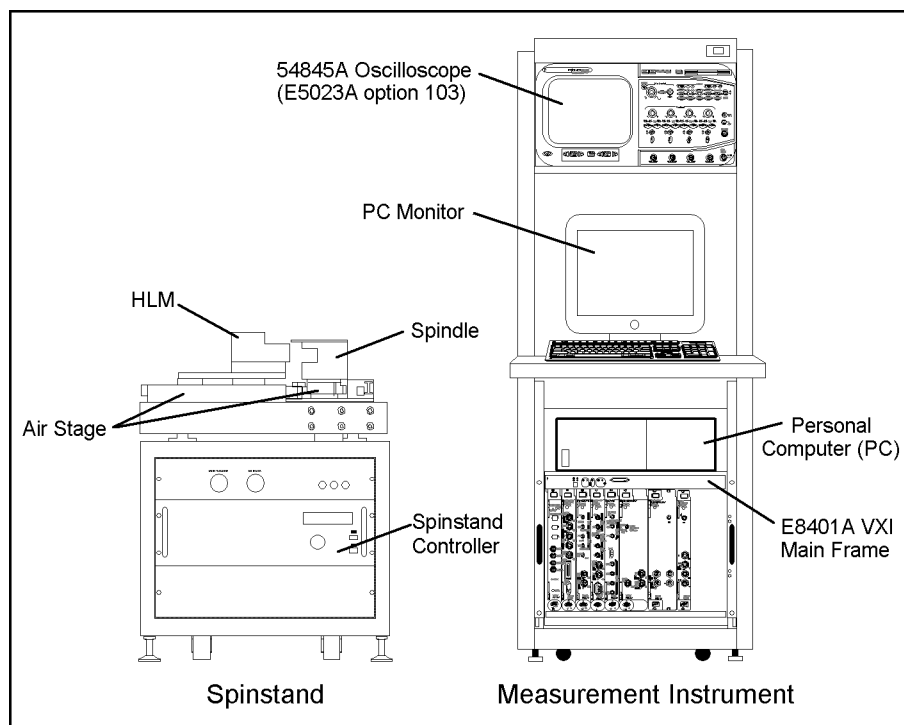
- Option 700 2-m high system rack for system with option 103 oscilloscope.
- Option 701 1.6-m high system rack for system without option 103 oscilloscope.

System Configuration with the System Rack Option

With the system rack option (option 700/701), all instruments will be installed inside the system rack except the spinstand. Figure 1-2 shows the 2-m high system rack (option 700) with the oscilloscope (option 103) integrated.

Figure 1-2

Example of the System Configuration with the System Rack Option



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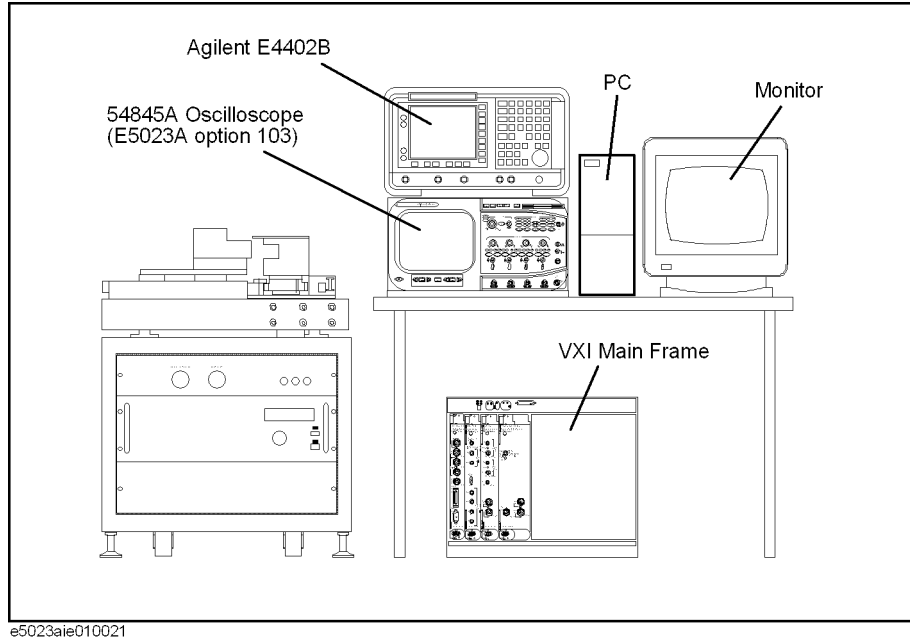
Overview
Options

System Configuration without the System Rack Option

Without the system rack option (option 700/701), you can combine instruments freely depending on your installation site. Individual instruments, the PC, and the Monitor are packed separately and shipped. Install the instruments at the installation site that you have decided according to Chapter 2, “Site Preparation.”

Figure 1-3

Example of the System Configuration without the System Rack Option



Other Options

Option 103 adds the Agilent 54845A box type 8 GSa/s oscilloscope.

Option E5023A-300 3GHz Spectrum Measurement Capability.

Tools Required for Installation

The following tools are required for installation.

Table 1-1

Required Tools

Tools	Size	Purpose
Open end wrench	5/16"	Cable extension connectors on spinstand
	9/16"	Fixing legs of spinstand
	11/16"	Granite bed fixing nuts
Monkey wrench	Large	Fixing legs of spinstand
Hex key (Allen wrench)	1/16"	Removing ground contact electrode
	3/16"	Installing spinstand cover
	3/32"	Removing ground contact electrode
	5/32"	Fixing bolts of air-float stages / shroud assembly
	5/16"	Granite bed fixing bolts
Torque limiting wrench	8 mm-11 kgf•cm	SMC cable connector
	6 mm-3.5 kgf•cm	SMA cable connector
TORX [®] screwdriver	T10	Head amplifier attachment
	T15	System rack
	T20	Installing modules
Slotted screwdriver	5.5 mm	Serial cable connector
Phillips screwdriver	Ph#1	Rack mounting screws
	Ph#2	Opening panels of spinstand
Pozidriv screwdriver	Pz#1	VXI modules
Level		Level spinstand
Chain nose pliers		General purpose
Diagonal cutting pliers		Cutting cable ties, etc.
Knife		Opening carton, etc.
Soldering iron		Installing spinstand cover
Antistatic wrist band		Prevent ESD

Overview
Tools Required for Installation

2 **Site Preparation**

This chapter describes information on what you need to prepare before system installation.

Overview

This chapter describes preparation in advance of installation. The following items will be covered.

- Carry-in route
- System dimension and weight
- Power supply
- Air requirement
- Environmental considerations
- Check list

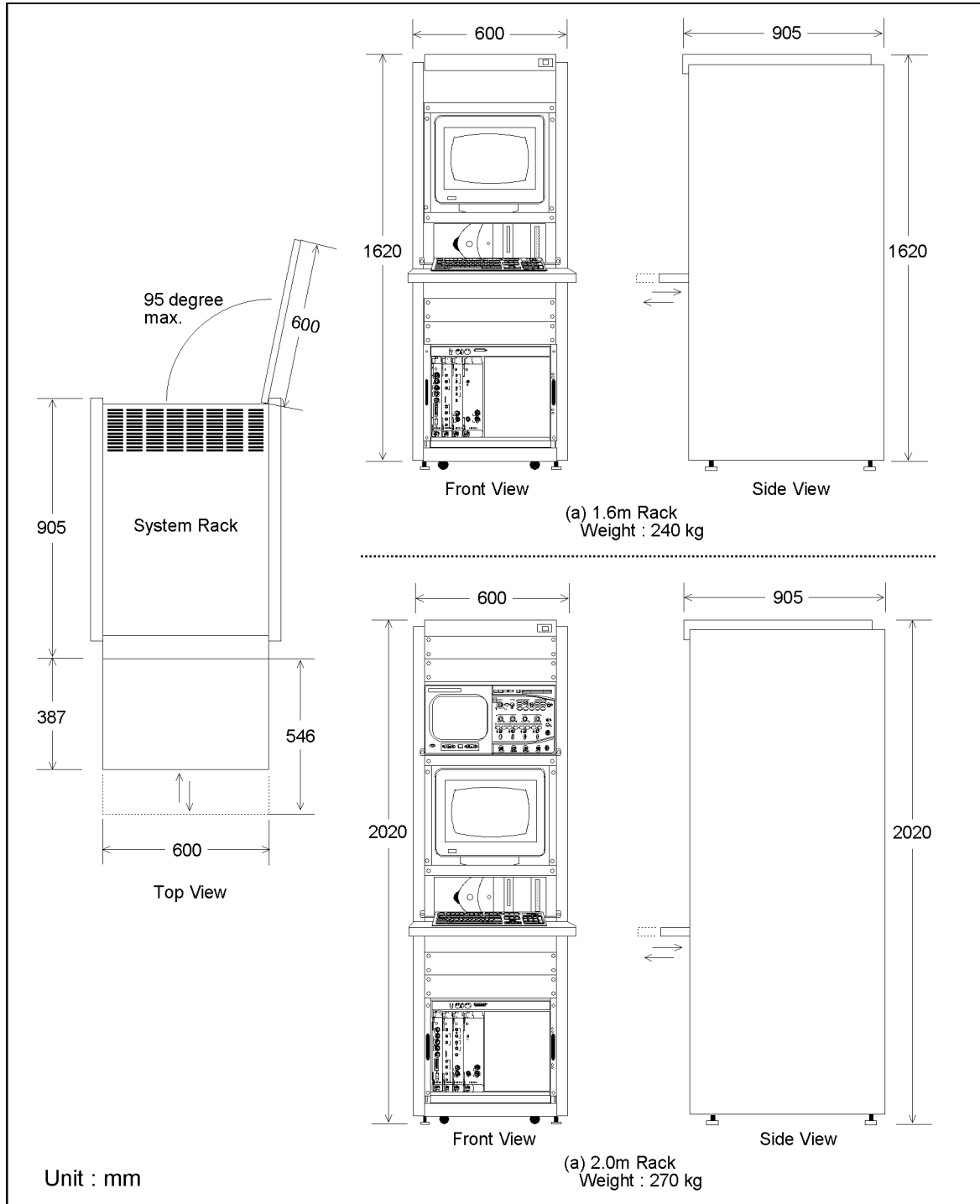
Carry-in Route

Check the following items so that the system can be moved to the place where the system will be installed.

- Vehicle access road
- Steps, slopes, and gaps through the carrying-in route
- Temperature of the temporary storage area
- Space to unpack the spindstand
- Door size within the site
- (When installing upstairs,) elevator size and the maximum load.
- Entrance of the clean room

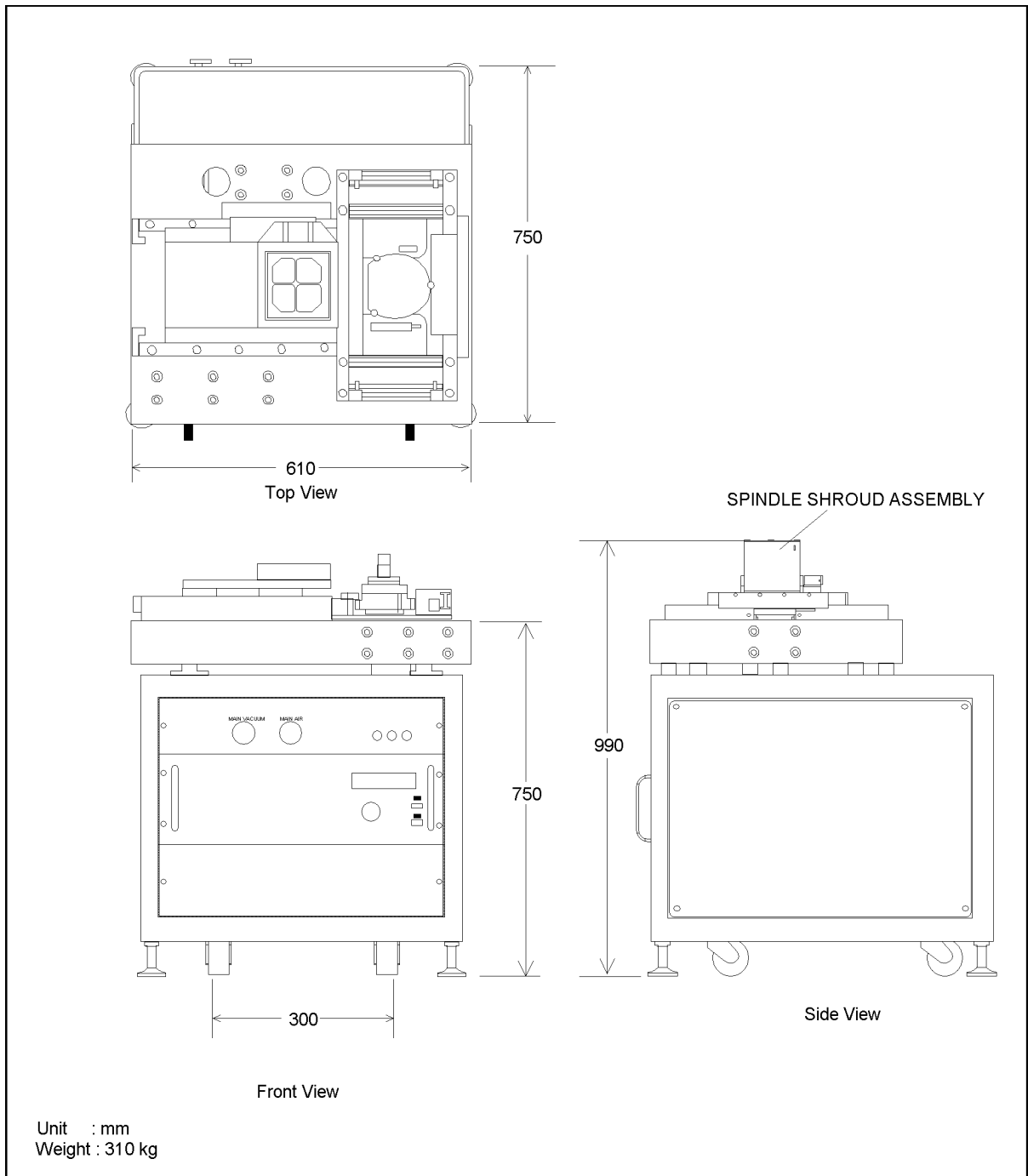
System Dimension and Weight

Figure 2-1 Dimension of the system rack



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Figure 2-2 Dimension of the Spinstand (E5010C)

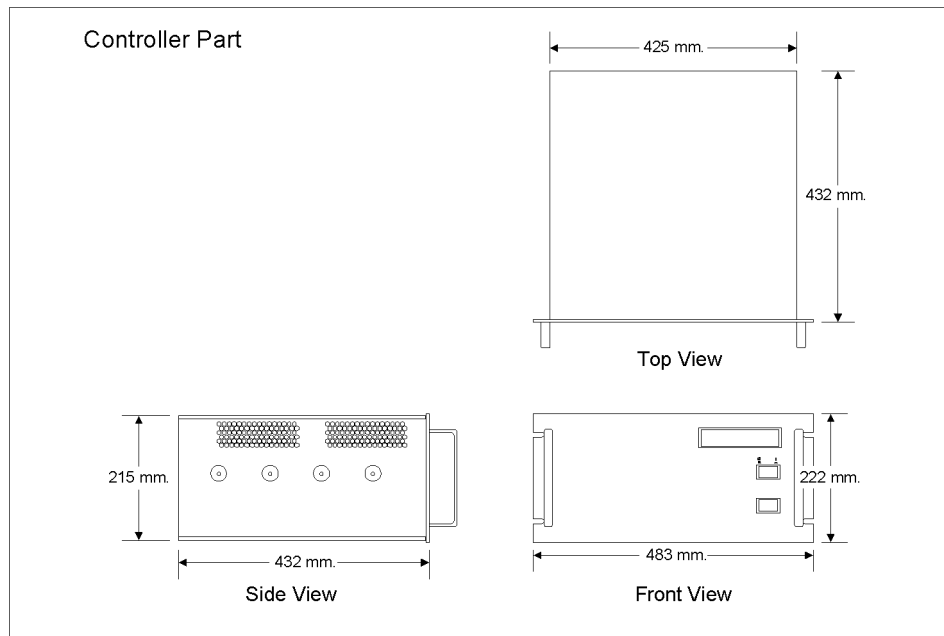
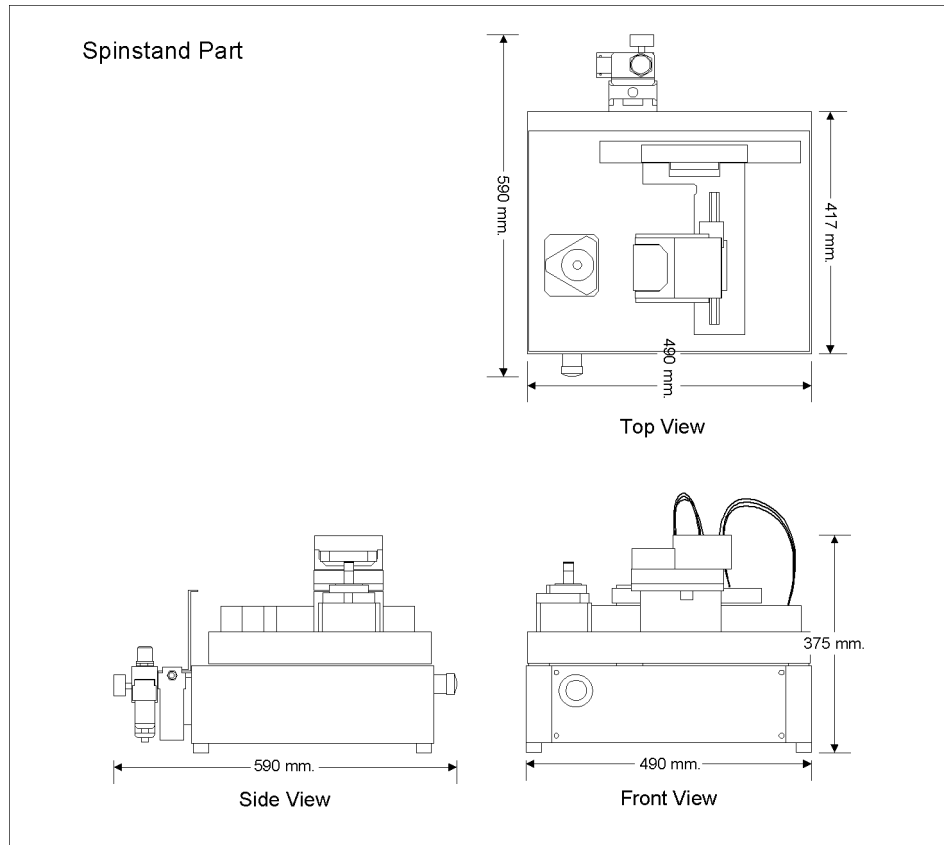


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Site Preparation
System Dimension and Weight

Figure 2-3

Dimension of the Spinstand (E5013A)



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Modules / Instruments Mechanical Specification

Table 2-1

Mechanical Specification

Module		Dimension	Weight
E8401A VXI Mainframe		352 mm H × 425 mm W × 631 mm D	18 kg (w/o modules) 28 kg (incl. modules)
54845A/B Oscilloscope (Option 103)		216 mm H × 437 mm W × 440 mm D	12 kg
E5010C Spinstand	Spinstand	1020 mm H ^{*1} × 610 mm W × 750 mm D	310 kg (typical)
	Spinstand and Cover ^{*2}	1270 mm H × 700 mm W × 850 mm D	330 kg (typical)
E5013A Spinstand	Spinstand Part	375 mm H ^{*3} × 490 mm W × 590 mm D ^{*4}	80 kg (typical)
	Spinstand Part and Cover ^{*5}	580 mm H × 550 mm W × 700 mm D	100 kg (typical)
	Controller Part	222 mm H × 483 mm W × 432 mm D ^{*6}	32 kg (typical)
E4402B Spectrum Analyzer (Option E5023A-300)		222 mm H × 373 mm W × 409 mm D (Without handle) 222 mm H × 416 mm W × 516 mm D (With handle, maximum)	15.5 kg
E5040A Spectrum Measurement Module		265 mm H × 60 mm W × 380 mm D	3.8 kg

*1. Includes spindle shroud assembly.

*2. Option CV1 installed.

*3. Not includes cables and air tubes.

Site Preparation

System Dimension and Weight

*4. Includes emergency stop switch.

*5. Option CV3 installed.

*6. Not includes front handle and cables connected on the rear panel.

Environmental Considerations

To ensure Agilent E5023A system performance, be sure to comply with the following environmental conditions.

Table 2-2

Environmental Conditions

Item	Specification
Temperature	+18 °C to +28 °C (+64.4 °F to +82.4 °F)
Relative Humidity	15%RH to 80%RH, Non-condensation
Air Cleanness	< Class 10,000

Power Supply

This section describes the requirements of power supply.

Power Supply Requirements

Table 2-3 shows power requirements of the Agilent E5023A system.

Table 2-3 Power Requirements

Instrument	Line Frequency	Line Voltage Rating	Maximum Power Consumption
VXI Mainframe with VXI Modules	47-66 Hz	90-264 Vac	360 VA (100-120 V) ^{*1}
			480 VA (220-240 V) ^{*1}
Option 103 Oscilloscope (54845A/B)	47-440 Hz	90-132 Vac, 198-264 Vac	390 W
Monitor	47-63 Hz	90-264 Vac	100 W ^{*2}
PC	47-63 Hz	90-127 Vac, 200-240 Vac	60 W ^{*2}
Spinstand (E5010C)	47-63 Hz	90-132 Vac	1.9 kVA
		198-264 Vac	
Spinstand (E5013A)	47-53 Hz, 57-63 Hz	90-132 Vac	1.8 kVA
		198-264 Vac	1.9 kVA
E4402B Spectrum Analyzer	47-66 Hz	90-250 Vac	300 W

*1. At maximum module configuration.

*2. PC and monitor power consumptions may vary depends on their model.

Power Cables

No System Rack Option Configuration

The following table shows the power cords furnished with the Agilent E5023A.

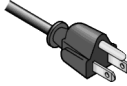
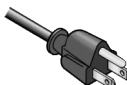

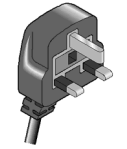
Table 2-4 Power Cables Supplied

Option	Country	Voltage (Nominal)	Cable Part Number	Qty.	PDU Model Number* ¹
Option 800	Japan	100 V	8120-4753	4	E4455A
			8120-5400	1* ²	
Option 801	U.S.	120 V	8120-1378	4	E4455A
			8120-2371	1* ²	
Option 802	Indonesia	220 V	8120-1351	5	E4457B
Option 803	Thailand	220 V	8120-1378	5	E4457B
Option 804	Philippines	110 V	8120-1378	4	E4455A
			8120-2371	1* ²	
Option 805	China	220 V	8120-8376	5	E4457B
Option 806	Hong Kong	220 V	8120-1351	5	E4457B
Option 807	Singapore	230 V	8120-1351	5	E4457B
Option 808	Malaysia	240 V	8120-1351	5	E4457B

*1. Applied only with option 700/701 system rack cabinet ordered.

*2. For VXi mainframe power supply.

Table 2-5 Plug Type

Part Number: 8120-4753 Plug: JIS C 8303, 125 V, 12 A Japan	
Part Number: 8120-1378 Plug: NEMA 5-15P, 125 V, 10 A U.S., Philippines, Thailand	
Part Number: 8120-8376 Plug: GB 1002, 250 V, 10 A China	
Part Number: 8120-1351 Plug: BS 1363/A, 250 V, 10 A Hong Kong, Singapore, Malaysia, Philippines	


Site Preparation
Power Supply

System Rack (Option 700/701) Configuration

When the E5023A is ordered with system rack option 700 or 701, one of the following power distribution unit (PDU) is installed in the rack when shipped from the factory.

Table 2-6

System Rack Power Distribution Unit

PDU Model Number	Voltage	Receptacles*¹	Power Cord	Plugs
E4455A	100-120 V	9×NEMA 5-15R 1×IEC-320 C13	Attached 2 m	NEMA 5-20P 
E4457B	200-240 V	10×IEC-320 C13* ²	Attached 2 m	No Plug (unterminated)* ³

*1. One IEC-320 C13 receptacle is reserved for fan, if being used.

*2. Five jumper cables (Agilent P/N 8120-1860) used to connect the instruments to the PDU are furnished to the system rack option.

*3. Three-wire plug for the PDU must be prepared before installation.

NOTE

For 200-240 V configuration, no main power plug is connected to the PDU. You must prepare three-wire plug that meets your local regulations before installation.

Additional Power Outlets

Prepare additional power outlets for instruments for maintenance.

Air Requirement

This section provides the necessary air requirements for the Agilent E5023A system.

Compressed Air

The compressed air is used for the following purposes.

- Air bearing for the spindle
- Floating the air stages
- Load/unload action of the HLM (Head Loading Mechanism)
- Generating the vacuum air for the Clamp and the Media support
- Moving the ramp of the Ramp Loading Mechanism (Option 320)

Prepare compressed air meets the specification below:

Item	Specification	
	E5010C	E5013A
Air Pressure Requirements	724 kPa to 827 kPa (105 psi to 120 psi)	724 kPa to 827 kPa (105 psi to 120 psi)
Temperature Range	Room Temperature ± 2.8 °C (Room Temperature ± 5 °F)	Room Temperature ± 2.8 °C (Room Temperature ± 5 °F)
Air Consumption ^{*1} (per system)	0.65×10^{-3} m ³ /s (1.37 scfm)	0.86×10^{-3} m ³ /s (1.82 scfm)
Air Tube Diameter	9.5 mm (3/8") ^{*2}	

*1. under the condition of spindle rotation: 7200 rpm, both stages: freefloat

*2. Use an adapter tube (Agilent P/N E5010-60004) furnished with the system to use 10 mm air tube.

NOTE

Use as much as dry and clean air. Although air filter and mist separator are built-in to the spinstand, supplying moist or dirty air could shorten their life.

Vacuum

The vacuum is used for the following purpose.

- Locking down the stages to the granite bed
- Locking down the piezo to the cassette block

Prepare vacuum meets the specification below.

Site Preparation
Air Requirement

Item	Specification	
	E5010C	E5013A
Minimum Vacuum ^{*1}	-70 kPa (-20.5 inHg, -521 mmHg) or below (lower pressure)	-70 kPa (-20.5 inHg, -521 mmHg) or below (lower pressure)
Vacuum Consumption (per system)	$0.22 \times 10^{-3} \text{ m}^3/\text{s}$ (0.79 m ³ /h, 0.47 scfm)	$0.22 \times 10^{-3} \text{ m}^3/\text{s}$ (0.79 m ³ /h, 0.47 scfm)
Vacuum Tube Diameter	9.5 mm (3/8") ^{*2}	

*1. At specified air consumption.

*2. Use an adapter tube (Agilent P/N E5010-60004) furnished with the system to use 10 mm air tube.

Check List

The following list is a site preparation checklist to help you see at a glance what you have already done and what remains to be done.

Check each check item off as it's completed. If the item does not pertain, mark the item "N/A" (not applicable).

- Carry-in route
 - o Vehicle access road
 - o Steps / slopes / gaps through the carrying-in route
 - o Temperature of the temporary storage area
 - o Space to unpack the system
 - o Door size within the site
 - o (When installing upstairs) elevator size and maximum load
 - o Entrance of the clean room
- Floor plan
 - o Space for operation and servicing at the front and rear of the cabinet
 - o Space for personnel safety, comfort, and freedom of movement
- Power supply
 - o System rack power supply
 - o Spinstand power supply
 - o (When no system rack) measurement instruments, PC power supply
- Air / vacuum
 - o Compressed air pressure
 - o Vacuum air pressure or vacuum pump
 - o Air tube diameter
 - o Air tube adapter
 - o Air tube layout
- Environment
 - o Temperature
 - o Relative humidity
 - o Air cleanness
 - o Vibration

Site Preparation
Check List

3 Installation for E5023A

This chapter describes how to install the Agilent E5023A Hard Disk Read/Write Test System.

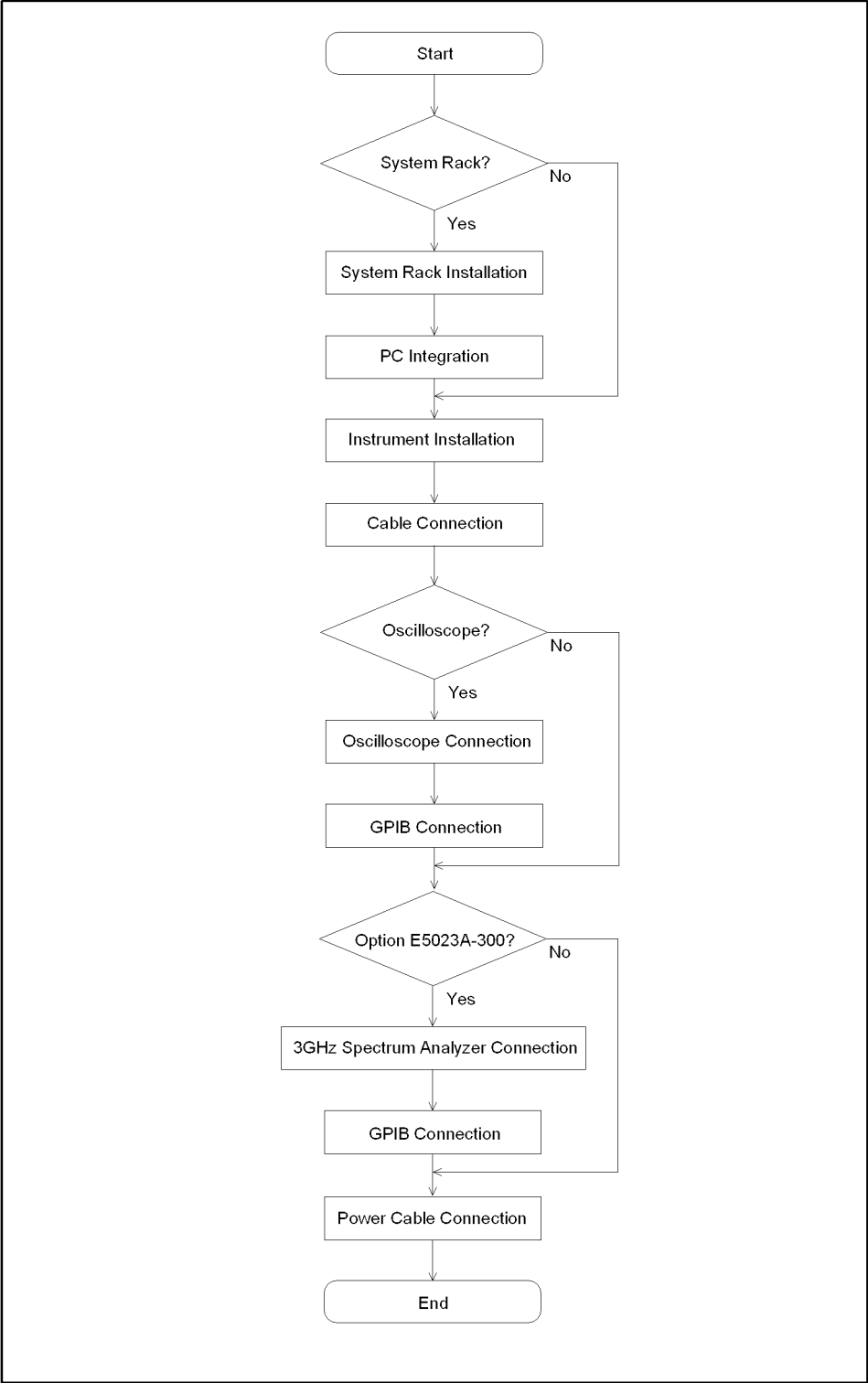
Overview

This chapter describes the installation of the Agilent E5023A system. The installation procedure differs depending on the system configuration. For the difference of the installation procedure, refer to Figure 3-1.

NOTE

Before installing the system, you should decide your installation site, prepare its environment, carry in the product, and check the contents of the package. This section is written, assuming that these preparations and checks are completed. For details, refer to Chapter 2, “Site Preparation.”

Figure 3-1 E5023A Installation Flow



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Installing the System Rack (Option 700 and 701 only)

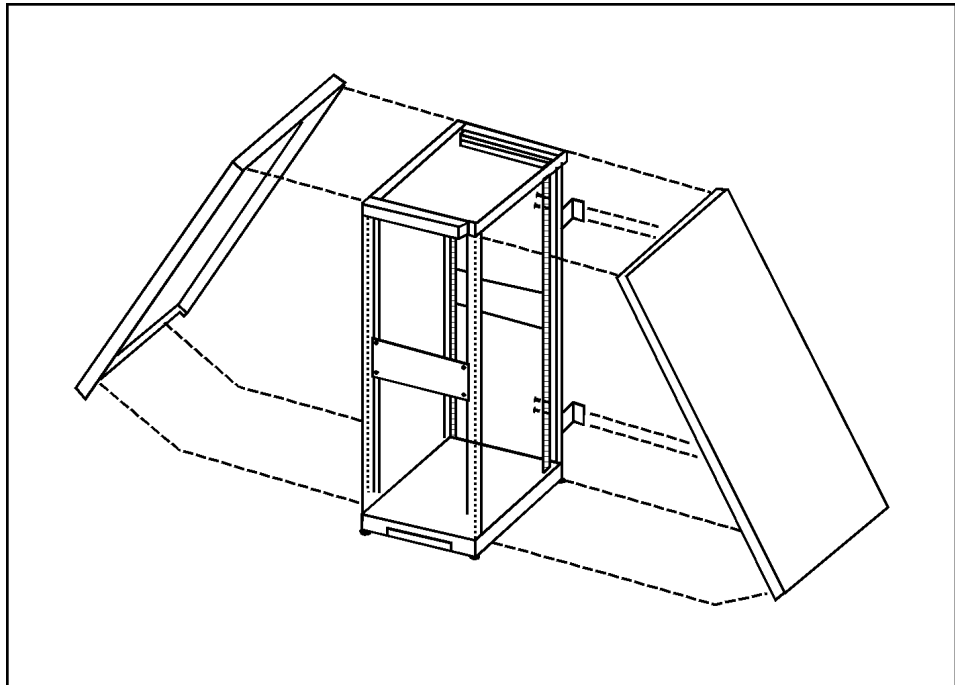
Fix the system rack to the site selected according to the “Site Preparation Manual.”

Installing the PC

Follow the steps below to integrate the PC into the system rack.

Procedure

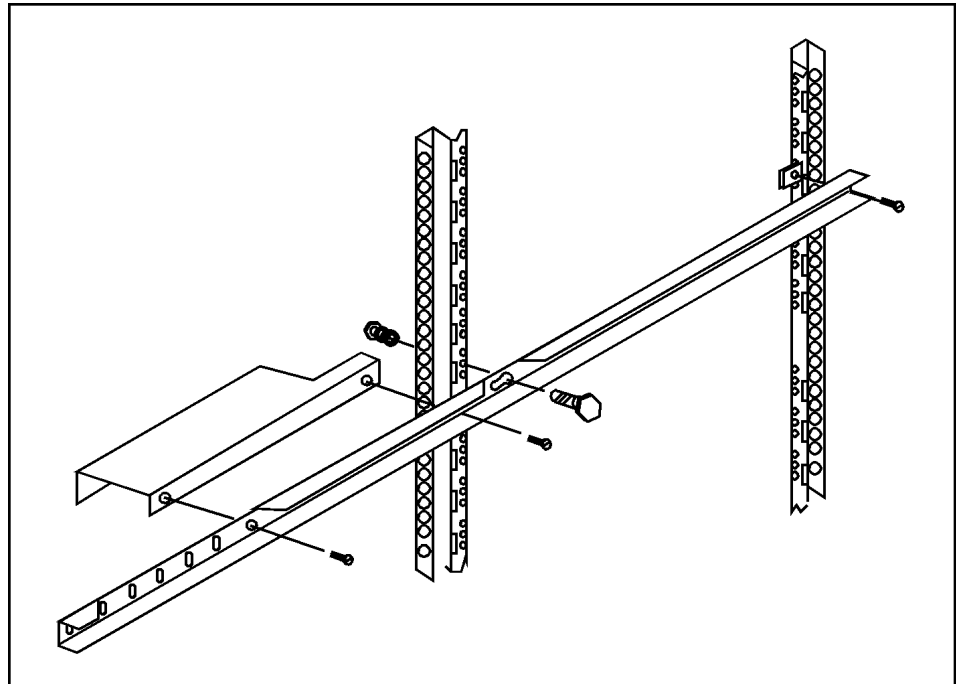
- Step 1.** Remove the side panel from the system rack.



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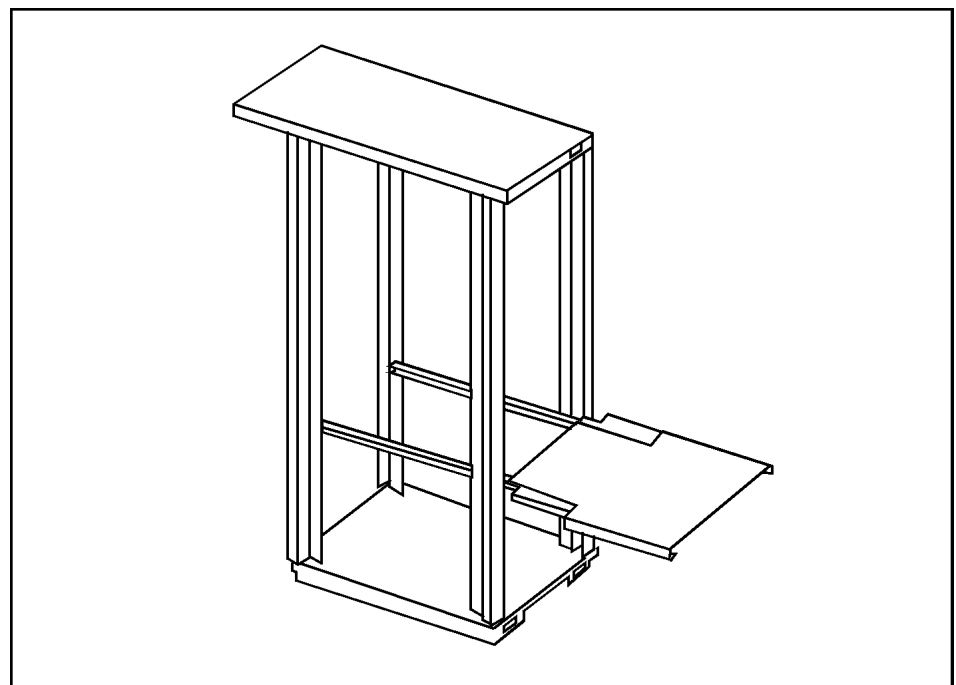
- Step 2.** Set the PC in the system rack.

Step 3. Attach the sliding rail to the system rack.



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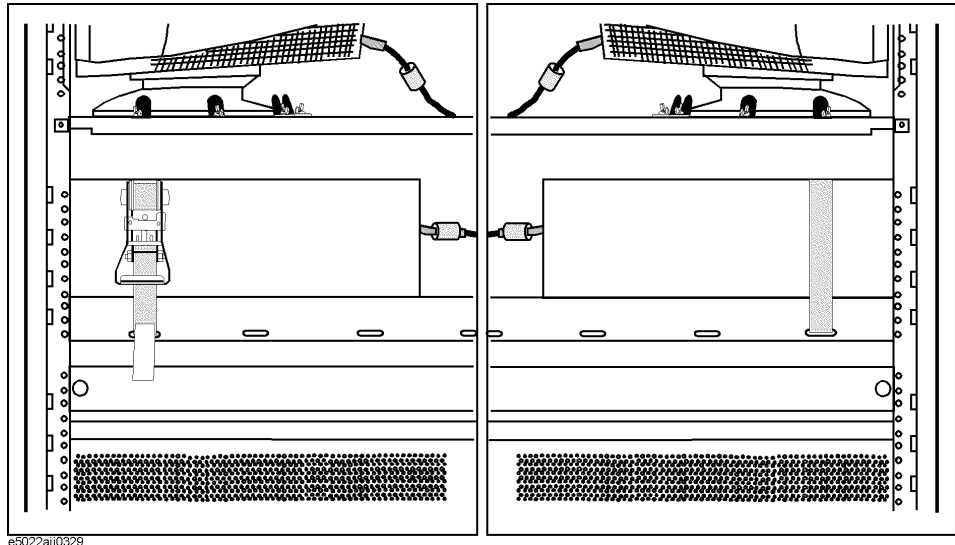
Step 4. Set the slab top in the system rack.



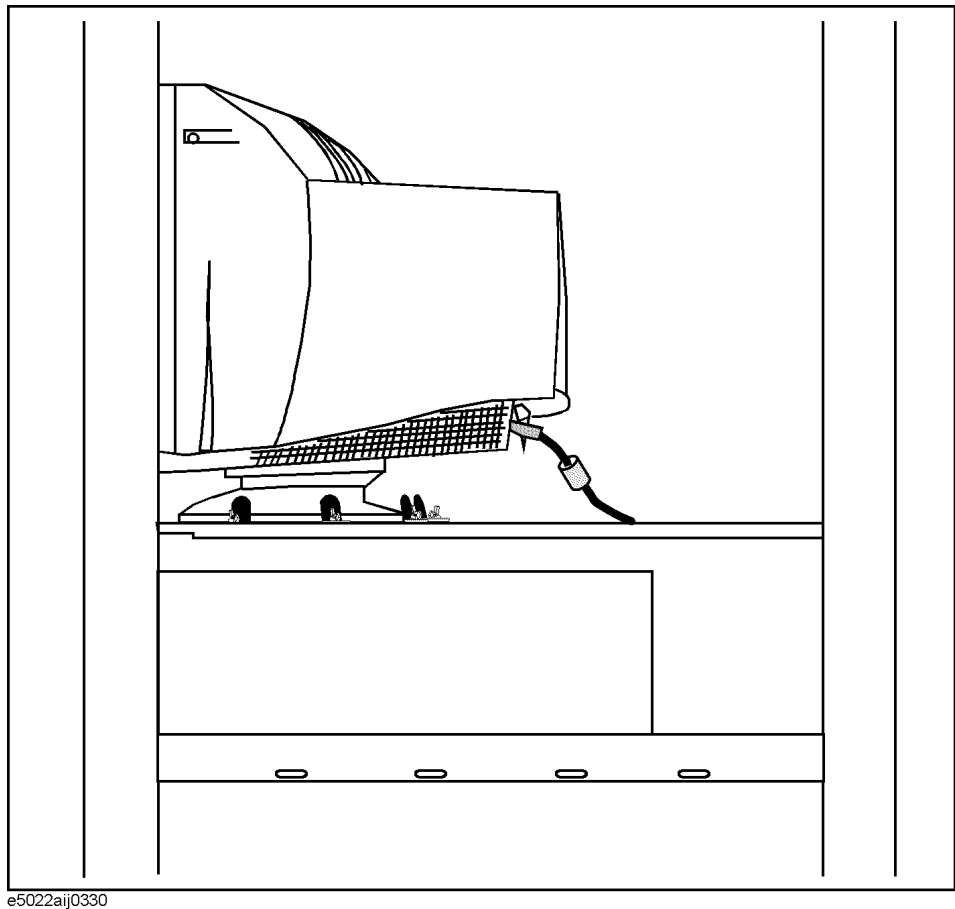
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Installation for E5023A
Installing the System Rack (Option 700 and 701 only)

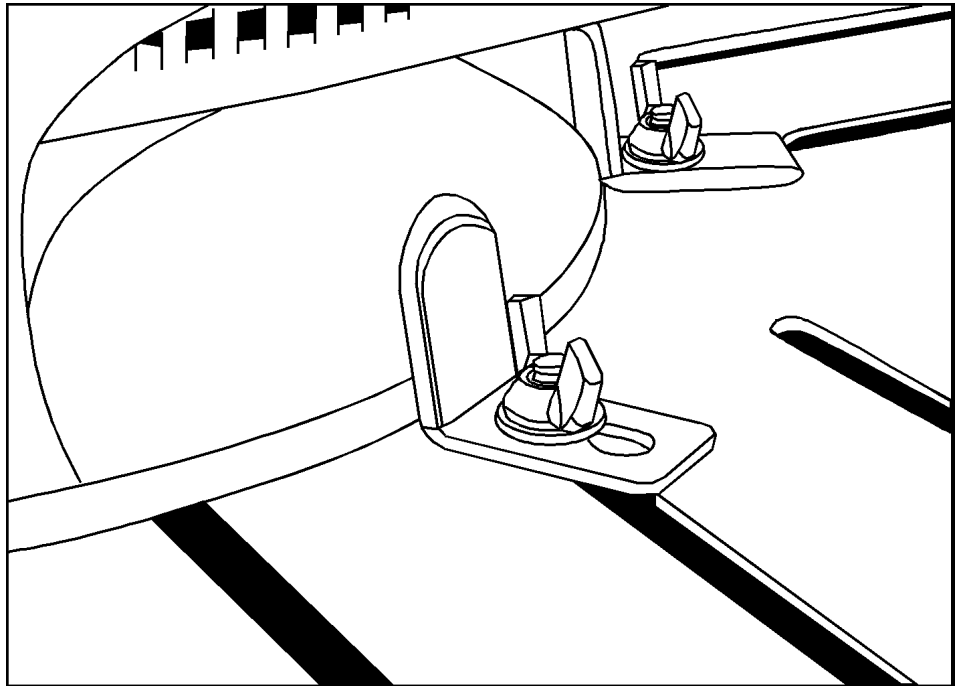
Step 5. Fix the PC with the fixing belt.



Step 6. Set the monitor in the system rack.



Step 7. Fix the monitor to the slab top.



e5022aij0331

Step 8. Connect the PC and the monitor with the cables.

Step 9. Attach the side panel on the system rack.

Instrument Installation

This section describes how to install the instruments.

Setting Instrument Addresses

This section describes the instrument addresses and how to set them.

NOTE

All the instruments' addresses are set when shipped from factory.

VXI Modules

The address switches' default values are shown in Table 3-1.

Table 3-1

VXI Module Addresses

Module	Address	Switch Settings ^{*1}
E8491B	0	00000000
E5035B	5	00000101
E5036A	6	00000110
E5037C/D	7	00000111
E5038B	8	00001000
E5039B/C	9	00001001
E5040A	10	00001010
E5041A	11	00001011

*1. From bit 7 to bit 0

GPIB

An oscilloscope (optional) are connected via GPIB. Their GPIB addresses are shown in Table 3-2.

Table 3-2

GPIB Addresses

Module	Address	How to set address
Oscilloscope (54845A/B)	7	<ul style="list-style-type: none">Using mouse, click the mouse icon on the right top corner of the screenSelect [Utilities] - [Remote Interface...]Select GPIB address as 7.
E4402B	18	

Installing the VXI Modules

This section describes how to install each VXI module in the VXI mainframe.

NOTE

The VXI modules are pre-installed in the VXI mainframe when shipped from the factory.

Tools Required

- #1 Pozidriver

Procedure

Step 1. Referring to Table 3-3, attach filler panels using a #1 Pozidriver.

Table 3-3

Recommended Slot for each VXI Module

Slot No.	VXI Module Locations (Standard Config.)	VXI Module Locations (with E5039B/C)
0	E8491B	E8491B
1	E5035B	E5035B
2	E5037C/D	E5037C/D
3	E5036A	E5039B/C
4	E5038B	E5036A
5		E5038B
6	E5040A	E5040A
7		
8	E5041A ^{*1}	E5041A ^{*1}
9	(Blank) ^{*2}	
10 to 12		(Blank) ^{*2}

*1. Optional module.

*2. Attach appropriate filler panels.

Step 2. Pulling two levers of each VXI module, slide the module into the VXI mainframe slot.

Step 3. Push the module until the levers down by themselves.

Step 4. Press the levers down completely.

Step 5. Secure the module with two screws attached on the front panel by using the #1 Pozidriver.

Step 6. Repeat the above steps for rest of VXI modules.

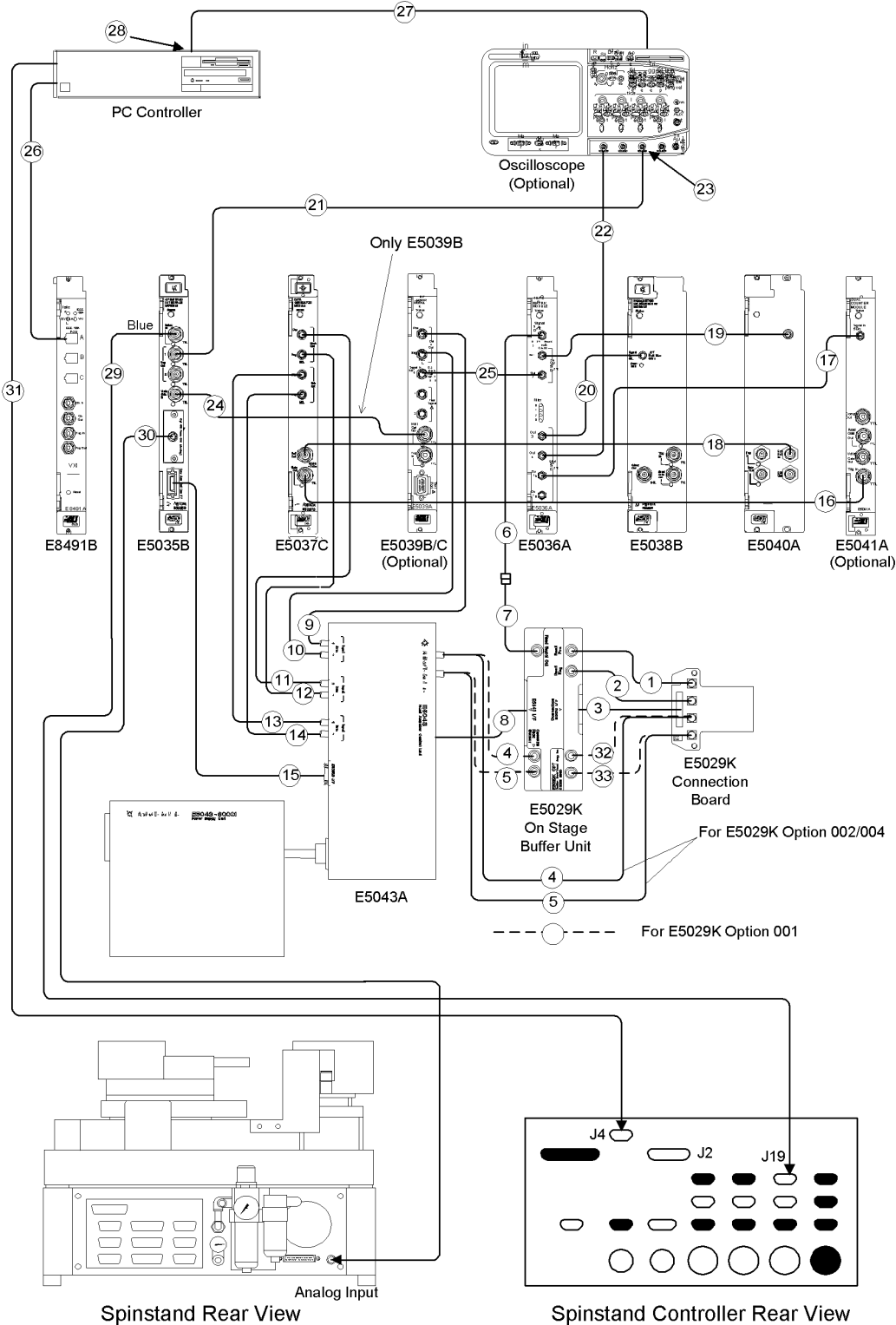
Figure 3-2 and 3-4 show the overall connection diagram including optional oscilloscope, the E5039B/C bit Error Test module and the E541A Dual Counter module. Please refer to “FigureAppendix 3-17 “for E5023A-300 connection diagram.

Connecting Cables

Connecting Cables for E5023A Option 415 (1.5 Gbps)

Figure 3-2 shows the overall connection diagram including optional oscilloscope, the E5039B/C Bit Error Test module and the E5041A Dual Counter module.

Figure 3-2 Overall Connection Diagram of E5023A-415 (1.5 Gbps) without Option E5023A-300

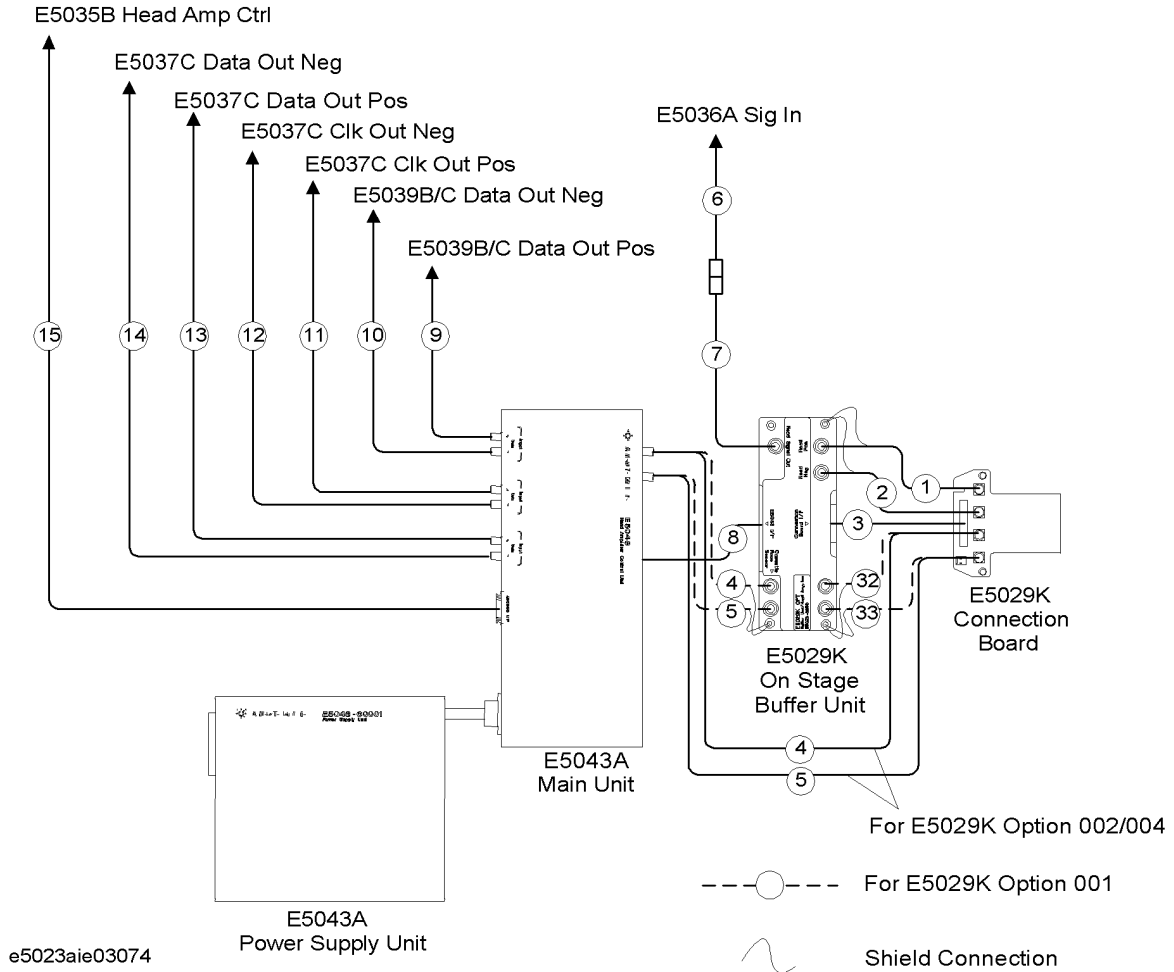


e5023aie03073

Installation for E5023A
Connecting Cables

Figure 3-3 shows the cable connection of the head amplifier and the E5043A.

Figure 3-3 Cable Connection for E5023A-415 (1.5 Gbps) (Connection Board, On Stage Buffer Unit, E5043A)



NOTE The locations of connectors on the head amplifier may differ from the figure above depending on the amplifier that you use. Check the connector names printed on the head amplifier when connecting the cables.

Table 3-4 Cable Connection for E5023A-415 (1.5 Gbps) (Head Amplifier, HLM)

No.	Description	Connection		Part Number
1	SMA(m)-SMA(m) Cable	E5029K Connection Board "R+"	E5029K Onstage Buffer Unit "R+"	E5029-61601
2	SMA(m)-SMA(m) Cable	E5029K Connection Board "R-"	E5029K Onstage Buffer Unit "R-"	E5029-61602

Table 3-4 Cable Connection for E5023A-415 (1.5 Gbps) (Head Amplifier, HLM)

No.	Description	Connection		Part Number
3	FFC Cable	E5029K Connection Board "Connection Board I/F"	E5029K Connection Board "Cable"	E5029-61603
4	SMA(m)-SMA(m) Cable	E5043A "OUT D+"	E5029K "W+"	E5043-61641*1
5	SMA(m)-SMA(m) Cable	E5043A "OUT D–"	E5029K "W–"	E5043-61642*1
6	SMA(m)-SMA(m) Cable	E5036A "Sig In"	Cable "7"	E5023-61607
7	SMA(m)-SMA(m) Cable	Cable "6"	E5029K "Read Sig Out"	E5023-61608
8	50P Halfpitch Flat Cable	E5029K Onstage Buffer Unit	E5043A Head Amplifier Control Unit (Main Unit)	E5043-61613
9	SMA(m)-SMA(m) Cable	E5039B/C "Data Out Pos"	E5043A "Input 2 Data+"	E5039-61606
10	SMA(m)-SMA(m) Cable	E5039B/C "Data Out Neg"	E5043A "Input 2 Data–"	E5039-61607
11	SMA(m)-SMA(m) Cable	E5037C "Clk Out Pos"	E5043A "Input Clock+"	E5023-61601
12	SMA(m)-SMA(m) Cable	E5037C "Clk Out Neg"	E5043A "Input Clock–"	E5023-61602
13	SMA(m)-SMA(m) Cable	E5037C "Data Out Pos"	E5043A "Input 1 Data+"	E5023-61603
14	SMA(m)-SMA(m) Cable	E5037C "Data Out Neg"	E5043A "Input 1 Data–"	E5023-61604
15	MDR-MDR Cable	E5035B "Head Amp Ctrl"	E5043A "Head Amp Ctrl"	E5023-61605
32	SMA(m)-SMA(m) Cable	E5029K Connection Board "W+"	E5029K Onstage Buffer Unit "W+"	E5029-61604
33	SMA(m)-SMA(m) Cable	E5029K Connection Board "W–"	E5029K Onstage Buffer Unit "W–"	E5029-61605

*1. E5043-61611 and E5043-61612 were replaced with these E5043-61641 and E5043-61642 respectively in December 2002.

Connecting Cables for E5023A Option 425 (2.6 Gbps)

Figure 3-4 shows the overall connection diagram including optional oscilloscope, the E5039B/C Bit Error Test module and the E5041A Dual Counter module.

Installation for E5023A
Connecting Cables

Figure 3-4

Overall Connection Diagram of E5023A Option 426 (2.6 Gbps) (without Option E5023A-300)

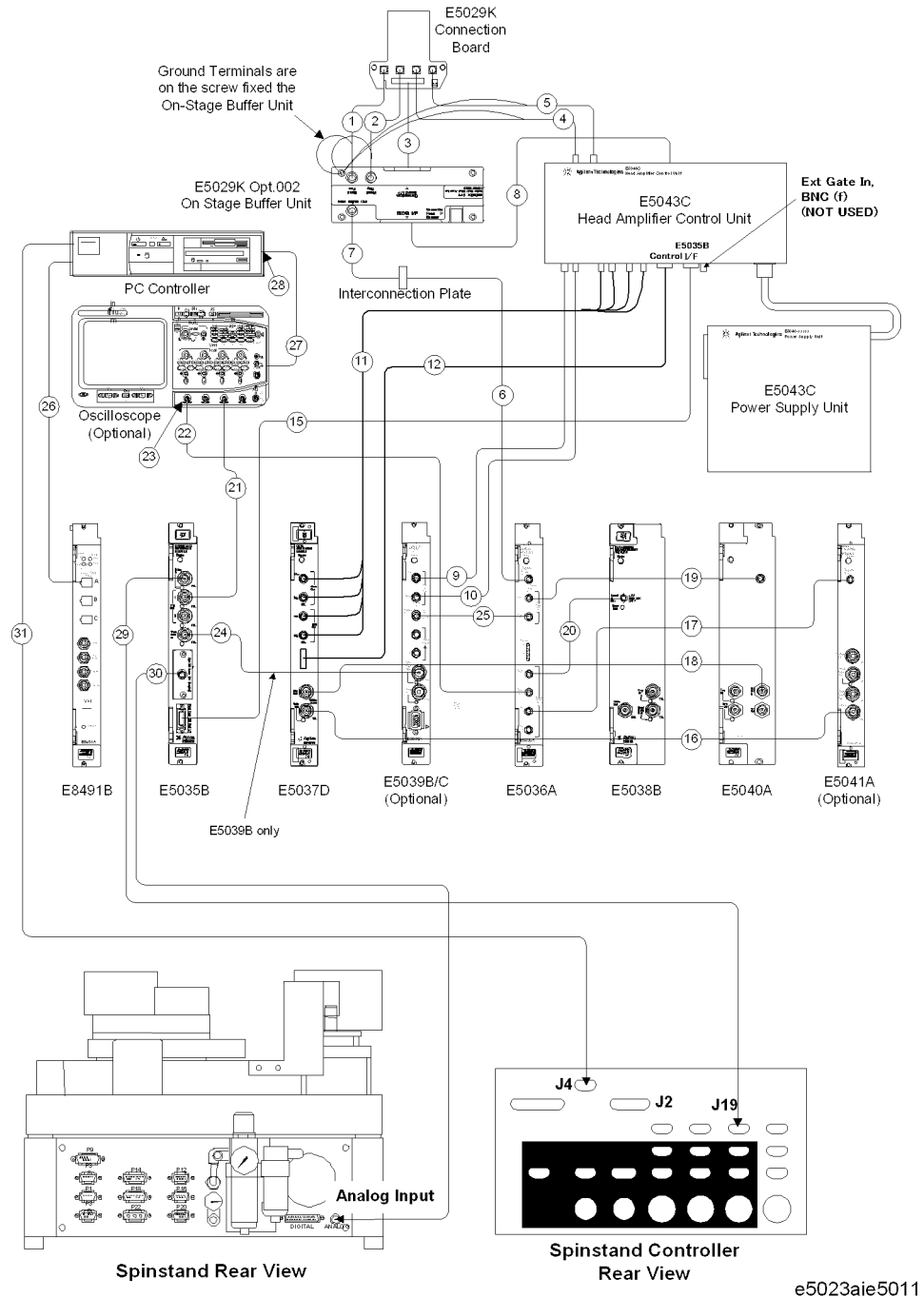
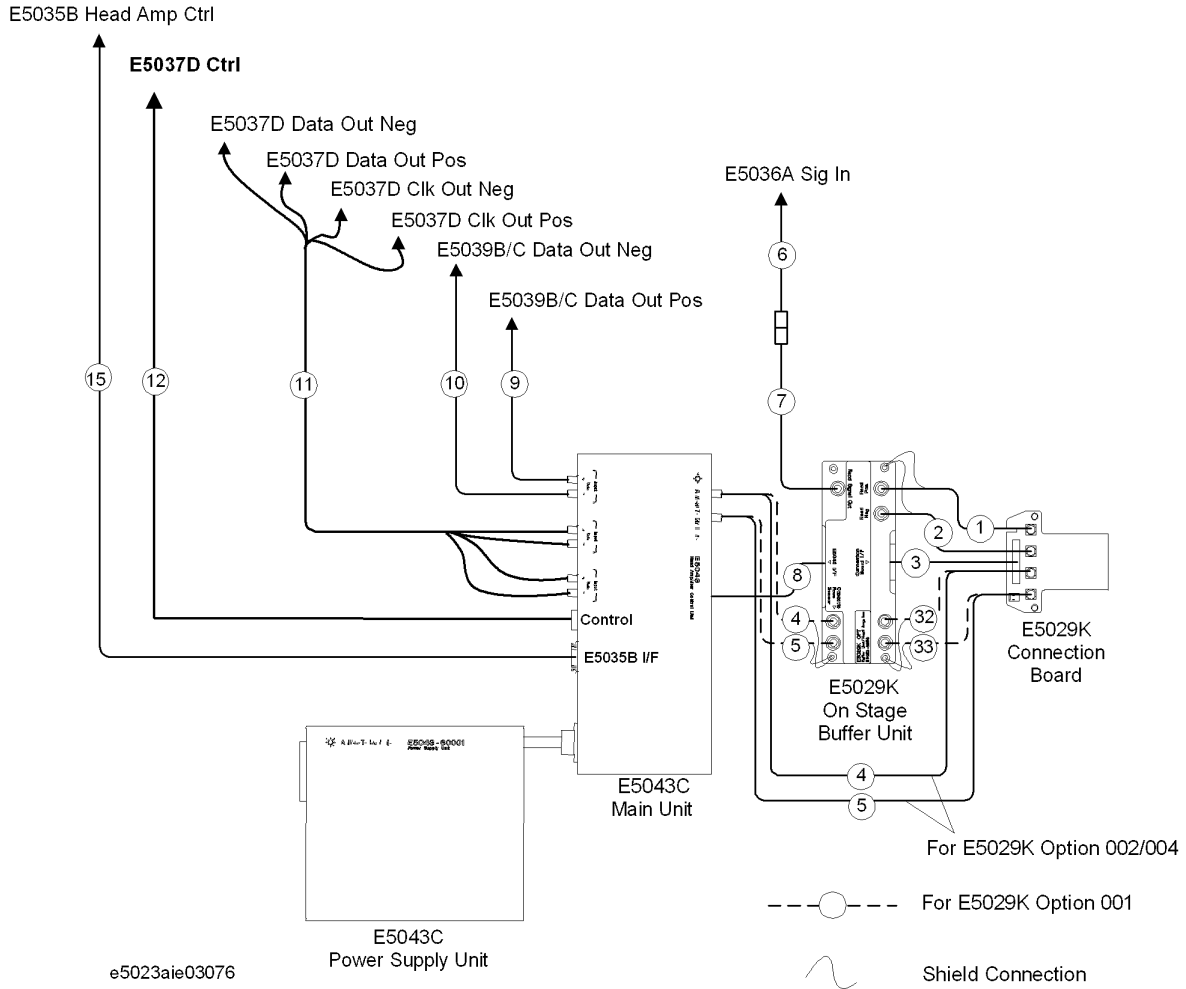


Figure 3-5 shows the cable connection of the head amplifier and the E5043C.

Figure 3-5 Cable Connection of E5023A-426 (2.6 Gbps) (Connection Board, On Stage Buffer Unit, E5043C)



NOTE The locations of connectors on the head amplifier may differ from the figure above depending on the amplifier that you use. Check the connector names printed on the head amplifier when connecting the cables.

Table 3-5 Cable Connection of E5023A Opt. 426 (2.6 Gbps) (VXI Modules)

No.	Description	Connection		Part No.
1	SMA(m)-SMA(m) Cable	E5029K Connection Board "R+"	E5029K Onstage Buffer Unit "R+"	E5029-61601
2	SMA(m)-SMA(m) Cable	E5029K Connection Board "R-"	E5029K Onstage Buffer Unit "R-"	E5029-61602
3	Flat Cable	E5029K Connection Board "Connection Board I/F"	E5029K Connection Board "Cable "	E5029-61608

Installation for E5023A
Connecting Cables

Table 3-5 Cable Connection of E5023A Opt. 426 (2.6 Gbps) (VXI Modules)

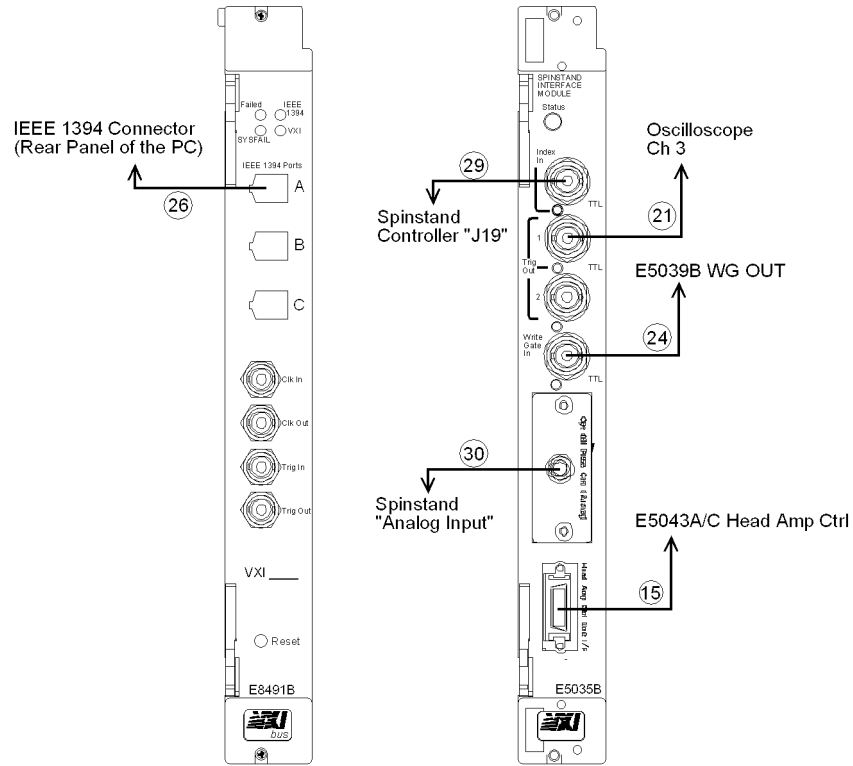
No.	Description	Connection		Part No.
4	SMA(m)-SMA(m) Cable	E5043C "OUT D+"	E5029K "W+"	E5043-61641*1
5	SMA(m)-SMA(m) Cable	E5043C "OUT D-"	E5029K "W-"	E5043-61642*1
6	SMA(m)-SMA(m) Cable	E5036 "Sig In"	"Junction Read Sig"	E5023-61607
7	SMA(m)-SMA(m) Cable	"Junction Read Sig"	E5029K "Read Sig Out"	E5023-61608
8	50P Halfpitch	-	-	E5043-61613
9	SMA(m)-SMA(m) Cable	E5039 "Data Out Pos"	E5043C "Input2 Data+"	E5039-61606
10	SMA(m)-SMA(m) Cable	E5039 "Data Out Neg"	E5043C "Input2 Data-"	E5039-61607
11	SMA(m) - SMA(m) Cable	E5037D "Clk Out Pos"	E5043C "Input Clock+"	E5037-61621*2
		E5037D "Clk Out Neg"	E5043C "Input Clock-"	
		E5037D "Data Out Pos"	E5043C "Input1 Data+"	
		E5037D "Data Out Neg"	E5043C "Input1 Data-"	
12	MDR-MDR Cable	E5037D "Ctrl"	E5043C "Control"	E5043-61622
15	MDR-MDR Cable	E5035 "Head Amp Ctrl"	E5043C "E5035B I/F"	E5023-61605
16	BNC(m)-BNC(m) Cable	E5037D "Gate Out"	E5041A "Trig In"	E5041-61602
17	SMA(m)-SMA(m) Cable	E5036A "Fltrd Out 5"	E5041A "Signal In 50Ω"	E5041-61603
18	BNC(m)-BNC(m) Cable	E5037D "Ref Out"	E5040 "Ext Ref In"	E5023-61606
19	SMA(m)-SMA(m) Cable	E5036 "Thru Out"	Spectrum Ana In	E5023-61611
20	SMA(m)-SMA(m) Cable	E5036 "Filtr'd Out"	E5038 "Signal In"	E5023-61610
21	SMA(m)-SMA(m) Cable	E5035 "Trig Out 1"	Oscillo	E5023-61613
22	BNC(m)-BNC(m) Cable	E5036 "Filtr'd Out"	Oscillo Ch1	E5023-61612
23	SMA(f)-BNC(m) Adapter	-	-	1250-1700
24	BNC(m)-BNC(m) Cable	E5035B "WG IN"	E5039B "WG OUT"	E5039-61609
25	SMA(m)-SMA(m) Cable	E5039 "Signal In"	E5036 "Out2"	E5039-61608
26	IEEE-1394 Cable	IEEE-1394 Port on PCI Board	E8491B "Port A"	8192-8688
27	GPIB Cable, 2m	GPIB Port on PCI Board	54845A/B GPIB port	10833B
28	GPIB Adapter Extender	-	-	10834A
29	BNC(m)-BNC(m) Cable	E5035 "Index In"	Spinstand Index	E5023-61609
30	SMA(m)-SMB(m) Cable	E5035 "Piezo Ctrl"	PZT Ctrl Analog	E5035-61601
31	Serial Cable	PC COM1 Port	Spinstand Serial Port	E5022-61628

*1. E5043-61611 and E5043-61612 were replaced with these E5043-61641 and E5043-61642 respectively in December 2002.

*2. E5037-61621 has to be used as the default 4 cables set, because these length are used in the system calibration data.

Connecting the VXI Modules

Figure 3-6 E8491B/E5035B Cable Connection



e5023ase002

Table 3-6 E8491B/E5035B Cable Connection (VXI Modules)

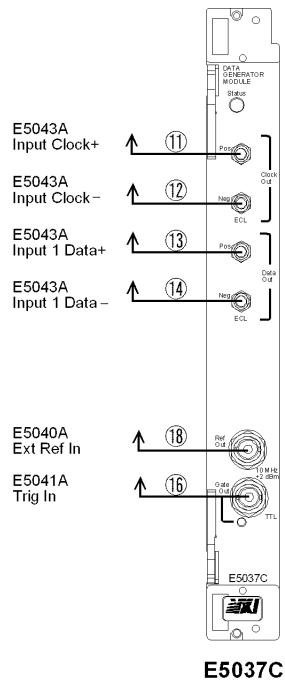
No.	Description	Connection		Part Number
15	MDR-MDR Cable	E5035B "Head Amp Ctrl"	E5043A/C "Head Amp Ctrl"	E5023-61605
21	BNC(m)-BNC(m) Cable	E5035B "Trig Out 1"	Oscilloscope Ch3	E5023-61613
24	BNC(m)-BNC(m) Cable	E5035B "WG IN"	E5039B "WG OUT"	E5039-61609
26	IEEE-1394 Cable	IEEE-1394 Port on PCI Board	E8491B "Port A"	8192-8688
29	BNC(m)-DSUB(f) Cable	E5035B "Index In"	Spinstand Controller "J19"	E5023-61609
30	SMA(m)-BNC(m) Cable	E5035B "Piezo Ctrl"	Spinstand "Analog Input"	E5013-61601

NOTE Any IEEE-1394 port can be used on both E8491B and PC.

Installation for E5023A
Connecting Cables

Figure 3-7

E5037C Cable Connection (for E5023A-415, 1.5 Gbps)



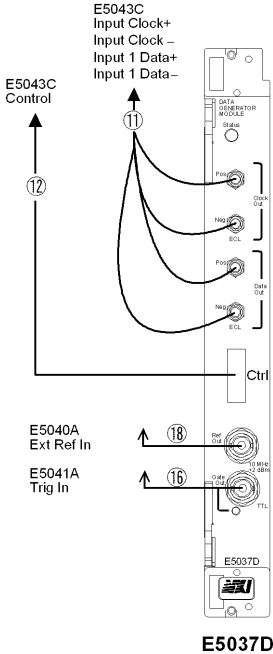
e5023aie-001

Table 3-7

E5037C Cable Connection (for E5023A-415, 1.5 Gbps)

No.	Description	Connection		Part Number
11	SMA(m)-SMA(m) Cable	E5037C “Clk Out Pos”	E5043A “Input Clock+”	E5023-61601
12	SMA(m)-SMA(m) Cable	E5037C “Clk Out Neg”	E5043A “Input Clock-”	E5023-61602
13	SMA(m)-SMA(m) Cable	E5037C “Data Out Pos”	E5043A “Input 1 Data+”	E5023-61603
14	SMA(m)-SMA(m) Cable	E5037C “Data Out Neg”	E5043A “Input 1 Data-”	E5023-61604
16	BNC(m)-BNC(m) Cable	E5037C “Gate Out”	E5041A “Trig In”	E5041-61602
18	BNC(m)-BNC(m) Cable	E5037C “Ref Out”	E5040A “Ext Ref In”	E5023-61606

Figure 3-8 E5037D Cable Connection (for E5023A-426, 2.6 Gbps)



e5023aie-002

Table 3-8 E5037D Cable Connection (for E5023A-426, 2.6 Gbps)

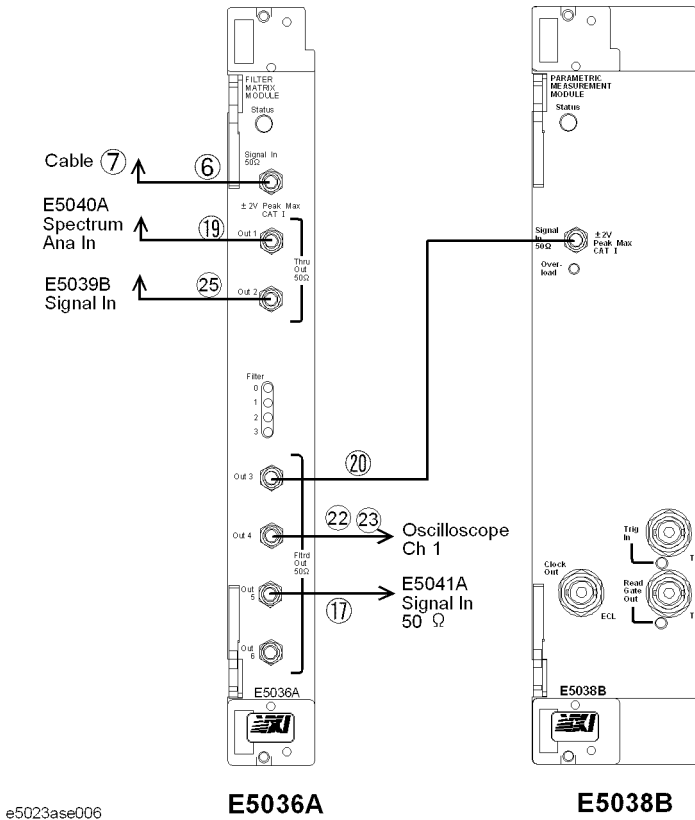
No.	Description	Connection		Part No.
11	SMA(m) - SMA(m) Cable	E5037D "Clk Out Pos"	E5043C "Input Clock+"	E5037-61621 *1
		E5037D "Clk Out Neg"	E5043C "Input Clock-"	
		E5037D "Data Out Pos"	E5043C "Input1 Data+"	
		E5037D "Data Out Neg"	E5043C "Input1 Data-"	
12	MDR-MDR Cable	E5037D "Ctrl"	E5043C "Control"	E5043-61622
16	BNC(m)-BNC(m) Cable	E5037D "Gate Out"	E5041A "Trig In"	E5041-61602
18	BNC(m)-BNC(m) Cable	E5037D "Ref Out"	E5040 "Ext Ref In"	E5023-61606

*1. E5037-61621 has to be used as the default 4 cables set, because these length are used in the system calibration data.

Installation for E5023A
Connecting Cables

Figure 3-9

Cable Connection (E5036A/E5038B)



e5023ase006

Table 3-9 E5036A/E5038B Cable Connection

No.	Description	Connection		Part Number
6	SMA(m)-SMA(m) Cable	E5036A "Sig In"	Cable "7"	E5023-61607
17	SMA(m)-SMA(m) Cable	E5036A "Filtrd Out 5"	E5041A "Signal In 50 Ω"	E5041-61603
19	SMA(m)-SMA(m) Cable	E5036A "Thru Out"	E5040A "Spectrum Ana In"	E5023-61611
20	SMA(m)-SMA(m) Cable	E5036A "Filtrd Out"	E5038B "Signal In"	E5023-61610
22	SMA(m)-SMA(m) Cable	E5036A "Filtrd Out"	Oscilloscope Ch1	E5023-61612
23	SMA(f)-BNC(m) Adapter	-	-	1250-1700
25	SMA(m)-SMA(m) Cable	E5039B/C "Signal In"	E5036A "Out 2"	E5039-61608

Connecting the E5039B Bit Error Test Module (Optional)

NOTE This procedure is needed only if the system is configured with the Agilent E5039B Bit Error Test Module.

Figure 3-10 Cable Connection of the Agilent E5039B (Option)

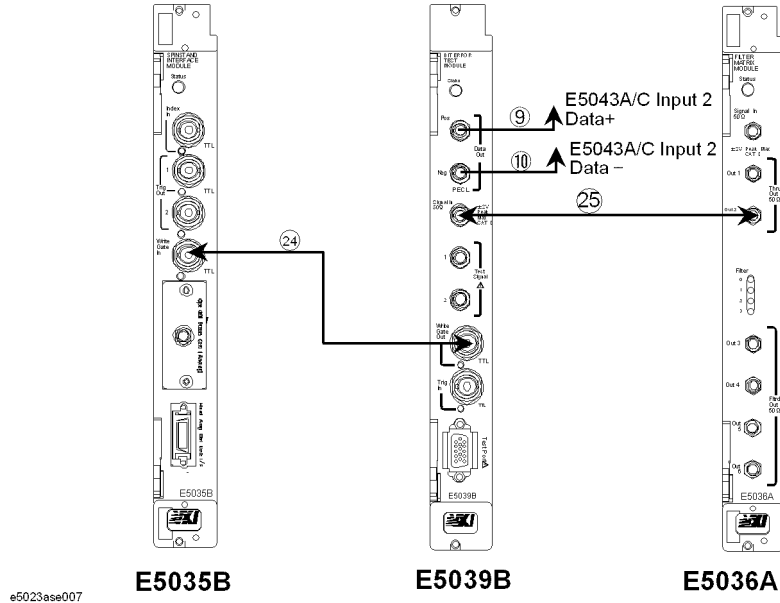


Table 3-10 Cable Connection (E5039B)

No.	Description	Connection		Part Number
9	SMA(m)-SMA(m) Cable	E5039B "Data Out Pos"	E5043A/C "Input 2 Data+"	E5039-61606
10	SMA(m)-SMA(m) Cable	E5039B "Data Out Neg"	E5043A/C "Input 2 Data-"	E5039-61607
24	BNC(m)-BNC(m) Cable	E5035B "WG IN"	E5039B "WG OUT"	E5039-61609
25	SMA(m)-SMA(m) Cable	E5039B "Signal In"	E5036A "Out 2"	E5039-61608

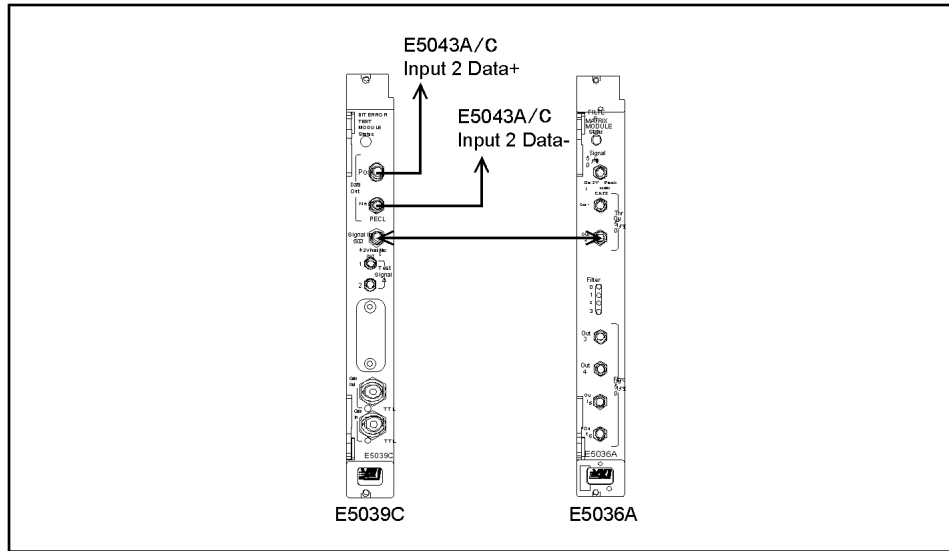
Installation for E5023A
Connecting Cables

Connecting the E5039C Bit Error Test Module (Optional)

NOTE This procedure is needed only if the system is configured with the Agilent E5039C Bit Error Test Module.

NOTE The channel IC board is NOT installed in the Agilent E5039C Bit Error Test Module when the system arrives at the customer’s site. The customer need to install it by himself with referring to the Agilent E5039C Installation manual. After installing it, connect the cables with referring to Figure 3-11.

Figure 3-11 Cable Connection of the Agilent E5039C (Option)



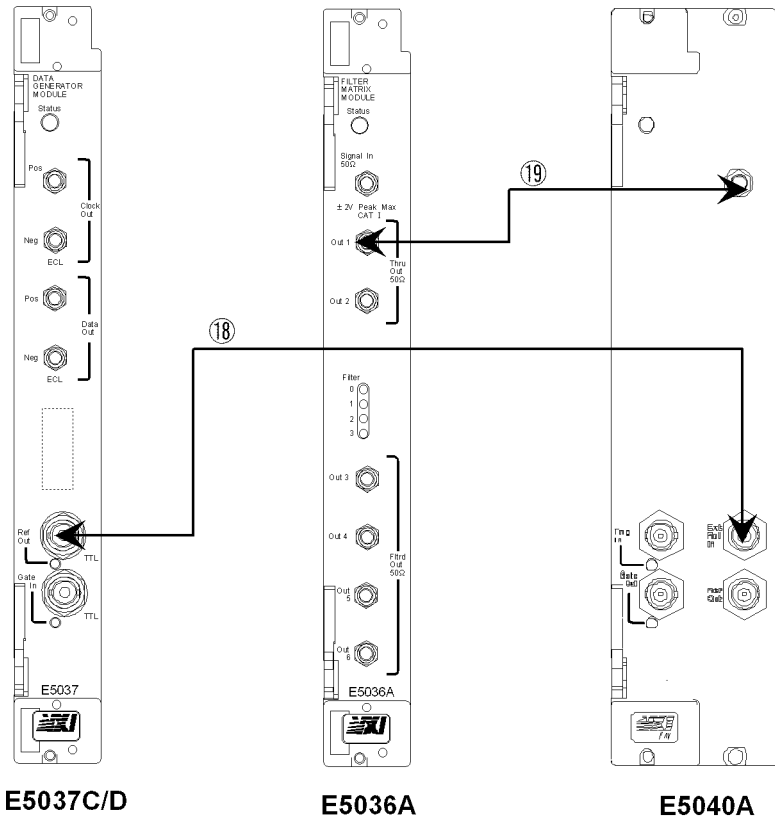
e5023ase090

Table 3-11 Cable Connection (E5039C)

No.	Description	Connection		Part Number
9	SMA(m)-SMA(m) Cable	E5039C “Data Out Pos”	E5043A/C “Input 2 Data+”	E5039-61606
10	SMA(m)-SMA(m) Cable	E5039C “Data Out Neg”	E5043A/C “Input 2 Data-”	E5039-61607
25	SMA(m)-SMA(m) Cable	E5039C “Signal In”	E5036A “Out 2”	E5039-61608

Connecting the E5040A Spectrum Analyzer Module

Figure 3-12 Cable Connection (Spectrum Analyzer Module) (without Option E5023A-300)



e5023ase009

Table 3-12 Cable Connection (E5040A)

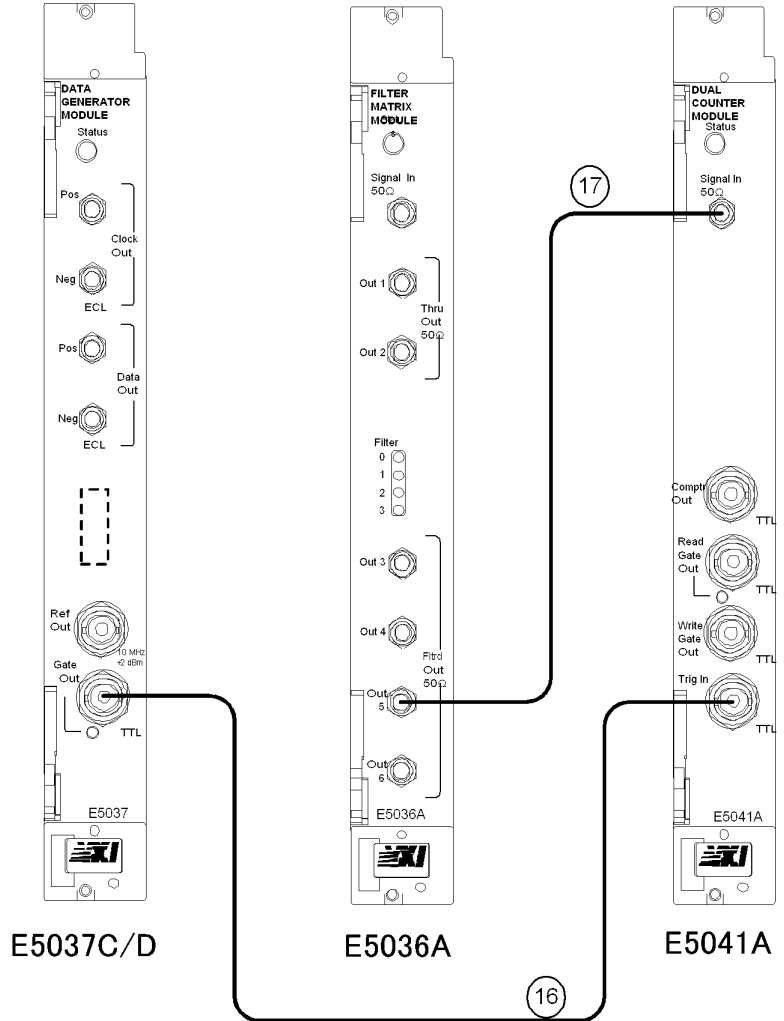
No.	Description	Connection		Part Number
18	BNC(m)-BNC(m) Cable	E5037C/D "Ref Out"	E5040A "Ext Ref In"	E5023-61606
19	SMA(m)-SMA(m) Cable	E5036A "Thru Out"	E5040A "Spectrum Ana In"	E5023-61611

Connecting the E5041A Dual Counter Module (Optional)

NOTE

This procedure is needed only if the system is configured with the Agilent E5041A Dual Counter Module.

Figure 3-13 Cable Connection of the Agilent E5041A (Option)



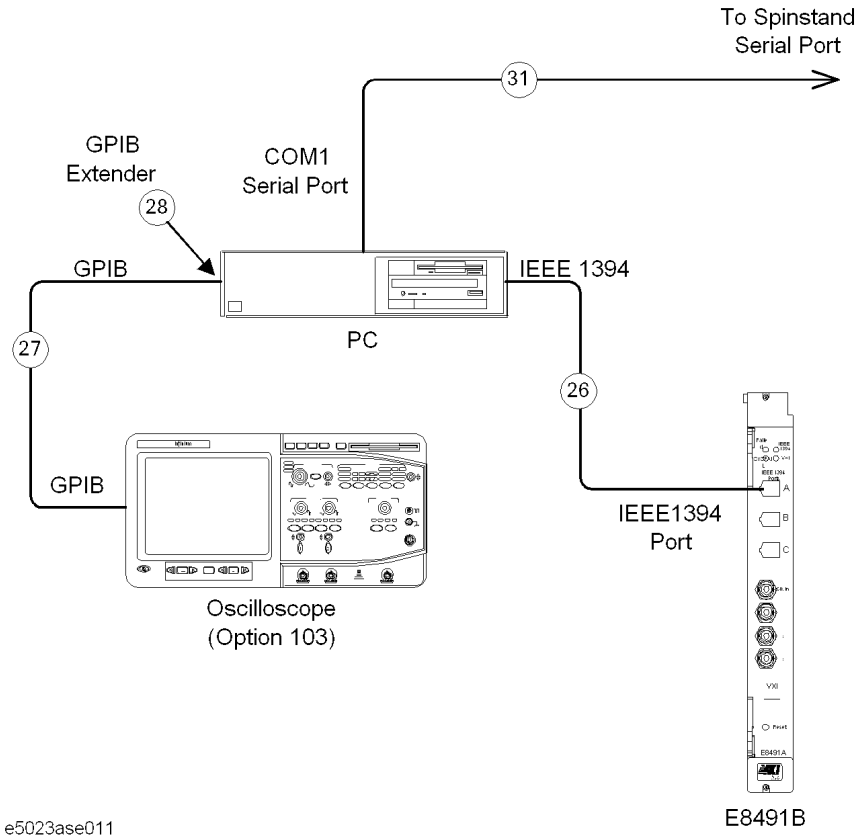
e5023ase008

Table 3-13 Cable Connection (E5041A)

No.	Description	Connection		Part Number
16	BNC(m)-BNC(m) Cable	E5037C/D “Gate Out”	E5041A “Trig In”	E5041-61602
17	SMA(m)-SMA(m) Cable	E5036A “Filtrd Out 5”	E5041A “Signal In 50 Ω”	E5041-61603

Connecting the PC

Figure 3-14 Cable Connection (PC) (without Option E5023A-300)



e5023ase011

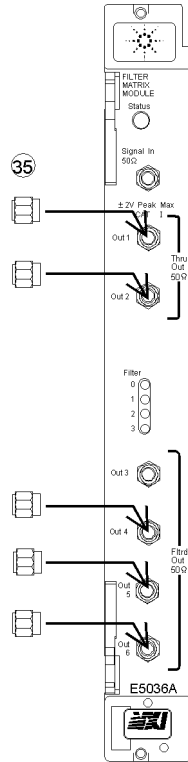
Table 3-14 Cable Connection (IEEE 1394, Serial Cable, GPIB)

No.	Description	Connection		Part Number
26	IEEE-1394 Cable	IEEE-1394 Port on PCI Board	E8491B "Port A"	8192-8688
27	GPIB Cable, 2m	GPIB Port on PCI Board	54845A/B GPIB Port	10833B
28	GPIB Adapter Extender	-	-	10834A
31	Serial Cable	PC COM1 Port	Spinstand Serial Port	E5022-61628

Installation for E5023A
Connecting Cables

Terminating unused connectors

Figure 3-15 **Terminator Connection**



e5023aie03005

Table 3-15 **Terminator Connection**

No.	Description	Connection		Part Number
35	50 Ω Terminator	-	-	1810-0118

Connecting the Oscilloscope (Optional)

Connect the oscilloscope as follows.

Connecting for Option 103

Connect the cables for option 103 (8 GSa/s Oscilloscope) as shown in Figure 3-16 and Table 3-16.

Figure 3-16 Cable Connection (Option 103)

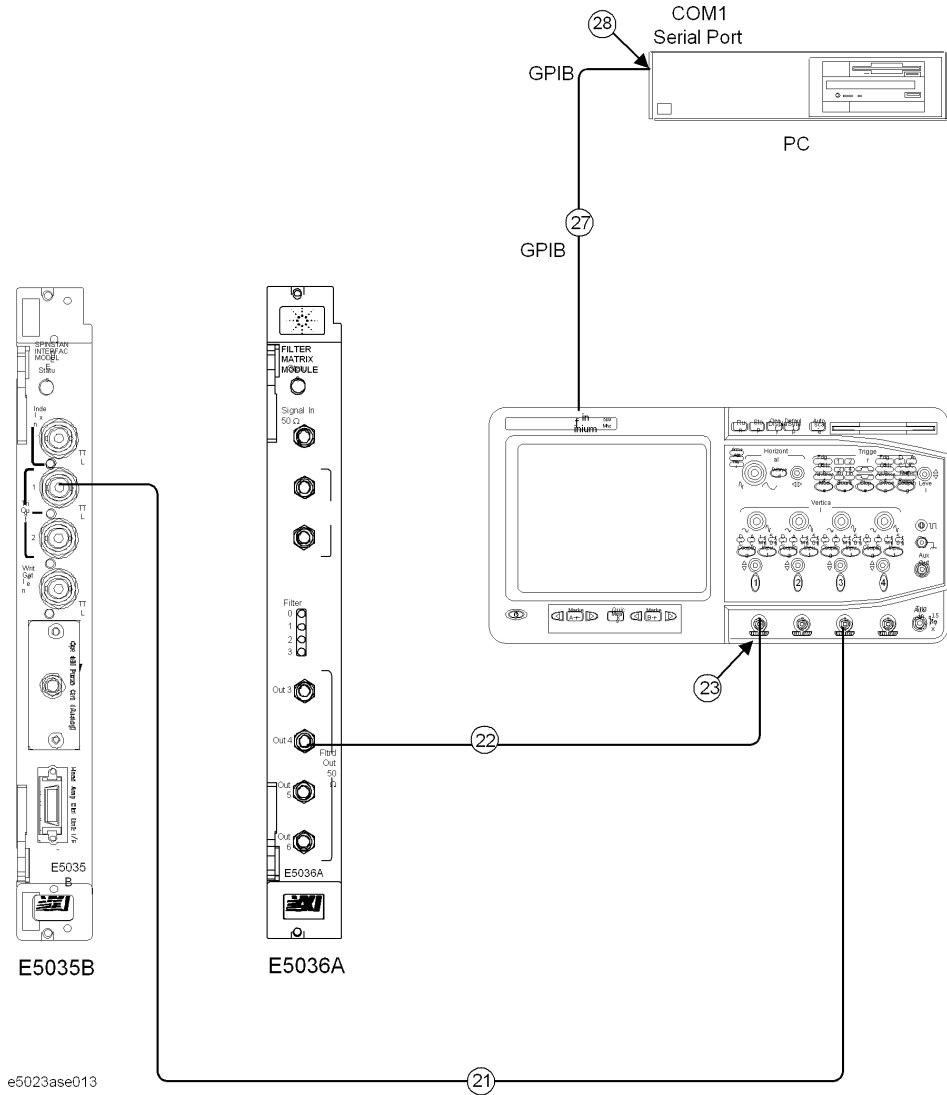


Table 3-16 Cable Connection (Option 103)

No.	Description	Connection		Part Number
21	BNC(m)-BNC(m) Cable	E5035B "Trig Out 1"	54845A/B (Oscilloscope) Ch3	E5023-61613
22	SMA(m)-SMA(m) Cable	E5036A "Filtrd Out 4"	54845A/B (Oscilloscope) Ch1	E5023-61612

Installation for E5023A
Connecting Cables

Table 3-16 Cable Connection (Option 103)

No.	Description	Connection		Part Number
23	SMA(f)-BNC(m) Adapter	-	-	1250-1700
27	GPIB Cable, 2m	GPIB Port on PCI Board	54845A/B GPIB Port	10833B
28	GPIB Adapter Extender ^{*1}	-	-	10834A

*1. The GPIB Extender is used if the GPIB connector is difficult to connect to the PC when the PC's rear panel is sunk.

NOTE

Store the terminators you removed from the Agilent E5035B to mount the oscilloscope in a safe place for future use.

Procedure to Connect the GPIB

- Step 1.** Connect a GP-IB extender adapter to the GPIB connector of the PC.
- Step 2.** Connect the PC and the oscilloscope with a GPIB cable.

Connecting the 3 GHz Spectrum Analyzer (Option)

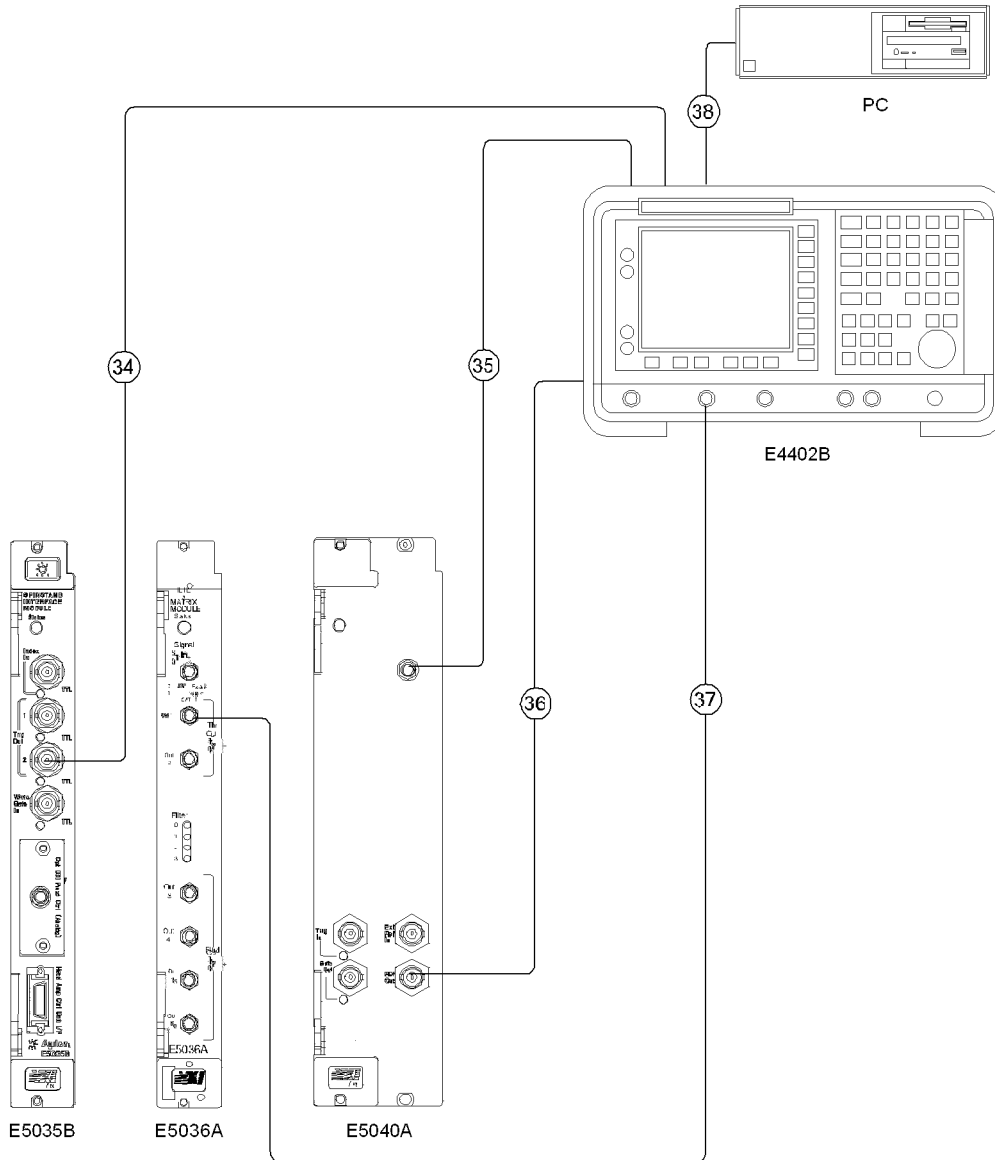
Connect the 3 GHz Spectrum Analyzer as follows.

Connecting Option 300

Connect the cables for option 300 (3 GHz Spectrum Measurement Capability) as shown in Figure 3-17 and Table 3-17.

Installation for E5023A
Connecting the 3 GHz Spectrum Analyzer (Option)

Figure 3-17 Cable Connection (Option 300)



e5023ase0102

Table 3-17 Cable Connection (Option 300)

No.	Description	Connection		Part Number
34	BNC(m)-BNC(m) Cable, 2.3 m	E5035B "Trig Out 2"	E4402B "Gate Trig / Ext. Trig In"	E5023-61615
35	BNC(m)-SMA(m) Cable, 2.3 m	E5040A "Signal In"	E4402B "Aux IF Out"	E5023-61618
36	BNC(m)-BNC(m) Cable, 2.3 m	E5040A "Ref. Out"	E4402B "10 MHz Ref in"	E5023-61616
37	SMA(m)-SMA(m) Cable, 0.6 m	E5036A "Thru Out 1"	E4402B "Input"	E5023-61617

Table 3-17 Cable Connection (Option 300)

No.	Description	Connection		Part Number
38	GPIB Cable, 2 m	GPIB Port on PCI Board	E4402B "GPIB"	10833B

Connecting the GPIB

- Step 1.** Connect a GP-IB extender adapter to the GPIB connector of the PC.
- Step 2.** Connect the PC and the E4402B with a GPIB cable.

Setting Line Voltage

This section describes line voltage settings for the instruments. If you use the system without changing the original specification at your purchase, there is no need to set the voltage.

Setting Line Voltage for the Instruments

All instruments (including optional oscilloscopes) except the PC and its monitor have automatic voltage setting capability. Therefore, there is no need to set their line voltage. The line voltage to the PC and its monitor should be set correctly according to the documents that come with the equipment.

Setting Line Voltage for the System Rack

The PDU (Power Distribution Unit) inside the system rack is equipped with the plug that meets the specification of your order. Contact your local Agilent Technologies Sales Office if you want to change the PDU.

4 Installation for E5010C

This chapter describes how to install the Agilent E5010C Spinstand.

Overview

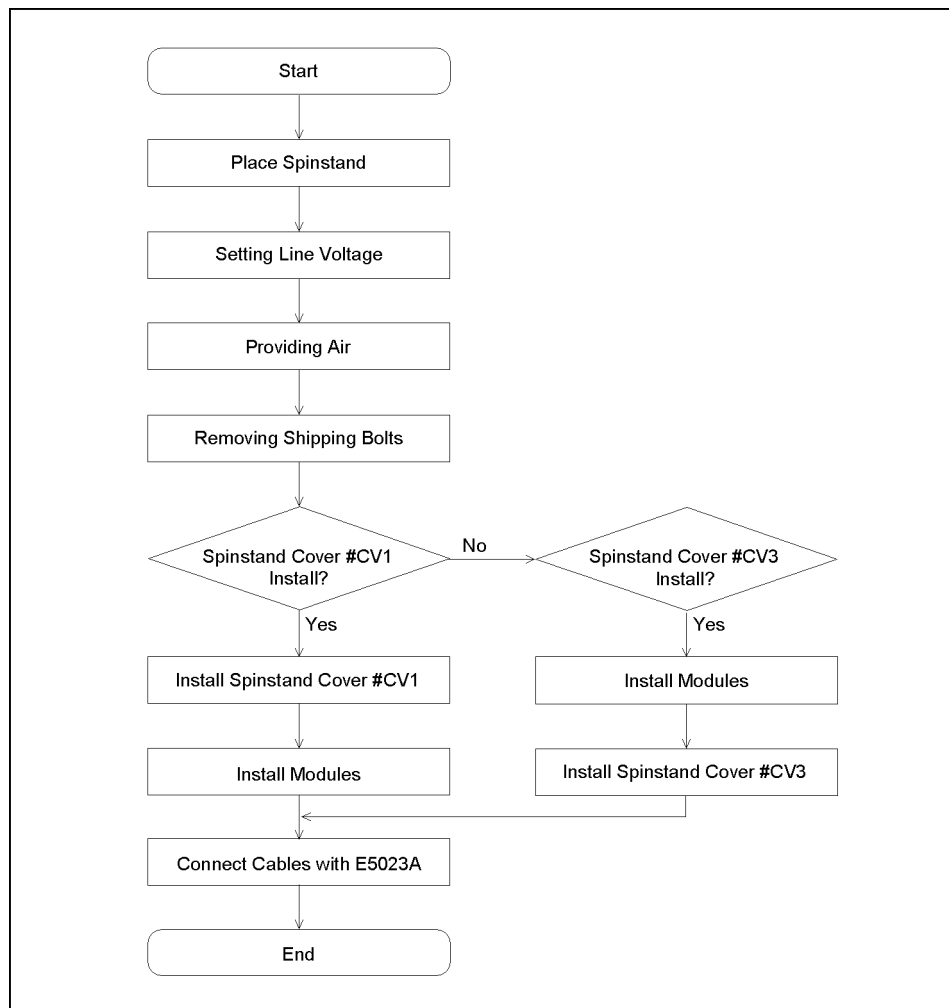
This section describes the installation of the Agilent E5010C Spinstand.

Install the E5010C with referring to Figure 4-1.

NOTE

Before installing the E5010C, you should decide your installation site, prepare its environment, carry in the product, and check the contents of the package. This section is written, assuming that these preparations and checks are completed. For details, refer to Chapter 2, “Site Preparation.”

Figure 4-1 E5010C Installation Flow



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Place the Spinstand

CAUTION

Do not push a granite bed when carrying the spinstand. Push a frame from rear side or pull handles on the front panel of the spinstand. Pushing the granite bed may cause getting out of joint.

Release the Granite Bed

To prevent from being damaged during transportation, the spinstand is shipped with its various parts fixed. Release those parts as follows, and then set up the spinstand.

CAUTION

Do not move the spinstand as much as possible after removing the shipping bolts from the granite bed.

The granite bed which is located on the top of the spinstand is fixed to the spinstand frame with four bolts as shown in Figure 4-2. Loosen the bolts by following these steps.

Tools Required

- Phillips P2 driver
- 11/16" wrench (less than 10 mm thick)
- 5/16" hex key

Installation for E5010C
Place the Spinstand

Procedure

Step 1. Remove side panels on both sides of the spinstand with a Phillips P2 driver.

Figure 4-2 Locations of the Granite Bed Fixing Bolts (Top View)

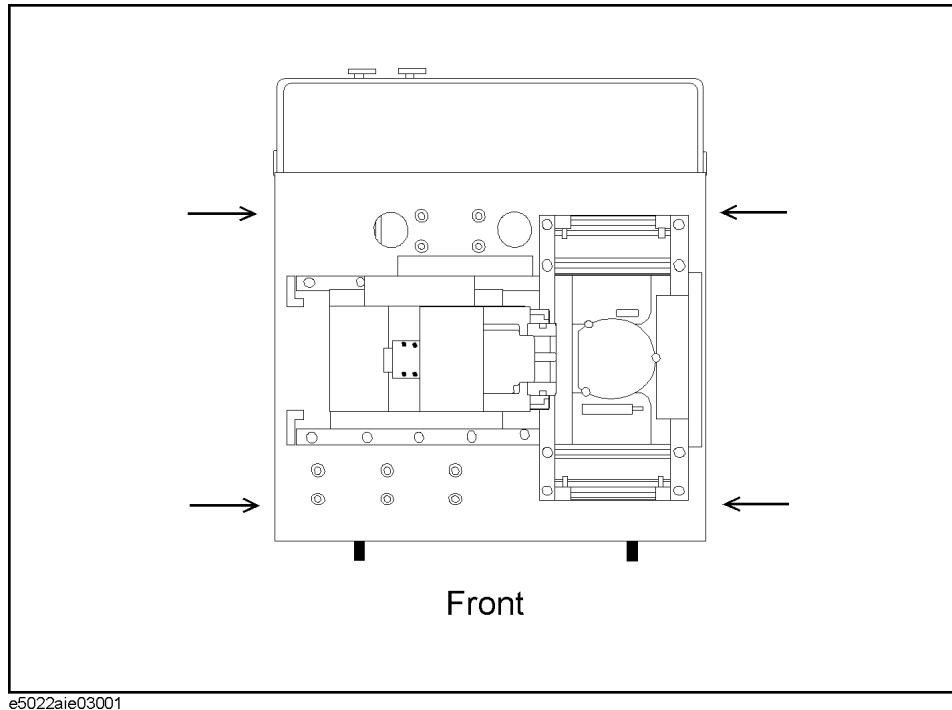
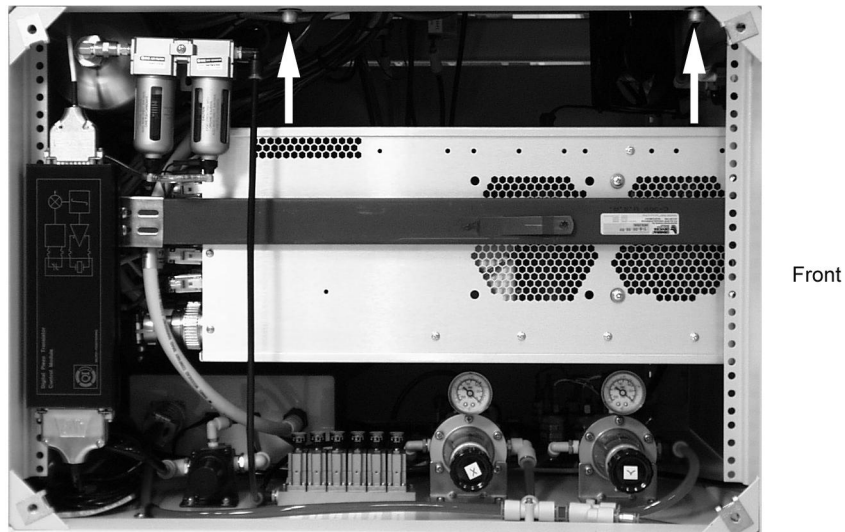


Figure 4-3 Locations of the Granite Bed Fixing Bolts (Side View)



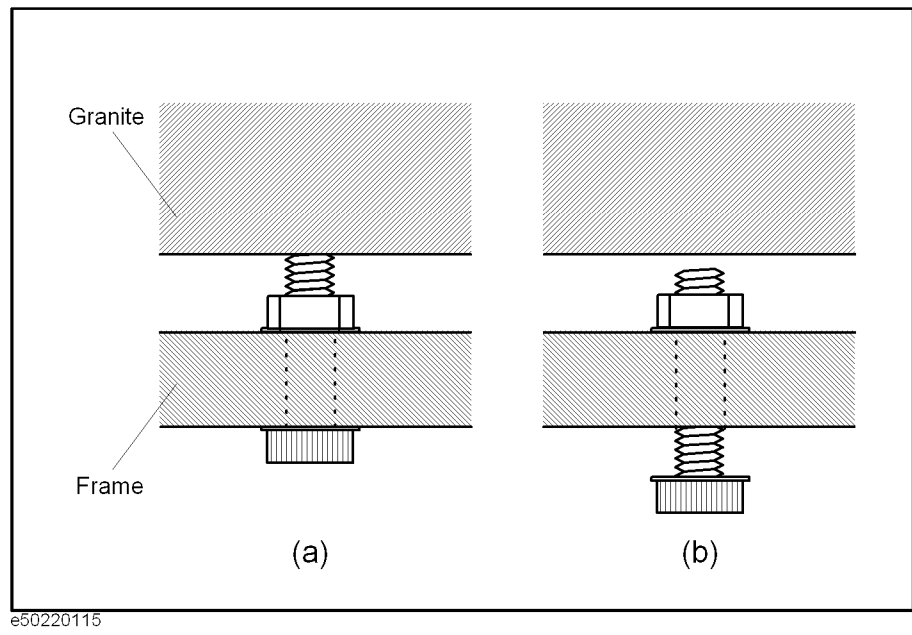
Step 2. Loosen a nut which locks the bolt to the spinstand frame using a 11/16" wrench.

Step 3. Holding the nut not to rotate with the wrench, rotate the bolt about 1 cm away with a 5/16" hex key to release the granite bed from the spinstand frame.

NOTE Do not remove away the bolt from the granite bed. If removed, the bed will drop off from the joint.

Step 4. Lock the nut to the granite bed side to fix the bolt as shown in Figure 4-4 (b).

Figure 4-4 **Tighten and Loosen the Bolt**



Step 5. Repeat the above steps for the rest of three bolts.

Step 6. Restore the side panels on the spinstand.

Fixing the Spinstand

Follow these steps to fix the spinstand feet shown in Figure 4-5.

Tools Required

- Level
- Large monkey wrench
- 9/16" Wrench

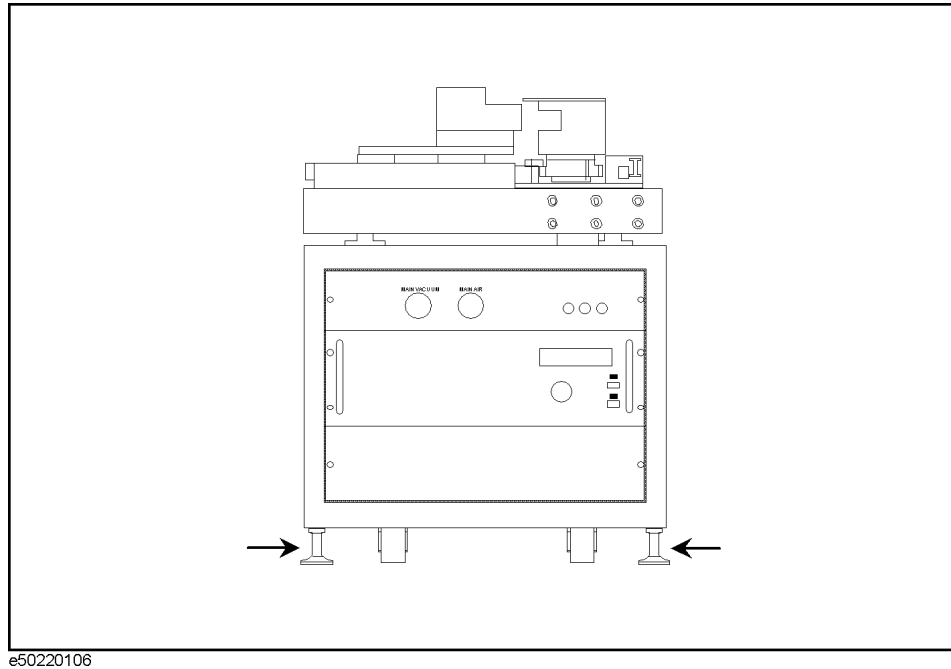
Procedure

Step 1. Loosen securing nuts of the spinstand feet with a large monkey wrench.

Installation for E5010C
Place the Spinstand

Figure 4-5

Leveling the spinstand



- Step 2.** Using your fingers but not any tools, turn counterclockwise each spinstand foot to extend it until reaching the floor.
- Step 3.** Put a level on the granite bed in parallel position to the front panel.
- Step 4.** Extend two front feet about 1 cm maintaining horizontal level using a 9/16" wrench.
- Step 5.** Change the level direction to orthogonal position to the front panel.
- Step 6.** Extend one of the rear feet until the level is horizontally adjusted using the wrench.
- Step 7.** Using your fingers but not the wrench, extend the last rear foot until it reaches the floor.
- Step 8.** Check that all the feet evenly support the load
- Step 9.** Secure the feet by the securing nuts with the large monkey wrench.

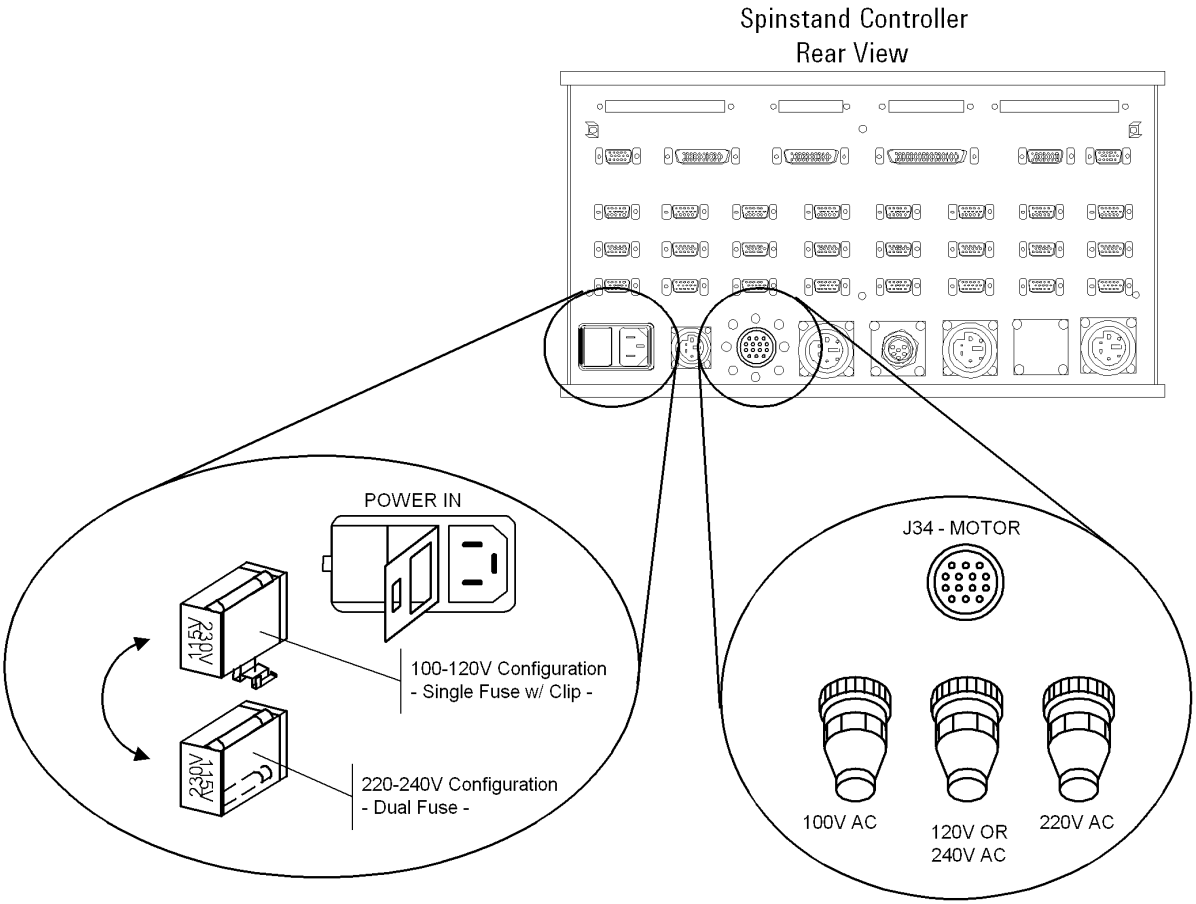
Setting Line Voltage

The line voltage to the spinstand is set by a combination of the fuse holder and the voltage setting plug. Refer to Table 4-1 to set a correct combination.

Table 4-1 Line Voltage Settings

Line Voltage (Nominal)	Applicable Voltage Range	Fuse Holder Direction	Fusing	Applicable Voltage Plug
100 Vac	87 - 110 Vac	“115V”	1×15 A	“100V AC”
120 Vac	104.4 - 132 Vac	“115V”	1×FUSE CLIP	“120 OR 240V AC”
220 Vac	191.4 - 242 Vac	“230V”	2×8 A	“220V AC”
230/240 Vac	207 - 264.5 Vac	“230V”		“120 OR 240V AC”

Figure 4-6 Setting Line Voltage for the Spinstand



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Installation for E5010C
Setting Line Voltage

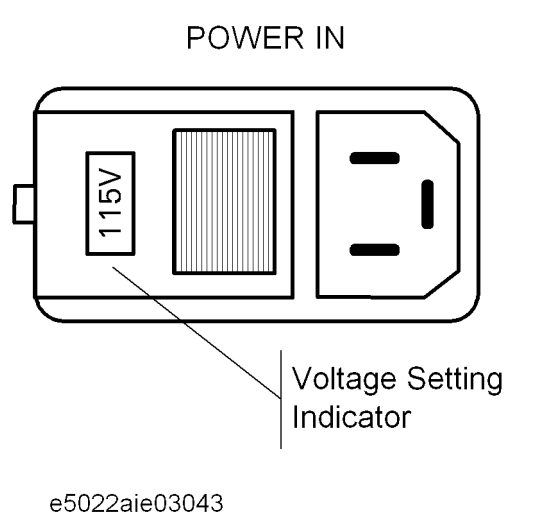
Setting the Fuse Holder

Open the rear panel of the spinstand and check the voltage setting indicator on the POWER IN connector as shown in Figure 4-7.

If the indication does not match with your line voltage, follow these steps to change the fuse box.

Figure 4-7

Voltage Setting Indicator on POWER IN Connector



Procedure to Set to 115 V

- Step 1.** Open the rear panel of the spinstand.
- Step 2.** Remove the power cable from the spinstand controller.
- Step 3.** Open the fuse box cover.
- Step 4.** Attach the fuse clip to the fuse box and insert a 15-ampere fuse.
- Step 5.** Close the cover.
- Step 6.** Plug in the power cable.

Procedure to Set to 230 V

- Step 1.** Open the rear panel of the spinstand.
- Step 2.** Remove the power cable from the spinstand controller.
- Step 3.** Open the fuse box cover.
- Step 4.** Remove the fuse clip from the fuse box and insert two 8-ampere fuses.
- Step 5.** Close the cover.
- Step 6.** Plug in the power cable.

Setting the Voltage Setting Plug

There are three types of voltage setting plugs.

Procedure

- Step 1.** Open the rear panel of the spinstand.
- Step 2.** Check that a correct plug that meets your power supply is plugged in at the J34 MOTOR connector of the spinstand controller. If the plug is not correct, replace it with a correct one. See Figure 4-6 to find the connector location.

Providing Air

The spinstand requires two kinds of air lines: compressed air and drawing air (vacuum). The compressed air is used for the air bearing of the air spindle, floating air stages, generating vacuum air for the disk clamp, and loading/unloading head. The vacuum air is used to lock down the air stages, and to lock down the piezo to the cassette block.

CAUTION Do not turn on the compressed air and vacuum air valves until removing shipping bolts.

NOTE Procedures for connecting air lines described in this document assumes that all the facilities required for the lines are prepared at the installation site. For details on air equipment, refer to Chapter 2, "Site Preparation."

NOTE Make sure that air is operated within the limits of system use. Failure to do so could result system malfunction and unwanted accident.

Specification of Compressed Air

Use compressed air that meets the following specification.

Table 4-2 Specification of Compressed Air

Air Pressure Range	0.72 MPa to 0.83 MPa (105 psi to 120 psi)
Temperature Range	Room temperature $\pm 2.8^{\circ}\text{C}$ (Room temperature $\pm 5^{\circ}\text{F}$)
Minimum Flow Rate	$0.65 \times 10^{-3} \text{ m}^3/\text{s}$ (1.37 scfm)
Tube Diameter	3/8 inch or 9.5 mm ^{*1}

*1. Use an adapter tube (Agilent p/n E5010-60004) furnished with the system to connect a 10-mm tube.

Specification of Vacuum

Use vacuum that meets the following specification.

Table 4-3 Specification of Vacuum

Minimum Air Pressure	-70 kPa (-20.5 inHg) or below
Minimum Flow Rate	$0.22 \times 10^{-3} \text{ m}^3/\text{s}$ (0.47 scfm)
Tube Diameter	3/8 inch or 9.5 mm ^{*1}

*1. Use an adapter tube (Agilent p/n E5010-60004) furnished with the system to connect a 10-mm tube.

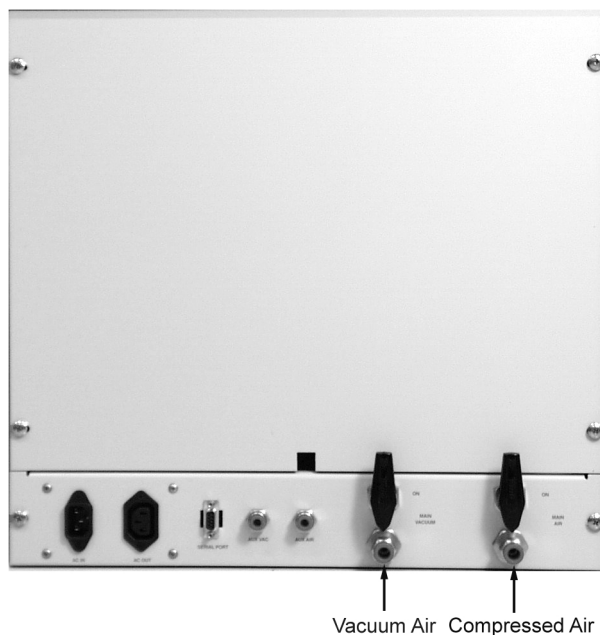
Connecting Air Tubes

Procedure

Follow steps below to connect the air tubes.

- Step 1.** Connect the compressed air tube to the air connector marked “MAIN AIR” on the rear panel of the spinstand.
- Step 2.** Connect the vacuum air tube to the air connector marked “MAIN VACUUM” on the rear panel of the spinstand.

Figure 4-8 Air Tube Connection



NOTE

The spinstand air connectors fit 3/8 inch air tubes. Using the adapter tube furnished with the system (Agilent p/n E5010-60004) allows you to connect them 10-mm air tubes.

- Step 3.** Turn both MAIN AIR and MAIN VACUUM valves on.
- Step 4.** Confirm the reading of the main air gauge which is on the front panel is within the range shown in Table 4-2.
- Step 5.** Confirm the reading of the vacuum gauge on the front panel is within the range shown in Table 4-3.

Removing Shipping Bolts

After placing the E5010C, remove the shipping bolts and connect some cables with referring to procedure below.

Tools Required

- T10 TORX driver
- 1.5 mm hex key
- 5/32" hex key
- Connector monkey wrench
- Torque limiting wrench
- Diagonal cutting plier

Procedure

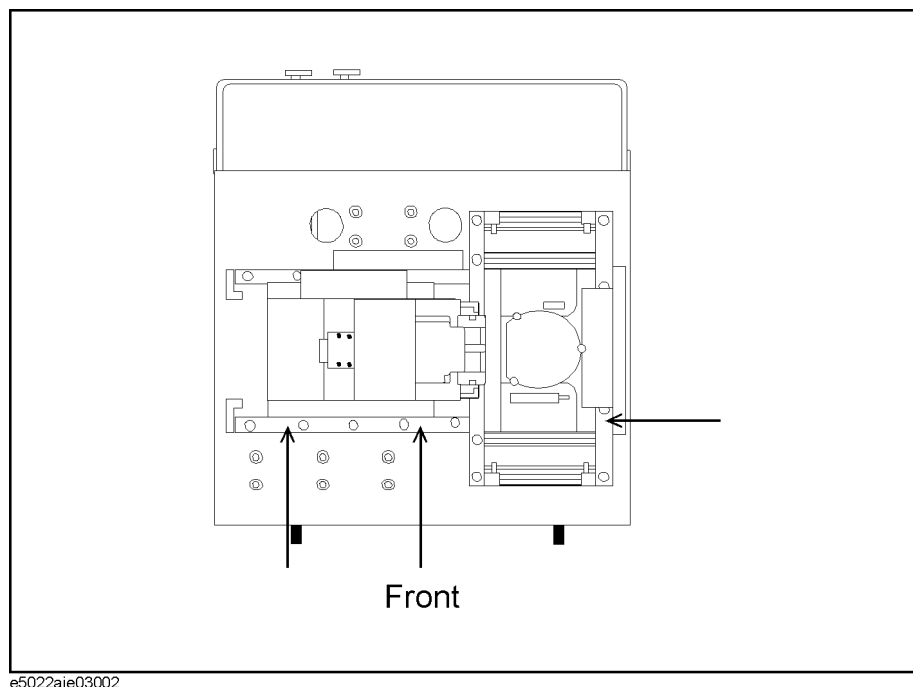
Removing the Air Stage Securing Screws

CAUTION

Do not move the spinstand as much as possible after removing the shipping screws from the air stages.

- Step 1.** Remove three screws that secure the air stages with a 5/32" hex key. The air stages are secured at the points shown in Figure 4-9.

Figure 4-9 Locations of the Air Stage Fixing Screws



NOTE Store the screws in a safe place. They will be used to secure the air stages again when you send back it for repairing or relocate the system.

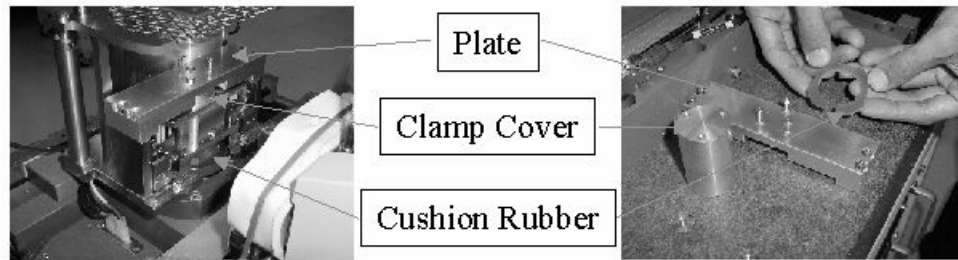
Release the Spindle

NOTE Do not rotate the spindle without providing compress air to the spinstand.

Follow the procedure below to remove the following three items as shown in Figure 4-10 to release the Spindle.

Figure 4-10

Release the Spindle



Step 1. Loosen three screws on the plate with a connector monkey wrench.

Step 2. Loosen four screws that fix the plate with T10 TORX driver.

Step 3. Remove the plate.

Step 4. Remove the clamp cover.

Step 5. Remove the cushion rubber.

NOTE Store the these parts in a safe place. They will be used to secure the spindle, when you send back the spinstand for repairing or relocate it

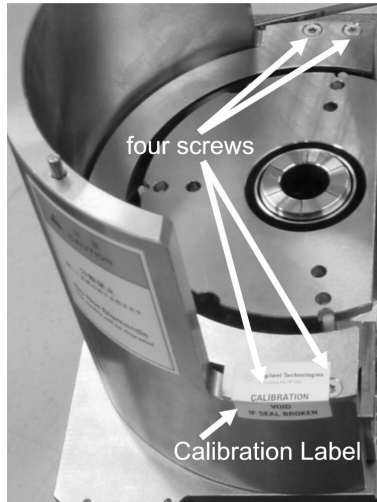
Attach the Covering Plate to the Media Support

Follow the procedure to attach the covering plate to the media support to protect it.

Step 1. Place the covering plate on the media support, and fix it by four screws with T10 TORX driver as shown in Figure 4-11.

Installation for E5010C
Removing Shipping Bolts

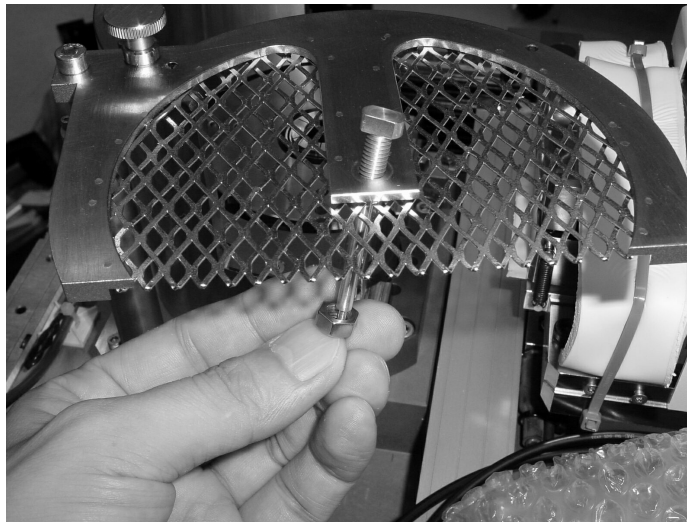
Figure 4-11 **Covering Plate and Calibration Label**



Step 2. Install the calibration label on the screws as shown in Figure 4-11.

Step 3. Remove the nut from the centering pin, and insert the centering pin into the top cover of shroud as shown in Figure 4-12.

Figure 4-12 **Inset the Centering Pin**



Step 4. Fix the nut to fix the centering pin to the shroud with small monkey wrench.

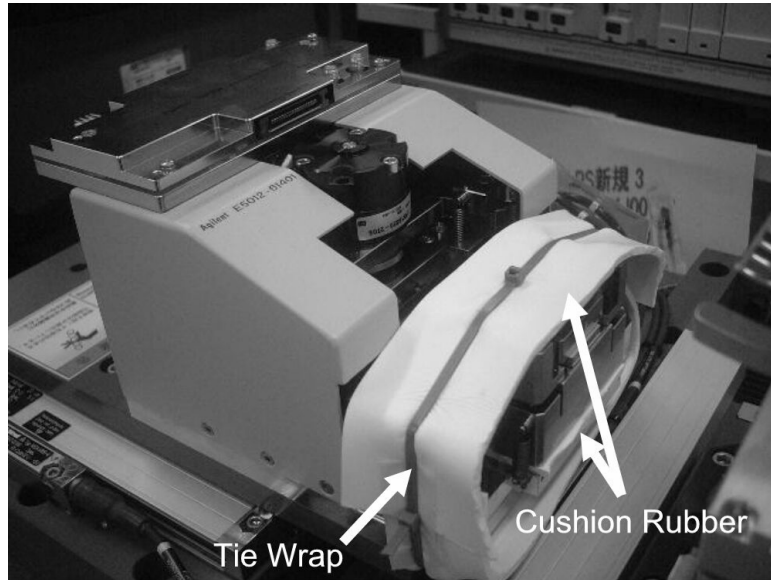
Release the HLM and Connect the Cables

Follow the procedure below to release the cassette attachment block since it is fixed to the HML to protect piezo stage from unexpected damage.

Step 1. Cut the tie-wrap as shown in Figure 4-13.

Figure 4-13

Release the HLM



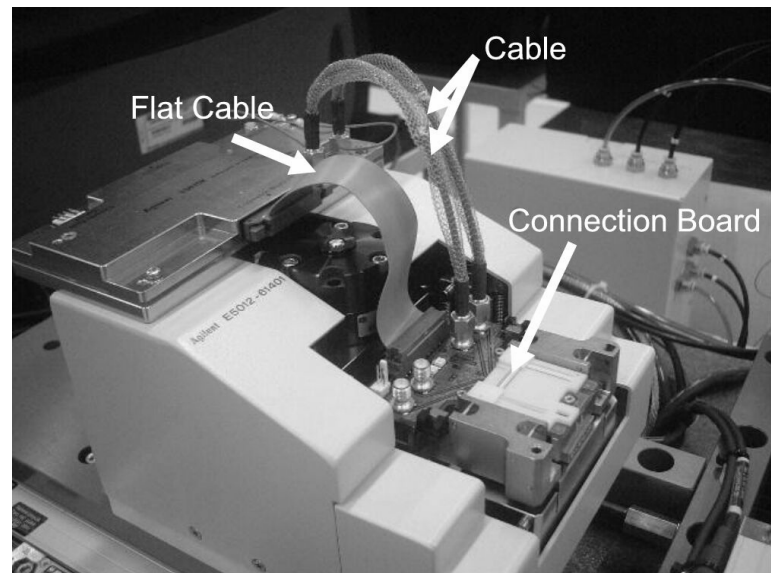
Step 2. Remove the cushion rubbers as shown in Figure 4-13.

Step 3. Tighten the four screws to attach the HLM front cover with T10 TORX driver.

Step 4. Tighten the three screws to attach the E5029K Connection Board with 1.5 mm hex key as shown in Figure 4-14.

Figure 4-14

Connection Board and Cables



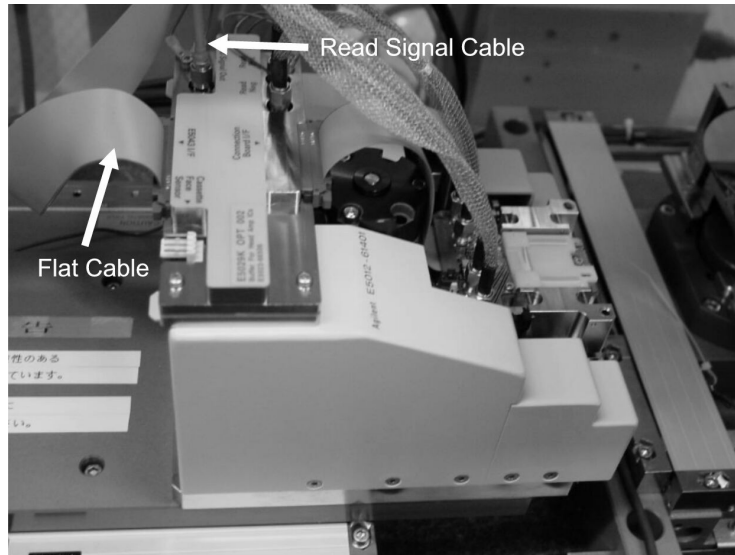
Step 5. Connect a “R+” cable and a “R-” cable (item 1 and 2 in Figure 3-3) between the E5029K On Stage Buffer Unit and the E5029K Connection Board as shown in Figure 4-14. The ground terminals are on the screws fixed the On Stage Buffer Unit.

Step 6. Connect the flat cable (item 3 in Figure 3-3) between the E5029K On Stage Buffer Unit and the E5029K Connection Board as shown in Figure 4-14.

Installation for E5010C
Removing Shipping Bolts

- Step 7.** In case of the E5029K Option 001, connect the four cables (item 4, 5, 32 and 33 in Figure 3-3) to the E5029K. The ground terminals are on the screws fixed the On Stage Buffer Unit.
- Step 8.** In case of the E5029K Option 002/004, connect the two cables (item 4 and 5 in Figure 3-3) to the E5029K Connection Board.
- Step 9.** Connect a flat cable (item 8 in Figure 3-3) and a read signal cable (item 7 in Figure 3-3) to the E5029K On Stage Buffer Unit as shown in Figure 4-15.

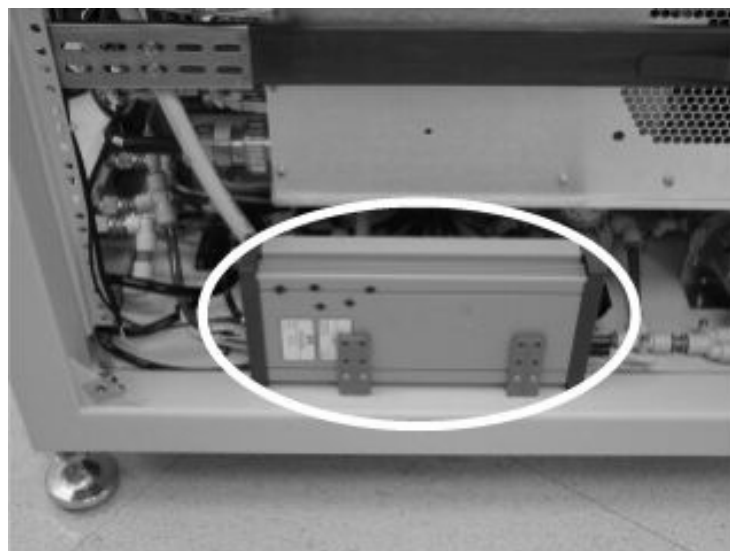
Figure 4-15 Flat Cable and Read Signal Cable



Place the Piezo Controller

- Step 1.** Place the piezo controller with the brackets since it is shipped separately to protect it from unexpected damage as shown in Figure 4-16. Then connect the all cables to it.

Figure 4-16 Place the Piezo Controller

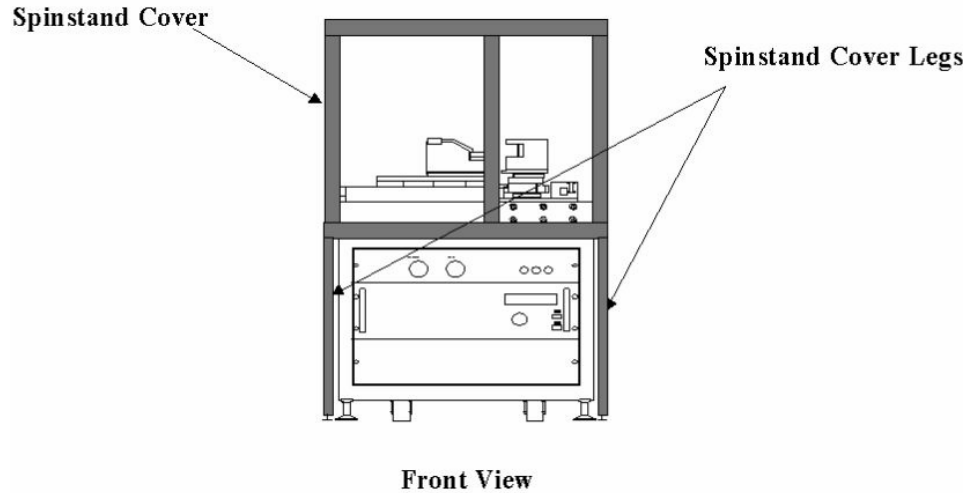


Install the Spinstand Cover (Option CV1)

In case of the spinstand cover CV1, install the spinstand cover with referring to procedure below.

Figure 4-17

Spinstand Cover (Option CV1)



Tools Required

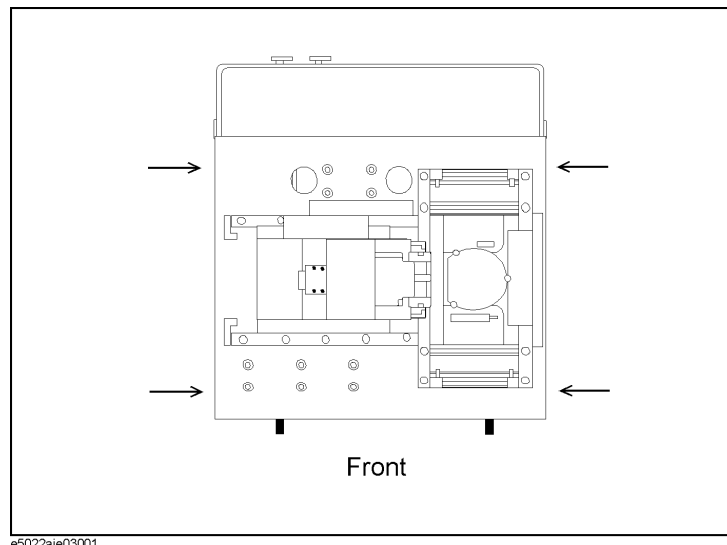
- 3/16" hex key

Procedure

Step 1. Fix the four brackets to the spinstand frame as shown in Figure 4-18.

Figure 4-18

Fix the Four Bracket



Installation for E5010C
Install the Spinstand Cover (Option CV1)

Step 2. Fix the bracket to the spinstand frame by turning a knob as shown in Figure 4-19 and Figure 4-20.

Figure 4-19 Fix the Bracket (1/2)

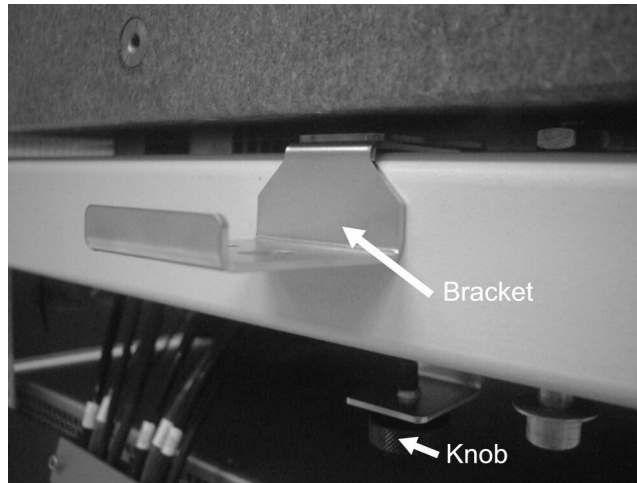
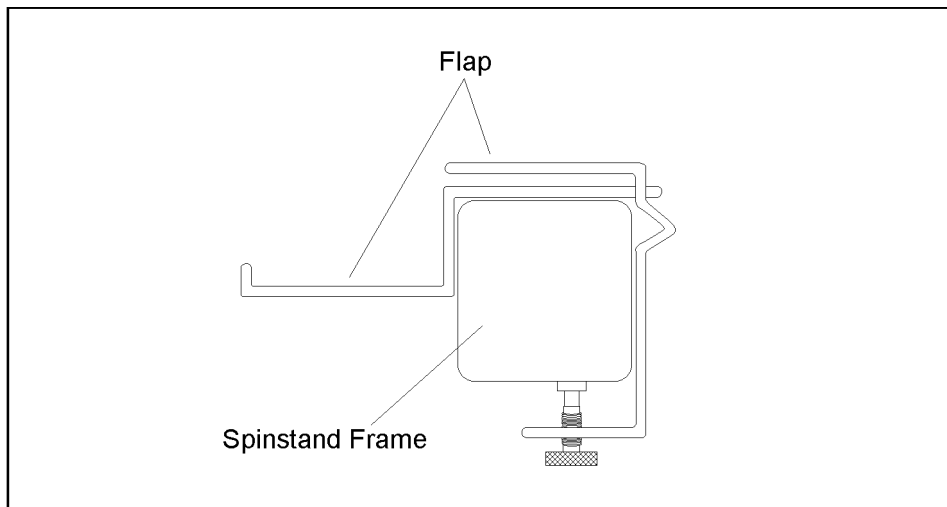


Figure 4-20 Fix the Bracket (2/2)



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Step 3. Repeat the above steps for the rest of three brackets.

Step 4. Lift the spinstand cover and place it on the four brackets.

Step 5. Fix the two pieces of spinstand cover feet to both left and right sides of the spinstand cover bottom frame by 12 screws with 5mm hex key as shown in Figure 4-22.

Figure 4-21

Spinstand Cover Legs

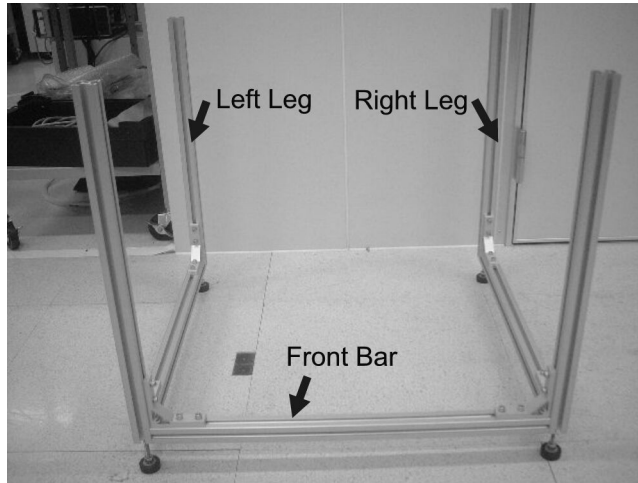
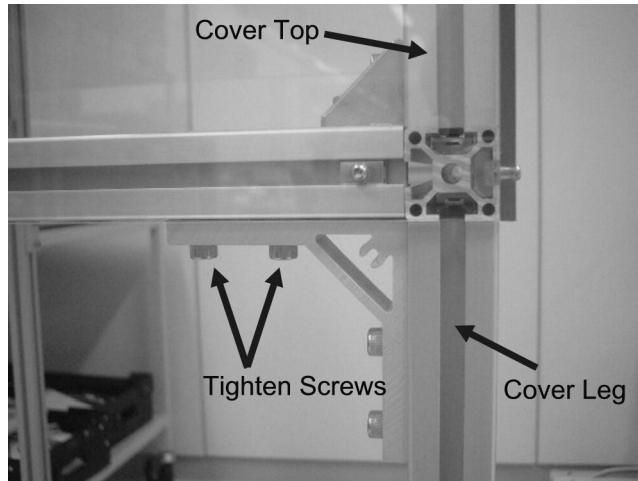


Figure 4-22

Join the Cover Top and Cover Legs



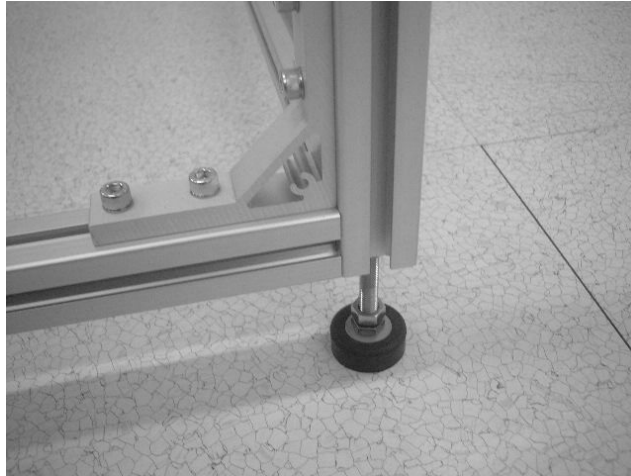
Step 6. Fix the front bar of the spinstand cover to both left and right side legs.

Step 7. Extend adjustable feet until the adjustable feet brace up the spinstand cover as shown in Figure 4-23. In short, there are gaps between brackets and cover bottom frame.

Installation for E5010C
Install the Spinstand Cover (Option CV1)

Figure 4-23

Adjust Feet



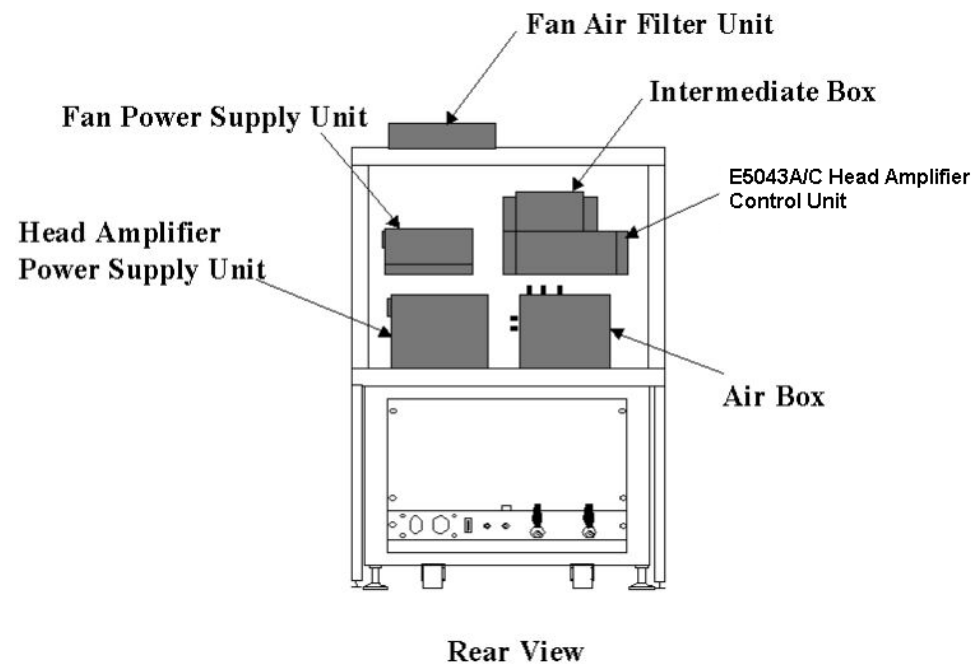
Install the Modules with Option CV1

After installing the spinstand cover CV1, install the following modules with referring to procedure below.

- E5043A/C Head Amp Control Unit
- Air Box
- Head Amp Power Supply Unit
- Fan Power Supply Unit
- Intermediate Box
- Fan Air Filter Unit

Figure 4-24

Modules



Tools Required

- T20 TORX driver
- Phillips P2 driver
- Connector monkey wrench

Procedure

Attach a E5043A(E5043-60002)/E5043C(E5043-60012) Head Amp Control Unit

Step 1. Loosen the four screws back of the spinstand cover with T20 TORX driver.

Installation for E5010C
Install the Modules with Option CV1

- Step 2.** Attach the E5043A/C Head Amp Control Unit with the brackets, and fix it by four screws as shown in Figure 4-25.

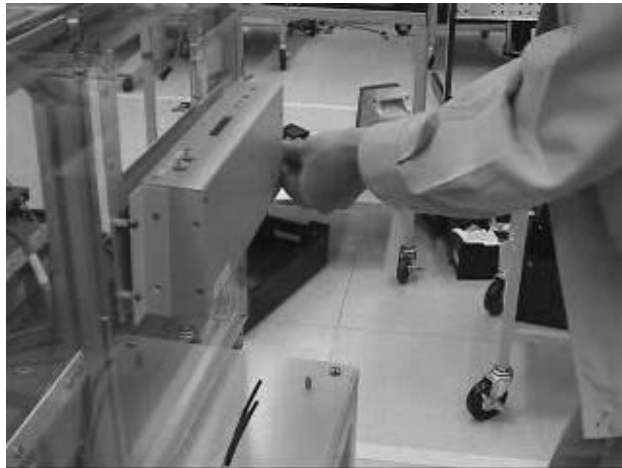
NOTE

Two kind of the brackets are included in the E5043A/C Head Amp Control Unit. Attach the brackets to it which is using with the E5010C. Store the other brackets in a safe place.

When you install the E5043C Head Amplifier Control Unit (main unit) on the Agilent spinstand cover for the E5010C, you should fix the angle (bracket) with the four M3 screws (p/n 0515-0372) and four washers (p/n 3050-0893).

Figure 4-25

Attach the Head Amp Control Unit



- Step 3.** Connect cable from E5035B as shown in Figure 3-6.
- Step 4.** Connect cables from E5037C/D as shown in Figure 3-9.
- Step 5.** If the 5039B or the E5039C is installed, connect the cables from E5039B or E5039C as shown in Figure 3-10 or Figure 3-11.

Attach an Air Box (E5012-60801)

There are some pneumatic parts inside of the air box.

NOTE

Unless necessary, do not open this box nor readjust any parts in this box.

All parts in this box are already adjusted.

- Step 1.** Loosen the two screws located back of the spinstand with T20 TORX driver.
- Step 2.** Attach the air box, and fix it by two screws as shown in Figure 4-26.

Figure 4-26

Attach the Air Box



Step 3. Connect the three air tubes to the side of air box as shown in Figure 4-27.

Figure 4-27

Connect the Three Air Tubes



Step 4. To ground the spinstand cover, install a ground cable between the spinstand cover and the screw that fixes the air box to the back of the spinstand.

Attach a Head Amp Power Supply Unit (E5043-60001)

There is a DC power supply (universal input voltage AC 85 to 264 V) inside of this box.

Step 1. Loosen the two screws back of the spinstand with T20 TORX driver.

Step 2. Attach the power supply unit with the brackets, and fix it by two screws as shown in Figure 4-28.

NOTE

Two kind of the brackets are included in the Head Amp Power Supply Unit. Attach the brackets to it which is using with the E5010C. Store the other brackets in a safe place.

Installation for E5010C
Install the Modules with Option CV1

Figure 4-28

Attach the Head Amp Power Supply Unit



Step 3. Connect cable to the bottom of Head Amp Control Unit.

Attach a Fan Power Supply Unit (E5010-61063)

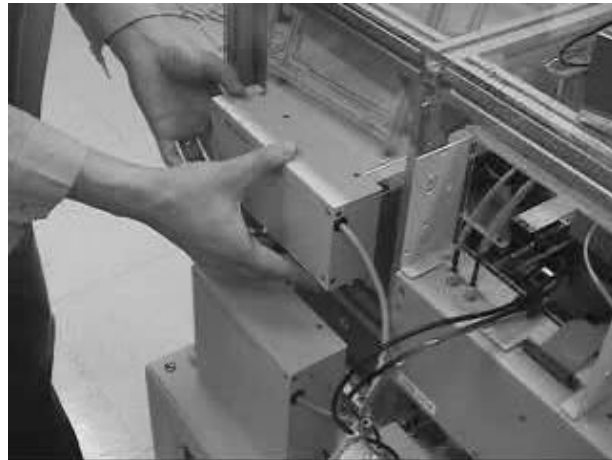
There is a DC power supply (universal input voltage AC 85 to 264 V) inside of this box.

Step 1. Loosen the three screws back of the spinstand cover with T20 TORX driver.

Step 2. Attach the power supply unit, and fix it by three screws as shown in Figure 4-29.

Figure 4-29

Attach the Fan Power Supply Unit

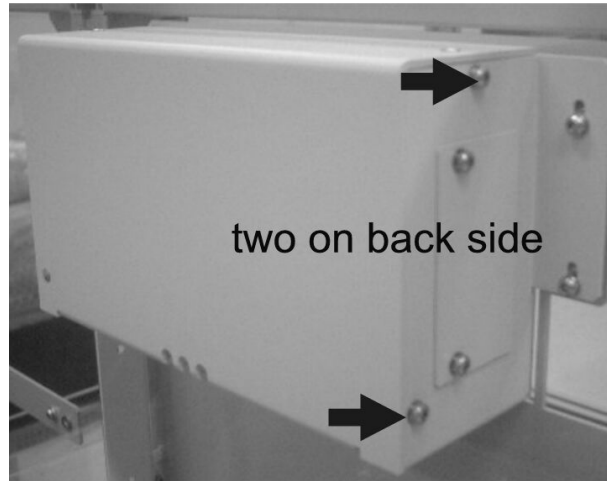


Attach an Intermediate Box

This box is a connection box for the cables and air tubes.

Step 1. Loosen the four screws to remove its cover as shown in Figure 4-30.

Figure 4-30 Remove the Intermediate Box Cover



- Step 2.** Loosen the four screws back of the spinstand cover.
- Step 3.** Attach the intermediate box to the spinstand cover and fix it by four screws as shown in Figure 4-31.

Figure 4-31 Attach the Intermediate Box

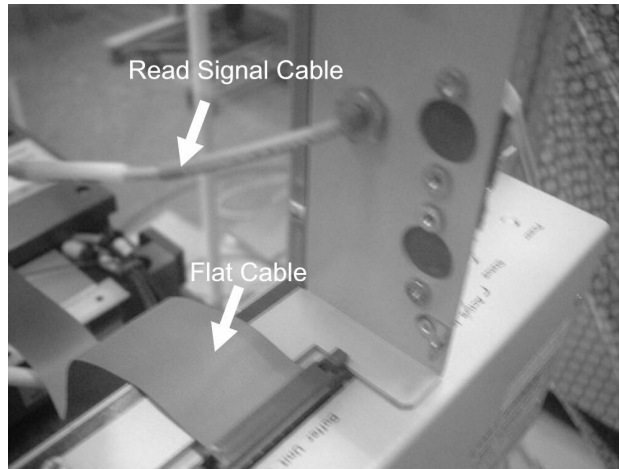


- Step 4.** Connect the read signal cable (item 7 in Figure 3-3) and flat cable (item 8 in Figure 3-3) from the E5029K On Stage Buffer Unit as shown in Figure 4-32.

NOTE The read signal cable can be connected to either of left side or right side of the Intermediate Box.

Installation for E5010C
Install the Modules with Option CV1

Figure 4-32 **Read Signal Cable and Flat Cable**



- Step 5.** Then connect the read signal cable from the E5036A (item 6 in Figure 3-3) to the read signal cable from the E5029K On Stage Buffer Unit which is fixed on the Intermediate Box.
- Step 6.** Connect the “W+” cable and “W-” cable (item 4 and 5 in Figure 3-3) between the E5029K and the E5043A/C.
- Step 7.** Fix the three air tubes from the HLM to the air tube holder, and insert them to the Air Box inlets.

NOTE It is not necessary to place the cover of the Intermediate Box.

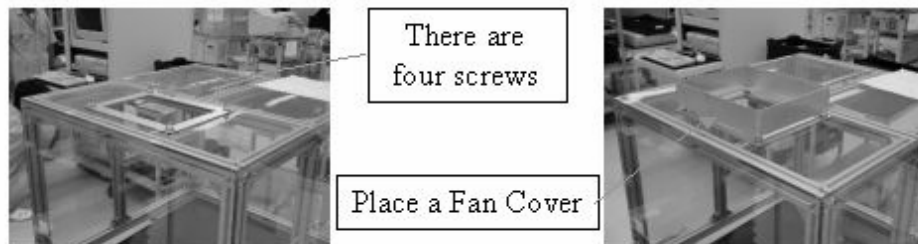
Attach a Fan Air Filter Unit to the top of spinstand cover

To control the flow of air around Media and HGA the fan air filter unit is attached.

- Step 1.** Place a fan cover on to the top of the spinstand cover as shown in Figure 4-33.

NOTE There is no needed to fix the fan cover by four nuts.

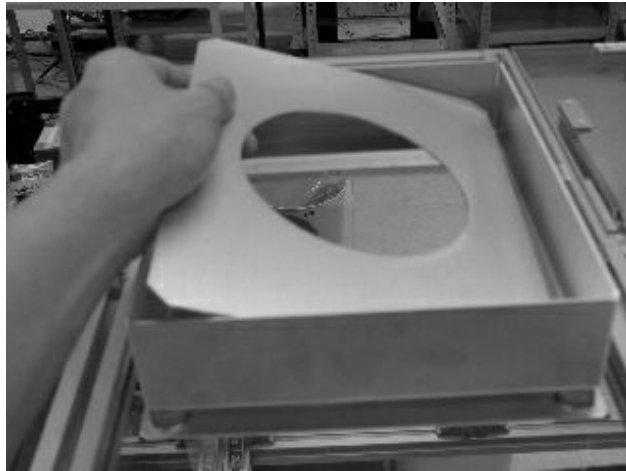
Figure 4-33 **Place the Fan Cover**



- Step 2.** Place an insulation plate inside of the fan cover as shown in Figure 4-34.

Figure 4-34

Place the Insulation Plate



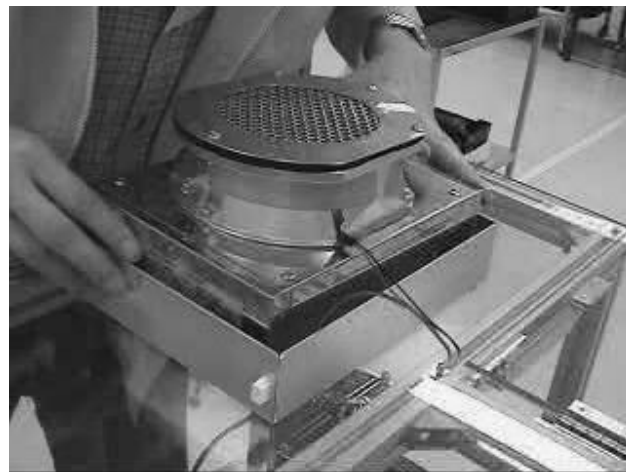
Step 3. Place the fan air filter unit on the insulation plate as shown in Figure 4-35.

NOTE

The fan must not touch the connector and fan frame to isolate the fan unit.

Figure 4-35

Place the Fan Air Filter Unit

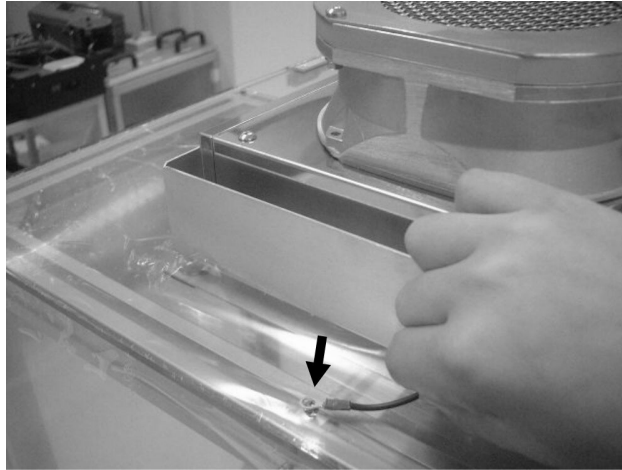


Step 4. To ground the fan, install a cable between the fan and the spinstand cover with the phillips P2 driver as shown in Figure 4-36.

Installation for E5010C
Install the Modules with Option CV1

Figure 4-36

Connect the Ground Cable



Step 5. Connect the cable from the fan as shown in Figure 4-37 to the Fan Power Supply Unit.

Figure 4-37

Connect the Fan Power Supply Cable



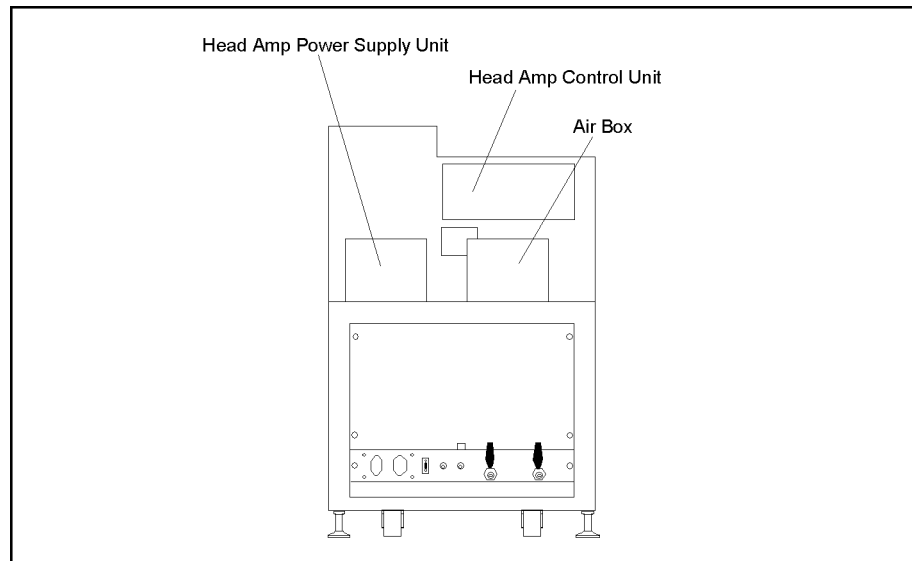
Install the Modules with Option CV3

Before installing the spinstand cover CV3, install the following modules with referring to the procedure below.

- E5043A/C Head Amp Control Unit
- Head Amp Power Supply Unit
- Air Box

Figure 4-38

Modules



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Tools Required

- T20 TORX driver
- Phillips P2 driver
- Connector monkey wrench

Procedure

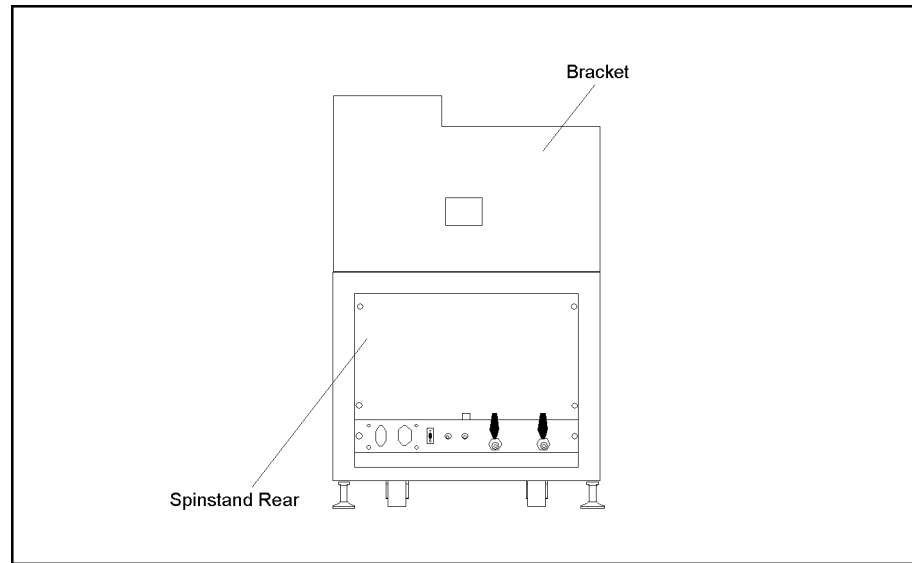
Attach a Bracket to the Spinstand Rear

- Step 1.** Tighten the five screws to attach the bracket to the spinstand rear as shown in Figure 4-39.

Installation for E5010C
Install the Modules with Option CV3

Figure 4-39

Attach the Bracket



Attach a E5043A(E5043-60002)/E5043C(E5043-60012) Head Amp Control Unit

- Step 1.** Loosen the four screws back of the spinstand cover with T20 TORX driver.
- Step 2.** Attach the E5043A/C Head Amp Control Unit with the brackets, and fix it by four screws as shown in Figure 4-38.

NOTE

Two kind of the brackets are included in the E5043A/C Head Amp Control Unit. Attach the brackets to it which is using with the E5010C. Store the other bracket in a safe place.

*When you install the E5043C Head Amplifier Control Unit (main unit) on the Agilent spinstand cover for the E5010C, you should fix the angle (bracket) with the four M3 screws (p/n 0515-0372) and **four washers** (p/n 3050-0893).*

- Step 3.** Connect a cable from E5035B as shown in Figure 3-6 and Figure 4-40.

Figure 4-40 **Connect the cables to the E5043A/C**



- Step 4.** Connect the cables from E5037C/D as shown in Figure 3-9 and Figure 4-40.
- Step 5.** If the 5039B or the E5039C is installed, connect the cables from E5039B or E5039C as shown in Figure 3-10 or Figure 3-11.

Attach an Air Box (E5012-60801)

There are some pneumatic parts inside of the air box.

NOTE Unless necessary, do not open this box nor readjust any parts in this box.

All parts in this box are already adjusted.

- Step 1.** Loosen the two screws on the bracket of the spinstand rear with T20 TORX driver.
- Step 2.** Attach the Air Box, and fix it by two screws as shown in Figure 4-38.
- Step 3.** Connect the three air tubes to the side of the Air Box as shown in Figure 4-27.

Attach a Head Amp Power Supply Unit (E5043-60001, common to E5043A/C)

There is a DC power supply (universal input voltage AC 85 to 264 V) inside of this box.

- Step 1.** Loosen the two screws on the bracket of the spinstand rear with T20 TORX driver.
- Step 2.** Attach the Power Supply Unit with the bracket, and fix it by two screws as shown in Figure 4-38.

NOTE Two kind of the brackets are included in the Head Amp Power Supply Unit. Attach the brackets to it which is using with the E5010C. Store the other bracket in a safe place.

- Step 3.** Connect the cable to the bottom of the E5043A/C Head Amp Control Unit.

Connecting the Cables

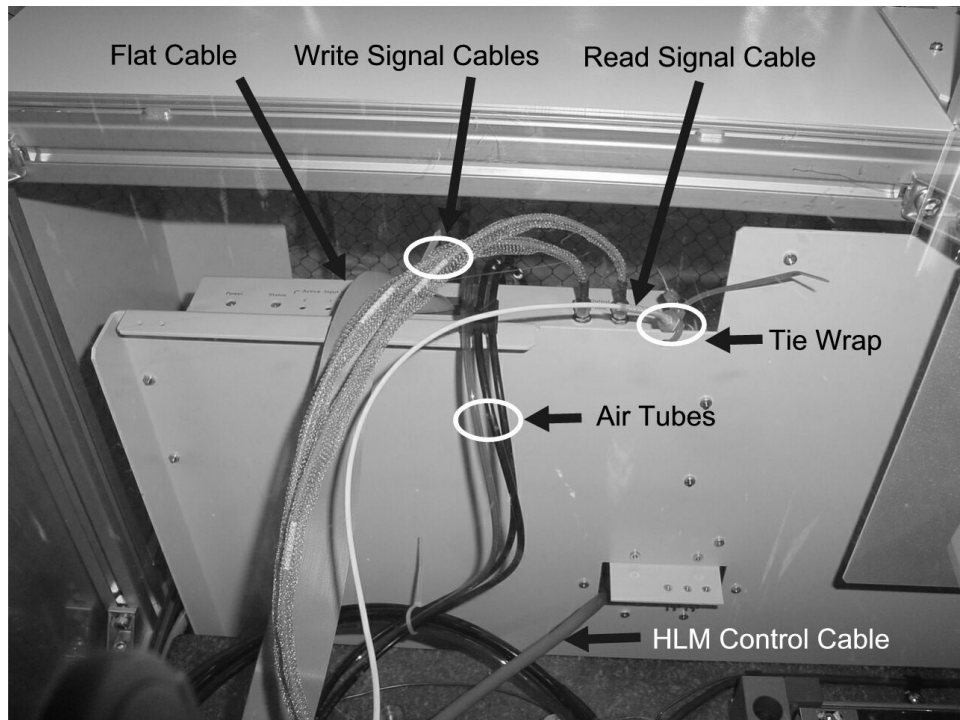
- Step 1.** Connect a Flat cable between the E5029K On Stage Buffer Unit and the E5043A/C Head

Installation for E5010C
Install the Modules with Option CV3

Amp Control Unit (item 8 in Figure 3-3) as shown in Figure 4-41.

Figure 4-41

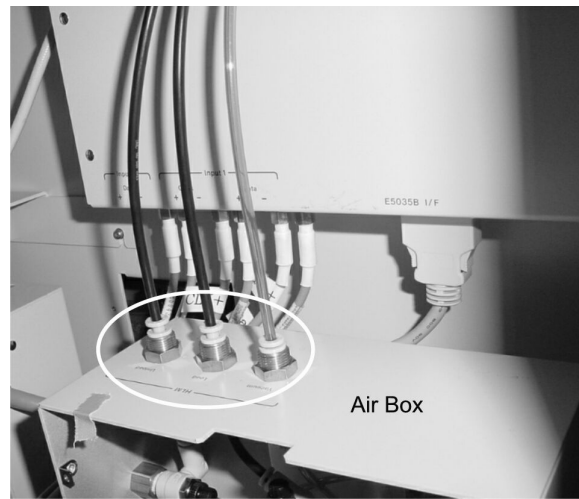
Connect the cables



- Step 2.** Connect the two write signal cables between the E5029K and the E5043A/C (item 4 and 5 in Figure 3-3) as shown in Figure 4-41.
- Step 3.** Joint the two read signal cables from the E5029K On Stage Buffer Unit and the E5036A Sig In (item 7 and 6 in Figure 3-3). Fix the cable to the bracket using a tie wrap as shown in Figure 4-41.
- Step 4.** Connect the three air tubes between the HLM and the Air Box as shown in Figure 4-41 and Figure 4-42.

Figure 4-42

Connect the Air Tubes



- Step 5.** Pass the HLM control cable through the cable hole on the bracket as shown in Figure 4-41. Connect it between the HLM and the Spinstand Controller J2 connector.

Install the Spinstand Cover (Option CV3)

In case of the spinstand cover CV3, install the spinstand cover with referring to procedure below.

Tools Required

- T20 TORX driver
- Phillips P2 driver
- Diagonal cutting plier
- Soldering iron

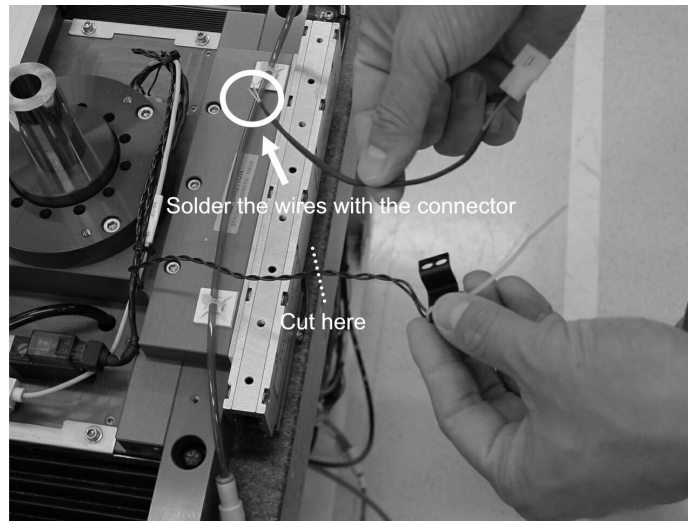
Procedure

Step 1. Remove a shroud sensor from the shroud.

Step 2. Cut the shroud sensor cable using the diagonal cutting plier as shown in Figure 4-43.

Figure 4-43

Connect the Connector



Step 3. Join the wires with the connector and wires you cut. Then solder the wires. The existing shroud sensor is unnecessary to install the spinstand cover.

Step 4. Place the cover on the E5010C Spinstand as shown in Figure 4-44. Three or four people are require to lift the cover.

Figure 4-44

Place the Cover



Step 5. Connect the connector you soldered to the connector which is place the door of the spinstand cover.

Step 6. Put the plate on the case of the fan as shown in Figure 4-45.

Figure 4-45

Put the Plate

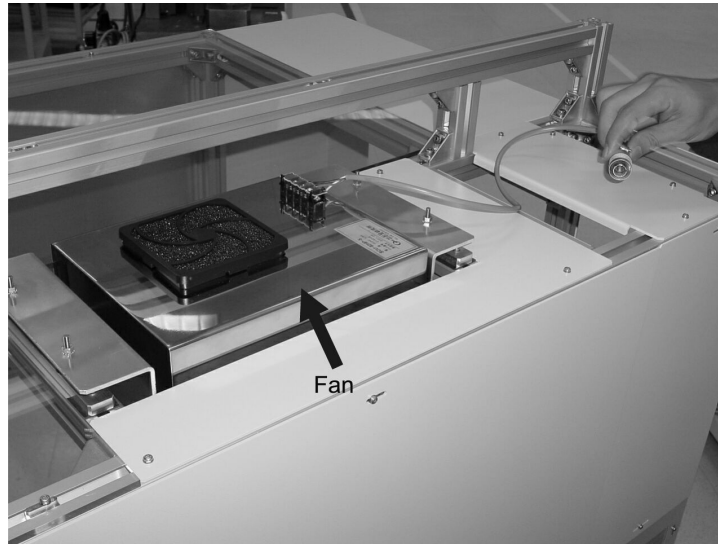


Step 7. Put the fan on the case as shown in Figure 4-46.

Installation for E5010C
Install the Spinstand Cover (Option CV3)

Figure 4-46

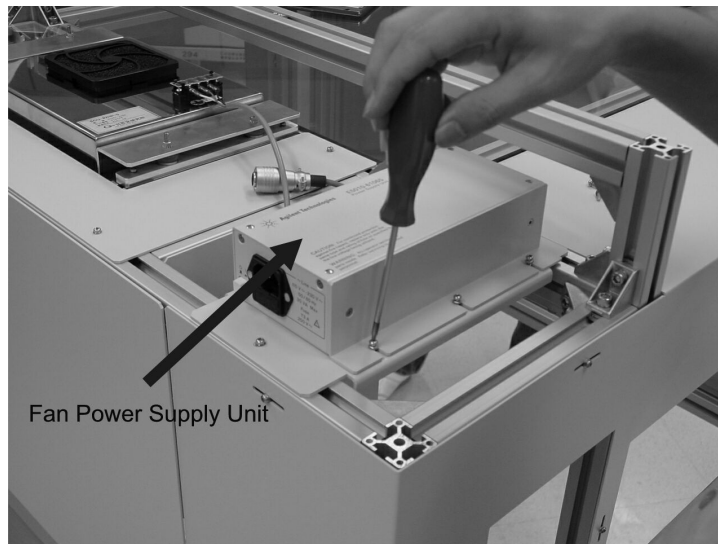
Put the Fan



Step 8. Tighten the three screws to attach a Fan Power Supply Unit as shown in Figure 4-47 with T20 TORX driver. Then connect the cable between the fan and the Fan Power Supply Unit.

Figure 4-47

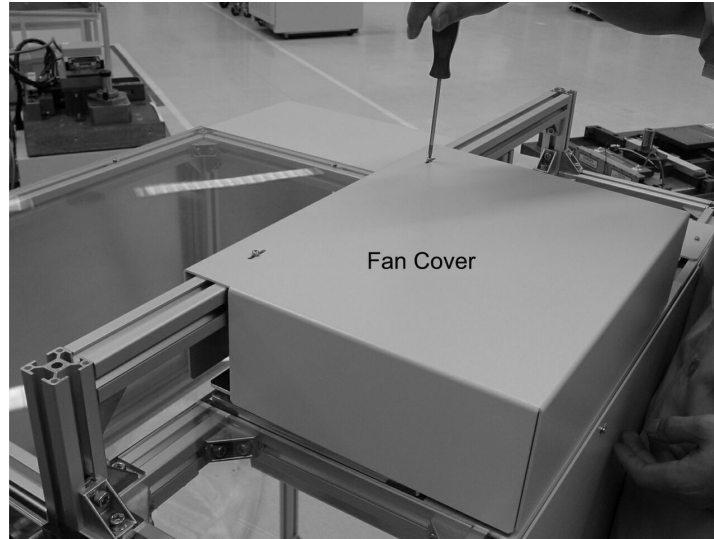
Attach the Fan Power Supply Unit



Step 9. Tighten the two screws to attach the fan cover with Phillips P2 driver as shown in Figure 4-48.

Figure 4-48

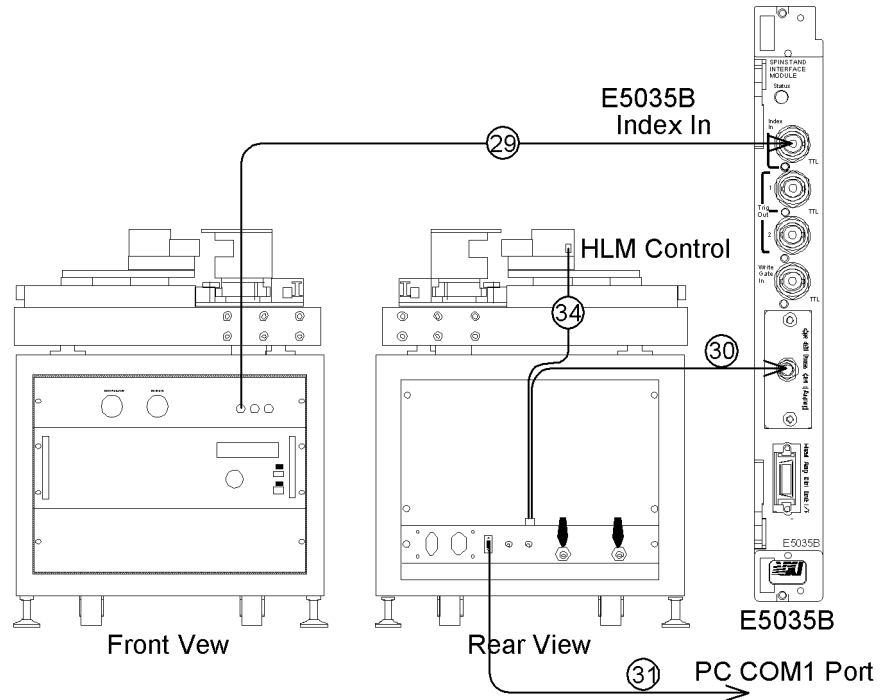
Attach the Fan Cover



Connect Cables with the E5023A

Connect the cables with referring to Figure 4-49 and Table 4-4.

Figure 4-49 Cable Connection



e5023aie03002

Table 4-4 Cable Connection

No.	Description	Connection		Part Number
29	BNC(m)-BNC(m) Cable	Spinstand "Index Out"	E5035B "Index In"	E5022-61608
30	SMA(m)-SMB(m) Cable	PZT Ctrl Analog	E5035B "Piezo Ctrl"	E5035-61601
31	Serial Cable	Spinstand Serial Port	PC COM1 Port	E5022-61628
34	DSUB(f)-DSUB(f) Cable	Spinstand Controller "J2"	HLM "HLM Ctrl"	E5012-61603

5 Installation for E5013A

This chapter describes how to install the Agilent E5013A Spinstand.

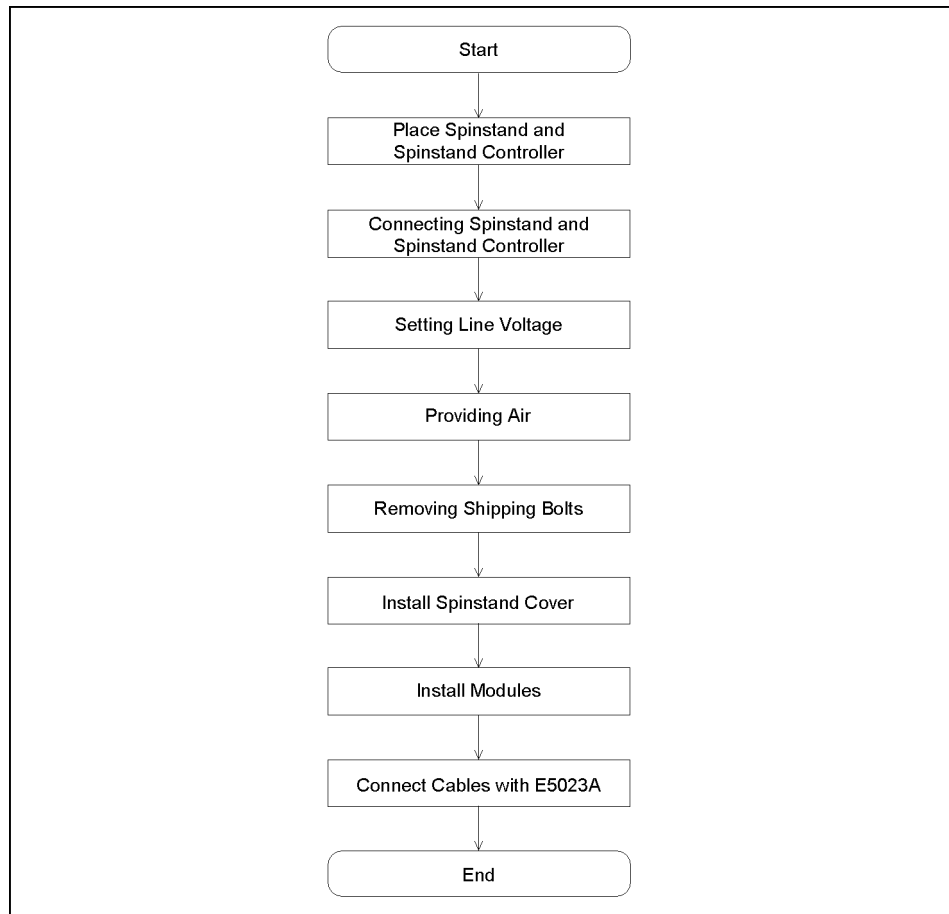
Overview

This section describes the installation of the Agilent E5013A Spinstand.

NOTE

Before installing the E5013A, you should decide your installation site, prepare its environment, carry in the product, and check the contents of the package. This section is written, assuming that these preparations and checks are completed. For details, refer to Chapter 2, “Site Preparation.”

Figure 5-1 Installation Flow



e5023aie03072

Place the Spinstand and the Spinstand Controller

Locate the spinstand on level and stable place.

CAUTION

Do not stack the spinstand on the controller.

Do not put the controller vertically.

Tools Required

- 3/16" hex key
- Level

Procedure

- Step 1.** There are two screw holes on front side of the Base Plate as shown in Figure 5-2. The Spinstand Cover feet will be fixed to the Base Plate. Loosen the two screws and remove the spinstand cover from the Base Plate with 3/16" hex key.

Figure 5-2

Base Plate



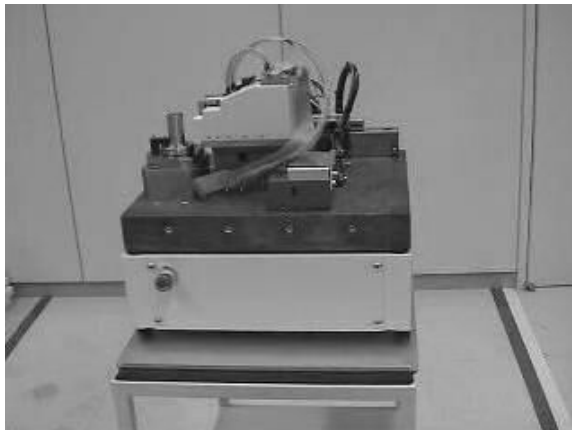
Installation for E5013A
Place the Spinstand and the Spinstand Controller

Figure 5-3 Loosen/Tighten Two Screws



Step 2. Place a Spinstand on the base plate, as the Spinstand four feet are located on the four hollow rounds on the Base plate as shown in Figure 5-4.

Figure 5-4 Place the Spinstand



Step 3. Place the spinstand controller on or underneath of the working bench as shown in Figure 5-5.

Figure 5-5

Place the Spinstand Controller

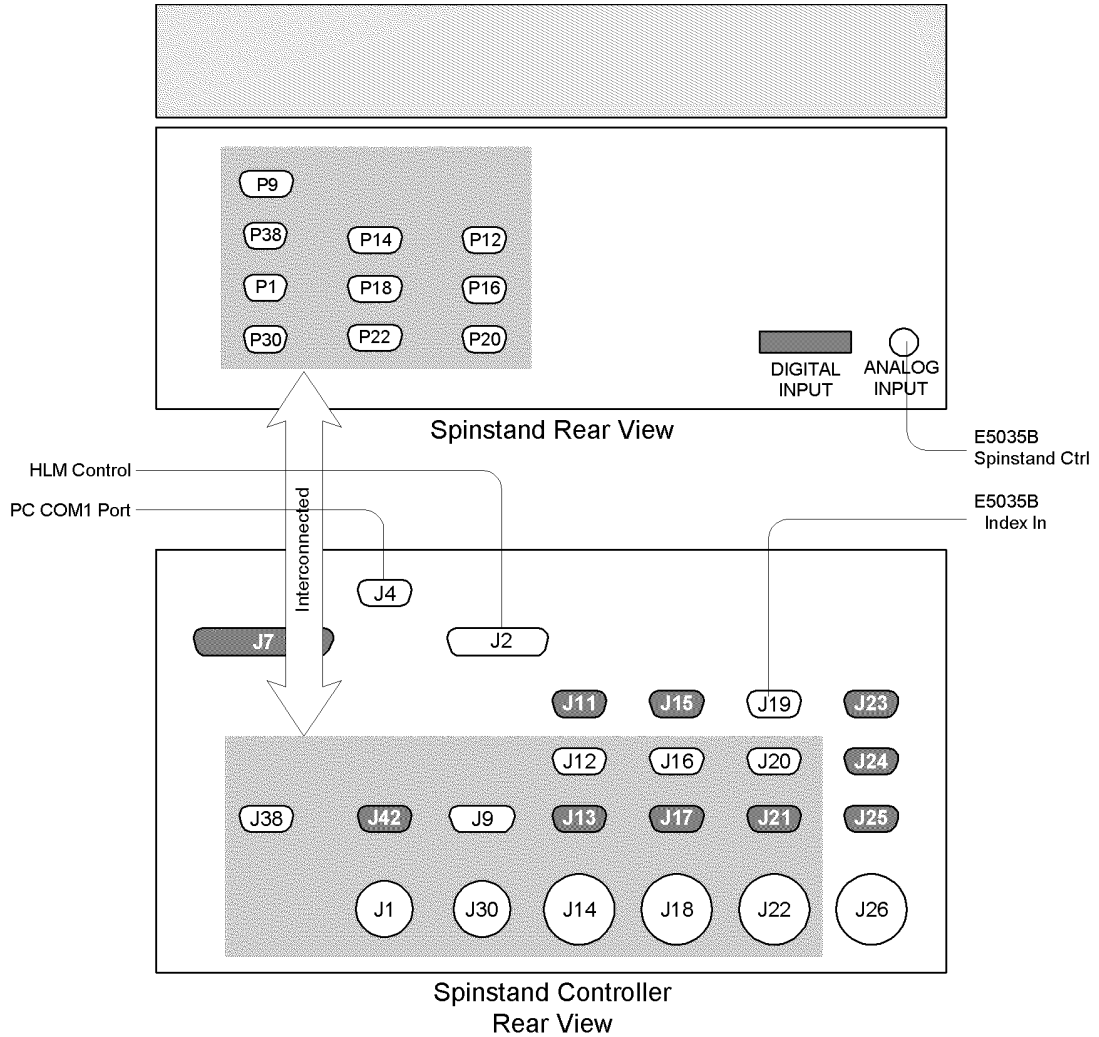


Connecting the Spinstand and the Spinstand Controller

Connect the cables between spinstand and spinstand controller with referring to Figure 5-6 and Table 5-1.

Figure 5-6

Cable Connection between Spinstand and Controller



e5023aie03001

Table 5-1 Cable Connection between Spinstand (HLM) and Spinstand Controller

Connection		Part Number
Spinstand	Spinstand Controller	
P14	J14	E5011-65721
P18	J18	E5011-65721
P12	J12	E5011-65722
P16	J16	E5011-65722
P22	J22	E5011-65723
P20	J20	E5011-65724
P9	J9	E5011-65725
P1	J1	E5011-65726
P38	J38	E5011-65727
P30	J30	E5011-65730
HLM Control	J2	E5012-61603
-	J26 ^{*1}	

*1.External Emergency Switch Connector

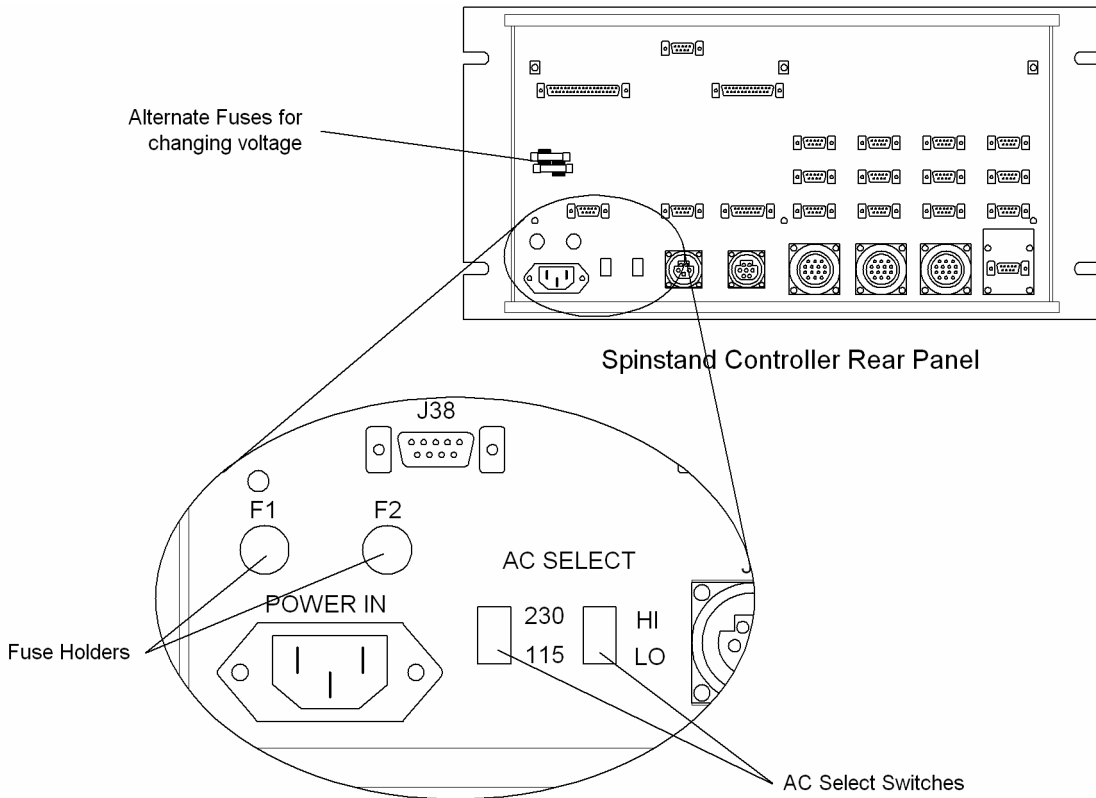
Setting Line Voltage

The line voltage to the spinstand is set by a combination of two AC SELECT switches on the spinstand controller rear panel. Refer to Table 5-2 to set a correct combination.

Table 5-2 Line Voltage Settings

Line Voltage (Nominal)	Applicable Voltage Range	AC SELECT Switch	Fusing	
			F1	F2
100 Vac	90 - 110 Vac	115 / LO	Dummy Slug	15 A
120 Vac	108 - 132 Vac	115 / HI	Dummy Slug	15 A
220 Vac	198 - 242 Vac	230 / LO	8 A	8 A
240 Vac	216 - 264 Vac	230 / HI	8 A	8 A

Figure 5-7 Setting Line Voltage for the Spinstand



e5022aie03051

Providing Air

The spinstand requires two kinds of air lines: compressed air and drawing air (vacuum). The compressed air is used for the air bearing of the air spindle, floating air stages, generating vacuum air for the disk clamp, and loading/unloading head. The vacuum air is used to lock down the air stages, and to lock down the piezo to the cassette block.

CAUTION Do not turn on the compressed air and vacuum air valves until removing shipping brackets.

NOTE Procedures for connecting air lines described in this document assumes that all the facilities required for the lines are prepared at the installation site. For details on air equipment, refer to Chapter 2, “Site Preparation.”

NOTE Make sure that air is operated within the limits of system use. Failure to do so could result system malfunction and unwanted accident.

Specification of Compressed Air

Use compressed air that meets the following specification.

Table 5-3 Specification of Compressed Air

Air Pressure Range	0.72 MPa to 0.83 MPa (105 psi to 120 psi)
Temperature Range	Room Temperature ± 2.8 °C (Room Temperature ± 5 °F)
Minimum Flow Rate	0.86×10^{-3} m ³ /s (1.6 scfm)
Tube Diameter	9.5 mm (3/8")*1

*1. Use an adapter tube (Agilent p/n E5010-60004) furnished with the system to connect a 10-mm tube.

Specification of Vacuum

Use vacuum that meets the following specification.

Table 5-4 Specification of Vacuum

Minimum Air Pressure	-70 kPa (-20.5 inHg, -521 mmHg) or below
Minimum Flow Rate	0.22×10^{-3} m ³ /s (0.79 m ³ /h, 0.47 scfm)
Tube Diameter	9.5 mm (3/8")*1

*1. Use an adapter tube (Agilent p/n E5010-60004) furnished with the system to connect a 10-mm tube.

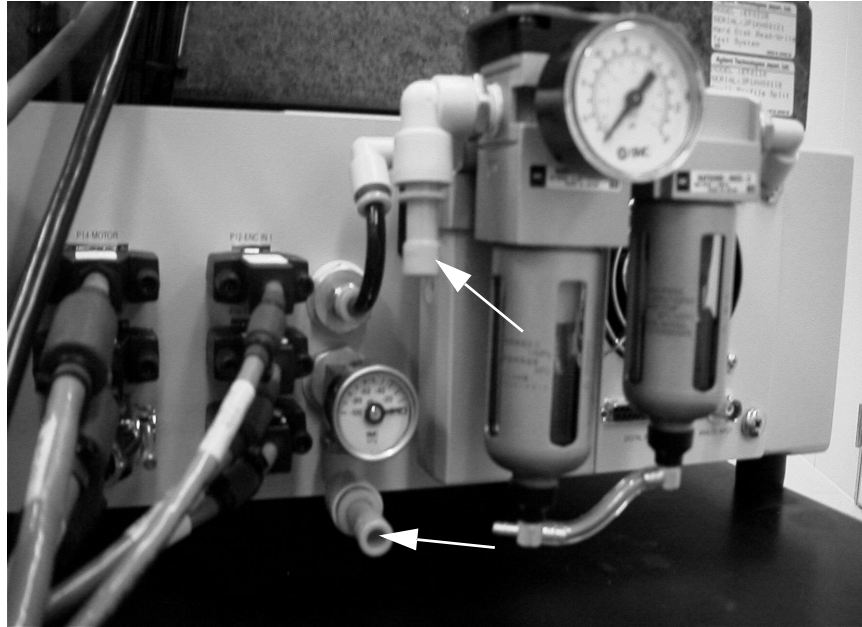
Installation for E5013A
Providing Air

Connecting Air Tubes

Follow these steps to connect the air tubes.

- Step 1.** Connect the compressed air tube to the air connector on the rear panel of the spinstand as shown in Figure 5-8.
- Step 2.** Connect the vacuum air tube to the air connector on the rear panel of the spinstand as shown in Figure 5-8.

Figure 5-8 **Air Tube Connection**



NOTE The spinstand air connectors fit 9.5 mm (3/8") air tubes. Using the adapter tube furnished with the system (Agilent p/n E5010-60004) allows you to connect them 10-mm air tubes.

CAUTION Do not apply compressed air to the vacuum air inlet. Doing so may cause damage to the vacuum indicator.

- Step 3.** Confirm the reading of the main air gauge which is on the front panel is within the range shown in Table 5-3.
- Step 4.** Confirm the reading of the vacuum gauge on the front panel is within the range shown in Table 5-4.

Removing Shipping Bolts

After placing the E5013A, remove the shipping bolts and connect some cables with referring to procedure below.

Tools Required

- 5/32" hex key
- 3/16" hex key
- T10 TORX driver

Procedure

Removing the Air Stage Securing Screws

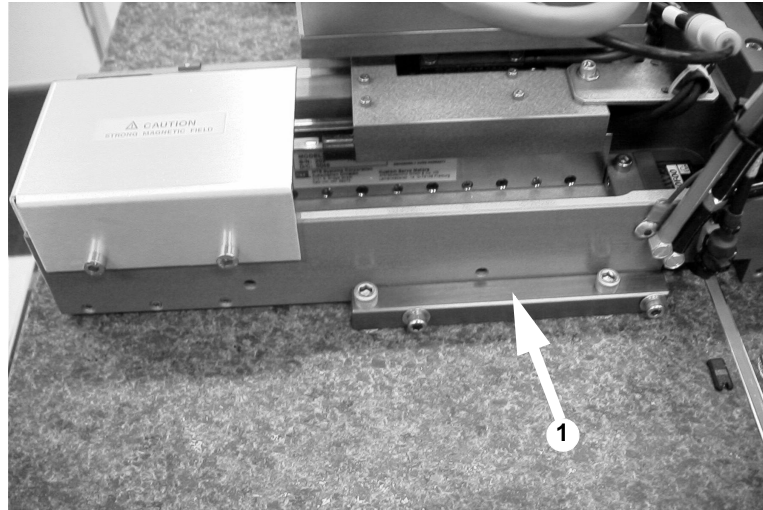
NOTE

Store the shipping brackets and screws in a safe place. They will be used to secure the air stages again when you send back it for repairing or relocate the system.

- Step 1.** Remove four screws to detach a shipping plate 1 on the right side of pack stage with 3/16" hex key as shown in Figure 5-9.

Figure 5-9

Detach the Shipping Plate 1

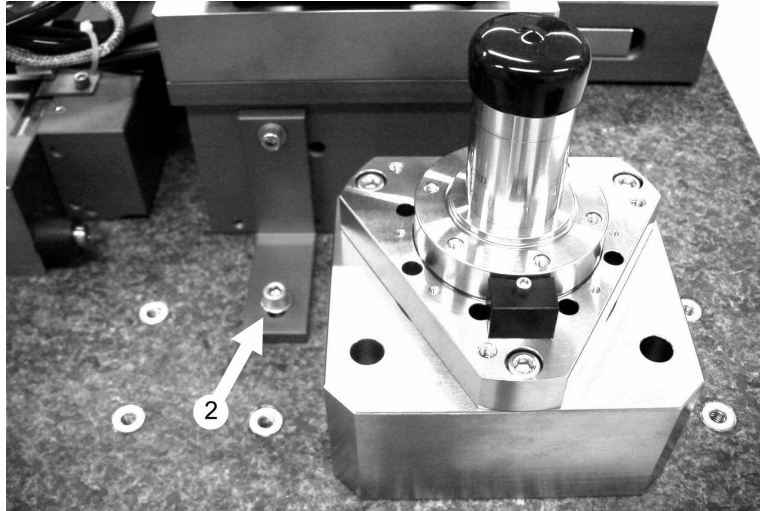


- Step 2.** Remove two screws to detach L angle shipping plate on the left side of pack stage with 5/32" hex key as shown in Figure 5-10.

Installation for E5013A
Removing Shipping Bolts

Figure 5-10

Detach the Shipping Plate 2



Step 3. Push an air valve manual button inside of the pack stage to float the pack stage by inserting a 1/16-inch hex key to a hole on the front of pack stage.

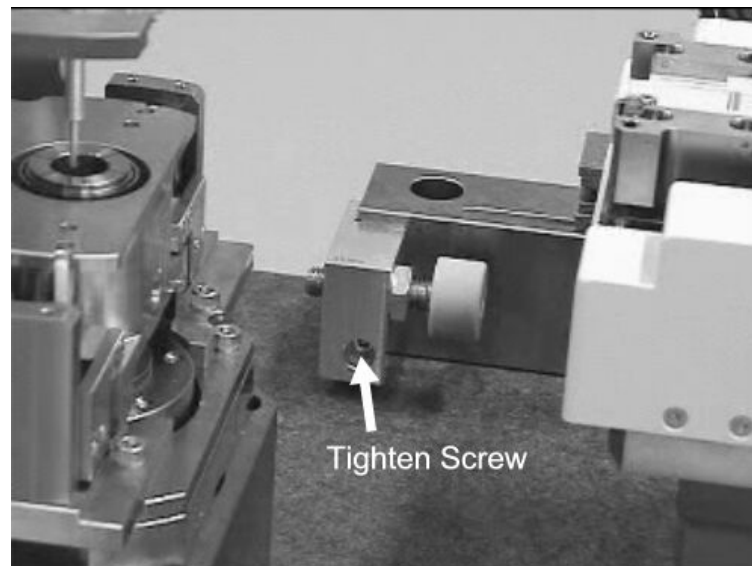
Step 4. While pushing the air valve manual button with the hex key, move the pack stage away from the spindle by manually.

Fix the Stage Stopper

Step 1. Fix the stage stopper to the stage rail with a 1/8-inch hex key as shown in Figure 5-11.

Figure 5-11

Fix the Stage Stopper



Release the Spindle

CAUTION

Do not rotate the spindle without providing compressed air to the spinstand. Doing so may cause fatal damage of the spindle assembly.

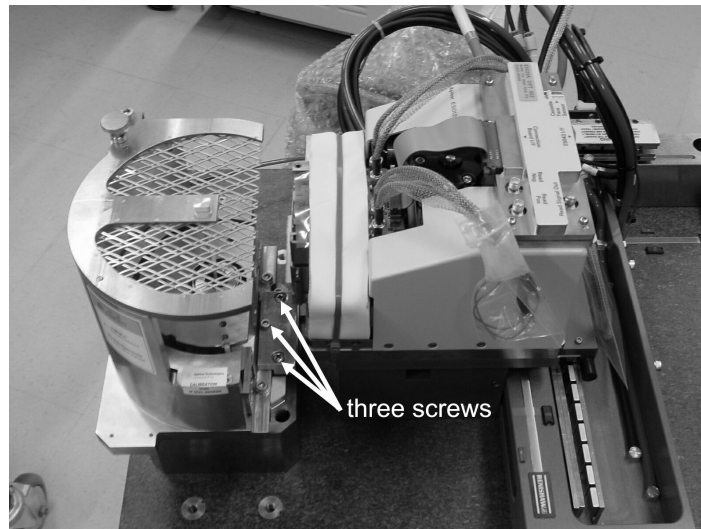
NOTE

Store the shipping screws in a safe place. They will be used to secure the spindle again when you send back it for repairing or relocate the system.

- Step 1.** Remove the three screws to detach a shipping block that fixes spindle as shown in Figure 5-12.

Figure 5-12

Detach the Shipping Block

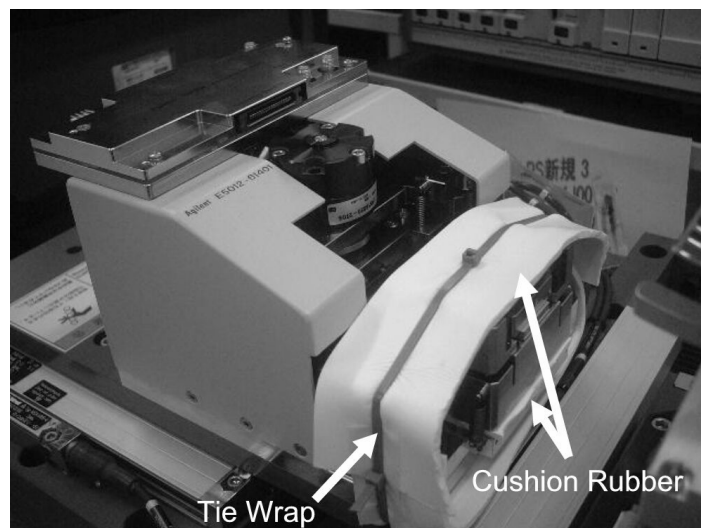


Release the HLM and Connect the Cables

- Step 1.** Cutting a tie-wrap, and remove the protection rubbers as shown in figure Figure 5-13.

Figure 5-13

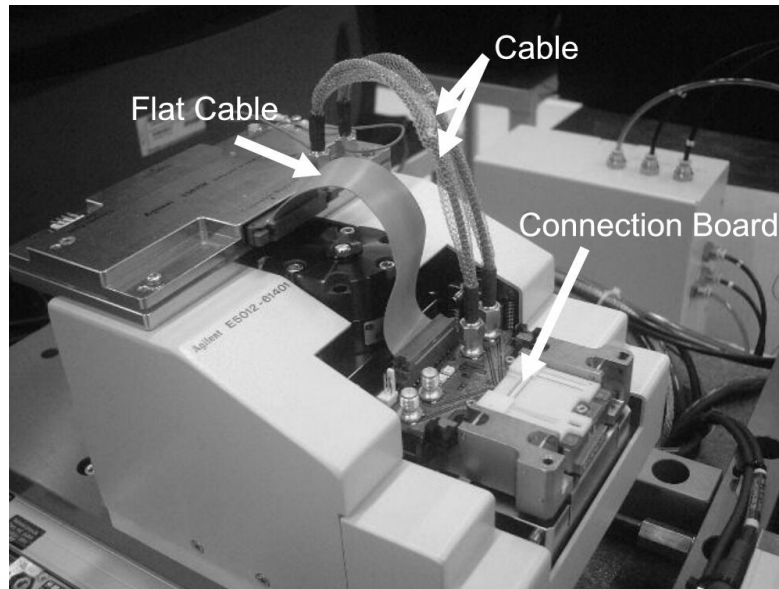
Release the HLM (The picture is E5010C)



Installation for E5013A
Removing Shipping Bolts

- Step 2.** Tighten the four screws to attach the HLM front cover with T10 TORX driver.
- Step 3.** Tighten the three screw to attach the E5029K Connection Board with 1.5 mm hex key as shown in Figure 5-14.

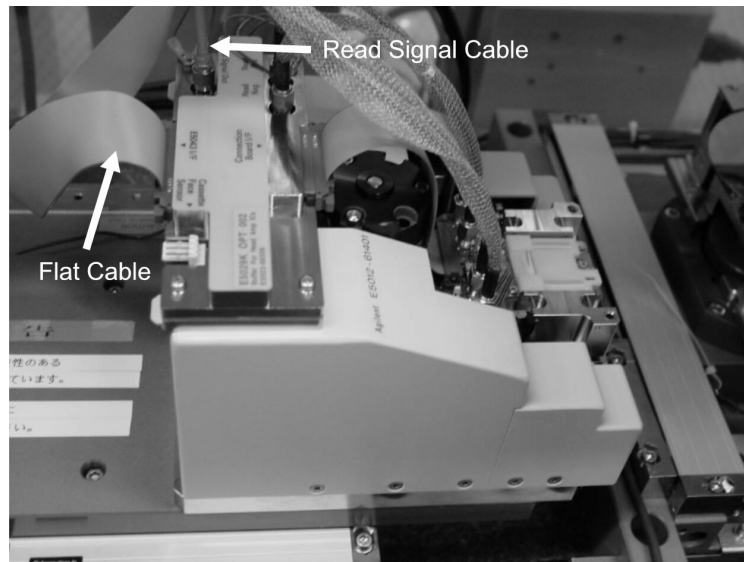
Figure 5-14 Connection Board and Cables (The picture is E5010C)



- Step 4.** Connect a “R+” cable and a “R-” cable (item 1 and 2 in Figure 3-3) between the E5029K On Stage Buffer Unit and the E5029K Connection Board as shown in Figure 5-14. The ground terminals are on the screws fixed the On Stage Buffer Unit.
- Step 5.** Connect the flat cable (item 3 in Figure 3-3) between the E5029K On Stage Buffer Unit and the E5029K Connection Board as shown in Figure 5-14.
- Step 6.** In case of the E5029K Option 001, connect the four cables (item 4, 5, 32 and 33 in Figure 3-3) to the E5029K. The ground terminals are on the screws fixed the On Stage Buffer Unit.
- Step 7.** In case of the E5029K Option 002/004, connect the two cables (item 4 and 5 in Figure 3-3) to the E5029K Connection Board.
- Step 8.** Connect a flat cable (item 8 in Figure 3-3) and a read signal cable (item 7 in Figure 3-3) to the E5029K On Stage Buffer Unit as shown in Figure 5-15.

Figure 5-15

Flat Cable and Read Signal Cable (The picture is E5010C)



Install the Spinstand Cover (Option CV3)

This section describes how to install the Spinstand Cover CV3.

Tools Required

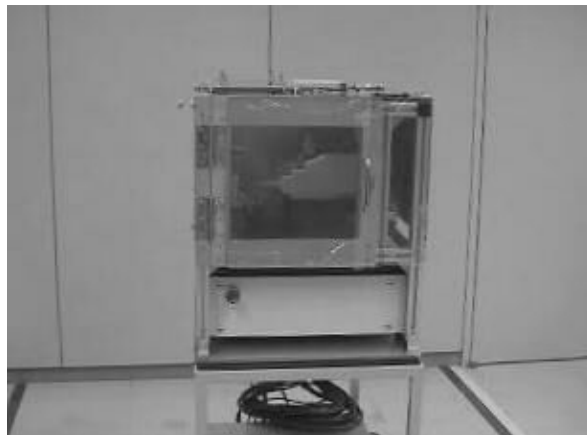
- 3/16" hex key
- Phillips P2 driver

Procedure

- Step 1.** Place a spinstand cover to the spinstand as shown in Figure 5-16.

Figure 5-16

Place the Spinstand Cover

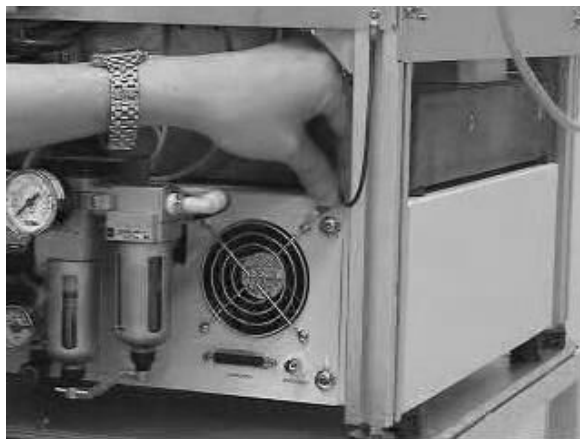


- Step 2.** Fix the spinstand cover to the base plate by two screws with 3/16" hex key as shown in Figure 5-3.

- Step 3.** To ground the spinstand cover, install a cable between the rear of the spinstand and the rear of the spinstand cover with the phillips P2 driver as shown in Figure 5-17.

Figure 5-17

Connect the Ground Cable



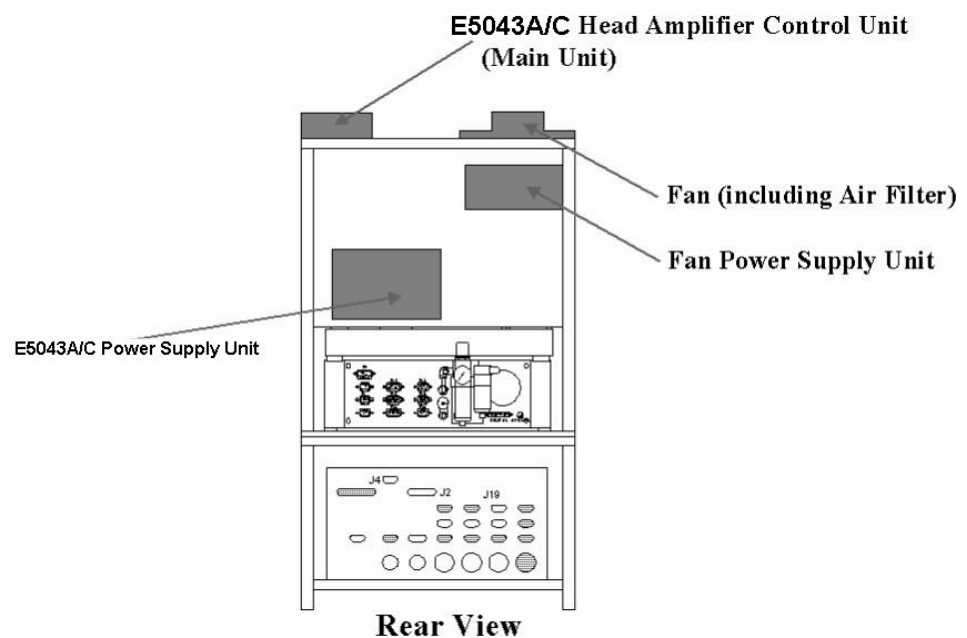
Install the Modules

After installing the Spinstand Cover CV3, install the following modules with referring to procedure below.

- E5043A/C Head Amplifier Control Unit
- Head Amp Power Supply Unit
- Fan Power Supply Unit
- Fan Air Filter Unit

Figure 5-18

Install the Modules



Tools Required

- T15 TORX driver
- T20 TORX driver
- Phillips P2 driver
- Connector monkey wrench

Procedure

Attach a Head Amplifier Control Unit (E5043A: E5043-60002, E5043C: E5043-60012)

- Step 1.** Loosen the four screws top of the spinstand cover with T20 TORX driver.
- Step 2.** Attach the Head Amp Control Unit with the brackets, and fix it by four screws as shown in

Installation for E5013A
Install the Modules

Figure 5-19.

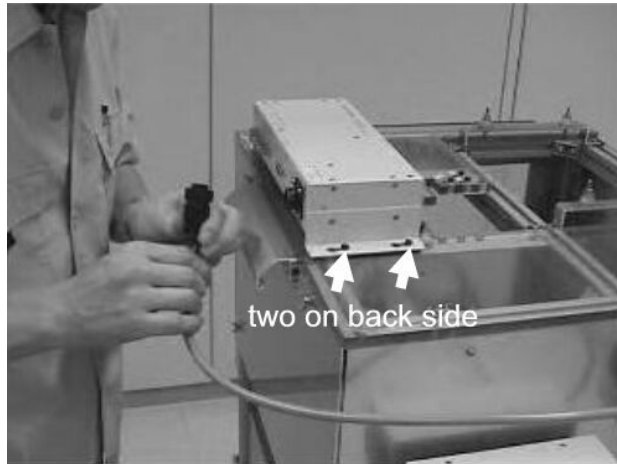
NOTE

Two kind of the brackets are included in the E5043A/C Head Amp Control Unit. Attach the brackets to it which is using with the E5013A. Store the other brackets in a safe place.

*When you install the E5043C Head Amplifier Control Unit (main unit) on the Agilent spinstand cover for the E5013A, you should fix the angle (bracket) with the four M4 screws (p/n 0515-0380). **The four washers (p/n 3050-0893) are not used.***

Figure 5-19

Attach the Head Amp Control Unit

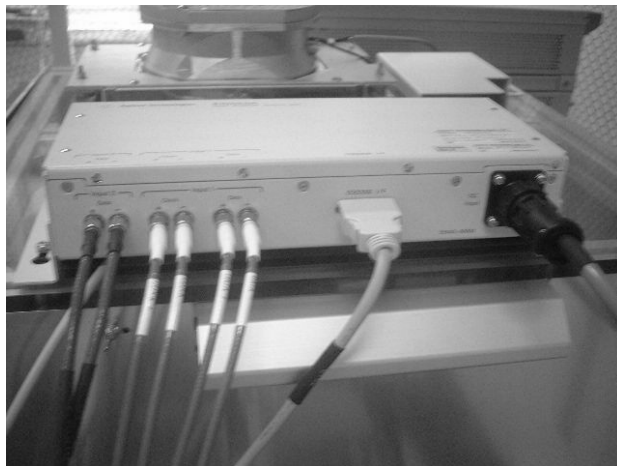


Step 3. Connect a cable from the E5043A/C Power Supply as shown in Figure 5-19.

Step 4. Connect cable from the E5035B as shown in Figure 3-6.

Figure 5-20

Connect cables between E5043A/C and VXI Modules



Step 5. Connect the cables from the E5037C/D as shown in Figure 3-9.

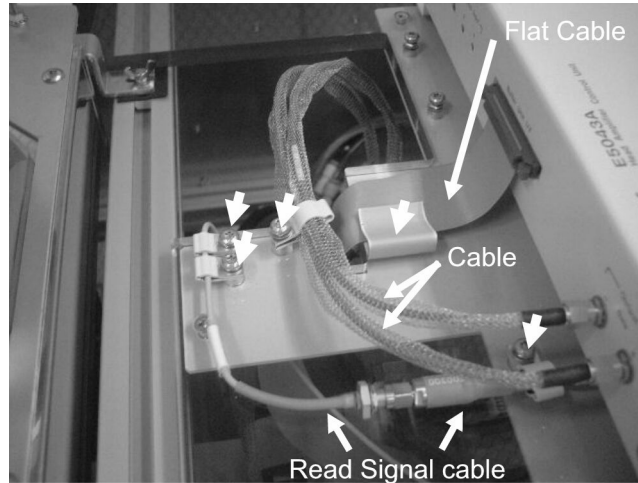
Step 6. If the E5039B or the E5039C is installed, connect the cables from E5039B or E5039C as shown in Figure 3-10 or Figure 3-11.

Step 7. Loosen the two screws with T20 TORX driver that fix the cover next to the E5043A/C

Head Amp Control Unit. Then remove the cover.

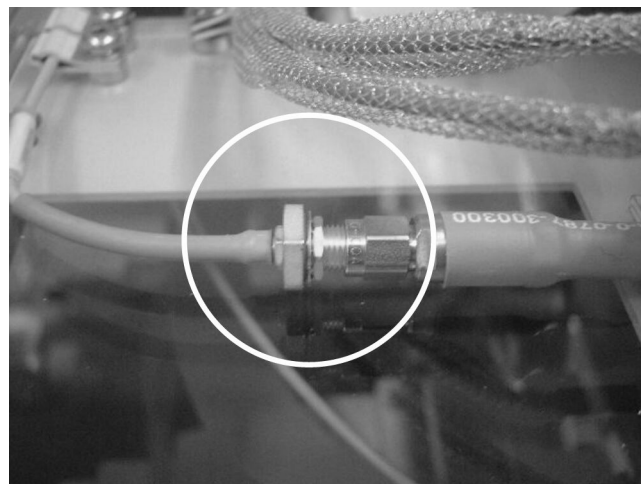
- Step 8.** Connect the two write signal cables between the E5029K Connection Board and the E5043A/C (item 4 and 5 in Figure 3-3). Fix the two cables using the cable tie as shown in Figure 5-21.

Figure 5-21 Connect the Cables



- Step 9.** Connect a flat (50 pin half-pitch) cable between the E5029K On Stage Buffer Unit and the E5043A/C Head Amp Control Unit (item 8 in Figure 3-3) as shown in Figure 5-21. Then tie the cables.
- Step 10.** Connect a read signal cable from the E5029K On Stage Buffer Unit (item 7 in Figure 3-3) and a read signal cable from the E5036A (item 6 in Figure 3-3) as shown in Figure 5-22. Then tie the cables.

Figure 5-22 Connect the Read Signal Cables

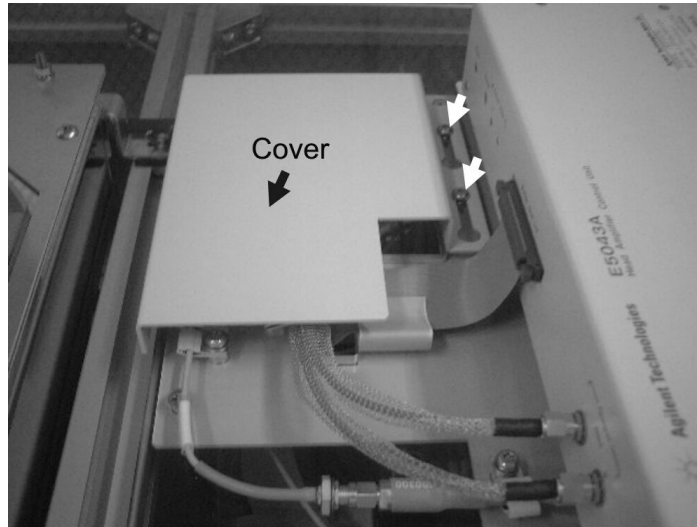


- Step 11.** Fix the cover with two screws with T20 TORX driver as shown in Figure 5-23.

Installation for E5013A
Install the Modules

Figure 5-23

Fix the Cover



Attach a Head Amp Power Supply Unit (E5043-60001)

There is a DC power supply (universal input voltage AC 85 to 264 V) inside of this box.

- Step 1.** Loosen the four screws back of the spinstand with T15 TORX driver.
- Step 2.** Attach the Head Amp Power Supply Unit with the brackets, and fix it by four screws as shown in Figure 5-24.

NOTE

Two kind of the brackets are included in the E5043A/C Head Amp Power Supply Unit. Attach the brackets to it which is using with the E5013A. Store the other brackets in a safe place.

Figure 5-24

Attach the Head Amp Power Supply Unit



- Step 3.** Connect the cable to the bottom of Head Amp Control Unit.

Attach a Fan Power Supply Unit (E5010-61063)

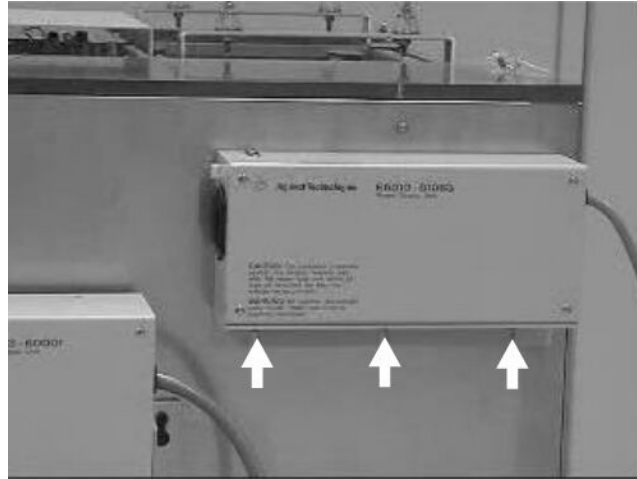
There is a DC power supply (universal input voltage AC 85 to 264 V) inside of this box.

Step 1. Loosen the three screws back of the spinstand cover with T10 TORX driver.

Step 2. Attach the Fan Power Supply Unit, and fix it by three screws as shown in Figure 5-25.

Figure 5-25

Attach the Fan Power Supply Unit



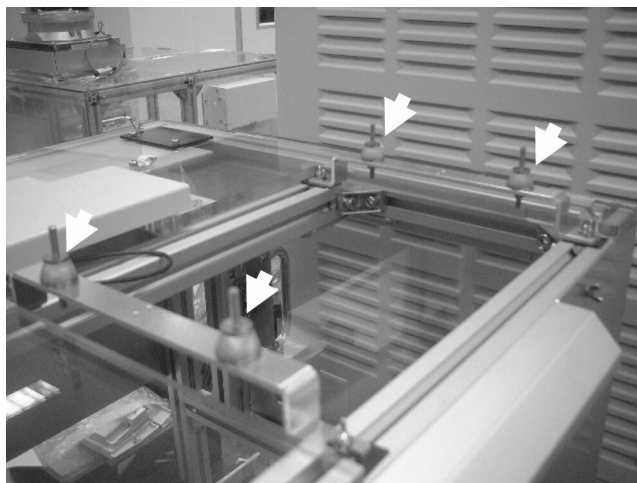
Attach a Fan Air Filter Unit to the top of Spinstand Cover

To control the flow of air around Media and HGA the Fan Air Filter Unit is attached.

Step 1. Remove the four nuts as shown in Figure 5-26.

Figure 5-26

Remove/Tighten the Four Nuts



Step 2. Place the Fan Guide Plate as shown in Figure 5-27.

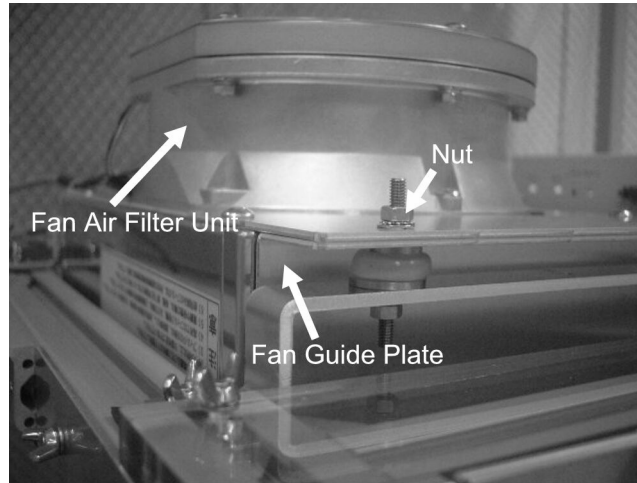
Step 3. Place the Fan Air Filter Unit as shown in Figure 5-27.

Step 4. Fasten the four nuts to fix the guide and the Fan Filter Unit as shown in Figure 5-27.

Installation for E5013A
Install the Modules

Figure 5-27

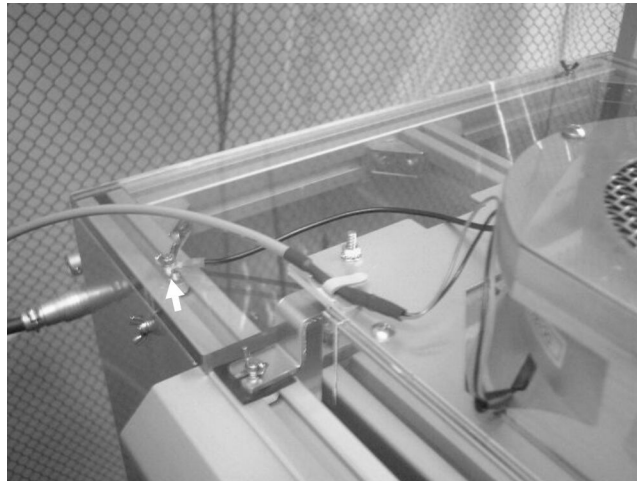
Place the fan Guide Plate and Fan Air Filter Unit



Step 5. To ground the fan, install a cable between the fan and the spinstand cover with the phillips P2 driver as shown in Figure 5-28.

Figure 5-28

Connect the Grounding Cable

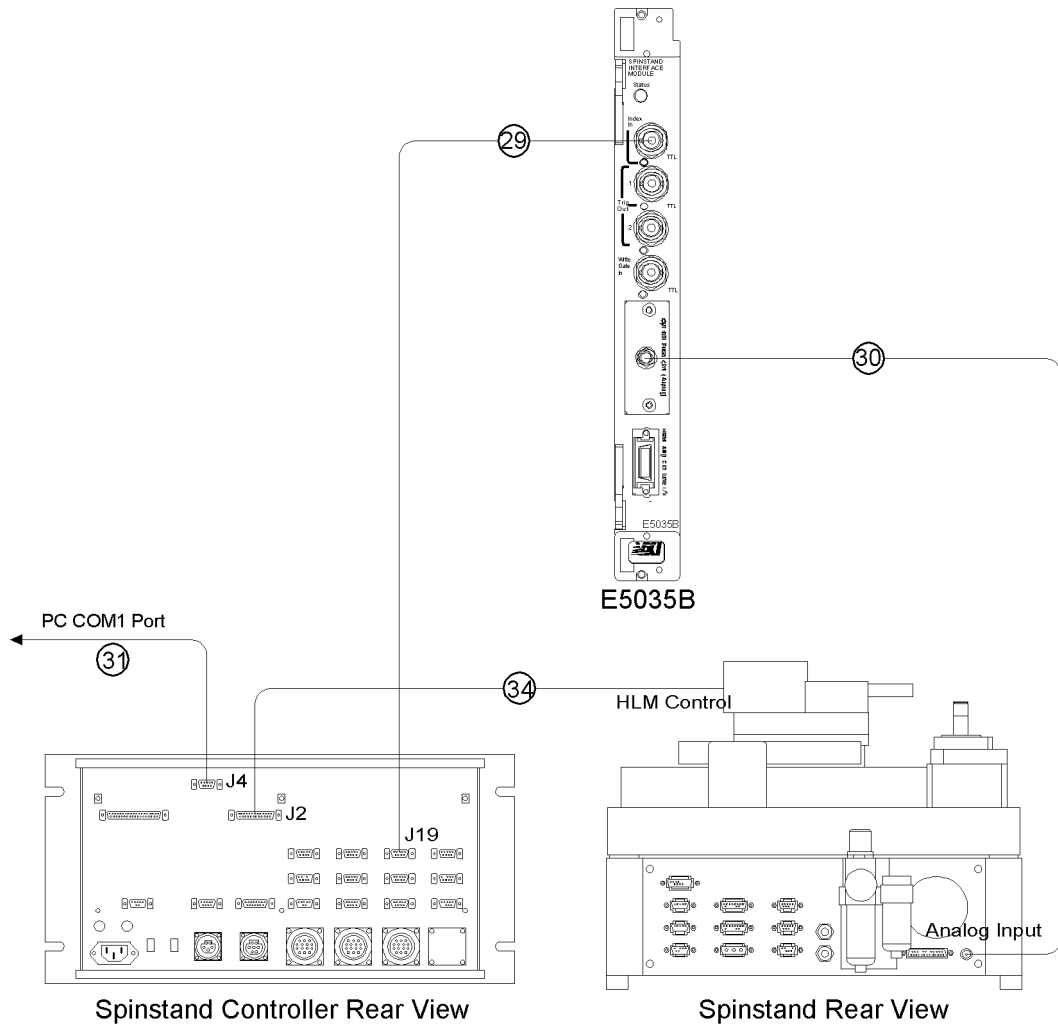


Step 6. Connect the cable to the Fan Power Supply Unit.

Connect Cables with the E5023A

Connect the cables with referring to Figure 5-29.

Figure 5-29 Cable Connection



e5023aie03003

Table 5-5 Cable Connection

No.	Description	Connection		Part Number
29	BNC(m)-DSUB(f) Cable	Spinstand Controller "J19"	E5035B "Index In" Blue Cable	E5023-61609
30	SMA(m)-BNC(m) Cable	Spinstand "Analog Input"	E5035B "Piezo Ctrl"	E5013-61601
31	Serial Cable	Spinstand Controller "J4"	PC COM1 Port	E5022-61628
34	DSUB(f)-DSUB(f) Cable	Spinstand Controller "J2"	HLM "HLM Control"	E5012-61603

Installation for E5013A
Connect Cables with the E5023A

A **Software Installation**

This appendix describes how to install the VEE revision 6.1 or above to the personal computer, if necessary.

VEE 6.1 or Above Installation

When the VEE 6.1 or above software's package comes with the E5023A, to launch the following application software is required to install it into the personal computer. By the way, when the VEE 5.xx or VEE 6.00 software's package comes with the E5023A, it can launch them without software installation.

- Test Environment (**Start - Programs - Agilent hard Disk Read / Write Test System - Test Environment**)
- Spinstand Tool (**Start - Programs - Agilent hard Disk Read / Write Test System - Spinstand Tool**)

NOTE

The above application softwares whose runtime version are also installed into the personal computer. To launch them is NOT required to install the VEE 6.1 or above.

How to install the VEE 6.1 or above

The VEE 6.1 and above require a code word license file to install. You must request one from Agilent by visiting Agilent web site. Get it and install the VEE 6.1 or above with referring to the 'Entitlement Certificate' and E5023A Operation Manual. The Entitlement Certificate evidences is attached with the VEE software's package.