Index

SAX Series 903 / 906

Specification of SAX Series

Model No.	SAX-903	SAX-906
Motherboard	ATX, Extended ATX	
Slot	7	
Drive Bay	3 x 5.25"(open) 2 x 3.5"(open)	
Color	Flash Gray	
LCD	14.1", 15.1", 15.4" (Tillable), 14.1"--15.4" LCD, 250 nits brightness, 50,000 hrs of backlight life	17"(Fixed) 17" LCD, 280 nits brightness, 50,000 hrs of backlight life
Resolution	1024 x 768, 1280x1024, 1400 x 1050	
D/C	ATI M3 chipset AGP card with 16MB ATI M6 chipset AGP card with 64MB Analog-to-digital conversion board	
Keyboard/Mouse	108 keys, multi-languages/touchpad	
Case Size	17.5" x 13.1" x 9.6" (445mm x 333mm x 245mm)	
Power Supply	Full range PS/2 350 Watt with Active PFC	
SKD Weight	11.5 kgs (25.3 lbs)	
Speaker	Built-in amplified speakers Amplified board output: 2 x 6 Watt Stereo Dual Speaker output: 2 Watt	
Carrying Case	Padded carrying case with wheels	
Card Stabilize Bars	2	
Cooling Fan	1 x 80mm x 80mm x 25mm (chassis fan) 1 x 120mm x 120mm x 25mm (back cover)	
Case	External chassis-flame retardant ABS Plastic/internal chassis-gold color aluminum alloy	

Environmental Specification

Oper. Temp.	0°C-50°C
Relative Lum.	20-80% (non-condensing)
Shock (Operating, all axes)	15g
Vibration (Operating, all axes)	1.25g @ 10-100Hz
Comply to	CE & FC Class B Compliant

1.0 Introduction

Version: 2004.1

SAX Series Portables:

- Compact& powerful rugged design portable
- Offer 7 slots expansion capability to accommodate a standard ATX size motherboard.
- High performance processing power.
- XGA （1024*768）TFT LCD Screen (from 14.1”-to 15.4”) with adjustable angle, and 17” SXGA+（1400*1050）none adjustable.
- Double cooling system with PS/2 & convection design.
- The new RJ-45 cabling style.
- Unique capacity flexible drive bay.

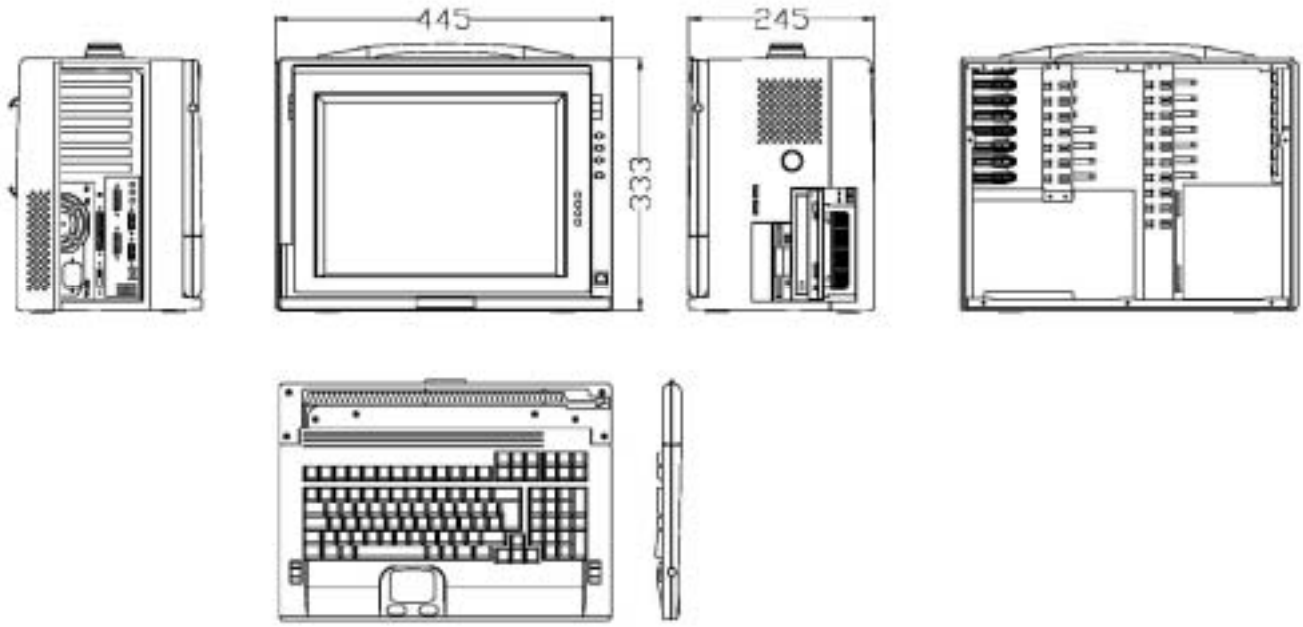
The SAX is a high performance industrial portable computing solution. And it is highly compatible across a broad range of hardware, software and operating systems. It has more computing power than that of most desktops, and traditional portable computers. Its full size add-in slots, Pentium 4 processing power, and a XGA resolution TFT color display make it a high performance field solution. The SAX series portables comply with FCC class B Part 15 and CE Mark. It’s an unpredictably powerful choice for workstation or server.

You can find SAX in industrial environment serving you with high performance computer bus analysis & telecommunication testing, multi-protocol network analysis, PLC programming, real time automatic industrial application and much more. It is designed to function with your needs in mind.

2.0 Getting Started

The SAX is a well design compact portable computing machine that is both nimble as well as rugged. It will serve your needs for both expansion as well as performance. An important aspect of the SAX is the concept of standardizations, which means all components that you can find off the shelf or proprietary designed will fit into the SAX. If the peripheral is designed according to industry standard for interconnectivity then it will fit. With that in mind, we will layout and identify each of the component. In this section you can find each component of the SAX with respect to its purpose and usage.

SAX 903/906



Drive Bays:

SAX 903/906 –with 2x 5.25" open bays, 2 x 3.5" open bays

Keyboard:

108-key
keyboard is integrated with the portable allow closing against the portable for both connivance and protection in transportation.

Keyboard Cable:

The keyboard cable connects to the keyboard internally with cable jack on other end for insertion into the portable lower right hand corner; allow easy access and removal of the keyboard.

LED Status Indicator:

The green LED indicates power on, the red LED indicates hard disk drive access.

Display:
Integrated TFT Active Matrix LCD provides XGA color display with resolution of 1024*768 (for 14" & 15").

Speaker:
Integrated two speakers built-in allow media audio play back without having to outsource attachment. Speaker has volume control for different environment usage.

Drive Bay:
The SAX 903/906 come standard with 2X5.25"size drives bays, and 2X3.5 size drive bays.

Power Switch:
The power switch to turn on the computer is located on the right side.

Fan:
Located inside the chassis, these fans will help draw out and push in cool air to alleviate excessive heat built-up for components inside the portable allowing worry free operation.

Expansion Slots:
Opening to provide access to the I/O ports on the installed add-in cards.

Expansion slot Cover:
The slot cover covers the I/O opening for protection of vital equipment inside, it serves to detour object from entering as well as cooling (drilled opening).

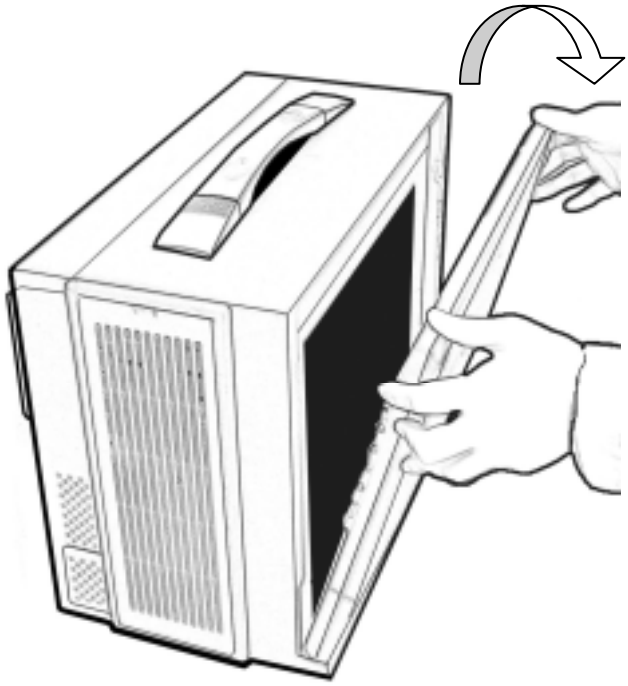
Handle:
Large handle provide convenient transportation of the portable with comfort and ease.

Keyboard Release Buttons:
These buttons when depressed will release the locking mechanism to detach the keyboard from the main portable chassis.

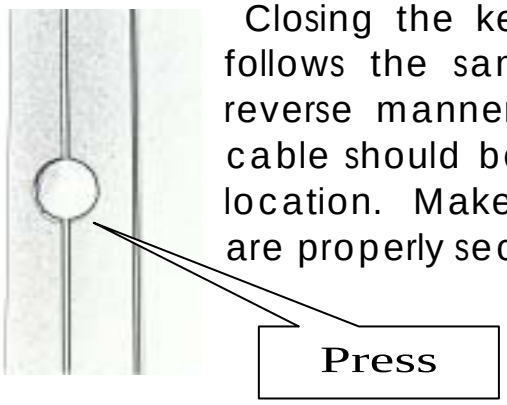
4.1 Keyboard and Touch pad:

How to release

There are two release buttons located on the top-left and top-right of the keyboard. When depressed, the keyboard is disengage from the portable and will release the keyboard structure. There are also two mounting leg located at the bottom of the keyboard that are inserted into the portable for fitting and stability, in which case you can start lifting the keyboard upward. The keyboard now can then be removed for usage.



How to close keyboard



Closing the keyboard back onto the portable follows the same procedure as opening, in a reverse manner. It is noted that the keyboard cable should be put back into its proper lodging location. Make sure the two locking mechanism are properly secure after it is put back.

What to look for

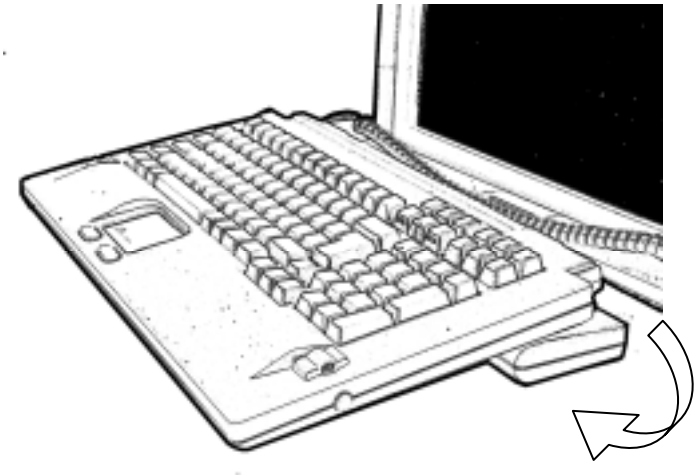
The keyboard cable is located on the top portion of the keyboard; it is a coil cable with a RJ45 connector at the end. The jack should now be attached to the portable (at the lower right hand corner) to be operational.

K/B usage

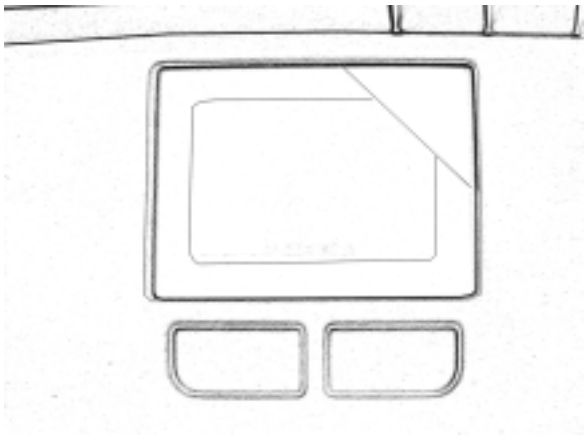
Keyboard is the main medium for inputting data into the system. The keyboard of the SAX series portables contains both a keyboard and a touch pad. Keyboard is a 108-keys Windows ready keyboard with power function and shortcut keys.

Keyboard position

You may want to adjust the keyboard angle by folding the top portion of the keyboard



TOUCHPAD operation



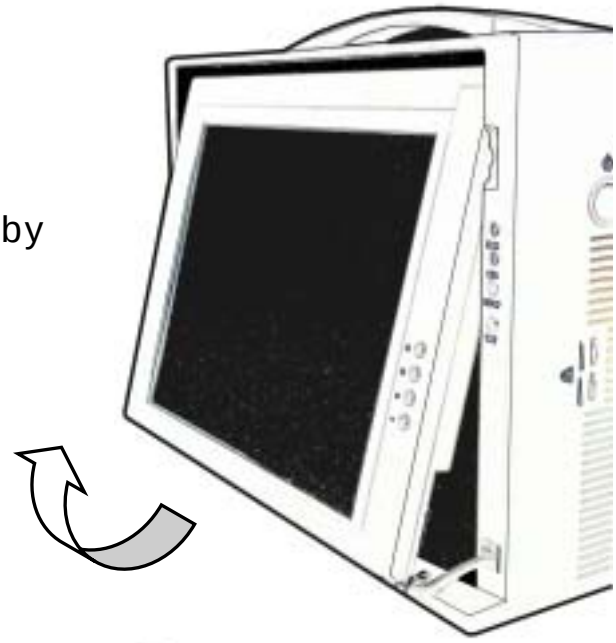
TOUCHPAD surface can be use to move the cursor in the GUI environment by placing and moving your finger. The two buttons located below the touch pad act as same as the mouse left/right button. Or you may wish to tap on the touch pad to indicate a left click.

4.2 I /O:

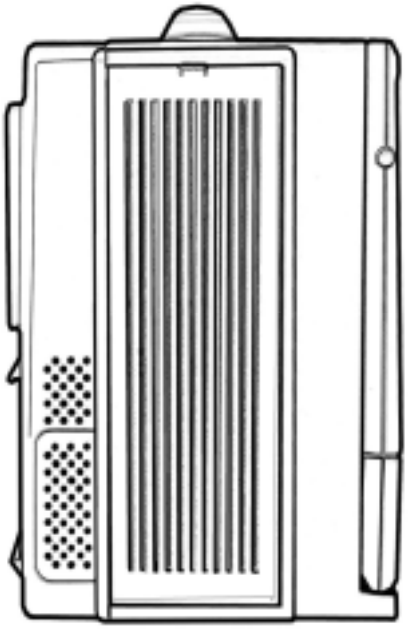
SAX 903/906 : 1x 25pin Parallel Port, 1x 9pin COM Ports, 2 x USB Ports, 1 x Ethernet RJ45.

4.3 LCD Display:

SAX 903/906 has an angle adjustable monitor. You may adjust your portable to a comfortable viewing position by tilting the LCD.



4.4 Side Panel:



The side panel is located behind the plastic protection cover that can be removed by pushing the clip. Depending on the system board and your add-on cards, you may also have other ports such as Ethernet port, and Audio ports. When in use, side panel can also be stored in a slot located on the back cover

4.4 Power switch and plug:

The power receptacle is located on the right side of the machine near the bottom. The three-prong power plug is supplied. Depending on your Power supply type, you may find a main power switch located next to the power receptacle and the position of the switch is of the following:

O=Off, I=On. This is the main power, to power up the system, user still require to power on the machine at the front of the portable, labeled Power. If your power supply does not have a main switch, user will control power on/off using the power switch located in the front.

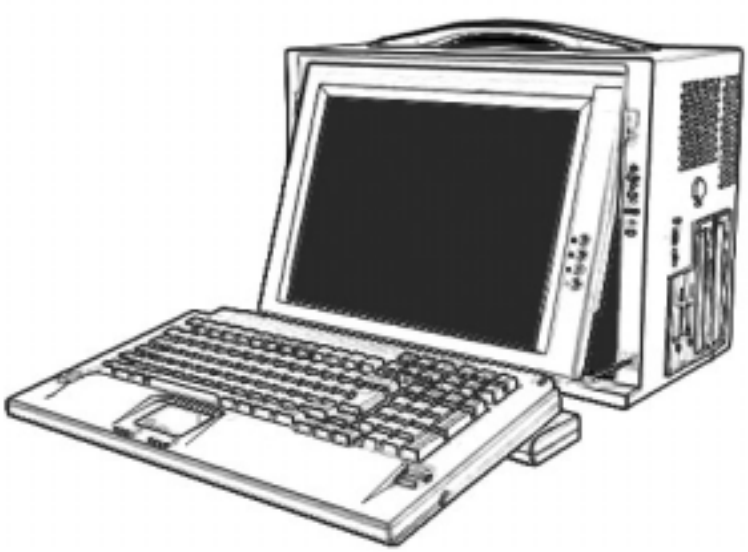
4.45 Power supply（PS/2）

This kind of power supply is supported in **SAX 903/906** series.

It's also Active PFC Full-Range, 400W output.

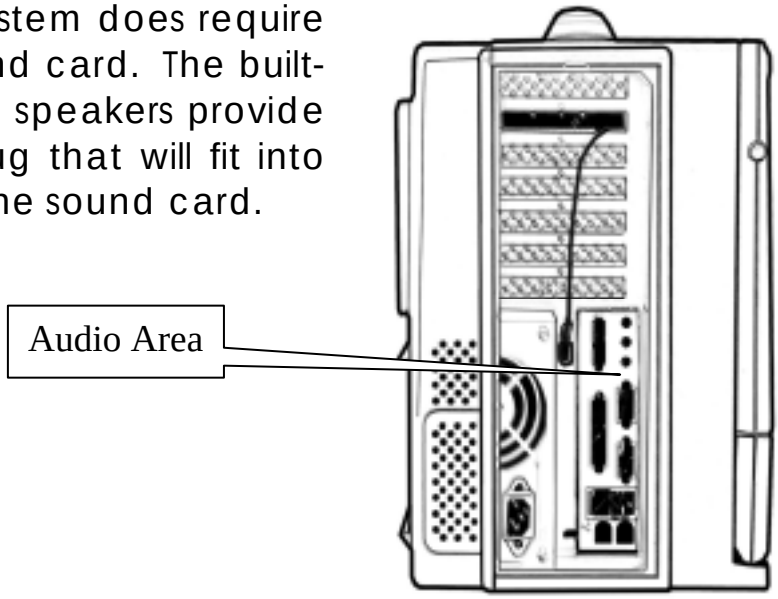
4.5 Hooking up external monitor:

he external CRT monitor / Projector can be hooked up via the side panel VGA (15pin) port while the system is off. The CRT/Projector will provide the cable to be inserted into this port. When connected, the display should come on if the machine is powered on. The signal is standard with the internal viewing resolution and the default setting is simultaneous display both on portable's LCD and CRT. To change the output mode (Simultaneous/LCD only/CRT only), please refer to your VGA setting.



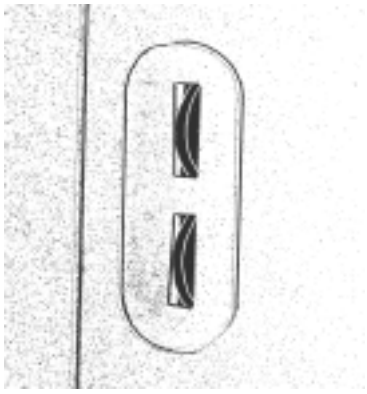
4.6 Audio:

The audio of the system does require user to install a sound card. The built-in internal amplified speakers provide a phono stereo plug that will fit into the output port of the sound card.



4.65 Volume adjustment:

There are two volume adjustments on the side panel.
Each volume adjustment may adjust right or left sound performance by any situation if possible.



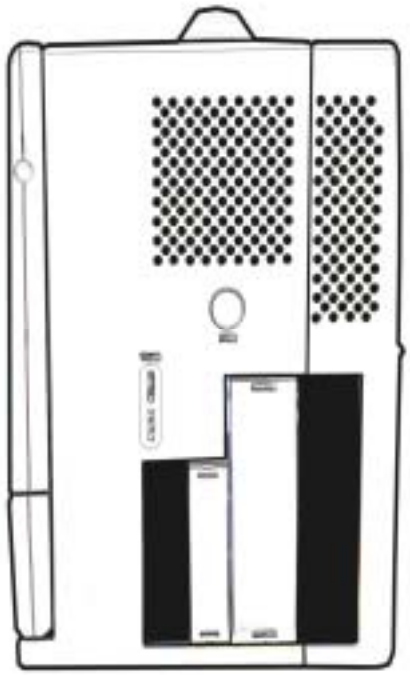
4.7 CD-ROM:

CD-ROM is important in that many of the applications available today are store on the CD due to their larger storage capacity. CD is read-only media (a CDR or CDRW are medium that are for user creation of data on CD medium) and is pre-loaded with data. You may open the CD-ROM drive door by pushing the eject button located on the door of the drive. During access to the CD-ROM, the light on the CD door will light up.

(The position of SAX CD-ROM is the same as side of FDD)

4.8 FDD Drive:

Floppy disk drive is essential as they are still an important medium for transferring data before systems. Floppy disks are available in all computer stores and are ready for usage in most case if pre-formatted. You may insert the disk into the drive with the disk face up. During access to the floppy, the lights on the floppy disk drive will light up, indicating the disk is currently being read/write; at this time you should be remove your floppy disk from the drive as it may cause damage resulting in data loss. Only remove your floppy disk when the drive light is off.



4.10 VGA

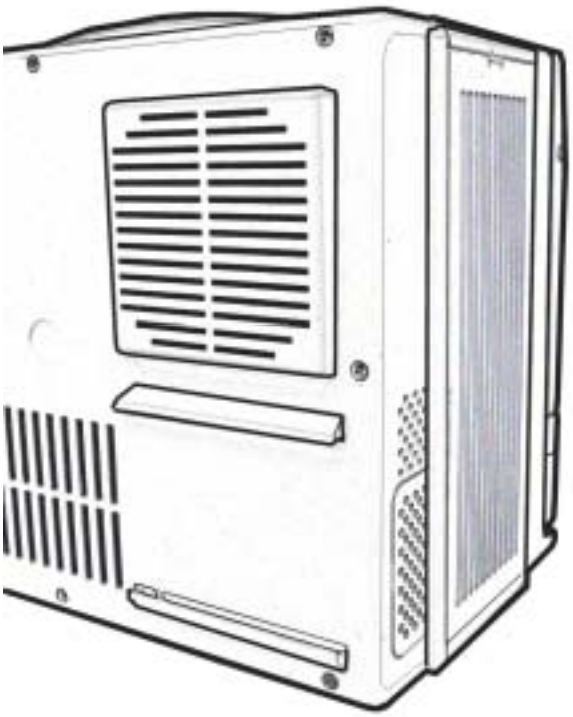
Based on your model you may have either:

1. 16MB ATIM3, 2x AGP
2. 64MB ATIM6, 4x AGP
3. Conversion Board
4. On-board system VGA

Please refer to your VGA user's manual for details

4.11 Unique Cooling System

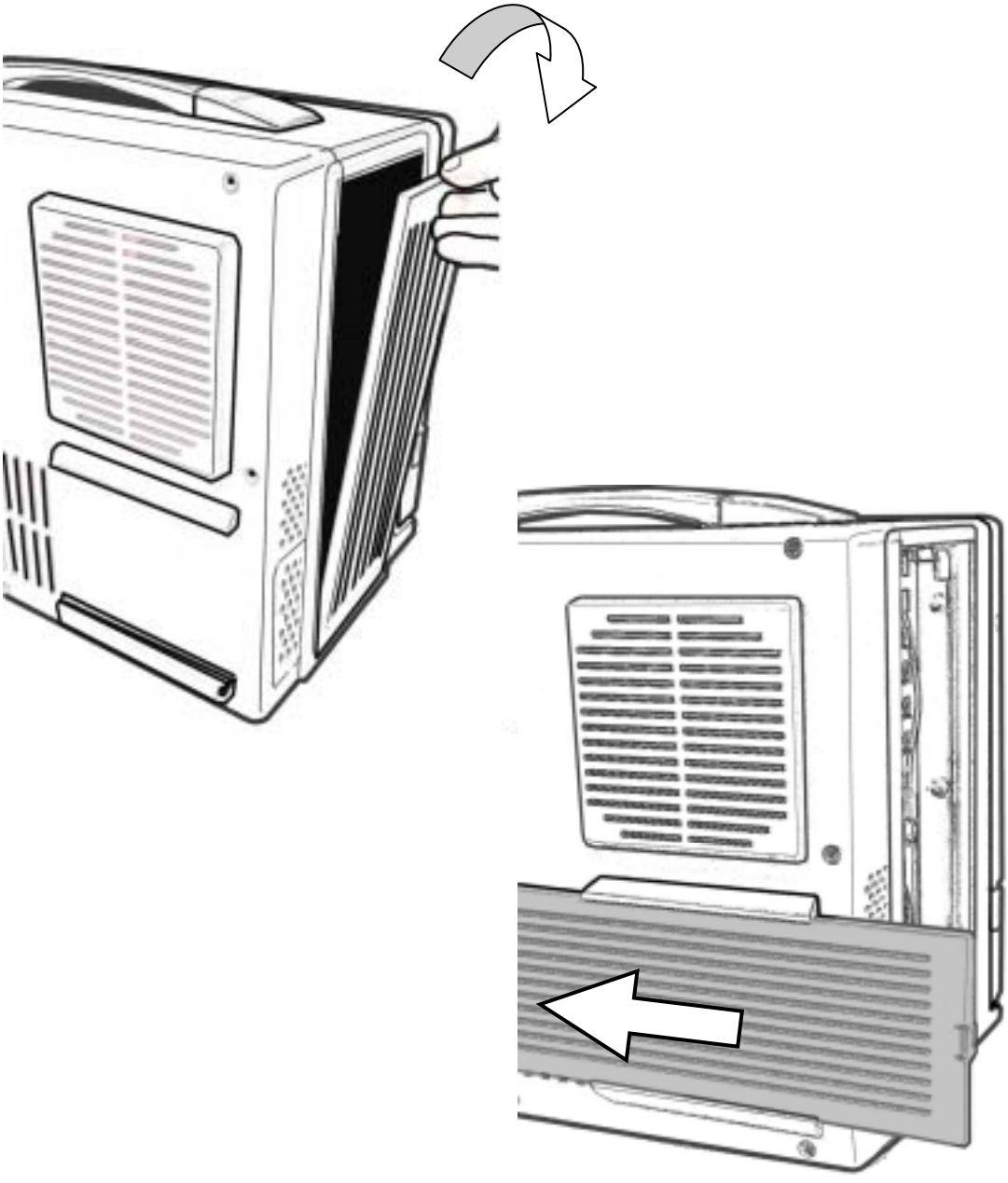
In SAX 903/906, we support the unique cooling system inside, There are including duel cooling fans & the 6.5" cooling fan. You may adjust the wind path to reduce the heat.



5.0 Hardware Installation

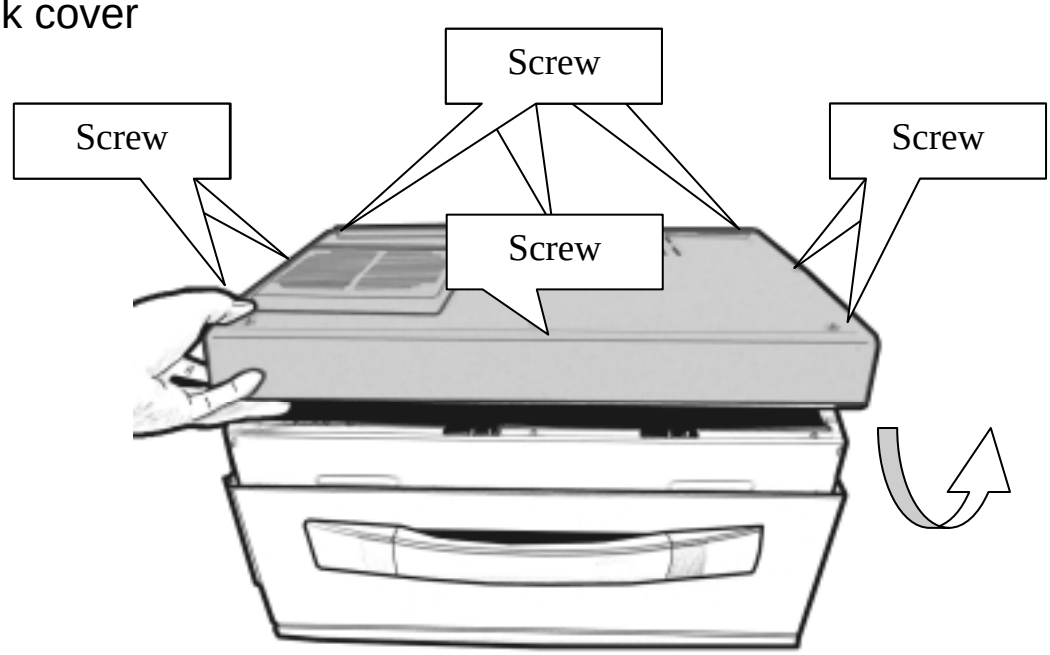
Before you attempt to open the SAX and do any hardware installation, make sure you have the proper knowledge of installation and compatibility feature of any upgrade. And understand the concept of electrostatic damage that can occur during handling of sensitive electronic equipments, proper precaution should be taken before proceeding.

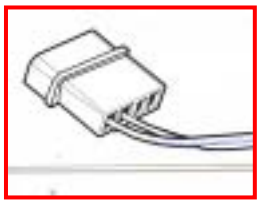
1. Remove the side panel---------



2. Open back cover----------

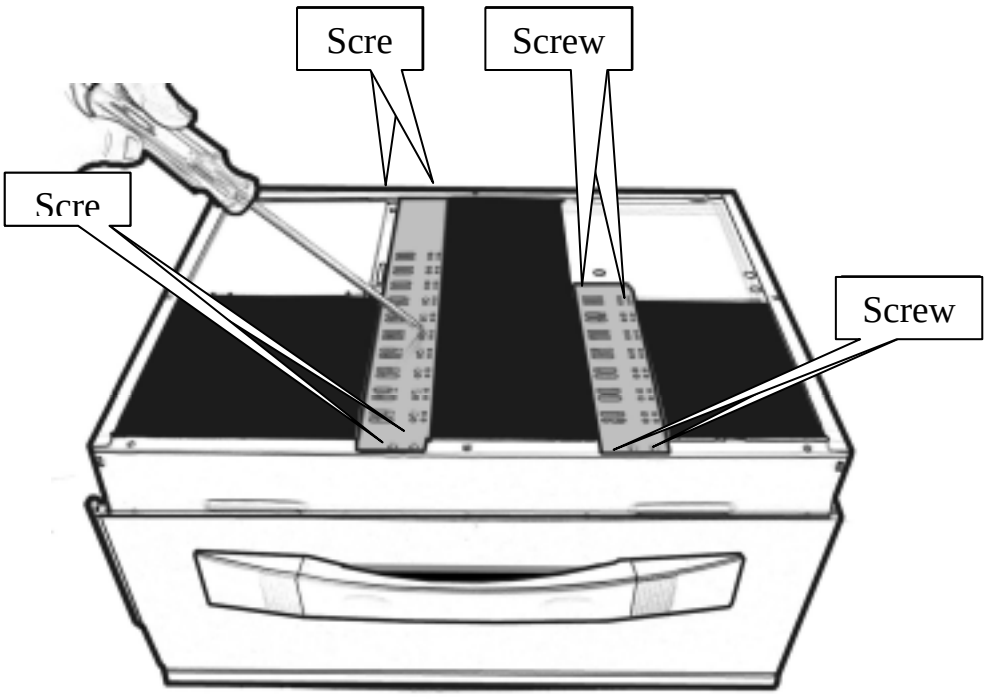
※The screws are well-designed that won't be departed from the back cover



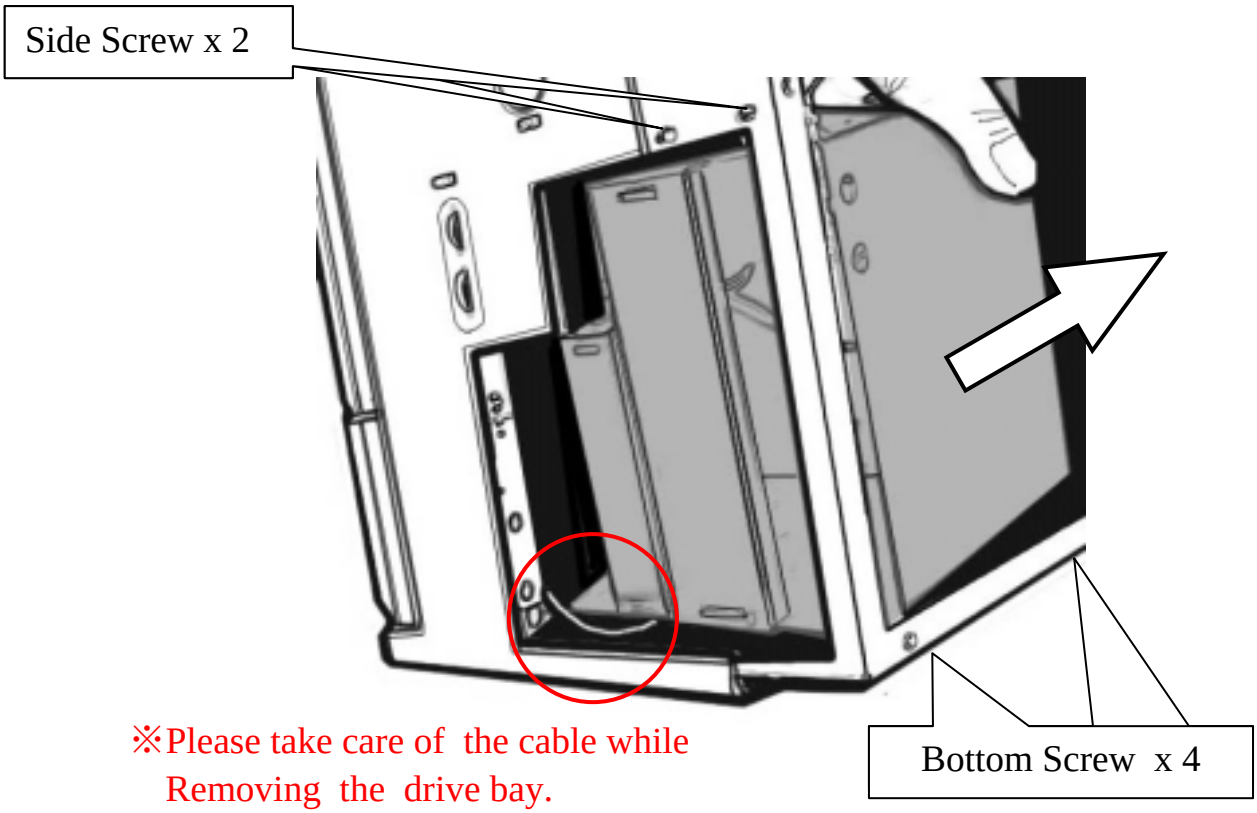


※ Before removing the back cover, please make sure to unplug the fan wire.

3.Remove stabilizer bars ------

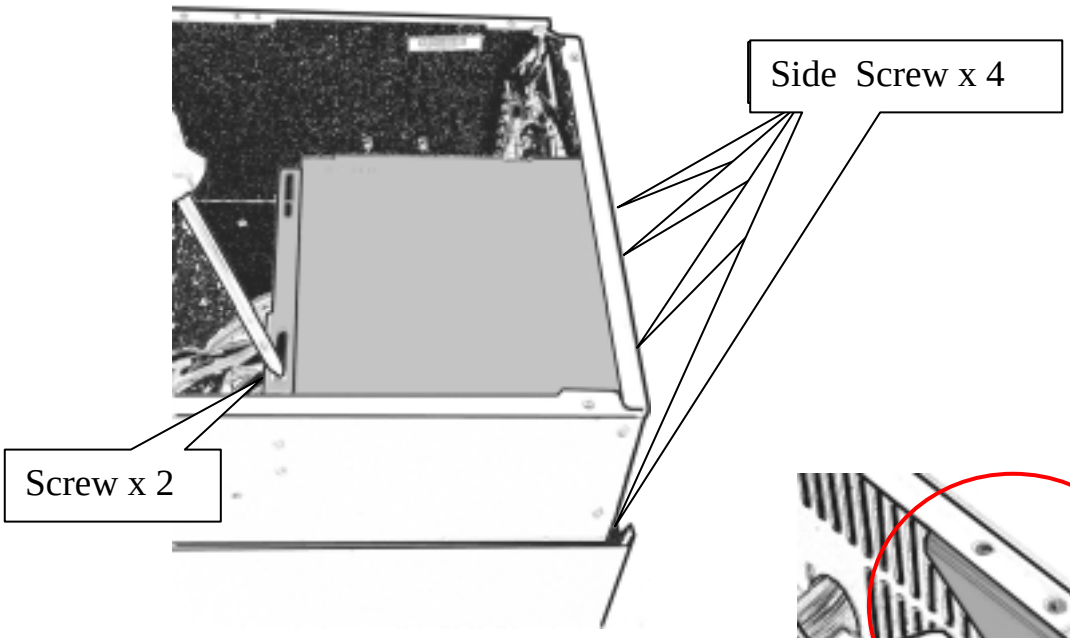


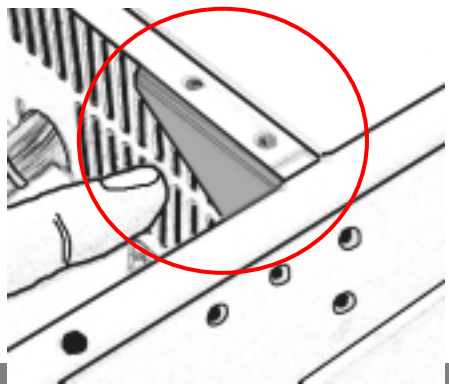
4.Remove drive bay housing----



※Please take care of the cable while Removing the drive bay.

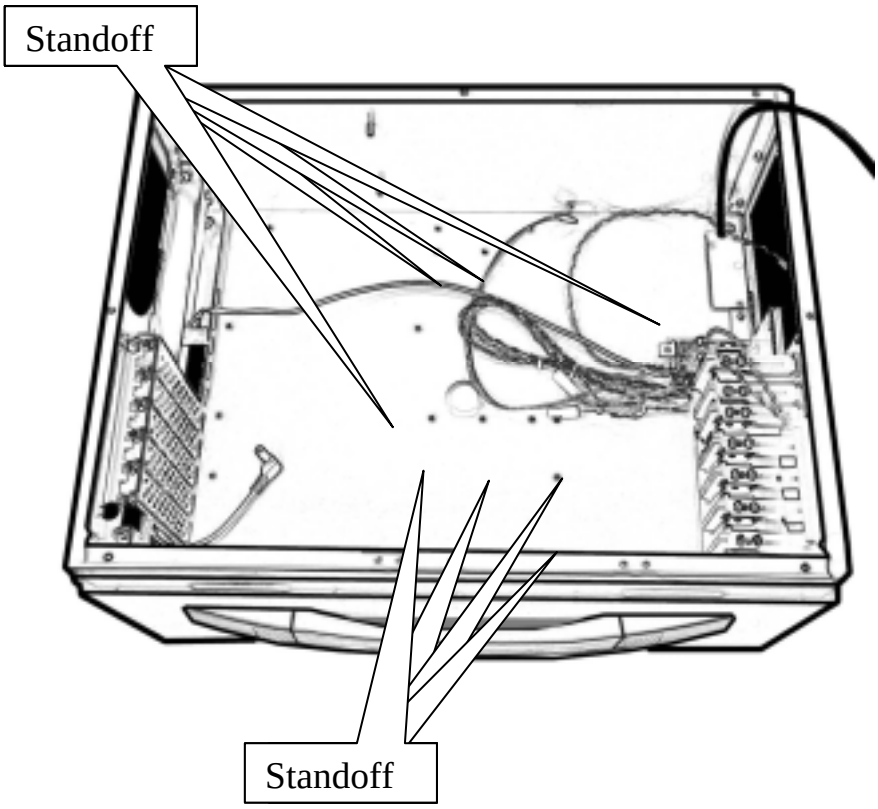
5.Remove power supply----------





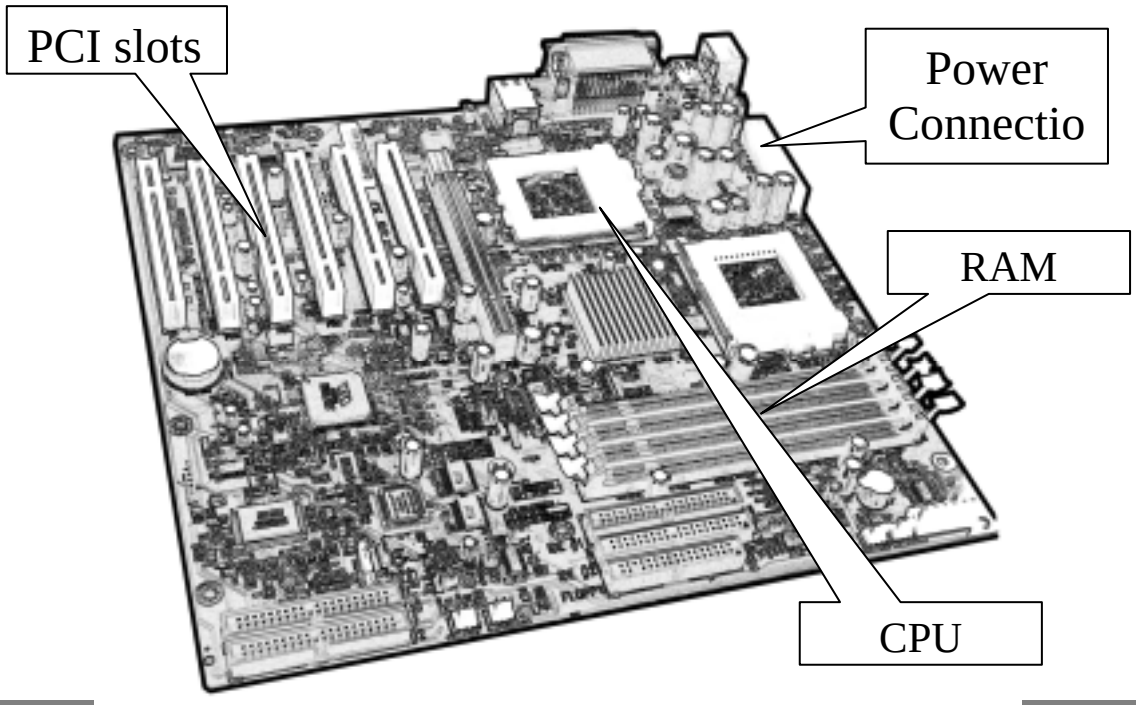
※Be sure removing the hanger before taking off the Power Supply, there are two more screws to unscrew.

6.Insert system board mounting standoff--------



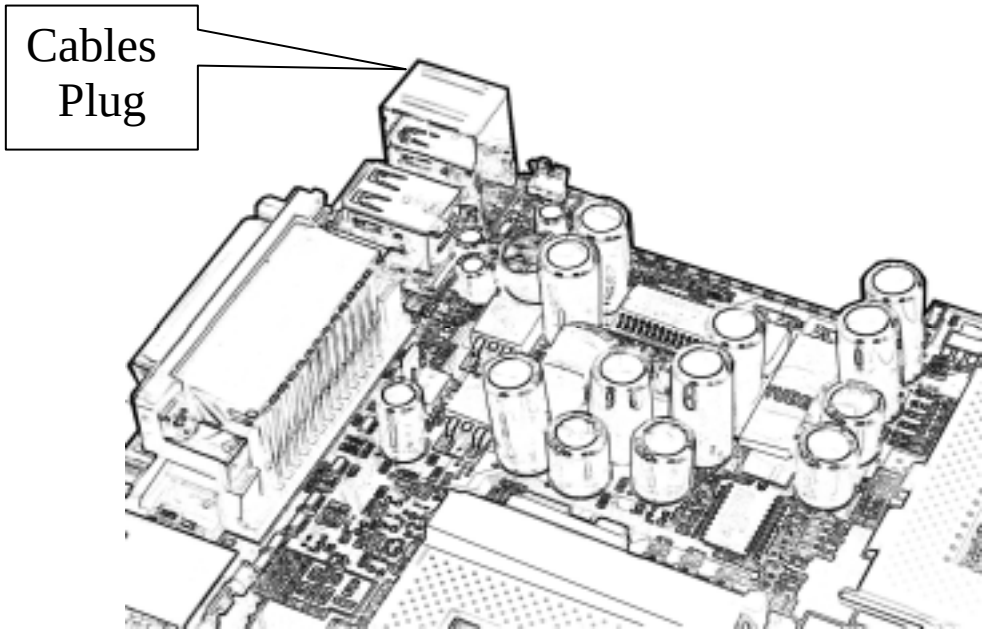
*Please refer to your system board manual for detail references.

7.Install system board with CPU and RAM-------



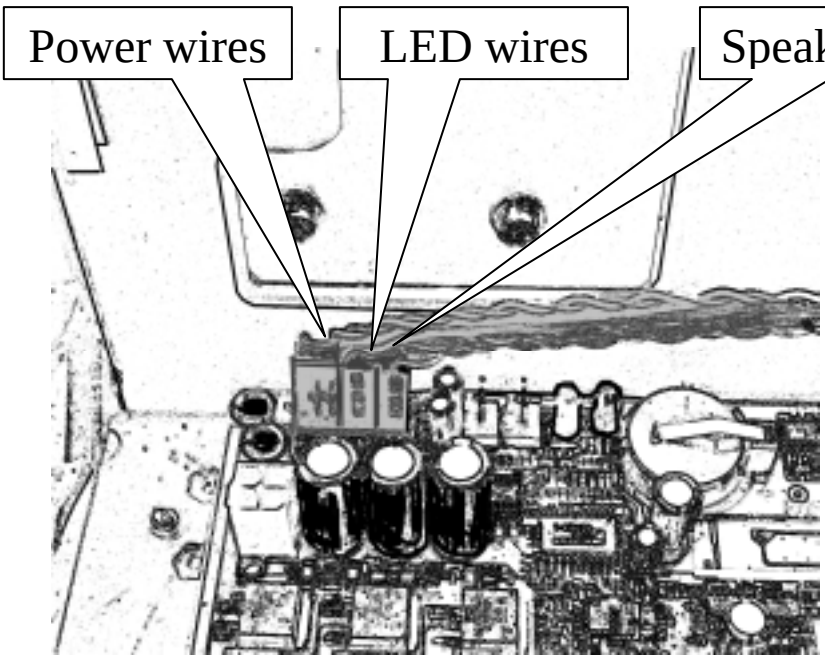
*Please refer to your system board manual for detail references.

8.Connect keyboard and TOUCHPAD cables--------



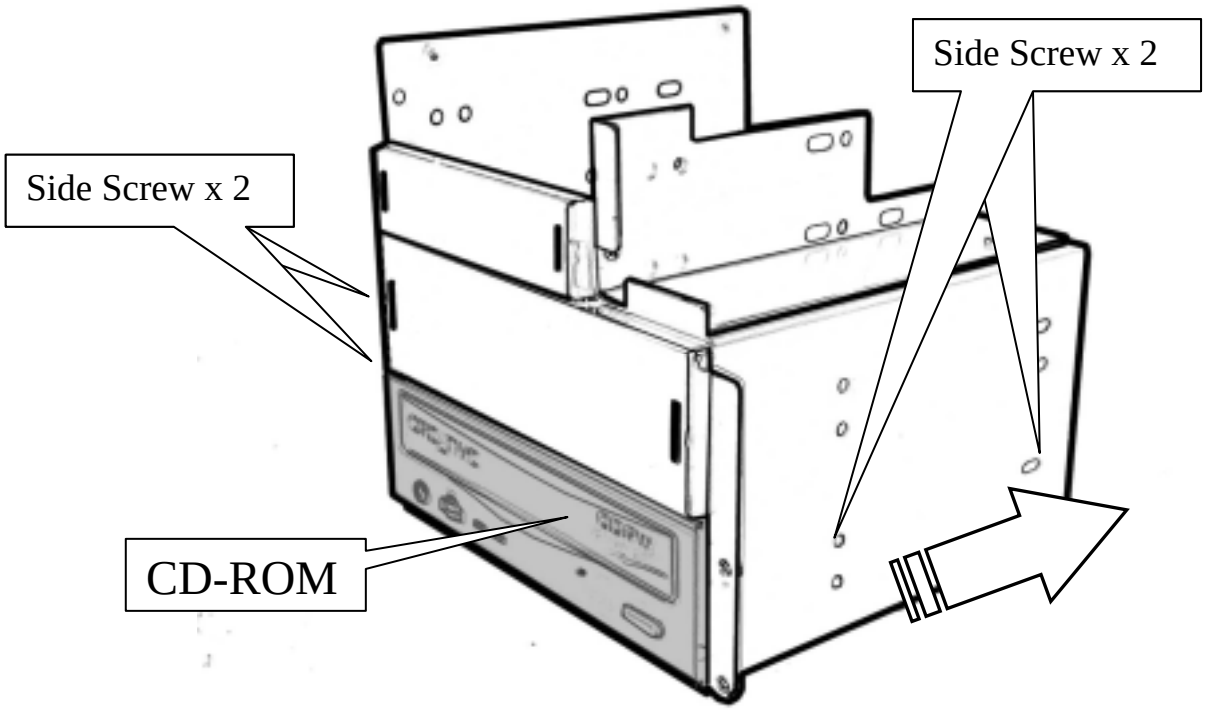
＊Please refer to your system board manual for detail references.

9.Connect power, LED, and speaker wires--------

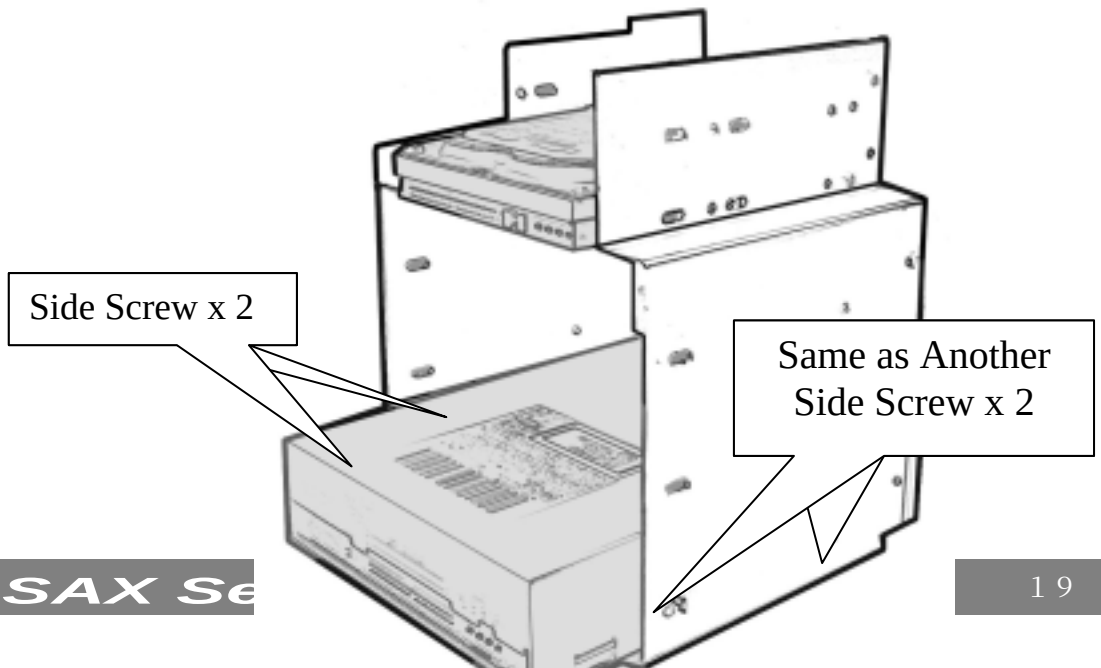


Please refer to System Board Manual for actual Location.

10.Install CD-Rom into Drive bay housing-----

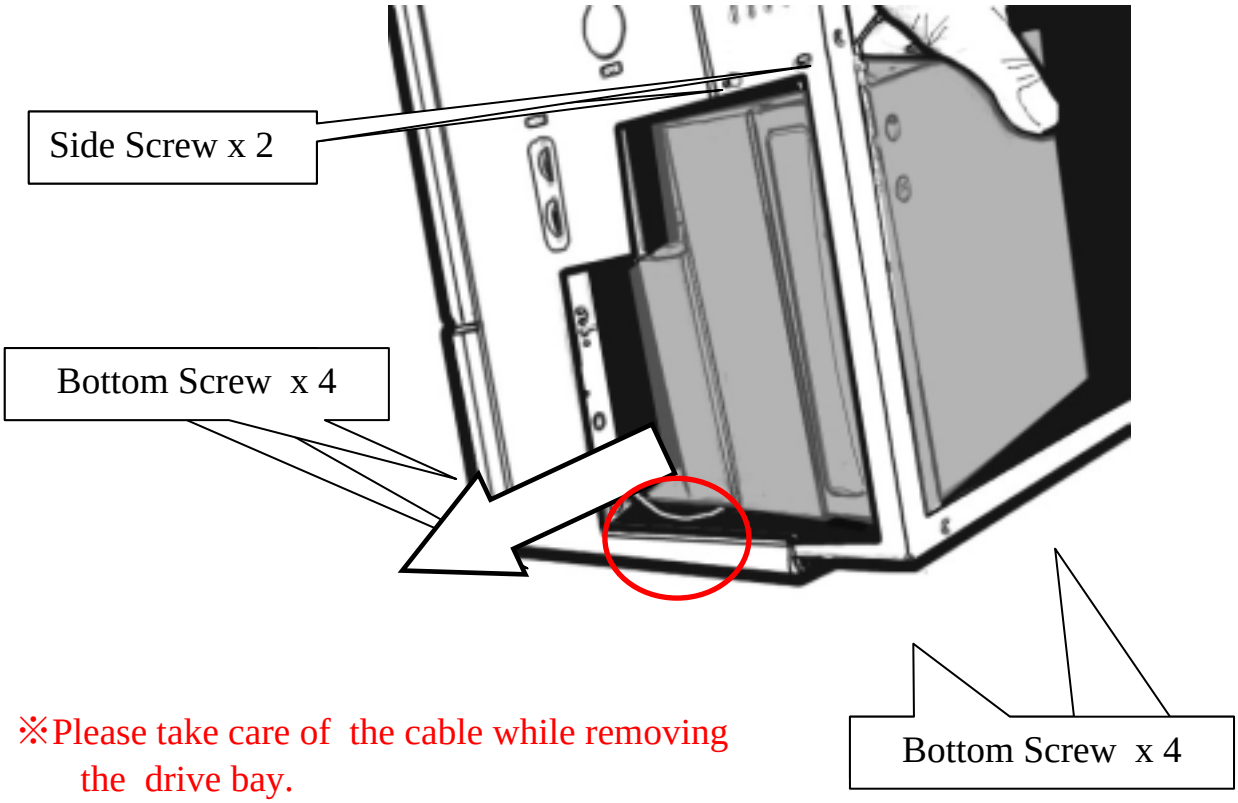


11.Install FDD and HDD into drive bay housing---



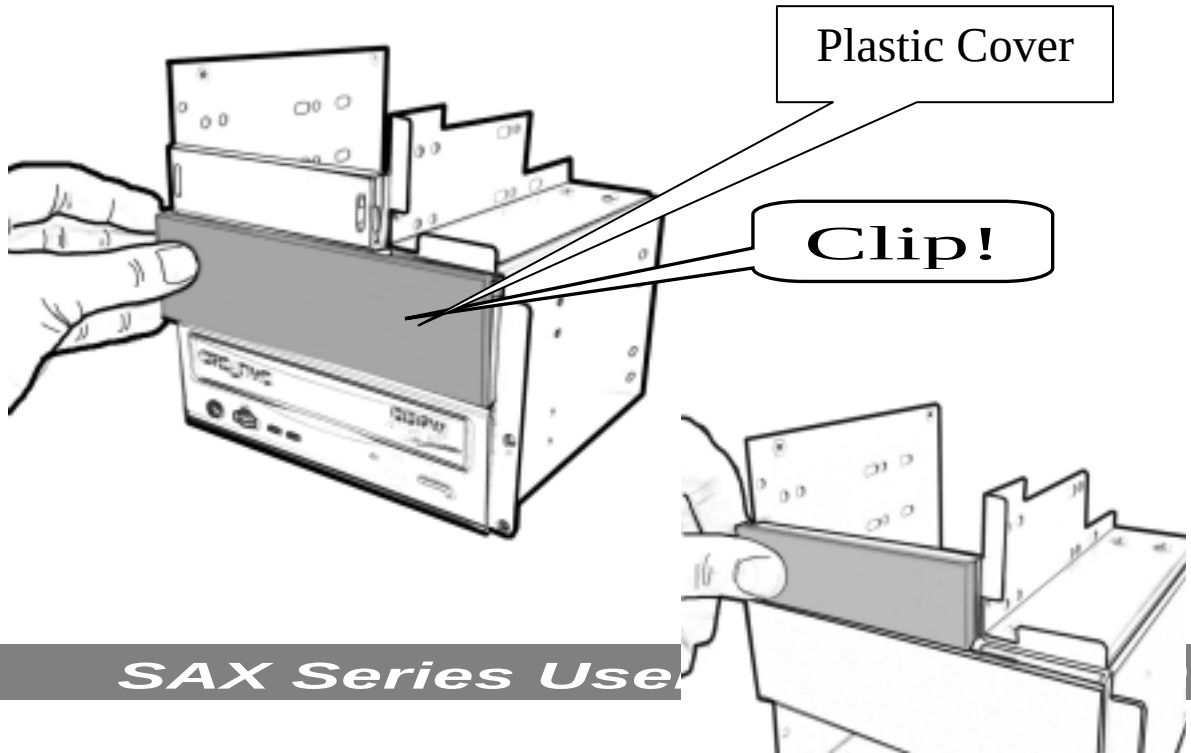
CD-ROM

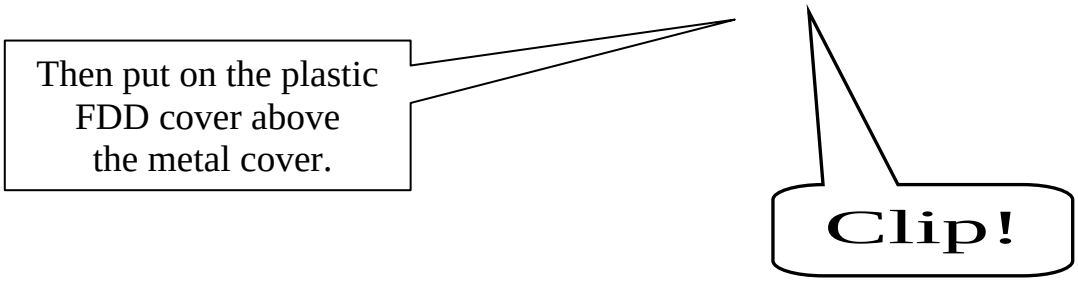
12. Install the Drive Bay into Chassis------



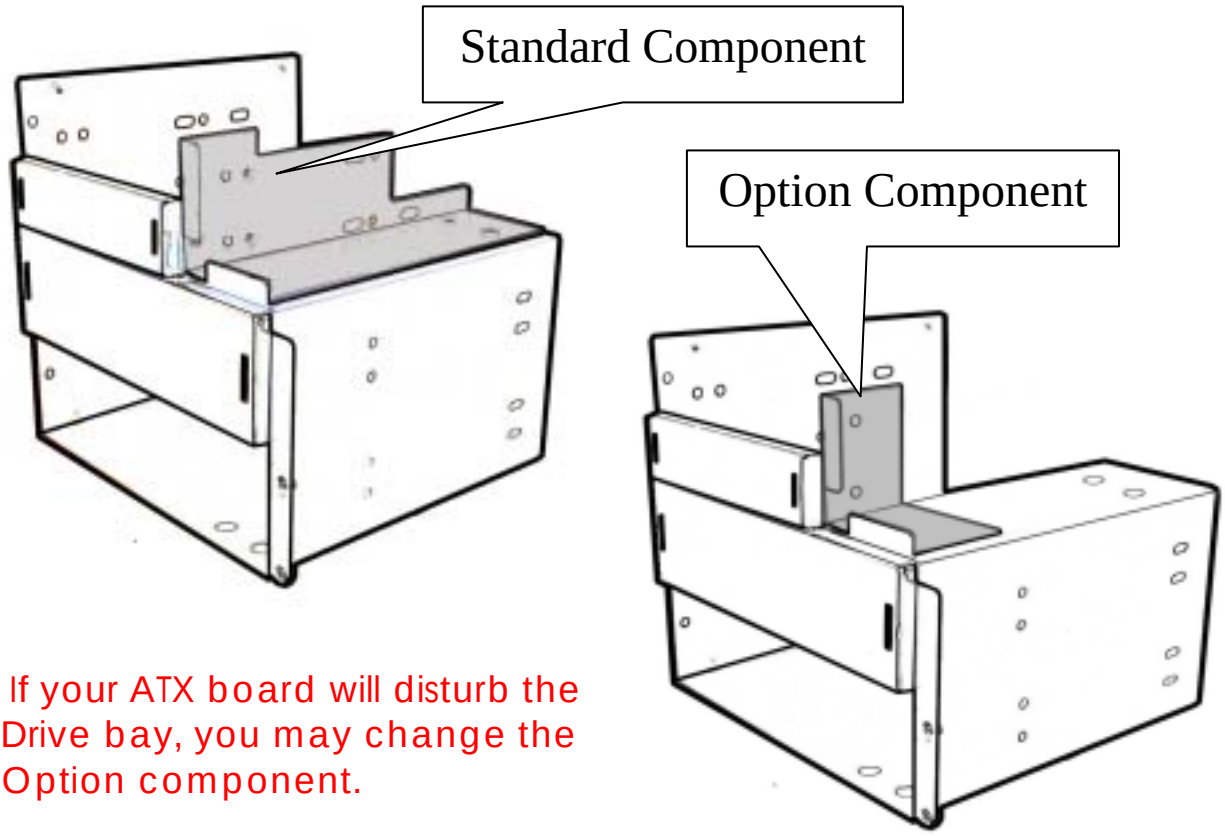
※Please take care of the cable while removing the drive bay.

13.Put on the plastic cover------



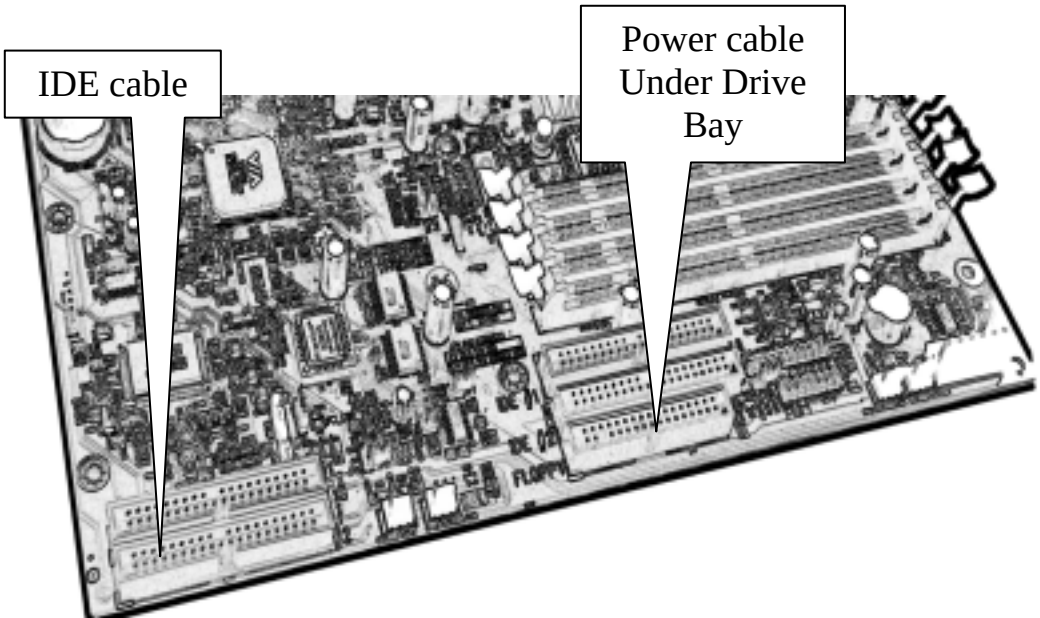


14.Change the metal component if needed to-----



※ If your ATX board will disturb the Drive bay, you may change the Option component.

15.Connect IDE and power cables------



Please refer to your model's removal process for reinstallation

16.Install power supply Into chassis-----

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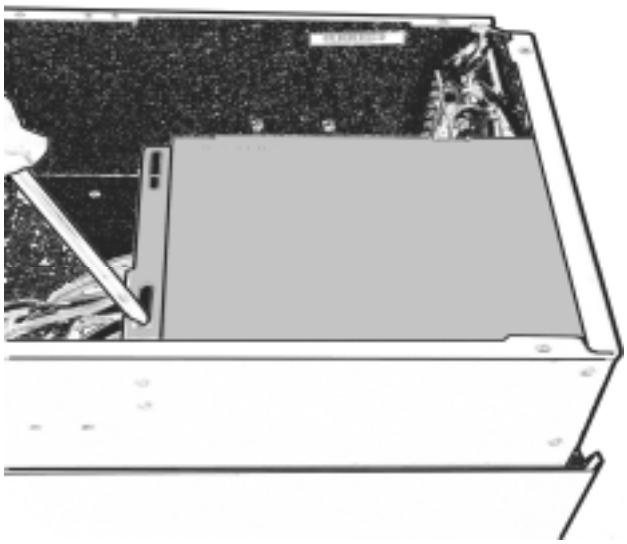
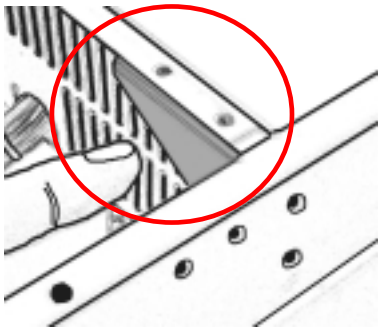
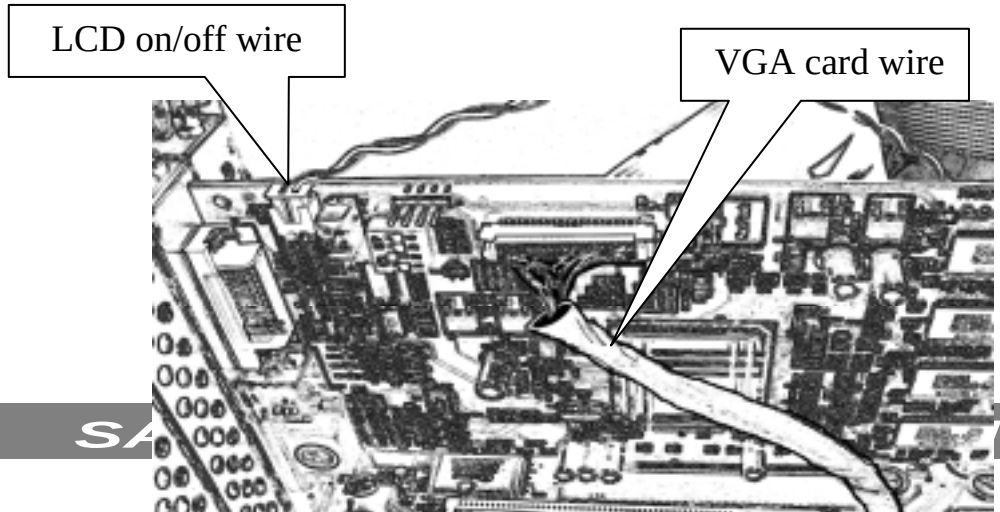


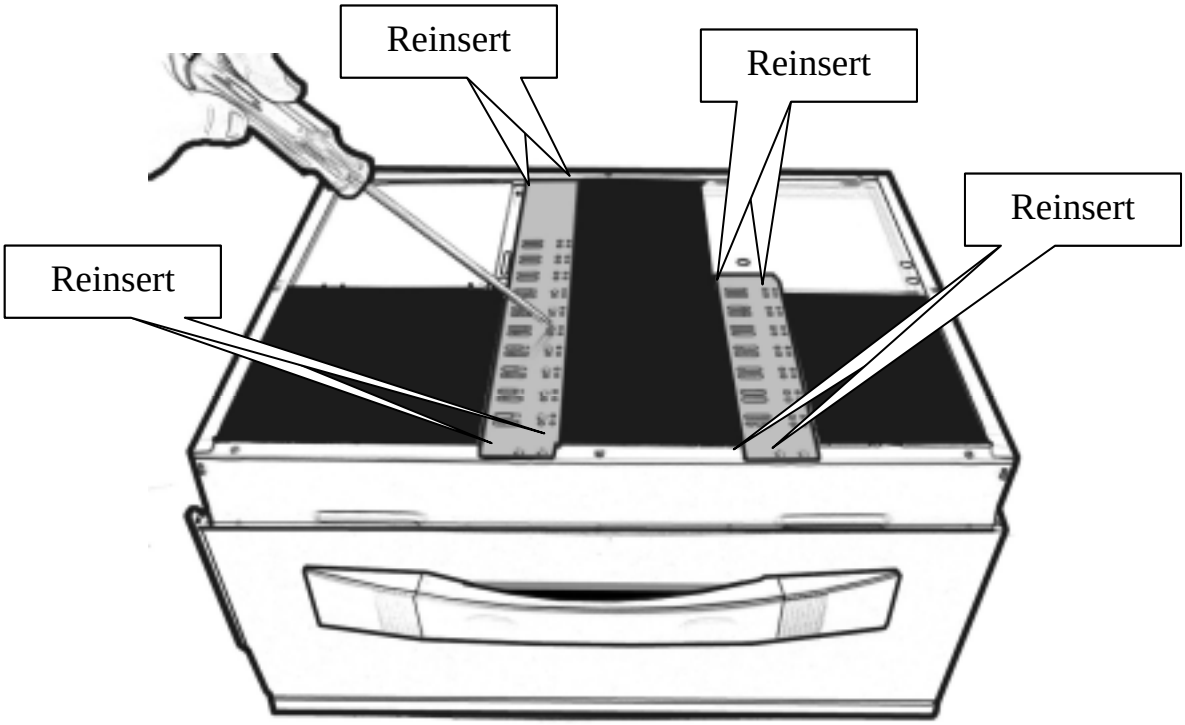


✳ Be sure reinsert the hanger before taking off the Power Supply, there are two more screws to screw..

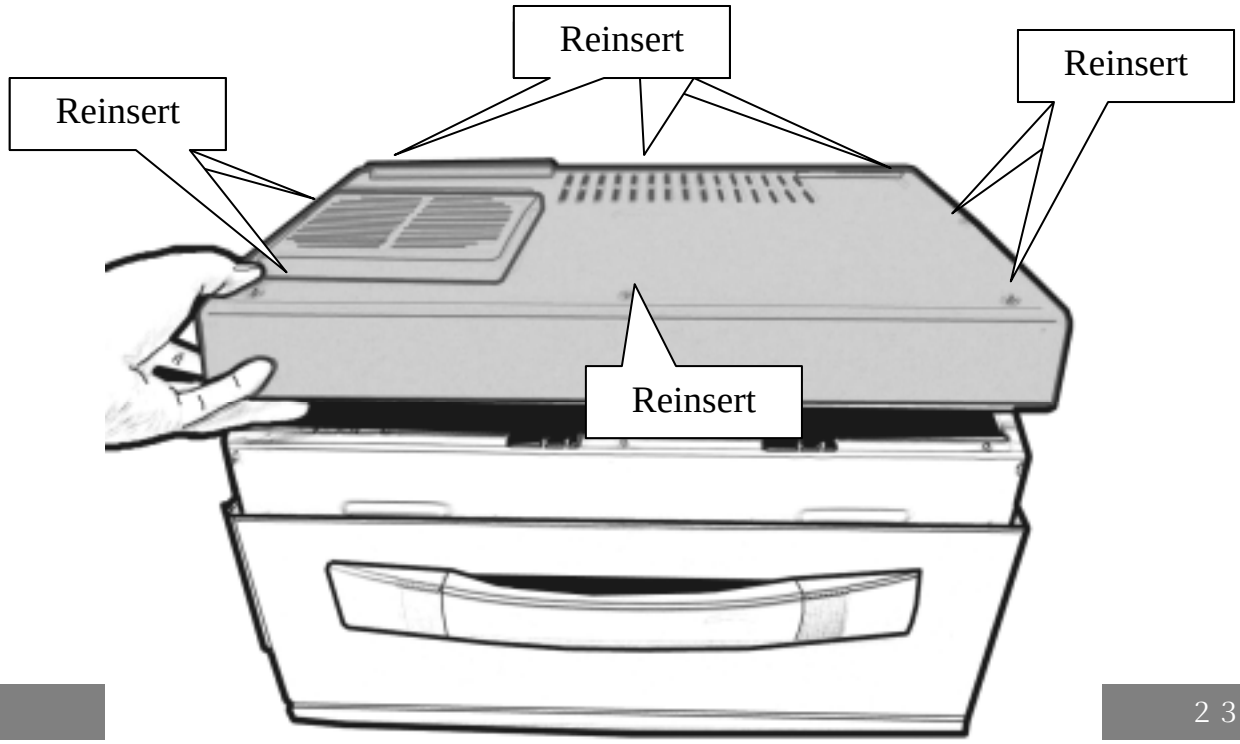
18.Install VGA card & LCD ON/OFF wire---



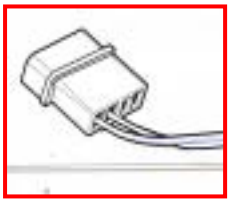
19.Reinsert stabilizer bars----



20.Close back cover----------



※Please remember plug-in the wire of cooling fan before reinsert.



6.0 Software Installation

CD-ROM Driver: CD-ROM driver are supplied with most operating system.

DOS Boot up: DOS boot up require you to have a version of the DOS installed on hard disk drive or floppy. Depending on the execution sequence you have set in the batch file, you will usually get a DOS prompt after loading.

Window Boot up: Windows boot up require you to have Windows installed in the hard disk drive. During Windows boot up, you will see a sequence of access to your hard disk drive which will eventually take you into a graphical user interface environment. As in the SAX, a copy of the Windows NT 4.0 Workstation is pre-installed in the machine.

Other O/S description: Many other operating systems are available in the market, such as Linux, Windows, Solaris and DOS. These operating systems will behave differently and you should react accordingly.

7.0 Maintenance

7.1 Handling of SAX:

You should always make sure the keyboard assembly is properly closed onto the SAX before transporting it. This will ensure you do not loose the keyboard as well as protecting the LCD screen. You may transport the portable in its carrying case, or you can carry the SAX on its handle located on top of the machine. The handle is located securely to the strongest part of the machine, and distributes the load of the SAX evenly as to allow easy carriage and proper balance.

7.2 Handling of Cable:

All cable should be treated with care. Do not over extend any cable and this could result in breakage internally in the cable. It is essential that cable with its plug be handled in the proper manner without force.

7.3 Handling of LCD:

Do not use any abrasive material to scratch the LCD screen, as they can leave marks on the surface. Do not apply any pressure to the surface of the LCD screen either with objects or hands; this will ensure that the screen do not suffer from internal damage or cracks.

7.4 Handling of Power:

Always make sure the power cord is in top condition before using them with the SAX. Make sure your power source is reliable and of proper standard. The SAX power supply is capable of handling 100-240V and 50-60Hz. Do not use the SAX on an already overloaded circuit.

7.5 Handling of K/B:

The keyboard is essential in that it helps protect the LCD during transportation. You should always watch for spill liquid or small objects from entering the keyboard. And the touch pad surface should be kept dry and clean for proper usage.

7.6 Cleaning LCD:

1. Do not use cleaner that contain alcohol.
2. Do not use cloth that could be abrasive to the surface of the LCD
3. Always gently wipe the LCD surface when cleaning.

7.7 Cleaning K/B:

1. Do not spill any liquid on to the keyboard.
2. Do not drop particle into the spacing between keys.
3. Using a compress air cleaner, you can remove the dust built-up within.

7.8 Cleaning Fan Filter:

1. Remove the filter from its housing.
2. Use a compress air cleaner to blow off the dust from the filter.
3. If necessary, you can wash the filter material, but do remember to dry it before inserting it back.

8.0 Problem Solving

8.1 Installation problem:

1. Normally problem with fail start up are due to installation problem.
2. Double check with all the peripheral cards or items you have added to the SAX.
3. Are all the items seated properly?
4. Are all the cable connected back to its original or correct position?
5. Are the items you have added compatible?
6. Before you check for these turn the computer off and unplug the power cord.
7. Check for 1 thru 5 and then re-power up the computer.
8. Remove all items that were added and re-try system power up.
9. If the system starts now, try inserting 1 new item in at a time and try powering up.
10. Repeat this step until you get the desire result.

8.2 BIOS Beep Code:

The BIOS beep code indicates error in system initialization. The BIOS of the system board will associate with video and memory error. Please check your video card is properly seated and your memory is installed properly.

8.3 System Fails to power up:

1. Check you power connection first.
2. Check the main power switch is in the ON position (I).
3. Press the power button located in front of the machine.

8.4 No display (LCD):

1. Check all the proper power up procedure has been taken.
2. Hook up an external CRT to the VGA port check if video is present.
3. If video is present on external CRT, check the internal LCD cable connection.
4. Or check your VGA setting using a CRT to make sure LCD video is enabled.
5. If there is no video on external, check your system makes sure everything is seated properly.

6. If everything is seated properly and still no video, call us for further assistance.

8.5 External CRT no display:

1. Check to see if you have internal LCD video.
2. Check your CRT is functioning properly.
3. Check your VGA setting to make sure external video is enabled.

8.6 Keyboard fails:

1. Make sure the keyboard plug is inserted completely into the portable.
2. Make sure you do not have another keyboard connected to the side I/O PS/2 port.

8.7 TOUCHPAD fails:

1. Make sure the keyboard plug is inserted completely into the portable.
2. If you have an external PS/2 mouse hook up on the side I/O PS/2 port, the touch pad will not function simultaneously.
3. If your operating system requires and does not load the mouse driver automatically, make sure you have the proper mouse driver loaded.

8.8 Floppy fails:

1. Make sure the diskette is of the proper specification (1.44MB, 720KB)
2. If floppy fail during POST, check internal cable fit.

8.9 CD-ROM fails:

1. Make sure the CD is readable.
2. If CD-ROM fails to be recognized during POST, check internal cable fit.

9.0 Standard SKD Accessory Kits

SAX Series				
Model	**Accessory Kit SKD**		**Accessory Kit System**	**Qty**
SAX *903/906*	**1**	User's Manual	User's Manual	1
	2	Driver CD	Driver CD	1
	3	ESD Bag	ESD Bag	1
	4	110 Power Cord 220 Power Card (Option)	110 Power Cord 220 Power Card (Option)	1
	5	Screw Pack (stabilizer)	Screw Pack (stabilizer)	1
	6	Stabilizer Supports Pack	Stabilizer Supports Pack	1
	7	Hardware Pack (system)		1
	8	Ports Label Sticker		1
	9	ATX I/O plate		1
	10	Hardware Pack（System）		1
	11	ATX I/O Plate Sticker		1
	12	Cooling Fan System Pack		1
	13	Plastic Drive bay Cover		1B 1S
	14	Metal Drive Bay Cover		1B 1S
	15	Option Drive Bay Component		1