

3D Mercury

English User's Manual

GZ-FW1CA-AJS/AJB

Thank you for purchasing Gigabyte Tech. thermal product. Gigabyte Tech. is dedicated to the integration of casing water/air-cooling solution technology to provide users with the most optimal solution for thermal dissipation. The five features of 3D Mercury series casing include state-of-the-art design, built-in liquid cooling system, system security, easy installation and etc. For further information and specifications of the "3D Mercury" series, please visit Gigabyte Tech. website. (<http://www.gigabyte.com.tw>)

The following are not covered by the warranty:

1. Using the product incorrectly or in a manner other than the designed purpose.
2. Nonobservance of the proper operation provided.
3. Malfunction due to interference from other devices.
4. Unapproved modification of the product.
5. Consequential damage to other objects due to the product's fault.
6. Malfunction arising from natural hazards, e.g. earthquake, lightning, fire, and floods.
7. The product's warranty label has been removed or damaged.
8. The devices inside, including power supply, hard disk, CD-ROM drive, motherboard, ventilator, etc, are not detached from the casing prior to transportation of the computer system, resulting in damage to the casing or other computer-related devices.
9. Any loss/damage caused by failure to follow the installation process with in the user manual.

Caution

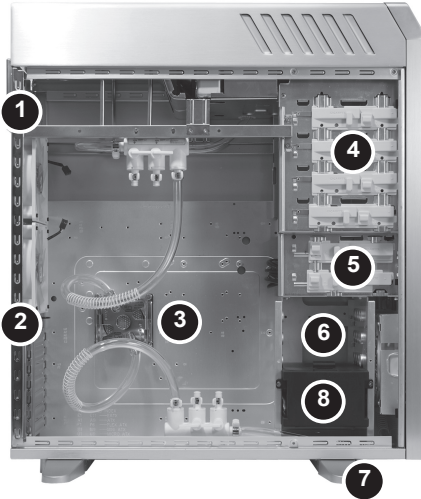
Failure to wear gloves during installation of computer products may cause bodily harm or damage to your devices. Incorrect connector installation may possibly burn out the motherboard and other components. Be sure to observe the instructions in the installation manual.

Table of Contents

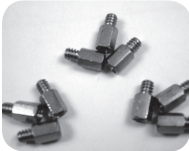
1. Components Introduction	4
1-1 Casing's Internal Structure	4
1-2 Front, Rear, and Left Side Panel Structure	5
2. Features	6
3. Specification Features	8
4. Installation Instruction	9
4-1 Installation of Power Supply	9
4-2 Installation of Motherboard	11
4-3 Installation of Add on Card	12
4-4 Installation of Front Multi-Media I/O Ports	13
4-5 Connection of Fan Power Cables	14
4-6 Installation of 5.25" Front Device Bay	15
4-7 Installation of 3.5" Front Device Bay	15
4-8 Installation of 3.5" Internal Device Bay	15
4-9 Application of Security Lock	16
4-10 Application of Foot Supports	16
4-11 Application of Transparent Side Panel	17
4-12 Application of Liquid Cooling System	17
4-13 4-way Splitter Valve Instruction and User Manual	20
4-14 Liquid Cooling System Maintenance	24

1. Components Introduction

1-1 Casing's Internal Structure



1. Power Supply Bay
2. PCI Tool-Free Fastener
3. Motherboard tray and PCI Slot panel
4. 5.25" Front Device Bay
5. 3.5" Front Device Bay
6. 3.5" Internal Device Bay
7. Foot Support
8. Tool Enclosure



a. Stand off x 12



b. Power Extension Securing Cable x 2



c. 3.5" device Securing Runner x 10



d. Key x 2



e. Wire clamp x 2



f. Motherboard Securing Screw x 12



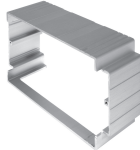
g. Power Supply Securing screw x 4



h. AM2 Water block bracket



i. Extended screw for securing power supply retainer plate.

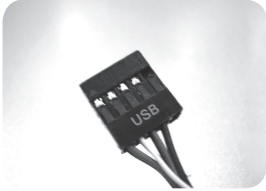


j. Extended power supply retainer plate.



k. Gigabyte Liquid Coolant x 2

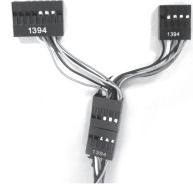
9. Front Cable Kit



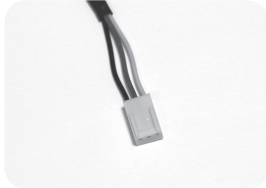
a. USB 2.0 x 2



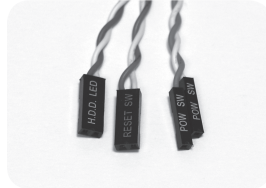
b. Audio (HD & AC97)



c. IEEE1394
(Multi-connectors)



d. 3-Pin Fan Connector



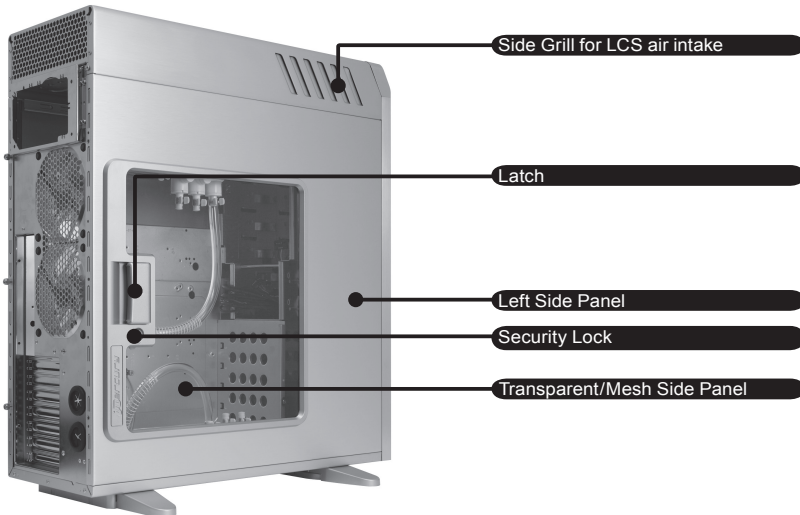
e. Power SW/Reset SW/HDD
LED Connector

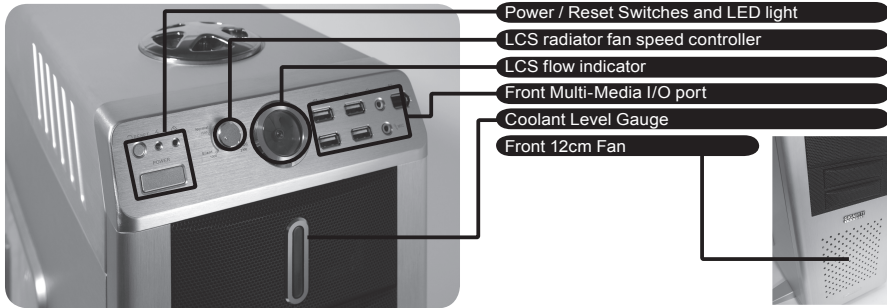
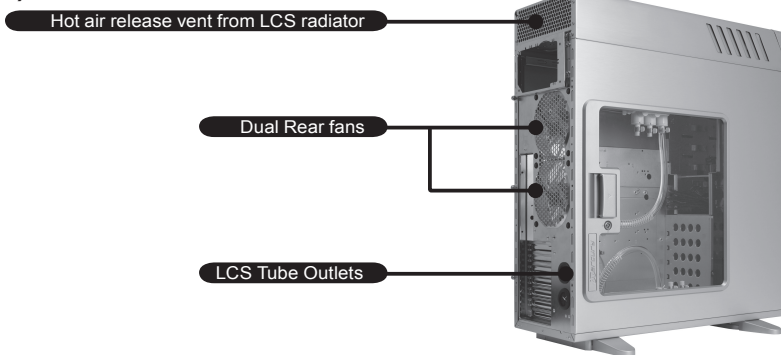


f. Motherboard 2-pin connector and 4-pin connector to power supply.

1-2 Front, Rear, and Left Side Panel Structure

a) Left Side Panel



b) Front Panel**c) Rear Panel**

2. Features

- All new Upgrade, Extremely Big Volume

Extended Body, for easy installation and service, support SLI, Cross Fire Dual/Quad multi-graphic cards, and support 12" x 13" motherboard.

- High Quality Design

Gigabyte Tech. top-class full tower thermal solution casing Lightweight aluminum alloy with hair-line brush anodized finishing Full-open aluminum side panel door design, with hair-line brush anodized finishing.

- Complete Support

Complete front panel multi-media support, including 4 x USB 2.0, 1 x IEEE1394, 1 x audio jacks (HD & AC97)

Full Support of Gigabyte Tech. thermal solution LCS and air-cooling products lines Support ATX / Micro ATX / Mini ATX / E-ATX / CEB motherboard.

- Integration of Cooling Technology

Aluminum alloy chassis for accelerating system cooling performance Gigabyte Liquid Cooling System situated in the top interior of the chassis. A 400L/hr strong silent water pump. Automobile standard, aluminum radiator with dual 12cm silent fan on either side. Pure copper CPU water block. 2 x 4-way splitter valve for easy upgrading. Only a few easy steps to complete installation.

- System Security

Viewing window at the front of the chassis to see the coolant level in tank.

Automobile standard tubes used to prevent bending and inadequate water flow.

LCS flow indicator.

Auto-induction of low water-level protection (LWP) and over temperature protection (OTP).

Side panel security lock to provide optimal system security.

Reinforced nickel-plated rear panel.

1.0mm reinforced aluminum structure.

- Convenience of Assembly

Integrated LCS already installed, tested and ready to use.

Scratch-resistant processing that ensures safety during assembly.

Tool-free installation design.

Detachable tool enclosure to store tools, screws and cables.

A single-handed latch to open the side panel, for easy disassembly.

3. Specification Features

Model: GZ-FW1CA-AJS/AJB

Case Type: FULL TOWER

Size: 205 x 620 x 535 (W x H x D)

Front Bezel Material: Aluminum

Color: Silver/Black

Side Panel: Vent mesh/Transparent acrylic

Body Material: Aluminum (1.0mm) / nickel-plated SECC (1.0mm)

Net weight: 12KG

5.25" drive bay (external): 4 Controller

3.5 drive bay (external): 2

3.5 drive bay (internal): 5

PCI slot: 7

Motherboard size: ATX / Micro ATX / Mini ATX / E-ATX / CEB

System Fan (Front): 1 x 12cm Silent Blue LED fan (1000 RPM)

System Fan (Rear): 2 x 12cm Silent Blue LED fan (1000 RPM)

LCS Fan (Top): 2 x 12cm adjustable fan (1000 RPM - 2600 RPM)

Multi-Media I/O port: 4 x USB 2.0 / 1 x IEEE1394 / 1 x audio jacks HD & AC97

4. Installation Instruction



Please follow the reference sections in order for installation

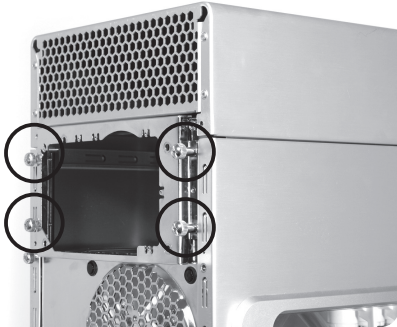
4-1 Installation of Power Supply

To facilitate the installation, it is recommended to set the chassis upright on the table.

Required Tools: power supply securing screw x 4

4-1-1 Remove the thumb screws of the left side panel and detach the left panel by unlatching the side panel.

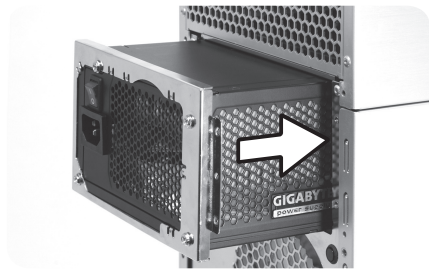
4-1-2 Remove the thumb screws of the power supply retainer plate at the back of the chassis and remove.



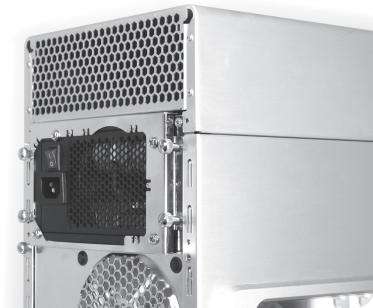
4-1-3 Secure the power supply onto the retainer plate, by using the 4 fixed screws.



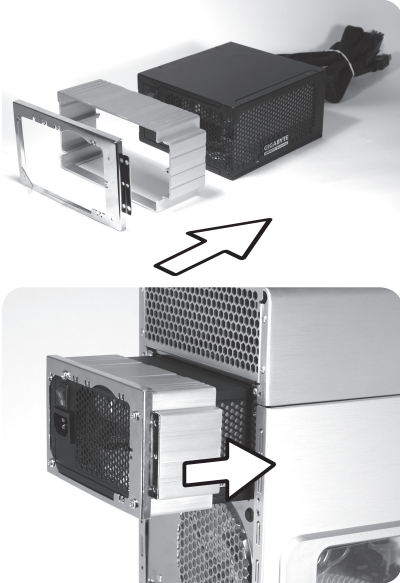
4-1-4 Slide in the power supply from the rear of the chassis.



4-1-5 Use the thumb screws to secure the power supply retainer plate to the rear of the chassis.



4-1-6 If a longer power supply is used, please use the extended power supply retainer plate and secure with the extended screws.



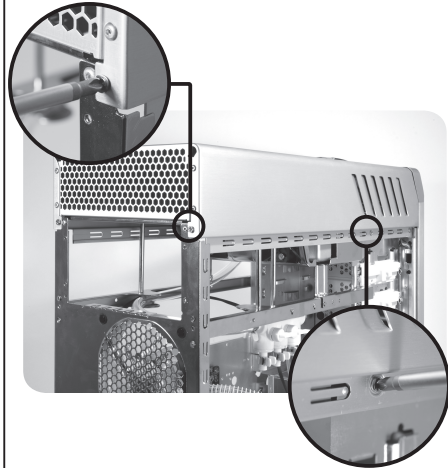
4-1-7 If an irregular size power supply is used which obstructs the product's sliding through the rear, please install the power according to the method mentioned below. A cross screwdriver will be needed for this procedure.

4-1-7a Remove the thumb screws of the side panels and detach both side panels.

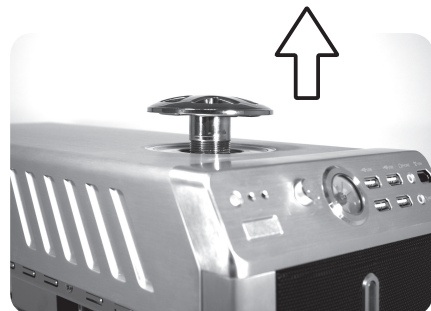
4-1-7b Remove the thumb screws of the power retainer plate at the rear of the chassis, and remove the power retainer plate.

4-1-7c Secure the power supply onto the retainer plate, by using the 4 fixed screws.

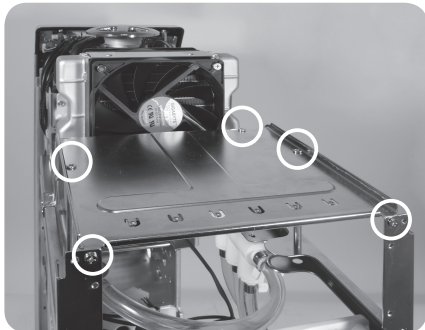
4-1-7d Remove the screws on the top cover of the chassis, two at the rear and two on either side of the chassis.



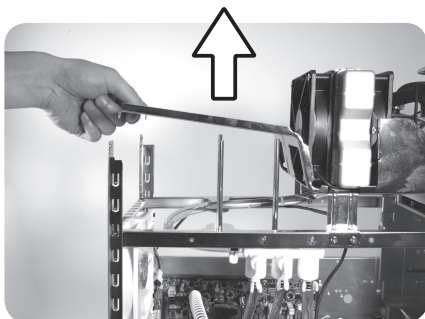
4-1-7e Remove the top cover after removing the lid to the coolant tank.



4-1-7f Remove the screws on the liquid cooling system tray (above the power supply area and back panel, total of 5 screws.)



4-1-7g Gently lift the liquid cooling system tray and insert the power supply through the rear chassis.



4-1-7h If a longer power supply is used, please use the extended power supply retainer plate and secure with the extended screws.

4-1-7i Reverse the steps to reassemble the parts

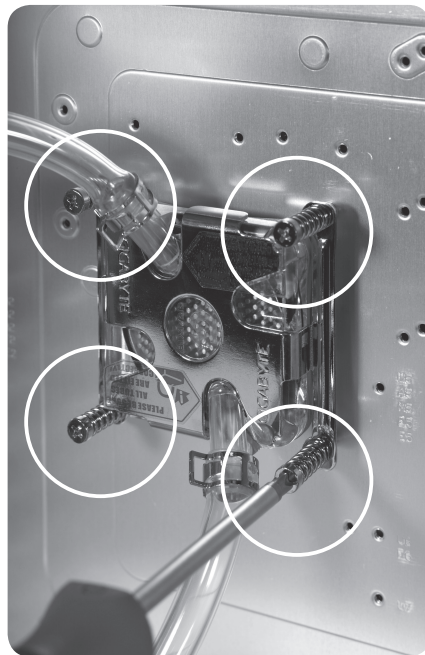
4-2 Installation of Motherboard

3D Mercury can support ATX / Micro ATX / Mini ATX / E-ATX / CEB

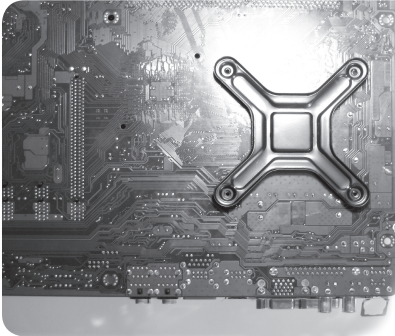
Please confirm the motherboard screw holes locations and size specification before installation

Required Tools: Screwdriver, stand offs, and the motherboard screws

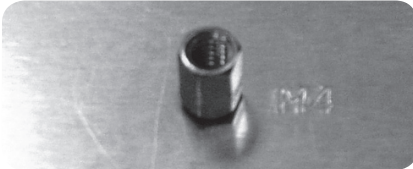
4-2-1 First remove the CPU water block from the motherboard tray on the chassis.



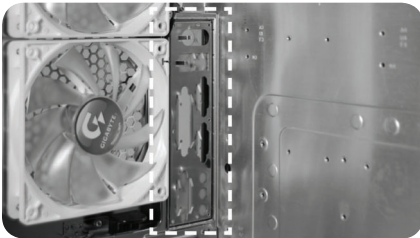
4-2-2 If the motherboard is an LGA775, please use the back plate and stick it behind the motherboard.



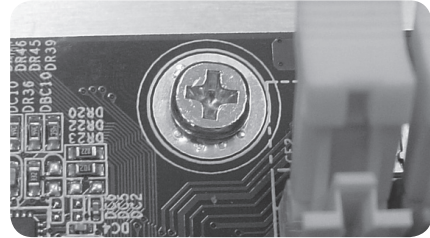
4-2-3 According to the motherboard' s size specification, select the correct screw holes and insert the stand offs.
Note: Incorrect installation may cause the motherboard to short circuit and other hardware to become faulty or damaged.



4-2-4 Install the motherboard I/O back-board at the back wall of the case (supplied by the motherboard manufacturer).



4-2-5 Use the motherboard screws to secure the motherboard onto the back wall of the case (refer to your motherboard manual to check what type of motherboard you have).



Motherboard	Code name
ATX	A1-A9
Mini ATX	M1-M9
Micro ATX	U1-U9
E-ATX	E1-E12

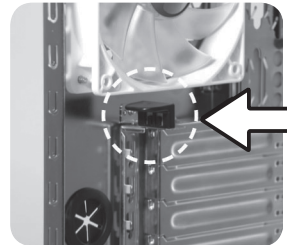
Motherboard screws	Case copper post
9	9
9	9
9	9
12	12

4-3 Installation of Add on Card

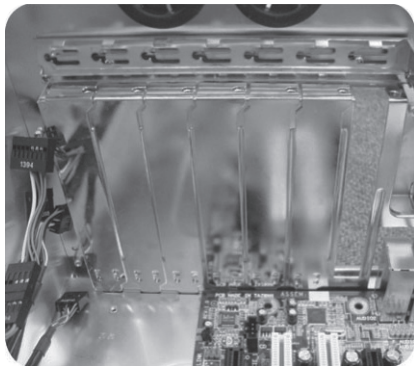
The 3D Mercury does not require any tools for installation of add-on cards such as graphics cards and network cards.

Required Tools: None

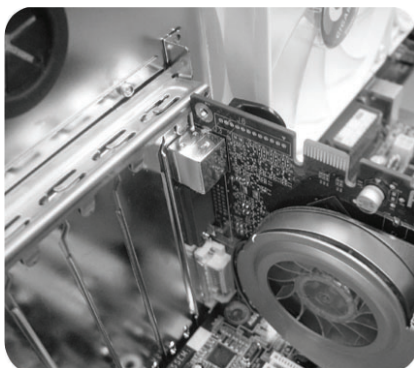
4-3-1 Open the PCI slot retention lock.



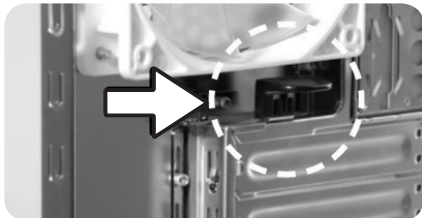
4-3-2 Remove the internally attached dust proof PCI cover.



4-3-3 Insert the interface card carefully into the expansion slot.



4-3-4 Close the PCI slot retention lock and make sure the card is secured.



4-4 Installation of Front Multi-Media I/O Ports

Incorrect connection of the slots can cause the motherboard to malfunction or completely destroy the motherboard. Please read the manual carefully during installation as incorrect installation or connection that causes faults will void your warranty

The front panel includes

- (1) 4 x USB 2.0, 1 x IEEE 1394 and HD or AC'97 audio jack (depending on the motherboard)
- (2) Basic casing power switch control cable kit

Required Tools: None

4-4-1 Insert the USB 2.0 connectors into the corresponding sockets on the motherboard (please refer to the motherboard user manual for further information).

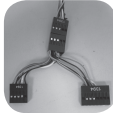
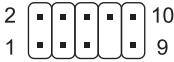
USB 2.0 connector



Pin	Definition	Pin	Definition
1	Power	6	USB Dy+
2	Power	7	GND
3	USB Dx-	8	GND
4	USB Dy-	9	
5	USB Dx+	10	USB Over current

4-4-2 Insert the IEEE 1394 connector into the corresponding socket on the motherboard.

Please refer to the instructions supplied by the motherboard manufacturer and make sure the correct type of the connector is used prior to installation.

IEEE 1394 connector A

Pin	Definition	Pin	Definition
1	TPA+	6	TPB-
2	TPA-	7	
3	GND	8	+12V
4	GND	9	+12V
5	TPB+	10	GND

IEEE 1394 connector B

Pin	Definition	Pin	Definition
1	TPA+	6	TPB-
2	TPA-	7	+12V
3	GND	8	+12V
4	GND	9	
5	TPB+	10	GND

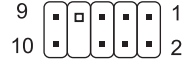
IEEE 1394 connector C

Pin	Definition	Pin	Definition
1	+12V	9	+12V
2	+12V	10	+12V
3	TPA+	11	TPA1+
4	TPA-	12	TPA1-
5	GND	13	GND
6	GND	14	
7	TPB+	15	TPB1+
8	TPB-	16	TPB1-

4-4-3 Insert the Audio connector into the corresponding socket on the motherboard.

HD AUDIO

Pin	Definition	Pin	Definition
1	MIC2_L	6	FSENSE1
2	GND	7	FAUDIO_JD
3	MIC2_R	8	No Pin
4	-ACZ_DET	9	LINE2_L
5	LINE2_R	10	FSENSE2

AC'97

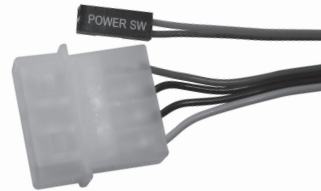
Pin	Definition	Pin	Definition
1	MIC	6	NC
2	GND	7	NC
3	MIC Power	8	NO Pin
4	NC	9	Line Out(L)
5	Line Out(R)	10	NC

4-4-4 Basic casing power switch control cable kit.



Connector	Color
Reset SW	Green (+)/White (-)
Power SW	Red (+)/White (-)
H.D.D. LED	Brown (+)/White (-)

4-4-5 Power switch connector, LCS power supply (including LCS emergency shutdown).



Reminder, Different Motherboards have different installation areas and specifications, screw holes and connectors. Please read the motherboard user manual supplied by the motherboard manufacturer

4-5 Connection of Fan Power Cables

The 3D Mercury has one 12cm silent, blue LED cooling fan at the front and two at the rear

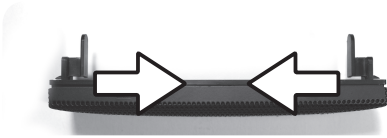
Required Tools: None

This case includes internal connectors that connect the front and rear fans, making it a 3-pin power connector. Plug the 3-pin connector into the system fan

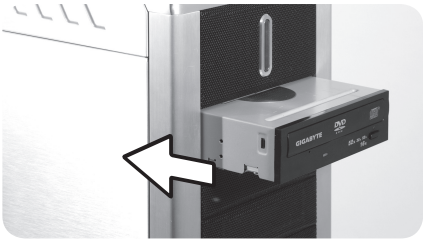
power connector on the motherboard to complete the installation

4-6 Installation of 5.25" Front Device Bay

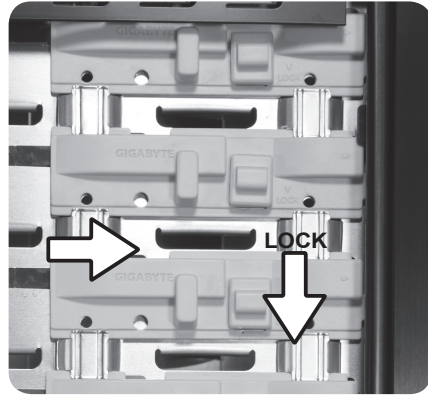
4-6-1 Open the side panel of the case and remove the mesh drive rail and metal EMI plate of the chassis.



4-6-2 Slide in the 5.25" device into the drive bay from the front of the chassis and level it with the other mesh drive rails.



4-6-3 Secure the 5.25" device with the internal latch. Refer to the figure for installation procedure.



4-7 Installation of 3.5" Front Device Bay

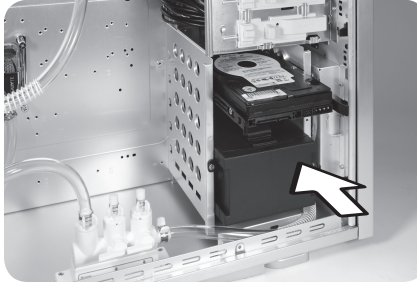
Installation of the 3.5" front device is the same as the 5.25" front devices. Please refer to step 4-6.

4-8 Installation of 3.5" Internal Device Bay

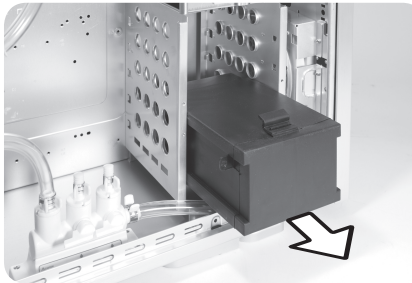
The 3D Mercury provides built-in bays to accommodate up to 5 hard disc drives (after removal of the tool enclosure). The built-in HDD requires securing runners which can be found in the black tool enclosure.

Required Tools: Securing runners (2 per hard disc drive)

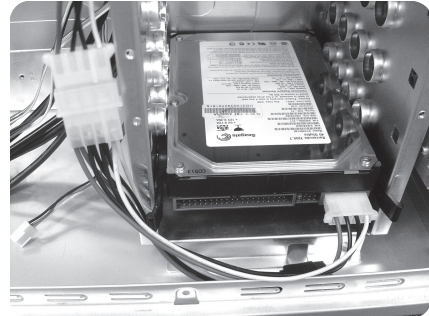
4-8-1 Fit the securing runners on both sides of the HDD and slide the HDD into the internal drive bay.



4-8-2 For installation of the 4th and 5th HDDs, remove the tool enclosure and install the HDD following step 4-8-1.



4-8-3 In case the length of the power cable is not sufficient for installation of the bottom HDDs, please use the power extension cable which can be found inside the tool enclosure. Connect it according to the type of the connector of your HDD.



4-9 Application of Security Lock

3D Mercury includes a safety lock on the side panel.

Insert the key into the lock and rotate it 90 degrees according to the diagram to lock and unlock it.



4-10 Application of Foot Supports

The 3D Mercury consists of four foot supports for ensuring the casing is firmly seated on the holding surface. Swivel the foot supports 90 degrees according to the diagram to open or retract.

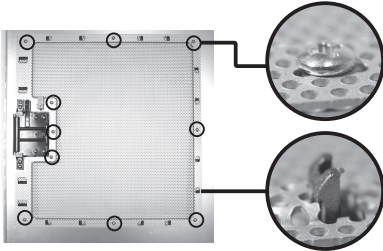
Note: When moving or laying down the case, please swivel the foot support to the closed position to prevent bending of the foot supports.



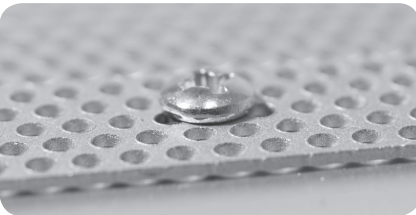
4-11 Application of Transparent Side Panel

Required Tools: Cross screwdriver, transparent side panel window.

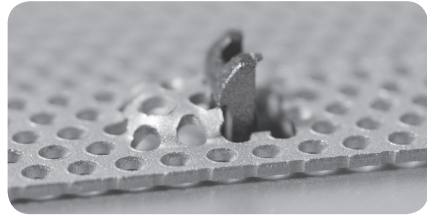
a. Open the side panel and lay it on the ground with the inner side facing up.



b. Remove securing screws from the mesh grid.

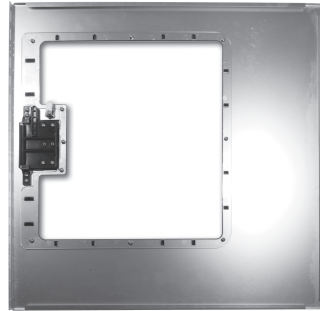


c. Release the plastic clamps and remove the mesh grid.



d. Take the transparent side panel window out from the carton box and remove the plastic protection layer.

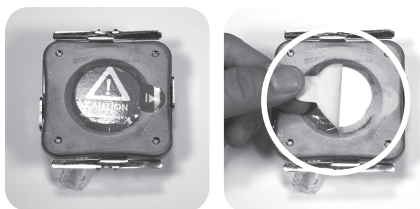
e. Screw the transparent side panel window onto the side panel with the protruding side facing outwards.



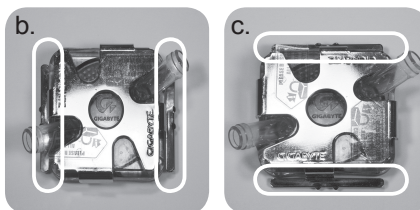
4-12 Application of Liquid Cooling System

4-12-1 CPU water block installation

Warning: Be sure to remove the "CAUTION" sticker from the bottom of the CPU water block. Spread the thermal paste evenly on the CPU surface.



Note: The AMD K8 clip can be separated from the water block (Fig. a) to adjust to the appropriate installation direction (Fig. b/c).



4-12-2 Intel® Pentium LGA775 bracket installation.

4-12-2-1 Place the water block on top of the Intel® Pentium LGA775 CPU (Fig. a) and adjust to the desired direction (Fig. b)

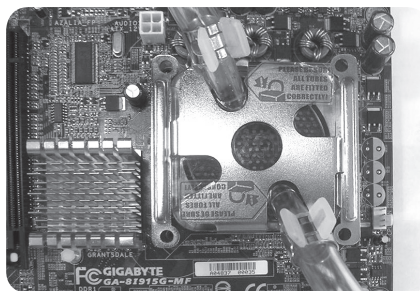


Fig. a

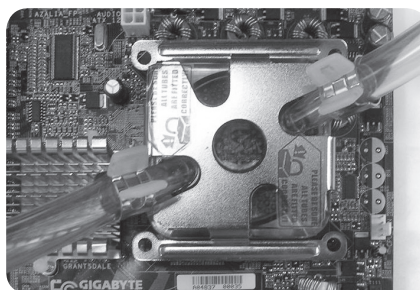
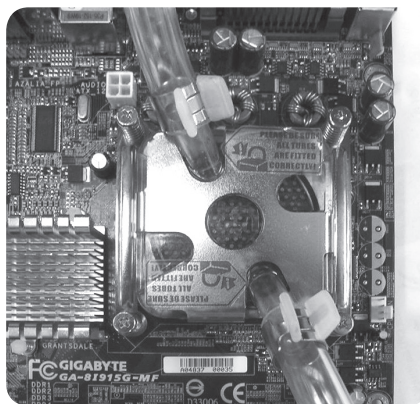


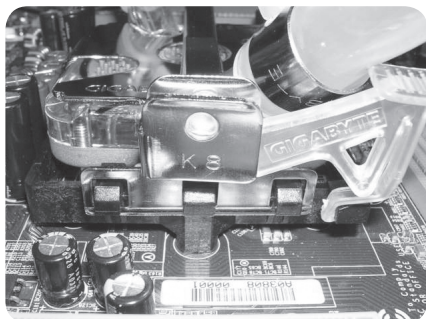
Fig. b

4-12-2-2 Secure the water block onto the motherboard with the attached spring screws.

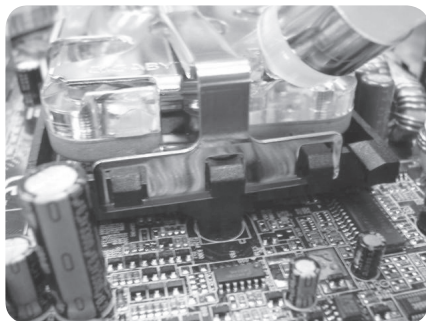


4-12-3 AMD K8 (754/939/940) Clip Cover Installation.

4-12-3-1 Please change the LGA775 clip cover with the AMD K8 clip cover and align the AMD K8 clip to the three raised points on the CPU.

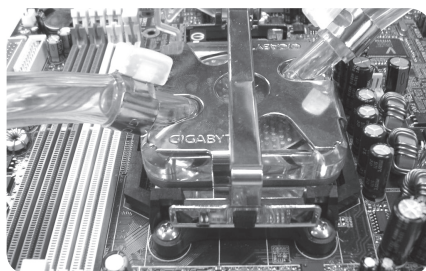


4-12-3-2 Fasten the latch from the AMD K8 clip cover and make sure that the water block is properly secured on the CPU.

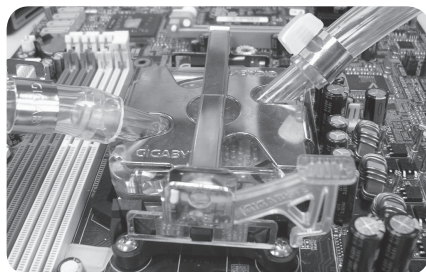


4-12-4 AM2 Clip Cover Installation

4-12-4-1 Replace the clip cover on the water block to the AMD AM2 clip cover. Align the AMD AM2 clip to the raised points on the CPU.

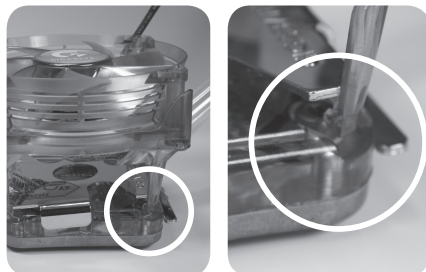


4-12-4-2 Fasten the latch on the AMD AM2 clip cover and make sure that the water block is properly secured on the CPU.



4-12-5 Mosfet Air-Cooling Fan installation.

4-12-5-1 Place the Mosfet air-cooling fan on the top of the water block and make sure that the four feet of the air-cooling fan are secured on the water block.



4-12-5-2 Connect the 3-pin power connector of the fan into the CPU fan socket on the motherboard (Fig. a: 3-pin CPU fan socket / Fig. b: 4-pin CPU fan socket (LGA775))

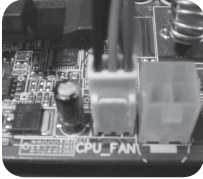


Fig. a

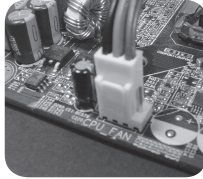
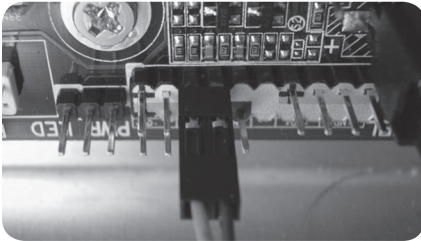


Fig. b

4-12-6 Pump power Cable Installation.

4-12-6-1 Connect the power SW cord (female 2-pin) with the "+PW-" jumper on to the motherboard.



4-12-6-2 Connect the 4-pin connector from the pump to a 4-pin connector of the power supply.



4-12-7 Adding coolant to the tank.

Please remove the lid on the top of the chassis and check the coolant level gauge on the front panel of the chassis. Fill the tank to 80% full and close the lid. Turn on the power until all the coolant drains into the tubes. The system should shutdown automatically due to the tank coolant level being too low or empty. (This is normal as the tubes and radiator are not filled with liquid). Open the lid again and fill the tank up to 80% full; repeat this until all tubes and radiator are filled with coolant and the tank coolant level is constant at 80% full.



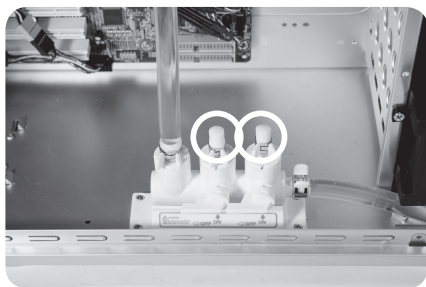
4-13 4-way Splitter Valve Instruction and User Manual

Note: Gigabyte Blue Eye and Chipset

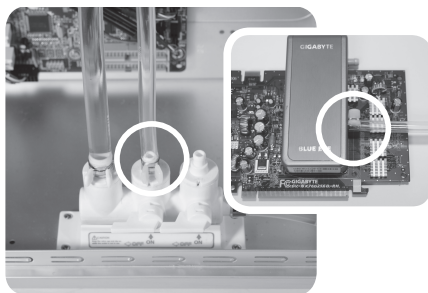
water block are used as examples.

Warning: Please make sure that the PC Power is turned off prior to installation.

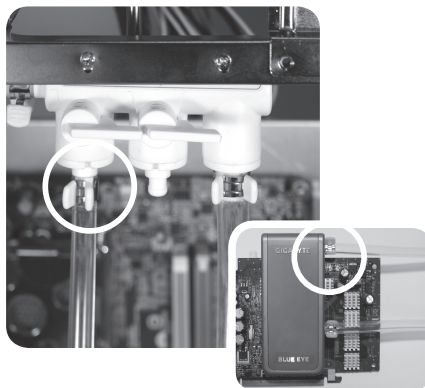
4-13-1 Remove the caps and tube clips from the 4-way splitter valve. Please do not switch on the power at this moment and make sure that the valves are closed.



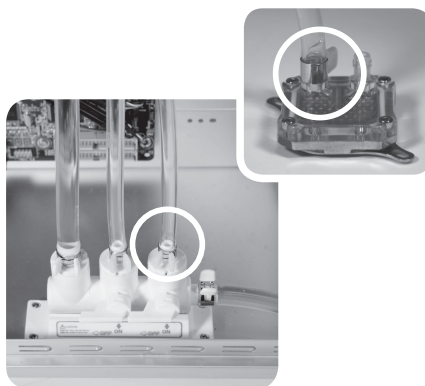
4-13-2 Cut a tube into suitable size, connect one side of the tube with the first splitter on the 4-way splitter valve (1) and connect the other side to the inlet of the VGA Blue Eye and fasten with tube clips.



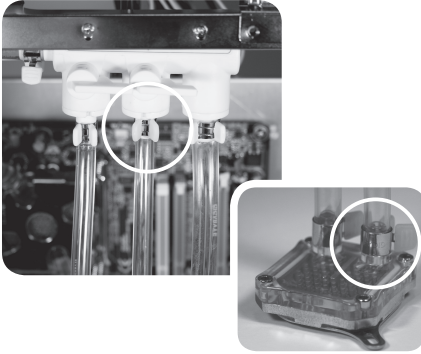
4-13-3 Cut a tube into suitable size, connect one side of the tube with the second splitter on the 4-way splitter valve (2) and connect the other side with the outlet of the VGA Blue Eye and fasten with tube clips.



4-13-4 Cut a tube into suitable size, connect one side of the tube with the second splitter on the 4-way splitter valve (1) and connect the other side with the inlet of the chipset water block and fasten with tube clips.



4-13-5 Cut a tube into suitable size, connect one side of the tube with the first splitter on the 4-way valve (2) and connect the other side with the outlet of the chipset water block and fasten with tube clips.



4-13-6 Before turning on the power, please make sure all tube clips are fastened tightly (such as Fig. a/b/c), and open the valves on the 4-way splitter valves (such as Fig. d and e).

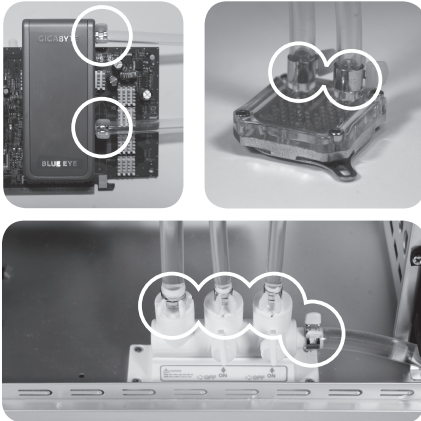


Fig. a, b and c

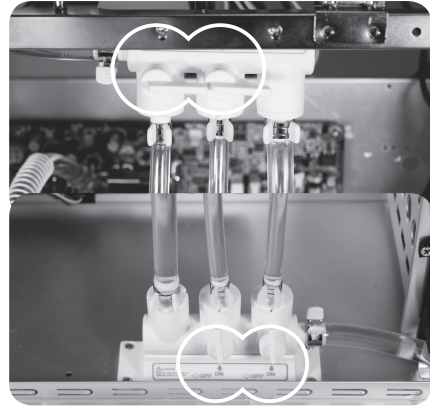


Fig. d and e

4-13-7 To complete the liquid cooling system, after turning on the power, pour coolant into the tank till 80% full.



Caution: While removing the tubes for disassembly, please make sure to close all valves on the 4-way splitter valve,

turn off the power and keep all the devices away from any electronic part.

Note:

It is strongly recommended that all coolant is drained from the liquid cooling system prior to transportation of the computer system to prevent leakage if it is dropped or damaged. Although this has already been tested before the product is dispatched from the factory, the chassis is not designed to be transported with coolant inside the liquid cooling system.

Warning:

Use only GIGABYTE liquid coolant; any damage arising from the use of other liquid products is not covered by warranty. Leakage of liquid coolant due to improper installation may damage the system and is not covered by warranty.

4-13-8 Draining out all the coolant.

- a. Please make sure that all the power is turned off.
- b. Prepare an empty container with a cross screwdriver.
- c. Place the chassis on a table or higher platform and put the empty container on the floor next to the chassis.
- d. Using the screwdriver, remove the bottom 4-way splitter valve from the chassis.



- e. Place the 4-way splitter valve outside of the chassis (Fig A), remove the right tube (Fig. B) and let the coolant drain into the bucket/barrel (Fig. C). Turn on power to let water in tank drain out.

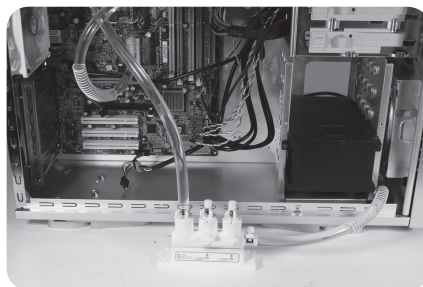


Fig. A



Fig. B



Fig. C

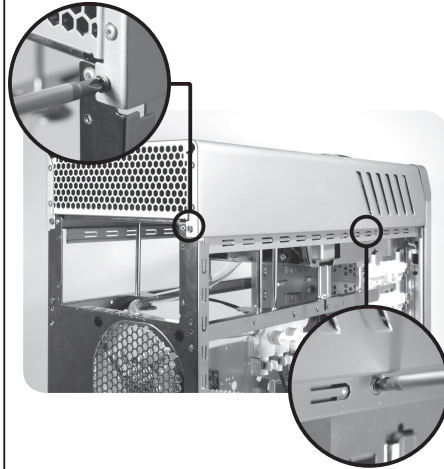
- f. Shake the chassis slightly to get excess coolant out of the tubes.
- g. After all the coolant has been drained out. It is now safe to transport the chassis or replace parts that need to be replaced.

4-14 Liquid Cooling System Maintenance

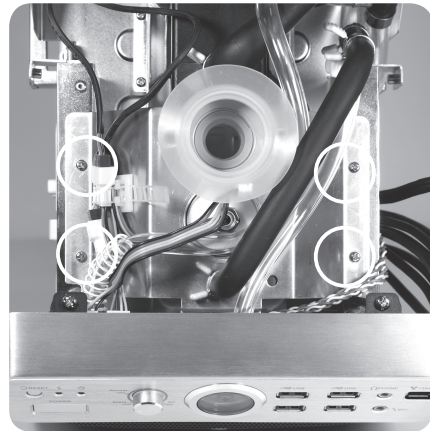
4-14-1 If the coolant level is too low, remove the top lid and, after refilling coolant, secure the lid back on.

4-14-2 If the pump makes strange noises, please make sure that there is no air inside the tubes. You will need tools for this. Please prepare a cross screwdriver and cloth (to clean the water leaks that may occur when disconnecting tubes).

- a. Please use the above-mentioned method to drain the coolant from the chassis.
- b. Remove the screws on the top cover of the chassis, two at the rear and two on either side of the chassis.



- c. Remove the lid from the top of the chassis.
- d. Remove the 4 screws that secure the tank.



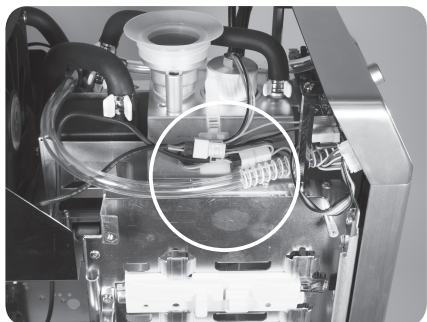
- e. Remove the tube that is connected to the tank.



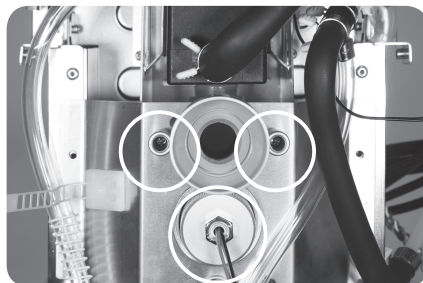
- f. Remove the 4 connectors from the front PCB and the 2 fixing screws.



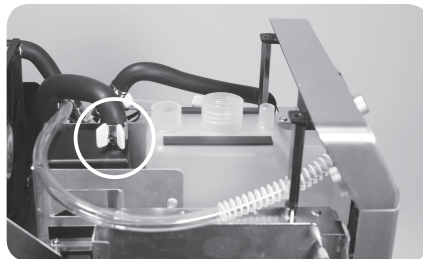
- g. Remove the cables from the cable holder.



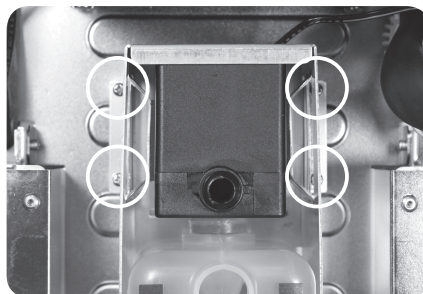
- h. Remove the 2 screws that secure the funnel, and then remove the funnel and the coolant level measurer for the LWP alarm.



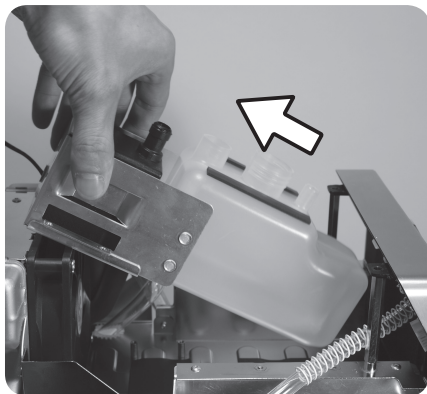
- i. Remove the plate that secures the tank and remove the tube that is connected to the pump.



- j. Remove the screws that secure the pump to the chassis.



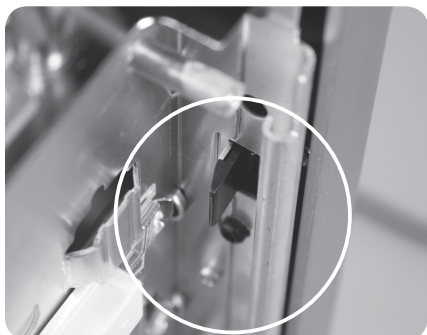
k. Remove the pump and tank.



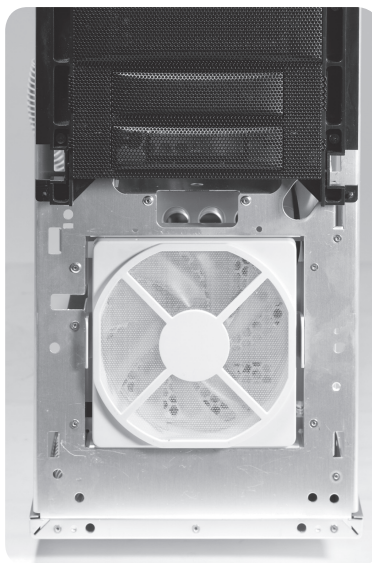
l. Replace the parts that need to be replaced, reverse steps to reassemble.

4-14-3 Cleaning the filter on the front fan holder.

- a. Open the two side panels.
- b. Release the plastic clamps that hold the front panel onto the chassis, and remove the front panel.



c. Take out the fan holder and separate the fan holder from the fan.



d. After cleaning the fan filter, reverse steps to reassemble.

Recommended parts to purchase

- GIGABYTE VGA Air Cooler
- GIGABYTE Blue Eye (VGA Liquid Cooling)
- GIGABYTE Chipset Water block
- GIGABYTE Radiator