

# Computer Enclosure

RESERATOR XT

## User's Manual

English Version



**ZALMAN**  
COOL INNOVATIONS

# English Version

Visit our website ([www.zalman.co.kr](http://www.zalman.co.kr)) and watch the Reserator XT installation video for an installation overview.

- ※ Please read this manual thoroughly before installation.
- ※ The specifications of this product and its components may change without prior notice to improve performance.

## Installation and Operational Notes

### Installation Notes

1. Do not place the unit in dusty or humid conditions, under direct sunlight, or near a heat source such as a room heater.
2. Do not drop or subject the unit to excessive force.
3. Check the CPU socket compatibility before installation.
4. Do not mix any contaminants with the coolant when filling. It may cause product failure or corrosion.
5. Place the unit on top of the PC or a location with good ventilation.
6. Check for leaks on the Water Blocks and Tubes before installation.
7. Preparing the necessary tools (Needle-Nose Pliers, Scissors) will ease the installation process.

### Operational Notes

1. Check to see if the DC cables are properly connected before use.
2. If the coolant is not circulating properly or if the pump's flow rate becomes too low for other reasons, then the red LED will begin to flicker with an alarm sound. Immediately turn the PC OFF and contact the place of purchase.
3. Do not place any objects on the product.
4. Install the unit on a leveled surface free of vibration, and do not tilt or lay the unit on its side while using.
5. Must use the provided coolant. Regularly check the amount of coolant and replenish as needed (must be with new coolant every year).
6. If a leak is found, turn off the system immediately and contact the place of purchase.
7. Separate the Reserator from the PC case when moving the system.
8. Do not block the Air Ducts on either side of the product with any object. It could lead to fan failure, increased noise, or a decrease in product performance.
9. Make sure that the Water Pump is functioning properly.

### Disclaimer

Zalman Tech Co., Ltd. is not responsible for any damages due to external causes, including but not limited to, improper use, problems with electrical power, accident, neglect, alteration, repair, improper installation, or improper testing.

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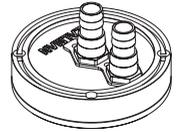
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## 1. Features

- High Performance Ultra Quiet Water Cooling System
- Active/Passive Hybrid Cooling Design
  - Active Cooling: 140mm Fan (Forced Convection Cooling)
  - Passive Cooling: Anodized Aluminum Heatsink Chassis(Natural Convection Cooling)
- Automatic/Manual Control Modes
  - Automatic Mode: Coolant Temperature is monitored for Automatic Control of Fan Speed and Coolant Flow Rate.
  - Manual Mode: Front Panel Control Knob allows the user to manually optimize performance and minimize noise
- Warning & Alarm System
  - Coolant Flow Monitoring: Warns the user when coolant flow is problematic.
  - Coolant Level Monitoring: Warns the user when the coolant level is low.
- Comprehensive Visual Monitoring Display
  - Coolant Temperature (viewable in °C or °F)
  - Ambient Temperature (viewable in °C or °F)
  - Coolant Level Warning Icon (Lights Up When Coolant Level Is Low)
- Coolant Flow Rate
  - Coolant Flow Indicator
  - Light Switch
- Automatic Power ON/OFF In Sync with the Computer
- Quick Couplings for Fast, Convenient, and Leak-Free Installation & Maintenance

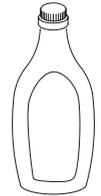
## 1) CPU Water Block (ZM-WB5)

The CPU Water Block incorporates a pure copper base for excellent heat transfer. The Water Block Cover has been anodized to prevent corrosion. It supports Intel's Socket 775 CPUs and AMD's Socket 754/939/940/AM2 CPUs, and is designed to be light weight and easy to install.



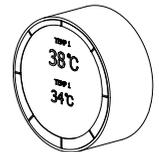
## 2) Anti-Corrosion Coolant (ZM-G300)

This coolant contains a high quality anti-corrosion agent for various materials including copper, aluminum, plastic, and other metals that prevents corrosion for long term operation.



## 3) FND(Flexible Numeric Display)

Displays the internal temperature, water temperature, water level, and mode. The black background and wine color details intensify the aesthetics.



## 4) Analog Gauge

Displays the fan speed and pump's flow rate. The wine colored lighting adds a touch of elegance and tuning effect.

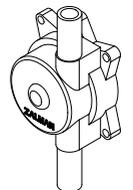


## 5) Automatic Control

The internal coolant temperature sensor automatically regulates the fan speed and coolant flow rate for optimal cooling and ultra quiet operation.

## 6) Flow Indicator

This component is connected with the circulation tube for checking the circulation of the coolant. When the coolant is circulating properly, its impeller rotates to visually indicate the status of coolant flow.



## 7) Quick Coupling

The Fittings incorporate valves that prevent leaks when disassembling the Reserator, allowing quick and convenient separation and reassembly of the Reserator for transport and coolant replacement.



## 2. Specifications

### 2.1 Reserator XT (Reservoir+Radiator+Water pump)

- 1) Weight : 7kg
- 2) Materials : Anodized Pure Aluminum
- 3) Dimensions : 350(L) x 210(W) x 180(H)mm
- 4) Maximum Coolant Capacity : Max. 1.25 l
- 5) Integrated Water Pump : 6W, DC 12V, 300L/Hr
- 6) Maximum Lift : 1.8m

### 2.2 CPU Water Block (ZM-WB5)

- 1) Weight : 160g
- 2) Materials : Base Cover (Pure Aluminum), Base (Pure Copper)
- 3) Dimensions : 63(W) x 63(L) x 40(H)mm

### 2.3 Anti-Corrosion Coolant (ZM-G300)

- 1) Materials : Propylene Glycol & Anti-Corrosion Agent
- 2) Volume : 250ml
- 3) Freezing Point : -9°C
- 4) Exchange Cycle : 1Year

#### <Optional Components>

### 2.4 VGA Water Block (ZM-GWB3 / GWB8800 Ultra & GTX / GTS)

- 1) Weight : 100g / 420g
- 2) Materials : Anodized Pure Aluminum
- 3) Dimensions : 60.4(L) x 60.4(W) x 30(H) mm / 183(w) x 95(L) x 30(H)mm
- 4) Compatible VGA Cards : All VGA cards with installation holes

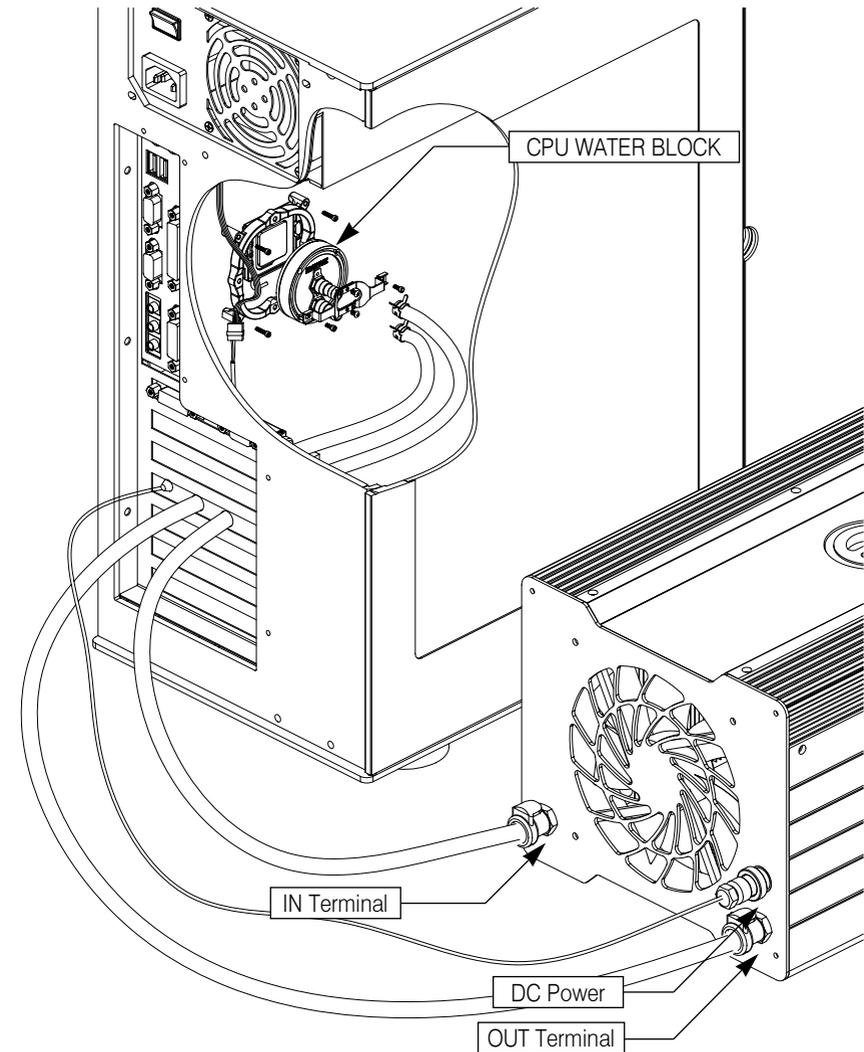
### 2.5 Northbridge Water Block (ZM-NWB1)

- 1) Weight : 48g
- 2) Materials : Anodized Pure Aluminum
- 3) Dimensions : 43(W) x 43(L) x 30(H)mm

### 2.6 VGA RAM Water Block (ZM-RWB1)

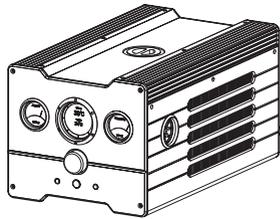
- 1) Weight : 120g
- 2) Materials : Anodized Pure Aluminum
- 3) Dimensions : 19(W) x 122(L) x 12(H)mm

## 3. Installation Overview

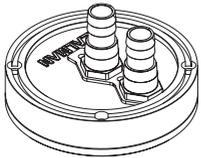


## 4. Components

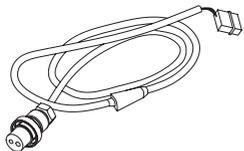
## 1) Reserator XT- 1 Unit



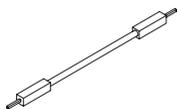
## 2) CPU Water Block (ZM-WB5) - 1SET



## 3) DC Cable - 1EA



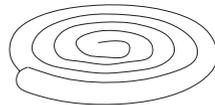
## 4) Jump Cable - 1EA



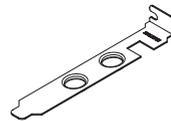
## 5) Coolant (ZM-G300) - 1EA



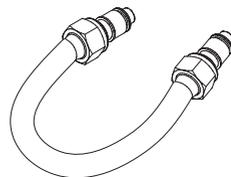
## 6) PVC Tube - 4m



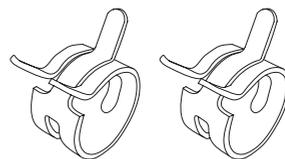
## 7) I/O Bracket - 1EA



## 8) Degassing Tube - 1EA



## 9) Tube Clamp - 2EA



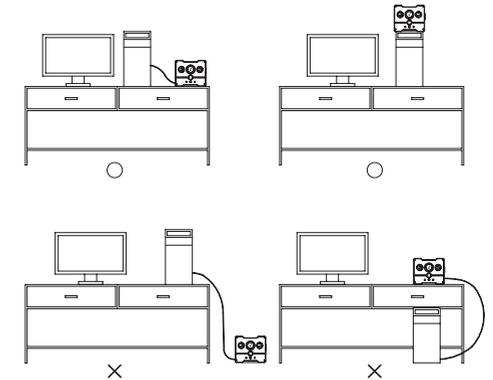
## 10) User's Manual - 1EA



## 5. Installation Guide

## 5.1 Reserator Placement

The Reserator's placement should be determined in relation to the position of the PC. Place it upright, next to or slightly above the PC. Note that if the Reserator is placed lower than the PC, the PVC Tube's internal air pressure may prevent proper initial operation.



## 5.2 Adding Coolant

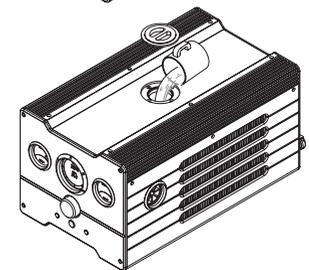
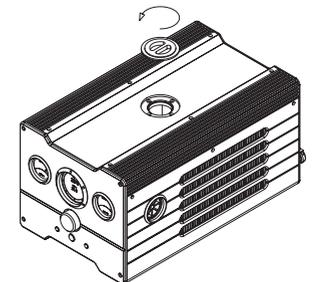
- 1) Remove the Reserator XT's Reservoir Cap by turning it counter-clockwise.
- 2) Mix the provided coolant with one liter of distilled water in a bowl.
- 3) The entry hole is small. Therefore, use the provided coolant container to fill the Reserator with mixed coolant (four separate pours for a sum of 1000ml).

Note 1) Fill by four separate pours to prevent overflowing of coolant. Once air has been completely released and the coolant begins to circulate, then refill the remaining coolant (250ml).

Note 2) The provided coolant is a concentrated liquid. Therefore, it must be diluted with distilled water in a 1:4 ratio.

Note 3) Read the warning label on the coolant before use.

Note 4) Keep this product and its associated system away from children.



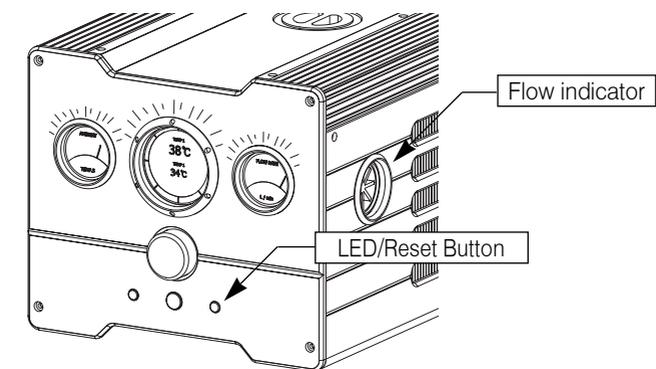
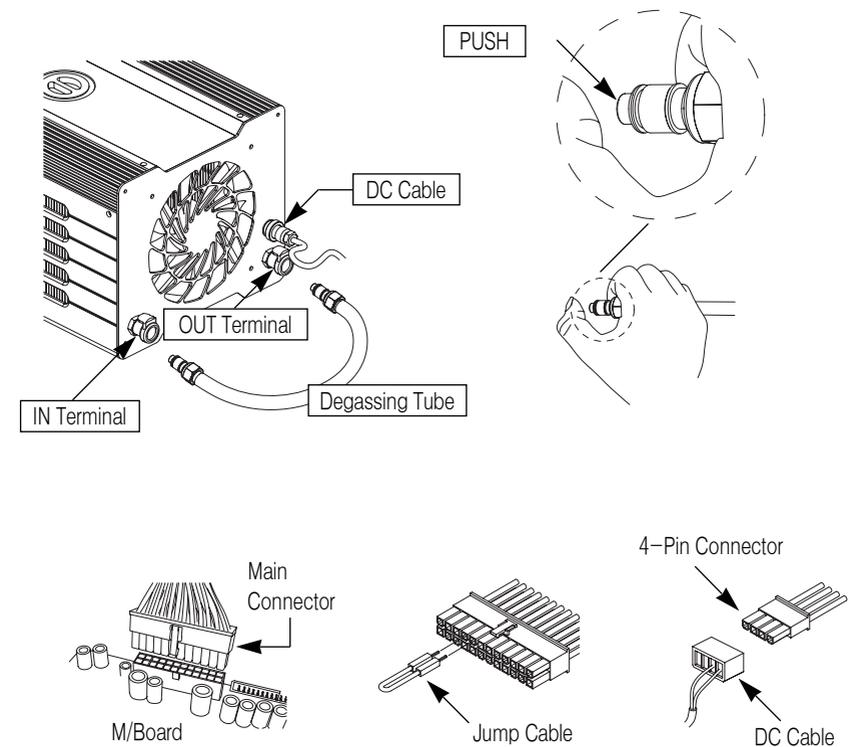
### 5.3 Reserator XT's Coolant Circulation

- 1) The purpose of connecting the Jump Cable of the Power Supply's Main Connector (20P/24P) is to receive direct current (12V) needed for the test run and leakage inspection.
- 2) For smooth initial degassing, connect one end of the Degassing Tube to the OUT terminal of the Reserator, and repeatedly press the opposite Quick Coupling end - with the finger to discharge the internal air. Now remove this end of the Degassing Tube from the OUT terminal.
- 3) Connect the other end of the Degassing Tube to the IN terminal and remove the internal air in the method described above, and connect the opposite Quick Coupling end to the OUT terminal.
- 4) Remove the Power Supply's Main Connector (20P/24P) and the 4-Pin CPU Sub Connector from the motherboard, and connect the Green Wire Terminal and Black Wire Terminal of the Main Connector (20P/24P) with the provided Jump Cable.
- 5) Connect the DC Cable to the Power Terminal on the Reserator XT's back panel, and connect the opposite 4-Pin Connector to the Power Supply's 4-Pin Connector.
- 6) Supplying power to the Power Supply will light up the Red LED on the front panel, cause the Flow Indicator's Impeller to rotate, and the Blue LED on the side panel to light up. For discharging of the gas within the Reserator and good coolant circulation, turn the Power Supply ON/OFF approximately 3~7 times in 10 second intervals.
- 7) Circulate the coolant for approximately 10 minutes for leakage inspection and for checking its operation, then turn OFF the Power Supply. Disconnect the Degassing Tube, and disassemble the Quick Coupling Inserts from the Degassing Tube.

Note 1) Make sure that the coolant of the Reservoir does not overflow when tilting the unit.

Note 2) Check the degassing status by looking at the tubes. Once degassing is complete, turn the PC OFF and install the Water Blocks.

Note 3) If the Flow Indicator detects a problem with coolant circulation, an alarm will sound and the red LED will begin to flicker. Press the Light/Reset button for 5 seconds to restart the system.

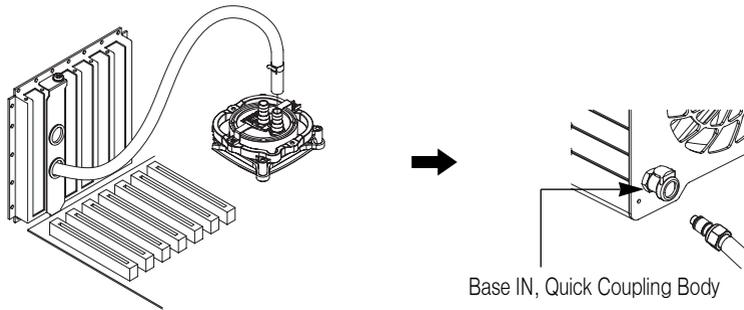


**5.4 CPU Water Block Installation (ZM-WB5)**

- 1) Refer to the manual provided with the ZM-WB5 for installation.
- 2) If interference occurs while installing the Water Block, then stop the installation.

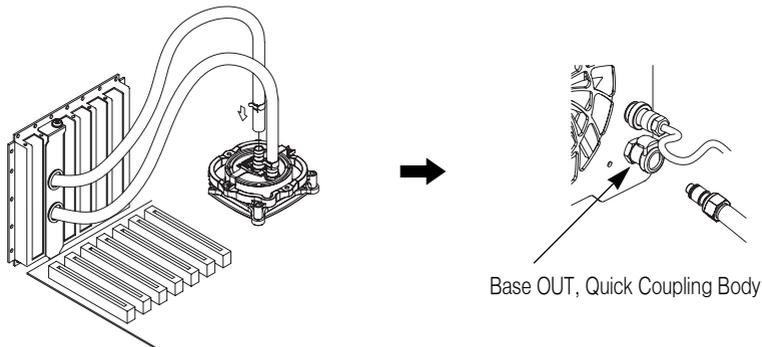
**5.5 CPU Water Block and Reserator's Base IN Connection**

- 1) Connect one end of the PVC Tube to the Fitting of the CPU Water Block and fasten with a Tube Clamp as shown in the diagram.
- 2) Pull out the PVC Tube through the I/O Bracket hole on the computer case.
- 3) Connect the Quick Coupling Insert that has been disconnected from the Degassing Tube to the other end of the PVC Tube, and fasten it with Tube Clamp.
- 4) Plug the Quick Coupling Insert into the Quick Coupling Socket of the Base IN fitting.



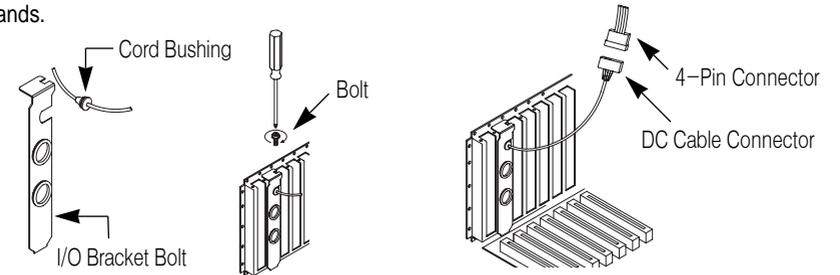
**5.6 CPU Water Block and Reserator's Base OUT Connection**

- 1) Connect one end of the PVC Tube to the CPU Water Block Fitting and fasten with a Tube Clamp as shown in the diagram.
- 2) Pull out the PVC Tube through the tube hole of the I/O Bracket.
- 3) Connect the Quick Coupling Insert to the other end of the PVC Tube, and fasten with a Tube Clamp.
- 4) Plug the Quick Coupling Insert into the Quick Coupling Socket of the Base OUT fitting.



**5.7 DC Power Cable Connection**

- 1) Fit the DC Cable's Cord Bushing into the groove of the I/O Bracket, and fasten the I/O Bracket with a Bolt.
  - 2) Connect the DC Cable Connector to the 4-Pin Connector of the Power Supply.
- Note 1) Do not exert excessive force when connecting the connector. Slowly connect with both hands.

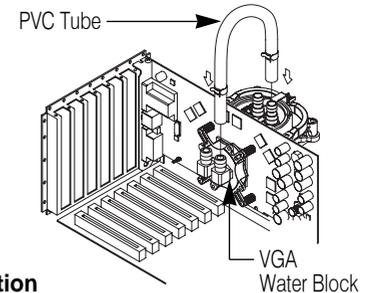


**<Installation of Optional Products>**

**◆ VGA Water Block Installation**

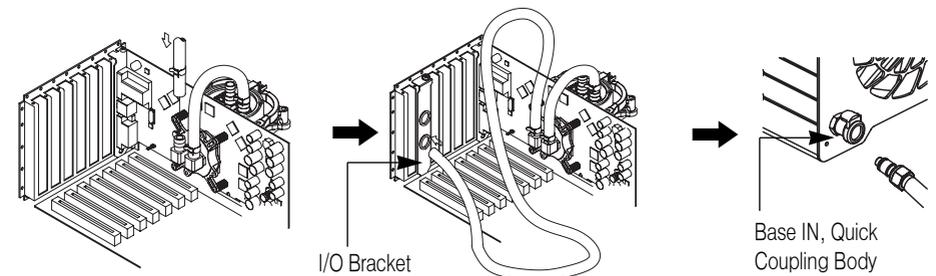
Connect the CPU Water Block and the VGA Water Block with the PVC Tube and fasten them with Tube Clamps as shown in the diagram.

Note 1) Using Needle-Nose Pliers for fixing the Tube Clamps in place will make the installation easier.



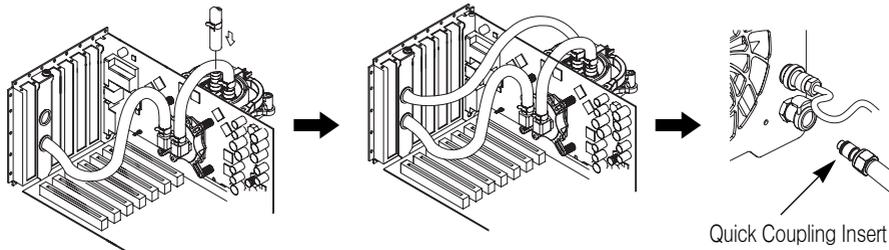
**- VGA Water Block and Reserator's Base IN Connection**

- 1) Connect one end of the PVC Tube to the Fitting of the VGA Water Block and fasten with a Tube Clamp as shown in the diagram.
- 2) Pull out the PVC Tube through the I/O Bracket hole on the computer case.
- 3) Connect the Quick Coupling Insert that has been disconnected from the Degassing Tube to the other end of the PVC Tube, and fasten it with a Tube Clamp.
- 4) Plug the Quick Coupling Insert into the Quick Coupling Socket of the Base IN fitting.



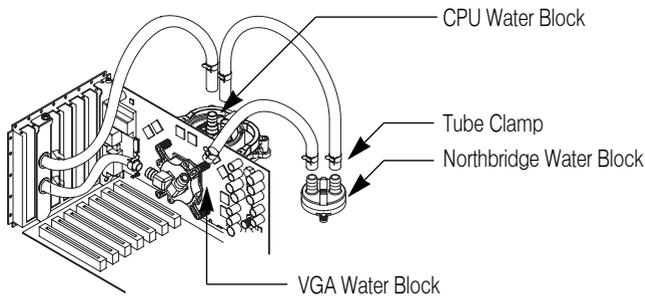
**- CPU Water Block and Reserator's Base OUT Connection**

- 1) Connect one end of the PVC Tube to the Fitting of the CPU Water Block and fasten with a Tube Clamp as shown in the diagram.
- 2) Pull out the PVC Tube through the I/O Bracket hole on the computer case.
- 3) Connect the Quick Coupling Insert that has been disconnected from the Degassing Tube to the other end of the PVC Tube, and fasten it with a Tube Clamp.
- 4) Plug the Quick Coupling Insert into the Quick Coupling Socket of the Base OUT fitting.



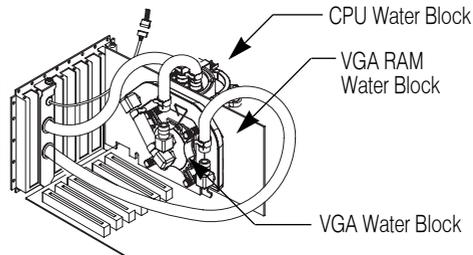
**◆ Northbridge Water Block Installation**

- 1) When using the Northbridge Water Block, please install as illustrated below.
- 2) The Tube Clamps must be installed on the PVC Tubes.



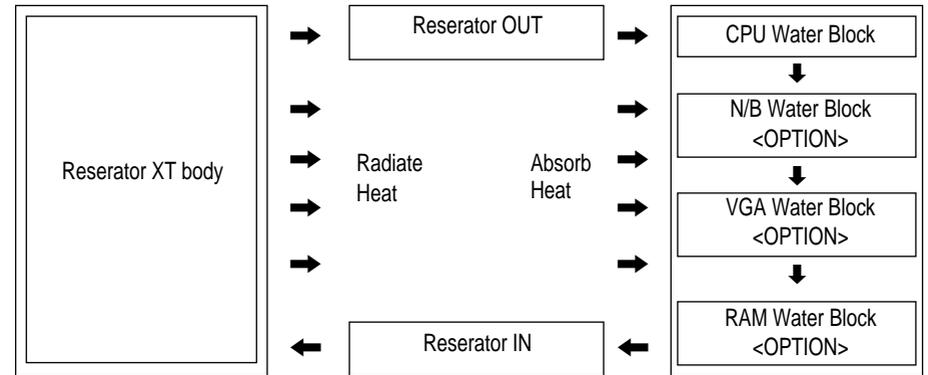
**- VGA RAM Water Block Installing**

- 1) When using the VGA RAM Water Block, please install as illustrated in the diagram.
- 2) The Tube Clamps must be installed on the PVC Tubes.



**5.8 Confirmation of Proper Installation**

- 1) Check if the product is placed properly.
- 2) Check if the coolant's circulation path conforms to the path shown below.
- 3) Slightly tug on the PVC Tubes connected to each Fitting to check for loose connections.

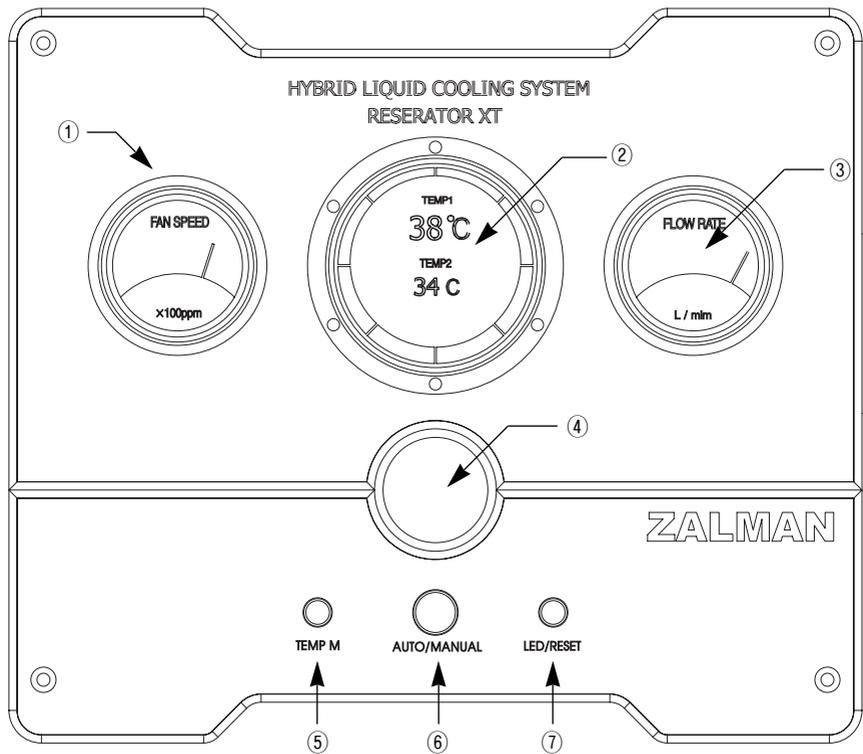


**5.9 Leakage Inspection and Test Run**

- 1) Check to see if the green wire terminal and the black wire terminal of the Power Supply's Main Connector are connected with the Jump Cable.
- 2) Check the amount of coolant inside the Reserator's Reservoir, and fill it by approximately 80%.
- 3) Connect the Power Supply's 4-Pin Connector to the Reserator's DC Cable Connector, and provide power for the Power Supply.
- 4) Once power is supplied, check to see if the Flow Indicator's impeller placed inside the Reserator's side panel is rotating, if the blue LED is lit, and if the coolant is being circulated to each Water Block.
- 5) Check for leakage at each connector. Leakage can lead to short-circuits and damage the motherboard or other components. If leakage is found, turn OFF the power, completely remove the water, and reassemble the leaking section.
- 6) If there is no leakage, remove the Power Jump Cable from the Power Supply's Main Connector. Now connect the Power Supply's Main Connector to the motherboard's Power Connector and run the PC.

Note 1) Power must be supplied to the Reserator's DC Cable at all times for the Reserator and the PC to run simultaneously. The user must check periodically to see if the DC Cable is connected properly.

## 5.10 Front Panel Display



## ◆ Front Panel Display

- ① Fan Speed Gage
  - Displays the Fan Speed(rpm). If there is a problem, the display will flicker. If the flickering is observed, please check if there are any mechanical or pump related problems.
- ② FND(Flexible Numeric Display) Display
  - Temperature Display
    - Coolant Temperature(upper display)
    - Ambient Temperature(lower display)
  - Coolant Level Sensing
    - If a certain quantity of coolant is unavailable, an alarm will sound and the display will flicker. If the flickering is observed, please refill with coolant.
  - Coolant Temperature Sensing
    - If the coolant's temperature reaches 60°C(92°F) and above, an alarm will sound and the FND Display will flicker. If the flickering is observed, please check if there are any problems.
- ③ Coolant Flow Rate Gage
  - Displays the coolant flow rate. If there is a problem, the display will flicker. If the flickering is observed, please check if there are any mechanical or pump related problems.

## ◆ Control Knob &amp; Buttons

- ④ Control Knob
  - Controls the Fan Speed(rpm) and Coolant Flow Rate.
- ⑤ °C/°F Button
  - Sets the temperature display to Celsius(°C) or Fahrenheit(°F).
- ⑥ AUTO/MANUAL Button
  - AUTO Mode: Automatically adjusts fan speed and coolant flow rate.
  - MANUAL Mode: Allows the user to manually adjust fan speed and coolant flow rate.
- ⑦ LED/RESET Button
  - LED On/Off: Short pressing of the button turns the displays' LEDs On & Off.
  - RESET: Pressing the button for at least 5 seconds will reset the Reserator XT.

## Zalman Noise Prevention System

Stable performance and noiseless liquid cooling system can both be achieved with the use of Zalman's Noiselee Power Supply, VGA Water Block, Northbridge Water Block, VGA RAM Water Block.



Noiseless  
Power Supply



VGA Water block



Northbridge  
Water Block



VGA RAM Water Block

## Heatpipe Cooled Modular Power Supply



ZM500-HP



ZM600-HP

- Reduction in the PFC circuitry's switching FET heat generation by use of 3 Parallel switching FETs (normally 1 or 2 used)
- Heatpipe cooling system on the main rectifier (output) diodes for maximum stability and minimum fan speed for ultra quiet operation
- Modular design for convenient and tidy cable installation
- Blue LEDs for cool aesthetics

## Gaming PC Enclosures



GT 1000

- High end Gaming Enclosure built sturdy all aluminum anels
- Three tool free hinged magnetic panel(2 Left, 1 Right) for easy installation and access to components
- Tool free installation of disk drives, Fan Controllers, Audio interfaces etc
- Accommodates up to 6 Hard Drives
- Luxurious and cool aesthetics
- Color option: Black (Red LED Fans), Titanium (Blue LED Panel)

**For more information, please visit our website.**