



*Puris*<sup>®</sup>

miraeST

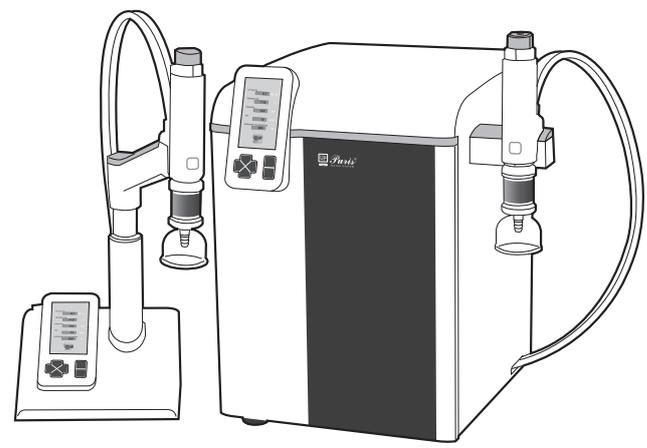
UP *Puris*<sup>®</sup>  
PUSH WATER SYSTEM

Microfilter, 0.2um  
ASMFO2-B  
www.miraest.co.kr

# Puris, Evo-UP Water System

**Model : Evo-UP Series**

**User Manual**



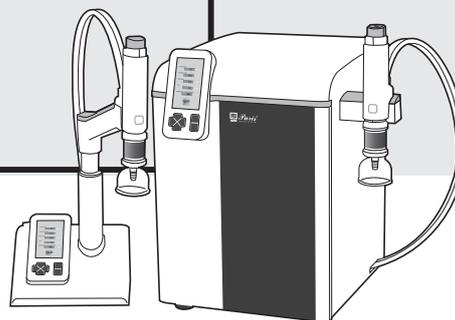
## Foreword

This manual is provided to serve as the installation, operation and maintenance guide for the Evo-Series

LAB Water system models.

The manual should be read before attempting any cycle of installation, operation and maintenance. If the instructions in this manual are not followed, the performance of this product or the safety of the user may be compromised.

If the problem cannot be solved with using this manual, please call your distributor or the manufacture.



## Safety Operation

Evo-UP Water System functions as described in this manual.

Follow the instructions in this manual for correct usage and filter replacement. Failure to do so may result to the malfunction and breakdown of Evo-UP Water System. If any encountered problem persists, contact the Mirae ST customer center for professional assistance.

## Safety Symbols

The following symbols are designed to guide you through Evo-UP Water System operation.

	AC(Analternating Current)
	An Earth
	On
	Off
	FUSE

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## Section 1. User Manual Outline

### 1-1. General Outline

This manual guides you through the installation, operation, and maintenance of Mirae ST Evo-UP System. You will find that using Evo-UP system is very simple, if you take the time to read this manual beforehand. Contact the Mirae ST customer center if you have any inquiries.

### 1-2. Customer Center

#### **Mirae ST Head Office**

- Phone : 031-420-5753
- Fax : 031-420-5978
- Web site : [www.miraest.co.kr](http://www.miraest.co.kr)
- E-mail : [mrst@mrst.kr](mailto:mrst@mrst.kr)

## Section 2. Product Details

### 2-1. Merits of Evo-UP System

- One-touch tubing lets even the first-time users of the Evo-UP Series to install Evo-UP System easily.
- Installation space is minimized by the S-Dispenser, the first one of its kind in Korea. Evo-UP System can be used safely in laboratories.
- Evo-UP System's quiet pump is perfect for all environments.
- Water quality, water level, and system status are all displayed on a 4.3"-wide graphic display. Settings can be made on both the main unit and the S-Dispenser.

### 2-2. Water Quality

	Evo-UP Dio BA	Evo-UP Dio UV	Evo-UP Dio-UF	Evo-UP Dio VF	Evo-UP Dio UT	Evo-UP Dio VFT
Flow Rate (L/min) (Up to )	2.0	2.0	2.0	2.0	2.0	2.0
Product Quality Resistivity (at 25°C) MΩ-cm	18.2	18.2	18.2	18.2	18.2	18.2
TOC (ppb) μg/L	<10	<5	<10	<5	<5	<5
Particles (0.2 μm)	<1	<1	<1	<1	<1	<1
Bacteria, cfu/ml	<1	<1	<1	<1	<1	<1
Endotoxin, EU/ml	-	-	<0.001(*)	<0.001(*)	-	<0.001(*)
Rnase, ng/ml	-	-	<0.01(*)	<0.01(*)	-	<0.01(*)
Dnase, pg/μl	-	-	<4(*)	<4(*)	-	-
PH	1-14(**)	-	-	-	-	1-14(**)

(\*) with UF Pack  
 (\*\*) with PH Sensor

## 2-3. Dimensions and Weight

- Dimensions
  - Main unit : W350 x D430 x H520 (mm)
  - S-Dispenser : W235 x D180 x H635 (mm)
- Weight
  - Main unit : 20–22.5 kg
  - S-Dispenser : 5.0 kg

## 2-4. Installation Environment

### 2-4.1 Water Supply

- Reverse Osmosis Water, DI Water and Distilled Water
- Chlorine :  $\leq 0.07$  ppm
- TOC :  $\leq 50$  ppb
- Silica :  $\leq 3$  ppm
- Temperature : 5–40 °C
- Pressure : 0.9 bar
- Influx :  $> 1,000$  L/hr

### 2-4.2 Power Supply

- 220–240 v/50–60 Hz or 110–120 v/50–60 Hz

### 2-4.3 Installation Environment

- Installation temperature : 4–40°C
- Environment type : Indoors
- Altitude : 2,000 m or less
- Pollution degree : 2

## Section 3. System Installation

### 3-1. Before Installation

#### 3-1.1 Power Supply

- Plug in the power cord correctly.
- Make sure that the correct level of power is supplied.
- Do not open or disassemble the main PCB (Printed Circuit Board).
- Never tamper with the lines in the main PCB and sensor.

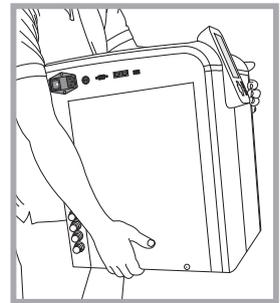
Program or sensor malfunction may result.

#### 3-1.2 Location

- Install Evo-UP System on a laboratory table or a flat horizontal surface.
- Install Evo-UP System on a table - not floors or surfaces on which Evo-UP System might become contaminated.

#### 3-1.3 Relocation

- Before relocating Evo-UP System, turn off the tap and remove all tubing from the tap and the back of Evo-UP System.
- Remove all packs from the inside of Evo-UP System before relocation.  
Failure to do so can result for the Quick Connector to become damaged.



#### 3-1.4 General Safety Precautions

- Keep Evo-UP System away from alcohol and inflammables.  
Electric shock or fire can be created if an inflammable material comes in contact with the electrical components inside Evo-UP System.
- Keep the top of Evo-UP System free from any objects because it negatively affects the function of electrical components.
- Keep Evo-UP System and the pure water tank out of direct sunlight.  
Direct sunlight can spread microbes.
- Keep Evo-UP System at room temperature.  
Excessively high or low temperatures can deteriorate the filter and PCB.

## 3-2. Unpacking

- Remove Evo-UP System from its packing and check if all components are there.
- Place Evo-UP System on a flat horizontal surface in a safe environment.

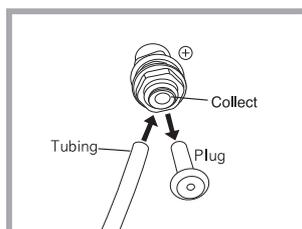
### 3-2.1 Components

Puris, Evo-UP Water System Unit × 1

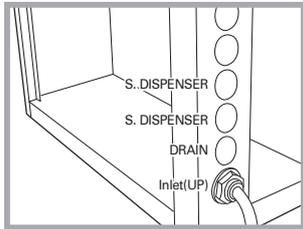
- Built-in filter
  - UV Lamp : 1EA (For Dio UV, VF, UT, VFT, VFTPH)
  - UF Pack : 1PK (For Dio UF, VF, VFT, VFTPH)
- Removable filter
  - Dio Pack I : 1PK
  - Dio Pack II : 1PK
  - Final Filter : 1EA
- Power Cord : 1EA
- Tubing kit
  - 1/4" tubing(Drain) : 1EA (For Dio UF, VF, VT)
  - 5/16" tubing(UP Inlet) : 1EA
  - 1/4" tubing : 2EA (For Connection 1SET of S-Dispenser)
  - Cable Tie Kit : 1SET
- User Manual : 1EA

### 3-3. Main Unit Installation

- Place the main unit in the location where it is to be installed and install as follows.
- Influx and drainage must be possible in the installation location.
- Locate the main unit beside or under the pure water tank for optimum influx.
  - Remove the plug-in place to prevent leakage before connecting the tubing to the side of the main unit.
  - Press down on the area marked "Collect" and pull to remove the plug.



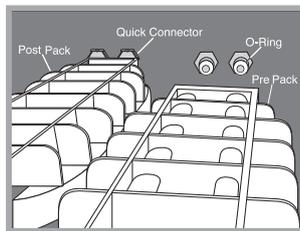
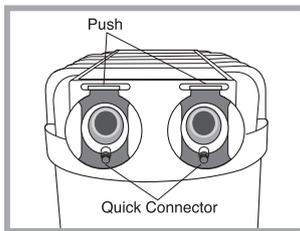
- Connect the 5/16" and 1/4" tubing to the area from which the plug was removed.



- Inlet(UP) - Connect the 5/16" tube to the Pure water tank
- Drain - Located the 1/4" tube to the drainage
- S-Dispenser - Connect to Dispenser

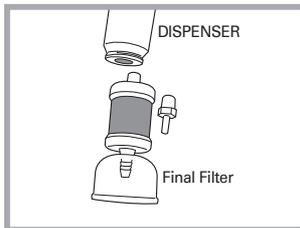
- Open the front door of Dio-Pack I, II and connect to the Quick Connector.

Press down on the top part of the Quick Connector before installing the packs on the main unit.

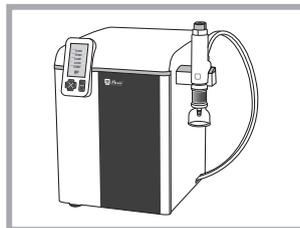


**Caution:** If left protruding, the top part of the Quick Connector can damage the O-ring in the main unit. Press down on the top part of the Quick Connector before installing the packs on the main unit.

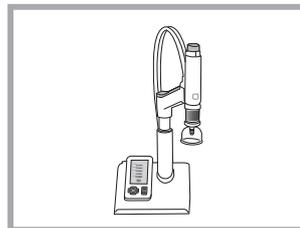
- Install the final filter on the cork where ultrapure water is produced. Remove the stem adapter from the ultrapure water outlet before installation.



Final Filter

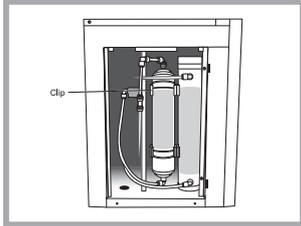


B-Dispenser

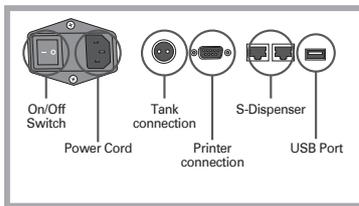


S-Dispenser

- The UV lamp and UF pack (For Dio UV, UF, UT, VFT, VFTPH) are located on the left side of the main unit.

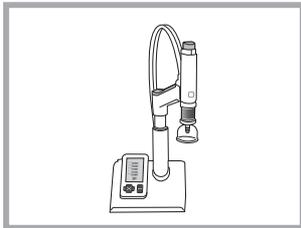


- Connect the power cord at the front.

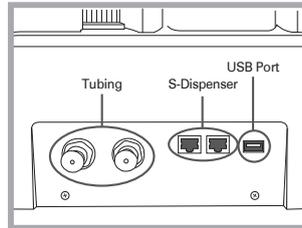


### 3-4. S-Dispenser Connection

Take the S-Dispenser out of its box and connect it to the main unit.  
System settings made on the main unit or S-Dispenser are applied to both units.



S-Dispenser



### 3-5. Connecting Water Supply

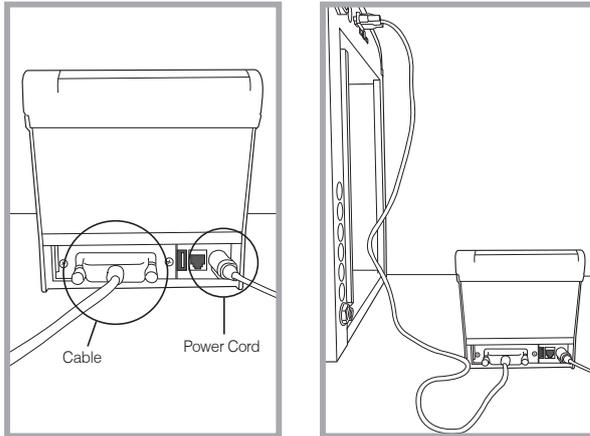
- Position the stem under or beside the water supply tank and not above it.
- Connect the feed line to the pure water tank with the 5/16" tubing.
- Direct the drain line to the drain outlet (For Dio UF, VF, VFT, VFTPH).



**Caution:** The pump may become damaged if Inlet(UP) is not connected to the Pure water tank directly. Your product warranty does not cover this damage.

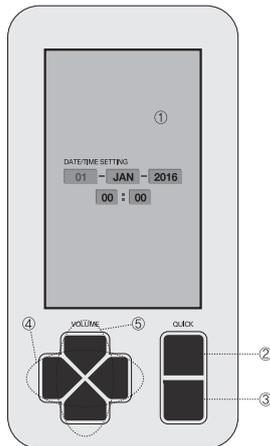
### 3-6. Printer Connection

- Connect the power cord to the printer and connect the printer to the main unit.



## Section 4. System Operation

### 4-1. Keypad



- ① LCD monitor
- ② Quick - Use this button to check the remaining pack level when the filter icon is displayed on the screen.
- ③ Menu - Use this button to automatically save changes and return to Menu.
- ④ ◀ ▶ - Use to navigate items.
- ⑤ △ ▽ - Use to make changes.

#### 4-1.1 Icons



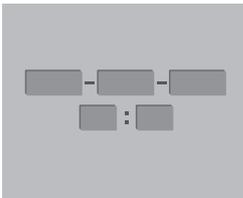
- Evo-UP System is in operation.



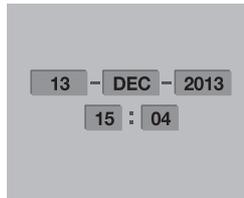
- Ultrapure water is being collected.

## 4-2. Date and Time

- The time setting screen is displayed when Evo-UP System is first started. Press  $\Delta$ ,  $\nabla$  to set the time.
- Press Menu to save the changes made and move to Menu.

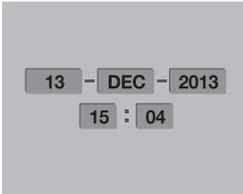


(Before Setting)



(After Setting)

## 4-3. Initial Screen



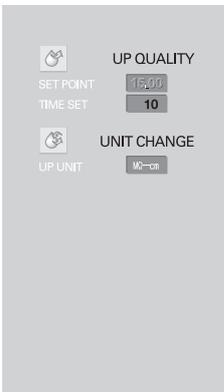
- Saved date and time are displayed.

## 4-4. Menu Setting

※ This item is the factory default setting So, you do not need to reset.

### 4-4.1 Quality

- The unit of Ultrapure water can be set in Quality



Ultrapure water can be set in units of MΩ-cm.

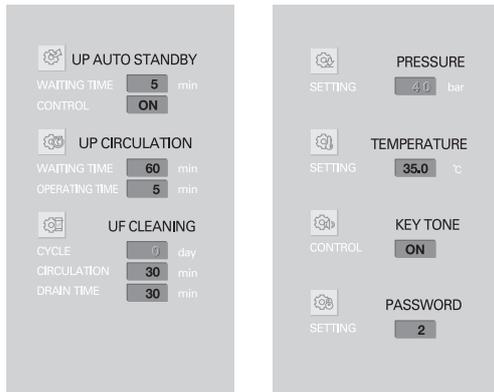
Set Point automatically stops ultrapure water production if a set water quality (**default: 15 MΩ-cm**) is not achieved within a set time.

The default water quality of 15 MΩ-cm does not need to be altered.

Press Menu to save and return to the Menu.

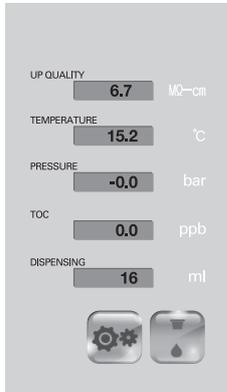
## 4-4.2 Settings

- In Settings, UP Auto Standby, UP Circulation, UF Cleaning, Pressure, Temperature, Key Tone, and Password can be set.



- UP Auto Standby  
Evo-UP System is put on standby from circulation mode if not used for longer than a set time (default: 5 min) to prevent idle pump rotation.
  - UP Circulation  
Automatically circulates ultrapure water (default: UP Standby: 60 min, Circulation: 5)
  - UF Cleaning  
Automatically cleans the UF Pack
  - Pressure
  - Temperature  
Evo-UP System stops operating if influx temperature exceeds a set level (default: 35°C).
  - Key tone
  - Password  
Initial password is 0001.
- Press Menu to save changes made and return to Menu.

## 4-5. Ultrapure Water Screen



Sample model : Dio-VFTPH

- Press Run to use ultrapure water.
- Quality and temperature of ultrapure water are displayed.  
Displayed information can differ by model. Sample model : Dio-VFTPH
- Press the Dispenser button to produce ultrapure water.

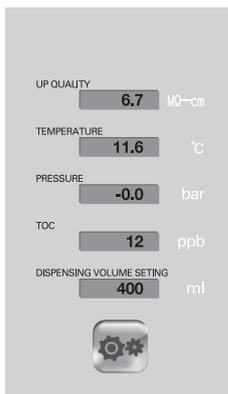
## 4-6. Quantity Control

- Ultrapure water can be collected in units of 100 mL.
- Press Run.
- Press Vol to open Dispenser Settings.
- Press ◀▶ to set the desired quantity.

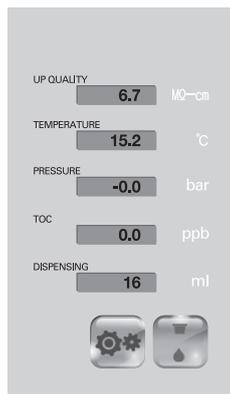


**Caution :** Pump damage can occur if the maximum volume of a connected pure water tank is exceeded.

- Press Vol again to begin collecting ultrapure water.
- To stop, press Vol again.



Quantity Control Setting  
Screen

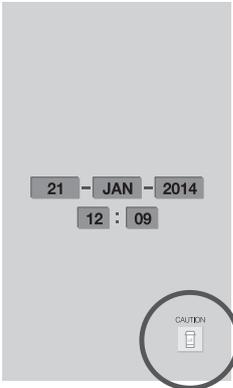


Collection-in-progress  
Screen

## 4-7. Water Quality Printout

- Press Print while the ultrapure water is running to get a printout of water quality.

### 4-8. Filter Replace Alarm



- A filter change icon is displayed seven days ahead of the required filter change. Press Quick to view the remaining life span of all filters.

### 4-9. USB Auto Save

- You can save water quality records automatically to a USB memory device.
  - Insert a USB memory device and press the Menu key in USB Print. Remove the USB memory device and insert it again at a desired time and press the Menu key in USB Print to save.
  - Water quality records are saved in Excel format on the hour from the start and the end of this function. Auto save does not take place if Evo-UP System is not running.

\* Example : Auto save is not performed if USB Print starts at 17:03 and ends at 17:58. Two files are saved if USB Print starts at 16:57 and ends at 18:02 and it can be viewed on your PC.

#### Sample Screenshot

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Time	Min.	Day	Month	Year	RO	Temp.	UP	Temp.	Inlet Temp.	PH	TOC				
2	16	0	7	NOV	2013	25	0	0.1	25	25	7	0				
3	17	0	7	NOV	2013	25	0	0.1	25	25	7	0				
4	18	0	7	NOV	2013	25	0	0.1	25	25	7	0				
5	19	0	7	NOV	2013	25	0	0.1	25	25	7	0				
6	20	0	7	NOV	2013	25	0	0.1	25	25	7	0				
7	21	0	7	NOV	2013	25	0	0.1	25	25	7	0				
8	22	0	7	NOV	2013	25	0	0.1	25	25	7	0				
9	23	0	7	NOV	2013	25	0	0.1	25	25	7	0				
10	24	0	7	NOV	2013	25	0	0.1	25	25	7	0				
11																
12																
13																
14																
15																

Auto saved files do not have the item names shown in the sample screenshot. Refer to the sample screenshot and name the items yourself.

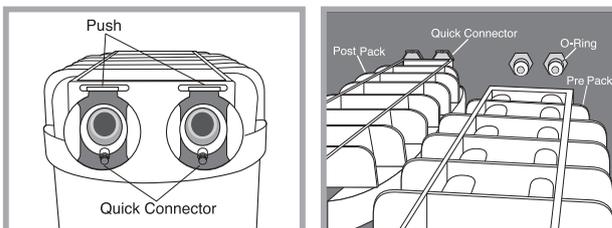
## Section 5. System Maintenance

### 5-1. Replacing of the Dio Pack I , II

Open the front door and connect the Quick Connector. Before connecting the pack to the main unit, press down on the top part of the Quick Connector.

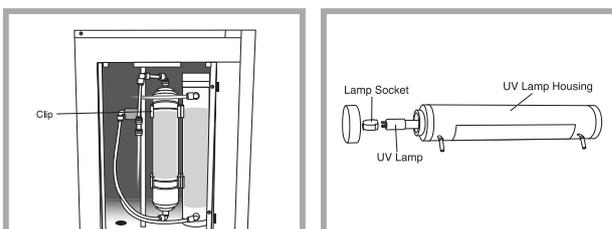


**Caution :** If left protruding, the top part of the Quick Connector can damage the O-ring in the main unit.



### 5-2. Replacing of the UV Lamp (For Dio UV, VF, UT, VFT, VFTPH)

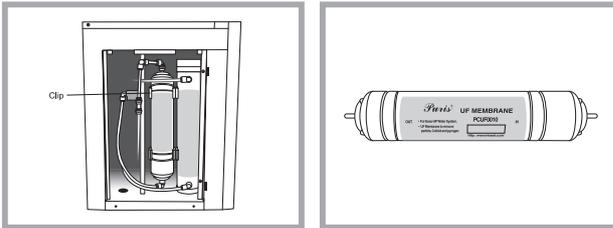
- Remove the cover from the left side of the system with a screwdriver.
- Remove the tubing from the top and bottom.
- Removed the clip-fixed UV lamp housing and turn its top counterclockwise to remove the lamp socket from the UV lamp.



- Replace the old UV lamp with a new one.
- Reassemble and install in the main unit.

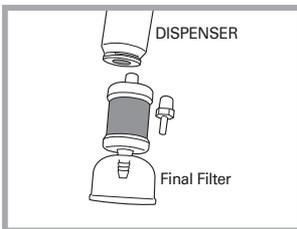
## 5-3. Replacing of the Dio-UF Pack (For Dio UF, VF, VFT, VFTPH)

- Remove the cover from the left side of the system with a screwdriver.
- Remove the tubing from the top and bottom.
- Replace the old UF-Pack and with a new one.
- Reconnect the tubing and install in the main unit.



## 5-4. Replacing of the Final filter

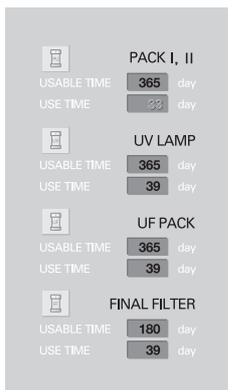
- Remove the final filter from the front of Evo-UP System by turning it clockwise.
- Install a new final filter by turning it counterclockwise.



**Caution :** Do not turn the filter with excessive force to prevent damage.

## 5-5. System Resetting after filter replacing

- Select Filter on Menu.
- Press ◀▶ to select the replaced filter.
- Press △▽ to change USE Time to “1 day” and press Menu to return to Menu.



\* Filter type can vary by model. Sample model in the photo : Evo-UP DioVFT



**Caution :** Changing USE TIME greatly affects water quality and optimum water quality guaranteed if extended excessively. Regular filter change is recommended.

## 5-6. Component Replacement Cycle

Consumable	P/N	Replacement cycle	Remark
Dio-Pack I	ADPI28M	1 year	
Dio-Pack II	ADPII28M	1 year	
UV Lamp	ADVL85M	1 year	For Dio UV, VF, UT, VFT
UF-Pack	ADFP10M	1 year	For Dio UF, VF, VFT
Final filter	ADFF02M	6 months	

\* Average life span of consumables can vary according to water quality and frequency of use.

\* Always keep Dio Pack I, II and UF Pack refrigerated.

## 5-7. Maintenance

- Fuse replacing

- Switch off the power and remove the power cord.
- Assess the power cord unit at the side of the main unit.
- Pull forward the part in the middle marked "Fuse" using a screwdriver.
- Remove the fuse box with the hand. Two fuses, one being a spare, should be found.
- 200–240 v or 110–120 v: T1.6A (T: Time lag fuse)

- Cleaning

Clean the exterior and interior (inside the door) of Evo-UP System as follows.

- Switch off the power and remove the power cord.
- Wet a clean soft cloth and wring it thoroughly. Wipe the surfaces clean.  
Carefully wipe clean the microprocessor control panel (top panel of the main unit) with a dry soft cloth.  
Never use cleaning liquids directly on any part of Evo-UP System.  
Do not use alcohol, benzene, or thinner to clean as discoloration or disfiguration may occur.
- Remove any vapor formed on surfaces with a dry cloth.

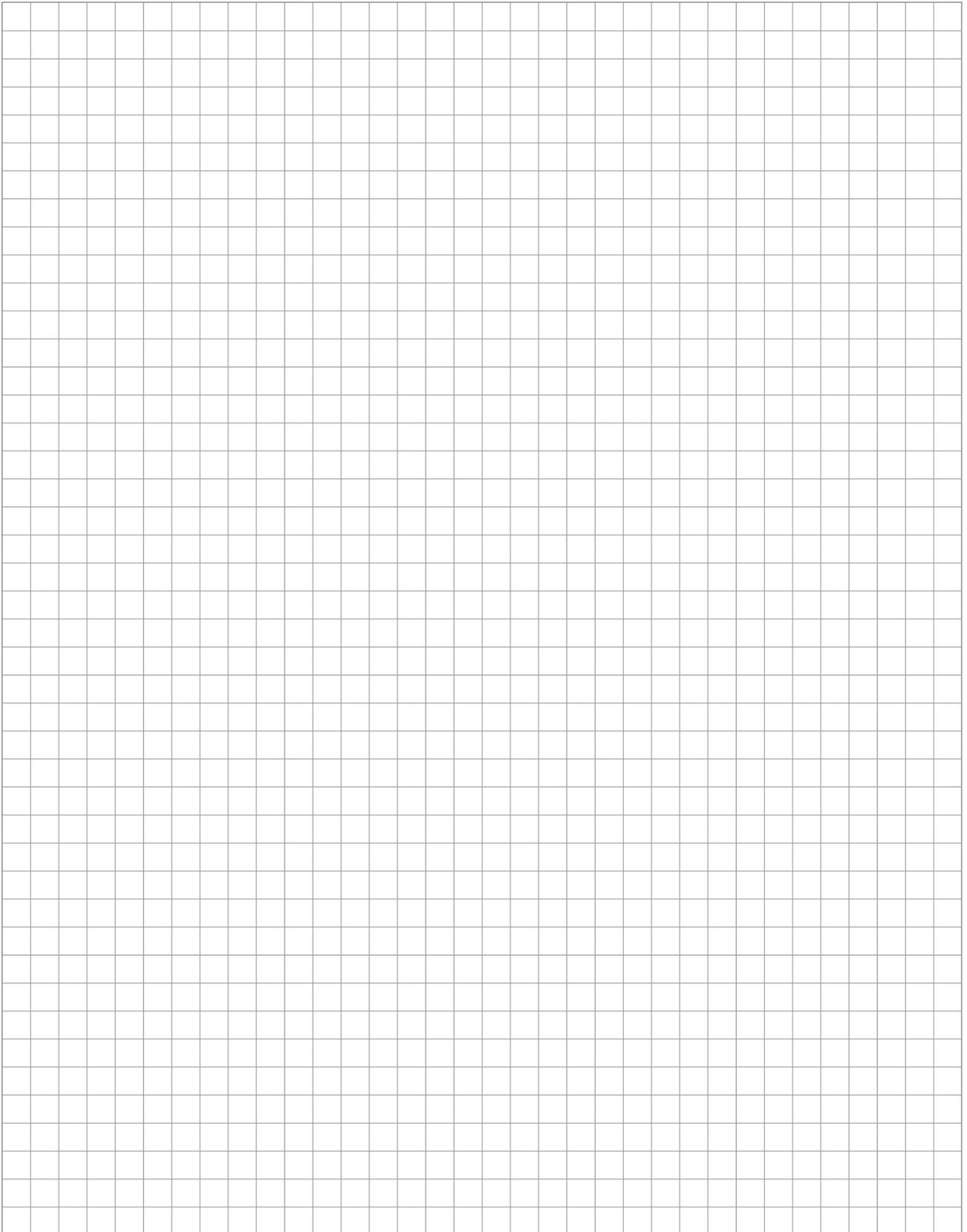


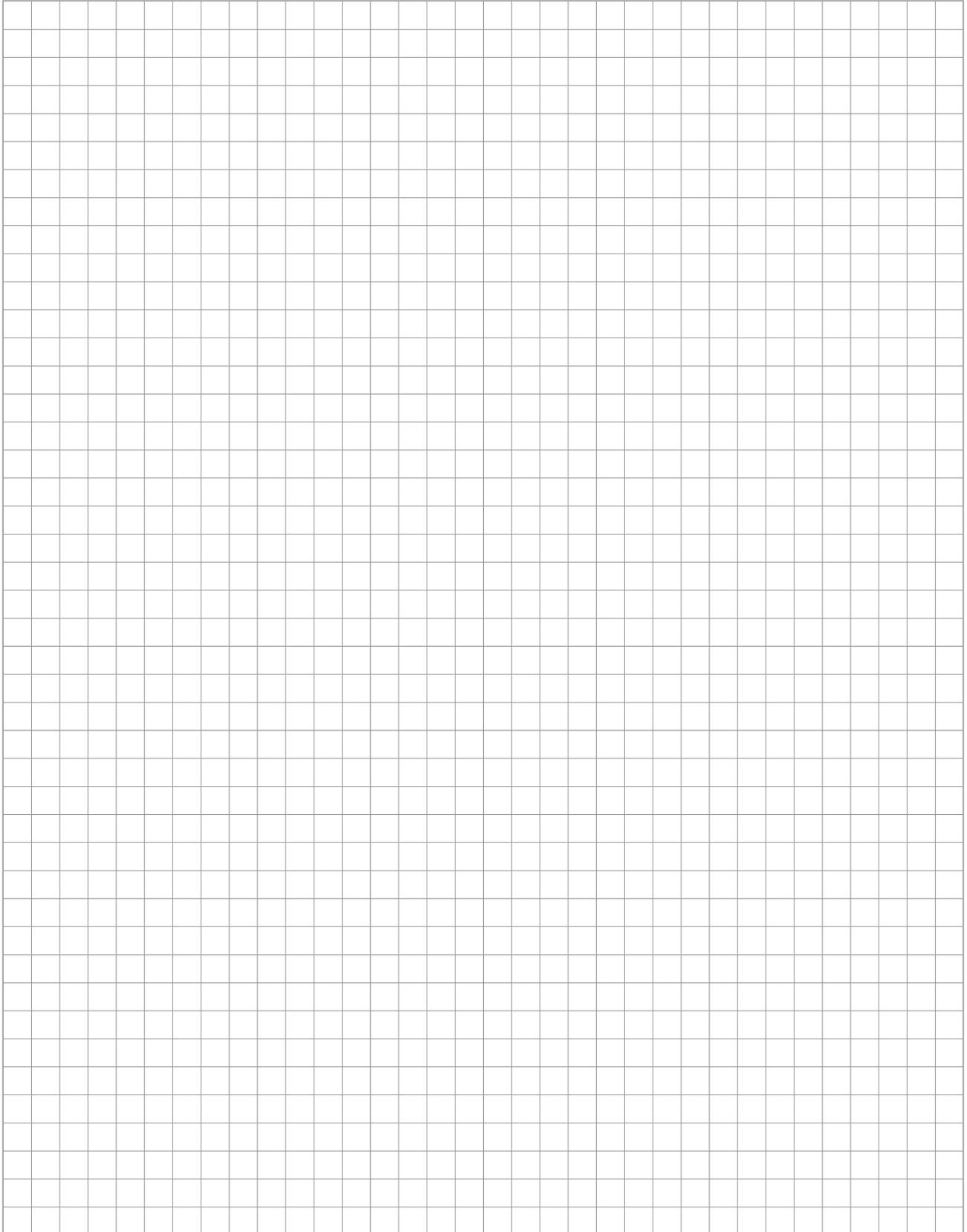
**Caution :** Always remove the power cord before cleaning.

## Section 6. System Alerts

Error	Solution
 <p>REPLACE PACK I, II</p>	<p>Replace Dio-Pack I, Dio-Pack II. Refer to 5-1.</p>
 <p>REPLACE UV LAMP</p>	<p>Replace the UV lamp. Refer to 5-2.</p>
 <p>REPLACE UF PACK</p>	<p>Replace the UF Pack. Refer to 5-3.</p>
 <p>REPLACE FINAL FILTER</p>	<p>Replace the final filter. Refer to 5-4.</p>
 <p>UP HIGH TEMPERATURE</p>	<p>Check the inflowing water temperature.</p>
 <p>UF CLEANING</p>	<p>Automatically cleans the UF Pack</p>

Contact the Mirae ST customer center if problems persist.





We strive to guarantee our customers the complete satisfaction.  
MIRAE ST CO. LTD not only makes high quality products but we do our best  
to provide the best after service to our customers.  
We are always glad to receive feedbacks or any opinions from our  
customers. If you have any inconvenience or something that we can be of  
help, please don't hesitate to contact us.  
Thank you!!



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