



# USER MANUAL

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E-PURE 2

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# 1. Introduction

## 1.1. Manufacturer Information

Manufacturer **SHIN JIN MEDICS INC.**

**Head Office** : B301, ILSAN TECHNO TOWN, 1141-1 Baekseok-Dong,  
Ilsan Dong-gu, Goyang-Si, Gyeonggi-Do, South Korea

**R&D** : B311, , ILSAN TECHNO TOWN, 1141-1 Baekseok-Dong,  
Ilsan Dong-gu, Goyang-Si, Gyeonggi-Do, South Korea

**TEL** 00 82+ 2-566-0913

**FAX** 00 82+ 2-566-0914

**E-MAIL** [DIAKEY@DIAKEY.COM](mailto:DIAKEY@DIAKEY.COM)

## 1.2. Date of Published and Manual Version

Date of Published 2016-03-30

Manual Version 1.0

## 1.3. Product Usage and Features

### Purpose or Use

E-PURE 2 is the instrument for the automated EIA with E-WAVE, E-SPECTRO of the DREAM E-FAMILY. It is a Plate Washer using Micro-plate in Diagnostic Test

### Features

It detects insufficient Flushing Solution, full waste in the Waste Tank to prevent overflowing and Human Error.

There is Level Sensing that featured automatic detection of the number of strip. This can be automatic washing operation without inputting the number of Strip.

The assay can be conducted by choosing Plate way or Strip way and only Suction is possible.

The user can choose the number of repetitions and Soak Time. It Can be washed in a various of ways.

The Suction will be conducted by Selecting One Point or Two Point Suction

## 2. User Manual Description

### **Purpose**

The User Manual is made to provide the safety and convenience for the user of E-PURE 2.

### **2.1. Instrument**

**E-PURE 2**

### 3. Safety Precautions

#### 3.1. The main indications



## 3.2. User safety

### Installation Precautions

- Must be installed on a flat surface
- Use stable table of more than 50Kg capacity
- Avoid hot and humid place
- Install more than 10Cm distance from the wall or surrounding instrument.

### Precautions for use

- Do not use in the place where the room temperature is less than 2°C or more than 40°C, and the humidity is more than 80%. The instrument may not operate normally.
- Do not plug or unplug with wet hands causing a risk of electric shock.
- If there are unusual smells or smokes, Shut off the Main Power and contact the person in charge. .
- Do not remove the Micro Plate during the washing. If you should remove it unavoidably, please remove it after stopping.
- Use in the place where power supply is stable (Also in the shake about  $\pm 10\%$  or it is required to install the AVR in severe shaking area.)

### 3.3. Product Safety precautions.

#### Instructions

- Temperature: 15~32°C
- Humidity : 20~80%
- Use well balanced table unaffected by the any movement or shaking.
- Must be installed in a confined space unaffected by the surrounding enviroment
- Avoid the exposure to direct sunlight
- Make a clan surroundings unaffected by dust etc.

#### Maintenance

- Do not store in a high temperature and high humidity.
- Do not place heavy objects on the top of the instrument.

### 3.4. Precautions when transporting

#### Precautions

- Do not carry the instrument upside down.
- It is recommended that the instrument is securely packed for its protection.



## 4. Maintenance

- **Before use**
  - Verify the Suction and Dispensing Needle clogged d by foreign objects.
  - Check the Washing Solution is sufficiently filled.
  
- **After use**
  - After the last use, wash out the remaining reagent of the Dispensing Needle and Washing Needle by flushing more than 10seconds,
  
- **Weekly management**
  - Needles Unit Cleaning: Clean up the Dispensing Needle and Washing Needle of Needle Unit by using the Needle Cleaner.
  - Clean the waste bottle.
  - Clean the inside Tube by using a distilled water and flushing for 1 minute.

## 5. Technical Description

### 5.1 Components

Items	Quantity	
Main Body	1	
Waste Tank	1	
Waste Tank Tubing Set	1	
Washing Solution Tank	2	
Washing Solution Tank Cap (A Type)	2	
Washing Solution Tank Cap (B Type)	2	
Needle Cleaner	1	
Adapter (INPUT: 110/220 Free Volt OUTPUT: DC12V)	1	
User Manual	1	
Service Manual	1	

## 5.2 Design of the instrument

### 1) FRONT PANEL



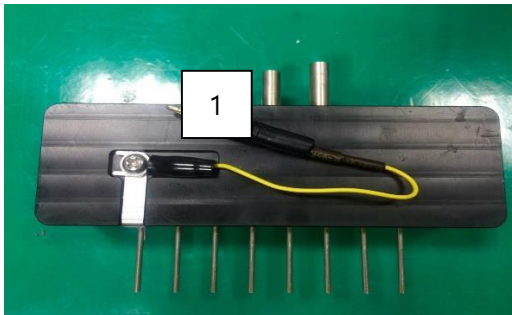
LOCATION	NAME
1	Plate Deck
2	Control Panel : Touch LCD Module
3	Washing Solution A
4	Washing Solution B

## 2) REAR SIDE



LOCATION	NAME
1	POWER CABLE INLET
2	Main Switch
3	AIR INPUT
4	WASTE SENSOR
5	WASTE OUTPUT
6	AIR FILTER

3) Needle Unit



LOCATION	NAME
1	Level Sensor Cable
2	Dispensing Needle Unit
3	Suction Needle

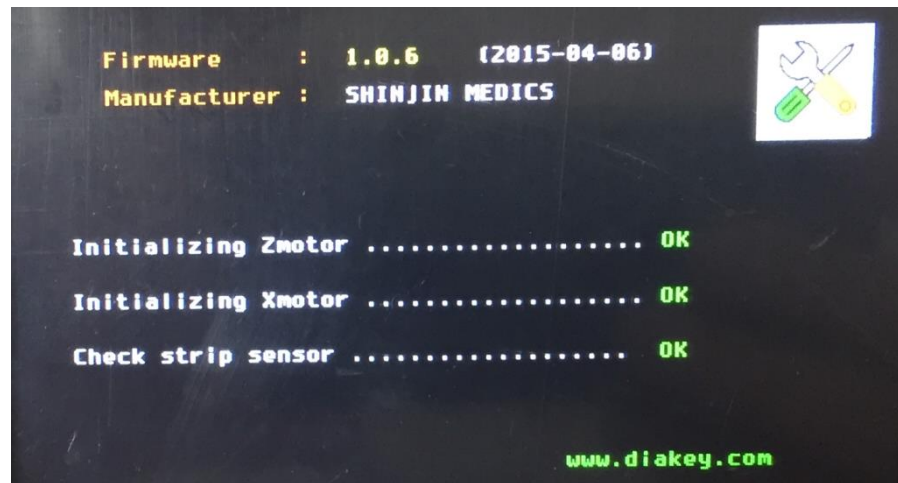
## 5.3 Specification

Specification	Description
Micro Plate	1
Strip Count	1 ~ 12 (Automatic Detection)
Volume	50 ~ 350ul
Iteration Count	0 ~ 9
Washing Type	Strip / Plate
Suction Type	1 Point / 2 Point
Suction Time	0 ~ 10 Sec
Soak Time	0 ~ 10 Sec
Waste Tank & Sensor	1 Set
Washing Tank & Cap	2 Set
Display	Color LCD
Interface	Full Touch Panel
Power	100~240VAC(50/60Hz) Adapter
Power Consumption	100W
Dimension	300(W)*440(D)*190(H) (Unit: mm)
Weight	10Kg

## 6. Operation of the instrument

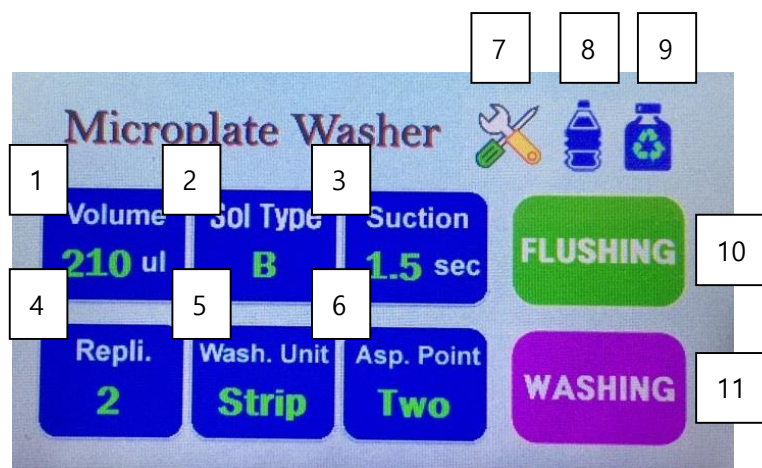
### 6.1 Initialization and self checking

Once the instrument is connected to the power supplies, following the process appears and the screen is displayed to check the status of instrument. (If there are errors, see the Trouble shooting.)



## 6.2 Main View

After the device is initialized properly, the following main view is shown.



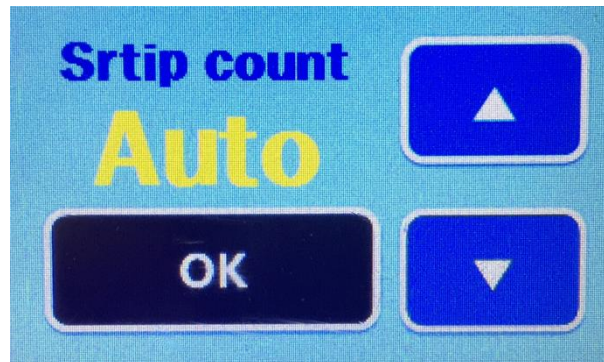
	Item	Range	Description
1	Volume	0 ~ 350ul	Set the volume of Washing Solution for dispensing.
2	Sol Type	A/B	Select the Washing Solution Type.
3	Suction	0~10 Sec	Set the Suction time.(Max. 10 seconds. (Adjustable in 0.5 seconds)
4	Repl.	0~9	Specify the number of times for washing.
5	Wash. Unit	Plate/Strip	If set to the Plate, the Washing is repeated by Plate Unit. If set to the Strip, the Washing is repeated by Strip Unit.
6	Asp. Point	One/Two	If set to One, Aspiration is conducted once at the center of the Well. If set to Two, Aspiration is conducted twice in front of Well and behind the Well.
7	Configuration		Go to the Configuration Screen of the device.
8	Washing Solution Status		If the Washing Solution is insufficient, corresponding images flash and it will inform the users through the warning alarm.
9	Waste Tank Status		If the Waste Tank is fully filled, corresponding images flash and it will inform the users through the warning alarm.
10	Flushing		Operate the Flushing performance. While the Washing Solution is aspirated and dispensed in the Flushing Bath, it removes the air in the Tube
11	Washing		Depending on the settings, it starts the Plate Washing.



## 6.3. Washing

Click on the WASHING button, the following screen will be displayed.

During the Auto Washing operation, it can automatically detect the number of Strip through the Level Sensor Washing. Otherwise, select the number of Strip directly.



Press the OK button after select the number of Strip, Washing starts.



Washing will be completed with a melody.

## 6.4 Flushing

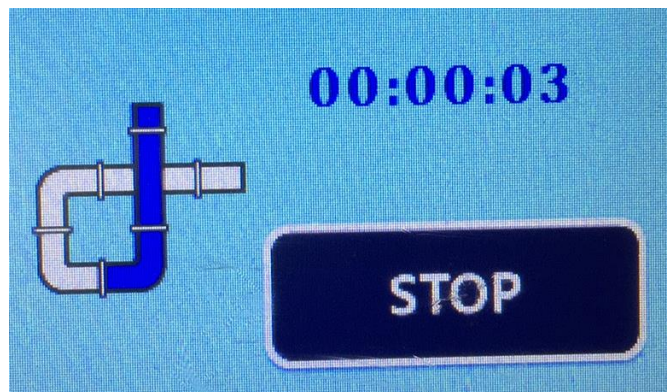
If the users click on the Flushing button, Flushing status screen is displayed.

If the users click on the STOP button, the operation is stopped.

If you do not click the STOP button, it will be continuously operated for 60 seconds.

Note that the Washing Solution Sensor will not operate during the Flushing.


This is to empty the water that filled in the Flushing Bath or the inside Tube.



## 6.5 Setup

Click the Configuration, and set up the configuration information.



	Item	Adjustment Range	Description.
1	X-Start	0~500	Set the X-Start Position. Setting Position should be matched with Suction needle Position at the right corner of Washing Chamber as shown below. 
2	Z-Max	0~500	Set the Z-Max Position for Aspiration of Microplate Well. Attach the actually used Microplate to the Washing Deck and Set the Suction Needle Position located close to the bottom of Microplate Well. If the Z-Max Needle is set too low, the Needle may touch the bottom surface of Washing Deck and malfunction of Level Sensing may happen.
3	Pump Power	0~100%	Set the strength of the dispensing pump If the amount of dispensing is different from the actual, adjust the amount of dispensing.
4	Sound	On/Off	During the operation, Set the On/Off for Sound.
5	F. Sensor	On/Off	Set the On/Off for the Sensor of Washing Solution.
6	W. Sensor	On/Off	Set the On/Off for the Sensor of Waste Tank.
7	Soak Time	0 ~ 10sec.	Set the Soak time. (Adjustable to 0.5 seconds)
8	L. Sensor	0 ~ 100	Level Sensing is sensitive setting.
9	Current Level	0 ~ 4095	Current Level Sensing Value is displayed. (Recommended Value: 1,500 ~ 3,000)

## 7장 Troubleshooting

### 7.1 Troubleshooting

#### (1) Aspiration Malfunction

##### A. Total Aspiration Malfunction

- Make sure that the Suction Hose Set is properly connected to the back of the Instrument.
- Make sure Suction Hose Set is not damaged.

#### (2) B. Aspiration Malfunction of Partial Suction Needle Only]

- Remove the foreign objects in the Suction Needle with the Needle Cleaner.
- If there are foreign objects inside the Needles Unit, Clean the inside the Instrument after remove the Hex Screw of Needle Unit Side

#### (3) Dispensing Malfunction

##### A. Total Dispensing Malfunction

- Conduct the flushing for 5~10 Seconds.
- Make sure that the Hose Connector is connected properly.

##### B. Dispensing Malfunction of Partial Dispensing Needle

- Separate the needles from the Needle Unit by using Needle tweezers in order to remove the foreign objects inside the Needles with the Needle Cleaner
- For Installation, It must be completely connected to the Needle Unit.

#### (4) In case of Washing Solution Alarm

- Fill up with Washing Solution enough to use.
- If the alarm is ringing even the sufficient Washing Solution, Contact our A/S center.
- In case of urgent, configure the off of Flushing Solution Sensing.

#### (5) In case of Waste Tank Alarm

- Use the instrument after Empty the Waste Tank
- Make sure that Waste Tank Sensor is properly connected to the back of the Instrument.
- Check the Vertical movement of Sensor that is connected to the Waste Tank Cover
- If the problem is not resolved, contact our A/S Center.

**(6) During the Auto Washing, Well Detection Malfunction**

- Make sure that the Level Sensor Cable is well connected.
- Check the operation by changing the Level Sensitivity Settings.
- If the problem is not resolved, contact our A/S Center.

## **7.2 Customer Service**

The A/S of E-PURE 2 is promptly processed via Shin Jin Medics Inc.

**\* Service Center :+82-2-1544-1429**