

# **RAPID-DRY™**

## **OPERATION MANUAL**

**MODEL : SRS-320ST**

Rev.1.1\_170221

Electronic moisture prevention storage case



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V2.0

# 1. Virtue and characteristics of RAPID DRY™

## A. Ability

- 1) Absorbs molecule of vapor inside device by special absorbent to maintain room temperature with low humidity.
- 2) Absorbs moisture inside device by powerful high-performance DRY UNIT with special absorbent.
- 3) Converts absorbed moisture to vapor by heating absorbent.
- 4) Opening & closing shutter is activated for discharging out this vapor.
- 5) This shutter reduces humidity by repeating absorbing and discharging automatically through IC timer.

## B. Characteristics

- 1) Realize high reliable ultra-low humidity by powerful dehumidifying unit of the RAPID DRY™.
- 2) Since it can maintains room temperature with low humidity, you can safely keep such vulnerable products to moisture as precision parts, fine powder and documents etc. Especially, it prevents oxidization of electronic products and metal powder.
- 3) Long-term continuous operation is possible due to noise-free and vibration-free.
- 4) Since dehumidification is available, it is applicable to case of door opening & closing is frequent, and case of drying function is required.
- 5) Can be applicable to type work and industrial purpose with high durability.
- 6) Can maintains low humidity in room temperature. It prevents goods from heating or cooling, eliminating worry about dew forming etc.
- 7) Door consists of transparent glass, close adherent rubber etc.
- 8) Can moves easily with caster(Wheel).
- 9) Can observe inner humidity with naked eyes through embedded high-precision hygrometer.
- 10) It impedes static electricity with such design that electric current would be flowed throughout overall dehumidifying box, if earth terminal is connected (to rear side of dehumidifying box).
- 11) It impedes static electricity by adopting stainless rack.

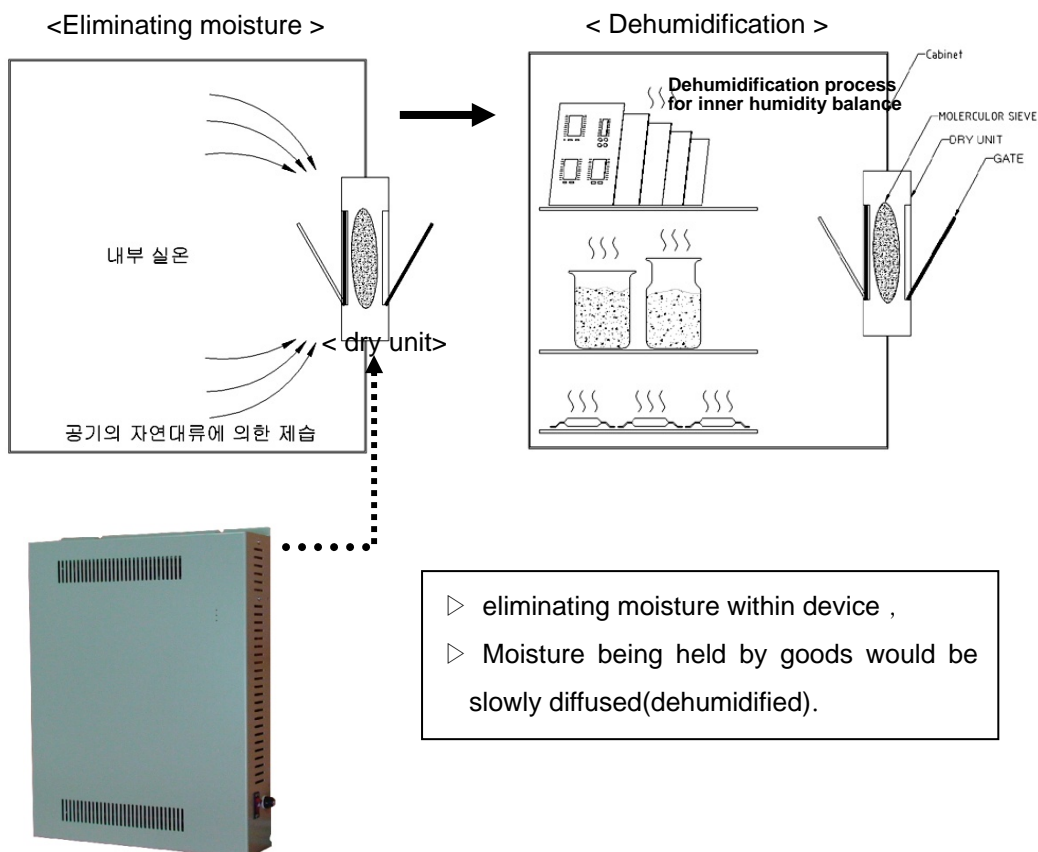
## 2. Dehumidifying principle of RAPID DRY™

### A. Principle

- 1) Absorbs moisture inside cabinet into DRY UNIT using natural convection current phenomenon.
- 2) Absorbing time would be continued for 4~8 hours.
- 3) Moisture absorbed into DRY UNIT would be diffused to outside of cabinet in vapor.
- 4) Displays heat emission condition on Green and Yellow LED outside device.
- 5) Temperature when moisture diffused to outside device is about 50~100°C.

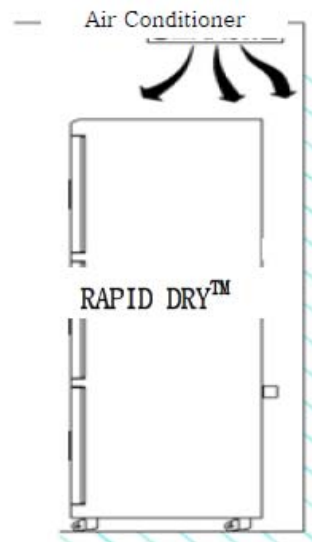
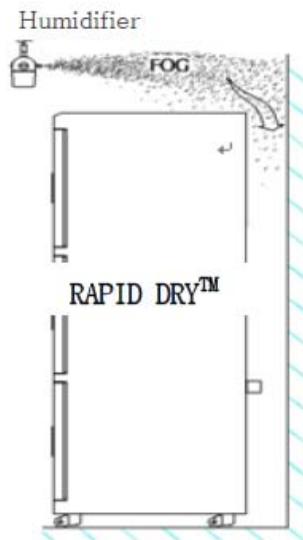
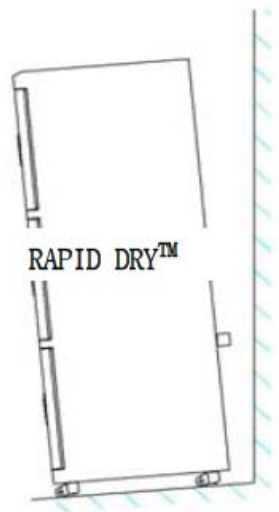
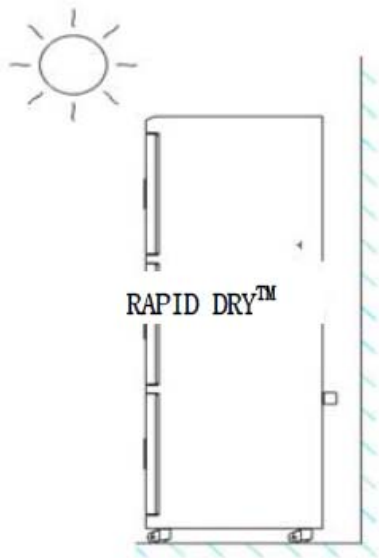
There is no safety problem since temperature of UNIT surface and vapor  
**Inside room temperature**  
outlet would be about 30°C at this time.

- 6) Power consumption is 70~160W/H for heating, and 8W/H for moisture absorbing.



### 3. Installing location of RAPID DRY™

Such locations that sufficient even level being maintained, not exposed to direct lay of light, not affected by heat and vapor and there is no moisture, should be selected.



## 4. How to use RAPID DRY™ correctly

- 1) Check out if doors installed on even place is opened and closed smoothly, then firmly fix the caster stopper.
- 2) Connect earth line to the earth terminal(for static electricity).
- 3) Large doors would be delivered in key lock condition, so it should be used after opening with attached key.
- 4) Connect rack hook to right and left side of the body and set up the rack.
- 5) Insert power plug into wall outlet.

## 5. How to operate DRY UNIT

- 1) Connect power line to the power supply plug located on lower side of rear device.
- 2) Initiate operation when electric current lamp turned on inside upper side of front device.
- 3) Temperature and humidity will be displayed on term/humid indicator on upper side of front device.
- 4) Adjust dial on the handle for DRY UNIT dehumidifying controller to ON or 10-40%.
  - Reference -
  - a) Even though DIAL is set to 10~40%, humidity inside device does not always maintained consistently.
  - b) Pause operation of DRY UNIT when humidity being reached to adjusted humidity( $\pm 8\%RH$ ) by dial.
  - c) Special absorbent drops humidity inside device during door of DRY UNIT is not opened for long time.
  - d) Although humidity controller prevent over dehumidification, accurate humidity would not be adjusted. (Error of humidity controller is  $\pm 8\%$ )
- 5) Set dial location to ON when intend to maintain low humidity consistently.  
(We recommend to set humidity range of 10-30%RH then use it when dehumidifying IC package or keeping electronic parts etc.)
- 6) We recommend to set dial location to ON when opening and closing of device is frequent.
- 7) We recommend to use in temperature range of 30-40%RH when you keep

measuring devices, precision parts etc.

- 8) Separate operation does not required since automatic operation process would be initiated by humidity controller.
- 9) Special absorbent inside DRY UNIT will be transformed to absorption condition after regeneration. Regeneration time would be 30–40 minutes for about 6 hours. (Regeneration time could be varied according to product type)
- 10) Humidity inside device could be risen little, because dehumidification would not implemented during regeneration by DRY UNIT.
- 11) Since regeneration process will be implemented by heat, so temperature of DRY UNIT could be risen about 5–10°C, but it does not a matter.

## 6. Caution (Trouble and cause)

- 1) Dehumidifying process could takes longer time due to risen humidity inside device, if products being packed with paper containing moisture such as paper or corrugated cardboard etc.
- 2) Opening and closing of door should be carried out rapidly, doing not open excessively.
- 3) Products containing humidity should be dried before inserted.
- 4) Insertion of ignitable chemicals does not allowed.
- 5) There are no humidifying, heating and cooling functions in RAPID DRY™.
- 6) Since hot steam would be emitted from upper discharging side of main body, please stay your hands away from there.
- 7) Turn the power off if humidity inside device drops below specified level when surrounding humidity is low.
- 8) Never put something on the DRY UNIT. Dehumidification could be interrupted and stuff on it would be heated.
- 9) Earth the grounding screw on both sides on lower side of rear device, in order to prevent device from static electricity.
- 10) Humidity would be lowered to under 30%RH, after around 10HR.
- 11) Lower humidity below 10%rh because it would not be sufficiently low initially, then specified humidity would be reached after around 24 hours.
- 12) It should be used at below 20%RH when be used to keep IC package, print board, electronic product or preventing oxidation(Dial location of humidity controller is ON).
- 13) Since mold would be gathered rapidly at temperature of 20°C, humidity of

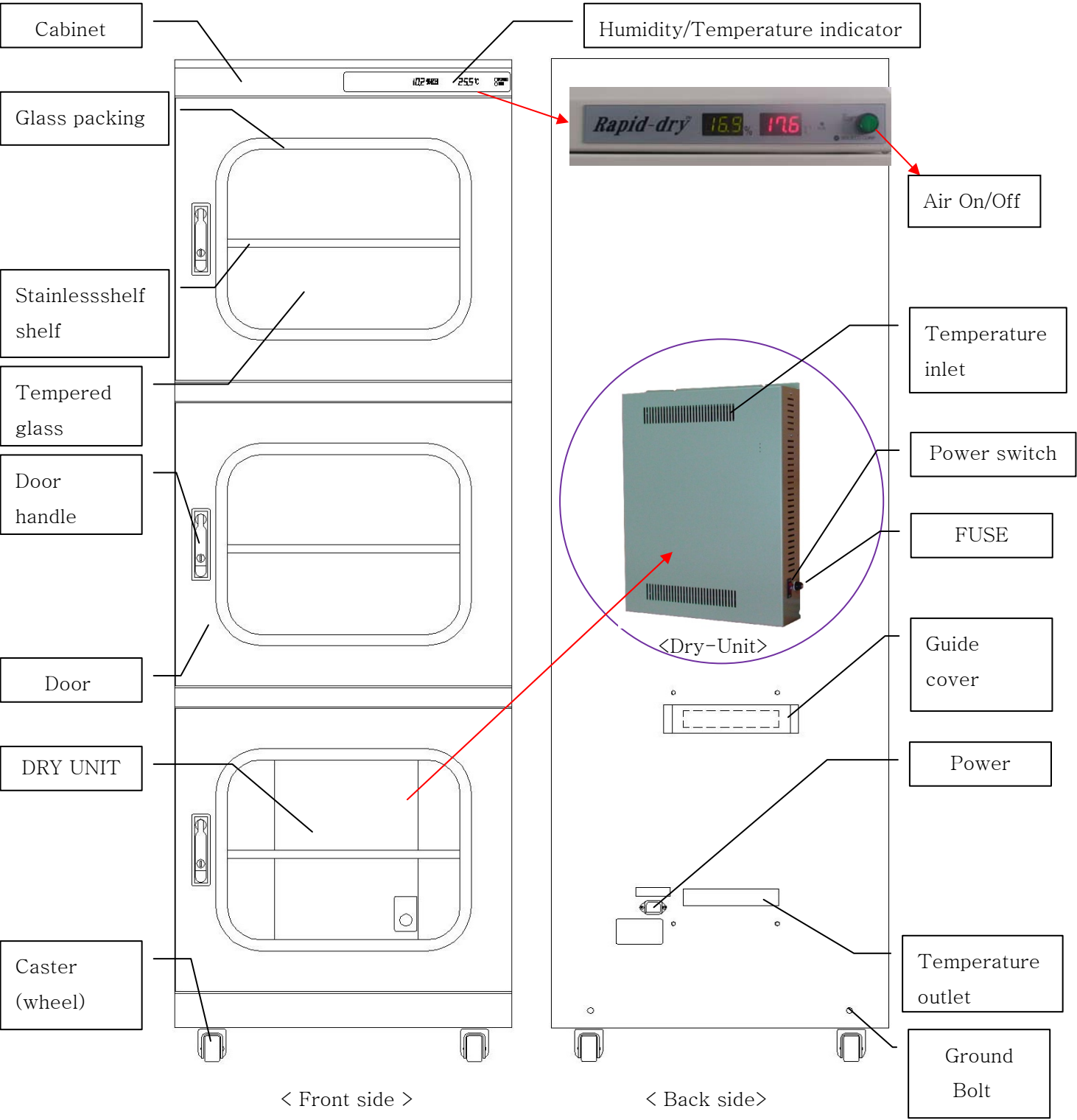
60%RH and oxidation would be accelerated at humidity of 50%RH or more, it should be used at humidity range of 30% or less.

※ Followings are not errors.

Symptoms	Causes
<ul style="list-style-type: none"> <li>- Power lamp on temperature/humidity indicator or lamp inside DRY UNIT is not turned on.</li> </ul>	<ul style="list-style-type: none"> <li>- Could be power cut.</li> <li>- Power dial is in OFF condition.</li> <li>- Power plug is unplugged.</li> <li>- Power fuse or circuit breaker is in OFF condition.</li> </ul>
<ul style="list-style-type: none"> <li>- DRY UNIT has been heated.</li> <li>- Temperature on temp/humid indicator is different from outer temperature.</li> </ul>	<ul style="list-style-type: none"> <li>-Temperature could be risen because it heats and regenerates absorbent for about 30-40 at 6 hours interval.</li> <li>- Difference from outer temperature could be shown because it is heated at sealed space.</li> </ul>
<ul style="list-style-type: none"> <li>- Specified humidity on humidity Controller and hygrometer display does not consistent.</li> <li>- Humidity is lower than specified one (When it is specified to level above outer humidity)</li> </ul>	<ul style="list-style-type: none"> <li>-Error of humidity controller is <math>\pm 8\%</math></li> <li>-Humidity could be automatically dropped continuously when door is not opened for long time.</li> </ul>
<ul style="list-style-type: none"> <li>- Humidity inside device is risen continuously.</li> </ul>	<ul style="list-style-type: none"> <li>- Inner/outer humidity could be flowed in due to sharp difference at a moment DRY UNIT is connected to outer air, in order to heat and regenerate absorbent.</li> </ul>



7. Structure of RAPID DRY™



\* Reference . Above picture is to explain via SMS-630SU model.

## 8. Specification of RAPID DRY™

### - Product specification by each model and structure

MODEL	SRS-1260ST	SRS-630ST	SRS-320ST	SRS-840ST	SRS-210ST
OUTSIDE (WXDXH)	1200X780X1790	600X750X1800	600X780X1250	1200X650X1300	600X760X650
INSIDE (WXDXH)	1150X570X1550	550X670X1000	550X570X1000	1150X570X1550	550X500X460
VOLUME	1200ℓ	600ℓ	400ℓ	800ℓ	180ℓ
POWER	AC 220V				
STRATEGY OF EXHAUSTION	Below 60W/H	Below 40W/H	Below 40W/H	Below 60W/H	Below 40W/H
COLOR	IVORY COLOR				
INSIDE (WXDXH)	A. 1160 X550 X15 B. 1160 X465 X15	C. 563X550X15 D. 563X465X15	C. 563X550X15 D. 563X465X15	A. 1160 X550 X15 B. 1160 X465 X15	C. 563X550X15 D. 563X465X15
SHELF	A : 3EA, B : 2EA	C : 3EA, D : 2EA		A : 3EA, B : 2EA	D : 4EA
DRY UNIT	2EA	1EA		2EA	1 EA
HUMIDITY INDICATOR POWER	POWER DC 5V 1.2A				
SHELF LOCK	22EA			대(大) 23EA	16EA
POWER CABLE	1EA				
DOOR KEY	6EA	3EA	2EA	4EA	2EA

\* DRY UNIT and humidity indicator were attached basically on cabinet inside.

## 9. Air hose and Power connection

- (1) Air hose connection and air supply.
  - 1) Connect the hose to the filter section on the right to supply air.
  - This product basically supplies 4M
  - When air must be connected from a distance, make sure to extend the connection so there is no pressure loss.



※ Main Filter(SRD-400L5), the Dry Air Supplying Device inside the assembly, can be semi-permanently used, provided the replacement upon declination of performance is required as the massive moisture content and oil inflow may interfere with the dehumidification capability.

### Oil Filter

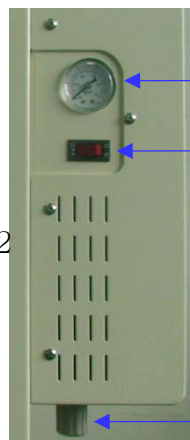
Filter replacement cycle:  
1 years (recommended)

### Air Filter

Filter replacement cycle:  
1 years (recommended)

This device is originally equipped with oil filters, but if a large amount of oil and moisture comes from the air compressor, it may cause serious damage to this device. Therefore, check the condition before supplying air.

- 2) Control the air pressure by turning the air regulator after injecting air.
- Recommended pressure: 6kgf/cm<sup>2</sup>
  - Minimum pressure: 5kgf/cm<sup>2</sup>
  - Necessary flux : 200ℓ/min
  - Minimum flux: 150ℓ/min



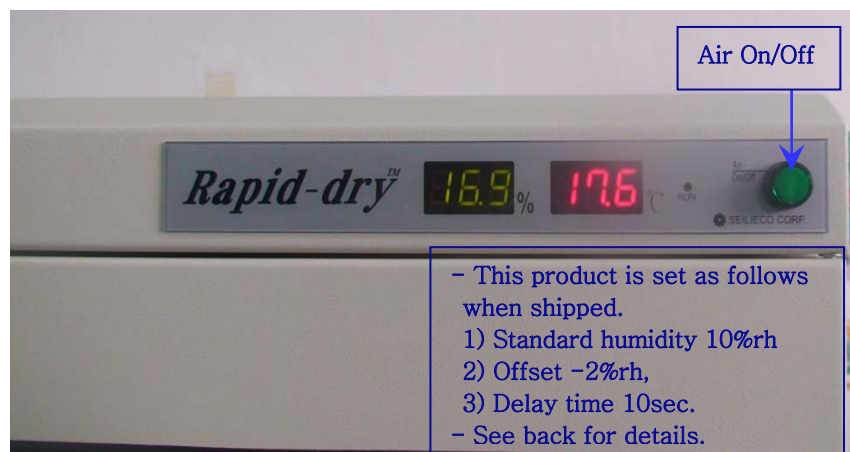
Pressure gauge

Power switch

Pressure control regulator

## (2) Power connection and operation

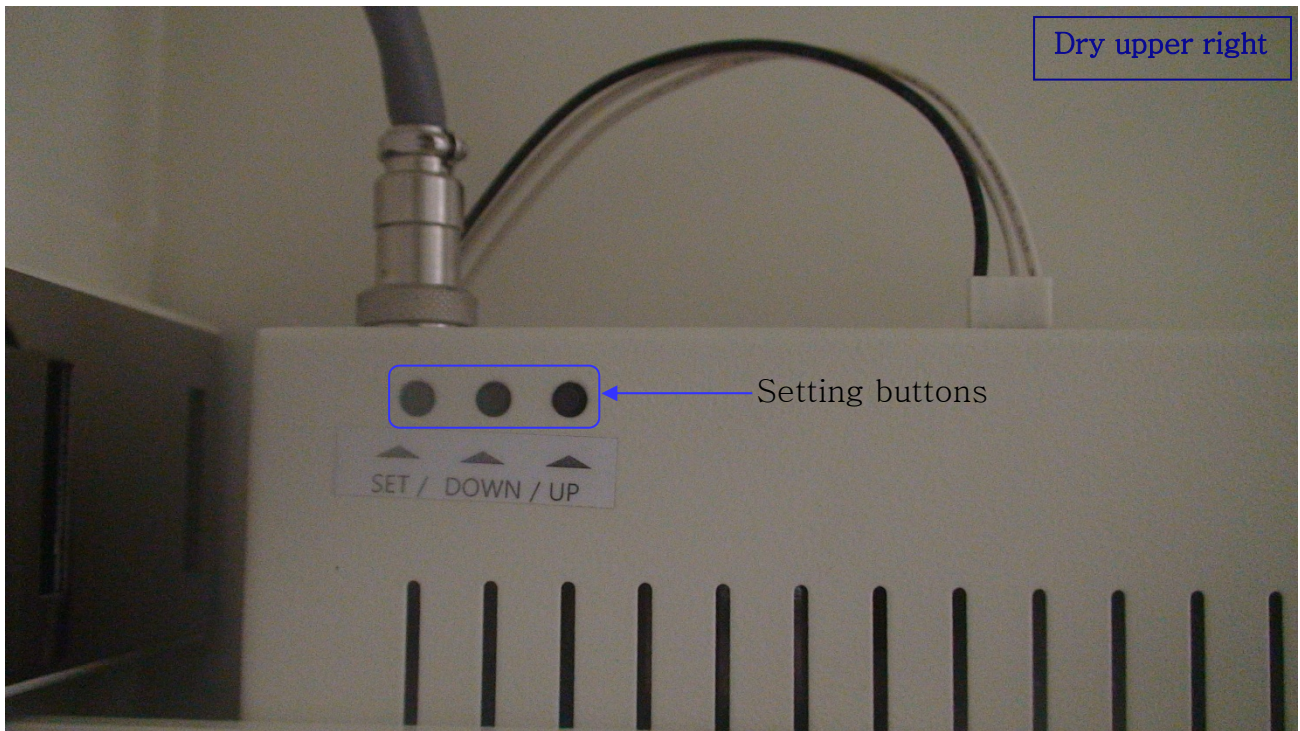
- 1) After connecting to power, turn on the power switch of Rapid Dry. The humidity and temperature will show up on the display in a few seconds.
- 2) Turn on the controller switch. When the indicated humidity is over 10%, it will automatically operate and stop when humidity drops to 8%.



- This product is set as follows when shipped.
- 1) Standard humidity 10%rh
- 2) Offset -2%rh,
- 3) Delay time 10sec.
- See back for details.

## 10. Rapid Dryer setting and operation

### (1) Rapid Dryer Controller setting



#### 1) Press 'SET' once: Set standard humidity (range: 5%rh~30%rh)

Use "UP" and "DOWN" buttons to change the standard humidity.

The temperature display will show "\_H\_"

#### 2) Press 'SET' twice: Set OFFSET (range: 0~4)

When the apparatus is under operation, set standard humidity where operation should stop.

The temperature display will show "\_O\_"

Example. When the standard humidity is set at "10%" and OFFSET is set at "2":

Operation begins when the interior humidity of Micro Dry is increased beyond "10%rh" and stops when humidity drops to 8%. (Please note that interior humidity may increase when air supply stops.)

#### 3) Press 'SET' three times: Set DELAY (range: 0~100 sec.)

Set the point of air supply when interior humidity increases, after a few moments.

The temperature display will show "\_t\_"

(Useful for short periods of material in/out, and stop button should be pressed when materials move period is extended.)

#### 4) Press 'SET' four times: Return to control mode.

### (2) Operation method

- 1) When the switch is turned on (see photo above), operation automatically begins according to the set values.
- 2) Turn off the above switch when the door of the Micro Dry is open for extended periods.

### (3) Operation indication

- 1) The humidity/temperature values will be displayed when the internal humidity of the cabinet goes down below the set point.
- 2) When the values increase, the delay time is indicated on the temperature display, and the countdown begins.
- 3) When air is supplied, the supply status is indicated on the temperature display, and the value returns to the temperature when the set value is reached.