Laboratory Equipment Manufacturer
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INSTRUCTION MANUAL FOR

Benchtop temp/humidity Chambers

CCG-80/120

PLEASE READ THIS MANUAL CAREFULLY BEFORE OPERATION

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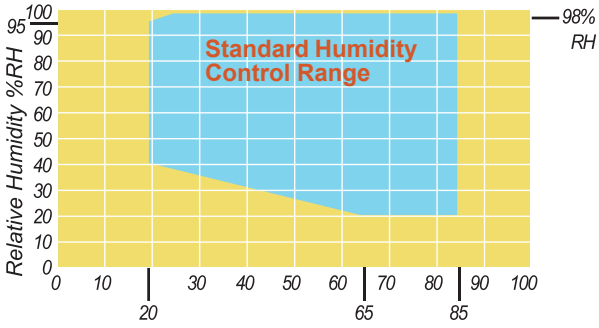
CCG/PCG-Series, (Programmable) Bench Top Constant Temperature & Humidity Chamber, 80 or 120 Liter

Benchtop Temperature&Humidity Test Chambers offer flexibility, uniformity and control accuracy required for cost effective testing for a variety of products. Ideal for testing smaller products such as computer components, automobile sensors or cellular phones, these chambers combine superior performance with compact design that is perfect for research and development or personal point-of-use testing. Available in two sizes, the Benchtop serie chambers allow you to cost effectively select the exact chamber that best meets your environmental test criteria. These chambers can be mounted in an instrument rack or will easily sit on a laboratory benchtop. This humidity chambers include an removable water storage tank, avoiding the need for water hook-ups.

PCG-80 PROGRAMER

Humidity Controlable Range (at room temp. 20°C)



Temperature & Humidity Range Table — General Type

CCG-80: **Fix point PID control LED display.**
PCG-80: **5 Programs. 50 steps. 999 cycles. LCD display**

Features:

- Viewing window with interior light.
- Stainless steel access port with plug, for convenient access to test items.
- Easily accessible service areas.
- Stainless steel internal and external chamber.
- Solid state heating switching.
- Refrigeration system: high efficency , maximum reliability and low vibration and low noise. The air cooled refrigeration is working with CFC free refrigerant. The total cooling circuits is working with solenoid valve bypass technique ensuring that the compressor will only be disconnected if cooling capacity has not been required for a prolonged period.
- Heating system: low mass electric resistance heater is located directly in front of the recirculating air blower.
- The PID microprocessor controllers with the solid state relays allows extremely precise & constant control.
- Adjustable stainless steel shelves.
- Optional 100mm chart recorder.

CCG-80 CONTROLLER

Model Controller	CCG-80	CCG-120
Model Programmer	PCG-80	PCG-120
Temp. range	-20°C~100°C	
Humid. range	20%~98% R.H	
Temp&Humid. constancy	±0.5°C±2.5% R.H	
Temp&Humid. uniformity	±1°C±3%R.H	
Heating up time	20°C~100°C within 30 min	
Pull down time	20°C~-20°C within 60 min	
Volume (Liter)	80liter	120liter
Interior dimensions(mm)	W400xD400xH500	W500xD400xH600
Exterior dimensions(mm)	W860xD810xH810	W960xD810xH970
Interior/Exterior material	Stainless steel plate (SUS304)/(SUS304) tough powder-coated	
Insulation	Rigid polyurethane foam	
Refrigeration system	Single stage refrigeration	
Safety devices	Refrigerator overload relay, refrigeration high pressure switch, protection relay protection fuse, boil dry protector, overheat protector, alarm viewing window	
Accessories	Shelves (freely adjustable) 2pcs. Chamber lamp	
Power source	AC220V 50/60Hz 1Φ	

Warning

Before connection the power to Mains supply and operating the equipment check the following:

1. Make sure that Mains supply is correctly grounded
2. Use only distilled water

Non-implementation of the requirement in this warning revokes the warranty of the goods

Checking Power:

1. Power input: 230V/50Hz, 25amp.
    a. Use single socket only- Dangerous in combination use with other electrical equipments.
    b. Shut down when the power shortage.
    c. Keep the system working in a normal condition.

2. Grounding is of necessity for security.

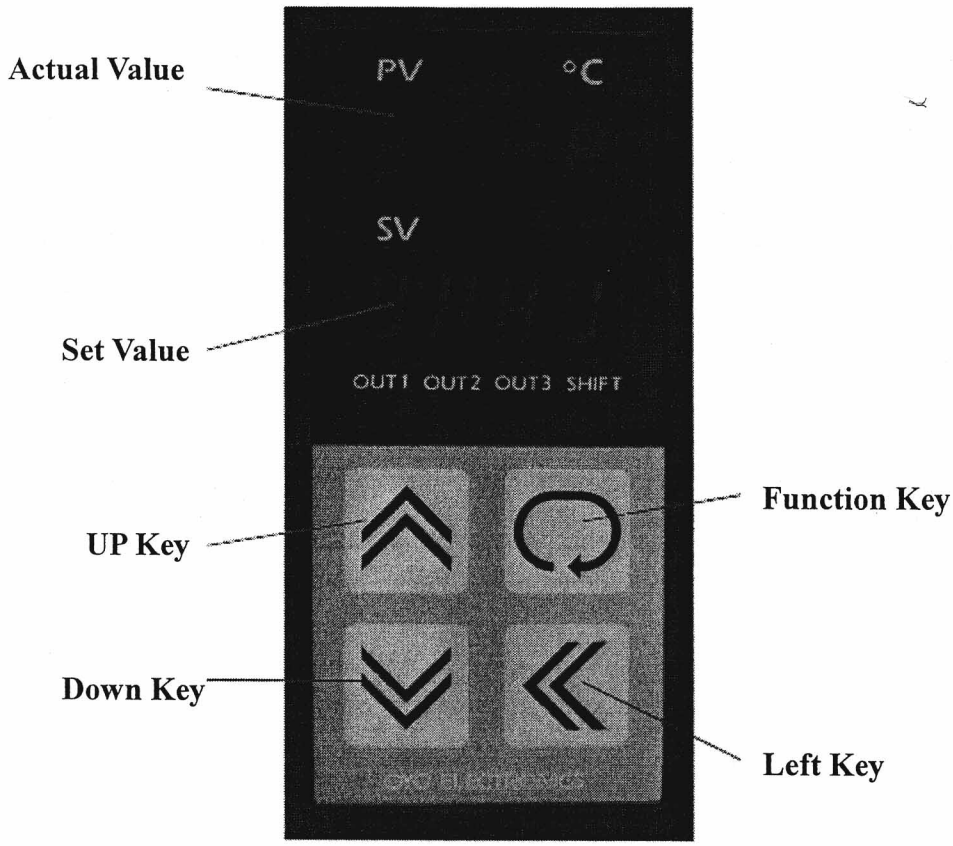
Cleaning:

Use soft cloth with wet to clean the system first. Then, use dried cloth to wipe the system dryness. Use neutral detergent and clean water to wipe the system if it is dirty.

Caution:

1. Uneven ground would cause vibration and noise to the system.
2. Back or lateral vent improper would cause performance.
3. The system is not to meet corrosive materials contained for use.
4. The equipment can not be located beside the hot plate and sunshiny area.
5. The equipment can not be title over 45 degree when system is transported or carried.
6. Prudent operation will be able to extend life of the system.
7. If the system is not to be operated for a long time, it has to remove the wire plug away from the socket, then, use neutral detergent to wipe the chamber inside and the elements of the system and keep it vent and dryness.

Controller Operation Instruction:



A. Temperature Control Set-Up:

1. Power "ON", Indicator light, Temperature Controller operation.
2. Temperature Controller PV window indicates the temperature and SV window indicates the temperature value.
3. Press the FUNCTION KEY (press once only), the digits in PV window flash and SV window appears SET1. Use PRESET VALUE GAIN KEY or PRESET VALUE DECREASE KEY may change the temperature value set up. In the meantime, use SHIFT-LEFT SET KEY to change digits.
4. After set up completed, press the FUNCTION KEY, the temperature value and set up value will restore or awaiting 10 seconds auto-restoration.

B. Temperature Correction:

1. Press (holding) the LIFT KEY first, press CIRCULATION KEY again, the SV window appears SCLL.
2. Press FUNCTION KEY until SV window appears LOC and PV window appears PART as well. Press UP KEY twice, PV window appears FREE (unlock).
3. Press FUNCTION KEY- 4 times, SV window appears OFFS, digits flash.

4. Press UP KEY to make up the temperature in case of higher temperature output. Oppositely, press VALUE DECREASE KEY.
5. After correction completed, press FUNCTION KEY until SV window appears LOC, PV window appears FREE, press VALUE GAIN KEY once again, the PV window appears PART, press FUNCTION KEY appears 1761, SV window appears TYPE. Hold LEFT SET KEY, then, press FUNCTION KEY to restore operation mode.

C. Temperature auto-perform mathematical calculations PID (AT):

1. Hold the UP Key and FUNCTION Key, the Decimal Point flashing then starts auto-perform mathematical calculations PID.

D. Humidity control set up:

1. Humidity switch ON, Indicator lights, Temperature controller operation.
2. Operation mode (refer to temperature set up).

E. Humidity Correction:

Operation mode same as temperature correction set up.

F. Humidity auto-perform mathematical calculations PID (AT):

Operation mode same as temperature auto-perform mathematical calculations.

Troubleshooting:

Temperature unable to depress:

1. Check the compressor whether it is in normal operation.
2. Too heavy dirt caused hot air radiating problem.

Temperature unable to raise:

1. Heater problem.
2. Temperature protection switch off.

Moisture unable to raise:

1. Heavy moisture to result water level shortage caused moisture apparatus burnout.
2. Water shortage.
3. Water shortage in lower chamber, Pump failure or block cause unable to make up water.

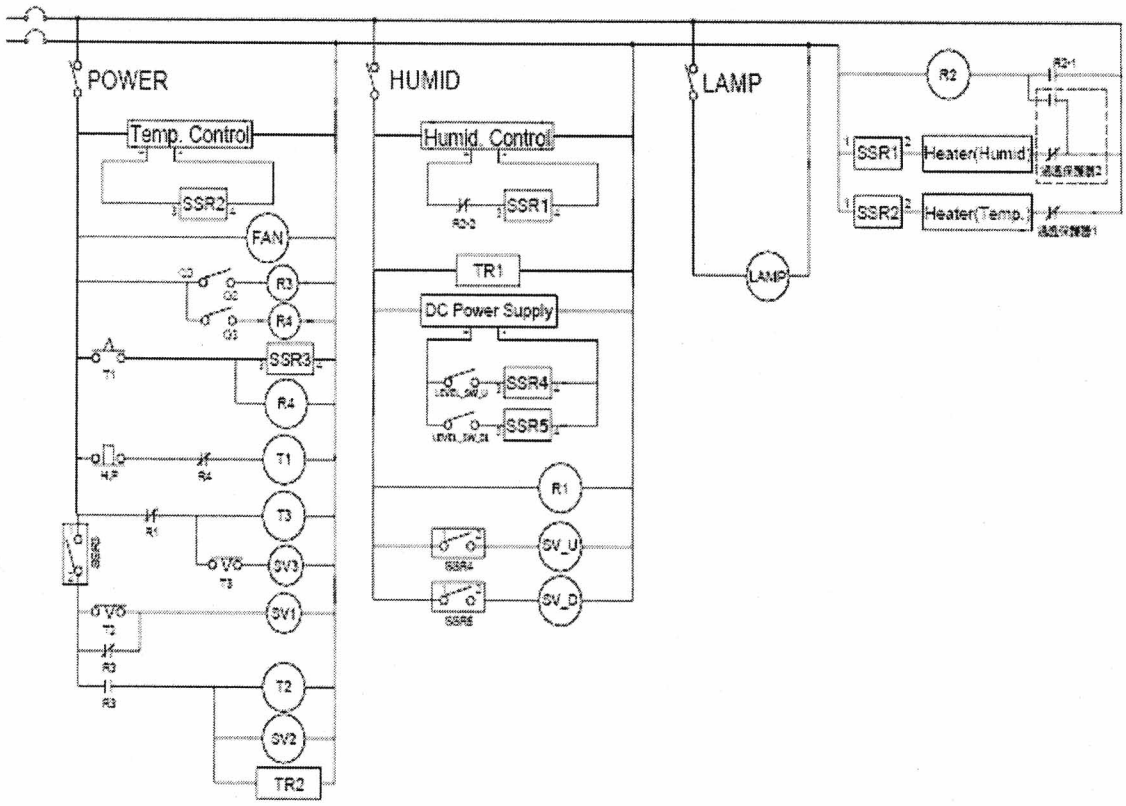
Moisture unable to depress:

1. Test rod without water or the cotton cloth unable to absorb water.
2. Moisture apparatus failed, keep on moisture.

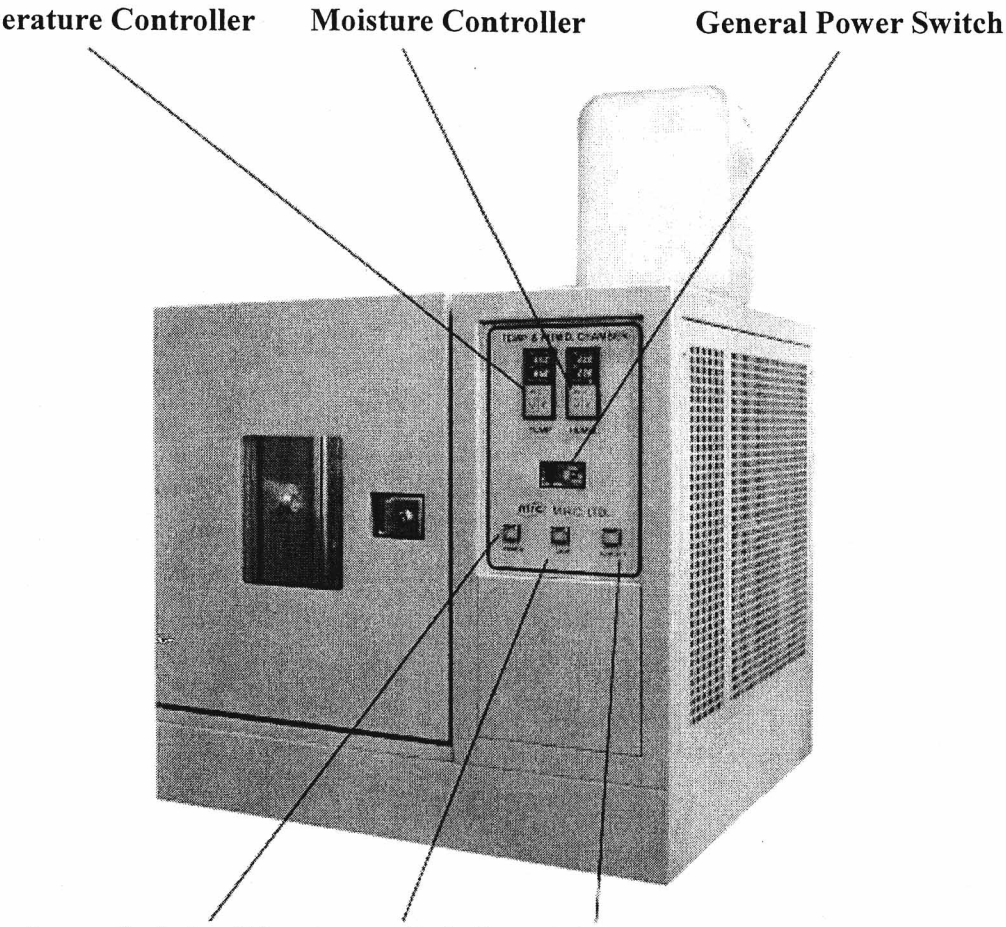
Service and Maintenance:

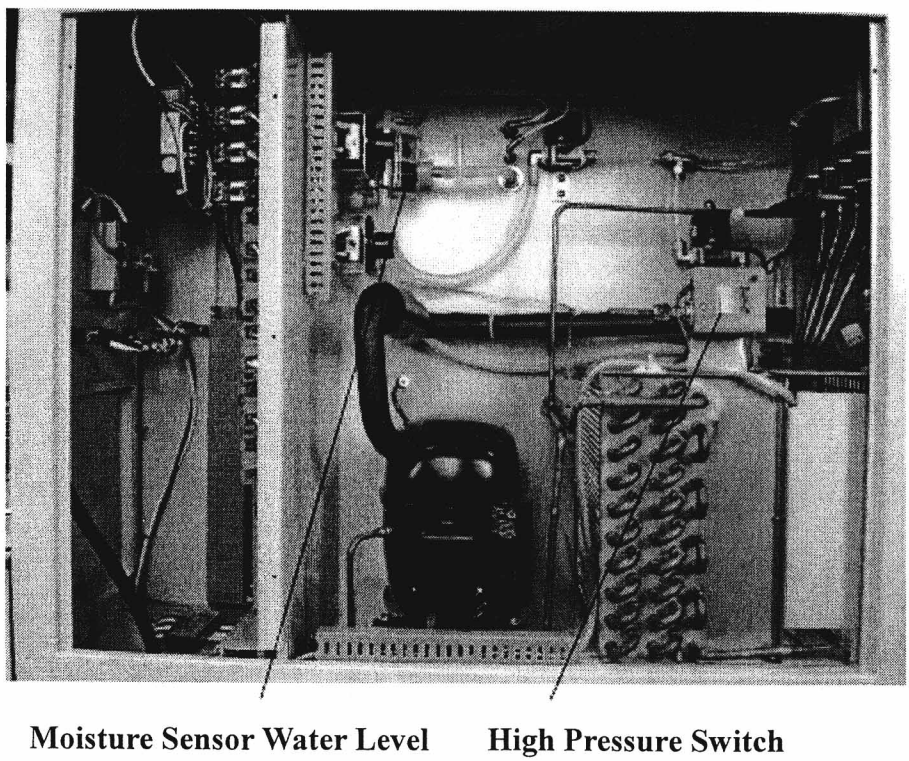
1. Because, too much dusty affect radiation blocking up, clean up each position every 3 months by using of high pressure air rinsing.
2. Water is easily deterioration in quality, change radiator every one or two months.
3. The Sensor wet cloth is easily to be degeneration, change the wet cloth every 3 months.

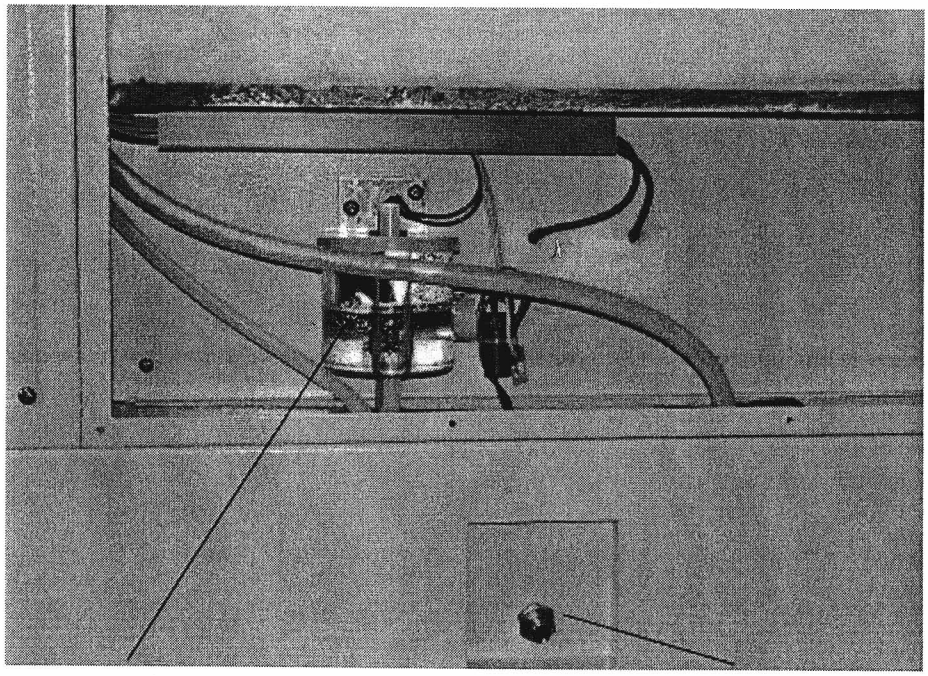
Circuit Diagram:



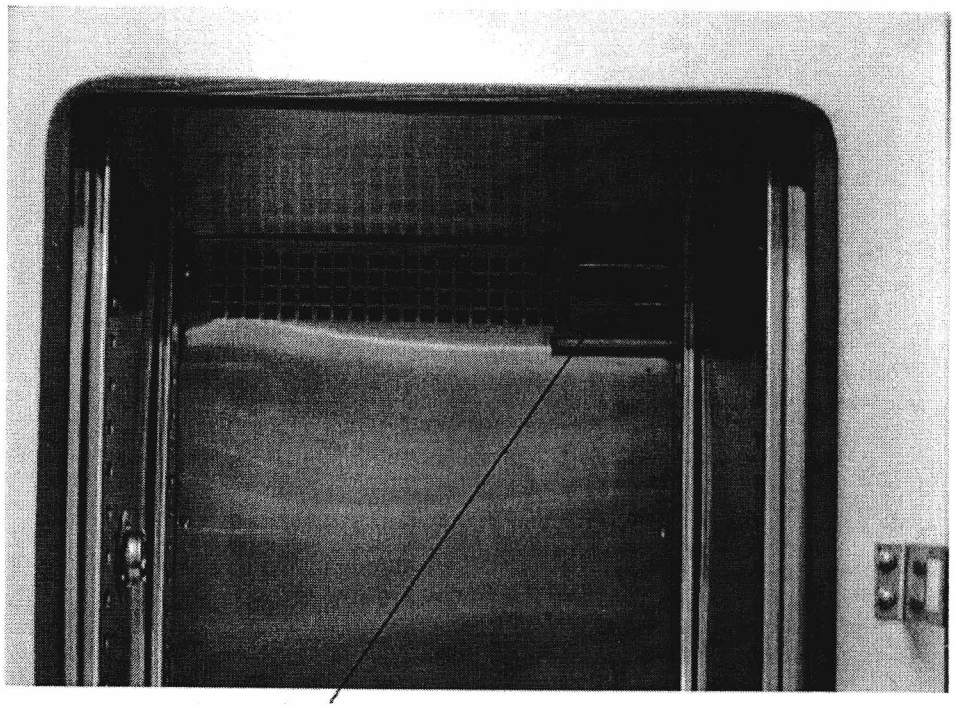
Construction of Equipment & Installation:





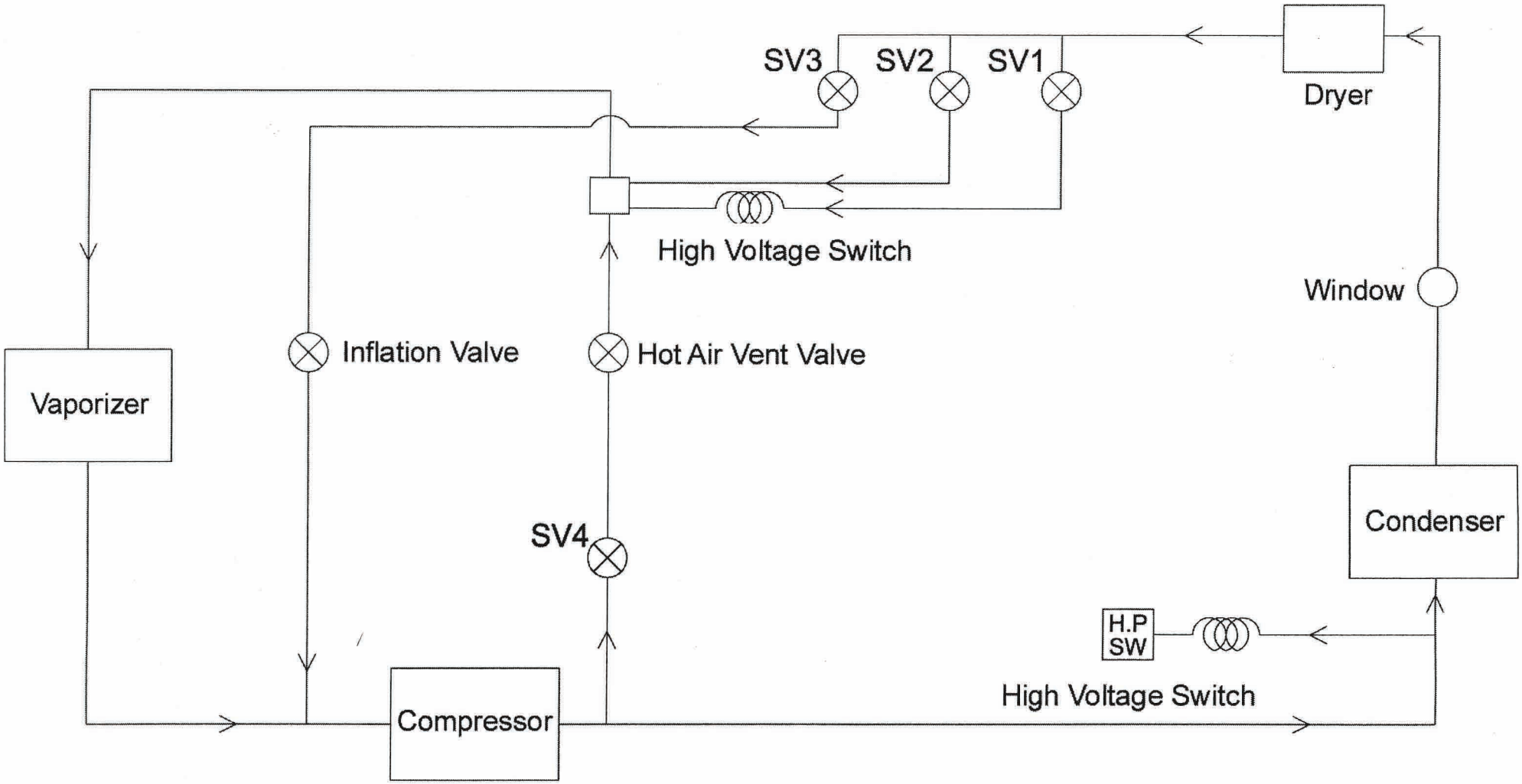


Moisture Apparatus Water **Drain Off Water Outlet**



Moisture Sensor

Cooling System Flow Chart



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