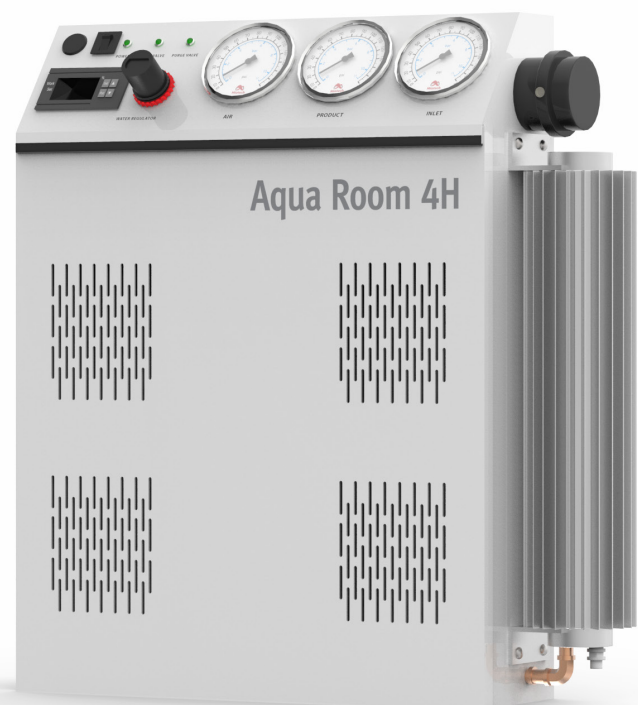


TECHNICAL INSTRUCTIONS

Aqua Room 4H User Guide

COLD ROOM - POST HARVEST HUMIDIFICATION

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Aqua Room 4H

Specification Sheet



Air-Water Nozzle Box

Features

- Automated humidifier system for cold rooms down to 34 °F (1 °C)
- Optional Crio-Nozzle kit down to 25 °F (-4 °C)
- Reverse osmosis water filtration removes dissolved minerals
- Ultra atomization nozzle mixing air and water
- Scheduled maintenance includes system check and easy annual filter change
- Factory assembled for easy mounting and installation
- Color coded plumbing
- Powder coated cabinet
- Maximum performance, low maintenance
- Relative humidity control sensor and digital display module

Model	AQUA ROOM 4H
Maximum volume at 32-35 °F (0-2 °C) up to	100,000 ft ³ (3000 m ³)
Nozzle boxes supported	4 nozzle boxes (115 V areas) 3 nozzle boxes (230 V areas)
Location Requirements	
Electrical Source	100/115/230 V AC, 50-60 Hz
Water Supply	1/2" FPT Adapter with Shutoff Valve
Inlet Pressure	30 psi (2 bar) minimum
Drain	Floor Drain or 1/2" Drain Pipe
Maintenance	
Prefilters (#11009)	Change every year
Membranes (#11076)	Change every year
Specifications	
Size:	
Height	18.5 inches (47 cm)
Width	17.75 inches (45 cm)
Depth	4.75 inches (12 cm)
Weight	45 lb (20.4 kg)
Pressure Gauges	Air, Product, Inlet
Operating Voltage	100/115/230 V
Unit Power Consumption	115 V, 3 A / 345 W 230 V, 1.5 A / 330 W
Solenoid Valve:	
Mist	Plastic 1/8" FPT
Purge	Plastic 1/8" FPT
Air compressor	One Air-cooled, oil free
Tubing	
	Color coded
Materials	Polyethylene High pressure rated
Nozzle box	
Materials	Plastic Box
Dimensions	2.25 x 3.5 x 1.5 inches (6 x 9 x 4 cm)
Air Pressure	30-40 psi
Air Required	0.8 ft ³ /m
Liquid Capacity	0.5 gallons/hour (2 liters/hour)
Droplet Size	10 microns
Humidity Control	
Sensor	Hydrotransmitter 0-99.9 % RH
Humidity Controller	Digital
Cable from system to sensor	130 feet (40 meters)

Aqua Room 4H

Installation Guide

SYSTEM PLACEMENT

Find a suitable place for the main control unit. The main control unit should be placed on the wall outside or inside the humidified room. Water, drain and electrical power outlet should be close to the control unit.

System should be installed outside the humidified environment if RH is 80 % or higher.



Picture 1

NOZZLES INSTALLATION

Locate the best distribution locations for the nozzles, away from the cooler intake and doors. The nozzles should be aimed toward the middle of the room and as high as possible to get the best circulation of humidity. Install the nozzles using the mounting screws provided (see layout diagram).

Drill a 1/2" hole thru the cooler wall or ceiling near each nozzle to accept the water and air lines that will be attached later (see picture 1). Locate the water and power source.

HUMIDITY SENSOR PLACEMENT

Mount the Humidity Sensor in the room, away from the nozzles, doors and fans to maintain consistent sensor readings. The length of the wires between the system and the Humidity Sensor is 130 feet (40 meters).

The sensor also needs to be protected against any moisture besides the humidity that is being produced for the room. If the sensor is sprayed directly it will give false readings and will not allow proper function of the unit.

AIR AND WATER FEED LINES

From the system run 1/4" blue tubing from the Product supply to the furthest nozzle. Using the supplied 1/4" Tees (#17006) provided connect the water feed line to each nozzle (see layout diagram).

Repeat the same procedure for the air using the supplied 1/4" white tubing.

Secure both of these lines to the cooler using the zip ties and screws provided. Make sure to secure the lines every four to five feet (~1 meter) to eliminate vibration of the lines, which may cause cutting and damaging of the tubes. From the inlet water source attach the 1/4" by 1/2" MPT fitting using Teflon tape and silicone to prevent leaks. Install the 1/4" green tubing from the inlet fitting to the supply marked inlet on the system.

Install a 1/4" yellow brine tube from the system port marked "Brine" and a 1/4" red drain tube marked "Drain" to the nearest floor drain. Secure those lines to the drain using the straps provided. If draining into a floor sink drain, a 5" air gap is required for sanitary reasons.

NOTE: All of the cuts on the tubing ends need to be straight and clear. The tubing needs to be pushed all the way into the fittings. This is accomplished by pushing the tube past the O-ring inside the fitting till the full stop.

Turn the water supply to the unit ON. Turn ON the power. The system should start to run. There will be a slight delay before the fog is visible from the nozzles.

Set the humidity controller to the desired humidity level. Adjust the nozzles inside the cooler for the uniform humidity distribution.

Check the system for leaks and observe the rising humidity level in the humidified room. Make sure system will turn off at desired humidity level.

In 230 V - 50 Hz areas the maximum recommended quantity of properly operating nozzles used in Aqua Room 4H should be 3. This is due to the difference in compressor productivity working in different voltage-frequency areas. Operating with 4 nozzles per compressor under 230V-50 Hz may cause a water collection on the floor if the facility height is less than 6-7 m and temperature is less than 5 °C.

Aqua Room 4H

Installation Guide

HUMIDITY CONTROLLER OPERATION

The Humidity Controller comes programmed from the factory, however if adjustments need to be made please follow instructions below. To set the parameters use the four buttons on the Humidity Controller.

The button description:

“Set” – entering and saving humidity level settings;

“Rst” – power and cancel button;

“▲” – increase button;

“▼” – decrease button;



OPERATING INSTRUCTIONS

1. Power on/off:

a) To turn “On” the system - press Power (RST) button.

b) To turn “Off” the system - hold Power (RST) button for three seconds and hold on, then it will be off.

2. Setting desired Relative humidity (RH) level:

a) Press the SET button once to enter the humidity control setting (you will see current desired RH level);

b) Press ▲ or ▼ button to adjust RH level;

c) After you set desired RH level press the SET button once to save settings and exit setting mode.

*** Factory setting for relative humidity level to be maintained in the room is 90%.**

Factory settings

Symbol	Details	Factory settings	Units
HC	Humidification/ Dehumidification	H	
D	Hysteresis (humidistat differential)	2	%
LS	The minimum set limit	1	%
HS	The maximum set limit	99	%
CA	Humidity calibration	10	%
PT	Delay time	0	Minutes

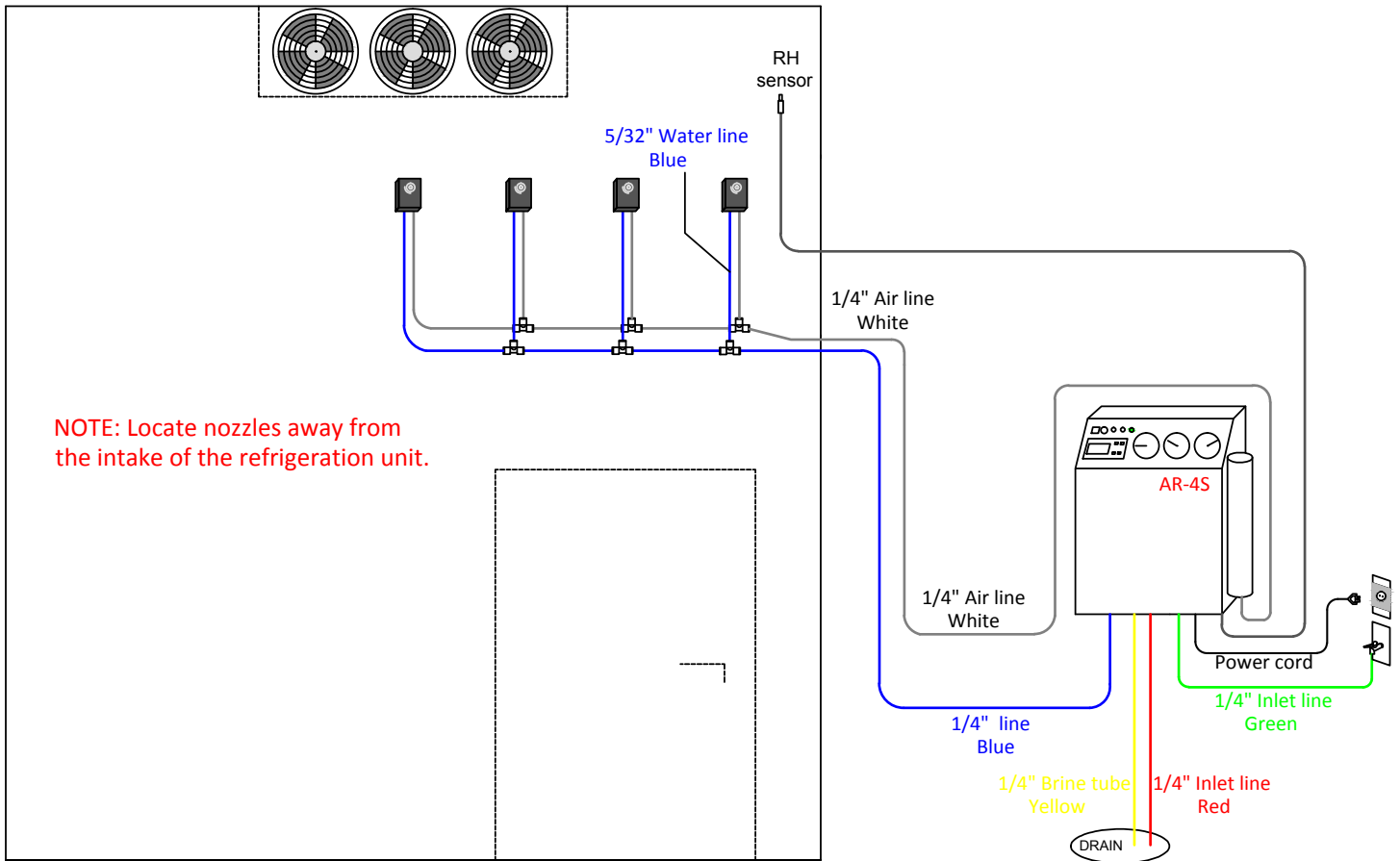
Humidity Controller LED Description

“WORK” LED – system is operating.

“SET” LED – on when in settings menu.

Aqua Room 4H

Layout Diagram



Nozzle boxes supported	4 nozzle boxes (115 V areas)
	3 nozzle boxes (230 V areas)

Aqua Room 4H

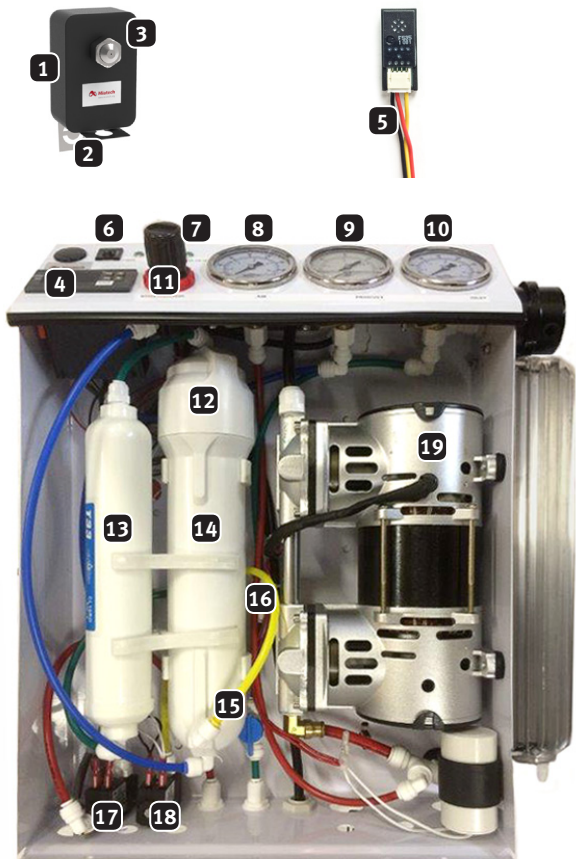
Maintenance Guide

Maintenance Requirements

1. Prefilter is to be replaced once a year or more often if local water conditions require, causing the prefilter to clog.
2. Membrane is to be replaced once a year. Within the year check TDS readings for Inlet, Brine and Product. The Product should not exceed 25 % of the inlet water reading.
3. Air filter should be cleaned each time the water filters are changed.
4. Unit should be inspected for leaks.
5. Aqua Room Nozzles should be wiped down each time the cold room is cleaned.

Troubleshooting

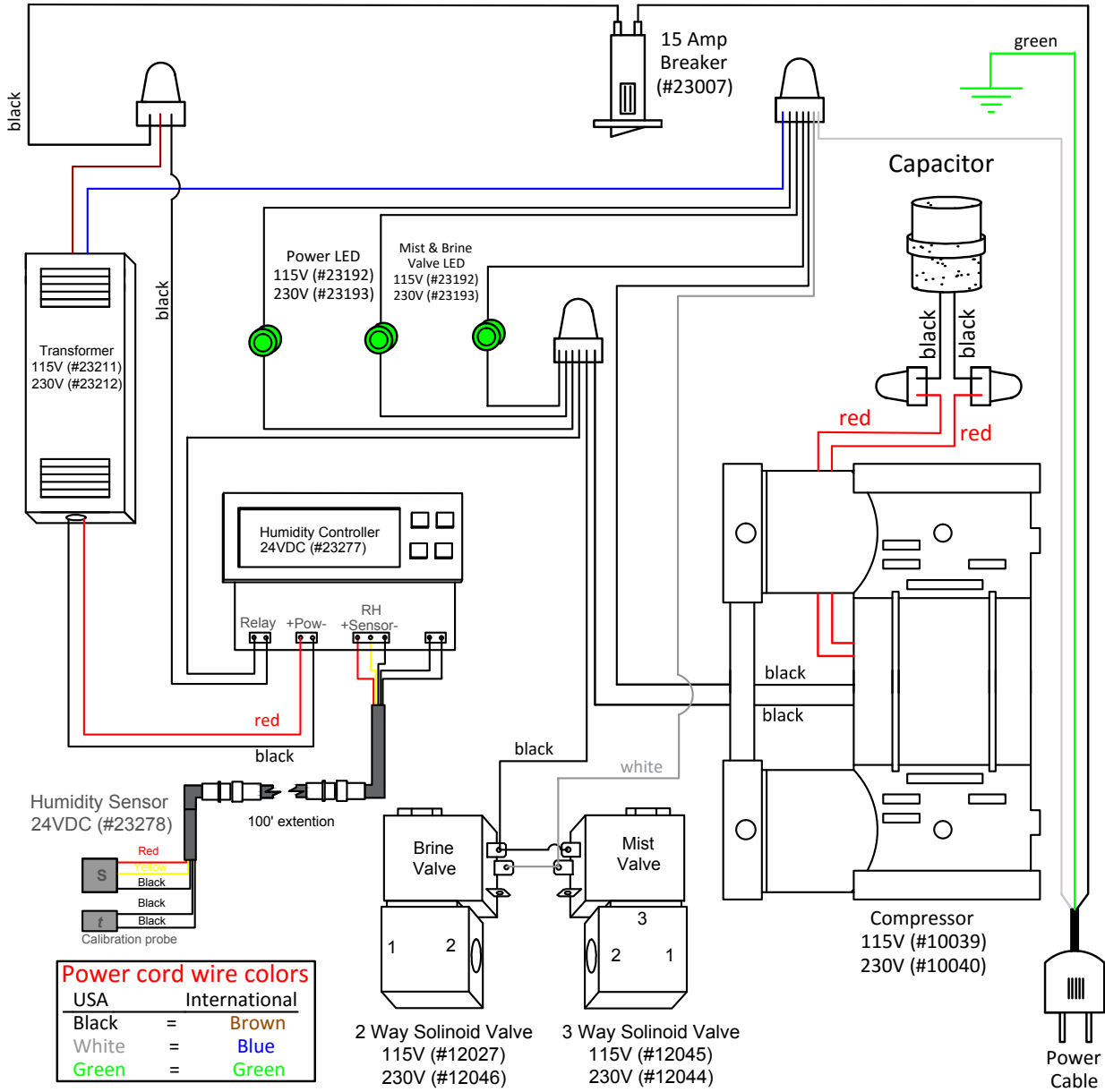
Problem	Solution
Humidity controller reading is not correct.	First make sure the sensor is positioned where it is not affected by the mist or other factors. If sensor is correctly placed, then either sensor or Humidity controller will need replacing.
Straight Squirt of water from nozzle.	Air is not getting to the nozzle to mix with the water. If air compressor is turning on, check for restricted air lines or holes in the line, or a disconnected line. If compressor is not turning on, check electrical wires to the compressor. If the wiring is good, the compressor may need to be replaced.
Unit won't turn on.	Check 15 amp breaker, and power source. Humidity controller or sensor may need replaced if no readings.
Unit never turns off.	Unit is not producing enough water to achieve required humidity levels. Could be clogged filter or membrane, or require adjustment of metering valve. Humidity controller may be set wrong or either sensor or display module requires replacement. Additionally if water pressure is not high enough (at least 30 psi) unit may not purify water fast enough. A pump tank kit can be added for this.
No Mist, but has Air.	Clogged prefilter or membrane. Tubing or nozzle maybe frozen depending on the temperature and how it is insulated, also check Purge. Solenoid valve is not opening – replace the valve.



- | | |
|---|--|
| 1. Black plastic box (#19010) | 13. Carbon filter (#11009) |
| 2. Stainless steel nozzle bracket (#16035) | 14. Low energy 75 gpd membrane inside (#11076) |
| 3. Air-water nozzle (#20026) | 15. Black flow restrictor (#11012) |
| 4. Humidity Controller (#23277) | 16. One-way check valve (#17149) |
| 5. Humidity Sensor (#23278) | 17. Solenoid 3 way valve
115 V (#12045), 230 V (#12044) |
| 6. 15 amp reset breaker (#23007) | 18. Solenoid valve
115 V (#12027), 230 V (#12046) |
| 7. Indicator lights
115 V (#23192), 230 V (#23193) | 19. Air compressor
115 V (#10039), 230 V (#10040) |
| 8. Air pressure gauge (#15005) | |
| 9. Product pressure gauge (#15009) | |
| 10. Inlet pressure gauge (#15005) | |
| 11. Water regulator (#23041) | |
| 12. Housing membrane (#11074) | |

Aqua Room 4H

Wiring Diagram



Aqua Room 4H

Pull Sheet Pack

PART NO.	PART NAME	AMOUNT	Insp.
	Air-Water Nozzles or Crio-Nozzles included *Refer to Aqua Room Nozzle Pull Sheet	4	
17131	1/2" x 44 - QC	1	
18023	44 Red Tube	25	
18027	44 White Tube	40	
18001	44 Blue Tube	40	
18028	44 Green Tube	40	
18025	44 Yellow Tube	25	
24001	#8 x 3/4" Self-tapping Screw (square head)	10	
24003	12" Nylon Tie	4	
24004	4" Nylon Tie	10	
24034	#14 x 2 1/2" Screw	4	
24035	#14 Plastic Anchor	4	
24078	Cable Tie 6" Black	10	
11015	Carbon Block Filter 10 Micron	N/A	
Single filter canister assembled			
17131	1/2" x 44 - QC	N/A	
11018	Filter Canister Blue	N/A	
11046	Single Canister Bracket	N/A	
24002	#10 x 3/4" Self-tapping Screw Phil.	N/A	
FOLLOWING PARTS REFER TO CRIO-NOZZLE ONLY			
23211	115 / 24 Volt DC Transformer	Depends on source	1
23212	230 / 24 Volt DC Transformer		
23128	Wire Connector	2	
23171	Large Wire Terminal	2	
23126	Extra Electrical Cord	50'	

DATE _____

PULLER _____

CHECKER _____



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For further technical support in North America call 1-800-933-6478
If outside North America call to the USA at 1-503-659-5680