

**AKIMist® “E”****Portable Dry Fog Humidifier Set  
with Automatic Humidity Control****Instruction Manual**

Thank you for purchasing our AKIMist® “E”  
Portable Dry Fog Humidifier Set.

Before use, please read this manual carefully  
and follow the instructions to ensure optimal  
performance.

Keep this manual handy for quick reference.

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“The Fog Engineers”

**H. IKEUCHI & CO., LTD.**

# 1. Safety Precautions

## Warnings

If the product is used without observing the information given under this symbol, death or serious injury may result.

## Cautions

If the product is used without observing the information given under this symbol, personal injury, physical, and/or property damage may result.

## Warnings

- Air pressure to the water tank must be 0.2 MPa or lower.

Higher air pressure may cause water leak from the humidifier or the water tank to burst.



- Let the compressed air out of the water tank before pouring water into the tank.

Otherwise, the cap of the water tank may be blown off.

- Use only clean water. Never pour liquid other than water into the tank.

The use of liquid other than water could corrode, damage or break the water tank, and damage the tube and nozzles.



- Use the proper power source and voltage.

The controller can be used only within the range of 100–240 VAC. Also, ensure that the voltage of the solenoid valves used is the same as the power supply voltage.

- Install electrical wiring securely.

Problems such as loose wiring at the terminals may cause a short circuit.

- Do not touch the inside of the controller except for the purpose of making electrical connections during installation.

There is risk of electric shock.

## Cautions

- Close air and water valves before disassembling AKIMist® “E” and the nozzles.

Otherwise, the nozzle could be broken and water leaks could occur.

- Use at temperature of 5–40 deg C, with humidity less than 80% RH. Avoid location where it is exposed to dust or chemical atmosphere such as organic solvent, acidic, and alkaline.



- Keep the Humidity Sensor filter clean.

If the humidity sensor filter becomes dirty, it can lead to errors in sensed values and operation.

Clean the filter frequently. If the filter cannot be cleaned, replace it with a new filter. (See the RHC-C11 Instruction Manual.)











## 2. Features

- Produces large volumes of Dry Fog with simple operation.
- Light weight, compact and easy to move.
- Easy assembly.
- Easy automatic control with a provided humidity controller.

## 3. Checking the Delivery

Before starting installation, please verify that all the parts listed below are included in your delivery.

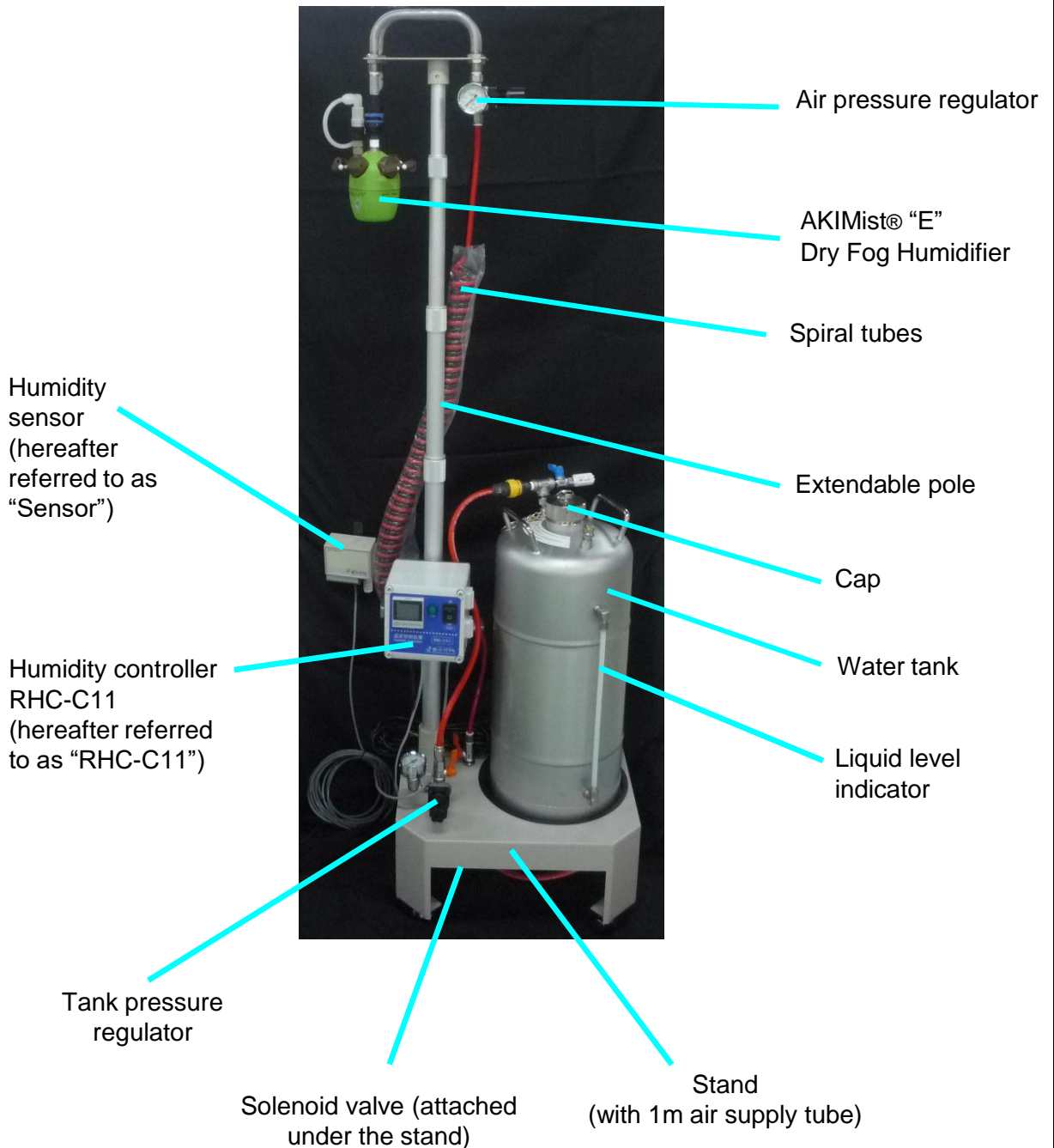
If any item is missing, please contact us or your local supplier.

 <p><b>AKIMist® "E" Dry Fog Humidifier</b></p>	 <p><b>Water tank</b></p>	 <p><b>Stand (with solenoid valve attached at the bottom)</b></p>	 <p><b>Extendable pole (attached with RHC-C11 and sensor)</b></p>
 <p><b>Spiral tubes</b></p>	 <p><b>Cleaning kit</b></p>	 <p><b>Humidity controller RHC-C11 Instruction Manual</b></p>	 <p><b>AKIMist® "E" Instruction Manual</b></p>
 <p><b>AKIMist® "E" mounting unit</b></p>	 <p><b>Sealing tape, Hexagon wrench, Fastening screws (2), Plastic coupler plug</b></p>		

Note: The actual appearance and shape of the parts may differ from the presented images..

## 4. Structure

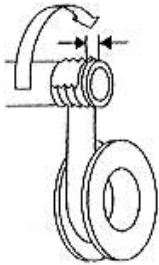
AKIMist® “E” Portable Dry Fog Humidifier Set is to be assembled as shown below.



The actual appearance and shape of the parts may differ from the presented images.

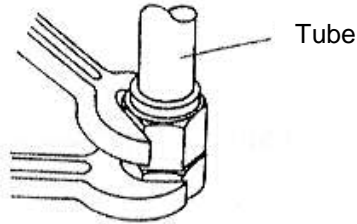
## 5. Caution Before Assembly

★ Apply sealing tape to each thread.



Wrap sealing tape 2-3 times around the threads along the thread lines while keeping the tape taut, leaving 1-2 thread ridges free of tape for easy screwing into a pipe.

★ Tighten the screw firmly with a spanner.

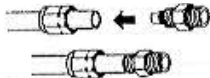


★ Tube joint

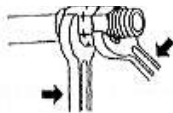
1. Unscrew the nut from the joint, and slide it on the tube. (Ensure the direction of the nut.)



2. Insert the joint into the tube completely.



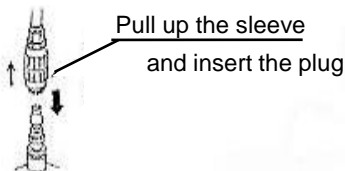
3. Tighten the nut firmly with a spanner.



★ How to connect Quick Couplers

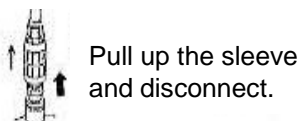
<How to connect the air coupler>

Pull up the sleeve and insert the plug.  
Then let the sleeve down.



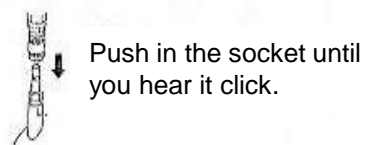
<How to disconnect>

Pull up the sleeve and detach the socket from the plug.



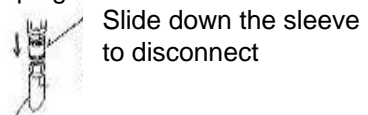
<How to connect the water coupler for AKIMist®>

Insert the plug into the socket firmly until it clicks.



<How to disconnect>

Push down the sleeve of the socket and detach the plug.



## 6. Assembly



Scan for assembly guide.  
Refer to manual for details.

Note: This video does not include assembly instructions for step No. 11 (mounting the humidity sensor) and subsequent steps on page 10. Please refer to the manual for these instructions.

Assemble AKIMist® “E” Portable Dry Fog Humidifier Set as follows.

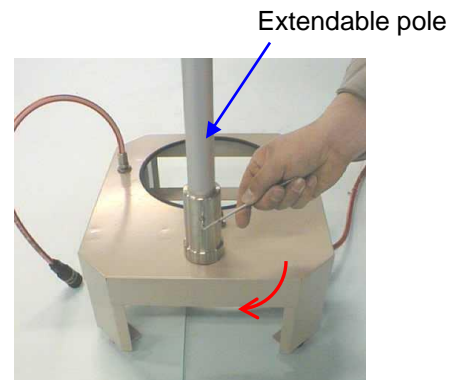
The actual appearance and shape of the parts may differ from the presented images.

- 1) Insert the extendable pole into the socket of the stand and tighten the fastening screw with the enclosed hexagon wrench.

### Cautions

Screw in the fastening screw until the tip of the screw reaches the pole. Then, tighten it by 1/8 turn only.  
Over-tightening can damage the pole.

RHC-C11 is already attached to the extendable pole, and the sensor is connected to RHC-C11 with the sensor cable before shipment. When inserting the pole into the stand, make sure that sensor cable is firmly connected and sensor does not hit the pole or other objects.



- 2) Set the AKIMist® “E” mounting unit on the pole and tighten the fastening screw with the enclosed hexagon wrench.

### Cautions

Screw in the fastening screw until the tip of the screw reaches the pole. Then, tighten it by 1/8 turn only.  
Over-tightening can damage the pole.



Continue to the next page↓

3) Attach the spiral tubes on the AKIMist® “E” mounting unit as follows.

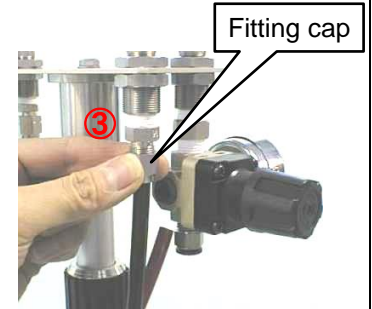
- ① Remove the fitting cap from AKIMist® “E” mounting unit. Slip the fitting cap on the end of the black spiral tube.
- ② Insert the black tube all the way into the fitting of the mounting unit.
- ③ Ensure that the black tube is fully inserted into the fitting, then tighten the fitting cap firmly. Tighten it by hand first, then with a spanner.

 **Cautions**

Tube inserting is very tight. Be careful not to get injured when inserting the tube. If soapy water is applied to the black tube, it will be slippery and easy to insert. Ensure that the hose does not come off.



Slip the fitting cap on the black tube and insert the tube fully into the fitting.

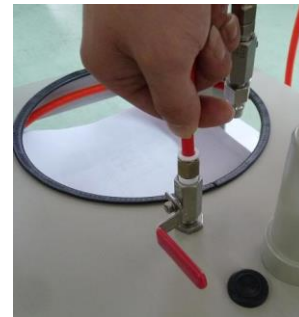


Tighten the cap by hand first, then tighten it with a spanner.

- ④ Insert the red spiral tube fully into the joint under the air pressure regulator.



- ⑤ Insert the other end of the red spiral tube into the joint at the base of the pole on the stand.



- 4) Open the lid of water tank and fill the tank with water. Replace the cap and tighten it firmly.



- 5) Set the water tank on the stand.

Continue to the next page↓



6) Connect the blue valve at the end of black spiral tube to the joint on the water tank.



It's easier if you pull down the ring of female coupler before connecting.



7) Connect the female coupler of the air tube from the stand to the upper part of the water tank.



8) Install AKIMist® "E" to the mounting unit as below.  
(Protective caps are placed on the air and water inlets of the AKIMist® "E".  
Remove them before installation.)

1. Push the each plug for air and water into the each socket until it clicks.



Continue to the next page↓

2. Ensure that the couplers are connected properly.  
Check that there is no space between the socket and sleeve as seen below.



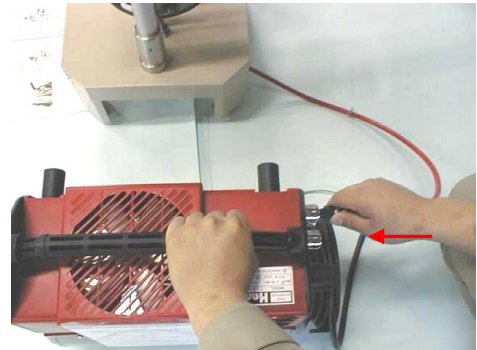
**Good: No space**



**Bad: There is a space**  
→ **Not firmly connected**

- 9) Connect the air tube from the base of stand to an air piping or an oil-free compressor you prepared.

R1/4 fitting (1/4" male, taper pipe threaded) is attached to this tube.  
A separate coupler plug (plastic) is also provided for coupler connecting.  
If air leaks, change the fitting to the one suitable for your piping or compressor connection.



(Compressor shown in the picture is NOT included in this unit.)

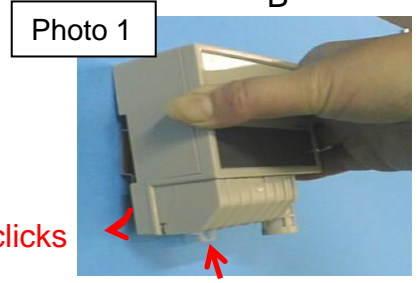
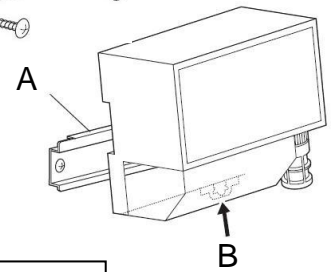
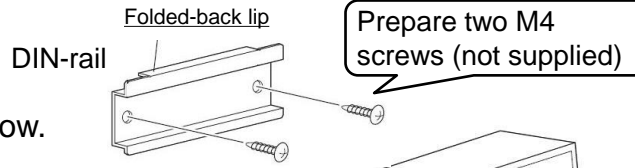
- 10) Adjust the height of the extendable pole as desired.



Continue to the next page↓

11) Mount the sensor on the wall as below.

1. Remove the DIN-rail (metal part) from the back of the sensor.
2. Install the DIN-rail with the folded-back lip side facing up, using two M4 screws to mount it on a wall.
3. Set the sensor on DIN-rail again as Photo 1: Hook the back of the sensor body over the lip (A) of the DIN-rail as shown at right, then secure the sensor to the DIN rail by pushing in the stopper in the direction of Arrow (B).

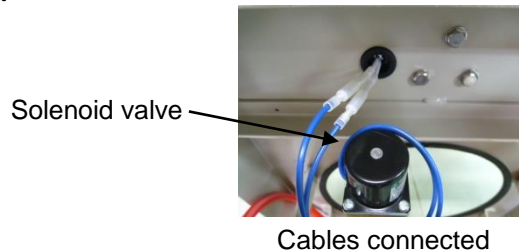
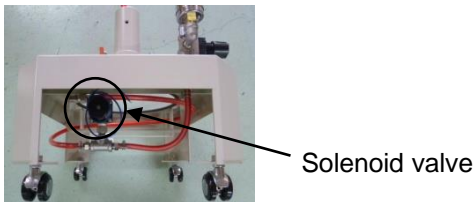
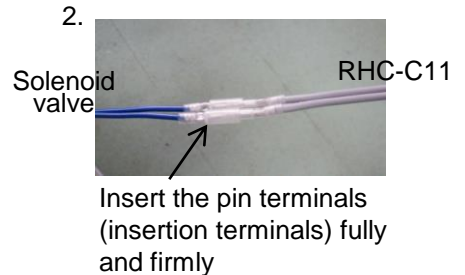
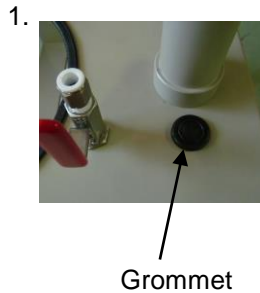
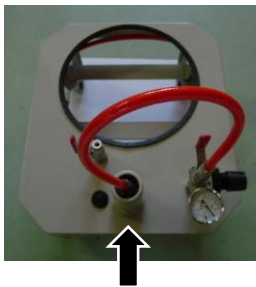


①Fit the sensor on DIN-rail until it clicks

②Push

12) Connect the solenoid valve cable to the cable from RHC-C11 as below. The solenoid valve is fixed at the bottom of the stand.

1. Put the cable from RHC-C11 through the grommet.
2. Connect the solenoid valve cable to the cable from RHC-C11.



13) Plug the power cable\* into the power source.

\*Please prepare a power cable.  
The power cable shown in the picture is NOT included in this unit.



- Assembly is complete.-

## 7. Operation

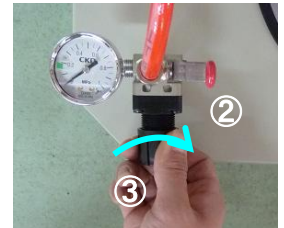
### 1. Starting operation

The actual appearance and shape of the parts may differ from the presented images.

Please remove the protective caps from the nozzles before use.

- 1) Turn on the RHC-C11 power switch and set the relative humidity set value (SV), referring to 5. Operation section of RHC-C11 Instruction Manual.
- 2) Turn on the air compressor.
- 3) Adjust the tank pressure regulator to set the pressure to 0.1 MPa as follows.

- ① Close the blue valve.
- ② Open the red valve.
- ③ Pull the control knob and turn it slowly clockwise until the pressure is increased to 0.1 MPa. Then push the knob down.

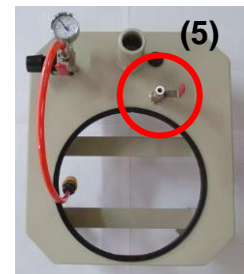


If the tank pressure becomes too high

1. Turn the control knob slowly counterclockwise.
2. Slowly open the blue valve and let air out of the tank.
3. Wait until the pressure is down to approx. 0.1 MPa, then close the blue valve and adjust the pressure using the pressure regulator.

- 4) Open the blue valve at the foot of the spiral tube.

- 5) Open the red valve (as circled in red in the picture) on the stand.



- 6) Set the air pressure to 0.2–0.5 MPa (for the nozzle type 03C), or 0.3–0.35 MPa (for 03B), adjusting the air pressure regulator on the AKIMist® "E" mounting unit.

Pull the control knob and slowly turn it clockwise until air pressure is increased to the desired pressure. Then, push in the knob.



Now it is ready for operation with automatic humidity control.

To check if AKIMist® "E" properly sprays, change the set value (SV) of RHC-C11 to a higher value than the present humidity value and confirm the humidifier starts spraying.

## 2. During operation

### When you need to change the spray volume

Adjust the air pressure by turning the control knob of the air pressure regulator on the AKIMist® “E” mounting unit. See the table below.

Air pressure (MPa)	Spray volume (L/hr)							
	AE-1		AE-2		AE-3		AE-4	
	(03C)	(03B)	(03C)	(03B)	(03C)	(03B)	(03C)	(03B)
0.2	1.3	—	2.6	—	3.9	—	5.2	—
0.3	2.4	3.3	4.8	6.6	7.2	9.9	9.6	13.2
0.5	3.6	—	7.2	—	10.8	—	14.4	—

Note:

- ◆ Operating air pressure range is 0.2–0.5 MPa (29–73 psi) for 03C nozzle type.
- ◆ Operating air pressure range is 0.3–0.35 MPa (44–51 psi) for 03B nozzle type. Spray volume of 03B is the same when air pressure is 0.3 MPa or 0.35 MPa.
- ◆ Use within the operating range. When the air pressure is out of the above range, coarse atomization and/or water dripping from the nozzle orifice will be caused.

### •To start/stop spraying temporarily

Open or close the blue valve at the foot of the spiral tube and the red valve on the stand as below.

To start the spray, open the blue valve first, then the red valve on the stand.

To stop the spray, close the blue valve first, then the red valve on the stand.

### •Be careful of the water level in the water tank.

Check the water level using the liquid level indicator and refill the tank if you do not see the water. (For refilling the tank, see Page 13)

### •Be careful not to twist/rotate AKIMist® “E”.

Do not twist or rotate AKIMist® “E”.  
Twisting can loosen the connection of liquid nipple.



**Don't twist or rotate!**

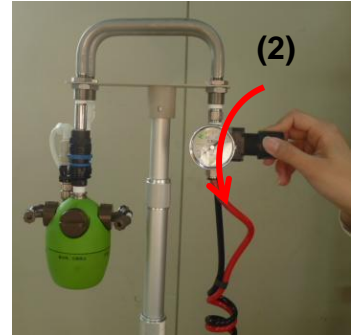


### 3. Stopping operation and water refill to the tank

The actual appearance and shape of the parts may differ from the presented images.

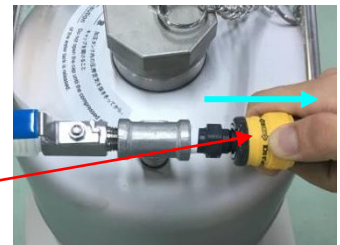
☆ indicates procedures only for stopping operations.  
△ indicates procedures only for liquid refilling.  
No mark indicates common procedures to both.

- 1) Close the red valve on the stand.
- 2) Pull the control knob of air pressure regulator on the AKIMist® "E" mounting unit and slowly turn it counterclockwise until the air pressure is back to 0MPa.
- 3) Close the blue valve at the foot of the spiral tube.
- ☆ 4) Remove the lower body of AKIMist® "E" and throw away the water inside.
- 5) Set the RHC-C11 power switch to OFF.
- 6) Let the compressed air out of the water tank as below.
  - ① Close the red valve.
  - ② Open the blue valve.Confirm the pressure indicator shows 0.  
☆ ③ Pull the control knob at the foot of the stand slowly turn it counterclockwise to the end. Then push in the knob.



- 7) Disconnect the coupler of the air tube from the upper part of the water tank.

Pull the yellow ring of female coupler, then pull out the coupler.



- 8) Confirm that the blue valve at the foot of the spiral tube is closed and disconnect the coupler at the foot of the water tank.

Push down the ring of female coupler, then pull out the coupler.



- ☆ 9) Empty the water tank.

Continue to the next page↓

△ 10) Open the tank and pour water into the water tank, and replace the cap.

11) Connect the couplers removed on step 7) and 8) again to the tank according to Page 7.

△ 12) Proceed as instructed on Page 11 "Starting operation" to start the spray.

Confirm that AKIMist® "E" properly sprays.

## 8. Maintenance

- For maintenance of Dry Fog Humidifier AKIMist® "E" , see the enclosed AKIMist® "E" Instruction Manual.
- For maintenance of Humidity Controller RHC-C11, see the enclosed RHC-C11 Instruction Manual.

## 9. Troubleshooting

If any trouble occurs, immediately stop the air supply and check as follows. (Also see the troubleshooting section in the instruction manuals of AKIMist® "E" and RHC-C11.)

Troubles	Probable causes	Solutions
No spray or spray stops after a short time	Air compressor is not switched on.	Switch it on. (Supply the air)
	Air pressure is too low.	Check the air compressor operation.
		Adjust the air pressure with a pressure regulator on the mounting unit (page 11).
	There is no or little water in the water tank.	Pour water into the tank.
	Air or water leaks at the connection.	Tighten any loose connections. Check the coupler connection.
Spray "wheezes"	Nozzle orifice is clogged.	Clean the nozzle. See AKIMist® "E" Instruction Manual.
	Tubes for air and water are not correctly connected.	Correctly connect the tubes.

Troubles	Probable causes	Solutions
Coarse atomization	Air pressure is too low.	Adjust the air pressure with a pressure regulator on the mounting unit (page 11).
Water dripping from the nozzle orifice	Dust around the nozzle orifice.	Clean the nozzle. See AKIMist® “E” Instruction Manual.
	Air pressure is too low or too high.	Set air pressure at 0.2–0.5 MPa (29–73 psi) for 03C nozzle type. Set the air pressure at 0.3–0.35 MPa (44–51 psi) for 03B nozzle type.
RHC-C11 does not work when switched on	RHC-C11 is not connected to a power source.	Connect RHC-C11 to the power source.
	Fuse has blown.	Replace the fuse. See RHC-C11 Instruction Manual.
Current humidity value (PV) on the control panel shows “uuuu” and flashes	Humidity sensor and RHC-C11 is unconnected.	Check the wiring for humidity sensor and RHC-C11.
Humidity displayed in the control panel is not accurate	Location of humidity sensor is not appropriate (the place where sensor is located has humidity and temperature different from that of other places).	Review the location of sensor. Note: relative humidity is effected by temperature of the place where sensor is located.
	Dirt on the filter of sensor element	Clean or replace the filter of sensor element. See RHC-C11 Instruction Manual.
	Sensor element is used-up.	Replace the sensor element. See RHC-C11 Instruction Manual.
	Forgot to push “replacement switch” after replacement of sensor element.	Push the sensor element replacement switch. See RHC-C11 Instruction Manual.
	Fuse has blown.	Replace the fuse.
No spray while “FOG ON” lamp is lit	Compressed air and water are stopped.	Check the pressure gauge and supply compressed air and water.
	No electricity for solenoid valve	Check the wiring for solenoid valve and RHC-C11.
	Fuse has blown.	Replace the fuse.



## 10. Specifications

### ■ AKIMist® "E" Portable Dry Fog Humidifier Set (AE-T set)

Humidifier	Humidifier model No.	AE-1		AE-2		AE-3		AE-4	
		(03C)	(03B)	(03C)	(03B)	(03C)	(03B)	(03C)	(03B)
	Spray volume* (L/hr)	1.3–3.6	3.3	2.6–7.2	6.6	3.9–10.8	9.9	5.2–14.4	13.2
	Air consumption (L/min, Normal)	22–43	29	44–86	58	66–129	87	88–172	116
T-set	Weight	Approx. 13 kg (dry weight) excluding solenoid valve, RHC-C11, and sensor							
	Water tank	Water capacity: 18 liters, Pressure resistance: 0.7 MPa, Pop-off valve: spring type (operates at 0.4 MPa)							
	Compressed air pressure resistance	0.7 MPa							
	Maximum height	Stand with wheels: 2,380 mm (Standard) Stand with rubber pads: 2,300 mm (Optional)							
Solenoid valve	Power voltage	100 VAC, 110 VAC, 200 VAC, 220 VAC, 230 VAC, or 240 VAC (designated on order)							
	Power consumption	5.5 W (50 Hz), 4.2 W (60 Hz)							
Materials	Water tank	Stainless steel 304, Brass, NBR							
	Humidifier	Body: PP, etc. Nozzles: PPS and plastics, O-ring and packing: FKM							
	Pole	Aluminum							
	Spiral tube	Soft nylon							

\*Spray volume and air consumption vary depending on the air pressure. Spray volume of 03B type is the same when air pressure is 0.3 MPa or 0.35 MPa.

### ■ RHC-C11

	Subject	Specifications	Remarks
RHC-C11 Humidity controller	Rated power	100–240 VAC (50, 60 Hz single phase)	
	supply voltage		
	Power consumption	Approx. 20 W	
	Operation	Compares current humidity (PV) with required humidity (SV) and Spray when PV < SV, Stop spraying when PV > SV	
	Interlock	External signal from normal open contact can bring the controller into operation.	Terminal COM and D22 are connected before shipment. When connecting to an external equipment, remove the pre-wired jumper lead connecting COM and D22. (Do not disconnect it if external interlock signal is not used.)
	Setting range	0–100% RH	
	Allowable temperature and humidity	0–50°C, 0–85% RH	Condensation is never allowed.
	Dimensions	125(W) x 125(H) x 100(D) mm	Excludes protrusion
	Weight	Approx. 700 g	
	Casing material	Polycarbonate (cream color)	IP40
Humidity sensor	Element	Polymer film	
	Response time	Within 1 min.	
	Dimensions	90(W) x 90(H) x 48.3(D) mm	Includes DIN-rail, excludes protrusion
	Sensor cable	5 m	

See the instruction manuals of AKIMist® "E" and RHC-C11 for details.



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