

## Instruction Manual for AE-T Set (with RHC)

# **Portable Dry Fog Humidifier Set with Automatic Humidity Control**

**(incl. AKIMist® “E”, Humidity Controller RHC-C11 and Sensor HN-EK)**

Thank you for purchasing our product.

Please read this manual carefully and follow the instructions to ensure optimal performance.

Keep this manual handy for quick reference.

Parts of products may be changed without prior notice.

Please be aware that due to continuing efforts to improve our products, some details in this manual may differ from the actual product.

Thank you for your understanding.

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# 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 the air and water valves before disassembling AKIMist "E" and the nozzles.

Failing to do so may result in nozzle damage and water leakage.

- Operate only in environments with a temperature of 5-40°C and humidity below 80% RH.

Avoid areas with dust or chemical atmospheres containing organic solvents, acids, or alkalis.

Do not use in locations where condensation or water exposure may occur.

- Caution for Supply Pressure to Unit:

Ensure the supply air pressure from the compressor to the unit is less than 0.7 MPa to prevent malfunction of the solenoid valve.



## 2. Features

- Produces large volumes of Dry Fog with simple operation.
- Light weight, compact and easy to move.
- Easy assembly.

## 3. Checking the Delivery

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

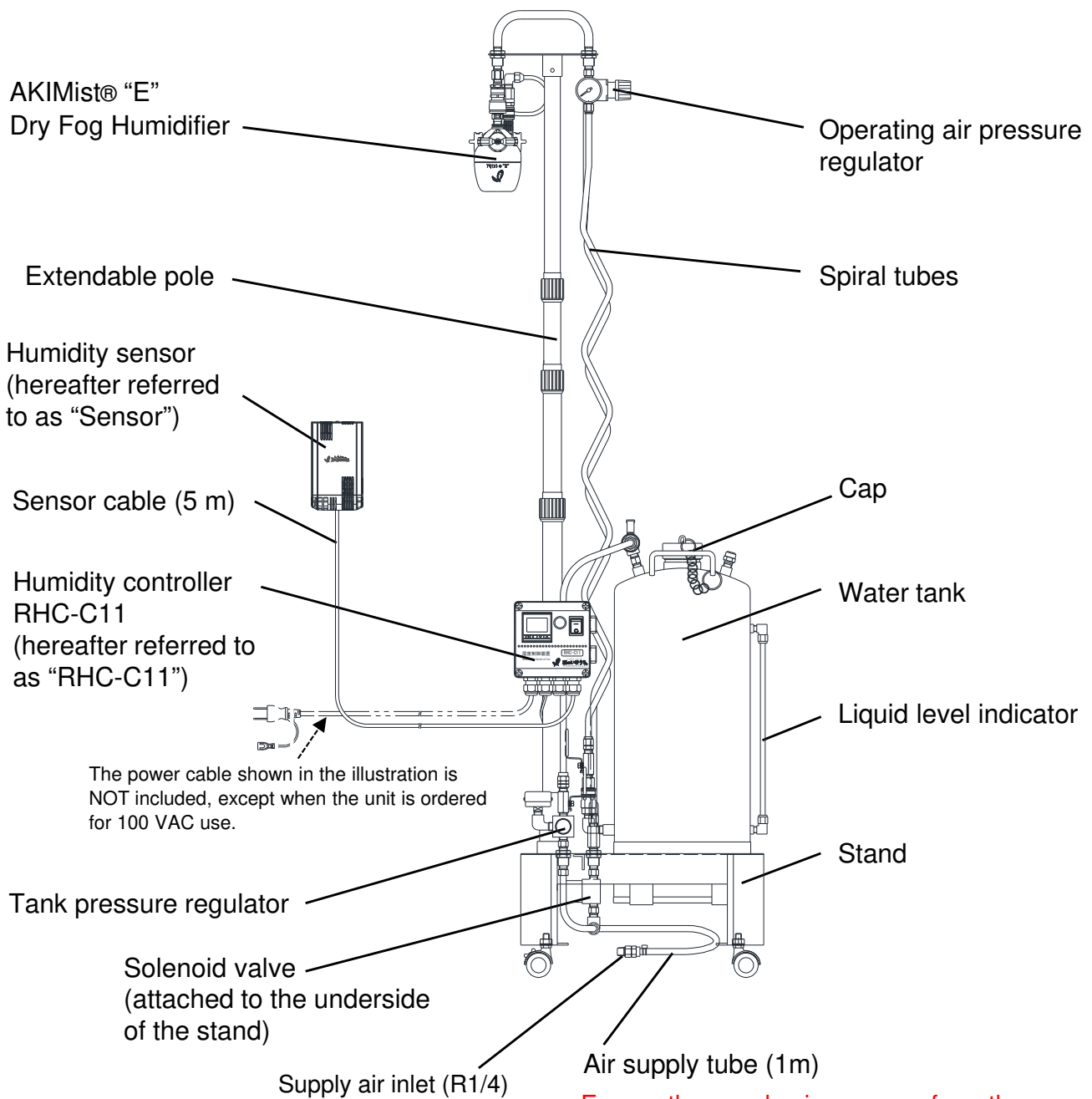
If any item is missing, please contact us or your supplier.

			
<p>AKIMist® "E" Dry Fog Humidifier</p>	<p>Water tank</p>	<p>Stand (with solenoid valve attached at the bottom)</p>	<p>Humidity sensor</p>
			<p>Enclosed Instruction Manuals:</p> <ul style="list-style-type: none"> <li>• This manual</li> <li>• Manual for Humidity Controller RHC-C11</li> <li>• Manual for Dry Fog Humidifier AKIMist® "E"</li> </ul>
		<p>Extendable pole (attached with humidity controller)</p>	
<p>Spiral tubes</p>	<p>Cleaning kit</p>	<p>Extendable pole (attached with humidity controller)</p>	
<p>AKIMist® "E" mounting unit</p>	<p>Sealing tape, Hexagon wrench, Fastening screws (2), Plastic coupler plug JOPLAX JF-02</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.



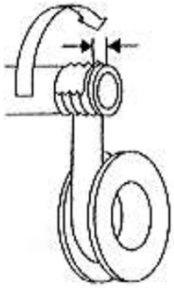
The power cable shown in the illustration is NOT included, except when the unit is ordered for 100 VAC use.

Ensure the supply air pressure from the compressor to the unit is less than 0.7 MPa to prevent malfunction of the solenoid valve.

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

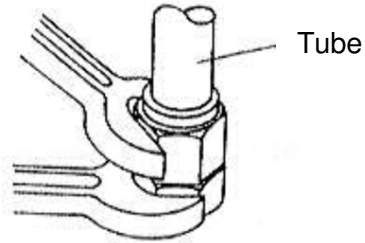
# 5. Caution Before Assembly

★ Apply sealing tape to each thread.



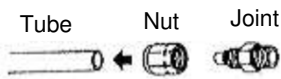
Leave the first few turns of the thread without sealing tape. Wrap the remainder of the threading with 2 to 3 turns of sealing tape while maintaining some tension.

★ Tighten the screw firmly with a spanner.

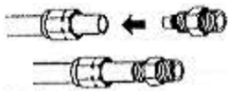


★ Tube Joint

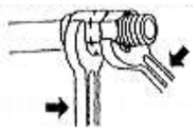
1. Unscrew the nut from the joint, and slide it on the tube. (Ensure the direction of the nut.)



2. Insert the joint into the tube completely.

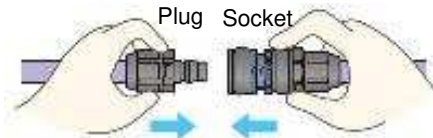


3. Tighten the nut firmly with a spanner.

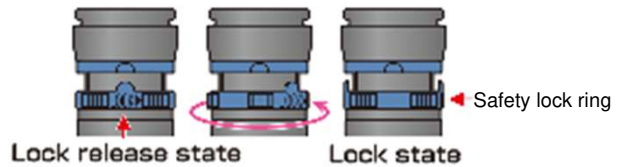


★ Quick Couplers (Air couplers) for AKIMist® "E"

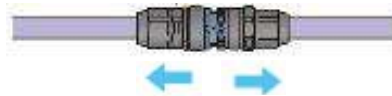
To connect, pull back the sleeve (slider) of the socket and insert the plug. Then, release the sleeve.



Turn the safety lock ring 90 degrees counterclockwise until it clicks to secure the plug in place.



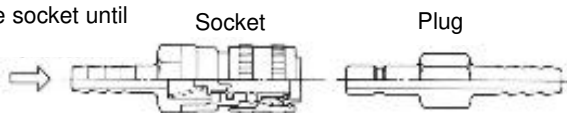
To disconnect, turn the safety lock ring clockwise until it clicks to release the lock. Then, pull back the sleeve (slider) of the socket and detach the plug.



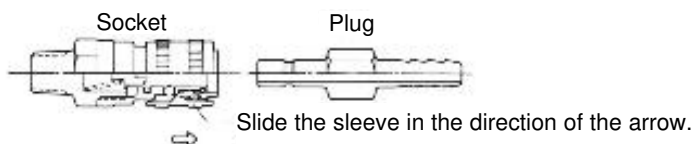
★ Water Couplers for AKIMist® "E"

To connect, insert the plug into the socket firmly until it clicks.

Push in the socket until it clicks.



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 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.

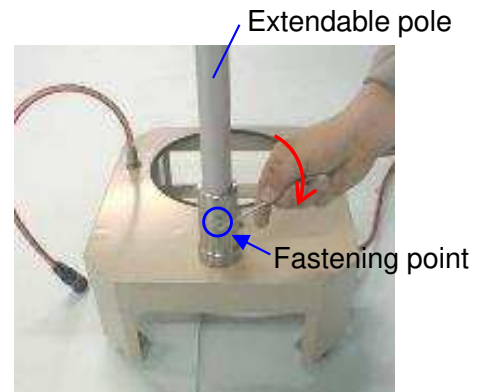
The actual appearance and shape of the parts may differ from the presented images.

- 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.



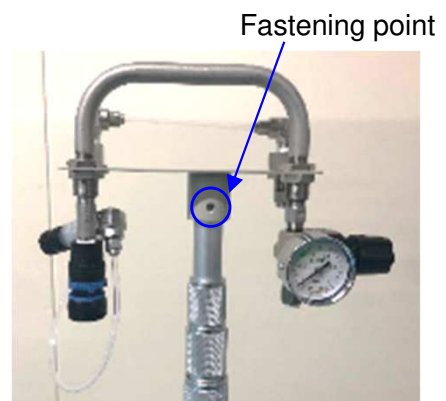
Note: RHC-C11 (with the sensor cable) is already attached to the extendable pole.

- 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.

- I. Remove the fitting cap from AKIMist “E” mounting unit. Slip the fitting cap on the end of the black spiral tube.
- II. Insert the black tube all the way into the fitting of the mounting unit.

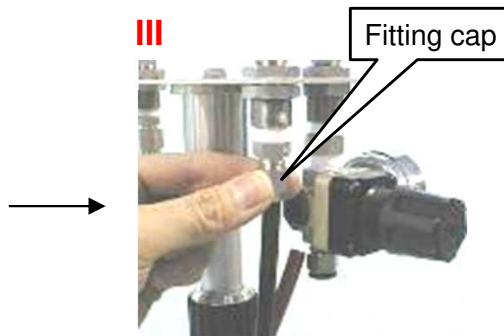
 **Cautions**

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 tube does not come off.

- III. 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.



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.

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



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



Continue to the next page ↓



- 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.

- 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.



Continue to the next page↓

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.

I. Push the plugs for air and water into their respective sockets until they click.



Refer to page 5 for how to connect the couplers.

II. Ensure that the couplers are connected properly.

Check that there are no gaps in the connection for the water-side couplers, as shown below.



**Good: No gaps**



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

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

**Note: Supply air pressure from the compressor to the unit must be less than 0.7 MPa to prevent malfunction of the solenoid valve.**

A plastic coupler plug is included for air supply connection.  
When connecting the air supply tube, use an Rc1/4 (female taper pipe thread) fitting or a coupler socket compatible with the included coupler plug (JOPLAX JF-02).  
If there are air leaks, replace the fitting with one that properly fits the connection.

Continue to the next page↓

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



Tighten

Loosen

11) Install the humidity sensor on the wall, then connect the pre-attached sensor cable from RHC-C11 to the sensor, referring to the 1. Preparation Before Use section in the enclosed RHC-C11 manual (pages 3, 6-13).

12) Connect the solenoid valve to RHC-C11 as below.

Each of the solenoid valve and humidity controller comes with its own cable equipped with pin terminals (insertion terminals).

- I. Put the cable from RHC-C11 through the grommet.
- II. Connect the solenoid valve cable to the cable from RHC-C11.

I.



Solenoid valve

The solenoid valve cable is fixed to the underside of the stand.



Grommet

II.



Insert the pin terminals fully and firmly.



Solenoid valve

Make sure the pin terminals are positioned underneath the stand.

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

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



- Assembly is complete.-

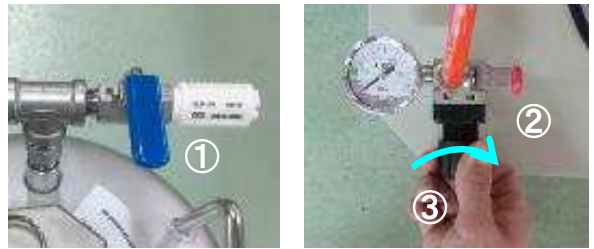
## 7. Operation

### 1. Starting operation

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

- 1) Remove the protective caps from the nozzles of the AKIMist "E" before use.
- 2) Turn on the RHC-C11 power switch and set the relative humidity set value (SV), referring to 2. Operation section of RHC-C11 Instruction Manual.
- 3) Turn on the air compressor to supply air. **Ensure the supply air pressure is below 0.7 MPa to prevent malfunction of the solenoid valve.**
- 4) Adjust the tank pressure regulator to set the pressure to 0.1 MPa as follows.

- ① Close the blue valve on the top of the tank.
- ② Open the red valve of the tank pressure regulator.
- ③ Pull the control knob on the tank pressure regulator until you hear a click, then slowly turn it clockwise. When the pressure reaches 0.1 MPa, push the knob back down until it clicks.



If the tank pressure becomes too high:

- I. Turn the control knob slowly counterclockwise.
- II. Slowly open the blue valve on the top of the tank and let air out of the tank.
- III. Wait until the pressure is down to approx. 0.1 MPa, then close the blue valve and adjust the pressure using the tank pressure regulator.

- 5) Open the blue valve at the foot of the spiral tube. (See Photo 1)
- 6) Open the red valve on the stand, as circled in red in Photo 2.

Photo 1



Photo 2



- 7) Set the operating 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 until you hear a click, then slowly turn it clockwise. Once the pressure is increased to the desired value, push in the knob until it clicks.



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 for the 03C type nozzle is 0.2–0.5 MPa (29–73 psi).
- ◆ Operating air pressure range for the 03B type nozzle is 0.3–0.35 MPa (44–51 psi).
- ◆ 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.



**Do not 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 0 MPa.
- 3) Close the blue valve at the foot of the spiral tube.



- ☆ 4) Turn the lower body of the AKIMist "E" clockwise to loosen and pull it down to remove. Then, empty the water inside. (See photo on the right)

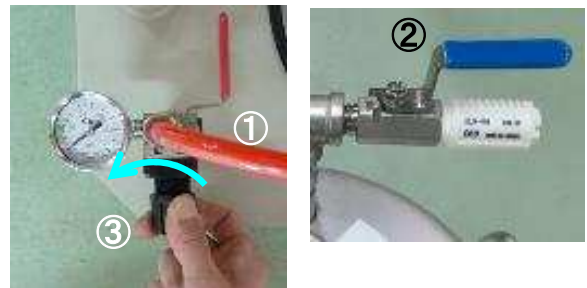


- 5) Set the RHC-C11 power switch to OFF.

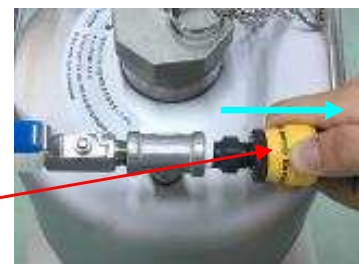
- 6) Let the compressed air out of the water tank as below.

- ① Close the red valve of the tank pressure regulator on the stand.
- ② Open the blue valve on the top of the tank. Confirm the pressure indicator shows 0.

- ☆ ③ Pull the control knob on the tank pressure regulator and 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.

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

11) Reconnect the couplers removed on steps 7 and 8.

△ 12) Follow the instructions on page 11 under 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 turned on.	Switch it on. (Supply the air)
	Air pressure is too low.	Check the air compressor operation.
		Adjust the operating air pressure with a pressure regulator on the AKIMist "E" 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.
Coarse atomization	Operating air pressure is too low.	Adjust the operating air pressure with a pressure regulator on the AKIMist "E" mounting unit (page 11).
Water dripping from the nozzle orifice	Dust around the nozzle orifice.	Clean the nozzle. See AKIMist "E" Instruction Manual.
	AKIMist "E" operating air pressure is too low or too high.	Set air pressure to 0.2–0.5 MPa (29–73 psi) for the 03C nozzle, and 0.3–0.35 MPa (44–51 psi) for the 03B nozzle.
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.
Present 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	Refer to the enclosed instruction manual for RHC-C11.	
No spray while "FOG ON" indicator of RHC-C11 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.



# 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)							
	Max. operating pressure differential	0.7 MPa							
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. The spray volume of the 03B type remains the same at air pressures between 0.3 and 0.35 MPa.

## ■ RHC-C11

	Subject	Specifications	Remarks	
RHC-C11 Humidity controller	Rated power supply voltage	100–240 VAC (50, 60 Hz single phase)		
	Power consumption	Approx. 20 W		
	Operation	Compares present humidity (PV) with set humidity (SV) and starts spraying automatically when PV < SV, and stops 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. (Disconnect it only when external interlock signal is 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	145(W) x 85(H) x 38(D) mm		Excludes protrusion
	Sensor cable	Approx. 5 m		

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



“The Fog Engineers”  
**H. IKEUCHI & CO., LTD.**

<https://www.dry-fog.com/en/>

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