AMANO

Electrostatic Oil Mist Collector for Air Floating Oil Mist

AC-900 SERIES

Instruction manual

Thank you for purchasing this Amano product. **Please read this manual carefully to ensure safe and correct use of the product.**
In addition, keep this manual close at hand so that you can refer to it at any time.

IMPORTANT

◎ Be sure to read "1. For Safe Operation" (on pages 3 and 7), and use it properly.
◎ Carry out daily and periodic inspections, observing all operation and maintenance instructions given in this manual.
◎ Observe all applicable laws and regulations regarding installation and servicing of this machine.
◎ This operation manual is intended for the product based on the standard specifications. If the machine has been customized as instructed by a customer, its design and operation procedures may differ from those described in this manual.

CONTENTS

Introduction

This machine is intended to collect oil mist floating in the work space in a factory that uses a local dust collector (mist collector) attached to the metal-working equipment.

Points you need to understand before using this product

- This machine is designed to collect oil mist that is floating in the factory or generated from the metal-working process of machining centers or NC machine tools. However, the machine is not designed to collect oil mist such as explosive or flammable powder (such as carbon, magnesium, aluminum, etc.), an excessive amount of dust (1% or more in weight ratio), strong alkaline mist, strong acidic mist, solvent mist, welds, or metal fumes generated upon fusing.
  - This product cannot be used to collect substances that must not be suctioned, explosive or combustible dust, or substances described under "△WARNING" on the next page.
- If local measures against the oil mist source have not been taken, the performance of this machine cannot be guaranteed.
- This manual describes the oil mist collector manufactured according to the standard specifications. Custom-order specifications may differ in aspects such as appearance and performance.
- The specifications and appearance of the product, and the descriptions in this manual are subject to change due to improvements.
- This machine is designed and manufactured for business transactions and use within Japan. We cannot assume responsibility for warranties, repairs, or parts supply when used overseas.
- See page 7 for precautions regarding suction conditions.

Disclaimer

The manufacturer and dealers are not responsible for accidents or malfunctions due to the following causes.

- Fire and explosions in this machine caused by ignitability or inflammability of suctioned oil mist.
- Inappropriate construction methods and means that are different from those specified in this manual and relevant construction instructions.
- Incorrect operating conditions, or usage methods that are different from those specified in this manual.
- Failure to appropriately maintain the machine or replace the consumable parts as specified in this manual.
- Any modifications, repairs, or moving of the machine conducted by any third party or personnel not authorized by AMANO.
- Natural disasters or calamities, such as fires, earthquakes, or floods.
- Any event that may not have been able to be predicted scientifically or technologically at the time of manufacture.
- Use of a secondhand product (that is distributed for the purpose of resale after being sold by AMANO).
- Other causes AMANO is not responsible for.

1. For Safe Operation

Precautions in this manual are classified according to the degree and type of danger as shown below. Be sure to read them before operating this product.

⚠Warning
Shows situations in which incorrect operation may result in death or serious injury to the operator.

⚠Caution
Shows situations in which incorrect operation may result in an injury to the operator or property damage.

- Serious injury refers to loss of eyesight, wounds, burns (high and low temperature), electric shock, bone fractures, poisoning, etc. that have lasting effects or require hospitalization or long-term outpatient treatment.
- Injury refers to wounds, burns, electric shock, etc. that do not require hospitalization or long-term outpatient treatment.
- Property damage refers to extensive damage to houses, property, equipment, devices, etc.

Explanation of symbols The illustration in each symbol indicates messages.


Indicates a warning or caution.


Indicates a prohibited action.


Indicates a mandatory action that must be carried out.

⚠Warnings


Explosion hazard

Never allow the following substances to enter this machine.
- Explosive or flammable powders: Aluminum, magnesium, titanium, epoxy, toner, flour, etc.
- Flammable substances: Gasoline, thinner, benzine, kerosene, paint, etc.
- Dust with sparks: Dust produced by a high-speed cutter, grinder, welding machine, etc.
- Sources of fire: Cigarette butts, ashes, etc.
- Other: Oil or mist with a low flash point of 80℃ or lower.

Not observing the above may cause a fire or explosion.


Explosion hazard

Never install this machine in a dangerous location specified by law, regulations, etc.
Not observing the above may cause a fire or explosion.


Prohibit

Do not use a damaged power cable.
Not observing the above may lead to an electric shock or fire.


Never use

Do not install it in a location where evaporation, dispersion, or stagnation of the following substances is likely to occur.
- Inflammable substances (gasoline, thinner, benzine, kerosene etc.)
- Explosive materials (such as nitroglycerin)
- Ignitable substances (explosive metal powder including aluminum, magnesium, or red phosphorus, yellow phosphorus, etc.)
- Inflammable fine particles (coal powder, synthetic resin powder, sulfur powder, cornstarch powder, etc.)

Not observing the above may cause a fire or explosion.


Explosion hazard

Never operate this machine in or near an area where inflammable, explosive particles or corrosive materials, fumes or gases are present.
Not observing the above may cause a fire or explosion.


Prohibit usage with wet hands

Never touch the power cable with wet hands when connecting or disconnecting it.
Not observing the above may result in an electric shock


Prohibit disassembly

Do not modify this product under any circumstances.
Not observing the above may cause an accident, fire, or electric shock.


Prohibit use of voltage

Never use it with any other power voltage or frequency than those indicated on the product. Also, do not overload any electrical outlets by connecting many plugs to them.
Not observing the above may lead to an electric shock or fire.


Prohibit suction

Never allow the following substances to enter this machine.
- Harmful dust, such as asbestos.
- Corrosive substances: Hydrochloric acid gas, chlorine, a toxic gas with sulfide based compounds, and hydrogen fluoride, etc.
- Dust polluted by radioactive substances or radioactivity.

These substances may affect your health.


Prohibit

Do not use an inflammable substance (gasoline and kerosene, etc.) to clean the collection unit and main body.
Not observing the above may lead to an electric shock or fire.

1. For Safe Operation (Continued)

Warnings


Prohibit

Never turn on the switch with the inspection door or electric equipment cover opened.
Not observing the above may cause an accident, injury, or electric shock.


Fire

Never allow the machine to suction dust such as soot or fume alone.
Not observing the above may result in fire.


Instructions regarding action

Perform periodic inspection described in this manual.
Failure to observe the above may cause a malfunction or fire.


Instructions regarding action

Be sure to turn off the power when opening the inspection door or electrical equipment cover.
Not observing the above may cause an accident, injury, or electric shock.


Instructions regarding action

When performing inspection and maintenance work, do not shake or load the suspended parts.
Not observing the above may cause the part to come out or drop.


Instructions regarding action

Carry out the following maintenance for the electrode.
- Clean regularly once every six months or more frequently.
- In the case that the machine frequently stops due to a power shutdown even after an inspection and cleaning has been carried out, clean the electrode.

Failure to observe the above may cause an exhaust leak or abnormal sparks, which may result in a fire.


Instructions regarding action

For work at elevations of 2 m or more, safety measures specified by laws and regulations shall be implemented.
Failure to observe the above may result in an accidental fall.


Instructions regarding action

Inspect the suspending members in accordance with the instructions in this manual.
- Check the installation condition every two months.

Failure to observe the above may result in an accidental fall.


High voltage hazard

Only allow a person who is in charge of maintenance to open the electrical equipment cover.
Not observing the above may result in an electric shock


High voltage hazard

Before you open the inspection door, wait for 20 seconds after you turn off the power supply.
Not observing the above may result in an electric shock


Grounding

Be sure to ground this machine.
If the equipment is not grounded, electrical leakage may occur and create a danger of fire or electric shock. Also, the equipment may be damaged or malfunction due to static electricity.


Instructions regarding action

When this machine stopped due to a power shutdown, be sure to check the electrode and clean it.
Failure to observe the above may cause a malfunction or fire.


Instructions regarding action

Periodically clean the adhered or accumulated material from inside the machine or pipes.
Failure to observe the above may cause a fire.


Instructions regarding action

If a fire or dust explosion occurred inside the product, take the following actions immediately.
- Turn off the power supply immediately.
- Use a fire extinguishing agent suitable for the dust collected.
- Even after the fire has been extinguished, never open the door until the internal temperature drops to the normal level.


Instructions regarding action

Take fall prevention measures by installing this machine in accordance with the instructions in this manual and the construction instructions.
Failure to observe the above may result in an accidental fall.

1. For Safe Operation (Continued)

Cautions


Caution

Wear appropriate protective safety gear such as safety glasses and gloves when carrying out an inspection or replacing parts.
Not observing the above may result in an injury.


Prohibit

When opening the inspection door or electrical equipment cover, be sure to stop operations.
Failure to observe the above may cause an injury or accident.


Turn the power off.

If any abnormal noises, fumes, vibrations, smells, or overheating are detected during operation, turn off the primary power supply immediately.
Failure to observe the above may cause a malfunction, or lead to an electric shock or fire.


Turn the power off.

Before carrying out an inspection or maintenance work, always turn off the primary power supply to this machine.
Not observing the above may result in an electric shock


Turn the power off.

If the fan stops during operation, turn off the primary power supply immediately.
Not observing the above may result in an electric shock


Turn the power off.

Do not touch the inside of the main unit during operation.
Not observing the above may cause an electric shock or injury.


Caution

Do not touch the electrode discharge brush. When handling it, wear a pair of leather or thick rubber gloves.
Not observing the above may result in an injury.


Prohibit

Do not look into the discharge port.
If this warning is not observed, foreign materials or droplets may enter and hurt your eyes or otherwise impair your health.


Instruction

All wiring connection must be performed by a qualified electrician.
Failure to observe the above may cause an accident .


Instruction

Inspection and maintenance work must be performed by a competent electrician.
Failure to observe the above may cause an accident .


Instruction

Be sure to place the product in a horizontal orientation.
The tilted orientation may result in incomplete fixation of the product, potentially leading to a fall accident.

1. For Safe Operation (Continued)

Notes

Please use it correctly to maximize the performance of this product.

Operate with the appropriate air volume.
Failure to observe the above may cause performance to degrade.

Do not operate the machine without the electrode.
Failure to observe the above may cause a malfunction.

Do not fully close the ports.
Failure to observe the above may cause a malfunction.

Never allow the following substances to enter this machine.
- Abrasive substances, others: liquids such as water (including vapor)

Failure to observe the above may cause a malfunction.

Adjust the usage environment temperature within the range of 0°C to 40°C.
Failure to observe the above may generate heat or lead to a malfunction.

Adjust the temperature of the suctioned air to be within the range of 0°C to 40°C.
Failure to observe the above so may cause an accident or lead to a malfunction.

Keep the pH of the oil mist to be suctioned within the range of 7.0 to 10.5.
Failure to observe the above may cause an accident or lead to a malfunction.

The oil mist to be suctioned shall have an electrical conductivity of 300 mS/m (millisiemens) or less.

Keep the concentration of the oil mist to be suctioned within the range of 2 mg/m^3 or less.

Installation altitude shall be 2000 m or less.
Failure to observe the above may reduce performance or lead to a malfunction.

Obstacles that hinder the air volume and wind direction around the machine should be eliminated.
Failure to observe the above may reduce performance or lead to a malfunction.

1. For Safe Operation (Continued)

IMPORTANT

Exercise care when operating in the following environment as it may lead to a failure.

- Water (vapor) cannot be collected.

● Suction condition

In addition to safety purposes, please check the following suction conditions to ensure that the performance of this machine is sufficient.

Condition item	Confirmation item	Precautions	Remarks (1)	Remarks (2)	Check ☑
Air volume, wind direction	Appropriate air volume and direction	Secure the wind velocity 0.2 m/sec, 20 m from the discharge port.	Airflow 15 m^3/min	Remove obstructions that prevent suction within 500 mm of the suction port	☐
		Wind direction	Direction of the discharge port	Consult with AMANO sales representative.	☐
Temperature	Suctioned air temperature	0°C to 40°C			☐
Suction target object	This product collects oily mist generated from metal machining.	Do not collect anything other than oil mist	This cannot be used to collect dust	Oil mist that contains an excessive amount dust (1% or more in weight ratio) cannot be collected.	☐
		Do not collect combustible materials.	Do not suction mist containing explosive flammable dust.	Carbon, magnesium, aluminum, etc.	☐
		Inflammable materials must not be collected.	Do not suction oil with a flash point of 80℃ or lower	Gasoline, thinner, solvent mist, etc.	☐
		Do not collect bonding materials.	Do not suction high viscosity mist.	Grilled meat oil, etc.	☐
	Targets mist with the right pH value.	Mist with pH values outside the applicable range cannot be collected.	Applicable range is pH 7.0 to 10.5.	Strong acid mist, strong alkaline, and corrosive mist cannot be collected	☐
	Electrical conductivity of collected mist	Highly-conductive mist cannot be collected.	Collection target is mist with less than 300 mS/m of electrical conductivity.		☐
	Suction concentration of mist collected	The maintenance cycle becomes shorter when the defined value is exceeded.	Suction concentration is up to 2 mg/$m^{3.}$		☐ ☐

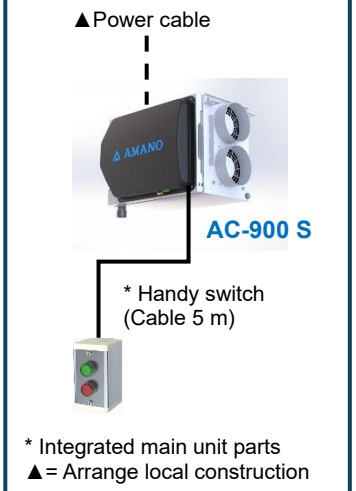
Reference: Requirements for installation location (page 11)

2. Part Names

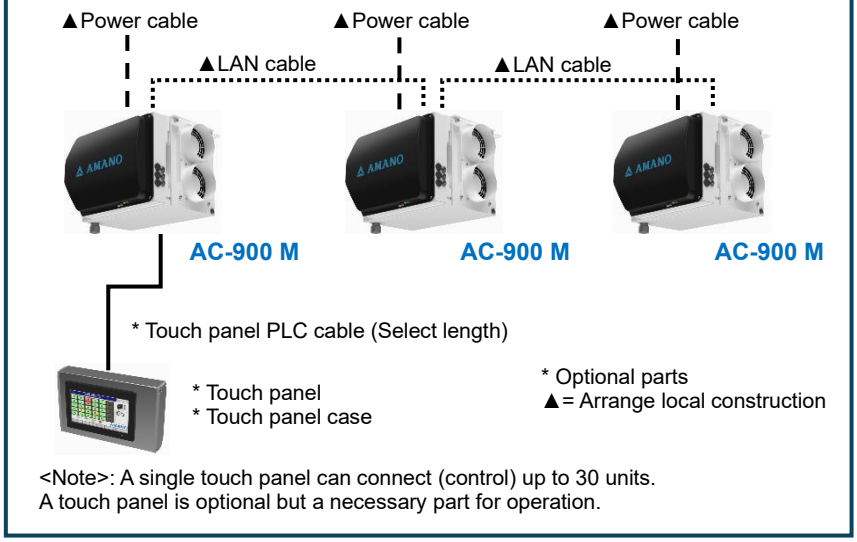
AC-900 system configuration

Type	Communication function	Handy switch	Purpose	Extensibility
AC-900 S	No	Yes	Individual operation	No
AC-900 M	Yes	No	Batch control	Oil mist sensor linkage

Individual operation

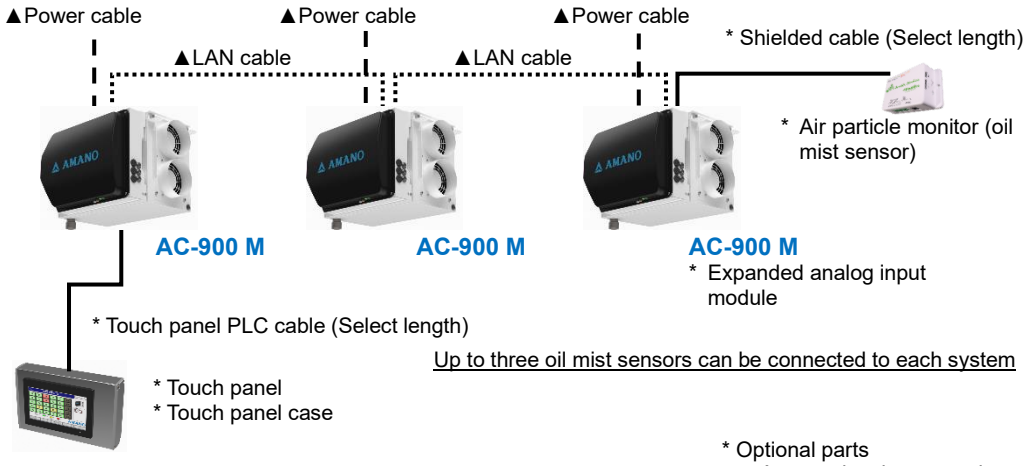


Batch control



<Note>: A single touch panel can connect (control) up to 30 units.
A touch panel is optional but a necessary part for operation.

Batch control + air particle monitor (oil mist sensor) linkage



Up to three oil mist sensors can be connected to each system

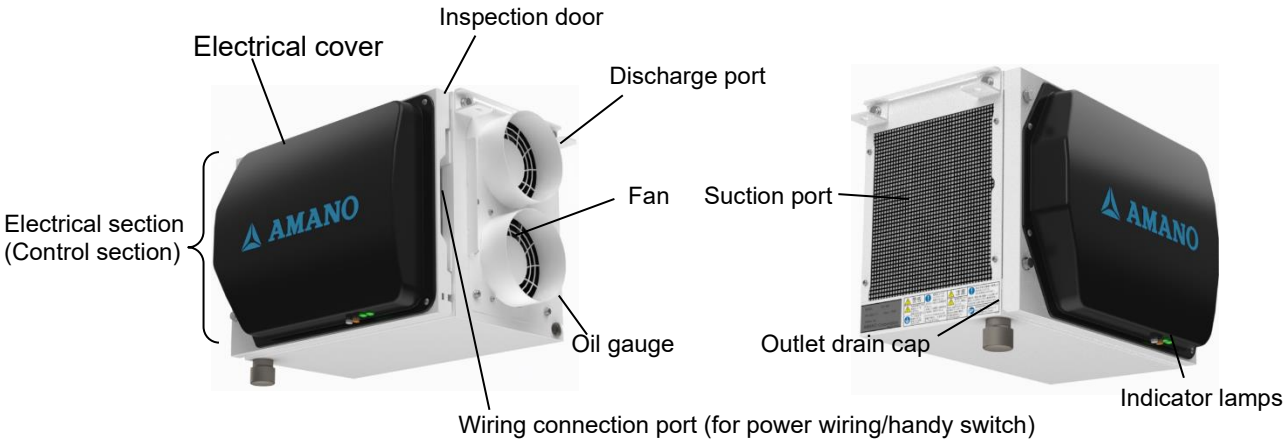
<Note>: A single touch panel can connect (control) up to 30 units.
A touch panel is optional but a necessary part for operation.

2. Part Names (Continued)

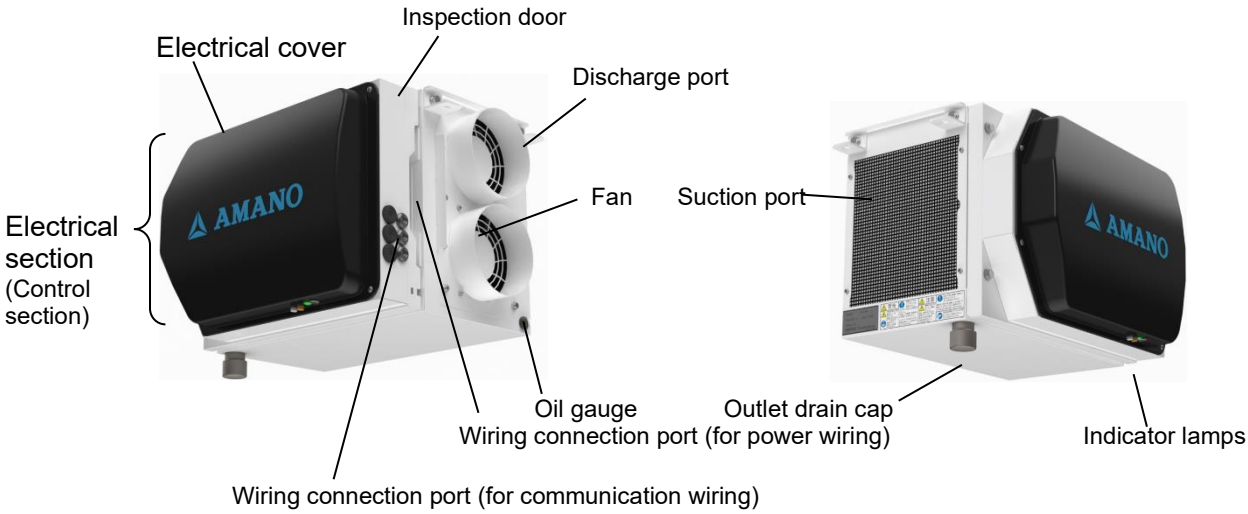
Appearance and internal structure

<Appearance>

AC-900 S



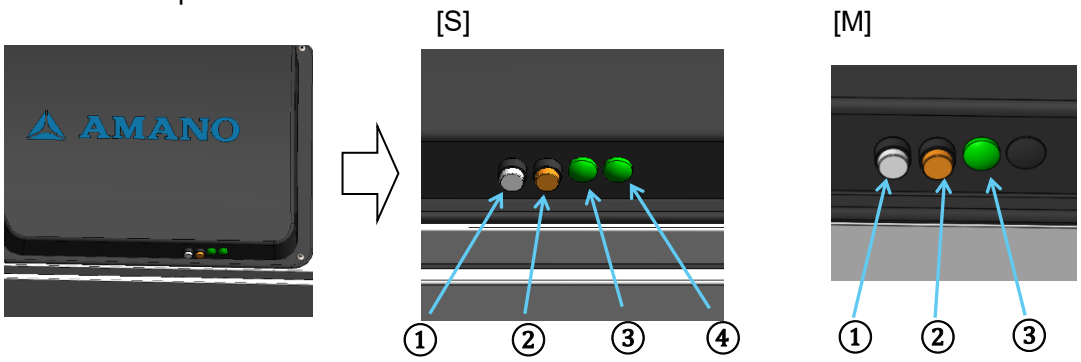
AC-900 M



2. Part Names (Continued)

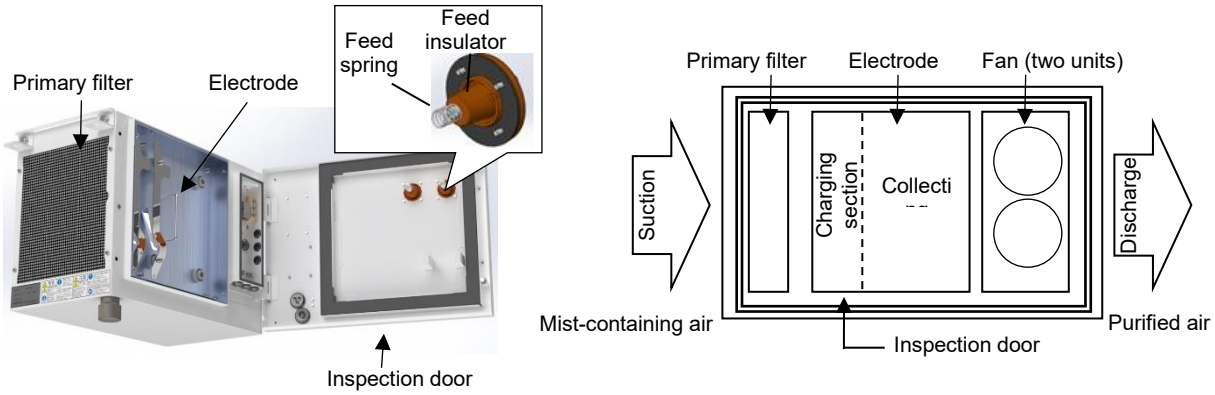
Appearance and internal structure (Continued)

<Indicator lamps>



No.	S	M	Name	Function
①	○	○	POWER lamp (White)	Lights up when power is supplied to the unit.
②	○	○	HIGH VOLTAGE lamp (Orange)	Lights up when high voltage outputs.
③	○	○	FAN 1 lamp (Green)	S: Lights up when the upper fan moves. M: Lights up when the upper and lower fans move. This turns off when one or both fans stop.
④	○	×	FAN 2 lamp (Green)	S: Lights up when the lower fan moves. M: No corresponding indicator lamp

<Internal structure>



Part Name	Purpose
Primary filter	This is a pretreatment part that removes coarse foreign matter that has been suctioned with a net.
Electrode	This part collects suctioned oil mist. This is an electrode that integrates the charging section and collecting section in an electric dust collecting method.
Fan	Blower parts in the oil mist collector (two pcs)
Inspection door	This is an electrical section door equipped with a high-voltage power supply and control section. Open/close the door for internal inspection and electrode removal.
Feed insulator	This part insulates high-voltage electricity generated by the electrical section.
Feed spring	This spring supplies high-voltage electricity generated by the electrical section to the electrode.

3. Before Using the Machine

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

Installing this machine

Observe the following when you install this machine: Not observing the above may lead to reduced performance, failure of the product, or an accident.

Requirements regarding the installation location

In addition to safety purposes, please check the following requirements regarding the installation location to ensure that this machine can deliver sufficient performance.

Condition item	Confirmation item	Precautions	Remarks (1)	Remarks (2)	Check ☑
Temperature and humidity	Usage environment temperature	0°C to 40°C	No freezing		☐
	Usage environment humidity	10% to 90%Rh	No condensation		☐
Altitude	Check the installation altitude.	To be installed below 2000 m			☐
Indoor installation	Install indoors in a location not directly exposed to sunlight, precipitation or dew.	Consider the weight to be borne at the installation site	The weight to be borne shall be 30 kg, including collected oil.	Mass of the main unit S:20kg M: 23kg	☐
		Install horizontally by suspending from ceiling Within ±1° of horizontal reference			☐
		Install in a location not subject to strong vibrations or impacts.	If installed in a location where vibrations occur, product failure may occur.	When subjected to vibrations, measures to suppress vibrations (anti-vibration rubber) are required.	☐
		Secure maintenance space.	400 mm or more from electrical cover (inspection door opening/closing distance)	Remove obstructions that prevent suction within 500 mm of the suction port	☐
	Installation prohibited location	Do not install in a dangerous location.	Dangerous locations defined by laws and regulations		☐
		Do not install in a location where there is a risk of explosion or fire (where vaporized or scattered).	Inflammable substances	Gasoline, thinner, benzine, kerosene, etc.	☐
			Explosive substances	Nitroglycerin, etc.	☐
			Combustible substances	Explosive metal powder including aluminum and magnesium.	☐
				Red phosphorus and yellow phosphorus	☐
			Inflammable particles	Coal powder, plastic powder, sulfur powder, cornstarch powder, etc.	☐
	Ventilation	Install in a regularly ventilated location.	Ozone is formed during operation.	There is a distinct ozone odor.	☐
Installation	Suspending from ceiling	Four-point support with full thread bolts (see construction instructions)	Measures to prevent falling when full thread bolts are broken	Fall prevention products recommended by AMANO. • "O-T-9" ® (fall prevention bracket) • "Soft wire method" ® (wire type vibration retaining bracket)	☐
Electrical work	Conducted by an electrician	See construction instructions.	100 V to 220 V single phase		☐
Communication work	For M type	See construction instructions.			☐

Reference: Suction conditions (page 7)

3. Before Using the Machine (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

Installing this Machine (Continued)

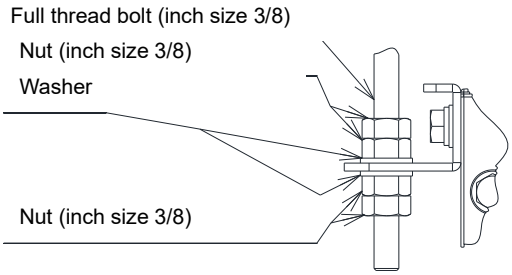
IMPORTANT

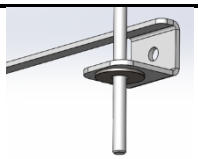
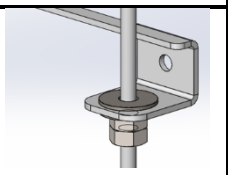
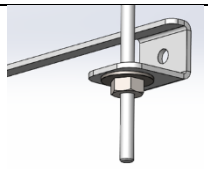
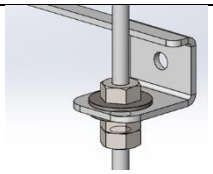
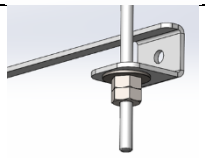
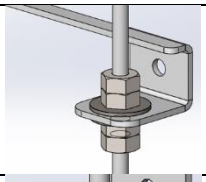
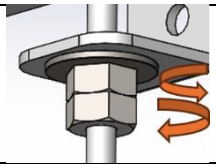
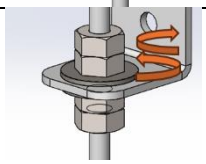
Installation should be 4-point support with full thread bolts, and take measures to prevent falling even if the full thread bolts break. Fall prevention products recommended by AMANO: "O-T-9" ³ (fall prevention bracket) and "soft wire method" (wire type vibration prevention bracket)

Caution

・Full thread bolts should be secured using double nuts.

<Fixing method>



Procedure	Description		Procedure	Description	
1	Place the plain washer on the bottom side of the suspended plate. * Attach the bottom side first. * Please note that washers and nuts cannot be inserted from the top after a full thread bolt is attached to the suspension source.		6	Place the plain washer on the top side of the suspended plate * Attach the bottom side, and then the top side.	
2	Attach a hexagon nut to adjust the angle of the main body.		7	Attach a hexagon nut.	
3	Add a second hexagon nut.		8	Add a second hexagon nut.	
4	Turn the top and bottom hexagon nuts in opposite directions to tighten the double nuts.		9	Turn the top and bottom hexagon nuts in opposite directions to tighten the double nuts.	
5	Check the level, and adjust it if there is a problem		10	Double-check the level and adjust if there is a problem	

3. Before Using the Machine (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

Connecting to the power supply

IMPORTANT

- The power supply should be connected by a qualified electrician.
- Refer to the construction manual for details.
- To help ensure safety, install the breaker on the side of the primary power source.

1 Checking the power specifications

Check the name plate and make sure that the power you are about to use is compatible with the machine. (100 V to 220 V single phase)

2 Turn the power off.

Be sure to turn off the switchboard (to cut the power supply to the machine) to prevent any risk of electric shock.

3 Connect the ground wire.

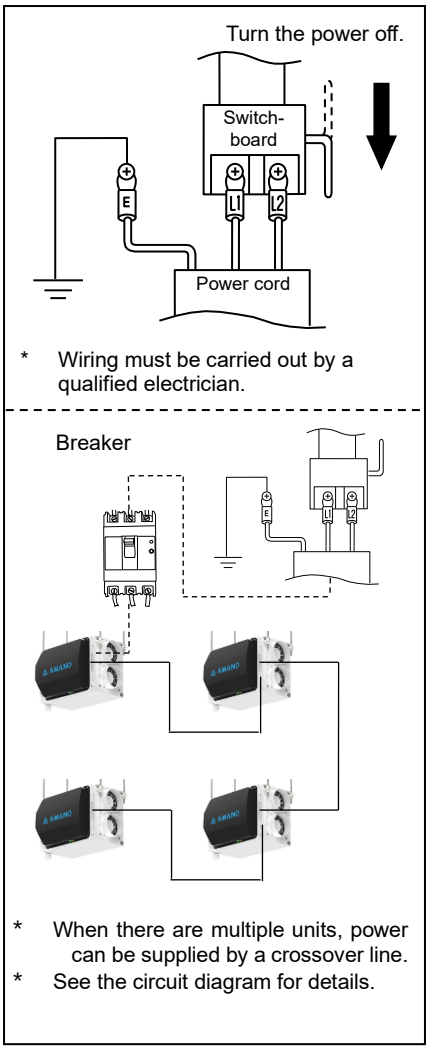
Ground the ground wire of the power cord. Make sure that the ground satisfies the conditions for class D grounding work (grounding resistance value of 100 Ω or less).

4 Connect wires except the ground wire.

Screw the power cord, excluding the ground wire, tightly to the terminal block of the circuit breaker (power supply to this machine) in the distribution board.

5 Turn the power on.

Check the above ① to ④ again and turn on the switch of the circuit breaker (supply power to this machine).



Checking of the breaker:

To help ensure safety, install the breaker on the side of the primary power source. The circuit breaker is a safety device that automatically shuts off current when a large current occurs. It is installed to protect the circuit.

Type of breaker: "MCCB (molded circuit breaker for wiring) or "ELB (earth leakage circuit breaker 30 mA)"

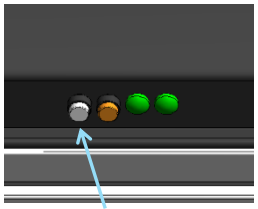
4. Operation

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

Pre-check

● Check the condition of power distribution.

Check the power distribution. When the power is turned ON, the POWER lamp lights up.



POWER lamp (White)

AC-900 S operation procedure

IMPORTANT

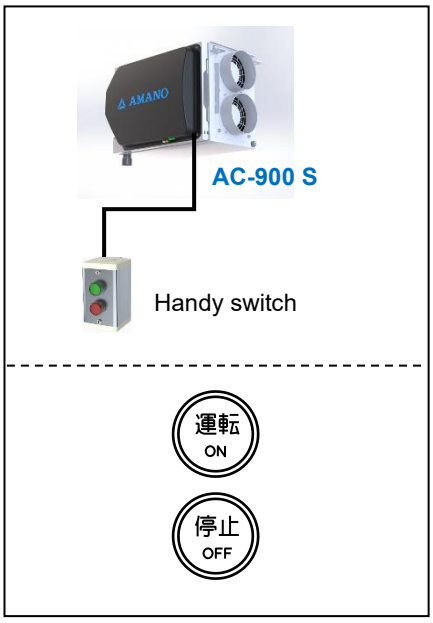
- Be sure to only use the product to collect oil mist.
- Do not modify the product. Not observing the above may cause a malfunction or display error.
- Adjust the temperature of the suction air to be within the range of 0 to 40°C.
- Adjust the environment temperature to be within the range of 0 to 40°C.
- Adjust the environment humidity to be within the range of 10 to 90% Rh. (No condensation)
- The product has been manufactured to collect oil mist with a flash point of not less than 80°C, or soluble mist with a specific electrical conductivity of not more than 300 mS/m (millisiemens). The machine cannot be used to collect oily or water soluble mist that does not meet the collection conditions.
- This product is for oil mist that has a maximum concentration of less than 2 mg/m3. In an application where the oil mist concentration exceeds the maximum, sufficient performance (collection efficiency) will not be obtained, and the machine will stop frequently and/or oil mist will leak out of the exhaust port.
- Do not run this product without the electrode. Otherwise, the board may malfunction.
- Make sure that the inspection door is firmly closed before starting operation.

1 Start operation.

Press the ON switch.
The fan rotates, and suction starts.

2 Stop operation.

Press the OFF switch.
The fan has stopped.



4. Operation (Continued)

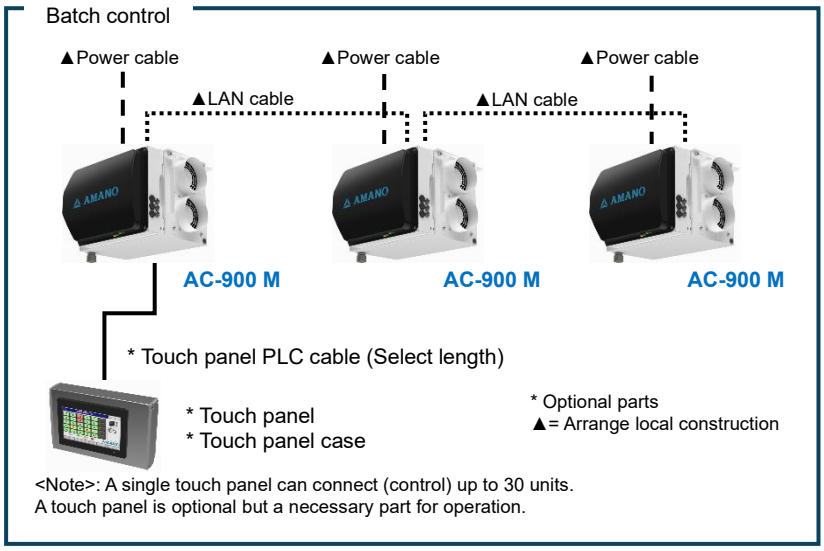
Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

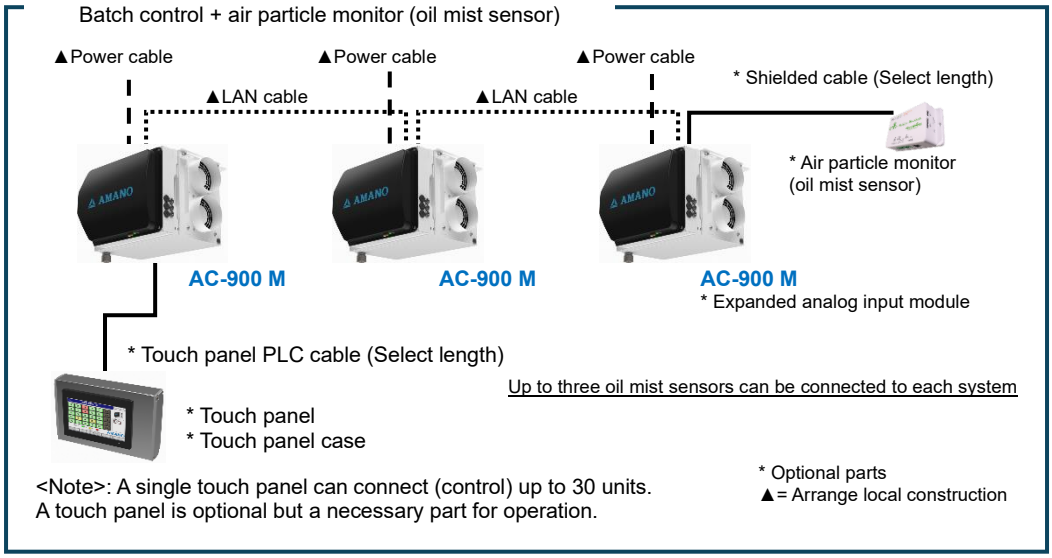
AC-900 M setup screen and operation procedure

Check the system configuration.

IMPORTANT

- Be sure to only use the product to collect oil mist.
- Do not modify the product. Not observing the above may cause a malfunction or display error.
- Adjust the temperature of the suction air to be within the range of 0 to 40°C.
- Adjust the environment temperature to be within the range of 0 to 40°C.
- Adjust the environment humidity to be within the range of 10 to 90% Rh. (No condensation)
- The product has been manufactured to collect oil mist with a flash point of not less than 80°C, or soluble mist with a specific electrical conductivity of not more than 300 mS/m (millisiemens). The machine cannot be used to collect oily or water soluble mist that does not meet the collection conditions.
- This product is for oil mist that has a maximum concentration of less than 2 mg/m3. In an application where the oil mist concentration exceeds the maximum, sufficient performance (collection efficiency) will not be obtained, and the machine will stop frequently and/or oil mist will leak out of the exhaust port.
- Do not run this product without the electrode. Otherwise, the board may malfunction.
- Make sure that the inspection door is firmly closed before starting operation.
- The setting for assigning the IP address of AC-900 M is described in the construction instructions.





4. Operation (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

AC-900 M setup screen and operation procedure (Continued)

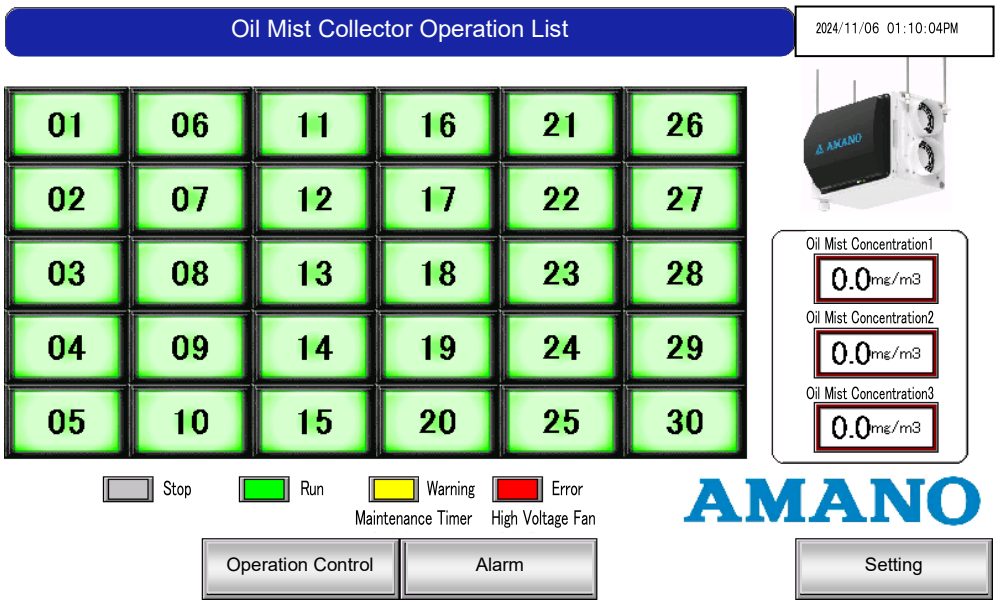
The touch panel displays the "Oil Mist Collector Operation List" screen after performing the initial startup process for approximately one minute after powering on. This screen enables you to check the operating status.

① Operation list screen

<Operation list icon to be touched> Operation List

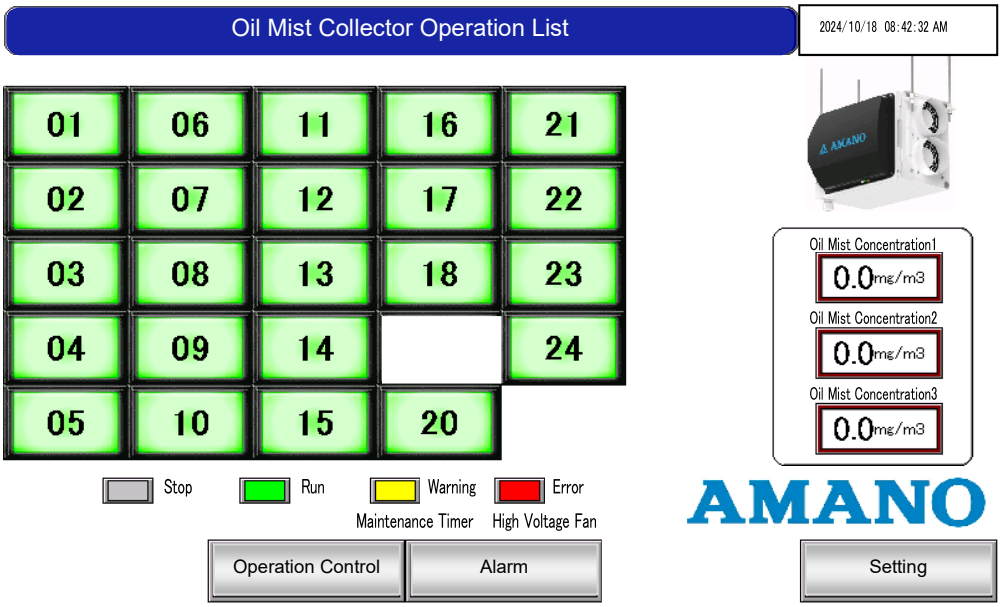
● Display descriptions

The number of connected units is indicated by the serial number. If the number of units is 24, the last serial number is 24.



Serial numbers of unconnected units will be blank as shown in the figure below.

Example: When No.19 is not connected in a configuration of 24 units

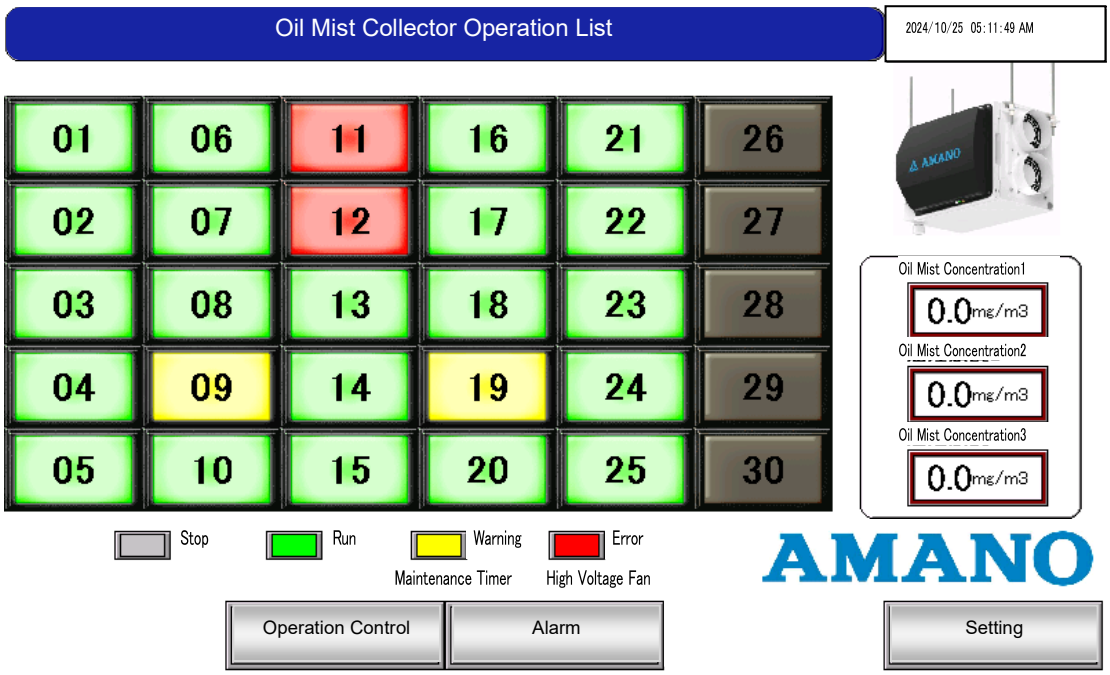


4. Operation (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

AC-900 M setup screen and operation procedure (Continued)

● Description of the display: The operating status (stopping, running, warning, error) is color-coded for each serial number.



Color-coded display of operating status

	Gray	Stopping
	Green	Running
	Yellow	Maintenance time is reached.
	Red	High electricity error/Fan error

When the oil mist sensor is installed, the oil mist concentration is displayed on the right side. Unit mg/m^3

4. Operation (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

AC-900 M setup screen and operation procedure (Continued)

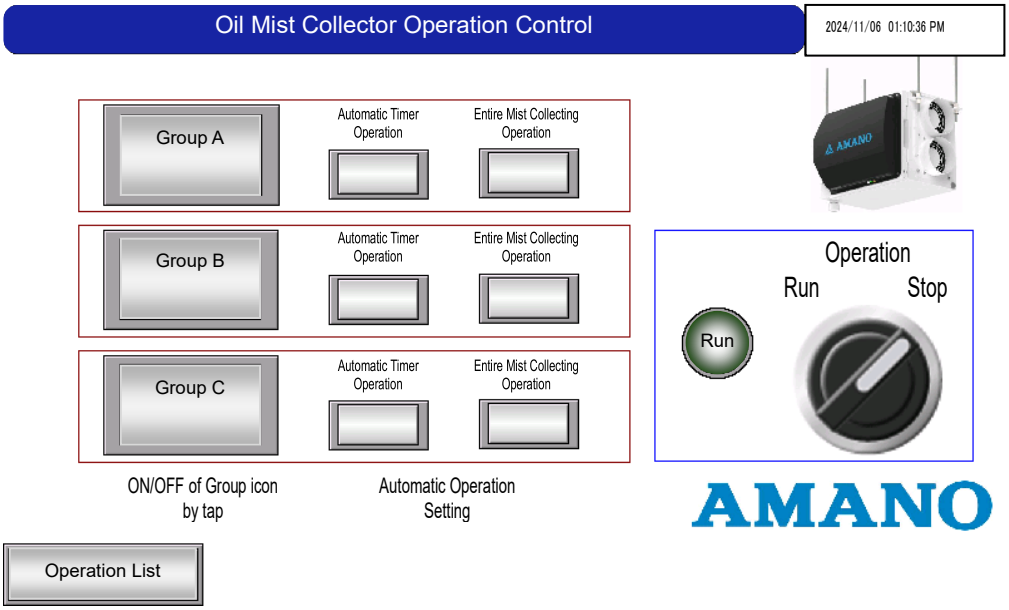
This screen is used for controlling operation. In addition to the "Run" and "Stop" of the selector switch, there are buttons to divide into groups and automatic operation buttons by timer and concentration.

② Operation control screen

<Operation control icon to be touched> Operation control

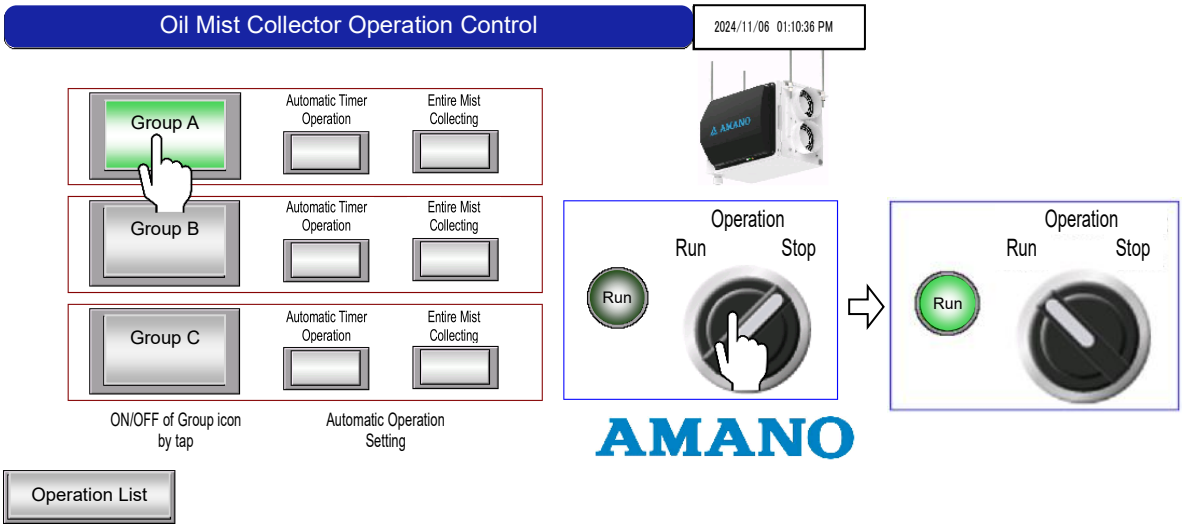
Operation settings by group, automatic timer settings/automatic concentration operation settings

[Screen of all groups not set in a stopping state]



[Settings for operation by group]

- Press to select the group to be operated. (The figure below shows that Group A is selected.)
- When the selector switch of the entire oil mist collecting operation is set to "Run", the target group will run.



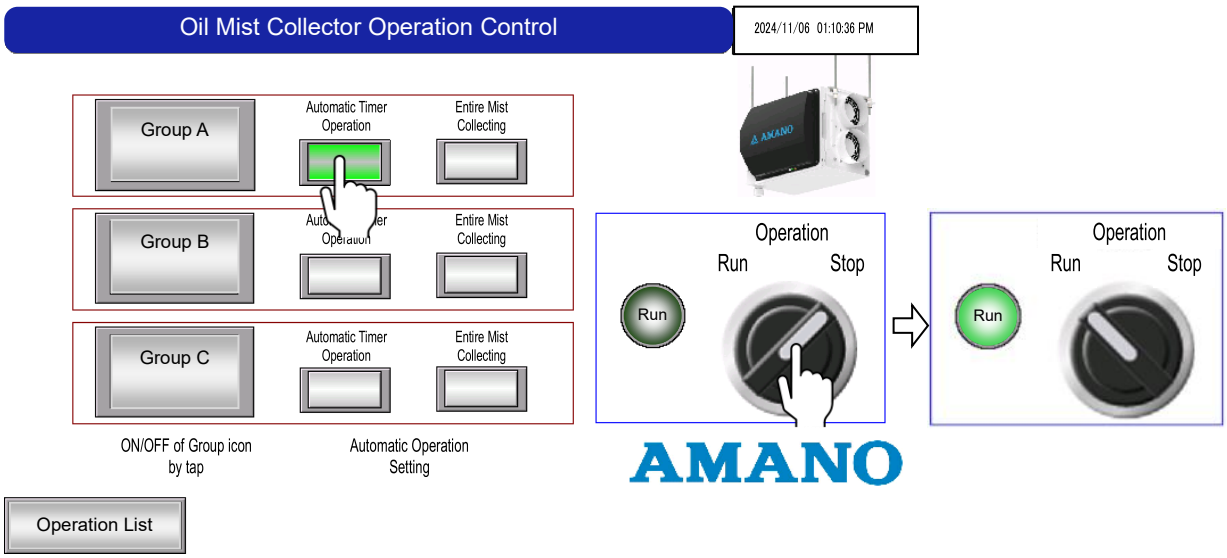
4. Operation (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

AC-900 M setup screen and operation procedure (Continued)

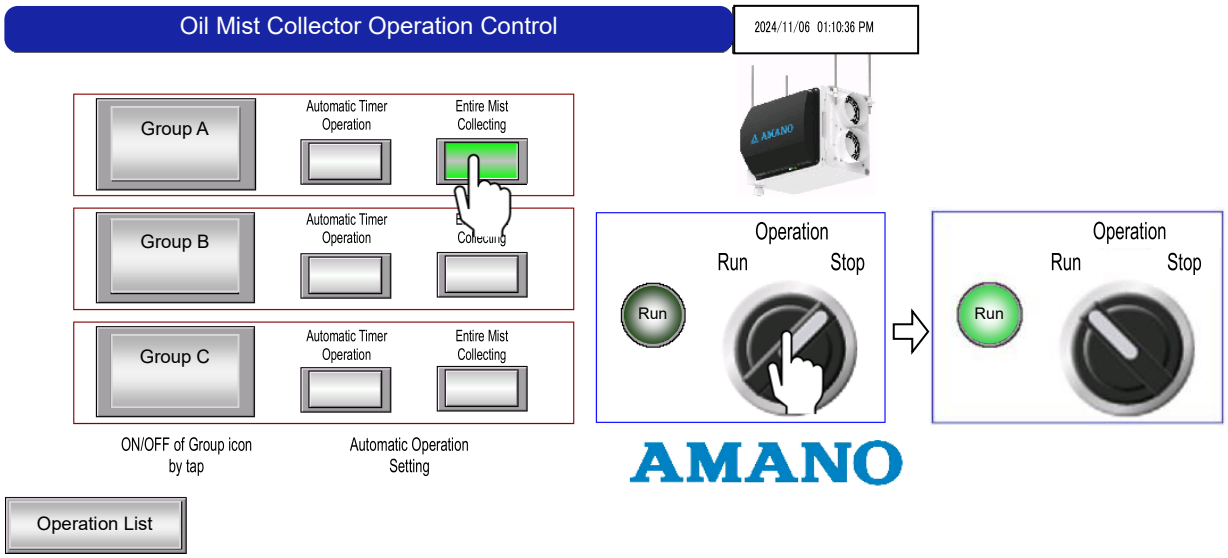
[Settings for automatic timer operation]

- Press Automatic Timer Operation of the group to be operated. (The figure below shows that Group A is selected.)
- When the selector switch of the entire oil mist collecting operation is set to "Run", the target group will run according to the preset time and day of the week.



[Settings for automatic concentration operation]

- Press Entire Mist Collecting of the group to be operated. (The figure below shows that Group A is selected.)
- When the selector switch of the entire oil mist collecting operation is set to "Run", the target group will run while maintaining the preset range of concentrations.



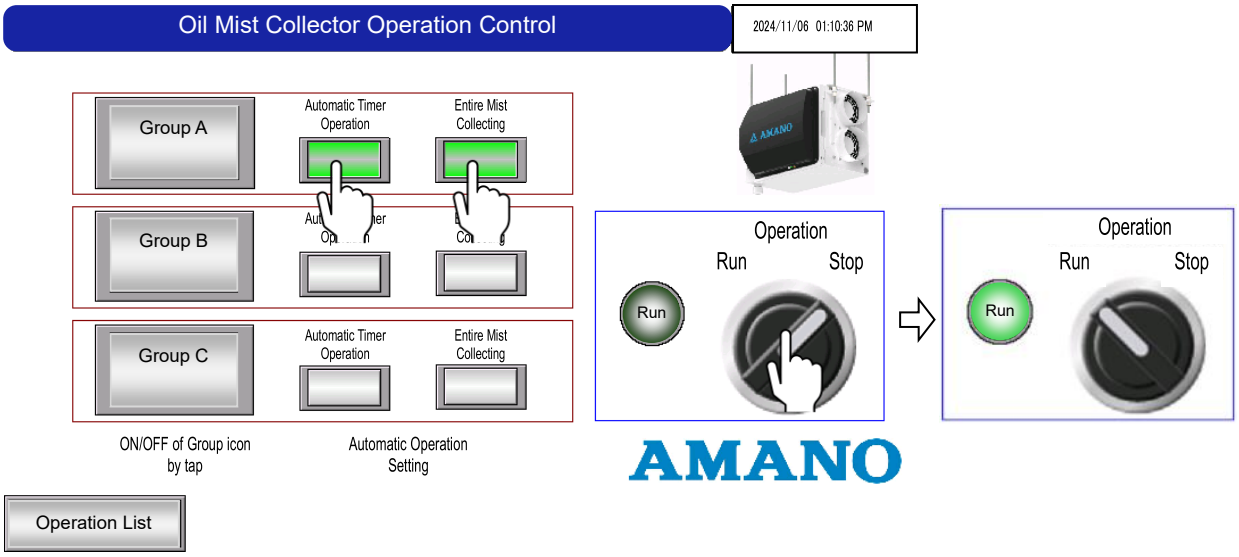
4. Operation (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

AC-900 M setup screen and operation procedure (Continued)

[Settings for both automatic timer operation and automatic concentration operation]

- Press Automatic Timer Operation and Entire Mist Collecting. (The figure below shows that Group A is selected.)
- When the selector switch of the entire oil mist collecting operation is set to "Run", the target group will run according to the preset time and day of the week while maintaining the preset range of concentrations.
- In areas where automatic timer operation and automatic concentration operation overlap, the automatic timer takes precedence.



4. Operation (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

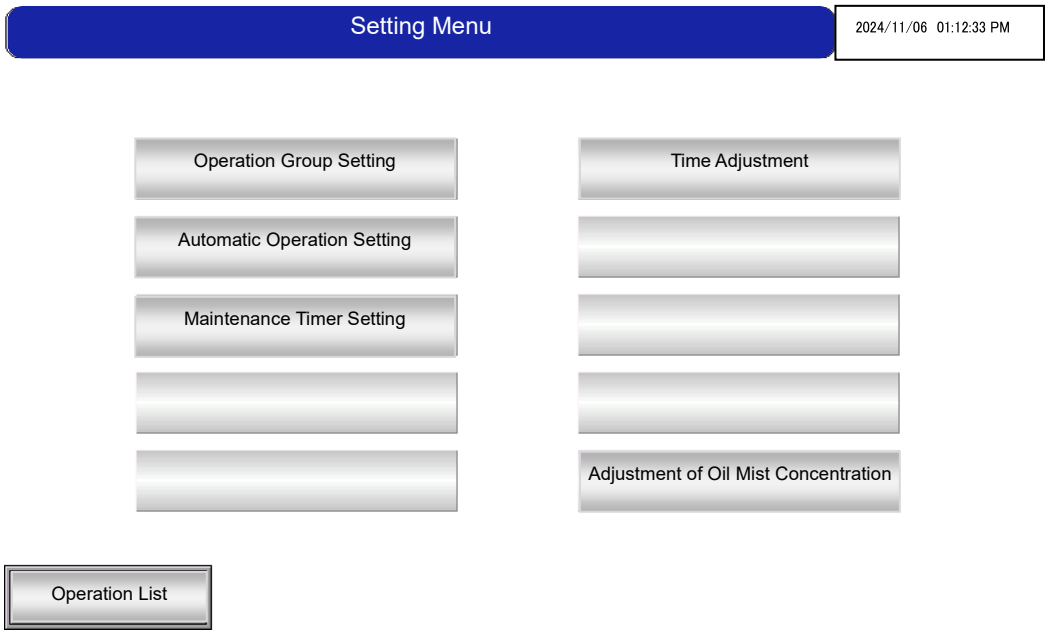
AC-900 M setup screen and operation procedure (Continued)

③ Setting menu screen

<Setting icon to be touched> Setting Menu

[Setting menu screen]

- Automatic Operation Setting, • Operation Group Setting, • Maintenance Timer Setting,
- Adjustment of Oil Mist Concentration, • Time Adjustment



4. Operation (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

AC-900 M setup screen and operation procedure (Continued)

③-1. Operation Group Setting screen

<Operation group setting icon to be touched> Operation Group Setting

- Displays which group each serial number belongs to.
- If you want to make any changes, touch the target serial number and change the group.
- Set the serial numbers of unconnected units to "Pause".

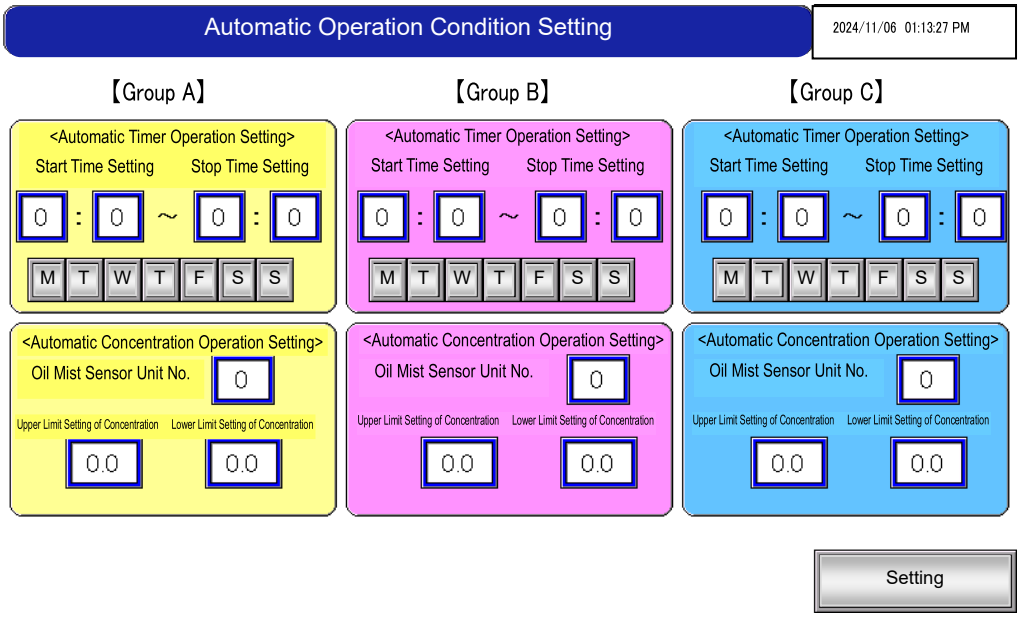
③-2. Automatic Operation Setting screen

<Automatic operation setting icon to be touched> Automatic Operation Condition Setting

Operates automatic timer/concentration operation condition settings of oil mist collector by group.

[Automatic operation condition settings]

Default display screen



4. Operation (Continued)

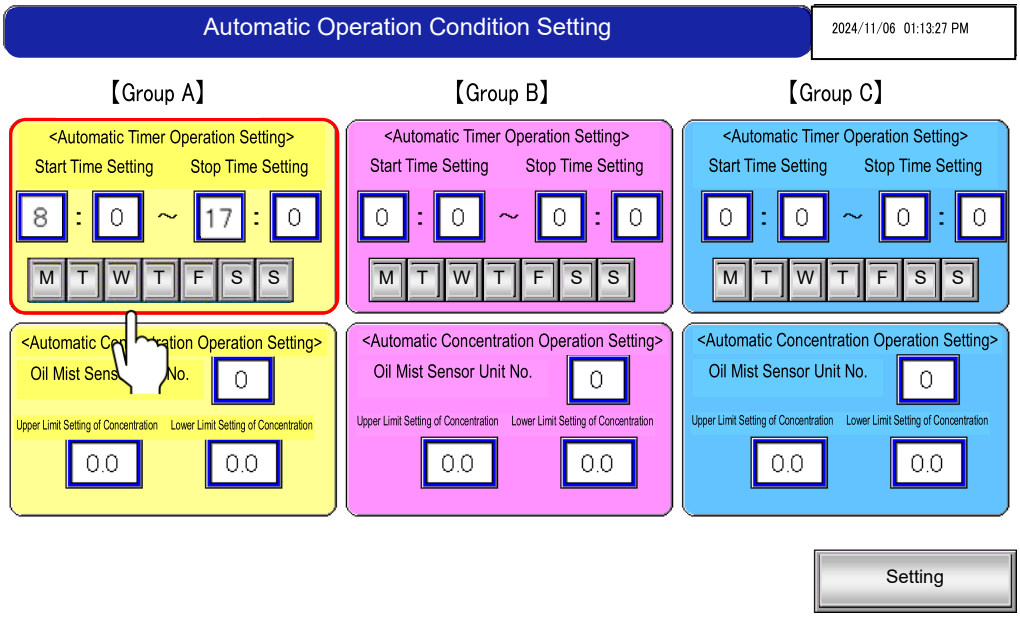
Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

AC-900 M setup screen and operation procedure (Continued)

[Automatic timer operation settings]

- Touch the screen to set the start and stop time.
- Touch the screen to set the day of the week.

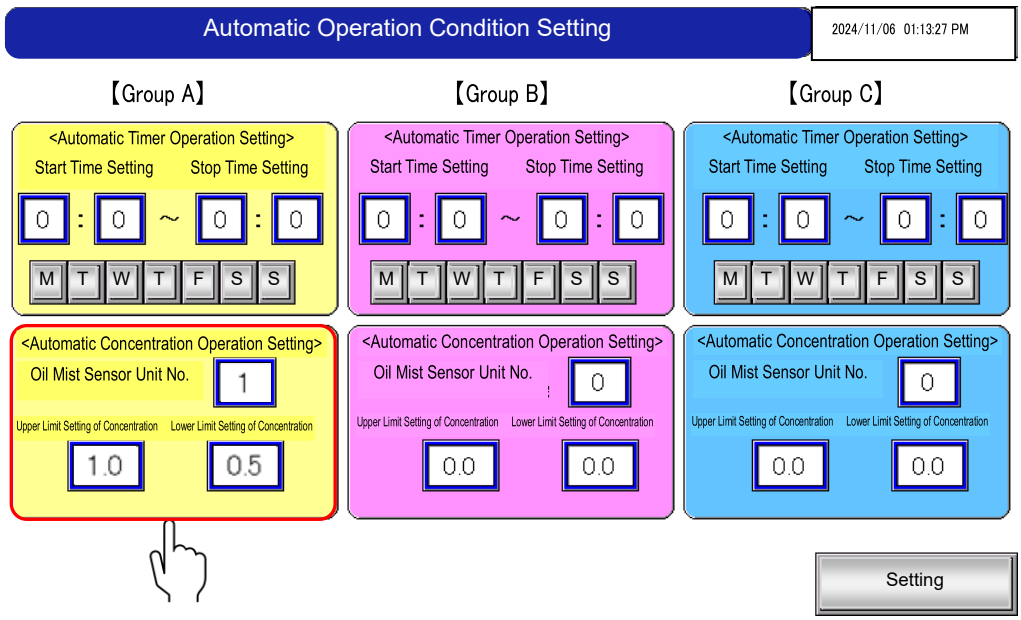
* The settings can be configured by group.



[Automatic concentration operation settings]

- Touch the screen to set the serial number of the unit that will be the oil mist sensor.
- Touch the screen to set the upper and lower limits of concentration.

* The settings can be configured by group.



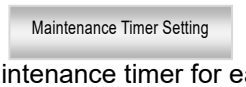
4. Operation (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

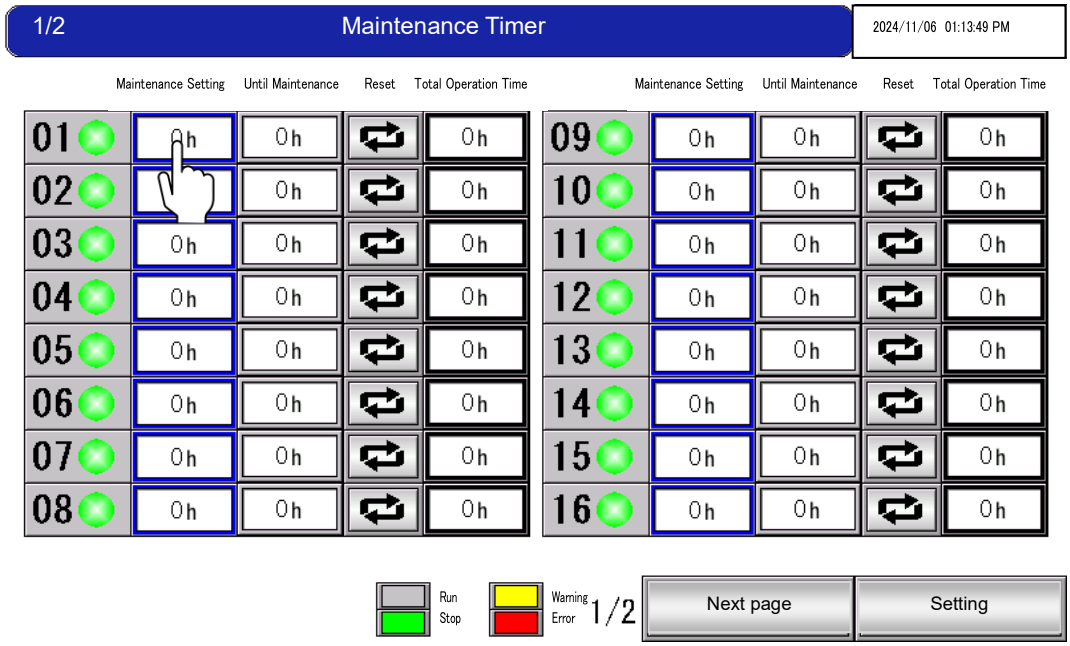
AC-900 M setup screen and operation procedure (Continued)

③-3 Maintenance Timer Setting screen

<Maintenance timer setting icon to be touched>



- Touch the maintenance setting button to set the maintenance timer for each serial number.
- When set, the screen displays the remaining time until maintenance and the accumulated time of operation.
- Pressing the reset button resets the alarm and regains the set time



③-4 Oil mist concentration adjustment screen

<Oil mist concentration adjustment icon to be touched>

<u>* This setting screen is for AMANO staff only. It is not for the user.</u>

- Operates the coefficient to correct the output value of concentration measured by the oil mist sensor.
- Configure this setting for each serial number, if necessary.
- Coefficient input range is 0 to 9.9. AMANO recommended coefficient is 1.8.

4. Operation (Continued)

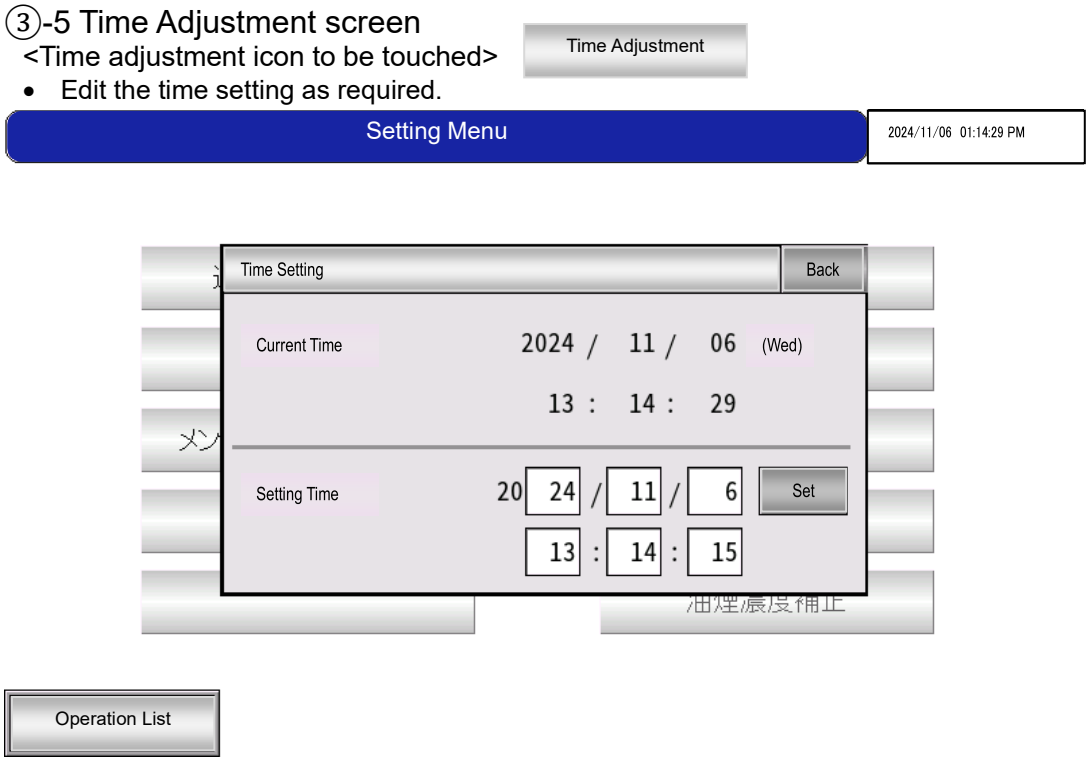
Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

AC-900 M setup screen and operation procedure (Continued)

③-5 Time Adjustment screen

<Time adjustment icon to be touched>

- Edit the time setting as required.



4. Operation (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

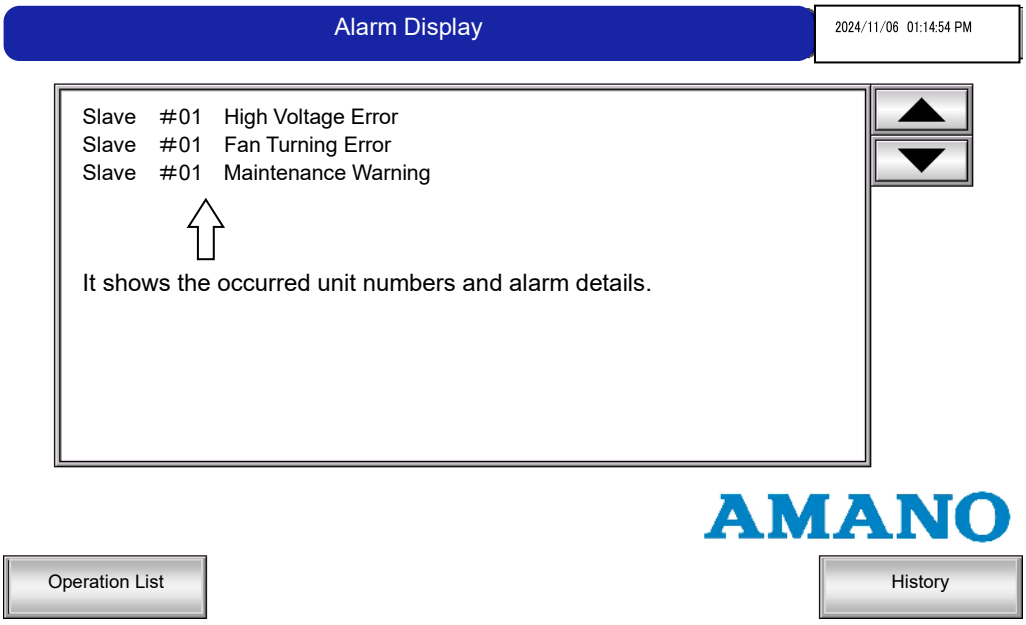
AC-900 M setup screen and operation procedure (Continued)

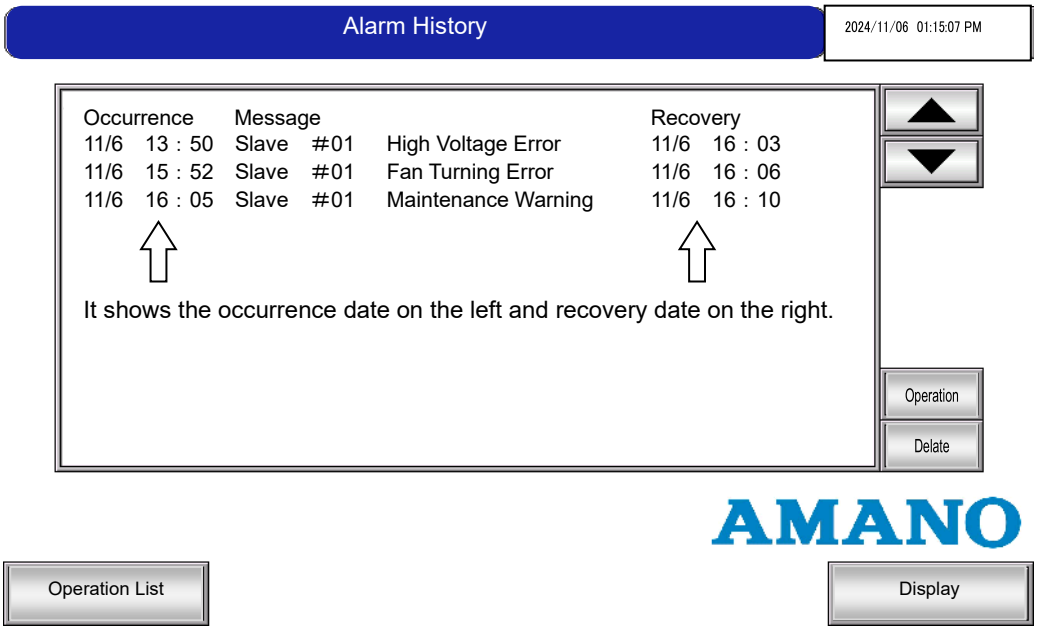
④ Alarm screen

<Alarm icon to be touched>

- The alarm display shows the current alarm status.
- Press the History button to display the alarm history.

(Pressing the Display button on the alarm history screen returns to the alarm display screen.)





5. Maintenance

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

Key points of inspection

IMPORTANT

- Wipe off drops of oil on the floor before starting the inspection and maintenance. Any oil that has dropped on the floor may cause slipping and falls.
- The maintenance work on the user's side should be carried out by personnel who are sufficiently familiar with this apparatus and well trained in its repairs and related electrical engineering.
- If any cleaner or detergent is used for cleaning the collection unit (electrode and primary filter) and the machine, put on appropriate protective wear (goggles, mask, gloves, etc.), and dispose of the waste fluid and accumulated deposit according to the rules and regulations of your company and/or the relevant laws.
- Before opening the inspection door or electrical equipment cover, turn off the primary power supply to this machine.
- Before inspection:
  - If the maintenance or inspection needs working on a high ground, use appropriate protective device against fall. Also, prepare a high-altitude floor and high-altitude lifter suitable for elevated locations.
  - The inspection should begin with turning off the primary power supply before everything.
  - Wait at least 20 seconds before opening the inspection door.
- Cautions during inspection:
  - The primary filter is a consumable, but it can be reused by wiping the dirt off the net. (P.29)
  - The electrode is a consumable, but it can be reused after cleaning. (P.34)
  - Once deformation or damage is observed during an inspection, replace the primary filter and electrode with new ones.
  - When contamination is found on the power feed insulator during an inspection, clean it by wiping it using a dry cloth. If the dirt is sticky and not able to be removed easily, use the waste cloth soaked in degreasing detergent.
  - If this machine is shut down, be sure to inspect and clean the electrode. Failure to observe the above increases the risk of fire.
  - Do not run this machine without the electrode. Failure to observe the above may cause a malfunction.
  - If the electrode is deformed, damaged, or affected by foreign matter, replace it with a new one.
- Caution about inspection frequency:
  - Daily inspections

    Make sure that the indicator lamps light up. Inspection is required when either the POWER lamp (white), HIGH VOLTAGE lamp (orange), or FAN lamp (green) is off.

    Check the oil level using an oil gauge. When the oil level reaches half the height of the oil gauge, open the drain cap and collect the drainage oil in the oil receiver.
  - Inspection every two months

    Check the suspending section. Visually check full thread bolts for any looseness or cracks, and check the installation status of the fall prevention parts.
  - Inspection every six months

    Clean the collection unit (primary filter, electrode) and the inside of the main unit.
  - Item to be checked in unsteady states

    See "Every time a problem occurs" in the "7. Periodic Inspection Table". (P.39)

5. Maintenance (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

Checking the amount of oil suctioned, and the oil-draining procedure

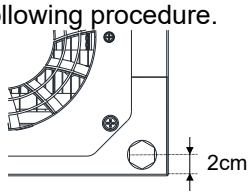
IMPORTANT

- If oil has accumulated beyond the upper limit, the collected oil may leak from the exhaust port.
- When the upper limit (oil level of half the oil gauge) is reached, the amount of oil discharged is approximately 1.8 L.

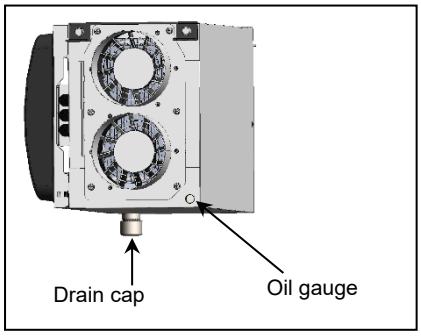
Check the amount of oil suctioned by daily inspection.

1 Check the oil level using an oil gauge.

Check the oil level from the oil gauge window. When the oil level reaches half the height of the oil gauge, stop operations and open the drain cap to discharge oil according to the following procedure.

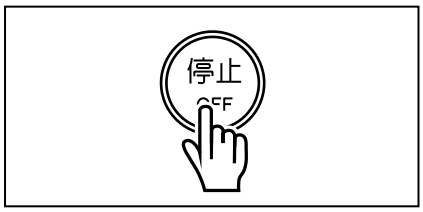


Upper limit: The oil level reaches half way up the oil gauge (2 cm from the bottom).



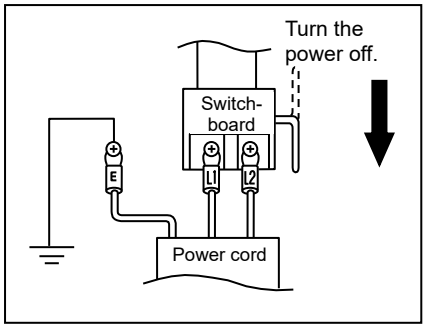
2 Stop operation.

Press the OFF switch. When using the centralized operation panel in the batch control, use the panel to stop operations.



3 Turn the power off.

Be sure to turn off the primary power supply.
Then wait at least for 20 seconds before proceeding to the next step.

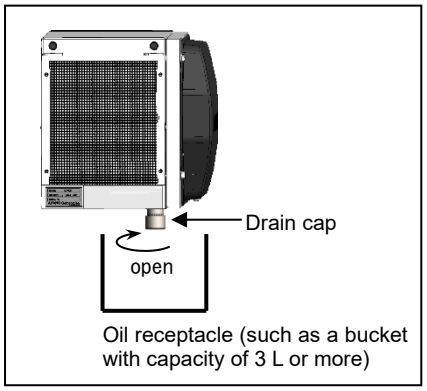


4 Discharge oil.

Once the oil receiver is ready, turn the drain cap counterclockwise to open it and discharge oil. The amount of oil discharged varies depending on the usage environment. When the upper limit (oil level of half the oil gauge) is reached, the amount of oil discharged is approximately 1.8 L. After discharging oil, rewrap the sealing tape at the drain port with new tape before attaching the drain cap.

Caution

Dispose of the collected discharged oil appropriately in accordance with your company rules and related laws and regulations.



5. Maintenance (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

Checking the amount of oil suctioned, and the oil-draining procedure (Optional oil drain bottle)

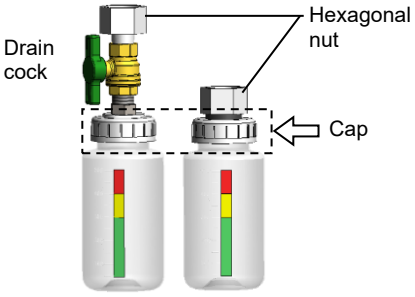
Oil drain bottle（optional）

●An oil drain bottle can be installed.
●Two types are available: with and without a drain cock.
●When the water level reaches the red line, the oil must be drained.
●The drain cock should always be left open, and when draining the oil, close the drain cock and remove the bottle.

<How to install the oil drain bottle>

Make sure that the oil inside the unit is empty.
Remove the drain cap at the bottom and replace it with the bottle.

- Replace while the unit is not in operation.
- When installing the oil drain bottle, rewrap all the sealing tape around the oil drain port of this unit with new sealing tape.（See previous page）
- After removing the drain cap as described on the previous page, tighten the hexagonal nut on the top of the bottle to secure it in place.



Red: 400ml-500ml, drain required
Yellow: 300ml-400ml
Green: 0ml-300ml

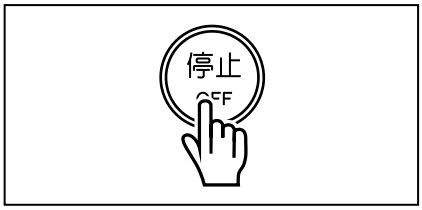
1 Check the oil level in the drain bottle

Check the oil level on the water level sticker. When it reaches the red (400mL to 500mL) line, it needs to be drained.
*If the water level exceeds the red line, it may overflow when the bottle is removed.

If there is a drain cock	After closing the cock, proceed to "④Drain the oil". Be sure to close the cock to prevent oil leakage. If you do not close the cock, follow the steps below for "If there is no drain cock".
If there is no drain cock	Follow the steps below from "② Stop operation" to "④ Drain the oil".

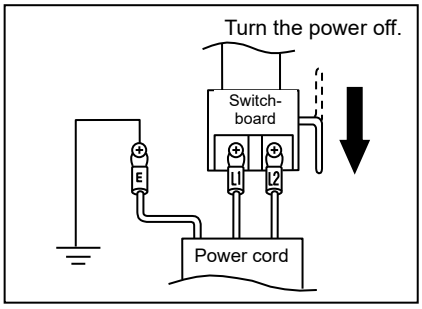
2 Stop operation

Press the OFF switch. When using the centralized operation panel, use the panel to stop operations.



3 Turn the power off

Be sure to turn off the primary power supply.
Then wait at least for 20 seconds before proceeding to the next step.



4 Draining the oil

The bottle can be removed by loosening the cap. After draining the oil, tighten the cap to secure the bottle. (For models with a drain cock, open the cock at all times when using.)

Caution

Dispose of the collected discharged oil appropriately in accordance with your company rules and related laws and regulations.

5. Maintenance (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

Cleaning the primary filter

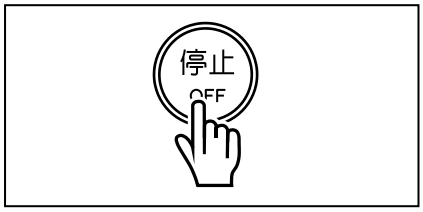
IMPORTANT

- The primary filter is consumable, but it can be reused by wiping the dirt off the resin net.

The cleaning of the primary filter is based on a six-month inspection cycle. The inspection cycle can be shortened or extended depending on the seriousness of contamination.

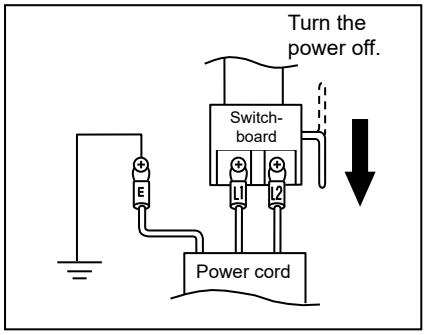
1 Stop operation.

Press the OFF switch. When using the centralized operation panel, use the panel to stop operations.



2 Turn the power off.

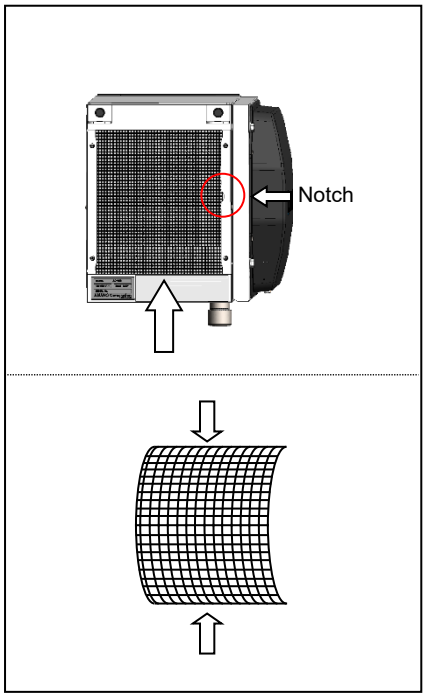
Be sure to turn off the primary power supply.
Then wait at least for 20 seconds before proceeding to the next step.



3 Clean the primary filter.

Wipe off the dirt on the outer surface of the primary filter with a cloth containing detergent. If any deformed or broken part is detected, replace the primary filter with a new one. As the mesh filter is made of soft resin, it becomes deformed when you apply force from the up/down direction or from the left/right direction to the center. Use this deflection to remove and install it.

- Remove the mesh filter by hooking your finger on the notch.
- When installing, position the notch (located to the right) last. Position the other three sides first.



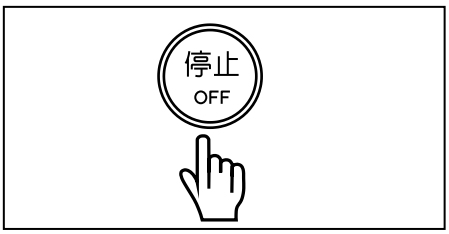
5. Maintenance (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

Opening and closing the inspection door

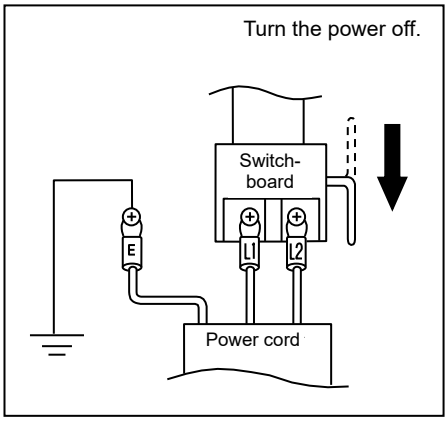
1 Stop operation.

Press the OFF switch. When using the centralized operation panel, use the panel to stop operations.



2 Turn the power off.

Be sure to turn off the primary power supply.
Then wait at least for 20 seconds before proceeding to the next step.

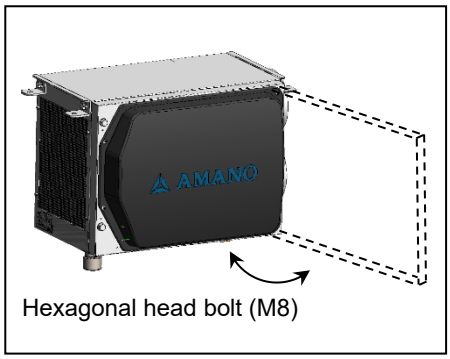


3 Open the inspection door.

Unscrew the hexagonal head bolt from the inspection door, and open the inspection door.

Caution

Wipe off any oil that has adhered to this machine or gasket of the inspection door.



4 Close the inspection door.

Secure the inspection door by firmly tightening the removed hexagonal head bolt to prevent looseness.

Caution

This machine will not start unless the limit switch of the safety device on the inspection door is activated (i.e., the door is closed). Therefore, ensure the inspection door is securely closed.
To prevent deformation of the hexagonal head bolt, do not use an electric screwdriver.

5. Maintenance (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

Inspecting the electrode

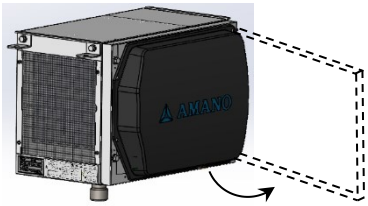
IMPORTANT

● Follow "Opening and closing the inspection door" on the previous page to open the inspection door.

Inspection and cleaning of the electrode is based on a six-month cycle. The inspection cycle can be shortened or extended depending on the seriousness of contamination.

1 Open the inspection door.

Unscrew the hexagonal head bolt from the inspection door according to the "Opening and closing the inspection door" procedure on the previous page, and open the inspection door.



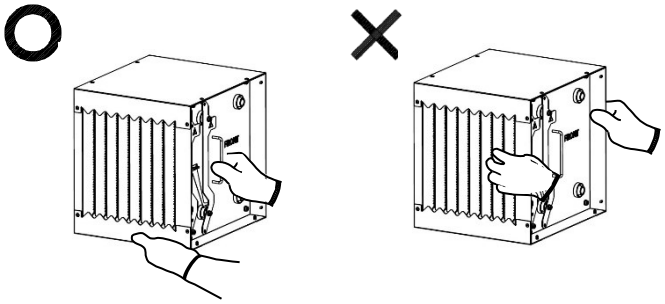
Hexagonal head bolt (M8)

2 Pull out the electrode.

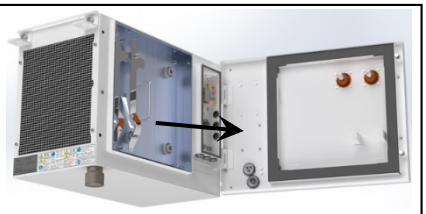
Gently pull out the electrode while holding the grip of it. When the electrode is pulled out halfway, pull it out of the machine supporting the bottom with your hand.

Caution

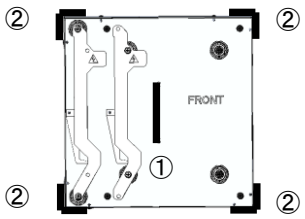
When holding the electrode by hand, do not hold it in such a way that your finger touches the internal discharge brush. Not observing the above may deform the discharge brush. (See the figure below.)

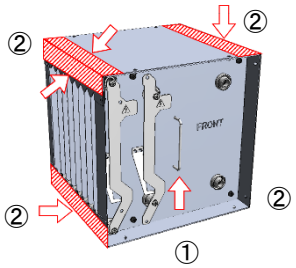


Do not hold it in such a way that your finger touches the discharge brush.



Pull out the electrode gently.





<Positions you can hold>

① Handle at the center

② The part where the top plate and the bottom plate intersect with the side plate, and the part where they are both planes (Do not hold any parts other than those mentioned above as they may be deformed.)

5. Maintenance (Continued)

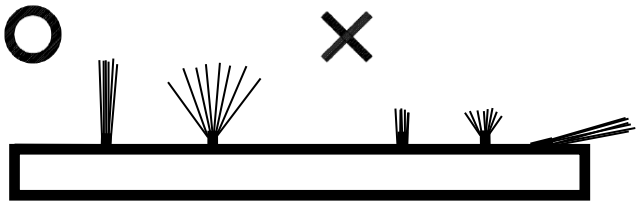
Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

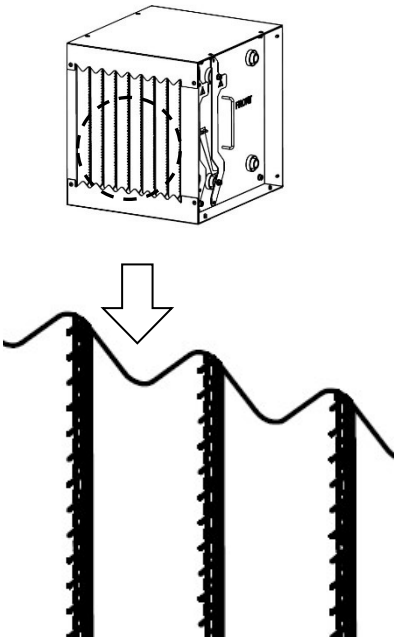
Inspecting the electrode (Continued)

3 Inspect the electrode.

Check it for contamination (for example, contamination at the tip of the discharge brush), deformation, and breakage. If contaminated, clean the electrode according to "Cleaning the electrode". If any deformed or broken part is found, replace the electrode with a new one. In addition, if the bristle tip of the discharge brush becomes short or the brush falls significantly (close to 90°), the collection performance will decrease. In that case, replace it with a new electrode.

<Reference example of the discharge brush>

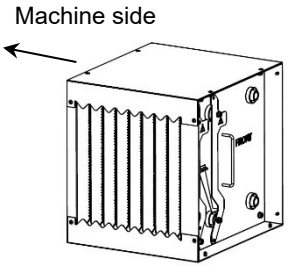




Check for contamination, and if contamination is at unallowable level, clean the electrode.

4 Install the electrode and close the inspection door.

When installing the electrode in the machine, face the electric charging side (where you see the discharge brush) toward the suction port, and push it gently all the way along the guide of the machine. Then shut the inspection door after finishing the installation.



To reinstall, first make sure that the electric charging side (where you see the discharge brush) toward the suction port.

5. Maintenance (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

Important points regarding cleaning the electrode and the inside of the machine

IMPORTANT

<Preparation>

- Wear appropriate protective safety gear such as safety glasses and gloves.
- Before opening the inspection door or electrical equipment cover, turn off the primary power supply to this machine.
- The metallic side plates are very slippery due to oil on the surfaces. Be very careful not to cut your fingers etc. on the bent edges.

<Detergent>

- Do not use any inflammable substances when cleaning the electrode and the machine. If any inflammable substances or liquids remain when operation is started, they may cause a fire or explosion.

[Banned inflammable substances]

  - Inflammable liquid such as gasoline, kerosene, thinner, toluene, etc.
  - Inflammable cleaner (cleaners such as marked as parts cleaner, brake cleaner, etc.)

- Use a degreasing detergent to remove oil from the electrode and to clean this machine. When using the detergent, be sure to follow the instructions regarding the container.
- Any detergents (strongly acidic and strongly alkaline substances, etc.) that are likely to cause corrosion cannot be used.
- Use a detergent that will not cause the electrode to rust, become deformed, or corrode.
  - Recommended water-based degreasing detergent: AMANO "Degreaser II" Parts No: VF-434300

<Cleaning method>

- Dilute detergent to the specified concentration, and immerse the contaminated electrode in the diluted detergent for about 10 minutes, and wash off the dirt. (Change the soaking time according to the seriousness of contamination. The longer the soaking time, the better the cleaning effect, but it should be up to 12 hours.)
- The cleaning liquid at the temperature between 50°C and 60°C proves the best cleaning performance.
- Important point to note when using cleaning goods:

  [Banned cleaning goods and acts]

  - High-pressure water sprayer (including equipment spraying high-pressure water by water hose)
  - Ultrasonic cleaning machine
  - Brushes with hard tips, such as an iron brush
  - Large brush that exerts an external force on the electrode
  - Cleaning liquid or water with a temperature exceeding 60°C
  - Using the cloth on the discharge brush tip

<Post-cleaning action>

- Used cleaning liquid must be disposed of according to your company’s regulations and/or relevant laws and regulations.
- To prevent performance deterioration, install the electrode correctly.
- Be sure to dry the electrode after cleaning, and install the dried electrode (with no water drops) in the machine.

5. Maintenance (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

Cleaning the electrode

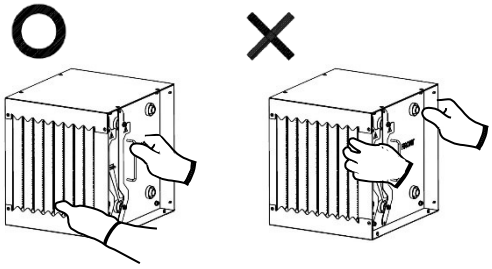
Inspection and cleaning of the electrode is based on a six-month cycle. The inspection cycle can be shortened or extended depending on the seriousness of contamination.
Furthermore, if the HIGH VOLTAGE lamp (orange) turns off and does not work, please wash the electrode according to the following steps regardless of the extent of contamination. For the procedure to open/close the inspection door and pull out the electrode, follow the procedure described in the preceding sections.

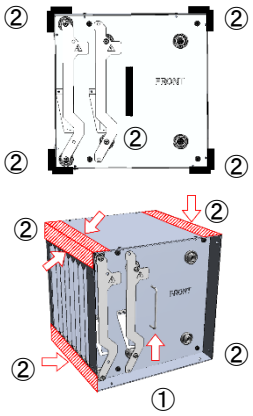
1 Pull out the electrode.

Open the inspection door and pull out the electrode.

Caution

When holding the electrode by hand, do not hold it in such a way that your finger touches the discharge brush. Not observing the above may deform the discharge brush. (See the figure below.)





<Positions you can hold>
① Handle at the center
② The part where the top plate and the bottom plate intersect with the side plate, and the part where they are both planes (Do not hold any parts other than those mentioned above as they may be deformed.)

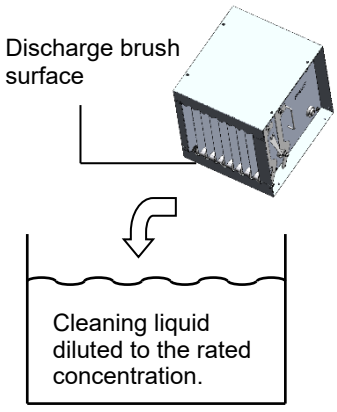
2 Put the electrode in the cleaning liquid.

Pull the electrode out of the machine, put the correctly water-diluted degreasing detergent in the container, and immerse the electrode in the detergent for 10 minutes. Gently place the electrode into the cleaning liquid so that the discharge brush faces down.

* When you use AMANO's "Degreaser II" (Part No. VF-434300) as the degreasing detergent, dilute it to the rated concentration (40 times dilution).

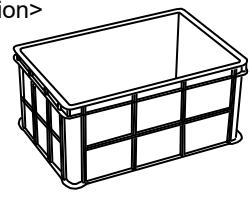
Caution

If it is difficult to remove the contaminants after immersing for 10 minutes, implement the following procedure.
- After immersing it for about two hours, air blow it to remove the contaminants.



Put the discharge brush facing down to the cleaning liquid.

<Option>



Cleaning tray for electrode
Part No.: NFQ-835000

5. Maintenance (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

Cleaning the electrode (Continued)

3 Remove contamination from the electrode.

Rinse the electrode to remove adhered dirt. Sometimes adhered resin marks may be left behind on the cleaned electrode surfaces. Please note that these do not need to be removed by force.

Caution

Do not use a brush or pressure washer to clean the electrode.
The air blow can be used on the outside of the electrode, but not on the discharge brush on the inside of the electrode.

4 Rinse the electrode using room-temperature or warm water

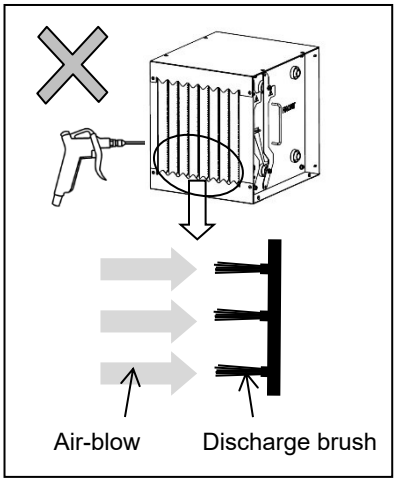
Rinse the electrode using room-temperature or warm water so that no cleaning liquid is left on the electrode. Insufficient rinsing can cause rust or deformation of the electrode, and may negatively impact the designed performance.

5 Dry the electrode.

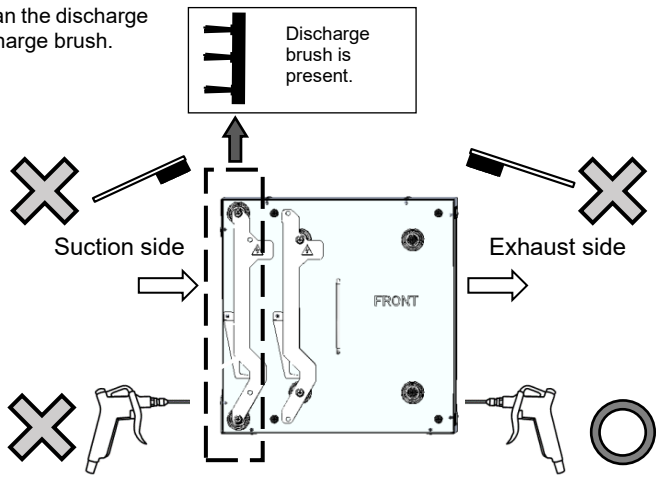
Dry completely the water drop attached with the flame or insulator of the electrode by taking wiping or air blow. (Do not use air blow for the discharge brush.)

Caution

- If the electrode is installed in an insufficiently dry state (with water droplets still attached), it may cause abnormal spark discharge. Be sure to completely dry it after rinsing it using room-temperature or warm water.
- Do not air blow water droplets off the discharge brush. Not observing the above may damage the discharge brush.
  (Air blow can only be used outside the electrode)



Do not use a brush, pressure washer, or air blow to clean the discharge brush. Not observing the above may damage the discharge brush.
Air blow can only be used outside the electrode.



5. Maintenance (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

Cleaning the electrode (Continued)

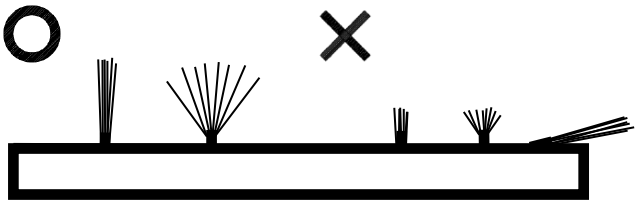
6 Check the condition of the feed plates.

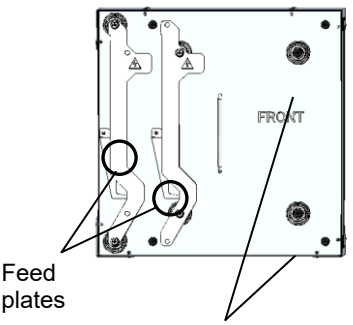
The feed plates and resin insulators should be checked for dirt and contaminants, and if any are found, wipe them off using a dry cloth. If the dirt is sticky and not able to be removed easily, use the waste cloth soaked in degreasing detergent. If the feed insulator section (feed springs) is also contaminated, clean it likewise.

7 Check the condition of the electrode.

Before installing the cleaned electrode back into the machine, check to ensure the plates are free from foreign substances, deformation, and bends. Any foreign substances on the electrode will cause abnormal spark discharge. In addition, if the bristle tip of the discharge brush becomes short or the brush falls significantly (close to 90°), the collection performance will decrease. In that case, replace it with a new electrode.

<Reference example of the discharge brush>





If the feed plate, resin insulator, or feed insulator section (feed springs) are dirty, wipe off any contaminants.

8 Install the electrode.

Install the electrode and close the inspection door.

Note

If abnormal sparks occur frequently even after the electrode is cleaned, the electrode needs to be replaced.

5. Maintenance (Continued)

Be sure to read "1. For Safe Operation" (on pages 3 to 7), and use the product correctly.

Cleaning the inside of the machine

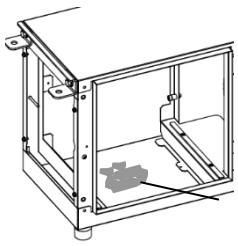
Follow the procedures provided in the preceding sections for opening/closing the inspection door to remove the collecting unit (primary filter and electrode). If you do not clean inside the machine, substances are likely to accumulation inside, which may ignite and cause an explosion or fire.

1 Pull out the collecting unit.

Open the inspection door and pull out the collecting unit (primary filter and electrode).

2 Remove the contamination adhered to the machine.

Remove and clean adhered or accumulated material from inside the machine. At this time, it is recommended that a resin brush is used to make cleaning easier.



Be sure to remove any material that has accumulated inside the machine.

3 Check the condition of the oil drain port.

Check whether the oil drain port is clogged or not. If clogged, clear the clogging substances.

4 Install the collecting unit.

First, make sure that the inside of the machine is completely dry, then install the collecting unit (primary filter and electrode) and close the inspection door.

6. Troubleshooting

Immediately after an error occurs during operation, stop the power supply for safety reasons and inspect the error.
If the problem persists, you should not attempt to carry out repairs by yourself. Please contact your local AMANO office.

State	Problem	Cause	Corrective action
Fan does not run.	The machine will not start even though the ON switch (panel operation) has been pressed. The POWER lamp is off.	Power is not supplied.	Check the power source.
		The power cord is broken.	Check the broken part and repair or replace the power cord.
		Electricity outage	Wait for power to recover.
		Failure of the switching power supply (DC power supply)	Replace the switching power supply
	The machine will not start even though the ON switch (panel operation) has been pressed. The FAN lamp is off.	Fan has failed.	Replace the fan.
		The inspection door opens. (The limit switch has worked.)	Close the inspection door correctly.
		Incorrectly configured or unconfigured IP address (M type)	Configure the setting.
		Incorrectly connected connector	Connect the connector correctly.
		Power voltage is unstable.	Stabilize the power voltage.
	The machine came to a sudden stop during operation.	Power failure has occurred.	Stabilize the power voltage.
		Abnormal spark discharge or short-circuit has occurred in the electrode.	When it is caused by contamination, clean or replace the electrode. When it is caused by deformation or damage, replace it.
		Fuse on the board has burnt out.	Replace the fuse to new one.
		Electricity outage	Wait for power to resume.
The fan is running.	Poor suction	The suction port is clogged.	Eliminate the cause of the blockage.
		Clogged primary filter	Clean or replace the primary filter.
		Poor seal on the inspection door	Close the inspection door so that there are no gaps.
	Poor suction One of the FAN lamps is off.	One of the fans has failed. (S type)	Replace the fan.
	Cannot collect mist.	The upper limit of holding suctioned oil has been exceeded.	Discharge oil.
		Dirt adheres to the electrode.	Clean the electrode.
	Cannot collect mist. The machine is shut down. (HIGH VOLTAGE lamp is off.)	Abnormality of the electrode (deformation, etc.)	Check the electrode and eliminate the cause.
		The discharge brush is damaged.	Ask your nearest AMANO office or dealer for a replacement.
	Abnormal discharge occurs such as sparking.	Dirt adheres to the electrode.	Clean the electrode.
		Abnormality of the electrode (deformation, etc.)	Check the electrode and eliminate the cause.
		The discharge brush is damaged.	Ask your nearest AMANO office or dealer for a replacement or repair service.
	An abnormal vibration, noise, or smell occurred.	Fan error	Check the fan for the installation status or a failure. If any exist, replace it.

Caution

- During the inspection, be sure to shut down the machine and use the appropriate personal protective equipment and machinery to help ensure safety.

7. Periodic Inspection

The frequency of checks differs depending on the usage conditions of the oil mist collector. The following checking frequency is for reference purposes only, and is not a guaranteed frequency. The checking frequency may need to be set earlier depending on the inspection regulations.

Location to inspect	Inspection period			Relevant standards	Method and description
	Every day	Every two months	Every six months		
Lamp lighting	○				① Check the lighting of each lamp (POWER lamp (White), FAN lamp (Green), HIGH-VOLTAGE lamp (Orange)).
Amount of oil suctioned	○				① Check the retained oil level using an oil gauge. ② Upper limit: The oil level reaches half way up the oil gauge.
Suspending section		○			① Visually check for looseness and cracks of full head bolts ② Visually check the status of the fall prevention products
Oil drainage		○			① Drain the suctioned oil (every two months or when the oil level reaches half of the gauge)
Cleaning inside of the main unit			○		① Clean the interior with the inspection door open and the electrode removed.
Primary filter			○		① Wipe off any dirt on the exterior. ② Replace the part, if necessary.
Electrode			○	HIGH VOLTAGE lamp is off	① Check the installation condition. If incorrect installation is discovered, install it correctly. ② Inspect the seriousness of contamination and check for damage. If contaminated, clean it off. If damaged, replace it. ③ If the HIGH-VOLTAGE lamp is off, or the exhaust air contains mist, clean it regardless of the extent of contamination.
Suspending section			○		① Increased tightening of full head bolts
Power cord terminal	Whenever there is a problem				① Check the power cord for deterioration, damage, and poor installation. If the sheath is torn and bare wires are exposed, stop using it and replace it. ② When a power plug is used, check it for breakage and deformation. ③ Tighten screws of the power cord and the terminal on the fan side so that they are not loose.
Feed plates Feed spring	Whenever there is a problem			HIGH VOLTAGE lamp is off	① Inspect the seriousness of contamination and check for damage. If contaminated, wipe it off. If damaged, contact your local AMANO office or dealer regarding replacement.
Power feed section on the machine side	Whenever there is a problem			HIGH VOLTAGE lamp is off	① Inspect the seriousness of contamination and check for damage. If contaminated, wipe it off. If damaged, contact your local AMANO office or dealer regarding replacement.
Fan section	Whenever there is a problem			FAN lamp is off	① Check operation of the limit switch on the inspection door. ② Check the power cord and terminal. ③ Check fans.

Caution

- Observe operation and maintenance instructions, and implement daily inspections and routine checks.
- If applicable laws and regulations exist, strictly comply with them.
- During the inspection, be sure to shut down the machine and use the appropriate personal protective equipment and machinery to help ensure safety.

8. Specifications

Machine

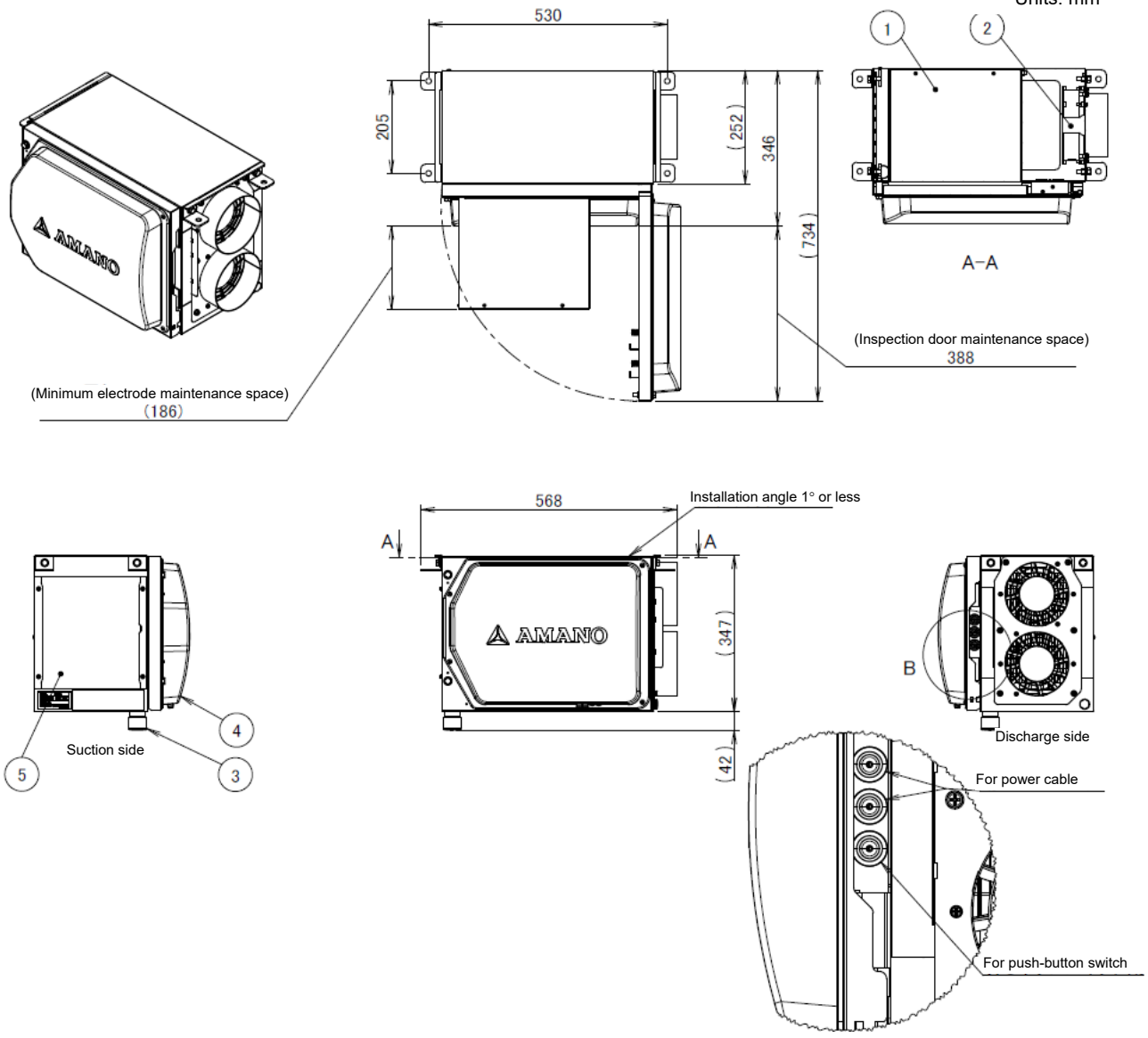
Model		AC-900 S	AC-900 M
Power supply		100 to 220V ±10%, single phase 50/60Hz commonly used.	
Control voltage		DC 24V	
Rated power consumption [W]		130	
Noise [dB (A)]		Max. 60±2 [3m machine-side]	
Dimensions (W×D×H)[mm]		346×568×345	401×568×345
Weight [kg]		20	23
		(30 or less with suctioned oil condition holding amount and optional parts included)	
Airflow [m^3/min]		15	
Electric collecting section	Charge type	Negative charging system	
	Charging section	Brush charge method	
	Charging section voltage HV [kV]	-6 (8 rows)	
	Collecting section voltage LV [kV]	-5 (16 rows)	
	Electrode weight [kg]	5	
Initial collecting efficiency [%]		70 (gravimetric mean particle size 1.2μm)	
Collecting target		Oil mist leaking from a local dust collector attached to a metal-working machine Mist with pH between 7.0 and 10.5 Oil mist with flash point over 80°C Water soluble mist with less than 300mS/m of electrical conductivity	
Permissible suctioned air temperature [°C]		0 to 40	
Permissible suction mist concentration [mg/m^3]		Max. 2	
Usage environment temperature [°C]		0 to 40	
Usage environment humidity [%RH]		10 to 90	
Usage environment mist concentration [mg/m^3]		Max. 2	
Safety device		Inspection door limit switch	
Oil drain port		One-inch nipple (tapered screw for R1 pipe)	
Accessory		Manual operation switch box	Communication hub (built-in) Smart relay (built-in)

These specifications are for the standard models for domestic use in Japan.
The specifications for non-standard models may differ.
The data above are subject to change without notice.
Power supply voltages other than the above specifications (abnormal voltage, three-phase power supply) cannot be used.
Install and operate the entire oil mist collectors in multiple units, with an estimate total processing air volume equivalent to 7.5 to 10 ventilation cycles/h.

9. External Dimensions

<AC-900 S>

Units: mm

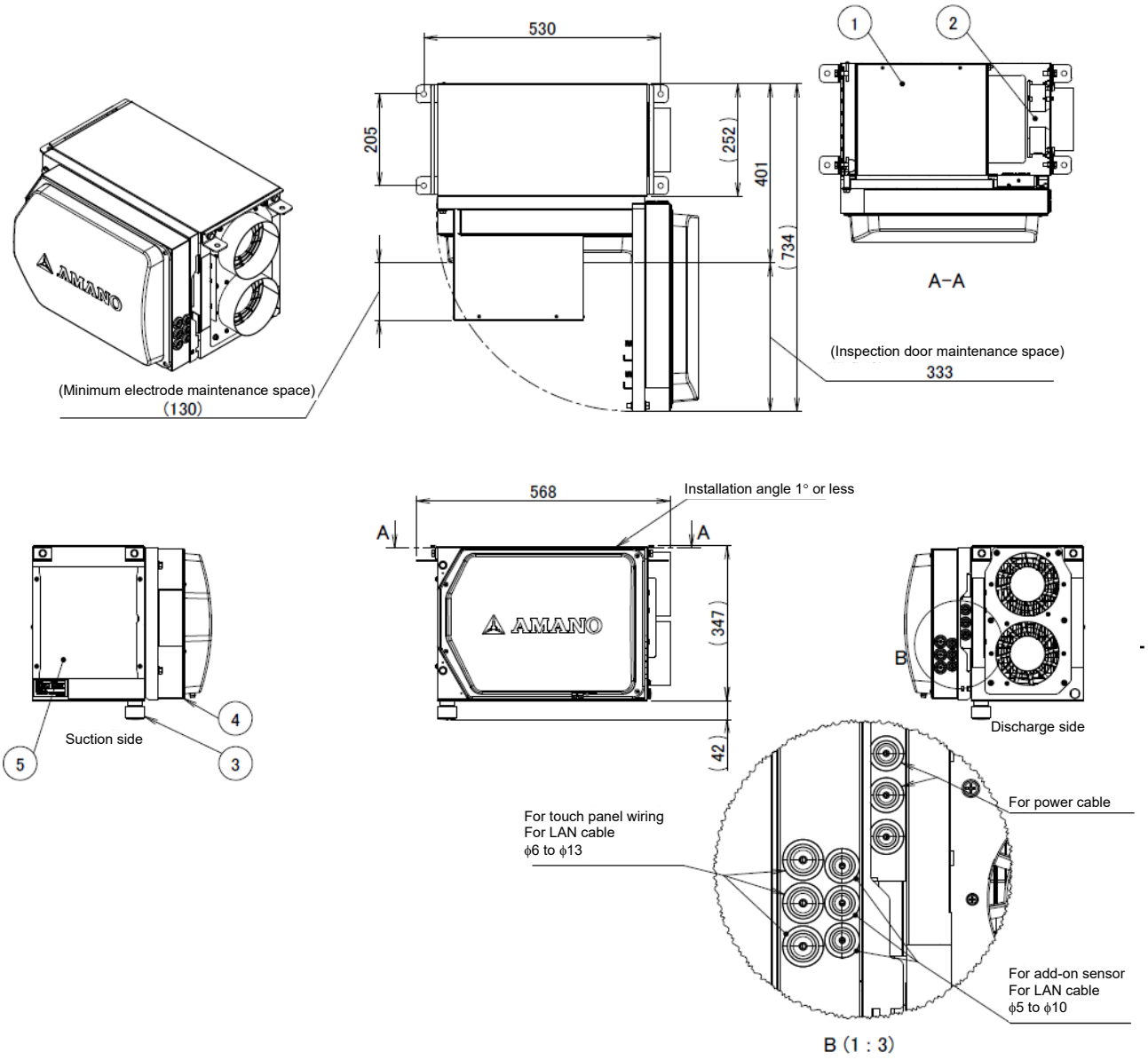


No,	Name	Qty	Remarks
①	Electrode	1	295×293×265 (mm) 5kg
②	Fan	1	DC axial flow type (two units)
③	Oil drain port	1	One inch
④	Inspection door	1	
⑤	Primary filter	1	

9. External Dimensions (Continued)

<AC-900 M>

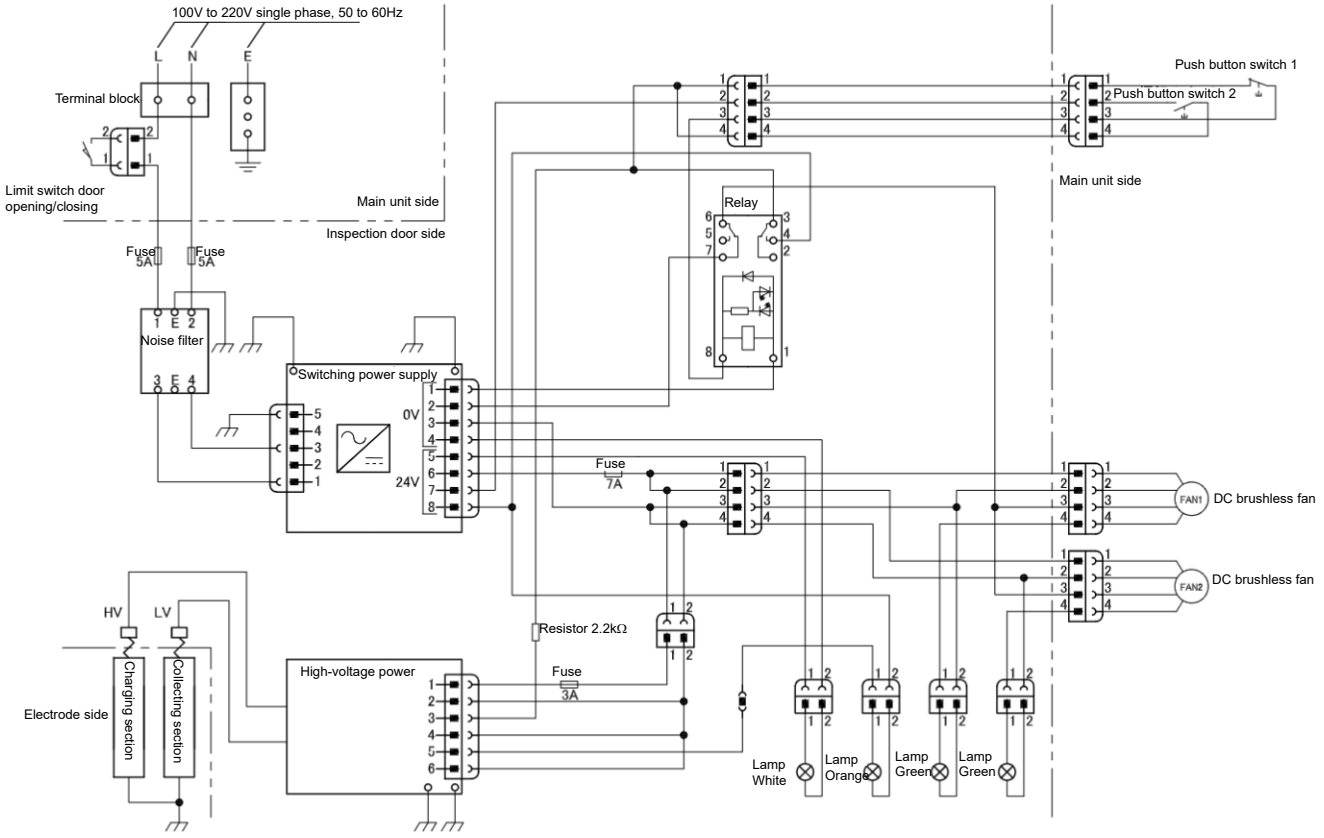
Units: mm



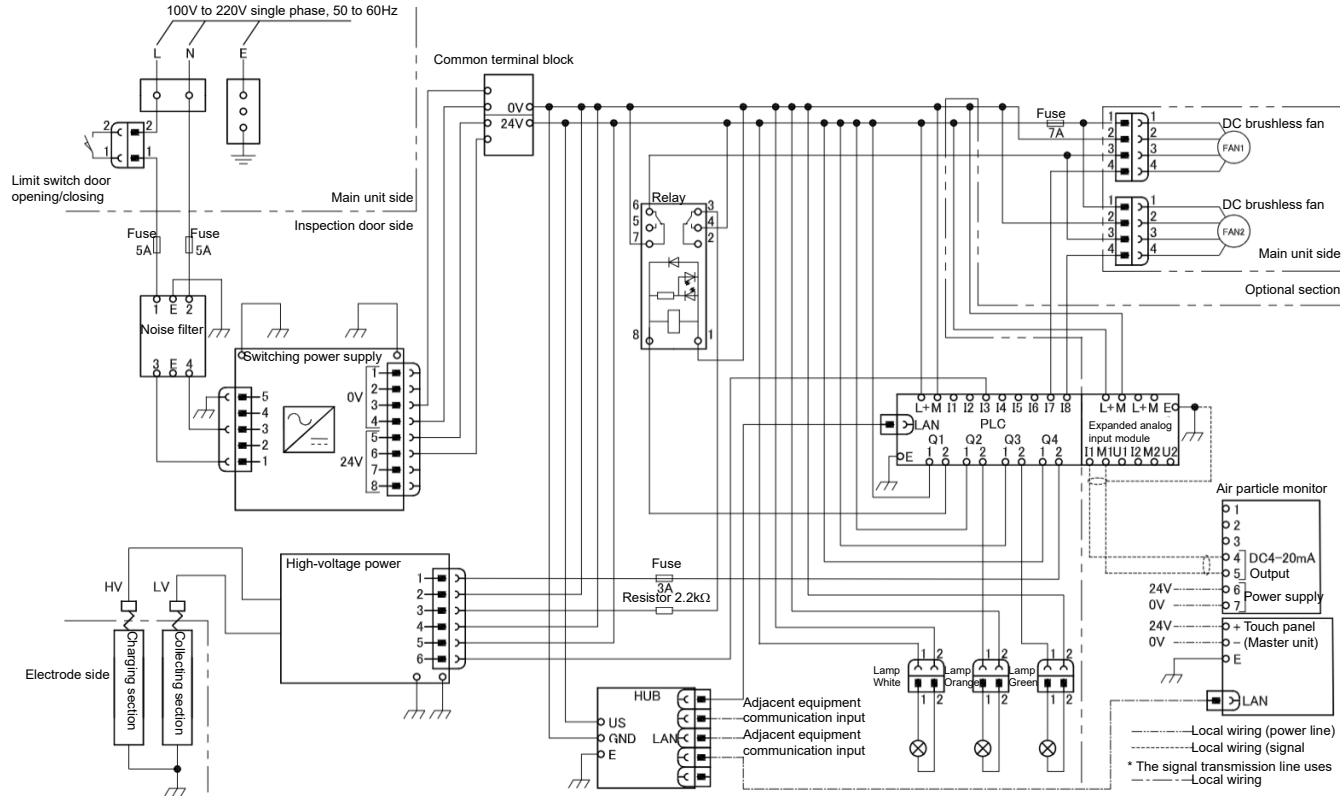
No,	Name	Qty	Remarks
①	Electrode	1	295×293×265 (mm) 5kg
②	Fan	1	DC axial flow type (two units)
③	Oil drain port	1	One inch
④	Inspection door	1	
⑤	Primary filter	1	

10. Wiring Diagram

<AC-900 S>



<AC-900 M>



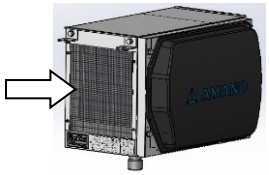
* The illustrations above are for standard models intended for domestic use within Japan. A custom-designed specification etc. may differ with respect to certain details.

11. Expendable parts/options

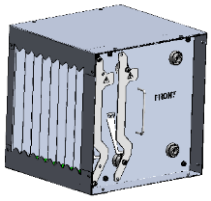
Expendable parts/options

The following expendable items should be checked every six months to check whether they are worn out and to replace them regularly. The seriousness of wear varies depending on the usage environment. If a wear is found during the inspection, replace it every time.

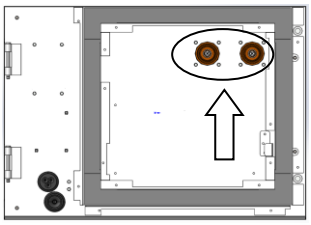
<Expendable parts>



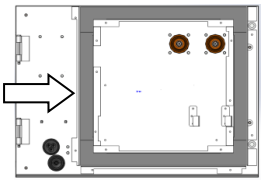
Primary filter assembly
Part No.: NFK-120300



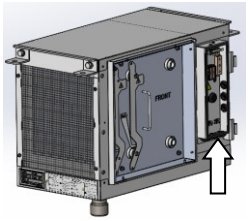
Electrode assembly
Part No.: NFK-210070



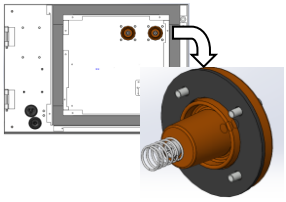
Feed insulator assembly
Part No.: NFK-722150



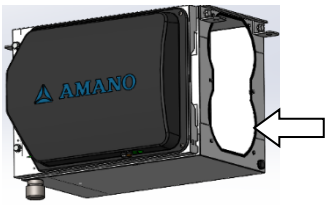
Door gasket
Part No.: NFK-713000



Relay terminal box gasket
Part No.: NFK-130500



Feed insulator gasket
Part No.: NEG-181100

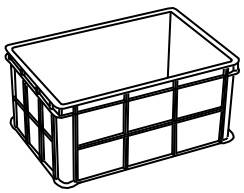


Formed sealer (5m)
Parts No.: VK-122500

Formed sealer (5m)
Parts No.: VK-122500

<Optional components>

AMANO's degreaser II 10L
Part No.: VF-434300



Cleaning tray for electrode
Part No.: NFQ-835000

[Oil drain bottle]

<With drain cock>
Part number : NFK-809070

<Without drain cock>
Part number : NFK-808070

* The foot of the part number indicates the version. The number may increase due to improvements, but compatibility is maintained. You can use it without problems.

12. After-sales Service

If any abnormalities occur during operation

Before requesting repairs, thoroughly read this operation manual and carry out an inspection. If the error recurs, contact your dealer or local AMANO office.

Parts holding period

The minimum parts holding period of performance components used for repairs of the oil mist collector is six years after the product has been discontinued.
(The performance components used for repair refer to the components required to maintain functions of the product.)

Note

To maintain performance and ensure long-term safe use, use genuine AMANO components for replacement purposes.

13. Disposal

When disposing of this machine, follow the related laws and regulations to do so appropriately.

AMANO Corporation

Yokohama,Japan

https://www.amano.co.jp/English

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