ORIGINAL INSTRUCTIONS

Instruction Manual
Ionizer
IZT40/41/42/43 series

Refer to Declaration of Conformity for relevant Directives.

The intended use of this product is to neutralize charged objects.

1 Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “Caution”, “Warning” or “Danger”.
They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC) [*1)], and other safety regulations.

[*1)] ISO 4414: Pneumatic fluid power - General rules relating to systems.
ISO 4413: Hydraulic fluid power - General rules relating to systems.
IEC 60204-1: Safety of machinery - Electrical equipment of machines. (Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots -Safety.etc.

This manual contains essential information for the protection of users and others from possible injury and/or equipment damage.

- Read this manual before using the product, to ensure correct handling, and read the manuals of related apparatus before use.
- Keep this manual in a safe place for future reference.
- To ensure safety of personnel and equipment the safety instructions in this manual must be observed, along with other relevant safety practices.

⚠ **Caution**	Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
⚠ **Warning**	Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
⚠ **Danger**	Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

⚠ Warning

- The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.
- Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.
- Only personnel with appropriate training should operate machinery and equipment.
  The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.
- Do not service or attempt to remove product and machinery/equipment until safety is confirmed.
  1) The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
  2) When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.

2 Specifications

Ionizer type		IZT40	IZT41 (NPN type)	IZT41 (PNP type)	IZT42 (NPN type)	IZT42 (PNP type)
Applied voltage		+/- 7,000V			+/- 6,000V	
Air purge	Fluid	Air (Clean and dry)				
	Max. operating pressure	0.5 MPa or less				
	Proof pressure	0.7MPa				
Current consumption		0.7A or less (+0.6A or less per ionizer when connected)	0.8A or less (+0.7A or less per ionizer when connected)		1.4A or less (+1.3A or less per ionizer when connected)	
Power supply voltage		DC24V±10% (AC100-240V：AC adapter option Applicable when only one bar is used)				
Input signal	Ion generation stop signal	-	Connected with DC(-) Voltage range : 5 VDC or less Current consumption: 5mA or less	Connected with DC(+) Voltage range: 19 VDC to supply voltage Current consumption: 5mA or less	Connected with DC(-) Voltage range : 5 VDC or less Current consumption: 5mA or less	Connected with DC(+) Voltage range: 19 VDC to supply voltage Current consumption: 5mA or less
Output signal	Maintenance detection signal	-	Max. load current : 100mA Residual voltage : 1V or less (at : 100mA of load current) Max. supply voltage: 26.4 VDC	Max. load current : 100mA Residual voltage : 1V or less (at 100mA of load current)	Max. load current : 100mA Residual voltage : 1V or less (at : 100mA of load current) Max. supply voltage: 26.4 VDC	Max. load current : 100mA Residual voltage : 1V or less (at 100mA of load current)
	Error signal					
Ambient and fluid temperature	Controller	0 to 40°C				
	High voltage power supply module					
	Bar	0 to 50°C				
Ambient humidity		35 to 80%Rh (no condensation)				

1 Safety Instructions-continued

3) Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

- Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.
  1) Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
  2) Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustions and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specification described in the product catalogue.
  3) An application which could have negative effects on people, property, or animals requiring special safety analysis outside the scope of ISO 13849 described in this document.
  4) Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.
- Always ensure compliance with relevant safety laws and standards.
  All electrical work must be carried out in a safe manner by a qualified person in compliance with applicable national regulations.

⚠ Caution

- The product is provided for use in manufacturing industries.
  The product herein described is basically provided for peaceful use in manufacturing industries.
  If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
  If anything is unclear, contact your nearest sales branch.
- This product may cause interference if used in residential premises.

2 Specifications-continued

Ionizer type		IZT43 (NPN type)	IZT43 (PNP type)
Applied voltage		+/- 6,000 V	
Air purge	Fluid	Air (Clean and dry)	
	Max. operating pressure	0.7 MPa or less	
	Proof pressure	1.05 MPa	
Current consumption		0.4 A or less (+0.4 A or less per ionizer when connected)	
Power supply voltage		24 VDC ±10% (100-240 VAC：AC adapter option applicable when only one bar is used)	
Input signal	Ion generation stop signal	Connected to DC(-) Voltage range : 5 VDC or less Current consumption: 5 mA or less	Connected to DC(+) Voltage range: 19 VDC to supply voltage Current consumption: 5 mA or less
Output signal	Maintenance detection signal	Max. load current: 100 mA Residual voltage : 1 V or less (at : 100 mA of load current) Max. supply voltage: 26.4 VDC	Max. load current : 100 mA Residual voltage : 1 V or less (at 100 mA of load current)
	Error signal		
Ambient and fluid temperature	Controller	0 to 40°C	
	High voltage power supply module		
	Nozzle		
Ambient humidity		35 to 65% Rh (no condensation)	

3 Installation

3.1 Installation

⚠ Warning

Do not install the product unless the safety instructions have been read and understood.

- Reserve an enough space for maintenance, piping and wiring.
  Please take into consideration that the one-touch fittings for supplying air, need enough space for the air tubing to be easily attached/detached.
  To avoid unreasonable stress applied to the connector and one-touch fitting mounting parts, bending of the cable or air tubing should be more than the minimum bending radius.
  If the cable is bent in an acute angle or load is applied to the cable repeatedly, it may cause malfunction, wire damage or fire.
  Minimum bending radius: Power supply cable: 40 mm
  Separate cable (optional): 40mm
  High voltage cable: 30mm
  NOTE: This is an allowable bend radius at 20°C. Bend radius should be larger at lower than 20°C.
  Regarding the minimum bending radius of the air tubing, refer to the operation manual or catalogue for tubing.
- Use specified cable holder (IZT40-E1 or IZT40-E2) for installing high voltage cables.
  Follow the items below when installing high voltage cables. If items below are not followed, insulation performance of high voltage cable decreases, causing the failure of this product, leading to electrical shock or fire.
  a. Do not cut the cable.
  b. Keep the minimum bend radius of the cable.
  c. Do not tighten the cable too much by tying band. Do not deform the cable by placing object on the cable.
  d. Avoid the factor of cable runaway such as cable duct.
  e. Do not twist or damage to the cable. If the cable is damaged, it should be replaced.
- Fix the high voltage cable connector using 2 screws included in accessory.
  Fix the connector using 2 cross recessed round head screws (M4 x10L) referring to the operation manual for this product.
- Mount to the flat surface and do not apply impact load or excessive external force.
  Mounting on an uneven surface will apply excessive force to the housing and bracket, which may lead to damage or failure.
  Do not drop or apply excessive shock. Otherwise, damage or an accident may occur.
- Install the product so that the bar does not have an excessive deflection.
  For a bar length of 820mm or longer, support the bar at both ends and in the middle by using brackets (IZS40-BM1 or IZT40-BM2). If the bar is held only at the both ends, self-weight of the bar causes deflection, resulting in damage or deformation to the bar.
- Be sure to fix the high voltage cable plug using a cable clip and the cross recessed round head screw (M3x5L).
- Avoid using in a place where noise (electromagnetic wave and surge) is generated.
  It may cause an electric shock, fire, or breaking of wire.
- Do not carry this product by holding its cables.
  It may cause an injury or damage to the product.

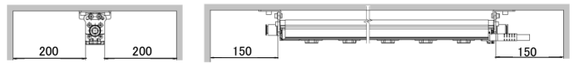
3 Installation-continued

If the product is used in an environment where noise is generated, it may lead to malfunction or deterioration or damage of the internal elements.
When the presence of noise is suspected, take preventive measures against noise and avoid the crossing wires such as power line and high voltage line.

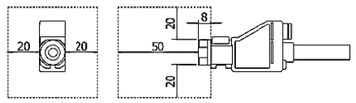
- Tighten the screws to the specified torque.
  If the screws are tightened in excess of the specified torque range, it may damage the mounting screws or mounted areas.
  If the tightening torque is insufficient, the mounting screws and brackets may become loose.
  Refer to the operation manual for this product.
- Do not directly touch the emitters.
  Do not directly touch the emitter with your finger. If the needle sticks to your finger, or electrical shock makes an instantaneous rapid body motion to escape from the shock, causing injury.
  If emitter or cartridge is damaged by tools, etc., it may interfere with the specified function and performance, and may also cause operation failure and accident.
- Do not affix any tape or labels to the controller, high voltage power supply module or bar/nozzle.
  If the tape or label contains any conductive adhesive or reflective paint, a dielectric phenomenon may occur due to ions arising from such substances, resulting in electrostatic charging or electric leakage, causing malfunction, breakage, electric shock or fire.
- Be sure to remove power supply and air supply to the controller, high voltage power supply module and bar/nozzle before starting the product installation.
  If installation or adjustment is performed being supplied with power or air, electric shock, failure or injury can result.
- High voltage power supply module uses a fan. 20mm or more space from the exhaust port is necessary for ventilation.
  Or install the product in a ventilated location so peripheral device are not affected.
- Do not damaged the cable or apply a heavy object or pinch the cable. Avoid repeatedly bending or stretching the cable.

⚠ Caution

- When IZT40/41/42/43 series is installed, keep space below from structures or components.
  If there are electrically conductive objects such as walls or structures close to the bar/nozzle, generated ions may not reach the target object effectively or product failure or electric shock can result due to dielectric or short-circuit.



Bar



Nozzle

- After installation, verify the performance of this product.
  The performance of the product varies depending on the surrounding installation and operating conditions. After installation, verify the performance of this product.
- When installing Ionizers which operate in DC mode (one polarity, positive or negative) with IZT41, IZT42 or IZT43 close together, they should be positioned at least two meters away from each other.
  When IZT41, IZT42 or IZT43 which operates in AC close to the Ionizer which operates in DC mode, separate them by at least two meters. The offset voltage (ion balance) may not be adjusted by the built-in sensor due to the ions discharged from the Ionizer which operates in DC mode.
- Use specified end bracket.

3 Installation-continued

3.2 Environment

⚠ Warning

- Do not use in an environment where corrosive gases, chemicals, salt water or steam are present.
- Do not use in an explosive atmosphere.
- Do not expose to direct sunlight. Use a suitable protective cover.
- Do not install in a location subject to vibration or impact. Check the product specifications.
- Do not mount in a location exposed to radiant heat.
- Operate the product in the specified fluid temperature range and ambient temperature range.
  Operating fluid temp. and ambient temp. range: Controller 0 to 40 °C, high voltage power supply module 0 to 40 °C, bar 0 to 50 °C, nozzle 0 to 40 °C, AC adapter 0 to 40 °C.
  Do not use the product in locations where the temperature may change suddenly even if the ambient temperature range is within the specified limits, resulting in condensation.
- Do not use this product in an enclosed space.
  This product utilizes the corona discharge phenomenon. Do not use the product in an enclosed space as ozone and nitrogen oxides exist, even though in marginal quantities.
- Environments to avoid.
  Never use or store under the following conditions. These may cause an electric shock, fire, etc.
  a. Use in the environment which ambient temperature is out of the product specification.
  b. Use in the environment which ambient humidity is out of the product specification.
  c. Environment where abrupt temperature changes may cause condensation.
  d. Environment where corrosive gas, flammable gas or other volatile flammable substances are stored.
  e. Environment where the product may be exposed to conductive powder such as iron powder or dust, oil mist, salt, organic solvent, machining chips, particles or cutting oil (including water and any liquids), etc.
  f. Paths of direct air flow, such as air conditioners.
  g. Enclosed or poorly ventilated environment
  h. Locations which are exposed to direct sunlight or heat radiation.
  i. Areas where strong electromagnetic noise is generated, such as strong electrical and magnetic fields or supply voltage spikes.
  j. Environment where static electricity is generated to the product.
  k. Locations where strong high frequency is generated.
  l. Locations which are subject to potential lightning strikes.
  m. In an area where the product may receive direct impact or vibration.
  n. Areas where the product may be subjected to forces or weight that could cause physical deformation.
- Do not use air containing mist and/or dust.
  Air containing mist and/or dust may cause performance deterioration, and reduce the maintenance cycle.
  Install a dryer (IDF series), air filter (AF/AFF series), and/or mist separator (AFM/AM series) to obtain clean compressed air (air quality of Class 2.4.3, 2.5.3, 2.6.3 or higher according to ISO 8573-1: 2010 (JIS B8392-1:2012) is recommended for operation.
- Controller, high voltage power supply module, bar/nozzle and AC adapter are not resistant to lightening surge.
- Effects on implantable medical devices.
  The electromagnetic waves emitted from this product may interfere with implantable medical devices such as cardiac pacemakers and cardioverter defibrillators, resulting in the malfunction of the medical device or other adverse effects.
  Please use extreme caution when operating equipment which may have an adverse effect on your implantable medical device. Be sure to thoroughly read the precautions stated in the catalog, operation manual, etc., of your implantable medical device, or contact the manufacturer directly for further details on what types of equipment need to be avoided.

3.3 Piping

⚠ Caution

- Before piping make sure to clean up chips, cutting oil, dust etc.
- When installing piping or fittings, ensure sealant material does not enter inside the port. When using seal tape, leave 1.5 to 2 threads exposed on the end of the pipe/fitting.

3 Installation-continued

- Tighten fittings to the specified tightening torque.

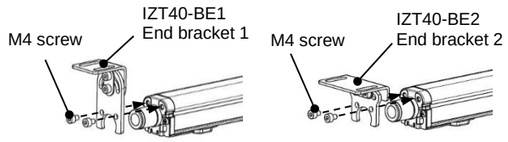
3.4 Installation of bracket

3.4.1 Bracket for bar

- 2 types of end bracket and intermediate bracket are available.
  When end bracket 1 is used, use intermediate bracket 1.
  For end bracket 2, use intermediate bracket 2.

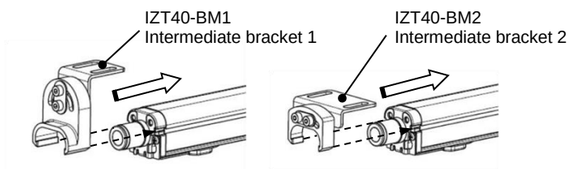
1) End bracket

- Use specified end bracket.
  For mounting, fix the end bracket at both ends of the bar using M4 screws with the specified tightening torque.
  Tightening torque: 0.51 to 0.55 Nm



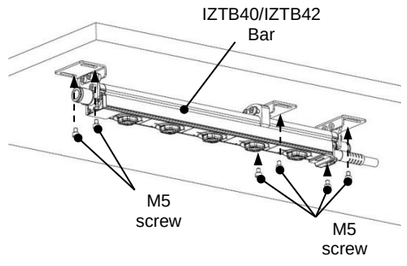
2) Intermediate bracket (for bar lengths of 820 mm or more)

- Match the groove of the bar and protrusion of the intermediate bracket, and slide the bracket from the end of the bar.
- Intermediate brackets should be mounted at the same intervals.



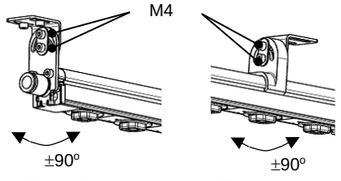
3) Installation of the bar

- Fix the bracket to the specified position using M5 screws.
  (The screws should be prepared by the user, recommended screw length 5 mm).



4) Mounting angle adjustment

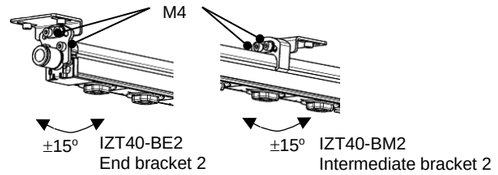
- Adjust the mounting angle of the bar for effective neutralization, and fix the product with the rotating set screw (M4) at each bracket.
  Tightening Torque
  IZT40-BE1 (End bracket 1): 0.72 to 0.76 Nm
  IZT40-BE2 (End bracket 2): 0.72 to 0.76 Nm
  IZT40-BM1 (Intermediate bracket 1): 0.72 to 0.76 Nm
  IZT40-BM2 (Intermediate bracket 2): 0.47 to 0.49 Nm



IZT40-BE1
End bracket 1

IZT40-BM1
Intermediate bracket 1

3 Installation-continued

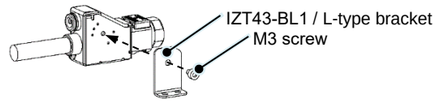


3.4.2 Bracket for nozzle

- Use the bracket specified.

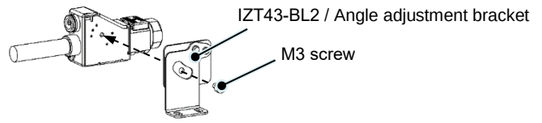
1) L-type bracket

- For mounting, fix the bracket using M3x4 screws with the specified tightening torque.
  Tightening torque: 0.61 to 0.65 Nm



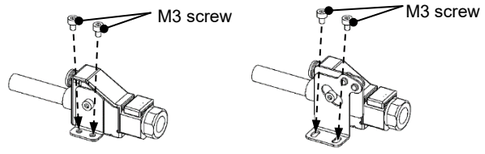
2) Angle adjustment bracket

- For mounting, fix the bracket using M3x4 screws with the specified tightening torque.
  Tightening torque: 0.61 to 0.65 Nm



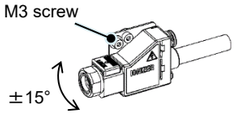
3) Installation of the nozzle

- Fix the bracket to the specified position using M3 screws.
  (The screws should be prepared by the user. Recommended screw length 5mm.)



4)Mounting angle adjustment

- Adjust the mounting angle of the nozzle for effective neutralization, and fix the product.
  Tightening torque: 0.61 to 0.65 Nm



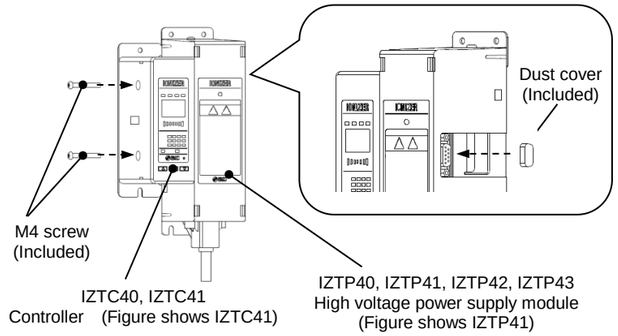
3.5 Connecting the controller and high voltage power supply module

- Remove the protection film on the controller before use.
- The product is used by connecting the controller and high voltage power supply module. They can be connected either directly or separately. For separate connection, an optional separate cable is required.
- Mount a dust cover on the D-sub connector when not using the directly mounted high voltage power supply module.

1) Direct connection

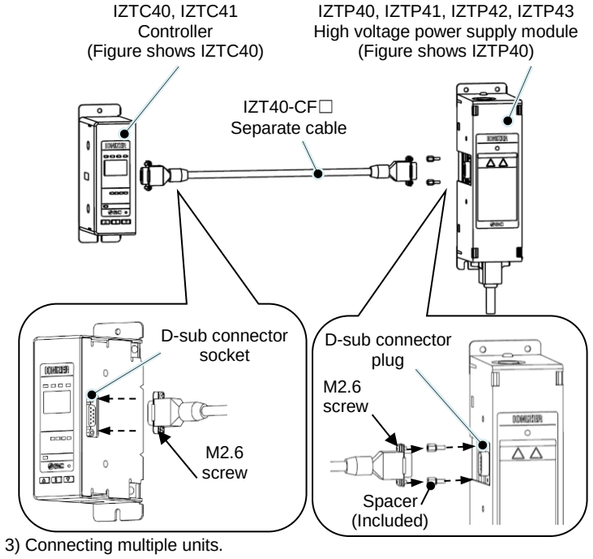
- Fix the controller and high voltage power supply module using cross recessed round head screw (M4X30).
  Tightening Torque: 0.22 to 0.24 Nm

3 Installation-continued



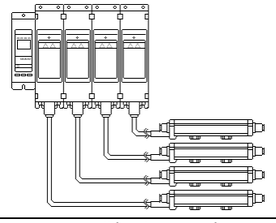
2) Separate connection

- For separate connection, an optional separate cable is required.
- Mount the spacers (included) to fix the separate cable to the high voltage power supply module.
- Fix the spacers (2 pcs.) to the plug (male side) of the D-sub connector on the high voltage power supply module.
- Connect the controller and high voltage power supply module after mounting the spacers and fix them using 2 round head combination screws (M2.6).
  Spacer tightening torque: 0.4 to 0.6Nm
  Separate cable tightening torque: 0.25 to 0.35Nm



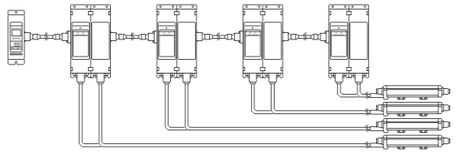
3) Connecting multiple units.

- Up to 4 controllers and high voltage power supply modules can be connected together.
- Controller IZTC40 can be connected to IZTP40 only.
- Controller IZTC41 can be connected when IZTP41, IZTP42 and IZTP43 are used together, but IZTP40 cannot be connected.
- When multiple controllers are connected, make sure that the displayed content and the number of connected controller is consistent after power is supplied. (Connected CH turns on or flashes)



Direct connection
Example of connecting IZTC40, IZTP40 and IZTB40 (4pcs.)

3 Installation-continued



Separate connection
Example of connecting IZTC41, IZTP42 and IZTB42 (4pcs.)

3.6 Installing the controller and high voltage power supply module

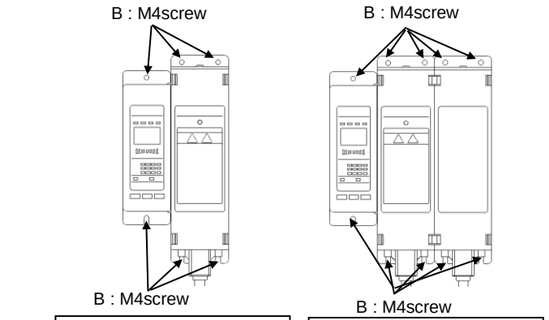
Install the controller and high voltage power supply module to DIN rail using screws or DIN rail mounting brackets.

1) Mounting with screws (The screws should be prepared by the user).

- Fix the controller (IZTC40 and IZTC41) using 2 x M4 screws.
- Fix the high voltage power supply module controller (IZTP40, IZTP41 and IZTP43) using 4 x M4 screws.
- Fix the high voltage power supply module controller (IZTP42) using 8 x M4 screws.
- The number of screws to connect multiple high voltage power supply modules=Number of connected modules x screws necessary for fixing a module.

Ⅰ. When the controller and high voltage power supply module are directly connected

- Install the directly connected controller and high voltage power supply module at location B using M4 screws.
  (The screws should be prepared by the user)



When IZTC41 and IZTP41 are directly connected.

When IZTC41 and IZTP42 are directly connected.

Ⅱ.When the controller and high voltage power supply module are connected separately

- Mount the spacers to the high voltage power supply module.
- Install the separately connected controller and high voltage power supply module by at location B using M4 screw (x 6).
  (The screws should be prepared by the user).

Ⅲ. Adding a high voltage power supply module

a. High voltage power supply module to be added should be

- Connected by D-sub connector at location C.
- Controller IZTC40 can be connected to IZTP40 only. Controller IZTC41 can be connected when IZTP41, IZTP42 and IZTP43 are used together, but IZTP40 cannot be connected.

b. Mounting bracket

- Mount the brackets to location D.

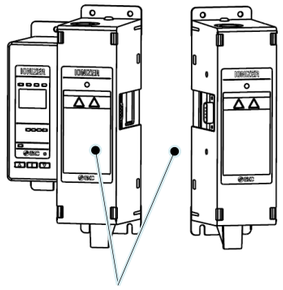
c. Install the controller and high voltage power supply module

- Fix the controller and high voltage power supply module at location B using M4 screw.
  (The screws should be prepared by the user).

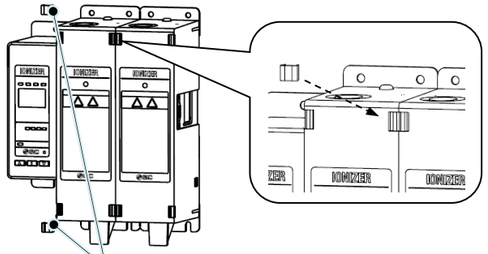
d. High voltage power supply module CH number setting.

- Set the CH number so that it does not duplicate the set number of other channels.

3 Installation-continued



C : D-sub connector



D : Brackets(accessories)

2) Installation of DIN rail

- Use an optional DIN rail mounting bracket.
- DIN rail mounting brackets are required for mounting the controller and high voltage power supply module.
- Tighten the fixing brackets that are installed and shipping with specified torque before installation.

Ⅰ. When the controller and high voltage power supply module are directly connected

a. Removal of the fixing bracket.

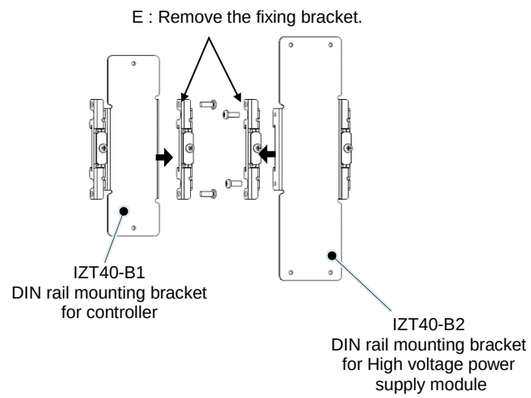
- Remove the fixing bracket from DIN rail mounting bracket at the adjoining faces indicated at location E.

b. DIN rail mounting bracket

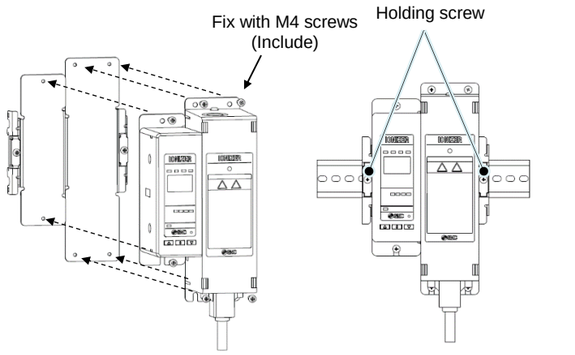
- Fix the controller and high voltage power supply module to the DIN rail mounting bracket using M4 screws.
  Tightening torque: 1.30 to 1.50Nm

c. Install to the DIN rail.

- After installing the DIN rail mounting bracket, fix the controller and high voltage power supply module to the DIN rail using M4 screws.
  Tightening Torque: 1.30 to 1.50 Nm



3 Installation-continued



Ⅱ.When the controller and high voltage power supply module are connected by separate cable

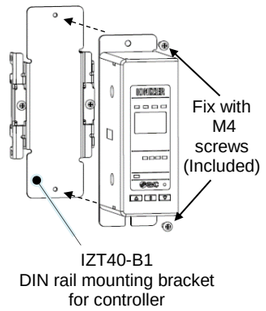
- Mount the spacers to the high voltage power supply module connector.

a. DIN rail mounting bracket

- Fix the DIN rail mounting bracket to the controller and high voltage power supply module using M4 screws.
  Tightening Torque: 1.30 to 1.50 Nm

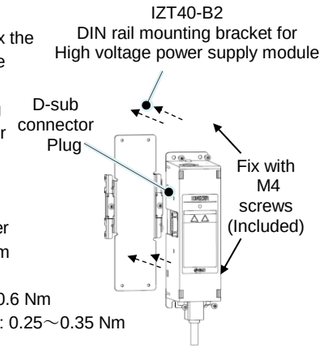
b. Install to the DIN rail.

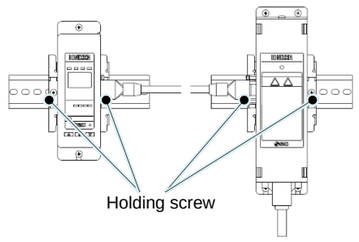
- After installing the DIN rail mounting bracket, fix the controller and high voltage power supply module to the DIN rail using M4 screws.
  Tightening Torque: 1.30 to 1.50 Nm



c. Connection of separate cable

- Mount the spacers (included) to fix the separate cable to the high voltage power supply module.
- Fix the spacers (2pcs.) to the plug (male side) of the D-sub connector with high voltage power supply module.
- Connect the controller and high voltage power supply module after mounting the spacers and fix them using M2.6 screws.
  Spacer tightening torque: 0.4 to 0.6 Nm
  Separate cable tightening torque: 0.25～0.35 Nm



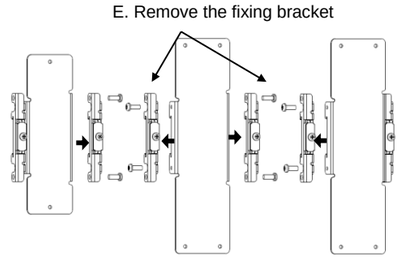


Ⅲ. When the high voltage power supply module is added directly

a. Removal of the fixing bracket

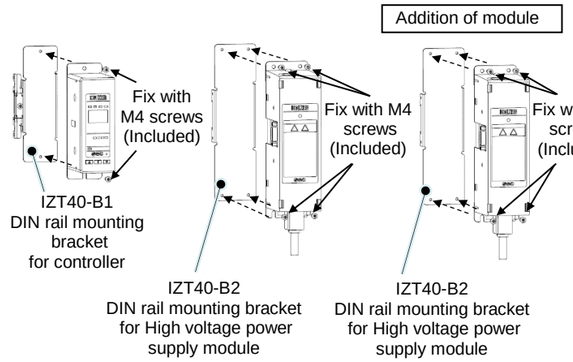
- Remove the fixing bracket from the DIN rail mounting bracket at the adjoining faces indicated at location E.

3 Installation-continued



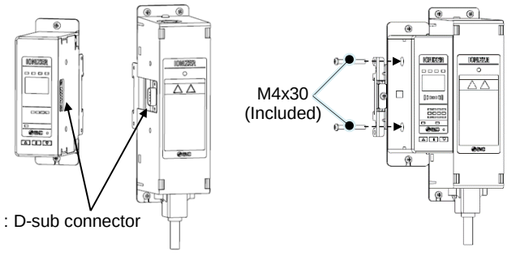
b. Mounting of DIN rail mounting bracket

- Fix the controller and high voltage power supply module to the DIN rail mounting bracket using M4 screws.
  Tightening Torque: 1.30 to 1.50 Nm



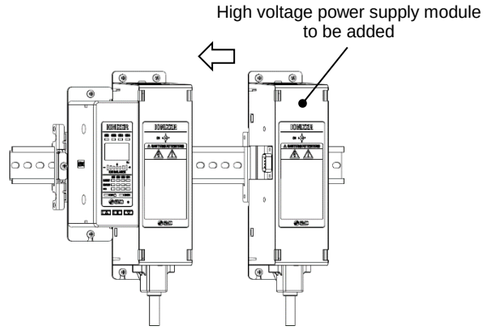
c. Connect the controller and high voltage power supply module

- Connect the D-sub connector in location C and fix the controller and high voltage module together using M4x30 screws (2 pcs. included as an accessory).
  Tightening Torque: 0.22 to 0.24 Nm



d. Install to DIN rail

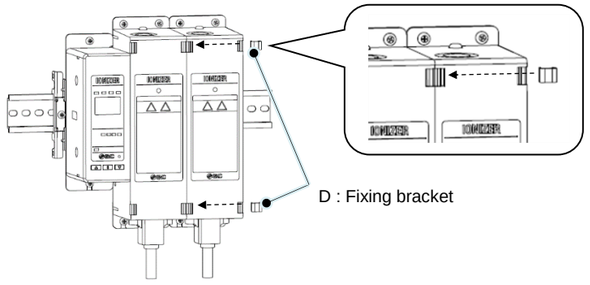
- Mount them on to the DIN rail and connect the additional high voltage power supply module D-sub connector.



3 Installation-continued

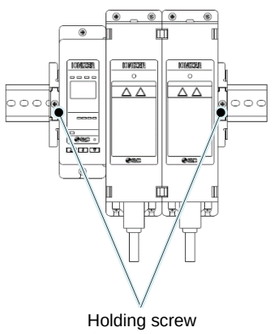
e. Mount the fixing bracket

- Mount the fixing brackets (included as an accessory) in location D.



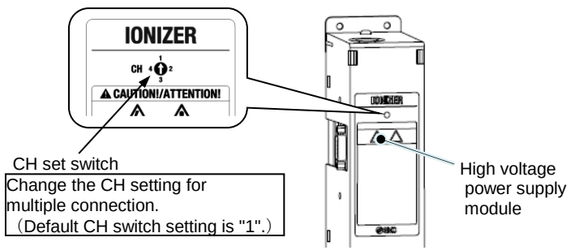
f. Fix to DIN rail

- After installing to the DIN rail, fix the controller and high voltage power supply module using set screws.
  Tightening Torque: 1.30 to 1.50 Nm



g. High voltage power supply module CH number setting

- Set the CH number setting switch for all connected high voltage power supply modules.
- Set the CH number so that it does not duplicate the set number of other channels



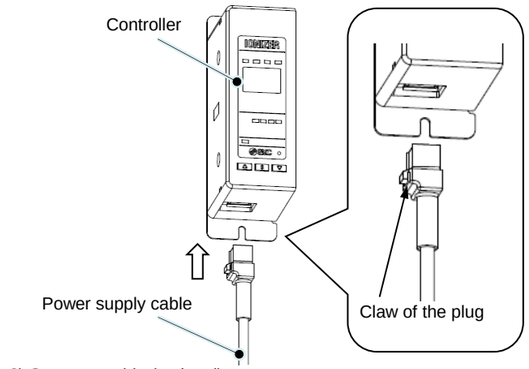
3.7 Routing of cables

- Do not apply excess stress to the mounting part of the connector.
- When the cable is bent, maintain the minimum bend radius.

1) Power supply cable

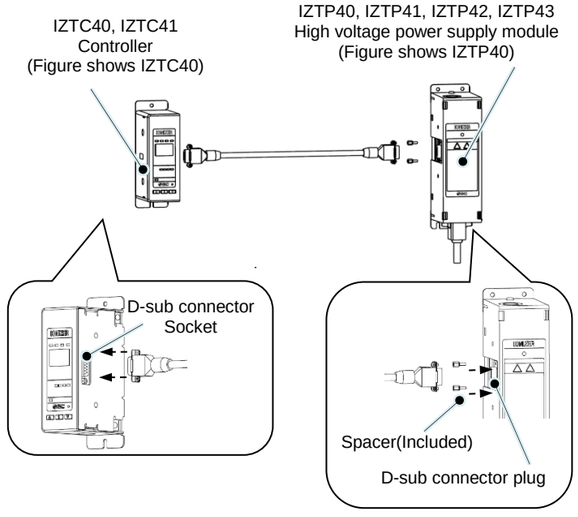
- This cable supplies power to the product and external equipment used to control this product. (IZT40 has no input/output functions.)
- When connecting the controller to the power supply cable, insert it until it makes a click sound.
- When removing the power supply cable, press the plug claw to release the lock and pull it out straight. If mounted or removed in an inappropriate direction, the connector may be damaged and cause operation failure.
- Fix the cable around the connecting part so that stress is not applied to the plug.
- Connect the lead wires according to the wiring diagram. Unused wires should be cut short, or insulated using insulation tape.
- To satisfy the current capacity, make sure to wire 2 brown cables in which a voltage of 24 VDC is supplied and 2 blue cables in which 0V is connected.

3 Installation-continued



2) Separate cable (optional)

- Cable for connecting the controller and high voltage power supply module and connecting the extension modules separately. This cable is not necessary when the modules are directly connected.
- Before connecting the cable, mount the spacers (included) in the male side of the D-sub connector plug on the high voltage power supply module.
- It is not necessary to mount spacers to the controller D-sub connector and the D-sub connector (socket) of the high voltage power supply module because spacers are already mounted to them.
- When the separate cable is mounted or removed, pinch the connector with fingers and insert or take out the plug vertically. If mounted or removed in an inappropriate direction, the connector may be damaged and cause operation failure.
- After connecting the separate cable, fix screws of the connector. Mount the dust cover to any D-sub connector which is not used.
  Spacer tightening torque: 0.4 to 0.6 Nm
  Separate cable tightening torque: 0.25 to 0.35 Nm



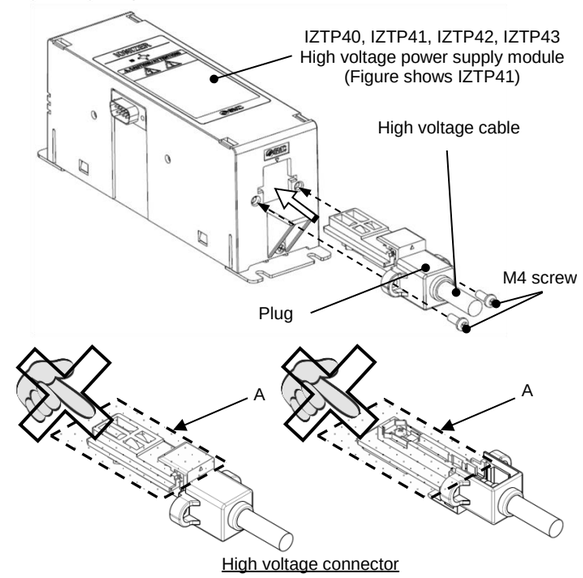
3) High voltage cable

Ⅰ. High voltage cable connection

- Connect the high voltage cable at the bar/nozzle end to the high voltage power supply module.
- When connecting and disconnecting the high voltage cable, hold the plugs together with the plug bodies, and insert or pull out straight. If mounted or removed in an inappropriate direction, the mounting part of the modular jack may be damaged and cause operation failure.
- Do not touch part A when handling the plug. Be careful so that moisture oil or foreign matter does not adhere to the plug. Adhesion of moisture, oil or foreign matter on part A may cause high voltage electric leakage. If moisture, oil, or foreign matter adheres to part A, clean it with ethanol.

3 Installation-continued

- After connecting the high voltage cable to the high voltage power supply module, fix the cable using 2 cross recessed round head screws (M4x10) included with the product.
  Tightening Torque: 0.49 to 0.53 Nm



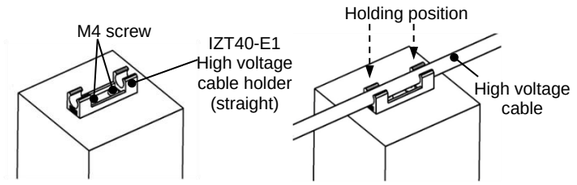
High voltage connector

Ⅱ. Wiring high voltage cable

- When installing the high voltage cable, use the specified high voltage cable holder.

a. High voltage cable holder (straight)

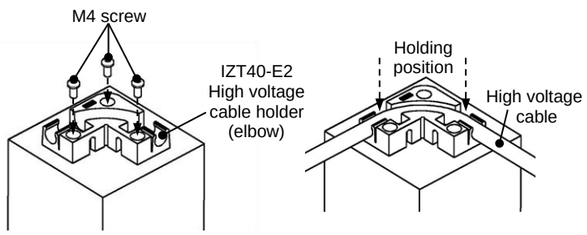
- Use 2 cross recessed round head screws (M4) for installing the high voltage cable holder. Press the cable positioning it into the holding position and install it. (The screws should be prepared by the user).
  Tightening torque: 0.19 to 0.21 Nm



b. High voltage cable holder (elbow)

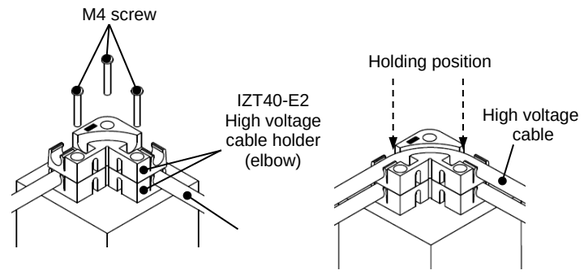
- Use the cable holder when bending the high voltage cable through 90 degree.
- Use 2 holders when installing high voltage cable for the IZT42.
- Use cross recessed round head screws (M4) for fixing the high voltage cable holder.
- When they are used in layers, select the screw length considering the thickness of the high voltage cable holder (14.8 mm/holder).
- When holding the high voltage cable to the cable holder, align the cable in the holding position and mount it by pressing the cable. (The screws should be prepared by the user).

Installation example 1

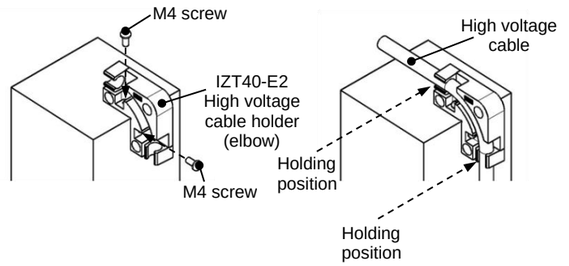


3 Installation-continued

Installation example 2



Installation example 3



3.8 Wiring

Wire cables according to the circuitry and wiring diagram.

⚠ Warning

- Before wiring, ensure that the power supply capacity meets the specification and that the voltage is within the specification. Product damage or malfunction can result.
- To maintain product performance, the power supply should be UL Class 2 certified by National Electric Code (NEC) or evaluated as a limited power source according to UL60950.
- To maintain the product performance, ground the product with the F.G. cable with a resistance of 100 Ω or less. If the product is not grounded, it is not possible to secure the performance and may lead to product failure or malfunction.
- Wiring (including insertion and removal of the power supply connector) should never be carried out with the power supply ON. Otherwise, an electrical shock or accident may occur.
- Use specified cable for connecting the ionizer controller, high voltage power supply module and bar/nozzle. Do not disassemble or retrofit them. Disassembling or modifying the product may cause product, electric shock or fire. The product will not be guaranteed if it is disassembled and/or modified.
- Ensure the safety of wiring and surrounding conditions before supplying power.
- Do not connect or disconnect the connectors (including power source) while the power is supplied. Failure to follow this procedure may cause product malfunction.
- If the power and high voltage cables are routed together, the product may malfunction due to noise. Route the Ionizer wires separately.
- Confirm that the wiring is correct before operation. Incorrect wiring will lead to product damage or malfunction.

3.8.1 Ground the F.G. cable

- Make sure to ground the F.G. cable with a ground resistance of 100 Ω or less.

3 Installation-continued

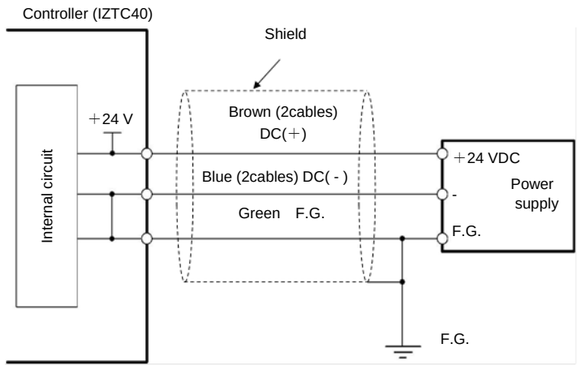
The F.G. cable is used as a reference electric potential for static neutralization (Functional earth). If the F.G. cable is not grounded, an optimal offset voltage (ion balance) cannot be obtained, and it may damage this product and power supply.

3.8.2 Connection Circuit

- Do not apply excess stress to the mounting part of the controller connector.
- When the power supply cable is bent, maintain the minimum bend radius.
- Connect the lead wires according to the wiring diagram.
- Unused wires should be cut short, or insulated using insulation tape.
- To satisfy the current capacity, make sure to wire 2 brown cables in which a voltage of 24 VDC is supplied and 2 blue cables in which 0V is connected.

1) Wiring of IZTC40

Cable color	Signal name	Signal direction	Description
Brown	DC(+)	IN	･Connect power supply to operate the Ionizer.
Blue	DC(-)	IN	
Green	F.G.	-	・Make sure to ground with a resistance of 100Ω or less to use it as a reference electric potential for Ionizer.
Pink	Unused	-	-
Gray	Unused	-	-
Yellow	Unused	-	-
Purple	Unused	-	-
White	Unused	-	-
Black	Unused	-	-
Orange	Unused	-	-

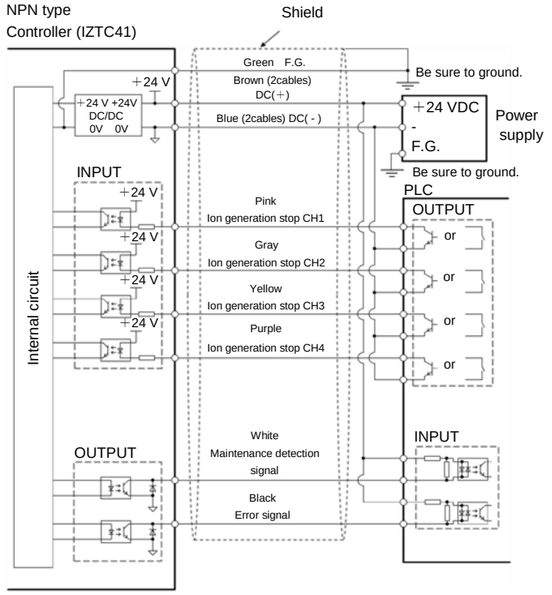


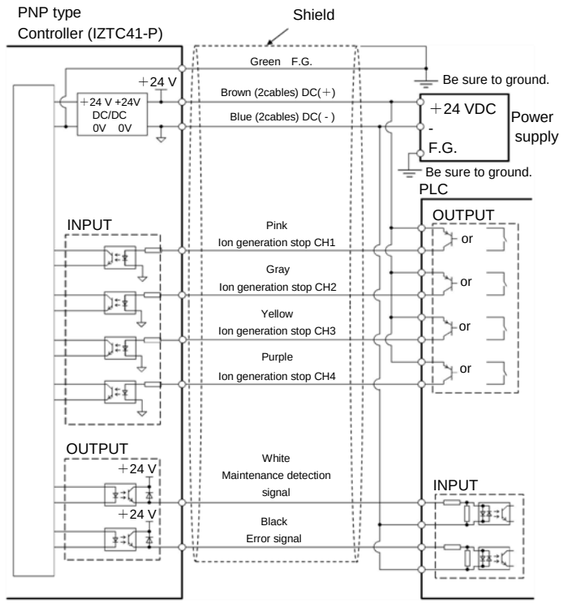
When the product is used in DC mode, make sure to ground the F.G. cable (green) and DC(-) cable (blue) of the input power supply with a resistance of 100 ohms or less. Without grounding the DC(-) cable, this products and/or power supply may be damaged.

2) Wiring of IZTC41

Cable color	Signal name	Signal direction	Description
Brown	DC(+)	IN	･Connect power supply to operate the Ionizer.
Blue	DC(-)	IN	
Green	F.G.	-	・Make sure to ground with a resistance of 100Ω or less to use it as a reference electric potential for Ionizer.
Pink	Ion discharge stop signal CH1	IN	・Signal input to turn ON/OFF ion generation of each bar/nozzle （CH1 to 4）. ・NPN specification: Ion generation is stopped by connecting to 0 V. （Ion generation stars by disconnecting） ・PNP specification: Ion generation is stopped by connecting to 24 VDC . （Ion generation stars by disconnecting）
Gray	Ion discharge stop signal CH2	IN	
Yellow	Ion discharge stop signal CH3	IN	
Purple	Ion discharge stop signal CH4	IN	
White	Maintenance detection signal	OUT (Contact point A)	・Turns ON when emitter needs cleaning.
Black	Error signal	OUT (Contact point B)	・Turns off in case of CPU failure, power supply failure, high voltage failure, communication failure, cooling fan motor failure, inconsistent module, duplication of CH, output signal over current, or high voltage power supply module is not connected. (The signal is ON when there is no problem.)
Orange	Unused	-	-

3 Installation-continued





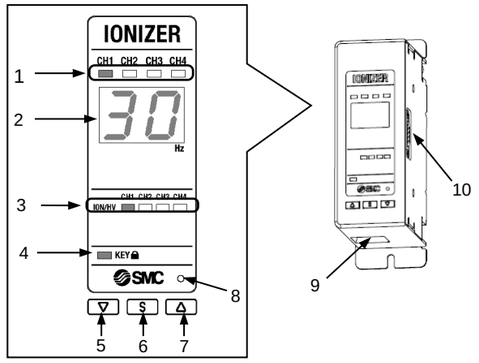
When an ionizer (IZT41/IZT43) is used in DC mode, make sure to ground the F.G. cable (green) and DC(-) cable (blue) of the input power supply with a resistance of 100 ohms or less. Without grounding the DC(-) cable, this products and/or power supply may be damaged.

4 Setting

4.1 Name of Parts

4.1.1 Controller

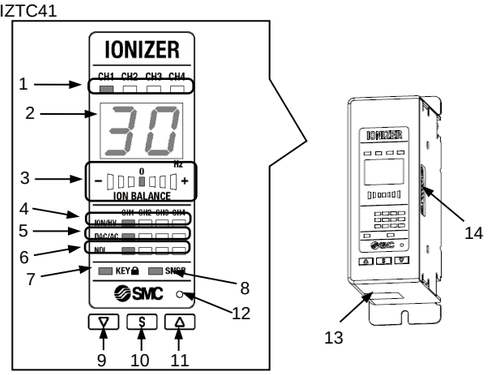
1) IZTC40



Name of parts

No.	Name	Panel indication	Type	Description
1	CH display	CH□	LED (Green)	･High voltage power supply module connected to the controller is ON (green). ･Flashes (green) when selecting frequency or adjusting the offset voltage.
2	Frequency display	Hz	LED (Green)	・Green LED is ON during operation. ・Green LED flashes during frequency selection, adjustment of the offset voltage and abnormality exists.
3	Ion emission/ high voltage error display	ION/HV	LED (Green / Red)	・Green LED is ON during static neutralization. ・Red LED is ON when high voltage abnormality exists. ・LED flashes (red) when CPU abnormality (controller/ high voltage power supply module), power supply abnormality, communication error, cooling fan motor failure, module inconsistency, or CH duplication exists. ・Turned off when the high voltage power supply module is not connected.
4	Key lock display	KEY	LED (Green)	・Key lock ON : ON (green) ・Key lock OFF : OFF
5	▼ button	-	Press button	・Decrease the set value.
6	S button	-	Press button	・Change the mode and set a set value.
7	▲ button	-	Press button	・Increase the set value.
8	Reset button	-	Press button	・Return the setting values of each mode to the default condition.
9	Power supply connector	-	Connector	・Equipped with ionizer power supply and grounding.
10	High voltage power supply module connector	-	D-sub connector (socket)	・Connect high voltage power supply module or separate cable.

2) IZTC41



4 Setting-continued

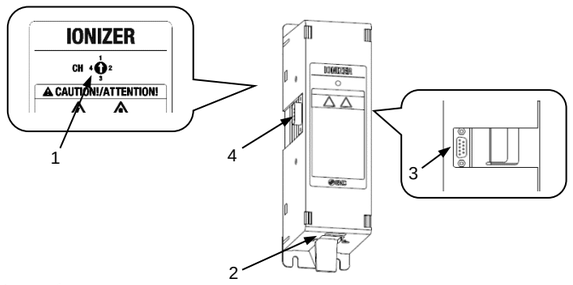
Name of parts

No.	Name	Panel indication	Type	Description
1	CH display	CH□	LED (Green)	･LED of high voltage power supply module connected to the controller is ON (green), ･LED flashes (green) during frequency selection, offset voltage adjustment, balance control selection, emitter contamination detection level selection, ･Turned off when the high voltage power supply module is not connected.
2	Frequency display	Hz	LED (Green)	・ON during operation, ・LED flashes (green) during frequency selection, offset voltage adjustment, balance control selection, emitter contamination detection level selection, key lock setting and each abnormality.
3	Ion balance display	ION BALANCE	LED (Green/ Orange)	・LED (green) is ON during operation or output signal over current. ・LED (green) flashes during offset voltage adjustment. ・LED is OFF flashes (red) when CPU abnormality (controller/ high voltage power supply module),power supply abnormality, communication error, cooling fan motor failure, module inconsistency, or CH duplication exists. ・LED (orange) flashes when ion balance is maximum or minimum during offset adjustment. ・Turned off when the high voltage power supply module is not connected.
4	Ion emission/ high voltage error display	ION/HV	LED (Green / Red)	・Green LED is ON during static neutralization. ・Red LED is ON when high voltage abnormality exists. ・LED flashes (red) when CPU abnormality (controller/ high voltage power supply module),power supply abnormality, communication error, cooling fan motor failure, module inconsistency, or CH duplication exists. ・Turned odd when the high voltage power supply module is not connected.
5	Indication of connected mode	DAC/AC	LED (Green/ Blue)	・LED is ON (green) when the high voltage power supply module IZTP41 is connected. ・LED is ON (blue) when the high voltage power supply module IZTP42 is connected. ・OFF when CPU abnormality (controller) or CH duplication exists, or high voltage power supply module is not connected.
6	Maintenance display	NDL	LED (Green)	・LED (green) is ON when emitter contamination is detected. ・LED (green) flashes when the emitter contamination detection level is set. ・Turned off when the high voltage power supply module is not connected
7	Key lock display	KEY	LED (Green)	・Key lock ON : ON (green) ・Key lock OFF : OFF ・Turned off when the high voltage power supply module is not connected.
8	Sensor LED	SNSR	LED (Green)	・Auto balance function ON : ON (green) ・Auto balance function OFF : OFF ・OFF when CPU abnormality (controller) exists or high voltage power supply module is not connected.
9	▼ button	-	Press button	・Decrease the set value.
10	S button	-	Press button	・Change the mode and set a set value.
11	▲ button	-	Press button	・Increase the set value.
12	Reset button	-	Press button	・Return the setting values of each mode to the default condition.
13	Power supply connector	-	Connector	・Equipped with ionizer power supply and grounding.
14	High voltage power supply module connector	-	D-sub connector (socket)	・Connect high voltage power supply module or separate cable.

4 Setting-continued

4.1.2 High voltage power supply module

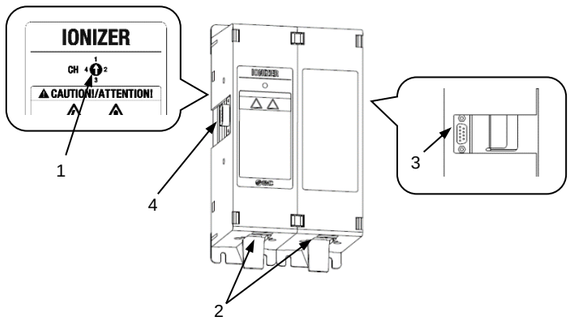
1) IZTP40, IZTP41, IZTP43



Name of parts

No.	Name	Panel indication	Type	Description
1	CH number set switch	CH	Rotary switch	・High voltage power supply module CH number setting.
2	High voltage cable connector	-	Connector	・Connect with the high voltage cable of the bar/nozzle.
3	High voltage power supply module connector	-	D-sub Connector (socket)	・Connect high voltage power supply module or separate cable.
4	Controller/ High voltage power supply module connector	-	D-sub connector (plug)	・Connect the controller, high voltage power supply module or separate cable.

2) IZTP42

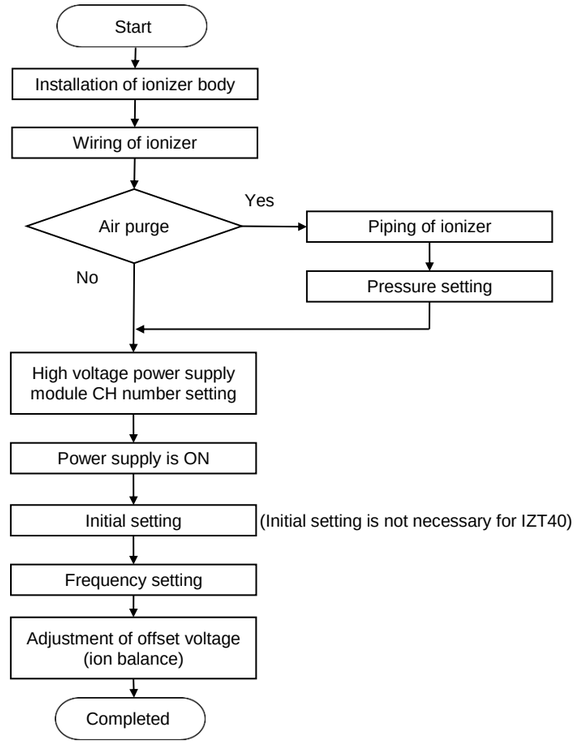


Name of parts

No.	Name	Panel indication	Type	Description
1	CH number set switch	CH	Rotary switch	・High voltage power supply module CH number setting.
2	High voltage cable connector	-	Connector	・Connect with the high voltage cable of the bar IZTB42.
3	High voltage power supply module connector	-	D-sub Connector (socket)	・Connect high voltage power supply module or separate cable.
4	Controller/ High voltage power supply module connector	-	D-sub connector (plug)	・Connect the controller, high voltage power supply module or separate cable.

4 Setting-continued

4.2 Flow chart to operation

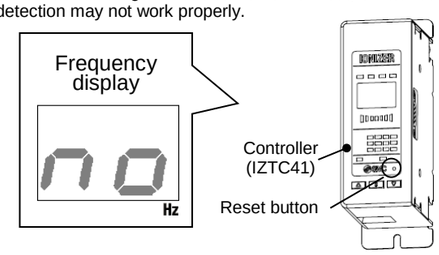


4.3 Initial setting (Initial setting is not necessary for IZT40)

- This product has a function which constantly monitors the emitter contamination. When emitter contamination is detected, it is indicated by a signal output and LED. Initial setting is necessary for emitter contamination detection.
- In the default setting "no" is displayed for the frequency display.
- The Initial setting is started by pressing the S button for 3 seconds or longer while "no" is displayed. To revert to the default setting press the reset button during use.
- Connect and install this product bar/nozzle to be used before setting.
- When multiple bars/nozzles are connected, assign the channel for which initial setting is necessary.
- Do not disconnect the power supply during setting. (Initial setting is completed within 60 seconds.)

[Initial setting is necessary in following cases]
① When "no" is displayed in the frequency display.
② Bar/nozzle (Emitter cartridge, Body assembly or High voltage cable assembly) is replaced.
③ Installation environment is changed.

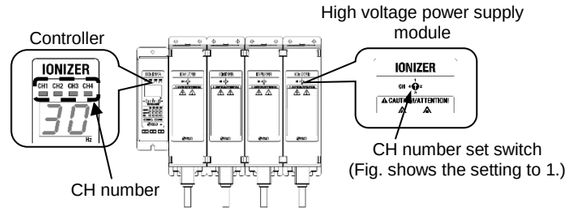
※For ②③, perform initial setting after pressing the reset button and make sure that "no" is displayed in the frequency display.
It is recommended to start the initial setting for ③ after replacing the emitter cartridge. If initial setting is performed while the emitter cartridge is not clean or is worn out, emitter contamination detection may not work properly.



4 Setting-continued

4.4 High voltage power supply module CH number setting

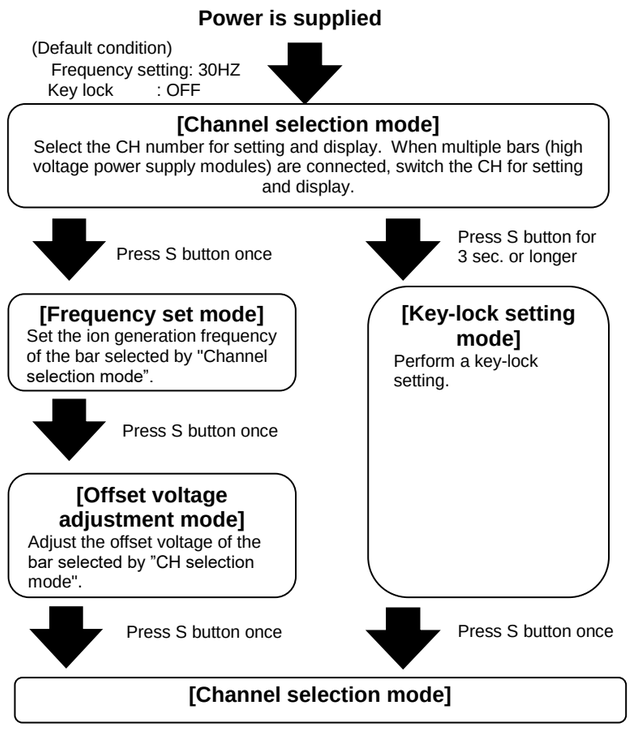
- When multiple high voltage power supply modules are connected to one controller, the CH number must be set for each high voltage power supply module to identify the information and set time.
- The CH number can be assigned from 1 to 4. (Up to 4 modules can be connected). Set the CH number using the rotary switch on the high voltage power supply module.



- The CH number set for the high voltage power supply module corresponds with the CH number displayed on the controller.
- When multiple high voltage power supply modules are used (max 4 pcs.) the CH number must not be duplicated. Duplication of the CH number will generated an error (error code: Er).

4.5. Controller setting

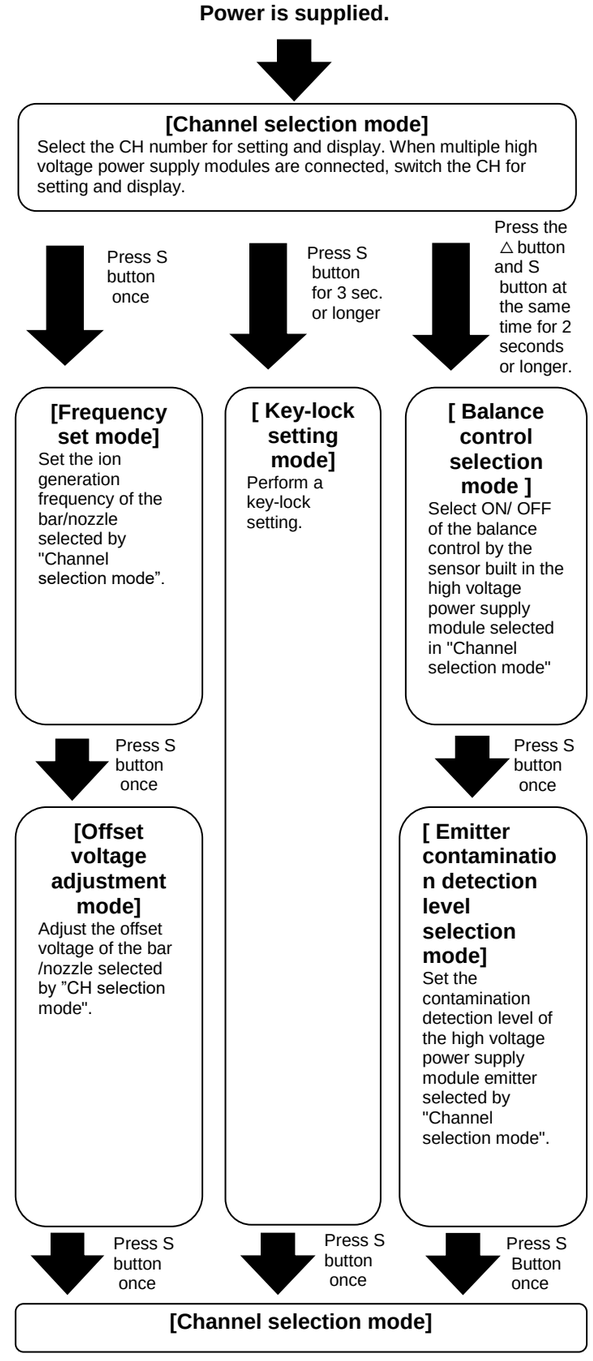
1) Setting IZT40



4 Setting-continued

2) Setting IZT41, IZT42 and IZT43

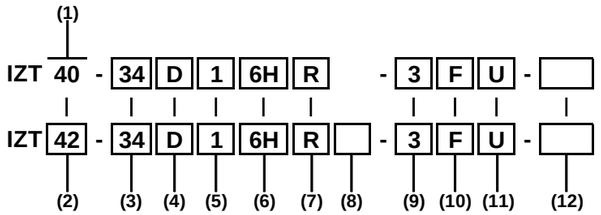
(Default condition)
Frequency setting: 30Hz
Key lock: OFF
Built-in sensor: ON
Emitter contamination: MIDDLE



5 How to Order

- The product number consists of the controller, high voltage power supply module and bar (1 of each).
- When multiple high voltage power supply modules and bars are added to one controller, choose the equipment according to the product number for a single unit.

5.1 Bar + High voltage power supply module + Controller



(1) Model

Symbol	Model
40	Standard type

(2) Model

Symbol	Model
41	AC type
42	Dual AC type

(3) Bar length

Symbol	Bar length (mm)	Symbol	Bar length (mm)
16	160	82	820
22	220	112	1120
34	340	130	1300
40	400	160	1600
46	460	190	1900
58	580	232	2320
64	640	250	2500

(4) Emitter Cartridge Type/ Materials

Symbol	Type	Material
D	High speed static neutralization cartridge	Tungsten
E		Silicon
L	Energy saving static neutralization cartridge	Tungsten
M		Silicon
V	Energy saving high-efficiency cartridge	Tungsten
S		Silicon

(5) High voltage cable length

Symbol	High voltage cable length (m)
1	1
2	2
3	3

※Number of included cable holder is different depending on the high voltage cable length (Table below).

Number of High Voltage Cable Holder

Sym-bol	IZT40		IZT41		IZT42	
	Straight	Elbow	Straight	Elbow	Straight	Elbow
1	1	1	1	1	2	2
2	2	1	2	1	4	2
3	3	1	3	1	6	2

(6) One-touch Fitting

Symbol	Metric size
4H	ø4 straight
6H	ø6 straight
8H	ø8 straight
AH	ø10 straight
4L	ø4 elbow
6L	ø6 elbow
8L	ø8 elbow
AL	ø10 elbow

Symbol	Inch size
5H	ø3/16" straight
7H	ø1/4" straight
9H	ø5/16" straight
BH	ø3/8" straight
5L	ø3/16" elbow
7L	ø1/4" elbow
9L	ø5/16" elbow
BL	ø3/8" elbow

(7) Plug Location

Symbol	Plug location
Nil	Without plug
Q	High voltage cable side
R	The opposite side of the high voltage cable

(8) Input/ Output Specifications

Symbol	Input/ Output
Nil	NPN
P	PNP

※None of the Input/Output functions can be used when the AC adapter is being used.

(9) Power Supply Cable Length

Symbol	Length (m)
3	3
10	10
15	15
N	None

※To use AC adapter, specify "N", and select AC adapter with the option number.

(10) Bracket for bar

Symbol	Type
Nil	Without Bracket
B	With bracket 1
F	With bracket 2

※Number of intermediate bracket depends on the bar length. (See table below)

No of bracket

Bar length (mm)	End bracket	Intermediate bracket
160 to 760	2	None
820 to 1,600		1
1,660 to 2,380		2
2,440 to 2,500		3

(11) DIN rail bracket for controller, high voltage power supply module

Symbol	For controller	For high voltage power supply module
Nil	None	None
U	Included	Included
W	Included	None
Y	None	Included

(12) Made to Order

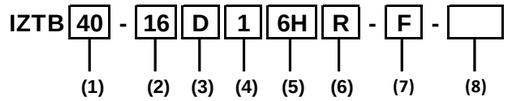
5.2 Product number for single unit (to order separately)

Table for combination

	Bar / IZTB		Nozzle / IZTN	High voltage power supply module / IZTP				Controller / IZTC	
	40	42	43	40	41	42	43	40	41
IZT40	●			●				●	
IZT41	●				●				●
IZT42		●				●			●
IZT43			●				●		●

5 How to Order –continued

5.3 Bar



(1) Model

Symbol	Model
40	Standard, AC type
42	Dual AC type

(2) Bar length

Symbol	Bar length (mm)	Symbo	Bar length (mm)
16	160	82	820
22	220	112	1120
34	340	130	1300
40	400	160	1600
46	460	190	1900
58	580	232	2320
64	640	250	2500

(3) Emitter Cartridge Type/ Materials

Symbol	Type	Material
D	High speed static neutralization cartridge	Tungsten
E		Silicon
L	Energy saving static neutralization cartridge	Tungsten
M		Silicon
V	Energy saving high-efficiency cartridge	Tungsten
S		Silicon

(4) High voltage cable length

Symbol	High voltage cable length (m)
1	1
2	2
3	3

※Number of included cable holder is different depending on the high voltage cable length (Table below).

Number of High Voltage Cable Holder

Sym-bol	IZT40		IZT41		IZT42	
	Straight	Elbow	Straight	Elbow	Straight	Elbow
1	1	1	1	1	2	2
2	2	1	2	1	4	2
3	3	1	3	1	6	2

(5) One-touch Fitting

Symbol	Metric size
4H	ø4 straight
6H	ø6 straight
8H	ø8 straight
AH	ø10 straight
4L	ø4 elbow
6L	ø6 elbow
8L	ø8 elbow
AL	ø10 elbow

Symbol	Inch size
5H	ø3/16" straight
7H	ø1/4" straight
9H	ø5/16" straight
BH	ø3/8" straight
5L	ø3/16" elbow
7L	ø1/4" elbow
9L	ø5/16" elbow
BL	ø3/8" elbow

(6) Plug Location

Symbo	Plug location
Nil	Without plug
Q	High voltage cable side
R	The opposite side of the high voltage cable

(7) Bracket for bar

Symbo	Type
Nil	Without Bracket
B	With bracket 1
F	With bracket 2

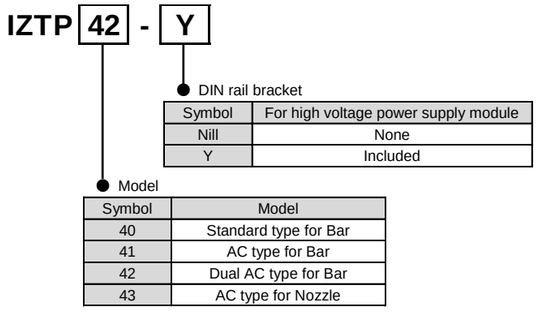
※Number of intermediate bracket depends on the bar length. (See table below)

No of bracket

Bar length (mm)	End bracket	Intermediate bracket
160 to 760	2	None
820 to 1,600		1
1,660 to 2,380		2
2,440 to 2,500		3

(8) Made to Order

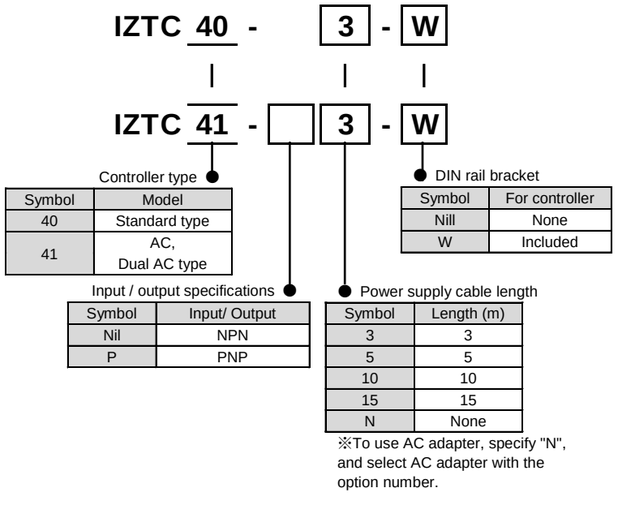
5.4 High voltage power supply module



Symbol	For high voltage power supply module
Nill	None
Y	Included

Symbol	Model
40	Standard type for Bar
41	AC type for Bar
42	Dual AC type for Bar
43	AC type for Nozzle

5.5 Controller



Symbol	Model
40	Standard type
41	AC, Dual AC type

Symbol	For controller
Nill	None
W	Included

Symbol	Input/ Output
Nil	NPN
P	PNP

Symbol	Length (m)
3	3
5	5
10	10
15	15
N	None

※To use AC adapter, specify "N", and select AC adapter with the option number.

5 How to Order -continued

- The product number consists of the controller, high voltage power supply module and bar (1 of each).
- When multiple high voltage power supply modules and nozzles are attached to one controller, choose the equipment according to the product number for a single unit.

5.6 Nozzle + High voltage power supply module + Controller

IZT 43 - D 1 6H ☐ - 3 F U

(1) (2) (3) (4) (5) (6) (7) (8)

(1) Model

Symbol	Model
43	AC type

(2) Emitter Cartridge Type/ Materials

Symbol	Type	Material
D	High speed static neutralization cartridge	Tungsten
L	Energy saving static neutralization cartridge	Tungsten

(3) High voltage cable length

Symbol	High voltage cable length (m)
1	1
2	2
3	3

※Number of included cable holder is different depending on the high voltage cable length (Table below).

Number of High Voltage Cable Holder

Symbol	IZT43	
	Straight	Elbow
1	1	1
2	2	1
3	3	1

(4) One-touch Fitting

Symbol	Metric size
6H	ø6 straight
6L	ø6 elbow

Symbol	Inch size
7H	ø1/4" straight
7L	ø1/4" elbow

(5) Input/ Output Specifications

Symbol	Input/ Output
Nil	NPN
P	PNP

※None of the Input/Output functions can be used when the AC adapter is being used.

(6) Power Supply Cable Length

Symbol	Length (m)
3	3
10	10
15	15
N	None

※To use AC adapter, specify "N", and select AC adapter with the option number.

(7) Bracket for nozzle

Symbol	Type
Nil	Without bracket
B	With L-type bracket
F	With Angle adjustment bracket

(8) DIN rail bracket for controller, high voltage power supply module

Symbol	For controller	For high voltage power supply module
Nil	None	None
U	Included	Included
W	Included	None
Y	None	Included

5 How to Order -continued

5.7 Nozzle

IZTN 43 - D 1 6H - F

(1) (2) (3) (4) (5)

(1) Model

Symbol	Model
43	AC type

(2) Emitter Cartridge Type/ Materials

Symbol	Type	Material
D	High speed static neutralization cartridge	Tungsten
L	Energy saving static neutralization cartridge	Tungsten

(3) High voltage cable length

Symbol	High voltage cable length (m)
1	1
2	2
3	3

※Number of included cable holder is different depending on the high voltage cable length (Table below).

Number of High Voltage Cable Holder

Symbol	IZT43	
	Straight	Elbow
1	1	1
2	2	1
3	3	1

(4) One-touch Fitting

Symbol	Metric size
6H	ø6 straight
6L	ø6 elbow

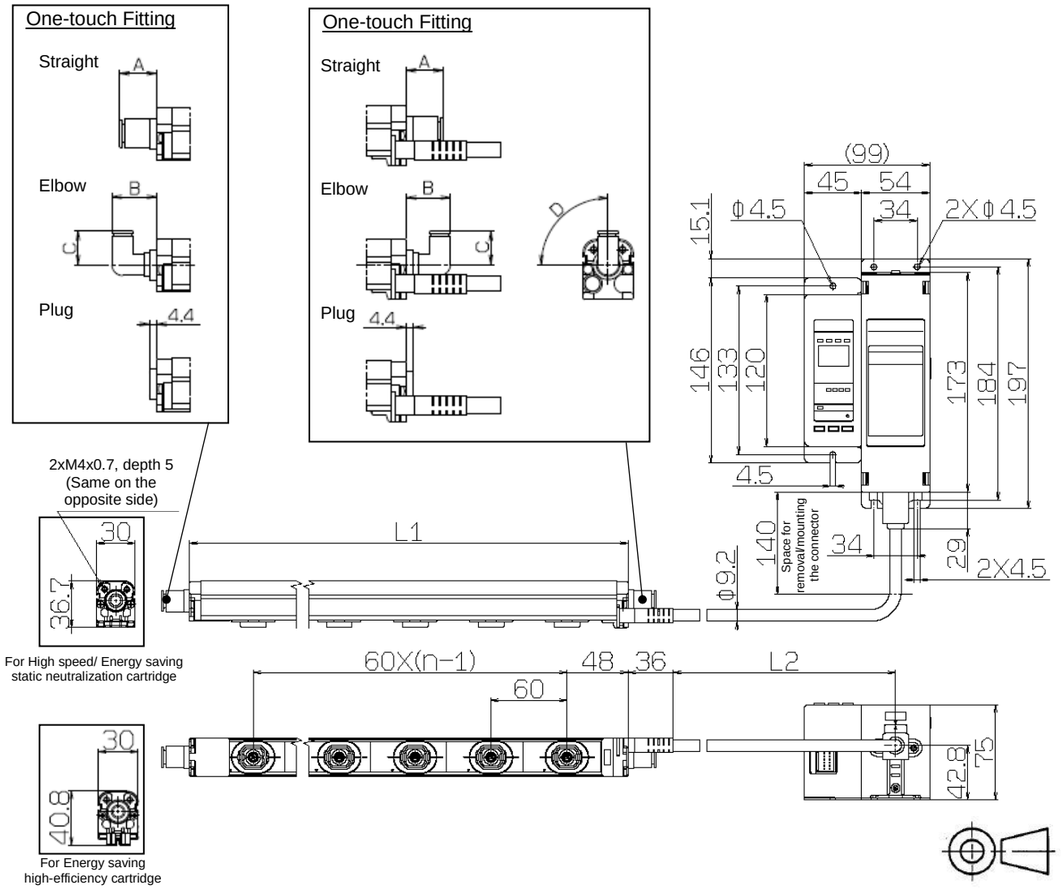
Symbol	Inch size
7H	ø1/4" straight
7L	ø1/4" elbow

(5) Bracket for nozzle

Symbol	Type
Nil	Without bracket
B	With L-type bracket
F	With Angle adjustment bracket

6 Outline Dimensions (mm)

6.1 **Ionizer IZT40, IZT41**



Emitter cartridge qty. n, bar length L1

Product No.	n(pc.)	L1(mm)
IZT4□-16	2	160
IZT4□-22	3	220
IZT4□-34	5	340
IZT4□-40	6	400
IZT4□-46	7	460
IZT4□-58	9	580
IZT4□-64	10	640
IZT4□-82	13	820
IZT4□-112	18	1120
IZT4□-130	21	1300
IZT4□-160	26	1600
IZT4□-190	31	1900
IZT4□-232	38	2320
IZT4□-250	41	2500

High voltage cable length L2

Symbol	L2(mm)
1	1000
2	2000
3	3000

One-touch fitting

Straight (mm)

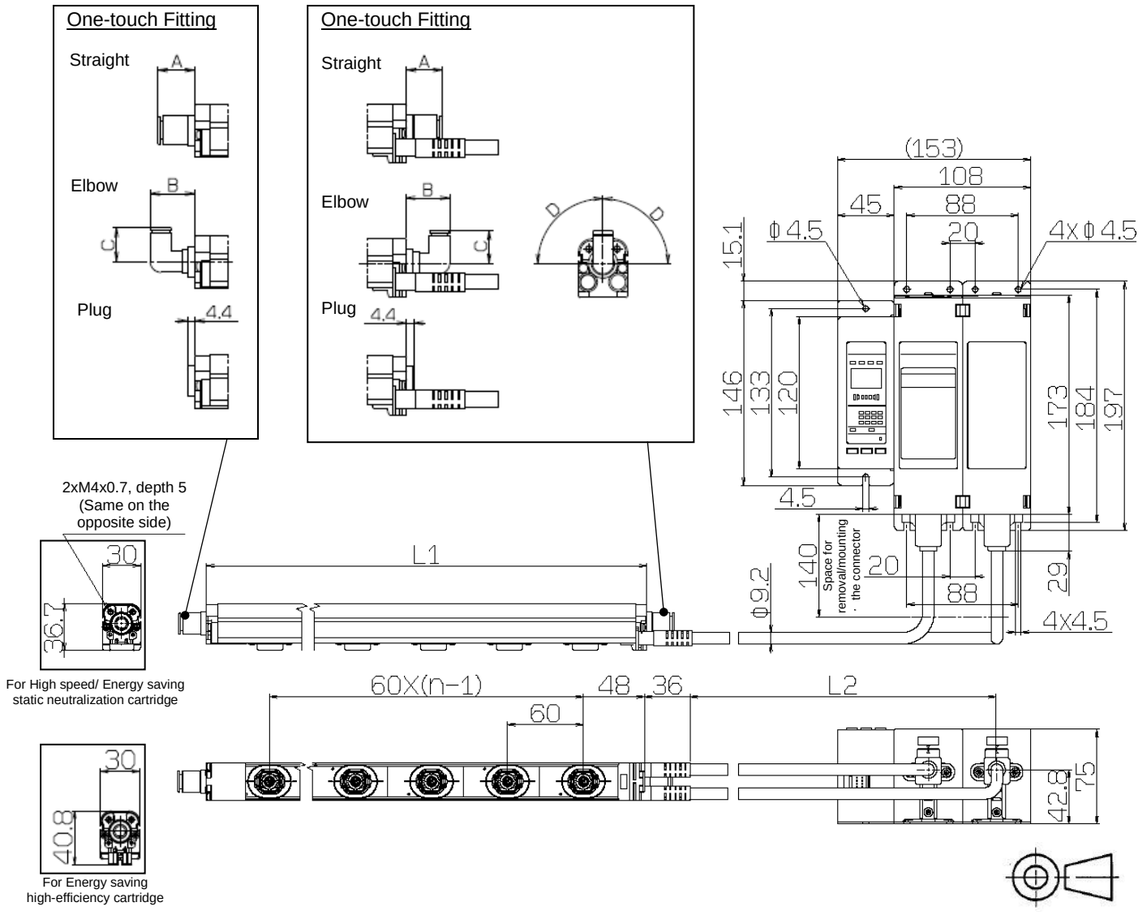
Applicable tube O.D.		A
Metric	ø4	13
	ø6	13
	ø8	15
	ø10	22
Inch	ø3/16"	15
	ø1/4"	14
	ø5/16"	15
	ø3/8"	23

Elbow (mm)

Applicable tube O.D.		B	C	D
Metric	ø4	25	19	90°
	ø6	27	21	75°
	ø8	29	24	73°
	ø10	37	27	71°
Inch	ø3/16"	26	20	90°
	ø1/4"	27	21	75°
	ø5/16"	29	24	73°
	ø3/8"	36	27	71°

6 Outline Dimensions (mm) -continued

6.2 Ionizer IZT42



Emitter cartridge qty. n, bar length L1

Product No.	n(pc.)	L1(mm)
IZT4□-16	2	160
IZT4□-22	3	220
IZT4□-34	5	340
IZT4□-40	6	400
IZT4□-46	7	460
IZT4□-58	9	580
IZT4□-64	10	640
IZT4□-82	13	820
IZT4□-112	18	1120
IZT4□-130	21	1300
IZT4□-160	26	1600
IZT4□-190	31	1900
IZT4□-232	38	2320
IZT4□-250	41	2500

High voltage cable length L2

Symbol	L2(mm)
1	1000
2	2000
3	3000

One-touch fitting

Straight (mm)

Applicable tube O.D.		A
Metric	ø4	13
	ø6	13
	ø8	15
	ø10	22
Inch	ø3/16"	15
	ø1/4"	14
	ø5/16"	15
	ø3/8"	23

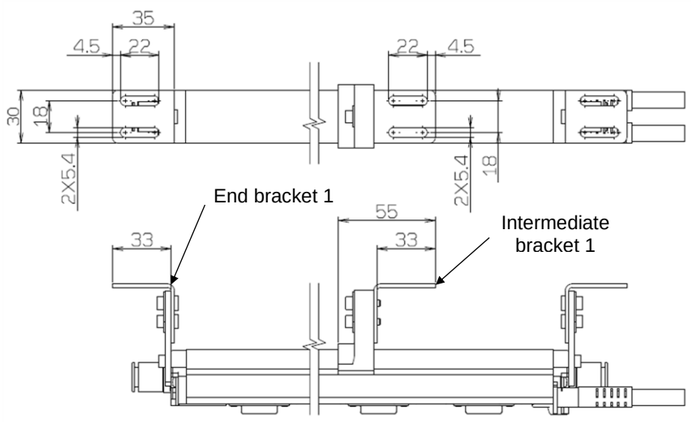
Elbow (mm)

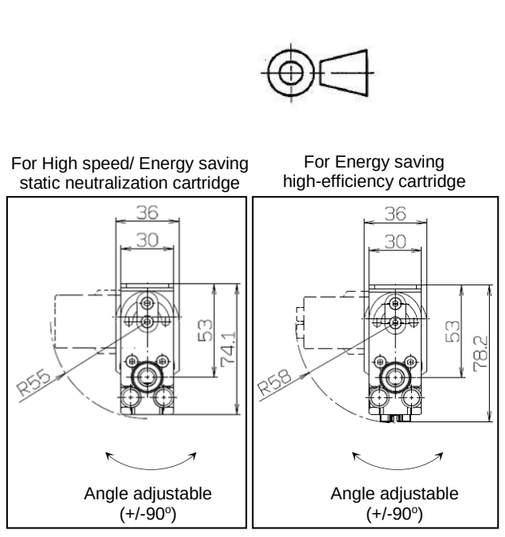
Applicable tube O.D.		B	C	D
Metric	ø4	25	19	90°
	ø6	27	21	75°
	ø8	29	24	73°
	ø10	37	27	71°
Inch	ø3/16"	26	20	90°
	ø1/4"	27	21	75°
	ø5/16"	29	24	73°
	ø3/8"	36	27	71°

6 Outline Dimensions (mm) - continued

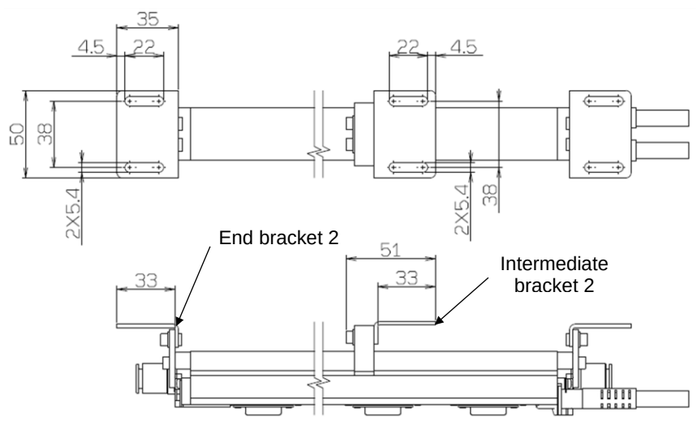
6.3 Bracket for Bar

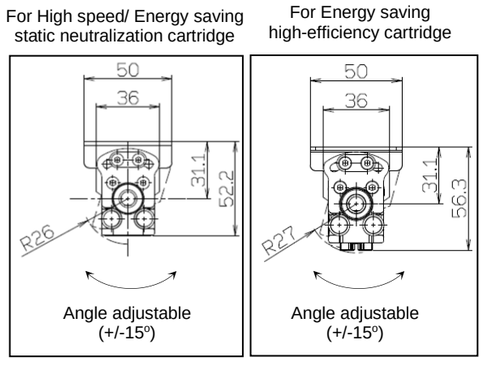
6.3.1 End bracket / IZT40-BE1 , Intermediate bracket / IZT40-BM1





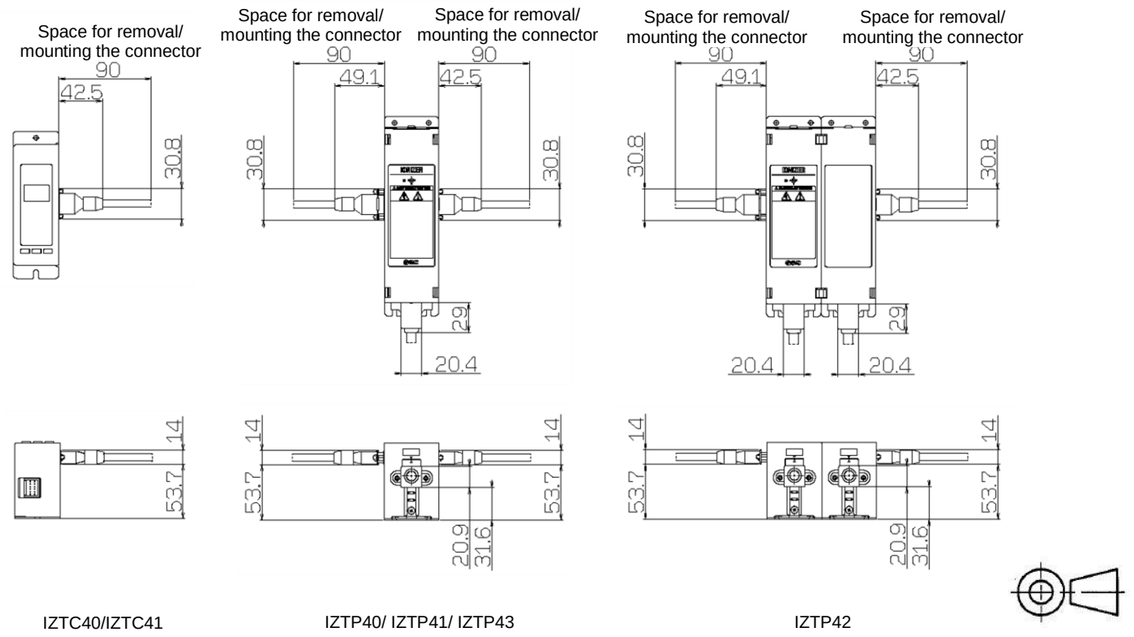
6.3.2 End bracket / IZT40-BE2 , Intermediate bracket / IZT40-BM2





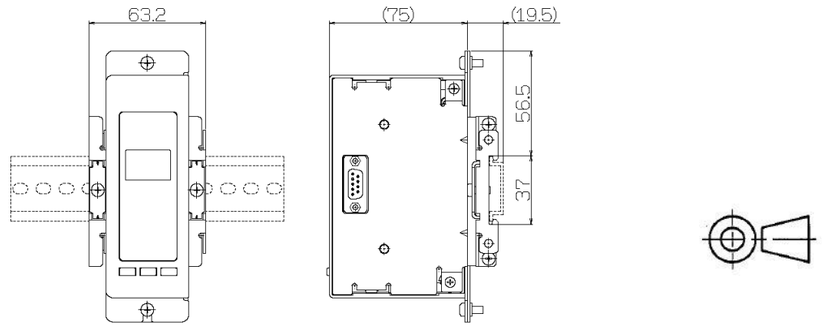
6 Outline Dimensions (mm) - continued

6.4 Space for mounting / removal of the separate cable

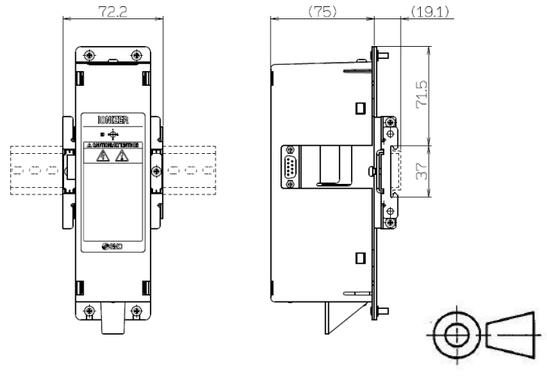


6.5 DIN rail bracket

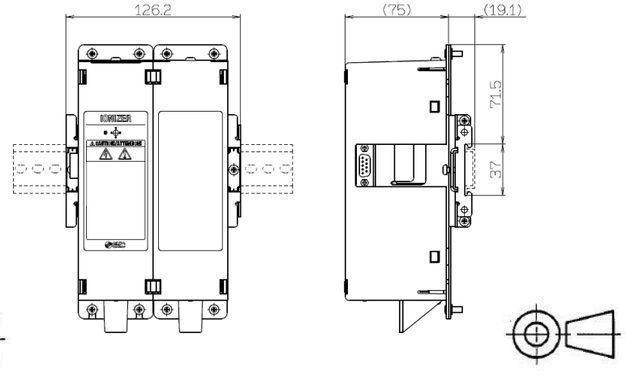
6.5.1 When DIN rail mounting bracket (IZT40-B1) is used



6.5.2 When DIN rail mounting bracket (IZT40-B2) is used

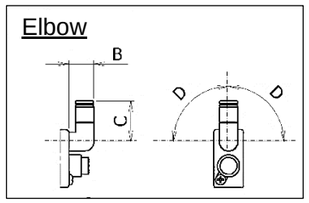


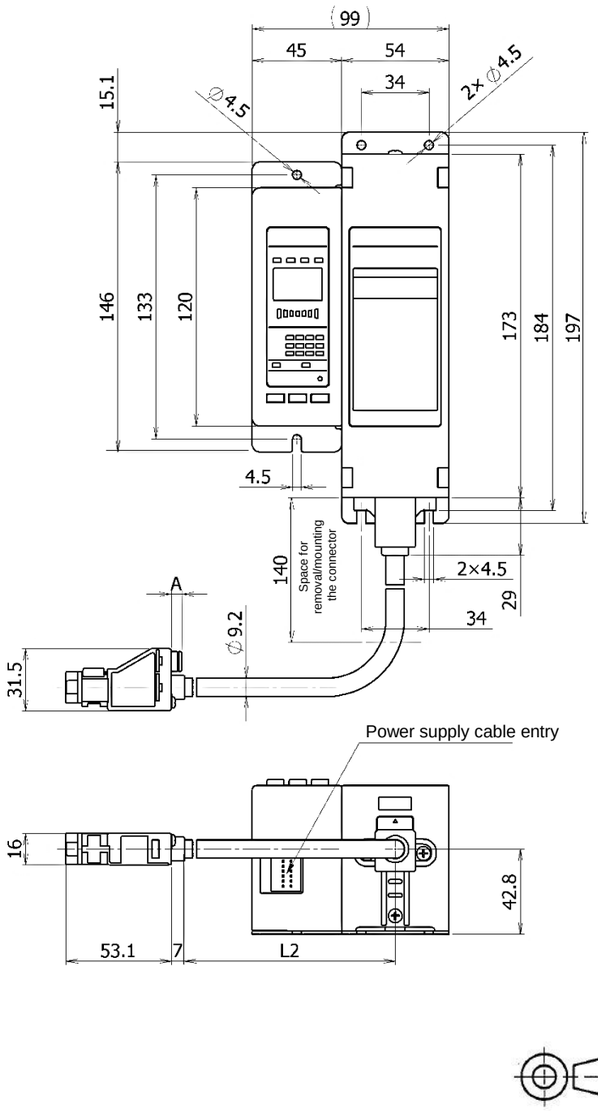
• 6.5.3 When DIN rail mounting bracket (IZT40-B3) is used



6 Outline Dimensions (mm) - continued

6.6 Ionizer IZT43





High voltage cable length L2

Symbol	L2(mm)
1	1000
2	2000
3	3000

One-touch fitting

Straight (mm)

Applicable tube O.D.		A
Metric	ø6	7
Inch	ø1/4"	10

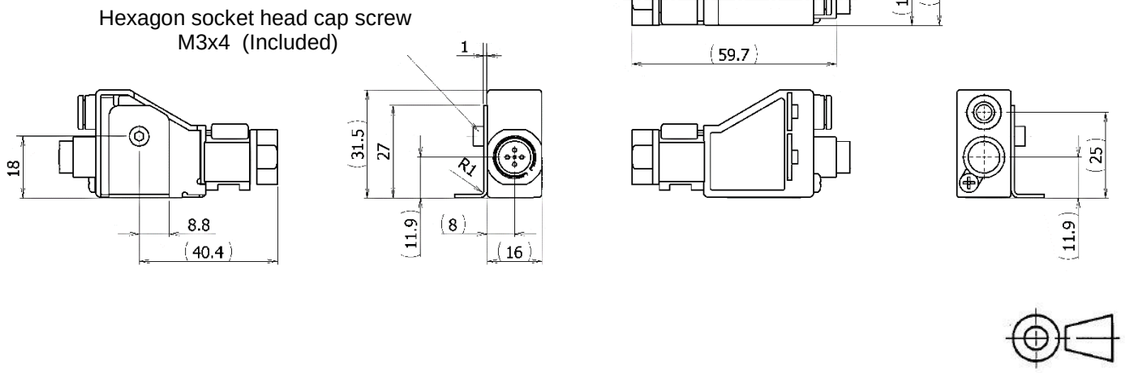
Elbow (mm)

Applicable tube O.D.		B	C	D
Metric	ø6	14	23	105°
Inch	ø1/4"	14	26	105°

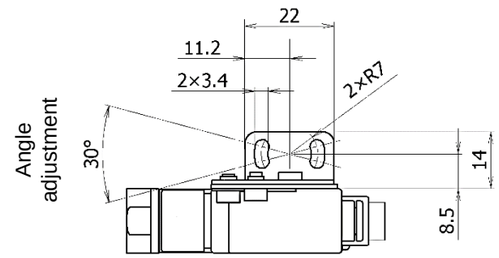
6 Outline Dimensions (mm) - continued

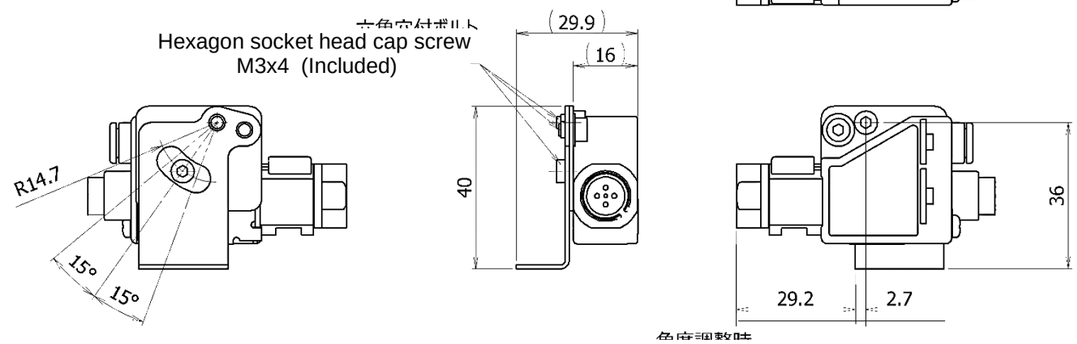
6.7 Bracket for Nozzle

6.7.1 L-type bracket / IZT43-BL1

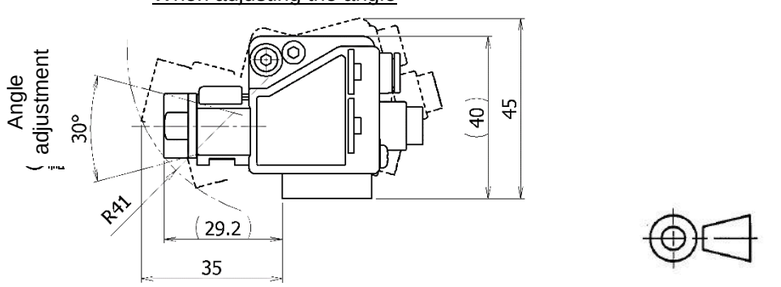


6.7.2 Angle adjustment bracket / IZT43-BL2





When adjusting the angle



7 Maintenance

7.1 General Maintenance

⚠ Caution

- Not following proper maintenance procedures could cause the product to malfunction and lead to equipment damage.
- If handled improperly, compressed air can be dangerous. Maintenance of pneumatic systems should be performed only by qualified personnel.
- Before performing maintenance, turn off the power supply and be sure to cut off the supply pressure. Confirm that the air is released to atmosphere.
- After installation and maintenance, apply operating pressure and power to the equipment and perform appropriate functional and leakage tests to make sure the equipment is installed correctly.
- If any electrical connections are disturbed during maintenance, ensure they are reconnected correctly and safety checks are carried out as required to ensure continued compliance with applicable national regulations.
- Do not make any modification to the product.
- Do not disassemble the product, unless required by installation or maintenance instructions.

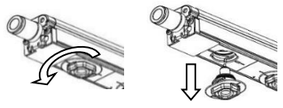
7.2 Maintenance

⚠ Warning

- A high voltage generating circuit is mounted onto this product. Verify that the power supply is OFF when performing maintenance.
- When compressed air is supplied to the product, shutoff the supply before performing any maintenance operation.
- Never disassemble or modify the product, as this can cause loss of product functionality and a risk of electric shock and earth leakage.
- Do not touch the end of the emitters. They have a sharp end and touching them directly with your fingers may cause injury.
- Only people who have sufficient knowledge and experience are allowed to clean the emitters.
- If this product is used for an extended period of time, contamination such as dust will stick to the emitters, reducing the static neutralization performance.
- The Emitter contamination detection function is available for the IZT41, IZT42 and IZT43. When the emitter contamination is detected, clean the emitter.
- In cases where the emitter contamination detection function is not used on the IZT40, IZT41, IZT42 or IZT43 is used, perform neutralizing performance test and set a maintenance cycle for periodic cleaning.
- Emitter contamination level is different depending on the installation environment and supply pressure.
- If the maintenance signal is output upon completion of cleaning the emitter, it may not have been cleaned sufficiently or it may be worn or damaged. If the emitters are worn out or damaged, replace the emitter cartridge.
- If the emitter is worn out or damaged, the static electricity elimination performance will decrease.

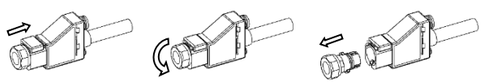
Cleaning procedure of emitter

- It is highly recommended that the emitter cleaning kit (IZS30-M2, IZT43-M2) is used to clean the emitter needles.
  a. Before cleaning the emitters, shutoff the power and air supply.
  b. The emitters may be cleaned with the emitter cartridges mounted to the bar or with the cartridges removed from the bar.
  Refer to "Removal procedure of emitter cartridge" shown below for instructions on how to remove the cartridges.



(1) Rotate 90 degree (2) Pull out

Removal procedure of the emitter cartridge of bar

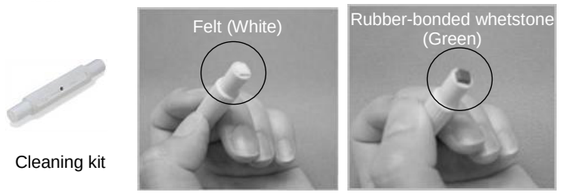


(1) Slide to unlock (2)Rotate the cartridge in the counter-clockwise direction. (3) Pull to remove.

Removal procedure of the emitter cartridge of nozzle

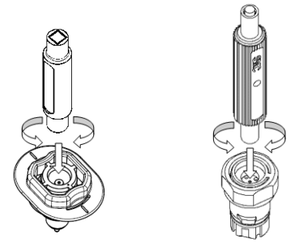
7 Maintenance - continued

c. The emitter cleaning kit (IZS30-M2, IZT43-M2) has felt at one end of the tool and rubber-bonded whetstone at the other end of the tool.



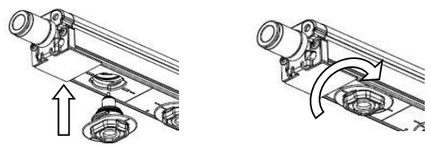
Cleaning kit

- Saturate the felt end of the emitter cleaning tool with alcohol and insert it into the back of the emitter cartridge. Turn the tool for several rotations to thoroughly remove dirt.
- If it is not possible to thoroughly remove the dirt using the felt end of the cleaning tool, the rubber-bonded whetstone should be used in the same procedure as described for that of the felt end.
  If you do not have a cleaning kit, an alcohol saturated cotton ball can be used for cleaning the electrodes. Use caution to prevent damage to the electrode needles.
- The alcohol used should be reagent ethanol class1 99.5vol% or more.



For the bar For the nozzle

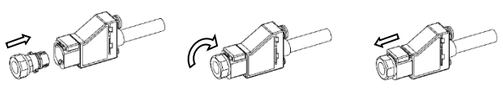
d. When the emitter cartridges are removed for cleaning, remount them to the product according to the "Mounting procedure of emitter cartridge" shown below. Make sure that the cartridges are securely mounted. If not, the cartridges may become dislodged when compressed air is supplied to the product.



(1) Insert the cartridge into the bar so that the longer side of the cartridge is mounted at a right angle to the bar.

(2) Rotate the cartridge 90 degrees to match the markings on the bar to those on the cartridge and secure.

Mounting procedure of the emitter cartridge for the bar



(1) Insert the cartridge. (2) Rotate the emitter cartridge for in the clockwise direction. (3) Slide to lock.

Mounting procedure of the emitter cartridge for the nozzle

e. Confirm that the static neutralization performance is maintained after cleaning and remounting of the cartridges are completed.

7 Maintenance - continued

Replacement of the felt or rubber-bonded whetstone tips of the emitter cleaning kit

- The felt or rubber-bonded whetstone tips of the emitter cleaning kit should be replaced referring to the procedure below when it becomes dirty, as it will not sufficiently clean the emitter.
  a. Remove the felt or the rubber-bonded whetstone tip at the end of the emitter cleaning kit.
  b. Insert a new felt or rubber-bonded whetstone tip into the emitter cleaning kit using the reverse procedure as the removal. The felt and the rubber-bonded whetstone tips are rectangular, and the inserting orientation is specified. The end of the rubber-bonded whetstone tip will stick out of the emitter cleaning kit end for 1mm. Do not push it in too much.
- Part number for spare felt/ rubber-bonded whetstone tips.

For IZS30-M2

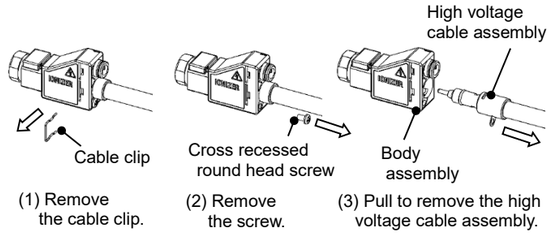
Description	Part No.	Qty.
Replacement felt pad	IZS30-A0201	10
Replacement rubber grindstone	IZS30-A0202	1

For IZT43-M2

Description	Part No.	Qty.
Replacement felt pad	IZT43-A003	10
Replacement rubber grindstone	IZT43-A004	1

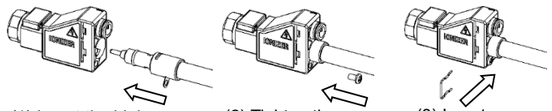
7.3 Replacement of the high voltage cable assembly or body assembly

- Securely mount or remove the high voltage cable assembly or body assembly referencing the instructions shown below.



(1) Remove the cable clip. (2) Remove the screw. (3) Pull to remove the high voltage cable assembly.

Removal



(1) Insert the high voltage cable assembly. (2) Tighten the screw. (Tightening torque: 0.11 to 0.15 Nm) (3) Insert the cable clip

Mounting

8 Limitations of Use

8.1 Limited warranty and Disclaimer/Compliance Requirements

- The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”. Read and accept them before using the product.
- Limited warranty and Disclaimer
  1) The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first(1). Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
  2) For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
  This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
  3) Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.
  (1) Vacuum pads are excluded from this 1 year warranty.
  A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

8 Limitations of Use - continued

- Compliance Requirements
  1) The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
  2) The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.
- This product is not designed to be explosion proof.
  Never use in an atmosphere of potentially explosive dust, flammable gas or explosive gas. Fire or an explosion can result.

⚠ Caution

- SMC products are not intended for use as instruments for legal metrology.
  Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country.
  Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.
- Clean room specification is not available.
  When using in a clean room environment, confirm the required cleanliness before use.
  Fine particles are generated due to wear of emitters and motor sliding during operation.

9 Product disposal

- This product should not be disposed of as municipal waste. Check your local regulations and guidelines to dispose this product correctly, in order to reduce the impact on human health and the environment.

10 Contacts

Refer to www.smcworld.com or www.smc.eu for contacts.

SMC Corporation

URL : http// www.smcworld.com (Global) http// www.smc.eu (Europe)
'SMC Corporation, Akihabara UDX15F, 4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101 0021

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