



It is recommended that only persons who have sufficient knowledge and experience such as system designers and responsible persons deal with this product after carefully reading the product manual.

1 The matters of safety

WARNING

- * If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- * Do not let the water touch the product.
It may cause electric shock or fire due to malfunction.
- * When you check or maintain the product, make it sure you turn off the power.
It may cause electric shock or fire due to malfunction.
- * Secure the product firmly when you want to secure it.
There is a possibility of accident due to fall-over or malfunction, etc.
- * Secure working space when you install the product. If working space is not secured, the checking or maintenance of the product is made impossible leading to failure of the product.
- * Do not use the product at the place where dangerous material such as inflammable or ignitable material exists. This product is not the product of anti-explosive type.
- * This device is made only for industrial uses. You need to ground the device beforehand. Otherwise, there are in case of malfunction, electric shock, or fire damage.

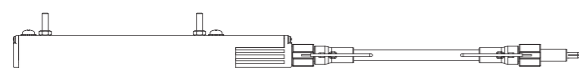
CAUTION

- * Do not contact the discharge needle or terminal with power applied.
There is a possibility of electric shock or malfunction.
- * Handle the discharge needle with care as its tip is very sharp.
- * Connect wires referring to the product manual. Wrong connection can cause failures.
- * Take precautions as cables of the adaptor, the power line and communication line of each product may disconnect. If the cable is damaged, replace it immediately.
- * Do not install the device where the vibration can be detected. Any minor impact or vibration on the device, the malfunction or danger of accident might happen.
- * Do not use the product for the purpose outside of the range of the product use.
If the product is used for the purpose outside of the range of the use, it can result in the trouble or the shortened service life. Or an unexpected problem may occur.
- * The ionizer generates ozone(below 0.05ppm).
If you sense the smell of ozone, ventilate the air.
- * When installing or transporting the ion bar, be prepare not to bend the item during the process.

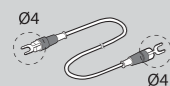
2 Check the package contents

Product compositions

The package includes the following products composition.



Ion Bar
SKBN Series
1ea



* Ground Cable
SGC-MT-2-003
Ø4 - Ø4 / 4m / 1ea

Option

If you require extra functions with the basic accessories we provided, you need to purchase optional items in below for further assistant.



* Clamp
SCL-SB-1-001



* Mount Bracket
(A Type)
SBR-KB-1-001



* Mount Bracket
(B Type)
SBR-KB-2-001



* Mount Bracket
(C Type)
SBR-KB-3-001

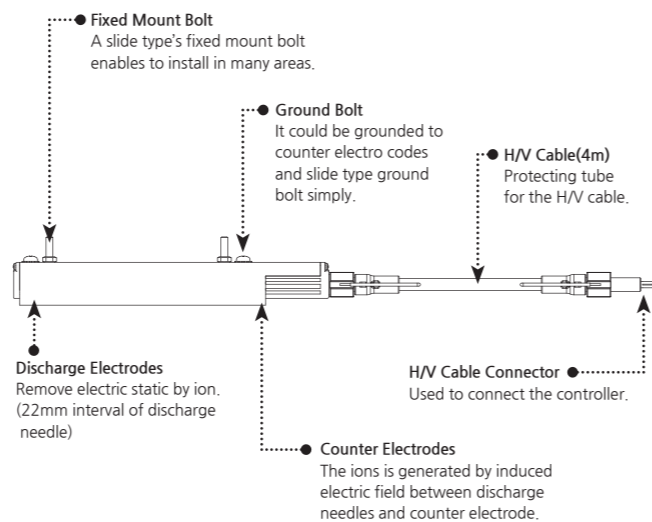


* Mount Bracket
(D Type)
SBR-KB-4-001



* Mount Bracket
(E Type)
SBR-KB-5-001

3 Nomenclatures of parts



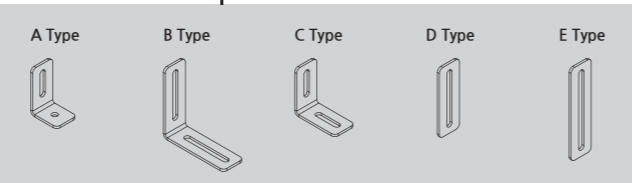
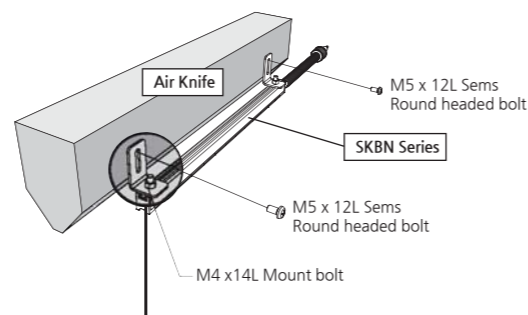
4 Installation and connection

Ion bar installation

When you install SSBN Series, please check the distance between ion bar and object.
* Please, handle with care when you carry or install not to break or bend an ion bar.

How to Install

Place your ion bar on the air knife and install it with the brackets. We provide 5 different mounting brackets to suit your installing environment. Please fully consider your installing circumstances in order to install our product. There might be some problem if product's conduction, vibration, or fall. Please install the product(s) tightly.



SKBN Series Model's Mount Bolt / Mount Bracket Quantity Requirement

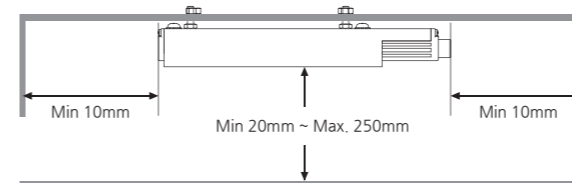
There are total 24 different SKBN Series, and mount bolt & mount bracket quantity requirement is below.

Model	Mount Bolt / Mount Bracket	Model	Mount Bolt / Mount Bracket	Model	Mount Bolt / Mount Bracket
SKBN-120	2ea	SKBN-1700	3ea	SKBN-3000	6ea
SKBN-300	2ea	SKBN-1900	3ea	SKBN-3100	6ea
SKBN-500	2ea	SKBN-2100	4ea	SKBN-3200	6ea
SKBN-700	2ea	SKBN-2300	4ea	SKBN-3300	6ea
SKBN-900	2ea	SKBN-2500	4ea	SKBN-3400	6ea
SKBN-1100	3ea	SKBN-2700	4ea	SKBN-3500	6ea
SKBN-1300	3ea	SKBN-2800	6ea	SKBN-3600	6ea
SKBN-1500	3ea	SKBN-2900	6ea	SKBN-3700	6ea

* The mount bolt is already attached on main body of ion bar.

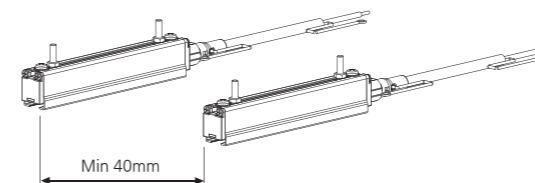
* The mount bracket is optional. Please consider installing circumstances and install suitable type of the mount bracket. If difficulties of applying the mount bracket are appeared, please contact us immediately.

Distance for the Basic Installation



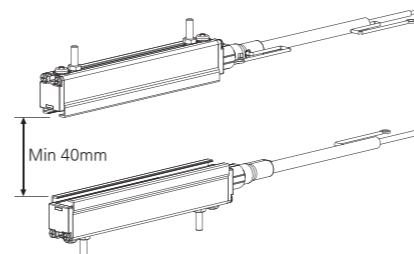
Side to Side Installation

When the more than two ion bars are installed, to avoid interference, the range between two ion bars should be more than 40mm.

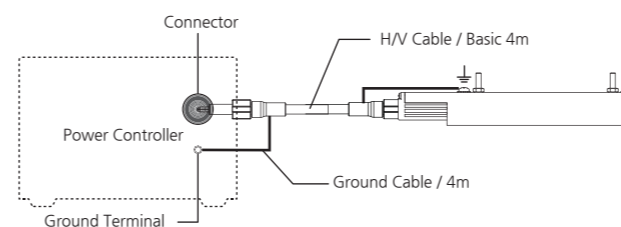


Face to Face Installation

When two ion bars are installed face to face, to avoid interference, the range between two ion bars should be more than 40mm.

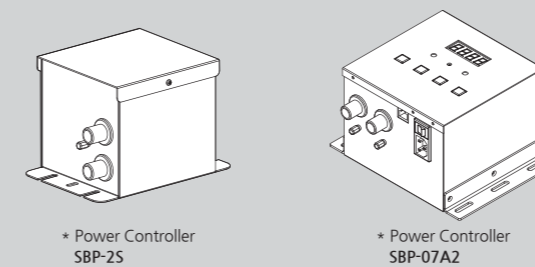


How to connect the power controller



Connectable Power Controller

SKBN Series can be connected to the power controllers as below.



H/V Cable Length

SBP-2S : SKBN-120~900 (Max. 5m) / SKBN-1100~1900 (Max. 4m) / SKBN-2100~2700 (Max. 3m) / SKBN-2800~3700 (Max. 2m)

SBP-07A2 : SKBN-120~3700 (Max. 5m)

* It does not affect to the performance even noise and vibration generated by the commercial frequency from high-voltage power.

CAUTION

* Don't try to connect with the power controller that is not properly specified to install.
It will be causes of malfunction or operation disorder.

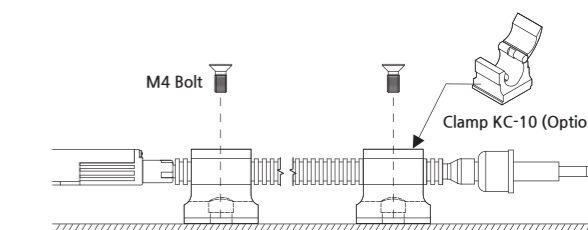
H/V cable connection

CAUTION

- * Do not bend the high voltage cable or do not damage its wire when you are install.
- * Offered H/V cable is suitable only for our goods. Please do not use any other H/V cable and also do not convert offered H/V cable into any other purpose.
- * Please refrain from connecting H/V cable with any other wires or cables because of interference of high electric field.
If you connect or set up them to H/V cable closely, it must be wired over than 200mm each other.
Also, if you wire H/V cables from more than two controllers which has different frequency or out-put voltage, please do not setup the H/V cable together.

Clamp (Option)

- Manufacturing Company & Model : KODUCT / KC-10B
- It is recommended that clamp is set up every 300mm.
- It is recommended that using M4 bolt.



5 Maintenance

Maintenance is an essential item for maintaining its capacity. Please conduct a routine maintenance according to the below description. The life time of a discharge needle can be a difference depending on using circumstance. SKBN Series needs a routine maintenance and cleaning in case of bad circumstance.(high humidity or dust)

CAUTION

- * This device uses the high level of voltage. When operating maintenance, please power off and unplug the device.
Otherwise, there might be in case of electric shock or fire damage.
- * The discharge needle is very sharp at the edge.
Do not physically(directly) touch the discharge needle.

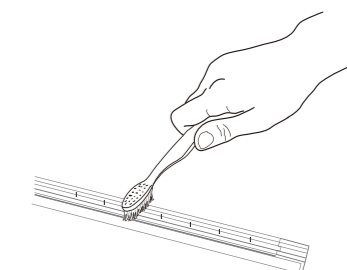
Discharge needle cleaning

The contamination level of discharge needle is different among the areas where the user installs, please maintain own cleaning period that suits your environment.

- Brush Cleaning : Weekly (or after using 168hr)
- Alcohol Cleaning : Once per 3 month (or after using 2,160hr)

Discharge needle cleaning order

- Be sure to power off before cleaning the ionizer.
- Use brush(nylon) or air compressor to clean the dirt. (E.g. tooth brush)
But, if you are in clean space, use cotton materials to clean.
- When there are any inks or oily dirt, apply alcohol(Methanol) or IPA in the cotton materials to wipe the dirty surface. But, do not forget to dry the cotton materials(first) before applying it.
You need to clean once per every 3 month or after using 2,160 hours.
- After cleaning the controller, you can turn it back on.
- Record the date of you cleaned in the machine.



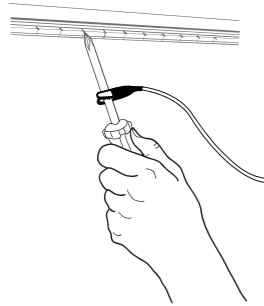
► How to test the machine whether it works or not

Test period : Non-periodic or anytime it is necessary.

- Put controller's power on.
- Get the screw driver that has metallic tip on it.
- Ground the wire on the metallic part of the screw driver.
- Barely touch the discharge needle from the discharge electrodes.

(Approximately 3mm of the distance between the screw driver and the needle.)

Check the diagram below.



Type	Arcing	Testing	Cause	Resolution
Shockless Type	No Arcing	Broken	Due to insulation from bar or cable oxidation, power supply is broken, etc.	Bar or controller needs to be fixed or be replaced.
	Approx. 2~3mm of thin white Arcing	Normal	-	-
	Approx. 5~8mm of thick red Arcing	Broken	Inner insulation of the bar oxidation.	Bar needs to be replaced.

6 Problem solving

► Checklist before alled

Problem	Identifying Problem	Solution
The product does not work.	Is your power cable still plugged in?	Please re-plug the power cable and then turn the device on again.
	Was the proper voltage level applied for this set-up?	Please use the proper level of power input for the device. (AC 100~220V, 50/60Hz)
	Is the switch off at back of the controller?	Turn on the power switch.
There is no ionization.	Does the installed environment have too high/low level of humidity or temperature?	Please install the device upon the proper working specification.
The ionizing performance has been decreased.	Can't possibly ground the device?	Please refer to 'Installation & Connection,' for (proper) grounding the device.
	Any damages or cut on the cables?	You need to replace the cables if it gets cut or damaged.
	Any contamination on the discharge needle?	Please refer to 'Maintenance,' for cleaning the discharge needle.

7 Dimensions

► Ion Bar (SKBN Series)

No.	Model No.	Controller	
		SBP-2S	SBP-07A2
1	Standard Length	4m	
2	SKBN-120~900	Max. 5m	Max. 5m
3	SKBN-1100~1900	4m	
4	SKBN-2100~2700	3m	
5	SKBN-2800~3700	2m	

No.	Model No.	Tip Q'ty	A	B	Mount Bolt Q'ty
1	SKBN-120	1	118	-	2
2	SKBN-300	9	294	176	2
3	SKBN-500	18	492	374	2
4	SKBN-700	27	690	572	2
5	SKBN-900	37	910	792	2
6	SKBN-1100	46	1108	990	3
7	SKBN-1300	55	1306	1188	3
8	SKBN-1500	64	1504	1386	3
9	SKBN-1700	73	1702	1584	3
10	SKBN-1900	82	1900	1782	3
11	SKBN-2100	91	2098	1980	4
12	SKBN-2300	100	2296	2178	4
13	SKBN-2500	109	2494	2376	4
14	SKBN-2700	118	2692	2574	4
15	SKBN-2800	123	2802	2684	6
16	SKBN-2900	128	2912	2794	6
17	SKBN-3000	132	3000	2882	6
18	SKBN-3100	137	3110	2992	6
19	SKBN-3200	141	3198	3080	6
20	SKBN-3300	146	3308	3190	6
21	SKBN-3400	150	3396	3278	6
22	SKBN-3500	155	3506	3388	6
23	SKBN-3600	159	3594	3476	6
24	SKBN-3700	164	3704	3586	6

Mount Bracket (Option)

8 Specification

Parameter	Description / Value	
Compliant Standards	Technical Recommendations of the Research Institute of Industrial Safety	
Rated Voltage	AC 7kV ±7% (Max.) / 50~60Hz	
Structure	Capacitive-Coupled (Shockless Type)	
Ozone(O3) Concentration	≤0.05ppm	
Operation Circumstance	0°C ~ +50°C(32°F ~ 122°F), 35% ~ 85% RH	
Material	Body	PBT (Polybutylene Terephthalate) ,PA66_Level V0
	Cover	Aluminum
	Electrode	SUS 304
	Cable Insulator	PVC (Polyvinyl Chloride)
Flexible Tube	PA (Polyamide) _Level V0	
Operating Distance	10 ~ 250mm (Non Air Pressure)	
Mounting Method	Ceiling & Wall Mount	
Weight	About 0.6kg/m (Without H/V Cable)	
Tip Cleaning Cycle	1 week (Electrode Cleaning)	
Warranty	1 year	

※ The appearance and specification of the product may be changed without prior notice for the improvement of the product.

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