

CE RoHS

***Ion Bazooka*** ***BBZ-E***  
STATIC ERASER GUN

---

Thank you for purchasing our Stat Clean No. BBZ-E.

Read this instruction manual before use. Keep it in a safe handy place for future reference.

**Table of Contents**

■For Your Safety .....	P.2
■Product Features .....	P.3
■Production Specifications .....	P.4
■External View .....	P.5
■Performance .....	P.6
■Installation .....	P.7
■Operation .....	P.8
■Maintenance .....	P.10
■Troubleshooting .....	P.13
■Storage .....	P.14
■Warranty .....	P.16

## ■ For Your Safety

### Safety Precautions

- Carefully read these Safety Precautions before use. Observe the precautions indicated herein to ensure safety.
- Safety precautions in this instruction manual are categorized into two types by the degree of danger associated with each on the followings. Based on danger analyses performed by Vessel, all precautions in this instruction manual are of the CAUTION level.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

	<b>WARNING</b>	Indicates that improper handling can lead to serious injury or even death.
	<b>CAUTION</b>	Indicates that improper handling can lead to minor injury and property damage.



This symbol indicates a WARNING or CAUTION.



This symbol indicates a prohibited action.



This symbol indicates a mandatory required action

 <b>CAUTIONS</b>	
 <b>ROHIBITED</b>	Do not use BBZ-E in environments that require explosion-proofing. BBZ-E is not of explosion-proof construction, therefore explosion or fire may occur.
 <b>ROHIBITED</b>	Do not use BBZ-E in flammable atmospheres. The corona discharge can act as an ignition source and cause an explosion or fire.
 <b>ROHIBITED</b>	Do not use BBZ-E in environments subjected to sharp temperature fluctuations or dewing. This kind of environment can lead to breakdown.
 <b>DO NOT WET</b>	Do not use BBZ-E in highly damp places or anywhere it may be wet by water, oil, solvent or other liquid. Contact with moisture can result in electric shock or breakdown.
 <b>PROHIBITED</b>	Do not use BBZ-E for anything other than static erasure or dust removal.
 <b>PROHIBITED</b>	Do not use BBZ-E with power supplies of ratings not specified in the specifications. Inappropriate power supplies can result in fire and electric shock.
 <b>PROHIBITED</b>	Do not install, use or service BBZ-E until having understood the information in this instruction manual.
 <b>REMEMBER</b>	Keep this instruction manual in a safe handy place for future reference.
 <b>CAUTION</b>	Vessel assumes no responsibility whatsoever for consequences arising from the use of this product.
 <b>PROHIBITED</b>	Never look Into high luminance light beam with your naked eye.

### Special Features

The BBZ-E is the high-performance ionizer that is focused on the noise reduction, the expansion of the static eliminating area and the durability.

#### \* **Corona Discharge AC type**

AC corona discharge performance won't dirt the needle nor the Ion balance off.

High frequency voltage transformer produces ion in its high performance without ion re-uniting loss.

#### \* **Silent Nozzle**

The BBZ-E is an excellent noise reduction model. It is about 10 db lower noise compared to conventional model with the standard nozzle.

#### \* **High Luminance LED Beam Built-in**

This high luminance LED beam makes it easy to check fine dusts stained on the surface of the articles.

#### \* **LED Display**

Both sides of Handle Grip display "ON" LED and "ALARM" LED for clear checking by left or right handed.

· Working "ON" display : Working "ON" Green LED at Power Switch

· High Voltage Warning : RED H.V. LED blinks when High Voltage Alarming is found in the power supply and output shuts down by the built-in transformer.

#### \* **Compact and Light Weight**

High Voltage power supply cable is not necessary. High Frequency Voltage Transformer is built in for safety, this compact design secures high performance of using this gun pin-pointedly over the required spot. Power source should be DC24 Voltage. Supply to this main body should be given by attached power supply adapter.

#### \* **Long power cable**

The attached power adapter has a 5m cable. Good handleability.

#### \* **Maintenance**

Replacement of the electrode could be easily done with Electrode needle replacement screwdriver (separately sold).

#### \* **Environmentally Friendly**

Compliant with RoHS standards.

#### \* **EMI Countermeasures**

Lower noise performance won't merely influence other electronic devices.

#### \* **CE Compliance**

The BBZ-E has been tested and approved under CE directive, EN61000-6-4, 6-2.

### Uses

Use the BBZ-E to blow away stubborn dust that adheres because of static electricity or to remove static electricity as a preventative measure against dust accumulation.

## ■ Product Specifications

---

### Ion Bazooka Static Eraser Gun

Model	: No. BBZ-E
Ion generation method	: High voltage AC corona discharge
Impressed voltage	: about AC2.0kV
Input voltage	: DC24V $\pm$ 5%
Power consumption	: 74mA (TYP. )
Dimensions	: W132 x H152 x D36(mm)
Weight	: 198g
Air consumption	: 0.1~0.6MPa
Air consumption	: 194L/min (at 0.3MPa)
Ozone generation	: 0.05ppm or less (Measured at 50mm)
Warning output	: High voltage alarm (Red LED)
Protective function	: High-voltage output shut down function (overload detection)
Working ambient temperature / humidity	: 5~40°C 35~65%RH (No dewing)
Distance from target area	: 50 mm ~ (Installation location: Non-dangerous indoor location)
Static electricity removal time	: Refer to the items in the capabilities chart.
Ion balance	: Within $\pm$ 10V (At 0.3MPa and 150mm)
Material	Casing : ABS Hook : SUS Electrode Needle Pole : Tungsten
Accessories	: Instruction Manual、AC Adapter

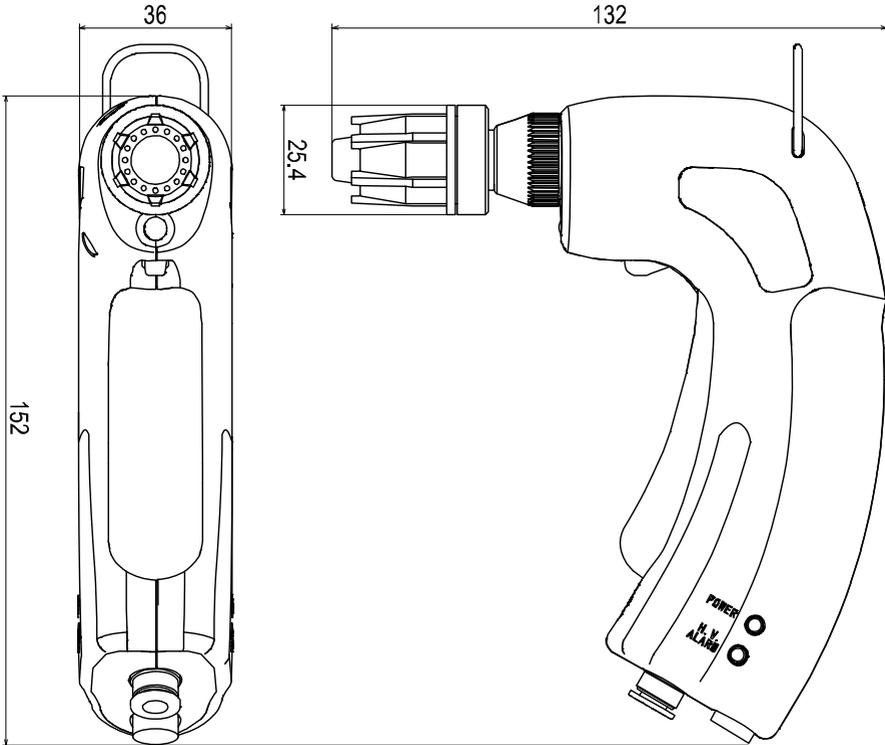
### AC Adapter No.AD24-ITB-E

Rated input voltage	: AC100V-240V(50/60Hz) 0.4A (TYP.)
Rated output voltage	: DC24V 0.75A
Working ambient temperature / humidity	: 0~40°C 5~95%RH (No dewing)
Cable length	: DC output cable: 5 m , AC input cable:1.8m
Weight	: 240g (without AC input cable)

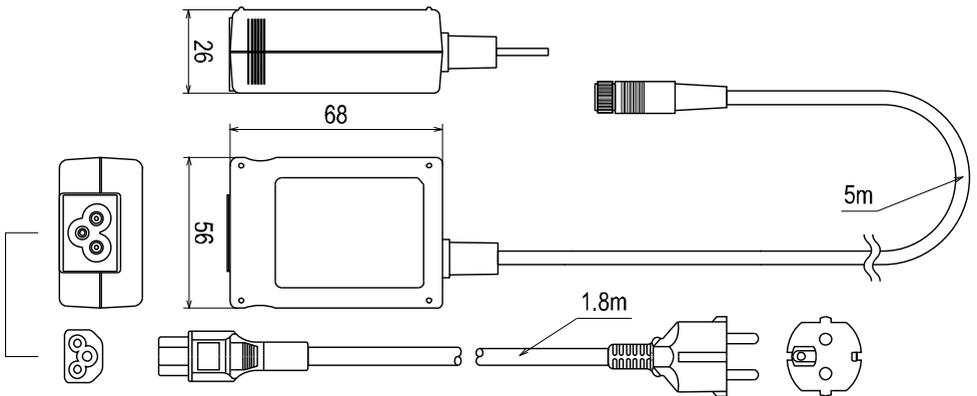
\*The measurement values were obtained using the VESSEL measurement environment, so error could be induced depending on the operation environment.

■ External View

No.BBZ-E



No.AD24-ITB-E



## ■ Performance

### EFFICIENCY DATA

Air Pressure (MPa)	0.1	0.2	0.3	0.4	0.5	0.6
Air consumption (L/min)	84	140	194	236	298	344
Ion Balance (V)	-2.1	-2.3	-2.1	-1.8	-2.1	-1.4
+ Decay Time (s)	1.5	0.9	0.7	0.6	0.6	0.6
- Decay Time (s)	1.6	0.9	0.7	0.6	0.6	0.5
Noise (dB)	65.2	72.4	77.3	80.5	83.2	85.5

\*The measurement values were obtained using the VESSEL measurement environment, so error could be induced depending on the operation environment.

\*The values of Ion balance and decay time are measured at 150mm distance from the nozzle to Charge plate monitor

\*Noise is measured at 1m distance from the nozzle.

## ■ Installation

### CAUTIONS IN INSTALLATION

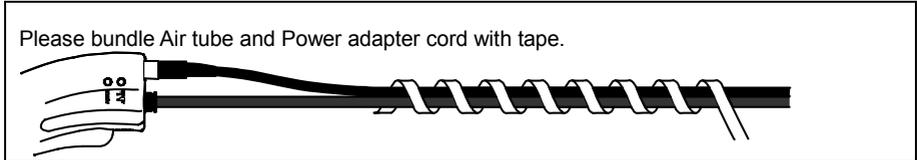
 <b>REMEMBER</b>	Use only the included power supply adapter. Use of other adapters may results in fire, electric shock and static electricity removal trouble.
 <b>REMEMBER</b>	Uses an air hose of sufficient withstand pressure performance. Air hoses of insufficient withstand pressure will rupture and leak air.
 <b>REMEMBER</b>	Please connect the plug to the power outlet with a ground terminal. Using the BBZ-E ungrounded runs the risk of electric shock.
 <b>REMEMBER</b>	Install the BBZ-E in the below environment. Adverse environments cause product deterioration and breakdown. Humidity: 20~80%RH (No dewing)      Temperature: 0~50°C
 <b>PROHIBITED</b>	Do not use the BBZ-E in the below environments. Adverse environments cause product deterioration and breakdown, as well as personal accidents. Where explosion-proofing is required, where found flammable atmospheres, high temperature and high humidity, or sharp temperature fluctuations, where dewing occurs, where possibly wet by water, oil or solvent
 <b>PROHIBITED</b>	Do not pull excessively on the tube. Abusive handling can damage the gun and internally disconnect the power cable and air hose.

## Installation Site

Select a location that is suitable for work and near to an air source and 100-240V AC supply.

## Air tube

Use an air tube (OD $\phi$ 6 mm x ID $\phi$ 4 mm) with sufficient withstand pressure.



## Air supply

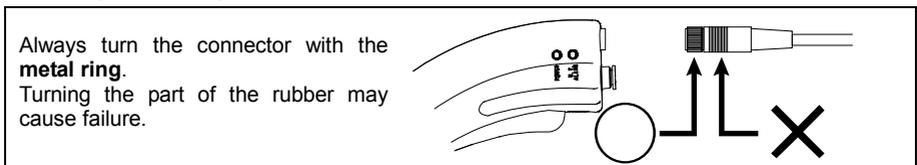
Remove all impurities with a mist separator (0.3 $\mu$ m). Remove all moisture with an air dryer.  
Supply air at a temperature of 0~40°C.

## Power adapter

Use the attached power adapter. Use with other adapter can lead to breakdown. The attached adapter is specifically designed for use with the BBZ-E. Do not use the adapter for any other purpose than to supply power to the BBZ-E.

## Connector

Align the pin positions on the connector and the BBZ-E, and plug in firmly.  
Turn the metal ring to be fixed the connector.  
Please tighten the ring with sufficient force, to prevent loose.



## Ground

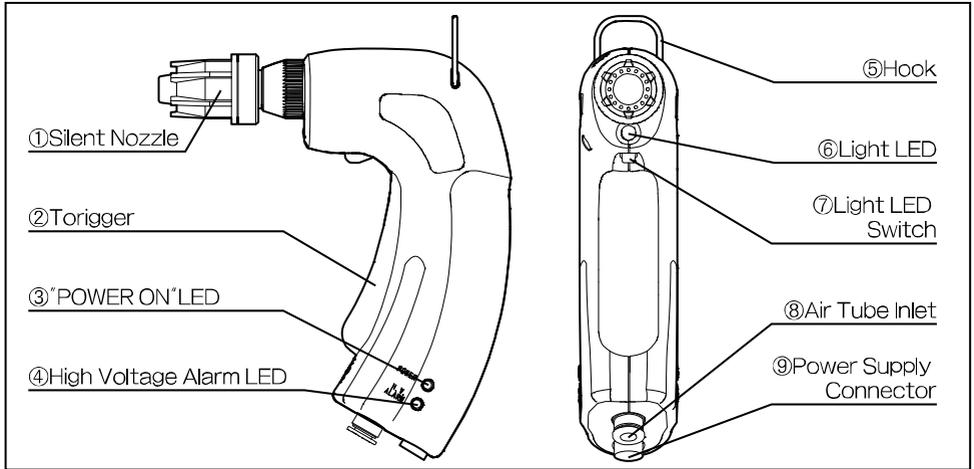
Please connect the plug to the power outlet with a ground terminal.

## Before Use Checks

Before use, check the BBZ-E, air tube and power adapter for trouble.

Make sure there is no damage, loose screws, disconnected hosing, loose connectors, etc.

## ■ Operation



- |                          |   |
|--------------------------|---|
| ① Silent Nozzle          | Air blow point part.  |
| ② Trigger                | Pulling Trigger for airblow / static bustering gets started.        |
| ③ "POWER ON" LED         | Lights up while the trigger pulled and static bustering.            |
| ④ High Voltage Alarm LED | H.V. ALARM LED lights while high voltage alarm.                     |
| ⑤ Hook                   | To hang on this gun while not in use.                               |
| ⑥ Light LED Switch       | To be used at ON/OFF with Light LED                                 |
| ⑦ Light LED              | To check if the dust and foreign article stained and / or remained. |
| ⑧ Air Tube Inlet         | Air Tube connecting (Out dia. 6mm x Inner dia. 4mm)                 |
| ⑨ Power Supply Connector | Power Inlet fitting for attached power supply adapter (AD24-ITB-E)  |

<b>⚠ CAUTIONS IN OPERATION</b>	
<b>⊘ PROHIBITED</b>	Do not use the BBZ-E for anything other than static erasure or dust removal.
<b>● REMEMBER</b>	If noticing anything strange, stop using the BBZ-E immediately.
<b>● REMEMBER</b>	Supply clean dry air. Improper air quality can lead to BBZ-E deterioration and work contamination.
<b>● REMEMBER</b>	After cleaning the electrode wire, attach the nozzle. If the BBZ-E is used without the nozzle, the electrode wire may fly off under the air pressure.
<b>⊘ PROHIBITED</b>	Do not remodel or disassemble the BBZ-E. The BBZ-E contains high voltage parts.
<b>⊘ PROHIBITED</b>	Do not drop the BBZ-E or otherwise subject to harsh impacts.
<b>⊘ PROHIBITED</b>	Do not pull excessively on the tube. Abusive handling can damage the gun and internally disconnect the power cable and air hose.
<b>⊘ PROHIBITED</b>	Do the damage the hose or cabling. Keep the hose and cabling away from sources of heat.
<b>● REMEMBER</b>	Before leaving the workplace, return the gun to the specified place.
<b>● REMEMBER</b>	Do not use BBZ-E if it has a defect.

## OPERATION

1. Confirm that the air tube is connected correctly.
2. Plug the power adapter into a 100V-240V AC power outlet.
3. Connect the Power supply connector with BBZ-E correctly.
4. Regulate air pressure to 0.1~0.6 MPa from the pressure regulator. (0.4 MPa recommended)
5. Pull the trigger to blow ion air from the nozzle.  
Blow air towards the statically charged work or dust covered work.
6. Release the Trigger when static elimination and dusting out have been completed.
7. Hang the BBZ-E in the specified place with the hook on its body.

## ■ Maintenance

### ⚠ CAUTIONS IN MAINTENANCE

⊘ DO NOT DISASSEMBLE	Do not perform any maintenance on the BBZ-E except for the electrode wire.
● REMEMBER	Before cleaning the electrode wire, shut OFF power and unplug the adapter from its electrical outlet. Shut off air supply at the source and disconnect the air hose.
⊘ PROHIBITED	Do not wipe the BBZ-E with detergent or solvent. Substances of the sort can cause cracking and result in electric shock or breakdown.
⊘ DO NOT WET	Do not wet the BBZ-E. Contact with moisture can result in electric shock or breakdown.

### 1. How to Clean the BBZ-E Casing

Remove the dirt over the BBZ-E with soft and dried cloth.

Never use alcohol and/or thinner solvent and detergent.

### 2. How to Clean the Electrode Needle

Electrode cleaning should be practiced after power supply adaptor pulled off electric concent.

Cleaning order

1-2. Remove the Nozzle.

3. Clean the point of the needle with cotton stick.

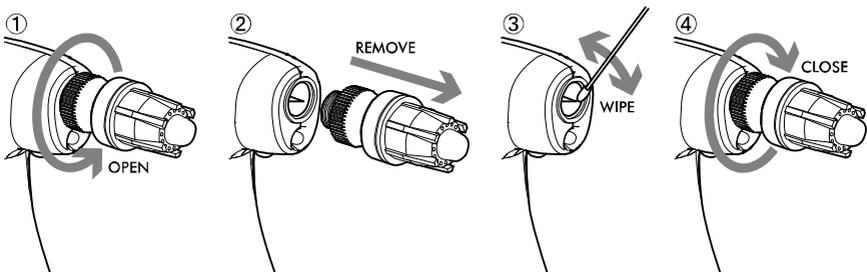
if it is heavily contaminated or dirty over the surface, use a few drops of alcohol.

Place the Nozzle back

4. Mount the Nozzle firmly.

If it is too tightly fastened, it may damage or break itself,

but if it is not well fastened this nozzle may pop out due to its air blow power.



### 3. How to Replace the Electrode Needle

Electrode needle replacement is made with Electrode needle replacement screwdriver G-7DR (separately sold) only.

Pull off power supply adapter first before the cleaning of Electrode needle.

Replacement Order:

1-2. Remove the Nozzle.

3. Release the screw with Electrode needle replacement screwdriver.

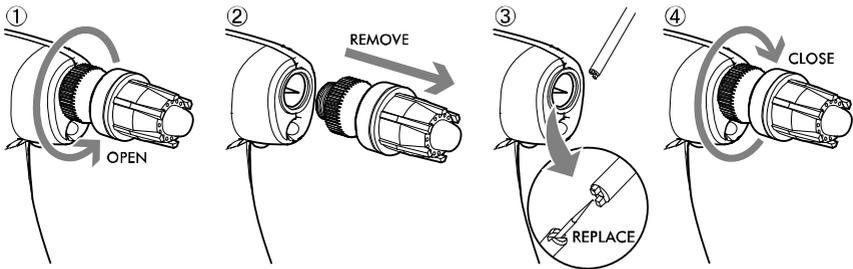
Change it with new needle (G-7H) and fasten firmly with the same screwdriver.

Place the Nozzle back.

4. Mount the Nozzle firmly.

If it is too tightly fastened, it may damage or break itself,

but if it is not well fastened this nozzle may pop out due to its air blow power.



### 4. Static Erasing Capacity Check

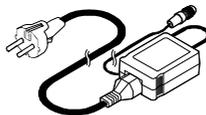
Measure ion balance and charge voltage dampening time using a charge plate monitor.

Reference: IEC61340-5-1-2, EOS/ESD S3.1

### 5. Replaceable Parts



Electrode Needle G-7H



Transformer with Robotic Cable  
(AC Adapter) AD24-ITB-E



Silent Nozzle  
BB-Z-SN

# ■ Maintenance

---

## 6.Optional Parts



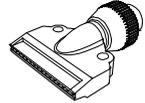
Standard Nozzle  
G-7SN



Flare Nozzle  
N-2FN



Consent Nozzle  
N-2TN



Silent Nozzle  
N-2WN



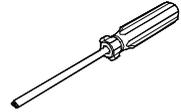
Brush  
G-7B (60mm)



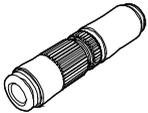
Brush  
G-7B (60mm)



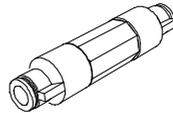
Relay Cable  
BB-ZC5



Electrode needle  
replacement  
screwdriver  
G-7DR



Speed Controller  
G-7SC



Micro Filter  
G-7F

 <b>CAUTIONS IN TROUBLESHOOTING</b>	
 <b>PROHIBITED</b>	<p>Do not use the BBZ-E in the following situations. Use can result in fire or electric shock.</p> <ul style="list-style-type: none"> <li>*If the power cable is damaged or hot</li> <li>*If the BBZ-E has been damaged because of dropping or shock.</li> </ul>
 <b>UNPLUG POWER CABLE</b>	<p>Unplug Power cable if BBZ-E has a defect.</p>
 <b>DO NOT DISASSEMBLE</b>	<p>Do not disassemble the BBZ-E.</p>

Using the BBZ-E when in anything but proper working condition can cause product damage or personal accident.

Therefore, promptly request servicing if trouble occurs. For servicing, contact the place of purchase.

## ■ Storage

### CAUTIONS IN STORAGE

#### PROHIBITED

Do not store the BBZ-E in the following places.

Adverse environments can cause product breakdown.

- Where exposed to marked vibrations or shock
- Where temperature and humidity are outside specified ranges
- Where dewing occurs
- Where temperature fluctuates sharply
- Where there is the possibility of ignition or explosion of flammable solvents, dust, etc.
- Where there is heavy dust or smoke
- Where possibly wet by water, oil, chemicals, etc.
- Where strong electric or magnetic fields are generated

**In the following cases, contact the place of purchase for servicing.**

**Do not service BBZ-E yourself as this can be dangerous.**

- \* If the power lamp does not light when the trigger is pulled.
- \* If the power cable is excessively hot
- \* If the power supply adapter is excessively hot
- \* If BBZ-E emits strange noises or vibrates during use
- \* If sparks are seen coming from electrode wire tips (In normal operation, sparks are not seen.)



---

**LIMITED WARRANTY:**

VESSEL expressly warrants that for a period of one (1) year from the date of purchase, VESSEL static erasers will be free of defects in material (parts) and workmanship (labour). Within the warranty period, Defects occurring will be repaired or products will be replaced at VESSEL's option and expense, if VESSEL receives notice during the warranty period. Defective products must be returned to VESSEL Osaka Japan with proof of purchase date. And if your unit is out of warranty, VESSEL will quote repair charges necessary to ship your unit freight prepaid to where you have originally purchased.

**WARRANTY EXCLUSIONS:**

THE FOREGOING EXPRESS WARRANTY IS MADE IN LIEU OF ALL OTHER PRODUCT WARRANTIES, EXPRESSED AND IMPLIED, INCLUDING FITNESS AND MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE WHICH ARE SPECIFICALLY DISCLAIMED.

The express warranty will not apply to defects or damage due to accidents, neglect, misuse, alterations, operator error, or failure to properly maintain, clean, or repair products.

**LIMIT OF LIABILITY:**

This electronic static eraser use high voltage corona discharge and should not be used in or near flammable or explosive environments. In no event will VESSEL or any seller is responsible or liable for any injury, loss or damage, direct or consequential, whether based in tort or contract arising out of the use of or the inability to use the product. Fulfillment of VESSEL's warranty obligations will be Customer's exclusive remedy and VESSEL's and Seller's limit of liability for any breach of warranty or otherwise. Before using this unit, users shall determine the suitability of the product for their intended use, and users assume all risk and liability whatsoever in connection therewith.

Model	BBZ-E	
Warranty	(1) year from the date of purchase	
Customer	Name	
	Address	
	Tel. No.	
Dealer	Name/Address/Tel. No.	

---

**Manufactured by:****VESSEL CO., INC.****OSAKA, JAPAN**

17-25, Fukae-Kita 2-chome,  
Higashinari-ku, Osaka 537-0001 Japan  
Tel : +81 6 6976 7778 Fax : +81 6 6972 9441  
E-mail : [export@vessel.co.jp](mailto:export@vessel.co.jp)  
URL : <http://www.vessel.jp>

Product of Japan  
11100300.003