Static Electricity Removing Unit Ionizer

Blow Type

DTY-ELK01 Series

KOGANEI Brand
All products are RoHS compliant.

A wealth of variations
Simple maintenance

Low air consumption type
Low particle generation type

Standard type
Ionizer Blow Type
DTY-ELK01 Series

- Introducing a new type of blow type ionizer. A full lineup provides three choices, a standard type, a low air consumption type, and a low particle generation type.
- A high-frequency AC method is used for outstanding ion balance, and a wide selection of nozzles meets the needs of everything from pinpoint to wide workpiece area static charge removal.
- Controllers are also available for power and air on/off control and to enable intermittent ionized airflow.

Simple maintenance
One-touch discharge needle unit for installation and removal. Allows cleaning of the entire discharge needle.

Safe design
Discharge status and ionizer trouble can be confirmed by LED indicators and output.

Direct mounting of unit
The body of the unit has three mounting holes that can be used for direct mounting, for a higher level of installation flexibility.

Note: When a bracket is used, mounting holes are compatible with those of DTRY-ELL01.

Standard Type (DTY-ELK01)
31 nozzle types, simple maintenance!

- Koganei Static Electricity Removing Unit Ionizers deliver a wider variety of nozzle variations plus ease of use. From pinpoint locations to wide areas, static charge removal is performed quickly and efficiently. See pages 1 through 2 for information about nozzle variations.
- An easy-to-remove discharge needle unit contributes to easier maintenance.

* Photograph shows standard nozzle installed.
CAUTION | Read the safety precautions on page 3 before using this product.

Low Air Consumption Type (DTY-ELK01-S)

Reduces expended air flow rate by 40%! (KOGANEI comparison with DTRY-ELL01)

- Low air consumption type that suppresses expended air flow.
- Original construction suppresses expended air flow while delivering high static charge removal.
- Low air consumption standard nozzle is standard equipment.
- World’s first! Supports installation of a separately available tube nozzle.

How the low air consumption type reduces the expended air flow rate

![Graph showing expended air flow rate and static charge removal time](graph.png)

- Applied air pressure levels for one second of static charge removal is DTRY-ELL-1: 0.08 MPa, DTY-ELK01-S: 0.16 MPa. See page 3 for information about flow rate characteristics.
- The graph shows values when a standard nozzle is used. The same results are obtained with a tube nozzle (DTY-NZK-03SS).

-To suppress the expended air flow rate while maintaining static charge removal performance (Reduced running cost)

  Low air type  
  DTY-ELK01-S

-To maintain absolute flow rate and static charge removal performance (For particle removal, etc.)

  Standard type  
  DTY-ELK01

* Photograph shows tube nozzle installed.
* Photograph shows standard nozzle installed.

Comparing expended air flow rates, the air amplification mechanism of the low air consumption type greatly reduces the static charge removal time.
How particle generation amounts are evaluated

KOGANEI evaluates particle generation amounts using an original measurement method that is not influenced by the measurement environment (clean bench downflow, etc.).

Measuring methodology
All of the air blown out from the ionizer is sent directly to the particle counter and measured.
1. With the ionizer turned off, air only is supplied and particles are measured (background measurement).
2. The ionizer is turned on and particles are measured again.

Measuring Conditions
- Applied pressure: 0.1 MPa
- Measurement time: 2 hours
- Suction volume: 1 cf/min
- Measurable particle sizes: 0.1 µm and greater

Notes:
1: Total particle generation amount for two hours is converted to 1 cf (28.3 l).  
2: This data represents actually measured values obtained by tests performed under the conditions described above. They are not guaranteed values.  
The particle generation amount depends on the environment and cleanliness level. Before actually using the product, first check the environment where it will be used.
Controller Unit (DTY-ZKCRU)*

Integrated on/off control of power supply and supply air!

* For use with DTY-ELK01 Series only. Cannot control other blow types.

- Using a controller unit enables integrated on/off control of power supply and supply air using an external signal.
- Controller settings can be configured for intermittent (5 Hz or 10 Hz) blowing of ionized air. Intermittent ionized air blowing increases particle removal.
- Cleaning timer to alert you to how much ionizer operation time is available. LED lamp and output alert you when operation time reaches 300 hours or 500 hours, which can be used as a guide for cleaning. For details, see page 9.
  * Cleaning period depends on the operating environment.

Control unit usage example

- Static electricity monitoring using an EP sensor and EP monitor, and ionizer control using a controller unit

  EP monitor switch output connects to the controller SIGNAL terminal for ionizer discharge and air on/off control.

- Static charge removal and particle removal using intermittent ionized air blowing

  The controller unit uses the intermittent control function of a solenoid valve for intermittent ionized air blowing at the workpiece for better particle removal.

![Diagram showing EP sensor, Ionizer, and EP monitor connection](image)
Safety Precautions

Always read these precautions carefully before use.

Before selecting and using the products, please read all the Safety Precautions carefully to ensure proper product use. The Safety Precautions described below are to help you use the product safely and correctly, and to prevent injury or damage to you, other people, and assets.

Be sure to follow both ISO4414 (Pneumatic fluid power - Recommendations for the application of equipment to transmission and control systems) and JIS B8370 (Pneumatic system regulations) safety regulations.

The directions are ranked according to degree of potential danger or damage: DANGER!, WARNING!, CAUTION!, and ATTENTION!

| DANGER | Indicates situations that can be clearly predicted as dangerous. Death or serious injury may result if the situation is not avoided. It could also result in damage or destruction of assets. |
| WARNING | Indicates situations that, while not immediately dangerous, could become dangerous. Death or serious injury may result if the situation is not avoided. It could also result in damage or destruction of assets. |
| CAUTION | Indicates situations that, while not immediately dangerous, could become dangerous. Failure to avoid the situation creates the risk of minor or mildly serious injury. It could also result in damage or destruction of assets. |
| ATTENTION | While there is little chance of injury, this content refers to points that should be observed for appropriate use of the product. |

This product was designed and manufactured as a part for use in general industrial machinery.

In the selection and handling of the equipment, a system designer or other person with sufficient knowledge and experience should always read the Safety Precautions, catalog, instruction manual and other literature before commencing operation. Making mistakes in handling is dangerous.

After reading the catalog, instruction manual, etc., always place them where they can be easily available for reference to users of this product.

If transferring or lending the product to another person, always attach the catalog, instruction manual, etc., to the product where they are easily visible, to ensure that the new user can use the product safely and properly.

The danger, warning and caution items listed under these “Safety Precautions” do not cover all possible cases. Read the catalog and instruction manual carefully, and always keep safety first.

Do not use the product for the purposes listed below:
1. Medical equipment related to maintenance or management of human lives or bodies.
2. Machines or equipment designed for the purpose of moving or transporting people.
3. Critical safety components in mechanical devices.
This product has not been planned or designed for purposes that require high levels of safety. Using it in this way may result in loss of human life.

Do not use the product in locations with or near dangerous substances such as flammable or ignitable substances. This product is not explosion-proof. It could ignite or burst into flames.

When mounting the product and nozzles, always firmly support and secure them in place. Falling, dropping, or abnormal operation etc of the product may result in injury.

Persons who use a pacemaker, etc., should keep a distance of at least one meter away from the product. There is a possibility that the pacemaker will malfunction due to the magnetic field, etc.

Never attempt inappropriate disassembly or assembly of the product relating to basic construction, or to its performance or functions. Doing so creates the risk of abnormal operation, injury, electric shock, fire, etc.

Do not allow water to splash on the product. Water spraying on the product, washing it, or using it under water creates the risk of abnormal operation, leading to injury, electric shocks, fire, etc.

Always turn off power before inspecting or cleaning the product, or performing maintenance. Failure to do so creates the risk of electric shock.

Never attempt to modify the product in any way. Doing so creates the risk of abnormal operation, leading to injury, electric shocks, fire, etc.

Do not share or wire parallel to power or high voltage lines. Noise from these lines may cause the equipment to operate erratically.

Before supplying electricity to the device and before starting operation, always conduct a safety check of the area of machine operation.

Unintentional supply of electricity creates the risk of electric shock.

Do not touch the discharge needle, terminals, or switches, while power is turned on. There is a possibility of electric shocks and abnormal operation.

Do not allow the product to be thrown into fire. The product could explode and/or release toxic gases.

Do not sit on the product, place your foot on it, or place other objects on it. Tripping over or dropping the product may result in injury, damage or breakage to the product resulting in abnormal, erratic, or runaway operation, etc.

Before conducting any kind of product inspection, maintenance, or replacement, be sure to completely cut off the power supply.

Before performing any kind of wiring work, be sure to turn off power. Failure to do so creates the risk of electric shock.

Do not allow the power cord, lead wires, and other cords to become damaged.

Allowing a cord to become cut, bent excessively, pulled, rolled up, placed under a heavy object, or squeezed between two objects creates the risk of current leaks or defective continuity that can lead to fire, electric shock, or abnormal operation.

Do not connect or disconnect connectors while power is turned on. Also, never apply unnecessary force to connectors. Doing so creates the risk of personal injury, device damage, and electric shock due to abnormal machine operation.

Always refer to the instruction manual and other documentation for information about proper product wiring and piping. Improper wiring and piping creates the risk of damage and abnormal operation.

After completing wiring work, check to make sure that all connections are correct before turning on power.

Correctly apply the rated voltage to the product. Applying the wrong voltage will make it impossible to obtain the specified function, and creates the risk of damage to and burnout of the product.

Do not place the AC adapter cable, or the power or signal wires of the products on moving parts because there is a risk they may be severed.

Should you ever notice smoke, strange odors, or noise being emitted, stop using the equipment. Continued use creates the risk of fire and electric shock.

Do not use the product in locations subject to direct sunlight (ultraviolet rays), dust, salt, iron particles, or humidity, or in ambient conditions which may impair the proper operation of the product.
atmospheres that include organic solvents, phosphate ester type hydraulic oil, sulfur dioxide gas, chlorine gas, acids, etc. Doing so could lead to loss of function, sudden degradation of performance, and reduced service life.

- This product uses sensitive electronic components. When handling the product take care to avoid dropping it, allowing it to come into contact with other objects, or otherwise subjecting it to excessive impact. Even if the product appears undamaged, damage to internal components can cause abnormal operation.
- When installing the product, be sure to allow adequate work space around it. Failure to ensure adequate work space will make it more difficult to conduct daily inspections or maintenance, which could eventually lead to system shutdown or damage to the product.
- Always post an "operations in progress" sign for installations, adjustments, or other operations, to avoid unintentional supplying of electrical power, etc. Unintentioned power supply can cause electric shock and sudden operation, creating the risk of personal injury.

**ATTENTION**

- When considering the possibility of using this product in situations or environments not specifically noted in the catalog or instruction manual, or in applications where safety is an important requirement such as in an aircraft related facilities, combustion equipment, leisure equipment, safety equipment, and other places where human life or assets may be greatly affected, take adequate safety precautions such as allowing plenty of margin for ratings and performance, or fail-safe measures. Be sure to consult with us regarding such applications.
- Always check the instruction manual and other reference materials for product wiring and piping.
- When handling the product, wear protective gloves, safety glasses, safety shoes, etc. for protection.
- When the product can no longer be used, or is no longer necessary, dispose of it appropriately as industrial waste.
- Equipment may exhibit degraded performance and function over its operating life. Always conduct daily inspections of the equipment, and confirm that all requisite system functions are satisfied, to prevent accidents from happening.

**Other**

- When using this product in a system, use only genuine KOGANEI parts or equivalent (recommended) parts. When conducting maintenance and repairs, always use genuine KOGANEI parts or equivalent parts (recommended parts). Always observe the prescribed methods and procedures. KOGANEI cannot be responsible if these items are not properly observed.

**Blow Type Ionizer Safety Precautions**

**DANGER**

- High voltage is applied to the discharge needle, creating the risk of electric shock. Never touch the discharge needle while power is turned on.

**WARNING**

- The tip of the discharge needle is a sharp point. Care is required when handling the needle. Improper handling of the discharge needle creates the risk of personal injury.
- Before conducting any kind maintenance, inspection, repair, connecting, disconnecting, or replacing parts, or similar operations on a product that uses pressurized air, always be sure first to completely cut off the air supply and confirm that residual pressure inside the product or in piping connected to the product is zero. In particular, be aware that residual air will still be in the air compressor or air storage tank.
- Blow type ionizers use air as a medium. Do not use any other type of medium.
- In the case of a blow type ionizer, always apply air first before applying power. Applying power while air is not being applied creates the risk of adversely affecting machinery and the environment.
- Check to make sure that the discharge needle unit is locked before applying air.

**CAUTION**

- An ionizer emits ozone into the atmosphere. Use of a single unit will cause ozone to reach the saturation point and will not increase past a fixed level. When using multiple units at the same time, provide ventilation if the odor of ozone becomes noticeable. Do not try to check for ozone odor by bringing your face close to the ionized air flow outlet. Doing so injure your nose and throat.
- Never try to use an ionizer for any other purpose beside static charge removal.
- Before performing piping work, thoroughly flush the inside of the pipes with compressed air. Metal chips, sealing tape, and rust generated while performing piping work create the risk of clogging and malfunction.
- For the medium, use clean air that does not include any oil or water.
- This product cannot be used if the medium or ambient atmosphere includes any of the following substances: Organic solvents, phosphate type hydraulic oil, sulfur dioxide gas, chlorine gas, or acids.
- Static charge removal may not be possible by ion blowing if there is a charged object in the vicinity of or touching another object. Pay attention to the environment surrounding the static charge removal target when setting up the ionizer.
- Static charge removal performance is reduced if the ionizer is not fully grounded.
- The life of the discharge needle depends on operating environment conditions. Periodic maintenance is required because performance is reduced under bad operating environment conditions (high humidity, etc.) or if the discharge needle is not cleaned.
- Note that ingress current occurs when power is turned on. When power on/off is controlled by PLC or other means, control using H.V. OFF.

**Handling Instructions and Precautions**

**General Precautions**

1. Do not apply extreme force to the exterior of the product.
2. Do not disassemble or modify the product.
3. Do not expose the product to ultraviolet rays, wind, or rain.

**Mounting**

1. Install the product on a flat surface. Twisting or bending during mounting creates the risk of abnormal operation.
2. For machine installation, take care to avoid water, oil, high temperatures, and high humidity. Be especially careful to avoid locations that are subject to condensation.

**Wiring**

1. When using a power supply with a commercially available switching regulator, be sure to connect a frame ground (F.G.).
2. When using devices that generate noise (switching regulator, inverter motor, etc.) in the vicinity of the installation, be sure to connect a frame ground (F.G.) to the devices.
3. After completing wiring work, check to make sure that all connections are correct.

**Precautions During Use**

1. Always turn off power before doing inspection, cleaning, or maintenance work.
2. Should any malfunction occur, be sure to contact KOGANEI for adjustment and repair.
3. Periodic maintenance is important to maintain performance. Perform periodic maintenance according to the instructions in the product’s instruction manual.
4. Do not use the product in the moving section of a machine where there is vibration or shock.
5. Do not place the AC adapter cable, or the power or signal wires of the products on moving parts because there is a risk they may be severed.
Precautions During Use

1. In the case of a blow type ionizer, always apply air first before applying power. Applying the power supply while air is not being applied will cause discharge, which raises the internal ozone density and creates the risk of adverse effect to the machine and environment.
2. Perform ionizer power on/off on the input power supply (+24VDC) side.
3. When using the DTY-NZK-Htube tip nozzle, connect the tube tip nozzle (included bracket) to ground. Failure to do so may prevent peak ionizer performance.
4. Nozzle tubes are consumables, so they required periodic replacement when they become soft or when they deteriorate.
5. Use only KOGANEI nozzles. Never attempt to modify nozzles. Doing so creates the risk of product malfunction, loss of function, or damage.
6. When bending a bender nozzle, hold the bender nozzle at its base. Failure to do so can result in damage to the pipe and the unit connector portion.

Output of abnormality output contact point

1. The abnormality output circuit of this product will normally activate about one second after power is turned on. Sufficient care should be taken to design an error detection circuit at the time of the unit installation on other equipment, etc.
2. Abnormality output is performed if power to the ionizer unit is turned off and immediately turned back on again. After turning power off, wait for at least one second before turning power back on again.
3. Abnormality output may be performed when power to the ionizer unit is turned off. Sufficient care should be taken to design error detection circuitry that does not detect ionizer error output for one second after power to the ionizer unit is turned off.

Notes: 1: The same also applies when the ionizer is turned on and off by H.V OFF.
2: Neither of the cases above causes any problems with ionizer performance.

Installing a nozzle unit for a bender nozzle

To install a nozzle unit on the tip of the DTY-NZK-00D, first remove the bender nozzle tip component and then install the nozzle unit. Securely screw the nozzle unit onto the bender nozzle.

For direction adjustment of the ionized air flow outlets of the DTRY-ADN-00B bender bar nozzle unit, loosen nut B. At this time, secure the bender nozzle with nut A in order to prevent force from being applied to the bender nozzle.

For direction adjustment of the ionized air flow outlets of the DTRY-ADN-FT01 bender flat nozzle unit, perform adjustment at the tip and secure with the lock nut.

Caution

- In the case of a blow type ionizer, always supply air first before applying power. Applying power while air is not being supplied creates the risk of adversely affecting machinery and the environment.
- For the medium, use clean air that does not contain any oil.

Minimum bending radius of bender nozzles and tubes

<table>
<thead>
<tr>
<th>Model</th>
<th>Minimum bending radius (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTY-NZK-00D/DTY-NZK-00DL</td>
<td>40</td>
</tr>
<tr>
<td>DTRY-ADN-U</td>
<td>15</td>
</tr>
<tr>
<td>DTRY-ADN-F</td>
<td>50</td>
</tr>
<tr>
<td>DTRY-ADN-S</td>
<td>10</td>
</tr>
<tr>
<td>DTY-ZKTL</td>
<td>10</td>
</tr>
</tbody>
</table>

Static charge removal performance may be reduced during use at the minimum bending radius.
**Specifications**

### Blow Type DTY-ELK01 Series

<table>
<thead>
<tr>
<th>Item</th>
<th>Model</th>
<th>DTY-ELK01 (Standard Type)</th>
<th>DTY-ELK01-S (Low Air Consumption Type)</th>
<th>DTY-ELK01-L (Low Particle Generation Type)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply</td>
<td></td>
<td>24VDC ±5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumption current</td>
<td>mA</td>
<td></td>
<td>Approximately 70</td>
<td></td>
</tr>
<tr>
<td>Output voltage</td>
<td>kV</td>
<td>Approximately 2 (high-frequency type)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicators</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POWER LED (green)</td>
<td></td>
<td>Lights while power is on</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H.V LED (blue)</td>
<td></td>
<td>Lights during discharge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHECK LED (yellow)</td>
<td></td>
<td>Lights when a discharge abnormality occurs (H.V LED off)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ALARM LED (red)</td>
<td></td>
<td>Lights when a machine abnormality occurs (H.V LED off)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output</td>
<td></td>
<td>Contact output when CHECK LED or ALARM LED is lighted (24VDC 50 mA MAX. open drain)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ionizer ON/OFF control input</td>
<td></td>
<td>Discharge stop by short circuit with 0V (no voltage input, internal drop voltage of 0.5V or less)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ion balance</td>
<td>V</td>
<td>Within ±15 (standard nozzle; 50 mm [2 in.] from nozzle tip; supply air pressure: 0.3 MPa [44 psi.])</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Static charge removal time</td>
<td>s</td>
<td>0.5 or less</td>
<td>0.8 or less</td>
<td>0.5 or less</td>
</tr>
<tr>
<td>Ozone generation amount</td>
<td>ppm</td>
<td>0.03 or less (standard nozzle; 300 mm [11.8 in.] from nozzle tip; supply air pressure: 0.3 MPa [44 psi.])</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Particle generation amount</td>
<td></td>
<td>—</td>
<td>50 or less</td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td></td>
<td>Air (clean air, water vapor and oil removed)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating air pressure range</td>
<td>MPa [psi.]</td>
<td>0.05<del>0.5 [7</del>73]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating environment</td>
<td></td>
<td>Indoors: 0 to 40°C [32 to 104°F], 15 to 65% RH (non-condensation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessories</td>
<td></td>
<td>Power and signal cable (2 meters), bracket</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Standard nozzle; measuring distance: 50 mm [2 in.]; supply air pressure: 0.1 MPa [14.5 psi.]
2. Particle diameter: 0.3 µm or greater at 1 cf/min. Actual measured values, not guaranteed values.
3. Air supply pressure: 0.5 MPa [73 psi.].
4. When bracket and nozzle are not installed.
5. Bracket not equipped.

**Controller (DTY-ELK01 series only)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Model</th>
<th>DTY-ZKCR (Controller)</th>
<th>DTY-ZKCRU (Controller unit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply</td>
<td></td>
<td>24VDC ±5%</td>
<td></td>
</tr>
<tr>
<td>Consumption current</td>
<td>mA</td>
<td>50</td>
<td>230</td>
</tr>
<tr>
<td>Control input</td>
<td></td>
<td>No voltage input, internal drop voltage of 0.5V or less</td>
<td></td>
</tr>
<tr>
<td>Output</td>
<td></td>
<td>ALARM</td>
<td>Ionizer output through</td>
</tr>
<tr>
<td>Clean</td>
<td></td>
<td></td>
<td>(open drain 24VDC 50 mA MAX.)</td>
</tr>
<tr>
<td>Solenoid valve connection</td>
<td></td>
<td>24VDC (200 mA MAX.)</td>
<td></td>
</tr>
<tr>
<td>Settings</td>
<td>MODE (solenoid valve operation setting)</td>
<td>Cont. (continuous operation), 5 Hz (intermittent operation), 10 Hz (intermittent operation)</td>
<td></td>
</tr>
<tr>
<td>Cleaning</td>
<td></td>
<td>non/reset (not using or timer reset)</td>
<td>300 hr (ionizer operation time: 300 hours)</td>
</tr>
<tr>
<td>Indicators</td>
<td>Power LED (red)</td>
<td>Lights while power is on</td>
<td></td>
</tr>
<tr>
<td>Cleaning LED (red)</td>
<td></td>
<td>Lights when cleaning timer time setting is reached.</td>
<td></td>
</tr>
<tr>
<td>Piping diameter</td>
<td></td>
<td>—</td>
<td>φ 6 quick fitting (IN, OUT)</td>
</tr>
<tr>
<td>Operating pressure range</td>
<td>MPa [psi.]</td>
<td>—</td>
<td>0.05<del>0.5 [7</del>73]</td>
</tr>
<tr>
<td>Medium</td>
<td></td>
<td>—</td>
<td>Air (clean air, water vapor and oil removed)</td>
</tr>
<tr>
<td>Built-in Solenoid valve</td>
<td>Model</td>
<td>130E1-2SR-4W DC24V (direct drive type, low grease specification, surge protected)</td>
<td>RID 1/8</td>
</tr>
<tr>
<td>Flow rate characteristics</td>
<td></td>
<td>Sonic conductance C 0.96 dm²/s · bar, Effective area 4.8 mm²/Cv 0.27</td>
<td>0<del>0.9 [0</del>131]¹⁵¹⁶⁵</td>
</tr>
<tr>
<td>Port size</td>
<td></td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Operating pressure range</td>
<td>MPa [psi.]</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Maximum operating frequency</td>
<td>Hz</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Current value</td>
<td>mA</td>
<td>185</td>
<td></td>
</tr>
<tr>
<td>Mass g [oz.]</td>
<td></td>
<td>60 [2.12]</td>
<td>250 [8.82]</td>
</tr>
<tr>
<td>Mounting methods</td>
<td></td>
<td>DIN rail mounting</td>
<td>Bracket mounting</td>
</tr>
<tr>
<td>Operating environment</td>
<td></td>
<td>Indoors: 0 to 40°C [32 to 104°F], 35 to 65% RH (non-condensation)</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Ionizer and externally connected equipment not included.
2. Use a control input OFF time of 200 ms or greater.
3. Capacity of connectable solenoid valve. For the solenoid valve, use a direct drive valve. Use a valve with surge protection and one that uses little grease.
4. The ionizer cleaning period depends on the operating environment. Use the cleaning timer as a guideline.
5. Use within the ionizer operating pressure range.

Reference: The DTY-ZKCRU (controller unit) is a unit product of DTY-AKCR (controller) and solenoid valve. Depending on operating conditions, the life of the solenoid valve may differ from that of the ionizer.

Caution:
1. When using a low particle generation type, note that particles may be generated from the solenoid valve.
2. When performing intermittent operation, the desired intermittent air effect may not be obtainable if the piping distance from the solenoid valve to the ionizer is long.
Controller connection configuration and functions

Note: Always be sure to connect the IONIZER H.V OFF terminal.
Reference: Recommended solenoid valve: 130E1-2-SR-4W DC24V (direct drive type; low grease specifications; surge protected). Depending on operating conditions, the life of the solenoid valve may differ from that of the ionizer.

Connection terminal functions

<table>
<thead>
<tr>
<th>Terminal Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>INPUT</td>
<td>DC24V</td>
</tr>
<tr>
<td></td>
<td>0V</td>
</tr>
<tr>
<td></td>
<td>FG</td>
</tr>
<tr>
<td>OUTPUT</td>
<td>ALARM</td>
</tr>
<tr>
<td></td>
<td>CHECK</td>
</tr>
<tr>
<td></td>
<td>CLEAN</td>
</tr>
<tr>
<td>IONIZER</td>
<td>DC24V</td>
</tr>
<tr>
<td></td>
<td>0V</td>
</tr>
<tr>
<td></td>
<td>FG</td>
</tr>
<tr>
<td></td>
<td>ALARM</td>
</tr>
<tr>
<td></td>
<td>CHECK</td>
</tr>
<tr>
<td></td>
<td>H.V OFF</td>
</tr>
<tr>
<td>SIGNAL</td>
<td>DC24V</td>
</tr>
<tr>
<td></td>
<td>0V</td>
</tr>
<tr>
<td></td>
<td>FG</td>
</tr>
<tr>
<td></td>
<td>IN</td>
</tr>
<tr>
<td>VALVE</td>
<td>DC24V</td>
</tr>
<tr>
<td></td>
<td>0V</td>
</tr>
</tbody>
</table>
OUTPUT terminal circuit configuration

SIGNAL terminal external connection example

- Reed switch output type
- NPN open collector output type
- For EP sensor + EP monitor
**Order Codes**

**Blow Type  DTY-ELK01 (Standard Type)**

### Main Unit

- **1-Head Type**
  - DTY-ELK01

**Main unit cannot be used alone. Always use it in combination with a nozzle.**

### Standard Type Nozzles

**Cannot be used with a low particle generation type or low air consumption type.**

- **Standard nozzle**
  - DTY-NZK-01S

- **Flat nozzle**
  - DTY-NZK-FT

- **Pipe nozzle**
  - DTY-NZK-02S

- **Bender nozzles**
  - DTY-NZK-100D (Nominal dimension: 100 mm)
  - DTY-NZK-200D (Nominal dimension: 200 mm)
  - DTY-NZK-300D (Nominal dimension: 300 mm)
  - DTY-NZK-400D (Nominal dimension: 400 mm)
  - DTY-NZK-500D (Nominal dimension: 500 mm)

- **Straight bar nozzles**
  - DTY-NZK-100B (Nominal dimension: 100 mm)
  - DTY-NZK-200B (Nominal dimension: 200 mm)
  - DTY-NZK-300B (Nominal dimension: 300 mm)
  - DTY-NZK-400B (Nominal dimension: 400 mm)
  - DTY-NZK-500B (Nominal dimension: 500 mm)

- **U-shaped bar nozzle**
  - DTY-NZK-100U

- **Spiral bar nozzle**
  - DTY-NZK-200SP

- **L-shaped bar nozzles**
  - DTY-NZK-100L (Nominal dimension: 100 mm)
  - DTY-NZK-200L (Nominal dimension: 200 mm)

- **Free-mounting L-shaped bar nozzles**
  - DTY-NZK-100FMT (Nominal dimension: 100 mm)
  - DTY-NZK-200FMT (Nominal dimension: 200 mm)

- **Shower nozzles**
  - DTY-NZK-60SW (60° type)
  - DTY-NZK-90SW (90° type)

---

* Fixing pin included
### Standard Type Options (sold separately)

- **Bender shower nozzle units**
  - DTRY-ADN-SW60 (60° type)
  - DTRY-ADN-SW90 (90° type)

- **Bender flat nozzle units**
  - DTRY-ADN-FT01

- **Bender bar nozzle units**
  - DTRY-ADN-100B (Nominal dimension: 100 mm)
  - DTRY-ADN-200B (Nominal dimension: 200 mm)

- **Conductive urethane tube** (500 mm)
  - DTRY-ADN-U
    - Outer diameter: φ6
    - Inner diameter: φ4
    - Color: Black

- **Silicon tube** (500 mm)
  - DTRY-ADN-S
    - Outer diameter: φ7
    - Inner diameter: φ4
    - Color: Black

- **Teflon tube** (500 mm)
  - DTRY-ADN-F
    - Outer diameter: φ7
    - Inner diameter: φ5
    - Color: Black

- **Conductive urethane tube holder**
  - DTRY-NZR31
  - Note: For use with conductive urethane tube only.

- **Controller (only for DTY-ELK01 series)**
  - **Controller (main unit only)**
    - DTY-ZKCR
  - **Controller unit (with solenoid valve)**
    - DTY-ZKCRU

- **Tube tip shower nozzle units**
  - DTY-NZK-H60SW (60° type)
  - DTY-NZK-H90SW (90° type)

- **Tube tip flat nozzle units**
  - DTY-NZK-HFT

- **Tube tip bar nozzle units**
  - DTY-NZK-H100B (Nominal dimension: 100 mm)
  - DTY-NZK-H200B (Nominal dimension: 200 mm)

- **AC adapter**
  - DTY-ZKPS
  - Rating:
    - Input: 100 to 240VAC
    - Input: 50/60 Hz 0.58 A
    - Output: 24VDC 1 A

- **Discharge needle replacement unit**
  - DTY-ZKEM
  - (Color: white)

---

**Notes**

1. Tubes are consumables and require periodic replacement.
2. For use with ionizers only. Do not use for pneumatic equipment piping.

**Remarks**

1. Use Teflon tubes to maximize service life, or silicon tubes to maximize bendability.
2. For information about minimum bending radius see page 292.
3. Conductive urethane tube is available in 20-meter and 100-meter rolls.

Order codes:
- U6A-B (20 m)
- U6A-B-100 (100 m)

**Outer diameter:** φ6
**Inner diameter:** φ4
**Color:** Black

**Outer diameter:** φ7
**Inner diameter:** φ4
**Color:** Black

**Outer diameter:** φ7
**Inner diameter:** φ5
**Color:** Black

Note: For use with conductive urethane tube only.
Order Codes

Blow type DTY-ELK01-S (Low air consumption type)

Main Unit

- 1-Head Type
  DTY-ELK01-S

Low Air Consumption Type Nozzles

- Standard nozzle (for replacement)
  DTY-NZK-01SS

- Tube nozzle (500 mm silicon tube, with tube holder)
  DTY-NZK-03SS

Low Air Consumption Type Options (sold separately)

- Silicon tube (500 mm for low air consumption type tube nozzle)
  DTY-ZKTS
  Outer diameter: ø12
  Inner diameter: ø8

- Filters (5-filter set for low air consumption type)
  DTY-ZKFS

- AC adapter
  DTY-ZKPS
  Rating
  Input: 100 to 200VAC
  Input: 50/60 Hz 0.58 A
  Output: 24VDC 1 A

- Tube holder (holder for low air consumption type tube nozzle)
  DTY-ZKTHS

- Discharge needle replacement unit
  DTY-ZKEMS

Controller (only for DTY-ELK01 series)

- Controller (main unit only)
  DTY-ZKCR

- Controller unit (with solenoid valve)
  DTY-ZKCRU

Note 1: Tubes are consumables and require periodic replacement.
2: For use with ionizers only. Do not use for pneumatic equipment piping.
# Blow Type DTY-ELK01-L (Low Particle Generation Type)

## Main Unit

- **1-Head Type**  
  DTY-ELK01-L

- **Low Particle Generation Type Nozzles**
  - **Standard nozzle**  
    DTY-NZK-01SL
    - *Fixing pin included*
  - **Pipe nozzle**  
    DTY-NZK-02SL
    - *Fixing pin included*
  - **Bender nozzles**  
    DTY-NZK-100DL (Nominal dimension: 100 mm)  
    DTY-NZK-200DL (Nominal dimension: 200 mm)  
    DTY-NZK-300DL (Nominal dimension: 300 mm)  
    DTY-NZK-400DL (Nominal dimension: 400 mm)  
    DTY-NZK-500DL (Nominal dimension: 500 mm)
    - *Fixing pin included*
  - **Straight bar nozzles**  
    DTY-NZK-100BL (Nominal dimension: 100 mm)  
    DTY-NZK-200BL (Nominal dimension: 200 mm)  
    DTY-NZK-300BL (Nominal dimension: 300 mm)  
    DTY-NZK-400BL (Nominal dimension: 400 mm)  
    DTY-NZK-500BL (Nominal dimension: 500 mm)
    - *Fixing pin included*
  - **Pipe nozzle**  
    DTY-NZK-02SL
  - **Bender nozzles**  
    DTY-NZK-100DL (Nominal dimension: 100 mm)  
    DTY-NZK-200DL (Nominal dimension: 200 mm)  
    DTY-NZK-300DL (Nominal dimension: 300 mm)  
    DTY-NZK-400DL (Nominal dimension: 400 mm)  
    DTY-NZK-500DL (Nominal dimension: 500 mm)
  - **Pipe nozzle**  
    DTY-NZK-02SL
  - **Discharge needle replacement unit**  
    DTY-ZKEML
    - (Color: Gray)
    Reference: The replacement discharge needle unit comes in single-layer clean packaging.

## Low Particle Generation Type Options (sold separately)

- **Fluororesin tube**  
  (500 mm soft type for low particle generation type)  
  DTY-ZKTL  
  - Outer diameter: ø 6  
  - Inner diameter: ø 4  
  - Color: Transparent  
  Note 1: Tubes are consumables and require periodic replacement.  
  Note 2: For use with ionizers only. Do not use for pneumatic equipment piping.  
  Note 3: Flush before use.  
  Remarks: For information about tube minimum bending radius, see page 2.  
  Fluororesin tube comes in single-layer clean packaging.

- **AC adapter**  
  DTY-ZKPS  
  - Rating:  
    Input: 100 to 200VAC  
    Input: 50/60 Hz 0.58 A  
    Output: 24VDC 1 A

- **Filter (with check valve)**  
  DTY-ZKF40C  
  Port size R (Rc) 1/8  
  DTY-ZKF80C  
  Port size R (Rc) 1/4

Notes 1: Check valve generates 50 dust particles or less with a particle diameter of 0.3 µm or greater at 1 cf/min.  
2: Do not apply air intermittently (intermittent operation).  
Doing so can damage the filter membrane.
**Blow Type DTY-ELK01 (Standard Type)**

**Dimensions (mm)**

- **Main Unit**
  - **Φ6 Fitting** for tube
  - **Fitting** for tube
  - **Connector** JST S07B-PASK
  - **Main unit mounting hole**
  - **Discharge needle unit** (color: white)
  - **Nozzle fixing pin hole**
  - **POWER LED (green)**
  - **Discharge LED (blue)**
  - **CHECK LED (yellow)**
  - **Alarm LED (red)**
  - **M3 & 0.5, depth 5**
  - **3-Φ3.2 Direct mounting hole**
  - **4-Φ3.4 Mounting hole**
  - **Bracket (Accessory)**
  - **Bracket mounting screw** (Accessory)
  - **Discharge needle unit** (color: white)
  - **Nozzle fixing pin hole**
  - **POWER LED (green)**
  - **Discharge LED (blue)**
  - **Main unit mounting hole**

**Circuit Diagram**

- **Main circuit**
  - **FG (green)**
  - **H.V OFF (blue)**
  - **CHECK NO (yellow)**
  - **ALARM NO (brown)**
  - **ALARM NC (white)**
  - **24VDC (red)**

- **Inside ionizer**
  - **Inner circuits**
  - **Example of external connection**
For Blow Type DTY-ELK01 (Standard Type)

- **Nozzles**

  1. **Standard nozzle** DTY-NZK-01S
     - Dimensions: 24.6 x 7 x 10 mm
     - (Ion air flow outlet)

  2. **Pipe nozzle** DTY-NZK-02S
     - Dimensions: 150.5 x 142.9 mm
     - (Ion air flow outlet)

  3. **Shower nozzle (60° type)** DTY-NZK-60SW
     - Dimensions: 37.5 x 29.9 x 15 x 5 mm
     - (Width across flats)

  4. **Shower nozzle (90° type)** DTY-NZK-90SW
     - Dimensions: 37.5 x 29.9 x 15 x 5 mm
     - (Width across flats)

  5. **Flat nozzle** DTY-NZK-FT
     - Dimensions: 75.5 x 67.9 mm

  6. **Straight bar nozzle** DTY-NZK-00B
     - Dimensions: L x A x B x C x D x N

---

**Model**

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>L</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTY-NZK-100B</td>
<td>10</td>
<td>100</td>
<td>129.7</td>
<td>152.9</td>
<td>160.5</td>
<td>11</td>
</tr>
<tr>
<td>DTY-NZK-200B</td>
<td>20</td>
<td>200</td>
<td>229.7</td>
<td>252.9</td>
<td>260.5</td>
<td>21</td>
</tr>
<tr>
<td>DTY-NZK-300B</td>
<td>30</td>
<td>300</td>
<td>329.7</td>
<td>352.9</td>
<td>360.5</td>
<td>31</td>
</tr>
<tr>
<td>DTY-NZK-400B</td>
<td>40</td>
<td>400</td>
<td>429.7</td>
<td>452.9</td>
<td>460.5</td>
<td>41</td>
</tr>
<tr>
<td>DTY-NZK-500B</td>
<td>50</td>
<td>500</td>
<td>529.7</td>
<td>552.9</td>
<td>560.5</td>
<td>51</td>
</tr>
</tbody>
</table>

**Remarks**

1. Loosen the nut when adjusting the ionized air flow outlet direction. The recommended tightening torque for nuts is 70 to 90 N·cm.
2. Each nozzle comes with a fixing pin.
For Blow Type DTY-ELK01 (Standard Type)

- **Nozzles**

  - Spiral bar nozzle DTY-NZK-200SP
  - U-shaped bar nozzle DTY-NZK-100U
  - L-shaped bar nozzle DTY-NZK-00L

### Table

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>L</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTY-NZK-100L</td>
<td>10</td>
<td>100</td>
<td>142</td>
<td>11</td>
</tr>
<tr>
<td>DTY-NZK-200L</td>
<td>20</td>
<td>200</td>
<td>242</td>
<td>21</td>
</tr>
</tbody>
</table>

**Remarks:**
1. Loosen the nut when adjusting the ionized air flow outlet direction. The recommended tightening torque for nuts is 70 to 90 N·cm.
2. Each nozzle comes with a fixing pin.
For Blow Type DTY-ELK01 (Standard Type)

**Nozzles**

- Free-mounting L-shaped bar nozzle **DTY-NZK-00FMT**
  - Tip Options for Bender Nozzles (Select suitable tip to use)

- **Bender nozzle** **DTY-NZK-00D**

  - **Bender shower nozzle unit (60° type)** **DTRY-ADN-SW60**
  - **Bender flat nozzle unit** **DTRY-ADN-FT01**
  - **Bender bar nozzle unit** **DTRY-ADN-00B**

**Tip Options for Bender Nozzles (Select suitable tip to use)**

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>L</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTY-NZK-100FMT</td>
<td>100</td>
<td>200</td>
<td>11</td>
</tr>
<tr>
<td>DTY-NZK-200FMT</td>
<td>200</td>
<td>300</td>
<td>21</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>(L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTY-NZK-100D</td>
<td>100</td>
<td>136.1</td>
</tr>
<tr>
<td>DTY-NZK-200D</td>
<td>200</td>
<td>236.1</td>
</tr>
<tr>
<td>DTY-NZK-300D</td>
<td>300</td>
<td>336.1</td>
</tr>
<tr>
<td>DTY-NZK-400D</td>
<td>400</td>
<td>436.1</td>
</tr>
<tr>
<td>DTY-NZK-500D</td>
<td>500</td>
<td>536.1</td>
</tr>
</tbody>
</table>

Remarks:
1. Loosen the nut when adjusting the ionized air flow outlet direction. The recommended tightening torque for nuts is 70 to 90 N·cm.
2. Each nozzle comes with a fixing pin.
For Blow Type DTY-ELK01 (Standard Type)

Tip Options for Tubes (Connect to the tip to use)

- **Tube tip shower nozzle unit (60° type) DTY-NZK-H60SW**
- **Tube tip fl at nozzle unit** DTY-NZK-HFT
- **Tube tip shower nozzle unit (90° type) DTY-NZK-H90SW**

- **Tube tip bar nozzle unit DTY-NZK-H00B**

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>L</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTY-NZK-H100B</td>
<td>10</td>
<td>100</td>
<td>129.7</td>
<td>174</td>
<td>11</td>
</tr>
<tr>
<td>DTY-NZK-H200B</td>
<td>20</td>
<td>200</td>
<td>229.7</td>
<td>274</td>
<td>21</td>
</tr>
</tbody>
</table>

Remarks:
1. Loosen the nut when adjusting the ionized air flow outlet direction. The recommended tightening torque for nuts is 70 to 90 N·cm.
2. Ground the bracket.
3. The bracket can also be used if its orientation is changed.
For Blow Type DTY-ELK01 (Standard Type)

**Tube**

- **Conductive urethane tube** DTRY-ADN-U
  - Conductive urethane tube

- **Teflon tube** DTRY-ADN-F
  - Teflon tube

- **Silicon tube** DTRY-ADN-S
  - Silicon tube

**Conductive urethane tube holder** DTRY-NZR31

- Fixing screw for tube

Note: For use with DTRY-ADN-U conductive urethane tube only. Cannot be used with DTRY-ADN-F Teflon tube or DTRY-ADN-S silicon tube.
**Blow Type DTY-ELK01-S (Low Air Consumption Type)**

**Dimensions [mm]**

### Main Unit

- **Connectors**: JST S07B-PASK
- **Discharge needle unit**: Color: light blue
- **Filter**
- **Low air consumption nozzle**
- **Ion air flow outlet**
- **Bracket (Accessory)**
- **Bracket mounting screw (Accessory)**
- **Main circuit**

**Circuit Diagram**

- **Main circuit**
  - 1: 24VDC (red)
  - 2: ALARM NC (white)
  - 3: ALARM NO (brown)
  - 4: CHECK NO (yellow)
  - 5: H.V OFF (blue)
  - 6: 0VDC (black)
  - 7: FG (green)

- **Inside ionizer**
- **Example of external connection**
**For Blow Type DTY-ELK01-S (Low Air Consumption Type)**

### Nozzles
- **Low air consumption type tube nozzle** DTY-NZK-03SS

![Nozzle Diagram](image)

### Options (for replacement)
- **Low air consumption type standard nozzle** DTY-NZK-01SS
- **Tube holder** DTY-ZKTHS
- **Silicone tube** DTY-ZKTS

Note: The nozzle comes with a fixing pin.
Blow Type DTY-ELK01-L (Low Particle Generation Type)

Dimensions [mm]

- **Main Unit**
  - Discharge needle unit (color: grey)
  - Nozzle fixing pin hole
  - 3 - 3.2 Direct mounting hole
  - Alarm LED (red)
  - CHECK LED (yellow)
  - POWER LED (green)
  - Discharge LED (blue)
  - 12 (Width across flats)
  - Connector: JST S07B-PASK
  - Main unit mounting hole: 9 x 65
  - 3.1 x 25
  - 23.5 x 25
  - 12.5 x 25
  - 3.1 x 25
  - 18.5 x 20
  - 18 x 18.5
  - M3 x 0.5, depth 5

- **Circuit Diagram**
  - 24VDC (red)
  - ALARM NC (white)
  - ALARM NO (brown)
  - CHECK NO (yellow)
  - H.V OFF (blue)
  - 0VDC (black)
  - FG (green)

- **Example of external connection**

- **Blow Type DTY-ELK01-L (Low Particle Generation Type)**

- **Dimensions** (mm)
For Blow Type DTY-ELK01-L (Low Particle Generation Type)

### Nozzles

- **Low particle generation type standard nozzle** DTY-NZK-01SL
  - ![Diagram of DTY-NZK-01SL](image)
  - Low particle generation type standard nozzle DTY-NZK-01SL
  - ![Diagram of DTY-NZK-02SL](image)
  - ![Diagram of DTY-NZK-00DL](image)
  - ![Diagram of DTY-NZK-00BL](image)

### Tube

- **Fluororesin tube** DTY-ZKTL
  - ![Diagram of Fluororesin tube](image)

#### Table

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>(L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTY-NZK-100DL</td>
<td>100</td>
<td>136.1</td>
</tr>
<tr>
<td>DTY-NZK-200DL</td>
<td>200</td>
<td>236.1</td>
</tr>
<tr>
<td>DTY-NZK-300DL</td>
<td>300</td>
<td>336.1</td>
</tr>
<tr>
<td>DTY-NZK-400DL</td>
<td>400</td>
<td>436.1</td>
</tr>
<tr>
<td>DTY-NZK-500DL</td>
<td>500</td>
<td>536.1</td>
</tr>
</tbody>
</table>

### Remarks

1. Loosen the nut when adjusting the ionized air flow outlet direction. The recommended tightening torque for nuts is 70 to 90 N·cm.
2. Each nozzle comes with a fixing pin.
Blow Type DTY-ELK01 Series Common Options

Dimensions [mm]

- Controller (main unit only)  DTY-ZKCR

- Controller unit (solenoid valve built-in)  DTY-ZKCRU

Connection terminal
Static Charge Removal Characteristic Graphs

Blow Type DTY-ELK01 (Standard Type)

Notes:
1: Measurement performed under KOGANEI standards using a 20 pF, 150 mm charged plate monitor.
2: Static charge removal time is the decay time from ±1000V to ±100V.
3: Static charge removal characteristics are values measured by KOGANEI. These values are not guaranteed.

When using each type of nozzle:

- **Standard Nozzle**
  - DTY-NZK-01S Nozzle

- **Bender Nozzle Length and Static Charge Removal Characteristics**
  - DTY-NZK-00D Nozzle

- **Teflon Tube Length and Static Charge Removal Characteristics**
  - When DTRY-ADN-F conductive urethane tube is installed on a DTY-NZK-01S nozzle.

- **Conductive Urethane Tube Length and Static Charge Removal Characteristics**
  - When DTRY-ADN-U conductive urethane tube is installed on a DTY-NZK-01S nozzle.

- **Silicon Tube Length and Static Charge Removal Characteristics**
  - When DTRY-ADN-S conductive urethane tube is installed on a DTY-NZK-01S nozzle.
Static Charge Removal Characteristic Graphs

Pipe Nozzle Static Charge Removal Characteristics

Shower Nozzle (60° Type) Static Charge Removal Characteristics

Shower Nozzle (90° Type) Static Charge Removal Characteristics

Flat Nozzle Static Charge Removal Characteristics

Spiral Bar Nozzle Static Charge Removal Characteristics

Straight Bar Nozzle (100 mm) Static Charge Removal Characteristics

Straight Bar Nozzle (200 mm) Static Charge Removal Characteristics

Straight Bar Nozzle (300 mm) Static Charge Removal Characteristics

Straight Bar Nozzle (400 mm) Static Charge Removal Characteristics

Straight Bar Nozzle (500 mm) Static Charge Removal Characteristics

DTY-NZK-02S Nozzle

DTY-NZK-60SW Nozzle

DTY-NZK-90SW Nozzle

DTY-NZK-FT Nozzle

DTY-NZK-200SP Nozzle

DTY-NZK-100B Nozzle

DTY-NZK-200B Nozzle

DTY-NZK-300B Nozzle

DTY-NZK-400B Nozzle

DTY-NZK-500B Nozzle
L-shaped Bar Nozzle (100 mm) Static Charge Removal Characteristics

- DTY-NZK-100L Nozzle

Free Mounting L-Shaped Bar Nozzle (100 mm) Static Charge Removal Characteristics

- DTY-NZK-100FMT Nozzle

U-shaped Bar Nozzle Static Charge Removal Characteristics

- DTY-NZK-100U Nozzle

Bender Nozzle Length and Static Charge Removal Characteristics (Shower Nozzle 60° Type)

- When DTRY-ADN-SW60 is installed on a DTY-NZK-100D nozzle.

Bender Nozzle Length and Static Charge Removal Characteristics (Flat Nozzle)

- When DTRY-ADN-FT01 is installed on a DTY-NZK-100D nozzle.

Bender Nozzle Length and Static Charge Removal Characteristics (Straight Bar Nozzle 100 mm)

- When DTRY-ADN-100B is installed on a DTY-NZK-100D nozzle.

Bender Nozzle Length and Static Charge Removal Characteristics (Straight Bar Nozzle 200 mm)

- When DTRY-ADN-200B is installed on a DTY-NZK-200D nozzle.
Static Charge Removal Characteristic Graphs

Tube Length and Static Charge Removal Characteristics (Shower Nozzle 60° Type)

When DTRY-ADN-S and DTY-NZK-H60SW are installed on the DTY-NZK-01S nozzle.

Tube Length and Static Charge Removal Characteristics (Shower Nozzle 90° Type)

When DTRY-ADN-S and DTY-NZK-H90SW are installed on the DTY-NZK-01S nozzle.

Tube Length and Static Charge Removal Characteristics (Flat Nozzle)

When DTRY-ADN-S and DTY-NZK-HFT are installed on the DTY-NZK-01S nozzle.

Tube Length and Static Charge Removal Characteristics (Straight Bar Nozzle 100 mm)

When DTRY-ADN-S and DTY-NZK-H100B are installed on the DTY-NZK-01S nozzle.

Tube Length and Static Charge Removal Characteristics (Straight Bar Nozzle 200 mm)

When DTRY-ADN-S and DTY-NZK-H200B are installed on the DTY-NZK-01S nozzle.

When DTRY-ADN-S and DTY-NZK-H90SW are installed on the DTY-NZK-01S nozzle.
Static Charge Removal Characteristic Graphs  
**Blow Type DTY-ELK01-S (Low Air Consumption Type)**

- **Notes**:  
  1. Measurement performed under KOGANEI standards using a 20 pF, 150 mm charged plate monitor.  
  2. Static charge removal time is the decay time from ±1000V to ±100V.  
  3. Static charge removal characteristics are values measured by KOGANEI. These values are not guaranteed.

---

**Standard Nozzle Static Charge Removal Characteristics**

<table>
<thead>
<tr>
<th>Nozzle</th>
<th>Tube Length and Static Charge Removal Characteristics</th>
</tr>
</thead>
</table>
| DTY-NZK-01SS | Tube length 100 mm  
| | Tube length 200 mm  
| | Tube length 300 mm  
| | Tube length 400 mm  
| | Tube length 500 mm  

When DTY-NZK-03SS is installed on the DTY-NZK-01SS nozzle.

**Tube Length and Static Charge Removal Characteristics**

1. Measured distance 50 mm
2. Measured distance 150 mm
3. Measured distance 300 mm
4. Measured distance 50 mm

---

Supplied air pressure (MPa)  
Static charge removal time (seconds)
Static Charge Removal Characteristic Graphs

Blow Type DTY-ELK01-L (Low Particle Generation Type)

Notes:
1: Measurement performed under KOGANEI standards using a 20 pF, 150 mm charged plate monitor.
2: Static charge removal time is the decay time from ±1000V to ±100V.
3: Static charge removal characteristics when filter is not installed.
4: Static charge removal characteristics are values measured by KOGANEI. These values are not guaranteed.

When using each type of nozzle
Flow Rate Characteristics Graph
Filter

Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Model</th>
<th>DTY-ZKF40C</th>
<th>DTY-ZKF80C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium</td>
<td></td>
<td>Air</td>
<td></td>
</tr>
<tr>
<td>Port size</td>
<td>R(Rc) 1/8</td>
<td>R(Rc) 1/4</td>
<td></td>
</tr>
<tr>
<td>Filtered particle size [µm]</td>
<td>0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Particle filtering efficiency [%]</td>
<td>99.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processed air volume [m³/min (ANR)]</td>
<td>40 [1.4]</td>
<td>80 [2.6]</td>
<td></td>
</tr>
<tr>
<td>Membrane surface area [cm² (in²)]</td>
<td>29.9 [4.63]</td>
<td>68.7 [10.65]</td>
<td></td>
</tr>
<tr>
<td>Operating pressure range [MPa (psig)]</td>
<td>0.05<del>0.9 [7</del>131]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guaranteed differential pressure [MPa (psig)]</td>
<td>0.5 [73]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating temperature range [°C (°F)]</td>
<td>5<del>45 [41</del>113]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mass [g (oz)]</td>
<td>33 [1.16]</td>
<td>55 [1.94]</td>
<td></td>
</tr>
<tr>
<td>Recommended tightening torque [N·cm (in. Ibf)]</td>
<td>400<del>600 [35.4</del>53.1]</td>
<td>700<del>900 [62.0</del>79.7]</td>
<td></td>
</tr>
</tbody>
</table>

Note 1: Specifications for a single filter.
2. When air pressure is 0.7 MPa (~102 psi.) (0.03 MPa (~4.4 psi.) pressure drop).
3. Certain operating conditions can cause a reduction of up to 5%.
3. Use within the ionizer operating pressure range.

Dimensions (mm)

**DTY-ZKF40C**

<table>
<thead>
<tr>
<th>Width across flats</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1/8 Check valve</td>
<td>(75.3)</td>
</tr>
<tr>
<td>(66.3)</td>
<td></td>
</tr>
</tbody>
</table>

**DTY-ZKF80C**

<table>
<thead>
<tr>
<th>Width across flats</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1/4 Check valve</td>
<td>(83)</td>
</tr>
<tr>
<td>(77)</td>
<td></td>
</tr>
</tbody>
</table>

Notes 1: **DTY-ZKF40C** can connect directly to the **DTY-ELL01** and **DTY-ELK01-L** ionizers. When mounting on the **DTY-ELL01**, use a tightening torque of 60 to 70 N·cm. Over-tightening can damage the ionizer.
2. **DTY-ZKF80C** cannot be connected directly to the ionizer.

Handling Instructions and Precautions

Mounting and Piping

1. Arrange piping so air flows in the direction of the black arrows on the label.
(Do not use with air flow in the opposite direction.)
2. The filter IN ports (Rc1/8, Rc1/4) are made of aluminum alloy. Take care to avoid excessive force such as that caused by steel piping, etc.
3. The purpose of filters is to remove solid matter. Water vapor and oil should be removed beforehand.
   - **Recommended circuit**

   ![Recommended circuit diagram]

   - Air dryer
   - Filter
   - Mist filter
   - Micromist filter
   - Filter

4. Check valve generates 50 dust particles or less with a particle diameter of 0.3 µm or greater at 1 cf/min.
5. Do not apply air intermittently (intermittent operation).
   Doing so can damage the filter membrane.

**CAUTION**

**Precautions when using in combination with an ionizer**

Note the following precautions when using in combination with an ionizer.
1. Backflow of ozone and other corrosive gasses generated from the ionizer can cause deterioration of the filter membrane. Be sure to supply air first before applying the power source.
2. Check filters periodically and replace them when necessary.
Warranty and General Disclaimer

1. Warranty Period
   The warranty period for KOGANEI products is 180 days from the date of delivery.

2. Scope of Warranty and General Disclaimer
   (1) The KOGANEI product warranty covers individual products. When a product purchased from KOGANEI or from an authorized KOGANEI distributor malfunctions during the warranty period in a way that is attributable to KOGANEI responsibility, KOGANEI will repair or replace the product free of charge. Even if a product is still within the warranty period, its durability is determined by its operation cycles and other factors. Contact your nearest KOGANEI sales office or the KOGANEI overseas department for details.
   (2) KOGANEI shall not be held responsible for any losses or for any damage to other machinery caused by breakdown, loss of function, or loss of performance of KOGANEI products.
   (3) KOGANEI shall not be held responsible for any losses due to use or storage of the product in a way that is outside of the product specifications prescribed in KOGANEI catalogs and the instruction manual, and/or due to actions that violate the mounting, installation, adjustment, maintenance and other safety precautions.
   (4) KOGANEI shall not be held responsible for any losses caused by breakdown of the product due to factors outside the responsibility of KOGANEI, including but not limited to fire, natural disaster, the actions of third parties, and intentional actions or errors by you.
Limited Warranty

KOGANEI CORP. warrants its products to be free from defects in material and workmanship subject to the following provisions.

Warranty Period
The warranty period is 180 days from the date of delivery.

Koganei Responsibility
If a defect in material or workmanship is found during the warranty period, KOGANEI CORP. will replace any part proved defective under normal use free of charge and will provide the service necessary to replace such a part.

Limitations
- This warranty is in lieu of all other warranties, expressed or implied, and is limited to the original cost of the product and shall not include any transportation fee, the cost of installation or any liability for direct, indirect or consequential damage or delay resulting from the defects.
- KOGANEI CORP. shall in no way be liable or responsible for injuries or damage to persons or property arising out of the use or operation of the manufacturer's product.
- This warranty shall be void if the engineered safety devices are removed, made inoperative or not periodically checked for proper functioning.
- Any operation beyond the rated capacity, any improper use or application, or any improper installation of the product, or any substitution upon it with parts not furnished or approved by KOGANEI CORP., shall void this warranty.
- This warranty covers only such items supplied by KOGANEI CORP. The products of other manufacturers are covered only by such warranties made by those original manufacturers, even though such items may have been included as the components.

The specifications are subject to change without notice.