Nozzle Type Vacuum & Gas Flushing Packaging Machine
Greeting

INTRISE CO., LTD is the leading exporter and manufacturer of nozzle type vacuum and gas flushing packaging machine, AIRZERO VACUUM PACKAGING MACHINE.

AIRZERO VACUUM PACKAGING MACHINE is a new concept of packaging machine with many merits, compared to chamber type packaging machine. AIRZERO VACUUM PACKAGING MACHINE suck air directly from the inside of packing envelope by using a nozzle stroke, So, the work is completed very quickly.

In addition to that, with the digital control box and vacuum sensor, AIRZERO VACUUM PACKAGING MACHINE has more special merits such as Packing process control both by vacuum degree and time, Separate control of 1st and 2nd vacuum degree, LCD / LED Indicator showing the operation and condition of machine, etc. So, AIRZERO VACUUM PACKAGING MACHINE ’ s excellent features overwhelm other company’ s packaging machinery.

Complying with the increasing importance of packaging for commercial value, AIRZERO VACUUM PACKAGING MACHINE is successfully expanding the market in packaging industry field through a unique combination of skilled personnel, technical quality control, quick delivery, competitive price, and a variety of ready and tailor made vacuum and gas flushing packaging machinery available to meet your production line ’ s need, backed up by aggressive and continuous R & D.

Please go over AIRZERO VACUUM PACKAGING MACHINE ’ s various vacuum and gas flushing packaging solutions at the website,

www.airzero.co.kr / www.Intrise.co.kr

and feel free to contact us if there is any way that AIRZERO VACUUM PACKAGING MACHINE can be of assistance concerning packaging of your products.
What’s the Nozzle Type Vacuum and Gas Flushing Packaging Machine?

It is a new concept of vacuum packing machine using a nozzle to suck air directly out of the bag so that it overcomes many shortcomings of the chamber type vacuum packing machine. (Refer to Chamber type vs Nozzle type.)

- A method to suck air out of the bag
  - Fast work speed
  - Little restricted from the size of products (possible to vacuum and gas flushing packing up to 200liter with AZ-Series)
- Vacuum packing for contents with high temperature (impossible with chamber type vacuum packing)
- In vacuum packing, no product damage caused by an instant discrepancy in pressure
- Multi-functions
  - Sealing, vacuum packing, vacuum and gas flushing
- Free adjustment for vacuum degree and gas
  - Vacuum packing at low vacuum possible (Stop at lowest)
  - Gas flushing and substitution for the purpose of packing (impossible with chamber type vacuum packing)
- Neat and tidy packing shape
  - In vacuum packing, products can be arranged neatly
- Various options
  - Various vacuum pumps can be applied according to products (pneumatic pump, pistola pump and oil pump)

Nozzle Type Vacuum and Gas Flushing Packaging Process

1. Preparation
2. Vacuum
3. Gas Flushing
4. Sealing

Functions of and ways to use AZ-Series control-box

- VAC TIME: This button is to select whether you control vacuum procedure by time or by vacuum degree.
- V: Vacuum Degree [KPa] of vacuuming. The machine is operated by the preset vacuum degree. If you select 45, the vacuum works until the vacuum degree is reached vacuum bag approaches -45 KPa and the nozzles moves backward after that. Therefore, it is not related to vacuuming time.
- T: Vacuum time. When you select 30, the vacuum works for 30 seconds and the nozzles move backward after that.
- M5: This button decides the work of VACUUM, GAS1, GAS2, AND SEALING are changed one by one for each press of M5 button. In 0, 2, 3 and 5, respectively VACUUM, GAS1, GAS2, and SEALING appear at the over-right side of LCD.
  - 0: Seal
  - 2: Vacuum → Gas1 → Gas2 → Seal
  - 3: Vacuum → Gas2 → Gas1 → Seal
- TIME: This button decides the work of which time or vacuum degree is adjusted. With each pressing of TIME button, the time are changed one by one from VACUUM, VACUUM, GAS1, GAS2, and COOLING. Then, for each of them, you can adjust time or vacuum degree for UP and DOWN button.
- UP/DOWN: Increase / Decrease time / vacuum degree for each selected process.
- STOP: This is the Stop button. If you press this button, the machine caters to the original state.

Properties of AZ-Series products

- The button gas flushing and gas substitution are included in the basic function
- Fusible link protects the gas circuit
- Fusible link prevents any damage when there is an overflow
- Control box delivers the nozzle valve signal line
- The spool valve doctor is attached to overcome work efficiency

The basic structure of AIRZERO vacuum packaging machine

- Vacuum using pneumatic method
- Its mechanical power to operate a machine is so high that the sealing bars can be extended longer, compared to a vacuum packing machine using a mechanical factor
- When the nozzle moves forward, the last aspect is controlled to go down for safety
- The safety device is equipped
- When foreign materials such as fingers are inserted into the sealing bars, the upper sealing bar automatically moves up
- ISO9001 & CEC certified

the inside of the machine
ISO Certificate
Examples of AZ-Series use

As the importance of packaging as a factor for product quality becomes bigger, the range of applying vacuum and gas flushing packaging widens to a variety of fields.

- Semiconductor and industrial products
  Prevention of oxidation, moisture and static electricity, particle elimination and reduction in logistics cost.

<table>
<thead>
<tr>
<th>Applied items</th>
<th>Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semiconductor and IC</td>
<td>Mitsubishi Electric, Samsung Electronics, Korea Electronics, etc.</td>
</tr>
<tr>
<td>Vacuum ICs and</td>
<td>Takeda, Samsung, Samsung Electronics Co. etc.</td>
</tr>
<tr>
<td>electronic components</td>
<td>Takeda, Samsung, Samsung Electronics Co. etc.</td>
</tr>
<tr>
<td>Optical tools</td>
<td>Sekiwa, Nara Optics, Taegyung Optics, Bong-Joo Optical, Haeinjung Optical,</td>
</tr>
<tr>
<td></td>
<td>LG LITEK, etc.</td>
</tr>
<tr>
<td>Machinery</td>
<td>DF Tech, Cino Engineering, etc.</td>
</tr>
<tr>
<td>Mobile phone</td>
<td>Korea Aps, B Tech, Garte M&amp;M, Sincr Tech, Samsung Electronics Communications, etc.</td>
</tr>
<tr>
<td>Research equipment</td>
<td>Institute for Advanced Engineering, Korea Electronics Technology Institute, etc.</td>
</tr>
<tr>
<td>Medical field</td>
<td>SKDTPM KPM, Genova, Pusan Sihwa University, Dong-A Medical, Bum-sik Seo,</td>
</tr>
<tr>
<td></td>
<td>D.G. Hospital, Department of Obstetrics and Gynecology, etc.</td>
</tr>
<tr>
<td>Silicon</td>
<td>Korea Institute, Micron, The Korea Science, etc.</td>
</tr>
<tr>
<td>Clothes and others</td>
<td>Ministry of National Defense, The Junggung Research Center of the Cultural Heritage,</td>
</tr>
<tr>
<td></td>
<td>Minohlin, LG INNOTEC, Indonesia, etc.</td>
</tr>
</tbody>
</table>

- Foods
  Shell life extension, and freshness and flavor maintenance.

<table>
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<th>Applied items</th>
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</thead>
<tbody>
<tr>
<td>Dried fish and meat</td>
<td>Donghwae Geonam, Deokwon Fishing, etc.</td>
</tr>
<tr>
<td>Vegetables</td>
<td>Sujangwon, Bokchonbong, Nonghyup, Yeongwon Cater,</td>
</tr>
<tr>
<td></td>
<td>Sejong Nongin, Bovichon, etc.</td>
</tr>
<tr>
<td>Grains</td>
<td>Hyunmyeon, Dongwon, Yeonghyup, Nongmyeonjang, Yeongwonjang, Noor</td>
</tr>
<tr>
<td></td>
<td>Agricultural Technology Center, etc.</td>
</tr>
<tr>
<td>Fish and meat</td>
<td>Dongwoon Bush, Cijang, Chonwon, Mokpo, Gyeongu, Ledon, etc.</td>
</tr>
<tr>
<td>Nuts</td>
<td>Hanbat Foods, Nokwon Foods, etc.</td>
</tr>
<tr>
<td>Hot goods</td>
<td>Gijung Nongin, Bongkang Nongin, Gwacheon, etc.</td>
</tr>
<tr>
<td>Others</td>
<td>Samsung Foods, Mokpo Oyster, Dongwonbong, Nongin, Mokpo, Yeongwon,</td>
</tr>
<tr>
<td></td>
<td>Yeongyang Food, Dongwon Foods, etc.</td>
</tr>
</tbody>
</table>

Desktop nozzle type vacuum packaging machine (AZ-450E)

- Suitable for a limited space

Stand-attached nozzle type vacuum packaging machine (AZ-450ES)

- Suitable for the case of requiring working stand below

<table>
<thead>
<tr>
<th>Model name</th>
<th>Sealing length</th>
<th>Sealing width</th>
<th>Packing capacity</th>
<th>Vacuum Pump</th>
<th>Required Power</th>
<th>Max. Instantly consumed power</th>
<th>Required Pneumatic pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>AZ-450E</td>
<td>450mm</td>
<td>5mm</td>
<td>10mm</td>
<td>1/4 HP</td>
<td>0.5 KW</td>
<td>0.5 KW</td>
<td>5-7 atg/min</td>
</tr>
<tr>
<td>AZ-450Ex</td>
<td>450mm</td>
<td>5mm</td>
<td>10mm</td>
<td>1/4 HP</td>
<td>0.5 KW</td>
<td>0.5 KW</td>
<td>5-7 atg/min</td>
</tr>
<tr>
<td>AZ-450S</td>
<td>600mm</td>
<td>5mm</td>
<td>10mm</td>
<td>1/4 HP</td>
<td>0.5 KW</td>
<td>0.5 KW</td>
<td>5-7 atg/min</td>
</tr>
<tr>
<td>AZ-450Se</td>
<td>600mm</td>
<td>5mm</td>
<td>10mm</td>
<td>1/4 HP</td>
<td>0.5 KW</td>
<td>0.5 KW</td>
<td>5-7 atg/min</td>
</tr>
</tbody>
</table>

* If you want other specification, please refer to our sales dept.
Nozzle Type Vacuum & Gas Flushing Packaging Machine

- Free angle-adjustment of a upper head by handling is possible: maximum of 45°
- Midongฮยมวองจู ฮ็องจู, Cheongwang BeksuChang

- Free height-adjustment of rack by handling is possible in maximum of 150mm
- Suitable for the case when water, dry and height adjustment is required frequently
- LG Electronics, Samsung Electro-Mechanica, Sikorix

- Used in thick packaging film
- Sealing bar is extended to 800mm

Vertical nozzle type vacuum packaging machine (AZV-600)

Suitable for packaging bulky or heavy products, Inclination and height adjustable (Equipped with an UP/DOWN electric power drive motor)

- Examples
  - Shinjetu Sikon: Silicon undulated solution
  - Haejeong: For preserving green tea
  - Haejeong Gunhup: Pickled fish and huge fish such as a shark
  - Haejeong: Cement

- Options
  - Work table, above and below heating method (vacuum pump, conveyor and the whole machine are made with stainless steel)
  - Possible to order and manufacture over 1200mm of sealing bar

<table>
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<tr>
<th>Model name</th>
<th>Sealing length</th>
<th>Sealing width</th>
<th>Packing capacity</th>
<th>Vacuum Pump</th>
<th>Required Power</th>
<th>Max. Instantaneous power</th>
<th>Required Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>AZV-600</td>
<td>900mm</td>
<td>5mm</td>
<td>1000mm/min</td>
<td>1.5 – 4 (ifin 0.1mm, depending on thickness and the amount of products to be packed)</td>
<td>Oil-free variable-speed oil-free pump (for internal use only)</td>
<td>2.5 kW</td>
<td>3.3 kW</td>
</tr>
<tr>
<td>AZV-800</td>
<td>850mm</td>
<td>5mm</td>
<td>1000mm/min</td>
<td>1.5 – 4 (ifin 0.1mm, depending on thickness and the amount of products to be packed)</td>
<td>Oil-free variable-speed oil-free pump (for internal use only)</td>
<td>2.8 kW</td>
<td>3.5 kW</td>
</tr>
<tr>
<td>AZV-1100</td>
<td>1100mm</td>
<td>5mm</td>
<td>1000mm/min</td>
<td>1.5 – 4 (ifin 0.1mm, depending on thickness and the amount of products to be packed)</td>
<td>Oil-free variable-speed oil-free pump (for internal use only)</td>
<td>3.2 kW</td>
<td>4.0 kW</td>
</tr>
</tbody>
</table>

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**Nozzle Type Vacuum & Gas Flushing Packaging Machine**

**Method to understand AZ-Series Model name**

According to the below procedure, Buyer can select the most suitable one for their production site.

![AZ-Series Model name diagram](image)

**Vacuum pump**

Its capacity to take air away is measured when it is not attached to the body.

<table>
<thead>
<tr>
<th>Model name</th>
<th>Maximum vacuum capacity (Lit)</th>
<th>Displacement speed (l/min)</th>
<th>Air consumption (l/h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EJECTOR PUMP</td>
<td>VTX-20</td>
<td>90</td>
<td>124</td>
</tr>
<tr>
<td></td>
<td>VTX-50</td>
<td>92</td>
<td>647</td>
</tr>
</tbody>
</table>

- Compressor is impossible to be built-in.

**Tailor-made AIRZERO vacuum sealer**

**Chamber type vs Nozzle type**

1. **Chamber type**
   - This type is suitable to pack several units of goods by just one process when the size of goods is very small compared to the size of chamber.

2. **Nozzle type**
   - Nozzle type adopts the method to vacuum-pack directly the inside of envelope by using a nozzle stroke. So, the work is very speedy compared to chamber type, except when the size of packed goods is very small so that you pack several units of goods by just one process by using a chamber type.
   - Nozzle type is much less restricted to the size of packed goods compared to chamber type, thanks to the method to vacuum-pack directly the inside of envelope by using a nozzle stroke.
   - Nozzle type has a vacuum sensor in control box. So, nozzle type is very suitable for when user want to vacuum-pack the packed goods at same vacuum degree regardless the size of packed goods. Chamber type is impossible to do this.
   - Nozzle type can control the volume of gas inserted in the envelope. That is, a user can flush heavily an envelope to swell up or flush just lightly. But, in the case of chamber type, gas cannot be inserted just lightly into an envelope.

- In the case of clean room vacuum packaging, only nozzle type is possible because nozzle type uses ejector-vacuum pump which pushes out very little dust compare to chamber type which uses oil-vacuum pump generating much dust.
- In the case of packing for any goods which includes liquid, chamber type is not suitable because chamber type uses oil-vacuum pump which becomes out of order when liquid seeps into it. But, that is possible for nozzle type using ejector-vacuum pump which is no problem with liquid. (But, even in the case of nozzle type, any inflow of much liquid to the inside of machine body may bring about a trouble.)
- Nozzle type is suitable when the packed goods is sensitive against any external shock. Chamber type is not suitable because it makes vacuum using momentary atmospheric pressure so that it gives external shock to packed goods.
- Especially, AZA-450-ES (Angle controllable type) is suitable for grains or liquid, for it can incline down the angle of machine body to 45°.

<table>
<thead>
<tr>
<th>Model name</th>
<th>Maximum vacuum capacity (Lit)</th>
<th>Displacement speed (l/min)</th>
<th>Oil consumption (ml/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OIL PUMP</td>
<td>SM-100</td>
<td>90</td>
<td>124</td>
</tr>
<tr>
<td></td>
<td>MS-200</td>
<td>92</td>
<td>647</td>
</tr>
</tbody>
</table>

- Compressor is possible to be built-in, in the case of attached horizontal model.
- Compressor is impossible to be built-in, in the case of attached attached model.