The world leader of Electric Extrusion Blow Molding Machine

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Corporate Philosophy

We keep challenging to create new values and aiming to ecological manufacturing for the Earth.

Corporate Identity

TAHARA's 3C

Challenge  Create  Cultivate

Even in our normal life, there are many bottles that is created by Tahara’s extrusion blow molding machine, such as shampoo and detergent for daily items, mayonnaise and dressing for food product, and mascara and sunscreen for cosmetic product. In other industries would be medical, stationery, automotive parts, and industrial parts. Tahara will create “added-value” on above products and will continue to develop ecological blow molding machine with saving electric power and material consumption.

History of Tahara's Blow Molding Machine

1951 Foundation

1961 Launch of Hydraulic Blow Molding Machine (TBMA series)

1971 Launch of Hydraulic Blow Molding Machine (TP series)

1987 Launch of Hydraulic Blow Molding Machine (TL series)

1994 Developed the first All Electric Blow Molding Machine in the world

2014 Developed 2nd Generation All Electric Blow Molding Machine

Relationship with JSW

Since 2006, TAHARA has joined in the group of the Japan Steel Works, LTD. (JSW) listed on the first section of the Tokyo Stock Exchange. Since JSW is experienced in large-size product and Tahara is experienced in small-size product, we engage in both development and creation of new technology of Blow Molding Machine.
Our Patent Technologies

Tahara has over 80 patents since we started making Blow Molding Machine. Below 2 technologies are one of our innovative inventions to improve fully electric mechanism.

The Prevention Mechanism of the Mold Parting Line

By installing the synchronization mechanism on the front platen and the rear platen, it keeps the parting line discrepancy below 50 μm. While it dramatically increases the neck part's finishing precision, it extends the life time of calibration tools.

The Equalization Mechanism for the Calibration Force

Even each blow pin's height gets misaligned by up to 2 mm from each other, it automatically adjusts the difference of the calibration force by the automatic correction mechanism. Without spending time on the height adjustment of blow pins, it enables to automatically adjust the calibration force on each blow pin to be equal.

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MSE/MB Series

MACHINE LAYOUT

SINGLE STATION TYPE

DOUBLE STATION TYPE

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<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>Take-out size</th>
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<td>MSE-3632M</td>
<td>1790</td>
<td>950</td>
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<td>2330</td>
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<td>2390</td>
<td>2420</td>
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<td>MB-8065C</td>
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<td>3230</td>
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<td>MSD-9065X2</td>
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<td>650</td>
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</table>

*Above information will change depending on the design and machine specification.
TAHARA's electric blow molding machine which meets the demands of the world

Stable Quality

Reduction of Defect Ratio
The constant operation time and precise reposition accuracy enables stable and high quality molding.

Stable Neck Part Cutting
By lifting up the extruder when cutting the parison, it prevents entangling of the parison when blow pin goes down. Moreover, high repeatability of each motion speed and position contributes greatly to the clear neck part cutting of the bottles.

Stable Product Weight and Thickness
By the parison length control and constant cycle time control system, it enables to mold products without having uneven of product weight and thickness.

Ecologically Friendly

Clean · Low noise
Clean environment is assured because there is no risk of oil leakage. Electric machine is ideal for clean rooms for food, cosmetic, and medical products.

Productivity & Operability

Shortened Down Time
The molding conditions can be set and changed without stopping the machine. In addition, the machine can save or reload all molding conditions of each product on the operation panel.

Faster Cycle Time
Because of AC servo motor driven, it enables to execute smooth operation at the maximum speed. It also drastically reduces dry cycle time for higher productivity.

Power Consumption & Economical

Energy Saving
Compared to hydraulic blow molding machine, it reduces 40% to 60% of power consumption.

Maintenance Free
Maintenance cost and time are drastically reduced because there is no need for replacing the hydraulic oil, packing and oil seal.
Advantage of Co-Extrusion molding

The main advantage of extrusion blow molding is to produce Co-Extrusion products. In order to keep the quality of product, Tahara's Co-Extrusion technologies are used in many bottles such as food products, beverage products, and seasoning products.

Using recycle materials / Saving master batch
- Cost reduction / Consideration for the environment

Barrier function
- Inhibited oxidation / Chemical resistance / Increasing of aroma retaining property

Making shiny on the outer layer
- Improving of outer layer with premium class / Image enhancement of product

The image of Co-Extrusion technology

Inner layer (LDPE)
Recycling layer (REG)
Adhesive layer (AD)
Barrier layer (EVOH)
Adhesive layer (AD)
Outer layer (LDPE)

We are making all of units by Tahara's original design, which is including Co-Extrusion head, Parison Controller, and Extruder.

It is not usual for among overseas competitors to design each unit internally. For example, some of the competitors purchase especially Co-Extrusion head that is technologically difficult and put on their machines and sell then to the clients.

However, all of units that is on our machine is 100% designed by Tahara.

Process of making Co-Extrusion Head

Preparation
Deciding material grade by client

Calculation
Applying Tahara's original calculation system based on the grade

Internal Manufacturing
Highly technological Co-Extrusion head will be manufactured by internally

Assembling & Inspection
Tahara's head enables to uniform each layer's wall thickness

Sample Multilayer Products

<table>
<thead>
<tr>
<th>Products</th>
<th>No. of Lay</th>
<th>Inner Layer</th>
<th>Outer Layer</th>
<th>Purpose</th>
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<tbody>
<tr>
<td>Mayonnaise</td>
<td>6</td>
<td>LDPE REG AD</td>
<td>EVOH AD</td>
<td>LDPE Antioxidation, Use of Regrind Materials</td>
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<tr>
<td>Dressing</td>
<td>6</td>
<td>PP REG AD</td>
<td>EVOH AD</td>
<td>PP Antioxidation, Use of Regrind Materials</td>
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<tr>
<td>Fuel Tank</td>
<td>6</td>
<td>HMWPE AD EVOH AD</td>
<td>REG AD EVOH AD</td>
<td>Prevention of Viscosity, Reduction of Pigments, Use of Regrind Materials</td>
</tr>
<tr>
<td>Mascara</td>
<td>5</td>
<td>PP AD EVOH REG</td>
<td>HDPE AD</td>
<td>PP Permeation Prevention, Chemical Resistance, Use of Regrind Materials, Visualization of Painted Coatings</td>
</tr>
<tr>
<td>Agrichemical</td>
<td>5</td>
<td>PA AD</td>
<td>REG HDPE AD</td>
<td>REG Gloss, Use of Regrind Materials</td>
</tr>
<tr>
<td>Shampoo</td>
<td>4</td>
<td>HDPE REG AD</td>
<td>RET-G HDPE</td>
<td>RET-G Gloss, Use of Regrind Materials, Improvement of Printability</td>
</tr>
<tr>
<td>Sunscreen</td>
<td>4</td>
<td>HDPE REG AD</td>
<td>EVOH HDPE AD</td>
<td>EVOH Reduction of Pigments, Use of Regrind Materials</td>
</tr>
<tr>
<td>Automobile Oil</td>
<td>3</td>
<td>HDPE REG</td>
<td>HDPE HDPE</td>
<td>HDPE Reduction of Pigments, Use of Regrind Materials</td>
</tr>
</tbody>
</table>
High performance products

Tahara's high functionally bottles

**Multi-layer High Gloss Bottle**
On the outside appearance, the bottle is produced by using high gloss resin such as PET-G or EVOH for the outer layers. By beautifying the appearance, it can appeal to customers and also enhance the product’s added values.

**In-mold Label (IML) Bottle**
The label is inserted into the inside of molds; the containers are formed by blowing, also pasting label on its surface. Because bottle and label are rigidly glued, the label does not peel off.

**Small PET Bottle**
This is a PET bottle which is made by extrusion blow molding. It is suited for small production which is difficult to produce by other molding methods and for products with the large blow ratio.

**Multi-layer Small Plastic Fuel Tank**
6 layer small plastic fuel tanks are used for electric generator, lawnmower, etc. It prevents volatilization of gasoline, and also reduces products weights compared to metal tanks.

**Multi-layer Food Bottle**
EVOH is used as barrier layer for preventing oxidation of contents, which leads to longer shelf life. TAHARA’s multilayer head can reduce the resin cost by making extremely thin layers of barrier and adhesive layers.

**Industrial Container**
This is an industrial container which has excellent chemical resistance and strong durability. TAHARA’s machine can produce various sizes of container up to 30 liters.

**View Stripe Bottle**
The bottles have stripe shaped window for checking remaining contents inside, TAHARA’s original view stripe head can make the line very clear.

**Convoluted Section Boots**
This is a convoluted section boots for automotive. We can provide either extrusion blow molding machine or injection blow molding machine depending on the products.

Do all the common tasks properly
This is one of our most important philosophy that we do all the common tasks properly to grow our business.