



Our Expertise Will Form Your Vision.

The histories of Nissei ASB and PET containers have been tied together, as will their future be.

Back in the early days of injection stretch blow molding (ISBM), Nissei ASB was a pioneer in the field and PET was just becoming established as the material of choice for beverage and foodstuff containers.

Today, both Nissei ASB and PET remain firmly at the forefront of the injection stretch blow molding industry.

As for the future, no-one can predict which direction the industry will take, but there is one thing you can be sure of - wherever it goes, Nissei ASB will be right there at the front continually innovating for tomorrow...

1978 Nissei ASB Machine Co., Ltd. established as an independent company.

1979 ASB moves into new factory in Sakaki-machi

1980 Nissei ASB Company established for USA Sales & Service

1987 Nissei ASB expands into a new factory in Komoro City

1987 Nissei ASB GmbH established for European Sales & Service

1990 Nissei ASB's Komoro Factory doubled in size

1993 Nissei ASB Pte. Ltd. established in Singapore for Asia / Africa Sales & Service

1997 ASB International manufacturing unit founded near Mumbai, India

2000 Shanghai ASB manufacturing unit established in Shanghai, China

2012 Nissei ASB Machine Co., Ltd. listed on the 2nd section of the Tokyo Stock Exchange

2013 Factory size at ASB International doubled with new mold making unit

2013 35th Anniversary

1978 First ASB-650 Series machine sold

1979 ASB-250 introduced

1980 ASB-50 introduced

1981 World's first double layer ISBM machine introduced

1981 First double layer molding using ASB-150D Series machine

1983 ASB-1200 - World's first double row ISBM process using ASB-250 machine

1984 World's first Polypropylene infusion bottle made by ISBM

1985 World's first multilayer ISBM container molded by ASB-T Series machine

1985 First heat-set PET molding machine

1985 ASB-70DP introduced

1986 ASB-32 introduced - up to 48 cavity molding

1986 World's first handled PET bottle produced using ASB-AI-5 machine

1986 introduced utilizing polyarylate neck

1989 ASB-70DPH introduced

1989 World's first in-mold labeling with ISBM demonstrated at K'89

1989 ASB-70DP introduced using ASB + POB Series machine, the ASB-V12

1990 ASB-70DP double row machine introduced

1990 ASB-300DP, large scale double row molding machine introduced

1991 World's first 1.5-step ISBM machine, the PM Series vertical clamping preform molding machines introduced

1991 NB Series 2-step re-heat blow molding machines introduced

1993 PF3-1BH and PF4-1BH introduced for integral han die molding

1995 HS Series for re-heat + double blow introduced (HS-45)

1995 HSO Series introduced - advanced double blow system

1996 ASB-50MB entry model introduced by ASB International

1999 ASB-150DP introduced for very large jar production

2001 HSB-10 refined double blow method introduced

2003 World's first all-electric 1-step ISBM machine, ASB-15N/10E introduced

2004 1,000th ASB-50MB machine is sold less than 7 years after introduction

2007 ASB-6M for wide neck hot-fill jar introduced for jar preform production

2008 ASB-150DPW introduced at K2010

2009 ASB-12M with low energy servo pump introduced

2009 PM-170/111M introduced for jar preform production

2010 ASB-12M introduced at K2010

2010 PF24-8B 1.5-step machine introduced

2011 HSB-2M molding hot fill jar with 83mm neck introduced at K2013

2012 ASB-12M introduced at K2013

2013 ASB-12M introduced at K2013

Since we, at Nissei ASB Machine Co., Ltd., produced our first injection stretch blow molding machine more than 35 years ago, the market has constantly put greater technical demands on container molding technology and at each step, Nissei ASB has responded by continually expanding the range and capabilities of our products to fulfill the needs of future market development. A quick look at the development history of our company indicates many "world-firsts" and tells a tale of long term commitment to research & development both as an industry leader, and as a company that reacts to the needs of its customers.

We have developed machines and processes that stretch the very limits of PET resin itself, and if we do find the limits of the very versatile PET then rest assured that we have machines that can mold a variety of other specialized resins to fulfill any need you may have.

Our pioneering work was in the field of 1-step PET Injection Stretch Blow Molding machines, the globally renowned "ASB Series" 4-station machines are still in huge demand today for their proven stability and flexibility.

Combining the advantages of both the 1-step and 2-step production methods, in the mid-nineties, Nissei ASB developed the revolutionary 1.5-step "cool parison" method. In 2004 we refined our highly successful 2-step re-heat double blow system into the "HSB Series", dedicated to the production of high temperature hot-fillable heat resistant containers, and from 2010 we introduced specialized machines for production of hot-fill jars, opening up another chapter in the ongoing expansion of PET applications.

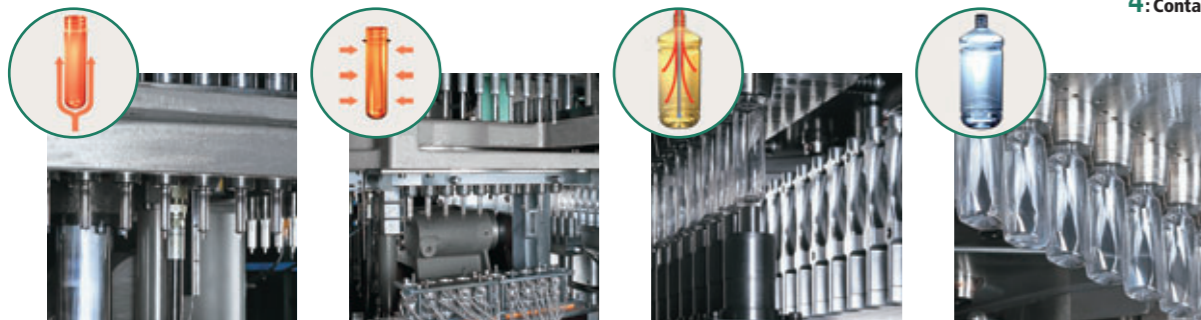
For the future, we will continue to push the boundaries of injection stretch blow molding, developing machines having ASB's normal levels of excellence coupled with greatly reduced power consumption - a key element in commercial competitiveness and most importantly, to help protect our planet's diminishing resources. Indeed, our reputation for tackling unique challenges in the market place has often led to a simple phrase being heard more and more often... "When everyone else has told you it's impossible, give Nissei ASB a try".

1-Step, 4 Station Technology

ASB Series

The original 1-step process developed by ASB.

By utilizing the residual heat from the preform injection molding process, energy consumption of the 1-step process is dramatically lower than that required for 2-step molding. The flexibility of the ASB Series conventional 1-step machines is ideally suited to extreme custom molding and non-PET applications.



1 Injection Station

Preforms are injected and cooled to below the crystallizing temperature of PET, but enough heat is retained to be blown without further re-heating. Specialized preform designs and adjustments to injection parameters can be used to optimize material distribution in the finished containers. Since the preform is custom designed for each specific container, special features such as non-standard necks can easily be incorporated.

2 Conditioning Station

This is where the legendary flexibility and stability of the ASB Series originates from. A variety of technologies can be applied to optimize the preform temperature profile allowing maximum utilization of material, enabling lightweight, strong containers to be molded in a variety of materials. By exchanging these low cost parts, round, square or oval containers can easily be produced from a common preform without the need to modify more expensive injection mold parts. This station can also compensate for outside variables such as utility supply, ambient conditions and molding resins thereby offering more stable molding.

3 Stretch Blow Molding Station

The basic stretch blow molding process can be modified in a variety of ways (see pages 8&9 for details). Most common amongst these are heat-setting and handle forming or insertion. If the preform design is compatible, a variety of container shapes can be formed by only changing the blow mold.

4 Container Take-Out

Containers are ejected from the lip cavity, having been precisely held since the injection of the preform. Necks are precisely orientated throughout the molding process and are protected from scuffing or damage. The body too, is maintained scuff free so container appearance is second-to-none making this process ideally suited to applications requiring the highest visual quality.

Specialized & Diverse Materials

The nature of the 1-step process in the ASB Series machine makes it very suitable for molding a range of non-PET resins

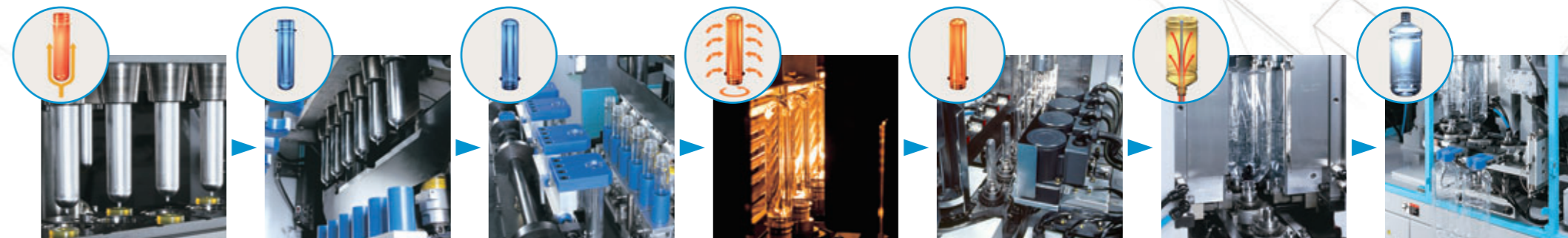
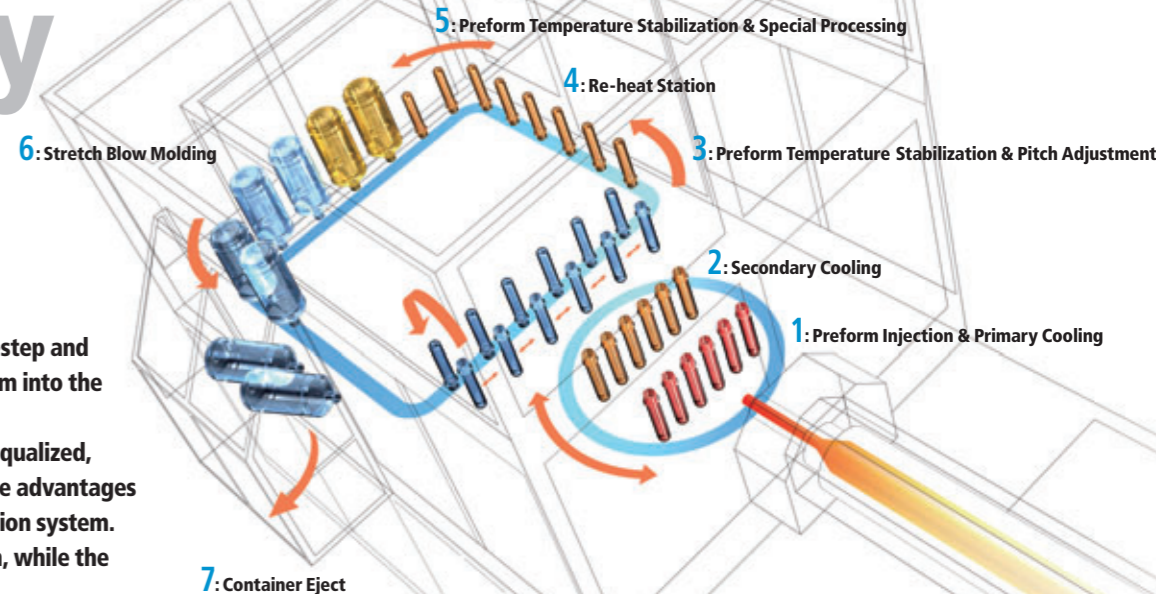
- ◆ **Polypropylene (PP)**
PP can be used in applications requiring high moisture barrier or high temperature resistance. In particular, ASB has deep experience with infusion containers for medical applications where sterilization is required. (ASB)
- ◆ **Polyethersulfone (PES)**
PES has rapidly replaced PC as the choice for baby feeding and other medical grade applications where high temperature resistance and stringent health concerns exist. (ASB)
- ◆ **Polycarbonate (PC)**
PC has excellent clarity and heat resistance. It will primarily be used in applications where high temperature washing and re-use is normal. Additional applications include lamp covers. (ASB)
- ◆ **Polyethylene Naphthalate (PEN)**
PEN has an all-round performance higher than PET making it suitable for high performance applications. (ASB/PF/HSB)
- ◆ **Polyactic Acid (PLA)**
PLA is produced from corn starch having the advantages of being both biodegradable and renewable. At ASB, we have already proven our machines for molding of this environmentally friendly material of the future. (ASB/PF/HSB)
- ◆ **Specialty Resins**
Our customers are constantly challenging us with newly developed molding materials. Contact us if you have an "out of the box" application. At ASB we are proud to rise to any challenge!

15-Step Technology

PF Series

Unique concept by Nissei ASB, specialist of the 1-step system.

In designing the PF Series concept our engineers carefully looked at the advantages of the 1-step and 2-step manufacturing processes, broke them into individual elements, then re-combined them into the most efficient method yet devised for manufacture of PET containers. In the "PF Series" machines, the preform is injection molded, partially cooled, temperature equalized, re-heated and blown in what is termed a "cool parison" system. This concept, incorporates the advantages of both the 1-step and 2-step systems container molding methods in a unique bottle production system. The practical result is a very compact injection clamp system at the preform injection station, while the blow station uses 2, 3 or 4 times less blow cavities to achieve a matching output. This vastly reduces the mold investment cost when molding a variety of bottle shapes from common preforms. Further simplification of the molds also results in vastly reduced downtime during mold changeover.



1 Preform Injection & Primary Cooling

By separating the injection and blow processes, we designed the injection station with reduced preform pitch, allowing the use of a high strength but compact injection clamp design.

2 Secondary Cooling

Unlike other systems, the preforms undergo additional cooling by either a cooling block or by staying on a second set of injection cores even after the next injection cycle starts, allowing greater efficiency in the injection cycle and reduced cycle times.

3 Preform Temperature Stabilization

Preforms are allowed to stabilize their temperature from skin to core, an essential requirement for stable molding and optimized material utilization.

4 Re-heat Station

Infra red heating by halogen heating lamps allows precise and consistent control of wall thickness, heating lamps are fully adjustable for position and power setting.

5 Preform Temperature Stabilization & Special Processing

A variety of specialized processing techniques can be added here, including; Neck Orientation, Spot Cooling*, Handle Inserter Device and others. Additionally, the preform skin temperature is allowed to stabilize with the core temperature once more.

6 Stretch Blow Molding

Either at step 3 or step 5, the pitch of the preforms is changed from the injection mold pitch to the blow mold pitch. Blow molds may be cooled (standard) or heated where special molding requirements exist such as semi-heat set.

7 Container Eject

Containers are removed from the machine and can be placed onto an optional take-out conveyor.

*PF6-2B molding concept is illustrated.

*Not applicable to PF24-8B

2-Step Double Blow Heat-Set Technology

PM Series CM Series HSB Series ASB Series†

ASB has been continually developing and refining the double blow heat-setting method over more than two decades. Containers produced by this method have unique properties that expand the uses of PET resin into new market segments.

Applications

- Heat-Set bottles and jars are commonly used for filling juices, teas, pickles, sauces and other bacteria sensitive products under pasteurized conditions. Typical filling and / or pasteurization temperatures will vary from 65 to 95°C* depending on the product to be filled.
- Heat-Setting can also be applied to returnable/refillable containers that need to be rinsed at high temperatures. This minimizes shrinkage and adds other advantages to the container such as improved stiffness and scratch resistance.
- Depending on the machine model used, up to 20 liter (5 US gallon) bottles can be molded.

Illustration of heat-set jar molding



1 Preforms are Molded

A PM Series preform molding machine may be used to injection mold the preform (as per normal 2-step molding). If neck crystallization is required, the molded neck diameter will typically be slightly larger than the target neck size.

2 Preform Neck is Crystallized

A CM Series neck crystallizer is used. For bottles, crystallization is not always required; the requirement depends on neck design, filling procedure and what type of cap is to be used.

3 Container is Blown

Using one of our HSB Series blow molding machines, the preform is re-heated and stretch blow molded. Refer to the following three steps for details of the HSB process.

3a Re-heating

The preform is re-heated to a temperature suitable for stretch blow molding. Up to this point, the molding process has been identical to conventional 2-step stretch blow molding but now it becomes different.

3b First Blow Mold (Hot)

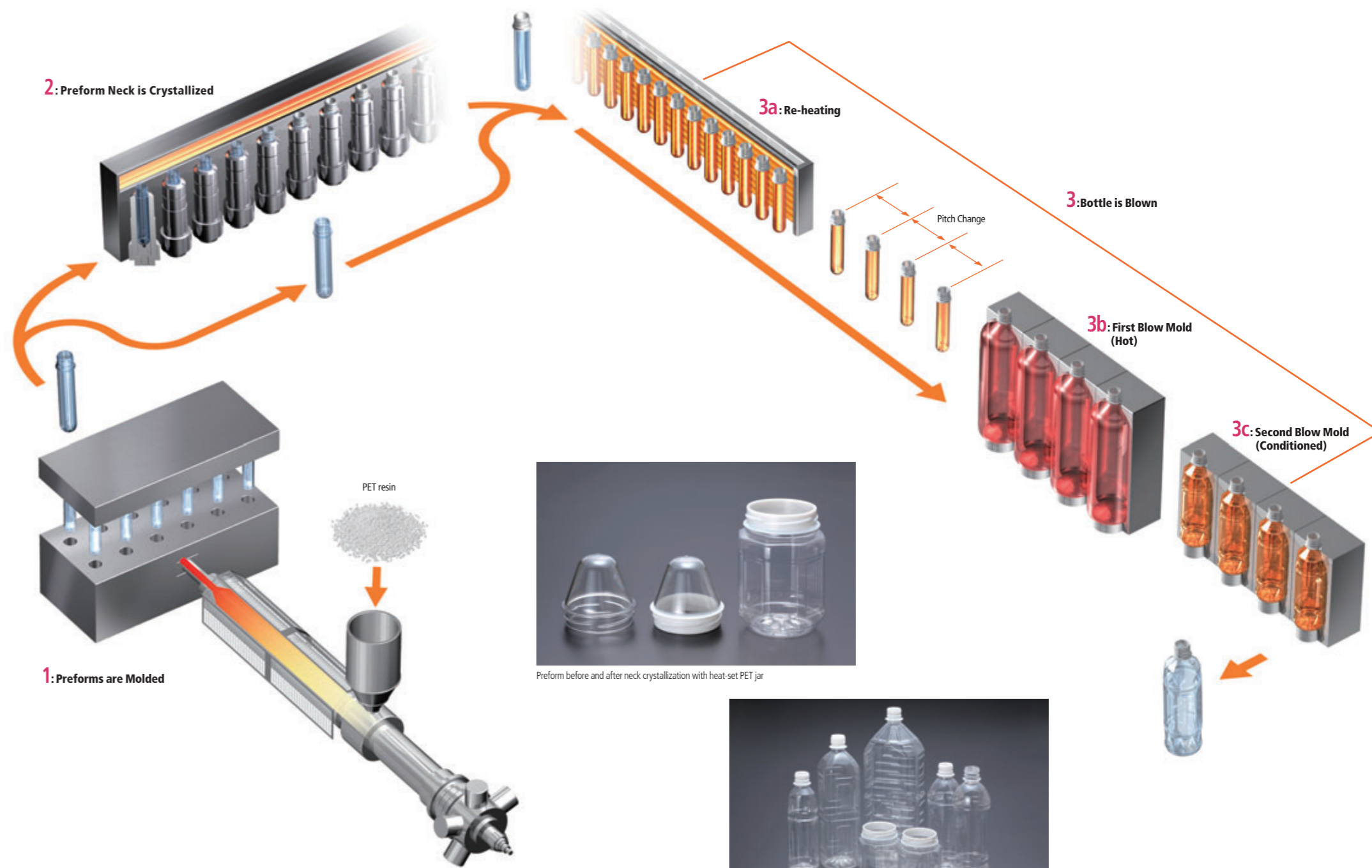
In an HSB Series machine, the primary blow mold is electrically heated in excess of 175°C, it is also larger than the target container size by around 20%. After blowing is completed, the pressurized air is exhausted from the container but the blow mold remains closed a little longer. The high temperature causes partial crystallization of the molded container, additionally, the container shrinks which has the effect of removing stress from the PET polymer chains.

3c Second Blow Mold (Conditioned)

The shrunken and partially crystallized container is transferred into the secondary blow mold where it is blown to the final shape. This mold is temperature conditioned to around 100°C. The final container leaves the mold with a high percentage of crystal growth and low stress. In the case of hot-filling, the container has the ability to be hot-filled at up to 95°C* or withstand pasteurization after filling.

* Maximum achievable temperatures are subject to container design and specification.

† ASB-650EXHS or ASB-650EXHD in combination with HSW machine.



Preform before and after neck crystallization with heat-set PET jar

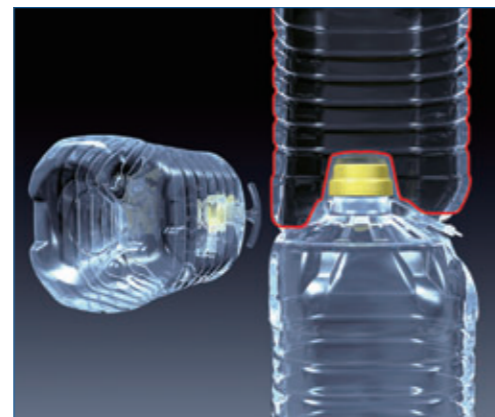


Heat-set containers made by various double blow machines

Note: As with all heat-setting, the heat resistance of the container will drop by a few degrees when stored for long periods in high humidity.

Specialized Molding Solutions

ASB has developed many specialized techniques enabling enormous flexibility of production.



Stackable

By blow molding with a deeply inset base, containers can be stacked directly on top of each other reducing volume for storage and transportation and reducing interlayer packaging materials (ASB/PF/HSB) *Some models may require option parts.



Injected Shoulder

Where a specialized container shoulder is required having exceptional detail for market appeal or precise capping, the shoulder can be molded as a flange on the preform in the injection cavity. (ASB)



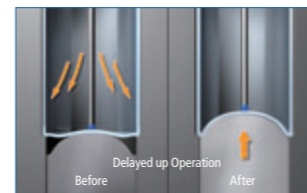
Asymmetric Parting Line

ASB's high quality blow mold manufacturing allows complex container shapes with undercuts to be molded by designing the blow mold parting line off the normal axis (ASB/PF)



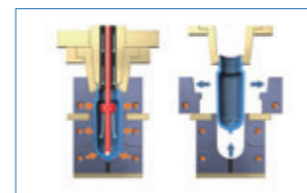
Superlight Weight / Bag In Box

Extreme light weight containers that are literally a bag with an injection molded neck can be molded to allow the body to collapse to eliminate air space, for storage prior to filling or efficient compacting of recycled materials. (ASB)



Champagne Base

Deeply dish bases can be easily molded using the built in "bottom mold delay" of the molding machine with an appropriate mold design. (ASB/PF/HSB) *Some models may require option parts.



Split Type Conditioning Blow

An ASB Series machine can utilize split type conditioning blow in order to stretch blow mold polypropylene narrow necked containers with increased molding stability. The technique can also be used to more easily mold very thick walled PET containers.



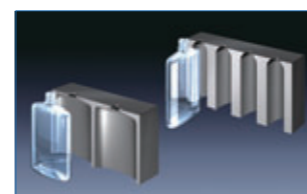
Extreme Oval

Preforms can be molded using ovalized injection cores or cavities. Preform temperature can be modified by use of ovalized conditioning station components (ASB), or Preferential Heating (PF). As a result, ovality ratios of up to 3:1*(ASB), 2.5:1*(PF) are easily achieved while maintaining perfectly equal wall thickness.



Deep Pinch Grip

With ASB's deep pinch grip technology, containers can be molded having handle grips much deeper than has ever been possible before. The result is the ability to mold large containers that can be comfortably held by everyone.



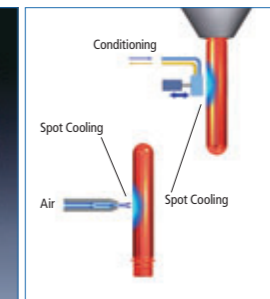
Front Parting Line

Thanks to our high quality mold manufacturing techniques, parting lines are virtually invisible. By designing oval containers with the parting line on the front / rear face, cavitation and productivity can be raised by up to 80%.



Handle Molding

A variety of handled bottles can be molded including post-molding and in-mold types (ASB/PF) and integral (PF). By applying spot cooling in the conditioning station, the preform is stretch blown to the ideal condition for stable molding of handled containers.



PET Can

The ability to injection mold a very thin flange means the container can go through the standard aluminium can lid crimping process. A transparent container enhances the product appeal. (ASB)



Off-Center Necks

Household trigger spray and similar containers are often designed with necks that are off-center. At ASB we have many experiences with this type of container design and can offer off-center ratios as high as 2:1*(standard), 7:3*(specialized).



Fixed Neck Orientation

Since the neck of the container is held throughout the molding process (ASB), the neck will always be in the correct orientation. Users of PF Series machines can achieve the same result with the optional neck orientation system.



Complex Neck Design / Very Short Necks

Since the preform is custom designed for the container, the end user can specify virtually any neck that is moldable. There is no need to be limited to a pre-designed preform shape. (ASB/PF) In ASB Series machines, the neck of the container can be as short as 3mm* allowing greater flexibility on cap design. Less material is used resulting in cost savings.



Long Neck Liquor Design

Most commonly used for liquor bottles, high quality containers can be molded with equal wall thickness in all parts of the container allowing lightest possible weight in the chimney section. (ASB/PF)



Zero/Minimum Support Ring

Containers molded in ASB Series machines do not require any support ring as the neck is always firmly held by the molded threads. In PF Series machines, the support ring diameter can be as low as 2mm greater than the preform diameter. As a result, weight can be saved and the appearance is enhanced.



Bottle-to-Bottle Recycling

With the simple addition of a specially designed PET resin dryer, ASB's full range of machines can mold suitably re-processed post-consumer resin directly into many containers for a wide range of applications, contributing toward a cleaner environment and cost reductions in raw materials. *Depending on the container specification.

Specialized Molding

Vast range of products that can be molded by machines from Nissei ASB.

High-efficiency, high-reliability, high-versatility ASB solutions. Select the one that meets your diversified requirements.

ASB is world famous for versatility and customized molding solutions. Our range of machines is ideally suited to the needs of the custom molder or to the needs of small and medium scale in-line filling operations.

Very Large Containers (ASB/PF)



Preform Molding (PM)



Jars (ASB)



Handled Bottles (ASB/PF)



Household Bottles (ASB/PF)



Heat-Set Containers (HSB)



Food & Beverage Containers (ASB/PF/HSB)



Cosmetics Containers (ASB)



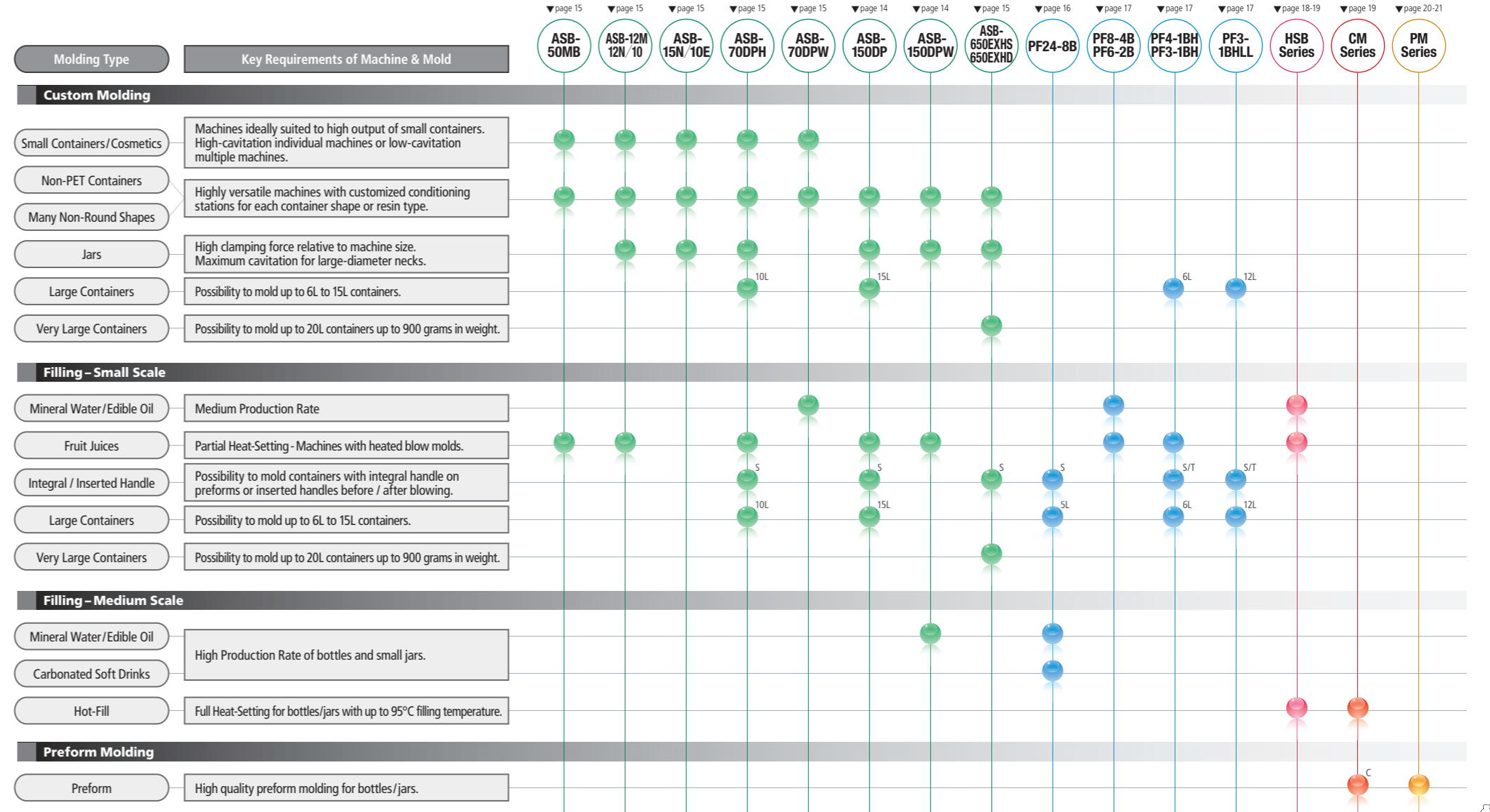
Shampoo & Toiletry Bottles (ASB/PF)



Non-PET Containers (ASB)



Small Bottles (ASB)



The chart illustrates the wide range of generic possibilities using machines from Nissei ASB. For detailed understanding of each machine's capabilities, please study individual machine specifications and consult with Nissei ASB. S: Inserted handle, T: Integral handle, C: Preform neck crystallizing only

Latest Innovations from Nissei ASB.

Increased output, reduced energy cost

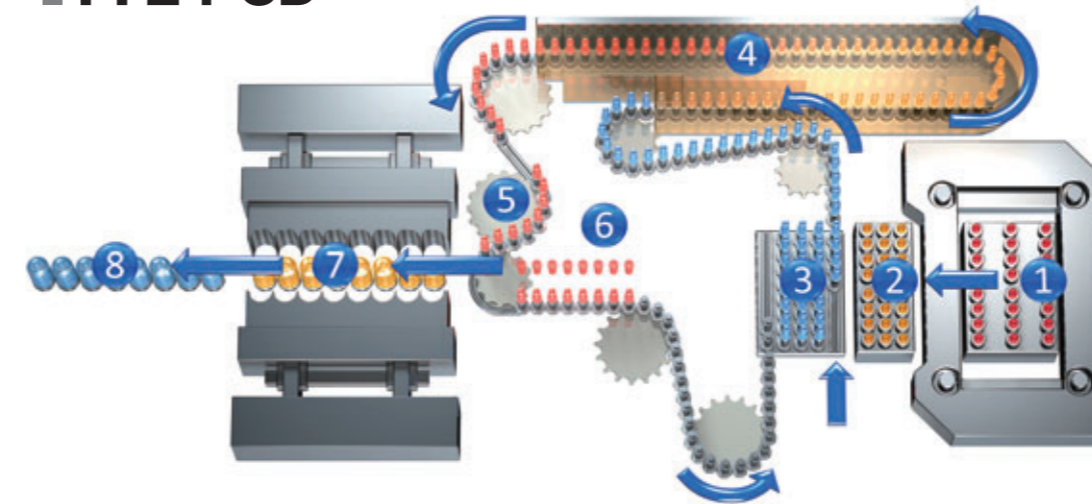
ASB-12M



The ASB-12M machine is the newest member to the smallest class of 1-step machines produced by Nissei ASB, yet it packs a huge amount of capability into its tiny frame. We listened to our customer's requests and developed this machine to provide higher productivity with reduced costs. The cavitation has been significantly increased over previous models allowing jars to be molded at up to 83mm neck diameter and greatly increased output rates of smaller containers. At the same time, the inclusion of servo driven hydraulic pumps mean that energy consumption is significantly lower than similar class hydraulically driven machines. The result is that actual power consumption for a typical 3-4 cavity PET mold is only around 9-10kW. The servo drive system also has the added benefit of being extremely smooth and quiet in operation.

Preforms & bottles in a fraction of the space of 2-step molding

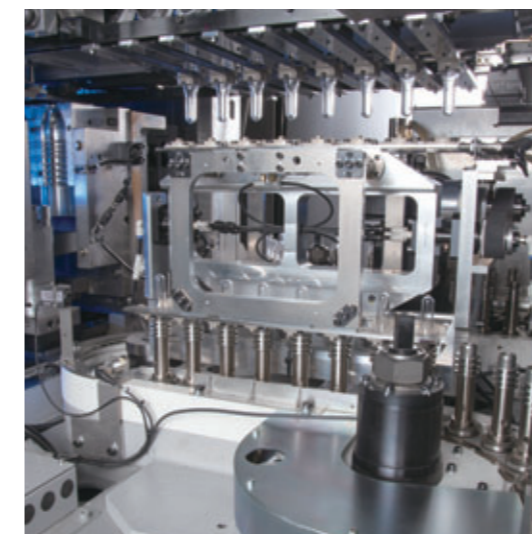
PF24-8B



- 1 Injection Molding/Primary Cooling
- 2 Secondary Cooling/Conditioning
- 3 Batch to Continuous Movement
- 4 Continuous Temperature Optimization
- 5 Continuous to Batch Movement
- 6 Preform Inverter
- 7 Pitch Change & Stretch Blow
- 8 Bottle Eject

The all-new PF24-8B extends the productivity of the PF Series up to 9,000bph*, overlapping into smaller 2-step molding territory but in a fraction of the floorspace.

Using ASB's original well proven and highly efficient 1.5-step molding process, preforms are molded, partially cooled, temperature conditioned, then blown into bottles at 3 times per injection cycle. This ratio has been proven to be ideal for blowing efficiency while maintaining very high consistency of container quality. Preform movement is converted from batch (at injection), to continuous for optimum temperature stability, then are converted back to batch movement for blowing. The machine can operate in a 24-8 cavity configuration for bottles up to 1.5 liter or be converted in the customer factory to operate in a 12-4 cavity configuration to mold bottles up to 5.0 liters. * for 500ml water bottle



Interior shot of machine

Drop-in PET replacement for the PC water cooler industry

HSW



Handled containers possible

As the market turns its back on Polycarbonate for 20 liter (5 US gallon) returnable water bottles, you can trust ASB to have a PET alternative that is ready to directly replace PC with minimal investment cost and no requirement for changes in filling, washing and distribution methods. With ASB's advanced molding techniques, all the necessary qualities such as resistance to hot washing, impact and scratching that PC was chosen for in the first place are retained.

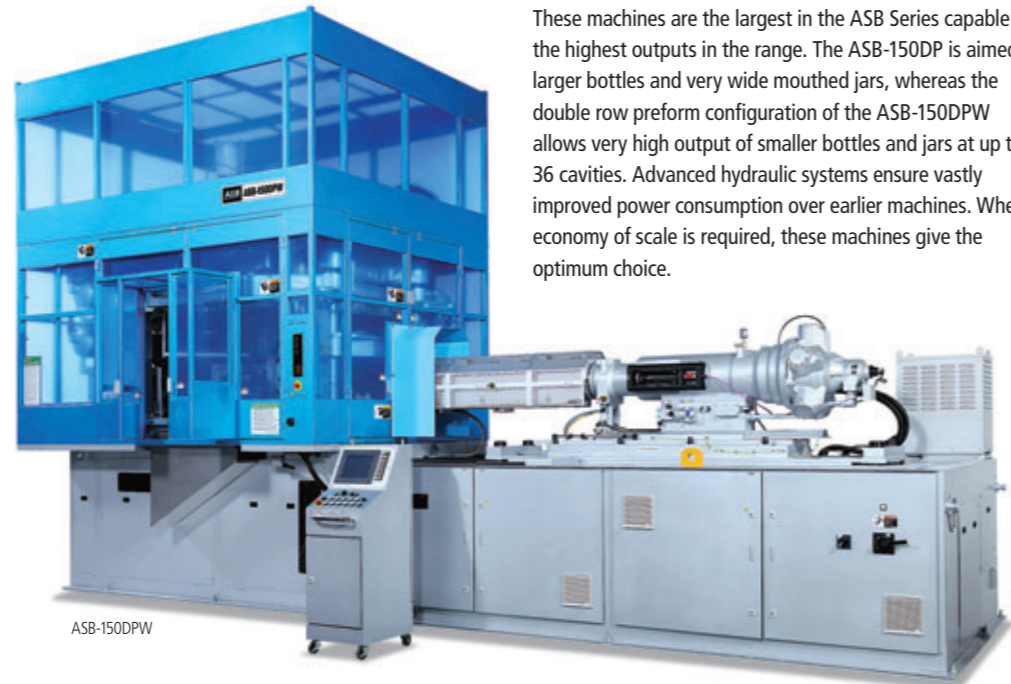
Building on ASB's long term experience with heat-setting and hot-fill technology, the HSW machine molding process is based on ASB's well proven double blow heat-set molding process. In this case, first blow takes place in an ASB-650EXHS or ASB-650EXHD machine. Existing ASB-650 machines can be easily converted for the switch from PC to PET and the HSW machine is added downstream. It is even possible to mold bottles with handles for efficiency and safety of the delivery staff.

ASB Series – Always Industry Leaders.

Our first ASB Series 4-station machine was delivered more than 35 years ago. They have become globally renowned as the standard in 1-step injection stretch blow molding and still remain in huge demand. Over the years, several competitors have tried to emulate the success of this model range – none have succeeded. Every model in the ASB Series has its own specific features and capabilities but all provide tremendous flexibility of container production and applicable molding resins. Hence the reason why demand for them has not only been maintained but has been increasing. Today ASB continues to expand the possibilities by developing entirely new models and re-developing existing ones to ensure they meet the current market needs of high output with low power consumption.

Large machines for mass production of bottles and large wide-mouthed containers

ASB-150DP ASB-150DPW



These machines are the largest in the ASB Series capable of the highest outputs in the range. The ASB-150DP is aimed at larger bottles and very wide mouthed jars, whereas the double row preform configuration of the ASB-150DPW allows very high output of smaller bottles and jars at up to 36 cavities. Advanced hydraulic systems ensure vastly improved power consumption over earlier machines. Where economy of scale is required, these machines give the optimum choice.

Medium sized machines for small narrow necked bottles up to wide mouthed jars

ASB-70DPH ASB-70DPW



These medium sized machines are amongst our best sellers for a reason – moderate investment costs and mold changeover times are well balanced by huge versatility of production. The ASB-70DPH is targeted at the medium to large bottle and jar market, while the double row preform configuration of the ASB-70DPW is ideally suited for high scale production of bottles under 700ml capacity.



Small machines with exceptional capabilities ideal for small scale bottle & jar production

ASB-50MB ASB-12N/10 ASB-12M ASB-15N/10E



- ASB-50MB** Originally conceived as a low-cost entry machine, it has rapidly become one of our best sellers, even in many developed markets. As a result, the specifications have been continually upgraded giving improved versatility and productivity. Over 2,000 units have been delivered since it was launched. It is ideally suited to molding a vast range of containers such as medicines, cosmetics, healthcare products, foodstuffs etc. in relatively small quantities.
- ASB-12N/10** With a higher specification than the ASB-50MB, this machine is ideally suited to more demanding applications offering a wider range of molding options with lower power consumption. The versatility of the ASB-12N/10 makes it a worthy candidate as a pilot production test machine.
- ASB-12M** The latest addition to this class of machines has set new standards for higher cavitation with lower energy consumption through the use of servo driven hydraulic pumps. Molds from both the above machines can be fitted to this machine with simple modifications.
- ASB-15N/10E** This all-electric machine is particularly suited to clean room production environments and has extremely low power consumption.

Dedicated machines for molding very large containers

ASB-650EXHS ASB-650EXHD



There are no better machines than these for molding up to 20L PET or PC bottles in single (EXHS) or twin (EXHD) cavities. They also have the capability to mold much smaller containers in larger cavitation. These models can trace their design heritage back to our first ASB Series machines delivered over 35 years ago – when a design is this good, why change it? With the addition of updated hydraulic and electronic control systems these machines are both well-proven and state-of-the-art.



ASB Series



PF Series – Innovative Efficiency

1.5-step molding combining the best features of 1-step and 2-step.

The PF Series machines are optimized for molding bottles in PET. Compact size makes them ideal for small to medium in-line filling operations while extended versatility appeals to custom molding operations as well.

In addition to outstanding productivity and cost performance, the PF Series is also available with optional equipment to enable the production of flat oval bottles, bottles with handles and other specialties.

Since their introduction, in excess of 1,400 PF Series machines have been sold worldwide, the majority of them being repeat orders to our many satisfied customers.

Increased output for a wide range of PET bottles

PF24-8B

The PF24-8B can mold PET resin direct to bottles in just 25~30% of the typical floor-space required for a similar capacity 2-step molding operation. The base model can be converted between 24-8 cavities molding at up to 9,000bph (500ml water), and 12-4 cavities molding at up to 2,400bph (5 liter square oil) for great production versatility. The 12H variant is designed specifically to allow containers with inserted handle to be molded by the use of an optional handle inserter unit.

- Very small footprint
- Convertible cavitation
- Stable molding
- Hybrid operation



PF24-8B

Small & medium bottle production

PF6-2B | PF8-4B

The best sellers in the PF Series are capable of molding containers up to 1.5L (PF8-4B) and 3L (PF6-2B). Optional neck orientation or preferential heating systems expand the capabilities of these machines for extreme oval designs. The PF8-4B is perfectly suited to 500ml water or sports drinks containers, while the PF6-2B is ideal for containers in the 1.5L to 3L range including in-mold inserted or post-molding inserted handles.



PF8-4B



PF6-2B/PF8-4B product samples

Large PET bottle molding with huge product variety

PF3-1BH | PF4-1BH

The PF3-1BH and PF4-1BH machines are optimized for molding PET bottles up to 6L capacity. With only a single blow cavity, mold investment cost is minimized and with numerous optional features, containers having integrated, inserted or post-molding inserted handles, off-center necks, or extreme unique designs can easily be molded.



Very large PET bottle molding with integral handles

PF3-1BHLL

This largest PF Series machine in terms of container size, can mold containers up to 12L capacity with an integrated handle if required, making it ideal for one-trip water bottles. Operation and maintenance is identical to the smaller PF Series machines ensuring easy training and operation.



PF3-1BH/PF3-1BHLL/PF4-1BH product samples

PF Series



HSB Series

Our Expertise Will Form Your Vision.

Double Blow Re-heat Stretch Blow Molding Machines: **HSB Series**

HSB Series – Taking The Heat

Double blow re-heat blow molding- a compact, solution for heat resistant containers.

HSB Series Line-up

- HSB-6M
- HSB-6N
- HSB-4N
- HSW

Together with the PM Series preform molding machines, and the CM Series neck crystallizers, the HSB Series double blow re-heat blow molding machines provide an integrated and matched solution to your hot-filling and pasteurization needs. Using a full mold set in the double blow mechanism will allow molding of containers that are capable of being filled at up to 95°C. By switching to a standard mold set, production of semi hot-fill or standard (non-hot-fill) containers is possible, increasing production flexibility and cost effectiveness. These machines provide an ideal solution to any small to medium scale filling company.

Double blow heat-set wide mouth jars

HSB-6M

The HSB-6M has been developed specifically for the production of wide mouthed hot-fillable/pasteurizable jars, ideal for many foodstuffs including pickles, jams, marmalade and a wide range of sauces. It utilizes the same tried and trusted double blow technique used in the bottle production machines, so high container performance is assured. As with the bottle molding models, this machine can also be configured to mold standard (non-hot-fill) jars.



HSB-6M product samples



Double blow heat-set bottles

HSB-6N | HSB-4N

These HSB Series machines have been optimized for molding bottles with necks up to 38mm thread diameter. The HSB-4N can mold up to 2L hot-fill or up to 3L standard bottles, whereas the HSB-6N has been optimized for smaller containers – 0.6L hot-fill or 1.5L standard bottles.



HSB-4N/HSB-6N product samples



Double blow heat-set production of 5 US gallon bottles

HSW

The HSW machine can be used as an add-on unit to an ASB-650EXHS or ASB-650EXHD machine to mold heat resistant bottles in PET to replace polycarbonate, but retain hot washing resistance. A variety of handle designs can be incorporated.



Before and After bottles from HSW

Our Expertise Will Form Your Vision.

Preform Neck Crystallizers: **CM Series**

CM Series

CM Series Line-up

- CM-6000M
- CM-6000N
- CM-12000

Ultimate heat resistance with crystallized necks.

Where hot-fill/pasteurization temperatures reach the limits of amorphous PET, crystallization of the preform neck finish provides ultimate integrity of the neck seal. To answer this need, Nissei ASB provides perfectly matched solutions in the shape of the CM Series neck crystallizer machines.

Heat resistant jar – preform neck crystallizer

CM-6000M

To mate up with our HSB-6M hot-fillable jar molding machine, this model is designed to crystallize jar preform necks up to 63mm thread diameter.



CM Series product samples – bottle preforms



CM Series product samples – jar preforms

Heat resistant bottle – preform neck crystallizer

CM-6000N | CM-12000

These bottle preform neck crystallizers offer nominal outputs of 6,000 and 12,000 crystallized preforms per hour for bottles with up to 30(38)*mm thread diameter.



*Option

PM Series – First Step To Success. Small to medium scale preform production.

The PM Series preform molding machines follow Nissei ASB's proven vertical clamping concept which ensures excellent preform accuracy with extremely compact design. The machines incorporate preform after-cooling systems to reduce cycle times so no additional handling or cooling equipment is required. Highly efficient hydraulic systems ensure low power consumption and short gate/gateless hot runner technology simplifies the preform molding process.

Jar & bottle preforms up to 48 cavities PM-170/111M

With 1,669kN clamping force, the PM-170 machine is ideally suited to the production of wide mouth jar preforms in 24 cavities. Its output is closely matched to work in line with our HSB-6M double blow heat-set molding machine, but is also suitable for molding a wide range of other preforms including bottle types in 32 to 48 cavities.



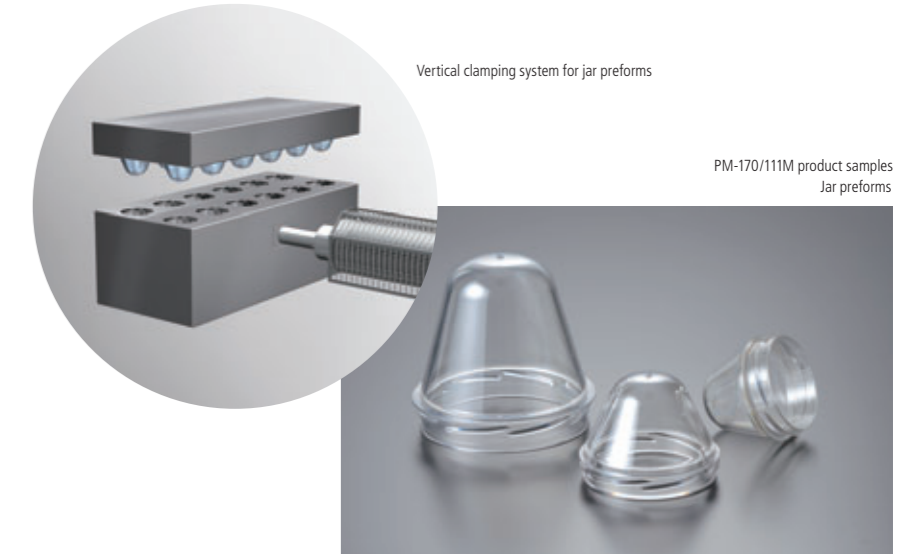
Small & medium bottle preform production up to 24 cavities

PM-70/65NII PM-70/111N



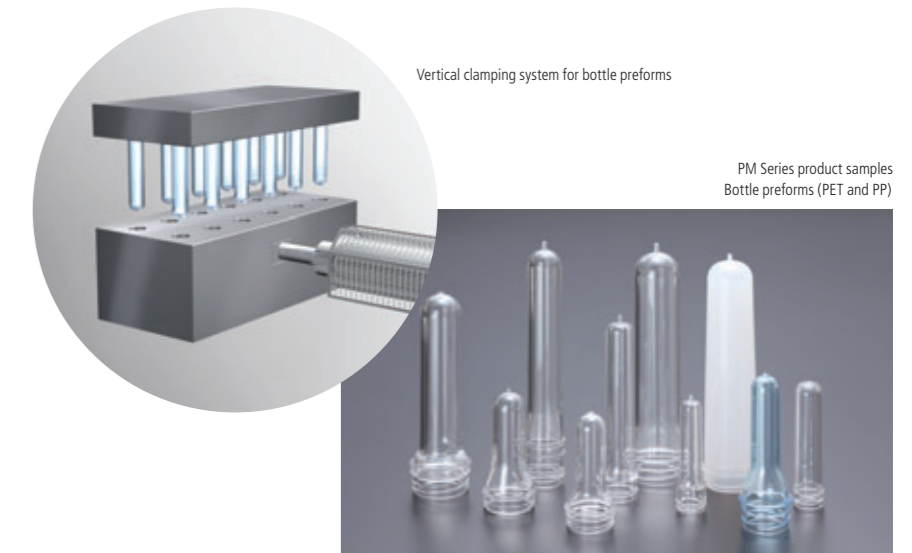
PM-70/111N

These machines are ideally matched to our CM and HSB machines for production of hot-fillable PET bottles. On the other hand, they can be used in any general molding operation for a range of preforms from 0.3L up to 5L, neck sizes up to 48mm (thread diameter) and from 8 to 24 cavities.



Vertical clamping system for jar preforms

PM-170/111M product samples
Jar preforms



Vertical clamping system for bottle preforms

PM Series product samples
Bottle preforms (PET and PP)

PM Series

ASB Molds – Profit From Day One.

Nissei ASB is not only a maker of injection stretch blow molding machines – a major part of our business has always been the ability to offer full product design, mold manufacturing and product testing. In fact, mold demand has been steadily increasing to the point where we now supply over 200* sets per month across our entire range of machines. We know our molding machines better than anyone, it therefore makes sense that we know how to get the best performance from the mold. Where necessary we may even customize the machine design or operation to enhance the efficiency for a specific project.

* Equivalent moldsets based on ASB-50MB

Product Design

Our highly experienced design team can offer advice on design optimization, or even create completely new designs in accordance with our customer's ideas.



Mold Production

Our overseas production unit is state-of-the-art providing world class engineering. Using over 120 CNC machine tools, mold components are manufactured to an exacting quality standard.



Component Inspection

Full and vigorous component inspection means our customers can be confident they are getting the very best possible quality. An essential point when dealing with the increasing demands of the container molding industry.



Performance Testing

In-house mold testing ensures that when the mold arrives in your factory, no further testing will be required. You can start producing containers and profits immediately.

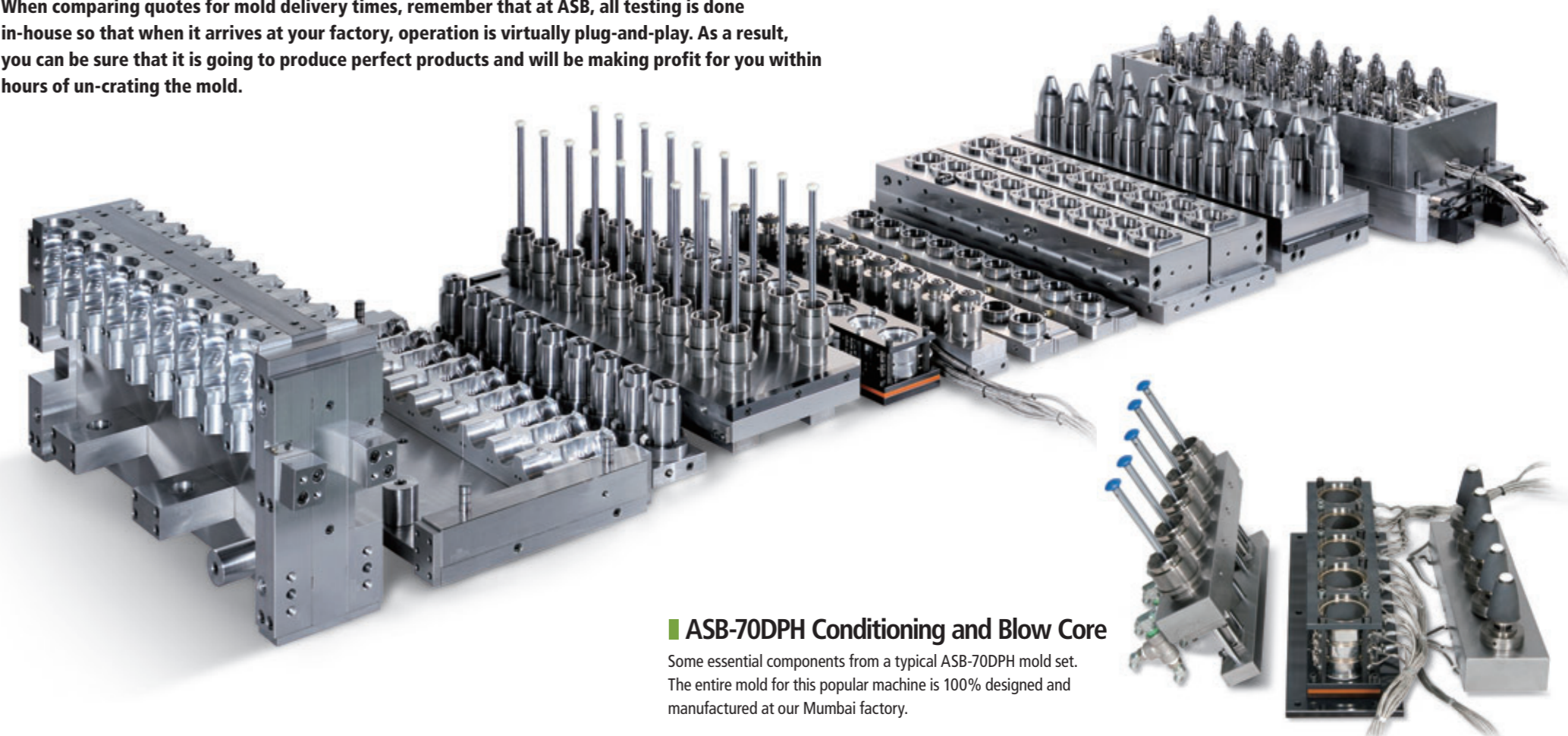


At ASB, we have every test machine and facility available for full testing of your mold before delivery. If you are buying a machine and mold as a set, then we will test them as a pair in our factory before shipment. Or, if you are only adding additional molds to your inventory, you can be sure that only ASB is able to offer a comprehensive testing facility on a machine in our factory that is identical to yours. In fact, we make it a standard rule that no mold leaves our factory untested, no matter how simple the molded product may be. When comparing quotes for mold delivery times, remember that at ASB, all testing is done in-house so that when it arrives at your factory, operation is virtually plug-and-play. As a result, you can be sure that it is going to produce perfect products and will be making profit for you within hours of un-crating the mold.

ASB-150DPW Mold Set

An 18 cavity jar mold set ready to be tested in one of our factories where all machine models are available. Our engineers have unrivalled understanding of each machine's capabilities enabling them to fully optimize the molding process.

* Some components are omitted for clarity.



ASB-70DPH Conditioning and Blow Core

Some essential components from a typical ASB-70DPH mold set. The entire mold for this popular machine is 100% designed and manufactured at our Mumbai factory.

Mold Production

From design consultation to after sales care and maintenance. We are ready to serve you at any time in any place around the world.

International Manufacturing

Nissei ASB is able to offer an efficient and superior service by utilizing the international talents of our global design, manufacturing and service personnel. In addition to our primary design facility in Japan where the focus is on group R&D and the design and assembly of custom built machinery, our India factory takes prime responsibility for manufacturing. In particular, our state-of-the-art mold manufacturing facility in our India factory allows us to offer faster delivery times for molds from design through manufacturing and final product testing. The recently expanded Mumbai factory currently employs more than 1,200 staff in 21,300m² of total factory space that operates a 24 hour CNC machine tool unit providing the ASB group with the majority of its machining capability. In addition, the factory manufactures and assembles many of our best-selling standard models of machines.



India Factory

Customer Training & Long Term Support

When you buy a Nissei ASB machine or mold system, you are not just becoming a customer – you are becoming a part of our family. As would be expected, we do our utmost to provide each and every one of our “family” with a complete molding package to satisfy their needs from design concept right through to successful start-up in your factory. On the way, we will provide you with technical assistance and training by our dedicated international customer training school either at one of our factories, regional offices, or if you prefer, on-site in your own factory. And it doesn't stop there – our global after sales network is in place to provide you with support at any time with spare parts and highly trained local engineers to keep you running at high efficiency. Our long term commitment to our “family” has seen deliveries of over 8,000 machines and 15,000 mold sets across the globe, with a high percentage being repeat orders.

Global Organization Assures Local Understanding

ASB is a truly international company with factories in 2 countries, subsidiaries in 18 and an additional 42 agents and sales representatives. And with our international staff originating from over 25 different countries, we have a unique understanding of the global and local needs of our customers. Not only can we offer machines and molds, but the entire molding system including compressors, chillers and all other necessary utility systems through to conveyor systems for finished product can be supplied. We can deliver on a global basis or can supply locally manufactured equipment for ease of service and maintenance. The choice is yours...



India Factory



Nissei ASB Customers Around the World

- Albania
- Algeria
- Argentina
- Armenia
- Australia
- Austria
- Azerbaijan
- Bangladesh
- Bahrain
- Barbados
- Belarus
- Belgium
- Bolivia
- Bosnia and Herzegovina
- Brazil
- Brunei
- Bulgaria
- Bahrain
- Cameroon
- Canada
- Chile
- China
- Colombia
- Costa Rica
- Croatia
- Cyprus
- Czech Republic
- D. R. Congo
- Denmark
- Dominican Republic
- Ecuador
- Egypt
- El Salvador
- Estonia
- Ethiopia
- Fiji
- Finland
- France
- Germany
- Ghana
- Greece
- Guatemala
- Honduras
- Hong Kong
- Hungary
- Iceland
- India
- Indonesia
- Iran
- Iraq
- Ireland
- Israel
- Italy
- Ivory Coast
- Jamaica
- Japan
- Jordan
- Kazakhstan
- Kenya
- Kuwait
- Lebanon
- Libya
- Lithuania
- Luxembourg
- Malaysia
- Mexico
- Micronesia
- Moldova
- Morocco
- Myanmar
- Nepal
- New Caledonia
- New Zealand
- Nicaragua
- Hungary
- Norway
- Oman
- Pakistan
- Palestine
- Panama
- Papua New Guinea
- Paraguay
- Peru
- Philippines
- Poland
- Portugal
- Puerto Rico
- Reunion
- Romania
- Russia
- Saint Lucia
- Saudi Arabia
- Senegal
- Serbia
- Seychelles
- Singapore
- Slovakia
- Slovenia
- South Africa
- South Korea
- Spain
- Sri Lanka
- Sudan
- Sweden
- Switzerland
- Syria
- Taiwan
- Tanzania
- Thailand
- The Netherlands
- Trinidad and Tobago
- Tunisia
- Turkey
- Turkmenistan
- U.A.E.
- U.S.A.
- Uganda
- Ukraine
- United Kingdom
- Uruguay
- Uzbekistan
- Vanuatu
- Venezuela
- Vietnam
- Yemen
- Zambia
- Zimbabwe

Variable Cavity Machines

ASB Series		ASB-50MB v3																		
Cavity Number	cavity	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	32	36
Max. Capacity	L	2.5	1.5	0.6	0.25	0.1	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-
Max. Neck Diameter	T	mm	63	42	32	27	25	17	-	-	-	-	-	-	-	-	-	-	-	-
Max. Body Diameter	BD	mm	115	90(100)	68(74)	56	45	35	-	-	-	-	-	-	-	-	-	-	-	-
Max. Height	HB	mm	300			200	150	-	-	-	-	-	-	-	-	-	-	-	-	-
Max. Weight*1	g	129	65	43	32	26	22	-	-	-	-	-	-	-	-	-	-	-	-	-

ASB Series		ASB-12N/10																		
Cavity Number	cavity	1	2	3	4	5	6	(7)	(8)	9	10	12	14	16	18	20	24	28	32	36
Max. Capacity	L	2.5	1.5	0.9	0.4	0.25	0.1	(0.03)	(0.02)	-	-	-	-	-	-	-	-	-	-	-
Max. Neck Diameter	T	mm	72	62	42	30	27	21	(17)	(15)	-	-	-	-	-	-	-	-	-	-
Max. Body Diameter	BD	mm	118	90(100)	74	52	42	35	(28)	(26)	-	-	-	-	-	-	-	-	-	-
Max. Height	HB	mm	310			(310)			-	-	-	-	-	-	-	-	-	-	-	-
Max. Weight*1	g	129	65	43	32	26	22	(18)	(16)	-	-	-	-	-	-	-	-	-	-	-

ASB Series		ASB-12M																		
Cavity Number	cavity	1	2	3	4	5	6	(7)	(8)	9	10	12	14	16	18	20	24	28	32	36
Max. Capacity	L	2.5	1.5	0.9	0.4	0.25	0.1	(0.03)	(0.02)	-	-	-	-	-	-	-	-	-	-	-
Max. Neck Diameter	T	mm	83	62	48	38	32	25	(17)	(15)	-	-	-	-	-	-	-	-	-	-
Max. Body Diameter	BD	mm	118	90(100)	66(85)	54(69)	56	45	(28)	(26)	-	-	-	-	-	-	-	-	-	-
Max. Height	HB	mm	300			200			(150)			-	-	-	-	-	-	-	-	-
Max. Weight*1	g	129	65	43	32	26	22	(18)	(16)	-	-	-	-	-	-	-	-	-	-	-

ASB Series		ASB-70DPH v4																		
Cavity Number	cavity	1	2	3	4	5	6	7	8	(9)	10	(12)	14	16	18	20	24	28	32	36
Max. Capacity	L	10	4.5	3.5	3	1.8	1	0.6	0.4	(0.35)	0.25	(0.1)	-	-	-	-	-	-	-	-
Max. Neck Diameter	T	mm	149(158)	120	99(111)	95	73(77)	57(60)	42	36	(34)	27	(18)	-	-	-	-	-	-	-
Max. Body Diameter	BD	mm	204	153	130	120	99	79	66(68)	54	(53)	45	(37)	-	-	-	-	-	-	-
Max. Height	HB	mm	350			200			(150)			-	-	-	-	-	-	-	-	-
Max. Weight*1	g	311	156	104	78	62	52	44	39	(35)	31	(26)	-	-	-	-	-	-	-	-

ASB Series		ASB-70DPW v3																		
Cavity Number	cavity	1	2	3	4	5	6	7	8	9	(10)	12	(14)	16	18	20	(24)	28	32	36
Max. Capacity	L	-	-	-	-	-	-	-	0.7	-	(0.7)	0.7	(0.6)	0.4	-	0.25	(0.1)	-	-	-
Max. Neck Diameter	T	mm	-	-	-	-	-	-	57	-	(56)	47	(38)	32	-	26	(24)	-	-	-
Max. Body Diameter	BD	mm	-	-	-	-	-	-	70	-	(70)	70	(66)	54	-	45	(37)	-	-	-
Max. Height	HB	mm	-	-	-	-	-	-	235	-	(235)	235	(235)	235	-	235	(235)	-	-	-
Max. Weight*1	g	-	-	-	-	-	-	-	55	-	(44)	36	(31)	27	-	22	(18)	-	-	-

Fixed Cavity Machines

PF Series	Cavities		Max. Capacity	Max. Neck Dia.(T)	Max. Body Dia.(BD)	Max. Neck Height(HB)	Max. Weight*1
	Preform	Blow					
	cavity	cavity	L	mm	mm	mm	g
PF24-8B/24	24	8	1.5	30(38)	90	330	47
PF24-8B/12	12	4	5	48	180	350	94
PF24-8B/12H	12	4	3*3	48	130*3	350*3	94
PF8-4B v4	8	4	1.5	32(38)	89	320(330)	55
PF6-2B v4	6	2	3	45	120	350	73
PF4-1BH v4	4	1	6	48/63*2	180	350	109
PF3-1BH v4	3	1	6	48/63*2	180	350	146
PF3-1BHLL v3	3	1	12	63/73*2	230	430	300

PM Series	Cavities Preform	Max. Neck Dia.(T)	Max. Preform Length	Max. Weight*1
PM-70/65N II	8	48	165	94
	12	40	165	63
	(16)	(30)/(38)	(165)	(47)
	24	30	165	31
PM-70/111N	8	48	165	181
	12	40	165	120
	(16)	(30)/(38)	(165)	(90)
	24	30	165	60
PM-170/111M	24	63	155	60
	(32)	(38)	(155)	(45)
	(48)	(30)	(155)	(30)

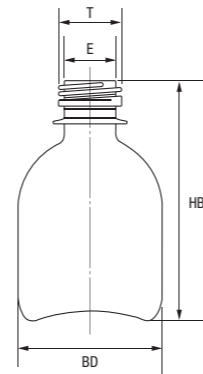
ASB Series		ASB-150DP																		
Cavity Number	cavity	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	32	36
Max. Capacity	L	15	15	10	8	5	4	3	2	1.8	1.5	0.7	0.45	0.3	-	-	-	-	-	-
Max. Neck Diameter	T	mm	168(223)	158(168)	158	132	117	100	91	83	63	53	39	32	28	-	-	-	-	-
Max. Body Diameter	BD	mm	260	260	230	200	160	135	115	100	90	80	68	56	48	-	-	-	-	-
Max. Height	HB	mm	350			350			350			-	-	-	-	-	-	-	-	-
Max. Weight*1	g	(1,130)	565	377	282	226	188	161	141	126	113	94	81	71	-	-	-	-	-	-

ASB Series		ASB-150DPW																		
Cavity Number	cavity	1	2	3	4	5	6	7	8	9	10	12	14	16	(18)	20	24	(28)	(32)	(36)
Max. Capacity	L	-	-	-	-	-	-	-	1.5	-	1.5	1.5	1.3	(0.9)	0.6	0.5	(0.3)	(0.2)	(0.15)	
Max. Neck Diameter	T	mm	-	-	-	-	-	-	94(101)	-	85(90)	78(83)	72(77)	67(72)	(63)	55	42	(32)	(27)	(24.5)
Max. Body Diameter	BD	mm	-	-	-	-	-	-	98	-	98	98	98	93	(83)	74	61	(51)	(45)	(39.5)
Max. Height	HB	mm	-	-	-	-	-	-	250	-	250	250	250	(250)	250	(250)	-	-	-	-
Max. Weight*1	g	-	-	-	-	-	-	-	141	-	113	94	81	71	(63)	56	47	(40)	(35)	(31)

ASB Series		ASB-15N/10E																		
Cavity Number	cavity	1	2	3	4	5	6	7	8	9	10	12	14	16	18	20	24	28	32	36
Max. Capacity	L	2	1.25	0.75	0.4	0.25	0.1	0.07	0.04	0.03	0.02	-	-	-	-	-	-	-	-	-
Max. Neck Diameter	T	mm	72	62	48	42	38	30	24	19	18	15	-	-	-	-	-	-	-	-
Max. Body Diameter	BD	mm	118	90	90	71	55	45	39	33	29	26	-	-	-	-	-	-	-	-
Max. Height	HB	mm	250			250			250			-	-	-	-	-	-	-	-	-
Max. Weight*1	g	133	67	44	33	27	22	19	17	15	13	-	-	-	-	-	-	-	-	-

ASB Series		ASB-650EXHS v2													
Cavity Number	cavity	1	2	(3)	4	5	6	7	8	9	10	12	14	16	18
Max. Capacity	L	20	20	(12)	5(7)	-	-	-	-	-	-	-	-	-	-
Max. Neck Diameter	T	mm	140	120	(90)	84	-	-	-	-	-	-	-	-	-
Max. Body Diameter	BD	mm	280	235(280)	(230)	180	-	-	-	-	-	-	-	-	-
Max. Height	HB	mm	510	(510)	510	-	-	-	-	-	-	-	-	-	-
Max. Weight*1	g	901	450	(300)	225	-	-	-	-	-	-	-	-	-	-

ASB Series		ASB-650EXHD													
Cavity Number	cavity	1	2	3	4	5	6	7	8	9	10	12	14	16	18
Max. Capacity	L	-	20	-	7	-	-	-	-	-	-	-	-	-	-
Max. Neck Diameter	T	mm	-	120	-	84	-	-	-	-	-	-	-	-	-
Max. Body Diameter	BD	mm	-	280	-	180	-	-	-	-	-	-	-	-	-
Max. Height	HB	mm	-	510	-	510	-	-	-	-	-	-	-	-	-
Max. Weight*1	g	-	901	-	450	-	-	-	-	-	-	-	-	-	-



Machine Specifications

	Standard Screw Diameter(φ)	Theoretical Injection Capacity	Injection Clamping Force	Blow Clamping Force	Chilling Water*1	Cooling Tower Water*2	Driving Power (Rated)	Heater Capacity*3	Total Electric Capacity	Oil Reservoir Capacity	Machine Size	Machine Mass	Max. Blow Air Pressure	Required Operation Air Pressure
	(mm)	(cm³)	(kN)	(kN)	(L/min.)	(L/min.)	(kW)	(kW)	(kW)	(L)	L x W x H (mm)	(ton)	(MPa)	(MPa)

ASB Series														
ASB-50MB v3	44	152	60	78	40	90	19.3	14.0	34.2	250	3,770 × 1,170 × 2,947	3.0	2.5	1.0
ASB-12N/10	44	152	137	116	60	55	19.3	21.5	42.0	220	4,083 × 1,110 × 2,957	4.0	3.5	1.0
ASB-12M	44	152	137	116	60	55	29.8	16.1	46.6	220	4,320 × 1,210 × 3,103	4.0	3.5	1.0
ASB-15N/10E	40	157	150	120	60	12	33.2	20.6	53.8	-	4,678 × 1,232 × 2,998	5.9	3.5	1.0
ASB-70DPH v4	54	366	687	242	180	140	33.0	38.5	73.7	600	5,643 × 1,896 × 3,208	9.0	3.5	1.0
ASB-70DPW v3	64	515	687	245	360	140	48.0	50.7	100.3	600	5,634 × 1,932 × 3,458	9.0	3.5	1.0
ASB-150DP	84	1,330	1,472	653	360	200	82.5	59.2	143.5	1,000	7,788 × 2,880 × 4,388	26.0	3.5	1.0
ASB-150DPW	84	1,330	1,472	653	360	200	82							



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