

Automatic
PET Stretch Blow Moulding
Equipment



25 Years of Complete Line Solution

Your packaging partner, from conception to commercialization SEPPA is one of the world leaders in PET blow moulding know-how and technology. We have been developing state-of-the-art, tailor-made solutions for a quarter of a century, and along the way have accumulated unparalleled expertise in the design and production of packaging for foods & beverages, health & beauty care, pharmaceuticals, and others.

“Buy me!”

Packaging is one of the key ingredients of a brand's equity, especially in fast-moving consumer goods. An appealing package design can be the trigger that initiates a buying decision. In fact, the package is often an important product differentiator, so creative, innovative packaging can go a long way in determining success or failure in the marketplace. The fact is, packages that say “Buy me” get bought, while those that hide stay hidden.

ALL THE QUALITIES OF PET...

The PET bottle is a great success in many countries. Produced by the biaxially oriented blow moulding process, PET or Polyethylene Terephthalate – bottles combine outstanding performances and aesthetic qualities. They give you the superb crystal clarity needed to show any product to advantage. They have excellent carbonation retention properties and a good barrier to oxygen. It's extremely resistant to breakage, Light to handle, Easy to transport and safe for health and environment.



SSB - SL

WITH SEPPA SYSTEM FLEXIBILITY

To the advantages of PET itself, the extraordinary characteristics of SSB 10 to SSB 150 are its simplicity, compactness, reliability and flexibility.

Quickly installed, the machine is ready for producing bottles of various shapes and contents as the changes of the moulds are rapid. Renowned for these advantages, it is the “two step” machine which is the most sold in the world and gives satisfaction to hundreds of manufactures for very different applications: Mineral water, carbonated drinks, Edible oil, Detergents...

This is the ideal system for the economical production, of quality bottles

One Machine Multiple Products

- Water and beverage
- CSD, Sparkling water and energy drinks
- Alcohol, Liquors
- Juices, teas, sport's drink
- Craft and commercial beer
- Liquid dairy products
- Cosmetics and personal care
- Pharma products
- Oil
- Cleaning liquids and chemicals
- Wide mouth jars for various products



SSB - SL

The Quartz Oven

Seven to Ten horizontally and angularly adjustable IR lamps can be turned to allow a more uniform heating of any type of performs before blowing. Preheating is achieved by re-circulating hot air exhausted by lamps. The system automatically adjusts to changes in the ambient temperature.

An oven with ten lamps (Optional) permits the heating of thicker performs.

Stretching System

A double cylinder stretching unit is standard equipment and ensures the fastest possible stretching speed, and the longest possible stretching stroke. Linear motion guides provide ultra smooth movement and the lowest possible friction coefficient.

Servo motors are also used in SLE models for electrical stretching.

The Control Cabinet

The control cabinet is equipped with a PLC (Programmable Logic Controller) with a HMI touch screen and graphic visualization. Multiple parameter entry for all performs and bottle shapes and size.

The PLC is integrated with a self diagnostic program with state of art artificial intelligence introduced to ensure highest efficiency during production. The system displays and records, blowing speed and productivity.

Alternative Raw Materials

Blow more than PET on SEPPA Smart Blow™ machines

To be competitive, you have to offer more than containers of ordinary PET.

Some packaging solutions are more cost competitive in polypropylene (PP). Others are better in polylactic acid (PLA). And some products require the high oxygen resistance of certain mono- and multi-layer barrier resin preforms.

Applications

- Water and milk bottles (PP + PLA)
- Hot-fill fruit juice bottles (PP)
- Compostable bottles (PLA)
- Beer (Barrier PET)

Process Advantages

- Innovative solutions for new products and customers
- Process flexibility
- Equipment versatility

The Bi-axial Orientation

PET is certainly the ideal material, but to retain that title, it also needs the full benefits of bi-axial orientation.

Bi-axial orientation requires two – stage production: The preform which is first produced in an injection machine is the feed raw material for the Bi - axial stretch blow moulding machine. The preform is pre heated to precise temperature range, after which it is simultaneously stretched bi-axially, thanks to stretching rods and radially by blowing. It is this process which gives the container its strength. The new generation of applications is covering a still more extensive range: mineral water, flavored water, nutrition water, milk, soft drinks, liquor, beer, detergents and cleaning products, wine and other alcoholic-drinks, fruit juices, certain preserves, sauces, ketchup and mustard, cosmetic and pharmaceuticals products, industrial paints and oils, chemical products etc....,,

It's a range of new markets with a promising potential.

Specialized in the manufacture of bi-axial stretch blow moulding machines for PET Containers (starting from preforms) seppa is offering today a completely up-graded range of small, medium and large capacity high speed blow moulding machines.

They combine the proven simplicity and reliability of the linear machine concept with the most recent developments in the field of PET process technology. A state-of-Art, User friendly operator machine interface (graphic display) allows easy programming of all relevant production parameters, ensuring at the same time extremely fast product change-over. Special equipment packages are available for the production of refillable or hot fill PET Bottles. PEN / PET bottles and bi-oriented PP bottles.

The machine can be designed to produce infinite number of bottle size and shape with neck size varying from 12mm to 120mm (ie) for bottles to jars on special request

Special Bottle Shapes: Preferential Heating

At SEPPA, we thrive on delivering solutions that really work

SEPPA preferential heating technology combines better quality and higher performance containers with greater design freedom. What's more, since this technology allows very precise wall thickness distribution, even on complex shape bottles, preform weight can be optimized for greater cost saving. Based on a dedicated oven, this technology is remarkably simple, and can even be retrofitted to existing machines.

We can produce world class oval container apart from complex shape bottles.

Applications

Alcohol, detergents, cosmetics...

Process Advantages

- Optimized production speed
- Optimized material distribution for enhanced package appearance
- Cost saving on raw material

The futuristic Next Gen Linear Electric Stretch Blow of SSB – SLE developed after years of R&D by SEPPA. The variable pitch unit synchronizes the heating system with the help of servo motors to the high speed preform transfer system which de-loads and transfers the preform to the blowing section. The high speed mould clamping in the blowing section supports to produce more than 1500 - 2000 bottles per cavity. This design reduces the cost of equipment while achieving high speed compare to the rotary blowing machine.

Preform Loading

An elevator belt transfers the preforms from the preform hopper to the preform orienter where preform are unscrambled and are vertically suspended on to a neck holding rail and feed to the infeed star wheel of the blowing machine.

Heating System

In the SSB – SLE Model infeed star wheel transfers the preforms to the continuous heating conveyor with individual preform mantels that hold the preform from inside their neck area. The preforms rotate around their axis continuously as they travel through the infra red heating system. In the SSB - SL model preforms are held by the neck not a mantel.

The heating lamps are individually controlled for perfection in heating and to achieve quality of blown bottles according to their shape.

A infra red camera is placed at the end of the heating zone to transmit actual temperature to the controller. The temperature can be compared with required set temperature and the PLC can auto correct if required.

Different necks sizes of preforms can be handled by a quickchange over of the preform holder and mantel.

Stretch Blow Moulding Station

The preform pick and place system then transfers the preform from the heating zone to the blowing station.

The mould is closed by a toggle pneumatic locking system with pneumatic compensation. Moulds are engineered with different neck holders depending on preform neck type.

A high speed preform stretching system either by pneumatic or servo drives is used to achieve varied stretch profiles. Once the stretch blow moulding process is completed the mould is opened.

Bottle Discharge System

Specialized grippers are used to catch the blown bottles by the neck and transfer them to the discharge air conveyor.



SSB - SLE



Neck Orientation

Customized Packaging Solutions

The growing popularity of flip-top caps means that precise cap-to-container alignment is an absolute necessity.

Unlike neck orientation features offered on other linear and rotary stretch blow moulding machines, which require the use of special preforms that feature one or two notches on the neck ring, SEPPA offers a solution that works with nearly all the preforms that are available on the market.

This neck orientation option can be combined with the preferential heating option, offering the possibility of blowing a wider range of bottle shapes.

Applications

- Food, cosmetics, personal care products, detergents,

Process advantages

- Simple to set up mechanical system
- Fast orientation in less than 0.8 sec.
- Accurate and flexible positioning



Options

PID system for heating zone

An Infrared thermometer detects the temperature of the preforms and automatically adjusts the temperature of the oven to the correct level. It avoids the influence of the temperature difference between day time and night time. Also, the system can have an additional lamp alarm unit, It sounds when it detects any broken or aging lamps.

Air Recovery system

We know most of the production cost comes from two factors, blowing the bottles and reheating the preforms. In order to reduce the production cost for the bottle manufacturers, SEPPA has introduced an Air recovery system. This system recovers up to 30% of exhausted High pressure air.

Air cooling system

We have developed an air cooling system for hot fill PET bottles, after high pressure blowing, air cooling is introduced. This reduces the level of PET residual stress, and increases the rate of PET crystallization. After the air cooling process, the PET bottle can stand hot filling without deformation.

- *** Preform feeding system**
- Linear unscrambler is fixed on the top of the machine for saving space.
- Preform loading is continuous with high speed quick change feeding star wheel design.
- *** Advanced heating system**
- Unique venting design for both lamps and preforms .
- Cooling circuit to protect the neck of the preforms .
- Closed loop system for the heating system
- *** Transfer of preforms**
- Servo driven variable pitch system in SSB -SLE and SSB –R models.
- Simple design for the preform grippers providing less change over time
- *** Clamping system**
- Double side compensation.
- Toggle clamp with self-lubricating graphite bearings.
- Synchronized horizontal and vertical movement
- *** Automation system**
- Becoff or Schneider PLC System
- Large touch screen HMI that saves up to 50 sets of data.
- Remote control unit with SEPPA customer support service.

The SSB –R Series – Next Gen Technology - Intense Performance

The most optimized rotary blowing equipment with maximized production output per mould. The SSB – R rotary blowing machine is designed with reduced power consumption due to its optimized minimized pitch at the preheater. The high speed clamping system along with variable stretching system and rapid response blowing valve block are designed to achieve high productivity and consistency in blowing.

System Overview

The SSB –R rotary blowing machine has very similar preform unscrambler followed by preform loading system and heating system as the SSB – SLE. The heating preform mantels index by 180° it also can be similar to the SSB – SLE model which keeps the preform at one level mouth up. The last part of the heating system is a gripper mechanism which transfers the heated preforms to the rotary blowing station.

The preforms are placed in the open mould. The mould is then closed and clamped with control cams.

The preform neck is sealed by a blowing seal. This is followed by stretching and preblow and high pressure blowing. Once the blowing is completed the mould is opened and the gripper mechanism transfers the bottles out of the open mould to the discharge system and out by an air conveyor.

System Advantage

- Top quality PET bottles
- Lowest energy and air consumption
- Air recycling system
- Reduced air demand
- Affordable low investment
- Low production cost
- Rapid product change over time
- Minimized wear and tear
- Lowest downtime – optimized uptime

Economical Blow Moulding Equipment Overview

PET model	Output bottle per hour	Max. bottle volume	Power (kw)	Blowing Heads (No's)
SSB-SL10	1000 - 1200	100ml - 2000ml	11	01
SSB-SL20	1800 - 2000	100ml - 2000ml	25	02
SSB-SL40	3000 - 4000	100ml - 2000ml	56	04
SSB-SL60	4000 - 6000	100ml - 2000ml	64	06

Electric Blow Moulding Equipment Overview

SSB-SLE40	4000 - 7200	100ml - 2000ml	64 / 96	04
SSB-SLE60	6000 - 9000	100ml - 2000ml	64 / 128	06
SSB-SLE80	9000 - 12800	100ml - 2000ml	90 / 140	08
SSB-SLE100	12000 - 15500	100ml - 2000ml	110 / 150	10
SSB-SRE120	15000 - 18000	100ml - 2000ml	140 / 175	12
SSB-SLE150	18000 - 20000	100ml - 2000ml	170 / 200	15

Rotary Blow Moulding Equipment Overview

SSB-R6	7000 - 8400	100ml - 2500ml	120	06
SSB-R8	10000 - 13600	100ml - 2500ml	160	08
SSB-R10	12000 - 17200	100ml - 2500ml	200	10
SSB-R12	20000 - 21600	100ml - 2500ml	220	12
SSB-R16	27000 - 28800	100ml - 2500ml	260	16

Note : - Due to continuous improvements, specifications are subject to change without notice.

LOW INVESTMENT
MAXIMIZED
PRODUCTION SPEED
MULTIPLE PRODUCTS



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