

Blow Fill Seal System

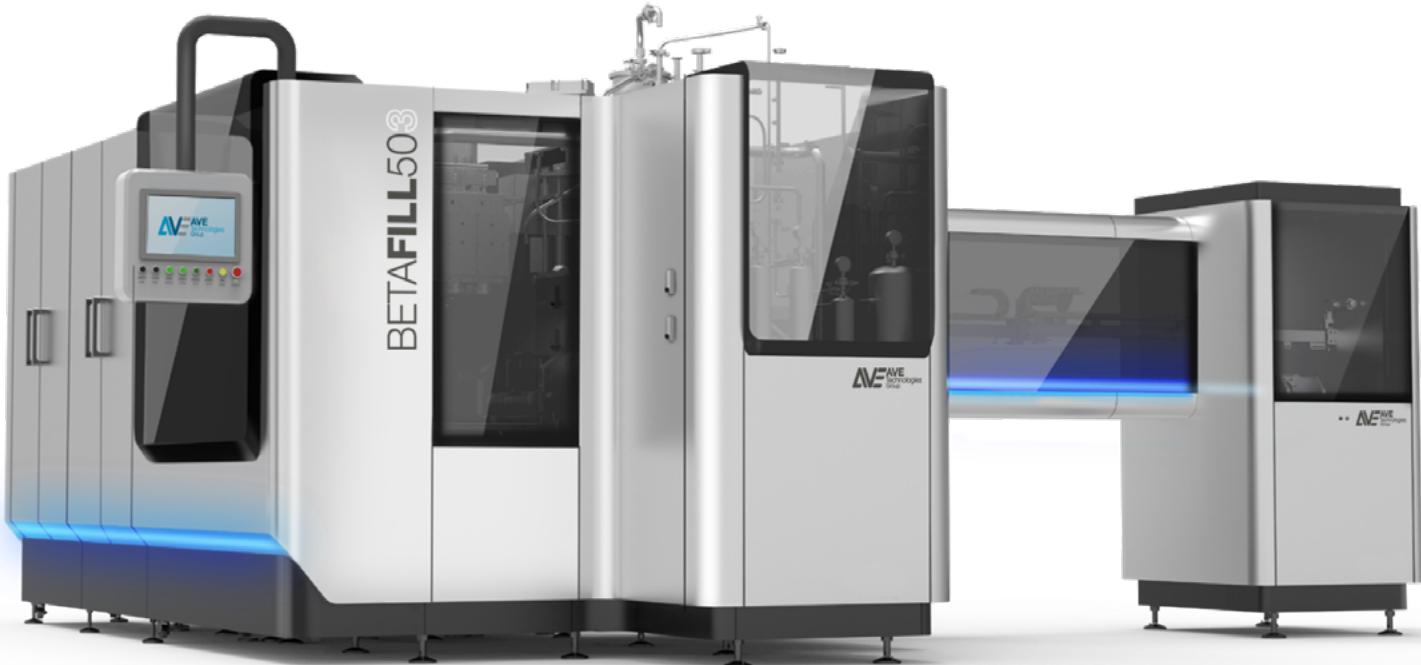
Product Data



BETAFILL50 1 3 4 3D 4D



Small volume filling 0.4ml-50ml



AVE Technologies small volume fill machines are often used in eye, ear, nose care products and cosmetics. Compared with glass ampoules, plastics offer more advantages such as ease of use, elimination of potential hazards, safe and environmentally friendly disposal, shatter-proof transportation, and lower manufacturing costs. Therefore, they are ideal for highly sterile products such as IV injection solutions, eye drops, inhalants and other similar products.



Product Description

Single Mould

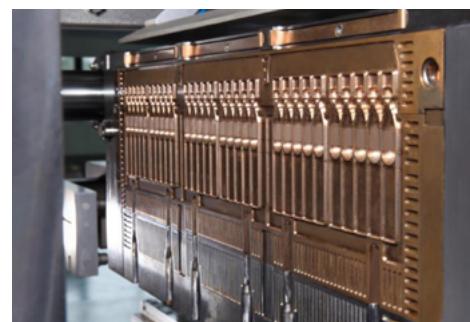
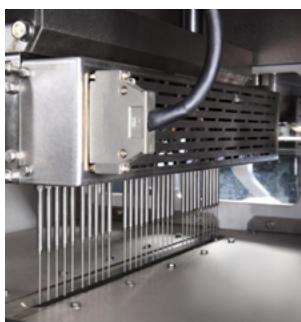
BETAFILL50 single mould system provides hassle-free aseptic packaging technology, and can run continuously to automatically complete the filling and sealing process. The equipment is compatible with medical Polyethylene (PE) or Polypropylene (PP) particles as raw materials. Various bottle types and caps can be selected according to a customer's design requirements, such as twist-off, multi-dose etc.

Double Mould

The double mould models offer higher production capacity, using two sets of moulds and cutting systems to operate at the same time. The double-extrusion structure uses the waiting interval of the extruder to carry out another set of mould extrusions during the mould forming and filling process. The two sides of the machine are connected to the conveyor belt, and directly transported to the packaging area. Compared with the traditional model, the whole process occupies a smaller area and offers lower operating costs.

Small volume product range specifications

Model	Specification	Extrusion heads	Extrusion head centre distance	Number of moulds	Die cavity number distribution	Total number of cavities	Recovery time (secs)	Production capacity (piece/hour)
BETAFILL50 1	0.4-2ml	1	/	1	1x(5+5)	10	12	3000
	5-10ml	1	/	1	1x7	7	12	2100
	10-20ml	1	/	1	1x6	6	12	1550
BETAFILL50 3	0.4-2ml	3	145	1	3x(5+5)	30	12	9000
	5-10ml	3	145	1	3x7	21	12	6300
	10-20ml	3	145	1	3x6	18	12	4500
BETAFILL50 4	0.4-1ml	4	110	1	4x10	40	12	9000
	1-3ml	4	110	1	4x8	32	12	6300
	5-20ml	4	110	1	4x5	20	12	4500
BETAFILL50 3D	0.4-1ml	3	145	2	2x3 x (5+5)	60	14	18000
	5-10ml	3	145	2	2x3 x 7	42	14	12600
	5-20ml	3	145	2	2x3 x 6	36	14	9000
BETAFILL50 4D	0.4-1ml	4	110	2	2x4 x10	80	14	24000
	1-3ml	4	110	2	2x4 x8	64	14	19200
	5-20ml	4	110	2	2x4 x5	40	14	10000

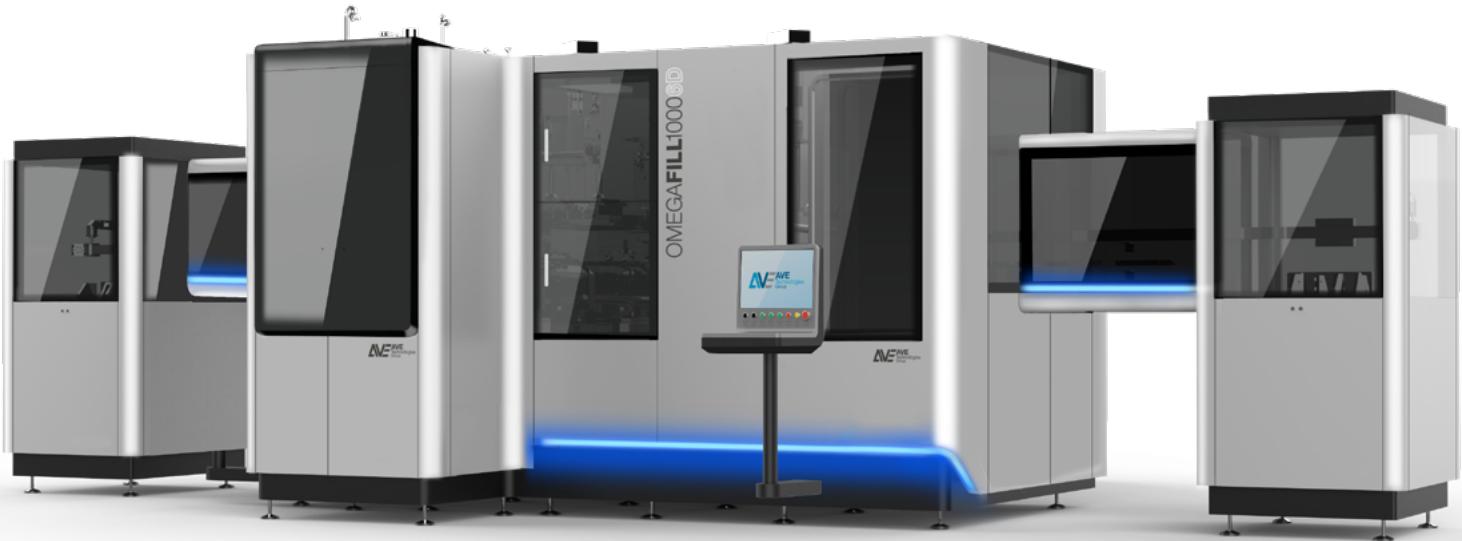


Production rates may vary depending on machine speed, fill material viscosity, and operator experience.



OMEGA**FILL**1000 6 8 6D 8D

Large capacity filling 50ml-1000ml



FDA compliant plastic brings a lot of convenience to users of large infusion products. They offer very low permeability and are very safe and convenient for use in hospitals. This type of packaging is fully recyclable, which adds a marketable positive outcome for the products once used.



Product Description

Single Mould

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Large capacity product range specifications

Model	Specification	Extrusion heads	Extrusion head centre distance	Number of moulds	Die cavity number distribution	Total number of cavities	Recovery time (secs)	Production capacity (piece/hour)
OMEGA FILL 1000 6	0500ml	6	80	1	6	6	18.5	1150
	1000ml	6	80	1	6	6	20	1080
OMEGA FILL 1000 8	100ml	8	62	1	8	8	14.5	1950
	5-10ml	8	62	1	8	8	16	1800
	500ml	8	62	1	8	8	18.5	1550
OMEGA FILL 1000 6D	500ml	6	80	2	2x6	12	18.5	2350
	1000ml	6	80	2	2x6	12	20	2160
OMEGA FILL 1000 8D	100ml	8	62	2	2x8	16	14.5	4000
	250ml	8	62	1	8	8	16	3500
	500ml	8	62	2	2x8	16	18.5	2880



Production rates may vary depending on machine speed, fill material viscosity, and operator experience.





The Blow Fill Seal Difference

Glass Packaging

- ✗ Higher transportation costs, and requires complete glass bottle production line, greatly increasing manufacturing costs and warehouse space
- ✗ Increased layers of packaging to prevent breakage
- ✗ Ampoules contain negative pressure – on opening surrounding pollutants can be pushed into the bottle

Blow Fill Seal Plastic

- ✓ BFS machines produce packaging containers under aseptic conditions, reducing human interference
- ✓ Low production costs and no need for excessive packaging in shatterproof plastic containers
- ✓ BFS plastic ampoules have easy twist-off openings for easy injection with no risk of contamination

Wash Potting

- ✗ Heavy-duty, long-line equipment requires large-scale production bases and purification workshops
- ✗ Bottle input to final product involves multiple machines requiring more operators to maintain the production line
- ✗ During the high-temperature sterilization process, variation in the liquid medicine can occur, such as changing the pH value and effectiveness of the contents, causing quality risks

Blow Fill Seal Plastic

- ✓ Since the BFS equipment occupies a small footprint, it saves a lot of infrastructure investment
- ✓ A fully automatic Blow Fill Seal system requires only 2 operators
- ✓ BFS equipment provides an efficient aseptic production environment, eliminating the need for unnecessary sterilization

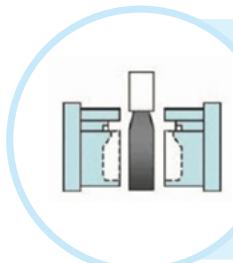
Freeze Drying Process

- ✗ Crystals must be added to the product for crystallization and it cannot be tested for insoluble particles
- ✗ Requires a lot of process pure water and energy for cleaning to ensure the aseptic effect
- ✗ Requires long working hours, low output, and high energy consumption, resulting in very high operating costs

Blow Fill Seal Plastic

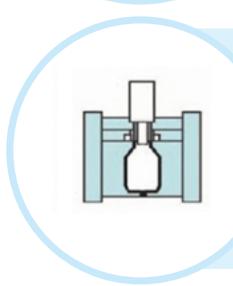
- ✓ BFS creates an aseptic filling environment without additional additives
- ✓ No need for special cleaning or large amounts of water
- ✓ All processes are completed on one Blow Fill Seal machine, reducing time and financial investment

The Process



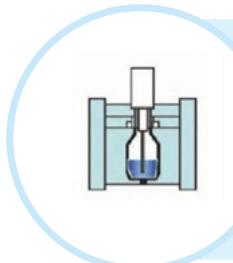
EXTRUSION

The thermoplastic material is continuously extruded into a tube with a high-speed screw, and the tube blank flushed by sterile air passes through the forming die.



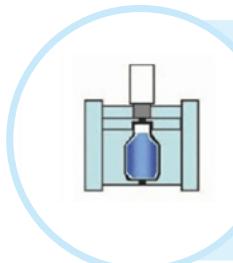
BOTTLE BLOWING

The main mould seals and cuts off the tube blank. Sterile air protects the open tube blank in the mould. The plastic raw materials are then moulded into shape by vacuum or sterile compressed air.



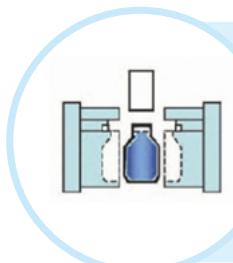
FILLING

The container is immediately filled, expelling the sterile air. The system uses time pressure filling and is equipped with CIP/SIP. The entire process is carried out under the protection of sterile air (equivalent to Class A).



SEAL

In this stage, the preform is still semi-molten between the top of the mould and the opening holding clip. The headforms are then combined to form the top of the container and the bottle is sealed.



DISCHARGE

In this stage, the preform is still semi-molten between the top of the mould and the opening holding clip. The headforms are then combined to form the top of the container and the bottle is sealed.

The Benefits

Minimize human intervention for efficient aseptic results

The speed of automation ensures interference-free aseptic handling and minimal exposure to the environment, ensuring efficient sterility.

Overall cost savings

The machines require no sterilization or cleaning, and occupy a small footprint, saving facility and warehouse space and infrastructure investment.

Suitable for biologics and heat-sensitive drugs

The quality of the liquid medicine is not affected by drastic variations in temperature during production. The system constantly monitors thermal influence.

Automatic CIP/SIP process

BFS machines can automatically complete the CIP/SIP process under the control of computer programs to achieve aseptic production and aseptic use of products.



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AVE Technologies Group offer:

- Complete Solid Dosage Line Process and Packaging
- Liquid Form Process and Packaging
- Clean Room Design and Fabrication

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