

Injection Stretch Blow Molding Machines – PRO Series



Product Description

The PRO series is the latest generation of CYPET Injection Stretch Blow Molding machines, which extend the competitiveness of 1-step blow molding, with high productivity.

How the machine works: <https://www.youtube.com/watch?v=2zqWbLTVb8&t=2s>

Why the PRO Series?

1. **Fast Payback:** The PRO Series enables a faster return on investment, with payback periods between 1.5 to 2 years.
2. **High Productivity and Efficiency:** Our 1-step PRO systems combine the process of injection, partial cooling, conditioning, and stretch-blowing into one efficient machine, significantly reducing energy consumption and production costs compared to the traditional 2-step process, while achieving outputs up to 15 000 bottles per hour.
3. **Quality, Sustainability, Ease of Use:** With precise temperature control along the length of the preform but also around its perimeter, the PRO machines ensure higher bottle quality with opportunities for light weighting, reducing cost of production and improving sustainability. It also allows easier processing, maintenance and mold changeover compared to other single stage machines.
4. **Supreme Flexibility:** The PRO Series offers unprecedented adaptability, capable of producing bottles and jars ranging from 20ml to 50L. You can produce a broader range of products with one machine, or even use it for injection molding caps and preforms to avoid under-utilization. Bottles come out of the machine on a conveyor belt, making it easy to connect the machine to subsequent post processing stations.

The PRO series of machines consists of 5 models, to cover a wide range of bottle & jar sizes and production outputs.

Customer Pain Points

1. Low Return of investment: Equipment price results in a lengthy payback period that leaves the owner of the equipment exposed to future market risks, such as losing a customer, product produced becoming obsolete, introduction of regulations, natural disasters, wars etc.
2. Bad sustainability image of plastic packaging: Plastic packaging has become a ubiquitous feature in modern life, but its negative environmental impacts are numerous and far-reaching. This has been driving the whole plastics packaging industry to look for more sustainable solutions and plastic materials.
3. Limited equipment flexibility: Conventional blow molding machines are only able to produce a narrow range of containers in terms of size and neck opening. This limits the ability of plastics converters to serve a wide range of customers.
4. Low productivity of single stage machines: Single stage blow molding machines suffer from low productivity relative to 2 stage blow molding machines. The low productivity reduces their use in high output requirements, preventing customers from benefiting from their low production cost advantages.
5. Difficulty in achieving consistently good bottle quality bottles: Single stage machines are known to have a tighter processing window than 2 stage machines. Changes in environmental temperature, humidity or material can change the bottle quality. There is limited ability to change bottle quality using the settings of single stage machines.
6. Complex logistics and quality control: Plastics converters that use 2 stage machines to produce their PET bottles typically struggle with storage and transfer of PET preforms to the production line. Converters who produce their own preforms suffer from the same logistics issues but also suffer from delayed diagnosis of preform quality issues, discovering them several days later once the preforms are fed to the blowing machines. The rectification process is complex and time consuming, trying to identify which batches of preforms suffer from quality control issues and what were the probable causes on that period of production.

Solutions

1. Faster payback period than existing equipment: The PRO Series enables a faster return on investment than existing equipment. Payback period ranges between 1.5 to 2 years, due to a combination of high productivity, low operating cost and sensible equipment price.
2. Ability to offer sustainable plastic packaging: CYPET machines focus on PET processing because PET has very good mechanical properties and excellent recyclability. PET can be easily separated from other plastics in mixed waste, can be re-used as re-grind or recycled into granules with equal properties as the virgin material including suitability for food contact. Therefore it can be recycled repeatedly, making it ideal for use in a circular economy. The ability of CYPET machines to blow mold PET containers with integrated handles solves the ergonomics issue that PET containers have historically suffered from. Typically, converting a container from HDPE to PET results in a lighter weight container, which reduces both cost and plastic raw material consumption. Offering the

market with more sustainable, more economic packaging using PET, is therefore the best strategy to mitigate long term risk from regulations and consumer behavioral shifts.

3. Outstanding machine flexibility: CYPET PRO series machines are able to produce a wide range of containers (in size, shape and mouth opening), just by changing molds. Not only that, the machines can also be used as standard injection molding machines by simply turning off the blowing function of the machine. They can therefore be still utilized in periods of low blow molding demand.
4. High productivity single stage machine, comparable to 2 stage linear machines: Our 1-step PRO systems combine the process of injection, partial cooling, conditioning, and stretch-blowing into one efficient machine, significantly reducing energy consumption and production costs compared to the traditional 2-step process, while achieving outputs up to 11 000 bottles per hour. This enables customers to serve markets that require high outputs, while still enjoying the benefits of single stage machines.
5. Easily achieve high quality bottles: CYPET PRO machines have precise temperature control along the length of the preform but also around its perimeter - which is unique to CYPET and patent pending. This is to ensure higher bottle quality than existing equipment, with opportunities for light weighting, reducing cost of production and improving sustainability. This also allows easier processing and more flexibility to re-optimize bottle quality in large changes in environment or material.
6. Simple logistics and real time quality control: Single stage machine need only be fed with PET resin, transforming it into a preform and then directly blowing the preform into a finished bottle. PET resin storage and transfer to the blowing machine is much easier than handling preforms. If any quality issues arise in the injection molding of the preforms, this becomes immediately apparent on the blown bottles and rectifying actions can be taken on the spot, minimizing losses of bad quality preforms.



Proof Points - Customer Success Stories

BL Agro, India - Increasing production capacity with a PRO machine

BL Agro, an edible oil company from India has been using their CYPET K35L machine to produce 15L PET-In-Box packaging for their edible oil products. They had a need to increase production of this packaging and instead of investing in another K35L machine or in a 2 stage machine, they invested in a PRO-50L machine to achieve the required increased productivity without losing the benefits of single stage blow molding. The machine is under construction currently.

Not only that, but BL Agro is utilising the superior preform temperature control of the PRO machines to reduce the weight (and therefore cost) of its already lightweight bottles by 8%.

The end result: a faster equipment payback period and a more economic and more sustainable packaging, compared to all other options.