Injection Stretch Blow Molding Machines – K Series

Product Description

The CYPET K Series machines are fully automatic single stage injection stretch blow molding machines, capable of producing finished containers directly from PET resin. They utilize CYPET's patented technology that uses only two stations, one for injection molding the PET preforms, and the second to stretch blow mold the PET containers. The K Series machines are designed to minimize floor space and provide unparalleled flexibility. The K model range can produce containers ranging from 20ml up to 120Ltr, with up to 400 mm neck diameter.

The machines are equipped with energy-saving servo-hydraulic technology as well as a blow air recovery system as standard, which reduce energy consumption by up to 40% (0.31kWh/kg of finished bottles). The machines' generous clamping force and platen size, can accommodate CYPET molds with up to 16 cavities to give high output with less investment compared to conventional technologies. The molds' hot runner is naturally balanced, enabling consistent mold filling for any preform weight and valve gated to eliminate stringing.

The machines can mold a wide range of PET containers, such as water bottles, edible oil jerrycans, liquor and pharma bottles, wide mouth jars, personal care containers and more. Additionally the containers can be molded with a handle on the neck as one piece – saving the trouble of assembling an external handle.

Finally, they can also be used as a standard injection molding machines, able to injection mold a wide range of plastic resins, further de-risking the investment in the machine and maximizing their utilization.

Customer Pain Points

1. Inability to differentiate from competitors: Plastics converters have been using almost identical machinery for more than 40 years. The products they are therefore able to offer to the market are all very similar with no unique selling points.
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. High Equipment Operating Costs: Blow Molding equipment suffer from high equipment operating costs, which consist of raw material costs, electricity consumption, labor costs, maintenance costs, logistics.

Solutions

1. Ability to offer truly unique, innovative containers: CYPET customers have used their machines to offer their respective markets new types of PET containers that have never been produced before. This allowed them to generate new revenue streams from new markets with limited competition.
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. Unparalleled machine flexibility: CYPET K series machines are able to produce a very 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. Low Operating Cost: Since the K series of machines are single stage, each bottle produced is optimized to have the lowest weight possible because the machine also makes the preform that is specific to the bottle. Lowest possible weight reduces the raw material cost. The machines have a very low, industry leading, electricity consumption, measured at only 0.31kWh per kg of plastic processed. The machines run fully automatically, allowing use of labor for other jobs while the machines are running. Low equipment cost compared to conventional single stage machinery.

Proof Points - Customer Success Stories

PET Innovators - Differentiating from competitors by producing sustainable packaging

PET Innovators, a plastics converter in The Netherlands has offered PET jerrycans with integrated handle to the European market, at much lower weight than the conventional HDPE jerrycans. As a result, they have won large contracts with multinational companies, converting their packaging from HDPE to a more sustainable and economic solution in PET and 100% recycled PET.

"5 Liter in 6 cavity and PET drums, is only possible with CYPET Technologies. For sure innovative, there is nobody that can do this! It separates us from the competition, we are creating our own market." – PET Innovators BV, Netherlands

Oasis Water, Oman - Low Operating Cost

Oasis Water, the largest mineral water company in Oman used to buy their 5L and 5 gallon PET bottles from outside. They started in-house production for both sizes of bottle using a CYPET machine, reducing their packaging costs by around 40%, thereby extending their lead in the market.

"The products out of CYPET machines are customer friendly and cost effective. Containers are different from the ones available in the market, they are low in cost with better quality." - Oasis Water Company, Oman

KEO, India - Sustainably disrupting the packaging of edible oil

KEO, an edible oil company in India used their CYPET machine to produce 15Ltr lightweight PET containers with integrated handles, to serve their customers in a world-first, PET-In-Box packaging solution, replacing the existing tin packaging.

The glossy, ergonomic design of the PET liner inside the box allowed their customers to use the container for secondary storage after it was emptied from the edible oil. With this big improvement in sustainability and cost, KEO continued to drive the sales of its edible oil products.

The edible oil industry quickly started adopted this kind of packaging once it was in the market, with multiple companies now employing CYPET machines to produce their PET-In-Box designs.

MCH Australia - Differentiating from competitors

MCH Australia supplies PET kegs and fermenter vessels for the beer and homebrewing market in Australia. Using two CYPET machines they are producing unique kegs and fermenters with integrated handles, at very high quality and strength. The uniqueness of their products is driving demand from all around the world.

“The PET fermenters we produce on our CYPET K 53 is of much higher quality than those of our opposition It has been sold worldwide to great effect We are happy with the responsiveness from the CYPET team” - Keg King, Australia

Megaplast, Cyprus - Fully utilized machine serving many different customers

Megaplast, a plastics converter in Cyprus is using their K16 CYPET machine to produce 15 different types of jars and bottles, from 60ml up to 4.5L - all on one machine.

They are able to serve a very fragmented market with small batch production runs, just by changing the molds on their machine.