

Injection Stretch Blow Molding (ISBM) Machine With Linear Indexing

The subject technology is a single stage injection stretch blow-molding machine. The technology has been prototyped to demonstrate the energy efficiencies and resin management potentials for Polyethylene Terephthalate (PET) bottling over existing single stage blow molding solutions but at a much lower initial capital cost of approximately \$50,000 per machine. The scope of the technology has been focused on smaller volume niche markets utilizing heavier weight or gauge bottles of superior quality for use in the cosmetic and pharmaceutical industries.

The subject technology provides the PET manufacturing industry with the ability to move PET from material resin into a completed molded bottle in one step through linear indexing. The proposed technology can be used with three, four, or five cavity molds at a production rate of 900, 1200, and 1500 bottles per hour respectively. Industry experts have indicated the current competing one-step machines in the market produce up to 36,000 bottles per hour and the traditional two-step machines can produce over 61,000 pieces per hour.

Injection stretch blow molding machines work on the ability to change out the type of bottles produced varying in size, shape, neck designs, closures, and material thickness. Currently in the market today, single stage machines have the capability to change out molds in less than three hours and return to production. Two-stage machines simply change out the mold for new pre-forms and that can be done in 15 to 20 minutes. Both instances hold a decided advantage over the subject technology's three and a half hour mold change.

Salient features

- Lower cost of machine
- Energy efficient and hygienic process
- Aesthetic bottles of superior quality can be produced on the ISBM process
- The ISBM machine minimizes the wastage of plastic raw material and increases yield substantially

Areas of application

Plastic industry

End users

The bottles produced on the Injection Stretch Blow Moulding machine would have end-use applications for packaging products in industries like pharmaceuticals, foods and beverages, pesticides, cosmetics, etc.