EXTRUSION BLOW MOULDING

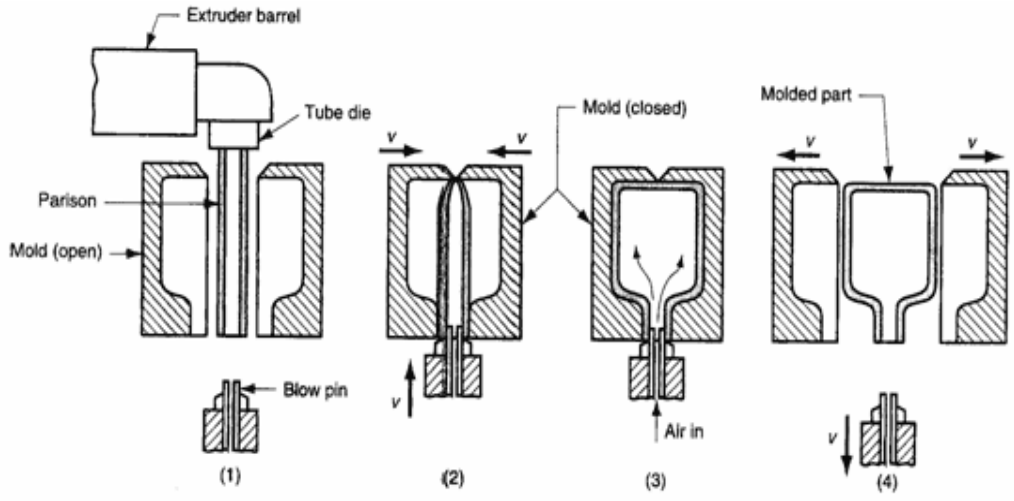
Extrusion blow moulding can be used to process many different polymers including polyethylene, polyvinyl chloride, polypropylene and more. The process begins with the conventional downward extrusion of a tube. When the tube reaches the desired length the mould is closed catching and holding the neck end open and pinching the bottom end closed. Then a blow-pin is inserted into the neck end of the hot tube to form the threaded opening and inflate the tube inside the mold cavity. When the mould is completely cooled it is opened to eject the bottle and the excess plastic is trimmed from the neck and bottom areas.

Blow molding is a molding process in which air pressure is used to inflate soft plastic into a mold cavity. It is an important industrial process for making one-piece hollow plastic parts with thin walls, such as bottles and similar containers. Since many of these items are used for consumer beverages for mass markets, production is typically organized for very high quantities. The technology is borrowed from the glass industry with which plastics compete in the disposable or recyclable bottle market.

Blow molding is accomplished in two steps: (1) fabrication of a starting tube of molten plastic, called a **parison** (same as in glass-blowing); and (2) inflation of the tube to the desired final shape. Forming the parison is accomplished by either of two processes: extrusion or injection molding.

Extrusion Blow Molding. This form of blow molding consists of the cycle illustrated below. In most cases, the process is organized as a very high production operation for making plastic bottles. The sequence is automated and usually integrated with downstream operations such as bottle filling and labeling. It is usually a requirement that the blown container be rigid, and rigidity depends on wall thickness among other factors.

Extrusion blow molding: (1) extrusion of parison; (2) parison is pinches at the top and sealed at the bottom around a metal blow pin as the two halves of the mold come together; (3) the tube is inflated so that it takes the shape of the mold cavity; and (4) mold is opened to remove the solidified part.



BLOW MOULDING OF THERMO-PLASTICS