

Blockwise Engineering Model TSE “Tube Stretcher” Parison Forming Machine

Leading-Edge Equipment for Catheter,
Balloon, Stent, and Heart Valve Makers



www.Blockwise.com

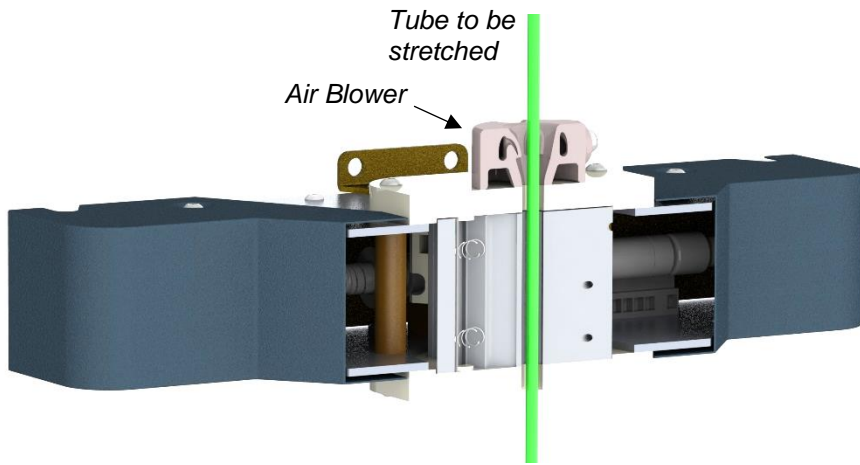
The Blockwise Model TSE “Tube Stretcher” Parison Forming Machine is designed to automatically stretch raw tubing extrusions into a parison for use in the balloon blow molding process. Model TSE “Tube Stretcher” uses the newest Blockwise radial compression mechanism to heat the tubing prior to stretching for contact-based heating on tubing sizes up to 10 mm. The radial compression mechanism provides repeatable process control with shorter process times and sharper parison transitions when compared to non-contact parison forming machines. A touchscreen HMI provides quick and easy control over the entire process.

The cycle time to process a typical 20 mm long PTCA balloon parison is expected to be around 20 – 25 seconds, including loading and unloading the machine.



Specifications:

Maximum Parison Length	240 mm (with a 3:1 stretch ratio)
Available Travel (includes parison)	400 mm (top), 600 mm (bottom)
Maximum Stretch Speed	300 mm/s (150 mm/s from each motor)
Maximum Tube Diameter	10 mm
Number of Compression Dies	5
Die Length	62 mm
Die Material	Diamond-Like Carbon Coated Hardened Stainless Steel
Die Heating Temperature Range	Ambient to 105 °C
Machine Dimensions	Appx. 57 cm x 52 cm x 181 cm
Weight	Appx. 55 kg
Electrical Spec.	100 – 240 VAC, 50 – 60 Hz, 8 A

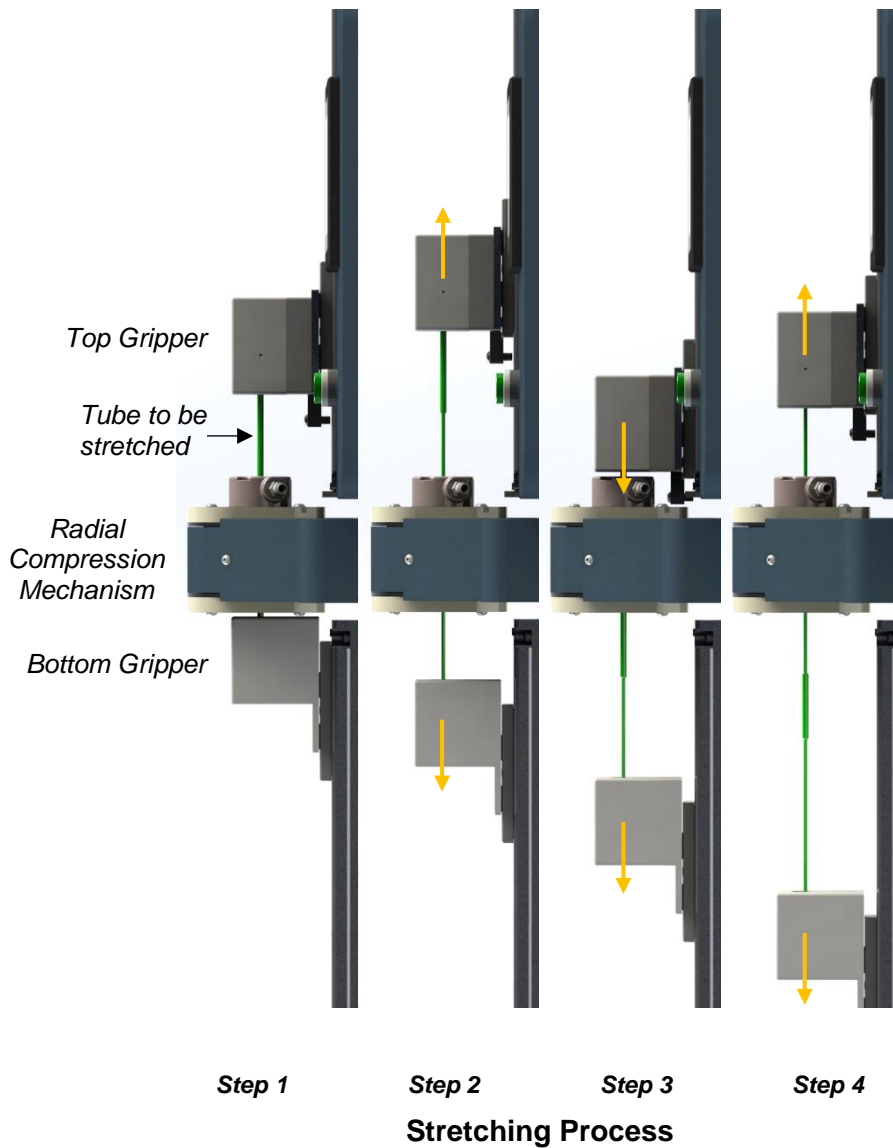


Radial Compression Mechanism

The Tube Stretcher uses a radial compression mechanism that can accommodate tube sizes up to 10 mm. With 5 heated stainless-steel dies, it heats the plastic tubing much more quickly than non-contact dies, decreasing overall process time.

A low-profile air blower can be used to protect the plastic tube from the heat of the compression mechanism as the tubing is passed through the mechanism.

Above and below the compression mechanism the tube is held in pneumatic clamps, or “grippers.”



Stretching Process

(Step 1) The tube is first loaded into both grippers. Pressing the START button closes the compression mechanism, which quickly heats a 62 mm section of the tubing. (Step 2) The compression mechanism opens, and both the top and bottom grippers then move in opposite directions to stretch the tubing. The top gripper has an integrated force sensor that allows measurement and control of the tension in the tube. (Step 3) After the 1st stretch the parison is moved through the compression mechanism to prepare for the second stretch. (Step 4) Both grippers again move in opposite directions for the final stretch. After the process is finished the parison can be dropped into a bin below the bottom gripper.