Swaging Basics

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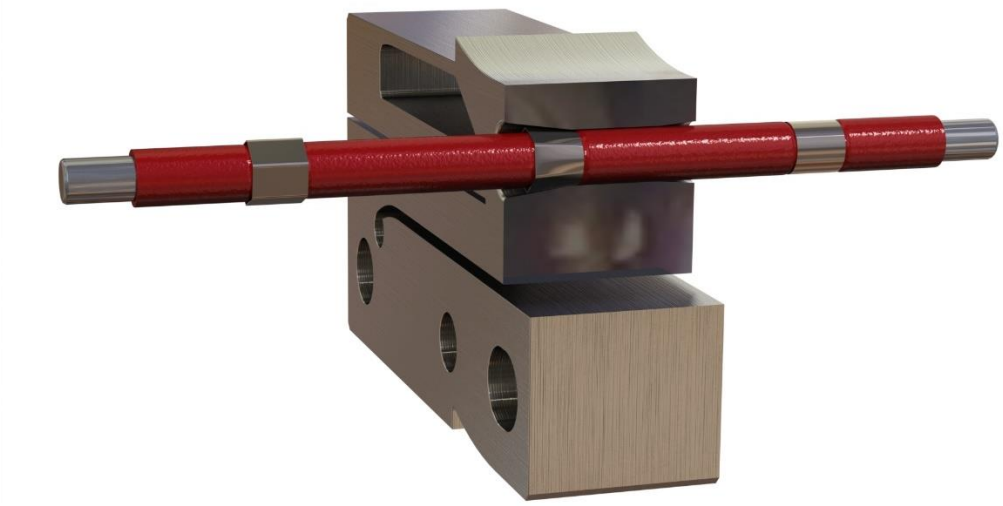
Swaging is the process of compressing and shaping of an object with many small deformations; typically using dies. Blockwise swagers are designed to reduce the diameter of ductile, thin-walled, metallic bands onto plastic catheter shafts.

Swaging is the final step of mechanically joining a band to catheter. A good swage is dependent upon a good pre-crimp. Please refer to documents: *P171 Marker Band Precrimping* and *MS105 Crimping versus Swaging* for information on precrimping.

Our machines use a die with a tapered cylindrical cavity to slowly decrease the band diameter. The die is actuated open and closed at high frequency while rotating around the product. Swaging a band embeds it into the catheter and returns the shape to a cylinder with smooth surface finish for the best placement retention.



With a fixed actuation frequency, the product feed rate controls how many times the die contacts the band. The slower the feed rate, the smaller the deformation size per actuation and the better the resulting surface finish. The band is typically deformed by the die 1,000 times.

Blockwise swaging dies are a single body design with a bisected swage cavity. The single body die requires no alignment or calibration. This design produces high quality surface finish and accurate swage diameter. The die closes fully each actuation, resulting in a diameter controlled process. Each swaging die is manufactured to produce a specific final band diameter. The swaging dies are non-adjustable; for each diameter desired, a separate swaging die will be needed.