

AlphaPleat™ & TwinCam™ Balloon Pleating Stations

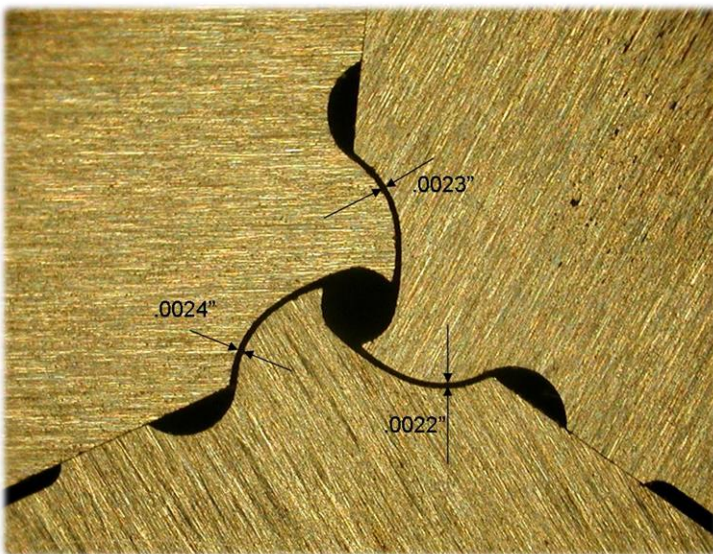


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AlphaPleat™ Balloon Pleating Stations (patented) provide the most accurate pleating geometry available. Available as part of Blockwise's Balloon Wrapping Machines and as separate components for integration with your equipment.

In AlphaPleat™ stations the balloon pleating dies have planar surfaces that are guided by adjacent dies. Bearing balls between adjacent guiding surfaces on the dies ensure the motion is smooth and consistent. This design has the advantage that the accuracy of the pleating cavity relies only on tolerances of the dies and bearing balls. The dies move in a very precise relationship to each other, and precisely in unison to form a very precise central cavity.

Pleating dies are manufactured with an EDM (Spark Erosion) process which gives extremely tight control of the final profile, typically $\pm 2.5 \mu\text{m}$. The bearing balls are a high precision grade with a sphericity tolerance of $0.61 \mu\text{m}$ and a diameter tolerance of $\pm 2.5 \mu\text{m}$. Since the tolerance stack-up is limited to just the dies and bearing balls, and does not include any end-plates or drive cams, the final pleating geometry is extremely accurate.



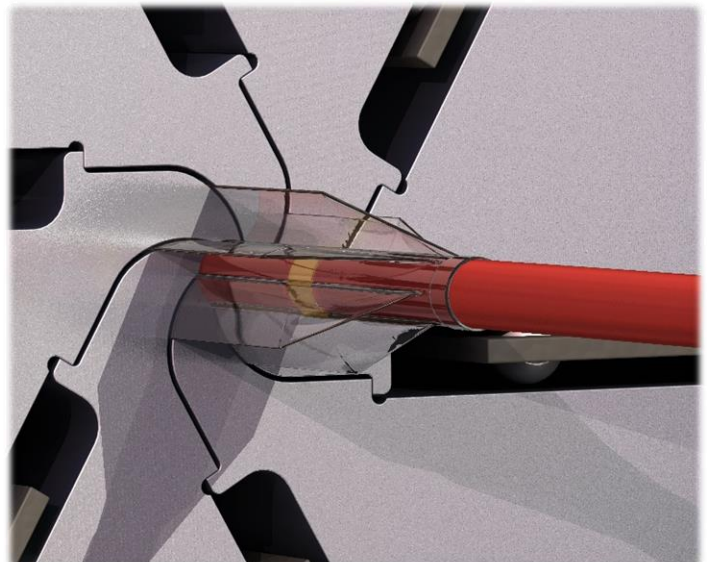
AlphaPleat Die Geometry, Accuracy $\pm 2.5 \mu\text{m}$



Typical Result: 6 Pleat



AlphaPleat Section View

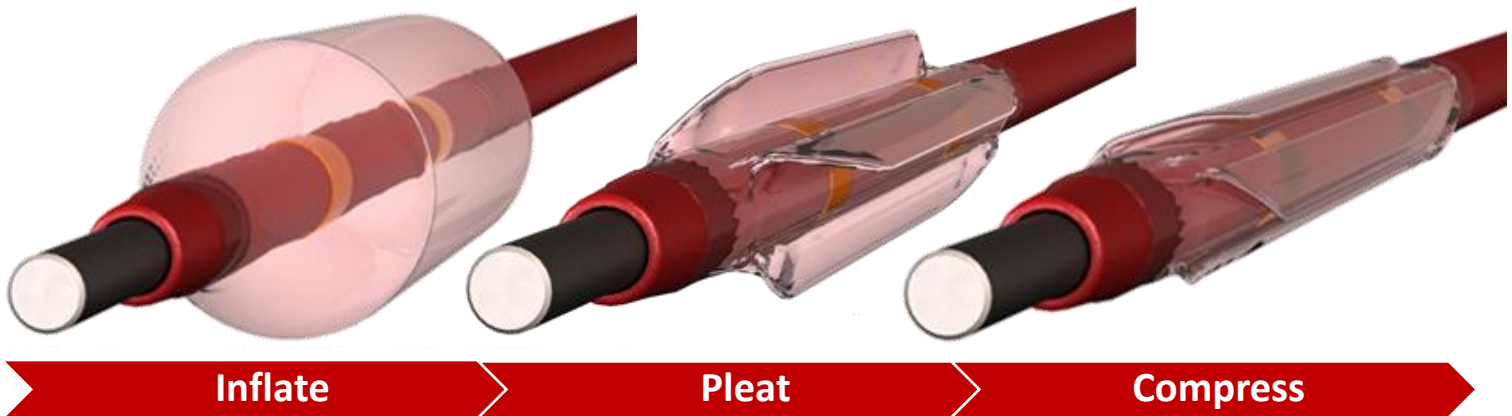


AlphaPleat Specifications:

Die Lengths Available	62, 124 mm
Number of Balloon Wings	2, 3, 4, 5, 6
Inflated Balloon Diameter Range (with pleat station change-outs)	1.5 mm to 15 Each station covers a diameter range of 3:1
Die Temperature Ranges	Room Temp to 100°C
Actuation	Pneumatic Cylinder or Stepper Motor
Die Material	Hardened, Electropolished, Certified Stainless Steel

TwinCam Specifications

Die Lengths Available	62, 124, 186, 248, 310 mm
Number of Balloon Wings	2, 3, 4, 5, 6, 8, 10, or 12
Inflated Balloon Diameter Range (with pleat station change-outs)	1.5 mm to 60 mm Each station covers a diameter range of 3:1
Die Temperature Ranges	Room Temp to 100°C
Actuation	Pneumatic Cylinder or Stepper Motor
Die Material	Hardened, Electropolished, Certified Stainless Steel



Pleating is one step in the “Balloon Wrapping” process. After pleating, the pleats or “wings” are normally compressed radially inward to achieve the lowest possible diameter profile and to assure the balloon is wrapped tightly.

Compression Step performed by a **Blockwise J-Crimp™** or **Twin-Cam™** compression station. Heated dies form an adjustable cylinder-shaped opening that radially compresses the vacuumed & pleated balloon, forming it so the pleats are tightly wrapped around the catheter shaft. After the compression step, the “wrapped” balloon is typically placed in a sheath. Blockwise offers compression stations as part of complete Balloon Wrapping Machine systems, or as separate components for integration with your equipment.



Model RJJ Radial Compression Machine with Model RJD62 J-Crimp Compression Station