

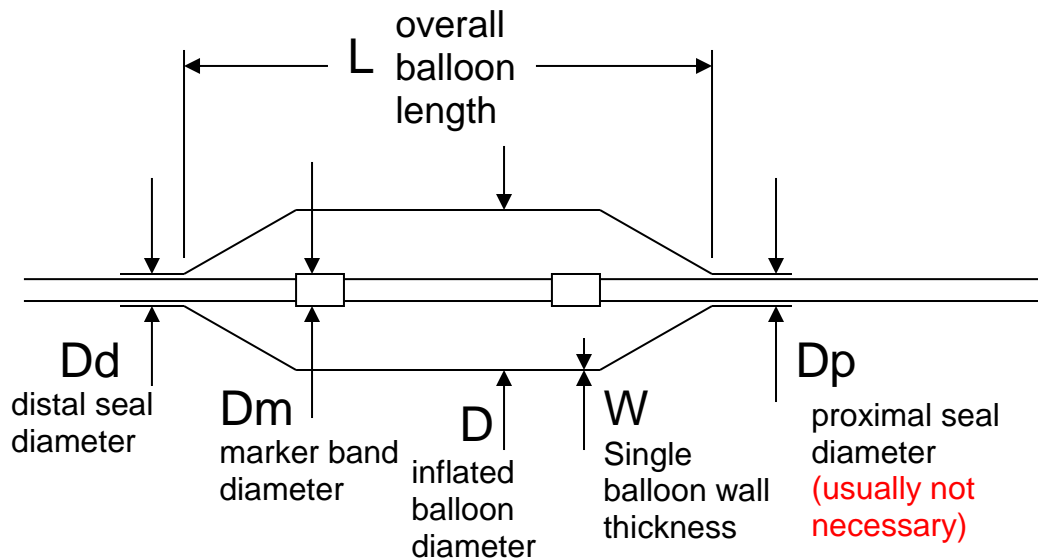


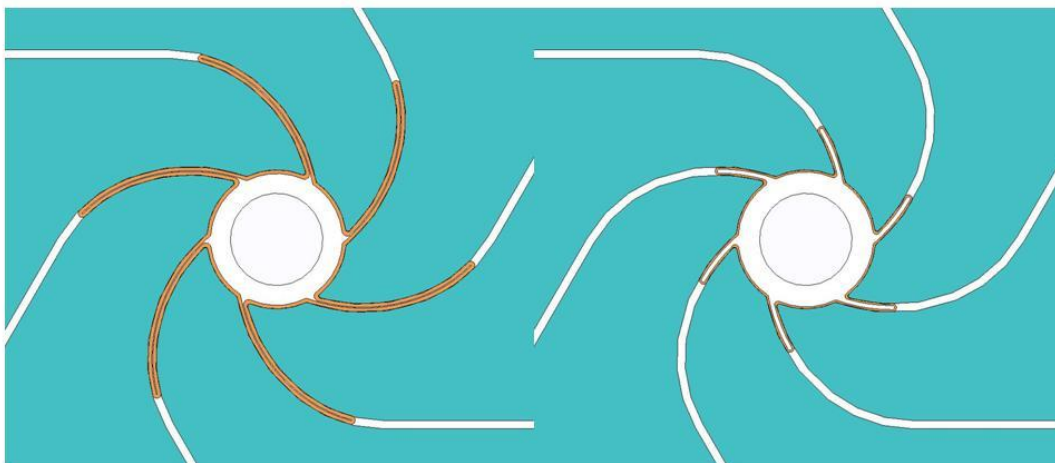
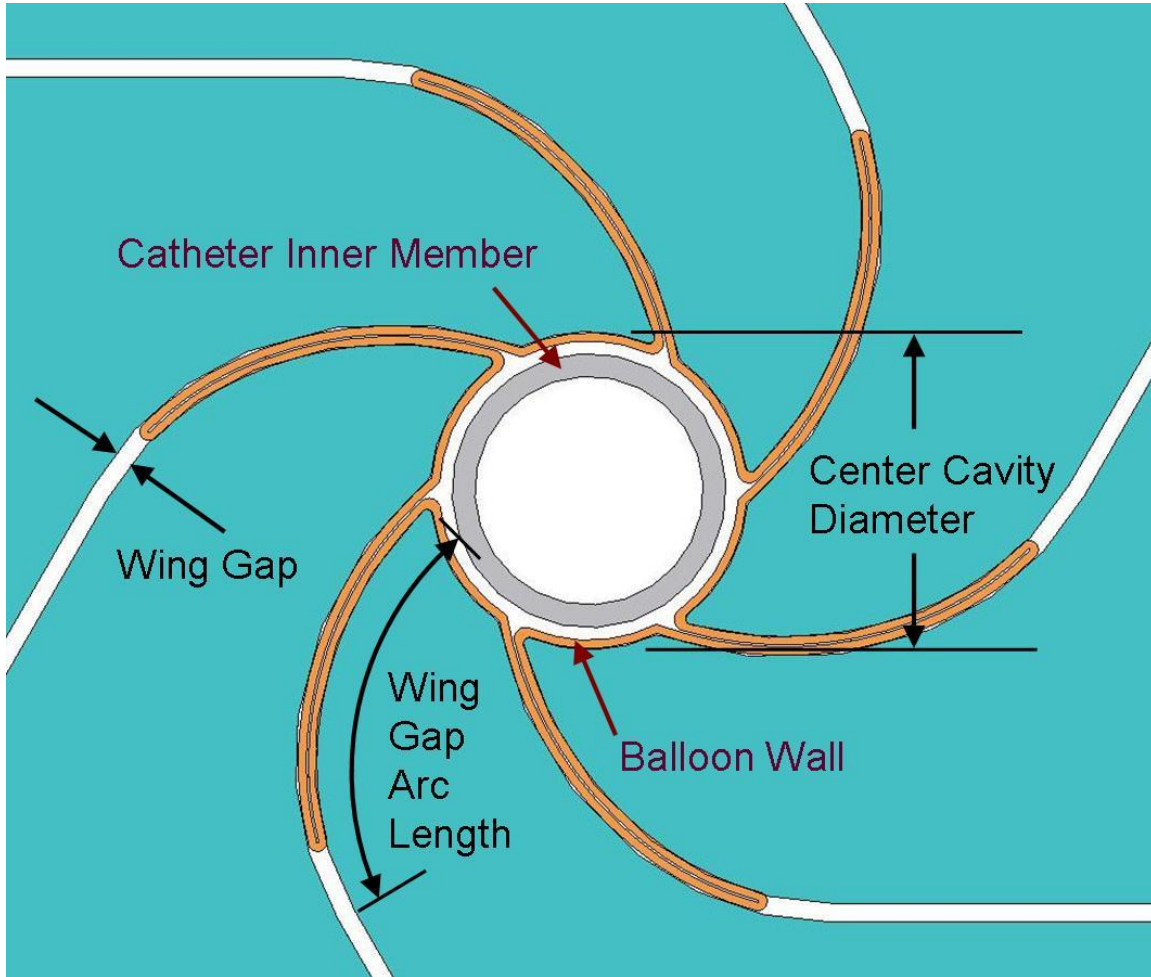
Blockwise pleating die tips are designed specifically to match the customer's balloon designs. The customer provides the following information for each balloon to be processed:

- Marker band diameter **Dm**
  - Single balloon wall thickness **W**
  - Longest overall balloon length **L**
  - Distal seal diameter **Dd**
  - Range of inflated balloon diameters **D**
  - Required number of wings **N**
1. The **Center Cavity Diameter** is designed to accommodate whichever is larger:
    - a. The largest value of: marker band diameter plus 2 times the balloon wall ( $D_m + 2 \cdot W$ ), plus margin.
    - b. The largest distal seal diameter  $D_d$ , plus margin.
  2. The **Wing Gap** is designed to accommodate: 2 times the thickest balloon wall ( $2 \cdot W$ ), plus margin.
  3. The **arc length of the curved wing gap** is designed to accommodate the circumference of the largest inflated balloon, plus margin.
  4. The **working length** of the pleating dies is selected to accommodate the longest overall balloon length, plus margin.

For each pleating station, we recommend the range of inflated balloon diameters less than about 2-to-1. However, many customers achieve good results with ranges up to 3-to-1. If larger ranges are processed, then the smallest balloons will have very little curvature in the wings, increasing the risk of unintended folds.

For the Center Cavity Diameter, we define a parameter  $C$ :  $C = \max(D_d, D_m + 2W)$ , where  $C$  is the distal seal diameter or the marker band plus 2 times wall, whichever is larger. We recommend the range of  $C$  less than about 1.5-to-1 for each pleating station. If the inner member is much smaller than the Center Cavity diameter, then the balloon will not wrap tightly or predictably around the inner member.





Large-Diameter Balloon and Small-Diameter Balloon In the Same Pleating Dies

# Pleating Die Customization



Blockwise Engineering LLC  
www.blockwise.com

Please enter data as completely as possible for every type of balloon. Add rows as needed.

Balloon	Qty Wings	D (mm)	L (mm)	Dd (in)	Dm (in)	W (in)
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
add rows...						

**Luer Connector Selection** Blockwise offer two models of connectors for attaching your luers to a Balloon Wrapping machine. Indicate preference with order, if desired. If no luer connector is specified with the order then Model CHA will be the default connector installed.

**Model CHA** is the better choice for standard luers with a flange. If your luer look like the top photo (with flange), then the CHA. It doesn't require seal kits, instead, it uses an O-ring which is low cost and easy to replace. It comes with 10 O-rings. Each O-ring usually lasts at least a few months or longer.

**Model CCB** If your luer looks like the bottom photo (without flange) or if you're connecting directly to an extrusion without luer connector, then the CCB is the better choice. The CCB uses "seals" which will occasionally require replacement, usually after many 10s of thousand of cycles or years, depending on use.

**Seal Specification** Inside Diameter of the seal hole should be .020" (0.5mm) larger than the diameter of the largest product to be sealed against. Indicate your luer or tube diameter below. Standard diameter for connecting to luers is 0.325" (8.2mm)

OD of largest product: \_\_\_\_\_ plus .020" (0.5mm) = \_\_\_\_\_ ID

With flange – Use High-Pressure Simpluer CHA



No flange – Use Tube Grabber CCB with 0.325" seal



CCB Tube Grabber, CHA High Pressure Simpluer