



 **ADDEX**



“REDI”

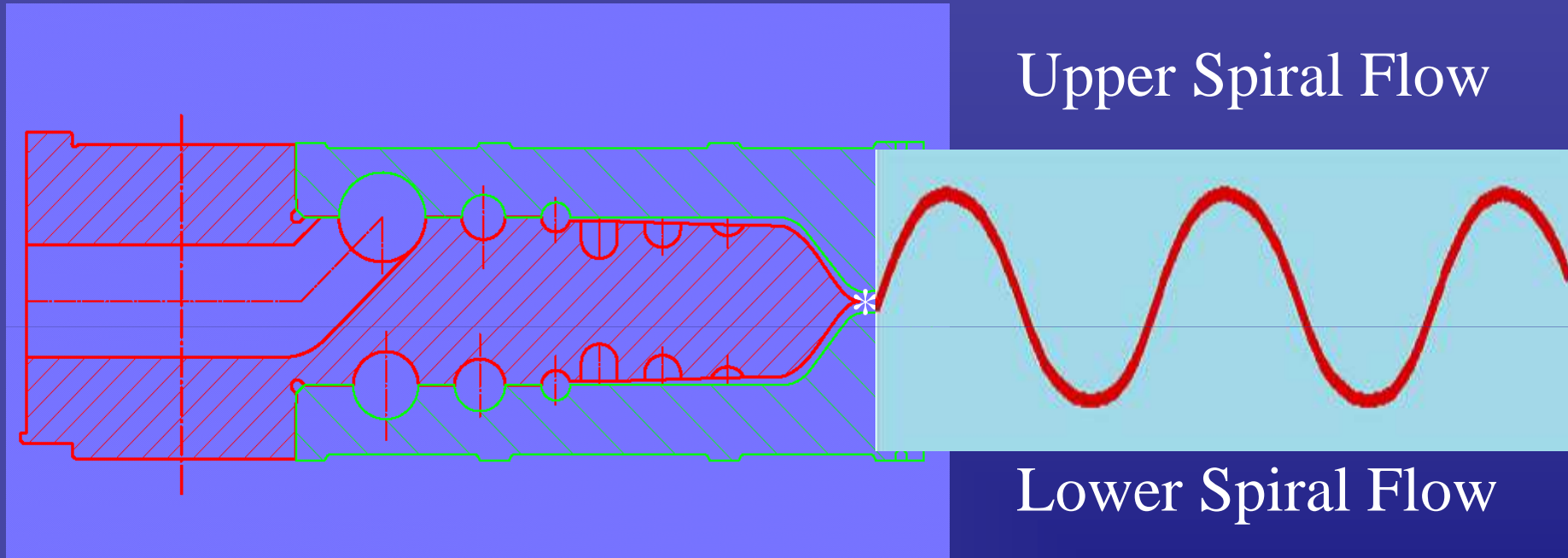
a
New
Blown Film Die
Concept

Patented

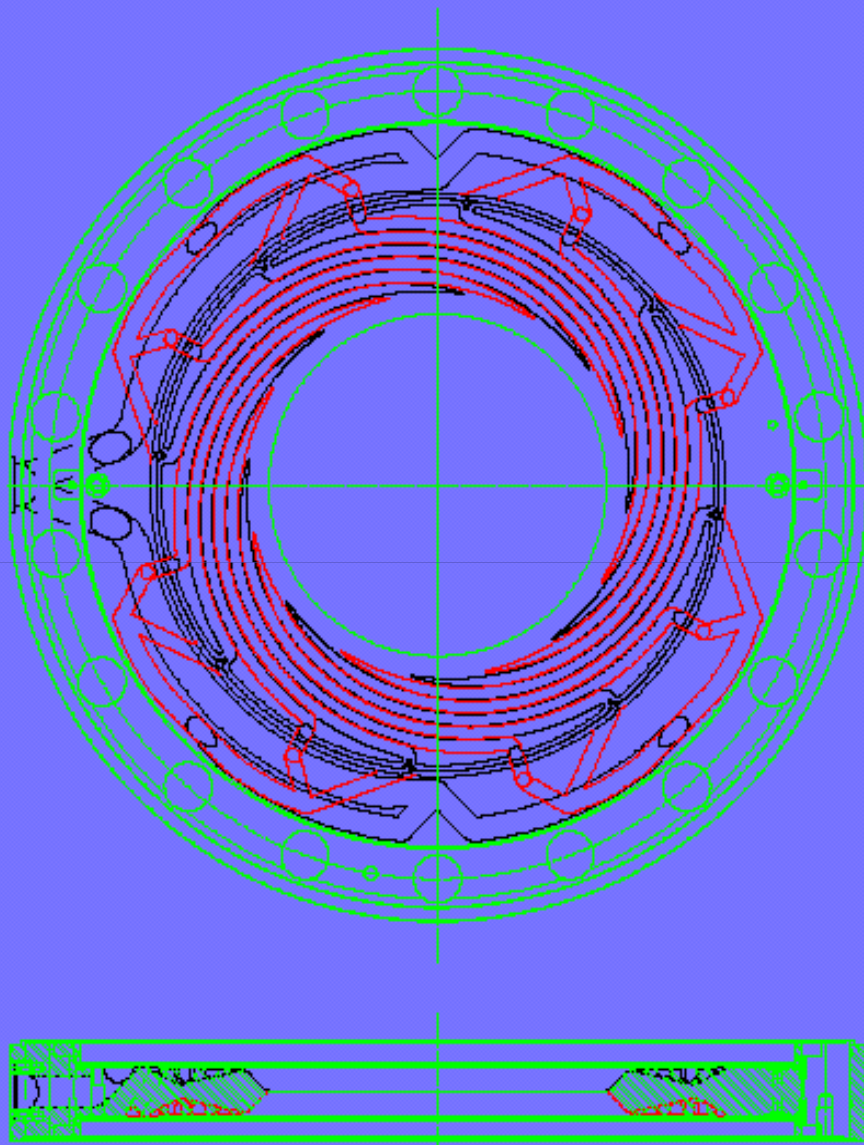
Art by M.C. Escher



Redi Die...Regular Division



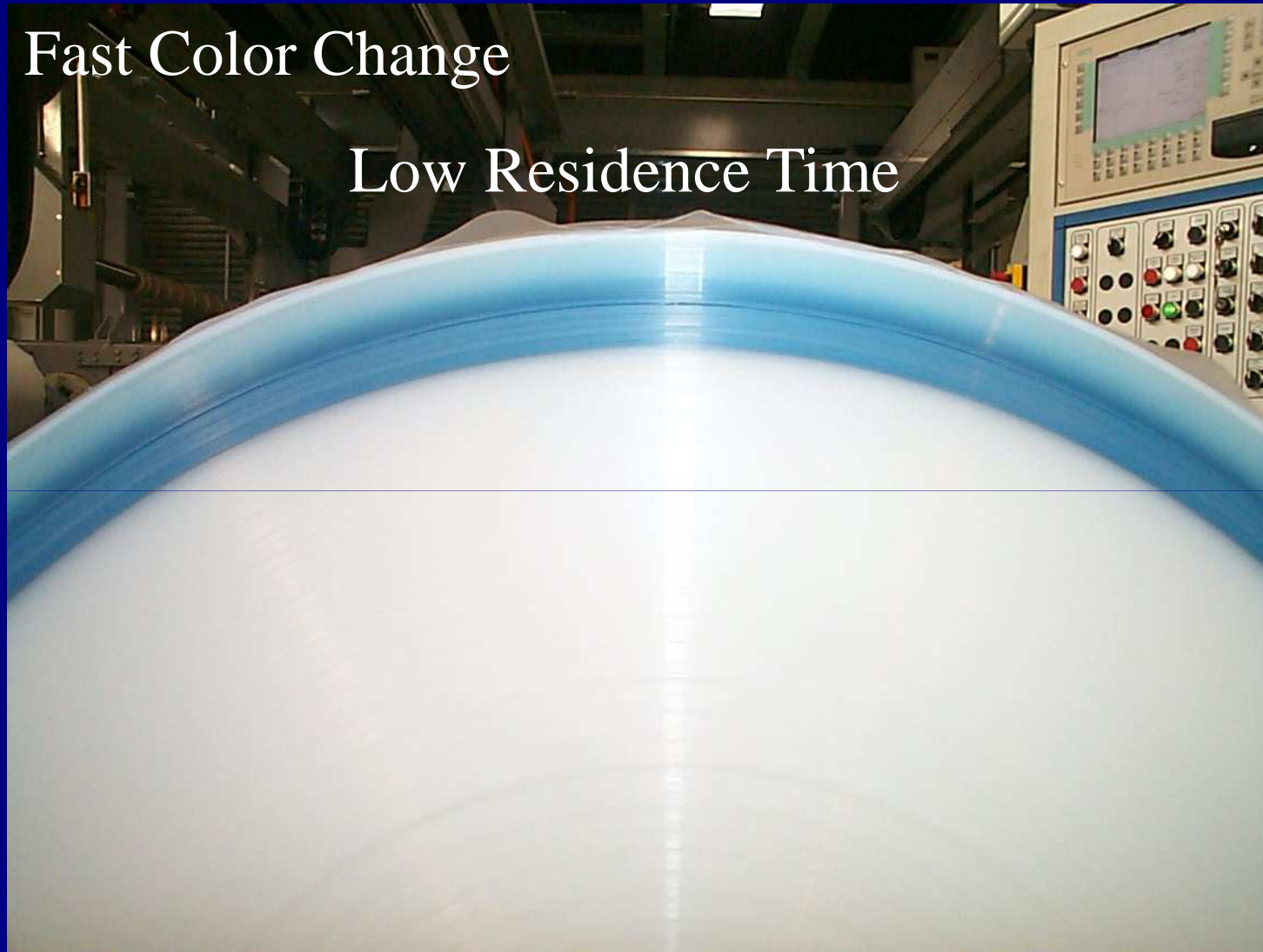
* Uniform Combined Flow at tip of Redi
... is “divided” by upper and lower spiral flow
profiles that are the same, or “Regular”.

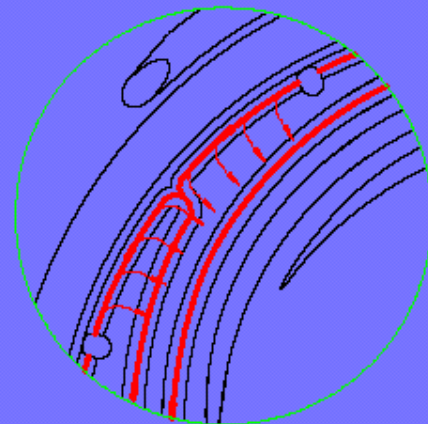
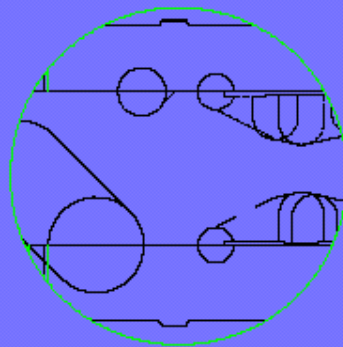
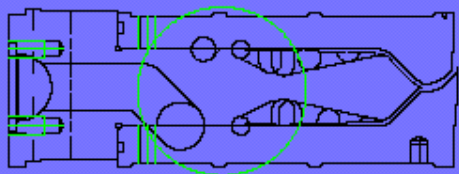
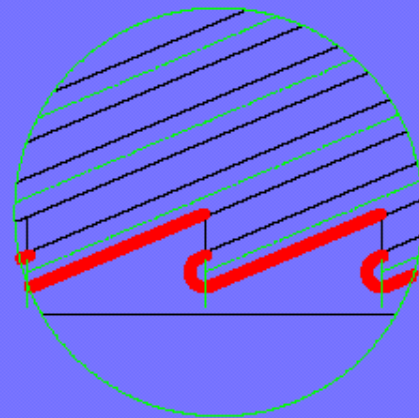
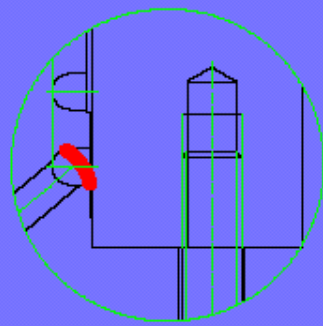
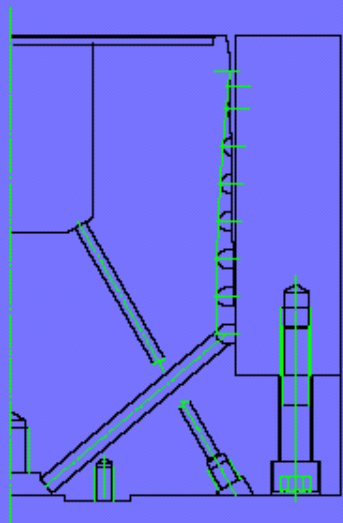


The two identical
Spiral systems are
shifted by 50%

Fast Color Change

Low Residence Time

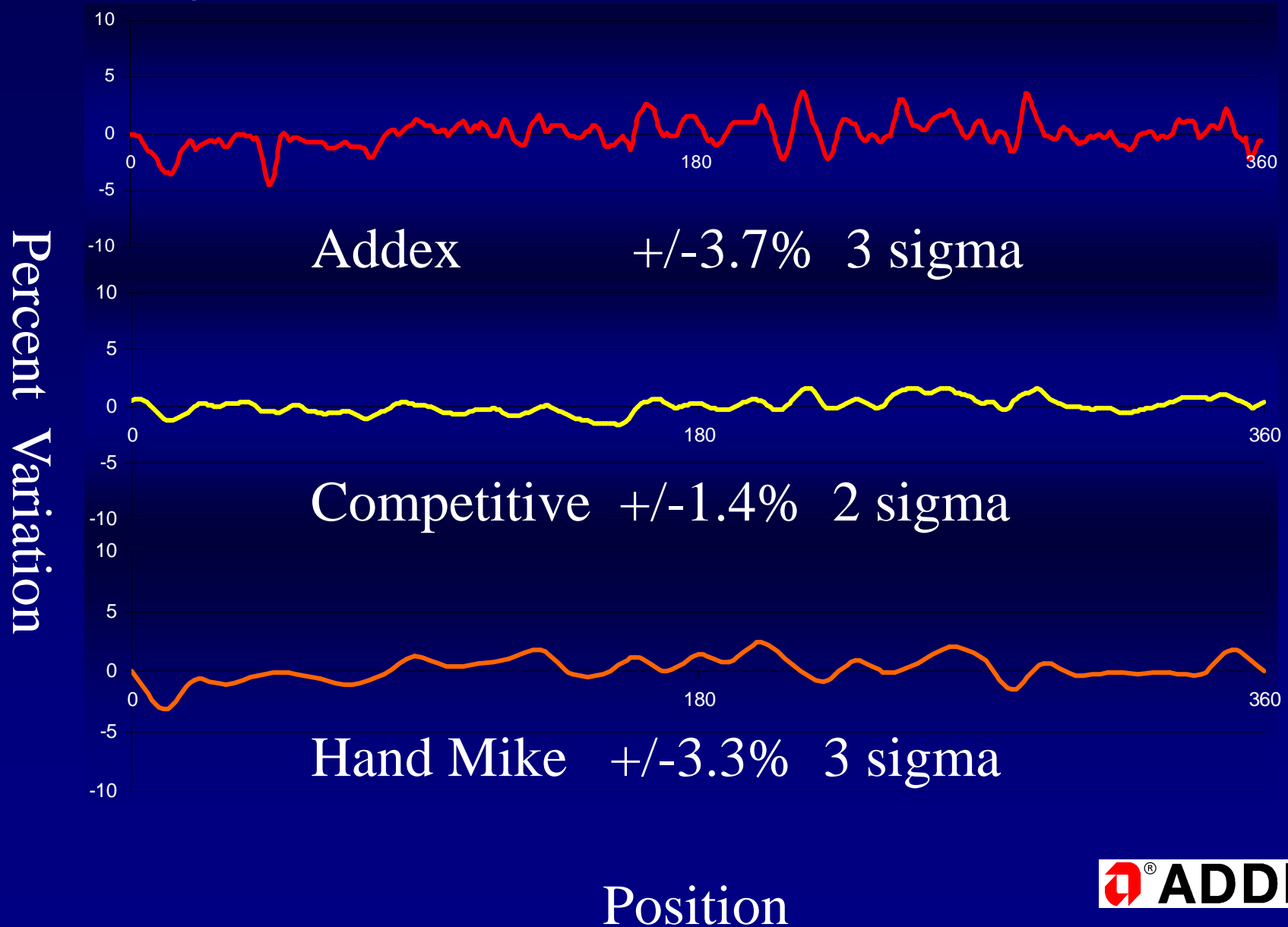




No Material Stay



1-Layer REDI 09" Die with EGC



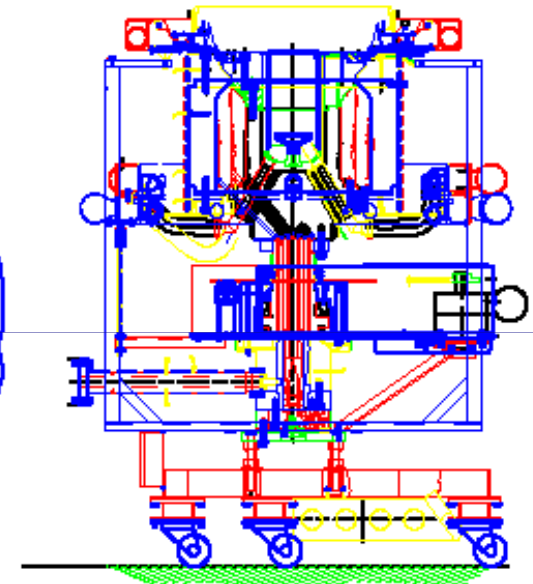
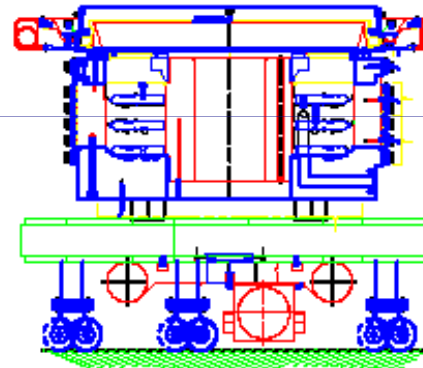
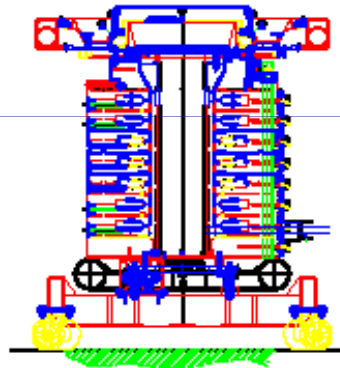
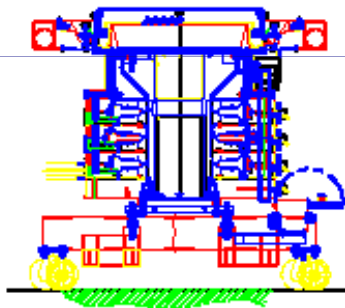
REDI SIDEFED DIES ROTATING DIE

Three layer 550mm

Seven layer 400mm

Three layer 1200mm

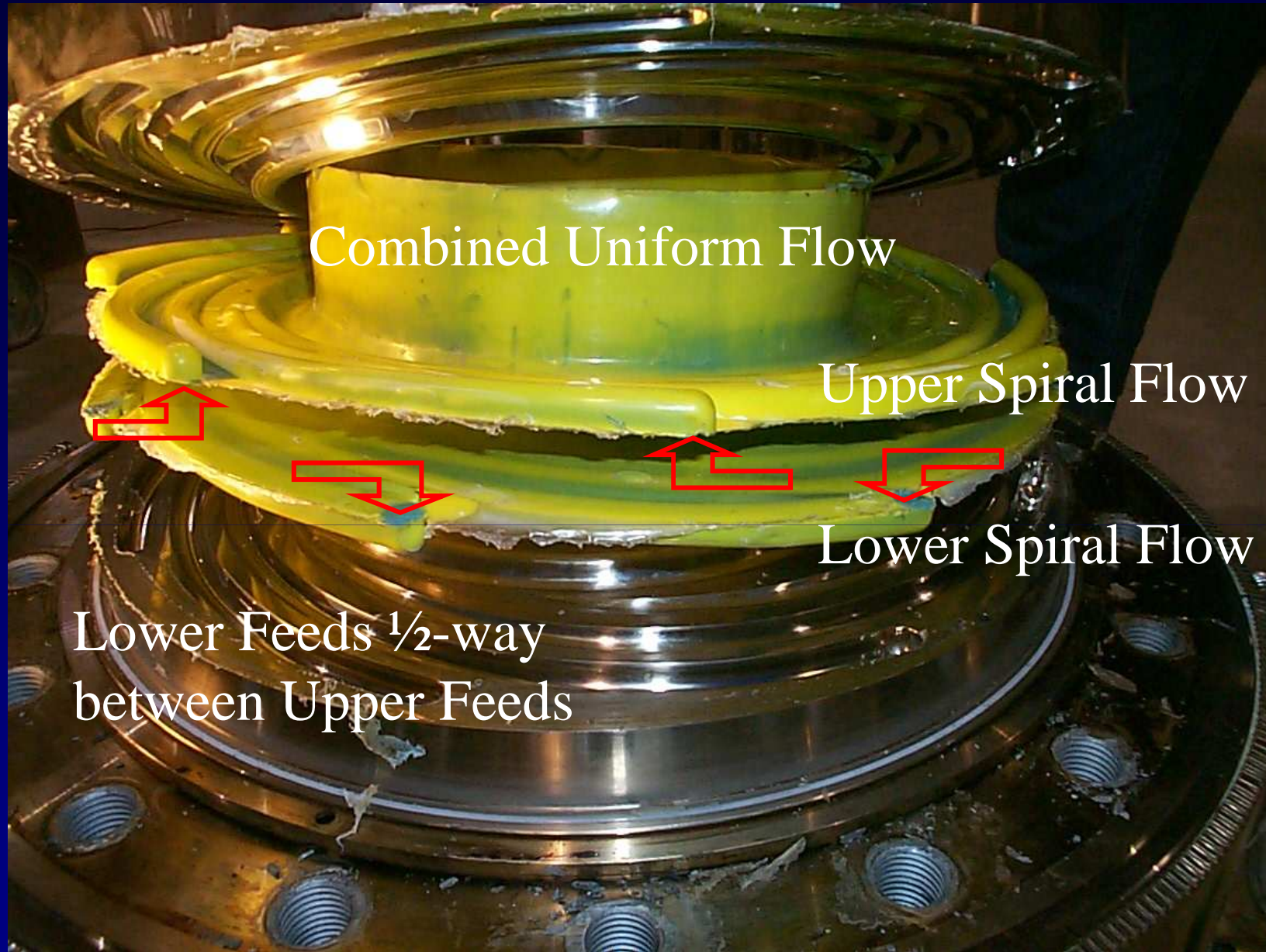
'inside out'



Bottom Fed vs. REDI



Much lower die height – easy to get to



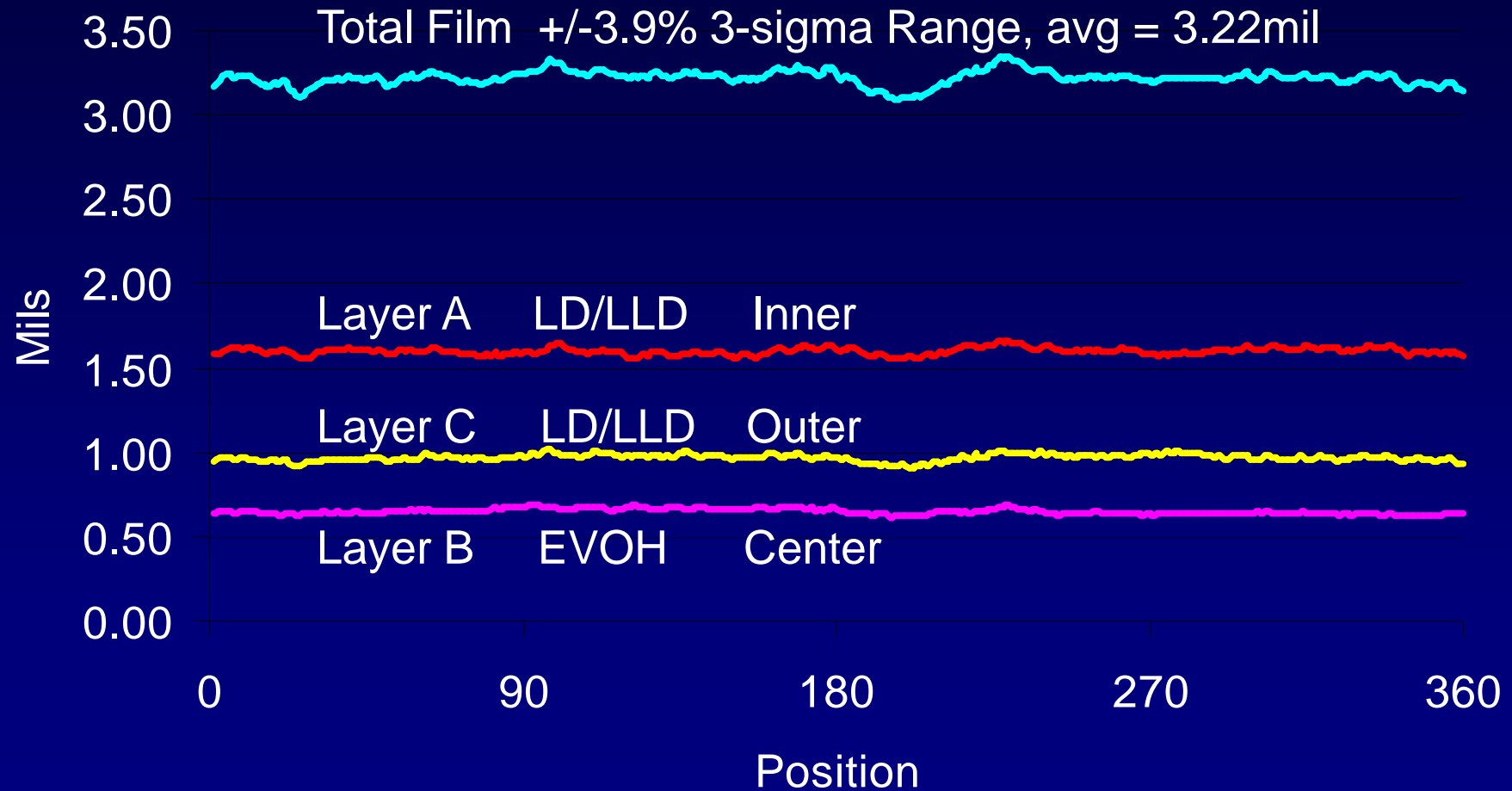
Combined Uniform Flow

Upper Spiral Flow

Lower Spiral Flow

Lower Feeds 1/2-way
between Upper Feeds

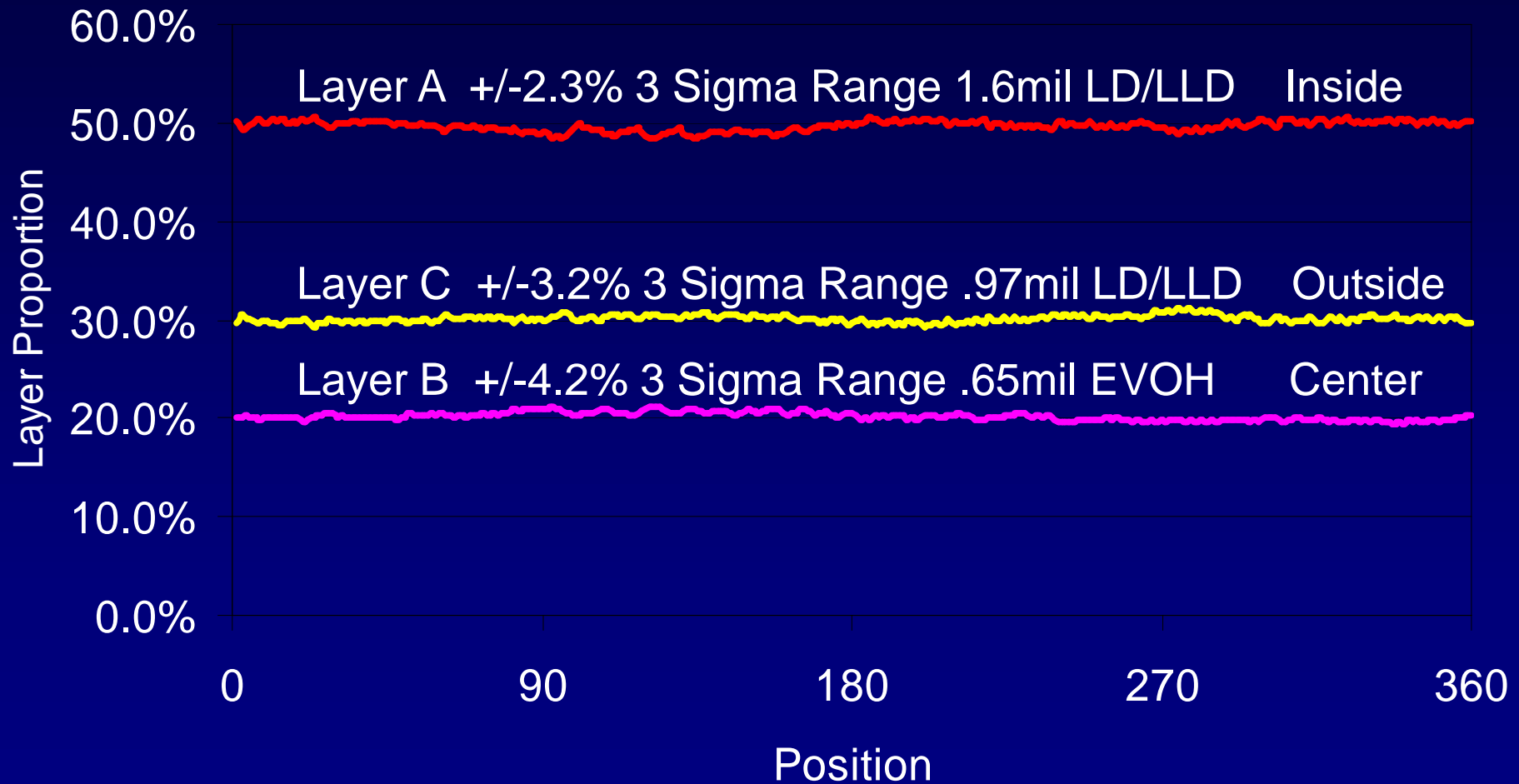
3L Redi Die... layer thickness



Measured using Addex stricter method: 3-sigma, no smoothing



3L Redi Die... layer distribution



Measured using Addex stricter method: 3-sigma, no smoothing



The REDI die

Advantages :

1. 3X better gauge than state-of-the-art competitive dies

Virtually equal to state-of-the-art cast film dies

Congratulations...Eric Hatfield, FlexTech Packaging
2002

2. Impervious to material changes
3. Only pancake die good enough for single layer
4. Stackable, interchangeable layers
5. Low residence time
6. Wide range of die diameters
7. Low height

The REDI die

Disadvantage :

1. Cannot be rotated.

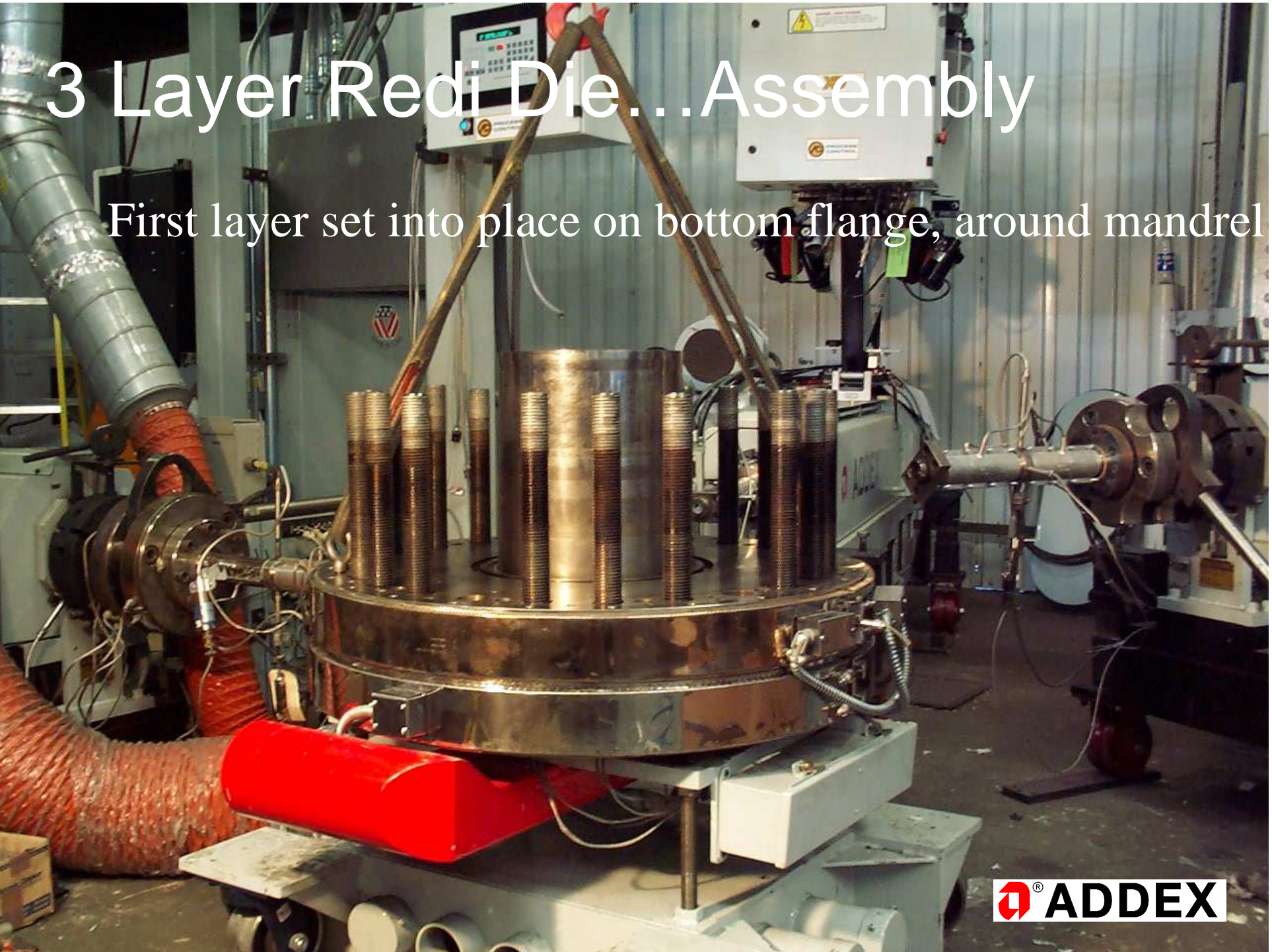
3 Layer Redi Die...Assembly

1 modular layer = 2 X Spirals + Redi Plate between



3 Layer Redi Die...Assembly

First layer set into place on bottom flange, around mandrel



3 Layer Redi Die...Assembly

Expansion Rings lock stacked modules into precise alignment



3 Layer Redi Die...Assembly

Three layers stacked and heated to 150 C for self alignment

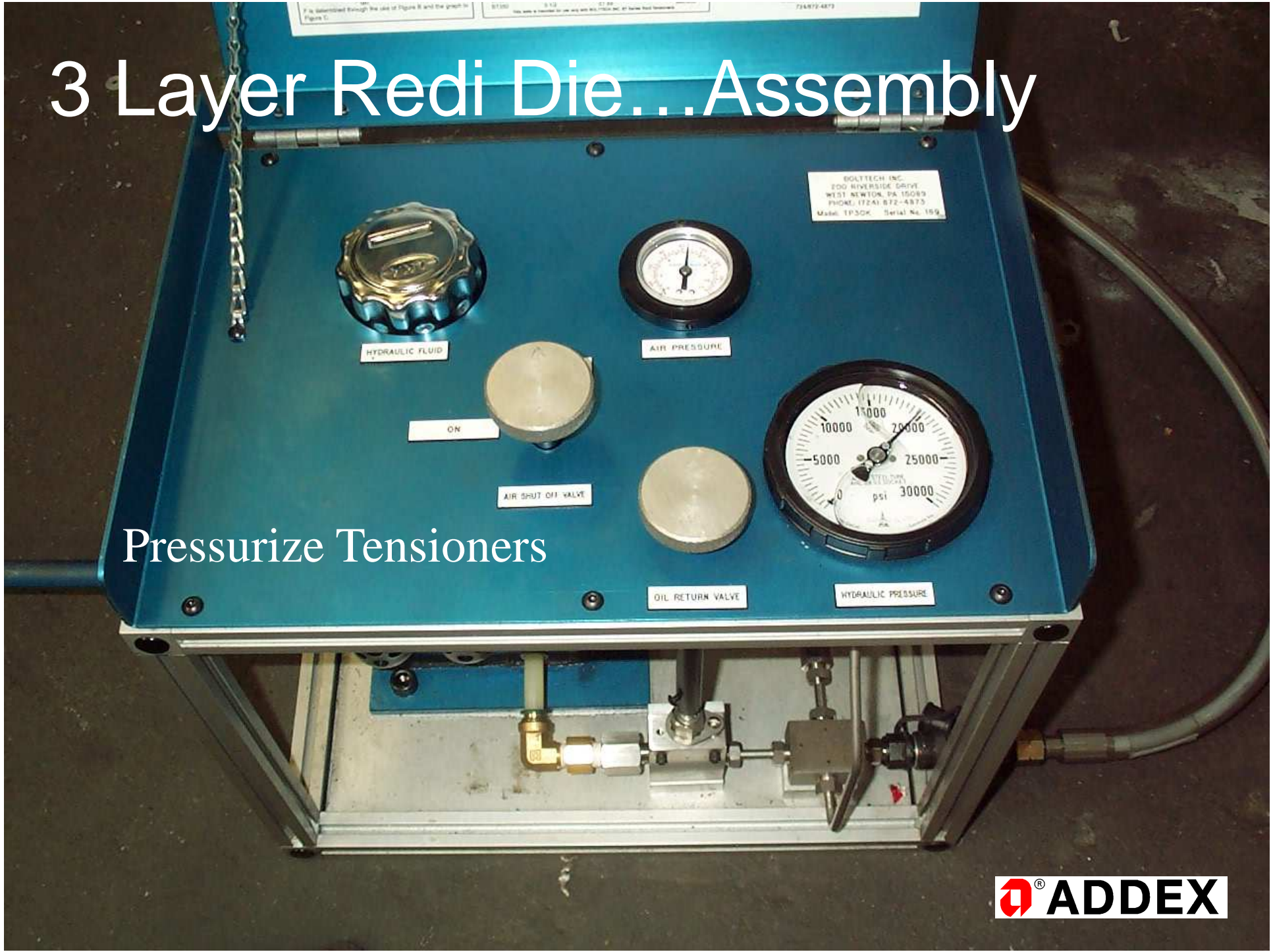


3 Layer Redi Die...Assembly

4 Hydraulic Tensioners installed

3 Layer Redi Die...Assembly

Pressurize Tensioners



3 Layer Redi Die...Assembly

Hand tighten each of 4 nuts

3 Layer Redi Die...Assembly



Move tensioners
...repeat 5 times



3 Layer Redi Die...Assembly

Install die lips

3 Layer Redi Die... Complete



