

YOUR VISIBLE VALUE

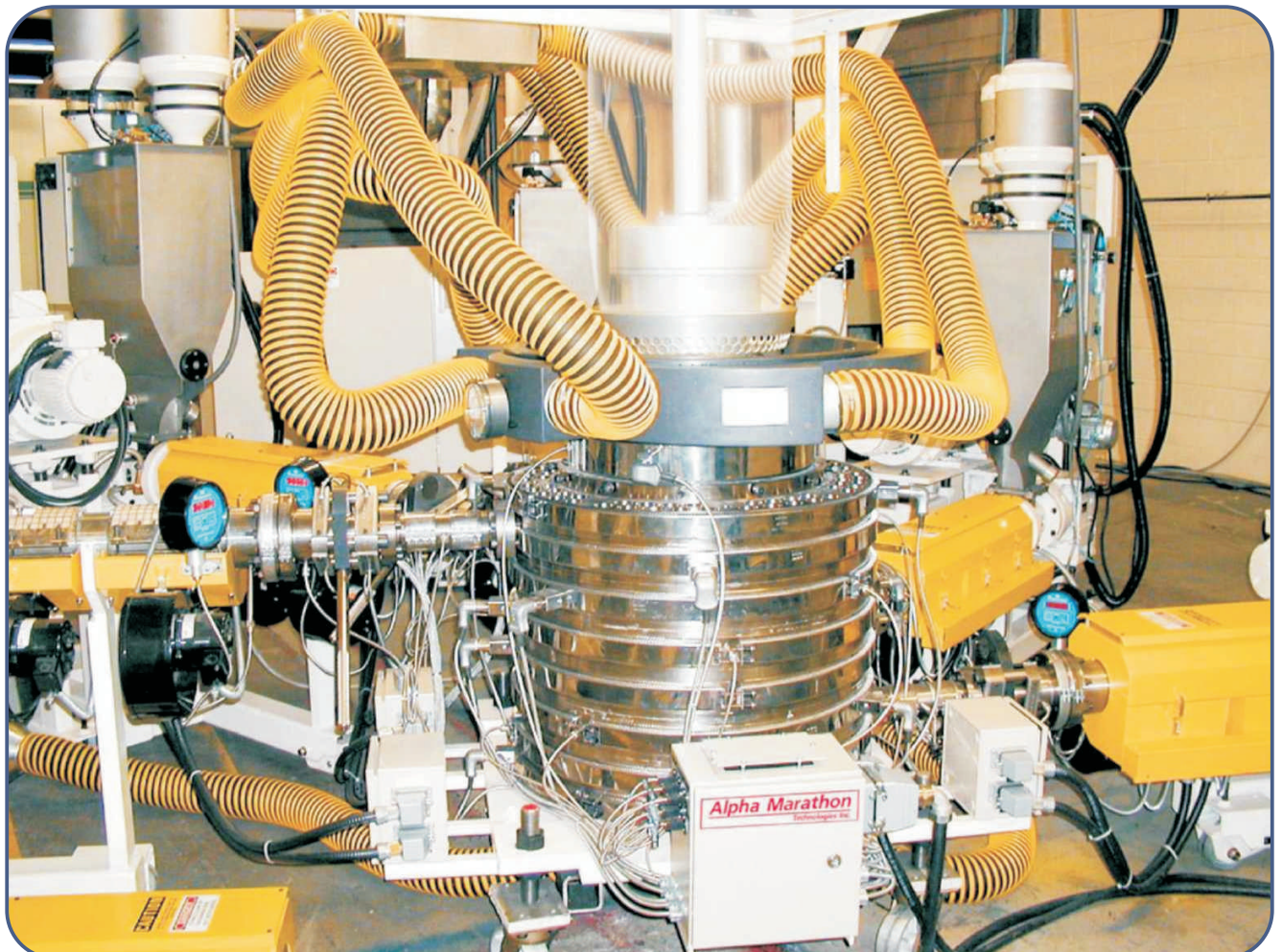
**ALPHA**  
**MARATHON**  
FILM EXTRUSION TECHNOLOGIES INC.

 POLYSYSTEM

# ALPHA DUAL SPIRAL SYSTEM

In the packaging or blow film market, where suppliers are struggling to keep up with ever changing industry requirements, the constant objective is to improve co-extruded film or blow molded products performance. To do this, the successful packaging supplier must have the most versatile equipment that can accommodate a vast array of potential structures at low production costs.

The Alpha Dual Spiral System (which allows material to flow through the top and bottom layer in an "Over-Lay" mode)(Patent Pending) represents an important and significant advancement in the technology of blown film machinery. Alpha has proven itself as being able to offer its customers advanced equipment like this. The ADSS effectively doubles the number of layers in a film die by distributing the melt on two separate identical distribution spirals and recombining the resulting layers together before exiting the die. This produces films that are stronger, with improved barrier properties while at the same time increasing the output and lowering the system pressure of the die. The ADSS is the only die on the market that can offer this feature. The ADSS die is already being used commercially by a number of film manufacturers with great success.



"ADSS" with "Over Lay" Technology (Patent Pending)  
A New Co-Extrusion Concept for Blown Film

How do you make 10 layer film sheeting on a 5 layer die? The Dual Spiral System (ADSS), is a new concept in co-extrusion blown film and blow molding. The ADSS enables processors to take advantage of the improvements brought about from adding layers without adding additional equipment costs. By dividing each individual layer into two separate layers, the enhanced structural and physical properties of each layer material can be taken advantage of. This means that a five layer extruder ADSS die would in fact be producing a 10 layer film.

**Alpha Dual Spiral System Co-Extrusion Die**

The ADSS provides a doubling of the number of layers in a die, superior streamlining and mixing of melt-flow, temperature isolation and a new standard in die design for simplicity and flexibility to add layers to the die configuration. The ADSS is available from 1 to 10 layers, in die sizes of 1 to 55 inches (25 to 1400mm).

**Features:**

- ❖ Polymer distribution on the face of modular disks rather than on the outside of a cylinder or cone.
- ❖ Computer designed flow passages based on plastics engineering software that optimizes pressure and residence time, and ensures that the spiral does all the polymer distribution, leaving the die gap to be sized based on shear stress to eliminate melt fracture.
- ❖ The entire melt flow passage from extruder adaptor to the exit of the die is highly streamlined, with no sharp bends to cause dead spots, materials which were formerly difficult or impossible to run can now be successfully processed.
- ❖ Each spiral is fed by two ports allowing increased material and temperature homogeneity of the melt entering the spirals. These streamlined **Flow Mixing Channels** have a low wetted surface area resulting in better mixing without any dead spots and insuring rapid flushing.

