Ensure unsurpassed product quality and performance when you partner with the industry’s leader in flat die manufacturing and technology.

**Benefits**

- **Achieve optimal product quality** with customized manifolds designed specifically for your production requirements.
- **Reduce material usage and easily changeover products** through a variety of available product features, including automatic or manual adjustments and deckling.
- **Reduce resin costs** by precisely controlling the gauge profile.
- **Improve cross-directional product uniformity** by up to 25% and reduce gel formation.
- **Reduce downtime for routine maintenance** with ancillary equipment designed for added safety and convenience during ‘split and clean’ procedures.
- **Spend less time purging and changing colors** between product runs due to the streamlined diminishing volume flow channel of a Contour® die.

Nordson, a leading international supplier of extrusion die technology, provides a broad line of custom-engineered flat extrusion dies and related system components for the production of cast film.

Whether your specific application requires the uniquely shaped Contour® die, a Uniflow™ die, or a multi-manifold die, Nordson’s highly skilled team will work with you to design an innovative solution to meet your needs.

- **EDI® Contour® dies** are designed with a sculpted configuration, which offsets the differences in die body deflection across the width of the die, thus reducing gauge variation in the end product for a wide range of product requirements.
- **EDI® Uniflow™ dies** are designed to provide an effective solution when less frequent product changeovers and/or thermally stable polymers are being processed.
- **EDI® multi-manifold dies** are designed to accommodate dissimilar viscosity materials and partial coverage requirements.

**Features**

- Automatic or manual gauge control
- Multi-manifold or single cavity coextrusion dies
- Unequaled construction and flow surface design
- Variety of finish and plating techniques
- Unique heating and insulation package
- Optional deckle systems
- Easily adaptable to interface with existing equipment

**Full System Solution:** Dual Chamber Vacuum Boxes, Ultraflow™ Coextrusion Feedblocks, and UltraSplit On-line Die Separation Device.
Solutions for Cast Film

**EDI Contour® Dies**
- Recommended for applications where thermally sensitive materials are being used and frequent rate changes are made
- Elongated teardrop, diminishing volume manifold improves layer uniformity in coextrusion applications
- Non-linear preland/manifold interface, which eliminates or greatly reduces “M” and “W” flow patterns
- Contour technology provides dimensional and process stability, and at the same time achieves uniform film properties, good purging characteristics, and avoids gels and degradation
- Autoflex™ automatic gauge control available as proven option

**Benefits**
- Significantly reduce scrapped materials by achieving acceptable product levels quicker than with a standard coathanger manifold die
- Improve product quality with lower levels of polymer degradation when compared to a conventional die

**EDI Uniflow™ Dies**
- Recommended for applications where thermally stable materials are being processed with very few rate changes
- Elongated teardrop manifold cross-section shape promotes uniform layers in coextrusion processes
- Versatile flow channel design accommodates a broader range of resins and processing parameters
- Autoflex™ automatic gauge control available as proven option

**Benefits**
- Outstanding mechanical stability reduces the changeover time between each product run
- For thermally stable resins, on-spec product can be produced with high yields
EDI Ultraflow™ V-T Adjustable Coextrusion Feedblock

- Ultraflow V-T design includes profiling actuators with interchangeable profile bars, allowing for the thickness uniformity of individual layers to be finely tuned during operation
- Adjustable “combining planes”, located where the melt streams join the central flow channel, can operate in two modes - each with a different advantage in terms of ease and adjustability:
  - Eliminating feedback adjustment by the operator. By leaving the adjustable plane in free-floating mode, operators can let the position be determined directly by the equilibrium pressure developed by flow from the extruders.
  - Optimizing layer-to-layer interfaces. For polymers whose interaction at the point of confluence poses the possibility of compromising the multilayer structure, the adjustable plane can be moved manually to fine-tune polymer flow.
- Optional selector spool feature available

Benefits

- Large diameter profiling actuators provide highly effective tuning lands, which can be positioned at the combination point or significantly upstream to refine the layer distribution
- Eliminates downtime by making possible “on-the-fly” product changeovers, as well as exceedingly precise tuning of individual layers
- Provides effective adjustability, without sacrificing streamlining

EDI Multi-Manifold Coextrusion Dies

- Designed to accommodate dissimilar viscosity materials and partial coverage requirements
- Coextrusion structures with skin layer(s) of less than 10% of total configuration
- Coextrusion structures with melt temperature differentials up to 50°F
- Available options include special lip exit design, complete metric design, special body materials, various platings, and mounting trunnions
- Autoflex automatic gauge control available as proven option

Benefits

- Optimized manifold designs for increased production efficiency
- Improved product quality with precise individual layer distribution
- Increase material savings by utilizing the “naked edge” or partial coverage feature, allowing for reduced trim

Solutions for Cast Film
**Case Study: EDI Contour® Die**

While benefits from the EDI Contour® die will vary with each application, in commercial-scale trial runs by a global film manufacturer working with Nordson, the die achieved considerably narrower gauge tolerances in comparison with a coathanger die, making possible material savings with a calculated annual value of US$200,000.00 (see table to right).

The Contour® die retains these advantages while saving up to two days of downtime for width changes because it incorporates an internal deckle for making changes in product width.

What does this mean to extrusion processors? With resin savings made possible by precisely controlling the gauge profile, the Contour® die will pay for itself in less than a year. Processors will also benefit from enhanced productivity resulting from increased yields of saleable film and reductions in scrapped material.

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**EDI Dual Chamber Vacuum Boxes**

- All stainless steel construction ensures the Dual Chamber Vacuum Box is easy to clean and maintain.
- Easily mounts to the die, reducing space requirements, as well as the air gap between the die and roll. Insulation between the die and box is provided.
- Blower systems can include optional variable speed control to minimize set-up time.
- The presweep chamber strips away any entrained air from the roll surface and the primary chamber positions and stabilizes the web.

**Benefits**

- Capital machinery savings by eliminating the need for additional process machinery, such as an air knife and edge pinning devices.
- Removal of entrained air and faster film cooling allows for faster, more stable production runs.
- Polymer comes straight out of the lip with minimal drag at the lip exit, which creates less build-up and means longer runs between cleaning the lips.

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**Case Study: Contour® Die versus Traditional ‘Coathanger’ Die**

<table>
<thead>
<tr>
<th>Basic Parameters</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Target gauge, mil</td>
<td>3.600</td>
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<tr>
<td>Net hourly throughput, lb</td>
<td>1,800</td>
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<tr>
<td>Extruder utilization, %</td>
<td>93</td>
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<tr>
<td>Annual yield, 1,000,000 lb</td>
<td>14,664</td>
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<tr>
<td>Average resin cost, $/lb</td>
<td>1.30</td>
</tr>
</tbody>
</table>

**Die Performance Compared**

| Traditional die; 3-sigma gauge variation, mil | 0.080 |
| Calculated minimum thickness, mil           | 3.520 |
| Contour Die; 3-sigma gauge variation, mil   | 0.033 |
| Calculated minimum thickness, mil           | 3.567 |
| Total possible savings with Contour Die, mil| 0.047 |
| Level of savings deemed acceptable, %       | 90  |
| Final calculated minimum thickness with Contour Die, mil | 3.558 |

**Potential Annual Savings with Contour Die**

| Rate of savings (with improved film quality), % | 1.047 |
| Increased yield (fewer lb/sq.ft.), lb         | 153,567 |
| Savings in material cost, $                    | 199,637 |

Source: Nordson EXTRUSION DIES INDUSTRIES, LLC