INEXCO

SMART
EXTRUSION
SOLUTIONS

EXTRUSION RETHOUGHT

Process Technology, Tooling
and Machine Engineering
from a Single Source



The CMX Active Melt Cooler combines intensive melt homogenization with targeted active cooling in a compact, modular system.

FIVE COMPETENCIES. ONE GOAL.

For more stable processes, better products, and new possibilities in extrusion.

› CMX – Active Melt Cooling

Precise control of melt temperature.

› Foam Extrusion

Reliable control of demanding foaming processes.

› Rapid Tool Change

Reduce downtime and increase productive machine time.

› Extrusion Tooling

Optimally coordinate flow, tooling, and product.

› Custom Extrusion Machinery

Tailor-made machinery solutions for specific process requirements.

INEXCO is a specialized engineering and machine-building company focused on demanding applications in plastics extrusion.

Our strength lies in combining in-depth process expertise, engineering know-how, and practical implementation. We analyze existing processes, identify technical potential, and develop solutions precisely tailored to the specific application. From the initial concept and engineering design through manufacturing, integration, and commissioning, we support our customers throughout the entire implementation process.

Short decision-making processes and direct technical communication enable close collaboration between the customer, our engineering team, and manufacturing. Rather than relying on standard solutions, we develop the right technical solution for each individual extrusion process.

› Our Product and Service Portfolio Includes:

- Melt Temperature Control
- Foam Extrusion
- Extrusion Tooling
- Rapid Tool Change Systems
- Custom Machinery Solutions

› Your Benefits with INEXCO:

- Process Expertise: In-depth know-how in extrusion
- CFD Expertise: Analyze flow conditions and optimize them with precision
- Tailored Solutions: Precisely matched to your product and process
- Precision and Manufacturing Quality: For stable processes and long-lasting components
- Collaborative Partnership: From the initial idea through to successful implementation

CMX – ACTIVE MELT COOLING

› Taking Control of Melt Temperature

As throughput and mechanical energy input increase, polymer melt temperature can become a limiting factor in the extrusion process.

This is exactly where CMX – Active Melt Cooling comes into play.

Unlike purely passive mixing and homogenization elements, the CMX combines controlled melt flow with active heat removal.

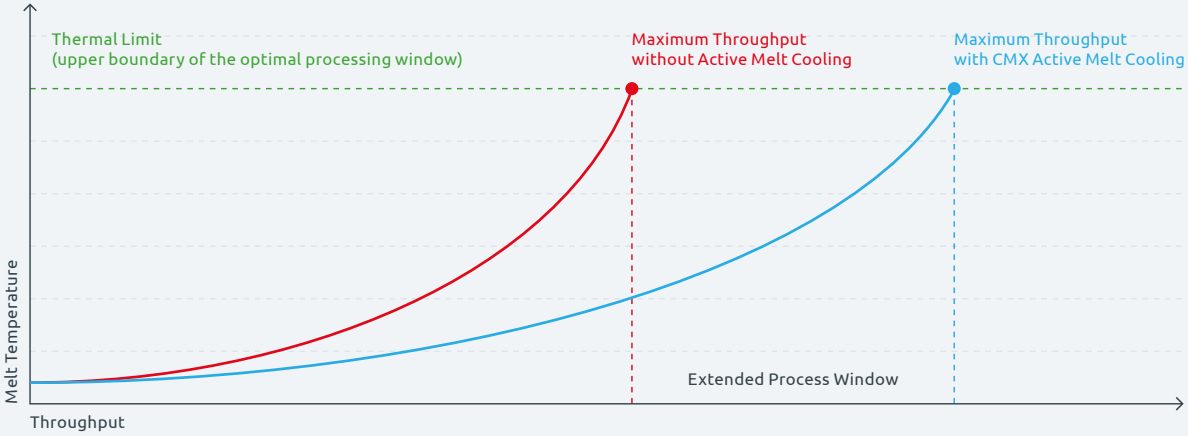
Heat is transferred directly from the polymer melt to a temperature-controlled cooling medium, enabling precise control of the melt temperature and extending the thermal processing window.

› Depending on the application, this can provide significant process advantages:

- Higher potential throughput
- Controlled melt temperatures
- Improved thermal homogeneity
- Greater process stability
- Extended thermal processing window
- Improved conditions for temperature-sensitive processes
- New possibilities for both existing and new extrusion lines

Throughput vs. Melt Temperature

With active melt cooling, the thermal process state stays controlled, significantly widening the usable process window.





Scalable for Different Process Requirements

The CMX is specifically engineered to match the polymer, throughput, temperature range, pressure conditions, and available cooling medium. Different sizes and modular configurations allow the system to be tailored to a wide range of process conditions and performance requirements

One Technology – Numerous Applications:

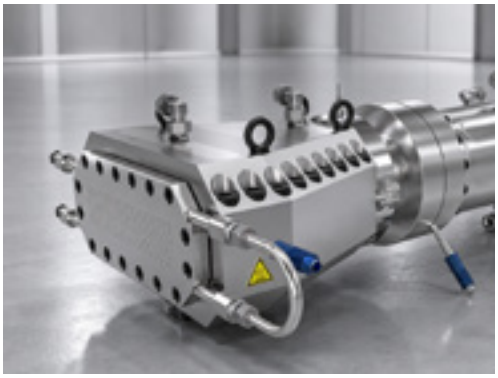
- Foam Extrusion
- Pipe Extrusion
- XLPE Cable Extrusion
- Film and Sheet Extrusion
- PET Sheet Extrusion
- Compounding
- Hot-Melt Extrusion
- Fiber Extrusion
- Recycling
- Retrofitting of Existing Extrusion Lines and Static Mixers

FOAM EXTRUSION

Process Expertise for Demanding Foam Applications

Physical foam extrusion is one of the most demanding processes in plastics extrusion. Temperature, pressure, gas loading, rheology, die design, and process parameters must be precisely coordinated. Even minor variations can have a significant impact on cell structure, density, surface quality, and the dimensional stability of the final product.

INEXCO combines many years of experience in foam extrusion with in-depth process expertise, engineering know-how, and custom-engineered tooling and machinery solutions.





Your Benefits:

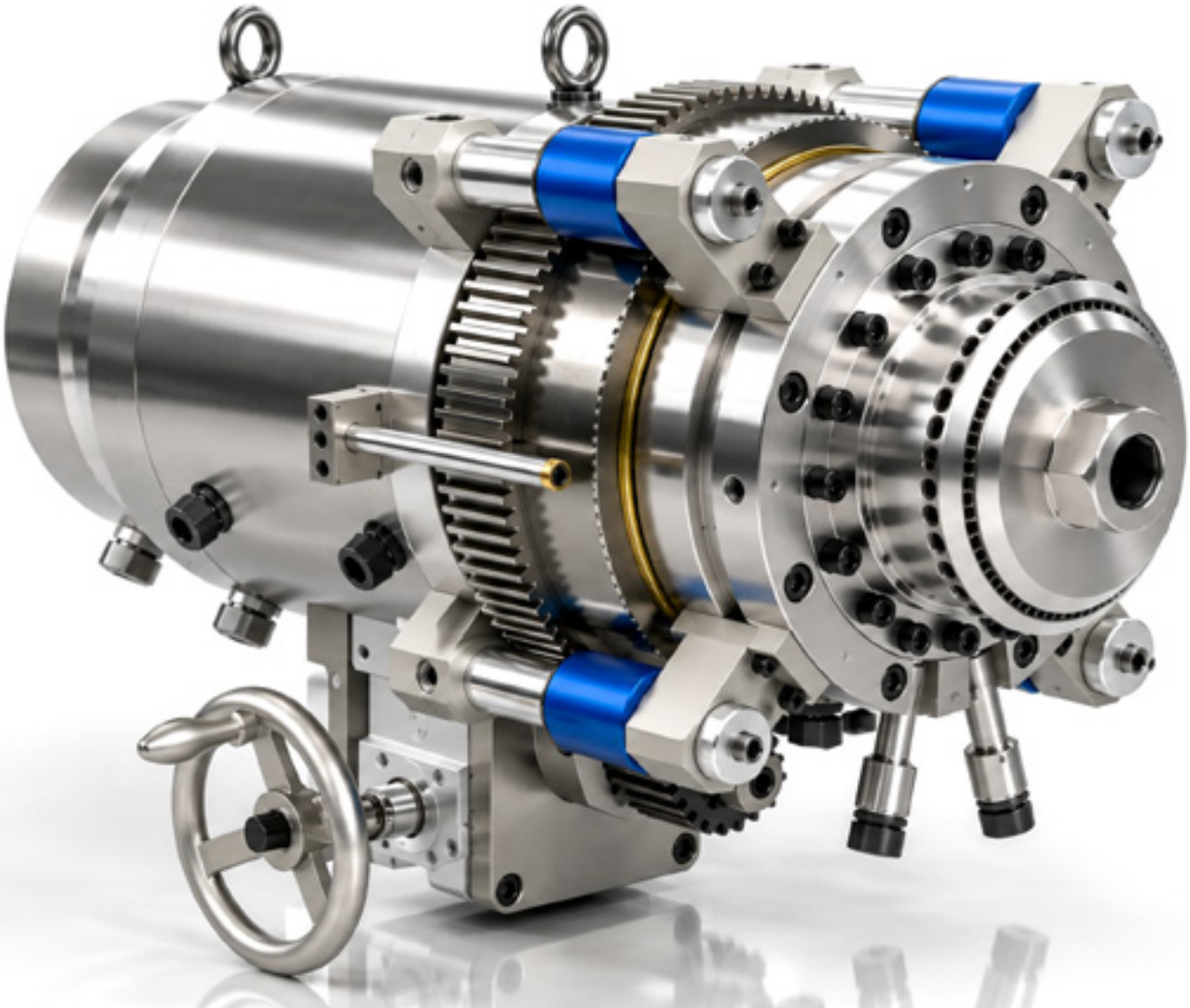
- Stable and reproducible processes
- Uniform cell structures
- High and consistent product quality
- Potential for increased throughput
- Energy-efficient processing
- Process and tooling solutions tailored to the specific application

Our Foam Extrusion Expertise:

- Foamed PET Sheet
- Foamed Profiles
- Foam Film
- Annular Dies for Foam Film
- Flat Dies for PET Foam Sheet
- Custom Extrusion Dies and Process Components
- Optimization of Existing Foam Extrusion Processes

The focus is on the interaction of the entire process chain.

The goal is a stable process window in which melt temperature, gas distribution, material, and die design are precisely coordinated with one another.



ANNULAR DIES

› Precision Die Technology for Foam Film Extrusion

The annular die is a key component in foam film extrusion. Uniform distribution of the blowing-agent-loaded melt around the entire circumference, combined with precisely defined die exit conditions, is essential for controlled expansion and a uniform film profile.

INEXCO develops annular dies with flow geometries specifically engineered for the material, blowing agent, and process parameters. A range of die sizes allows each system to be configured for different throughput rates, product widths, and film thicknesses.

› Engineered for a Uniform Film Profile

- Scalable Die Sizes
- Adjustable Die Gap
- Flexible Die Lip
- Reproducible Die Centering
- Individually Controlled Cooling Zones

QUICK TOOL CHANGE

› Change the Tool. Keep Production Running.

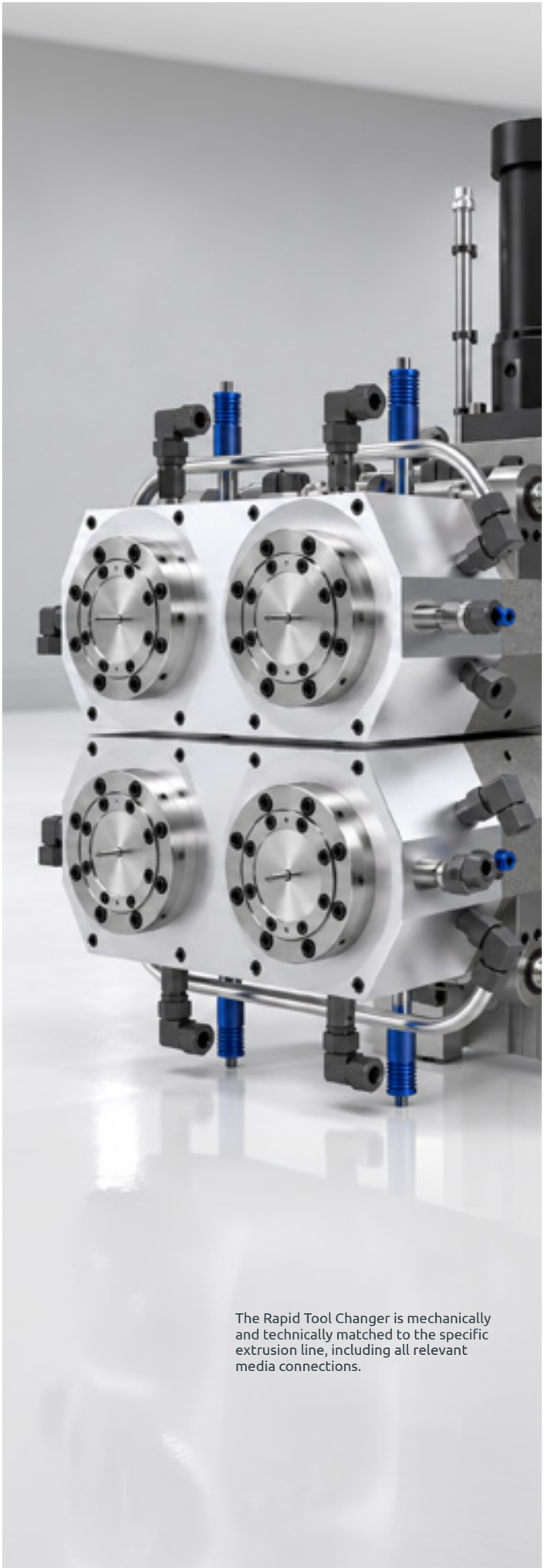
Tool changes can cause significant downtime in extrusion lines – particularly with frequent product changes, small production batches, or complex changeover procedures.

The INEXCO Rapid Tool Change System is designed to significantly reduce this unproductive changeover time. A pre-prepared tool is moved into the production position and the required utility connections are switched over. Production can then resume with the new tool within a short period of time.

While production continues, the previously used tool can be removed outside the production position and prepared for its next use. The concept is particularly suitable for applications where no downstream calibration or processing equipment limits the ability to perform a rapid tool change.

› Typical Applications:

- Foam Extrusion Dies
- Tube and Profile Extrusion
- Pelletizing Die Plates
- Small Production Batches and Frequent Product Changes
- Specialized Extrusion Processes



The Rapid Tool Changer is mechanically and technically matched to the specific extrusion line, including all relevant media connections.

EXTRUSION TOOLING

From Process Requirements to the Optimal Die

Product quality and process stability start with the right die design. The key is the precise interaction between material properties, melt flow, temperature, pressure, and product geometry.

INEXCO develops extrusion dies based on the specific requirements of each individual process. Flow distribution, pressure drop, residence time, and die exit conditions are carefully coordinated from the initial concept stage.

For complex applications, we use CFD simulations to visualize flow behavior, optimize geometries, and validate the die design before manufacturing begins.



COEXTRUSION TOOLING

Custom-engineered systems for the defined combination of multiple melt streams and the controlled build-up of multilayer products.

Our Die Engineering Expertise:

- Custom design tailored to product and process
- Flow-optimized geometries
- CFD-supported development and optimization
- High manufacturing precision
- Robust, application-oriented design
- Solutions for demanding mono- and coextrusion processes

CFD SIMULATION

Understand the Flow. Optimize the Geometry.

CFD simulation provides detailed insight into melt flow inside the extrusion die, creating a sound engineering basis for targeted geometry optimization. Using material properties, rheological data, throughput, and temperature conditions, we analyze the behavior of the polymer melt during the die development process. This allows different design concepts to be evaluated and optimized for the specific process and product requirements before manufacturing begins.



Our CFD Analysis Focuses On:

- Uniformity of melt distribution
- Velocity and pressure distribution
- Shear stress within the polymer melt
- Residence times and potential dead zones
- Thermal behavior
- Comparison and optimization of different geometries

Our Portfolio Includes:

- Coextrusion Dies
- Dual and Multi-Outlet Dies
- Wear-Resistant Die Plates for Pelletizing Processes
- Adapters and Transition Components
- Custom-Engineered Special-Purpose Dies

Custom Dies for a Wide Range of Applications

The requirements placed on extrusion dies are as diverse as the products they create. Material properties, product geometry, and process conditions determine which die concept provides the right solution. INEXCO develops and manufactures a broad range of custom extrusion dies – from specialized solutions for foam extrusion to dies for demanding mono- and coextrusion processes. The specific application is always at the center of our development process: precisely engineered, robustly designed, and tailored to the individual extrusion process.

The goal is a die that performs as an integral part of the entire extrusion process.

From melt flow to the finished product – precisely engineered for the application

CUSTOM MACHINERY AND SYSTEM COMPONENTS

Engineered for Specific Process Requirements

Where standard machinery reaches its limits, INEXCO develops custom solutions for demanding extrusion processes. New products, specialized process steps, and the integration of new technologies require machinery and system components specifically engineered for the application. Based on the individual process requirements, we work closely with our customers to develop custom machinery, assemblies, and process modules. Functionality, ease of operation, interfaces, and integration into existing production lines are considered from the very beginning.

The result is practical, purpose-built equipment that integrates seamlessly into the overall process – from individual system components to complete custom-engineered machinery.

From Engineering to Commissioning

INEXCO combines process expertise, mechanical engineering, and precision manufacturing.

We turn process concepts into well-engineered machinery solutions – designed, manufactured, and assembled for the specific application.

When integrating new equipment into existing extrusion lines, interfaces and the surrounding production environment are taken into account from the earliest engineering stage. From engineering and manufacturing through assembly and commissioning, we support the entire project through to successful implementation.

Our Capabilities:

- Custom-Engineered Machinery
- Process Modules and Functional Assemblies
- Machinery and Components for Foam Extrusion
- Die and Rapid Tool Change Systems
- Adapter and Interface Solutions
- Mechanical Engineering and Design
- Integration into Existing Extrusion Lines
- Retrofit and Modernization of Existing Equipment
- Manufacturing and Assembly
- Commissioning and Technical Support







The Die Changer automates
the changeover of extrusion dies,
reducing the manual effort required.

Engineered for Your Process

Every successful solution starts with a thorough understanding of your process. Talk to us about your requirements. Together, we develop a solution that delivers the required technical performance and integrates seamlessly into your production environment.

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