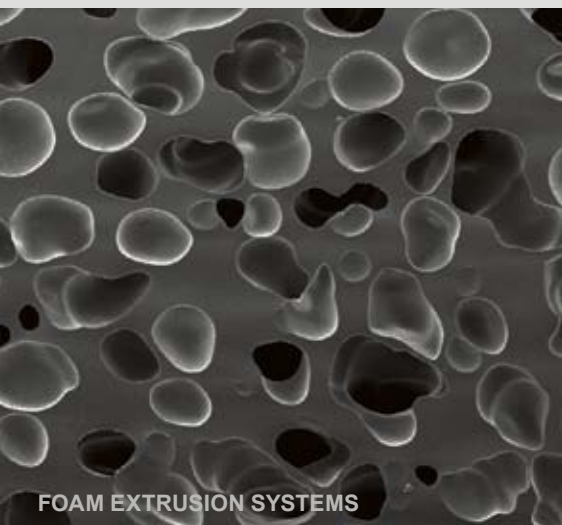




MIXING NOZZLES



MELT BLENDERS



FOAM EXTRUSION SYSTEMS



MELT COOLERS

COST SAVINGS AND QUALITY IMPROVEMENTS IN PLASTICS PROCESSING



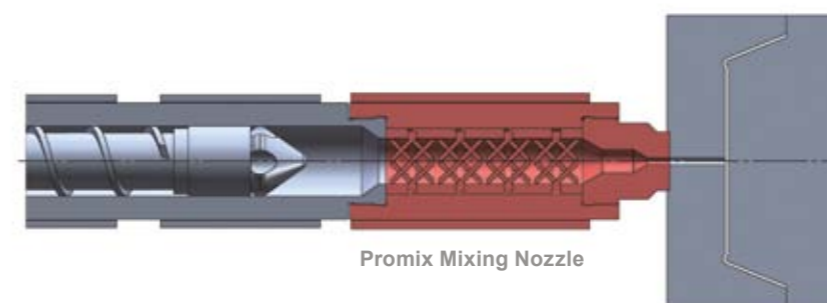
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HOW TO BENEFIT TWICE WITH PROMIX

EXPLORE THE POTENTIAL OF
PROMIX MIXING NOZZLES: SAVE
MASTERBATCH AND IMPROVE THE
QUALITY OF YOUR PLASTIC PARTS

Processing problems in injection molding such as the formation of color streaks are frequently solved by modifying the process parameters. In cases involving self-coloring of products, this approach is often only partially successful. Masterbatch concentration and screw back pressure have to be increased in such cases, inevitably leading to a substantial inflation of production costs. Through installation of a static mixer, Promix Solutions offers a simple but ingenious solution to any molder aiming to produce qualitatively high-grade plastic parts at reasonable cost.

Our mixers assure you of a consistently homogeneous melt, guaranteed by their patented geometry. The benefits are obvious: better quality of the produced part, reduced colorant consumption, fewer rejects, lower costs, greater return.



READY-TO-INSTALL SOLUTIONS

PROMIX MIXING NOZZLES replace the existing nozzle of your injection molding machine and are delivered ready-to-install within just 3 weeks. The nozzle is installed in next to no time allowing immediate continuation of your production. Benefit from our broad application know-how and individual consultancy.



YOUR BENEFITS IN INJECTION MOLDING

- Saving of 20–30% masterbatch
- No color streaks or flow lines
- Reduced cycle times
- Increased usage of regrind material
- Better tolerances and therefore lower scrap rates
- Increased tensile strength
- Easy to clean

What is static mixing?

Static mixing is mixing without moving parts. What does move are the components to be mixed. In plastics processing, the melt is propelled through the mixer by means of plasticizing screws or gear pumps. The mixing elements remain in a fixed position and effect continuous split-off, expansion and redistribution of the melt across the full cross-section of the flow path. The result is a fully homogeneous melt.



Roll-on housing molded without Promix Static Mixer

Roll-on housing molded with Promix Static Mixer



Cost savings with Promix Static Mixers

A typical saving is a 20 to 30% reduction of masterbatch consumption thanks to better color distribution as an effect of the installed static mixer. This results in savings of 1000 up to 10'000 EURO every year. However, static mixers bear further potential for cost savings.

HERE ARE A FEW EXAMPLES:

- Reduced scrap rate due to better tolerances of the molded parts
- Increased material strength
- Shorter cycle times
- Increased usage of regrind material

& Facts Figures

Masterbatch saving and cycle time reduction

90 000 EURO

Yearly savings thanks to Promix Mixing Nozzle by

30 % masterbatch reduction (from 2.2% to 1.5%)

and

9 % cycle time reduction (from 120 s to 109 s)

! Time for installation: less than 1 hour

Application: PP container, shot weight 7000g



HOW TO INCREASE YOUR PRODUCTIVITY WITH PROMIX

The production of high-quality products also takes top priority in extrusion processes. Promix Solutions demonstrates strong commitment to this field and is able to optimize your extrusion process with its specially developed melt blenders. In addition, many processors could also increase the production capacity of their extrusion line. Uneven wall thickness, long cooling time, flow lines or other quality issues are often limiting the maximum production capacity. Promix Melt Blenders overcome such limitations effectively and lead to significant cost savings. The product is usually supplied as a complete system including housing, adapters and heating. With Promix Solutions you can rely on high-quality, ready-to-install melt blenders at attractive conditions.



HIGH-QUALITY, READY-TO-INSTALL SYSTEMS

PROMIX MELT BLENDERS are installed directly before the die, after the screen changer and gear pump. This ensures the highest level of homogeneity of the melt entering the die. The implementation of a Promix Melt Blender is a very efficient and economical way to sustainably improve your extrusion process! We can offer ready-to-install systems including housing, adapters and heating for fast and easy installation into your existing extrusion line.

FIND OUT WHY MANY PRODUCERS HAVE EQUIPPED ALL THEIR EXTRUSION LINES WITH PROMIX MELT BLENDERS

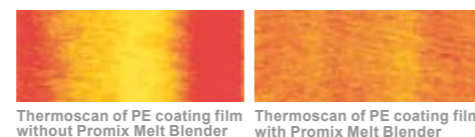
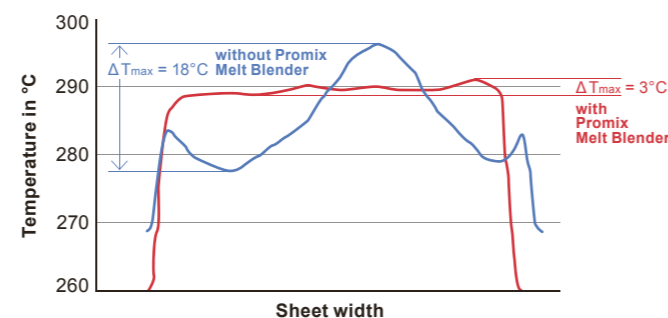


YOUR BENEFITS IN EXTRUSION

- Consistent quality of melt
- Higher throughput
- Absence of striations
- Uniform temperature distribution
- Even wall thickness or film gauge
- Excellent incorporation of additives
- Homogenous cell structure for foaming

Key for improved product quality

In extrusion processes temperature differences in the melt will be generated by the plasticizing process in the screw, melt pumps, screen changers and even by empty pipe sections. As demonstrated in the diagram below, a Promix Melt Blender efficiently equalizes temperature variations over the whole cross section. Equal melt temperature and velocity are key for high quality extrudates. Improve the thickness tolerances or surface quality of your product or improve your line capacity with a Promix Melt Blender.



Continuous R&D efforts – a must to remain a technology leader

The design principle of Promix Melt Blenders is the result of many years of research and development. Our latest melt blender generation SMB plus unifies a very robust design, excellent mixing properties and very low pressure drop. The flow optimized structure which was designed with modern CFD simulation techniques, features unique self-cleaning properties. In extrusion good inline cleaning properties are important to avoid degradation of polymer and to reduce waste during color or polymer change to a minimum. Despite its complex geometry the mixer has no dead spots and creates fewer deposits compared to empty pipe sections. This has been proven in numerous applications. Ask us, we are glad to share more detailed information!

& Facts Figures

Increased throughput thanks to Promix Melt Blender

300 000 EURO

Yearly savings by

30 %

increase in output (from 120 kg/h to 160 kg/h)

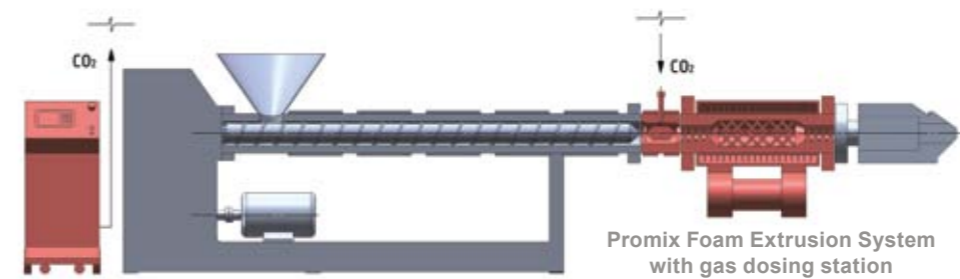
! Time for installation: less than 4 hours

Application: ABS edge band



HOW TO FOAM SUCCESSFULLY WITH PROMIX

Save money with microcellular foams and get the unique, license free retrofit solution. With Promix Foam Extrusion, conventional extrusion lines can be quickly and easily turned into foam extrusion lines. Promix Solutions analyzes your current extrusion process on suitability for foaming and offers a customized retrofit solution for your application. The patented technology relies on cost-saving and ecofriendly gases such as CO₂ and nitrogen. The retrofit solution is suitable for both, substitution of chemical foaming additives with physical blowing agents and conversion from solid to foam production. Rely on our broad experience and make your foam project a success! The investment usually pays back within just a few months.



PROMIX FOAM EXTRUSION

PROMIX FOAM EXTRUSION SYSTEMS are installed downstream of the existing extruder barrel and consist of components for fluid injection, homogenization and cooling. The blowing fluid is provided by a high precision gas dosing station. Depending on the application, the existing extruder configuration and the desired foam specification we will provide you with a customized solution for your individual process. It goes without saying that we support you until successful start-up of your production.

& Facts & Figures

Significant material savings by foaming with CO₂

95 000 EURO

monthly savings thanks to Promix Foam Extrusion System

35% density reduction
Extruder capacity: 350 kg/h
Blowing fluid: CO₂

! Time for installation: less than 2 days

Application: PP foamed sandwich boards



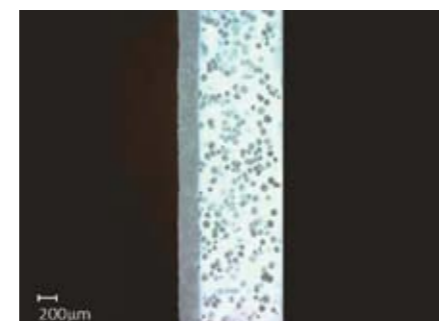
EXPERIENCE HOW PROMIX FOAM EXTRUSION SYSTEMS CAN SAVE YOU WEIGHT AND MONEY

Microcellular foaming has never been easier

Promix Foam Extrusion is a comprehensive solution including all required equipment and services to achieve your microcellular foam product.

WE OFFER YOU:

- Thorough analysis of your current extrusion process and your targeted foam application
- Foaming systems for precise injection and effective solving of supercritical blowing agents
- Reliable and very accurate gas dosing station
- Foam dies and die modifications
- Melt coolers for optimized foaming results
- Pilot testing and sample production on site or in our test facilities



Microcellular foam sheet

MELT COOLERS

HOW TO INCREASE YOUR OUTPUT WITH PROMIX

LEARN MORE ABOUT EFFICIENT MELT COOLING

In many processes the total line capacity can be significantly increased thanks to improved cooling. Promix Solutions offers a wide variety of highly efficient melt coolers and heat exchangers for high viscosity fluids and melts. During cooling or heating process, the melt is homogenized over the whole cross section, leading to effective heat exchange with minimal risk of fouling (=building of deposits). Because of the very narrow residence time distribution there is a minimal risk of product decomposition.



YOUR BENEFITS WHEN COOLING

- Very high cooling efficiency
- Accurate outlet melt temperature control
- No fouling or blocking problems due to a well-mixed single flow
- Narrow residence time distribution
- Short installation length
- Low pressure drop

YOUR BENEFITS WHEN FOAMING

- Significant cost savings (density reductions 15–60%)
- Lower running costs compared to chemical foaming
- Eco-friendly light weight products
- Superior foam properties and process consistency
- Easy switch from foamed to non-foamed products
- Fast and easy installation
- No license fees or running royalties

PROMIX SOLUTIONS, MARKET LEADER FOR STATIC MIXER SOLUTIONS IN THE PLASTICS PROCESSING INDUSTRY

Promix Solutions, a spin-off of Sulzer, offers solutions for effective cost savings and product quality improvements in plastics processing. The product range includes mixing nozzles, melt blenders, foam extrusion systems and melt coolers.

The headquarters of Promix Solutions AG is located in Winterthur, Switzerland. A second facility with a broad inventory stock in Linden, Germany allows you a fast access to a wide range of mixer solutions. An extensive and well established sales network secures easy contacting.



How to reach us

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YOU CAN RELY ON

- Profound expertise and experience in plastics processing
- Broadest mixer portfolio in the industry
- High quality products and short delivery times
- More than 40 000 references worldwide

Your local representative



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