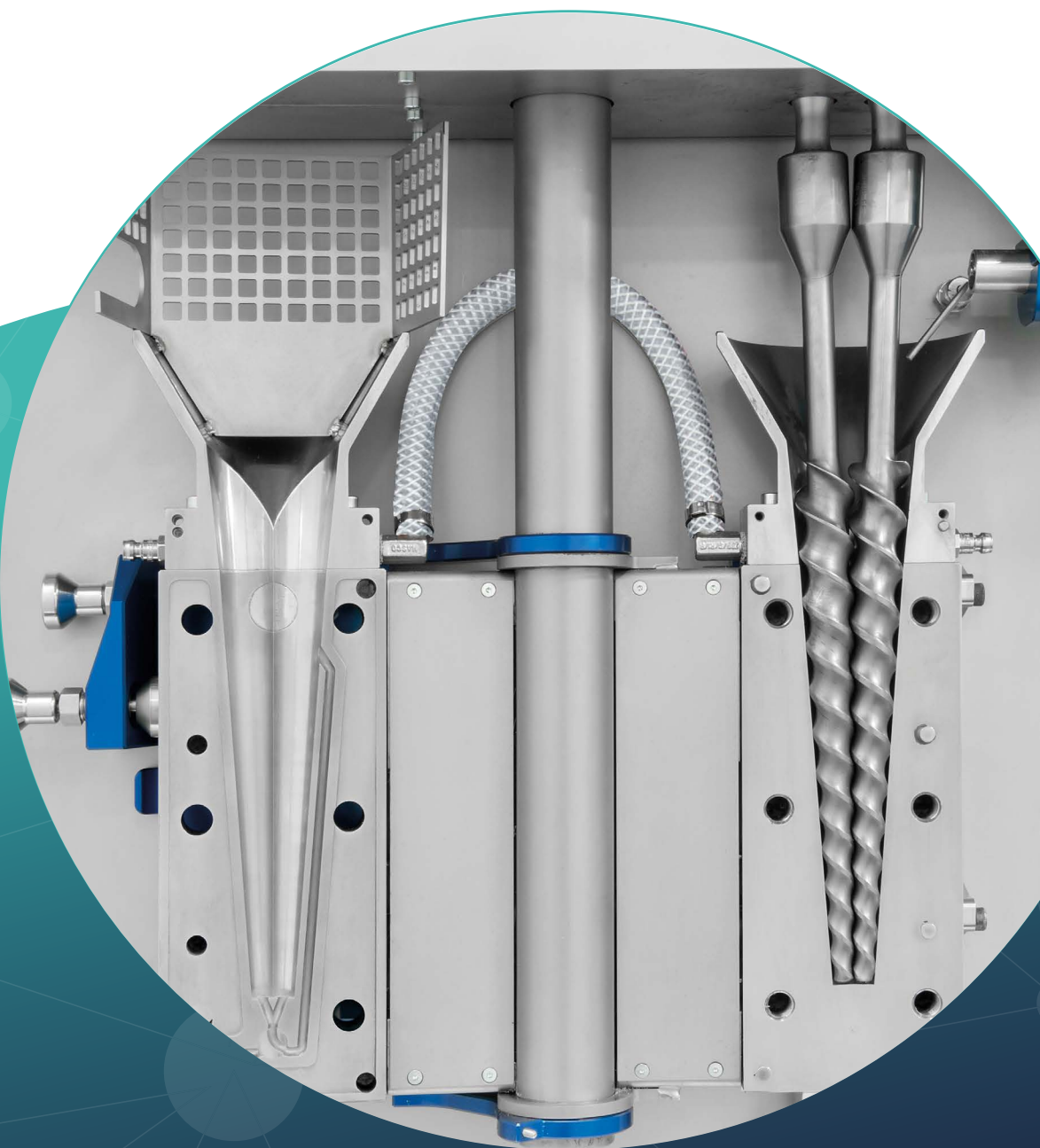




Xplore MC 15 HT Micro-Compounder

A high torque 15 ml Micro-Compounder for material R&D



Xplore Micro-Compounders:

Advanced Solutions for Feasibility Studies and Screening

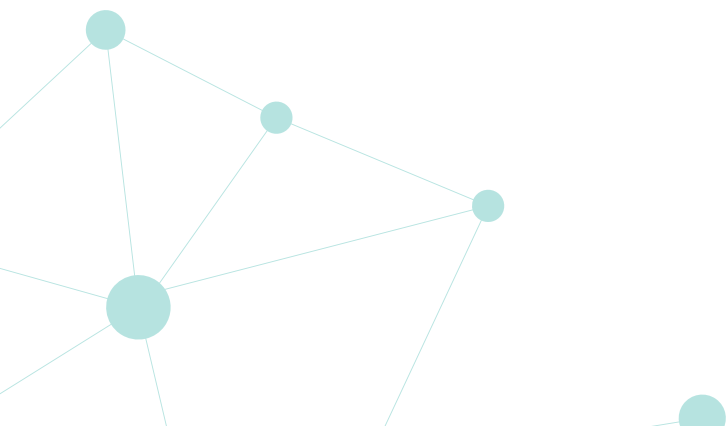
The Xplore MC 15 HT is a high-torque micro-compounder with a 15 ml material capacity, designed to enhance R&D performance through its reliability, ease of use and robust construction. It is a powerful instrument for developing new compound formulations, providing precise and stable control while fitting efficiently on a laboratory bench or inside a fume hood.

With more than 30 years of Dutch craftsmanship and expertise, Xplore Instruments continues to drive innovation in material processing technology. The MC 15 HT was developed in close collaboration with customers and incorporates continuous improvements in design and functionality. It combines strength, speed and ease of operation with excellent dimensional stability of filaments and films.

The MC 15 HT integrates superior mixing performance, a robust motor drive, housing, barrel and screws, and consistently reproducible results. Fully intermeshing screws ensure high output across applications including in-line injection moulding, film and multifilament extrusion. The system features continuous melt torque monitoring and is designed for efficient cleaning. It also supports continuous operation for melting and extrusion (e.g. filaments and films). Built with Xplore's focus on durability and precision, the MC 15 HT unites advanced mixing, extrusion and upscaling capabilities. The high screw torque (40 Nm), continuously monitored, is available across the full rpm range of 1–500. This enables high shear rates, excellent mixing and fine dispersion of viscous compounds, resulting in filaments and films with superior dimensional stability.

With 40 Nm of torque, the MC 15 HT processes rubbers and elastomers with ease. Fully intermeshing screws deliver high efficiency mixing, ensuring uniform material properties throughout the entire sample.

The compact and robust housing of the MC 15 HT minimizes footprint while improving handling and installation in laboratory environments, including fume hoods. Extrusion can also be performed vertically downward. The 24-bit motor drive ensures precise and reliable control, provides continuous digital torque monitoring, and reduces maintenance through its optimized design. Co- and counter-rotation are standard features, together with Xplore's durable, scratch-resistant barrels and intermeshing screws. These design elements guarantee reproducible mixing performance and consistently high yields. Advanced temperature control and a water-cooled top hopper for secure dosing are standard, along with a rapid water-cooled cleaning cycle. The design also simplifies servicing and enables easy integration of post-die add-ons such as cast film or filament lines. Optimized specifications ensure fast operation, flexible residence time variation and high cycle speeds for compounding, extrusion, shaping and cleaning.



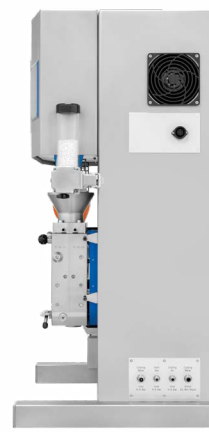


The MC 15 HT is equipped with optional proprietary rheological software for upscaling to larger parallel twin-screw extruders, and with Vari-Batch™ technology that allows the 15 ml unit to be reconfigured into 3 ml or 7 ml barrel sizes. These features make it possible to work efficiently with limited or high-value compounds. Standard fully intermeshing screws ensure excellent mixing performance and consistently high yields, supporting pioneering material development programs.

The MC 15 HT is a core instrument for R&D and quality control laboratories working with plastics, resins, compounds, elastomers, films, filaments and reactive extrusion processes.

Xplore leads in the miniaturization of polymer processing tools, enabling polymer formulation development, rapid screening, feasibility studies and the resolution of complex technical challenges. Developed in response to customer requirements, the MC 15 HT provides an efficient and reliable solution for advanced laboratory-scale compounding and extrusion.





Technical Specifications:

- Barrel volume: 15 ml (Vari-Batch™: 3 ml / 7 ml)
- Screw system: fully intermeshing, detachable, hardness 54 HRC, coating hardness 1000 Vickers
- Maximum melt torque: 40 Nm, continuously monitored
- Screw speed: 1 – 500 rpm, continuously variable
- Barrel: abrasion-resistant, hardness 64 HRC, coating hardness 2000 Vickers
- Maximum operating temperature: 450 °C
- Temperature control: melt and 2 × 3 barrel heating zones, 8 heating cartridges, 7 thermocouples
- Maximum pressure: 600 bar
- Rheological data acquisition: melt torque, shear viscosity, shear rate, shear stress
- Heating time (80 → 240 °C): <10 min
- Cooling time (240 → 80 °C): <10 min with water, <35 min with air
- Dimensions (H × W × D): 95 × 50 × 27 cm
- Weight: 145 kg
- Power supply: 400 Vac / 50–60 Hz, 3 phase, 16 A; 210 Vac / 50–60 Hz, 3 phase, 16 A
- Operating control: integrated touchscreen or USB computer interface
- Co- and counter-rotation standard
- Continuous or batch operation; vertical extrusion possible

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