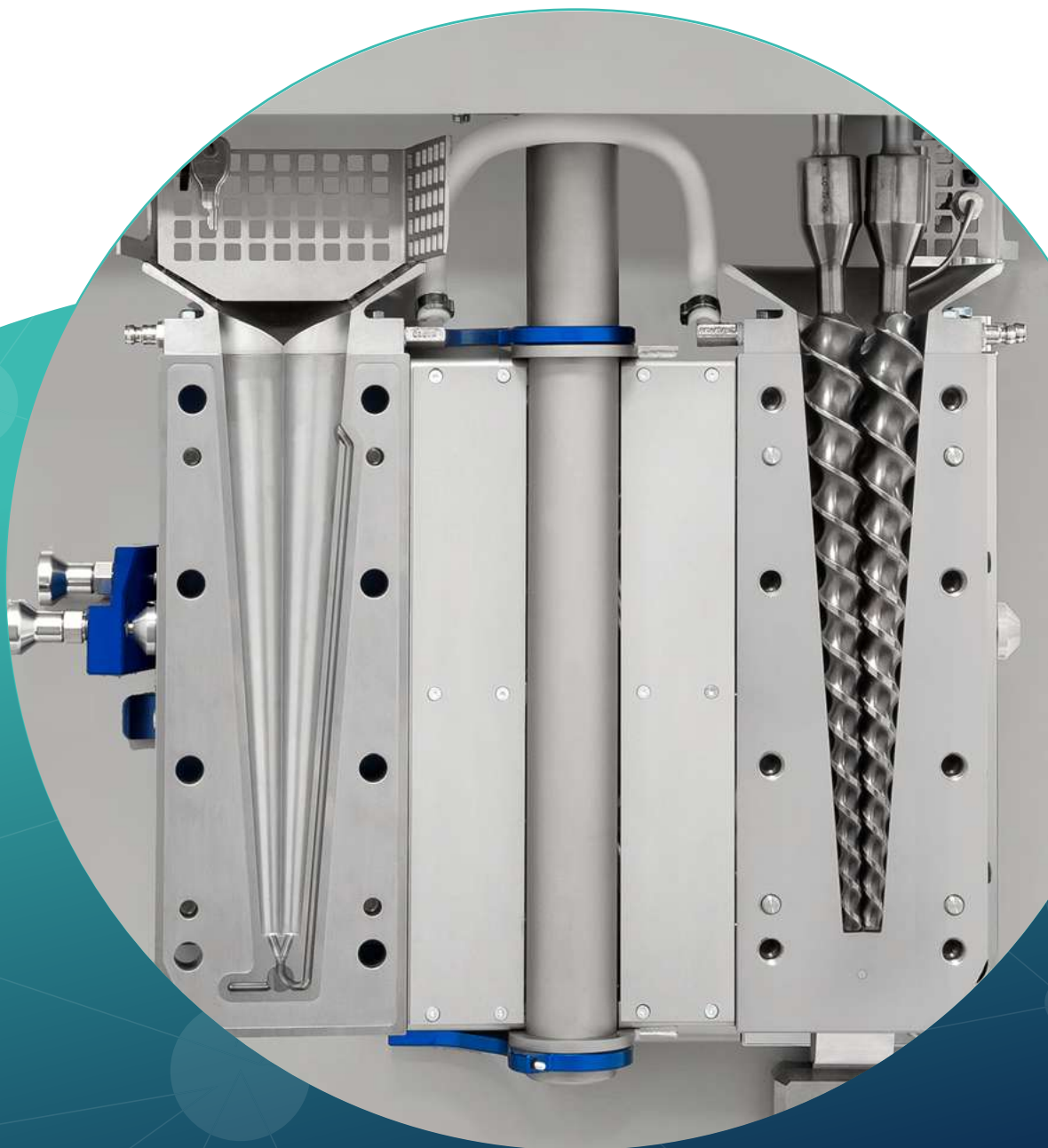




Xplore MC 40

A 40 ml lab compounder for material R&D



The Xplore 40 ml lab compounder:

your platform for feasibility studies, fast screening and technical marketing issues

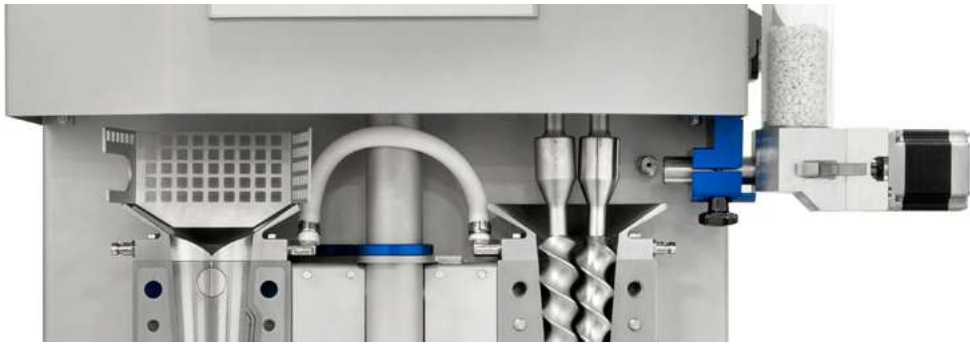
This high torque lab compounder, with a capacity of 40 ml, will improve your R&D performance by its reliability, ease of use and robustness. It is a unique asset for you in the development of new material compound formulations: a full-fledged material processing instrument with a slightly larger batch size that still fits on your laboratory bench or in your fume cupboard.

More than 30 years of Dutch craftsmanship, dedication to perfection! For those who are never satisfied: better mixing, more reliable and faster R&D Inspired by Xplore's customer's wishes and our drive to continuous improvement: the new MC 40 is strong, fast, has a small footprint and is easy to operate, with improved dimensional stability of filaments and films.

The Xplore MC 40 is our larger brother of the MC 15 HT. It gives you good value for money: excellent mixing, a larger batch size, the same long-life time (> 10 y) by the extremely robust design (motor drive, housing, barrel and screws), higher long-term reproducibility, higher yield, larger sample possibilities with in-line injection moulding, film, or (multi) filament extrusion. The MC 40 gives you more screening flexibility than any competing lab extruder or kneader; with continuous monitoring of true screw torque, easy and fast cleaning, no need for optimizing screw geometries and easy to scale up to larger parallel twin screw extruders. Due to its enlarged internal volume it can also be used even in continuous mode (filaments, strip, sheet, cast films, foils), also vertical extrusion is possible and low viscous fluids can be dosed without leakage. Built the Xplore way for extreme durability and reliability, the MC 40 features excellent mixing, extrusion and upscaling capabilities: with a maximum screw torque of 40 Nm between 1 – 500 rpm. This result, due to its larger screw diameter, in higher

shear rates, finer dispersion of higher viscous compounds. Finally, the increased torque in the lower rpm's results in processed filaments and films of much improved dimensional stability. With 40 Nm of torque processing rubbers and elastomers becomes easy, even with fully intermeshing screws, which have better mixing capabilities vs a tangential mixer, commonly used in rubber mixing. As a result, every cm³ has exactly the same properties, as opposed to a tangential screw design, where generating a consistent sample is still a challenge.





Its stiff housing has a minimal footprint and is that low that the instrument fits in a fume cupboard. Its new, state-of-the-art robust, precise and reliable continuously digitally variable 24 bits motor drive enables exact monitoring of the screw torque and as a result easy accurate upscaling to any larger parallel twin screw extruder, furthermore, also it requires less service by its improved design.

Standard equipped with a co- and counter rotation gear box and Xplore's cost effective, easy to clean DIN1.4112 barrel and fully intermeshing screws. The Xplore MC 40 HT guarantees the same excellent and reproducible mixing results as our renowned Xplore MC 15 HT compounder, but now you can also obtain higher yields. In addition, advanced temperature control and a water-cooled top hopper for easy and reliable sample dosing are standard, together with an extremely fast, water cooled cleaning cycle. Its clever design simplifies service and installment of post die add-ons such as a cast film or a (multi) filament line.

Our specifications guarantee you faster operations, ease of residence time variation and a higher cycle speed of compounding, extrusion, shaping and cleaning. The Xplore MC 40 HT will thus further simplify and accelerate your R&D. A much desired options is the Xplore's proprietary rheological software, which enables upscaling to large parallel twin screw extruders.

Xplore MC 40 HT: your trump to beat competition. This is not a want to have, but a must have for every R&D and quality control lab working with plastics, resins, compounds, elastomers or film, filament and reactive extrusion.

Xplore is the front runner in miniaturization of polymer processing tools and enables you to conduct polymer formulation development, fast screening, feasibility studies and solving technical marketing issues in a timely and cost-effective manner Inspired by the need of our existing customers, our engineers designed the best possible to provide an alternative for a difficult to clean and labor-intensive laboratory kneader or a time consuming "Banbury" type internal mixer and subsequent two roll mill process for rubber mixing.





Technical Specifications:

- Abrasion-resistant barrel (hardness 64 HRC), coating hardness 2000 Vickers
- Abrasion resistant barrel, material DIN 1.4112, hardness 54 HRC, coating hardness 2000 Vickers
- Batch volume: 40 ml
- Vertical barrel, fluid-tight, so liquids can be dosed
- Heated by 12 thermo cartridges and controlled by 7 thermocouples (temperature gradient possible)
- Temperature control: via melt thermo couple and in 2x3 barrel heating zones
- Maximum operating temperature 425 °C
- Heating time (from 80 to 240 °C) in less than 15 min
- Detachable conical forced feeding screws, fully intermeshing, coating hardness 1000 Vickers
- Screw speed: continuously variable 1 - 500 RPM
- Maximum melt torque: max. 40 Nm between 1 - 500 RPM
- Maximum pressure 250 bar
- Cooling time from 240 to 80 °C: with cooling water in less than 10 min, with air in less than 35 min
- Main drive: 1350 Watt
- Power supply: 0-500 rpm 400 Vac / 50 – 60 Hz, 3 phase 16 A (R,S,T, Neutral, Ground) 0-500 rpm 210 Vac / 50 – 60 Hz, 3 phase 16 A (R,S,T, Ground)
- Operating control via integrated touch screen or computer control via an USB port
- Easy to clean with dedicated cleaning cycle
- Overall dimensions (h x b x d): 95 x 50 x 27 cm
- Weight 150 kg
- Software: data acquisition and instrument control (stored in Xcel format)

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