

Thermo Scientific Process 16 Twin-screw Extruder

Versatile lab scale extruder for product development and pilot scale production in the polymer and food industries

Develop successful new products

The Thermo Scientific™ Process 16 Twin-screw Extruder opens many possibilities for your R&D and manufacturing environment, promoting fast and reliable material development in the polymer and food industries.

The Process 16 extruder is a highly modular, flexible extrusion system with a wide range of options and accessories to exactly meet your processing requirements.

The Process 16 Hygienic version includes all product contact parts constructed of X15TN steel for maximum corrosion resistance and optimal cleanability. For food applications, such as the processing of high moisture meat analogues (HMMA) or the incorporation of flavors into a carrier matrix, a liquid cooling option is available.

Ease of use

The Process 16 Twin-screw extruder is a floor standing instrument with a compact stainless-steel monocoque housing. This enables fast and thorough cleaning and in addition, reduces the number of visible cables, therefore, minimizing the risk of damage.

A clearly structured integrated touch-screen HMI (Human Machine Interface) allows control over all relevant extruder parameters as well as the connected feeding devices. This gives experts and novices to extrusion technology a jump start.

All feeder controllers are integrated, therefore, a connected feeder is automatically detected by the extruder and displayed in the HMI. This makes future feeder setup changes easy.

Flexible setup

In addition to the wide range of top feeders that accommodate different types of solids and liquids, secondary side feeding is an option with the Process 16 extruder. Side feeding increases the amount of low-bulk density fillers incorporated in the base matrix. Since the side feed connection is located at the back of the barrel, setup is simple, quick and does not interfere with access to the extruder during operation.



Process 16 Twin-screw extruder

The segmented screw design can be individually configured to exactly match the process requirements with a wide range of conveying, mixing, and extrusion elements. The 40 L/D length can be reduced to adapt to low material availability by using a screw-length adaption kit.

The screw elements have a ratio of outer to inner diameter of 1.73 and thus exhibit a high free volume design. With a screw diameter of 16 mm this high free volume design enables the user to process challenging material like large pellets, flakes, fibers or low-bulk density fillers successfully.

The fully ported barrel offers 6 positions for material infeed (plus main feed port) from the top, as well as 4 options on the rear side for attaching up to 2 side feeders. The barrel is horizontally split, and the top can be easily removed. This allows easy access for cleaning and inspection during process development. A range of barrel and screw materials to choose from offers the flexibility to process high moisture, chemically aggressive or abrasive materials.

Use our knowledge to your advantage

With its unmatched flexibility and international application team support, the Process 16 Twin-screw extruder can be the heart of your research and pilot plant setup. Turn to us to enhance your overall productivity and shorten time to market. [Contact us](#) today to discuss your needs.



Fully ported barrel

Technical Data	
Barrel diameter	16 mm
Barrel length	40 L/D
Barrel/screw material	440C* – Process 16 extruder X15TN – Process 16 Hygienic extruder
Diameter ratio Do/Di	1.73
Screw speed	10 – 1000 rpm
Torque max.	36 Nm
Pressure max.	100 bar
Temperature	350°C (450°C as option**)
Barrel zones	8 zones. 7 x 5 L/D electrical heated (optional water cooled)
Dimensions (LxWxH)	1230 x 690 x 1120 mm (LxWxH)
Weight	180 kg
Power	3 x 400V 25A

* CPM option available

** Not available with Process 16 Hygienic

Find out more at thermofisher.com/process16