

Thermo Scientific Pharma 24 Twin-screw Extruder

Commercial manufacturing for hot melt extrusion (HME) and twin-screw granulation (TSG)

Meet the production challenges

The Thermo Scientific™ Pharma 24 Twin-screw Extruder, with available hot melt extrusion (HME) and twin-screw granulation (TSG) application sets, is designed with commercial manufacturing process requirements in mind.

As space is a premium, the Pharma 24 Twin-screw Extruder has a small footprint containing all electronics and controls for downstream equipment within the extruder housing. The instrument can be moved by a single person and the hinged and split barrel design allows easy access for cleaning or configuration changes. No special handling device is needed to disassemble the barrel. An inspection to ensure the instrument meets the “visibly clean” criteria can be done without hassle. The media and power supplies are engaged with quick-connectors ensuring the unit can be easily setup or disassembled for cleaning after a production run.

Pharma 24 Twin-screw Extruder

Assisting our customers realize successful manufacturing projects helped us to optimize the design of the Pharma 24 Twin-screw Extruder for robust operation, easy handling and thorough, residue-free cleaning.

The compact, crevice-free housing design ensures GMP compliance. All product contact parts can be easily disassembled for external cleaning and inspection. With the convenience of removal barrel liners, a second set of contact parts for in-line product changes will significantly shorten the total change over time.



Pharma 24 Twin-screw Extruder

The fully-ported, split barrel with 8 individual heating and cooling zones, and up to 100 bar operational pressure, ensures maximum flexibility in process design. The comprehensive, industry-standard control and operation software allows plug-and-play functionality with upstream and downstream process equipment. It offers a user and recipe management program as well as audit trail functionality.

Opened barrel
for easy access



Main benefits

- Small footprint
- Easy cleaning
- Easy disassembling / no handling device needed
- No control cabinet, electronics included in extruder base
- Control software for up-and downstream equipment included
- 21 CFR Part 11 compliance
- Audit trail, Batch reporting

High throughput applications

Both the HME and TSG application sets include a specific set of screw-shafts fully configured with required screw elements. Die heater, die adapter, temperature control and combined melt temperature / pressure sensor completes the HME set. The TSG set includes a discharge chute with good / waste material diverter valve and appropriate collection bins.

Achieve high-throughput HME manufacturing with the optional chill roll. A compact, complete production setup can be realized in less than 3 m² of lab space including both the extruder and chill roll.

Use our knowledge to your advantage

With its unmatched flexibility and international application team support, the Pharma 24 Twin-screw Extruder can be the heart of your manufacturing setup. Turn to us to enhance your overall productivity and shorten time to market.

Technical data	
Screw Length	HME L/D = 40 (40 x 24 mm = 960 mm) TSG L/D = 40.75 (40.75 x 24 mm = 978 mm)
Barrel zoning	7 Barrel zones: Zone 2–8 (electrical heating, cooling by solenoid valves) optionally 1–3 heated die zones
Temperature	10 .. 300°C
Pressure, max.	100 bar
Screw speed	10–1000 rpm
Throughput	HME: 2–20 kg/h; TSG: 4–60 kg/g (rate depends on formulation)
Torque	105 Nm (52,5 Nm/shaft)
Main supply	3 x 400 V / N / PE, 50/60 Hz @63 A
Dimensions LxWxH	2100 mm x 850 mm x 1730 mm
Center line height	1050 mm
Footprint with ChillRoll	LxWxH apprx. 3200 x 850 x 1730
Weight	560 kg



Pharma 24 Twin-screw extruder with attached chill roll for HME manufacturing

Find out more at thermofisher.com/drugformulation