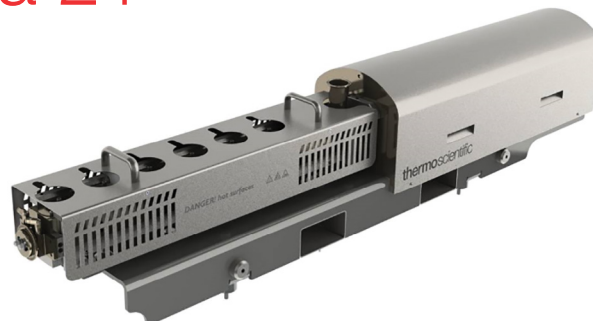


Thermo Scientific Pharma 24 Twin-Screw Granulator

Improve drug formulation development through continuous manufacturing



Pharmaceutical manufacturing is challenged with the transition from batch processes to continuous manufacturing (CM). Continuous processes can help increase overall production yield and improve product quality. Beyond that, CM promises the ability to ensure an adequate supply of important drugs in times of increased demand.

The Thermo Scientific™ Pharma 24 Twin-Screw Granulator (TSG) is a dedicated system for wet and dry granulation processes. It can be used as a stand-alone instrument or integrated into a modular, continuous manufacturing line that spans tablet production from initial raw material handling to final tableting.

Primary features

- Dedicated production-scale instrument with large volume capacity
- Split barrel with removable liners for easy access and cleaning
- ATEX design on request
- Compact design for fast set-up and reduced footprint
- Fully segmented screw design (40.75 L/D)

Optimized for continuous pharmaceutical manufacturing

The Pharma 24 co-rotating parallel TSG has a modular screw design and a barrel length of 40 L/D. It is suitable for wet or dry (melt) granulation of pharmaceutical formulations with a possible throughput of up to 70 kg/h, and it is manufactured to GMP standard.

Many additional features provide maximum process flexibility:

- The extruder barrel is horizontally split
- It has an easy to operate clamp shell design
- Removable top and bottom liners are made from pharma grade steel
- The main port and 5 additional multi-purpose, top feed/injection ports are available
- A stainless steel plate at the base provides easy adaption to an existing downstream equipment at an existing production site, or an optional base-frame enables stand-alone operation

Optimal design for challenging environments

The Pharma 24 TSG can be set up to operate in challenging environments because the liquid temperature control of the barrel ranges from 20°C to 80°C without any electrical heating. One standard cooling zone is supplied with the Pharma 24 TSG, but that can be extended to three cooling zones when intensive cooling of the barrel is necessary.

Maximum control and connectivity

For the best possible process control, sensors such as temperature sensors or optional process analytical technology (PAT) sensors can be easily inserted.

Controlled via a PLC system from Siemens™ (21 CFR part 11 compliant), the Pharma 24 TSG can be operated from a touch control panel mounted on a separate, movable frame. For integration into an existing overarching IT architecture, the TCP/IP can be used. Five different user levels with password protection and comprehensive reporting provides maximum user control.



Adjustable screw length and flexible configurations to change residence time and processing conditions.

Screws	
Diameter (nominal)	24 mm
Length of granulation shaft	40.75 L/D (978 mm)
Barrel	
Standard barrel	4 segments for top / bottom half Main feed port plus five (5) multi-purpose top feed/injection ports
Heat/Cool Zones	One (1) cooling zone (optionally up to three (3) cooling zones)
Operation Parameters	
Temperature	Range 20 – 80 °C
Screw speed	Range 10 – 1000 rpm
Torque	Maximum 36 Nm (18 Nm / shaft)
Throughput	Maximum 70 kg/h (depending on formulation)
External Temperature Control (Chiller)	
Temperature range (chiller)	5 – 0 °C (below 10 °C eventually condensation)
Connections	In / output: G1/2"
Line-up	
Dimensions: extruder L x W x H	2000 x 320 x 550 mm
Dimensions : cabinet L x W x H	1000 x 1200 x 300 mm
Weight: extruder	265 kg
Weight: cabinet	180 kg
Ambient temperature	10 – 40°C
Relative humidity	Max. 80% at 31°C (50% at 40°C)
Electrical Connection	
Main supply / frequency	3 x 400 V / N / PE, 50/60 Hz @32 A
ATEX Specification	
Extruder	⊕ II 3G Ex ic nA c IIB T155°C Gc
Cabinet	⊕ II 3G Ex [ic] IIB T155°C Gc

Find out more at thermofisher.com/drugformulation

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