

Thermo Scientific CaliCut Post-extrusion System

Precision calibration and cutting machine for pharmaceutical implants

Novel drug delivery systems such as ocular or subcutaneous implants demand a precise production including tight tolerances for the diameter and length of polymer strands. The Thermo Scientific™ CaliCut™ Post-extrusion System is the next generation of instruments for precise calibration of polymer strands and cutting into well-defined implants. Adept at catering to a variety of polymer formulations and application areas, the CaliCut Post-extrusion System is a highly modular instrument that can be adjusted to meet a broad range of product specifications.

High precision

The compact CaliCut Post-extrusion System sits right beside the extruder die so the polymer strand can be taken directly through a 1D laser diameter gauge and onto the conveyor belt without a major cool down. Based on the laser measurement, the belt speed is adjusted and pulls the strand enabling the diameter to be adjusted within set tolerances. Depending on the extruder die, a nominal strand diameter of 0.2 mm – 6 mm can be handled with the CaliCut Post-extrusion System. The nominal length of an implant can be set from 1 mm – 200 mm.

Maximum flexibility

Before a strand enters the cutting section of the instrument, the belt length ensures sufficient cool down of the strand, so cutting can be executed with maximum precision. To meet a broad range of polymer formulation and throughput needs, the instrument is available with



Detail of rotary cutter



Detail of linear cutter



350 mm, 700 mm or even 1200 mm belt length. The cooling can be accelerated with compressed air.

The cutting of an implant is a crucial step, and smooth cutting surfaces depend greatly on polymer formulation and the cutting method applied. Therefore, the CaliCut Post-extrusion System can be equipped with two different cutting mechanisms: a rotary and a linear cutting blade. Both cutters can be parametrized to ensure the best possible cutting for all implant materials. The adjustment possibilities for different cutting cone geometries allow cutting solutions for diverse product qualities to be realized. As a production device, the CaliCut Post-extrusion System is suitable for up to 600 cuts/min.

Pharmaceutical application

The computer controlling of the CaliCut Post-extrusion System is installed into a rugged stainless steel housing that conforms with GMP guidelines. It can be placed upon or beside the instrument to accommodate the best possible line layout. The user interface is easy to operate, allows full access to all machine parameters and monitors the analytical performance with a live diagram of the measured strand diameter. The software features

different user levels with customizable access rights, secured and safe data export, and audit trail support for 21 CFR part 11 compliance. The CaliCut Post-extrusion System comes with complete IQ/OQ documentation.

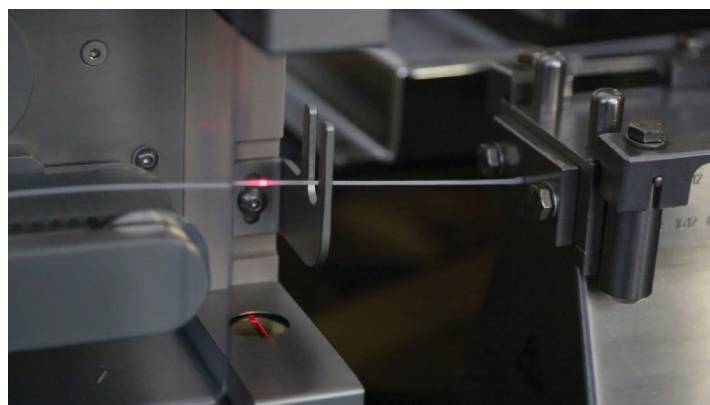
Given its great flexibility and interchangeable parts, the CaliCut Post-extrusion System can be set up for use in research and development as well as commercial manufacturing.

Dimensions CaliCut Post-extrusion System

- Length 530 mm
- Depth 400 mm
- Height 430 mm
- Weight ~50 kg

Dimensions control display

- Length 410 mm
- Depth 260 mm
- Height 400 mm
- Weight ~17 kg



Precise laser gauging

Technical specifications

Line speed:	Max. 18 m/min
Cutting speed:	Max. 600 cuts/min Nominal diameter: 0.2 mm – 6 mm
Nominal length:	1 mm – 200 mm
Diameter accuracy:	3 % ± 0.01 mm
Length accuracy:	1 % ± 0.1 mm
Belt length:	350mm (option 700mm, 1200mm)
Product collection:	Closed container system

Specifications may vary according to the machine configuration and product details.



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