Consistency and Quality in Drug Delivery and Formulation, Medical Device Manufacturing with

RONDOL'S 21MM TWIN-SCREW EXTRUDER

Optimum Performance, Cost and Resource Management in Drugs and Medical Device Manufacturing

RONDOL's 21mm twin-screw extruder makes it possible to manufacture:

- ✓ Solid oral dosage forms (tablets, hard and soft capsules)
- ✓ Orodispersible drugs (film granules, tablets)
- ✓ Semi solids (ointments, creams, pastes, gels, suppositories)
- ✓ Transdermal (implants, films)
- ✓ Extrudates for injection molding, calendaring or 3D printing of medicines, or medical devices
- ✓ Implants (ophthalmic, transdermal, vaginal)
- ✓ Medical plastics (strip, straps)
- ✓ APIs
- ✓ Co-crystals
- ✓ Dry and wet granulations
- ✓ Amorphous solid dispersions
- ✓ Solid lipid nanoparticles
- ✓ Plant extractions
- ✓ Cyclodextrins
- ✓ Bioavailability enhancement

Our unique set up **improves material flow**, facilitates **smoother mixing**, provides **superior temperature management** and **preserves the integrity of sensitive components** with varying melt-degradation properties, enhancing your medicines and medical device performance.

Key benefits of our extruder:

Durable material contact parts: Experience minimal abrasion and extend machine lifespan with our optimized components.

Easy to clean barrel: Ensure traceability with different sources of critical materials, thanks to inside liners which are easy to disassemble and clean.

Versatile screw design and die options: Cater to diverse R&D and production applications with our flexible design features.

Precise monitoring of process temperature with autonomous control for each of the 8 zones up to 300°C (450°C optional).

Smooth mixing of active pharmaceutical ingredients and proteins etc.

Integrated controls for feeders: Enhance operational convenience with our advanced control panel and compatible feeders from which you can inject in-the-barrel additional materials, additives and even gases.

SPECIFICATIONS SHEET

Length / Diameter	40:1
Nominal screw diameter	21mm
Machine material	Full stainless steel
Screw speed	0-300rpm (or 0-600rpm optional)
Screw configuration	Segmented screw design fully interchangeable
Footprint	1.2m2 / 12.9sq.ft
Dimensions	2000mm x 600mm x 1220mm (6.56ft x 1.97ft x 4.00ft)
Motor power	3.3KW
Electrical consumption	7.56KWh (standard's maximal temperature and speed: feeder + extruder + cast film die + haul-off winder film)
Torque output	55N.m per shaft maximum
Number of barrel zones	8 temperature-controlled zones (heating / cooling)
Temperature range	15-300°C (or 15-450°C optional)
Dies	Standard: strand die Options: cast film, strip, co-extrusion
Feeding	Options: main powder, pellet, or side feeder, liquid and/or gas feeders
Maximum output	Up to 8kg/hr (up to 16kg/hr optional)
Maximum pressure	100 bars
Product cooling systems	Options: air / stainless steel cooling systems
Plug in downstream equipment	Options: haul off winder (filament, film or strip), varicut pelletizer
Human machine interface	10.1" touch screen with PC-controlled data logging and audit trail (tablet optional)
Electrical power requirements	40 amp, 3 x 276/480V+1N+1PE (North America) 40 amp, 3 x 230/400V+1N+1PE (Europe)
Water supply requirements	15°C water, 4-6 bars
GMP Package (Option)	FAT IQ/OQ, SAT, CFR21 part 11, Materials certificates, Login etc