

For flexible and reliable compounding at outputs up to 150 kg/h, the PRISM TSE 36 HC twin-screw extruder is an ideal small production compounder. Segmented screw configuration and modular opening barrel design allow flexibility for the full range of polymer processes. Individual heat and cool to each zone gives accurate processing. PLC control with data logging and recipe storage ensures reliable and repeatable results.

PRISM TSE 36 HC

Production scale
modular twin-screw extruder



Applications:

- Compounding
- Masterbatch

Materials:

- Polymers
- Adhesives
- Ceramics
- Food

Production Scale

Modular Twin-Screw Extruder

The PRISM TSE 36 HC twin-screw extruder is ideal for making customer samples and small-scale production.

A horizontally split barrel, up to 40:1 L/D, is hinged for easy access to the screws, and the screws themselves have a simple removal device for quick and easy cleaning or configuration changes.

Control software is programmed to recognise a barrel extension and other plug-in ancillaries. Feeders and vacuum pumps can form part of the system.

The large colour touch screen interface incorporates on-screen data-logging as standard, with an option to download to a remote computer for archiving and analysis. The controls include recipe storage to pre-set extruder parameters for repeatable process conditions.

Each barrel section has independent temperature control with PID logic to give precise temperatures and save energy.

For scale-up calculations, a display on the touch-screen shows the levels of heating or cooling applied to each zone.

A low maintenance, brush-less 22 kW motor drives the screws at 750 rpm.

Thermo Electron (Stone) UK has a fully equipped Technology Centre for customer trials on PRISM equipment, and with worldwide representation, Thermo Electron Corporation supports customers globally.

Specifications and Accessories

PRISM TSE 36 HC

Ancillary equipment

Thermo Electron Corporation offers a full range of ancillary equipment to integrate with the PRISM TSE 36 HC twin-screw extruder, including pre-mixers, screen changers, chill rolls, strand pelletising lines, and an air-cooled face-cut system. Thermo has the ability and experience to design other non-standard ancillaries for special applications.

Face-cut Pelletising

For water-sensitive products or highly filled compounds, an air-cooled, face-cut pelletiser, the PRISM FCP 36, is available complete with blower and collecting cyclone.

Screen Changers

A fixed screen pack or simple manual screen changer can be fitted behind the strand die to allow direct filtration of products compounded in the extruder.

Strand Pelletising Options

Product from the PRISM TSE 36 HC can be converted using a traditional strand pelletiser with water or air-cooling. The PRISM VARICUT 36 pelletiser allows pellet length to be controlled between 1 and 3 mm.



Specifications

PRISM TSE 36 HC

Barrel length	L/D	28:1	28:1	40:1	40:1
Barrel bore diameter	mm	36	36	36	36
Screw diameter	mm	35.5	35.5	35.5	35.5
Channel depth	mm	6.7	6.7	6.7	6.7
Centre-line spacing	mm	29	29	29	29
Centre-line to radius ratio		1.61	1.61	1.61	1.61
Maximum screw speed	rpm	750	1000	750	1000
Power at maximum screw speed	kW	22	30	22	30
Torque per shaft	Nm	140	143	140	143
Torque/ (C-line ³)	Nm/cm ³	5.7	5.8	5.7	5.8
Barrel zones		7	7	10	10
Heater rating	W	24 x 750	24 x 750	36 x 750	36 x 750
Die heater rating	W	2 x 750	2 x 750	2 x 750	2 x 750
Extruder dimensions L x W x H	m	2.2 x 1.2 x 2.1	2.2 x 1.2 x 2.1	2.6 x 1.2 x 2.1	2.6 x 1.2 x 2.1
Scale-up data					
Internal free volume	cm ³	837	837	1196	1196
Peripheral surface area	cm ²	1791	1791	2559	2559
Surface area per unit free volume	m ² /l	0.21	0.21	0.21	0.21
Typical output	kg/h	20 to 120	20 to 150	20 to 120	20 to 150
Services					
Electrical power	Volt/ph/Amp	400V/3ph/150A	400V/3ph/200A	400V/3ph/150A	400V/3ph/200A
Cooling water 20 °C	Litres/min	50	50	50	50

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