Rheology Solutions

Rheology Solutions is the sole Australian distributor of this product range and we welcome the opportunity of discussing your application requirements.

We hope the information you are seeking is contained within this file. If you have any questions, or require further information please contact us. We look forward to being of further service.

Regards from the Team at Rheology Solutions.

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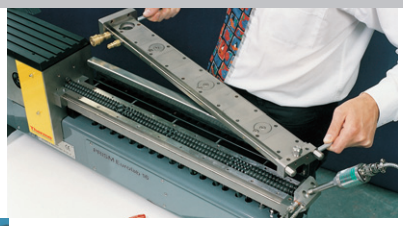
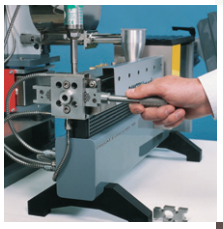
Product Specifications

PRISM EUROLAB 16

Modular twin-screw extruder

From sample batches of 50 g up to outputs of 10 kg/hr., the bench mounted 16 mm PRISM EUROLAB twin-screw extruder is the heart of a complete compounding and sample preparation system. The segmented screw configuration with modular barrel design give flexibility for the full range of polymer processes. PLC control with data logging and recipe storage gives reliable and repeatable results.





Applications:

- **Compounding**
- **Masterbatch**
- **Filter test**
- **Bown film**
- **Sheet**

Materials:

- **Polymers**
- **Adhesives**
- **Ceramics**
- **Pharmaceuticals**
- **Food**
- **Cosmetics**

Bench-top Modular Twin-screw extruder

The PRISM EUROLAB 16 twin-screw extruder is used for research, development, quality control, and small-scale production.

A horizontally split barrel, up to 40:1 L/D, has a lift-off top half for easy access to the screws, and the screws themselves have a simple removal device for cleaning and configuration changes.

The segmented top barrel half is constructed in modules and is easy to reconfigure. Barrel segments are available for feeding solids and liquids or for venting. Secondary feeders and vacuum pumps can form part of the system.

A rugged touch screen interface incorporates data acquisition 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. PID heater logic gives precise temperature control and saves energy.

The Digital Servo drive accurately controls speed and torque of the sealed, low maintenance, brushless, 1.25 kW motor at 500-rpm screw speed. A high-power 2.5 kW motor is available as an option with 1000-rpm screw speed.

Academic customers are using PRISM EUROLAB 16 twin-screw extruders in research and teaching laboratories, where many different small samples can be prepared in a short time with minimum product waste.

With a fully equipped Technology Centre for customer trials, and worldwide representation, Thermo Electron Corporation supports customers globally.

PRISM EUROLAB 16

Ancillary equipment

Thermo offers a full range of ancillary equipment to integrate with the PRISM EUROLAB twin screw extruder, including pre-mixers, screen changers, chill rolls, strand pelletising lines, an air-cooled face-cut system, and cast sheet or blown film lines.

Strand Pelletising Options

Product from the PRISM EUROLAB can be converted using a traditional strand pelletiser with water or air-cooling. The PRISM Varicut 16 pelletiser allows pellet length to be controlled between 1 and 3mm.

Face-cut Pelletising

For water sensitive products or highly filled compounds, an air-cooled face-cut pelletiser the PRISM FCP 16 is available complete with blower and collecting cyclone.

Screen Changers

A simple manual screen changer can be fitted behind the strand die to allow pressure filter tests to be made directly on products compounded in the twin-screw.

Specifications

Barrel Lenght	L/D	25:1	25:1	40:1	40:1
Barrel Bore Diameter	mm	16	16	16	16
Screw Diameter	mm	15.6	15.6	15.6	16.6
Channel Depth	mm	3.3	3.3	3.3	3.3
Centre-line Spacing	mm	12.5	12.5	12.5	12.5
Centre-line to Radius ratio		1.56	1.56	1.56	1.56
Maxiumum Screw speed	rpm	500	1000	500	1000
Motor Power at Maximum Speed	kW	1.25	2.5	1.25	2.5
Torque per shaft	Nm	12	12	12	12
Torque/(C-line3)	Nm/cm^3	6.1	6.1	6.1	6.1
Barrel zones		6	6	10	10
Heater rating	W	5x350	5x350	9x350	9x350
Die heater rating	W	250	250	250	250
Extruder Dimensions					
LxWxH	m	1.5x7x1.5	1.5x7x1.5	1.5x7x1.5	1.5x7x1.5
Scale-up data					
Internal Free Volume	cm^3	68	68	109	109
Peripheral Surface Area	cm^2	316	316	505	505
Surface Area per Unit Free Volume	$m^2/1$	0.47	0.47	0.47	0.47
Typical output	kg/h	0.5 to 5	0.5 to 10	0.5 to 5	0.5 to 10
Services					
Electrical power	Volt/ph/Amp	220V/1ph/20A	400V/3ph/20A	220V/1ph/25A	400V/3ph/25A
Cooling Water 20 deg C	Litres/min	5	5	5	5

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