LAB TECH ENGINEERING COMPANY LTD

Mini-Scientific

Mini Scientific Line Series of

Laboratory Machines for Polymer Processing











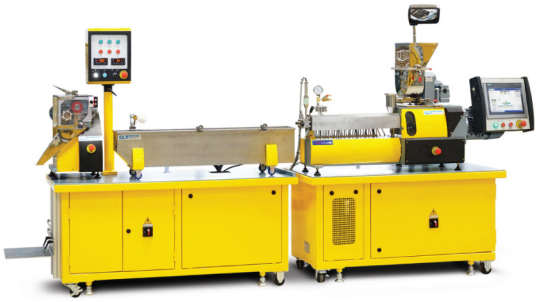

MACHINE CATALOUGE

LAB TECH ENGINEERING COMPANY LTD

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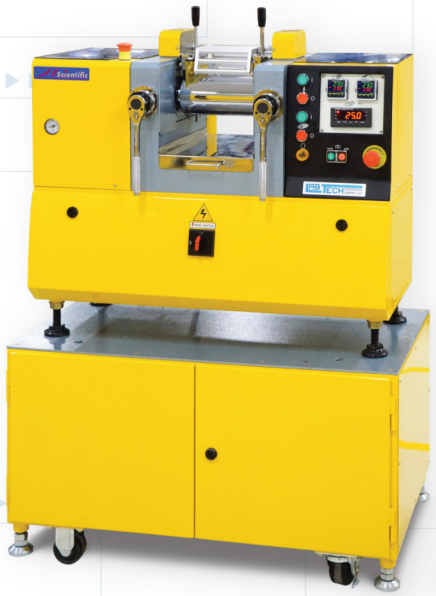
Mini Scientific Two-Roll Mill

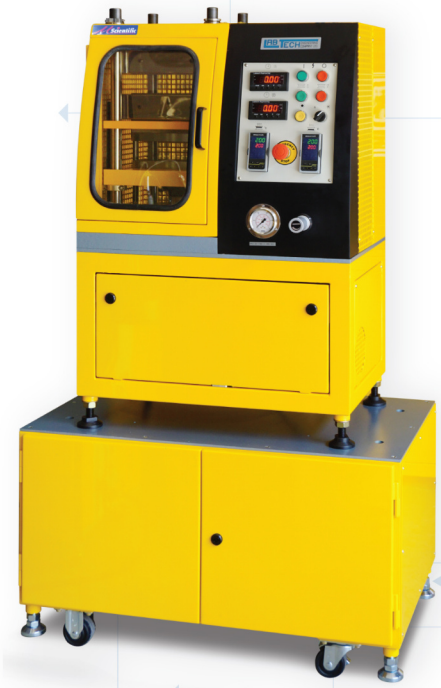
The Mini Scientific Benchtop Two-Roll Mill type is intended mainly for learning institutes and for laboratories where a smaller batch size is preferred compared to our range of floor mills. The machine features ratchet wrenches with micrometric scales for precise nip gap adjustment and a variable speed roll drive and electric roll heating system for an even temperature distribution.



Technical Data for LRM-M-100

Roll Diameter	100 mm
Working Width	150 mm
Max Temperature with Electric Heating	300°C
Dimensions (L x W x H)	970 x 590 x 1360 mm

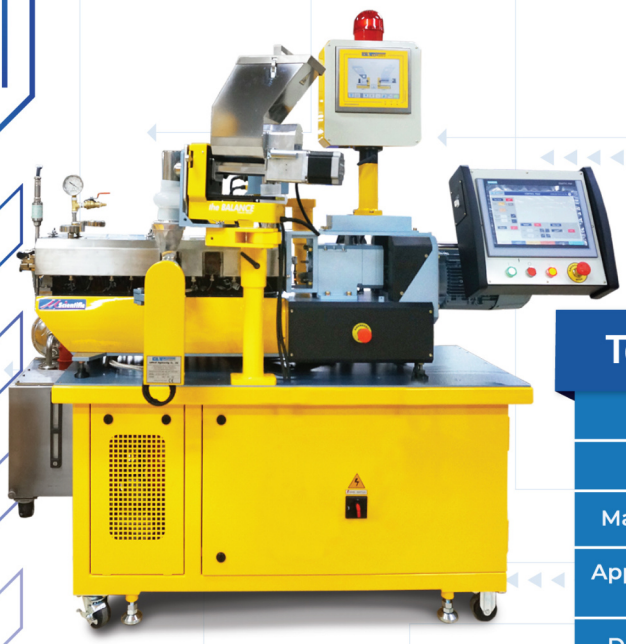
Mini Scientific Hydraulic Press



The Mini Scientific Benchtop Hydraulic Press features a two separate sets of electric heating platens and water cooling platens with zigzag water channels, and is also available as a single set of pressing platens with combined electric heating and water cooling on the same platens. The benchtop-mounted press is offered in two max platen pressures of 20 MT and 30 MT and they come with additional features including two digital temperature controllers, one digital timer controlling both the heating and cooling cycle, as well as a compact, custom-built high-power hydraulic system.

Technical Data	LP20-B	LP30-B
Max Platen Pressure	20 MT	30 MT
Platen Sizes (others on request)	200 x 200 mm	300 x 300 mm
Max Daylight per Platen Set	75 mm	
Max Platen Temperature	300°C (available in high-heat version 450°C)	
Dimensions (L x W x H)	730 x 645 x 1100 mm	900 x 750 x 1150 mm

Mini Scientific Twin-Screw Extruders

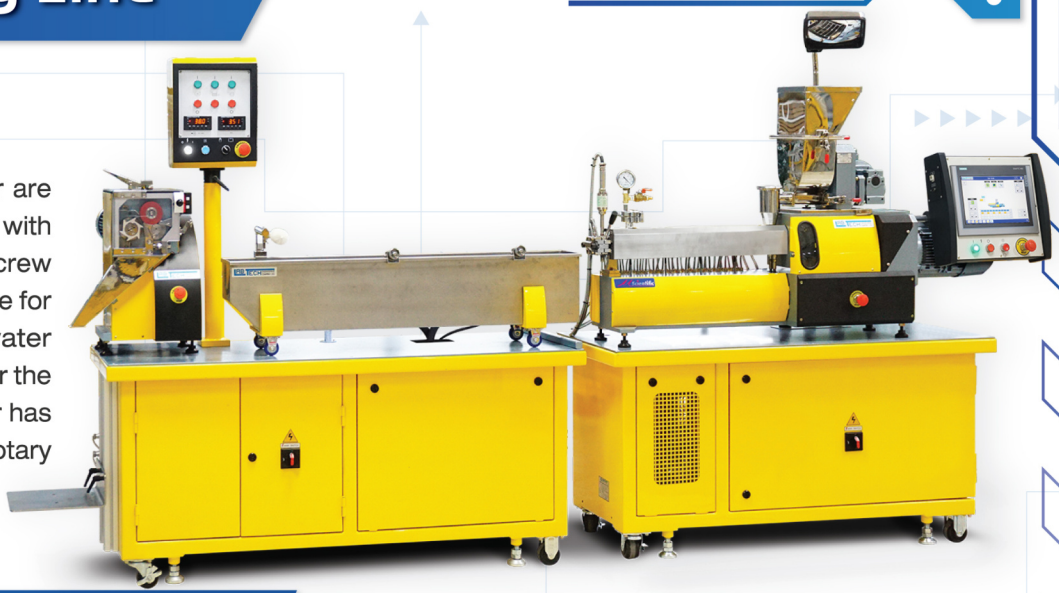


Our twin screw extruders are designed to process polymers in both powder and pellet form. The 12 mm Co-Rotating Twin-Screw Extruder is ideal for handling very small batches, while the 16 mm Co-Rotating Twin-Screw Extruder is suitable for larger batch sizes. Both extruders feature a modular clamshell barrel and a water cooling and electric heating system that ensures precise temperature control. For even greater flexibility in material processing, the screws are available in various configuration and an optional side feeder can be integrated, making them suitable for research and compound production.

Technical Data	LTE12	LTE16
Max Screw Speed	800 RPM	800 RPM
Motor Power	2.2 kW	2.2 kW
Max Barrel Temperature	400°C	400°C
Approximate Max Output (LDPE)	4 kg/hr	5.5 kg/hr
Dimensions (L x W x H)	1600 x 700 x 1795 mm	1875 x 780 x 1845 mm

Mini Scientific 16 mm Twin-Screw Compounding and Pelletizing Line

The Water Bath and the Pelletizer are mounted on the same sub cabinet with the same level as the Twin-Screw Extruder to form a convenient base for the entire pelletizing line. The water bath features a vacuum device for the strand suction, while the pelletizer has a high-quality carbon steel rotary cutting knife with six blades.



Technical Data for LZ-80

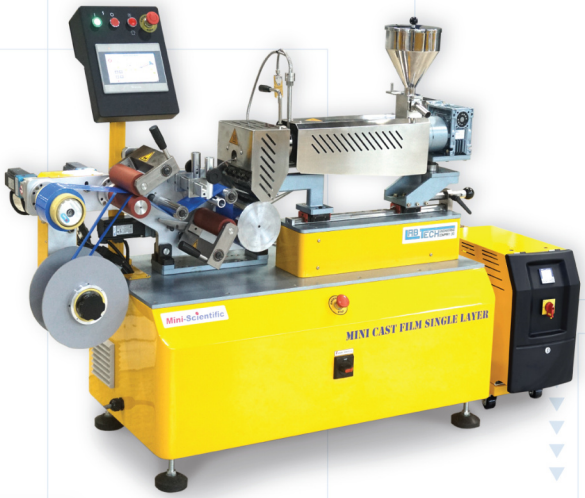
Rotary Knife Speed	50-1400 RPM
Pellet Length	Standard : 3 mm Variable In-Feed : 1-5 mm
Dimensions (L x W x H)	435 x 580 x 590 mm

Technical Data for LWB-40

Bath Capacity	40 L
Dimensions (L x W x H)	245 x 1200 x 420 mm

Mini Scientific Single-Layer Cast Film Line

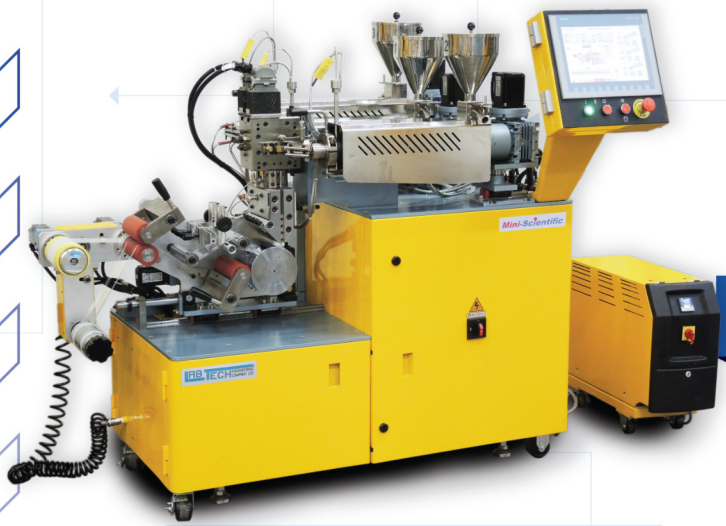
Our Mini Scientific Single-Layer Cast Film Line holds a lot of possibilities to achieve excellent developments of plastic films for many applications of professional laboratory needs at an affordable cost. Equipped with a Mini 16 mm Single-Screw Extruder with a downward-facing flat die and a 90° adapter, this line features an adjustable vertical gap to reduce necking. And it also includes a rubber pressing roll that pushes the film towards the chill roll to ensure contact with the chill roll for effective film cooling and prevent it from slipping out.



Technical Data for LMCR-150

Chill Roll Width	150 mm
Max Film Width	115 mm
Max Processing Temperature	300°C
Total Electric Consumption	12.3 kW
Dimensions (L x W x H)	1610 x 745 x 1175 mm

Mini Scientific 3 & 5 Layers Co-Ex Cast Film Line

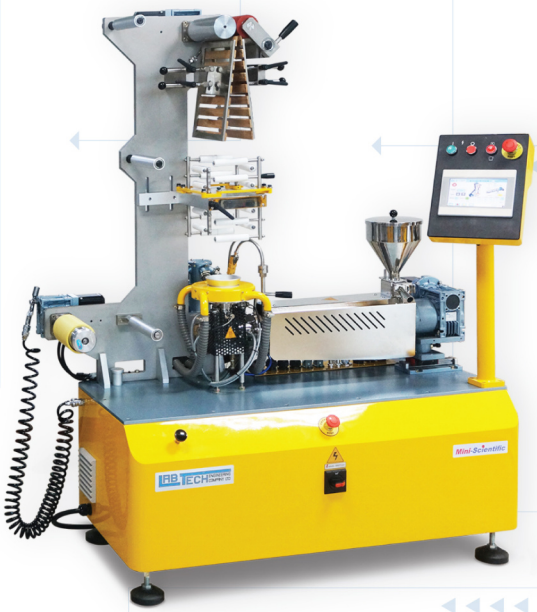


Our Mini Scientific 3 & 5 Layers Co-Extrusion Cast Film Line is designed to provide a compact laboratory-scale solution for researching and developing new cast films. This line features 3 units of Mini 16 mm Single-Screw Extruders for producing film with 3 or 5 layers. It is also equipped with a 5-Layer Feedblock which can be configured to A-B-C or A-B-C-B-A film layer structure and can also be optionally equipped with a Weighing Hopper for precise feeding.

Technical Data for LMCR-150-COEX

Chill Roll Width	150 mm
Max Film Width	115 mm
Max Processing Temperature	300°C
Total Electric Consumption	26.1 kW
Dimensions (L x W x H)	1750 x 1196 x 1418 mm

Mini Scientific Single-Layer Film Blowing Line



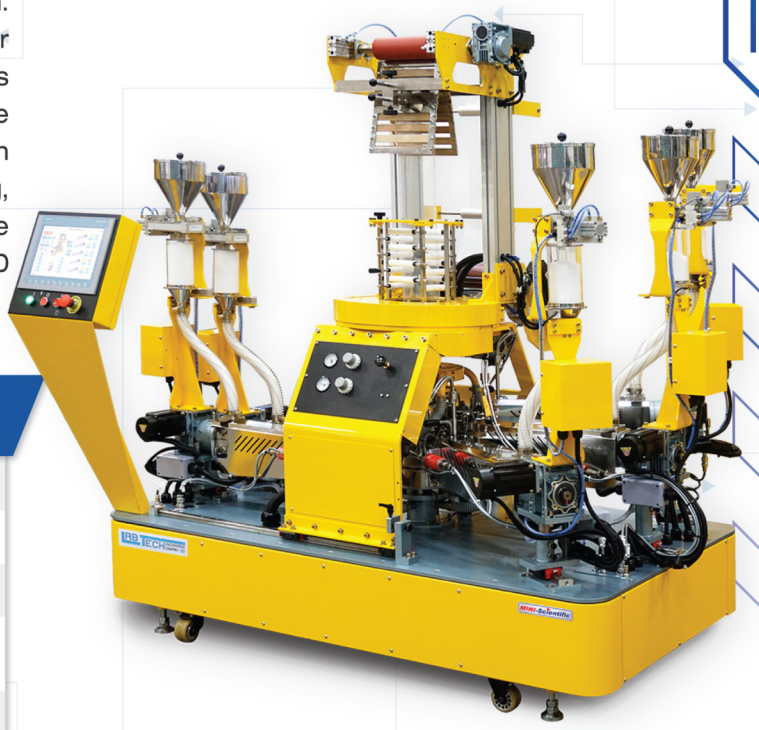
Our Mini Scientific Single-Layer Film Blowing Line is a practical choice for R&D in film-blowing applications with its compact design taking up little floor space offering an economic alternative for a quality control line of masterbatches. This line features a Mini 16 mm Single-Screw Extruder, a Spiral Mandrel with a 25 mm annular die lip diameter for uniform film blowing production, and an easy-to-use computerized LCD touchscreen control panel.

Technical Data for LMF-200

Max Layflat Film Width	180 mm
Max Line Speed	15 m/min
Nip Roll Width	200 mm
Total Electric Consumption	5.1 kW
Dimensions (L x W x H)	1485 x 875 x 1665 mm

Mini Scientific 3 & 5 Layers Co-Ex Film Blowing Line

Our Mini Scientific 3 & 5 Layers Co-Ex Film Blowing Line is a practical co-extrusion solution for multilayer film production. Our compact design makes it easy to fit in most labs, ideal for developing new film compositions and evaluating additives like colorants, fillers, and performance inhibitors. This line features 5 units of Mini 16 mm Single-Screw Extruders, each equipped with loss-in-weight hoppers for precise feeding, as well as a compact oscillating film tower to minimize gauge variation effects and an easy-to-use computerized LCD touchscreen control panel.

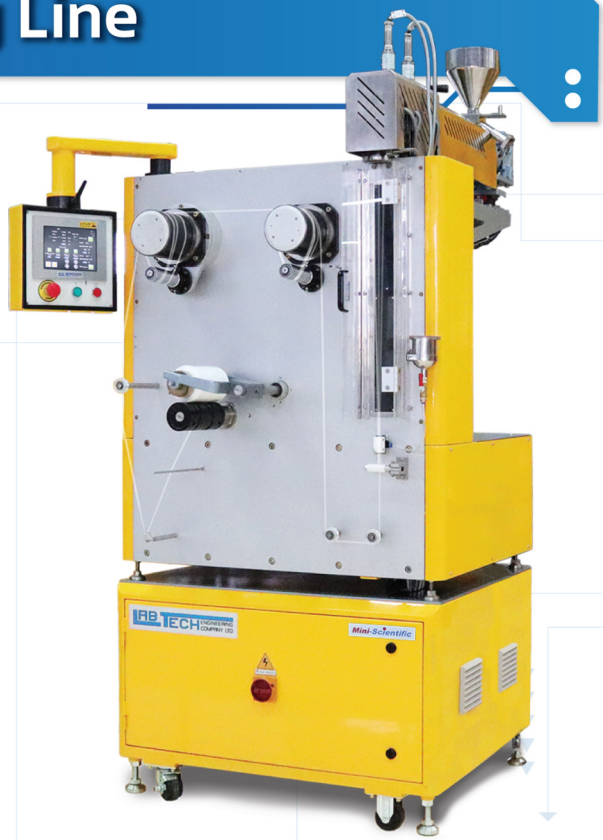


Technical Data for LMF-200-COEX

Max Layflat Film Width	180 mm
Max Line Speed	15 m/min
Nip Roll Width	200 mm
Total Electric Consumption	3 Layers : 19.1 kW 5 Layers : 28.5 kW
Dimensions (L x W x H)	2240 x 1498 x 2014 mm

Mini Scientific Melt Spinning Line

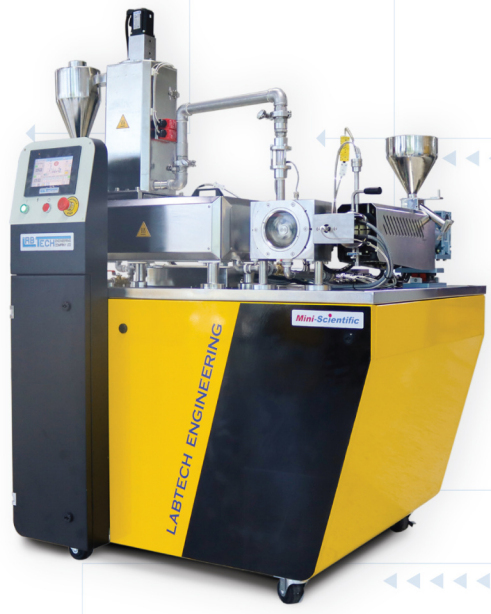
The NEW Mini Scientific Melt Spinning Line is a comprehensive solution for laboratory filament yarn extrusion. This compact and energy-efficient system enables quality testing of masterbatch color consistency and drives research in compound filament development at a minimized material consumption. Compatible with various polymers, including PET, PP, PA, and PLA, it produces high-quality filaments with a smooth surface, high tensile strength and flexibility.



Technical Data for LMSP

Approximate Max Output (Single-Screw Extruder)	2.3 kg/hr
Spinneret Die Diameter	0.3 mm
Max Godet Roller Temperature	200°C
Max Wind-Up Speed	320 m/min
Dimensions (L x W x H)	1385 x 1165 x 2195 mm

Mini Scientific Underwater Pelletizing Line



Our NEW Mini Scientific Underwater Pelletizing Line is specifically designed to be cost-effective for market sampling and laboratory works, allowing for the production of raw materials, compounds, blends, and masterbatch in a minimized floor space. This line features fully immersed pellet cutting with a closed-loop water circulation system for clean production and contaminant-free output to achieve nice-shaped clear-cut pellets from all kinds of plastics, especially those with hydrophobic properties and medium to low melting indexes such as PP Masterbatch, PE (LDPE, HDPE, LLDPE) Masterbatch, PETG, PA, ABS, TPU, TPE, PBAT, PLA, etc.

Technical Data for LMUP

Approximate Max Output (Single-Screw Extruder)	1-2 kg/hr
Knife Rotating Speed	10-3000 RPM
Die Plate	1 hole, Ø 3 mm
Max Extruder Heating Temperature	300°C
Max Centrifugal Impeller Speed	4000 RPM
Dimensions (L x W x H)	1250 x 1200 x 1770 mm

Mini Scientific High-Speed Mixer

The Mini Scientific High-Speed Mixer is designed for fast and efficient mixing of dry powders commonly used in laboratory and industrial settings, such as Plastic Powders, Minerals, Pigments, Fillers, Additives, Pharmaceutical Powders, etc. Available in three models with bowl sizes of 10, 5, and 1.5 liters, its modern design includes a sturdy subcabinet with an integrated control panel and features infinitely variable speed motor which can be controlled by a powerful programmable frequency inverter with high starting torque.

Technical Data	LMX1.5-VS	LMX5-VS	LMX10-VS
Mixer Bowl Volume	1.5 L	5 L	10 L
Impeller Speed	500-5000 RPM	500-3000 RPM	500-3000 RPM
Motor Drive	0.9 kW	1.5 kW	2.2 kW
Dimensions (L x W x H)	580 x 360 x 600 mm	690 x 450 x 690 mm	690 x 450 x 770 mm

Mini Scientific 3D Filament Pharmaceutical Line

The 3D Filament Pharmaceutical Line features a 12 mm Twin-Screw Extruder Type LTEP 12-40 which is specially designed as a suitable and economical line to process medical-grade resin materials for producing 3D Filaments with diameters of 1.75 mm, 2.85 mm and other diameters which are available upon request.

Technical Data for LTEP12-40

Max Screw Speed	800 RPM
Motor Power	2.2 kW
Max Barrel Temperature	300°C
Approximate Max Output (LDPE)	4 kg/hr
Dimensions (L x W x H)	1350 x 590 x 1540 mm

All sections of the line from the extruder up to the downstream equipment of calibration cooling bath, haul-off and wind-up units are systematically designed to comply with the GMP standards of a laboratory line in processing medical-grade resins.