Labtech Engineering

Quick Guide to our full range of Scientific polymer processing machines
For laboratory and pilot plant applications
Twin Screw Extruders with Ø 12 and 16 mm. with Modular Barrels for Optimum Flexibility

12 and 16 mm. Twin Screw Extruder

Available with gravimetric feeders which are modified to meet the requirement of feed rates adapted to the output of these small twin screw extruders

Our 16 mm twin Screw is available with forced air cooling for all barrel zones as well as side feeders

Available in manual or fully computerized touch screen controllers with possibility to download and process all data on a PC.

16 mm. Twin Screw Powder Coating line

Forced air cooled barrel

Side feeder
Twin Screw Extruders with Ø 20 and 26 mm
with Modular Barrels for Optimum Flexibility

Modular co-rotating twin-screw extruders available with clamshell barrels and our unique high tool steel barrel inserts. With screw diameters of 12, 16, 20 and 26 mm and L/D ratios up to 60. Suitable for laboratory, research and small batch productions.

Single elements mounted on hexagonal shafts of screws for optimum flexibility of screw configurations.

Available with both single and twin-screw hopper feeders, vacuum pump with multiple vent outlets on barrel, twin-screw side feeder, liquid feeders, quick screen changer and a multitude of screw element types and combinations.

NEW 26 MM COMBI TWIN
With co- as well as counter rotating screws with a gear selector for easy change over

Optional Computerized Controller equipped with LCD touch screen

High Output 26 mm. Maxi Compounder with 22 kW drive motor and 1200 max screw RPM

26 mm twin with 48 L/D and 3 gravimetric feeders
Single Screw Extruders

6 sizes with Ø 8, 12.5, 20, 30, 40, 45 mm.

Single Screw Extruders 12.5, 20 mm.

The amazing 12.5 mm. conical extruder which can handle regular pellets

The 12.5 and 20 mm extruders are also available as a Table Top versions

Single Screw Extruders 25, 30 mm.

Single Screw laboratory extruders with diameters from 8 to 45 mm, all with an L/D ratio of 30. The 25, 30, 40 and 45 mm extruders are available both as vented or non-vented versions and with plain screws or equipped with Maddock mixing elements as well as a mixing section on the screw tip.

C-clamp connection to extruder for fast and easy attachment of downstream equipment.

Single Screw Extruders 40, 45 mm.

Our equally amazing 8 mm ultra micro extruder that can be fed with regular pellets
Pelletizing Systems
From strand to under water pelletizer

Our range of pelletizing systems are complete with the introduction of our new underwater pelletizing system which is suitable for our 20 and 26 mm twins as well as our 45 mm single screw extruders.

Strand Pelletizers are available from our smallest version with only a few kg output to over 400 kg/hr. And the unique SideCut Pelletizer that can cut anything a pair of scissors can, from the softest TPE to the most rigid engineering polymers. Available in many sizes with output of up to 900 kg/hr.

Air-Cooled Die-Face Cutter with Parallel-axes die and rotor design only suitable for PVC and other "dry" resin types like certain grades of thermoplastic rubber which does not stick to the die.

The Amazing Sidecut Pelletizer that cuts anything a pair of scissors can and more.
Single Layer Film Blowing Lines
From lay flat of only 100 up to 550 mm.

- **Compact film blowing line** with 20 mm extruder for max 200 mm lay-flat film.

- **Single and Multi-layer film blowing lines** for film lay-flat widths of up to 550 mm. With many features such as twin channel air cooling ring, variable speed haul-off and nip-rolls, etc.

  The film blowing attachment is connected to our single screw extruder via a C-clamp on the flange of the extruder unit. The attachment is built up on an individual self-supporting frame with lockable casters and thus can be easily removed from the extruder.

  The die is mounted on the two tower aluminum pillars, adjustable in height to align with the extruder flange.

  The film blowing attachment is equipped with film bubble stabilizing cage and synchronous adjustable film collapsing frames with polished teak wood or carbon roller gate rods.

- **Large size for lay flat up to 550 mm**

- **Optional motorized height adjustment film tower.**

- **CO-EX film blowing lines with MDO.**

Also available with in-line or off-line MDO film stretching attachment.
Multi Layers Film Blowing Lines
Co-Ex Film Blowing Lines With up to 11 Layers of blown film

9-layers blown film line using three 30 mm and four 25 mm extruder 30 L/D

7-layers blown film line using five 25 mm, 30 L/D extruders with adjustable height

9-layers blown film line using two 30 mm and seven 25 mm extruder 30 L/D with Gravimetric hopper feeders and Dual channel high efficiency air ring, Stabilizing film bubble cage, Film bubble size controller, Oscillating nip roll.

- High cooling efficiency air ring and Pancake type die
- Oscillating Nip-Roll Haul Off with A-frame
- Automatic Web Guide system
- Splitting Knives
Our large size chill roll attachments have roll diameters of 175 mm and are equipped with heavy duty hydraulic lay on of both lower and upper rolls against the center roll. Available in various roll widths up to 700 mm. Individual water tempering or oil heating for each roll. Equip with motorized tilting mechanism, the roll stack can be placed in any position from horizontal to vertical or inclined at 45 degrees. The Chill roll attachment is supplied with individual servo motor drives for each roll.

We offer a large range of floor versions, connected to our single screw extruders of sizes 25, 30, 40 and 45 mm all with 30 L/D or to our twin-screw extruders of sizes 16, 20 and 26 mm.

Available with unwinds for laminations and coatings. Windups are available in single or two station versions with manual or automatic tensioning controls.

All chill rolls are made from high grade tool steel with hard chrome and mirror polish surface. The rolls are cored with spiral channels for water cooling and heating. Polishing top roll with pneumatic or hydraulic high pressure lay-on to the middle chill roll.

Flat dies with adjustable lip gaps, and widths of up to 150 mm for bench top version and up to 700 mm for the floor versions. Standard die versions can be used for producing thin films of 10 microns and sheets up to 15 mm thickness. Special dies are available for larger thicknesses and with exchangeable die lips.
Co-Ex Chill Roll Lines
With Up to 9 layers of cast film

High Speed Chill Roll Attachments. For films down to 10 microns with a line speed up to 100 m/minute

Large High Speed Co-Ex Chill Roll Attachments

The picture below shows an MDO unit in line with a co-ex cast film line which is equipped with two edge cutting stations one before the MDO unit and the other at the wind up station

The Feed Blocks supplied with our co-extrusion lines are made for up to 9 layers

Medium economy size Chill Roll Line

From 2 to 9 layers Available with a large range of chill rolls with die sizes from 100 to 800 mm and with extruder sizes from 12.5 to 45 mm

Heavy Duty Chill Roll lines with 300 to 400 mm roll widths

Also available with in-line or off-line MDO film stretching attachments

Single and 2-station MDO units with roll widths from 300 to 800 mm
World’s Smallest Polymer Processing Lines
The Amazing Ultra Micro Series

The Ultra Micro Film Blowing line
The Ultra Micro Chill Roll Line
The Combi film blowing and chill roll line with one common extruder
The Ultra Micro 3-Layers Co-Ex Blown Film line with 3 extruders
The Ultra Micro 3-Layers Co-Ex Chill Roll Line with 2 extruders

Designed by our Engineers to reproduce larger lab and production lines based on our Ultra small extruder with conical screw that can be used with regular pellet sizes.
The lines are designed for extrusion of small diameter Tubing, Pipes and Hoses with a diameter of up to 50 mm and with any desired wall thickness. It can also be used for other profile types with similar size range. The lines comprise of the extruders of sizes from 20 to 45 mm, equipped with a die, downstream calibrating vacuum tank with water spray for cooling and a caterpillar type haul off. The calibrating and sizing unit inside the tank together with the vacuum ensures high precision production of the pipe or tube.

A Bi-Lumen die produced the tube shown above left. This tube has an outer diameter of only 2 mm and has two cavities (Bi-Lumen).

Our Medical Tubing lines are made with the latest technologies. They are built based on technologies with license from a European manufacturer with many years experiences in this field.
High Speed 3D Filament production line
With vacuum calibration for a high strand diameter precision of +/- 0.025

This special “High Speed High Precision Filament Line” is made specifically to produce high precision filaments with an exact diameter from 1.75 to 3.00 mm with line speeds up to 100 m/min ensuring a homogeneous filament without any voids.

3D strand dies made for ABS and PLA as well as most other polymer and compound types.

A 4-meter long filament calibration water bath is comprised of a stainless steel vacuum sizing/cooling tank and calibration bath equipped with water heater. The Vacuum section with heavy duty hinged Plexiglas lid and quick vacuum release valve mounted on top of the lid. It has a calibration tube inside the vacuum chamber and a venturi strand suction units at the end of the water cooling bath.

High Speed 3D Filament Production Line

High Speed Two-Station Wind up unit
With touch screen control

High Speed Caterpillar Haul off unit
And optional laser measuring unit

4.0 meter length Stainless steel vacuum sizing/cooling and calibration bath with water heater
Fully automatic hydraulic bottle blow moulding attachment can be attached to our 20 and 25 mm single screw extruders.

Our range of Blow Moulding lines produces single layer or multilayer bottles of up to 125 ml size and can produce bottle in practically all resin types that can be blown.

Our new larger bottle blow moulding attachment can produce bottles of up to 250 ml. The attachment is hydraulic with high clamping force. The co-ex 2 and 3 layer dies are made with adjustable parison thickness and they produce a very even layer thickness over the entire bottle.

The lines used a streamlined die for optimum colour dispersion. A minimum amount of purging is needed for colour change over.
Filter Testers in full Conformity to
the DIN Norm

Computerized Filter Tester

Fully computerized version with on board large capacity PC featuring a practical keyboard and mouse for convenience in entering all the test data. This version automatically calculates the filter test value.

WE WERE FIRST IN THE WORLD TO PRODUCE FILTER TESTERS

Filter Tester with Gear Pump for accurate quality testing and standardization of master batches and compounds.

Our filter test head with gear pump is designed specifically for easy cleaning where the melt flows in a straight line from extruder through gear pump all the way up to the filter. The filter is easily installed and removed with our quick clamping system.

Standard filter sizes from 40 down to 5 microns, as well as DIN sizes. Available for both our 20 and 25 mm extruders.

New Compact Filter Tester type with 20 mm extruder
Two-Roll Polymer & Rubber Mills

The MicroScientific Bench Top Two roll mill type LRM-M-100 is intended mainly for learning institutes and for laboratories where a smaller batch size is preferred.

Bench Top Two Roll Mill Type

Polymer mills available with roll diameters of 100, 110, 150 and 200 mm. Roll heating is available in 3 ways, with our Standard 3-Zone or TRUE 3-Zone electric roll heating system, with Oil heating and cooling system, or with Electric roll heating and water cooling system.

From manual versions to fully automatic hands-free computerized mills used for colour matching, quality control and research.

New modern design on all our Two Roll Mill

Rubber mills with water cooled or oil heated and cooled rolls. With variable speed heavy-duty direct drives to the rolls.

Two Roll Rubber Mill sizes from 110 to 200 mm

Automatic Rollover Device

Rubber mills have direct drive to the rolls with heavy-duty helical bevel gears

Optional fully computerized operations from an LCD color touch screen with an extremely user-friendly software design
Hydraulic Press

Benchtop Laboratory Hydraulic Presses

Modern designed steel cabinet with curved sliding front door. The front door is equipped with a large Plexiglas window and the control cabinet is recessed so that it is covered by the front door when opened.

Fully Automatic Electric Press With no hydraulics

The up stroke pressure is achieved by a ball screw which is driven by an AC gear motor.

Laboratory presses from 20 to 80 MT platen closing force, with double set of heating and cooling platens as standard.

Available with fully automatic platen insert cooling system, as well as many platen sizes and control options.

Presses with optional automatic platens insert cooling system

ASTM Presses with high precision chilled water cooling system
High Speed Mixers

Bench Top Mini Mixers

Laboratory and pilot plant variable speed fluid high-speed mixers in high polished stainless steel

Practical high speed mixers for homogeneously mixing of all kind of powders.

25 and 75 liter pilot plant high-speed fluid mixers with infinitely variable impeller speeds, automatic mixing cycles and optional water cooling of the impeller.

The computer version with colour LCD touch screen controls is made from our very own user-friendly software design to provide easy operation of the mixer as well as printing of graphic and data of all running parameters via a PC.

Bench top 10, 5 and 1.5 liter mini high speed mixers with infinitely variable speed impeller drive and easy-to-clean components

High Power Jacketed High Speed Laboratory Mixers with optional cooling mixer
Our production facilities

We recently acquired a factory building next door which has doubled our production and office area so that we now have a total of 10,000 square meters. This expansion will enable us to increase the productions substantially so that we are able to meet the ever increasing demand for many years to come.
Our application test laboratory has a large range of machines, a few shown here. These are available at all times for you to test whenever convenient for you. We can also test these machines for you in accordance to your specific requirements.
Contact Us:
For more information regarding our wide range of Polymer processing laboratory machines you are most welcome to contact us directly on the below address, email and phone number.

Or if you prefer, please check our website for addresses of our agents worldwide

Labtech Engineering Co., Ltd
Bangpoo Industrial Estate, 818 Moo 4, Soi 14B, Sukhumvit Road, Praksa, Muang, Samutprakarn 10280, Thailand

Phone: 66-2-709 6959
Fax: 66-2-710 6488 and 89
Email: labtech@labtechengineering.com
Website: www.labtechengineering.com