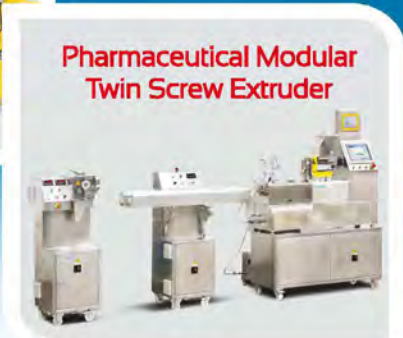


# Labtech Engineering

Quick Guide to our full range of *Scientific* polymer processing machines  
For laboratory and pilot plant applications



Pharmaceutical Modular  
Twin Screw Extruder



**LAB TECH** ENGINEERING  
COMPANY LTD

## Twin Screw Extruders with $\varnothing$ 12 and 16 mm with Modular Barrels for Optimum Flexibility



**12 and 16 mm  
Twin Screw Extruder**



**16 mm Twin Screw  
Powder Coating line**

The Micro Scientific table top 12, 16 mm co-rotating twin screw extruders with modular build up of the clam shell barrel, This twin screw extruder is available with up to a 52 L/D length



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 equipped 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 Extruder with downstream  
Water Bath and Pelletizer**



**Forced air cooled  
barrel**



**Side feeder**

## Twin Screw Extruders with $\varnothing$ 20 and 26 mm with Modular Barrels for Optimum Flexibility



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

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



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.

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



Optional  
Computerized  
Controller equipped  
with LCD touch  
screen

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



## Twin Screw Extruders with $\varnothing$ 36 mm with Modular Barrels for Optimum Flexibility

The new high output 36 mm twin screw extruder with segmented screws on high torque splined shafts and closed barrel modules with PM-HIP steel linings. With barrel lengths up to 60+ L/D and screw RPM of 900 for standard and 1200 for the *Maxi36Compounder*

The modular section barrel is equipped with thick barrel lining inserts made for very high wear resistant PM-HIP steel. And the screw elements are also made for very high wear resistant PM-HIP steel. The screws are built up from individual elements mounted on the splined hardened shafts.



The drive section with heavy duty gear box and large motor is covered with a sliding door with a large acrylic window both on front and rear which gives a very open and easy access to these components.

Heavy Duty Drive System



Highly Sensitive Torque Limiter



### 36 mm High Output Twin Screw Extruder Line



### 36 mm Twin Screw Extruder



The computerized control has full visualization of all extruder parameters on the touch screen

The entire barrel is covered with modular high polished stainless steel panels. This makes the cover very easy to clean. The modular panels are easy to remove with only one key lock for each unit. And with this it is very easy and fast to get access to the barrel and to mount additional side or top feeders.



Hopper Feeder



# Single Screw Extruders

6 sizes with  $\phi$  8, 12.5, 20, 30, 40, 45 mm

## Single Screw Extruders 12.5, 20 mm



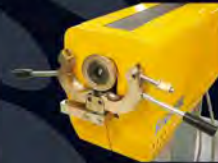
The amazing 125 mm conical extruder which can handle regular pellets

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

Computerized weighing hopper extruder feed system for co-ex lines



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.



Our equally amazing 8 mm ultra micro extruder that can be fed with regular pellets with L/D Ratio of 30 and option of 40 L/D



## Single Screw Extruders 25, 30 mm



## Single Screw Extruders 40, 45 mm



# Pelletizing Systems

From strand to underwater pelletizer



## Strand Pelletizers

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 extruder.

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.



## Air Cooled Die-Face Cutter



The Amazing Sidecut Pelletizer that cuts anything a pair of scissors can and more.



## Side Cutter Pelletizer



## Underwater Pelletizing

# Single Layer Film Blowing Lines

Type **LF-250, LF-400, LF-600**

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



**Compact Film Blowing Line**



**Medium size Film Blowing Line**

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 with a C-clamp on the flange to 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.

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



**Option motorized height adjustment film tower.**

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

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



## DOWNWARD Single Layer Blown Film line with Water quenching of film bubble

Single lip Air Ring



Water quenching  
and Collapsed A-Frame



Also available for  
multi layers Co-Ex  
blown film

The LWQF-400 is a water quenching film blowing attachment for downward extrusion of the film bubble. The melt coming out of the single die is blown up in same way as with conventional blown film system but it is here directed downward and is firstly lead through an air ring, after which it is blown up to required size and led through a water quenching ring where the film is in immediate contact with a water curtain which will cool down the film instantaneously. After passing the water quenching unit, the film bubble is collapsed in an A-frame and entering the lower set of nip-rolls. The water on the flattened film is removed with squeegees and finally passed through a heating tunnel for efficient removal of all water.



Film drying box is equipped with hot air chamber for efficient removal of all water on the film.

The out feed section of the water quenching film line is equipped Nip-Rolls which are driven individually by an ac motor. The speed is regulated on the control panel. The upper roll is made of rubber and the lower roll is made of steel with chrome plating.



25 mm, 30 L/D  
Single Screw Extruder



# Multi Layers Film Blowing Lines

Type Co-Ex Film Blowing Lines With up to 8 Layers

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



5 Layers Co-Ex film blowing line with 5 extruders



The film tower is of type LF-t400 Co-Ex with a total Nip Roll width of 400 mm which allows for a lay flat film width of around 350 mm.

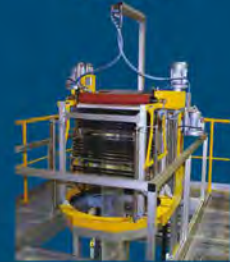
9-layers blown film line using two 30 mm and seven 25 mm extruder 30 L/D with Gravimetric hopper feeders and Dual channel high efficiency air ring, Stabilizing film bubble cage, Film bubble size controller, Oscillating nip roll.



High cooling efficiency air ring and Pancake type die



Oscillating Nip-Roll Haul Off with A-frame



Automatic Web Guide system

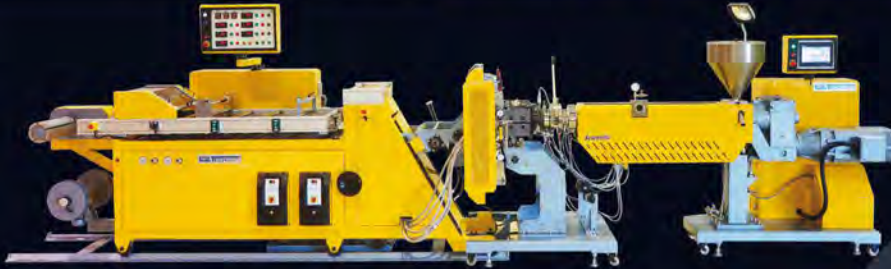


Splitting Knives



## Single Layer Chill Roll Lines

Flat Film and Sheet Chill Roll Lines



### Large Chill Roll & Calendering Line Type LCCR



### Medium size Chill Roll Attachments

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 1.5 mm thickness. Special dies are available for larger thicknesses and with exchangeable die lips.

Table top version connected to our 20 mm, 30 L/D extruder with gel counter.



### Compact Chill Roll Line for Spot Checking



**New!** LCCR-350/300-SR  
with 300 mm Diameter Rolls  
and Heavy-Duty,  
Multi-Angle Roll Stack Design

## 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



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



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

Medium economy size Chill Roll Line



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

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



Single and 2-station MDO units with roll widths from 300 to 800 mm



# New Large Size High Speed Co-Ex Line with Downstream MDO and with a lot of New Features

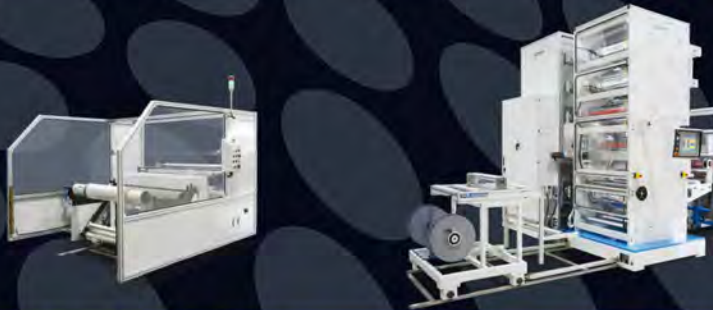
View Of Whole Line



The line will be used for a multitude of polymers from polyolefin to more advanced thermoplastics like PET etc. It is equipped with two single screw extruders and one twin, feed block, die and a new design of a chill roll attachment with large 600 mm diameter rolls. Downstream the line has a new large vertical MDO unit as well as a wind up unit with automatic change over of the film rolls.



New Large Size 3/5 Layers CO-EX Chill Roll Line



High Speed Wind Up With  
Automatic Changeover Of Film Rolls

MDO Film Stretching Unit



Rolling stack



1000 mm. Flat Die  
and Feed Block 3/5 Layers

# World's Smallest Polymer Processing Lines

The Amazing **Ultra Micro Series**



**The Combi Film Blowing and Chill Roll Line with one common extruder**



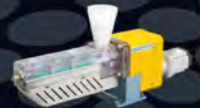
**The Ultra Micro Film Blowing Line**



**The Ultra Micro Chill Roll Line**



**Steel upper barrel half**



**Transparent upper barrel half**



**The Ultra Micro Single Screw Pelletizing Line**



**The Ultra Micro 3-Layers Co-Ex Blown Film Line with 3 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



**New Ultra Micro 3-Layers, 3-Extruders Co-Ex Chill Roll Line**

## Lines for Pipe, Profile, Hose and Medical Tubing



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 callbrating vacuum tank with water spray for cooling and a caterpillar type haul off. The callbrating and sizing unit inside the tank together with the vacuum ensures high precision production of the pipe or tube.

### Extrusion Line for Tubing, Hose, Pipe and other Small Profiles



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).

### High Precision Medical Tubing Line



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 of experience in this field.

# High Speed 3D Filament Production Line

With vacuum calibration for a high 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

Filament Accumulator for New High Speed 3D Filament Line

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

## Bottle Blow Moulding Lines

Single as well as Multi Layers Co-Ex Versions

The lines used a streamlined die for optimum colour dispersion. A minimum amount of purging is needed for colour change over.

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

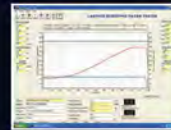


The Larger Bottle Blow Moulding attachment can be equipped with a 250 ml bottle mould of your own design



# Filter Testers in full Conformity to the DIN Norm

## Computerized Filter Tester



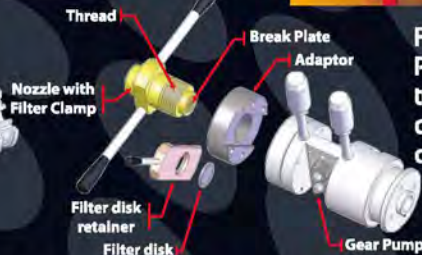
Fully computerized version with on board large capacity PC featuring a practical keyboard and mouse for convenience in entering all the test data. This version automatically calculates the filter test value.

**WE WERE FIRST IN THE WORLD TO PRODUCE FILTER TESTERS**



Retainer slot is open at back side for easy cleaning

Turning the handles will clamp or release the filter disk



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

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

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



**New Compact Filter Tester Type with 20 mm extruder**

## Two-Roll Polymer & Rubber Mills



### Bench Top Two Roll Mill Type

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.

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.



### Two Roll Rubber Mill sizes from 110 to 200 mm

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

### New modern design on all our Two Roll Mill



### 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 Presses

## 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.



Presses with optional automatic platens insert cooling system



## 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.



ASTM Presses with high precision chilled water cooling system



# High Speed Mixers

## Bench Top Mini Mixers



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



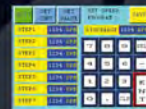
Bench top 10, 5 and 1.5 liter mini high speed mixers with infinitely variable speed impeller drive and easy-to-clean components



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



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.

High Power Jacketed High Speed Laboratory Mixers with optional cooling mixer



**DESIGNED FOR OPTIMUM COMPOUNDING  
OF PHARMACEUTICAL  
COMPOUNDS.  
BUILT TO GMP  
STANDARDS**



### Pharmaceutical Modular 28 mm Twin Screw Extruder

Our Pharmatech co-rotating twin screw extruders is made with a complete modular buildup of the clam shell barrel, The compounder is available in 12, 16, 26 mm and barrel lengths from 25 to 40 L/D and with AC vector motor drive.



The Clam Shell Barrel is equipped with exchangeable barrel wear lining inserts for optimum economy and ease of replacement. These standard inserts are built to GMP standards in stainless steel with a focus on a clean.



## Twin Screw Extruder Pharmaceutical

4 sizes with  $\varnothing$  12, 16, 20, 28 mm



### Pharmaceutical Modular 12 mm Twin Screw Extruder Line

The extruder is supplied with a stainless steel gravimetric hopper feeder type LGF 80 TS complete with hopper unit with a "spiral type" twin feed screws and a stirring arm (agitator) above the feeding screws, DC motor port.



The main screen shows all the extruder functions. Controls can be made in compliance with 21 CFR Part 11 regulations.



Closed Loop water circulating unit with heat exchanger and Vacuum pump system.

# Labtech Engineering

Our company's facilities, our capabilities



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

# 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 meter. 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



## 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](mailto:labtech@labtechengineering.com)

Website : [www.labtechengineering.com](http://www.labtechengineering.com)