

ULTRA MICRO *Scientific* COEX FILM BLOWING LINE

TYPE LUMF-150-COEX

WORLD'S SMALLEST ULTRA MICRO 3 AND 5-LAYER COEX FILM BLOWING LINE



PICTURE ABOVE SHOWS OUR NEW ULTRA MICRO 5-LAYERS COEX FILM BLOWING LINE

engineers and technicians during spare time and presented as a gift to our manager. However, it worked so well that we decided to offer it to our customer worldwide. It was shown for the first time in March 2015 at the NPE exhibition in the USA, and it drew a huge crowd at all times during show hours. This line is a fully functional replica of our larger COEX Film Blowing Lines.

A lot of engineering has gone into this machine, completely designed and built from scratch, and the result is truly amazing. This Ultra Micro COEX Film Blowing Line was again built by Labtech's

A. MACHINE FEATURES

This New Ultra Micro 3 and 5-Layer COEX Film Blowing Line has the following features:

The film tower has a total width of 150 mm and can accommodate a film of a lay-flat width up to 130 mm. The nip-rolls are spring-loaded and driven with a variable speed DC motor and one roll is made from chromed steel, the other with neoprene rubber coating. The A-frame has polished hardwood slats and is made with adjustable collapsing angle. The film bubble is stabilized with a cage comprising of three sets of adjustable Teflon rollers that can accommodate all applicable bubble diameters.

The distance from die lip to nip-rolls is 700 mm which ensures efficient cooling of the film bubble.





The die is suitable for LDPE, LLDPE, and HDPE. It may also be possible to blow PP but only specific grades which are suitable for conventional blown film. The die is designed the same as our larger versions, and it is of pancake type and connected to the extruders with adaptors and C-clamps. The die lip centering is done with six adjustable screws which are connected to the outer die lip ring.

The air ring is made with the same internal channels as our larger versions, and the airflow is adjustable with a turning lip ring. The cooling air is supplied by a high-velocity turbo blower built the tower sub-cabinet and connected to the air ring with four flex hoses. The blower is with variable speed to optimize the cooling rate of the film bubble.



The extruder is a developed and improved Ultra-Micro Conical Single-Screw Extruder type LUME or LE8-30/C. This is equipped with a conical screw and barrel having a starting diameter of 18 mm and an ending diameter of 8 mm and a screw length of 30 L/D. The conical design allows the extruder to be fed with regular plastic pellet sizes.



The whole extruder unit is mounted on a trapezoidal support frame with a fixed height and secure fixture to the base platform. It is positioned on the center-top of a linear slide to facilitate easy and quick separation from the film unit by sliding the extruder backward to clean and maintain the die and feedback easily.



The barrel has one heating zone which is controlled by a PID temperature controller on the touchscreen control panel. The screw is driven by a geared variable speed AC servo motor with 750 W, and the speed can be set by keying in the RPM up to 300 on the touchscreen.

The hopper base has a two-position sliding valve, one for the resin entering the barrel, the other for emptying out the hopper.



The two-station wind up shown at the right is supplied as the standard of the line while a single-station version at the left can be supplied as an option. Both versions utilize a variable speed brushless DC motor drive with a slip belt drive. The bobbins are easily installed and removed with spring-loaded gripping cones.



All electrical components of the line are conveniently stored away in the side cabinet and are easily accessible by removing the cover on the side of the unit.

This base cabinet contains the high-velocity turbo blower as well as a compressor for inflating the film bubble.

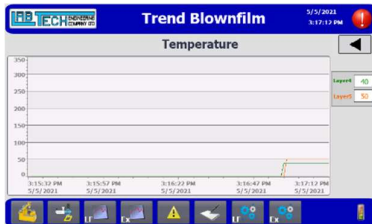
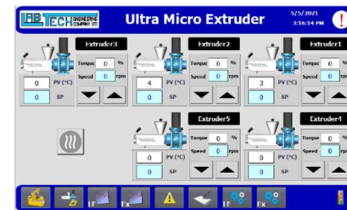
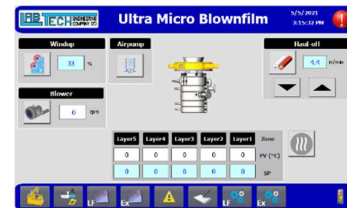


FULLY COMPUTERIZED CONTROLS OF THE ULTRA MICRO COEX FILM BLOWING LINE

Our fully integrated computerized control system of the COEX Film Blowing Lines incorporates a high capacity PLC with modules for temperatures, various motor speeds, etc., as well as possibilities to manipulate all the processing parameters. The control unit comprises a 7 inch TFT LCD Color Touchscreen

Screens will show all processing parameters of the whole line as well as each machine in the line like:

- Extruders with all Barrel Temperatures (Set and Actual Values)
- Screw RPM and Drive Power
- Die Temperatures for each layer Nip-Roll Speed & Wind-Up Speed in meter/min
- Speed on Air Ring Blower
- Start and Stop of built-in Air Compressor



No.	Time	Date	Text	
1	3:13:47 PM	5/5/2021	General Alarm Power	
2	3:13:47 PM	5/5/2021	Power failed	
3	14:0000	3:13:47 PM	5/5/2021	Connection established: 18M1_Connection_1_Station 192...
4	11:0001	3:13:47 PM	5/5/2021	Change to operating mode 'online'.
5	2:05006	3:13:47 PM	3/7/2021	Project modified: Alarms cannot be restored from the per...



OPTIONAL EQUIPMENT

1. PRESSURE TRANSDUCER

A pressure transducer can be mounted on the adapter to the die inlet to measure the die pressure. With this addition, you can measure the pressure at the die, which can be useful to make sure you do not get an overpressure in the die due to blockage, wrong temperatures, etc. The transducer will also stop the extruder if the pressure reaches the maximum pressure the die can handle.