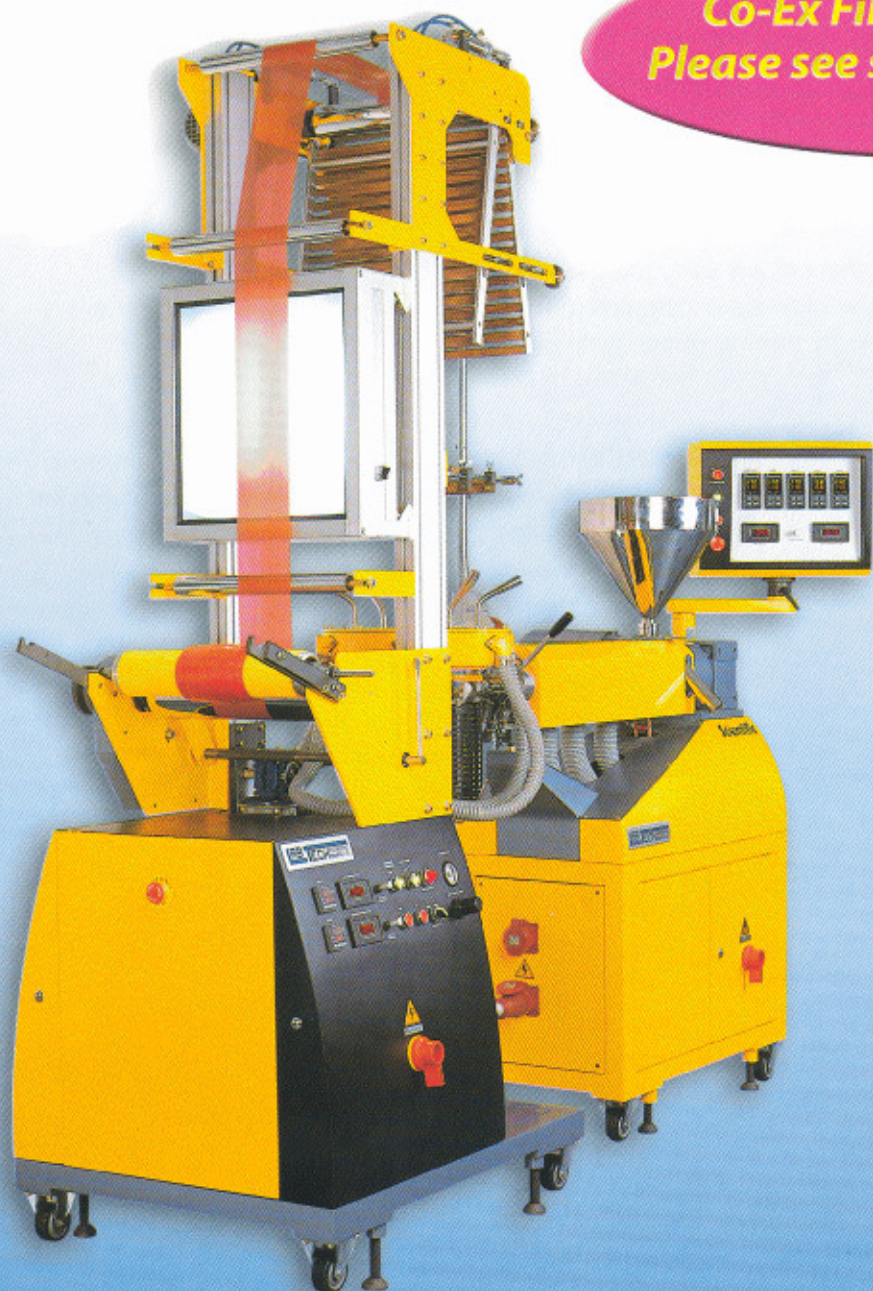


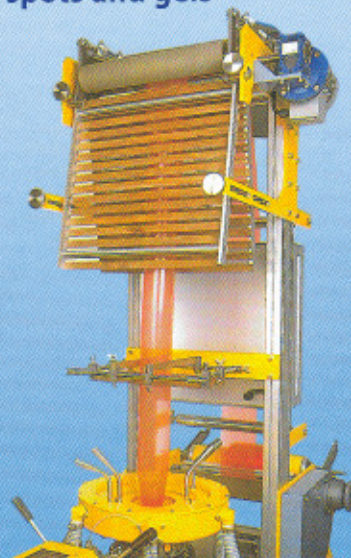
# Scientific

## Laboratory Film Blowing Line

*Co-Ex Film Blowing lines  
Please see separate catalogue*



Inspection lamp at downward pull of film, enables continuous monitoring of film quality, colour dispersion, pigment spots and gels



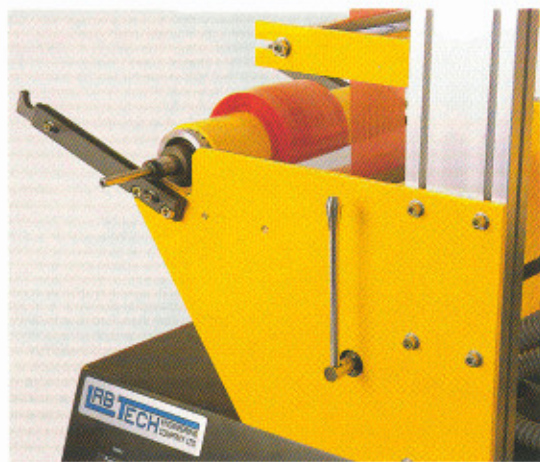
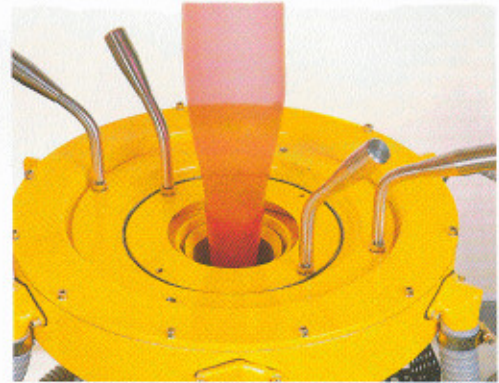
Film tower dimensioned for up to 350 mm wide film. With large dual channel cooling ring, four adjustable bubble support bars, adjustable film gate with polished wood ribbons and variable speed AC motor drive for the pneumatically operated Nip-Rolls. Spiral flow film die with all internal parts hard chromed and mirror polished. Die opening with adjustable center position, with easy changeover of mandrels for various film diameters.



**Control panel on film blowing tower containing:**

- Two temperatures controllers for die.
- Digital indicators for film speed in meter per minute with scroll buttons to regulate the individual infinite variable speeds of Nip-Gap rolls and Windup.
- Stop/Start buttons for Nip-Rolls, windup and air blower for cooling ring.
- Selector switch for opening and closing of the pneumatic operated Nip-Roll gap.

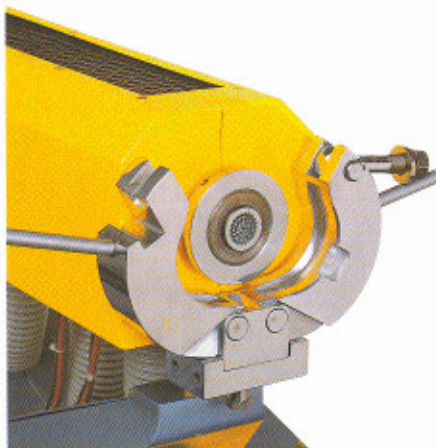
Dual channel ring cooler, with airflow created by a 1 HP high-pressure turbo blower is connected to the ring cooler through five hoses, ensuring a very even airflow around the film bubble. The ring cooler is further equipped with two adjustable cooling channels where air at the lower channel hits the film only at a short distance after it emerges from the die. The air from the second channel will surround the film upwards over the critical area where the blow up is completed. The airflow in both rings is easily adjustable by turning respectively ring with its handle.



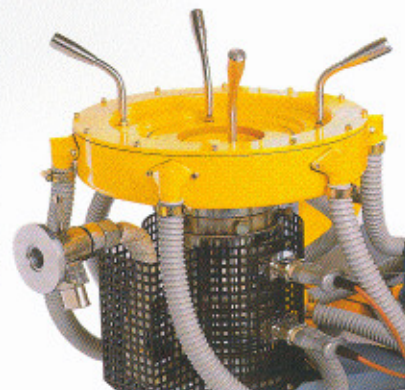
Film wind up device with quick change over of film rolls. The supporting rubber roll is easily released from the driving roll by pushing the handle shown to the left.

Other windup systems can be supplied optionally, for instance with pneumatic gripping of the bobbins, or with quick expanding bobbins core where the bobbins are fastened with an expansion shaft. It is also possible to use this expansion shaft for a bobbin free windup system.

The windup Nip-Rolls are driven with a variable speed AC motor and the tension is regulated with a slip clutch which can be adjusted by turning the knob shown here to the right.



The film blowing die and tower is connected to the extruder with a C-Clamp system. An S-shaped adaptor is connecting the die, which enables a lower position of the die, saving space in height of the film tower. It also gives a more convenient operating position of the die.



## The film blowing line comprises of:

### 1. Film blowing attachment type LF-400 equipped as following:

- Large 2,3 meter high film tower with twin pillars of rigid extruded aluminum profiles. Sub cabinet of modern pleasing design, which incorporates the control cabinet, as well as the blower for the cooling ring. The whole assembly is fitted with four heavy-duty casters, where two casters are equipped with brakes.
- Roll width 400 mm, which can accommodate film, lay flat widths of up to 300 mm.
- Pneumatically operated film nip rolls with controls on sub cabinet.
- Film die mounted on the two aluminum pillars, adjustable in height to fit extruder flange. Film die diameter as standard of 50 mm giving a blown film diameter of around 150mm. (Others die diameters on request.) Die mandrel equipped with spiral flow channels for uniform distribution of polymer melt around entire die area. All internal die parts are hard chromed with high polish. Adjustable die opening for accurate film thickness control.
- Two digital self-tuning temperature controllers, one for film die and the other for the S-adaptor to the extruder. The controllers are mounted on the sub cabinet to the film tower.
- Large twin channel cooling ring for optimum cooling efficiency. The upper and lower channels are equipped with adjustable airflow lips. Air supplied from a 1 HP turbo blower.
- Film bubble stabilizing rods, as well as synchronous adjustable film collapsing gates with polished teak wood gate rods.
- Infinite variable speed drive of nip rolls.
- Three guide rollers for downside movement of film.
- Inspection cabinet with lamps placed on downside of film tower. The lamps will shine through the film for easy inspection of film quality.
- Film wind-up Nip-Rolls driven through an adjustable clutch by a variable speed motor for precise tensioning of film. Easy removable film bobbin clamped on to a shaft with pinions, resting on two slanting racks. This system enables fast threading of new film and gives a tight wind-up.
- Electric cabinet, as well as control cabinet in the sub cabinet, containing all controls such as two temperature controllers for the die, on/off push buttons for blower, Nip-Roll and windup drives, as well as pneumatic opening/closing of nip rolls. The two variable speeds drives for Nip-Roll and windup are controlled with scroll button on the digital controllers, showing the film speed in meter per minute.
- **Built in full conformity to CE and all other world safety standards.**



### 2. Extruder type LE25-30/C

Please see the chapter in this catalogue covering Single Screw Extruders for full details.

#### Brief Technical Data On Film Blowing Attachment Type LF-400

Maximum film lay flat width:	350 mm
Film speeds, meter per minute:	Haul Off Nip-Rolls 0 to 44, Wind-Up 0 to 60
Standard film die diameter:(others on request)	50 mm giving a film diameter of 150 mm
Standard cooling ring, for die diameters:	40 to 50 (others on request)
Height from die to Nip-Roll:	1,150 mm (others on request)
Total height of film tower:	2,375 mm (others on request)
Total electrical power	4 kW