

Scientific

Cast Film And Sheet Chill Roll Line

**Co-Ex
Chill Roll Lines
Please see separate
Catalogue**



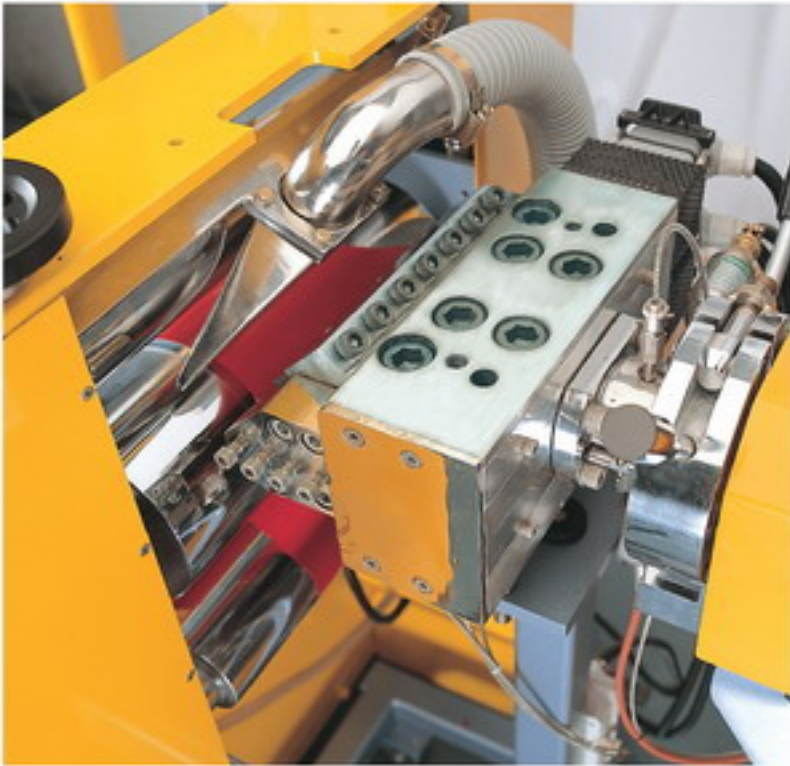
For laboratory production of up to 300 mm wide films and sheets in PE, PP, PS, ABS, etc.



With precise simulation of large production lines enabling low volume experimental runs of various polymers and additives.

Suitable for QC with fast change over thanks to streamlined "coat hanger" type die.





The lip of the flat "coat hanger" type of die is equipped with a multitude of lip gap adjusting screws for optimum thickness control of the film and sheet over its entire width. The inner parts of the die are hard chromed and mirror polished to facilitate easy cleaning and to give a very smooth surface to the film or sheet. The die is heated with a bank of high-density heater cartridges, and for dies with a width of 200 mm and larger, the heating and temperature control is made individually for the left, center and right parts. With this it is possible to vary and control the temperature of each section for precise regulation of the polymer flow inside the die.

The control panel of the chill roll attachment to the left is equipped with digital instruments for display and setting of roll stack speed as well as Nip-Rolls haul off speed in meter per minute. The windup is set and displayed in RPM and all three instruments are coupled to the programmable inverters for respectively three individual infinite variable AC drive motors. The speed control is made by pressing the yellow up/down scroll buttons on each instrument.



To the far right on the chill roll panel is shown the three temperature controllers to the 200 mm wide die are shown.

The chill roll attachment is linked to the control of the extruder with a closed loop system. A transducer at the adaptor to the flat die will measure the pressure and the temperature of the melt flowing into the die.



The extruder control panel is equipped with a pressure controller, as well as a digital pressure set instrument. With this, the extruder can run in a fully automatic mode where a constant flow of polymer is fed to the die, ensuring a uniform thickness of the extrudate.



The extruder control panel is also equipped with a selector switch for Manual and Automatic mode. Thus, the extruder can also be made to run manually where the screw RPM will determine the flow of the resin to the die.

The top polishing roll as the center and lower chill rolls are all cored for water cooling and heating up to 140 °C.

The upper polishing roll is lifted and lowered with pneumatic pistons and all three rolls are driven with a variable speed AC motor, with speed control from a programmable inverter.

The pneumatically operated upper polishing roll is equipped with micrometric Nip-Gap adjustment where the distance to the larger chill roll is shown on two dial gauges. Here, each side can be adjusted individually for precise Nip-Gap control and the adjusting handles can be locked at any position.



The chill roll stack and die head are protected with a streamlined cover with windows. The safety cover, which can slide backwards, is interlocked so that the roll stack cannot operate when opened.



The extruder is our single screw 25 mm, 30 L/D version, which is described in details on page 21-23. The screw configuration is either plain for general QC purpose or with Maddock and screw tip mixing section for optimum mixing and blending properties. The chill roll line can also be supplied with our vented extruder version.

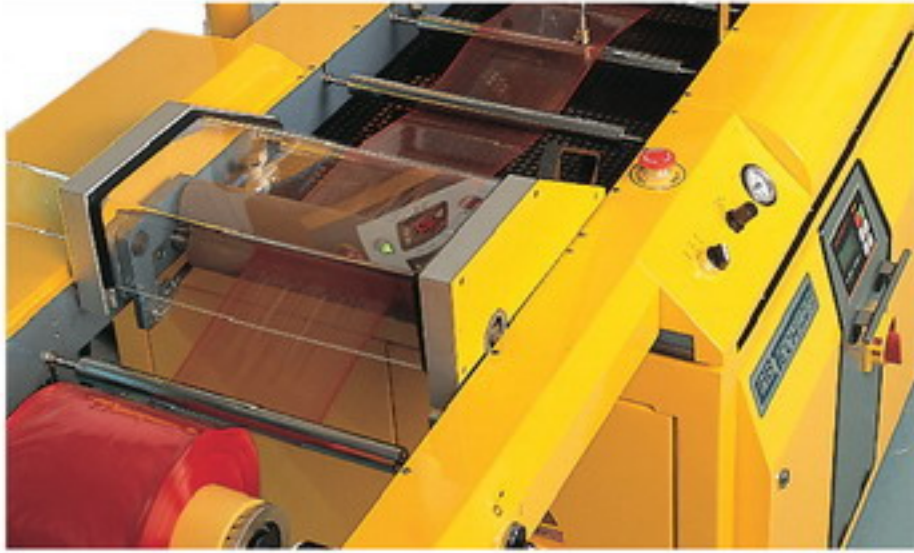
The film and sheet guiding rolls have smooth running bearings and the standard dial gauge shown here will measure continuously the gauge of the film or sheet microns.



The practical windup unit is equipped with a pneumatic clamping mechanism that will grab the windup bobbin, activated by a selector switch on the side.



The high efficiency water heater, and chiller unit is built in to the sub cabinet. It supplies tempered water to all the rolls, regulated by valves. Optionally, more tempering units can be added for individual regulation of each roll.



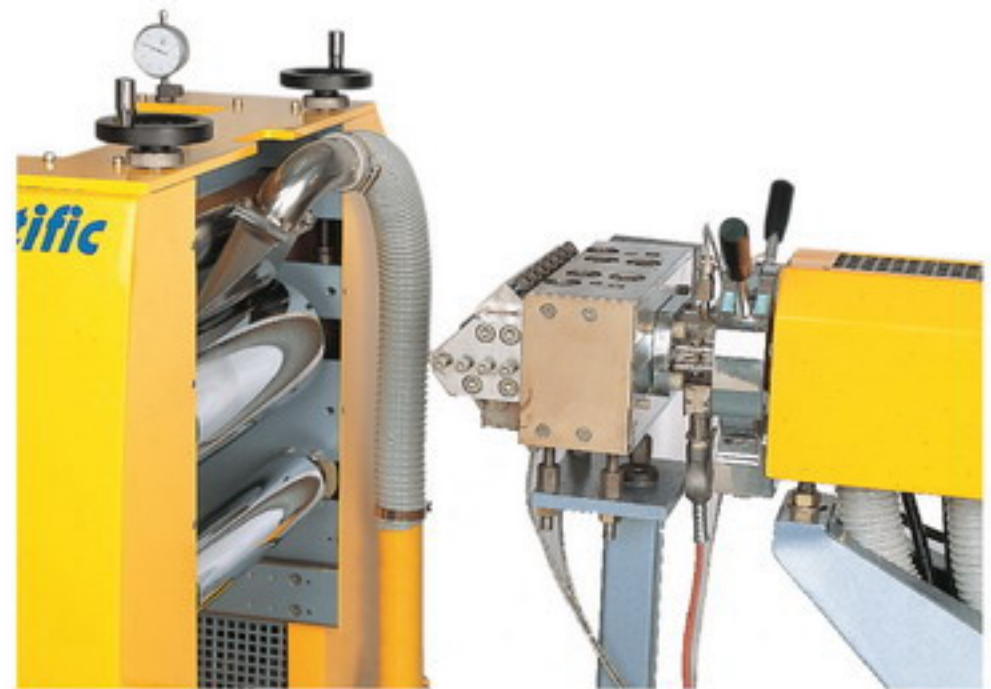
The rubber nip roll are completely protected under a Plexiglas cover, which gives full protection so that the rolls can not be touched while the machine is running.

The upper Nip-Roll is pneumatically operated from the controls at the front. The roll will lift up when the cover is opened and again close when the cover is closed. This ensures an easy threading of the film or sheet, without any hindrance from the safety cover.

The entire chill roll attachment can easily be rolled away from the extruder and the die. This gives clear access for cleaning of the die.

Seen to the right is the hose to the standard air knife situated on top of the larger chill roll. The airflow from a high pressure blower is regulated with a gate valve.

The die is also supported on a separate stand with casters, and it can be rolled away from extruder by simply unlocking the C-clamp. This gives fast access to the screen breaker plate, which is placed at the end of the screw barrel.



COMPLETE SAFETY IN FULL CONFORMITY TO CE AND ALL OTHER WORLD STANDARDS

Brief Technical Data

Output of extruder type LE25-30/C	Approximately 12 kg/hr. of LDPE
Main Chill Roll Diameter	145 mm
Polishing and lower chill roll diameter	72,5 mm
Roll widths	350 mm
Max film/sheet width	300 mm
Die adjustable lip opening	0,3 to 2,0 mm
Max sheet thickness	1,5 mm (others on request)
Minimum film thickness in LDPE	10 microns
Temperature range for the water tempering unit	Max 140 °C. Minimum same as your water supply.
Roll stack & Nip Rolls speed range	0 to 15 meter/minute
Windup speed	0 to 130 RPM