

# Scientific

## Single Screw Laboratory Extruders

and downstream equipment

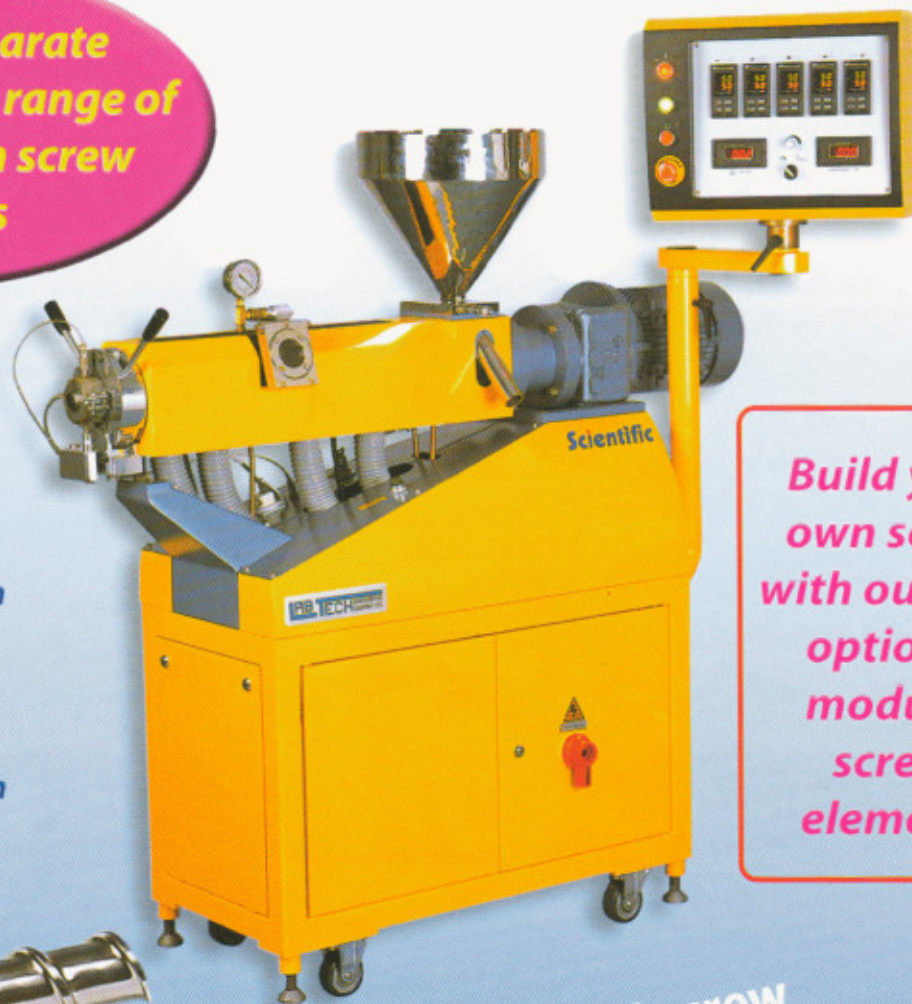
*Please see separate catalogue for full range of laboratory twin screw extruders*

*20 mm, 30 L/D tabletop model*

*25 mm, 30 L/D floor models, vented and non vented versions*

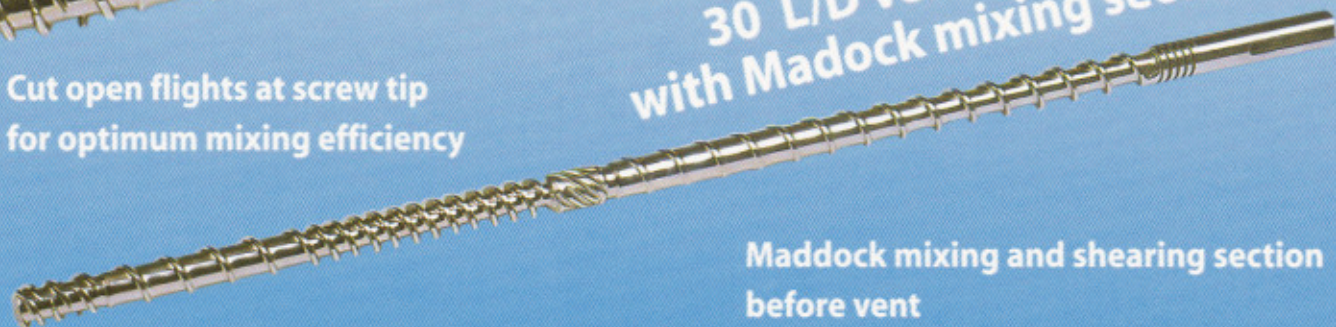
*30 mm, 30 L/D floor models, vented and non vented versions*

*Build your own screw with our new optional modular screw elements*



*Cut open flights at screw tip for optimum mixing efficiency*

*30 L/D vented screw with Maddock mixing section*



*Maddock mixing and shearing section before vent*

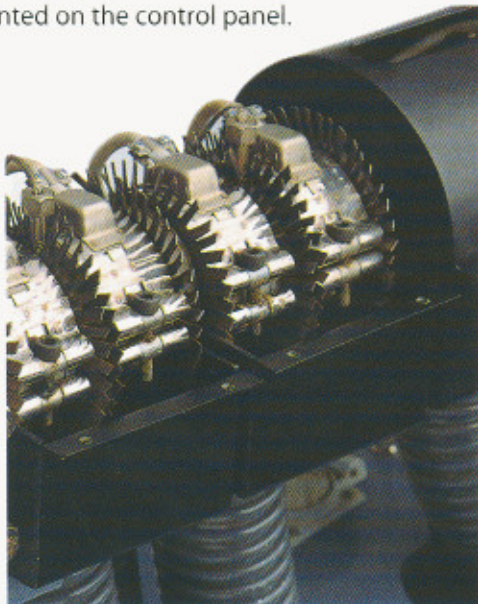
*Double flights after vent for optimum feeding of polymer*



- Screw and barrel in high-grade nitride steel, screw diameter 20, 25 and 30 mm, all with L/D ratios of 30.
- Several standard screw configurations. The 25 and 30 mm extruders can be supplied with a plain screw used for QC and general polymer processing where extra mixing is not required. Or, they can be equipped with a high mixing screw incorporating a Maddock mixing section, as well as pineapple mixing at screw tip. Optionally, these extruder sizes can be supplied in vented versions with screw design as pictured on proceeding page.

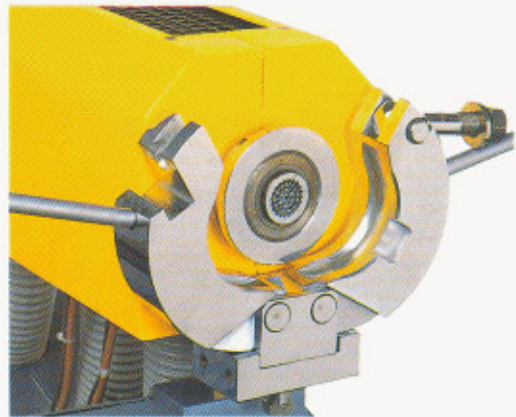
The 20 mm, 30 L/D, table top extruder is only available with plain screw.

- Large over sized AC motor drive, coupled directly to a in line heavy-duty helical gear box for minimum loss factor and maximum life time. The gearbox is flange-connected to an individual housing containing the oversized trust and position bearings for the screw drive.
- Programmable frequency inverter for infinite variable screw speed control and high torque even at low speeds. Digital readout of the screw RPM and motor power in percent of full load from instruments mounted on the control panel.



The 25 and 30-mm extruders have four heating zones and the 20-mm has three zones on the barrel, all with air-cooling. Each zone is equipped with high efficient air-cooling where copper sheets are mounted below the band heaters, ending up in a multitude of fins. These fins catches the cold air and conduct it directly to the barrel. The sirocco types of cooling fans are all mounted in the extruder sub cabinet and connected to each zone with hoses. The large wattage on the band heaters coupled with the efficient cooling system ensures very fast heating and cooling of each zone.

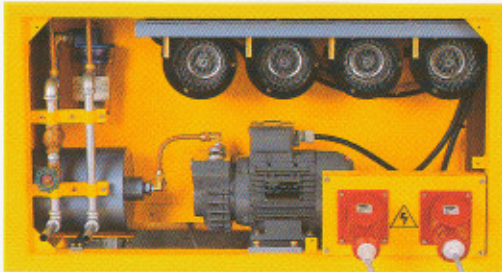
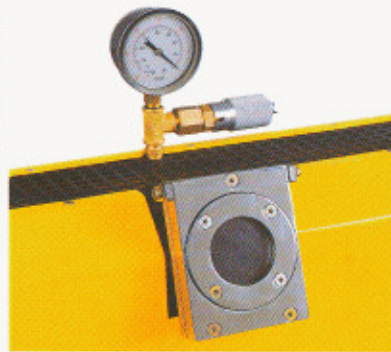
- Digital programmable set and readout temperature controllers for all zones coupled to solid-state relays for accurate heat control. The controllers are self-tuning and equipped with programmed auto compensation, ensuring a precise temperature over the entire working range of 0 to 300°C.
- Extruders supplied with downstream water bath and pelletizer are equipped with Chromed Strand Die head with one, two respectively four strands for 20, 25 and 30 mm extruders. The die is complete with electric band heater and digital programmable, and self-tuning controller. Streamlined die channels are designed for shortest possible changeover of colours, or compound with minimum contamination.



Extruder head with chromed C-Clamp, equipped with two isolated handles and a single clamping screw for easy operation. A breaker plate with slot for inserting of screens is situated at the barrel flange and can be easily accessed when the flange is opened.

- The 25 and 30-mm extruders have all electric components built into the sub-cabinet with swing open doors. For the 20-mm table top version the components are built in below and behind the extruder barrel.
- The 25 and 30-mm, extruders have a convenient swing away control cabinet containing all temperature controllers and extruder drive instruments. On the table top extruder, the control panel is mounted on the extruder body.
- Modern designed extruder body where all components are fully enclosed. A steel cover over the entire extruder barrel has grids on top for evacuation of hot air. The polished stainless steel hopper can be turned sideways for easy emptying of remaining load. The hopper is also equipped with a shut off valve.
- Extruder body for the 25 and 30-mm, versions are resting on four heavy-duty lockable casters, as well as four legs adjustable in height.

The vented extruders are equipped with a large all stainless steel vent opening. The front door to the vent is equipped with a large glass window. The door can be swung opened to enable easy cleaning of the vent area.



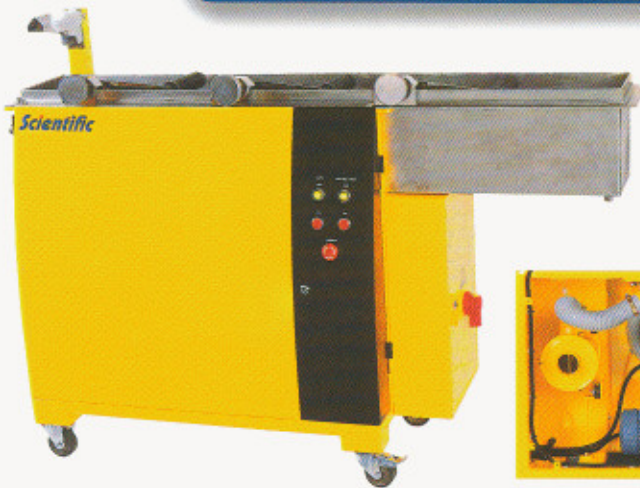
These extruders are also equipped with a built in high capacity vane-type vacuum pump. Including a large inlet filter, as well as a vacuum dial gauge and release valve mounted on the top of the extruder barrel behind the vent opening.

### Single Screw Extruder Data

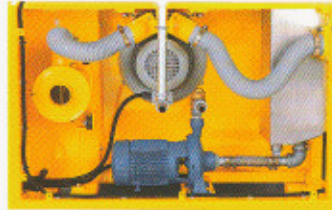
Extruder type		LE20-30	LE25-30	LE30-30
Types Standard Screw	Straight compression	Ratio 1 : 3	Ratio 1 : 3	Ratio 1 : 3
	Non vented version		Maddock at 20 D + pineapple at screw tip	Maddock at 20 D + pineapple at screw tip
	Vented version		Maddock at 15 D + split flange at screw tip	Maddock at 15 D + split flange at screw tip
Version		Tabletop with optional sub-cabinet	Floor type	Floor type
Screw Diameter	mm	20	25	30
Screw L/D ratio		30	30	30
Motor power	kW	1,5	4	7,5
Screw speed range	RPM	0-150	0-300	0-250
Number of heater zones on barrel		3	4	4
Additional temperature controller (More on request)		1	1	1
Air cooling on all barrel zones		YES	YES	YES
Heater power	Watt	1,970	4,000	8,400
Approx. max output with LD-PE, Kg/Hour		6	15	25
Dimensions:		95x62x75	170x73x167	190x61x167

**BUILT WITH FULL SAFETY IN CONFORMITY TO CE AND ALL OTHER WORLD SAFETY STANDARDS.**

## Water Bath type LW-100



The high vacuum strand suction device will remove all water from the strands. The Water bath is equipped with three easily adjustable strand rollers that can be quick locked to either the left or the right side of the Water bath.



### Water bath featuring :

- All heavy-duty stainless steel water tank with easy water level adjustment.
- Three nylon strand guiding rollers with quick locks at tank sides for easy and fast position adjustments. The rollers are open on one side to allow for adjustments without cutting the strands.
- Built in stainless steel water drain tank with re-circulating 0,75 HP pump and electronic water level sensor for automatic start of the pump. The drain tank is separated from the water bath and the circulating pump will only work when water is present in this tank. With this energy saving system, the pump will only work when there is water to be removed.
- Built in one HP vacuum strand suction system with protection filter. This heavy suction system ensures efficient water removal from the strands without any splashing.

#### Data for Water bath type LW- 100

Water tank Capacity: 80 liter  
Circulating Pump: up to 100 l/min  
Pump Power: 0,55 kW  
Vacuum Power: 0,75 kW

## Pelletizer type LZ-120



### Pelletizer Featuring:

- Speed regulating with programmable inverter, speed range from 0 to 1200 RPM. Motor power 1 HP. Strand feed speed 0 to 72 M/Min.
- Control panel with speed regulating Up/Down Scroll buttons and digital RPM display.
- Plexiglas front door with safety interlock and instant stop of rotor when door is opened.
- Easy adjustable fixed knife. Rotor with 20 cutting knives.
- Adjustable platform for holding discharge bag or container. Platform can be lowered all the way down to the base platform to enable space for a drum.

Optionally, the pelletizer can also be equipped with a second variable speed drive for the feed roll. With this, pellets can be cut at desired length from micro pellets of below 1 mm length up to 5 mm.



The optional variable speed drive for the strand feeding, where control is done on a second digital instrument

The speed is here set on its Up/Down Scroll buttons and the digital display shows the pellet length in mm. A micro computer synchronizes the rotary knife speed with the strand feeding speed so that the pellet's lengths remain always the same at all settings.



### Technical Data For Pelletizer LZ-120

Motor power	0,75 kW
Rotary knife speed	0 to 1200 RPM
Rotary knife number of cutting edges	20
Strand feeding speed	0 to 72 meter/minute
Max number of strands	6

