FIBER EXTRUSION RESEARCH & PILOT MACHINES FOR HOMO & BICOMPONENT LABORATORY APPLICATIONS

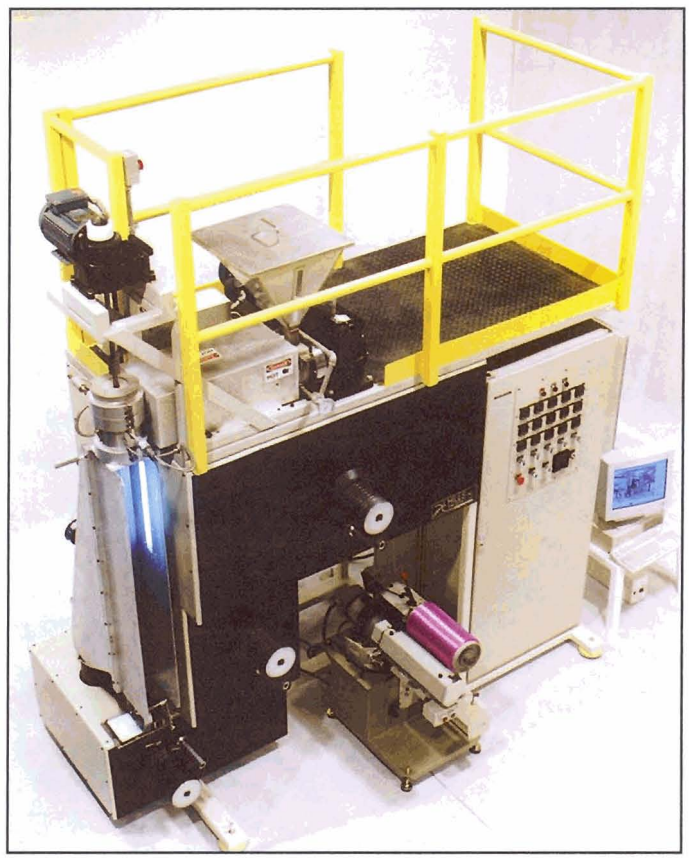
General Description:

The Hills research and pilot fiber extrusion machines provide flexible performance with reliable operations. Both types are built to be simple to use, but versatile and effective. They are currently being used for simulation of production systems, color matching trials, polymer characterization, product development, process development, and the production of specialty yarns and trial lots. Each machine has the capability to convert melt spinnable polymers into finished fibers.

All components of a complete fiber extrusion machine are included, such as: hopper, extruder, metering pump, spinnerets, quench cabinet and blower, finish oil applicators, independently driven heated godets and a winder.

BICOMPONENT PILOT MACHINE

HOMOFILAMENT RESEARCH MACHINE



Both are stand alone machines. The research unit is compact and capable of being installed in a laboratory with headroom of 10-1/2 ft. (3.2M).

The pilot unit occupies a larger area and is a two floor unit. Its longer convergence zone allows for in-depth exploration of all fiber products and can be fitted with bicomponent capability. Both machines can quickly be made fully operational with connections of standard utilities and minor wiring.

Hills can provide a wide range of options and customization to meet your needs. (see overleaf)

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SPECIFICATIONS

BASIC SPECIFICATIONS:

- Fiber extrusion up to 350 degrees C.
- Extruders, various sizes: 3/4, and 1-1/4 inch, 24:1 30:1 L/D.
- Screw includes Maddox mixing section.
- Direct connection of extruder to spin head.
- Extruder screw removal from rear of extruder.
- Metered polymer stream to spinneret.
- Variable quench air flow rate.
- Even air flow distribution from quench cabinet.
- Heated godets with separator rolls.
- Individual godet drives.
- Wide godet speed range.
- Godet temperatures to 180 degrees C.
- Complete modern instrumentation and controls are included.
- Metering pump and godet motors, independent inverter drives.
- Requires electricity, water and compressed air.

SIZE AND PERFORMANCE TABLE PER EXTRUDER

Extruder Diameter	3/4 (18) inch (mm)	1" (25)	1-1/4" (32)
Metering Pump Capacity	1.20 cc/rev	2.92	5.50
Instantaneous Throughput Range			
Polypropylene	1.0-5.7 Lbs/hr	2.8-13.8	5.2-26.1
Nylon	1.2-6.6	3.2-16.2	6.1-30.5
Polyester	1.5-7.6	3.7-18.5	7.0-34.9
Extruder	3 HP	3	5

Approximate Size	**Research Machine**	**Pilot Machine**
Width	108 (2740) / in (mm)	240 (6096) / in (mm)
Depth	60 (1525)	195 (4953)
Height	132 (3350)	228 (5790)
Weight	3500 (1600) / lb (kg)	7000 (3200) / lb (kg)

OPTIONS:

Dryer to process PA or PET
Various Hopper sizes
Various extruders L/D
Various extruder screws
High heat head, to 450 C.
Non-circular spinneret orifices
Detachable extruder deck
Heated shroud
Quench air cooling coil
Quench air temp 10 to 40 C.
Extended Quench Length
Water bath quench
Kiss roll finish application
Induction heated godets
High heat godets, to 250 C
Extended godet speed range
Gang control of godet drives
Ambient godets
Dual canted godet pairs
Various winder types
Supervisory control system with data logging
Aspirator
Pack cleaning apparatus
Hot knives
Inspection microscope
Doffing sticks
Denier reel
Tensile test machines
Bobbins
Bi-component research machinery