

Micro fiber line



Table top micro fiber line for fiber R&D applications



The platform for
formulation development

Fast screening of new fiber formulations: a micro fiber spin line.



This innovation enables you to obtain fibers from just 5 - 10 g of material in 10 - 15 minutes. So material development time is drastically reduced and considerably less R&D budget is needed.

Representative test fiber(s) can now be obtained in a few minutes with only a fraction of material used compared to conventional fiber development on laboratory equipment. The micro fiber line is especially useful when only small amounts of material are available or when expensive additives are used.

Extremely long fiber samples can be obtained with our compounders in combination with a continuous feed kit. There is no need for an additional spinning pump, as our micro-compounder is featured with throughput control to secure uniform fiber diameter. To prevent fiber breakage at the beginning of a stretching process a "slow start up sequence" can be programmed.

The instrument consists of two units: a high speed winding unit (winding speed up to 200 m/min) and a low speed stretching unit. Such design keeps the equipment to fit on a table in your R&D laboratory.

The stretching / conditioning unit has a controlled supply and take up roll and a heating element to accurately control fiber drawing speed, draw ratio and drawing temperature. The unit can be configured to perform hot or cold drawing/stretching of mono filaments using independently speed controlled godets. The speed of the winder godet can be controlled accurately from 0.5 to 90 m/min.

The lateral moving speeds of the traverse guides on both units are (in) dependently controlled to generate a variety of filament overlap pitch patterns. The pitch between adjacent fibers can be controlled within 0.1 mm to 4.0 mm. The units accommodate 75 mm cardboard bobbins. The fiber heating options of the stretching/conditioning unit consist either of a hot shoe (which heats the fiber by radiation), or, optionally, a heated metal cylinder which heats the fiber by conduction.

These features accurately heat the fiber(s) and enable accurate and reproducible stretching conditions of the fiber(s). Once a steady

stretching process is established the traverse guide laterally shifts to a defined area of the bobbin to wind the fiber(s) in a pre-programmed pitch pattern.

Optionally a 90° adapter can be mounted onto our compounder to have a perfect horizontal or vertical spinning die outlet, which enhances the spinning process. Several fiber dies are available for multiple fiber spinning applications.



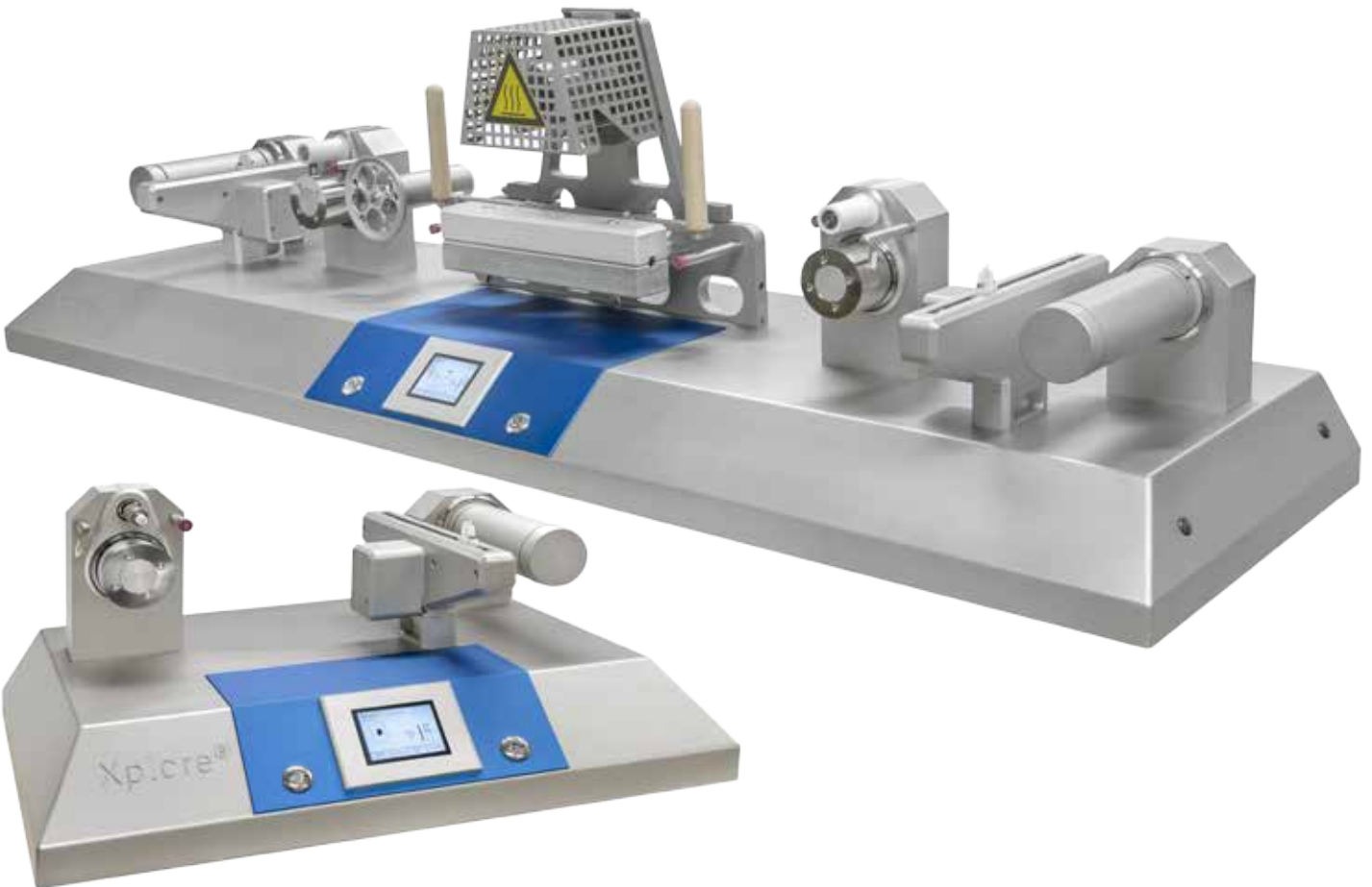
Technical Specifications

Winding unit:

- Godet drum diameters: 75 mm
- 1 Drum winder
- Controlled winding speed: 5 - 200m/min
- Controlled traverse guide pitch: 0.1 - 4.0 mm (increments of 0.1 mm)
- Controlled winding width: 10 - 150 mm (increments of 1 mm)
- Fiber die: diameter between 0.25 - 1.50 mm (increments of 0.25 mm)
- Controls: integrated touch screen with graphical user interface
- Overall dimensions (l x w x h) : 67 x 50 x 34 cm³
- Weight: ca. 35 kg
- Supply voltage: 115 or 230 Volts

Conditioning unit:

- Godet drum diameters: 75 mm
- 2 Drum winders
- Controlled speed: 0.5 - 90 m/min (increments of 0.01 m/min)
- Controlled traverse guide pitch: 0.1 - 4.0 mm (increments of 0.1 mm)
- Controlled winding width: 10 - 150 mm (increments of 1 mm)
- Torque winding rolls: -10 - 10 N (increments of 0.05 Nm)
- Adjustable stretch factor 1:10
- Temperature range of hot shoe: ambient - 300°C (increments of 1°C)
- Nitrogen purge
- Hot shoe length: 300 mm
- Controls: integrated touch screen with graphical user interface
- Overall dimensions (l x w x h): 1723 x 50 x 35 cm³
- Weight: ca. 75 kg
- Supply voltage: 115 or 230 Volts



Optionally

- Hot pin (heating by conduction)
- Cooled godet rolls
- Custom defined surface finish of godet drums
- Fiber tension meter to estimate impurities in fiber
- Fiber slip measurement
- Continuous feeding kit for use with an Xplore compounder which consists of:
 - Water-cooled top hopper
 - Continuous feeding screws and/or forced feeding screws (enhanced feeding zone)

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