

UDPrecise Creel Module/Section A

The creel has 50 spindles, each with a pre-tensioning system to ensure a constant, even tension regardless of package diameter. After initial tension setting, no adjustment is necessary. Winding tension is controlled by package weight.

Package support

Packages are held on rotating holding and tensioning assemblies.

Each package holder centralizes the package and holds it securely by means of a toothed rubber Tork-Grip. The Tork-Grip system enables easy push-on loading and pull-off doffing of the package, while ensuring positive retention during running. It provides the required torsional grip between the holder and the package tube to ensure positive connection to the tension-control system. The package support assembly is specially designed to prevent dust from infiltrating into the spindle.

Bearing and Tensioning System

Bobbin Size: 11" x 3"

Typical unwinding line speed: 20m–30m/minute

Range: 0m–40m/minute

Unwinding Creel Tension: 100g–500g

Creel for UD material in g/sqm

Typical 60g–400g using no-twist 12k roving

Carbon roving 12k–60k (no twist)

Utilities

Electrics: 380v/230v, 5 kw

Air at 6 bar constant

Finish

The steel framework of the creel is phosphated and has a durable coated finish. All metal parts are either stainless steel or electroplated for corrosion resistance.

UDPrecise Tensioning System Module/Section B

The PLC Tensioning System controls the rovings fed from the creel to maintain uniform tension before the rovings are spread in the UD Module.

The framework is constructed with welded rectangular steel tubing. Mounting plates are in specified positions for bearings.

Finish Protective coating, color determined by client.

Subsequent creel structure, sectors "a" and "b"

Sector "a" (patented system): Accepts incoming rovings, aligns all fibers on the same plane surface, maintaining zero twist. All turned cylinders, with Part 2 having a special external profile which depends on the desired weight of the resulting UD material in g/sqm.

Sector "b" (patented system): Contains rovings tensioning system, double tensioning PLC controlled, interfaced with SIEMENS control panel of UD machine module, effecting minimum stress on fibers before spreading in the UD module composed of Parts 3 and 4.

Parts 3 and 4 contain ground, chrome-coated and polished bars. Controlled by software and two, coupled gear-motors (with integrated feedback encoder), these bars allow adjustment of tension of the opening rovings.

Overall dimensions

Height: 2.10 m Depth: 1.20 m Width: 1.60 m

All components are placed on bearing supports to facilitate starting, cleaning and maintenance of the machinery.

PLC programs and controls all machine functions, interfacing with the Siemens control panel of the UD machine module.

Electronic control cabinet on machinery.

Full machine protection to prevent accidents, manufactured to ECC standards.