

Electronically Controlled Weaving



by:

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Long-experienced loom technology firm builds and supplies machines for weaving metal wire grids, architectural fabrics and transport belts.

belts, sieve screens and other architectural fabrics.

Trinca Company has developed completely electronically driven looms for weaving technical fabrics. These looms are equipped with the Trinca patented bandrapier weft insertion system and Trinca patented electronically controlled dobby. Trinca also currently makes electronically controlled shuttle looms featuring servomotor-driven shuttle picking systems, loom functions synchronized and controlled via PC and up to 10 separately tension-controlled warp beams. Also offered by Trinca are pre-assembled, electronically driven conversion kits for rebuilding existing mechanically driven looms by converting them into electronically controlled machines.

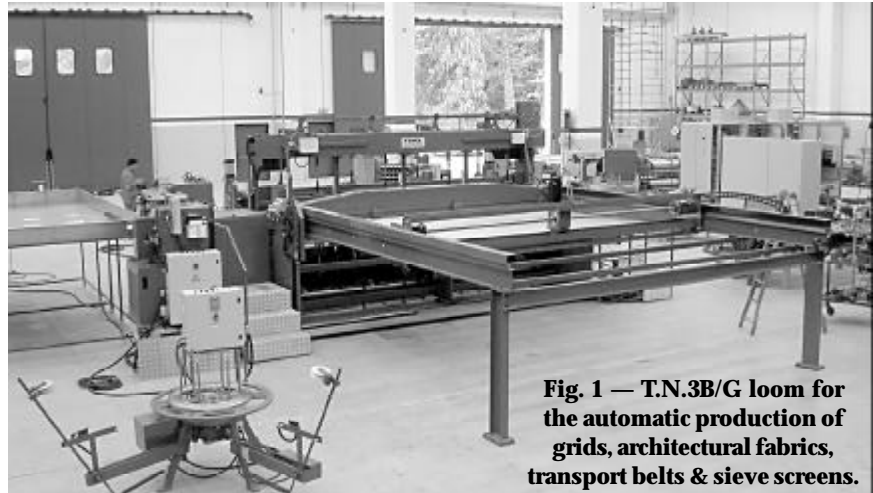


Fig. 1 — T.N.3B/G loom for the automatic production of grids, architectural fabrics, transport belts & sieve screens.

The Trinca manufacturing program includes complete PC-controlled and servomotor-driven weaving looms for metal wire and synthetic yarn fabrics. The company's loom line includes the type T.N.E/F for fine wires or yarns; the type T.N.E/M for middle heavy wire or yarns; the type T.N.E/P for heavy wires, yarns or fabrics; and the TN2E/PS for very heavy wires, yarns, fabrics and wire cloth. The weaving widths for these looms range from 300 to 13,000 mm (12" to 512"), with additional width available on request.

Suitable for weaving stainless steel, high-tensile carbon steel, high-content alloys, copper, brass, aluminum and synthetic and monofilament yarns, these machines process wires in diameters ranging from 0.03 to over 8 mm (0.001" to over 0.3") with warp tension range of 1500 to 100,000 N/m (100 to 6860 lbf/ft). Specific applications for these machines include:

- High-quality filters.
- Metal wire fabrics for special applications.
- Transport belts, architectural fabrics.
- External and internal decorative metal fabrics.

Looms for Metal Grids, Belts & Screens

Type T.N.3B/G looms, like the one seen in **Figure 1**, allow the automated production of grids, transport

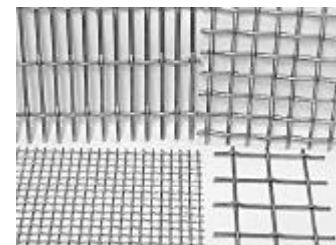
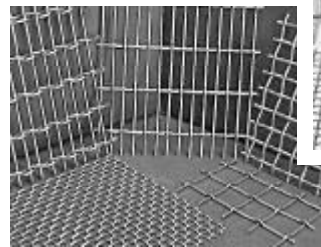


Fig. 2 — Products made on the T.N.3B/G loom.

These machines are slay driven by a crankshaft with cranks as needed. Weaving widths are from 1000 to 4200 mm (39" to 165") and more.

Features include weft insertion and pre-crimped weft insertion with wire diameters from 1 to 6 mm (0.04" to 0.24") and pre-straightened, rigid rods as weft insertion with diameters from 2 to 6 mm (0.08" to 0.24"). Samples of products woven on the type T.N.3B/G automatic loom system are shown in **Figure 2**.

Looms for Metal Belts & Fabrics

Type T.N.E/PS looms, like the one seen in **Figure 3**, are for the efficient weaving of architectural fabrics and transport belts. Features of this loom model include weft insertion from wire diameters of 0.10 to 6 mm (0.004" to 0.24"), pre-crimped weft insertion with wire

diameters of 1 to 6 mm (0.04" to 0.24") and pre-straightened, rigid rods as weft insertion with diameters ranging from 2 to 6 mm (0.08" to 0.24").

The type T.N.E/PS loom is suitable for weaving products such as those seen in **Figure 4**, from materials such as stainless steel, high-tensile carbon steel and high-content alloys.

Additional Loom Systems

Trinca also offers PC-controlled looms with a shuttle weft insertion system for weaving tubular fabric and felts as well as weaving single or multilayer fabrics into extremely heavy transport belts. These machines feature specially developed programming software and an electronically controlled and driven dobby (patented) for up to 24 (or more) heddle frames.

Trinca also offers looms for weaving plastic and synthetic fabrics as well as for weaving carpets from natural fibers, wool, paper, etc.

Loom Technical Specifications

All Trinca looms can be individually customized and offer a modular steel supporting structure and patented weft insertion system with one or two servomotor-driven bandrapiers. Slay-driven systems feature complementary cams running in an oil bath with a standstill during heat-up. The looms can be supplied with three-roller fabric tensioning and up-winding device, direct fabric tensioning and up-winding device with only one take-up beam or with a fabric up-winding device positioned outside the loom.

Electronic loom control, regulation and synchronization of all operating functions are accomplished via PC incorporating a Pentium processor. The system can control (separately or in synchronization) from one to 10 in-line running warp beams, with each driven by a servomotor.

Additionally, Trinca Company offers electronically controlled weft feeding and color changing devices for up to 12 different colors. Trinca looms can also be supplied with:

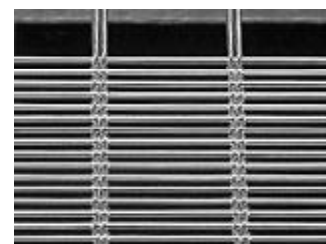
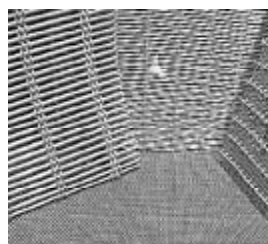
- Flat or ring warp beams.
- Warp beams with cannisters.
- Electronically controlled/driven warping devices.
- Weft prespoolers and compensation devices.
- Motorized weft uncoiling devices.
- Weaving edge welding devices.
- Weaving edge tucker devices.
- Weft and warp pre-crimping devices.
- Servomotor-driven shuttle launching systems.



Fig. 3 — Type T.N.E/PS loom for architectural fabrics & transport belts (inset: close-up of woven product).



Fig. 4 — Sample of products woven on the Trinca type T.N.E/PS loom.



- Servomotor-driven shuttle positioning and braking systems.

Trinca also offers patented technology that allows the conversion of old shuttle looms into looms with only one or two bandrapier weft-inserting systems for high production output. Trinca conversion kits can be assembled on small weaving machines with widths from only 900 mm (35") to large machines having weaving widths of more than 10 m (33').

These conversion kits also feature electronically controlled front and rear regulators that replace mechanical regulators, and weft preparation and color-changing devices with up to 12 color-changing positions.

To learn more about the metal wire looms offered by Trinca, contact the author or **Circle 208**.

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Company Profile..

Trinca's 10,000 m² (107,640 ft²) facility includes a 4500 m² (48,440 ft²) covered production plant with the latest high-technology manufacturing equipment. Trinca looms are developed/ designed by experienced engineers and technicians, and are made with skilled craftsmanship. Technical support service, fast spare parts delivery and cooperative synergies with other specialized companies and globally represented suppliers, allows Trinca to provide its customers with prompt, flexible and competitive wire weaving solutions.

