

*Expanded Applications of
TSUDAKOMA's Jet Looms*



TSUDAKOMA

Technical fabrics

TSUDAKOMA Looms for technical fabrics

Since founded in 1909, when shuttle looms were flagship for products and sales, TSUDAKOMA provided looms to weave technical fabrics, such as hoses and dust-collecting cloth used for incinerators. We still provide looms for technical fabrics even now, when jet looms are a leading product after the time of rapier looms. With advanced technology, TSUDAKOMA responds to production demands of high level, further extending the field of technical fabric weaving.

Also in the field of technical fabric weaving, it is important to have high reproducibility of setting conditions and ease of handling, as the adjustment work is mainly done by entering numerical values on the user interface.

TSUDAKOMA's weaving machine for technical fabrics is developed based on our standard loom that is highly electronically-controlled and user friendly. It can not only produce high quality technical fabrics but also responds to various demands, such as energy savings or occupational health and safety improvement.

At present, approximately 30% of TSUDAKOMA's looms sold yearly in Japan are provided for the purpose of technical fabric weaving.

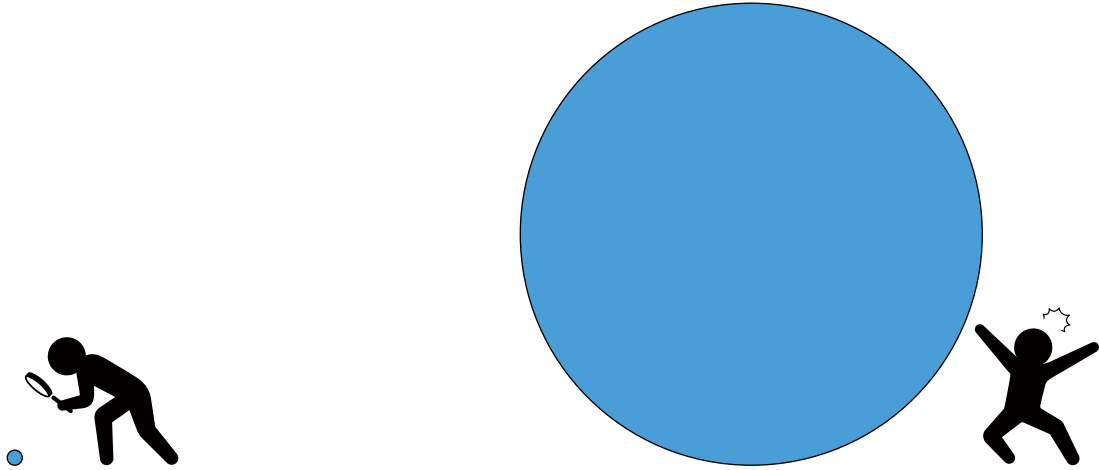


A variety of yarn materials

Polyamide (PA), Polyethylene terephthalate (PET), Polypropylene (PP), Polyethylene (PE), Polytetrafluoroethylene (PTFE, fluoroethylene resin), Polylactic acid (PLA), Polytrimethylene terephthalate (PTT), Polyacrylonitrile (PAN, acrylic), Polyvinyl alcohol (PVA, vinylon), PAN carbon fiber, Pitch-based carbon fibers, Quartz glass fibers, Rayon, Cotton, Linen (ramie, linen), Jute, and etc.

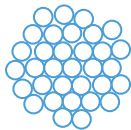
A variety of yarn thickness (fineness)

TSUDAKOMA's water jet loom achieves an extremely broad range of weaving performances from 8 dtex polyamide to 5,600 dtex polyester. Our highly versatile looms extend a wide range of specifications, ultra-fine yarn to ultra-thick yarn.

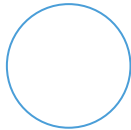


A variety of yarn shape

Yarns are not always simple such as bundled monofilament. Our loom for technical fabric weaving meets a variety of yarns.



Multifilament



Circular cross-sectional monofilament



Flat monofilament

Protect / Prevent

In global climate change, our lives are exposed to more disaster crisis such as typhoons and floods due to intense rainfall than ever before. Also, we are surrounded by life-threatening infections and pests due to bacteria and viruses. At the forefront of life protection against those crisis, fabrics woven with TSUDAKOMA's loom are there.

Shades for agricultural crops

(Insect screen, Cheesecloth)



While agriculture is given from nature's blessings, it is also a battle to protect crops from nature's power. Against wind and rain, pests, and excessive sunlight, TSUDAKOMA's loom fights together.

Sandbags



Sandbags used in the disaster-prevention areas are woven with film-shaped flat yarns. TSUDAKOMA's loom can also weave flat yarns.

Mosquito net



Mosquito-borne diseases such as dengue fever and malaria are expanding in many parts of the world. Effectiveness and importance of a mosquito net is now preferred, as it was when there were no air conditioners. TSUDAKOMA can offer a weaving method best suited for yarn materials ranging from natural fiber yarns to synthetic fiber yarns.

Screen door

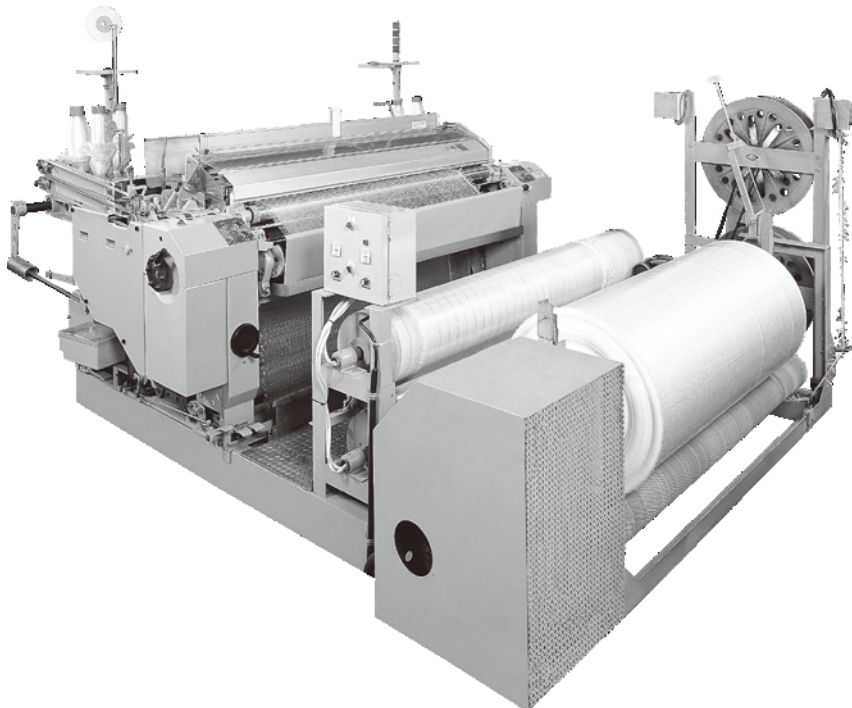


Surgical gown



A surgical gown protects doctors and nurses who work on the cutting edge of medical care. The fabric production for the surgical material is also in our loom's arena.

It is possible to weave all items with TSUDAKOMA's looms, the air jet looms of ZAX001neo and ZAX9200; or the water jet looms of ZW8200 and ZW8100. Much detailed specifications and dedicated devices are available according to yarn kinds, cotton, staple fiber spun to synthetic yarns, fine count to thick count, and monofilament. Please consult with TSUDAKOMA.



《Water jet loom for polypropylene (PP) flat yarn》

The devices for flat yarns are provided: squeeze roll dehydration mechanism, dedicated clamber, optimized beating angle, heat cutter, off-loom take-up device.

For the measuring and storage section, it is possible to choose feeder type or belt type. The APR Automatic defective Pick Remover can also be provided with the loom for flat yarn weaving.

CARRY, MOVE

The vehicle diffusion rate has doubled in the most recent 30 years. The number of vehicles owned around the world exceeded 1.3 billion units (as of 2019), and it is said that it will probably exceed 2 billion units in 2050. Tire's are indispensable for vehicles, an airbag enhances driver's safety, and car seat fabric gives comfortable driving support. TSUDAKOMA's loom weaves these materials and fabrics.

For an automotive airbag, for example, which is a base fabric that will be cut and sewn afterward, a water jet loom is the most reasonable method of weaving. On the other hand, to weave OPW (One-Piece-Woven) side curtain airbag that is followed by hollow weave process, an air jet loom might be the superior method. TSUDAKOMA can offer two solutions with air jet loom and water jet loom.

Airbag fabric, One-Piece-Woven airbag



Depending on the application from coated to non-coated super-high density fabrics, the shedding motion can be chosen (including crank to dedicated positive cam with a different dwell angle).

Belt fabric

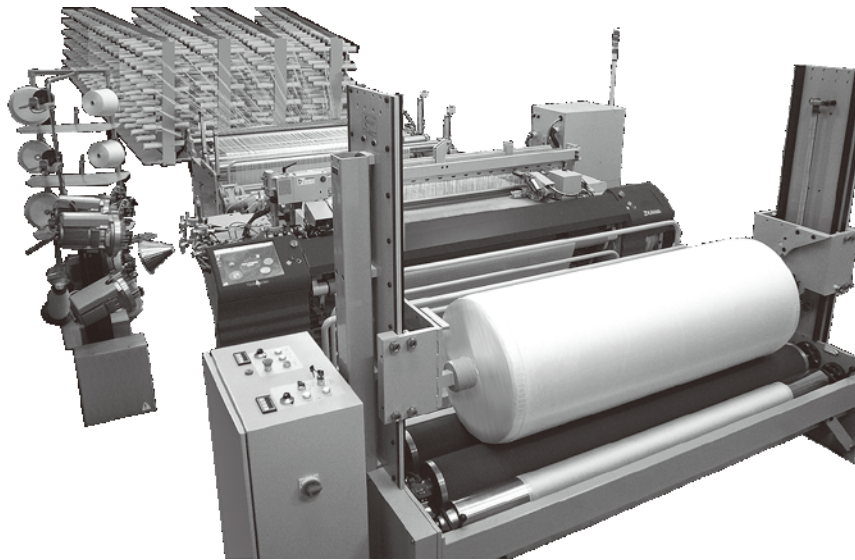


For the purpose of efficiency and durability, textile base materials are used for power transmission belts. The same applies to abrasive belts and conveyors. We are capable of weaving high-strength base fabrics.

Tire part (cord, chafer etc.)



Automobile tires are required to provide a variety of performance features such as safety, good fuel economy, quietness, and ride comfort. Structural parts made of fibers also play a role in achieving these requirements. We can provide looms with specifications that match the weaving of each component.



《Air jet loom for tire cord》

The ZAX9200iTC is for tire cord weaving. It is a dedicated machine provided with all the necessities to weave tire cord fabric, Warp sheet feeding, weft insertion, tuck-in selvage formation, and large-diameter take-up are performed at extremely high speed. Maximum weaving speed reaches 1,000 rpm.

A reusable shopping bag of thin synthetic fabric that is used around the world, a tote bag made of heavy cotton canvas, heavy-duty bag cloth of thick-count synthetic oxford, and a waterproof bag of PVC-coated tarpaulin cloth. Those bags which carry something important for you might be woven with TSUDAKOMA's weaving machine.

Reusable shopping bag



Business bag, Travel bag



Tote bag



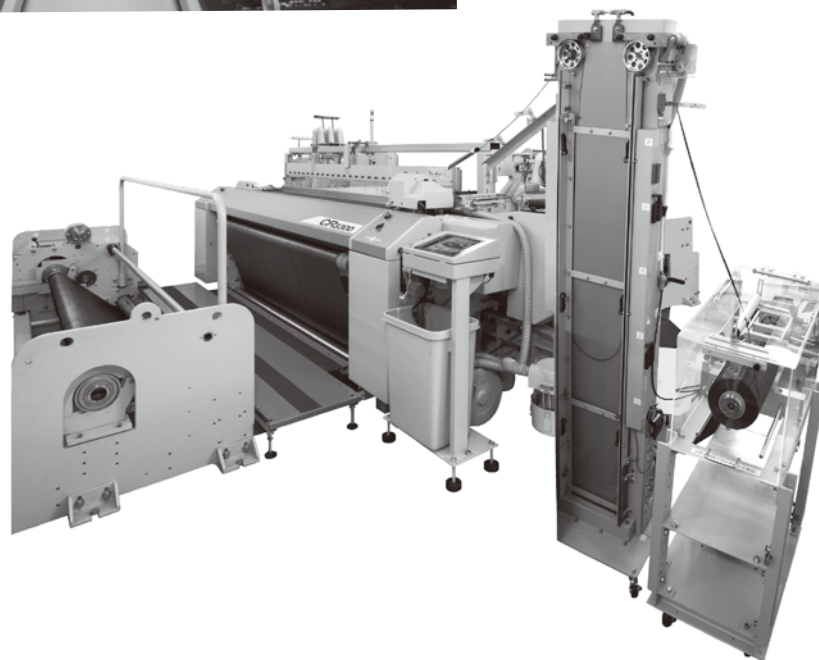
Waterproof bag



Strong and lightweight

A carbon fiber fabric combines strength and lightness contrary to the conventional wisdom, the more robust, the heavier. The scope of carbon fiber fabric is expanding to the aerospace industry, construction industry, and sports and leisure industry. TSUDAKOMA contributes to the growth of various industries through the loom.

Carbon, Glass



《Rapier loom for carbon fiber fabrics》

The CR3300 rapier loom targets composite fabrics, carbon fiber or aramid fiber and glass fiber. Equipped with one-side band rapier mechanism with guideless and slay running system, the CR3300 can reliably weave the 1K~48K fabrics of 150 cm to 210 cm-width (two-panel weave of 100 cm width x 2 panels is also possible) without transferring weft yarn at the middle section of weft insertion. Explosion-proof electric components to prevent fires due to carbon flies, warp supply creel (rolling type with a brake), and dedicated tension stand are provided with the CR3300 rapier loom. A positive cam is provided with the CR3300 rapier loom, responding to the case where not only 1/1 plain weave but twill weave is also needed to make an excellent from. For weft supply, it is possible to choose regular feeder or special feeder without twisted release even for flat yarn.

Both carbon fiber and glass fiber have extremely poor elasticity. If the yarn itself does not have elasticity, weaving is harder. Since both of them have superior strength, it is necessary to cater for different applications, For example, a special cutter which is different from the one used to weave general clothing is needed. TSUDAKOMA will meet the various requirements.

Making comfortable life

You open a curtain to let in the sun.
You turn the switch of an air conditioner on and off.
Spend lunch time on the terrace in a restaurant.
You enjoy DIY with your family on a holiday.
You make a lather with a body soap in a bath.

TSUDAKOMA's loom not only play a main role in the clothing and fashion field, but are indispensable for the supply of various housing & industrial materials in the living environment.

Monofilament yarn filter



TSUDAKOMA's loom accommodates a wide range of products, Monofilament filters for removing dust from electrical appliances, ventilation equipment, etc. available in a wide range of yarns from thick to fine (Around 280 dtex to 22 dtex).

Wash cloth



A wash cloth to make a lather with soap that is used in a bath can be woven with TSUDAKOMA's loom.

Curing tape, Adhesive tape



TSUDAKOMA supports a tape fabric weaving made of various materials, plastic film yarn, synthetic filament yarn, and staple fiber spun yarn.

Awning, Tent

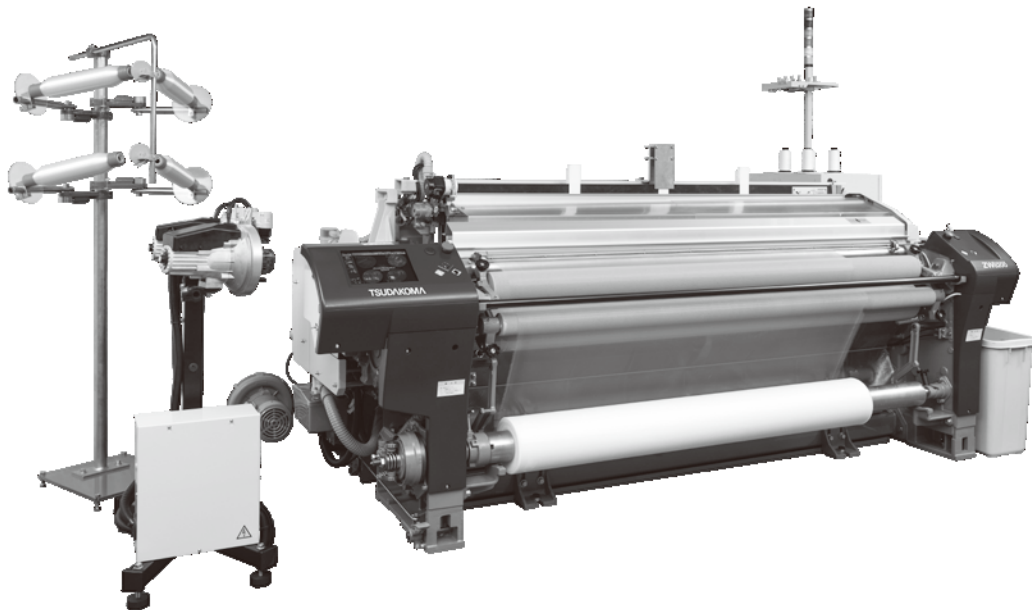


There are surprisingly many tarpaulin fabrics in our daily lives; an awning on the edge of the eaves and a tent used for a simple outdoor warehouse. They might have been woven with TSUDAKOMA's loom.

Tea bag etc.



TSUDAKOMA's looms have the potential to be suitable for weaving ultra-thin filters. Taking these characteristics, it is possible to use them to weave food and beverage filters.



《ZW8200 Water jet loom》

High productivity exceeding 1,000 rpm can be achieved with high fabric quality. Highly convergent nozzles with less water splash do not affect the mesh shape. Focusing on filter materials, which often need to be woven in long lengths, the machine can also handle fabric rolls with a larger diameter than those for general fabrics. We can also offer air jet loom weaving according to the environment of the factory location.

To an outdoor adventure

Outdoor leisure activities, such as trekking, camp, and marine sports, are now a great trend. For the activities in the natural environment that are sometimes exposed to severe weather, high-performance equipment is necessary.

TSUDAKOMA's loom is used in production of the equipment's material: the equipment satisfies outdoor-activities-oriented performance (such as waterproof, coldproof, lightweight properties and portability) and refined design.

Outdoor gear (Tent, Sleeping bag)



For the equipment of outdoor sports including mountain climbing, contradictory performances of excellent portability and high durability with small size/lightness are needed.

TSUDAKOMA helps weave the equipment's material that meets the demand in the higher dimension.

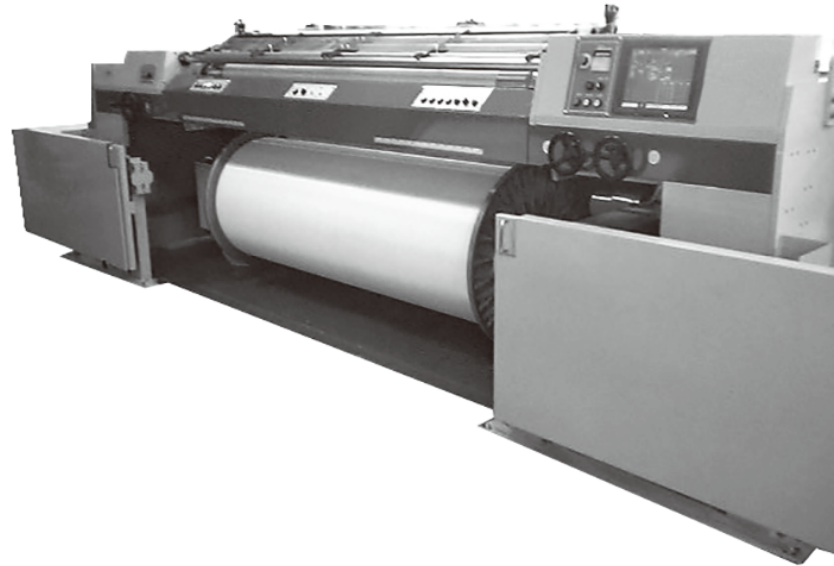
Paraglider



Yacht sail



**TSUDAKOMA supports customers
from warp preparation process to technical fabric weaving.**



TSUDAKOMA also sells the preparatory machines for the warp beam such as warper, sizing machine, and beamer. Warp preparation that is a previous process of weaving is important because it affects the success and quality of weaving. Ranging from the beam forming to weaving, TSUDAKOMA totally supports customers.

For the technical fabrics, the warp preparation machine may need the specifications that are different from those for general clothing fabrics, like the weaving machine. TSUDAKOMA, of course, responds to special requests on warp preparation machines.

For thick synthetic and monofilament yarns, for example, the special press roll in the take-up section that is not provided with general beamer may be needed. TSUDAKOMA can offer the special press roll with different type of the take-up head frame. We can also provide the beamer with high-tension specifications with a maximum take-up tension of 10,000 N or 15,000 N.

Consult with TSUDAKOMA for any requirements for unconventional machines.

The Product catalogs: T-Tech Japan Corp. website
<http://www.t-techjapan.co.jp>



