

ZW^{Professional}8100

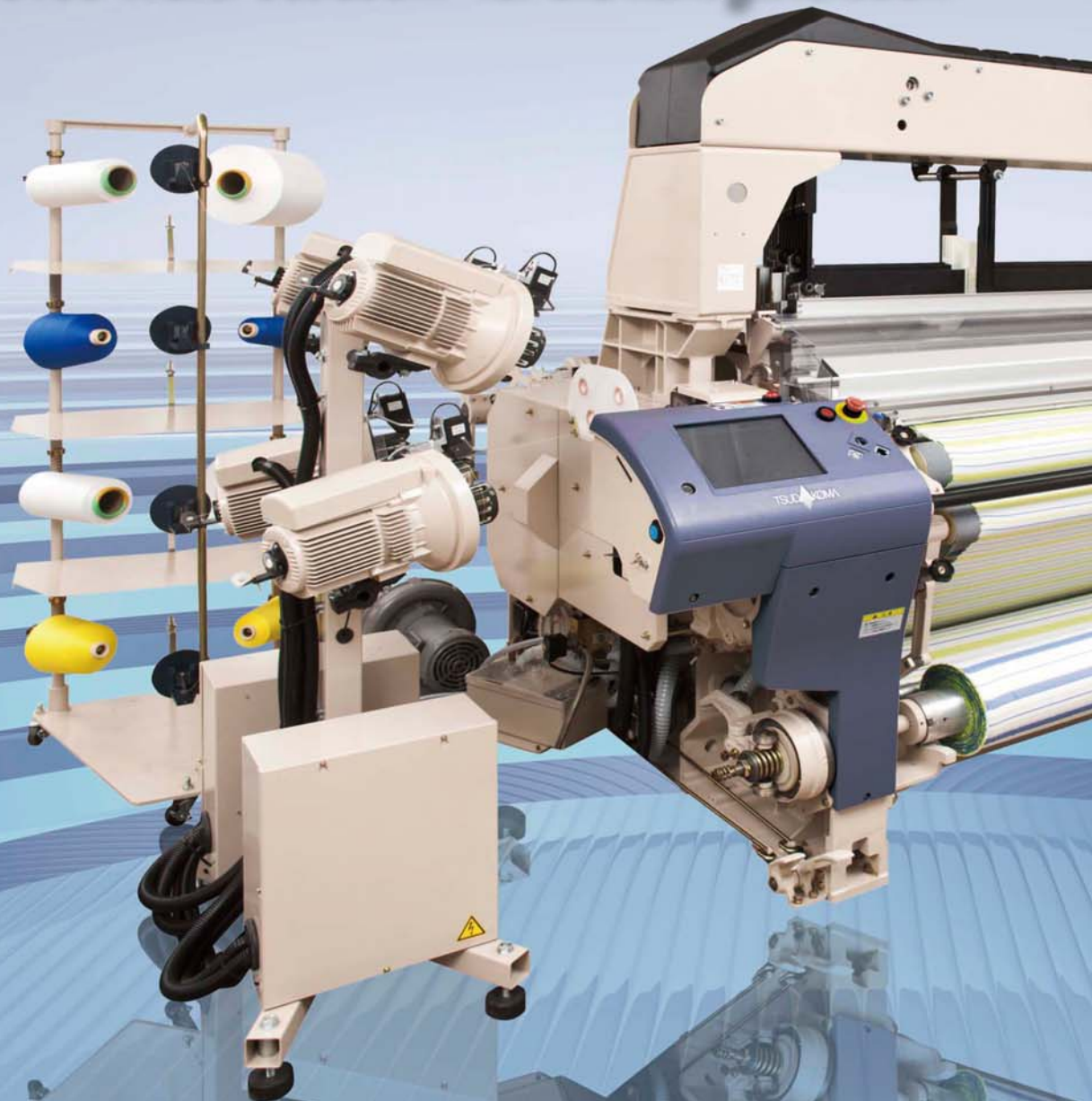
WATER JET LOOM



TSUDA  KOMA

ZW8100 *Professional* WATER JET LOOM

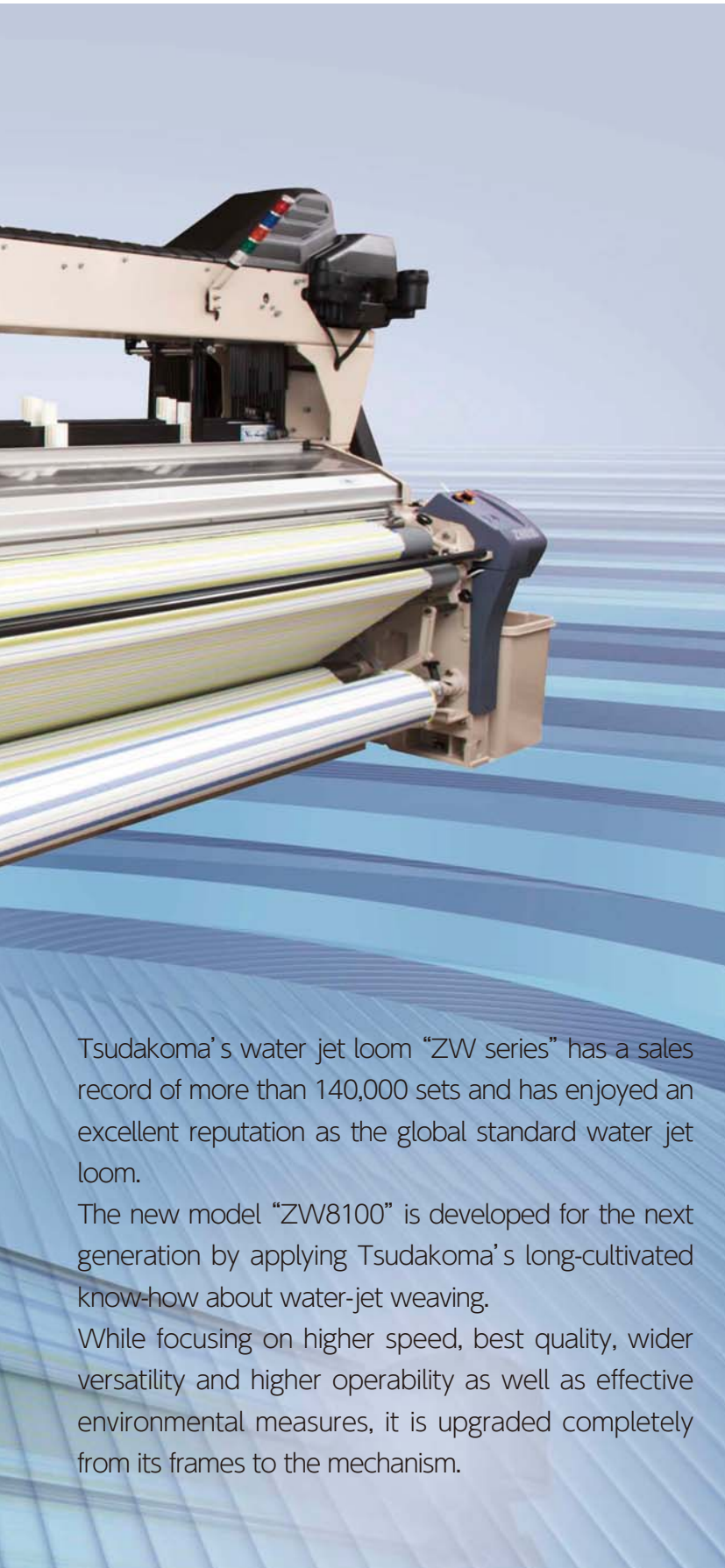
*Tradition and technology create a new legend.
The "ZW8100 Water Jet Loom" for the next generation*



Smart Ecology
Ecology and Economy in Harmony

The Weave Navigator

The basic abilities of the existing series are inherited and further enhanced for the next generation.



Tsudakoma's water jet loom "ZW series" has a sales record of more than 140,000 sets and has enjoyed an excellent reputation as the global standard water jet loom.

The new model "ZW8100" is developed for the next generation by applying Tsudakoma's long-cultivated know-how about water-jet weaving.

While focusing on higher speed, best quality, wider versatility and higher operability as well as effective environmental measures, it is upgraded completely from its frames to the mechanism.

Higher productivity

Tsudakoma pursues ultra-high speed operation and designed the "ZW8100" optimally from its frame structure, beating and shedding, and increased its weft insertion performance with the pitch-shortened nozzle. This increases the ZW8100's operation speed by 10% compared with existing models.

Best quality

The robust frame structure, reinforcement of the let-off motion, and shortening the cloth passage at loom front allow higher pick density. High speed while keeping the best fabric quality is attained at high levels. Furthermore, the PSS-W Programmable Start System is developed to efficiently reduce stop marks.

Higher operability

The "ZW8100" employs the "Weave Navigation® System" for better operability. Almost all electric adjustments can be done via the Navi-board. Its warp line height is 40-mm lower than the existing model for easy access. Furthermore, it automatically conducts pick finding after recovering from a loom stoppage and re-starts, demonstrating outstanding operability.

Wider versatility

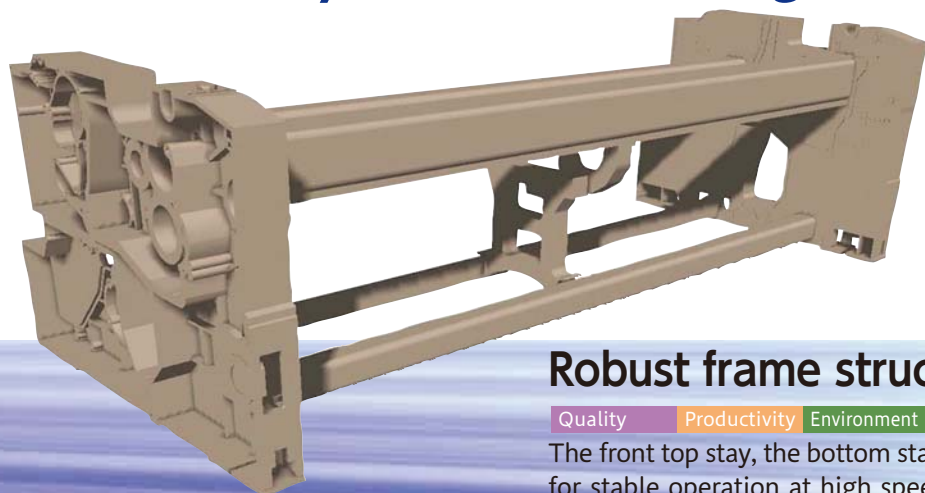
The "ZW8100" supports a wider range of fabrics: from extra-fine to thick yarns, from narrow to wide widths, and unbalanced construction such as double weave. To achieve this versatility, the "ZW8100" uses a combination of an electronic dobby machine, pitch-shortened nozzle, a twin pump, and 4-color weft selection.

A short cloth route at loom front allows a higher density fabric to be woven steadily.

Environmental measures

Tsudakoma always positively works on environmental issues. The "ZW8100" requires 5% less electric power compared with the existing model thanks to redesigning the mechanism for weft insertion, shedding, and beating. In addition, its robust frame structure and the optimized beating mechanism reduce vibration by 25% compared with the existing model. We deliver energy saving and environmental measures.

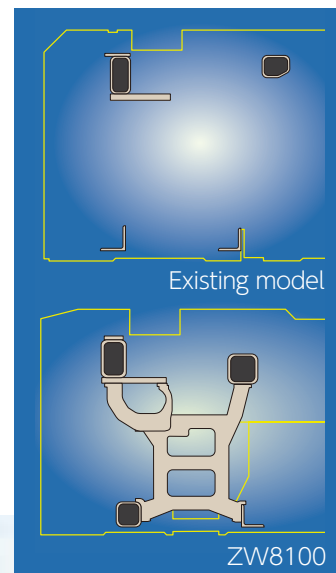
Higher Productivity and Best Quality achieved at High Levels



Robust frame structure

Quality Productivity Environment

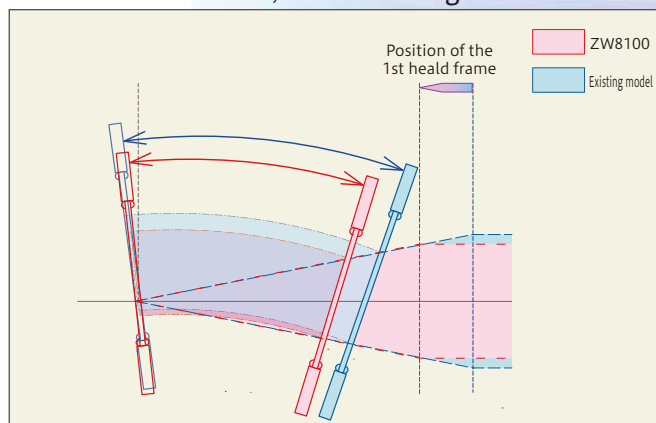
The front top stay, the bottom stay and the back top stay are strengthened for stable operation at high speed. The transverse rail **OP** is employed for special fabrics such as air bag and double weave, controlling vibration efficiently.



Short stroke beating

Productivity Environment

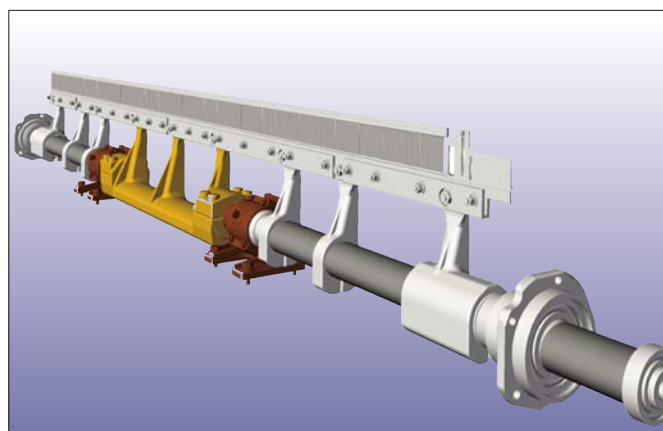
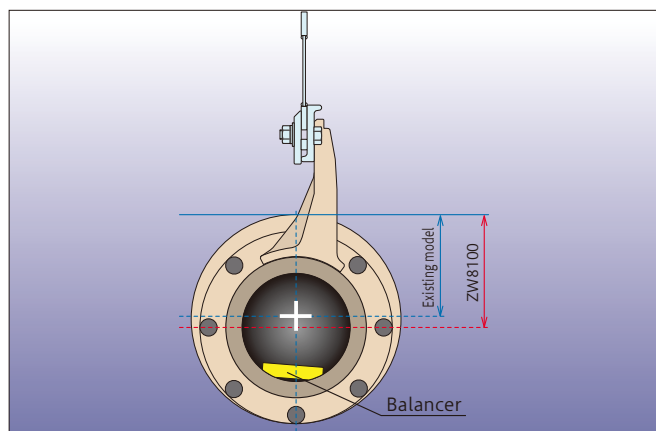
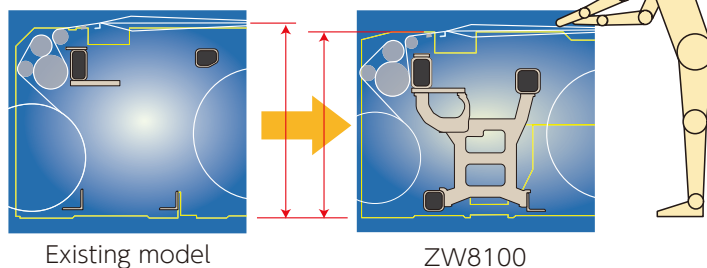
By shortening the beating stroke and making the position of the 1st heald frame closer to the cloth fell compared with the existing model, high speed operation is attained while maintaining fabric quality. For 3-color or more weft selections, a 6-link beating motion is used.



Low warp line

Operability

A 40-mm lower warp line compared with the existing model extensively enhances workability such as warp repair, contributing to a reduction in vibration.



New Offset rocking shaft **PAT.**

Quality Productivity

For the standard specifications with a reed space of 190 cm or less, a pipe-type offset rocking shaft is provided. Vibration is reduced compared with the existing models for better operation.

Offset rocking shaft (Intermediate supporter type) **PAT.**

Quality Productivity

The weight is reduced by separating the main shaft section and the balancing section of the rocking shaft, achieving high-speed and balanced beating.

In Pursuit of Wider Versatility and Best Quality with Fulfilling Devices

Electric weft pull-back device **OP**

Quality

For some fabrics, the weft tip that protrudes from the nozzle is pulled back to give it a good posture in order to prevent the weft yarns from being entangled. This stabilizes weft insertion.



WBS Weft Brake System **OP**

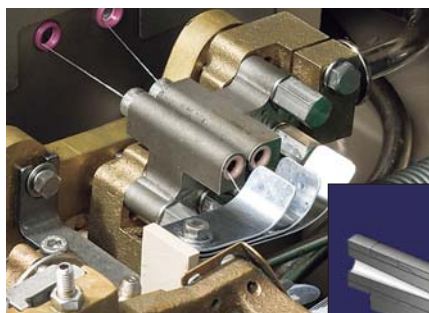
Quality

The WBS effectively reduces peak tension at the end of weft insertion and makes the crimping effect of high-twist yarn fabric even. It also prevents tight or loose pick of textured fabrics.

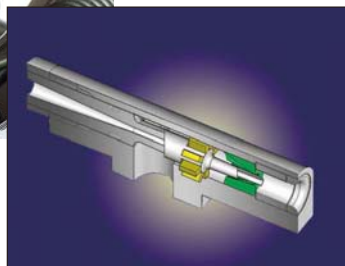
Pitch-shortened nozzle **PAT.**

Versatility

The pitch between the nozzles is shortened. This decreases the difference between the weft inserting conditions of the two nozzles. The time for weft insertion is increased, achieving stable weft insertion at high speed operation.



With the double stabilizer, convergence of jet water flow is enhanced.



OPF feeler for extra-fine yarn **PAT.** **OP**

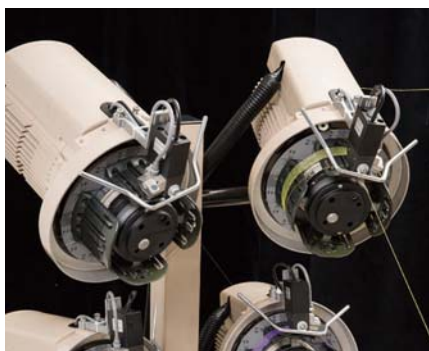
With a special feeler and amplifier, weft detection is enhanced.

It is possible to detect bright yarn of 33-dtex or less and mono-filament which were difficult to detect with the existing feeler.

New FDP-AllIW Free Drum Pooling device

Quality Versatility Operability

With an advancing mechanism that is excellent at high-speed and positively separates yarns, even a thick yarn is easily stored and released. It supports various types of weft. It is possible to adjust the diameter of the FDP drum with a simple operation.



Twin pump **OP**

Versatility

Layout is redesigned. Special shaft for cam driving is attached, achieving high speed operation.

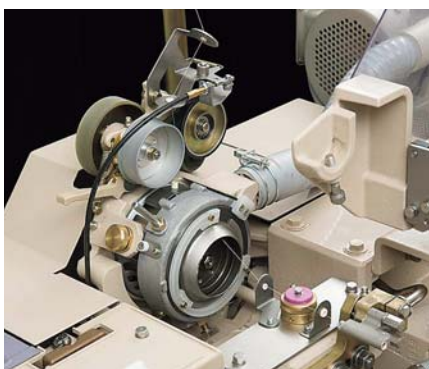
Stable high-speed operation for value-added fabrics that use weft yarns of different characteristics is achieved.



RDP Rotary Drum Pooling device

Quality

As the maximum tension given to the weft is relatively low, quality fabric weaving is assured even at higher speeds with the single nozzle use. In addition to regular yarn fabrics, those value-added fabrics such as twisted, taslan, nep, or loop yarn are easily woven. With the inverter control **OP**, airflow amount is controlled properly for energy saving.



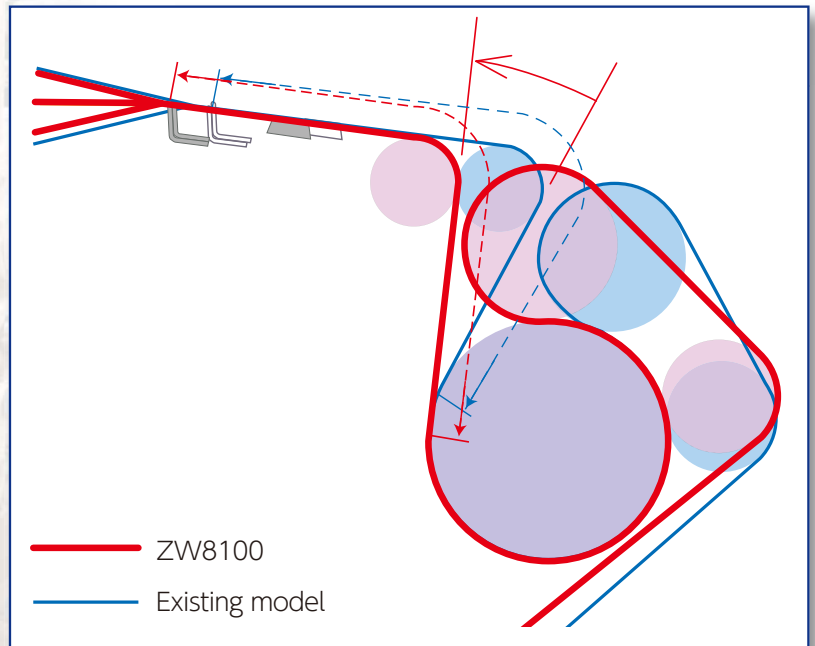
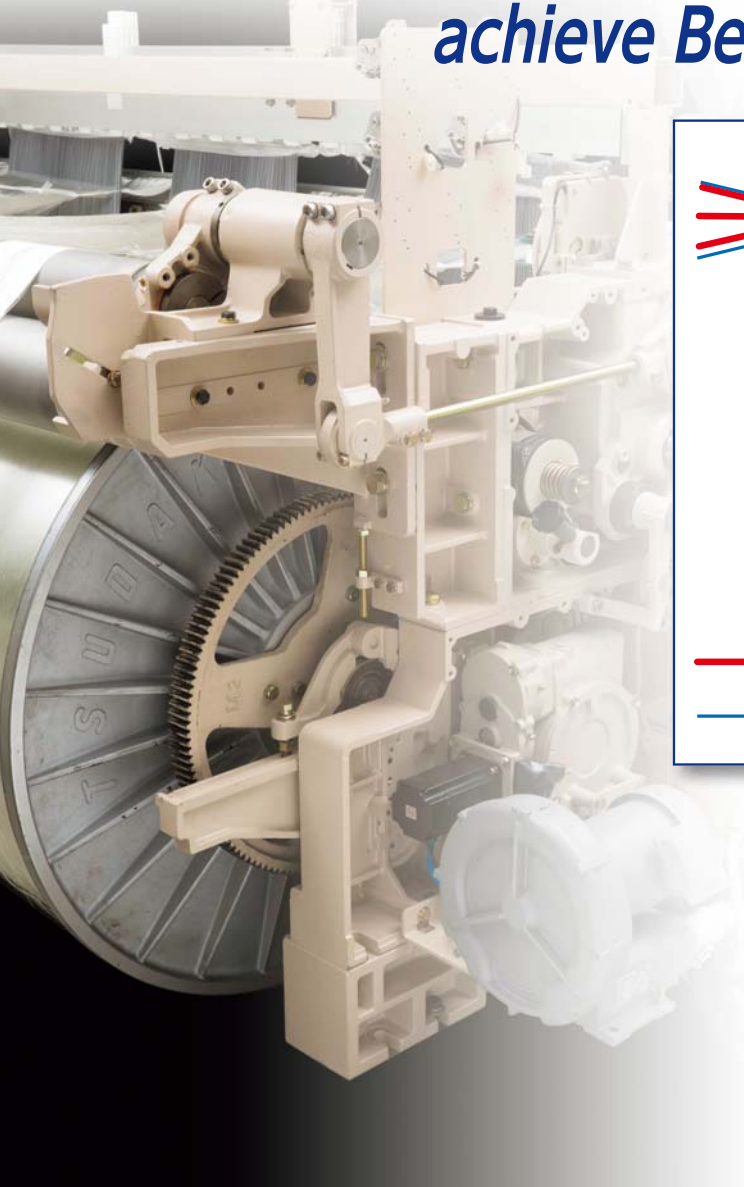
SDP Stationary Drum Pooling device

Productivity Environment

The SDP does not require a storage blower. Great energy saving is expected. The tension given to the weft is small, so the difference in measuring pick length is minimized.



“ELO” (Electronic Let-Off) and **“ETU”** (Electronic Take-Up) achieve Best Quality at High Levels.



Higher pick density

Quality

Shortening the cloth passage allows stable weaving of higher density fabrics.

Inclined cloth passage

Versatility

By inclining the cloth passage from the cloth fell, the stable operation to produce even unbalanced fabric construction such as double weave is achieved without causing vertical movement at the cloth fell.

It is possible to use with the reed protection **OP**.

Optimum Shedding Supports a Wider Range of Fabrics.

■ **Crank shedding** Up to eight shafts are supported.

■ **Positive cam shedding**

■ **Positive or negative dobby shedding**

■ **ECS Exclusive positive Cam Shedding for plain weave** **OP**

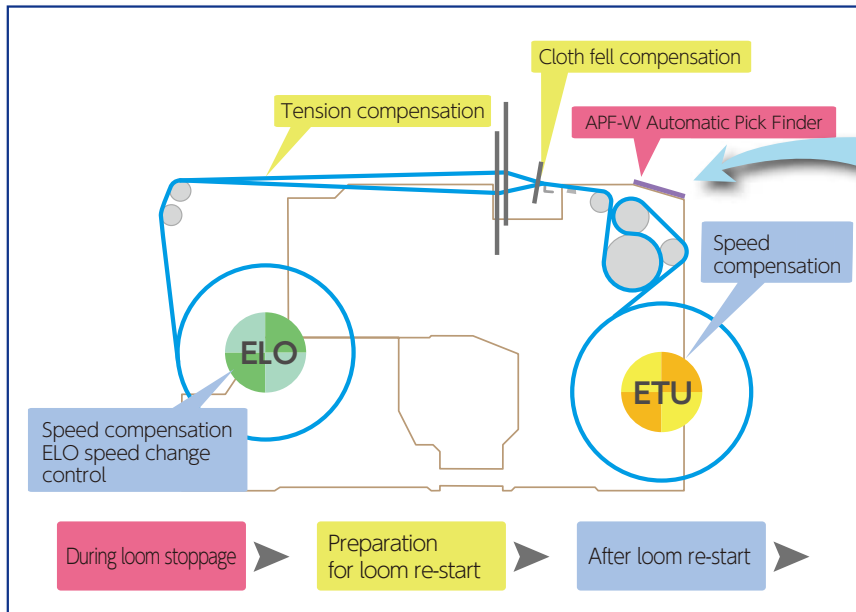
Versatility

The Tsudakoma's positive cam shedding uses less power because no cables or wire guides are provided. Maintenance is easy. The ECS is suitable for high density fabrics, such as airbag.



ECS Exclusive positive Cam Shedding for plain weave **OP**

PSS-W Programmable Start System for ZW PAT.



Weave Navigation® System



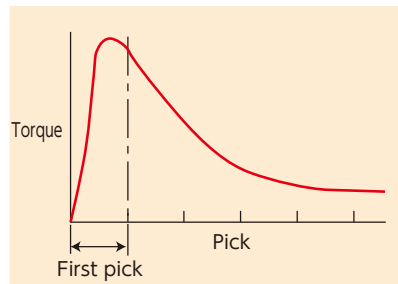
Quality

In addition to the cloth fell control just before re-start (kickback), the PSS-W compensates for speeds immediately after re-start to reduce stop marks after the cloth fell, by the linked operation of the ELO and the ETU. The warp tension that was changed during loom stoppage is also compensated. The PSS-W controls speed changes of the ELO immediately after re-start. It has two setting modes, "Standard" and "Details." The "Standard" mode is a simple setting mode for stop mark prevention for general fabrics. The "Details" mode allows detailed adjustments for stop mark prevention for fabrics which are difficult to weave.

Rush-start motor

Quality

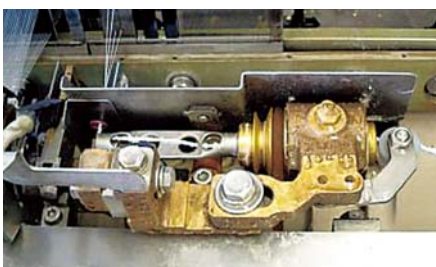
The rush-start motor provides an ultra-high torque start and effectively prevents stop marks and first pick looseness. Large capacity electromagnetic brakes directly connected to the crankshaft accurately stop the loom at the programmed position.



Catch cord spindle with perpendicular arrangement PAT.

Quality

Catch cord vibration is eliminated and catching failure is reduced.



Positive easing PAT. OP

Quality

Change in warp length caused by shedding motion is positively compensated at shedding. It is effective for stable cloth fell and secured beating while maintenance is easily done.



The Weave Navigator

Ultimate weaving support

In addition to pursuing high speed and high quality, Tsudakoma holds the concept of the "Weave Navigator" leading to higher user satisfaction by providing our accumulated wealth of weaving expertise.

Weave Navigation® System

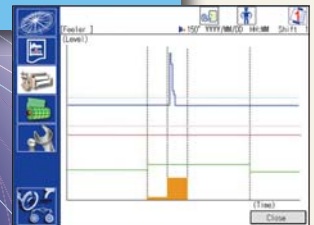
Weave Navi®

The Weave Navigation® monitors loom operation while the loom is in operation. It gives advice to improve the operation in various situations, navigating you to the best weaving possible.

Self Navigation

Excellent self-diagnosis and maintenance information allow easy maintenance. Adjustments for the feeler and let-off operation do not need measuring equipment.

Weave Navigation® System



TLM

Tsudakoma Loom
Monitoring system

Tune Navigation

The best setting values are automatically entered for your fabric and loom specifications. Automatic setting for the warp tension is possible. Optimum mechanical settings are recommended for the tension roll height, shedding amount, and shedding timing according to the fabrics to be woven.

Trace Navigation

When solving a problem like a stop mark, which needs to adjust multiple setting items, operators need only to adjust one setting to change all the related set values to the optimum based on Tsudakoma's accumulated weaving experience.

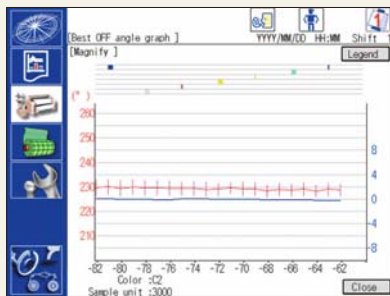
Higher operability attains stable quality and high productivity.

APF-W Automatic Pick Finder **OP**

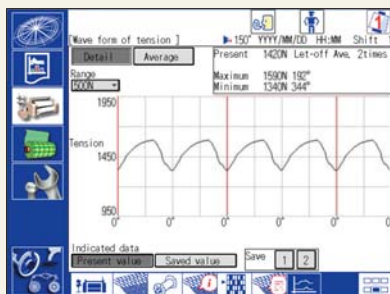
Operability

The APF-W automatically rotates the loom in reverse to find a pick when the loom is stopped. With its automatic re-starting operation, the number of times that an operator must operate the buttons is decreased. Thus, the operability is increased. The pick finding position to stop reverse rotation of the loom can be set for two reasons for loom stoppage: filling and other than filling.

AJC-W Automatic Jet Control **PAT.** **OP**

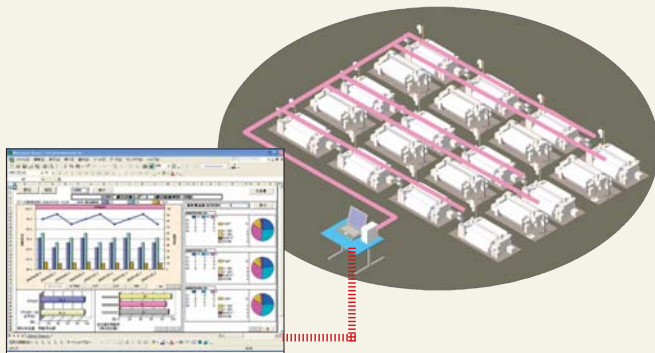


Warp tension indication in waveform



Network application

TLM Tsudakoma Loom Monitoring system



The TLM is the LAN system that can easily be installed using the Ethernet through the LAN port, which is provided on the Navi-board. As well as monitoring operation of the looms, bi-directional communication supports loom-to-loom setting data transfer and dobby pattern data transfer.

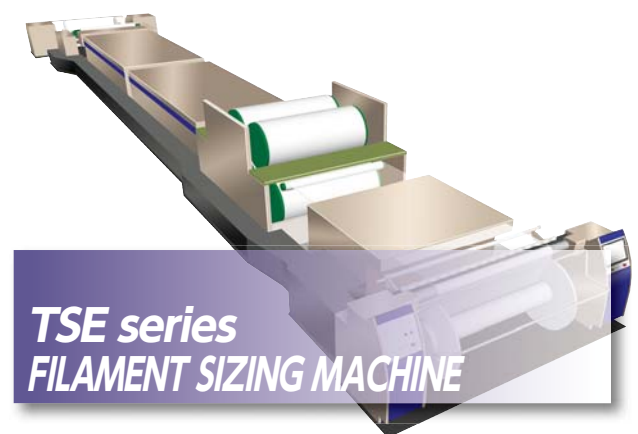
Note: For the functions of the Weave Navi® and browsing the manuals & parts catalog, the TLM is required.

T-Tech Japan's own control technology stably controls the tension from low to high.

The preparation process has a large effect on loom operation.

T-Tech Japan's products are top-level performers and of the best-quality. They are ready for small lot production and the fast-changing market demands in preparatory machines. They also help improve the quality and operations of the weaving process.

T-Tech Japan has the largest market share in the world in filament sizing machines.



Versatility:

Low- and stable tension control in a wide range.

Quality:

Automatic tuning controls the temperature for the hot air chambers for the best drying.

Productivity:

Max. yarn speed: 300, 500 m/min

Size drying according to production amount

Easy operation:

User friendly "Sizing Navigation System."

Adjustment with the T-MDS.

Energy saving:

Optimized & precise hot air circulation by inverter-controlled blower system.

Specifications

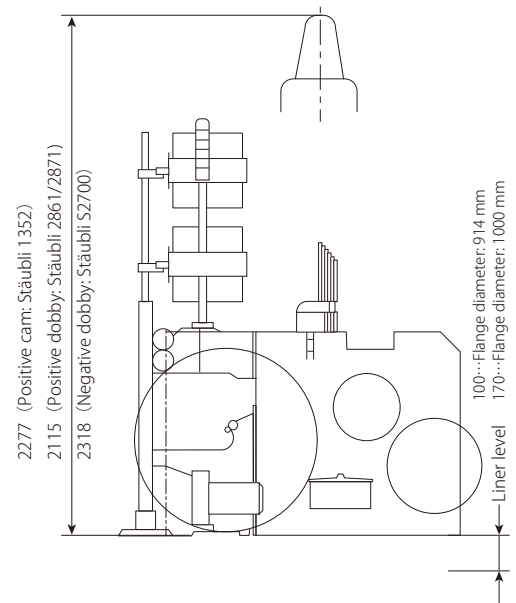
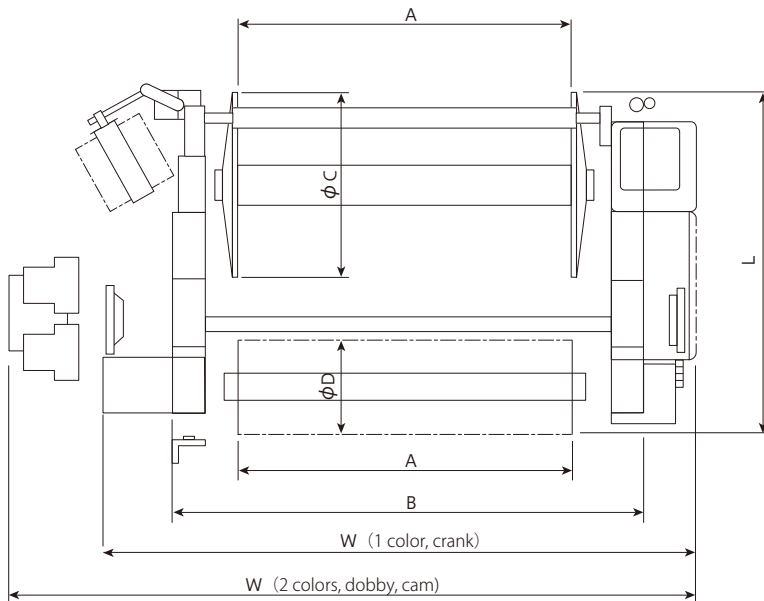
Item		Description	Optional
Reed space	Nominal (cm)	170, 180, 190, 210, 230	150
	Useful reed space	Nominal reed space with maximum reduction of 50 cm	Nominal reed space with maximum reduction of 60 cm/ 80 cm
Weft selection		1-color, 2-color at-will	
Driving	Starting method	Driven by a rush-start motor	
	Motor capacity	2.2kW, 3.0kW, 3.7kW	
	Operation	Stopped by the electromagnetic brake at the programmed position Push button operation (arrange, run, stop, forward inching, reverse inching, programmed position stop after one turn reverse rotation)	APF-W Automatic Pick Finder (2 colors or more)
Beating		Crank beating, multiple sword beating system. Oil bath lubricating system	
Weft insertion	Pump system	Plunger-type spring pressure system	Twin pump
	Nozzle	Ring nozzle stabilizer system (Ceramic needle)	
	Measuring & storage	SDP Stationary Drum Pooling device (1 color) RDP Rotary Drum Pooling device (1 color) FDP-AIIIW Free Drum Pooling device (2 colors, 3 colors, 4 colors)	WBS Weft Brake System Electric weft pull-back device AJC-W Auto Jet Control
Shedding		Crank type plain shedding: for 4 heald frames, for 6 heald frames Cam shedding: Top-mounted positive cam for 10 heald frames Dobby shedding: Top-mounted negative dobbie for 16 heald frames, Top-mounted positive dobbie for 16 heald frames	Crank type plain shedding: for 8 heald frames ECS Exclusive positive Cam Shedding for plain weave
Let-off		ELO Electronic Let-Off, PSS-W Programmable Start	Positive easing device
	Maximum tension	2300N, 4000N, 6000N	
	Distance from cloth fell to tension roll	Standard	
	Flange diameter	800 mm, 914 mm, 1000 mm	
Take-up		ETU Electronic Take-Up	
	Cloth wind-up diameter	520 mm	Off-loom take-up device
	Cloth passage	S-type inclined, S-type, F-type	Inclined with the reed protection
Weft supply stand		Floor-mounted stand, horizontal type	
Selvage formation		Twisting by planetary gear system	
Waste weft removal		Catch cord with spindle twisting system	Independent shedding motion for catch cord
Cutter		Mechanical cutter	
Temple		Top mounted. 2-barrel type with 2 rings each	Bar temple
Water suction		Slit tube suction system	
Stop motion	Weft yarn	OPF feeler	OPF feeler for extra-fine yarn
	Stop cause indication	Indication by message on Navi-board 4-color multi-function indication lamps	
Weave Navigation® System	Navi-board	Automatic data setting, recommended setting indication, optimum weaving condition information, automatic control, troubleshooting, self-diagnosis function, operating data indication, maintenance data indication	
	Network application	Weaving advice, operation manual & parts catalog browse, TLM Tsudakoma Loom Monitoring system	
Labor saving			APR-II Automatic defective Pick Remover Speed control inverter

Note 1: Specifications, drawings, and photos in this brochure are subject to change for improvement without prior notice.

Note 2: Some photos in this brochure include optional equipment.

Dimensions

Unit: mm



Reed space	A	B	W (2C FDP-AIIIW)	W (1C SDP, RDP)
170cm	1700	2310	3610	3060
180cm	1800	2410	3710	3160
190cm	1900	2510	3810	3260
210cm	2100	2710	4010	3460
230cm	2300	2910	4210	3660

Flange ϕC	800	914	1000
Cloth wind-up diameter ϕD	520	520	520
L (standard)	1810	1923	2001

Note: Dimensions may differ depending on the specifications. Please contact Tsudakoma for final confirmation.



DREAM NAVIGATOR SINCE 1909 TSUDAKOMA

Since its founding in 1909, Tsudakoma has been a vigorous pioneer in weaving technology.

While achieving higher productivity,
improving fabric quality,
and saving energy,
Tsudakoma has poured its energy into satisfying
the demands of multi-colored,
wide, and value-added fabrics.
As a result, Tsudakoma is the leader in
cutting-edge weaving technology.

Tsudakoma, as the Dream Navigator, continues creating
excellent textile machinery, opening the door
to a new era of weaving.



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