

TSUDAKOMA

**ZW**<sup>*Professional*</sup>**8200**  
**WATER JET LOOM**

# ZW<sup>Professional</sup>8200 WATER JET LOOM

*Enhanced while maintaining the basis of the best-selling ZW8100  
**Dream Navigator** leading synthetic fabric weaving*



## SDGs Activities

In the 21<sup>st</sup> century, globalization embracing diverse values has grown significantly in the world. By constantly keeping a sense of respect and gratitude to nature in mind, all the directors and employees of TSUDAKOMA and our group companies contribute to the new growth of TSUDAKOMA groups.

We work to realize a prosperous and harmonious sustainable society, in accordance with laws and the spirits held within our company creed, ethical standards, and codes of conduct.

**SUSTAINABLE  
DEVELOPMENT GOALS**

TSUDAKOMA supports the SDGs.

## Higher speed

**10% improvement**  
in loom RPM\*

\*Compared with the existing models

Water jet looms appeal to high productivity. Quick response to user's demand promotes timely and proper-quantity production, reducing stock wastage.

Provided with advanced nozzle and unique beating mechanism, the ZW8200 achieves a 10% higher speed.

## Water savings

**10% reduction**  
in water consumption\*

\*Compared with the existing models

Water is a limited and important natural resource. The ZW8200 reduces water consumption by 10% on average due to TSUDAKOMA's advanced nozzle.

## Clean

**70% reduction**  
in grease entry into drainage\*

\*Compared with the existing models

Keeping clean water is an important mission for looms that use water to weave fabrics.

The ZW8200 successfully reduces grease entry into drainage by 70%.



## Environmental Policy

Taking advantage of the plentiful water, clean air, and greenery of Ishikawa Prefecture, TSUDAKOMA develops businesses in textile machinery, machine tool attachments, and casting. Through *Monozukuri* and the development of human resources for which we always aim to achieve the highest quality, TSUDAKOMA contributes to local and international

communities.

We strive to realize safe and prosperous communities by sharing deep respect and appreciation for the environment between all our employees and by presenting a better environment to the next generation.

# To ever higher quality and productivity

## **New** UH type nozzle

\*Compared with the existing models

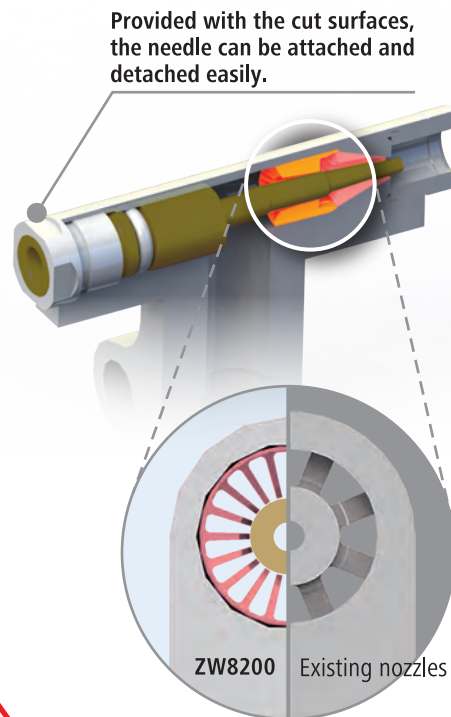
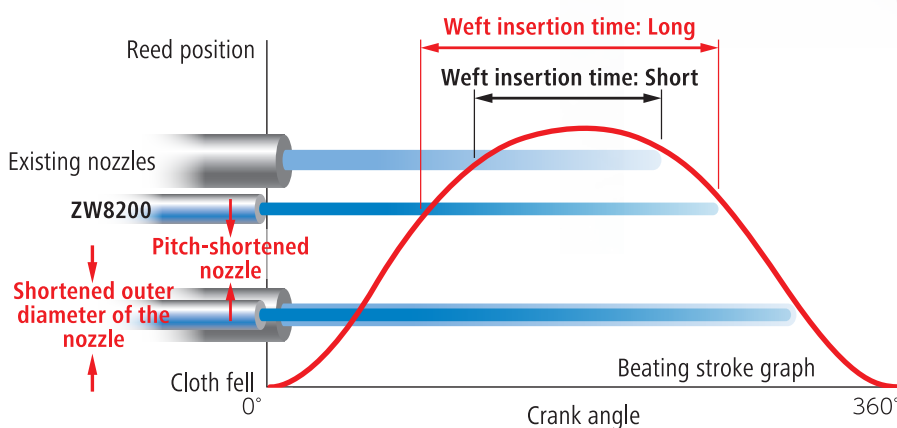
**10%** improvement  
in loom RPM\*

**PAT.**

By shortening the pitch between the nozzles, the difference in weft insertion for each nozzle can be reduced. Weft insertion time can be increased, achieving stable weft insertion during high speed operation.

For the stabilizer inside the nozzle, more rectifying fins are provided, compared with the existing models. Water jetting convergence is improved, increasing the weft feeding force.

Provided with the cut surfaces, the needle can be attached and detached easily using the dedicated tool.



Provided with the cut surfaces, the needle can be attached and detached easily.

More rectifying fins improve weft feeding force.

## **New** FDP-A IV W Measuring and Storage device

A new motor is used. The FDP-A IV W has an outstanding higher following performance during high-speed operation. It is provided with the feeding mechanism that positively separates yarns. It is easy to adjust to store and release even thick yarns for any weft. The measuring amount of weft (FDP drum diameter) is simple to adjust, one-touch type.



### Hook pin section

#### Yarn storage sensor Option

During operation, weft storage is monitored and automatically supplied.

#### Yarn breakage sensor

Contactless type. Package sensor is not required.\*

\*For multi-pick insertion, the package sensor is required.

#### Release sensor

Weft insertion status is monitored.

### Other measuring device

#### RDP

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. Even value-added fabrics such as twisted, taslan, nep, or loop yarn are easy to weave.

#### Inverter control Option

Airflow amount is properly controlled for energy savings.

#### SDP

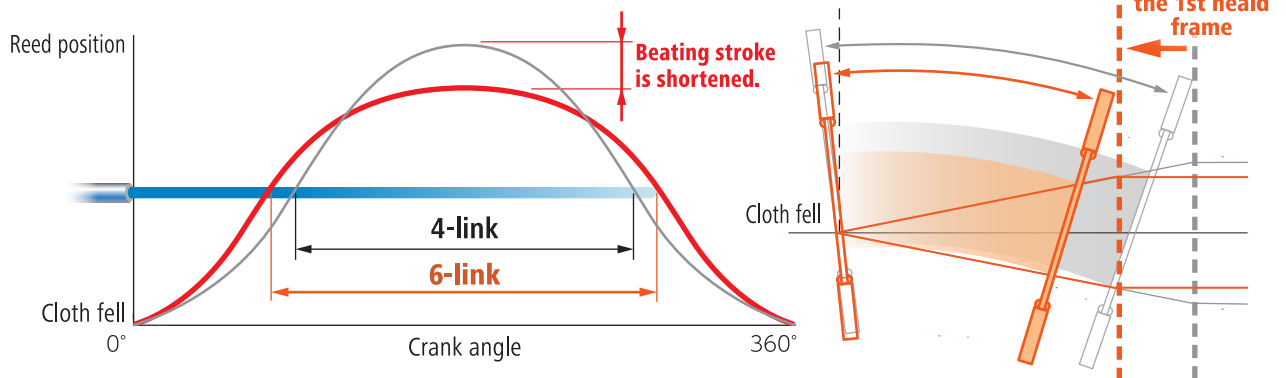
Storage blower is not required, contributing significantly to energy savings.

The tension given to the weft is small, minimizing the difference in measuring pick length.

## 6-link beating (Selectable for 2-color or more weft selections)

By shortening the beating stroke and positioning the 1st heald frame closer to the cloth fell compared with the existing models, both high quality fabric and high speed operation are offered.

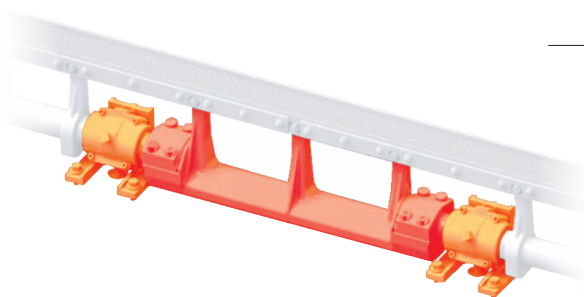
- Optimizing the beating stroke graph ensures reduced friction between warp and the reed and long weft insertion time.
- By positioning the heald frame closer to the cloth fell, the shedding amount can be small, reducing warp load. It is possible to use a less-high reed.
- Warp fluff and warp breakage can be reduced.



## Offset rocking shaft

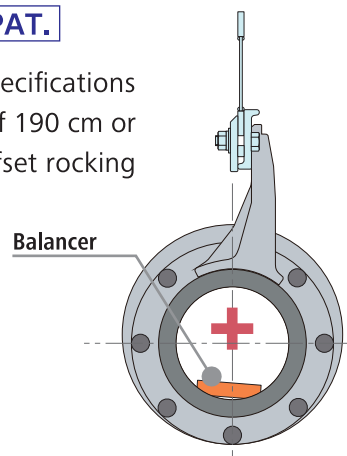
### Intermediate supporter type PAT.

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



### Pipe type PAT.

For the standard specifications with a reed space of 190 cm or less, a pipe-type offset rocking shaft is provided.



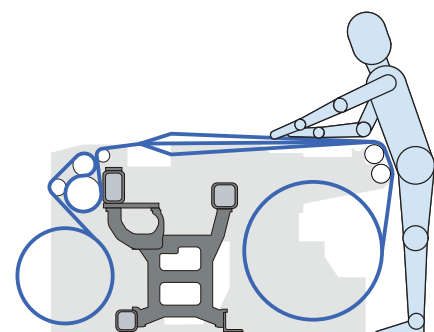
## Loom frame with a low center of gravity

The robust frame structure with a low center of gravity is inherited from the ZW8100. Vibration is reduced during high-speed operation, allowing stable operation. A low warp line enhances workability.

### Transverse rail

*Option*

Vibration can be efficiently controlled for special fabrics such as airbag and double weave.





# Greatly reduces environmental impact and running costs

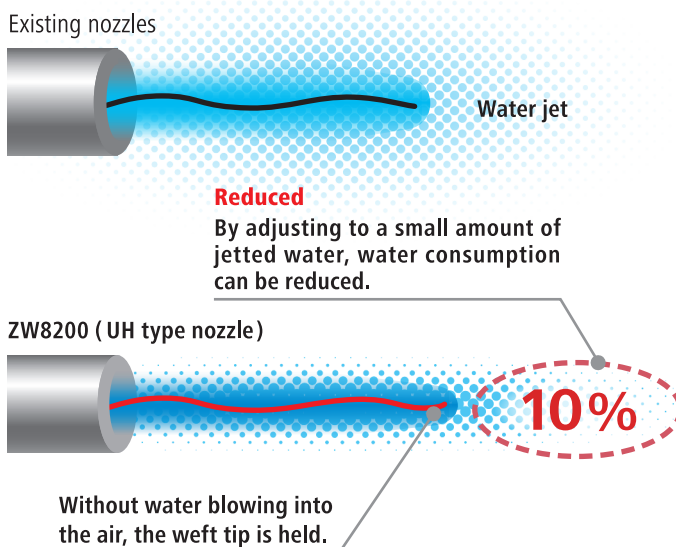
## **New** UH type nozzle

\*Compared with the existing models

**10% reduction**  
in water consumption\*

**PAT.**

The UH type nozzle achieves stable weft insertion and significantly reduces water jet blowing into the air. By firmly holding the weft tip with the advanced part of the jetted water and adjusting to a small amount of jetted water, it is possible to reduce water consumption.



## **New** Grease spill reduction mechanism

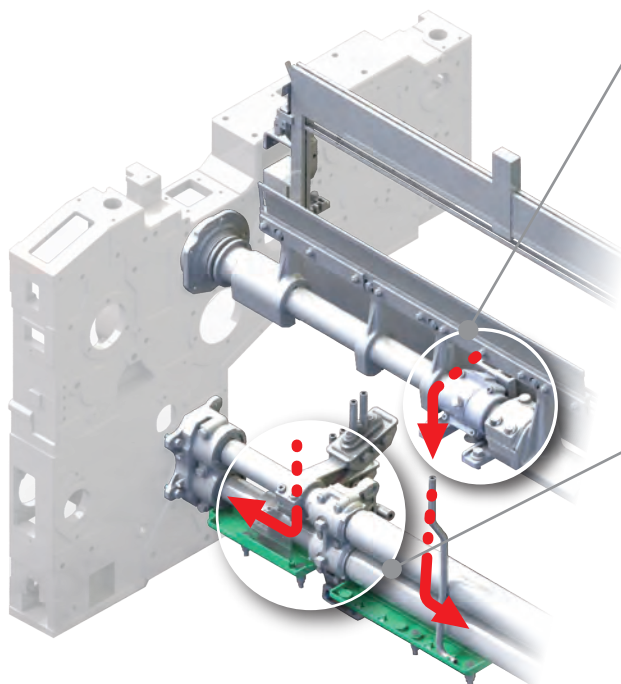
\*Compared with the existing models

**70% reduction**  
in entry into drainage\*

**Option**

**PAT.P**

By collecting old grease discharged during lubrication in the dedicated container, grease is not exposed to water, significantly reducing grease entry into drainage.



### Beating section

- Measures to keep the intermediate support section from water are furthermore enhanced, improving grease retention.
- The water to feed weft spilled on the beating section is discharged without being exposed to grease, reducing oil in drainage.
- Little grease is accumulated on the intermediate support sections. Grease on the grease collection tray can be easily removed at every warp-out.

### Shedding section

- By preventing grease from dropping on the UNDER PAN, it is possible to reduce oil in drainage.
- The water to feed weft spilled on the shedding section is discharged without being exposed to grease, reducing oil in drainage.
- Grease on the grease collection tray can be easily removed at warp-out.

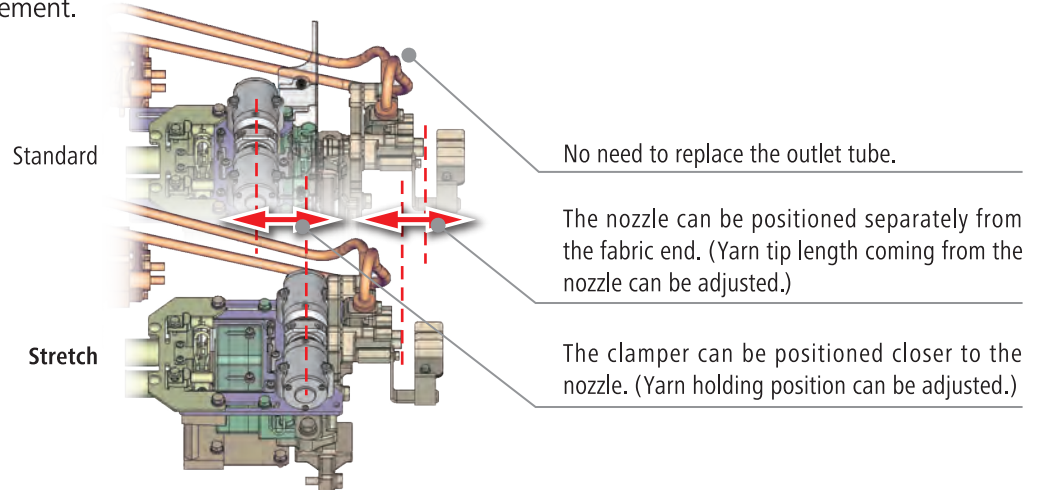
## Enhances versatility and convenience

**New**

### Standard/Stretch yarn simple replacement

**Option**  
**PAT.P**

It is possible to prevent stretch yarn from exiting the nozzle due to shrinkage after cutting it. Adjustment time required for yarn replacement is significantly shortened compared with the existing models, ensuring simple yarn replacement.



## Solutions supporting high grade and high quality

### AJC-W Auto Jet Control

**Option**  
**PAT.**

Release pulse detected by the FDP sensor is monitored. The timings of the hook pins and the clamer are feedback controlled.

#### Without AJC-W

Package diameter  
Large: Weft arrival timing is delayed.  
Small: Weft arrival timing is early.  
When package is replaced, slack pick easily occurs.

#### With the AJC-W

Average of the weft release pulse is calculated for a certain number of pick. The ON timings of the hook pins and the clamer are automatically controlled, allowing stability of weft restricted timing and weft arrival timing irrespective of the package diameter.

Note: It is recommended to use the pick-tail sensor in combination with the AJC-W.

### PSS-W Programmable Start System for ZW

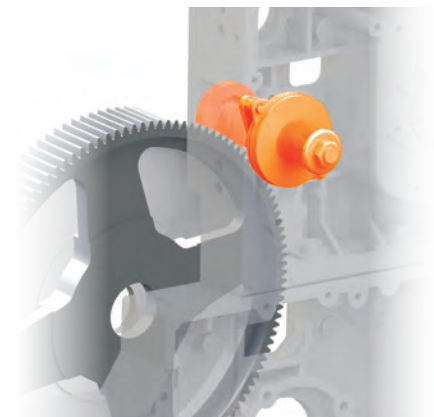
**PAT.**

The function to reduce thick marks is added, significantly reducing stop marks. In addition to the existing cloth fell control just *before* loom re-start, the cloth fell is controlled immediately *after* loom re-start. Warp tension that was reduced during loom stop is returned to the set tension just before loom start.

### Let-off beam brake (Mechanical mark reduction)

**Option**  
**PAT.**

Mechanical marks caused by a backlash of the beam gear are reduced, providing more stability and higher fabric quality.



## **Weave Navigation® System-II**

The weaving support system that TSUDAKOMA developed as one of the world's leaders is upgraded to the outstanding user-friendly Weave Navigation® System-II. The loom itself leads to the optimum weaving conditions for a wide variety of fabrics.



### Weave Navi®

The Weave Navi® monitors loom operation while the loom is in operation. It guides users to the best weaving conditions to improve operation in various situations.

### Tune Navigation

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

### Self Navigation

Excellent self-diagnosis and maintenance information allow easy maintenance. It is also possible to adjust the feeler and let-off operation without measuring equipment.

### Trace Navigation

When solving a problem, which needs multiple setting adjustments, like stop marks, operators need only to adjust one setting to change all the related set values to the optimum. This system takes advantage of TSUDAKOMA's wealth of weaving experience.

## **TISS Tsudakoma Internet Support System Option**

TISS analyzes and backs-up the operating information of the plants via the internet. To help users push their looms' performance to the fullest, TSUDAKOMA provides support to enhance operation, productivity, and preventive maintenance of sizing, warping, and weaving.



- 1. Preventive maintenance**  
Notification on part replacement schedules
- 2. Backup**  
Efficiently supporting loom problems
- 3. Monitoring**  
Monitoring the operating condition and improving production

**AI**

**TSUDAKOMA**

TSUDAKOMA analyzes the operating information to support user's loom performance.

**TISS**

*Tsudakoma Internet Support System*

**T-NSS**

*T-Tech Network Support System*

The T-NSS encompasses the preparatory machines from T-Tech Japan.





## Options

■ High quality 
 ■ Energy-saving 
 ■ High productivity 
 ■ Operability 
 ■ Versatility

### 8 heald frames for crank shedding

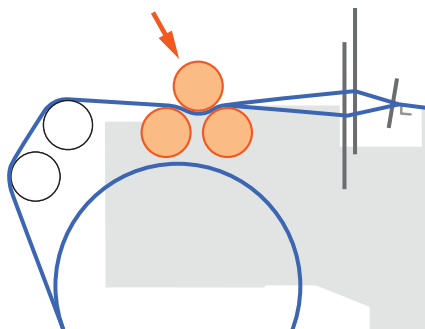


By increasing the number of the heald frames for crank shedding, the heald density can be decreased by one heald frame, increasing the upper limit of the number of warp. Lots of heald frames can be used, responding to thin high-density fabric of fine count yarn and of increased number of warp.

### Let-off cut roll



Adding a cut roll allows the distance between the let-off and the shedding to be shorter. This increases tension. Beating performance is improved and defective shedding is also reduced.



### Automatic water supply valve



Water is automatically supplied to the water pipe when the loom starts. Operation of the existing foot pedal is unnecessary.

When used in combination with the APF-W Automatic Pick Finder, it is possible to operate reverse operation automatically at loom start (with push button simplicity), reducing operation mistakes and ensuring high quality fabric.



### OPF optical feeler for extra-fine yarn



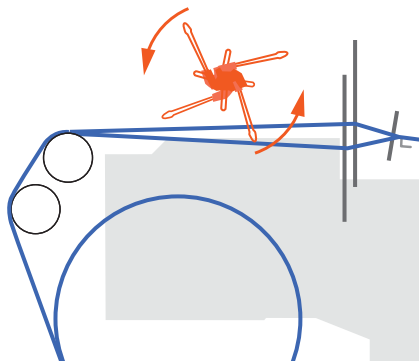
**PAT.**

Dedicated feeler and amplifier improve weft detection performance. It responds to the weft of approximate 8 dtex or more.

### Rotary sensor



Broken warp detection device without dropper pins.



### Large-capacity suction blower



For high density fabrics that need superior water suction, we recommend upgrading the blower.

\*Two small suction blowers are also possible.



### Internal speed control inverter

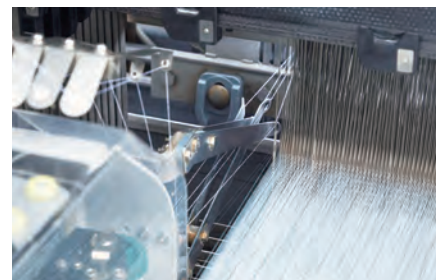


It is possible to set the rpm for each loom in the Navi-board, allowing more flexible support for various types of fabrics. The speed control inverter, formerly provided as a separate box, is included in the loom's control box.

### Independent shedding motion for catch cord



By using the dedicated shedding motion for catch cord shedding, exclusive heald frames (two heald frames) are unnecessary. An increased number of heald frames for fabric weave is possible while energy savings are also ensured because exclusive heald frames are unnecessary.



### Twin pump



Layout is redesigned. An exclusive 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 ensured.





## Expanded applications of the ZW8200

The ZW8200 responds to diverse technical fabrics.

### PREVENTION



Sandbags



Curing tape



Insect screen

### PROTECTION



Mosquito net



Surgical gown



Airbag

### CARRY



Reusable shopping bag



Tarp

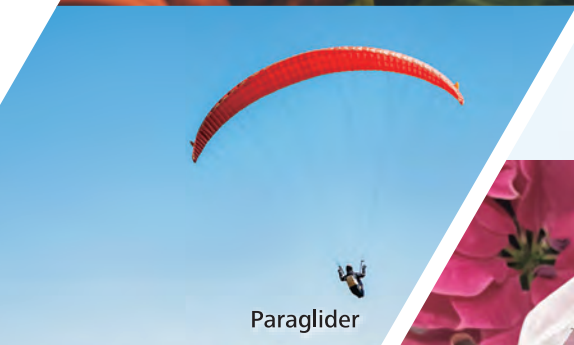
### LIFE



Awning



Tent, Sleeping bag



Paraglider



Washcloth

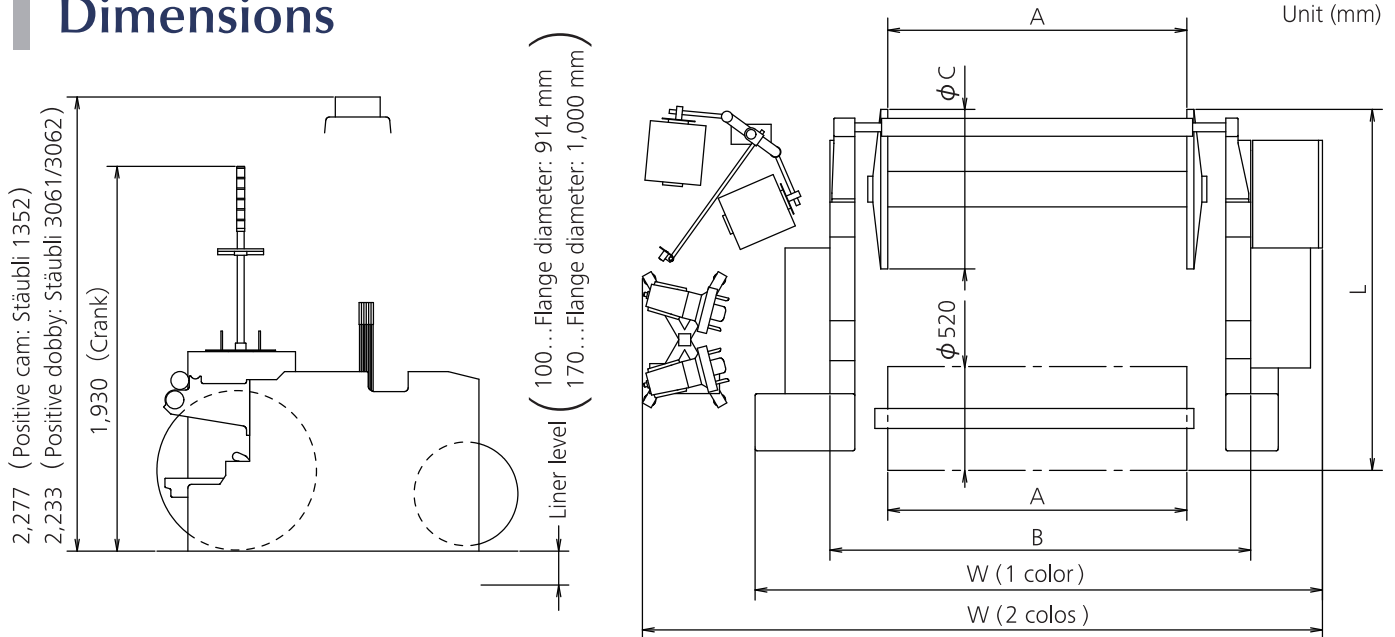


Teabag

Click here for the dedicated website for technical fabrics.  
[www.tsudakoma.co.jp/english/business/textile/technical/index.html](http://www.tsudakoma.co.jp/english/business/textile/technical/index.html)



## Dimensions



Reed space	A	B	W (without inverter)				W (with internal inverter)	
			2C FDP-A IV W		1C SDP, RDP		2C FDP-A IV W	1C SDP, RDP
			Without liner	With liner	Without liner	With liner		
150 cm	1,500	2,110	3,410	3,470	2,860	2,920	3,500	2,950
170 cm	1,700	2,310	3,610	3,670	3,060	3,120	3,700	3,150
180 cm	1,800	2,410	3,710	3,770	3,160	3,220	3,800	3,250
190 cm	1,900	2,510	3,810	3,870	3,260	3,320	3,900	3,350
210 cm	2,100	2,710	4,010	4,070	3,460	3,520	4,100	3,550
230 cm	2,300	2,910	4,210	4,270	3,660	3,720	4,300	3,750
250 cm	2,500	3,110	4,410	4,470	—	—	4,500	—
280 cm	2,800	3,410	4,710	4,770	—	—	4,800	—

Flange diameter $\phi C$	800	914	1,000
L (Standard)	1,810	1,923	2,001

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

## Warp preparation machines for full support for jet loom operations

T-Tech Japan's preparatory machines, including the sizing machines of world-leading performance and quality, accurately respond to small lot production and rapidly changing market needs and provide a total solution on the weaving process. T-Tech Japan has a leading share in the market for filament sizing machines.

### Versatility

Low tension control is new, allowing wide-ranging and stable tension control.

### Quality

Optimum drying is offered by temperature control of the hot-air chamber with auto-tuning function.

### Productivity

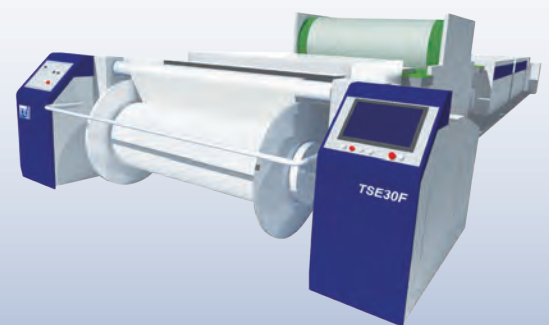
Yarn speed: 300 m/min., 500 m/min.  
Size drying according to production amount

### Operability

Sizing Navigation System is employed. Adjustment with the T-MDS

### Energy savings

Optimum air blow by inverter-controlled hot air circulation.



## Specification

Item		Specification	Optional
Reed space	Nominal (cm)	150, 170, 180, 190, 210, 230	250, 280
	Useful reeding width	Same as nominal width: Maximum width reduction: Up to 50 cm	Maximum width reduction: Up to 60 cm Up to 80 cm
Weft selection		1 color, 2 colors at-will, 3 colors at-will, and 4 colors at-will	
Machine power	Start	Rush-start motor drive	
	Motor capacity	2.2 kW, 2.7 kW, 3.0 kW, 3.7 kW	
	Operation	Push button operation with both hands Slow inching by inverter (Forward and reverse)	APF-W Automatic Pick Finder (2 colors or more)
Weft insertion	Pump system	Plunger-type spring pressure system	Twin pump
	Nozzle	UH type nozzle	
	Measuring & storage	SDP Stationary Drum (1 color) RDP Rotary Drum (1 color) FDP-A IV W Electronic Free Drum (2 colors, 3 colors, 4 colors)	WBS Weft Brake System Electric weft pull-back device AJC-W Auto Jet Control
Shedding		Crank plain: 4 heald frames and 6 heald frames Positive cam: Top-mounted, 10 heald frames Positive dobby: Top-mounted, 16 heald frames	Crank plain: 8 heald frames ECS Exclusive positive Cam Shedding for plain weave
Let-off		Electronic Let-Off PSS-W Programmable Start System Negative easing Two rolls	Positive easing device Let-off beam brake Let-off cut roll
	Maximum tension	2300 N, 4000 N, 6000 N	
	Flange diameter	800 mm, 914 mm, 1000 mm	
Take-up		Electronic Take-Up Density change function (8 densities)	
	Take-up diameter	Maximum: 520 mm	Off-loom take-up device
	Cloth passage	S-type inclined, S-type, F-type	Inclined with the reed protection
Beating		Crank with multiple sword 4-link, 6-link	
		Offset rocking shaft (intermediate supporter type, pipe type)	
Weft supply stand		Horizontal type (2 packages, 4 packages, 6 packages, 8 packages)	
Selvage		Mechanical planterary leno motion	
Waste weft removal		Catch cord with spindle twisting system	Independent shedding motion for catch cord
Cutter		Mechanical type	
Temple		Top-mounted ring temple (2-barrel type with 2 rings each)	Bar temple
Water suction		Slit tube suction system (blower suction) Float type water separator	Large-capacity suction blower
Stop motion	Weft	OPF feeler	OPF optical feeler for extra-fine yarn
	Warp		Rotary sensor
	Stop cause indication	Message indication on the Navi-board 4-color multi-function indication lamps	
Weave Navigation® System-II	Navi-board	Automatic data settings of weft insertion timing and warp tension, Recommended mechanical data indication, Optimum operation condition guide, Troubleshooting, Self-diagnosis function, Operating and maintenance information, Weaving advice, Instruction manual and part catalog browsing	
	Network connection	TLM (Tsudakoma Loom Monitoring system)	TISS (Tsudakoma Internet Support System)
Automation Energy savings			APR-II Automatic defective Pick Remover Automatic water supply valve PSC Programmable Speed Control Internal speed control inverter Standard/Stretch yarn simple replacement
Environmental measure			Grease spill reduction mechanism

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

Note 2: Some photographs in this brochure include optional devices.

