TSUDAKOMA

ZAX MASTER 9200i Terry

AIR JET LOOM

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Higher Speed

Outstanding ultra high-speed and low vibration

High productivity is an essential factor for air jet looms. The ZAX9200*i*-Terry enjoys a synergy of weaving geometry optimized for a smooth warp shed, the world's best weft insertion system, and a newly designed robust structure. Consequently, the ZAX9200*i*-Terry is successful in three conflicting tasks: considerably increased speed compared with our conventional model, low vibration, and energy savings.

New low-inertia ETS

A newly designed low-inertia motor is employed. Thanks to its small internal inertia, higher speed is attained.

Energy Conservation

i-Weave

With the "*i*-Weave," provided as standard for the ZAX9200*i*-Terry, high-speed performance is accompanied with energy saving by optimizing the three basics of weft insertion for air jet looms: nozzle, valve, and control technology. With a variety of optional devices, higher-grade performance is available.
The "*i*-Weave" is the fruit of weft insertion technology backed by Tsudakoma's 45-year accumulated air jet knowledge and our sales success.

Quality Fabric

New EPRC Electronic Pile Ratio Control

This function automatically adjusts the moving distance of the cloth so that the pile ratio is in the target range. Pile with a constant height is easily formed.

The ZAX9200*i*-Terry combines the ultra high-speed of the ZAX9200*i*
with the largest accumulation of terry-weaving know-how in the world.
The "Versa-Terry System," which is state of the art technology
for TSUDAKOMA's terry weaving, realizes the stable weaving of high quality towel.

Ultimate weaving support!

Ultimate weaving support!
"Weave Navigation® System-II"

The world's first weaving support system that TSUDAKOMA developed is upgraded to the "Weave Navigation® System-II."
TSUDAKOMA has embodied our accumulated wealth of terry-weaving expertise in this system.
Simple operation on the "Navi-Board" reproduces professional weaving technology with ease. The original systems of TSUDAKOMA, a special manufacturer of textile machinery, guide the ZAX9200*i*-Terry to the best weaving condition even during operation.

Easy operation

Easy operation is an indispensable factor for high productivity. The ZAX9200*i*-Terry design supports customers by simplifying weaving.
Based on TSUDAKOMA's years of experience, we have created a user-friendly loom with both software and hardware.

Wider Versatility

Expanding the world of terry-weaving

The ETS Electronic Terry System (Optional) can widen the weavable range.
Special designed towels with a nice touch and feel are covered by the ZAX9200*i*-Terry. Moreover, the pile height and the pile cycle can be changed with ease. Style change has been simpler.

Harmony with the Environment

Aiming for eco-friendly looms

In addition to low vibration and energy savings TSUDAKOMA aims to harmonize with the environment.
We continue investigating noise and vibration reduction, and promote practical applications.
Careful attention has been paid to design the ZAX9200*i*-Terry to save energy. Weft insertion at low air pressure is tender toward weft yarns. Air consumption was also reduced remarkably by adopting efficient new valves (option).
(Compared with our conventional model)

Versa-Terry System

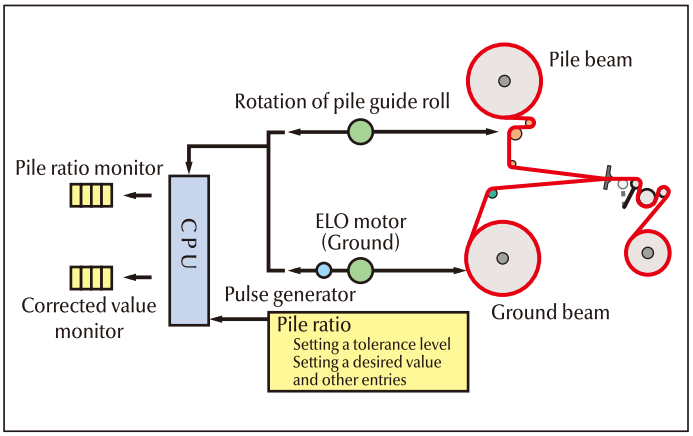
A masterpiece of TSUDAKOMA's terry weaving technology. It contains new technology for a wide diversity of design-conscious towels. The "Versa-Terry System" inherited all of TSUDAKOMA's greatest achievements for air jet loom terry-weaving and improved on them.

Easy weight control for towel

The change of the pile height can be carried out easily. It simplifies the weight control for towel.
With the new EPRC Electronic Pile Ratio Control, continuous production of constant-weight towel is possible.

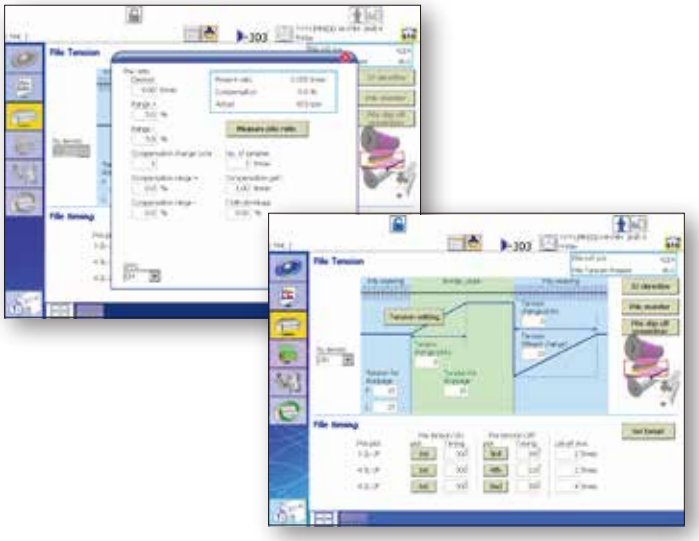
PRM pile ratio measuring

The fed length of pile yarn is measured via the rotation of the guide roll and the pile ratio is displayed. It contributes to stable pile quality and labor-saving.



New EPRC Electronic Pile Ratio Control

Controlling the present value of the pile ratio measured by the PRM pile ratio measuring in the target range makes it possible to weave even-weight towel. This automates weight control of the towel.



ETS Electronic Terry System

MPC Multiple Pile-Cycle terry

For the ZAX9200*i*-Terry, 31 kinds of pile heights can be set, and specially designed towel, such as 2-height pile and wave pile, can be easily woven. In addition, the terry cycle is programmable. Not only three-pick terry but any-pick terry can be set. This MPC Multiple Pile-Cycle terry greatly increases the flexibility of towel designs.

Easy style change

The pile height and pile cycle can be changed easily on the Navi-board, and style changes become simpler.

Multiple pile-cycle towel

Multiple pile-height towel

Improvement of quality, touch and feel

Each operation of the loose pick and the fast pick can be set to easily improve the quality, touch and feel of the towels.

TMC Terry Motion Control

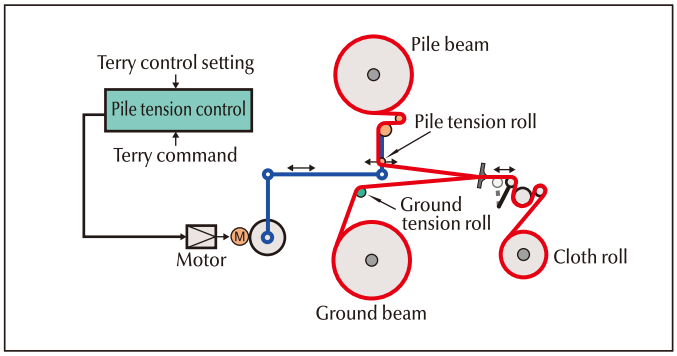
The TMC Terry Motion Control that received favorable reviews has been improved.

Ideal tension control

The new control system keeps the pile warp in the ideal tension to form high quality pile, a nice touch and feel. Stable operation results from preventing defective shedding of pile warp.

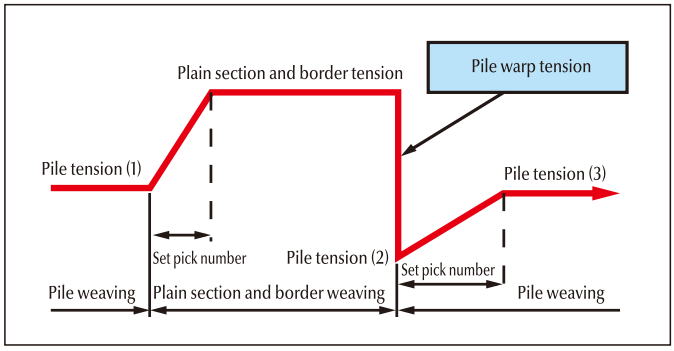
Stop mark prevention

When the loom is stopped due to warp, the pile tension is lowered to prevent middle blow-off.



MTC-P
Multiple Tension Control-Pile Warp

In addition to tension control during plain section and border weaving and at loom stoppage, two kinds of pile tension can be set while the pile is being woven.



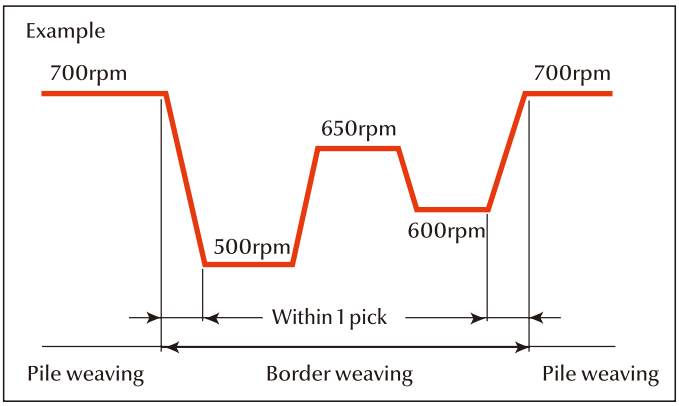
MTC-G
Multiple Tension Control-Ground warp

Multiple ground warp tensions can be set on the Navi-board. Thus, the pick density at the border is well controlled.

PAT.

PSC
Programmable Speed Control

Up to 32 loom rpms can be independently set for a border and a pile weaving section respectively. Formerly, the loom rpm was restricted by the border weaving section. The PSC automatically increases the loom rpm for other than the border weaving section in order to improve productivity. It changes the rpm within 1 pick. Moreover, versatility is also widened by weaving special borders.

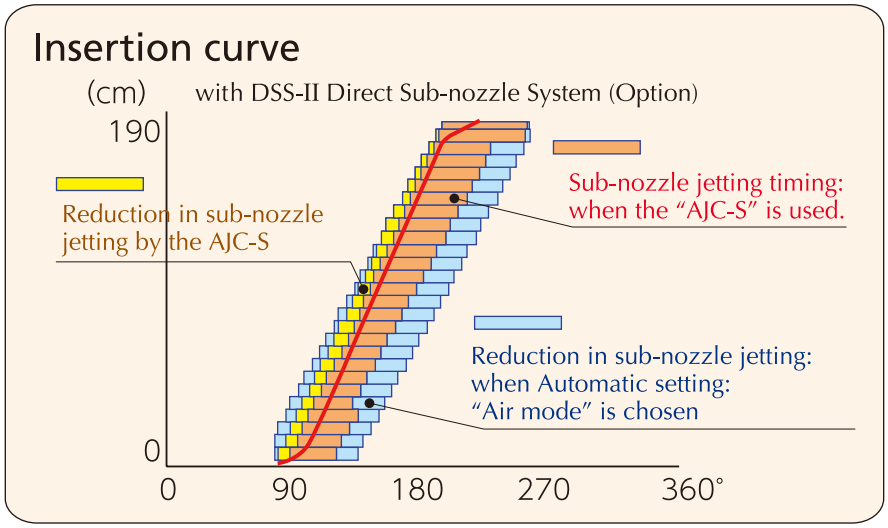


i-Weave

The "i-Weave" optimizes the three basics of weft insertion for air jet looms: nozzle, valve, and control technology. High-speed performance is accompanied with energy saving. The "i-Weave" is standard on the ZAX9200i -Terry. The "i-Weave" is the fruit of weft insertion technology backed by Tsudakoma's 45-year development and sales success on air jet looms.

AJC-S Auto Jet Control

The ZAX9200*i*-Terry is equipped with the air mode (patent-pending) to reduce air consumption enabling easy setting for energy saving. By controlling nozzle jetting timing in response to actual weft insertion, air saving is combined with stable operation.



ACI
Air Consumption Indicator

By indicating air consumption per loom, abnormal settings can be easily found on the Navi-board.

Easy Operation & Maintenance

Video replay

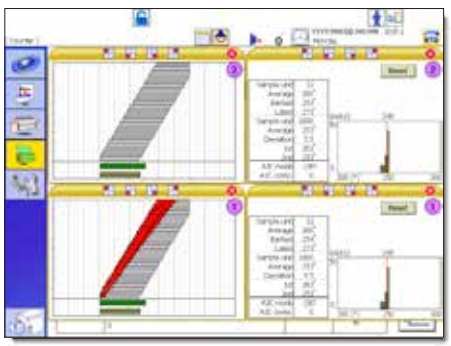
Procedures for adjustments and maintenance can be checked through the video.
The required works are easily comprehensible.

Use of USB thumb drive

Loom data can be saved and transported with a special USB thumb drive. The amount of data saved is drastically increased. Data management is easy.

Multi-windows

Simultaneously displaying the setting page and the monitoring page allow realtime adjustments. You can adjust the weft insertion timing while observing the weft insertion graph, and can set the warp tension while observing the tension changes.



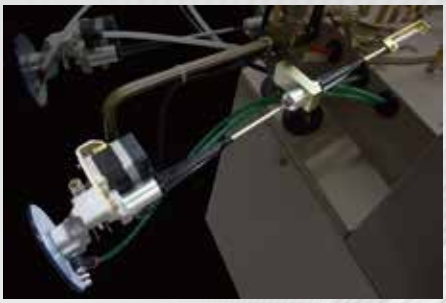
Options

8-color weft selection

The FDP-AIII free drum pooling system is superior in responding to high-speeds. Its advancing reel system separates weft yarns positively and is useful in weaving even long hairy yarns like worsted yarns without difficulty. The ZAX9200*i* can weave a much wider range of wefts. It stabilizes insertion with less yarn breakage even at high-speed weaving or extra-wide weaving. Optional weft selection up to 8 colors is available.

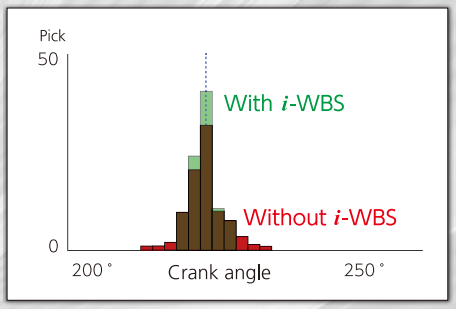
Twin auxiliary main nozzles

Two auxiliary main nozzles are positioned tandem. As they support feeding a weft yarn at two positions, higher speed and lower air pressure are attained.
(Available for pile colors only)



i-WBS Weft Brake System

The *i*-WBS Weft Brake System stabilizes weft arrival timing. The brake start timing to start braking weft is automatically adjusted according to the weft insertion condition. With the *i*-WBS, air saving is ensured and broken pick is reduced. Stable weft insertion contributes to high efficiency and high-quality fabric weaving.



PAT.P

1.4GT sub-nozzles

With efficient air passage inside the nozzles, air jetting is greatly improved.

PAT.

AGB Adjustable Guide Bar

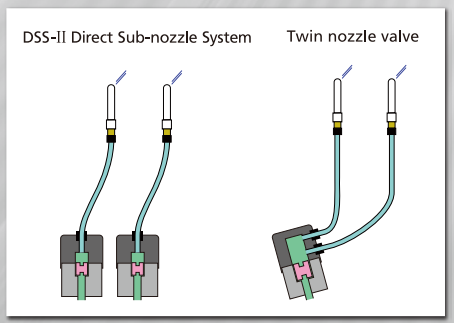
Style-change time is significantly reduced. Without cutting the guide bar according to the reeding width, it is easy to adjust the guide bar length. The guide bar sits in the reed tunnel and the cloth fell is supported, allowing stable operation.

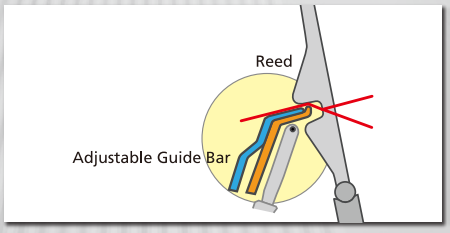
ZTN
needle-less tuck-in device

For tuck selvage formation, wefts are tucked in the edge by air, instead of conventional tuck-in needles. No mechanical parts are consumed. Maintenance and adjustments become easier.

DSS-II
Direct Sub-nozzle System

By employing an efficient new valve and optimizing the piping from the manifold, low setting pressure is accomplished while saving air.





Weave Navigation® System - II

Tune Navigation

The best setting values are automatically entered for your fabric and loom specifications. Optimum mechanical settings are recommended for the tension roll, easing amount, and various pressure settings according to the fabrics to be woven.

Weave Navi®

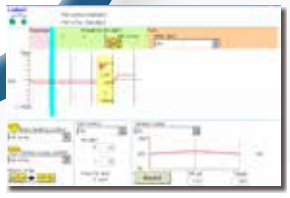
The Weave Navi® monitors the loom while the loom is operating. It guides users to the best weaving conditions to improve operation in various situations.

Weave Tips

Weaving expertise according to the fabric is offered.

i - Start

Stop marks after the cloth fell are less prominent. In addition to the conventional kickback function that controls the cloth fell just before loom start, the let-off and take-up speeds just after loom start are also compensated. The function to eliminate stop marks due to tension decrease is also provided. The tension decrease during loom stop is adjusted back to the tension just before loom start.



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.

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.

TISS

Tsudakoma Internet Support System

T-NSS

T-Tech Network Support System

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

1. Preventive maintenance
Notification on part replacement schedules

2. Backup
Efficiently supporting loom problems

3. Monitoring
Monitoring the operating condition and improving production.

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

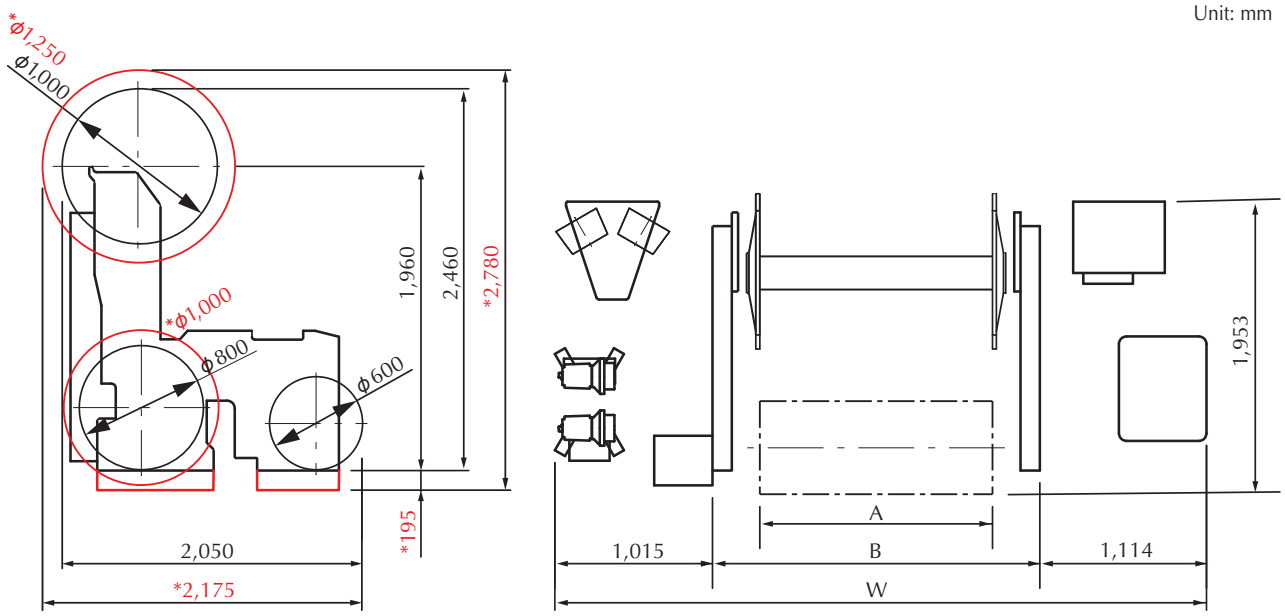
Specifications

Item		Specification	Optional
Reed space	Nominal (cm)	190, 210, 230, 260, 280, 300, 340, 360	
	Useful reeding widths	Same as nominal widths. Maximum width reduction: - Up to 60 cm (190, 210, and 230 cm) - Up to 80 cm (260, 280, 300, 340, and 360 cm)	Maximum width reduction: - Up to 80 cm (190, 210, and 230 cm)
Weft selection		4 colors, and 6 colors	8 colors
Machine power	Start	- Direct start of rush-start motor drive - Push-button operation with both hands - Inverter slow inching operation (Forward and Reverse) - PSC Programmable Speed Control	
	motor capacity	Rush-start motor: 3.7kw (for a loom provided with Electronic dobby) Rush-start motor: 5.5kw (for a loom provided with Electronic Jacquard)	
Weft insertion		Main and sub-nozzles combined system Auxiliary main nozzle, Stretch nozzle	Twin auxiliary main nozzles (2C)
	Control	- AJC-S Auto Jet Control - ACI Air Consumption Indicator - First pick control - Solenoid valve with built-in manifolds (Two sub-nozzles/valve) - Independent sub-nozzle timing control by color - Sub-nozzle boosting system - WBS Weft Brake System (WBS-S)	- DSS-II Direct Sub-nozzle System - Dual weft insertion control by color - i-WBS Weft Brake System - ACI-II Air Consumption Indicator
	Measuring and storage	FDP-AIII Free Drum Pooling (With advancing reel system)	Balloon breaker
Shedding		- Positive dobby (Electronic/Floor-mounted) - Jacquard	
Let-off		- ELO Electronic Let-Off - Double beam - With kickback function - TMC Terry Motion Control - MTC-G Multiple Tension Control-Ground warp - New EPRC Electronic Pile Ratio Control - MTC-P Multiple Tension Control-Pile Warp - PRM pile ratio measuring - One touch lift-up for ground guide roll	
	Flange diameter	- Pile: 1000mm, 1250mm - Ground: 800mm, 914mm, 1000mm	
Take-up		- ETU Electronic Take-up - 32 different density settings (32-densities independent settings) - Take-up stop device - blank pick function	AGB Adjustable Guide Bar
	Woven length counter	- Towel piece counter - Doffing counter (displayed on Navi-Board)	
	Maximum on-loom take-up diameter	600mm	Off-loom take-up device (Maximum diameter 1500mm)
	Pick density	9.8-118.1 picks/cm (25-300 picks/inch)	
	Temple	Slide top-mounted type, 14 mm guide bar	
Terry motion		- Terry motion with cloth fell shifting system - Slide guide bar - ETS Electronic Terry System - Shifting amount: 3-28mm	
Beating		- Crank type beating, multi-sley sword system - Rocking shaft with intermediate supporter	
Selvage formation		Leno	ZTN Needle-less Tuck-in device (Left & right/Intermeduate)
Cutter on the yarn supply side		Mechanical vertical type	- Electric vertical type - Electric horizontal type
Selvage cutter		Electric waste-selvage cutter	
Lubrication		- Oil bath system for main driving parts - Centralized lubrication (Manual grease)	Centralized lubrication (automatic grease supply)
Stop motion	Weft	Reflective feeler Two-head system	Package sensor 3-eyed feeler
	Warp	- Electric contact bar system - 2 rows each in 2 boxes	4-row dropper for ground warp (for gauze backing)
	Stop cause indication	- Indication by message on Navi-Board - 5-color multi-function indication lamp	
Weave Navigation® System-II	Navi-board	Automatic data setting, Recommended data indication, Optimum operation condition guide, Automatic control, Troubleshooting, Self-diagnosis function, Operating and maintenance information, Weaving advice, and Instruction manual and part catalog browsing	
	Network connection	TLM Tsudakoma Loom Monitoring system	TISS Tsudakoma Internet Support System

Note: For details, contact TSUDAKOMA's agent or our sales staff.

Dimensions

Unit: mm



Reed space cm (inch)		190 (75)	210 (83)	230 (91)	260 (102)	280 (110)	300 (118)	340 (134)	360 (142)
W	Dobby shedding	4,639	4,839	5,039	5,339	5,539	5,739	6,139	6,339
A		1,900	2,100	2,300	2,600	2,800	3,000	3,400	3,600
B		2,510	2,710	2,910	3,210	3,410	3,610	4,010	4,210

Note 1: The diagram above is applicable for a ZAX9200i-Terry air jet loom of 4-color at-will motion, with the diameter of the warp beams provided being 800 mm for ground and 1,000 mm for pile, and with Stäubli 3222 Dobby.
Note 2: The dimensions with the asterisk above are applicable when the flange diameter of the ground warp beam is 1,000 mm and the pile beam is 1,250 mm.
Note 3: Photographs, drawings, and data in this brochure are subject to change for improvement without notice.
Note 4: Some photographs in this brochure include optional devices.

Preparatory 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 the rapidly changing market needs and provide a total solution on the weaving process.

The TTS Spun Sizing Machines use the vertical yarn sheet pulling system providing easy operation and even-sized yarns. By employing the Sizing Navigation System, enhanced machine operability, machine operation management, and quality control are afforded. Fine-tuned control provides outstanding energy-saving performance, greatly contributing to improved operations of the looms.

T-Tech Japan has a leading share in the market for filament sizing machines. **The TSE30F Filament Sizing Machine** meets market demands, providing stable tension control ranging from the lowest 20 N to the highest 800 N.

TTS30S SPUN SIZING MACHINE

T-Tech Japan
www.t-techjapan.co.jp

TSUDAKOMA Corp.

www.tsudakoma.co.jp

ISO 9001 14001

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