TSUDAKOMA

ZAX neo 001

AIR JET LOOM

Outstanding Energy-Saving Technology

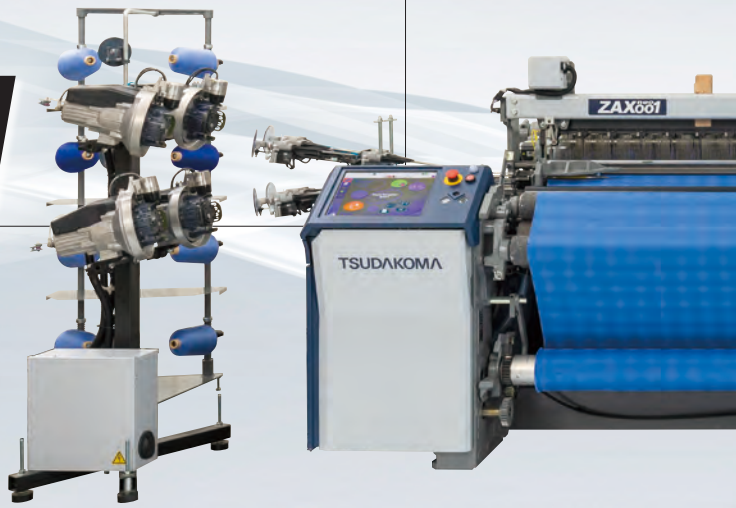
30% Reduction in Air Consumption and 15% Reduction in Air Pressure

*Compared with the ZAX9200*i*

- *Neo Valve system*
- *FDP-AIV Electronic Free Drum Pooling system*
- *Integrated auxiliary main nozzle*
- *AJC-S+ Auto Jet Control*
- *Cam beating* Option
- *Neo Air-saving reed* Option

ZAX neo 001

AIR JET LOOM



Thorough Support for High Quality

- *Direct gear drive*
- *FDP-AIV Electronic Free Drum Pooling system*
- *Weave Navigation® System-II*
- *TISS Tsudakoma Internet Support System*

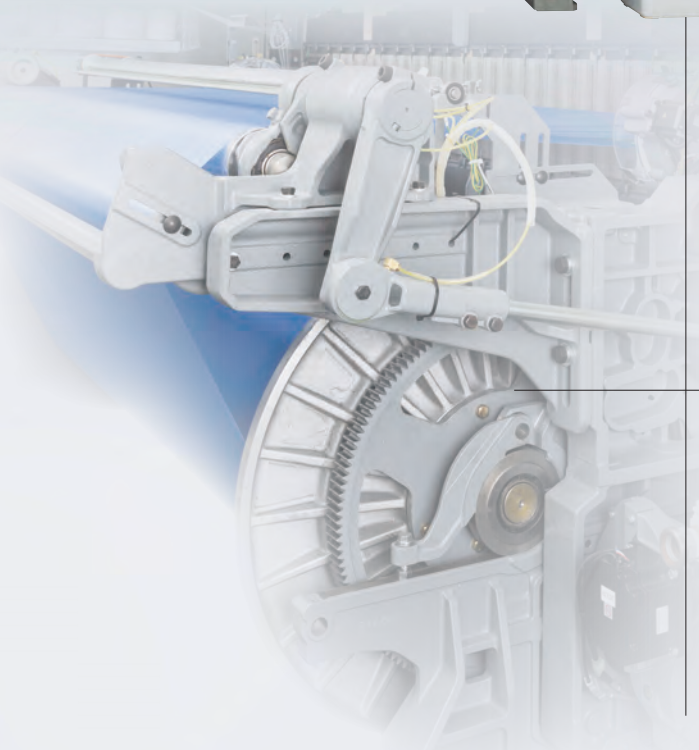
World-Leading
Ultra-High Speed
Performance

Maximum working rpm: 1,350 rpm

※For 190-2C-Positive cam (with AL20 of cam dwell)

- *New 4-link beating*
- *Sophisticated advanced weft insertion items*
- *Lightweight and well-balanced rocking shaft*

Neo Weave Technology



Robust Frame Structure

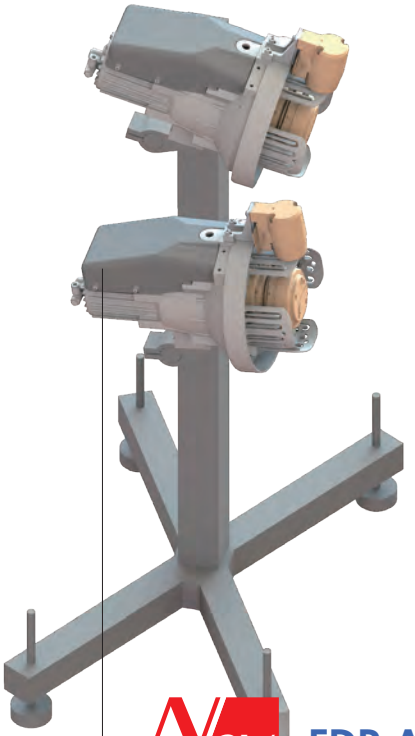
30% Reduction in Vibration

*Compared with the ZAX9200*i*

- *TAP Tsudakoma Advanced Platform*

Neo Weft Insertion System

Fruits of weft insertion technology, the outcome of efforts to pursue energy savings and high speed performance. The basis of the air jet loom: nozzles, valves, and control technology - are optimized. A greatest masterpiece of user-friendliness with special consideration for easier setting operation and adjustment.



New Integrated auxiliary main nozzle

Solenoid valve and auxiliary main nozzle body integration creates a pipe-less system. Residual compressed air is reduced and weft feeding force is increased. The integrated auxiliary main nozzle reduces broken or slack picks and weft insertion pressure. It also provides an extensive support for easy-to-break wefts.

New FDP-AIV Electronic Free Drum Pooling system

An improved motor is used. By greatly enhancing the acceleration performance, the storage amount for wefts at startup and during at-will motion for multi-colors is minimized. Stable weft insertion is assured. Provided with a feeding mechanism positively separating wefts, the FDP-AIV handles a variety of weft types. It is also possible to change winding direction according to twisted yarns on the Navi-board window.

* Drum diameter simple adjustment function is provided. (One-touch type)

Yarn storage sensor Option

Weft storage can be monitored and automatically supplied during operation. Stress to the weft due to the resistance when the weft is released from the drum is minimized, so weft insertion is stabilized.

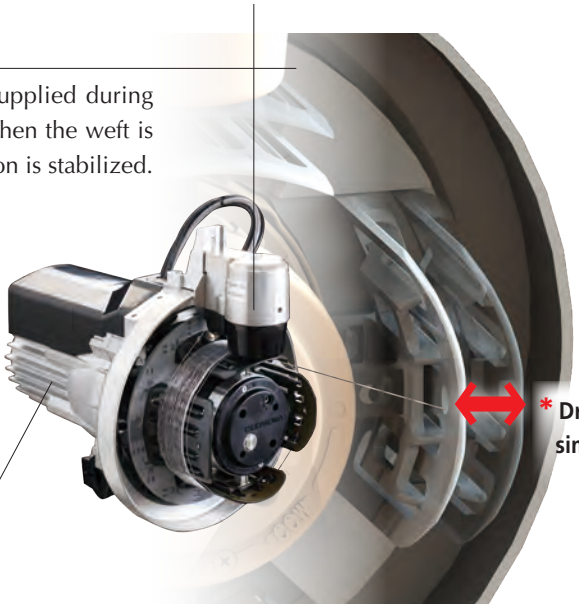
Yarn breakage sensor

Contactless type. Package sensor is not required. *

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

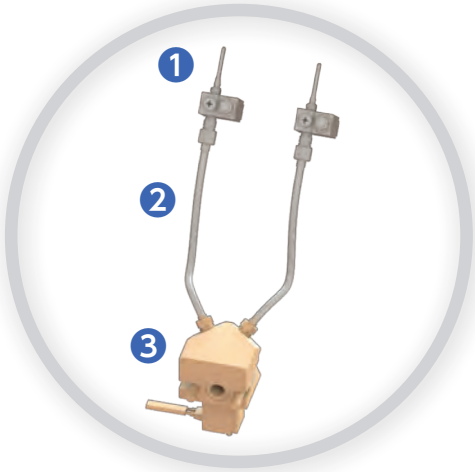
Release sensor

Weft insertion status is monitored.



New Neo Valve System

In pursuit of high performance, an innovative system with advanced air-saving performance is offered.



1 New sub-nozzles PAT.P

Efficient air passage inside the nozzles significantly improves air jetting characteristics.

2 Valve arranged close to the sub-nozzles

The piping layout between the valve and the sub-nozzles is entirely improved. Ideal jetting efficiency is achieved as a whole sub-nozzle system.

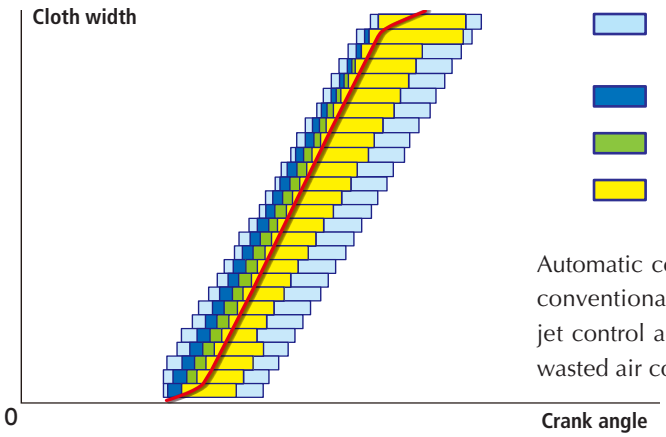
3 New manifold PAT.P

Air passage inside the manifold is optimized. A highly-efficient manifold specially designed for the new Neo valve system.

New Neo Air-saving reed Option

Our newly-developed reed maximizes the benefits of the Neo Valve System by contributing to low-pressure of the sub-nozzles and reduction in air consumption.

New AJC-S+ Auto Jet Control



- Air reduction with "Air mode" setting (For the automatic weft insertion setting)
- Air reduction with the AJC-S
- More air reduction with the AJC-S+
- Air jetting timing when the AJC-S+ is used.

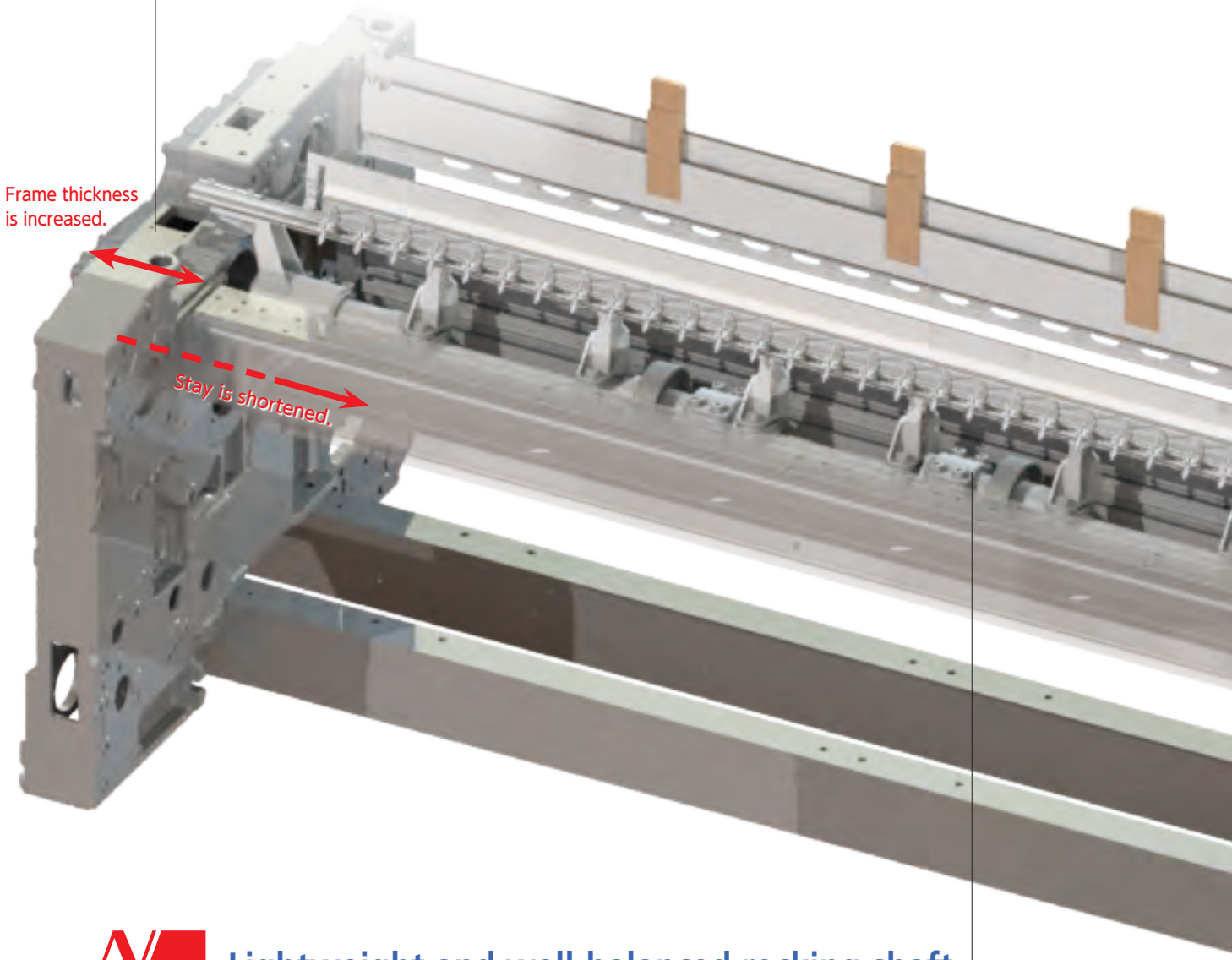
Automatic compensation function by time is possible in addition to the conventional weft insertion timing (loom angle) control. It enables air jet control according to the actual weft insertion condition, eliminating wasted air consumption.

TAP Tsudakoma Advanced Platform

Loom frames are unavoidably exposed to vibration due to movement of the heavy components. Because many long components are built widthwise, the loom has a weak structure. To solve these problems, existing models have been repeatedly reinforced. Now, TSUDAKOMA completely switched the method. We developed a new ideal loom frame. Highly recessed loom components, instead of flat or box-shaped, are the advanced platform. Both high robustness and lightweight moving components are achieved while ensuring reliable power transmission.

New Specially designed frame structure

The rib-structured frame with integrated let-off frame and shortened stays produces higher robustness. It contributes to ultra-high speed operation and vibration reduction.



New Lightweight and well-balanced rocking shaft

Lightweight and optimally balanced reed holders and rocking shafts are used.
Driving inertia is reduced and the balance is improved, resulting in lower vibration.

New heald frame

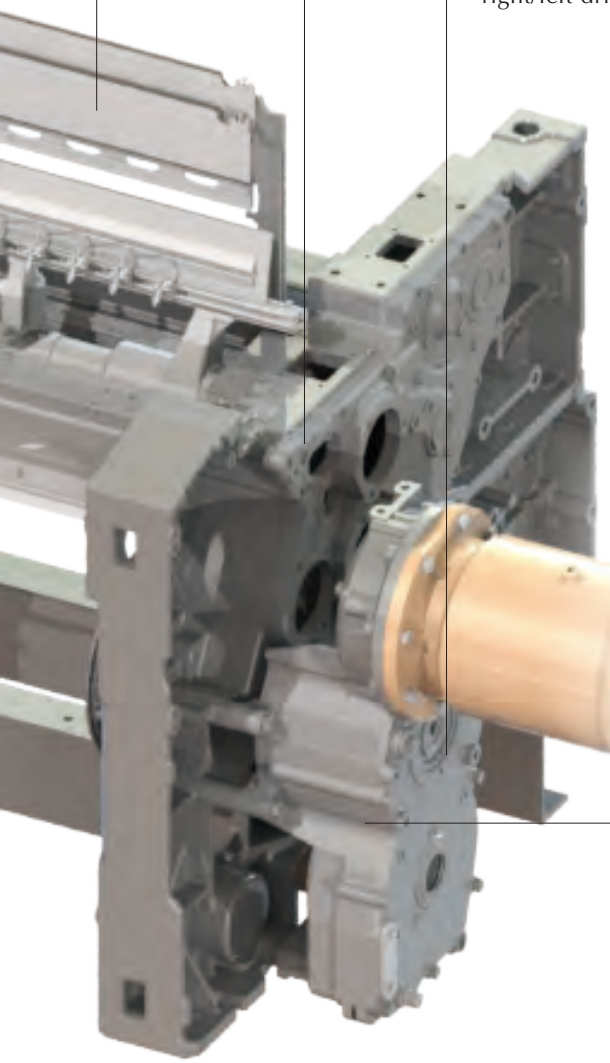
Under the supervision of TSUDAKOMA, an advanced heald frame featuring highly robust and lightness is designed for ultra-high speed operation. The advanced heald frame plays a major role in increasing maximum speed of the shedding motion.
*Select depending on the specifications.

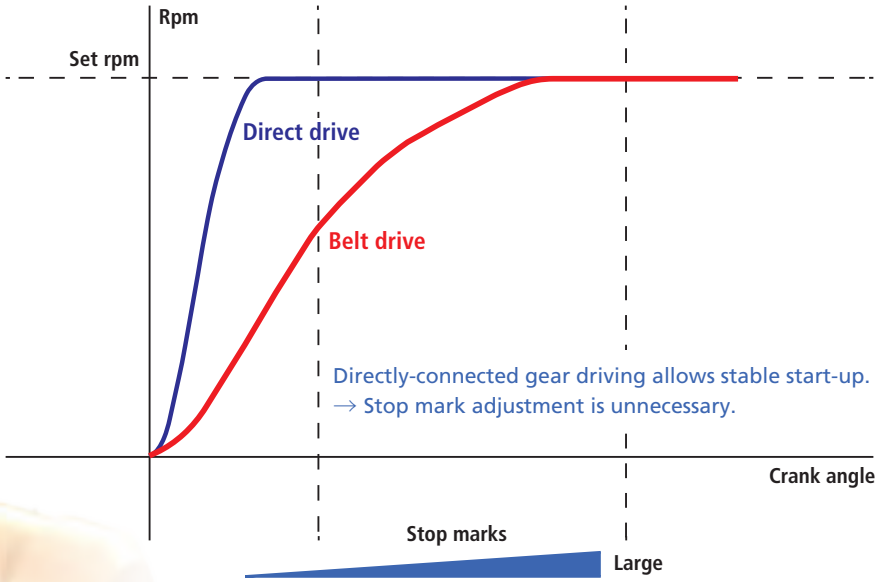
New 4-link beating

By optimizing the link mechanism and reinforcing the link structure, super-high speed operation can be achieved.

Direct gear drive

The driving motor is directly connected to the gear to operate the loom. Due to a stable start-up, stop marks are prevented. A belt-less drive section and shedding motion drive is maintenance-free.
The new independent dedicated gear box is designed for direct gear drive box and right/left driving gear boxes.





Oil bath structure

Individual oil circulation system is employed for each gear box in the driving section and direct gear drive section.
This new structure enables oil to spread evenly, contributing significantly to the longevity of loom parts.

Cam Beating System

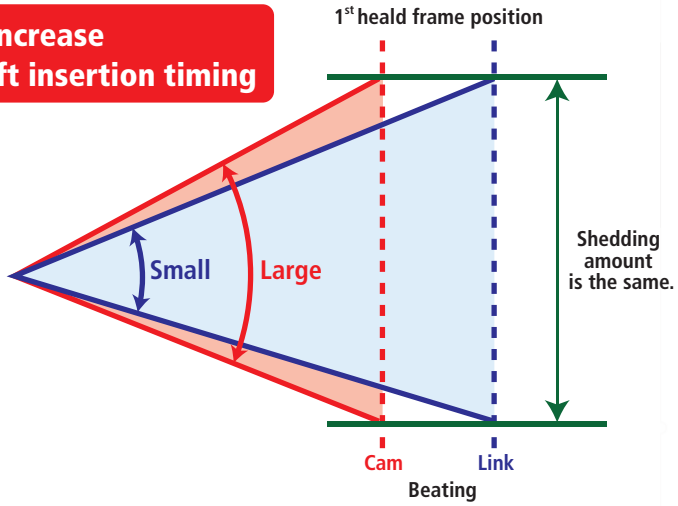
A new cam beating system suitable for jet looms is employed in the ZAX001neo.
It supports customers with diverse requirements and is the best choice for expanding weaving possibilities.

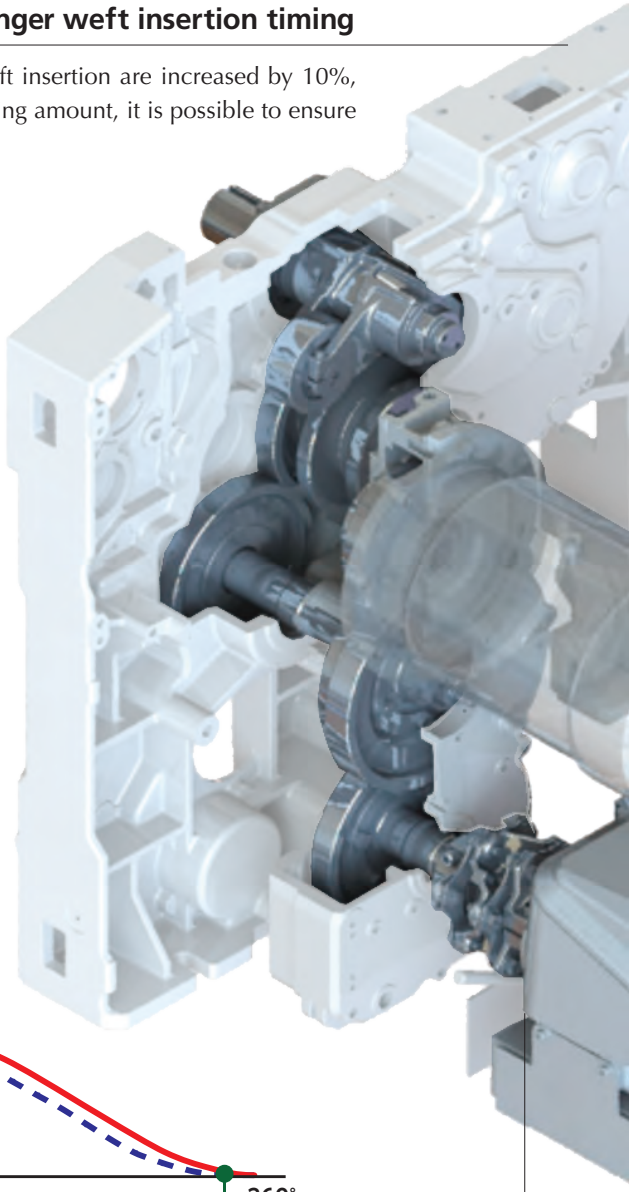
High versatility and upgrade of weaving performance

with a longer weft insertion timing

With a physical dwell in the cam beating system, time and space for weft insertion are increased by 10%, compared with existing model. Under the same conditions of warp shedding amount, it is possible to ensure a longer weft insertion timing and to insert difficult weft.

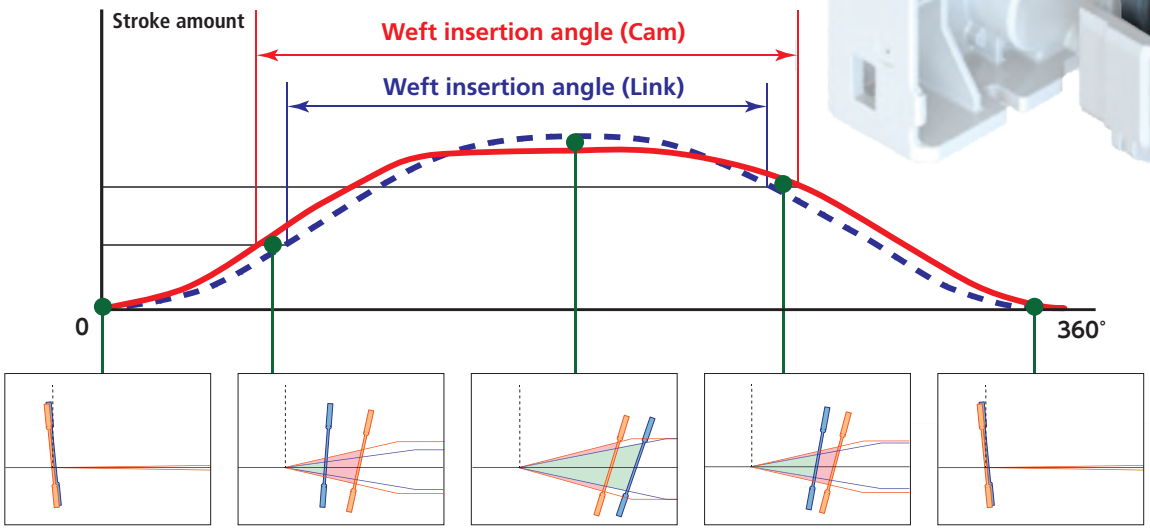
10% increase in weft insertion timing





Improved weaving performance

Large shedding angle and increase in acceleration speed at beating improves pick density.

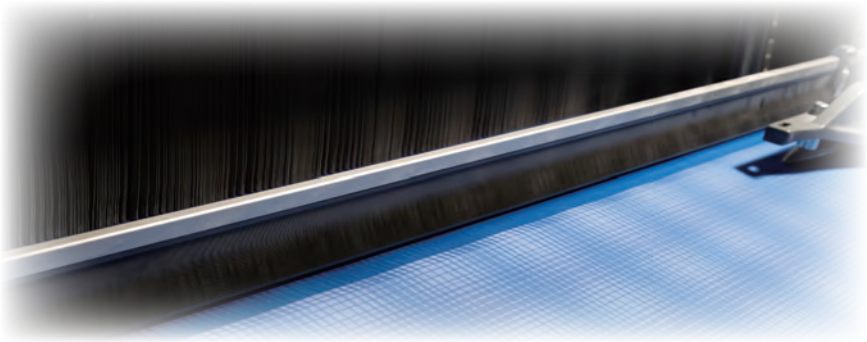


Synergy of cam beating and TAP Low vibration

Cam beating was likely to increase vibration in existing models. In the ZAX001neo, the cam curve is especially designed for jet looms, leading to significant suppression of vibration. With the combination of TAP (Tsudakoma Advanced Platform), vibration is further reduced in the entire loom.

Further energy savings with the dedicated reed for cam beating

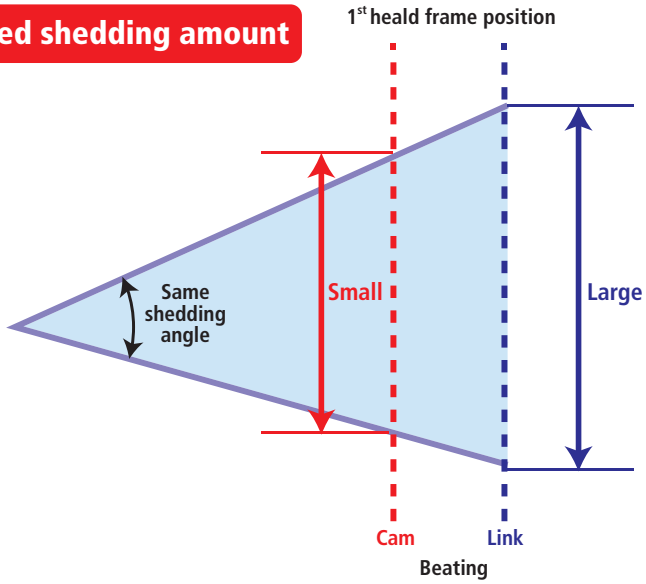
By securing more increased time for weft insertion, air pressure is lowered and air consumption is reduced.
In combination with our newly developed reed for cam beating, air consumption is further reduced.



Achievement of high speed weaving and longevity of loom accessories

By positioning the 1st heald frame closer to the beating point, shedding amount can be reduced, contributing to high speed weaving.
Under the same rpm conditions as in our existing model, the life of loom accessories is improved.

Reduced shedding amount



High quality and high productivity with cam beating

If weft insertion timing is not secured, there is a risk of triggering broken pick due to an increase in weft feeding pressure. This requires a decrease in loom rpm.
In the cam beating system, on the other hand, weft insertion timing can be secured and it is possible to continue high productivity while remaining at a low pressure.
*TSUDAKOMA will propose an optimum weft insertion specification suitable for the fabric and rpm.

Options

A wide range of devices are available as options.

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

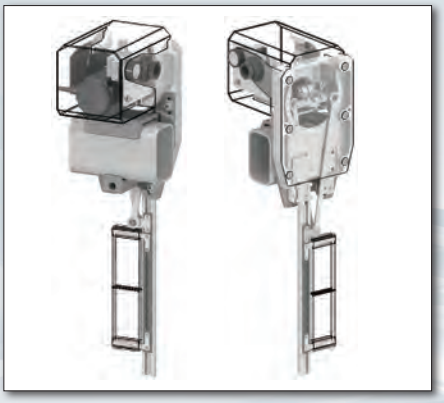
Twin auxiliary main nozzles

The twin auxiliary main nozzles contribute to increased weft feeding force and allow stable high-speed operation. The main nozzle pressure is reduced, resulting in decreased yarn breakage and improved loom operation.

EIS-II Electronic Independent Selvage motion

PAT.P

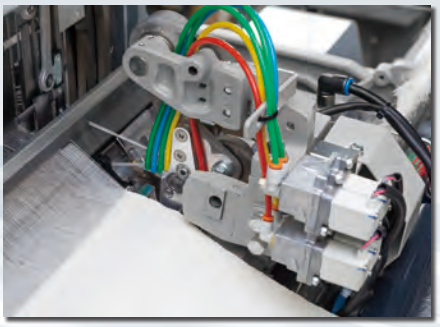
The driving system is completely changed. A new driving motor and lightweight driving section respond to higher speed operation.
It is possible to set the shedding amount, shedding timing, shedding pattern, and dwell with the Navi-board.



ZTN II Needleless tuck-in device

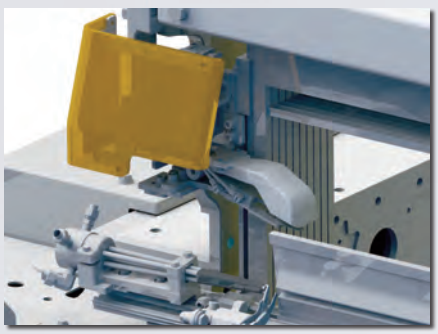
PAT.P

It is not necessary to cut the reed with the ZTN II Needleless tuck-in device. The previous ZTN required cutting according to the reeding width. The ZTN II prevents interference between the reed and tuck-in head. Permissible speed of the ZTN II is greatly increased in comparison with previous ZT and ZTN. The ZTN II improves productivity.



APR-III Automatic defective Pick Remover

The compact APR-III Automatic defective Pick Remover substantially improves workability during warp repair. Defective yarns are discharged to the trash box enabling easy collection. The cutter specially designed for the APR is placed at a stable position, resulting in longer service life of the cutter components.
Using a mechanical sensor, the detection accuracy of the defective colored yarn is increased.



AGB Adjustable Guide Bar

PAT.

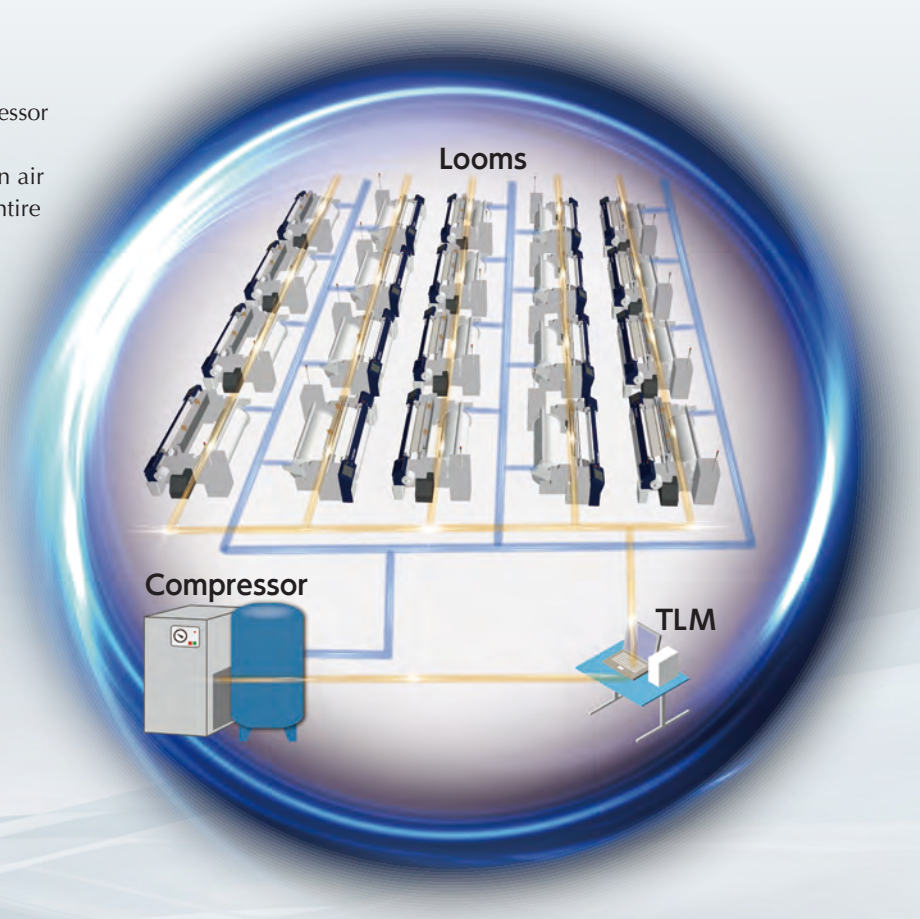
Style-change time is significantly reduced. Without cutting the guide bar according to the reeding width, it is easy to adjust the guide bar length. The guide bar sits in the reed tunnel and the cloth fell is supported, allowing stable operation.

ACI-II Air Consumption Indicator

Actual air flow amount is displayed on the Navi-board provided with an air-flow meter and an air-pressure sensor in the loom. It is also possible to set the threshold value of the inlet pressure and air flow with the Navi-board. An alarm code is indicated if an abnormal value is detected, preventing quality defects. The defective valve can also be easily found.

Smart Air Grid

The pressure used in the loom is sent to an air compressor via the TLM Tsudakoma Loom Monitoring system.
The new Smart Air Grid function combined with an air compressor can reduce the energy costs for an entire weaving mill.



Best for filament weaving

FIC Fuzzy Insertion Control

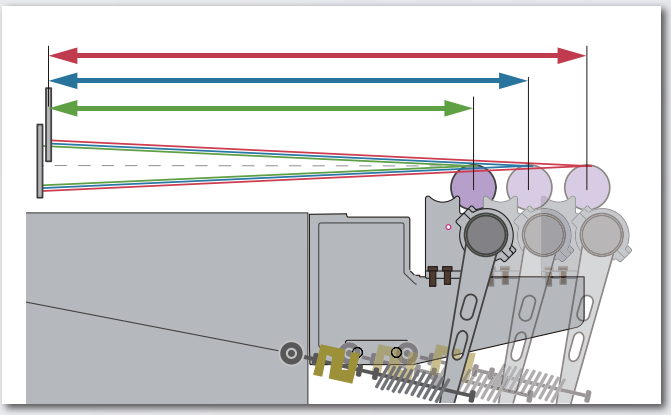
The FIC Fuzzy Insertion Control automatically controls the main nozzle pressure in order to always keep stable weft arrival timing. This device is efficient for wefts where its arrival timing depends on yarn package diameter changes and weft types. The FIC contributes to improved quality and stable operation.

F-2N negative let-off

For filament warp, negative let-off is suitable. It improves the performance of warp, making soft to warp and highly resistant to breakage even for ultra-fine warp. High quality and stable operation is ensured.

3-step switching distance
between heald frame and tension roll

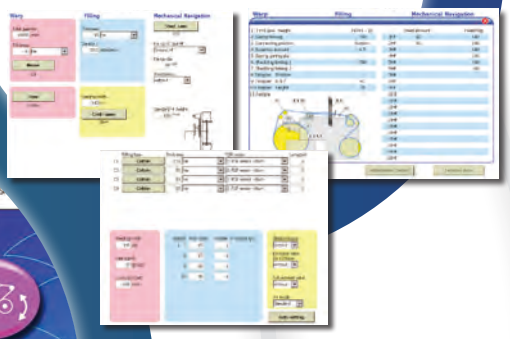
It is possible to change position of the tension roll according to the warp, allowing high versatility of weaving.
(For the flange diameter of 914 mm or 1,000 mm)



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®

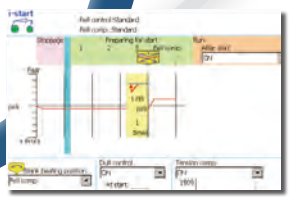
The Weave Navi® monitors loom operation while the loom is in operation. It guides users to the best weaving conditions to improve operation in various situations.

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.

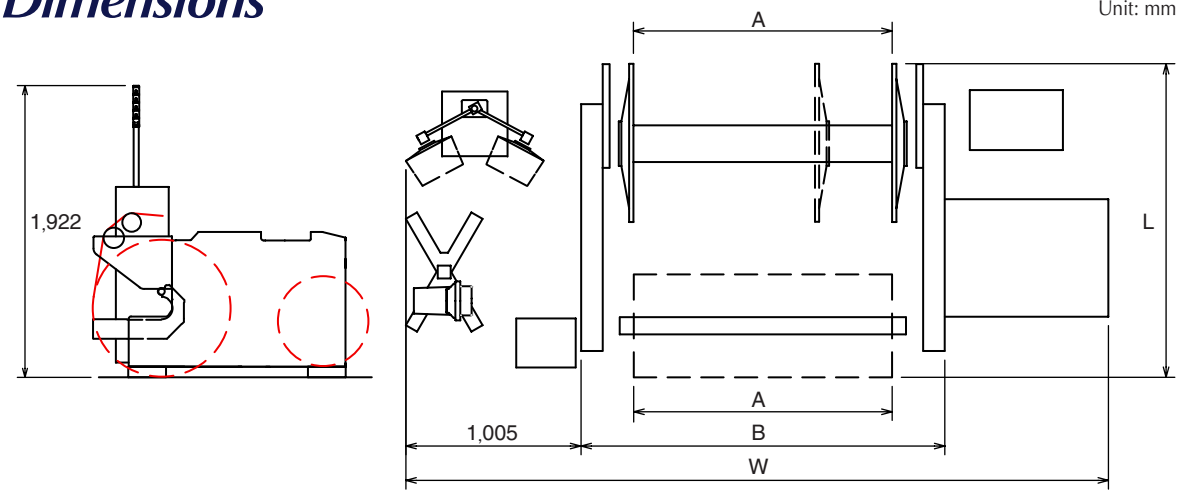
Specifications

Item		Specification	Optional
Reed space	Nominal (cm)	150, 170, 190, 210, 230, 250, 280, 340, 360, 390	
	Useful reeding widths	Same as nominal widths. Maximum width reduction: · Up to 60 cm (150, 170, 190, 210, and 230 cm) · Up to 80 cm (250, 280, and 340 cm)	Maximum width reduction: · Up to 80 cm (190, 210, and 230 cm)
Frame		TAP Tsudaokma Advanced Platform	
Weaving range		Spun yarns: Ne 100 ~ Ne 2.5 Filament yarns: 17 dtex ~ 1,350 dtex	
Weft selection		2 colors, 4 colors, 6 colors and 8 colors	
Machine power	Drive	Direct gear drive: 3.7kw and 5.5kw	
	Start	· Direct start of rush-start motor drive · *i*-Start · Push-button operation with both hands · Inverter slow inching operation (Forward and Reverse)	
Weft insertion		Neo Weft Insertion System Auxiliary main nozzle, Stretch nozzle	Twin auxiliary main nozzles
	Control	· AJC-S+ Auto Jet Control · ACI Air Consumption Indicator · First pick control · Neo Valve System · Independent sub-nozzle timing control by color · Sub-nozzle boosting system · Independently timing-controlled auxiliary main nozzle	· *i*-WBS Weft Brake System · WBS Weft Brake System · FIC Fuzzy Insertion Control · Main nozzle for core spun yarns · ACI-II Air Consumption Indicator
	Measuring and storage	· FDP-AIV Electronic Free Drum Pooling (with advancing reel system) · FDP Drum diameter simple adjustment (one-touch) type · Yarn breakage sensor	· Yarn storage sensor · Balloon breaker
Shedding		· Crank · Positive cam · Positive dobby (Electronic/Floor-mounted) · Jacquard	· Auto-leveling (Positive cam) · Selvage-name Jacquard · EIS-II Electronic Independent Selvage motion
Let-off		Positive easing motion, Negative easing motion	Twin beam, Double beam, EU standard beam
	Flange diameter	800 mm, 914 mm, 1,000 mm, and 1,100 mm	
Take-up		Provided with automatic density change function (32 densities)	· AGB Adjustable Guide Bar · 14 mm guide bar · Adjustable guide bar for filament
	Maximum on-loom take-up diameter	600 mm: Cam, dobby, and Jacquard 520 mm: Crank	· 720 mm · Off-loom take-up device
	Pick density	5.9~118.1 picks/cm (15~300 picks/inch) 3.9~118.1 picks/cm (10~300 picks/inch)	
	Temple	Top-mounted type	
Beating		· 4-link (Reed space: 150, 170, 190, 210, and 230 cm) · Cam (Reed space: 250, 280, and 340 cm)	Cam (Reed space: 150, 170, 190, 210, and 230 cm)
		· Lightweight and well-balanced rocking shaft · New reed holder	
Weft supply stand		· Floor mounted for 4 packages (2-color) · Floor mounted for 8 packages (4-color) · Floor mounted for 10 packages (6-color)	
Selvage		Mechanical planterary leno motion	· EPL Electronic Planetary Leno motion · ZTN II Needle-less Tuck-in device (Left & right/Intermediate) · ZTN Needle-less Tuck-in device (Left & right/Intermediate) · Center leno motion
Waste weft removal		· Catch cord taken-up with two rolls · Catch cord taken-up with a gear	· CCL Catch-Cord Less · Independent shedding motion for catch cord · Electric waste-selvage cutter
Cutter on the yarn supply side		Mechanical type	Electric vertical type, Electric horizontal type
Lubrication		· Oil bath system for main driving sections · Centralized lubrication (manual grease supply)	Centralized lubrication (automatic grease supply)
Stop motion	Weft	Reflective feeler	· Package sensor (only for multi-pick) · Pick-tail sensor · Tail discharge function
		One-head system or Two-head system	· 3-eyed feeler · Non-reflection feeler · Narrow-head feeler
	Warp	Electric 6-row contact bar system	· Row number indication · Left and right area indication
	Stop cause indication	· Message indication on the Navi-board · 4-color multi-function indication lamps	
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	Smart Air Grid TISS Tsudakoma Internet Support System
Automation · Energy savings			APR-III Automatic defective Pick Remover

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

Dimensions

Unit: mm



Reed space (cm)		150	170	190	210	230	250	280	340	360	390
W	Positive cam	4,076	4,276	4,476	4,676	4,876	5,076	5,376	5,976	6,176	6,476
	Floor-mounted positive dobby	4,208	4,408	4,608	4,808	5,008	5,208	5,508	6,108	6,308	6,608
A		1,500	1,700	1,900	2,100	2,300	2,500	2,800	3,400	3,600	3,900
B		2,080	2,280	2,480	2,680	2,880	3,080	3,380	3,980	4,180	4,480

	Flange diameter	Cam	Dobby
L	ϕ800	1,735	1,795
	ϕ914	1,845	1,905
	ϕ1,000	1,914	1,974
	ϕ1,100	2,035	2,095

Note 1: For details on other specifications, contact TSUDAKOMA.
Note 2: When the flange diameter is 914 mm or more, liners are required.
Note 3: "W": The dimensions for 2-color loom with the *i*-WBS or for 4-color loom. For details on other specifications, contact TSUDAKOMA.
Note 4: Photographs, drawings, and data in this brochure are subject to change for improvement without notice.
Note 5: Some photographs in this brochure include optional devices.
Note 6: In some specifications, the let-off bracket is provided in the backmost position. For detailed dimensions, contact TSUDAKOMA.

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.

TTS30S SPUN SIZING MACHINE

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.

TSE30F FILAMENT SIZING MACHINE

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

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

TSUDAKOMA Corp.

www.tsudakoma.co.jp

ISO 9001 14001

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