GLOBAL SERVICE NETWORK

Total Customer Support Based on Total Customer Service

Toyota offers a full range of services specifically tailored to individual customers—from design of the mill layout to installation and after-sales service. In addition, at the Toyota Textile Machinery Training Center, we offer a wide range of courses that match the needs of individual customers. Here, technical engineers from around the world get the latest know-how needed for smooth operation of all Toyota textile machinery.

Global Service Centers

1. Japan 2. Korea 3. China (Shanghai, Shaoxing, Wujiang, Jinan, Changzhou, Lanxi, Tianjin)
4. Vietnam 5. Thailand 6. Indonesia 7. Bangladesh 8. India 9. Pakistan 10. Uzbekistan
11. Turkey 12. Moldova 13. Switzerland 14. Spain 15. United States 16. Brazil

1. Layout

Toyota proposes designs for layout and installation of looms in the mill, and offers plans for the machinery and equipment most suitable for customer mill requirements.

2. Installation

Toyota supervisors will visit the customer's mill and provide advice ranging from loom placement and installation to operational guidance.

3. After-Sales Service

After looms have been delivered, Toyota will actively provide after-sales service, including supplying the spare parts needed for smooth loom operation.

4. Training

In response to customer requests, Toyota has set up training courses ranging from how to use the machines to brushing up management skills. Toyota also helps train skilled experts adept in both the hardware and software aspects of its products.

5. Global Service Network

With a number of service centers located around the world, Toyota is able to quickly respond to the needs of local customers.

TICS

The Toyota Internet Customer Support system (TICS)* connects Toyota and its textile machinery users through the Internet to provide information such as parts inventory and price, enabling our customers to get the information they need when they need it.

Part number search

Price estimate

Order status inquiry

*Date of TICS availability differs from region to region.

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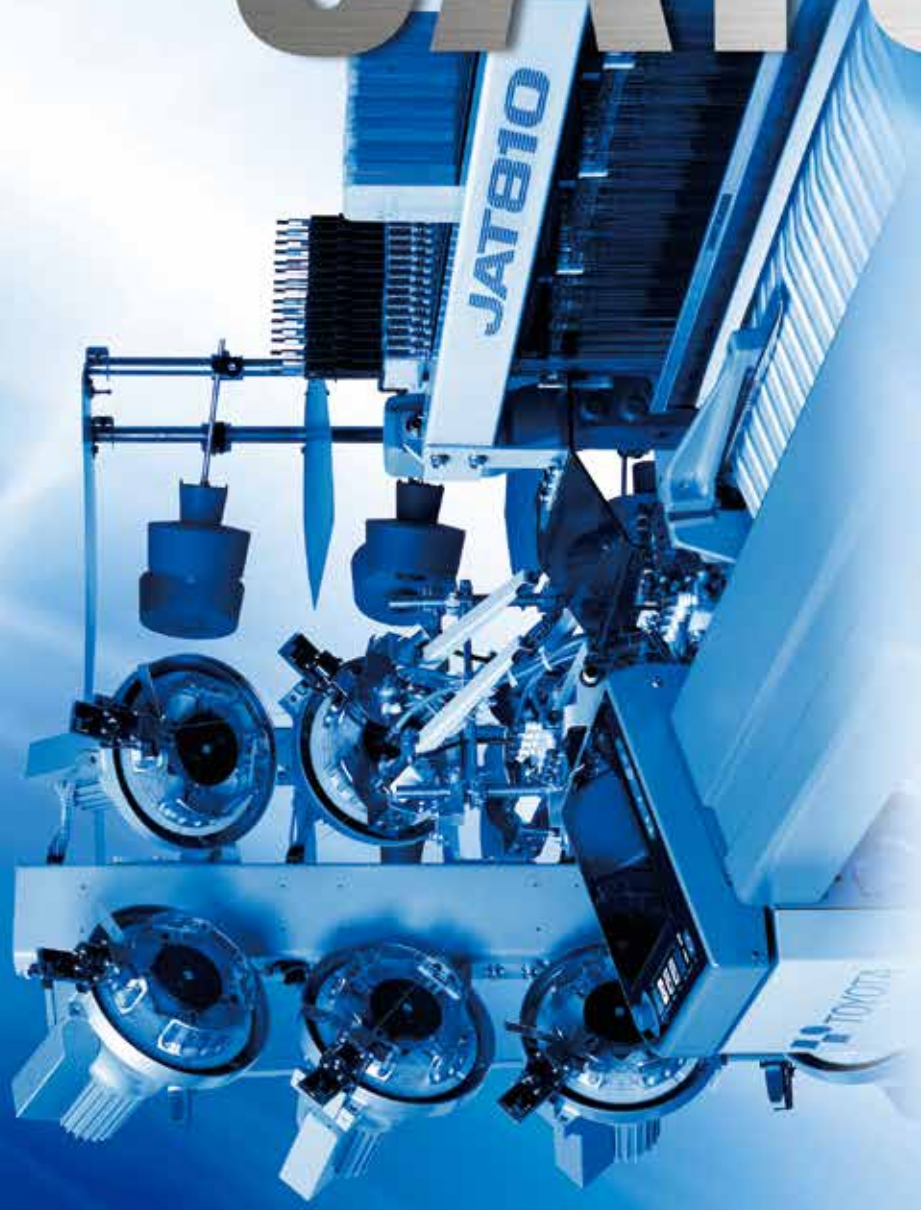
English
Printed in Japan

AIR JET LOOM

JAT810



TOYOTA

Introducing the JAT810—the Evolution of the JAT710, with the World's No.1 Market Share, to Meet the Needs of the Times

The JAT710 has been a best seller since its debut in 2003, and has gained a loyal following among a great many customers around the world. The new JAT810 has inherited its legacy of superb performance, while pursuing even greater energy savings and versatility, combined with thoroughly thought out ease of use.

Based on the underlying design concept of the JAT Series of "Weaving the highest quality fabric at the lowest possible cost," the JAT810 boasts a diverse range of original Toyota features, including an Air-Saving System that reduces energy consumption and the new "E-shed" electronic shedding motion. In addition, a newly developed function panel and a factory management system dramatically improve operability.

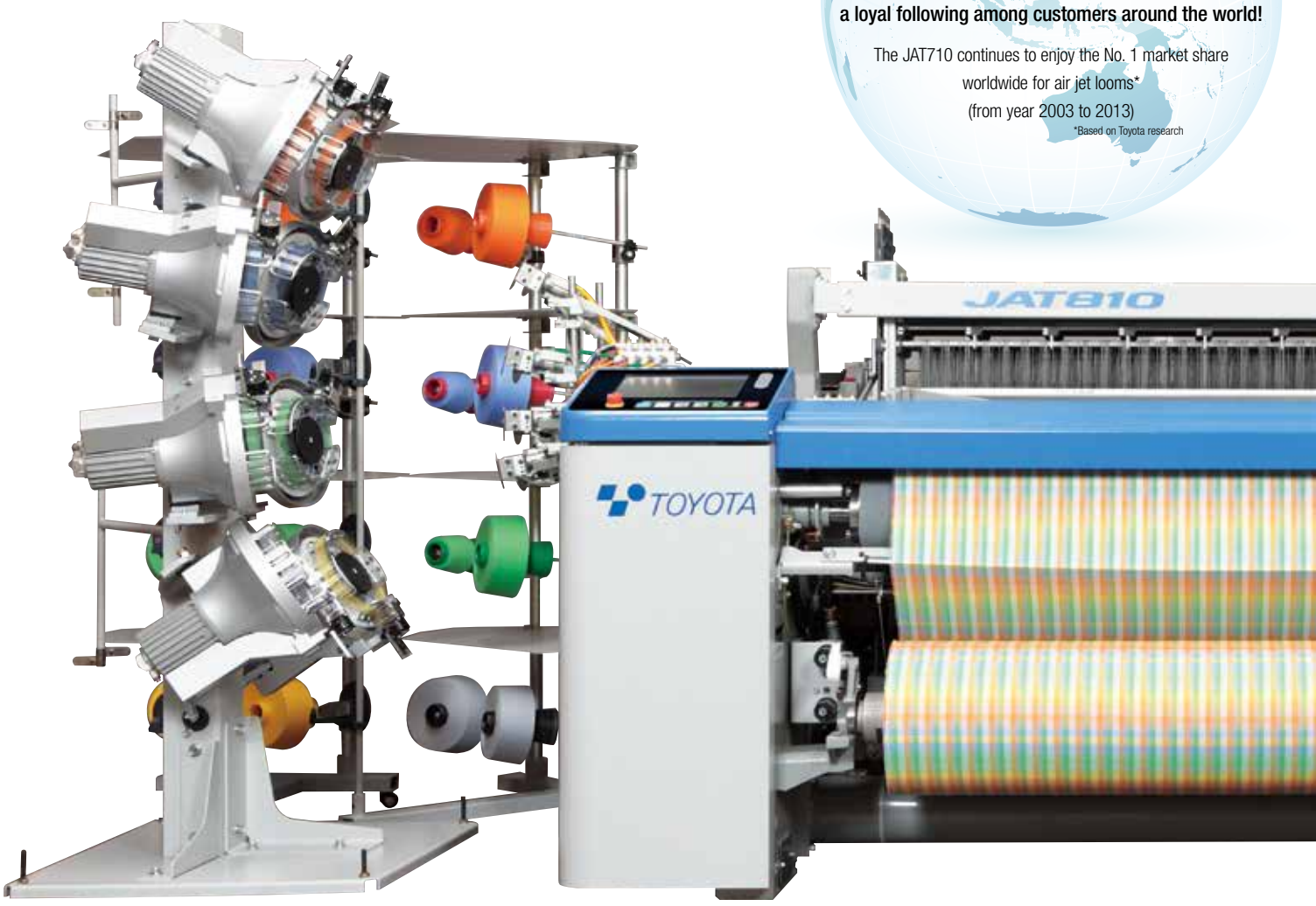
The JAT810 has evolved with the times and is designed to meet all your weaving needs.

A Trusted 70,000 Units Installed

JAT710 sales have reached 70,000 units thanks to a loyal following among customers around the world!

The JAT710 continues to enjoy the No. 1 market share worldwide for air jet looms*
(from year 2003 to 2013)

*Based on Toyota research



Unparalleled Energy-Saving Performance

The newly designed weft insertion system, including EDP, sub nozzles, and JAT e-REED, delivers further reductions in air consumption and air pressure.

Further Evolved Electronic Shedding Motion

E-shed, an improved version of Toyota's original shedding device, delivers speed and versatility that surpass any electronic dobby and positive cam shedding.

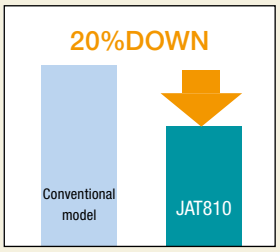
The Future of Factory Management

A new larger function panel and fully innovated electronic system. Enhanced features also include WAS (Weave Assist System) and the new FACT (Toyota Factory Management System).

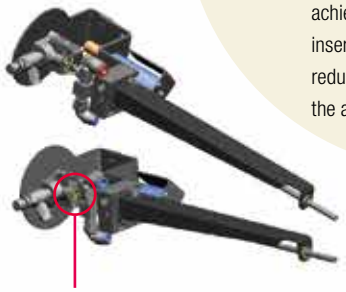
Unparalleled Energy-Saving Performance

Newly Developed Air-Saving System Reduces Machine Operation Costs

Air Pressure

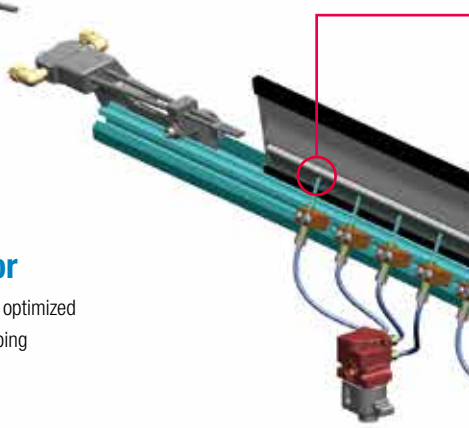


The new Air-Saving System achieves low-pressure weft insertion. It also enables a reduction in supplied pressure from the air compressor.



Automatic Brake System (ABS)*

Prevents yarn breakage by controlling peak weft tension, and is also effective in saving air.



New Electric Drum Pooling (EDP)

A new high-performance motor delivers improved responsiveness for high speed.

Independent Main Tank by Color

Pressures can be set separately for each color. A newly optimized placement of the tanks and valves reduces losses in piping distribution.

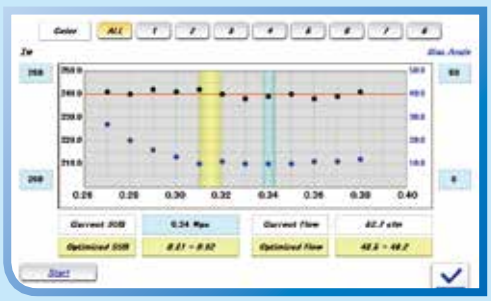
Advanced Technologies in Pursuit of Further Savings in Air Pressure and Air Consumption

Multi-Tandem Nozzle*

Unifying the tandem nozzle, ABS, and assist nozzle makes it possible to reduce the main tanks' pressure. The increase in propulsion power also allows high-speed applications.

Intelligent Air-Saving System (IAS)*

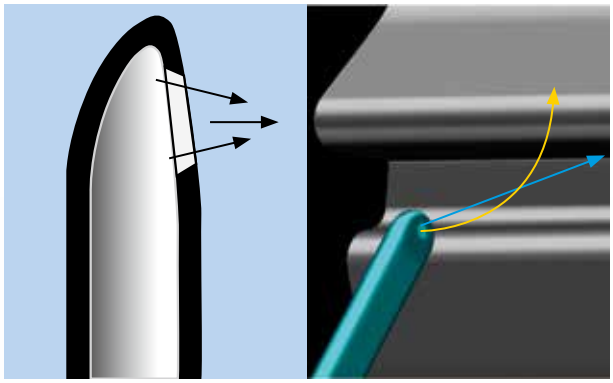
Air consumption reduction can be achieved by analyzing operating status and optimizing air pressure.



P Monitor*

Both operating pressure and air consumption can be monitored. Alarm functions make it easy to control operating costs.

To meet the increasing demand for energy savings, the weft insertion system on the JAT810 has been thoroughly innovated. This proprietary Toyota weft insertion system brings together new technologies to achieve a significant reduction in air pressure and air consumption.
In addition, users can choose a combination of the wealth of options to enable weft insertion of a wide variety of yarns.



Air jetting at low pressure with another company's nozzle
Air jetting at low pressure with the JAT810 nozzle

JAT e-REED

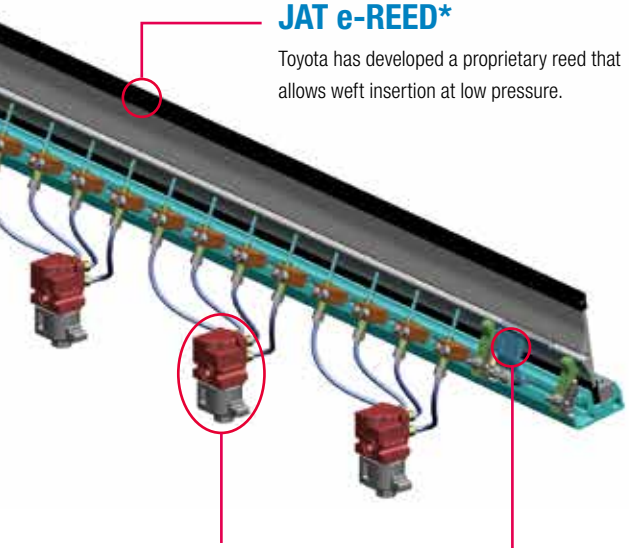
New front-injection stretch nozzle

New Tapered Sub Nozzle

Optimized taper angles allow even more stable weft insertion at a lower pressure.

JAT e-REED*

Toyota has developed a proprietary reed that allows weft insertion at low pressure.



New High-Efficiency Valve

Improved reliability and service life.

New Front-Injection Stretch Nozzle*

This stretch nozzle can be used without damaging the reed.

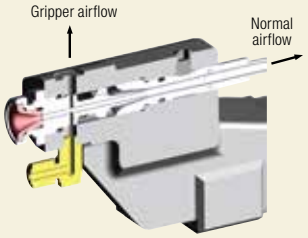
Automatic Pick Controllers (ATC, AFC*, APC*, EPC*)

Abundant control devices promote stable weft insertion at high speeds.

Compatible with a Wide Variety of Yarn Types and Fabrics

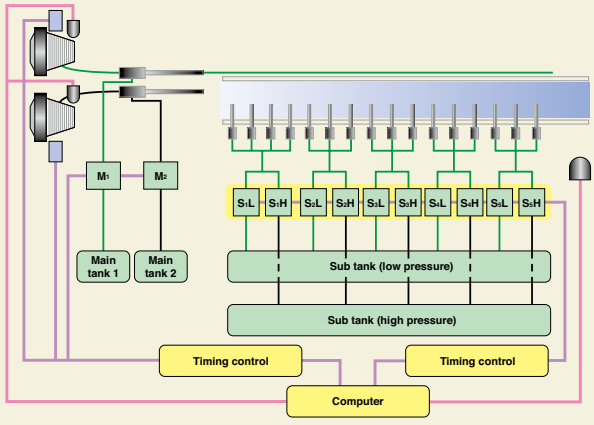
Air Gripper System (AGS)*

This system eliminates dropped picks of stretch yarn, while preventing damage to covered yarns.



Flexible Insertion System (FIS)*

Main nozzle pressure can be set independently for each pick according to the weft insertion pattern. Plus, the sub nozzle's pressure can be switched between high and low pressure for each pick. It can handle a maximum of 75-times difference in weft yarn count. (Example: Chenille yarn 1500d, 20d)

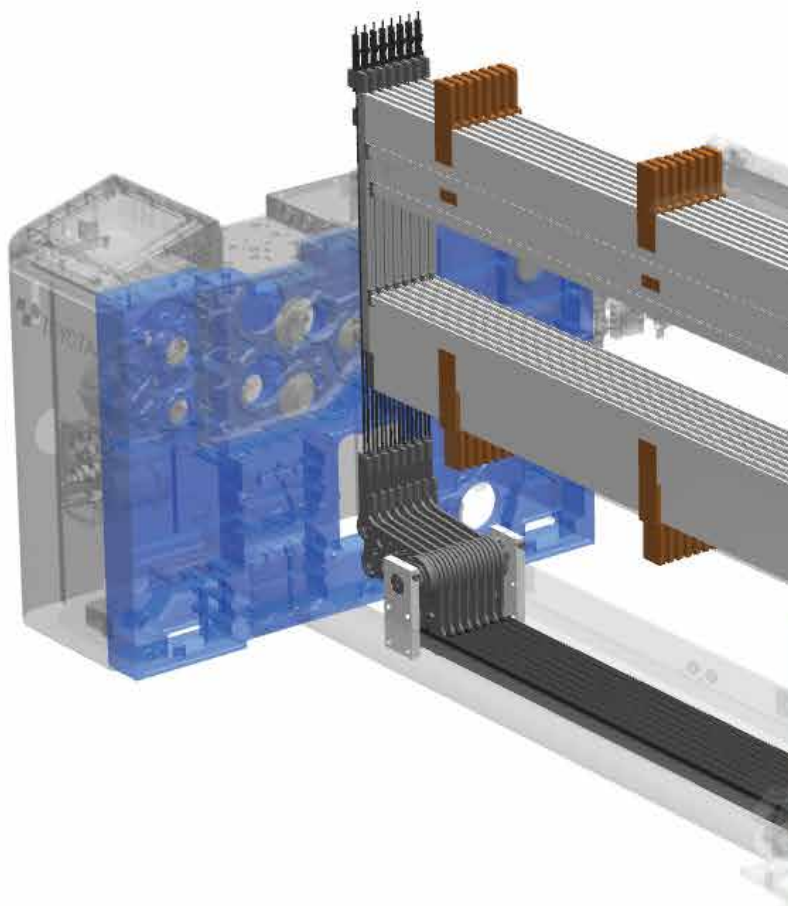


* Option

Further Evolved Electronic Shedding Motion

Crystallization of the Toyota Group's State-of-the-Art Technology

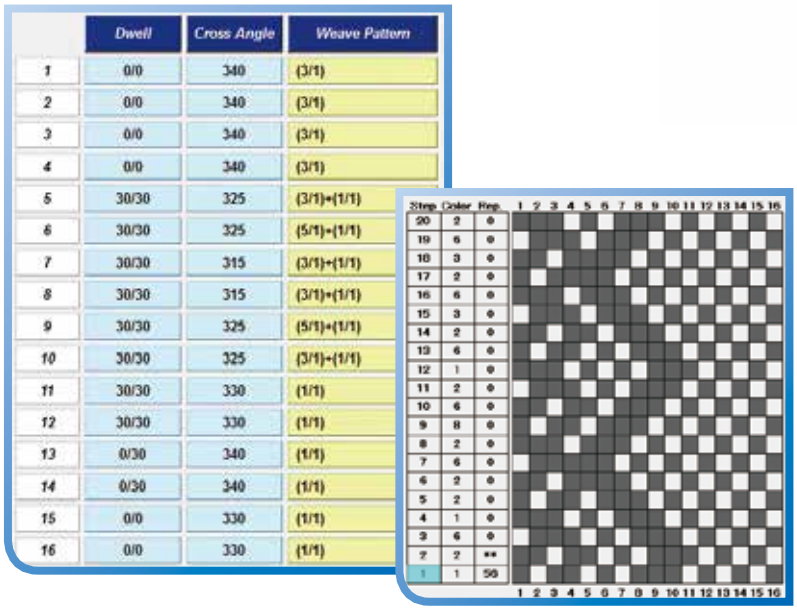
Independent servomotors drive individual heald frames. It is the ultimate shedding device with operability, as well as versatility, surpassing that of dobby units, and high-speed capabilities equal to or greater than cam shedding. The basic system has been newly redesigned for the third generation of this device, and high-performance motors and servo controllers were newly developed in-house for this shedding motion. Fabrics that had been highly challenging to weave can now be woven at high speed.



Functions and Features	E-shed	Electronic Dobby	Cam
Pattern settings can be changed at will from the function panel	●	●	×
Vertically variable dwell angles can be set for each frame	●	×	×
Variable cross-timing can be set for each shedding frame	●	×	▲*1
No limit on unbalanced fabric design (no limit on difference in number of upper/lower frames), even when using 16 shedding shafts	●	×	—
Pick finding with shedding motion only	●	×	×
Machine setting using WAS (makes it easy to perform optimum settings as recommended by Toyota)	●	▲	▲
Smooth shedding curve (improves the service life of heald frames and accessories)	●	×	▲
No limit on RPMs due to number of harness shaft drives	●	×	×

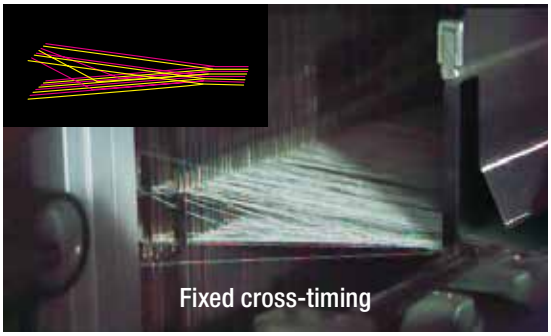
● Possible ▲ Conditionally possible × Not possible
*1 Cam replacement required with each modification of settings.

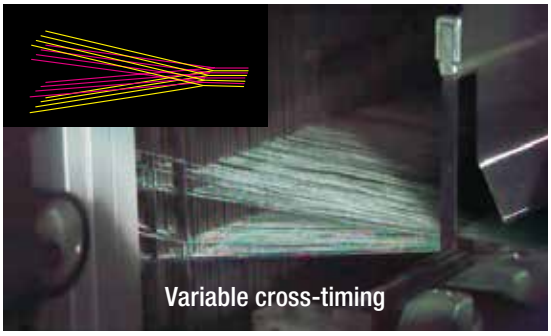
Dwell angle, cross-timing selection screen



	Dwell	Cross Angle	Weave Pattern
1	0/0	340	(3/1)
2	0/0	340	(3/1)
3	0/0	340	(3/1)
4	0/0	340	(3/1)
5	30/30	325	(3/1)•(1/1)
6	30/30	325	(5/1)•(1/1)
7	30/30	315	(3/1)•(1/1)
8	30/30	315	(3/1)•(1/1)
9	30/30	325	(5/1)•(1/1)
10	30/30	325	(3/1)•(1/1)
11	30/30	330	(1/1)
12	30/30	330	(1/1)
13	0/30	340	(1/1)
14	0/30	340	(1/1)
15	0/0	330	(1/1)
16	0/0	330	(1/1)

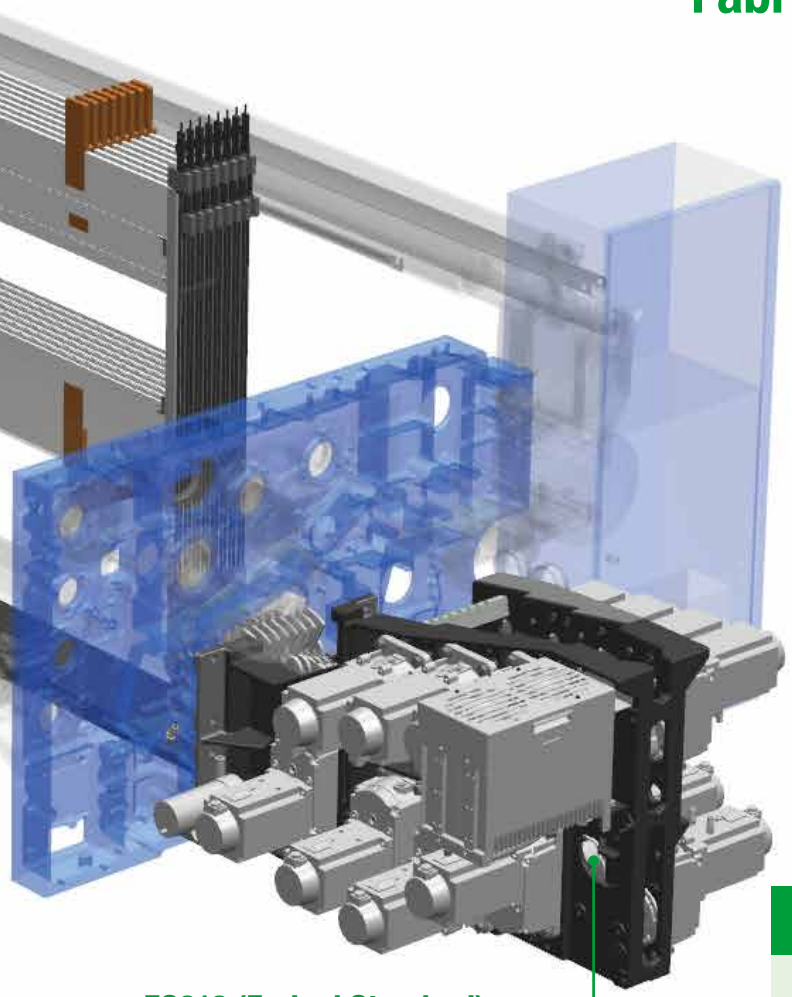
Benefit of changing cross-timing



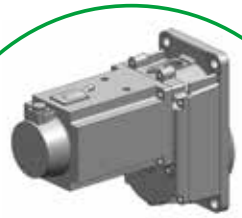


Since its debut in 2000, E-shed, Toyota's original electronic shedding device, has continued to evolve. This third generation of E-shed delivers significantly improved productivity by adopting liquid cooling in the motor cooling system. In addition, a new energy regeneration system and lightweight design were also developed to reduce power consumption. Furthermore, in addition to the existing 16-shaft model, an ultra-high-speed 8-shaft model and 4-shaft model have also been newly developed.

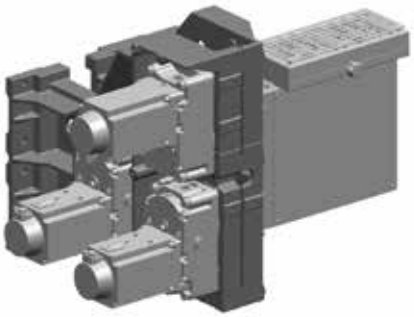
E-shed Lineup Available for Various Fabrics and Installation Space



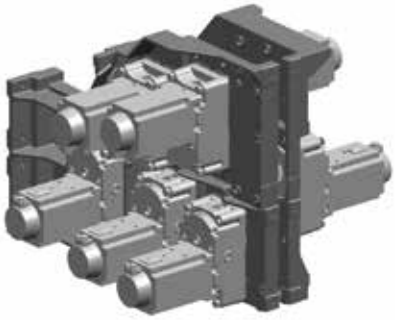
ES316 (E-shed Standard): Up to 16 shafts



Flexible shedding specifications (for example, 4 shafts can be added to a 12-shaft machine). The number of working shafts can be increased simply by adding servomotors.

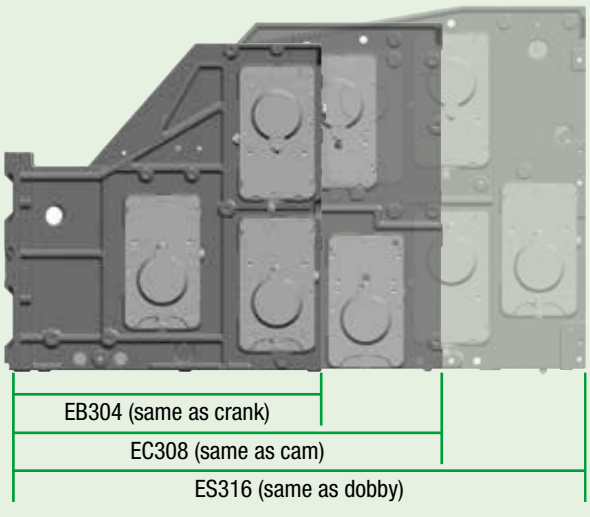


EB304 (E-shed Basic): Up to 4 shafts

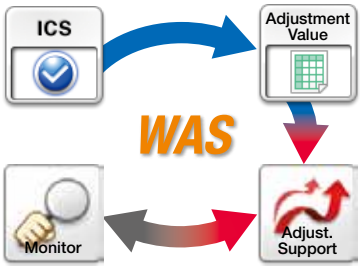


EC308 (E-shed Compact): Up to 8 shafts

Installation Space Comparison



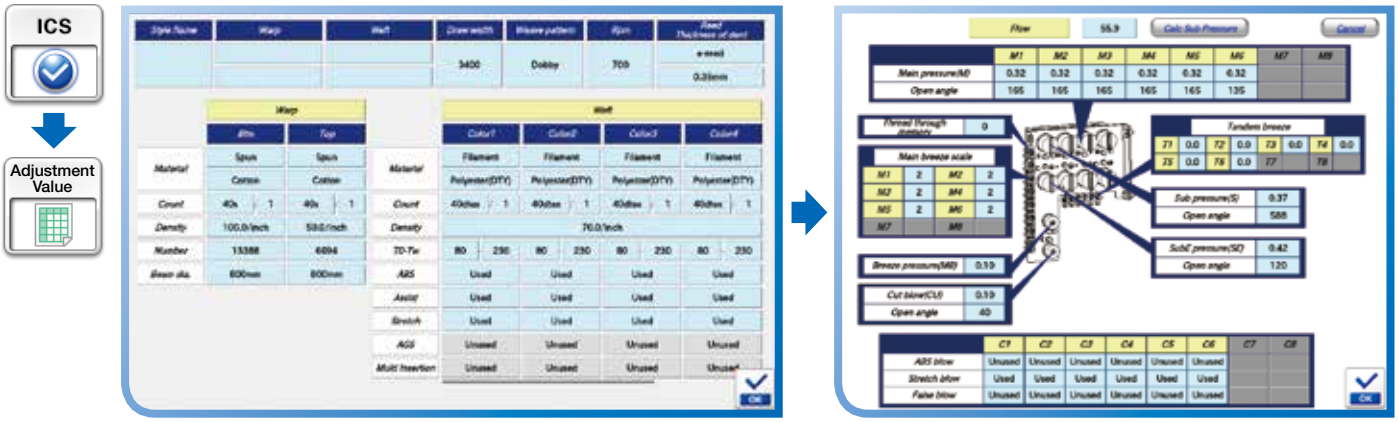
The Future of Factory Management



New Weave Assist System (WAS)

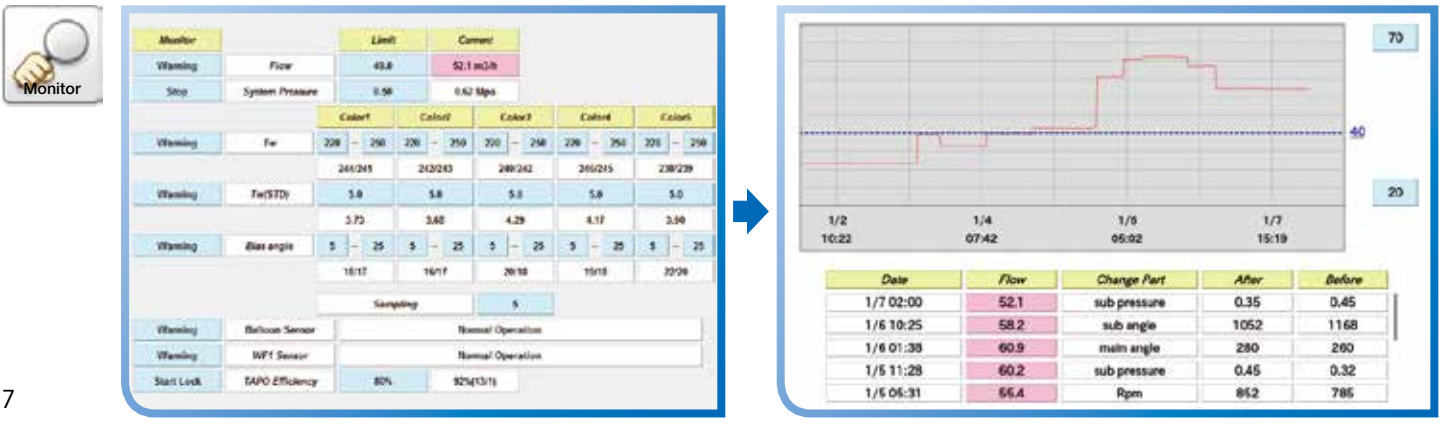
In addition to existing functions (ICS settings, electrical and mechanical parameters) that enable the optimum weaving conditions to be set automatically simply by selecting the fabric parameters, a newly designed Adjustment Support function assists the operator, for example, in making adjustments to reduce stop marks and the number of faults. In addition, for quality control, WAS monitors the number of faults and abnormalities, such as excessive air consumption, and warns and shuts down the machine to prevent the occurrence of defects: this maintains a high level of textile quality. Total management is also possible in conjunction with FACT.

Suggests recommended settings according to fabric specifications



Analyzes actual conditions and shows countermeasures

Sets targets and monitors status



The large function panel provides maximum ease of use, as well as enhancing connections with the new “FACT” Toyota Factory Management System. Linking operational data from FACT to machine settings from WAS (Weave Assist System) makes it easy to do comparative analyses of actual performance and operating conditions, paving the way to increased efficiency. The JAT810 goes far beyond traditional monitoring that merely compiles production data, and will contribute to improving the efficiency of the entire mill.

FACT Toyota FACTory Management System*

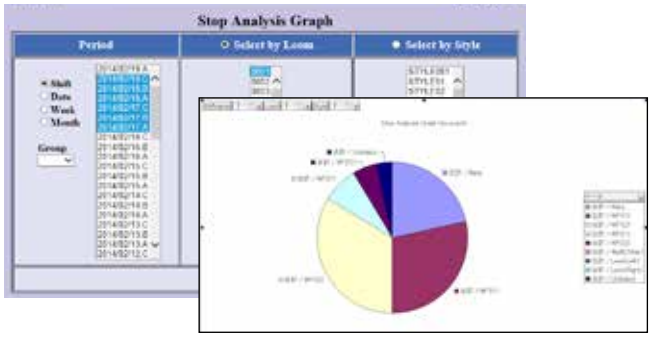
Toyota developed this new factory management system based on the Toyota Monitoring System (TMS), which was well received in the JAT710. Data such as shift reports and stop analysis graphs currently available can be displayed, as well as various breakouts showing operating status according to actual factory layout.

Operating status screen

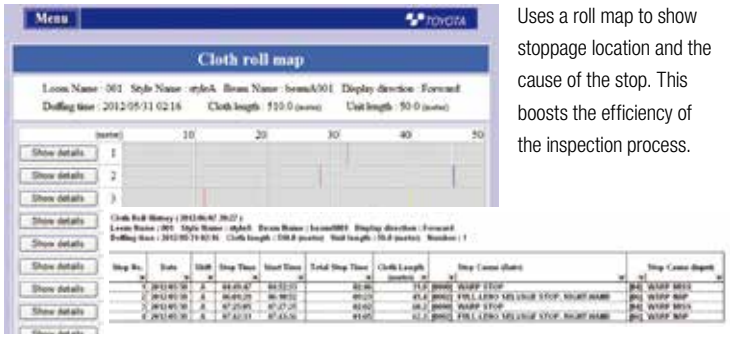
E-mail notification

FACT can be accessed from a smartphone or tablet. An e-mail notification function has been newly added.

1 Stop Analysis Graph



2 Cloth Roll Map Function



Uses a roll map to show stoppage location and the cause of the stop. This boosts the efficiency of the inspection process.

3 Operating Status Screen

Operation Monitor Mode

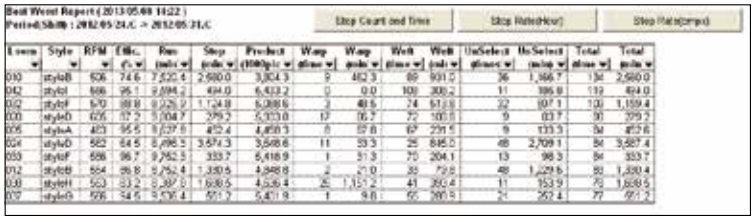
Gives easy-to-see operating conditions according to actual factory layout.

Doffing/Warp Out Forecast Mode

Predicts which looms will require cloth doffing and which will have warp out within the next hour.

Air Consumption Mode

Looms with abnormal air consumption are shown in red.



Best/Worst Report

Automatically displays the 10 best and 10 worst looms in terms of capacity utilization and number of stops. Can be used for deploying setting conditions across all looms for optimal operation.

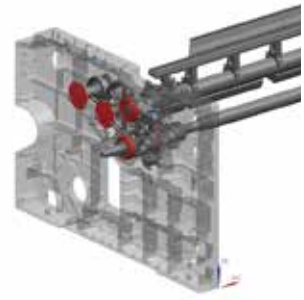
TMS (Toyota Monitoring System) will continue to be available.

* Option

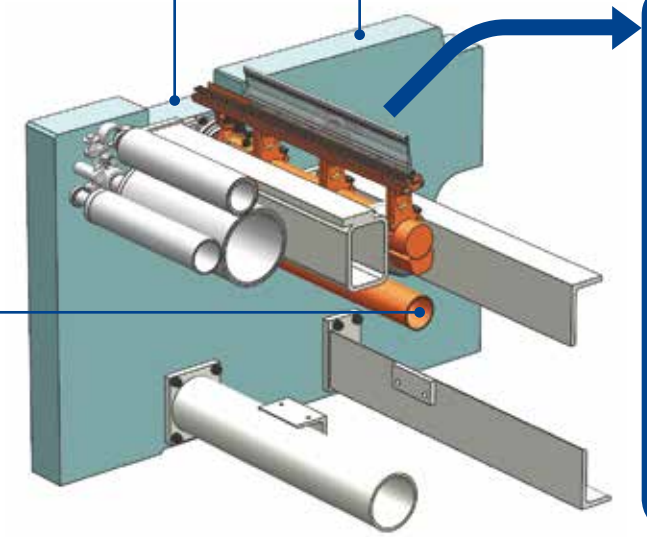
Pursuing High Quality

Lower-Vibration Technologies Bring Stable High-Speed Operation

Reinforced Gearing
Improved reliability of gearing parts



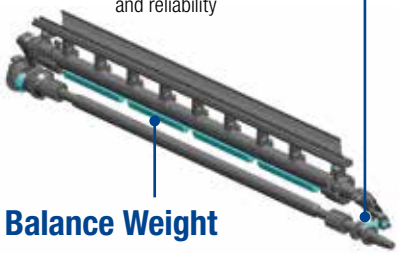
Integrated One-Piece Side Frame
Robust frame structure ensures stable operation



New Connecting Shaft
Higher rigidity reduces vibration

New Beating Mechanism

Reinforced Con-Rod
Improved beating strength and reliability

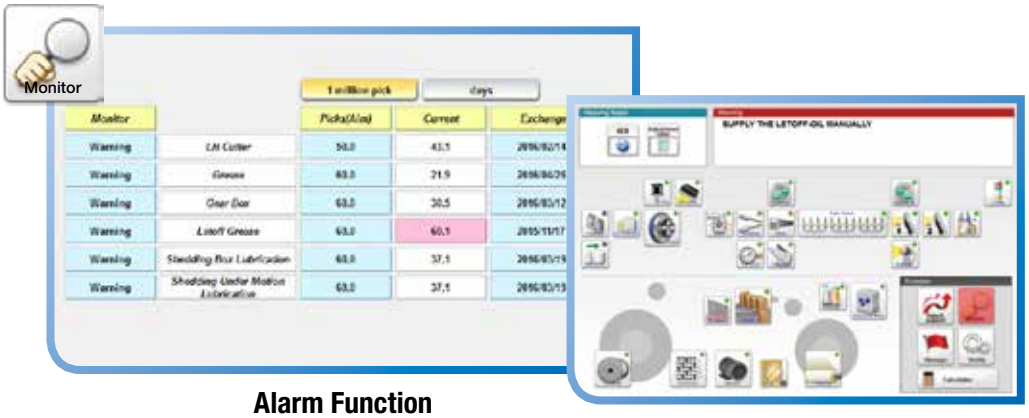


Balance Weight
Improved balance reduces vibration

Easy Operation

Function Panel
The large panel operates with finger-swipe and finger-tap gestures, and provides simple, easy operability with a strong graphical presentation.

Maintenance



Alarm Function
Alerts can be set for periodic maintenance.

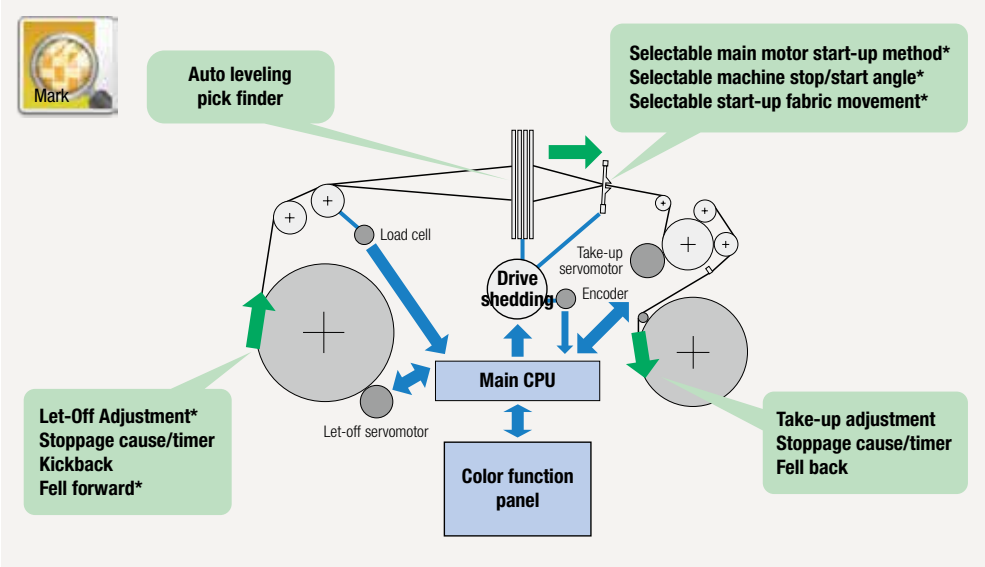
Fully Automated Centralized Lubrication
Lubricant is automatically supplied by designating a lubrication interval via the function panel.

Toyota continues to research and develop new technologies that are one step ahead to meet a diverse range of customer needs. By adopting new technologies, the JAT810 has achieved improvements in speed and quality while reducing overall vibration.

Total Stop-Mark Prevention System

Stop-Mark Prevention System

Powerful CPU provides synchronous control of various devices, including let-off and take-up mechanisms. Various stop-marks including heavy or light-filling bar defects and wavy set marks can be prevented.



Selectable Start-Up Fabric Movement

The operator can select a predetermined amount (mm) of reverse/forward let-off and take-up movement at start-up, effectively preventing light-filling bar defects (especially in temple areas).

Note: The amount of movement and number of cycles are selectable.

Let-Off Adjustment

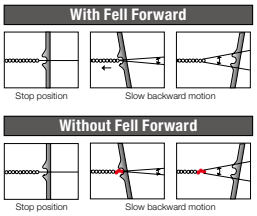
The operator can arbitrarily set the amount of let-off permitted in response to stoppages or machine downtime, thus reliably preventing stop-marks.

Selectable Machine Stop/Start Angle

The operator can prevent stop-marks by setting any arbitrary start/stop angle desired according to the type of fabric.

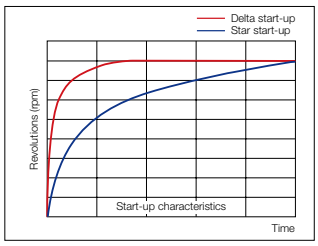
Fell Forward

Releasing warp yarn let-off tension immediately after the loom halts prevents the cloth fell from touching the reed, thus eliminating another cause of stop-marks. After the loom restarts, the preset tension is automatically restored, and beating resumes at the normal cloth fell position.



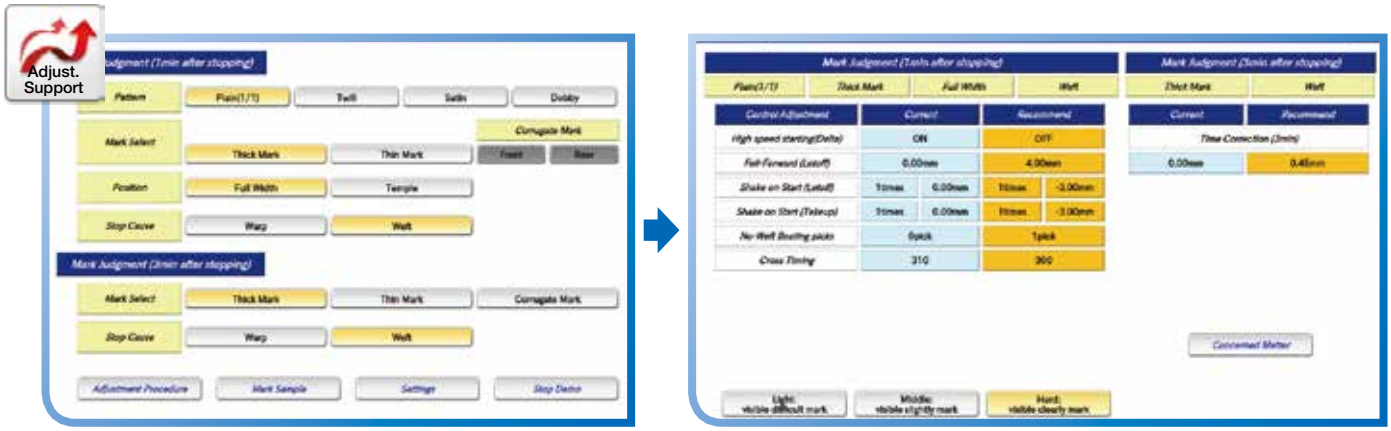
Selectable Main Motor Start-Up Method

The JAT810's super-fast start-up motor ensures full beating power from the first pick. Either a delta or star configuration can be selected for motor start-up, offering different start-up torques to prevent heavy or light-filling bar defects.



Stop-Mark Adjustment Support System

The JAT810 features a new stop-mark adjustment function via WAS.



Analyzes stop-mark conditions

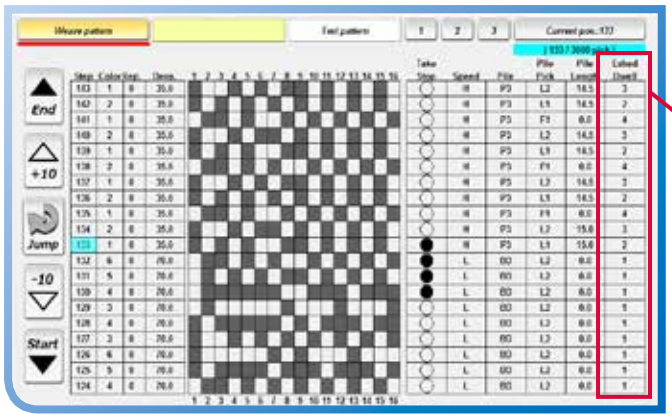
Shows corrective actions

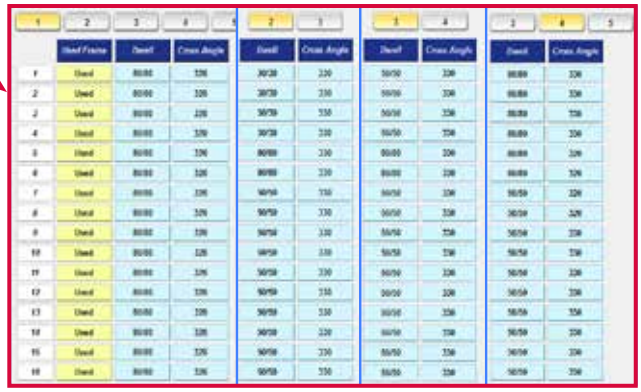
Weaving High-Value-Added Towels

From Gauze Towels to Thick Bath Mats

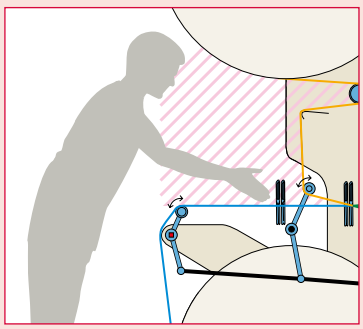
E-shed Multi-Control System

Dwell and cross-timing can be set for each pick.
Optimal shedding settings can be selected, based on cloth-fell movement and pattern changes.





Easy Operation

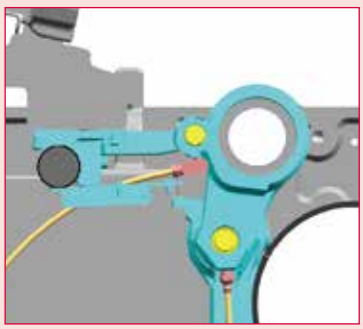


Improved Operability

An optimized configuration based on ergonomic design significantly improves warp-handling efficiency.

Maintenance-Free

An automated lubrication system on the fell movement part eliminates maintenance.



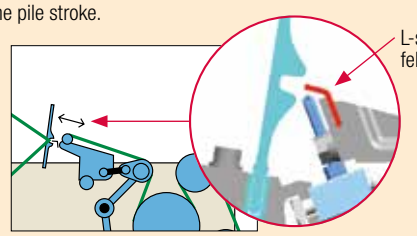
This new terry machine offers high-speed weaving of a wide range of towels, from gauze towels to thick bath mats. Based on the standard performance of the JAT810, it incorporates weaving know-how for towel weaves developed out of Toyota's long history. It is designed to provide customer satisfaction at every level in terms of productivity, quality, and versatility.

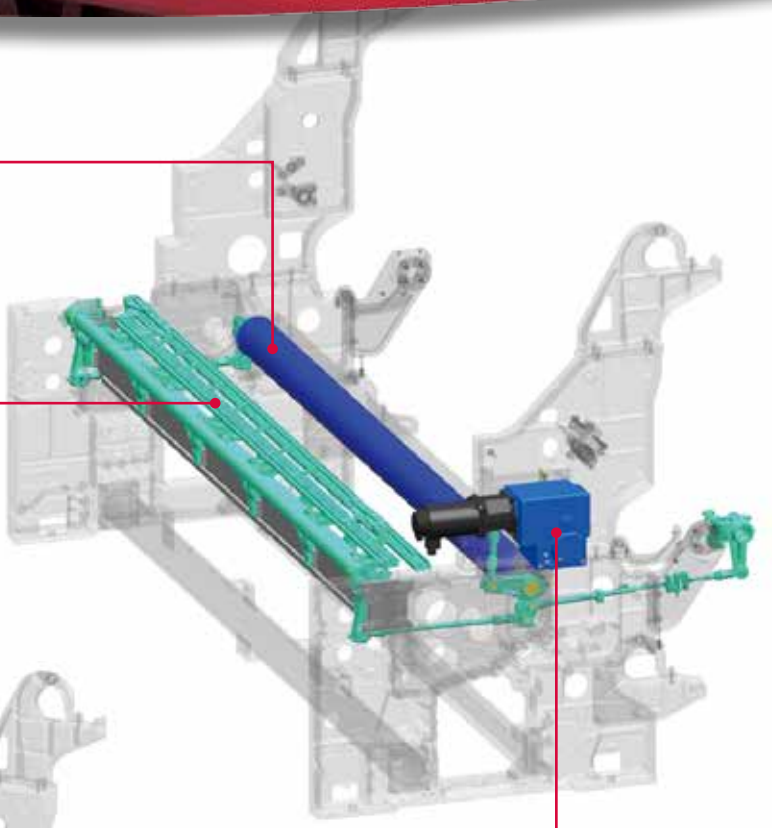
Two-Sided Main Shaft Drive System

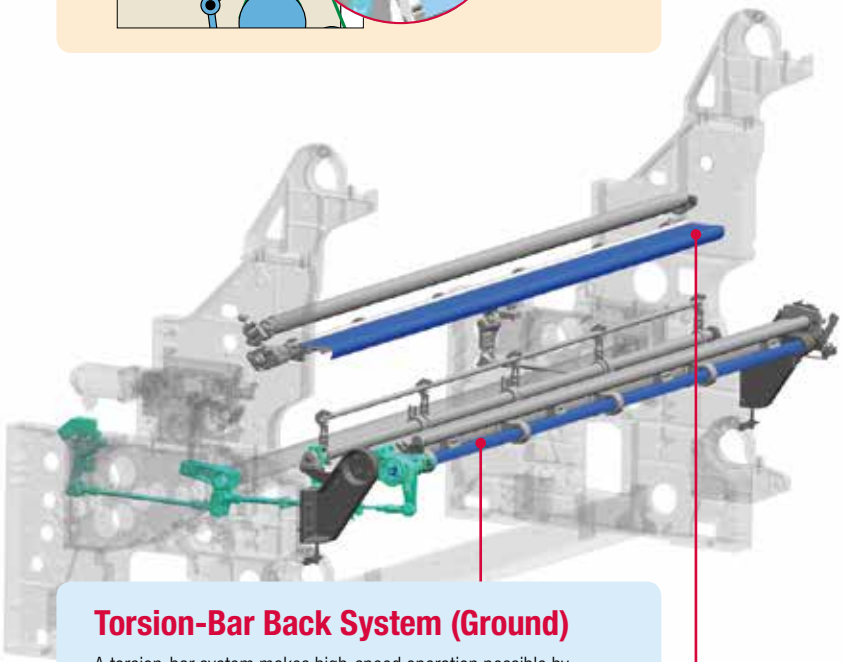
The cloth fell movement system is supported on the high-rigidity main shaft to prevent horizontal twisting and provide uniformly high-quality pile formation.

L-Shaped Fell Plate

An L-shaped fell plate prevents interference between the sub nozzles and the piles. This cloth movement system synchronizes the fell plate with the terry motion to eliminate the adverse effect of the pile stroke.

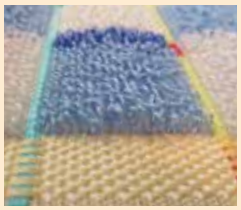


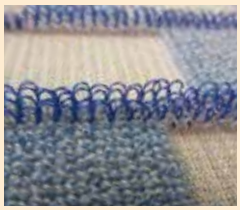




Electronic Pile System

Originally developed for terry machines. Pile length and the number of pick piles (3 to 9 picks) can be specified as desired, and optimized servomotor control can handle a wide variety of designs at high speeds.


Wave pile


Multi-pick pile

Torsion-Bar Back System (Ground)

A torsion-bar system makes high-speed operation possible by improving tracking characteristics for ground let-off.

Continuous Leaf Spring Easing (Pile)

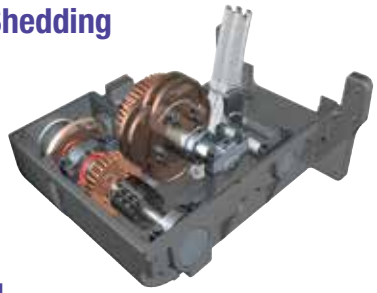
Use of continuous leaf spring easing eliminates pile yarn rolling for high-speed operation and consistently high quality.

Options/Variations

Shedding

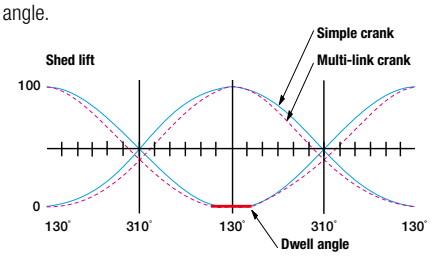
Negative Cam Shedding

Proprietary Toyota shedding technology provides for optimum cam curves.



Crank Shedding

The JAT810 provides simple crank shedding and multi-link crank shedding with dwell angle.



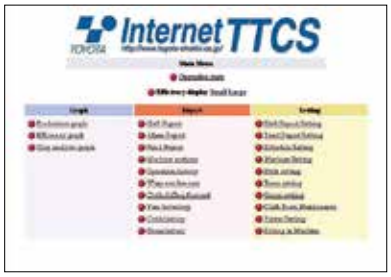
Simple crank

Multi-link crank

Factory Management

Internet-TTCS

Operators can instantly check the production status of their mill from anywhere in the world via the Internet. This advanced system enables total production management including monitoring machines, obtaining maintenance records, and keeping track of the entire weaving process.



Labor Savings

Toyota Automatic Pick Operator (TAPO)

If a mispick occurs, this feature automatically removes the mispick and restarts the loom. A variable-speed motor makes it possible to adjust the speed of mispick removal.

Automatic Insertion Command (AIC)

When a yarn supply fault occurs, AIC continues weft insertion by automatically switching to another drum without stopping the loom.

Electronic Selvage Motion (ESM)

Independent left and right servomotors and an oil-bath system for the drive gears increase the reliability of loom parts during high-speed operation.

For a Wide Range of Yarns and Fabrics

Independent Selvage Motion (ISM)

A diverse range of selvage constructions can be formed easily based on settings made from the function panel.
More complex designs are possible by increasing the number of frames in the ground construction.

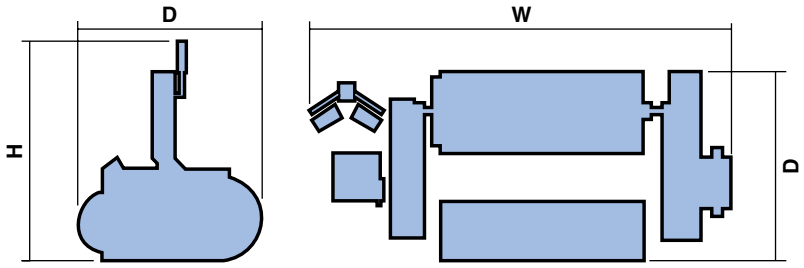
Selvage Jacquard Machine-Ready

The JAT810 can be manufactured ready for fitment of a selvage jacquard machine for customizing selvages with names, logos, etc.

Tuck-In Selvage Device

Can be mounted on both the left and right sides, as well as in the center. Enables high-quality tuck-in selvage formation at high speeds.

JAT810 Dimensions



(Unit: mm)

		Negative Cam	Positive Cam	Crank	Dobby	Electronic Shedding ES	Electronic Shedding EC	Electronic Shedding EB
Machine Width (W)	2-Color Weft Insertion	R/S+2290	R/S+2574	R/S+2267	R/S+2702	R/S+2734	R/S+2575	R/S+2267
	4-Color Weft Insertion	R/S+2395	R/S+2679	R/S+2372	R/S+2807	R/S+2839	R/S+2680	R/S+2372
	6-Color Weft Insertion	R/S+3205	R/S+3489	R/S+3182	R/S+3617	R/S+3649	R/S+3490	R/S+3182
	8-Color Weft Insertion	R/S+3205	R/S+3489	R/S+3182	R/S+3617	R/S+3649	R/S+3490	R/S+3182
Depth (D)		1,915	1,915	1,875	1,915	1,945	←	←
Height (H)		2,036	1,712	1,712	1,712	1,712	←	←

Note: Depth (D) at the back of the loom is measured from the outside edge of the upper beam for terry machines, and from the outside edge of the control box for other types of looms.

Notes:
1) Dimensions shown in the table at left apply to the case of a model with the following specifications.
   1. R/S 150 to 280 cm
   2. Single beam
   3. Yarn beam flange diameter of 800 mm
   4. Maximum take-up roll diameter of 600 mm (520 mm diameter for crank shedding)
   5. With tandem nozzles and ABS, standard package stand
   6. Floor-mounted dobby: Model S3060
      (Add 70 mm to the machine width [W] for model S3220)
      Positive cam: Models 1671 and 1681
2) When yarn beam flange diameters are 930 and 1,000 mm, the following specifications apply.
   1. 930 mm diameter: Depth: + 97 mm, height: + 130 mm
   2. 1,000 mm diameter: Depth: + 192 mm, height: + 200 mm
3) When R/S is greater than 340 cm, add 50 mm to the machine width (W).
4) Machine depth (D) will differ according to the location of the let-off rear parts.
5) Dimensions vary depending on the specifications. Please check the exact dimensions with Toyota.

Main Specifications

Item	Standard Equipment
Drive	Super-fast start-up motor Start, stop, forward/reverse slow motion activated by push-button operation Solenoid-brake stoppage Automatic compensation for fixed-position stops
Beating	Two-sided crank drive with oil bath Multiple short sleysword
Let-Off	Electronic let-off motion Positive easing, double back rollers (adjustable forward/back position)
Take-Up	Electronic take-up motion
Weft Insertion	High-propulsion main nozzle, Conical tandem nozzle High-efficiency tapered sub nozzles, Stretch nozzle New super-responsive solenoid valves Sub tanks with direct connection to valves Auto pick finder Automatic Timing Controller (ATC)
Temple	Upper cover temple (lower mounted)
Stop-Mark Prevention	Selectable main motor start-up method Selectable machine stop/start angle Adjustable let-off amount, One-shot weft insertion Selectable start-up fabric movement, Fell forward
Selvage	Left/right rotary full-leno selvage device
Waste Selvage	Waste selvage on the right with catch cord
Stop Motion	Electric warp stop motion Leno-selvage & waste-selvage break stop motion Reflecting weft detector (double weft detector) Four-color LED signal lamp
Lubrication	Oil bath lubrication system for main parts Fully automated centralized lubricator
Main Control	Large 12-inch interactive touchscreen color function panel 32-bit CPU & function panel Fiber-optic & Ethernet LAN communication network
Function Panel Features	24-hour & weekly efficiency graphs Doffing/warp out forecast, Timing checker Automatic Initial Condition Setting (ICS) Intelligent Filling Controller (IFC) Troubleshooting, Stoppage cause display Weaver's monitor, Weave Assist System (WAS)
Others	Centralized regulator, Power outage stop function Emergency alarm function, Toyota Monitoring System (TMS)

Main Options

Automatic Weft Brake System (ABS) Automatic Pick Controller (AFC, APC, EPC) Flexible Insertion System (FIS) Air Gripper System (AGS) Balloon Cover Electric Drum Pooling with Weft Separation Twin-Beam System Double-Beam System Multiple Pick Density Electronic Take-Up Hybrid Brake System Intelligent Take-Up Controller (ITC) Multi-Tandem Nozzle, P Monitor Automatic Insertion Command (AIC)	Intelligent Air-Saving System (IAS) JAT e-REED (air-saving reed) Electronic Selvage Motion (ESM) 2-Thread Half-Leno Selvage Device Tuck-In Selvage Device (left/right and center) Center Selvage Device Independent Selvage Motion (ISM) Warp Breakage Area Indicator (with 6 or 12 divisions) Toyota Automatic Pick Operator (TAPO) Speed Control Inverter (SC Inverter) Toyota Total Computer System (Internet-TTCS) Toyota Factory Management System (FACT)

Item	Variations
Nominal Reed Space (R/S)	140 cm, 150 cm, 170 cm, 190 cm, 210 cm, 230 cm, 250 cm, 260 cm, 280 cm, 300 cm, 340 cm, 360 cm, 390 cm
Let-Off	Negative easing, double back roller (adjustable up/down position)
Yarn Beam Flange Diameter	800 mm, 930 mm, 1000 mm, 1100 mm, 1250 mm (pile beam for towel weaving)
Temple	Lower cover temple, Full-width temple
Shedding	Negative cam shedding (maximum 8 shafts) Positive cam shedding (maximum 10 shafts) Crank shedding (maximum 6 shafts) Electronic shedding (maximum 16 shafts) Dobby shedding (maximum of 16 shafts) Note: Towel loom: maximum 20 shafts Jacquard shedding
Weft Insertion	Supports up to 8 colors (2-color, 4-color, 6-color, and 8-color pick-at-will)
Stop Motion	Penetrating weft detector (double weft detector)

Notes:
1) Reed spaces of 260 cm and 300 cm are only available for terry machines.
2) For further details and information concerning other combinations of options and variations, please contact Toyota or your Toyota representative.
3) Drawings, data, and photographs that appear in this catalog are subject to change without prior notice.