

OPTIMIZE YOUR
PRODUCTION

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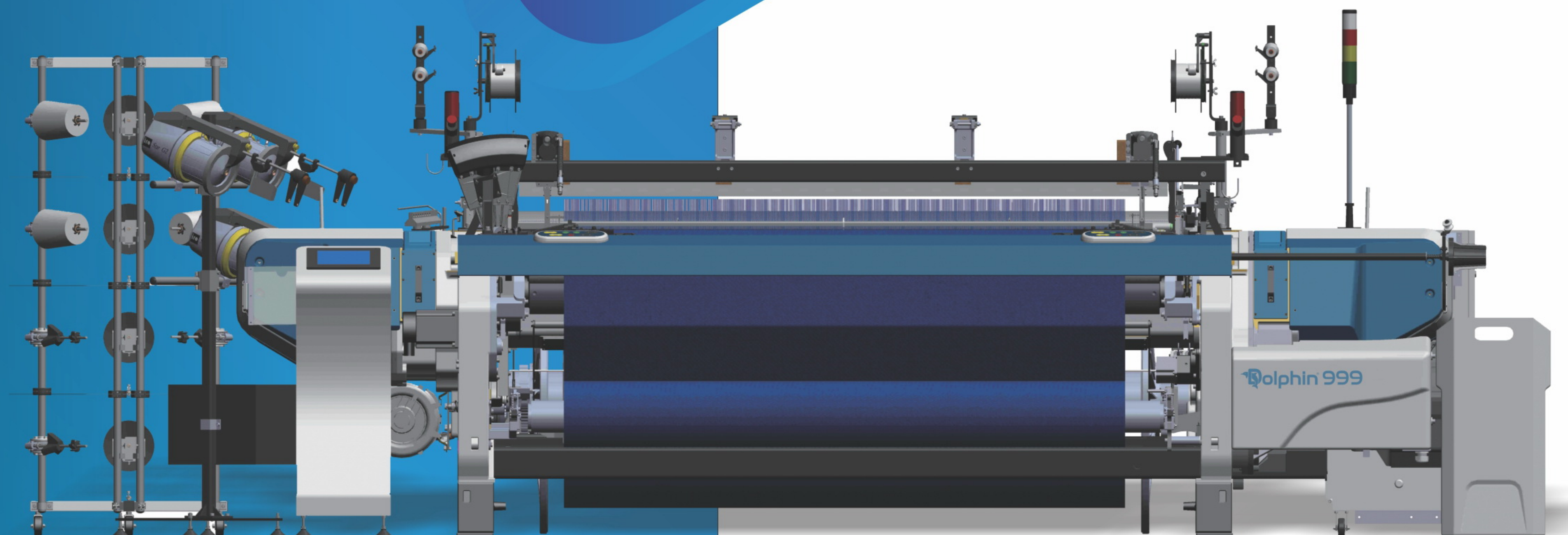


Efficient Textile Machines

EMBROIDERY

RAPIER
JACQUARD

AIRJET

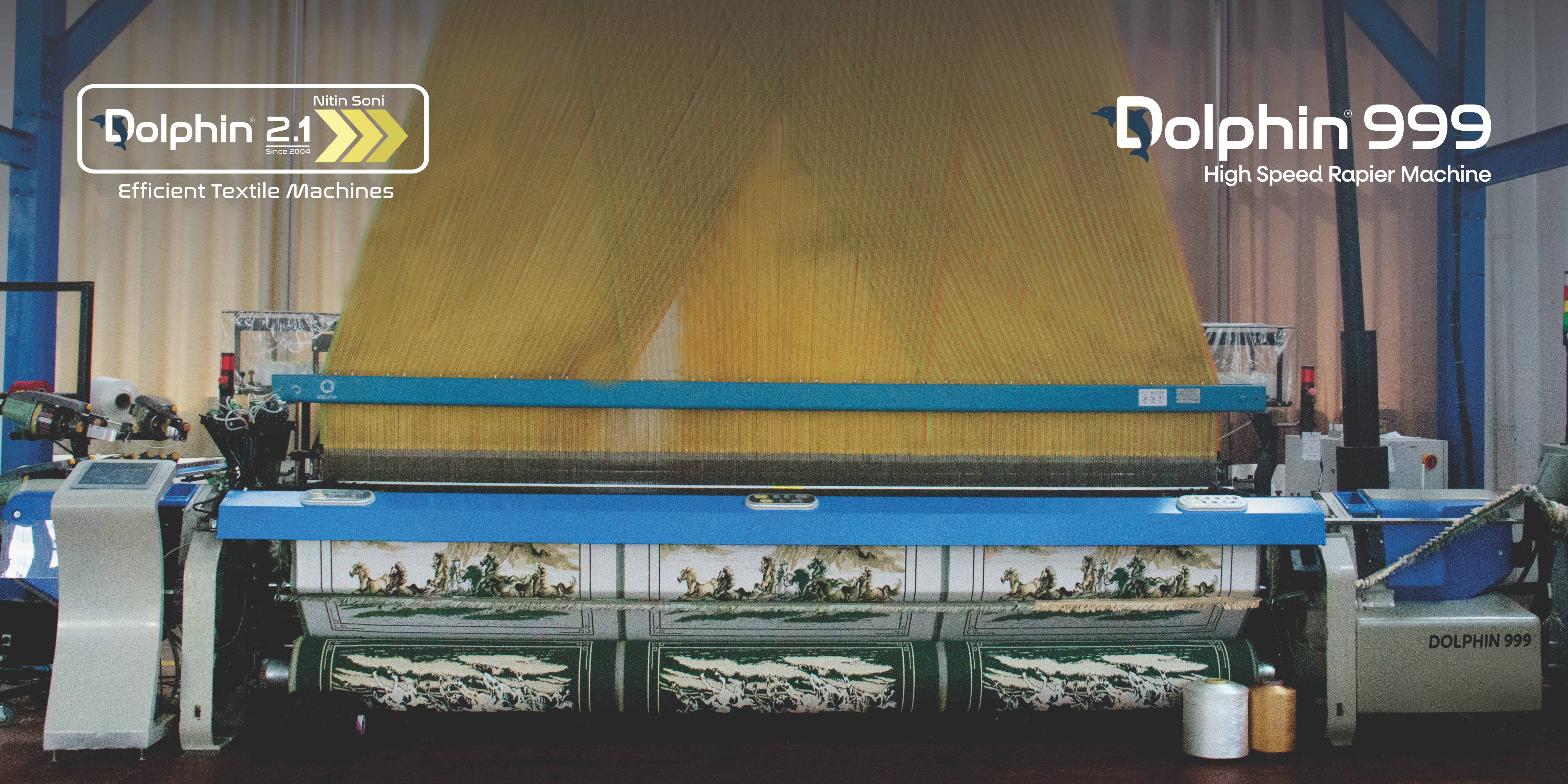


HIGH SPEED
RAPIER MACHINE



Efficient Textile Machines

Dolphin® 999
High Speed Rapier Machine



DOLPHIN 999

GET THE BEST EFFICIENCY

GUIDED HOOK SYSTEM (GH)

Standard solution for spun yarns. The rapier tape on the light-weight Guided Gripper system is perfectly guided by single-piece hooks. Together with a small shed and a small rapier head, high production speeds are achieved.



FREE FLIGHT SYSTEM (FF)

Specially designed for weaving delicate fabrics like saree, dupatta etc., providing maximum warp-friendliness & filling versatility. The Free Flight System is covered by raceboard for gentle treatment of filament warp yarns.



EASY & ADOPTABLE SHED FORMATION

Dolphin 999 machine structure for cam, dobby and jacquard versions is identical, making it possible to change the shed formation system at any time in the future, the **Dolphin 999** can be fitted with positive cam motion, electronic positive dobby or electronically driven jacquard.

DOUBLE BEAM READY WITH SOFTWARE

Designed to mount a superstructure, making it possible to add e.g. a jacquardette or fancy beam (additional top-mounted warp beam with separate let-off motion).



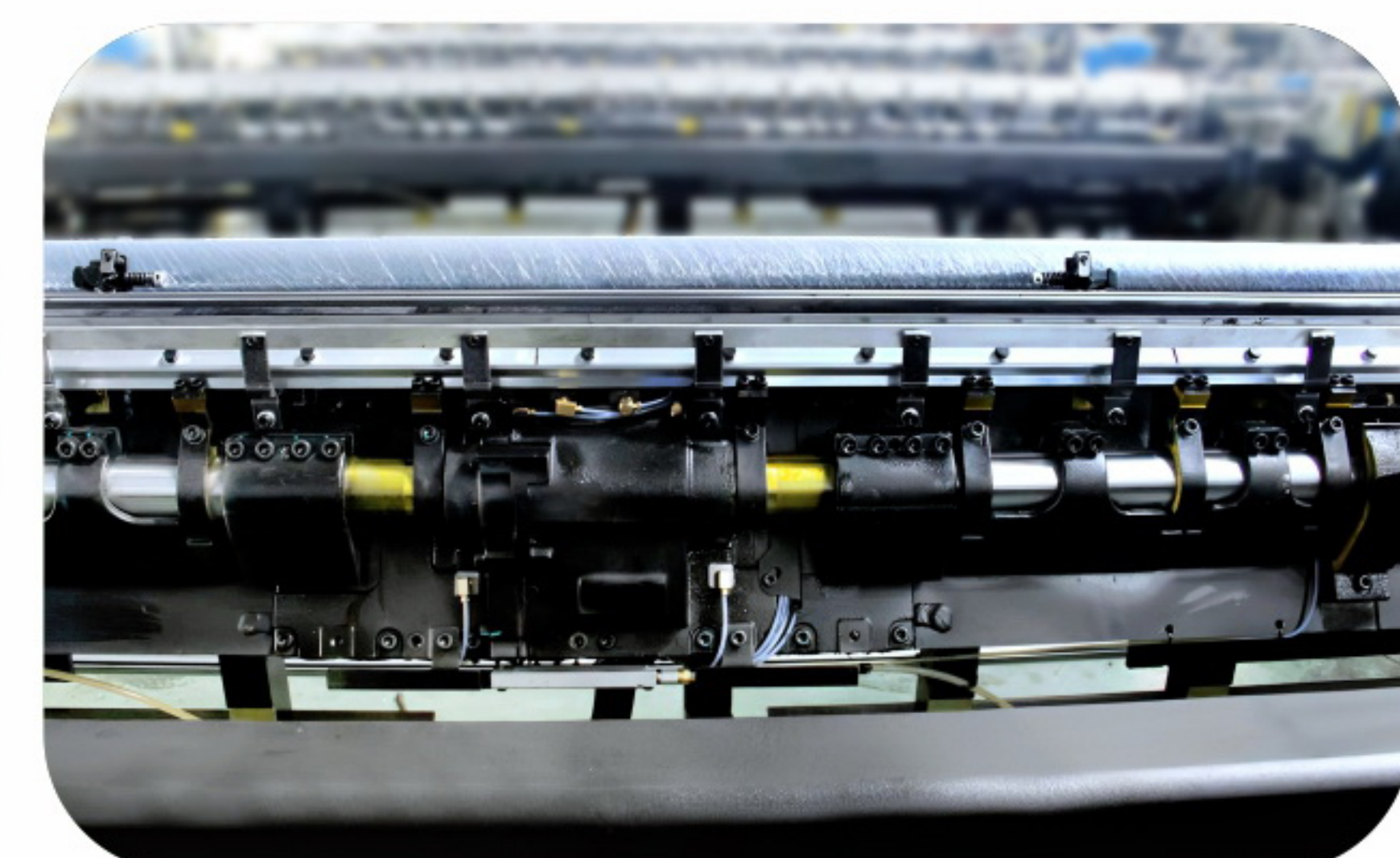
STRONG BODY CONSTRUCTION

High pressure cast-iron side frames are connected by sturdy cross-members. The sley is driven by conjugated cams with cam followers below the fabric. The sley with its reed holder is perfectly balanced by counterweights and provides powerful beat-up.

The dedicated backrest, adopts take-up, clamping arrangement for cloth support the **Dolphin 999** is capable of producing fabrics with high cover factors, such as heavy canvas or heavy filter fabric. A specially designed gripper drive is available for weaving wide fabric.

STRONG CAM BEAT-UP

Using CAE analysis, we designed a new robust frame structure. By employing the offset rocking shaft with less moment of inertia and a hollow reed holder, beating is well-balanced. Exiting force is prevented and about a 60% decrease of floor vibration is attained.



Dolphin 999 offers unique full leno selvedge motions which are electronically driven by individual stepper motors. They are mounted in front of the harnesses, so that all harnesses remain available for fabric pattern formation.

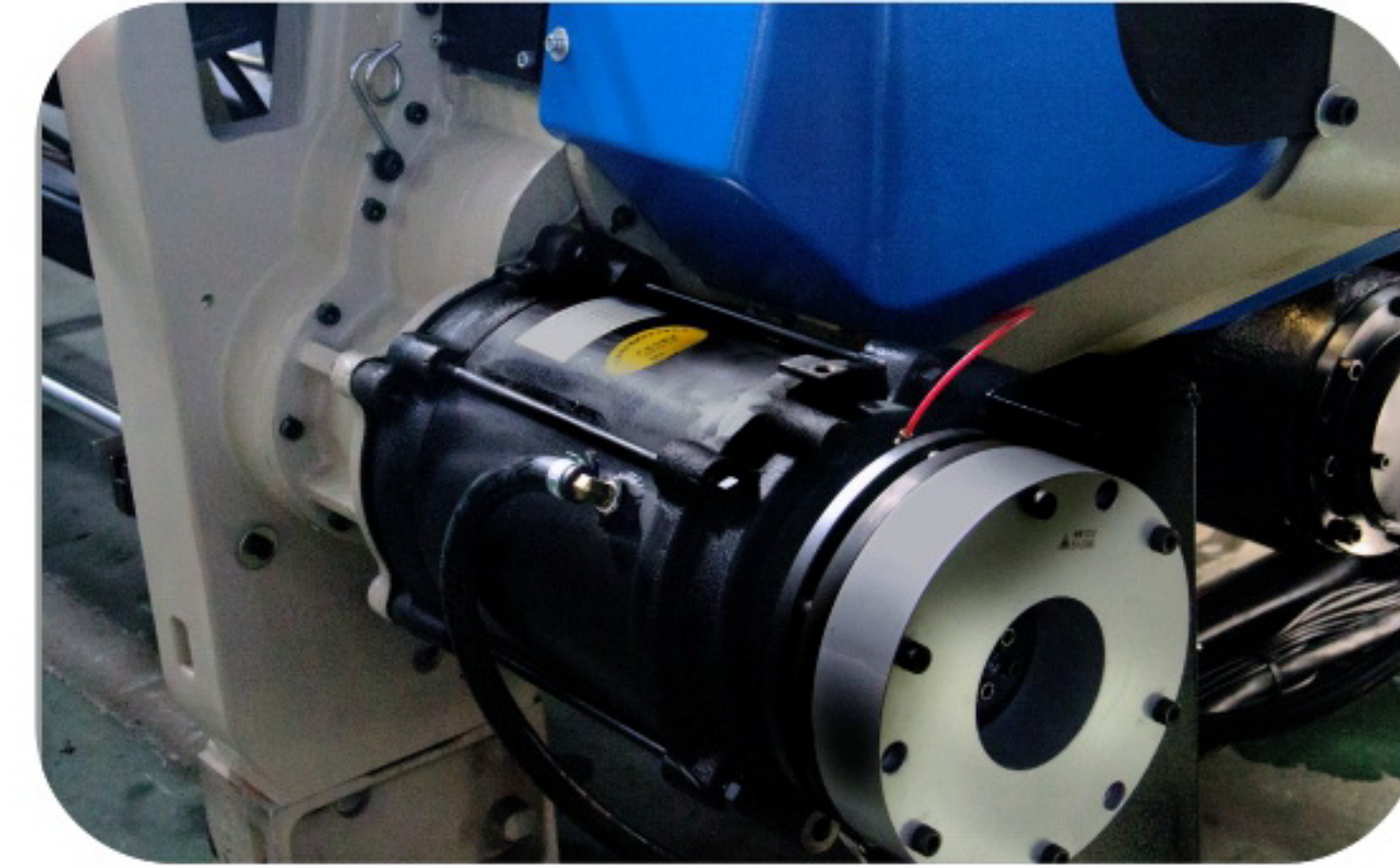
The selvedge crossing and pattern are programmed on the microprocessor independently of the shed crossing, even while the machine is in operation, allowing an immediate check of the result of a resetting.



**MAXIMIZE YOUR
MATERIAL EFFICIENCY**

DIRECT DRIVE JUMBO MAIN MOTOR (SUMO)

The oil-cooled Sumo main motor drives the weaving machine directly, without belt or clutch and brake. The combination of the highly energy-efficient Sumo motor with the direct drive of main shaft and shedding motion results in power savings of more than 40% in comparison with conventional clutch and brake configurations. The energy cost for air conditioning is also reduced as the Sumo motor generates less heat in the weaving mill.



ELECTRONIC TAKE-UP (ETU) AND LET-OFF (ELO)

Same technology as Sumo main motor.



OPTIMIZED LUBRICATION

The redesigned lubrication system further reduces the energy consumption.

SHORT DRIVE TRAIN

The motor speed is controlled electronically, without frequency converter, thus reducing power consumption and permitting greater flexibility. The very short drive train brings the machine to full speed right from the very first pick.

FAST STEP FILLING PRESENTER

The Fast Step operates with independent modules, each consisting of an electronically controlled stepper motor with presenter needle. After the left gripper has taken the presented yarn, the Fast Step needle returns to an intermediate position. At filling break, the needle is presented automatically in the most convenient position for re-threading, thus saving time for weavers.

The color & weave pattern are controlled by microprocessor or jacquard. The Fast Step modules have no mechanical drives, so no maintenance or lubrication is required.

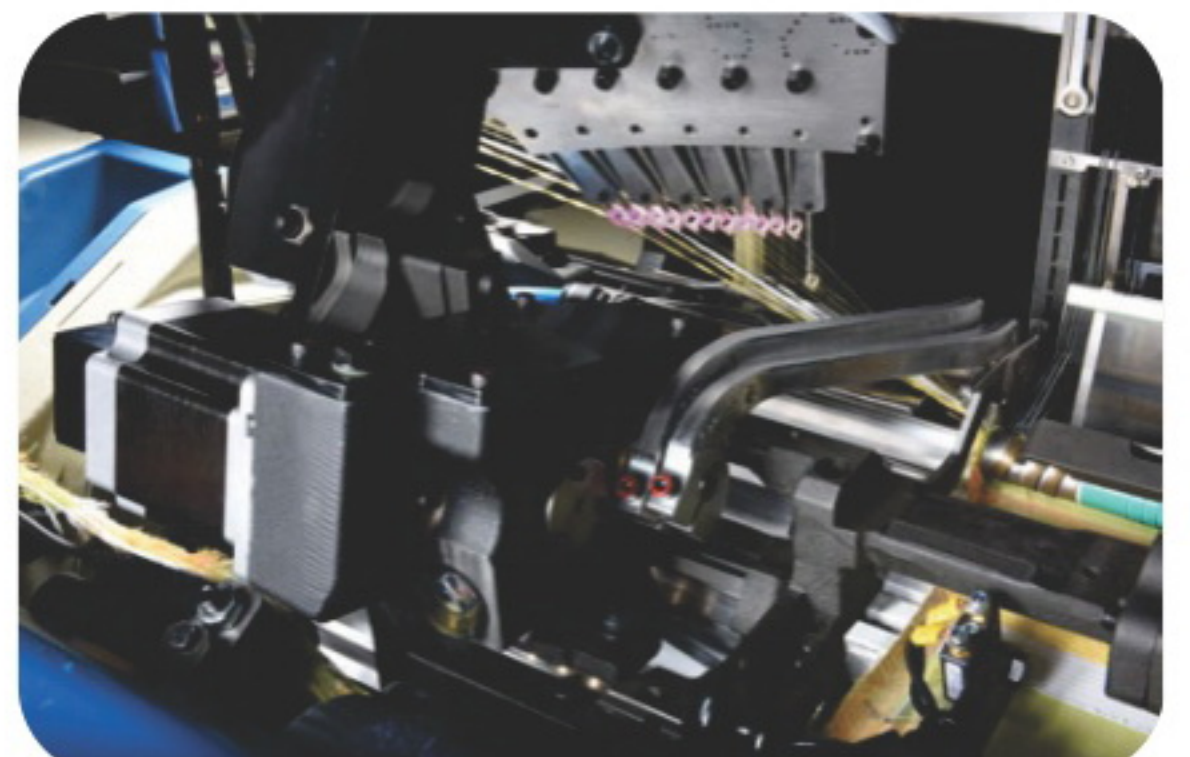


ACTIVE FILLING TENSIONERS

Each prewinder can be equipped with a Programmable Filling Tensioner. Tension control makes it possible to weave weak yarns at even higher speeds.

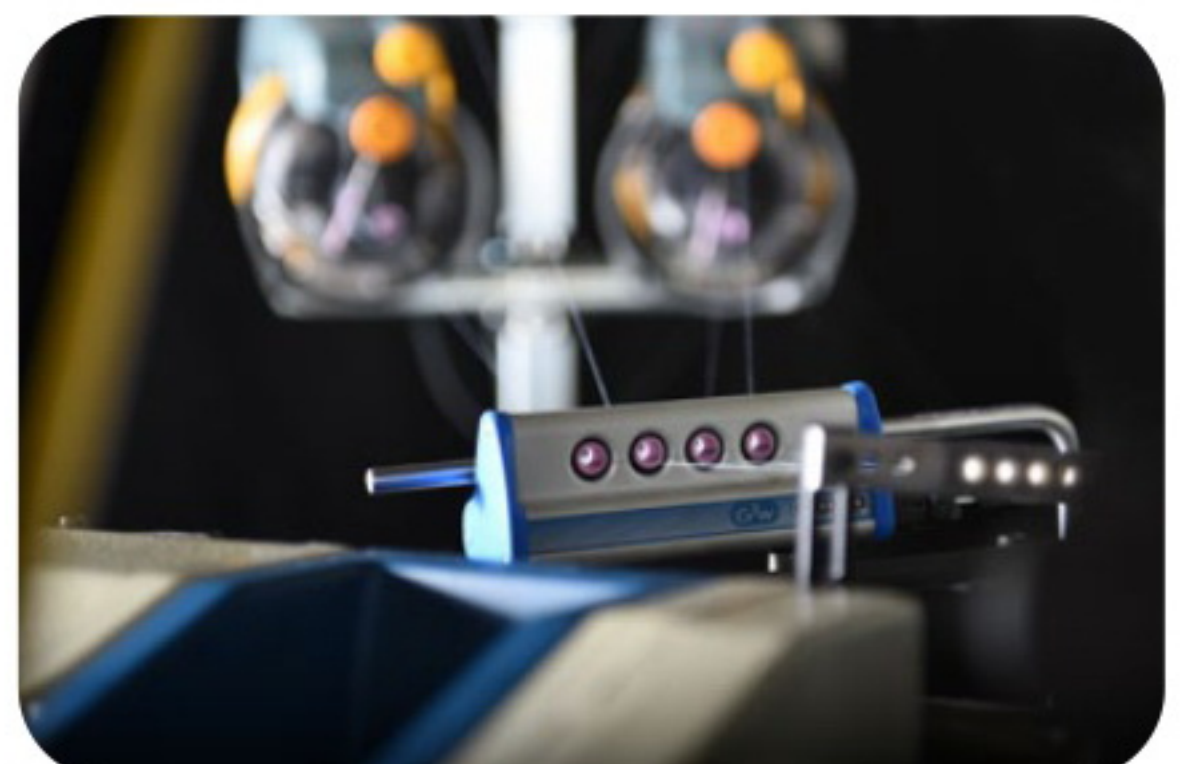
FILLING DETECTOR

The newly designed filling detector allows individual detection and sensitivity setting per channel.



ENHANCED GRIPPERS

The specially designed sending gripper and receiving gripper provide optimal weft insertion.



WIDTH ADJUSTMENTS IN A MINIMUM OF TIME

The **Dolphin 999** - has many unique features to keep machine downtimes to a minimum, : all components to be moved on the left and on the right are mounted on a single support whose position can be easily varied.

OPTIMIZED HARNESS FRAMES AND CONNECTIONS

Connecting the harness frames to drive the system is done in a single movement, thanks to quick connections. The unique harness height adjustment is done entirely at the top of the harness frames.

EASY WARP GAITING AND CLOTH DOFFING

The warp beam is driven by electronically controlled let-off system via a separate gearwheel that remains on the machine. Fitting a warp beam and changing a cloth roll are done by means of quick connections.

DIRECT DRIVE JUMBO MOTOR ADVANTAGE

The Sumo motor makes it possible to continuously adapt the machine speed pick by pick to match the strength of the filling yarn. This combination of Sumo motor with electronic settings makes it easy to obtain the highest possible industrial speeds, taking into account the yarn quality, the number of harnesses and the weaving pattern, and considerably reduces set-up times.

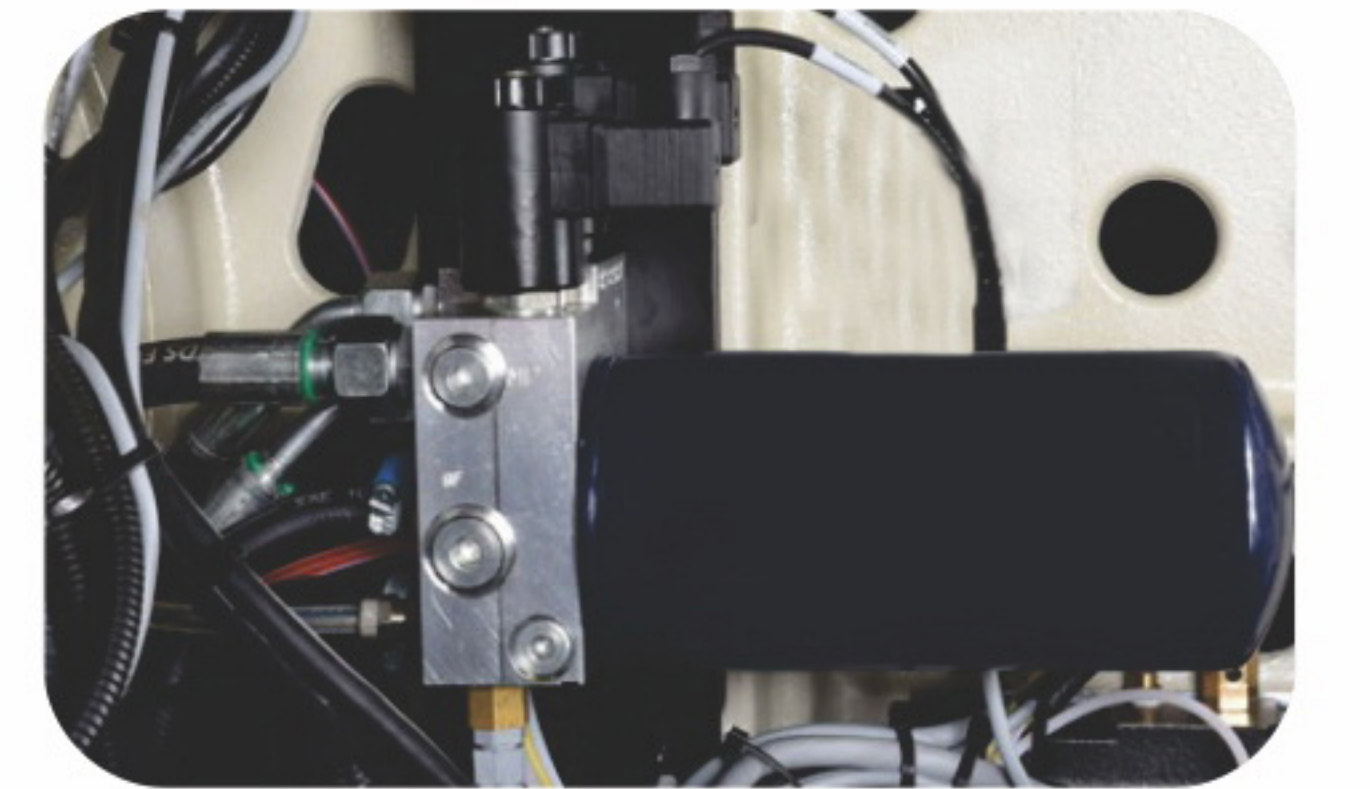
AUTOMATIC FULL PICKFINDING

Driven by the Sumo main motor. In case of a broken pick, the machine stops and only harness frames are brought in motion – automatically – so as to free the broken pick, without the reed touching the beat-up line.

STREAMLINE YOUR
MANUFACTURING PROCESS

PERFECT LUBRICATION

Dolphin 999 provides central oil circulation system, constant and adequate filtering of the oil ensures a perfect lubrication.



PREWINDER SWITCH-OFF

The piezoelectric filling detector stops the machine in case of a filling break. With its Prewinder Switch-Off system, the machine carries on weaving even if a filling break occurs on the bobbin creel or one of the rewinders.

MAXIMUM CONTROL

All machine functions are controlled by the microprocessor. Mechanical settings have wherever possible been replaced with digital ones. The microprocessor records, analyses and stores all production data. The interactive touchscreen can store settings of numerous articles.

ERGONOMIC MACHINE

The **Dolphin 999** machine is unusually low at the front. The pushbuttons with metal dome technology are conveniently located and have optical command confirmation. All main settings are carried out above fabric line, providing perfect accessibility for weavers and operators.



EXPERIENCE THE POWER OF
PRECISION ENGINEERING

TECHNICAL SPECIFICATIONS

FABRIC SPECIFICATIONS

Useful Widths	:	190, 210, 220, 230, 250, 300, 320, 340, 360, 380, 400, 430, 460 and 540 cm
Width Reduction	:	80 - 100 cm depending on reed width
Performance	:	Filling insertion rates up to 1700 m/min depending on style and machine width
Spun Yarn Range	:	Nm 200 - Nm 3 (Ne 118 - Ne 1.8) (up to Nm 1 (Ne 0.6) FOR FREE FLIGHT)
Filament Yarn Range	:	20 den - 3,000 den (22 dtex - 3,300 dtex) (as fine as 10 den (11 dtex) FOR FREE FLIGHT)

FILLING INSERTION

Filling Selection	:	1 - 12 colors or yarn types (filling presenter with insertion position)
Filling Monitor	:	Piezo-electric filling detector Double pick prevention (anti-two)
Filling Cutter	:	Mechanical filling cutter

WARP LET OFF

Warp Beam Diameter	:	600 & 800 mm
Twin Warp Beam	:	190 cm and up
Backrest	:	Double rollers Universal type with built-in warp tension sensor
Warp Stop Motion	:	6 bar



CLOTH TAKE-UP

Cloth Take-up	:	Diameter of cloth roll 550 mm (warp beam 800 mm) Batching Motion system for diameters up to 1,500 mm
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MACHINE DRIVE AND CONTROL

Main Motor	:	Sumo main motor with direct machine drive Automatic full pick finding
Reed Motion	:	Positive conjugated cam units (2, 3 or 4, depending on machine width)
Shedding Motion	:	Harness drive Positive cam, max. 8 harness frames, 12-mm pitch Automatic shed levelling with cam motion Electronic rotary dobby for 20 or 24 frames, 12 mm pitch with levelling
Let-off Motion	:	Load-cell electronically controlled warp let-off system (ELO)
Take-up Motion	:	Electronically controlled take-up system (ETU)
Lubrication	:	By forced circulation of filtered oil to all major drive functions (timer controlled)
Machine Controls	:	LCD touch screen with color display Pushbuttons on front panel

SELVEDGE FORMATION

SELVEDGE FORMATION	:	Independently electronically controlled selvedge system (ELSY)
Tucked Selvedge	:	Tuck in device (Optional)
Full-	:	Width temple (Full temple for woven lable etc)

MONITORING & SOFTWARE TOOLS

Self-diagnosis
Stop distribution reporting

