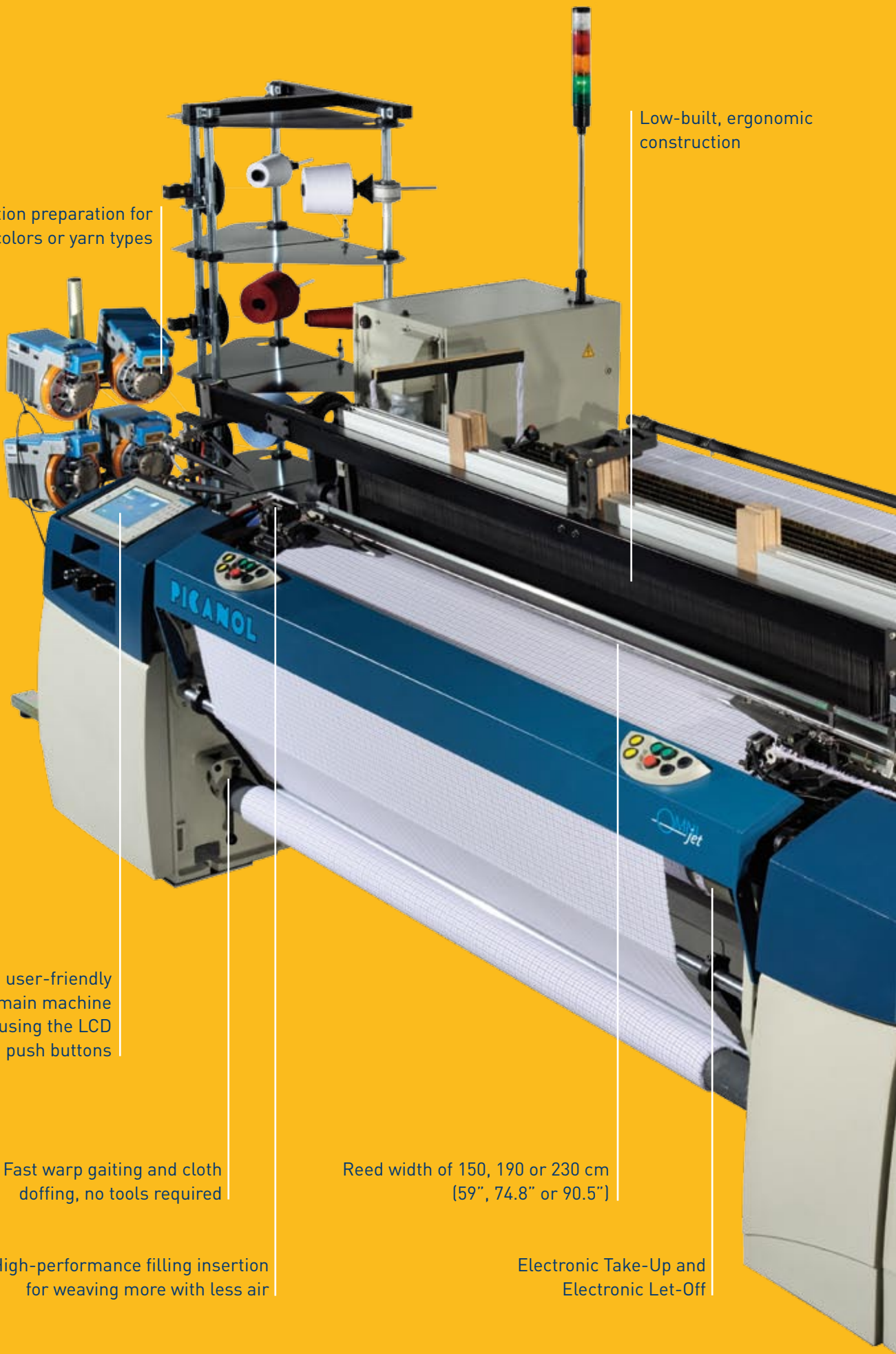
Get the most out of

weaving

OMNI *jet*

PICANOL

YOU ARE ALWAYS AHEAD



Optimized insertion preparation for two or four colors or yarn types

Low-built, ergonomic construction

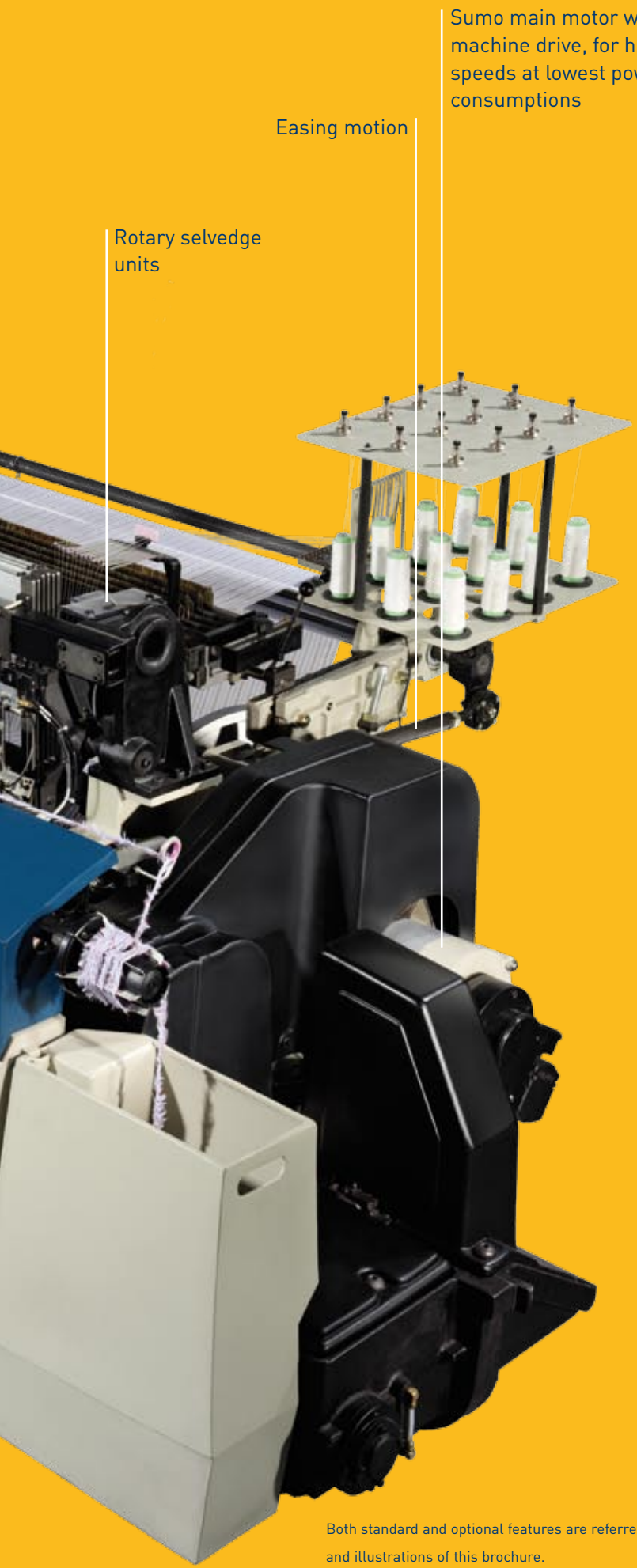
Accurate, user-friendly setting of all main machine functions using the LCD display and push buttons

Fast warp gaiting and cloth doffing, no tools required

High-performance filling insertion for weaving more with less air

Reed width of 150, 190 or 230 cm (59", 74.8" or 90.5")

Electronic Take-Up and Electronic Let-Off



Both standard and optional features are referred to in the text and illustrations of this brochure.

With OMNI*jet*, Picanol sets the standard for weaving high-quality fabrics. The machine is based on Picanol's OMNI*plus* 800 technology, with full electronic monitoring, Sumo main motor and microprocessor-controlled filling insertion. It offers all you need to weave yourself to the top in your market, thanks to a perfect balance between price and performance. Guaranteeing high fabric quality. Best in class for minimum energy consumption. Ready for every new opportunity. Optimizing your precious time. And creating space to unleash your talent.

If you really want to get the most out of your material, your energy, your market, your time and your talent, the OMNI*jet* weaving machine provides the platform for you to stay ahead. Always. Everywhere.

OMNI*jet*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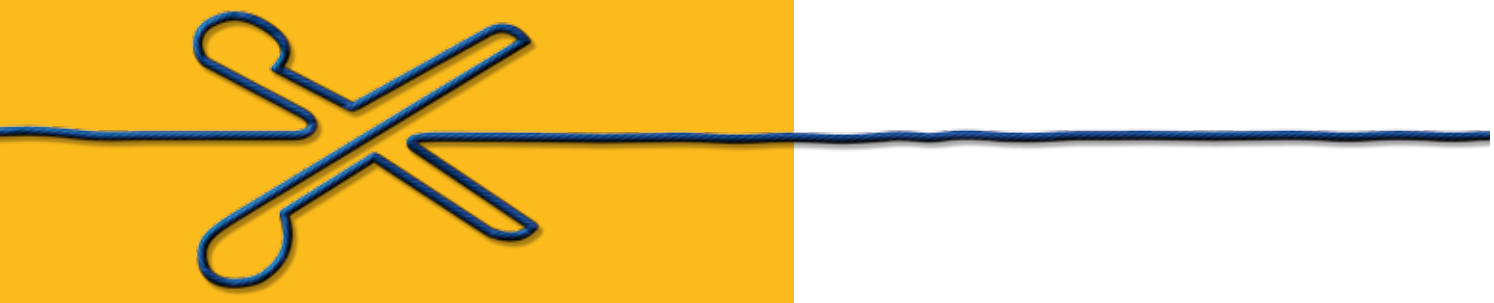
Get the most out of your material



Dedicated mechanics and advanced electronics used in OMNI*jet* greatly contribute to improved cloth quality. The OMNI*jet* has a fully integrated concept: the machine-drive, the take-up and let-off motion, and the insertion system are all synchronized. A guarantee for achieving the best fabric quality.

Robust mechanics

The OMNI*jet* machine is built around two cast iron side frames connected by very sturdy cross-members. This rigid structure and the perfect balancing of the mechanical parts eliminate all vibration, enabling the machine to produce high-quality fabrics at high industrial speeds continuously. The crank-driven sley motion with long stroke, the extra reinforced central 4-bar-linkage drive and the balanced sley guarantee stable beat-up, thus optimizing cloth quality.

Electronic Let-Off and Take-Up

Electronic Let-Off (ELO) and Electronic Take-Up (ETU) motions are standard on OMNI*jet*. They ensure a balanced warp tension during weaving.

Both let-off and take-up have a continuous control system (not on/off) to fully assure the cloth requirements. The electronic link between let-off and take-up is an additional tool contributing to high fabric quality

A high-performance prewinder

The OMNI*jet* machine is equipped with the OMNI*jet* WD (Wobbling Disc) prewinder, which is uniquely designed for airjet weaving and has a wide application range. The major parameters are automatically set and the piezo bobbin break sensor prevents fabric defects and offers direct start-up possibilities at bobbin run out. The prewinder is simple to handle and maintain, and can easily be threaded through a pneumatic system.

Optimized sley movement

The sley movement has been optimized for maximum insertion time, thus reducing the number of weft stops.

State-of-the-art nozzles

The fixed and movable main nozzles can be set individually in flow or blow duration. Threading up is very easy.

A stretching nozzle at the right-hand side can keep the filling tip fully extended until it is caught by the closing shed, thus preventing the formation of loops.

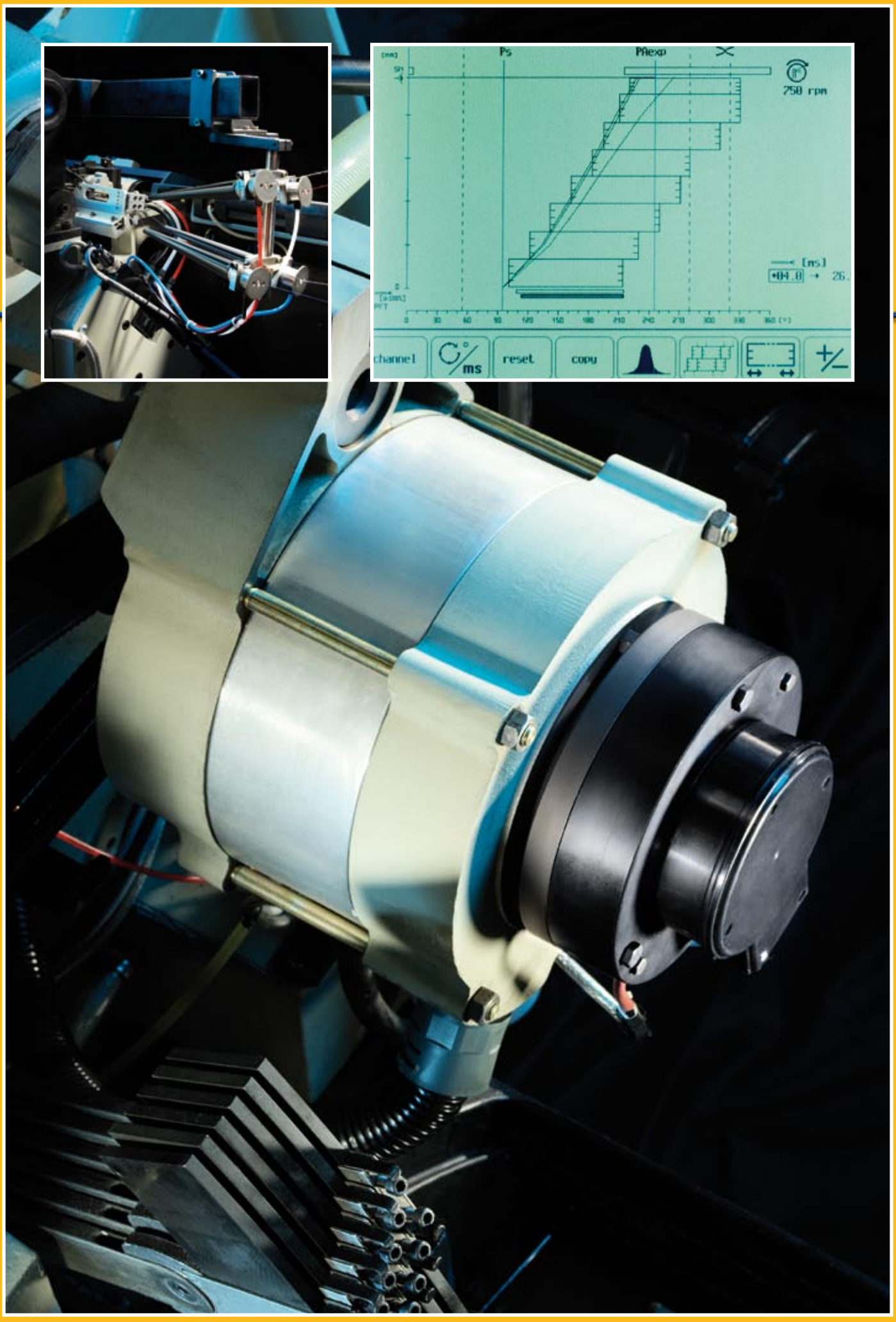
Digitally controlled valves and cutter

The electromagnetic valves ensure perfect control of the airflow in the shed. The microprocessor monitors the entire insertion cycle and keeps all the different elements perfectly synchronized.

The OMNI*jet* is equipped with an electronic filling cutter. The cutting times can be set separately for each filling channel – a great advantage over mechanical systems.

Optical filling detector

The optical filling detector, mounted in front of the reed (no cutting of the reed), stops the machine whenever the filling fails to reach the right-hand side of the machine. A second detector may be used to check whether the pick is broken in the shed or blown apart.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Get the most out of your energy

OMNI*jet* is the airjet weaving machine with the best price/performance ration. It cuts the cost of fabric production in many ways and combines extremely low energy requirements with low air consumption.

Consuming less energy with the Sumo main motor

Picanol introduced the Sumo main motor in 1999 on its Gamma rapier machine. It drives the weaving machine directly, without clutch or brake. The Sumo motor soon proved to have the highest performance of any weaving machine drive train on the market and its success led Picanol to use it as the standard motor on all its weaving machines.

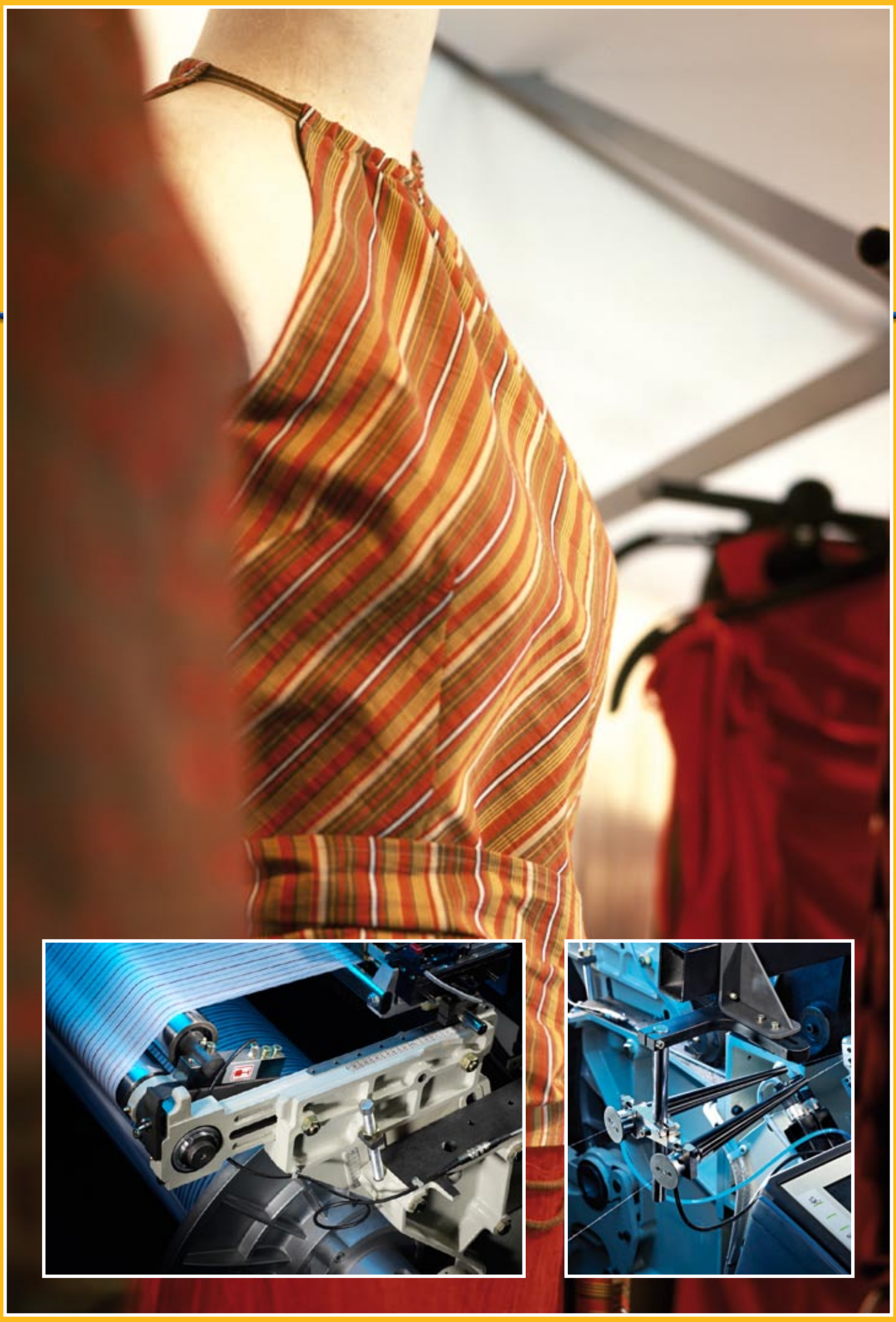
The combination of the highly energy-efficient Sumo motor with the direct drive of main shaft and shedding motion results in power savings of more than 10% in comparison with conventional clutch and brake configurations. Moreover, the energy cost for air conditioning is also reduced as the Sumo motor dissipates less heat in the weaving mill.

Consuming less air

The OMNI*jet* machine consumes less air than its competitors. The fixed and movable main nozzles have a high traction force, resulting in fast insertion rates with low air consumption. Highly effective main nozzles, yarn-friendly relay nozzles, valves directly mounted on the air-tank, optimum sley motion, ... they all contribute to a reduced pressure drop in the air distribution system.

Adaptive Relay Valve Drive

The unique ARVD system is a further development that automatically adapts the relay nozzle timings throughout the insertion, making use of the advanced integrated electronic controls. This results in an absolute minimization of the air consumption.



Get the most out of your market

OMNI*jet* will enable you to really get the most out of your market. It is based on a fully modular concept, enabling the machine to be extended or converted so as to take advantage of new market opportunities.

Modular concept

In designing the OMNI*jet* machine, a lot of attention was paid to minimum initial investment cost. The modular concept is a built-in flexibility that allows future adaptations. As an example: the insertion system can be extended from two to four channels; or deciding for a crank motion today still leaves the possibility to modify the machine to a cam or dobby motion.

Sumo increases the fabric quality

The speed of the Sumo motor is electronically controlled and set, which makes it much easier to adapt the machine speed in function of the quality of the yarn, the number of frames, and the fabric construction. Additionally, the Sumo motor has a very powerful, stable, and controllable start torque – a guarantee for the best fabric quality. Starting marks can be avoided because the stop and start parameters are under complete control.

Accurate warp tension and pick density ensures first quality fabric

The Electronic Let-Off motion is driven by an independent servomotor. Tension control is carried out by means of an electronic sensor. The system operates very accurately from full to empty beam, an essential requirement for continuous quality.

Also the Electronic Take-Up motion is driven by an independent servomotor. Pick densities can be set from 6 to 72 picks per cm (15 to 183 picks per inch). The required pick density is electronically set so that no pick wheels are required. The accuracy of the settings makes it easy to adjust the pick density of the fabric for optimum fabric weight and minimum yarn consumption. The settings are also easy to reproduce on other machines.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OMNIjet

Get the most out of your time

The OMNI*jet* runs at high industrial speeds, enabling the weaver to produce more fabric in a shorter time. To achieve this, Picanol has equipped the OMNI*jet* machine with Sumo drive technology, and optimized the insertion components. All the main machine functions can be set and checked by means of the machine's microprocessor, reducing the mechanical settings to an absolute minimum. The microprocessor intelligently assists the operator to get the machine going and keep it running with no time lost.

Sumo main motor

The speed of the machine equipped with the Sumo main motor is set and controlled electronically, which makes it easy to optimize the fabric quality and to obtain the highest industrial speed.

The Sumo system requires no extra downtime of the machine and no workload of the staff for mechanical checking and maintenance, as is required by conventional clutch/brake systems. With the Sumo direct-drive, on the contrary, there is no clutch, no brake coils, no flywheel, and no separate motor for slow motion movements ... The absence of all these parts means that both their maintenance and spare parts consumption are eliminated: this is the "savings by design" philosophy.

Autospeed

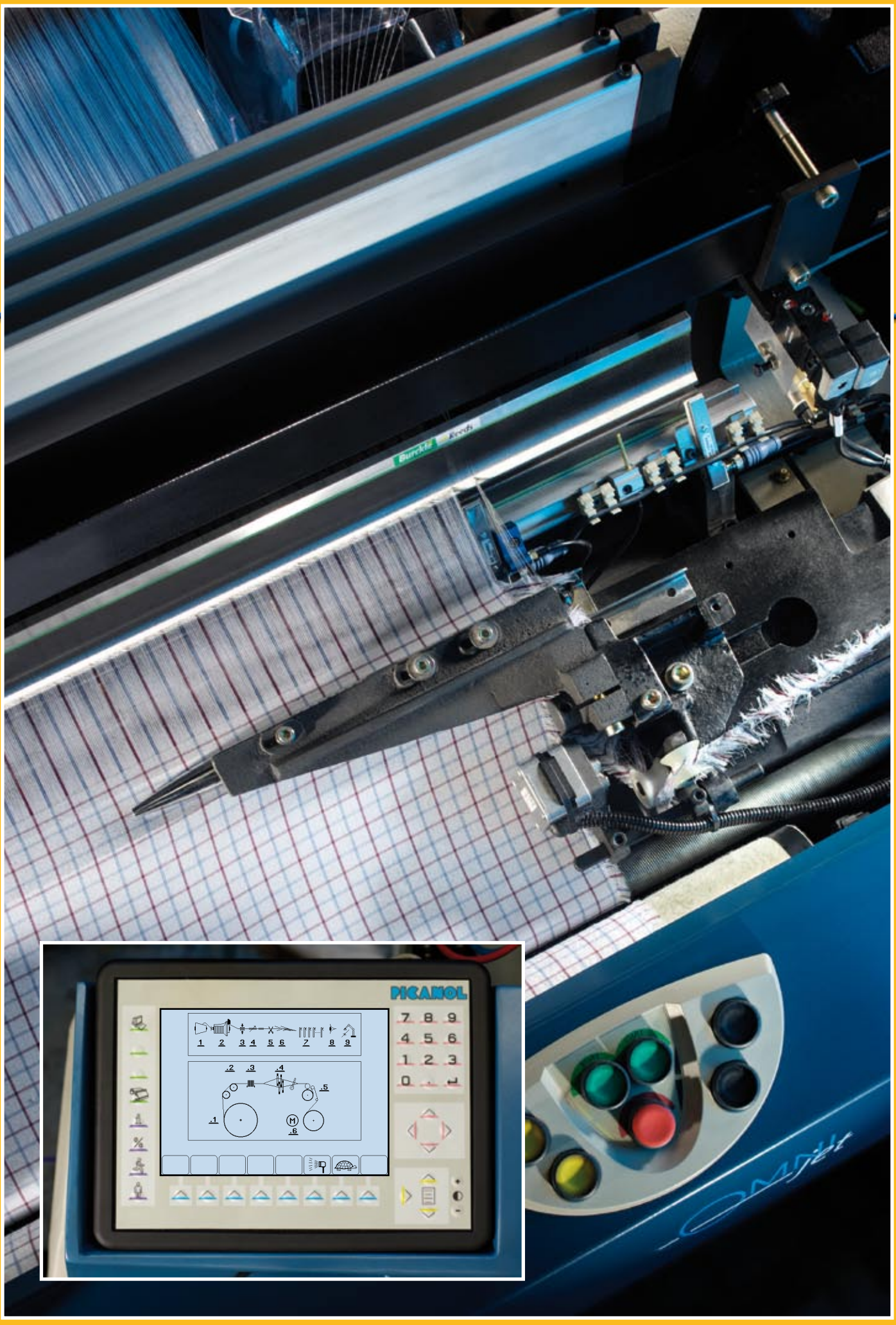
Thanks to the integration of the electronic insertion controls with the Sumo drive, OMNI*jet* is the only machine in its class featuring Autospeed. This enables the machine speed to be automatically maximized to the conditions of the filling yarn resulting in an overall production increase.

Central lubrication

The Electronic Take-Up (ETU), the Electronic Let-Off (ELO) and the sley are fed with oil under pressure from a central forced lubrication system controlled by the microprocessor. A microfine oil filter removes all impurities and extends the lifetime of the parts and the oil.

Efficient stop motions

The OMNI*jet* machine has an electric warp stop motion with up to 6 bars with a 30 mm (1.2") pitch. A dropper location lever helps the operator to locate the warp break quickly.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Get the most out of your talent

A weaving machine's ergonomics and user-friendliness are equally important as high machine speeds when wanting to achieve high weaving productivity. The state-of-the-art technology assures perfect repeatability of styles and settings as well as assistance during setting of the machine.

An ergonomic machine

The slight slope of the OMNI*jet* machine guarantees easy access for the operator. The push buttons are always within easy reach and provide control of all the important machine functions. Access to the filling area is easy, as well as the access to adjust shed opening and harness height.

Speed changes made easy

The Sumo motor has a wide speed range, which is very useful for starting up new styles. On the OMNI*jet*, the foreman sets the machine speed on the keyboard even while the machine is running. This in contrast to conventional drive systems, which always involve changing pulleys and belts, or require the use of an intermediate frequency converter in order to change speed.

Automatic recalculation of insertion parameters

When the speed of the main motor changes, the micro-processor automatically recalculates the electronic insertion parameters – another example of how OMNI*jet* makes life easier for the machine operator. The parameters can easily be viewed on the microprocessor display.

All the advantages of digitization

The electronic OMNI*jet* terminal monitors and controls all the main machine functions. Its big LCD screen enables the operator to set the weaving parameters in a very user-friendly way.

The settings are accurate and the result of slight adjustments can be checked immediately in the fabric. When a stop occurs, the LCD screen advises the operator which action to take.

The system can display diagnostic data and stop causes, so avoiding search time for stop detection. It also displays all the main data in shifts, giving the opportunity to maximize efficiency.

Save and transfer settings in no time

All electronic settings can be easily reproduced or transferred from other OMNI*jet* machines, either by means of electronic memory cards or through a network connection: patterns, insertion settings, warp tension, pick density etc.

Technical specifications

Standard equipment

Reed widths
150, 190 or 230 cm (59", 74.8" or 90.5")

Width reduction
150 and 190 cm (59" and 74.8"): up to 50 cm (19.6")
230 cm (90.5"): up to 70 cm (27.5")

Yarn range
Spun yarns: Ne 6 - Ne 80
Filament yarns: 50 denier - 600 denier
Adapted machine execution for weaving glass fiber available

Filling insertion
Fixed and movable main nozzle
System of main and relay nozzles combined with tunnel reed

Prewinder
Drum accumulator with wobbling disc
Pneumatic threading up of prewinder
Piezo bobbin break sensor

Color selection
Two or four colors

Filling cutter
Electrical, with electronic control
Separate setting of cutting time for each color/yarn

Filling stop motion
Photo-electric in front of the reed

Reed motion
Central 4-bar-linkage sley box with oil circulation

Shed formation
Positive drive crank for 4 harnesses, plain weave 1/1
Positive cam motion for up to 8 harnesses
Top-set electronic dobby (negative) for up to 16 harnesses

Warp let-off
Continuous, electronically controlled let-off system (ELO)
Warp beam diameter: 805 mm (31.7") and 1000 mm (39.4")

Backrest
Universal type with built-in sensor
Easing motion warp tension compensation

Selvedge motion
Rotary selvedge units

Warp stop motion
Electrical, with toothed electrodes and locator handle

Cloth take-up
Double pressure roller
Electronically controlled take-up system (ETU)
6-72 picks per cm (15-183 picks per inch)
Maximum diameter of cloth roll: 470 mm (18.5")

Machine drive
Sumo main motor with direct machine drive [patented]
Forward/backward slow movement controlled by main motor

Automatic control
Microprocessor with memory cards
Extended graphic terminal with support functions

Lubrication
Pressurized oil circulation system with continuous filtration

Regulations
In designing the OMNI*jet*, Picanol has taken into account current international regulations concerning safety (mechanical and electric) and the environment (ergonomics, noise, vibration and electromagnetic compatibility).

Dimensions of OMNI*jet* 2-P 190
4360 x 1677 mm

Optional equipment

Filling insertion
Stretching nozzle
Second filling detector
Adaptive Relay Valve Drive (ARVD)
Autospeed

Cloth take-up
Foreseen for batching motion

Machine drive
Multispeed

Automatic control
Interface for bi-directional communication

Get the most out of weaving

We commit ourselves to developing the most advanced weaving technology in order to get and keep our customers "ahead".

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