

Get the most out of

*weaving*

OMNI 300  
*plus*

**PICANOL**  
YOU ARE ALWAYS AHEAD

Optimized insertion preparation for up to eight colors or yarn types

Split frame for style change in less than 30 minutes

Sumo main motor with direct drive

Ultimate flexibility, with the same standard design for cam, dobby and jacquard motions

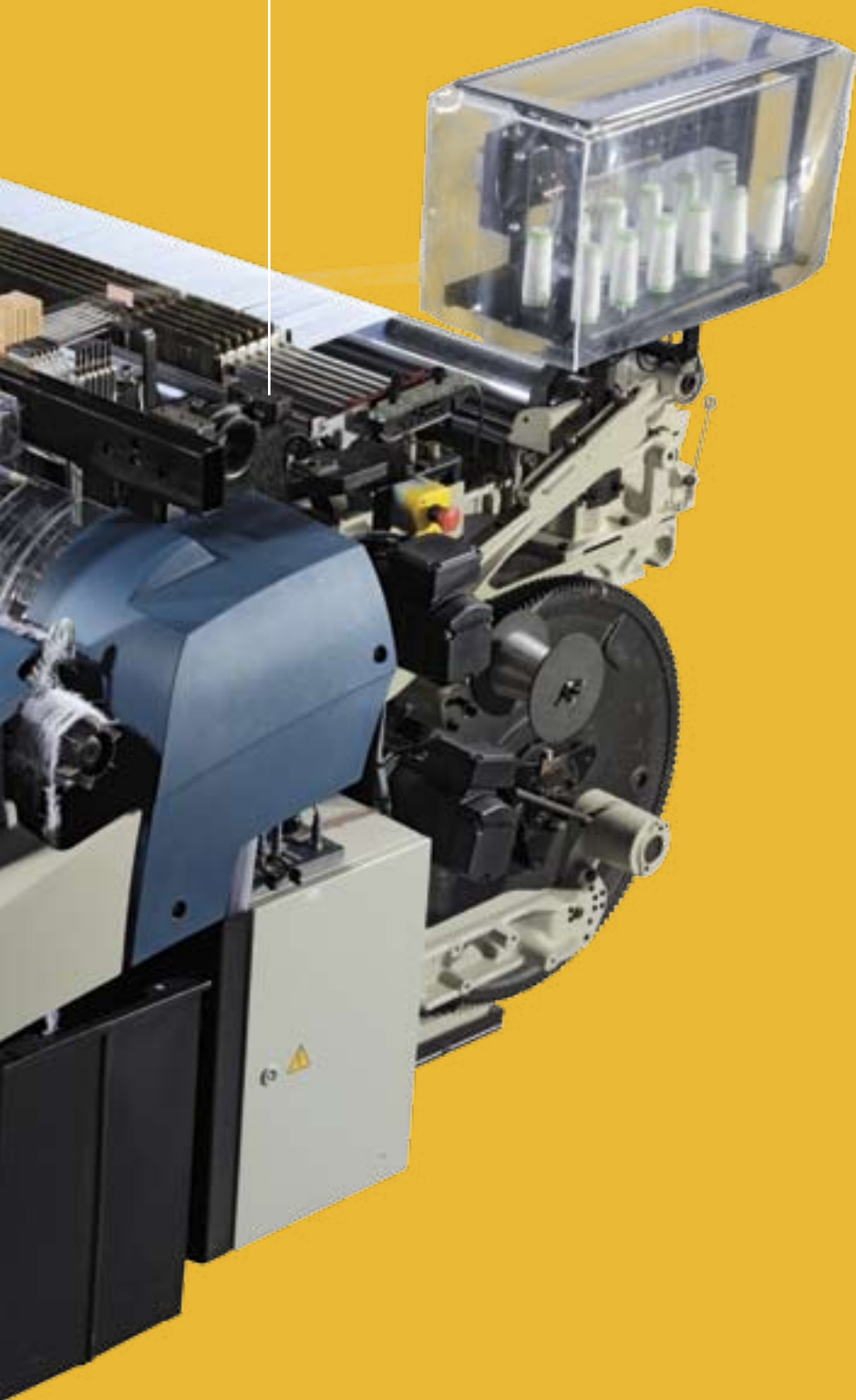
Warp beam and cloth roll can be changed quickly without tools

Equipped as standard for symmetrical width reduction

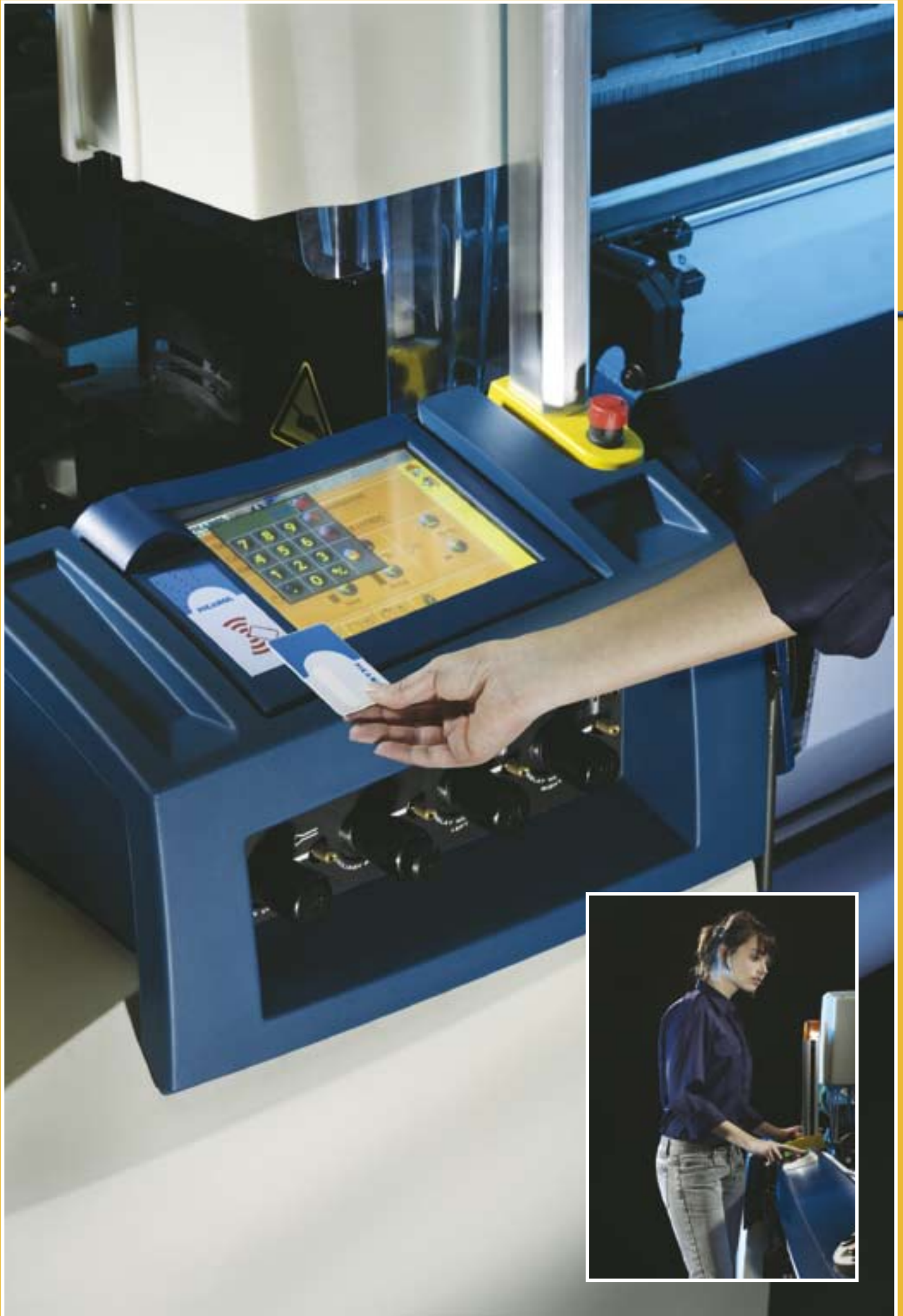
Newly designed relay nozzles and valves for highest performance

Fast, simple width changes

Equipped as standard for fitting a superstructure – one of the many modular features



With OMNI*plus* 800, Picanol sets a new standard for profitable airjet weaving. It offers all the possibilities for weaving yourself to the top in your market. Promising unprecedented market opportunities. Creating space to unleash your utmost creativity. Guaranteeing optimum fabric quality. Saving more energy costs than ever. And featuring options for reducing downtime to the very minimum. If you really want to get the most out of your talent, market, material, energy and time, the OMNI*plus* 800 provides the platform for you to stay ahead. Always.



# Get the most out of your talent



With the *OMNIplus 800*, we have created the space and the possibilities weavers need to deploy and realize their outmost creativity. The machine is exceptionally ergonomic and offers immediate control of all possible settings for maximum fabric quality.

## An ergonomic machine

The *OMNIplus 800* weaving machine is unusually low at the front, with all parts easy to reach. The pushbuttons are conveniently located, and all manual operations are carried out above the fabric line. Connecting the harness frames to the drive system is done in a single movement, thanks to the quick connections. Setting the frame heights is done at the top of the frames. The protection covers are sound absorbent and consist of scratch-resistant plastic mass colored all the way through.

## Maximum control

The microprocessor of the *OMNIplus 800* controls all the machine functions. Using the self-explanatory menus on the keyboard display or the interactive touch screen, the operator can start the machine and carry out fine adjustments easily. Thanks to the real-time nature of the digital settings the results are immediately visible.

Mechanical settings have wherever possible been replaced with electronic ones. These have several advantages: they are very accurate, can be checked directly, and are easy to transfer from one machine to another.

The microprocessor records, analyses and stores all the production data. The performance figures for the last two weeks can be consulted. The weaving machine itself can be linked to a central monitoring system by an Ethernet or bidirectional connection.

## Interactive touchscreen

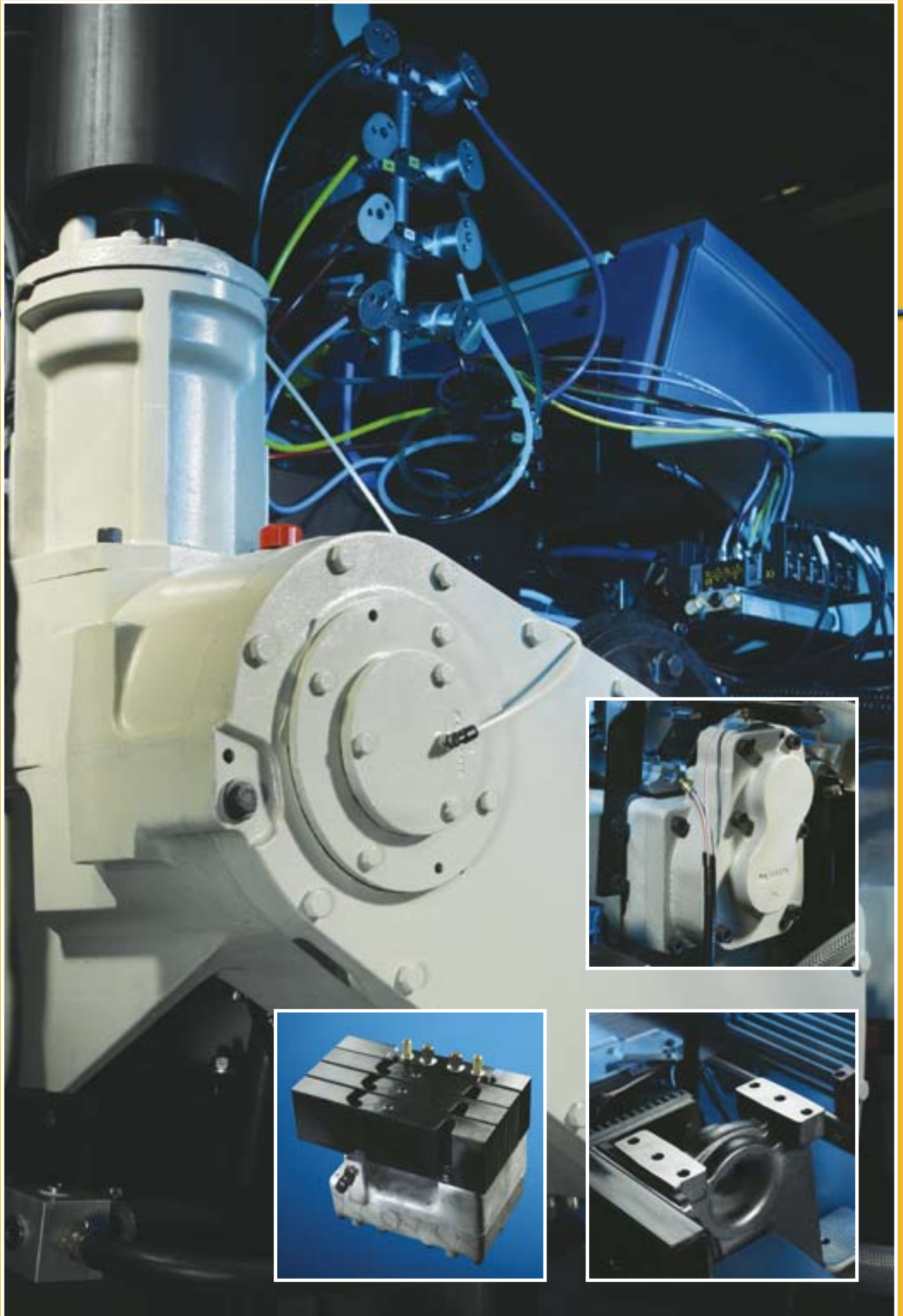
In addition to the keyboard display there is also an interactive touchscreen, which has the advantage that several article settings can be stored locally on the machine. A transponder card gives immediate access to the machine settings, which can be transferred from the microprocessor to a computer or vice versa using USB memory sticks. The Ethernet connection enables the machine to be integrated into the corporate network, opening the door to Internet applications.

## Picanol PC Suite

Picanol PC Suite is a collection of PC software to monitor the design, settings and production data of the weaving shed in a very easy way.

*LoomGate* makes it possible to communicate between the PC and the weaving machines over the network. Using *LoomGate*, machine settings are transferred from the PC to the machines and vice versa, the weaving machine can be updated with new software, or the actual settings and operating parameters of the weaving machines can be consulted. *LoomGate* also includes a monitoring function to consult and process machine and shift production data on the PC.

*Picanol Pattern Editor* is used to create new designs on the PC, to be transferred to the weaving machines. *Picanol Style Administration* is used to prepare settings while the weaving machine is running another style. *EasyStyle* helps to select the optimum machine settings: it generates the best settings for the specific style chosen, based on Picanol's broad weaving experience. *OptiStyle* provides on-loom tools to improve efficiency or quality in a fast, interactive way: just enter the problem and corrective measures are suggested, taking into account the actual machine settings and specifications.



# Get the most out of your market



Never before has any weaving machine been so modular in design. In the new *OMNIplus 800* concept, each machine consists of an identical, standard platform designed to accommodate future extensions or conversions. This modularity safeguards your investment: no other weaving machine is so easy to adapt in order to take advantage of new market opportunities.

## Modular insertion system

The *OMNIplus 800* can be equipped for up to eight different colors or filling yarns. The filling insertion system is modular, with two channels per module. The air supply components for the fixed and movable main nozzle are identical. This modular concept with its unique configuration for the air supply channels makes it possible for the machines to be converted to more colors in next to no time.

## Modularity with the PiCAN system

The PiCAN (Picanol CAN) system is based on the CAN data bus. This simple, flexible system enables the weaving machine to communicate with devices mounted on or connected to it, and for the movements of these devices to be synchronized with the machine movements. The system is designed so that new developments can be incorporated in the future without problem.

## Exchangeable shed formation

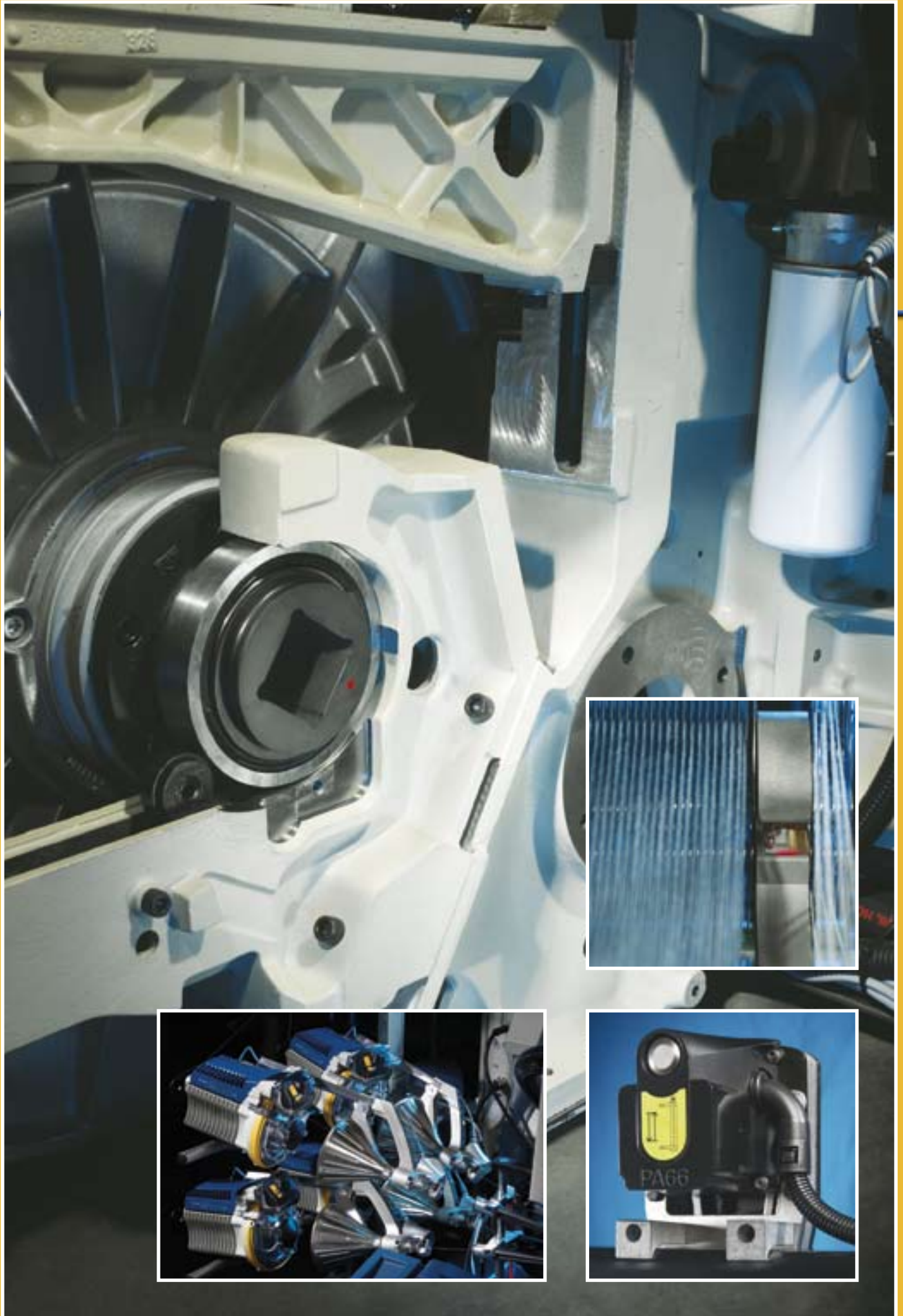
The *OMNIplus 800* can be fitted with a positive cam motion, electronic positive dobbie or electronically driven jacquard. The basic machine structure for the cam, dobbie and jacquard versions is identical, making it possible to change the shed formation system at any time in the future. For example, it is possible to change quickly from cam to dobbie, and vice versa. It is even perfectly possible to convert to jacquard.

## Superstructure-ready

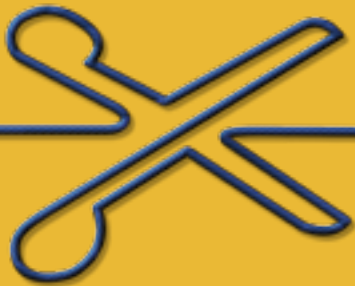
In line with the “standard platform” philosophy, the *OMNIplus 800* is ready to have a superstructure mounted on it. The mountings are identical in all cases, making it possible to decide at some time in the future to add e.g. a fancy beam or jacquardette.

## Tuckers

The *OMNIplus 800* can be equipped either with a mechanical tucker or with an air tucker. Since the latter does not have any moving parts, it does not limit the machine speed. Moreover, changing from a leno selvedge to tucker or vice versa presents no problems.



# Get the most out of your material



The mechanical components and advanced electronics of the OMNI*plus* 800 are designed for optimum fabric quality and minimum waste.

## Robust construction

The frame of the OMNI*plus* 800 has an entirely new design, with extra-heavy side frames, reinforced intermediate frames and a redesigned crossbar. This exceptionally stiff structure ensures vibration-free operation.

## Optimizing quality made simple

Thanks to the electronic controls, the machine settings are easy to adjust, even while the machine is running. In addition to the many diagnosis screens, the terminal screen gives access to a whole series of pre-programmed values for shed formation, insertion, pick density and warp tension. For example, the crossing time can be set automatically, and the machine speed can be adjusted or programmed for optimum fabric quality, with immediately visible results. Starting marks are a thing of the past thanks to the stiffness of the machine, the direct drive with the Sumo motor, the pneumatic pickfinder, the microprocessor-controlled start and stop algorithms, pre-programmed procedures and independent warp let-off and cloth take-up.

## CANplus prewinders

The CANplus prewinders – exclusive to Picanol – have a sensor for the reserve windings and may have a built-in optical yarn break detector. Thanks to the adjustable motion and force of the magnetic pin, the OMNI*plus* 800 is able to weave yarns ranging from extremely light to coarse.

## Programmable Filling Tensioner

The Programmable Filling Tensioner (PFT) reduces the peak tension in the yarn at the end of insertion when the magnetic pin on the prewinder closes. This makes it possible to weave weaker, more delicate or elastic yarns at higher speeds. The PFT is automatically threaded along with the prewinder when the latter is threaded

pneumatically. The PFT is mounted on the balloon breaker ensuring the ideal insertion line together with the fixed main nozzle.

## Clamp on the movable main nozzle (patented)

At the entrance to the main nozzle a pneumatically controlled mechanical clamp holds the yarn during the non-insertion period, enabling the continuous airflow to be kept at a very low level. This improves the fabric quality and reduces the number of stops with weaker yarns.

## Argus filling detector (patented)

The Argus filling detector ensures perfectly reliable detection of the yarn. The detector has a full view of the entire cross-section of the insertion channel, so that detection is independent of the position of the yarn in the channel.

## Electronic Selvedge System (patented) and Electronic Rotary Leno

The unique Electronic Selvedge Systems (ELSY) are driven by separate stepper motors that are controlled electronically. The selvedge patterns and crossing times can be programmed independently of the shed crossing. This can be done even while the machine is running, so the weaver immediately sees the result of the new settings.

The crossing time of the Electronic Rotary Leno (ERL) can similarly be programmed while the machine is running.

## Electronic Let-Off and Take-Up

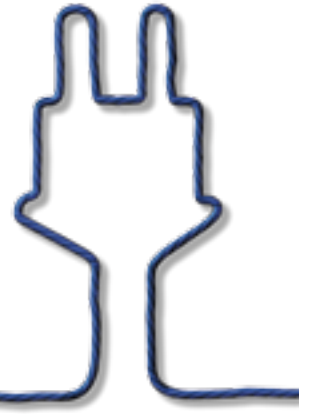
The electronically controlled let-off (ELO) and take-up (ETU) are fitted as standard. The ETU makes it possible to weave fabrics with variable pick densities, with highly accurate settings.

## Optimized sley drive

The sley is driven by a cam and cam follower system, for perfect beat-up and balanced lower inertia for higher speeds.



# Get the most out of your energy



Energy saving technologies have been developed and implemented, taking into account the rules and regulations concerning the environment. The OMNIplus 800 is equipped as standard with the energy efficient Sumo motor and with highly effective main nozzles, relay nozzles and valves.

## Sumo for reduced energy consumption

The combination of the highly energy efficient Sumo motor with the direct drive (patented) of the 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.

## Fixed and movable main nozzles

The entirely new air supply system and more efficient main nozzles permit higher performance. The position of both the fixed and the movable main nozzles is simple to adjust. Moreover, the airjet pressure and timing can be adjusted separately, giving reduced air consumption.

The Electronically-controlled Low Continuous Airflow (ELCA) system holds the filling yarn in the ideal position during the non-insertion period. The digital setting for each channel prevents the yarn unraveling.

## New relay nozzles and valves

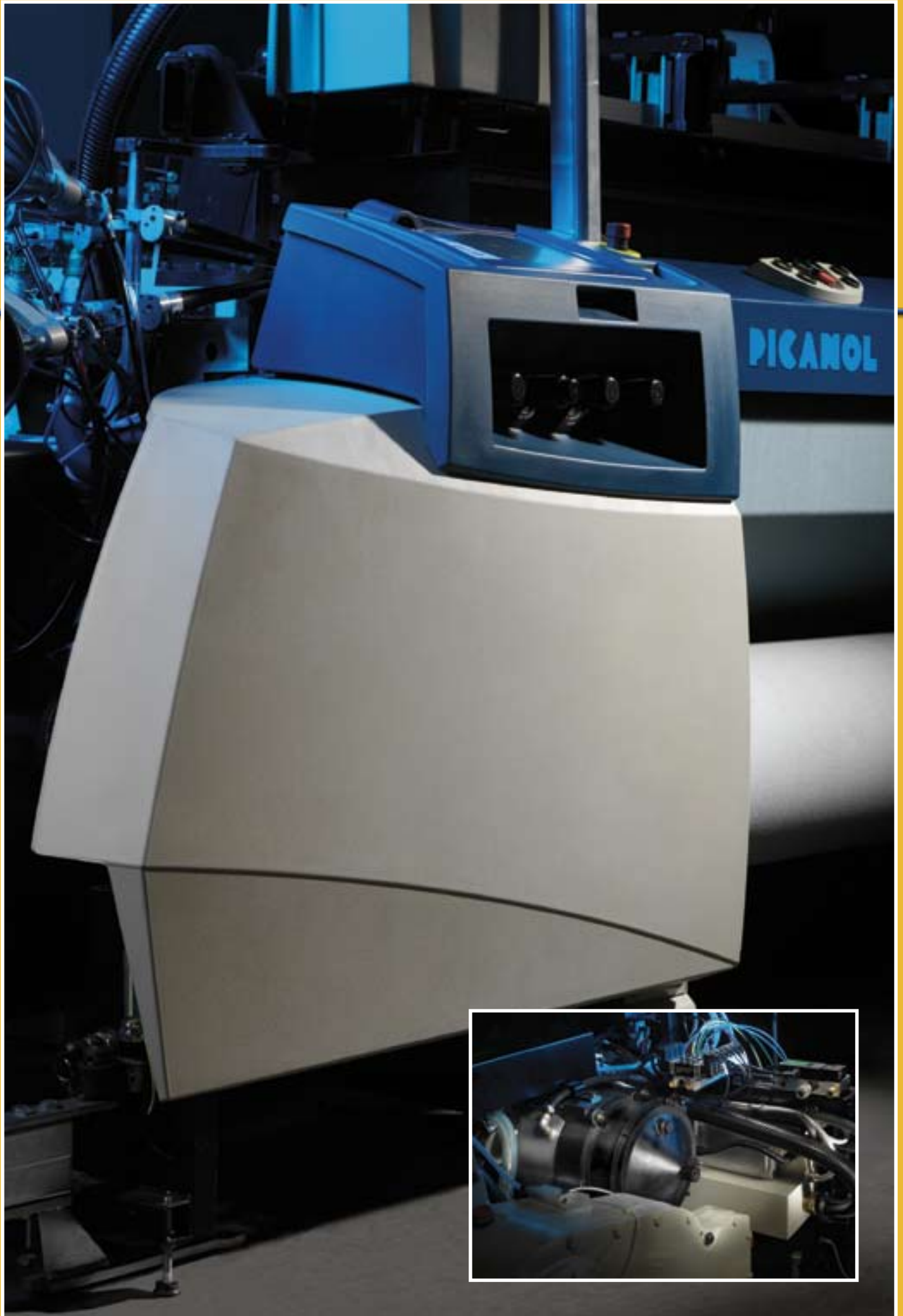
The OMNIplus 800 relay nozzles are optimized for more efficient use of air. The shape of the nozzles and the position of the holes give a higher Pitot value and enable maximum use to be made of the available insertion time.

The new Diamond-Like Coating (DLC) on the relay nozzles ensures a significantly longer lifetime when weaving abrasive yarns.

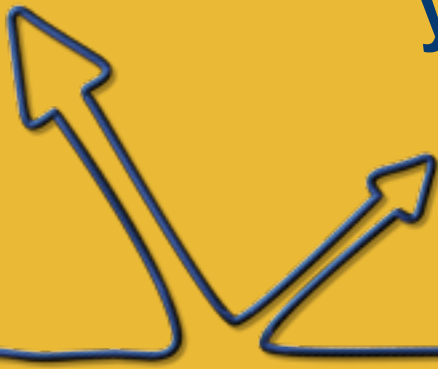
The electro-magnetic valves on the relay nozzles have been redesigned and are easy to reach, so that changing the width can be done quickly and easily. The airlines between valve and relay nozzle have been made as short as possible, thus further reducing air consumption.

## Adaptive Relay Valve Drive

The unique Adaptive Relay Valve Drive (ARVD) system is a further development that automatically adapts the relay nozzle settings to the behavior of the filling yarn 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 time (1)



The OMNI*plus* 800 weaving machine is based on an entirely new concept, as a future-oriented platform whose components are designed for higher operating speeds and top productivity.

## Unique Sumo main motor (patented) fitted as standard

The oil-cooled Sumo main motor drives the weaving machine directly, without belt or clutch and brake. The very short drive train is simple and compact, and the machine is up to full speed right from the very first pick.

The speed of the motor is controlled electronically, without a frequency converter, thus reducing power consumption and permitting greater flexibility. The shed crossing time is set entirely from the display. This combination of the Sumo motor with electronic settings makes it easy to obtain the highest possible industrial speeds taking into account the yarn quality, number of harnesses and weaving pattern, and considerably reduces the set-up times.

The machine drive is optimized for uniform loading of the machine, with the inertias calculated to suit the machine version without reducing the power of the motor.

## Autospeed

Instead of adjusting the insertion speed of the filling yarn, Autospeed keeps the arrival time of the filling constant by optimizing the machine speed according to the air-friendliness of each individual pick. As a result, the insertion capacity of the main nozzles is permanently kept at its highest possible performance. This increases the productivity of the loom.

## Automatic full pickfinding

The machine has an automatic full pickfinder driven by the Sumo main motor. Pickfinding is done using a shifttable gear on the Sumo motor, so that no slow motion motor and clutch are required. In case of a broken pick the machine stops and only the harness frames are brought in motion – automatically – so as to free the broken pick, without the reed touching the beat-up line. This reduces the stop time in case of a filling break and avoids starting marks.

## Pick Repair Automation

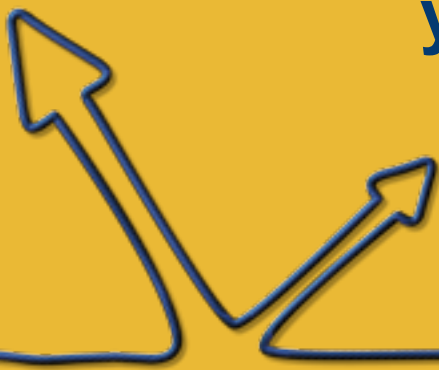
The Pick Repair Automation (PRA) system keeps stop times even shorter in case of a broken pick.

## Prewinder Switch-Off

With the Prewinder Switch-Off (PSO) system the machine carries on weaving even if a filling break occurs on the bobbin creel or one of the prewinders. The prewinder signals the break and the system switches to one of the remaining channels.



# Get the most out of your time (2)



The OMNIplus 800 weaving machine has many unique features that reduce downtime to the absolute minimum. The quick harness connections, the quick connections for the warp beam and batch roll, the Quick Style Change (QSC) system: these all increase the amount of time available for producing quality fabric at high speeds.

## Optimized harness frames and connections

The harness frames, connections and guides (DRC-10 and DRC-30) have been entirely redesigned for weaving at high speeds. Depending on the requirements the machine can be fitted with aluminum, hybrid (carbon fiber-reinforced aluminum) or carbon fiber harness frames. Furthermore the built-in damper (patented) permits higher speeds.

With the unique DRC-30 harness connection (patented) no manipulations have to be carried out under the fabric line when connecting the frames to the drive system in a single movement, and height adjustment is done entirely at the top of the frames.

## Easy fitting and removal of warp beam and cloth roll

The warp beam is driven by an electronically controlled let-off system via a separate gearwheel that remains on the machine. Fitting the warp beam and changing the cloth roll are done by means of quick connections - no tools are required.

## Quick Style Change

Special attention has been paid to fast width changes, which can be either symmetrical or asymmetrical. All the components to be moved both on the left and on the right are mounted on a single support whose position can be easily varied.

A maximum number of settings can be carried out on the microprocessor. The ability to set the crossing time of the harnesses fully digitally is unique.

The Quick Style Change (QSC) system (patented) enables a style change to be carried out by a single person in less than 30 minutes! The style change is done by replacing the entire rear part of the split frame, with the warp beam, backrest and support, warp stop motion, harnesses and reed. All the settings involved in preparing the article on the warp side are done before the style change, outside the weaveroom. The quick and easy adjustment of the backrest board (patented) is also unique.

## Perfect lubrication

Lubrication is by means of a central circulation system controlled by pressure and pressure difference sensors. Constant filtering of the oil ensures perfect lubrication.

The number of oil lines has been greatly reduced, while the lines themselves are shorter and are made of remolded rubber.

# Technical specifications

## Standard equipment

### Reed widths

Useful widths: 190, 220, 250, 280, 340, 360, 400 cm

Width reduction:

190 cm: up to 70 cm

220 and 250 cm: up to 90 cm

280, 340, 360 and 400 cm: up to 96 cm

Symmetrical and asymmetrical width reduction

### Yarn range

Spun yarns: Nm 3 - Nm 170

Filament yarns: dtex 22 - dtex 1100

### Filling insertion

Fixed and movable main nozzle

System of main and relay nozzles combined with tunnel reed

ELCA: Electronic Low Continuous Airflow [patented]

### Prewinders

Drum accumulator

### Color selection

Up to 8 colors

### Filling cutter

Electrical, with electronic control

Separate setting of cutting time for each color/yarn

### Filling stop motion

Photoelectric, in front of or beside the reed

### Reed motion

Conjugated cams with cam followers

### Shed formation

Positive cams for up to 8 harnesses, or alt. up to 10 harnesses

Electronic, positive dobby for up to 16 harnesses

Electronic jacquard

### Harness drive

DRC-10

### Backrest

Universal type with built-in sensor

### Warp let-off

Continuous, electronically controlled let-off system

Warp beam diameter: 805, 1000 and 1100 mm

Double warp beams for reed widths of 280 cm and up

### Selvedge motion

Rotary selvedge unit

### Warp stop motion

Electrical, with toothed electrodes and search handle

### Cloth take-up

ETU: electronically controlled take-up system

Diameter of cloth roll: standard 600 mm – option 720 mm

### Machine drive

Sumo main motor with direct drive [patented]

### Pickfinding

Automatic pickfinder

### Automatic control

Microprocessor with memory cards

Extended graphic terminal with help functions

### Lubrication

Pressurized oil circulation system with continuous filtration

Centralized lubrication points

### Regulations

In designing the OMNI*plus* 800, Picanol has taken into account all current and projected international regulations concerning safety (mechanical and electrical) and the environment (ergonomics, noise, vibration and electromagnetic compatibility).

### How to read the name

OMNI*plus* 800-4-R-F 190

Number of filling colors: 2, 4, 6, 8

Shed formation:

P: cam motion

R: dobby

J: jacquard

F: filament

Reed width: 190 cm

## Optional equipment

### Control

Bidirectional communication

### Quick Style Change [patented]

Split machine frame for quick style change

SCM: Style Change Module

Mobile or fixed module rack

Warpy transport unit

WarpLink welding unit

Uni-frame unit for tying-on outside the weaveroom

### Insertion

Package change detector

AIC/Q: Adaptive Insertion Control for filament filling

PSO: Prewinder Switch-Off

Balloon breaker

PFT air: Programmable Filling Tensioner

PRA 1p: Pick Repair Automation

Clamp on movable main nozzle

Second filling detector

Argus filling detector

### Shed and selvedge formation

Integrated heddle damping [patented]

Asymmetrical cam motion

Harnesses for 330 mm (13") heddles

Automatic shed leveling with cam motion

Independent selvedge formation, electronically controlled [patented]

Selvedge units mounted in the harnesses

Mechanical tucking-in unit

Airtucker

Hot wire cutter for filament yarns

### Harness drive

DRC-30

### Warp stop motion

Detector without drop wires for filament warps

### Warm beam

Fancy beam

### Backrest and warp let-off

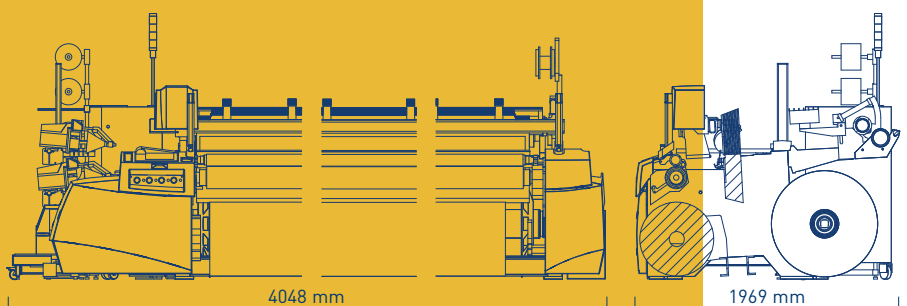
Easing motion (warp tension compensation)

TSW: warp tension sensors mounted in the warp

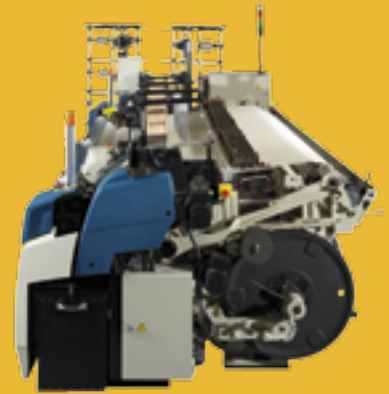
### Cloth take-up

PBM: Picanol Batching Motion for diameters up to 1500 mm

Double pressure roller



Dimensions OMNIplus 800-2-P 190



## 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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