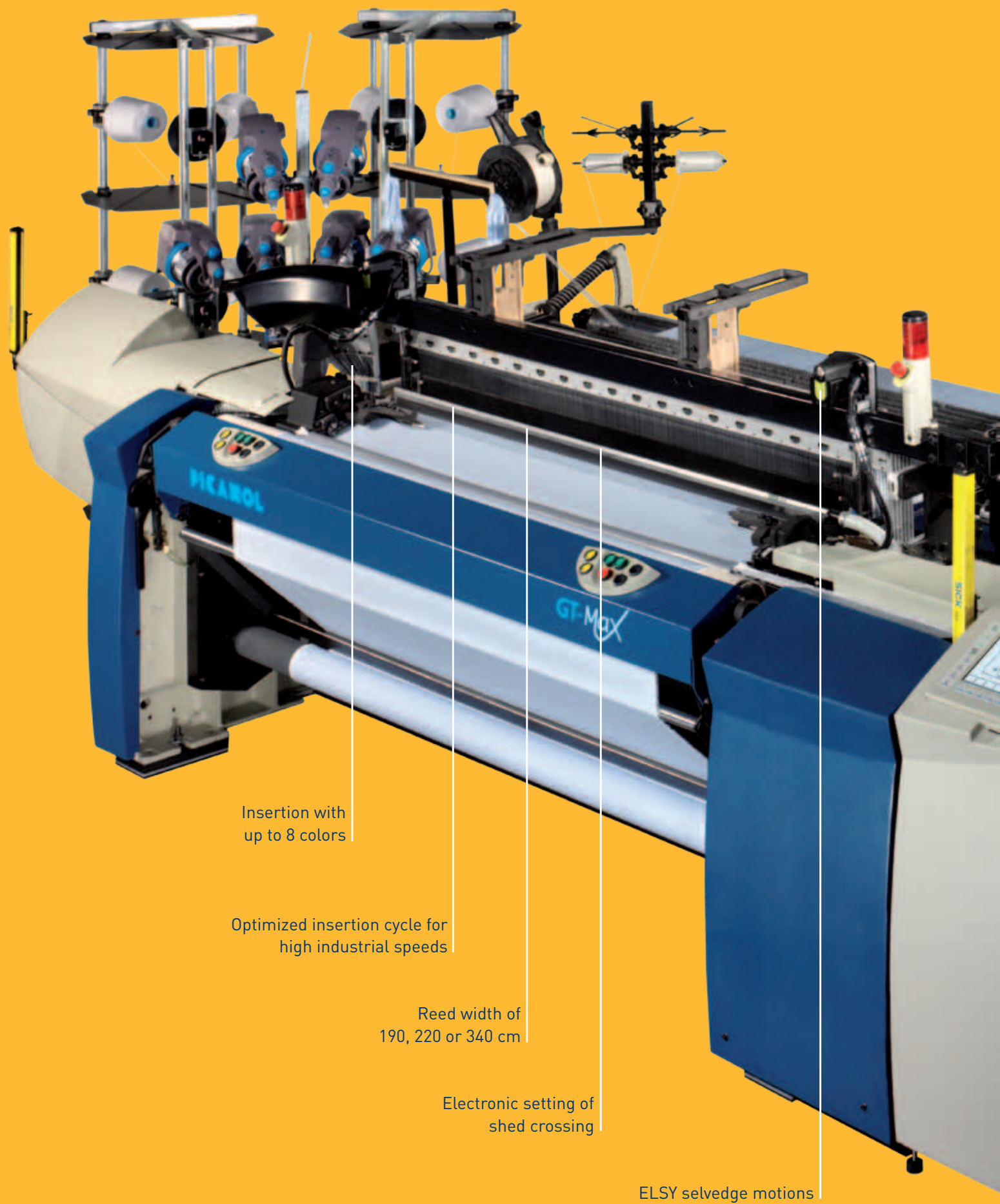


Get the most out of

*weaving*

**GT-***Max*

**PICANOL**  
YOU ARE ALWAYS AHEAD



Insertion with  
up to 8 colors

Optimized insertion cycle for  
high industrial speeds

Reed width of  
190, 220 or 340 cm

Electronic setting of  
shed crossing

ELSY selvage motions

Accurate, user-friendly machine setting using the keyboard display



Sumo main motor with direct machine drive is standard

The GT-Max offers all you need to weave yourself to the top in your market. It uses proven rapier weaving technology, with full electronic monitoring and control, Sumo main motor and microprocessor-controlled filling insertion.

This weaving machine has been designed to meet your objective of maximizing return on investment. It guarantees high fabric quality, is best in class for minimum energy consumption, creates space to unleash your talent and optimizes your precious time.

If you really want to get the most out of your market, your material, your energy, your talent and your time, the GT-Max provides the platform for you to stay ahead. Always. Everywhere.

**GT-Max** <sup>3</sup>



# Get the most out of your market



The GT-Max helps you win in your market by enabling you to offer high quality fabrics at the lowest weaving cost, using proven rapier weaving technology.

## Rigid construction

The GT-Max is built around two cast iron side frames connected by sturdy cross-members. This robust frame and the perfect balancing of the mechanical parts eliminate all vibration, enabling the machine to work continuously at high industrial speeds in all weaving widths while maintaining permanent, long-term stability. The absence of vibration enables the GT-Max machine simply to rest on its four feet: no anchor bolts are required.

## High-tech reed drive for powerful beat-up

The sley is driven by a set of complementary cams with cam followers on both sides of the machine. These are connected to the central lubrication system. The reed holder itself is made of light alloy with great stiffness. The sley with its reed holder is perfectly balanced by means of counter weights and provides a powerful beat-up over the whole weaving width, without any vibration.

## Shedding motion

The GT-Max can be equipped with an electronically driven jacquard or an electronic, positive dobby motion with leveling, for up to 20 harness frames.

## Guided gripper system

The weaver can choose the type of gripper system so as to further optimize the machine when weaving certain types of fabrics. GT-Max is fitted with a guided gripper system or a Free Flight gripper system. Both systems are interchangeable. The light-weight gripper enables high speeds, and since the easy presentation into the gripper clamp requires less filling tension, the number of filling stops is kept to a minimum. The light gripper is also small, which results in a smooth entrance of the gripper in the shed, less friction on the warp yarns, and hence fewer warp stops.

## Free Flight rapier for delicate fabrics

The Free Flight GT-Max version has been specially developed for weaving delicate fabrics, providing maximum warp friendliness and filling versatility. Free Flight means that the rapier tape is no longer guided by hooks, so the yarns cannot be damaged by hooks diving into the warp yarns. The machine has a covered raceboard for gentle treatment of filament warp yarns, as used for e.g. upholstery weaving, or the rapier is guided by supporting hooks, as used for e.g. wool or worsted weaving.

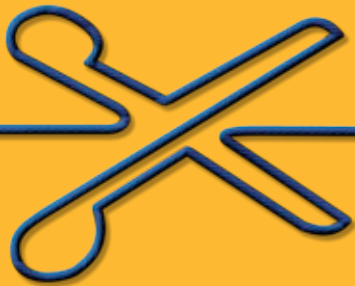
## Quick Step filling presenter for up to 8 colors

The weft presenter is fully modular, allowing you to start with e.g. 4-color insertion and to add more channels depending on your needs. GT-Max is available with up to 8-color insertion. The color and weave pattern are controlled by microprocessor.

The Quick Step modules are interchangeable, and there are no mechanical drives, so no maintenance or lubrication is required.



# Get the most out of your material



The mechanical components and advanced electronics of the GT-Max are designed for optimum fabric quality and minimum waste.

## Optimized rapier motion

At the position where the left gripper takes hold of the presented filling yarn, the rapier velocity is low, eliminating largely the "take-up spike". The acceleration is reduced, enabling the initial low tension of the filling yarn to be maintained during the insertion cycle. At the end of the insertion, the rapier speed is reduced before the right gripper head opens and releases the inserted pick. This optimized rapier motion results in fewer filling breaks and, hence, higher fabric quality.

## Quick Step filling presenter for low filling tension

The Quick Step filling presenter is standard. It operates with independent modules, each consisting of an electronically-controlled stepper motor with a presenter needle. After the left gripper has taken the presented yarn, the Quick Step needle returns to an intermediary position, so the course of the filling yarn is straight and the tension of the yarn is low and remains constant (patented).

The Quick Step system offers several more advantages. Since there is no mechanical link with the machine, sley movement after a filling break is minimal, which reduces fabric defects. At a filling break the needle is presented automatically in the most convenient position for re-threading, thus saving time for the weaver.

GT-Max is available with up to 8-color insertion. All the advantages offered by the Quick Step filling presenter are retained in the 8-color version: lack of maintenance, retraction after selection, automatic canceling in case of stop, and push-button controlled presenter needles for re-threading.

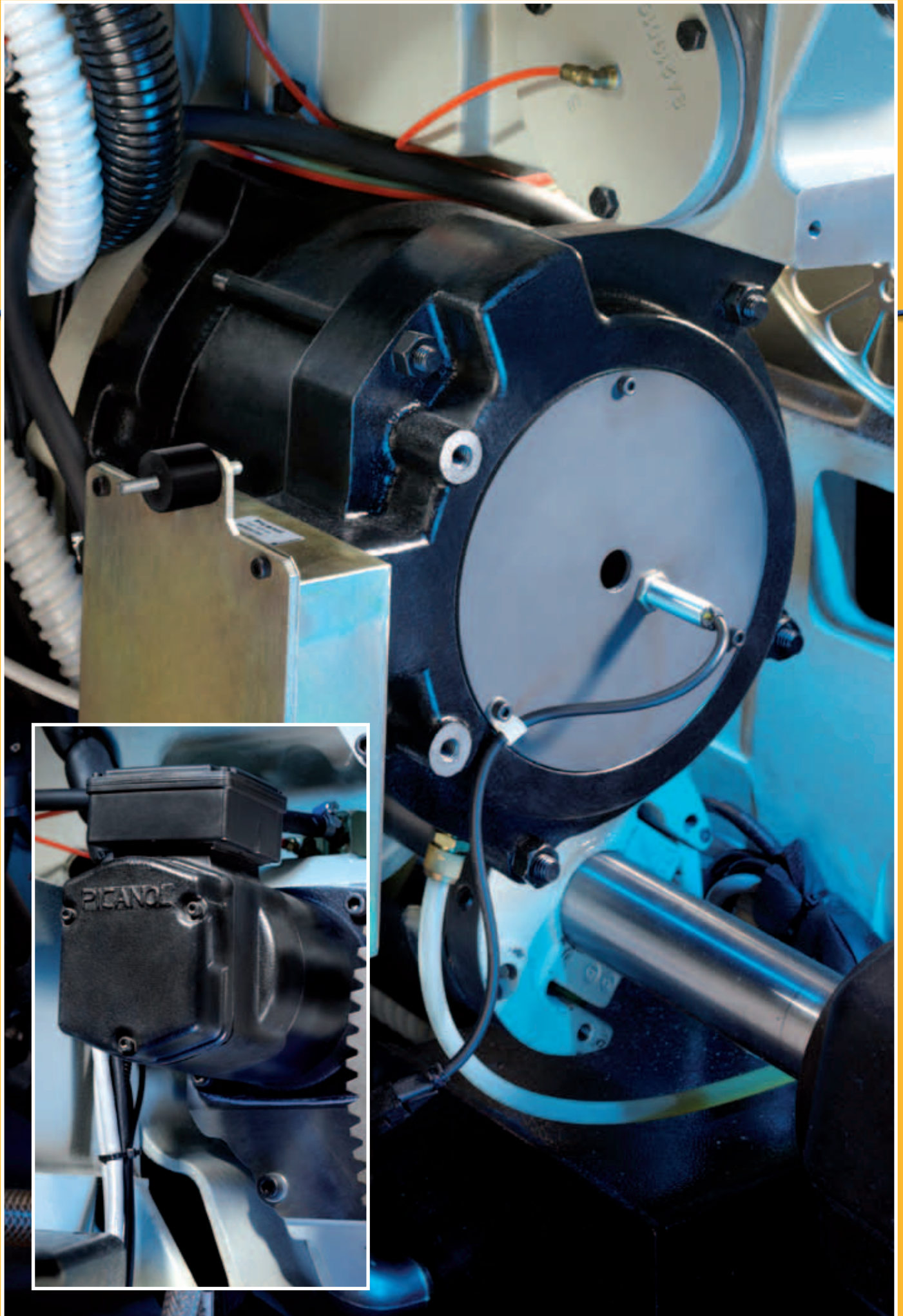
## Automatic full pickfinding

At a filling break the machine stops and only the harnesses are moved – automatically – to free the broken pick for removal by the weaver. The automatic pickfinder and the slow motion movements are not driven by a separate motor – the pickfinding is simply done by the Sumo at slow speed. The required pickfinding position is reached with a minimum of reed movements through the beat-up line.

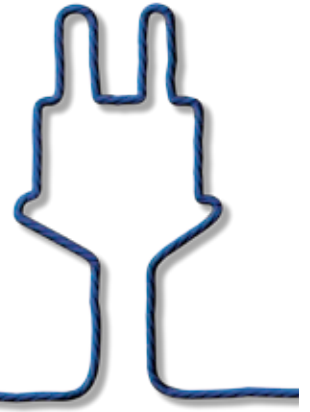
## Electronic Selvedge System

The unique Electronic Selvedge System (ELSY – patented) full leno false selvedge motions are electrically driven by individual stepper motors and are standard on GT-Max. They are mounted in front of the harnesses, so that all the harnesses remain available for the fabric pattern. The selvedge crossing and pattern are programmed on the microprocessor independently of the shed crossing, even while the machine is in operation, so the result of a resetting can be checked immediately.

The easiest position for re-threading can be set by a simple push of a button. When the machine starts, the selvedge system automatically returns to its original position. At a style change, the ELSY can be removed and repositioned very easily.



# Get the most out of your energy



**GT-Max is the rapier weaving machine with the best price/performance ratio. It cuts the cost of fabric production in many ways, e.g. thanks to extremely low energy requirements.**

## **Consuming less energy with the Sumo main motor**

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 (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.

The speed of the motor is controlled electronically, without a frequency converter, thus reducing power consumption and permitting greater flexibility using Flexi-, Multi- or Optispeed. The very short drive train is simple and compact, and the machine is up to full speed right from the very first pick. With the optional variable speed control (Optispeed), the machine speed can be adapted at will to a certain filling strength on a pick-by-pick basis or to a certain pattern, resulting in less filling stops and better fabric quality. Fabrics that once were considered not in the range of high-speed rapier machines, because of the combination of weak and strong filling yarns, can be woven successfully using this important feature.

## **Electronic Take-Up and Let-Off**

The ETU Electronic Take-Up and ELO Electronic Let-Off are standard on GT-Max and provide important time savings. The take-up and let-off are driven by the same type of motor (both Sumo-type).

The required pick density is electronically set (no pick wheels are required) and makes it possible to weave patterned fabrics with alternating pick densities. The accuracy of the settings makes it easy to adjust the pick density of the fabric for optimum fabric weight and minimum yarn consumption.

Warp beams are driven by the ELO Electronic Let-Off. The ELO-control system uses the signal from the warp tension sensor to keep the warp tension on the requested level. To ensure trouble-free operation of the let-off system and to improve cloth quality, the warp beam runs on roller bearings. After tying on a new warp, the ETU Electronic Take-Up unit permits fast pulling through of the knots.

The electronic link between let-off and take-up is an additional tool for the weaver to manage fabric quality.



# Get the most out of your talent



A weaving machine's ergonomics and user-friendliness are equally important as high machine speeds when you want to achieve high weaving productivity. The state-of-the-art technology of the GT-Max assures perfect repeatability of styles and settings and helps you finetune the machine settings.

## **An ergonomic machine**

The slight slope of GT-Max provides very easy access for the weaver. The push buttons are conveniently located.

The filling area is easily accessible from all sides, and all prewinders can be reached from the front, which shortens filling repair times. The shed opening and positioning of the harness frames are adjusted from the outside, with easy accessibility, because the shedding motion stands free at the right-hand side and is not obstructed by the package creel or prewinders.

## **Maximum control**

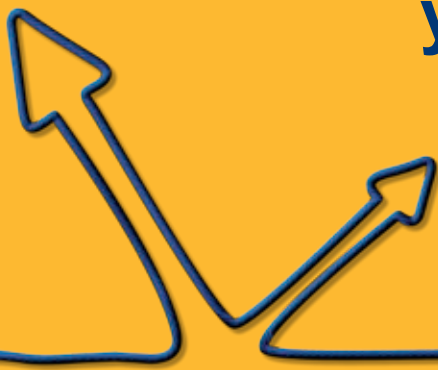
All the machine functions are controlled by the microprocessor. Using the self-explanatory menus on the display, the operator can start the machine and carry out fine adjustments easily.

Mechanical settings have wherever possible been replaced with electronic ones. Important settings normally done by the fixer under difficult conditions, such as setting the selvage crossing time or the shed crossing, are done by simply typing in the required values. The electronic settings have several advantages: they are very accurate, can be checked directly, and are easy to transfer from one machine to another. For the weaver, all this means great ease of operation and higher weaving productivity.

The microprocessor records, analyses and stores all the production data.



# Get the most out of your time



The GT-Max runs at high industrial speeds and enables you to produce more fabric in a shorter time. To achieve this, Picanol has equipped the machine with Sumo drive technology and optimized the machine settings. Most of the machine functions can now be set and checked with the machine's microprocessor and mechanical settings have been reduced to an absolute minimum.

## Unique Sumo main motor system (patented) is standard

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

## Electronic setting of shed crossing

A maximum number of settings can be carried out on the microprocessor. The electronic setting of the closed shed position (AKM) – a unique Picanol feature – allows the weaver to control the aspect and hand of the fabric without even touching the drive train of for instance the dobby. A few simple keystrokes on the display are all it takes to let GT-Max reset its crossing point. The crossing time not only influences the fabric quality, it also has an impact on stop figures.

## Fixing made easy

In designing GT-Max, much attention has been paid to accurate adjustment and simplified maintenance, so that the fixer's workload is reduced.

The transfer position of the filling yarn in the center of the fabric is always correct, even after changing

the drawing-in width for a new style. Symmetrical or asymmetrical (one-sided) fabric width reduction is possible without speed penalties.

Wherever possible, individual stepper motors are used; in addition to their accurate monitoring capabilities, they require no maintenance or lubrication. Stepper motors are used for the filling presenter, the ELSY selvage system and the waste cutters.

The complete absence of toothed belts also reduces the fixer's workload: say goodbye to the time-consuming task of checking or replacing belts in inaccessible positions!

The cylinder temples on top of the fabric hold the cloth at full width and are easy to set. At a warp change, the cylinders are turned up and back to their original position without additional adjustment.

The backrest can easily be set by one operator to obtain optimum shed geometry.

## Minimum maintenance with fewer spare parts

Clutch/brake systems require constant mechanical checking and maintenance. With the Sumo direct drive, on the other hand, there is no clutch, no brake or brake coils, not one single belt in the whole machine, and no flywheel. The absence of all these parts means that both their maintenance and wear-replacement are eliminated.

As on all Picanol machines, the bearings on GT-Max are fed with oil under pressure from a central lubrication system under microprocessor control. Microfine oil filtering, with a clogging sensor, removes all impurities and extends the lifetime of the parts and of the oil, too.

# Technical specifications

## Standard equipment

### Reed width

190, 220 and 340 cm

### Width reduction

70 cm

### Performance

Filling insertion rates up to 1160 m/min

### Yarn range

Spun yarns:

Nm 200 - Nm 3 (Ne 120 - Ne 1.8)

Filament yarns:

22 den - 3000 den (25 dtex - 3300 dtex)

Free Flight version, warp yarns: sized, unsized, twisted, non-twisted, intermingled filament

### Filling selection

1 - 8 colors or yarn types (filling presenter with insertion position) [patented]

### Filling monitor

Double-pick prevention (anti-two)

Piezo-electric filling detector

### Reed motion

Positive cam and cam followers in both frames (double-sided conjugated cams)

### Shedding motion

Electronic rotary dobby for 20 frames, 12 mm with leveling

Electronic setting of the crossing moment (AKM)

### Let-off motion

Load-cell electronically controlled warp let-off system (ELO)

### Warp beam diameter

805, 1000 mm

### Backrest

Single or double backrest roller

### Selvedge motion

Independently electronically controlled (ELSY) [patented]

### Warp stop motion

6 bar electrical 30-mm pitch

### Cloth take-up

Double pressure roller

Electronically controlled take-up system (ETU)

Diameter of cloth roll: 580 mm

### Machine drive

Sumo main motor with direct machine drive [patented]

### Pickfinding

Automatic pickfinding and closed shed positioning [patented]

### Machine controls

LCD screen

Push buttons on front panel

### Lubrication

By forced circulation of filtered oil

Grouped grease points for manual lubrication

Sealed bearings for the beat-up shaft, to prevent the lubrication grease from drying out

Grouped, centralized grease lubrication for bearings of the beat-up shaft and harness motion mechanism

### Monitoring

Self-diagnosis

Stop distribution reporting

### Safety

Light curtain (depending on country of delivery)

Protection guard over take-up rollers

### Regulations

In designing GT-Max, Picanol has taken into account the international regulations concerning safety (mechanical and electric) and the environment (ergonomics, noise, vibrations, and electromagnetic compatibility).

### Dimensions of GT-Max

4659 x 2031 mm

### How to read the name

GT-Max-4-R 190

Number of filling colors: 1 - 8

Shed formation:

R: positive dobby

J: jacquard

Reed width: 190 cm

FF: Free Flight version mainly for filament yarns

GOH: Guided Gripper version mainly for spun yarns

## Optional equipment

### Insertion

PSO Prewinder Switch-Off

### Cloth take up

PBM system for diameters up to 1500 mm

### Selvedge formation

Tucked selvedges



## 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".

Picanol nv  
Ter Waarde 50  
BE-8900 Ieper  
Belgium  
Tel. +32 57 222 111  
Fax +32 57 222 001  
[www.picanol.be](http://www.picanol.be)  
[info@picanol.be](mailto:info@picanol.be)

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