

LET'S **GROW**   
**TOGETHER**

**PICANOL**

**OptiMax-*i***

**EN**

## ABOUT THE PICANOL GROUP

The Picanol Group is an international, customer-focused group specialized in the development, production and sale of weaving machines, engineered casting solutions and custom-made controllers.

Its Weaving Machine division (Picanol) develops, produces and sells advanced weaving systems based on airjet or rapier insertion technology. Picanol has played a pioneering role around the world for more than 75 years, and is now one of the world's leading producers of weaving machines.

The Industries division covers all the other activities not related to weaving machines. Proferro represents the group's metal casting and mechanical finishing activities. It produces cast iron parts for among other things compressors and agricultural machinery, as well as parts for Picanol weaving machines. PsiControl for its part develops and produces custom-made controllers, Human Machine Interface (HMI) and touch devices. Finally, Melotte develops and manufactures innovative product solutions using 3D printing.



Since 2013 the Picanol Group has also had a leading stake in the Tessenderlo Group (TESB).

In addition to its headquarters in Leper (Belgium), the Picanol Group has production facilities in Asia and elsewhere in Europe, backed up by its own worldwide sales and services network. The Picanol Group employs some 2,000 people around the world, and has been listed on the Euronext Brussels exchange (PIC) since 1966.



  
**PICANOL GROUP**

## TRAINING TAKES YOUR TALENT FURTHER

Well-trained employees are a real asset to your company. Skilled staff make your machines run at optimum performance, producing excellent fabric quality and resulting in superb plant efficiency.

Training is part of the deal Picanol makes with its customers. We feel it is our duty to help your employees to improve their skills and knowledge. Hence, last year we decided to invest in a state-of-the-art Technical Training Center in Leper. Three fully equipped rooms (each with weaving machines, cut models, mini workshop etc.) cover a total area of 270 m<sup>2</sup>. This new knowledge center allows Picanol to train technicians from customers around the world in optimal conditions. All facilities are there to give your employees a warm welcome. If your employees are not able to travel to one of our training centers, our instructors come to you and will organize training at your premises.

Next to Leper, Picanol has two first-in-class training centers located in Suzhou (China) and Greenville (USA). All our training centers are specialized in technical training on weaving machines for machine operators, fitters and weaving managers.

A full list of our training courses can be found on our website: <http://www.picanol.be>

Our team is always at your disposal for further information or questions. Contact: [ttc-ieper@picanol.be](mailto:ttc-ieper@picanol.be) (tel. +32 57 22 21 11).



## SPARE PARTS

Weaving machines are one of your most important investments. Keeping them in optimal condition is essential to safeguard the high value of this asset and to remain competitive as a weaver in a globalizing world.

Use of original Picanol parts guarantees a continued high performance of the Picanol weaving machines.

Moreover, timely replacement of original parts enables Picanol's customers to run their machines in the most economical way.

Regardless of the age of the machine, the use of original parts will keep the machine in top condition which has a positive influence on the value of the machine throughout its life time.

Furthermore, to expand your weaving range and/or increase your machine performance, Picanol offers upgrade packages for installed Picanol machines. WeaveUp upgrades add state-of-the-art technology to your machines, which apart from the benefits in weaving equally increase the value of your investment.

With special services and a dedicated aftermarket team, Picanol takes care of the particular requirements and requests of its customers around the globe. These tailored solutions include among others :

- Online ordering of spare parts through P@rtsline
- Electronic spare parts catalogue (eSPC)
- On-time delivery of high-quality original parts
- Harness frames for different brands of weaving machines
- Tailor made upgrade proposals for installed machines
- Analysis and recommendations in respect with running costs
- Preventive maintenance and service audits

With headquarters in Belgium and local offices in China, India, Indonesia, Turkey, USA, Mexico, Brazil, Picanol is able to assure a close, long-term relationship with all its customers.

For more information, please contact your local Customer Service Representative (CSR).





# OptiMax-i

Get the most out of weaving

**PICANOL**  
OptiMax-i

**LET'S GROW  
TOGETHER**

**PICANOL**

If versatile and productive weaving is your objective, now you can be sure of real added value with the unique, future-oriented OptiMax-i.

The OptiMax-i offers all the possibilities for growing to the top in your market. Ready for every new opportunity. Guaranteeing optimum fabric quality. Best in class for minimum energy consumption. Optimizing your precious time. And creating space to unleash your utmost creativity.

Together with our customers we constantly strive to improve our machines and services, in order to stay ahead of the competition. So if you really want to get the most out of your market, your material, your energy, your talent and your time, the OptiMax-i provides the platform for you to keep growing. Because that is the essence of weaving.



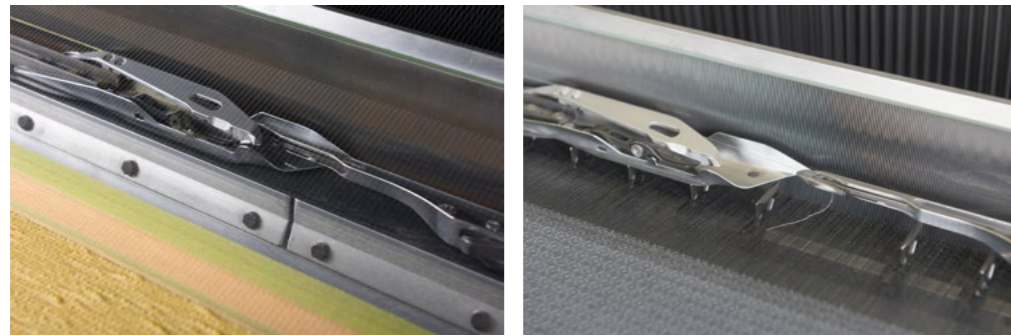
## GUIDED GRIPPER SYSTEM (GC)

Standard solution for spun yarns. The rapier tape on the light-weight Guided Gripper system is perfectly guided by one-piece hooks (patented). Together with a small shed and a small rapier head, industrial speeds are reached that were never attained before.



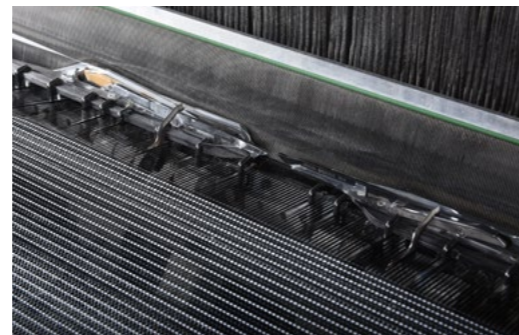
## FREE FLIGHT SYSTEM (FF)

Specially designed for weaving delicate fabrics, providing maximum warp-friendliness and filling versatility. The Free Flight System is covered by raceboard for gentle treatment of filament warp yarns or guided by supporting hooks.



## GUIDED POSITIVE GRIPPER SYSTEM (GPG)

Developed for dedicated technical fabrics. The positive gripper with guided rapier tape offers a unique combination of speed and weft versatility.



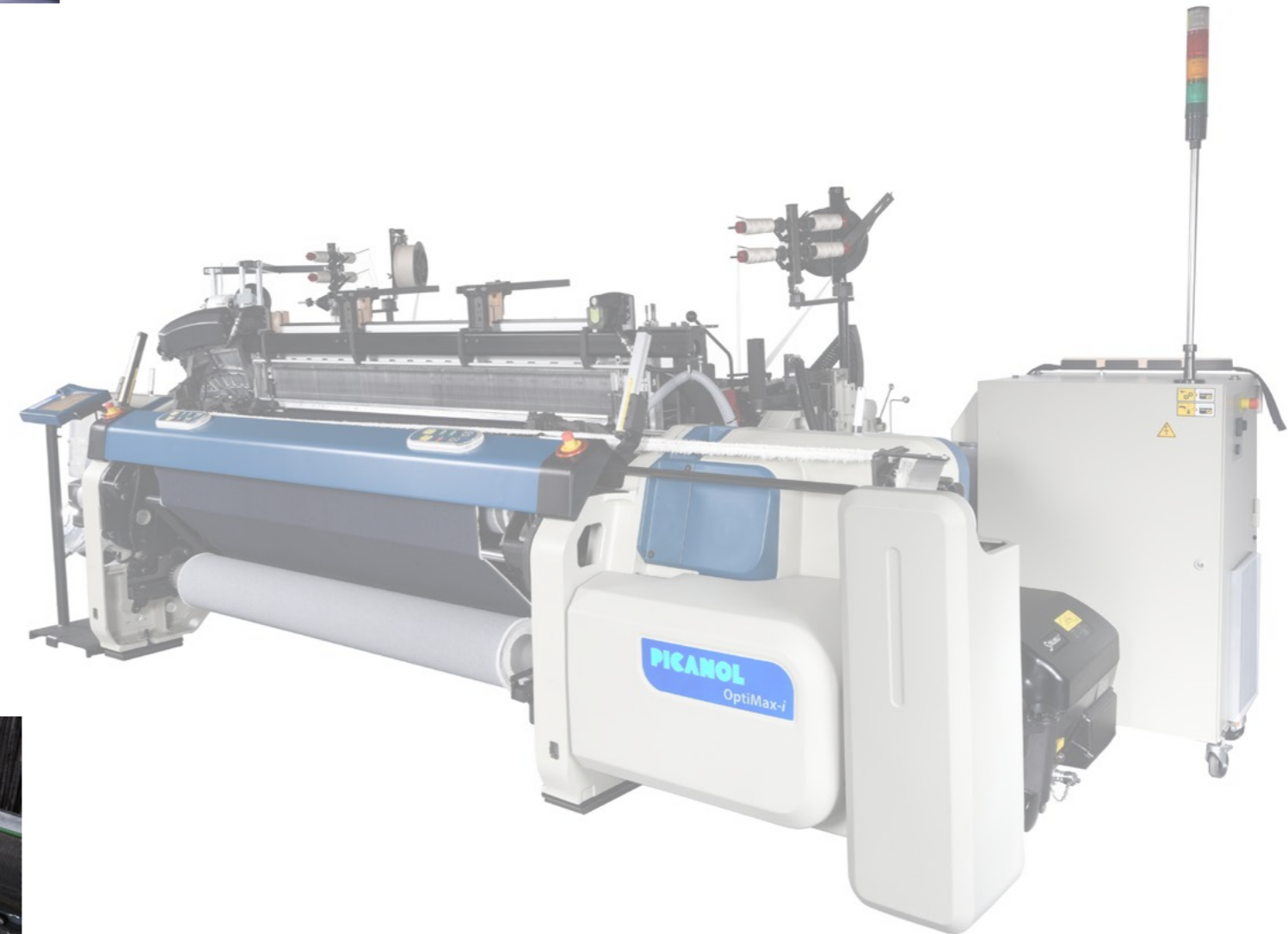
## RIGID CONSTRUCTION

Two redesigned 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.

With the dedicated backrest, adapted take-up, clamping arrangement for cloth support (patented) the OptiMax-*i* is capable of producing fabrics with high cover factors, such as heavy canvas or heavy filter fabric. A specially designed gripper drive (patented) is available for weaving wide fabric.

## OPTIMIZED SHED GEOMETRY

The short stroke of the sley and the frames and the redesigned rapier heads allow the OptiMax-*i* to weave with a small shed opening. The optimized shed geometry leads to uniform fabric characteristics over the whole width. The location of the sley cams below the fabric allows heavier beat-up forces, so fabrics with very high cover factor can be woven with ease.



**LET'S GROW**  
**YOUR MARKET**



## EXCHANGEABLE SHED FORMATION

The OptiMax-*i* can be fitted with positive cam motion, electronic positive dobby or electronically driven jacquard. The basic 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.

## OPTILENO

OptiLeno offers the possibility to produce leno fabrics without superstructure or leno heddles.

With the OptiLeno module (patented), it is not only possible to obtain fabrics with S-crossing or Z-crossing of leno ends, but also to obtain alternating S- and Z-crossing in the same fabric.



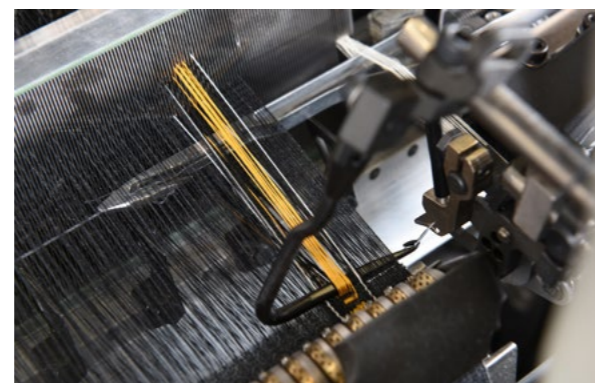
## SUPERSTRUCTURE READY

Ready 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).



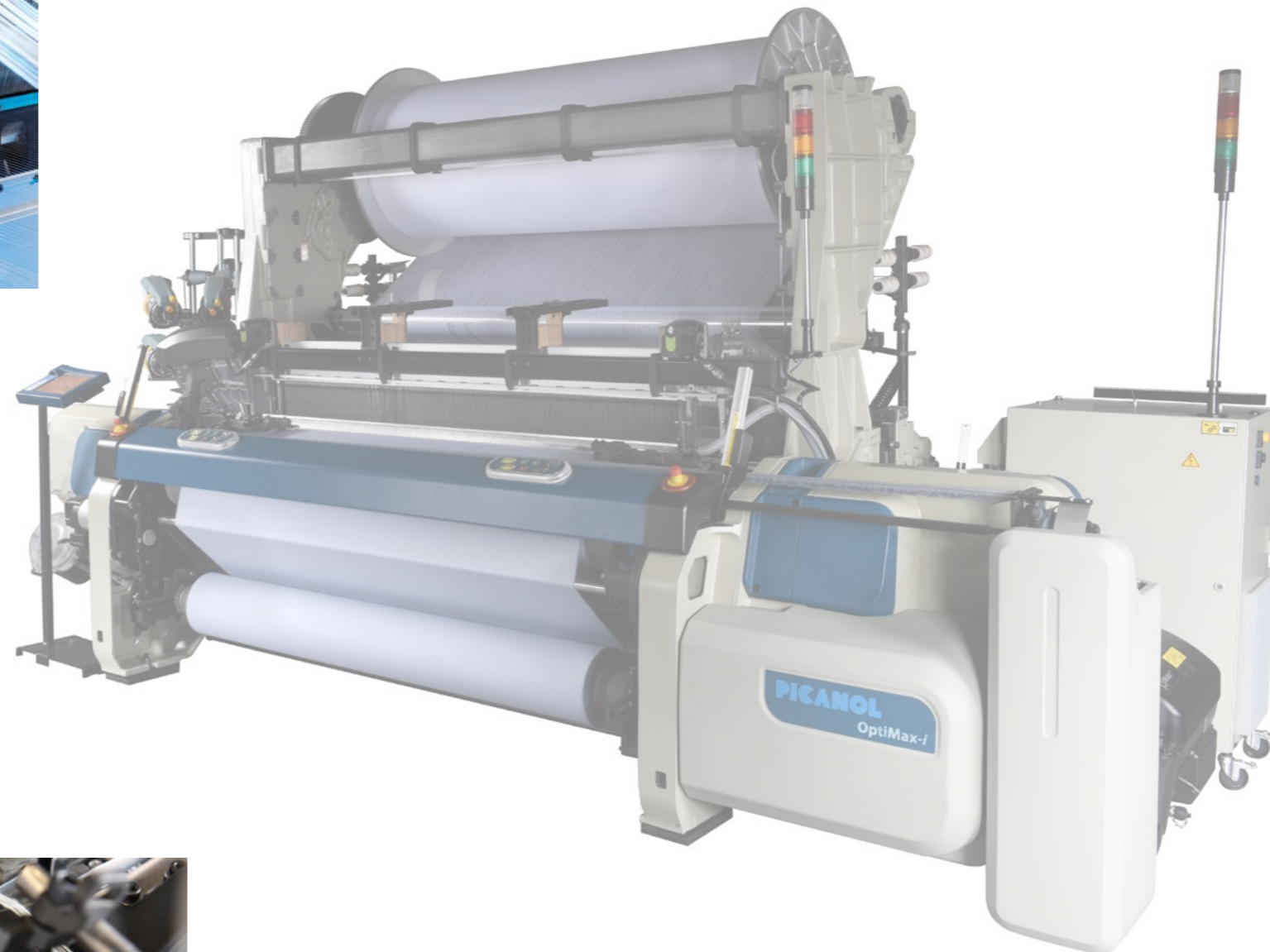
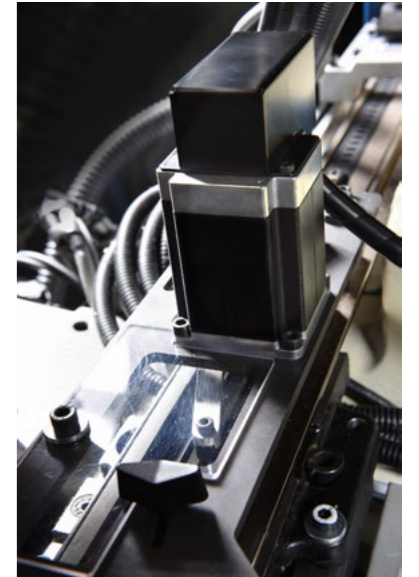
## TUCKERS

The OptiMax-*i* can be equipped either with versatile mechanical tucker or with air tucker. Changing from leno selvedge to tucked selvedge or vice-versa is easy and quick with repeatable settings.



## ELECTRONIC RIGHT-HAND GRIPPER OPENER (ERGO)

Improved control of weft insertion is assured by positive opening of the right-hand side gripper with the Electronic Gripper Opener system. This allows individual setting of the moment of opening according to each type of weft inserted, to manage the length of the weft waste.



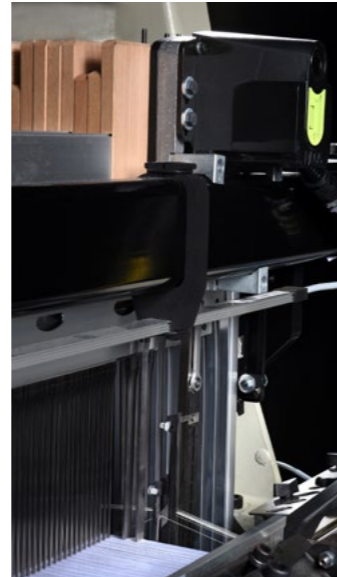
**LET'S GROW**   
**YOUR MARKET**



## **ELECTRONIC SELVEDGE SYSTEM (ELSY)**

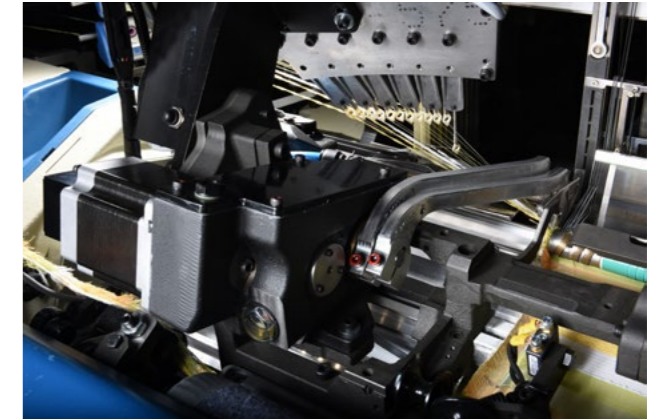
The unique full leno selvedge motions are electronically driven by individual stepper motors. They are mounted in front of the harnesses, so that all harnesses remain available for fabric pattern formation.

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.



## **FILLING CUTTER**

The Electronic Disc Cutter (EDC) cuts every filling yarn always at the right moment, while clamping the filling. A mechanical filling cutter is also available for more demanding filling yarns. The SmartCut allows programming of the cutting moment of each insertion channel.



## **QUICK STEP FILLING PRESENTER**

The Quick 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 Quick 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.

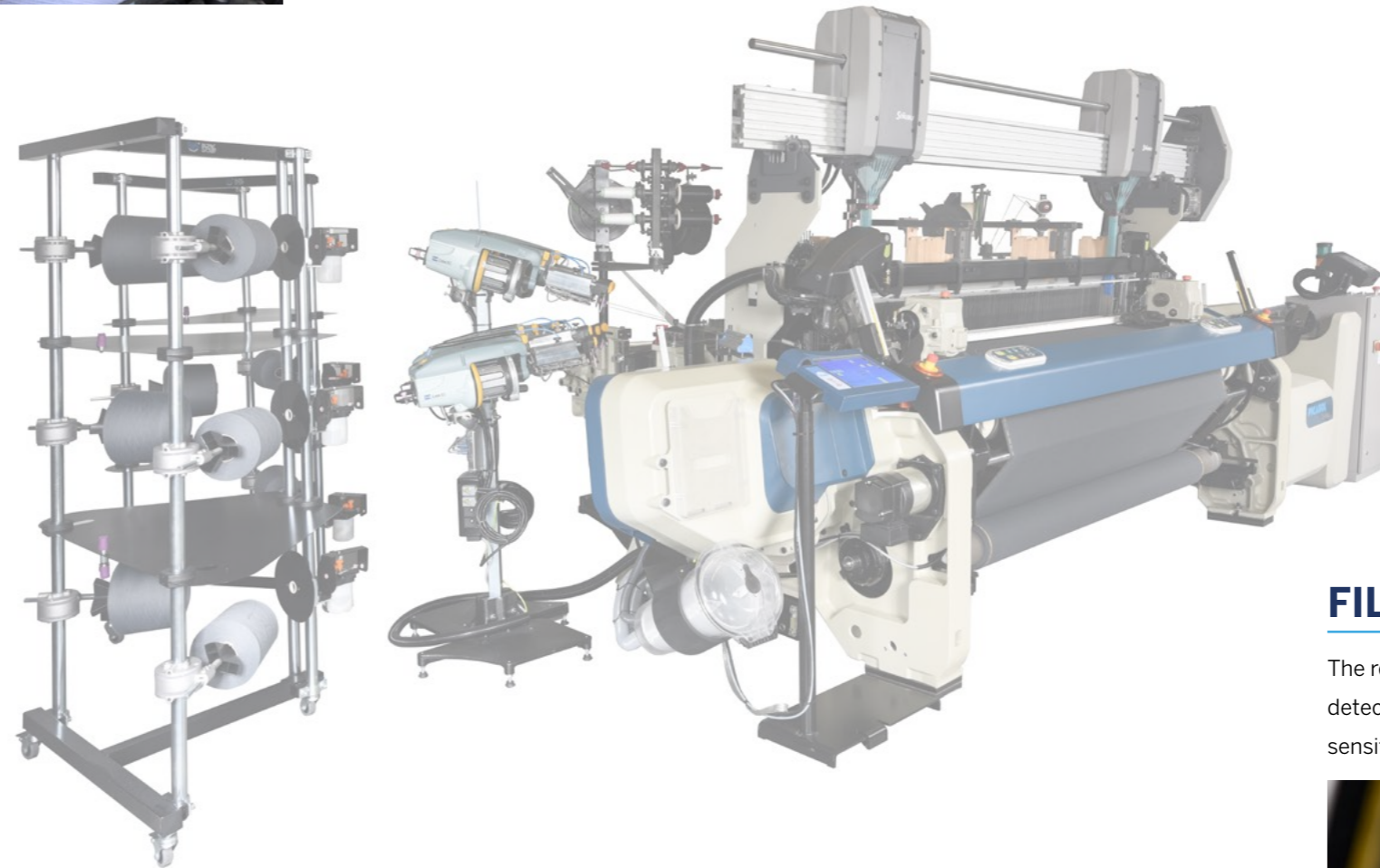
The color and weave pattern are controlled by microprocessor or jacquard. The Quick Step modules have no mechanical drives, so no maintenance or lubrication is required.



## **ACTIVE FILLING TENSIONERS**

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

As an alternative for very demanding applications the Electronic Filling Tensioner (EFT) (patented) can be offered.



## **FILLING DETECTOR**

The revolutionary SmartEye is a filling detector allowing individual detection and sensitivity setting per channel.



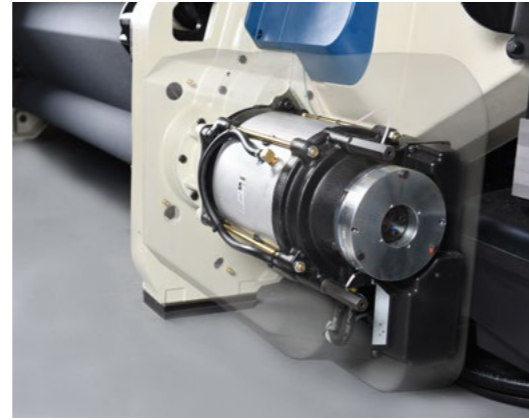
## **OPTIMIZED GRIPPERS**

The specially designed drawing gripper (patented) and taker gripper (patented) provide optimal weft insertion.

**GET THE MOST**   
**OUT OF YOUR MATERIAL**

## 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 main shaft and shedding motion results in power savings of more than 10% 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.



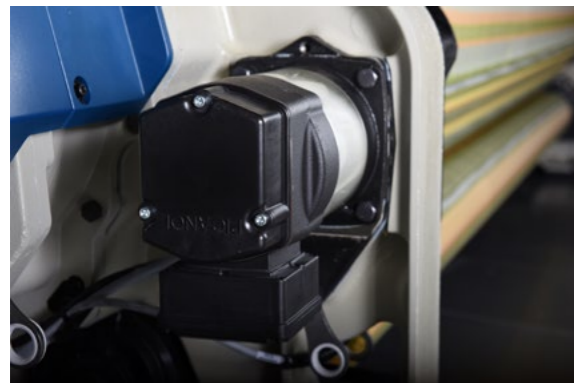
## REMOVING HEAT WITH WATER COOLING SYSTEM

With the water cooling, half the thermal load produced by the weaving machine is extracted from inside the machine. In this way, a new air-conditioning installation can be kept small and energy efficient, or an existing installation could still be compatible with high-speed weaving on the OptiMax-i.



## 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

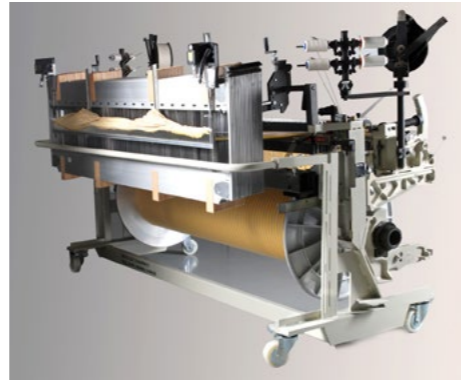
The motor speed is controlled electronically, without frequency converter, thus reducing power consumption and permitting greater flexibility. The very short drive train brings the machine to full speed right from the very first pick.

**GET THE MOST**   
**OUT OF YOUR ENERGY**



## QUICK STYLE CHANGE (QSC)

QSC 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 warp beam, backrest and support, warp stop motion, harnesses and reed. Quick and easy adjustment of the backrest is also unique.



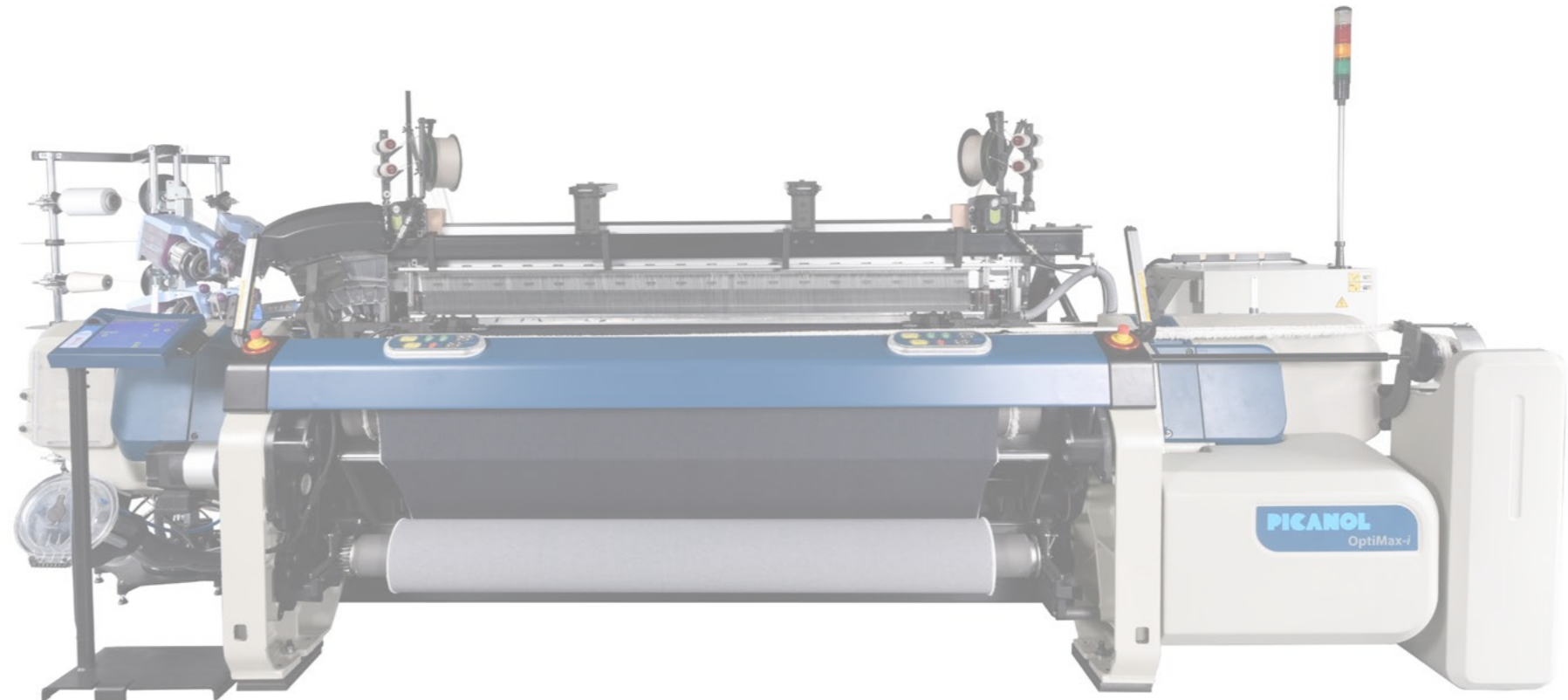
## WIDTH ADJUSTMENTS IN A MINIMUM OF TIME

The OptiMax-i has many unique features to keep machine downtimes ultra-short: all components to be moved on the left and on the right are mounted on a single support whose position can be easily varied. Software-assisted procedures are available in case transfer position of rapiers is to be modified.



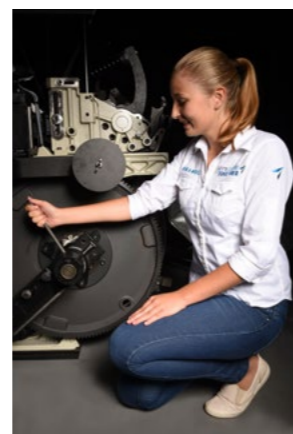
## OPTIMIZED HARNESS FRAMES AND CONNECTIONS

Connecting the harness frames to drive the system is done in a single movement, thanks to quick connections (DRC-2 and DRC-30). 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.



## SHED ANGLE INDICATORS

Standard on dobby – Picanol exclusivity. (patent pending)



GET THE MOST  
OUT OF  
YOUR TIME



## SUMO MAIN MOTOR

The Sumo motor makes it possible to continuously adapt the machine speed pick by pick to match the strength of the filling yarn (OptiSpeed). 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.



## PERFECT LUBRICATION

By means of central oil circulation system. The constant and adequate filtering of the oil ensures a perfect lubrication.

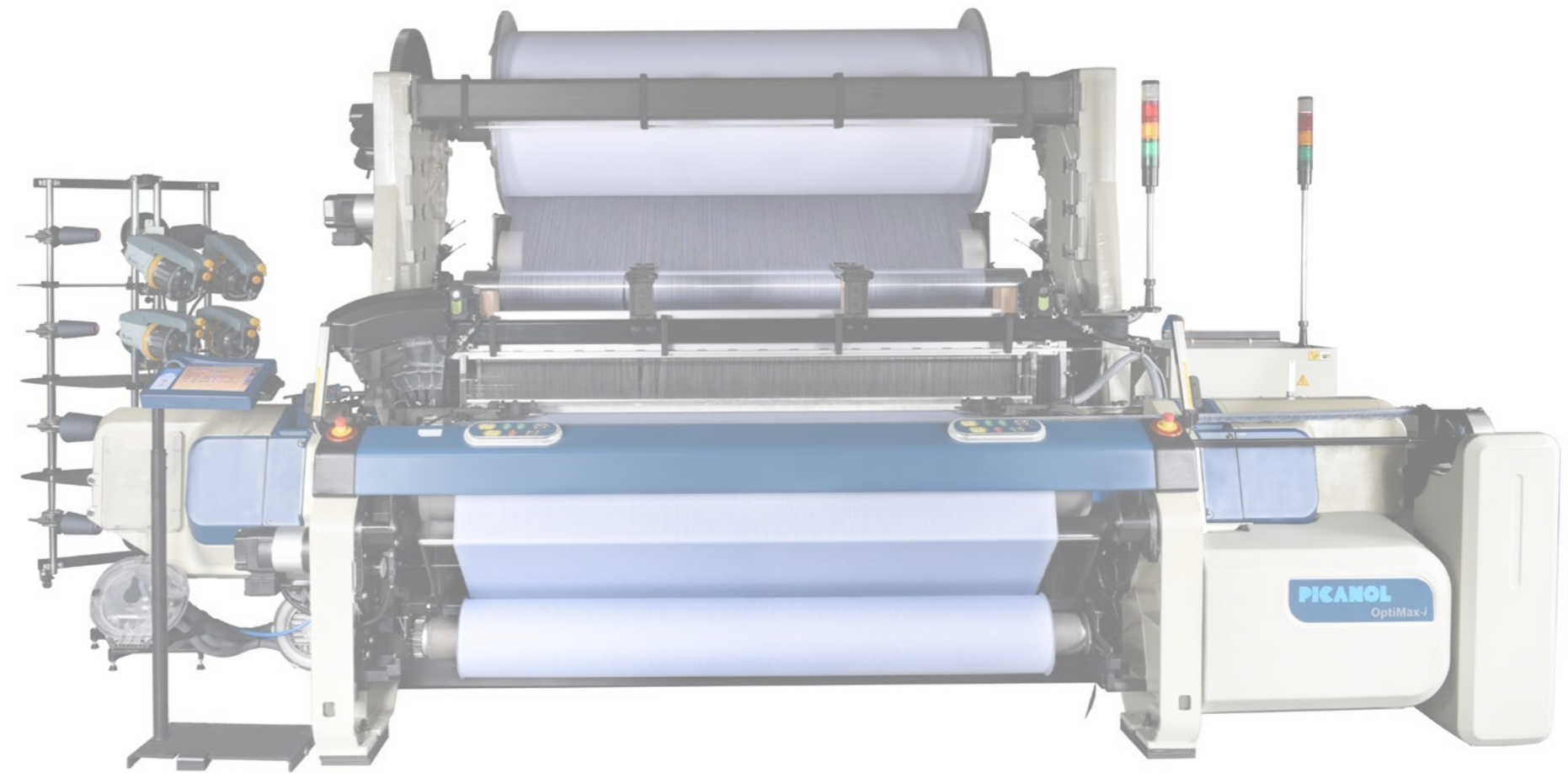


## AUTOMATIC FULL PICKFINDING

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.

## ELECTRONIC SETTING OF SHED CROSSING (AKM)

The crossing timing of the shedding motion can be set from the machine display – no tools required! A unique Picanol feature that allows the weaver to easily control the aspect and feel of the fabric.



## PREWINDER SWITCH-OFF (PSO)

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 prewinders.

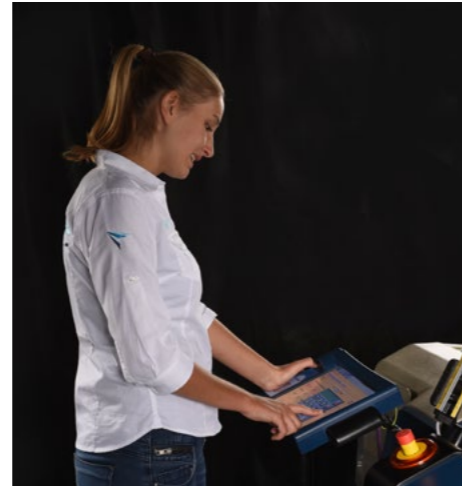


**GET THE MOST**  
**OUT OF YOUR TIME** 



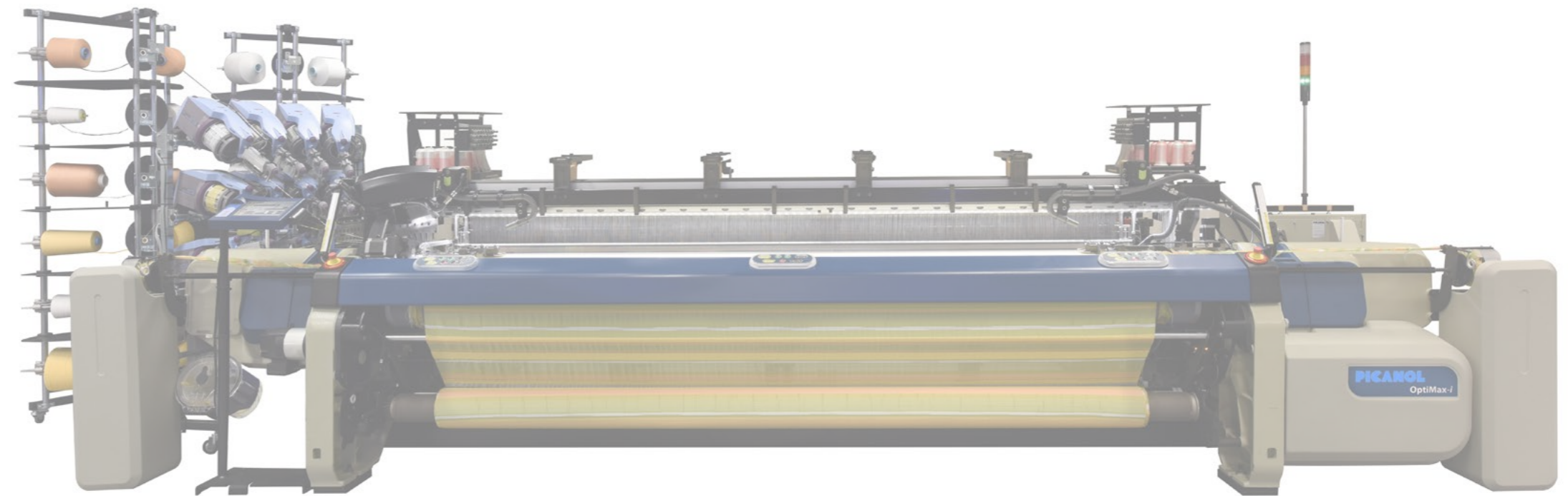
## MAXIMUM CONTROL

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 weaving machine itself can be linked to a central monitoring system (as integrated in LoomGate for example) by Ethernet or bidirectional connection. The interactive touchscreen can store settings of numerous articles.



## ERGONOMIC MACHINE

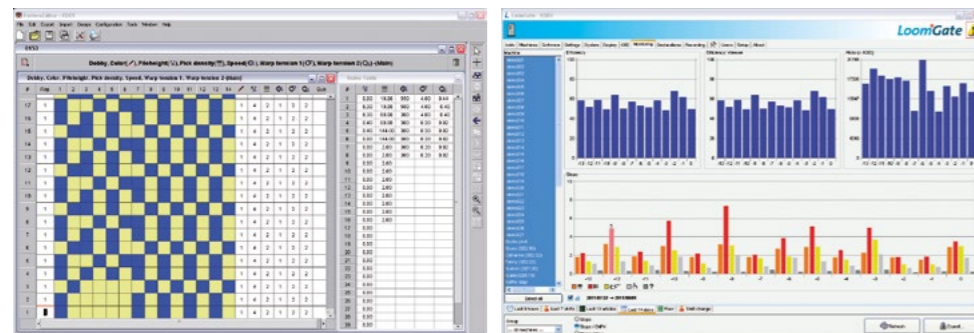
The OptiMax-i machine is unusually low at the front. The pushbuttons with metal dome technology are conveniently located and have optical command confirmation. All main settings are carried out above fabric line, providing perfect accessibility for weavers and operators.



## PICANOL PC SUITE

Picanol PC Suite is a collection of PC software applications. LoomGate makes it possible to communicate between PC and weaving machines over the network. Picanol Pattern Editor is used to create new designs on PC, for transfer to weaving machines. Picanol Style Administration is used to prepare settings while the weaving machine is running another style.


EasyStyle helps to select optimum machine settings. OptiStyle provides on-loom tools to improve efficiency or quality in a fast, interactive way.



**GET THE MOST**   
**OUT OF YOUR TALENT**












# TECHNICAL SPECIFICATIONS

Available for  
the aftermarket 




## FABRIC SPECIFICATIONS

Useful widths	GC version	190, 210, 220, 230, 250, 300, 320, 340, 360, 380, 400, 430, 460 and 540 cm
	FF version	190, 210, 220, 230, 250, 300, 320, 340 and 360 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	
Yarn range	Spun yarns	Nm 200 - Nm 3 (Ne 118 - Ne 1.8)
	Free Flight	up to Nm 1 (Ne 0.6)
	Filament yarns	20 den - 3,000 den (22 dtex - 3,300 dtex)
	Free Flight	as fine as 10 den (11 dtex)




## FILLING INSERTION

Filling selection	1 - 12 colors or yarn types (filling presenter with insertion position)	<b>Standard</b>
	Weaving 2 weft yarns simultaneously (patented)	Optional 
Prewinder	Prewinder Switch-Off (PSO)	Optional 
	Pneumatic feeder threading up	Optional
Active filling brakes	Programmable Filling Tensioner (TEC) (patented)	Optional 
	and Electronic Filling Tensioner (EFT) (patented)	Optional 
Filling monitor	Piezo-electric filling detector	<b>Standard</b>
	Double pick prevention (anti-two)	<b>Standard</b>
	SmartEye filling detector	Optional 
Filling cutter	Electronic Disc Cutter (EDC)	<b>Standard</b> 
	Mechanical filling cutter	Optional 
	SmartCut filling cutter	Optional
	Electronic Right-hand Gripper Opener (ERGO) (patented)	Optional 
	Guided Positive Gripper (available for dedicated technical applications)	Optional 




## WARP LET-OFF

Warp beam diameter	805, 1000, 1100 mm	<b>Standard</b>
Twin warp beam for reed widths of 300 cm and up		Optional
Fancy beam on top		Optional 
Backrest	Single roller, general purpose	<b>Standard</b>
	Double backrest rollers with possibility to add drag rollers	Optional 
	Direct Warp Control (DWC) (available for dedicated technical applications) (patent pending)	Optional
	Universal type with built-in warp tension sensor (TSF)	<b>Standard</b>
	Warp tension sensors mounted in the warp (TSW)	Optional
Warp stop motion	6 bar electrical 25-mm pitch or 8 bar electrical 16-mm pitch	<b>Standard</b>
	Detection per electrode	Optional
	Sectional warp stop motions	Optional
	Individual selvedge stop motions	Optional
Quick Style Change system (QSC)		Optional 






## CLOTH TAKE-UP

Cloth take-up	Diameter of cloth roll	<b>Standard</b>
	550 mm (warp beam 805 mm),	
	600 mm for larger beams	
	Picanol Batching Motion (PBM) system for diameters up to 1,500 mm	Optional
	Take-up directly over pressure roller	Optional
Fabric illumination	LED illumination under the fabric	Optional 
	LED illumination above reed	Optional 
	LED illumination above back shed	Optional 


## MACHINE DRIVE AND CONTROL

Main motor	Sumo main motor with direct machine drive (patented)	<b>Standard</b>
	Flexispeed	<b>Standard</b>
	Multispeed / Optispeed	Optional 
Automatic full pickfinding (patented)		<b>Standard</b>
Reed motion	Positive conjugated cam units (2, 3 or 4, depending on machine width)	<b>Standard</b>
Shedding motion	Harness drive DRC2 or DRC30	<b>Standard</b>
	Positive cam, max. 8 harness frames, 12-mm pitch	<b>Standard</b>
	Automatic shed levelling with cam motion	Optional
	Electronic rotary dobby for 20 or 24 frames, 12 mm pitch with levelling	<b>Standard</b>
	Electronic jacquard	<b>Standard</b>
	OptiLeno: continuous or alternating S/Z full-width leno system (patented)	Optional
	Jacquardette	Optional 
	Electronic setting of the crossing moment	<b>Standard</b>
Let-off motion	Load-cell electronically controlled warp let-off system (ELO)	<b>Standard</b>
Take-up motion	Electronically controlled take-up system (ETU)	<b>Standard</b>
	Heavy-duty electronic take-up motor	Optional
Lubrication	By forced circulation of filtered oil to all major drive functions	<b>Standard</b>
Water-cooling system		Optional
Machine controls	LCD touch screen with color display	<b>Standard</b> 
	Pushbuttons on front panel (design patent pending)	<b>Standard</b>

## SELVEDGE FORMATION

Independently electronically controlled selvedge system (ELSY)	Optional 
Tucked selvedge (mechanical or air tucker)	Optional 
Hotwire cutter	Optional 
Central selvedge	Optional 
Full-width temple	Optional 

## MONITORING & SOFTWARE TOOLS

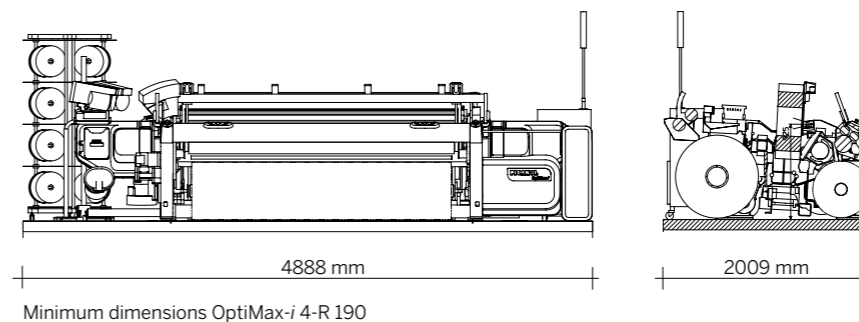
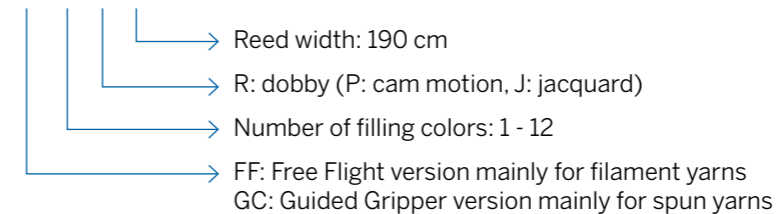
Self-diagnosis	<b>Standard</b>
Stop distribution reporting	<b>Standard</b>
Connection provided for major weaving room monitoring systems	<b>Standard</b>
Ethernet connection	Optional
Picanol PC Suite	Optional 

## SAFETY

Light curtain (depending on country of delivery)	<b>Standard</b>
Protection guard over take-up rollers	<b>Standard</b>

### How to read the name

OptiMax-i - FF - 4 - R - 190



### Regulations

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

**PICANOL**  
OptiMax-i

### **Growing is the essence of weaving.**

Thread by thread, line by line, from the most basic to the most exquisite, a wide range of fabrics emerge from our weaving machines. That's why Picanol offers a wide variety of machines and services that enable weavers to create every fabric imaginable.

### **Growing is the essence of doing business.**

The relentless pursuit to weave faster, better and more cost-efficiently is what drives you, and motivates us. That's why we make our machines ever more energy-efficient, user-friendly and easy to set.

### **Growing is the essence of the future.**

The world changes quickly, and only those who are ready to learn and adapt will survive. That's why Picanol machines are sustainable, future-proof and intelligent machines that can adapt to changing circumstances and connect with each other. And that's why at Picanol, we want to be an intelligent organization that listens to our customers and develops together with them.

### **Because our goal is to Grow Together.**

#### **With you, our customers and partners.**

We will grow together by removing all the obstacles and conventions holding back your ambition and our imagination. We will grow together by enabling your continued access to the latest technology. We will grow together by inspiring each other, listening to each other and learning from each other.

We truly believe that the future holds tremendous opportunities for growth. Let's grab them.

**Let's grow together**



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TOGETHER** 

[letsgrowtogether.be](http://letsgrowtogether.be)

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**PICANOL**