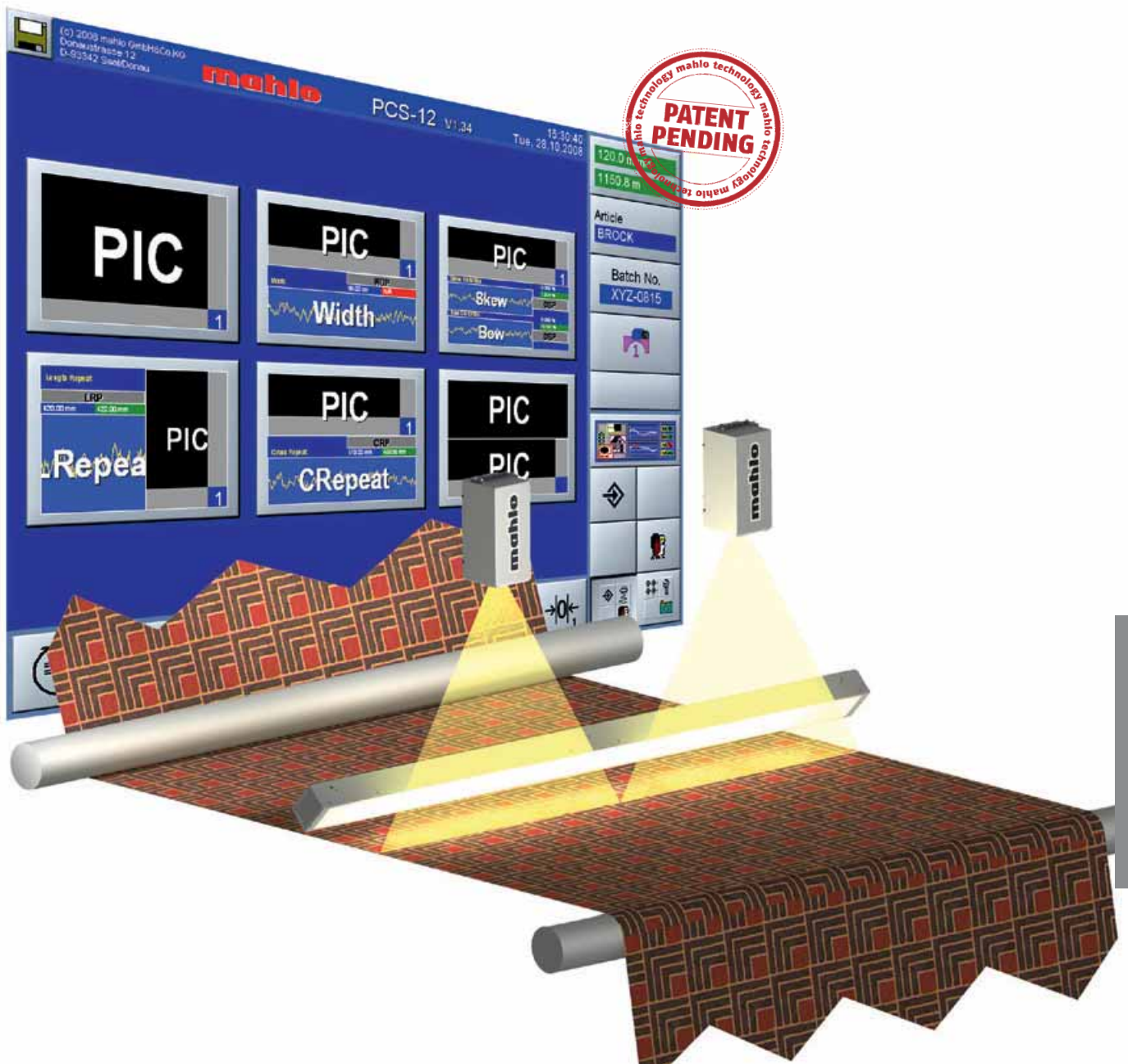


# PATCONTROL PCS-12

Pattern detection, distortion correction,  
design-repeat control





TEXTILE



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# PATCONTROL PCS-12

A modular system designed to detect patterns, correct distortions, control design-repeat and record faults or irregularities across the full width of the product.

## Product-highlights

- ✓ Modular assembly
- ✓ Measures repeat and straightens patterns simultaneously
- ✓ The very latest high-tech line cameras
- ✓ Easy to retrofit
- ✓ User-friendly
- ✓ Comprehensive operating software with corresponding visualization

## Customer benefits

- ✓ Uninterrupted monitoring and logging of actual product quality
- ✓ Savings in raw materials and energy at the manufacturing stage
- ✓ Increased productivity
- ✓ Optimized quality assurance
- ✓ Optimized process repeatability
- ✓ Short payback times

## Applications

The manufacture and finishing of modern textiles poses problems that were rarely, if ever, encountered previously. It has become far more difficult to turn out straight or realigned patterns. Keeping variables such as design repeat or pattern distortions to within increasingly tighter tolerances is mandatory in the manufacturing, processing and finishing sectors. Distorted patterns on carpeting and printed fabric, both woven and knitted, must be straightened without fail. Bowed or skewed designs impair a product's visual appearance, reduce its usable value and lead to complaints.

## Principle of operation

A PCS-12 is configured in accordance with each customer's specific requirements. The system registers the lie of the pattern by either one or two cameras – the number dependent on the width of the product – monitors design repeat automatically and continuously, measures the width of the material, and realigns the pattern with the help of a straightening machine.

It differs in accordance with the type of software analysis:

- + PDS (Pattern Distortion System) detects and controls bowed and skewed designs
- + PRS (Pattern Repeat System) monitors and controls design repeat using various standardized patterns.

In order to project the best possible, computable image of the pattern or fabric structure onto the screen, the line cameras are supported by a special light fitting, the beam of which either penetrates or illuminates the surface of the product. Depending on whether the system is required to compute cross-sheet patterns or motion and carriage-way repeat, different algorithmic assessments are employed. These depend in turn on the design itself (e.g. pattern, lines, etc.).

A PCS-12 can adapt automatically to sudden variations in product width, and is thus largely independent of operator intervention.

## Versions

The PCS-12 Pattern Control System is available in divers forms:

- + Self-contained form for one monitoring point comprising: panel with IPC and 15" TFT-monitor and electronics light fitting impulse tacho option of one or zwo camera modules (dependent on product width).
- + Split form for more than one monitoring point comprising: main monitoring point: panel with IPC and electronics light fitting impulse tacho option of one or zwo camera modules (dependent on product width) one or more extensions with panel, IPC, electronics, etc. and one or more display and control terminals with 15" TFT-monitor.
- + Custom-built specials can also be supplied!

## Applications

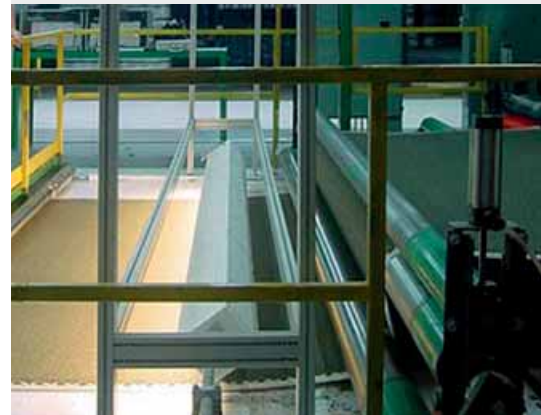
- Straightening curtain and lace fabrics, monitoring pattern repeat and controlling an overfeed roller
- Straightening woven and tufted carpeting ahead of a coating process
- Straightening terry fabric (e.g. hand towelling)
- Fine-tune straightening of printed cloth
- Measuring and sorting pattern repeat
- Continuous measurement of width
- Data-logging pattern repeat and distortions on carpeting
- Straightening residual bow and skew in carpeting at the stenter outlet
- Special analysis and measurement of industrial fabrics



Straightening hand towelling PDS-RMM



Carpet inspection PRS



Carpet inspection PDS/PRS-combination



Perching machine



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## PATCONTROL

# VISUALIZATION

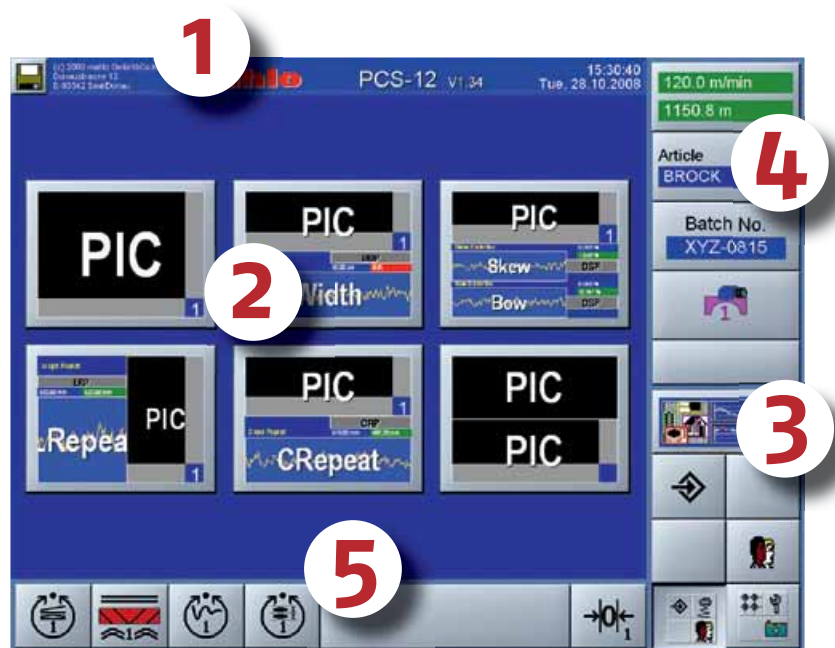
EVERYTHING AT A GLANCE

### Product-highlights

- ✓ Precise, instructive and progressive display of any bow and skew
- ✓ Menu-controlled service settings
- ✓ Freely scalable histograms
- ✓ Password protection – unauthorised users are denied access to the program
- ✓ Integrated audio response

### Customer benefits

- ✓ Continous inspection, classification and logging
- ✓ Storable recipes for various types of product
- ✓ Menu prompt in all the usual languages
- ✓ Ergonomic user prompt
- ✓ Easy to operate



Main display

The user interface is divided into five sections:

**1. Title line:**

General information (including alarm bar)

**2. Display area:**

Selectable screen pages (display forms)

**3. Selection block:**

Navigation within the program

**4. Vertical block:**

Touch buttons for main options

**5. Horizontal block:**

Touch buttons for basic functions and sub-options



Trend graph for skew detection



**COMMUNICATION**

Our systems talk to you. The touchscreen operated "Human Machine Interface" uses the integrated audio-response facility to give you information on product quality and adherence to tolerances. In any language you wish. So you always know what's happening.



Trend graph for measurement of repeat

The use of touchscreen technology eliminates mechanical elements such as keys and switches. Everything is entered directly via the screen through large-size, ergonomic buttons. Audio response in the user's own language represents a huge leap in user-friendliness. Operation of the interface is simple and intuitive. All essential information is visible at a glance.

## PATCONTROL

# APPLICATION OPTIONS

### VERSATILITY



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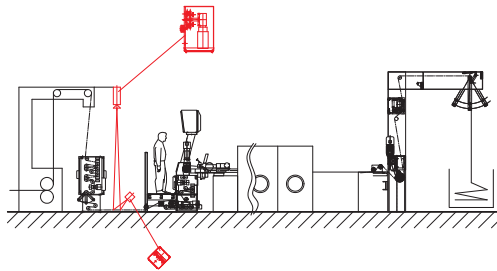
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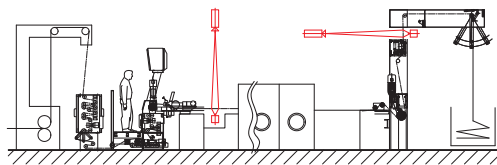
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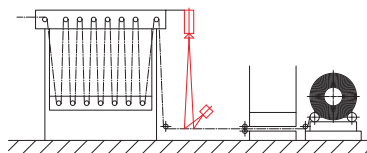
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Pattern straightening at the stenter feed end



Measuring lengthwise repeat and controlling overfeed at the feed end of a stenter, recording repeat and realigning patterns at the delivery end



Recording repeat behind an accumulator

The system has confirmed its ability to automatically realign bow and skew distorted industrial fabric, bordered terry fabric, printed dress material and flocked products.

It can also be applied to products which simply cannot be detected and straightened by conventional systems, lace or raschel curtain fabrics for example. A PCS-12 measures continuously and accurately the motion-way pattern and controls an overfeed or similar device in order to ensure an as accurate and consistent as possible pattern repeat.

2-camera systems capable of detecting pattern-related bow and skew across the full width of the product and logging any residual distortion are likewise employed in a practical way.

A PCS-12 can be either put to use on a perching machine to document possible residual bow and skew, or combined with an Orthomat straightener or weft-control system as an alternative to their respective scanning systems.

On finishing lines in the carpet industry, they differentiate between two distinct applications:

- |                               |   |
|-------------------------------|---|
| 1. Distortion:                | 2. Repeat:  |
| a) feed-end straightening     | a) control of draw roller                                 |
| b) delivery-end straightening | b) measurement of repeat and sorting for the carpet layer |
| c) control of draw roller     | c) data logging   |
| d) data logging               |   |

The opportunity to document pattern lengths and distortion across the full width of the product provides the carpet manufacturer with valuable information on, for example, how accurate and consistent the design repeat really is on each individual roll of carpet.

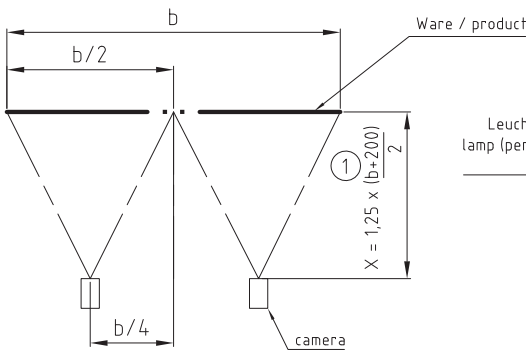
With the help of this information, the carpet layer can sort the rolls into a definite sequence before they are laid. Slight variations are then blended in during the laying process, and more pronounced ones sorted out for disposal elsewhere.

**TECHNICAL DATA | PATCONTROL PCS**

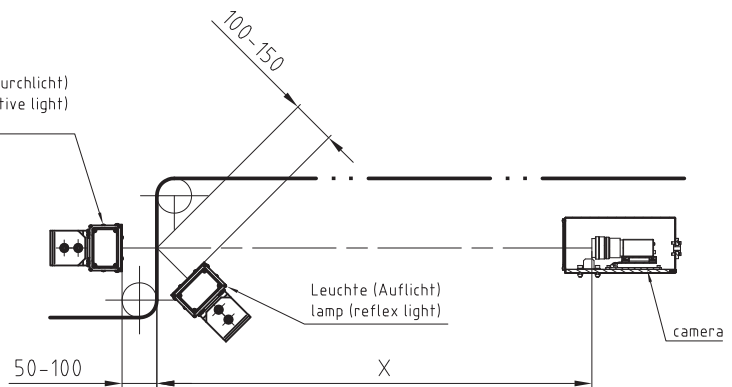
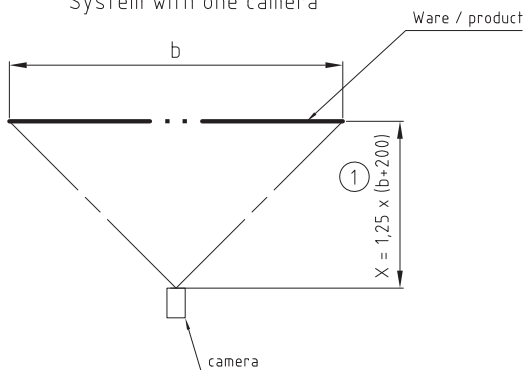
Unit	Patcontrol PCS
Measurement	Optical measurement method by cameras
Max. product width	Up to 5,00 m
Max. line-speed	120 m/min, subject to resolution and lighting
Max. length of camera cable	20 m
Motion sensor	5000 Imp/Rev
Dimensions	Subject to product width
Power supply	1 ~ 230/115 V AC, 50/60 Hz
Ambient temperature	Max. 50 °C

**Dimensions**

System mit zwei Kameras  
System with two cameras



System mit einer Kamera  
System with one camera



b = Warenbreite / product width

Monitoring and control systems, automation:

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