



PRODUCT RANGE

Measurement

Control

Automation



Mahlo, in the best traditions of a progressive, medium-sized family concern is on hand for its clientel in the world's markets with

- * well researched and developed, innovative products
- * in conception and construction
- * technically up-to-date, economically viable, problem-resolving proposals
- * and an efficient after-sales-service.

The aim of this no strings attached marketing guide is to promote the very utmost in customer satisfaction. Mahlo relies on fully qualified, motivated personnel, who can work largely on their own initiative, and a straightforward organizational setup.

Mahlo tries to strike a sound balance between:

- * quality and costs
- * investment and returns, stringent requirements and capacity to compete.

Mahlo International

Mahlo is backed up locally by

- 5 subsidiary companies,
- 97 agencies and
- 48 service outstations.































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Mahlo is developing today for the challenges of tomorrow. Your competitive advantage through innovative, future oriented technology, with solid monetary benefits, is in the centre of our mind.

The symbiosis of practical orientation in its applications and an always up to date knowledge of available and upcoming technologies is our guidance.

mahlo -
trendsetting technology. worldwide.

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Weft and knitted course control

Weft-straight cloth - even slightly distorted fabric is hardly tolerated nowadays, as returns and re-finishing cost money. Since manual control of straightening systems is next to im-

possible on today's high-speed ranges, the simple answer is: automatic weft straightening.



Orthomat FMC

An FMC weft controller is the very nerve centre of an Orthomat. It comprises a photoelectric scanning system, and electronic circuitry to control various straightening devices. It can also be retrofitted to straighteners already on stream.

It has at the same time an inbuilt capability to determine weft- and course density.



Orthomat MFRC/DFRC

A module MFRC/DFRC is a fine-tune straightener. A compact weft-control module, its novel, dual-purpose roller can realign both bowed and skewed weft or courses at, for example, the delivery side of a stenter or feed side of a printing range.

Another version has two dual-purpose rollers with increased straightening capacity.



Orthomat RFMC

An RFMC straightening machine realigns all manner of distorted weft or courses. It is available in various sizes to suit fabrics ranging in width from 1000 - 5000 mm. A heavy-duty version is also offered for straightening heavyweight materials such as denim or tufted carpets.

Orthomat GRFMC

ORTHOMAT GRFMC
A heavy-duty model.
The high stresses imposed by extra-wide materials (eg. carpeting) or dimensionally stable textiles requiring a degree of preset skew

(eg. denim) call for a heavy-duty straightener. The frames, bearings and rollers are designed to withstand high stresses. Working widths of up to 5500 mm are available.



Orthopac RVMC/REMC

An Orthopac combines in a single assembly the attributes of an Orthomat straightening machine with those of an Optipac process control system.
The two together offer the same standard of performance, but at a lower level of investment.



Pattern monitoring

Pattern Control System PCS

A pattern-detection system second to none.
A pattern detector featuring the latest in camera techniques. The recurrence of printed, woven or tufted patterns is analysed in accordance with specific algorithms, and used to monitor, re-align and evaluate bow and skew distortion and pattern repeat.



Process monitoring and control

Productivity, cost-effectiveness, minimal utilization of resources, consistent and reproducible quality at short lead times influence as never before a concern's capacity to compete.

Mahlo offers an extensive range of products to monitor and optimize a variety of manufacturing processes.

Ecopac EMC



Control cabinet with 6,5" TFT touchscreen monitor. Display and entry, all in one.

Featuring state-of-the-art microprocessor technology, an Ecomat EMC assures a quality finish and efficient drying in terms of throughput and energy consumption. The flexible, modular system monitors and con-

trols moisture retention, cloth temperature and exhaust humidity, and can be adapted to suit specific processes and needs. It is available with up to three identical or assorted modules according to requirements.



Thermoset OMT



Textometer RMS



Ecomat AML

THERMOSET OMT

A THERMOSET module monitors the surface temperature of a material by means of an infrared radiation pyrometer.

Based on a specific relationship between the two, the temperature of synthetic materials can be used as an indirect variable to determine the amount of moisture they retain. In isolated instances, checking the once only attainment of a target temperature suffices as a process control variable.

The pyrometer can be supplied with a cooling fan for mounting externally, or in compact form HP-250A for use inside the dryer.

Various electrodes are available to meet all manner of requirements.

ECOMAT AML

An ECOMAT module monitors exhaust humidity by means of a water-selective, dual zirconiumdioxid cell.

Maintaining humidity at an optimum level helps reduce energy consumption and, at the same time, increase productivity.

The sensor is impervious to other gases, and resists to a great extent fume-laden deposits.

TEXTOMETER RMS

A TEXTOMETER module determines the amount of moisture in a material by measuring its electrical resistance.

Residual moisture is an important criterion for any subsequent processing, final appearance and economical use of energy.

Optipac VMC A most effective stenter-control system

A modular process control system comprising a number of diverse modules, each capable of monitoring and controlling the specific process parameters chiefly associated with the running of stenters. The system can be extended at any time in accordance with requirements and available funds. Accurate monitoring and control of drying processes can be used to exploit potential cuts in energy consumption of up to 30 %, increase productivity, and ensure a reproducible, higher standard of quality.

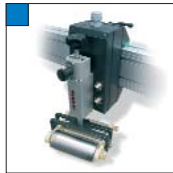
- **Modul A** measures the degree of humidity inside a dryer, and controls the volume of exhausted air.
- **Modul V**: automatically controls

the dwell-times associated with drying and high-temperature processes.

- **Modul R**: monitors the percentage of moisture retained by an on-line web as it emerges from a dryer, and controls line-speed accordingly.
- **Modul F**: measures and controls the weight of an on-line material or the amount of coating applied to it.
- **Modul P**: Measurement of weft- and course density with control signal.
- **Modul H** monitors the amount of liquor picked up by the cloth as it leaves the paddler.



Permaset VMT



Textometer RMS



Ecomat AML



Gravimat FMI



Famacont PMC

Qualiscan QMS Quality assurance and process optimization

A modular system for monitoring, recording and controlling critical process parameters such as weight per m², weight of applied coating, moisture, thickness, etc. The system is extendable, and can accommodate up to X traverse assemblies, each furnished with up to N different types of sensor. The sensors' to and fro movement right across the on-line product enables the system to record all measurements in profile form. The QMS can be supplied in both explosion-proof and compact form. The redesigned traverse is available in working widths of up to 6 m, and can be fixed at any angle between 0 - 90°.

■ Gravimat FMI

A non-contact system for measuring continuously the weight per m² of on-line material. Control of weight per m² considerably reduces variations in square measure, and thus guarantees a uniform end product of consistent weight.

■ Infralot IMF

An Infralot IMF is used to monitor and control continuously the amount of moisture in an on-line material when surface moisture is either of primary concern as a measured variable or representative of the total retained.

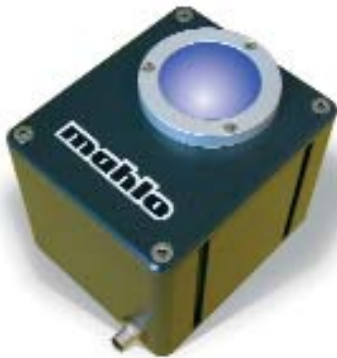
■ Aqualot HMF

An Aqualot HMF is a non-contact, microwave system for monitoring wet pick-up. Measurement is unaffected by the condition of the water, pH-levels, changes in material, filling agents and dyestuff pigments. Various sensors cover the different measuring ranges.

■ Calipro DML

Using the principle of laser-triangulation, a Calipro DML offers contact-free measurement of the thickness of a wide variety of materials, or of the coating applied to them. It can also measure materials with rough, porous or structured surfaces.





Famacont PMC

A non-contact, optoelectronic, on-line system for counting progressively the number of picks or courses per unit length. An indispensable tool for helping the finisher to meet the specifications set by customers and to minimise the costs occasioned by rejected or substandard material. It can count the picks or courses of even difficult materials. Suitable for controlling shrinkage processes .



Gravimat FMI

A non-contact system for measuring continuously the weight per m^2 of on-line material. Control of weight per m^2 considerably reduces variations in square measure, and thus guarantees a uniform end product of consistent weight. The virtual elimination of safety margins lead to savings in valuable material.

Accurate control pays in the long run by:

- Saving material
- Assuring a quality finish
- Increasing productivity

Auto-control strategy Famacont PMC and Gravimat FMI

When using two scanners, a sophisticated feed-forward, algorithmic control ensures excellent results on stenters. Consistent quality in terms of finish, and constant residual shrinkage levels are achieved (FMI .. is) by optimising the target count for pick and course density respectively in m^2 .

Even on frequent, abrupt variations in pick density (in m^2 weight), adjustment of target to measured value begins the moment the material

enters the stenter. By checking the result again automatically at the delivery end, a further fine adjustment is made to the target preset at the feed.

Gravimat FMX

X-ray back scatter area weight measurement system.

With the use of X-rays for the measurement of area weight, some of the disadvantages of the "traditional" beta-ray systems can be by passed. X-rays can be simply switched off and the measurement can be one sided only. As a consequence it permits a more cost effective and simplified design of traversing systems.

In principal one can also determine the elementary chemical composi-

tion of substances due to their characteristic radiation. It offers therefore potentially further solutions to the latent problems of the industry.

This new measuring principle will be combined with well proven components for data generation and processing out of the Mahlo product range and is therefore unrestricted compatible with other products of the Qualiscan QMS – family.



Measurement of colour

Color Inspection System CIS

A traversing colour monitor for on-line fabric inspection. The scanner employed by a CIS Color Inspection System is basically a spectrophotometer with a geometric scan of 0/45°. It runs to and fro across the piece at a velocity of up to 1.2 m/second. As it does so, it produces an 18 mm wide, 60 mm long scanning spot. The reproducibility of the readouts is exceedingly good.



Color Guide CGD

Measurement of colour by hand. Owing to its modest size and weight, long battery life, and the fact that it need not be calibrated at the frequent intervals usually associated with such meters, a Mahlo Color Guide can be used virtually everywhere. Measurements are obtained in a matter of seconds, the built-in software leaves nothing to be desi-

red, and the meter includes all currently available colour systems, scales and indices. Readouts are indicated on a LCD, and can be transferred via an interface to a PC.



Moisture control

Textometer DMB



A handy, portable, battery or mains-powered moisture meter. Measures very accurately the percentage of moisture retained by raw materials, intermediate and finished products.

Aquarius AMZ



A moisture meter to fit every pocket. Provides a prompt indication of the distribution of moisture in a variety of materials.

Electrostatic discharge

Antistat AMW



An effective counter to static charges ANTISTAT ionizers for troublefree processing of synthetic material and textiles highly susceptible to static charging. By ionizing the air space around the on-line material, static charges are conducted away from it.

Antistats can be used on both high and low-speed installations.

Cloth guiding systems

Ceremat MMZ



On a wide variety of processes involving online textiles, the cloth will invariably tend to drift sideways without the help of some kind of system to prevent it from doing so.

The Ceremat System, consisting of several components, will bring the fabric onto the right track.

Chemical residues

Chemocon CMC

A monitoring system designed to determine the pH-level and conductivity of on-line material, without affecting the substrate.



Width Measurement

WMI

Automatic width measurement on a running web. The system – available as a module or as stand alone – measures precisely and continuously the actual

width on a running web. The compact design favours the fitting even on the tightest space available. A retrofit is possible almost everywhere.



Web Inspection System

WIS

The Web Inspection System WIS is inspecting with a new camera technology defects on a moving web (grey cloth). The classification of defects follows the pattern below:

- spots
- defects in running direction, short

- defects in running direction, long
- defects across the running direction
- selvedge defects
- joints

The Inspection System will be available in working width from 1600 mm to 3200 mm.

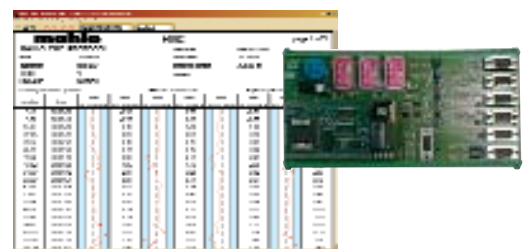


Data-management

Data-management

Recording and storage of all relevant production data is getting increasingly important in modern production plants. Mahlo is in a position to offer quite a number of data management tools. The flexibility of those tools permits

tailor made solutions to customers specific requirements.





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We safeguard quality

With over 40 service centres around the world, we guarantee a prompt response to calls for service, and delivery of spare parts within 24 hours. A new, remote-diagnostics system enables our technicians to access, via telephone, the software in our customer systems, and make any necessary adjustments, or resolve problems promptly.

mahlo-service - we are very near at hand should you need us!