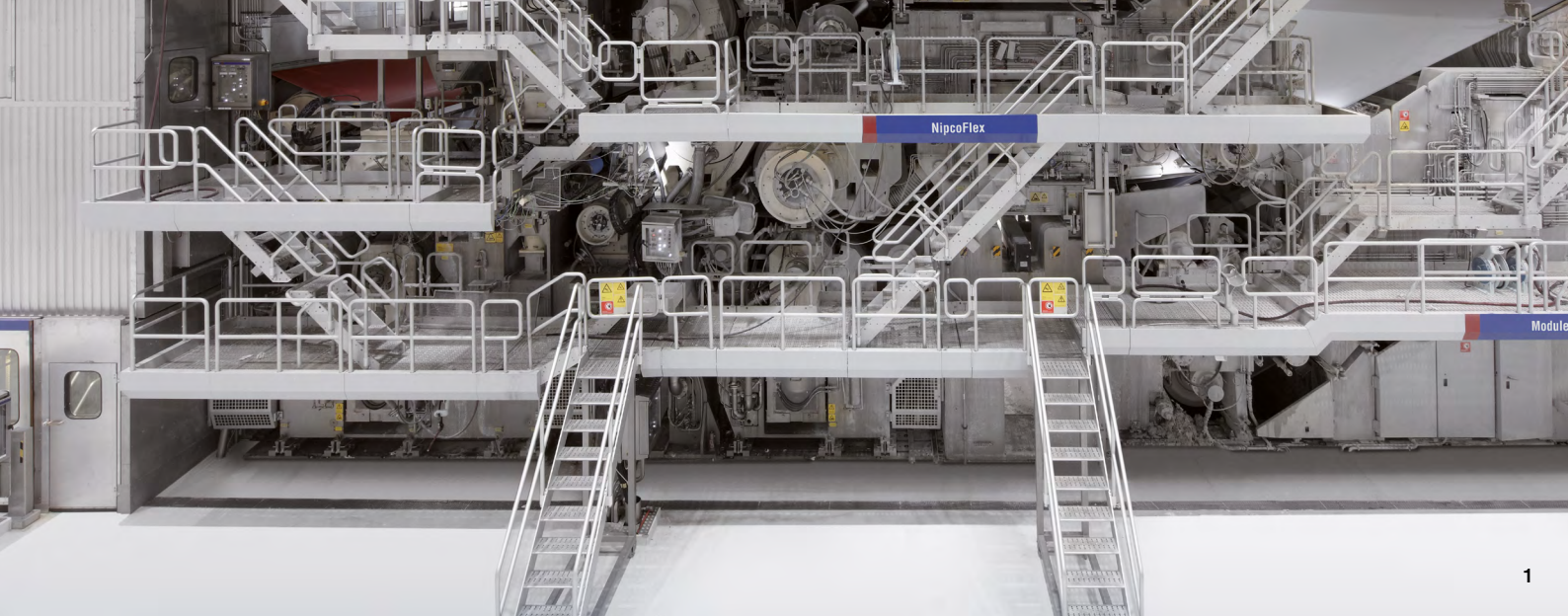


Safe felt measurement systems for the press section





Precise and safe fabric measurements on a running paper machine

Safety is a vital issue for all paper mills. When carrying out technical service work on the machine, the service employees are exposed to a dangerous environment. The online measurement systems from Voith eliminate this risk.

Increased safety on the paper machine

Service work on running machines, including measurement procedures in the various sections holds particular risks. The existing work procedures include various manual measurements and exposes employees to great dangers.

Increased company safety regulations and even government legislation are prohibiting or banning these types of dangerous manual measurements that put operators' health and safety at risk.

Nonetheless, in order to safely carry out important measurements, Voith has developed measurement systems that eliminate the need for manual measurements and thus clearly reduce the risk of accidents.

OnV FeltView and ProTect are two products that cover the entire range of press fabric measurements and can be used in various ways, either separately or in combination with one another.

Comprehensive measurements of press fabrics

For efficient production, press fabric measurements are indispensable. These measurements monitor and provide feedback in a timely manner about press fabrics condition to identify relative deficiencies in the fabric operation during normal operation or towards end of use.

Optimization in the press section from an efficient press fabric operation can reduce energy consumption in both the press and dryer section. Additionally, the steady-state performance of the fabric can be maintained by reducing wear and staying clean, while the paper properties and sheet transfer can be improved.

ProTect replaces the manual measurement work of the service personnel by a mechanical system. With the aid of the OnV FeltView system, the irregular measurements that would normally be done once or twice a week can instead become a continuous online measurement. ProTect and OnV FeltView can be combined without any problems. OnV FeltView can be integrated in the Voith OnView information system.



- 1 The online measurement systems from Voith can be used at various points in the press section.
- 2 With OnV FeltView and ProTect, dangerous manual measurements are a thing of the past.

Press fabric measurement with Voith For every application the right measurement system

	ProTect	OnV FeltView
High level of safety for the operator	✓	✓
Reliable and reproducible measurements	✓	✓
Can measure at various positions for comparison, using only one device	✓	
Preferred use: non-continuous, measurement at irregular intervals	✓	
Preferred use: continuous measurement for routine operation and optimization		✓
Integrated sensor for continuous moisture and permeability measurement		✓
Data can be integrated and presented online in OnView or another information system		✓
Integrated cleaning system (optional)		✓



All-round measurement values with ProTect

The aim of ProTect is to ensure the safety of the operating personnel while giving reliable fabric measurements at various positions in the press section of the machine. This new development is extremely easy to operate and allows flexibility for different measurement equipment.

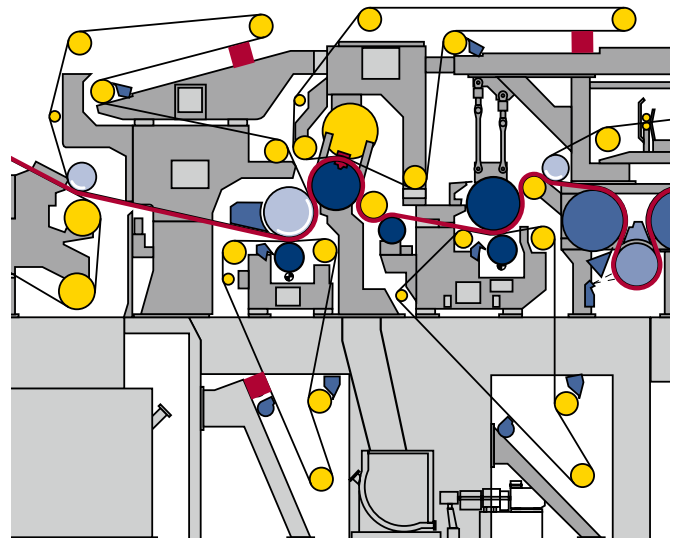
ProTect is an inexpensive and nonetheless extremely safe solution for exact and repeatable measurements of the various press fabric parameters. The system consists of a self-propelled carriage, transporting any variety of measuring device along a traversal beam which keeps the operator out of danger outside the fabric run.

Flexible and extremely easy to use

The firmly installed traverse beams and the adjustable measuring device fixture mean that ProTect can be used in various positions in the press. As a self-sufficient system with integrated rechargeable battery, compressor, pivoting mechanism and water tank, the compact system can even be used in confined or restricted areas.

As soon as the existing standard measuring device is attached and activated, ProTect has only to be mounted in the desired position. After returning to the starting position, the measurement can be repeated or the measuring device can be carried to the next position.

Possible installation positions





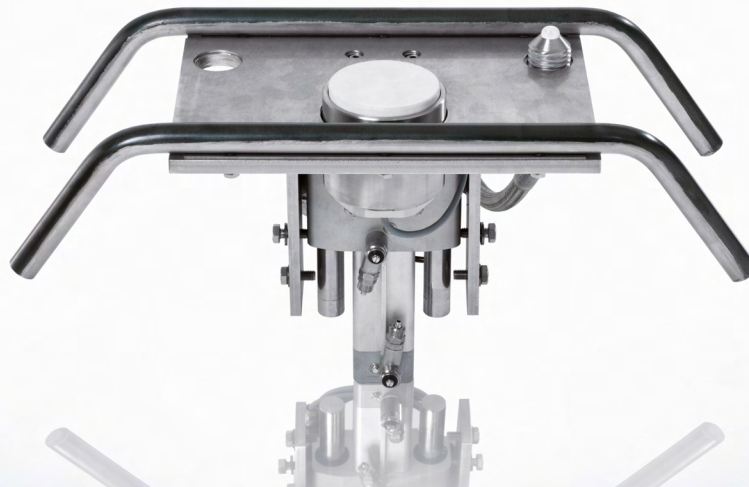
- 1 ProTect measuring head carriage
- 2 Flexible use on all press felts

Specifications

- Self-propelled traversing carriage
- Rechargeable battery operation
 - Compressor included
 - Integrated water tank
 - Trigger function for the measurement
 - Low-maintenance
 - One-fits-all principle: one carriage can be used in various positions
 - Operated with a few easy steps
 - Suitable for any press fabric width
 - No direct connection to the machine control, reading out of data depends on the measuring device used, integration in information systems is possible
 - Adaptable for all standard manual measurement equipment

Benefits

- + Reliable and reproducible measurement of various press fabric characteristics due to constant speed and consistent contact pressure
- + Clear visualization of press and fabric behavior
- + Quick diagnosis of moisture streaks and fabric damage
- + Prevention of safety risks with manual measurements by the personnel, especially on fast-running machines
- + No additional power, air or water connection necessary
- + Installation possible even in very confined positions
- + Upgrade to the OnView information system allows high-performance analyses of various press fabric data



Continuous measurements with OnV FeltView

OnV FeltView supports the paper maker during routine operation and in optimizing the press section settings. The measurements supply profile and trend information about felt moisture and permeability of the individual felts. They help in improving felt performance and paper quality.

Moisture and permeability measurement

The moisture sensor of OnV FeltView is based on microwave technology and determines the felt moisture on the basis of the change in the dielectric constant that is caused by the amount of water present in the felt.

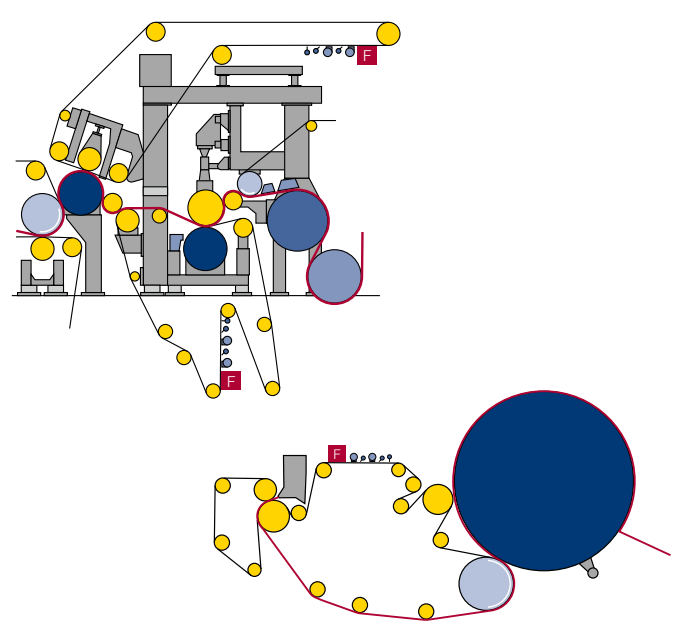
In order to determine the permeability, the pressure difference between a water jet penetrating the felt and a reference pressure is measured. The paper machine's speed has no influence on the measurement process.

The contacting surface of the sensors is a wearfree ceramic, guaranteeing lasting measurement accuracy.

Felt requirements with tissue systems

In the production of tissue, felts are used that are fine and dense in comparison to other grades and cannot be so easily penetrated by water. Due to this special requirement, the OnV FeltView measurement system has been optimized for tissue felts.

Installation position Press and tissue machine





- 1 OnV FeltView continuously measures moisture and permeability values.
- 2 The relevant felt data always in view.

Specifications

- Scanner
 - Scanner & head carrier material: stainless steel 1.4571
 - Measuring head installation angle: +/- 180°
 - Motor: 3-phase alternating current with frequency converter
- Moisture sensor
 - Measurement range: 200 – 1,800 g/m²
 - Measurement point diameter: 75 mm
 - Measurement rate: 5 readings/sec
 - Microwave measurement frequency: 433 MHz
 - Maximum ambient temperature: +70 °C
 - Protection class: IP 68
 - Measurement repeatability: 1.3 g/m² (2-sigma)
 - Measurement accuracy: +/- 0.3 %
- Permeability sensor
 - Measurement range: 0 – 100 %, convertible to ml/min
 - Water pressure: 4 – 20 bar, depending on the felt
 - Water flow rate through the nozzle: 1.5 l/min
 - Measurement rate: 5 Hz

Benefits

- + Reliable, continuous and reproducible measurement of various felt characteristics
- + Clear visualization of press and felt behavior
- + Quick diagnosis of moisture streaks and felt damage
- + Effective instrument for optimizing the press
- + Optimized felt conditioning leads to reduced energy consumption in the press and dryer section and to less felt wear
- + Fewer breaks, prevention of crease formation
- + Additional cleaning nozzle (optional) for optimizing cleaning
- + Prevention of safety risks with manual measurements by the personnel, especially on fast-running machines
- + More information improves operator's changing of press settings
- + Integrated OnView information system facilitates high-performance data analyses of historical and current felt data

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