



ORADOC | **MTK**
BOOSTING PERFORMANCES | AN ORADOC BRAND

ORADOC-MTK products

- ✓ Doctoring solutions
- ✓ Drainage systems
 - Drainage foils/blades (ceramic or plastic)
 - Complete boxes
 - Vacuum systems (valves, separators etc.)
- ✓ Measuring solutions
- ✓ OraBlades for paper machine
- ✓ Spare Parts

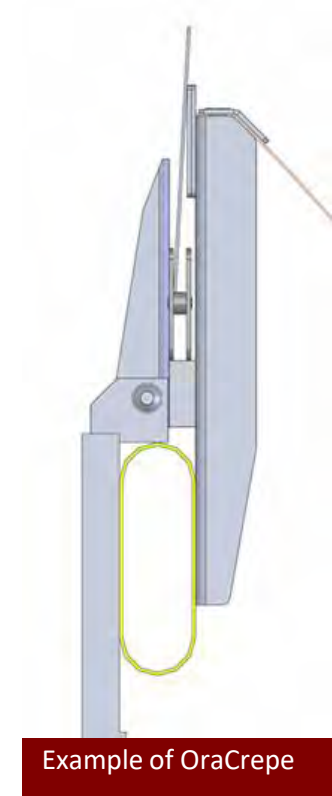
- ✓ Services
 - Doctors Overhaul
 - Grinding of drainage elements
 - Technical services (audit, installation, maintenance, setup etc.)
 - Modification & upgrade

Products - OraCrepe™

OraCrepe is the controlled-flexibility pneumatic creping doctor

FEATURES

- ✓ Self-profiling, no need manual adjusted on the Yankee crowning
- ✓ Pressure hose with high temperature and chemicals resistance
- ✓ Better blade holder adaptability on the Yankee roundness
- ✓ Uniform blade linear pressure along the entire face width
- ✓ Lower blade load for the same blade holding capacity
- ✓ Easier blade holder internal cleaning



Products – OraCrepe™ Next

New flexible creping doctor develop by Oradoc

FEATURES

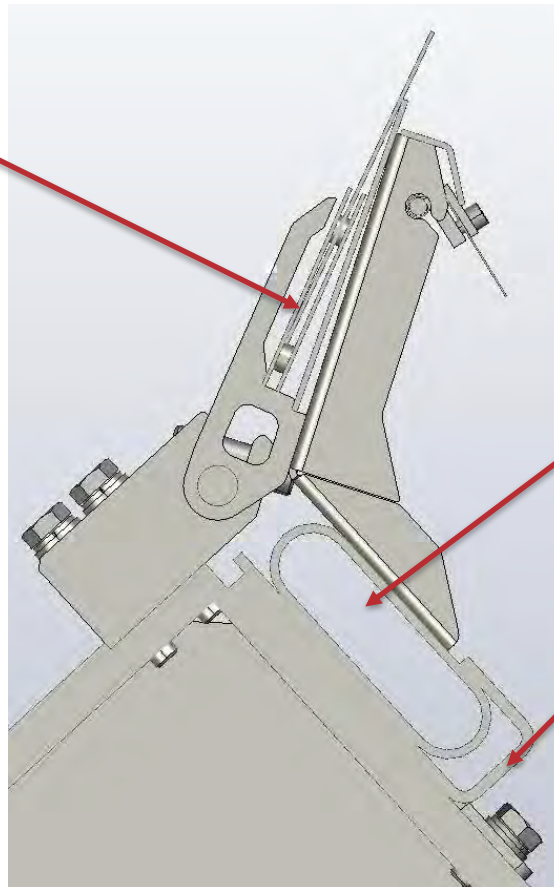
- ✓ Self-profiling, no need manual adjusted on the Yankee crowning
- ✓ New pressure hose with high temperature and chemicals resistance
- ✓ New hose support for easier maintenance and replacement
- ✓ New stiff and compact blade holder design
- ✓ Easier maintenance and cleaning activities
- ✓ New ELV (Edge Load Variation) system for edge control



Products – OraCrepe™ Next

OraCrepe Next is the **NEW** flexible creping blade holder

New Blade Holder design



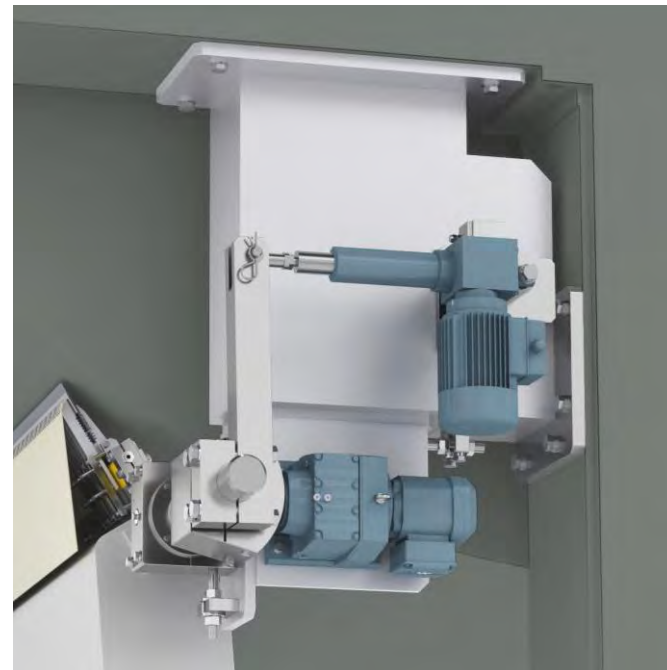
New pressure Kit

New Edge Load Variation system

OraCrepe™ Next – Additional tools

OraSet™ System Features

- ✓ **Continuous creping angle adjustment** while machine is running
- ✓ **Variation of the creping angle by +/- 5°** compared to the center value
- ✓ **Actuators are controlled by absolute encoders**



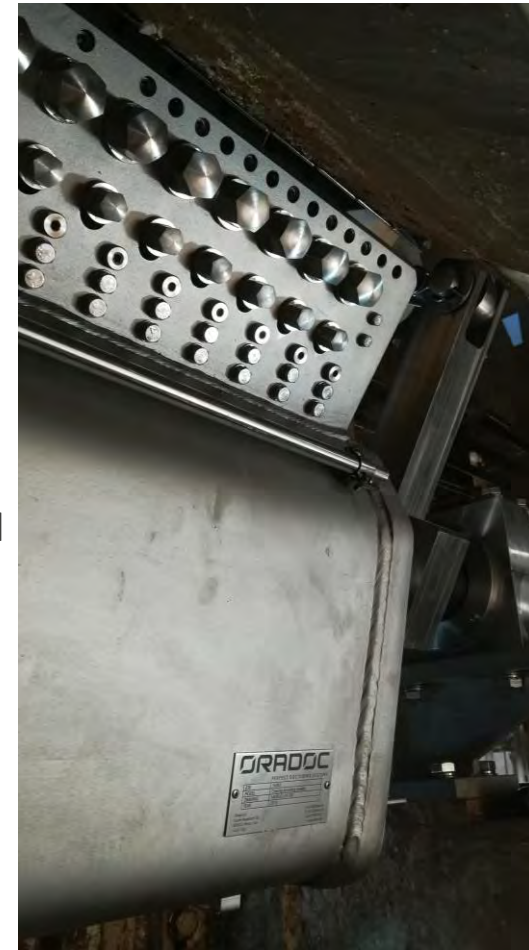
Example of OraSet System

Products - OraLock™

New rigid creping doctor develop by Oradoc

FEATURES

- ✓ More accurate and high-performance profiling on the Yankee cylinder
- ✓ Easier and quicker profiling set-up that doesn't require mechanical expertise
- ✓ Blade working load optimization
- ✓ Improvement in blade and Yankee surface lifetime



Products - OraSlick™

OraSlick is a rigid doctor used in the cutoff or cleaning position

FEATURES

- ✓ Stiff design
- ✓ Stainless steel construction
- ✓ Pneumatic cylinders loading
- ✓ New design to facilitate blade extraction
- ✓ FLAP option available
- ✓ Wing sheet stabilizer available



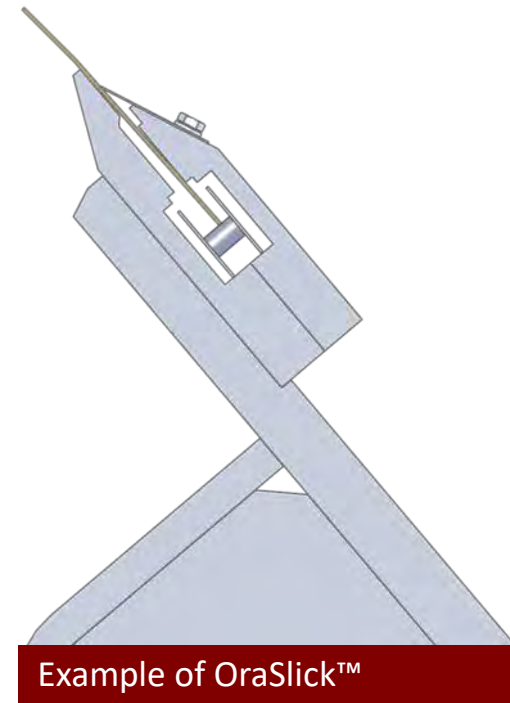
Example of OraSlick

Products - OraSlick™

OraSlick™ is a rigid doctor used in the cutoff or cleaning position

TECHNICAL CHARACTERISTICS

- ✓ Working load in cleaning position: 40 daN/m
- ✓ Working load in cut-off position: 400 daN/m
- ✓ Maximum working load: 900 daN/m
- ✓ Stick-out: from 15 mm to 35 mm
- ✓ Adjustable blade height

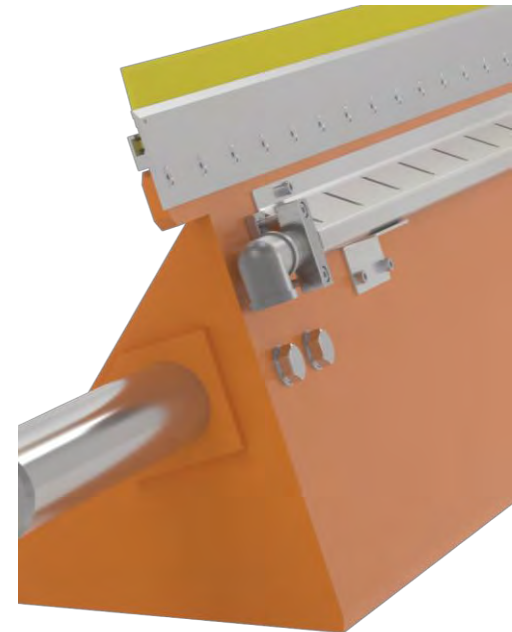


Doctoring solutions - OraClean

OraClean is the family of rigid blade holders for generic applications

FEATURES

- ✓ Rigid blade holder
- ✓ Gravity or pneumatic cylinders loading
- ✓ Oscillating or stationary
- ✓ Manual Profiling
- ✓ Simple and effective
- ✓ Stainless steel for wet end or painted carbon steel for dry end



Example of OraClean

Doctoring solutions - OraClean

OraClean doctors are simple and effective, they can be used in all sections of the machine such as:

- ✓ Wire rolls
- ✓ Felt rolls
- ✓ Dryers
- ✓ Pope reel
- ✓ Calender rolls
- ✓ Non critical rolls

OraClean doctor holders can also be equipped with OraFlow, the paper removal system through air blowing, used following a sheet break.

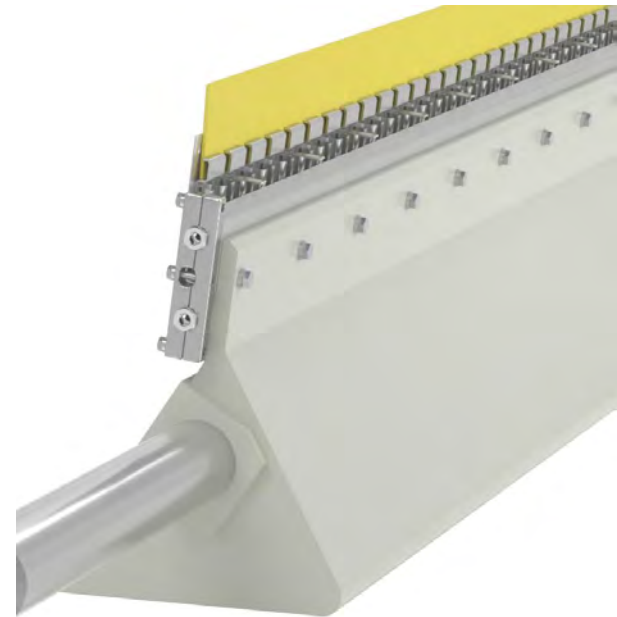
This product is manufactured in AISI 316L stainless steel and it is equipped with a dedicated control panel.

Doctoring solutions - OraFlex

OraFlex is the family of flexible cleaning doctors produced by Oradoc

FEATURES

- ✓ Flexible blade holder
- ✓ Blade loading/unloading with air pressure hose
- ✓ Oscillating or stationary
- ✓ Self profiling design
- ✓ Best doctoring efficiency



Example of OraFlex

Doctoring solutions - OraFlex

Due to their ability of self profiling, even under the most unfavorable conditions, OraFlex blade holders are the most widely used in critical positions such as:

- ✓ Breast roll
- ✓ Press section
- ✓ Some cylinders in the dry end
- ✓ Size and filming press
- ✓ Calender
- ✓ Pope reel
- ✓ Any critical position

OraFlex doctors can also be equipped with OraFlow, the paper removal system through air blowing, used following a sheet break.

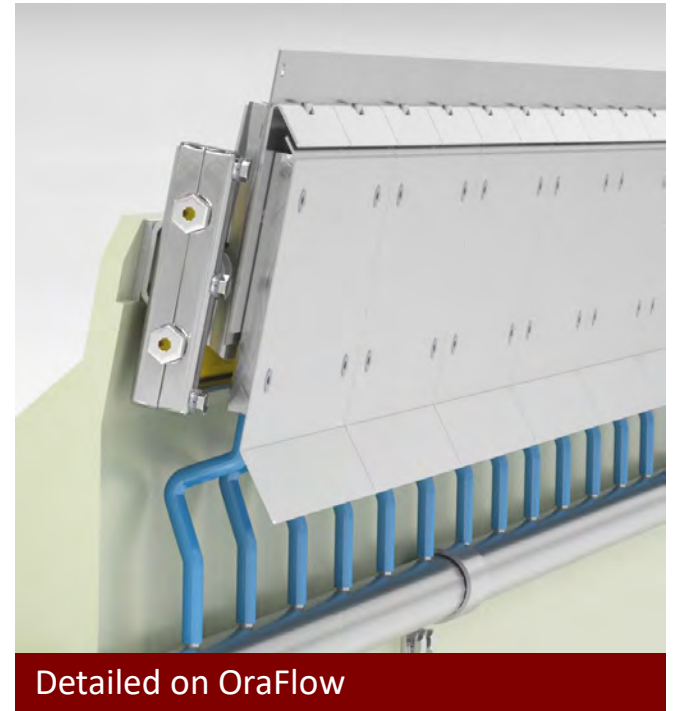
This product is manufactured in AISI 316L stainless steel and it is equipped with a dedicated control panel.

Products - OraFlow for OraClean/OraFlex

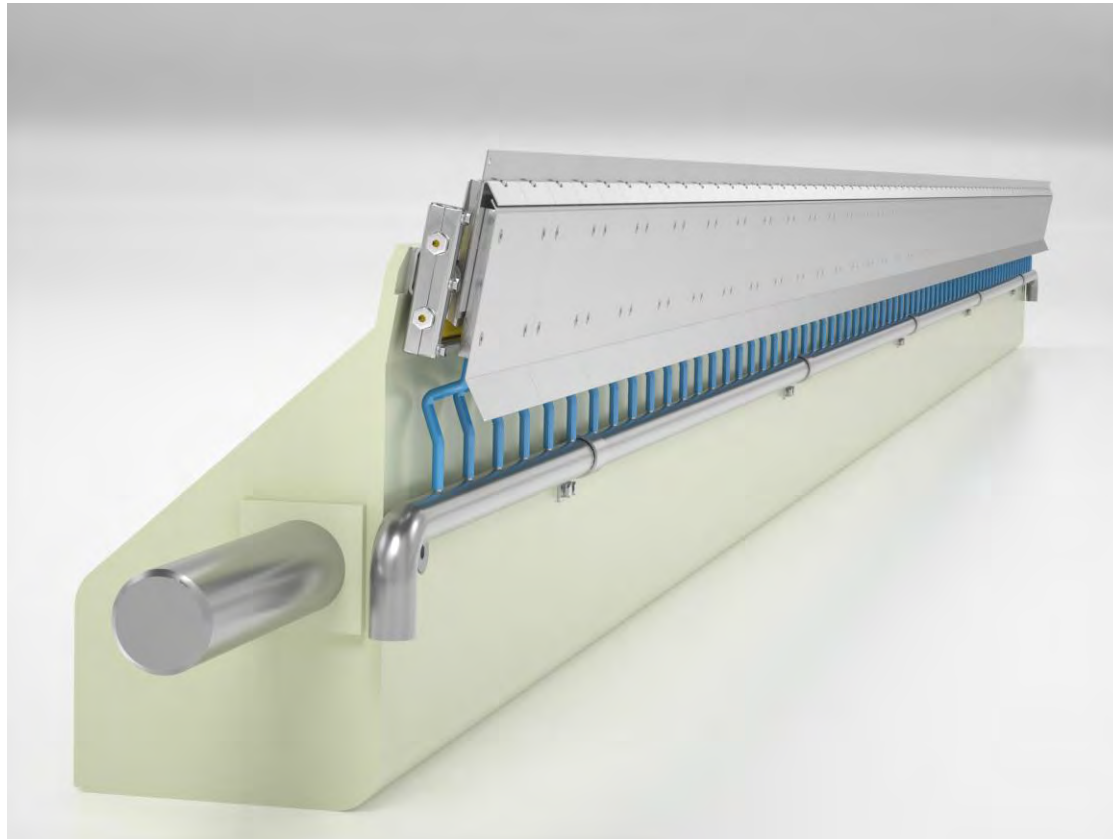
OraFlow the paper removal system through air blowing

The paper removal system through air blowing, used following a sheet break.

This product is manufactured in AISI 316L stainless steel and it is equipped with a dedicated control panel.



Products – OraFlow for OraClean/OraFlex



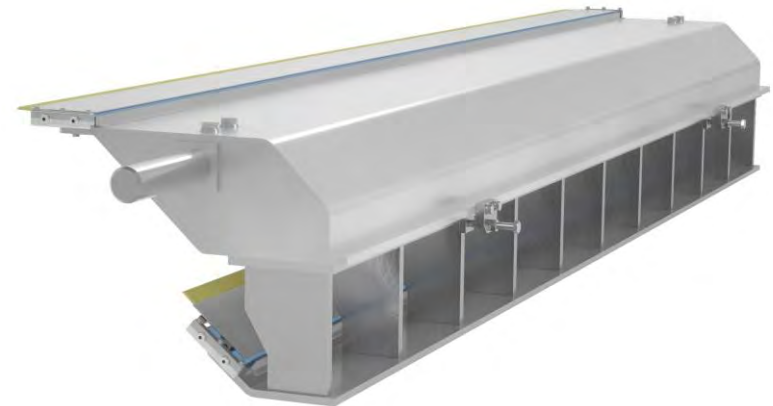
Example of OraFlow

Doctoring solutions - OraTwin

OraTwin is the backing system specifically conceived to support two OraFlex blade holders

FEATURES

- ✓ Nbr. 2 OraFlex doctor holders
- ✓ High performing cleaning
- ✓ Dewatering solutions
- ✓ Optimizing working life
- ✓ Nbr. 3 versions:
 - Compact
 - Semi-articulated
 - Articulated
- ✓ Oscillating or stationary
- ✓ Option: Sprinklers systems



Example of Semi articulated OraTwin on a Press roll

Doctoring solutions – Dewatering system

Oradoc supplies dewatering systems that meet the needs of both the tissue and the paper and board industry

Saveall Tray

The saveall tray is a typical application conceived for tissue presses, it can be fitted with one or two flexible doctors

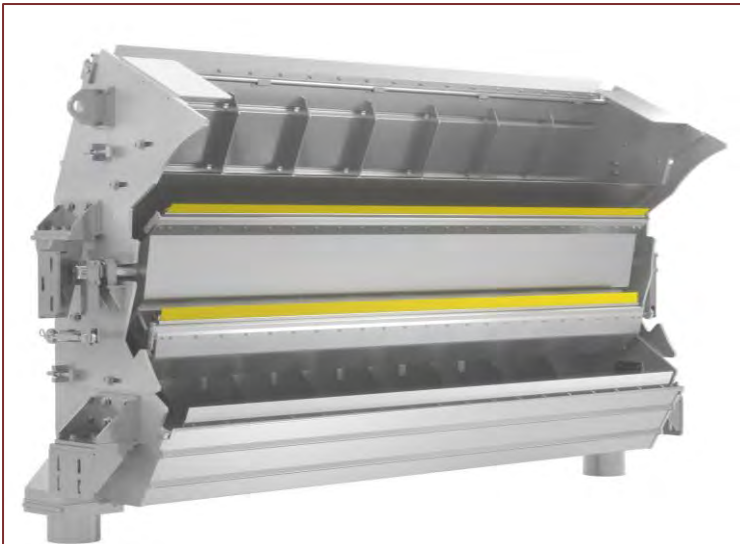
If installed along with the OraTwin it allows great regulation flexibility, even with different presses in various diameters

It can also be equipped with a quick hose unfasten system in order to speed maintenance procedures and felt change

Water Chest

The water chest is the dewatering system conceived for the paper and board production lines. It is easy to install and it can be supplied with doctoring systems as well as near presses without doctors.

Doctoring solutions - OraTwin



Example of OraTwin on a Press roll with save all tray

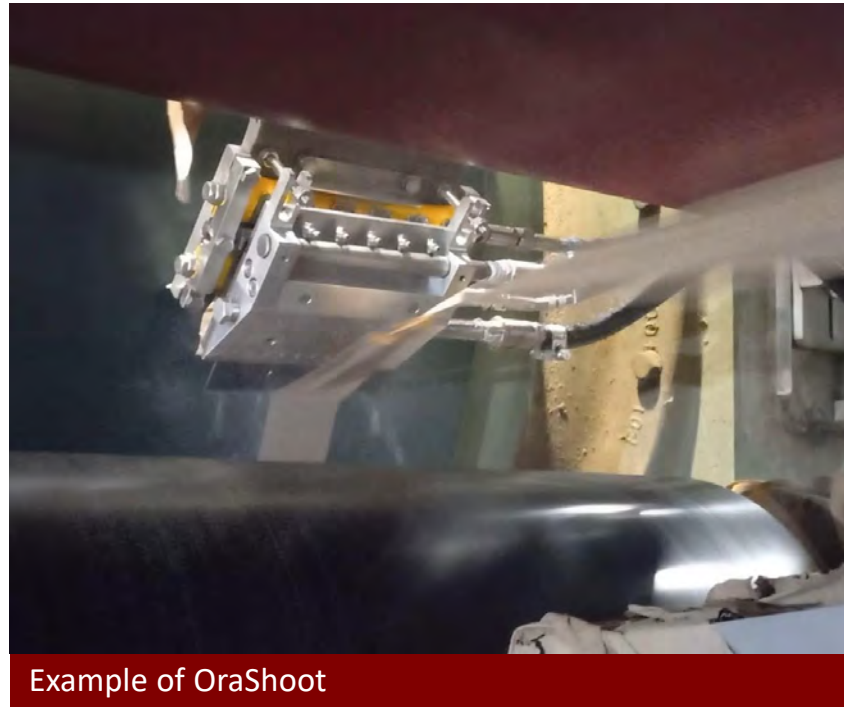


Example of OraTwin on a Press roll with save all tray

Doctoring solutions – OraShoot™

OraShoot™ is a simple and effective system to thread the tail from a press roll during machine start-up/sheet break

With OraShoot™ the operator only needs to supervise the operation in complete safety



Doctoring solutions – Accessories - OraThread™

OraThread™ allows threading the tail from one to another position, with no need for carrier ropes

FEATURES

- ✓ No ropes needed
- ✓ Safety increase
- ✓ Can be installed on flexible or rigid doctor holders



Detail on OraThread

Products – OraBlade

Blades for Oradoc doctors, compatible with other holders

BENEFITS

- ✓ Any kind of application
- ✓ Different types of fixing systems
- ✓ Different materials, dimensions and thicknesses



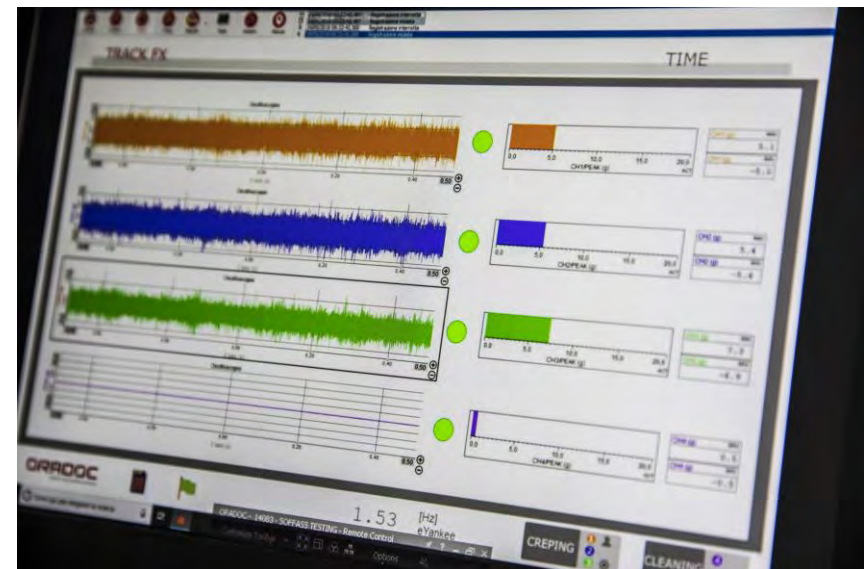
Blades are available in any length and can be equipped with pins, rivets or springs for any Oradoc doctor holder and for most competition holders.

Products - OraTec™ FX-20

OraTec FX-20 Complete and fixed Vibration measuring system

FEATURES

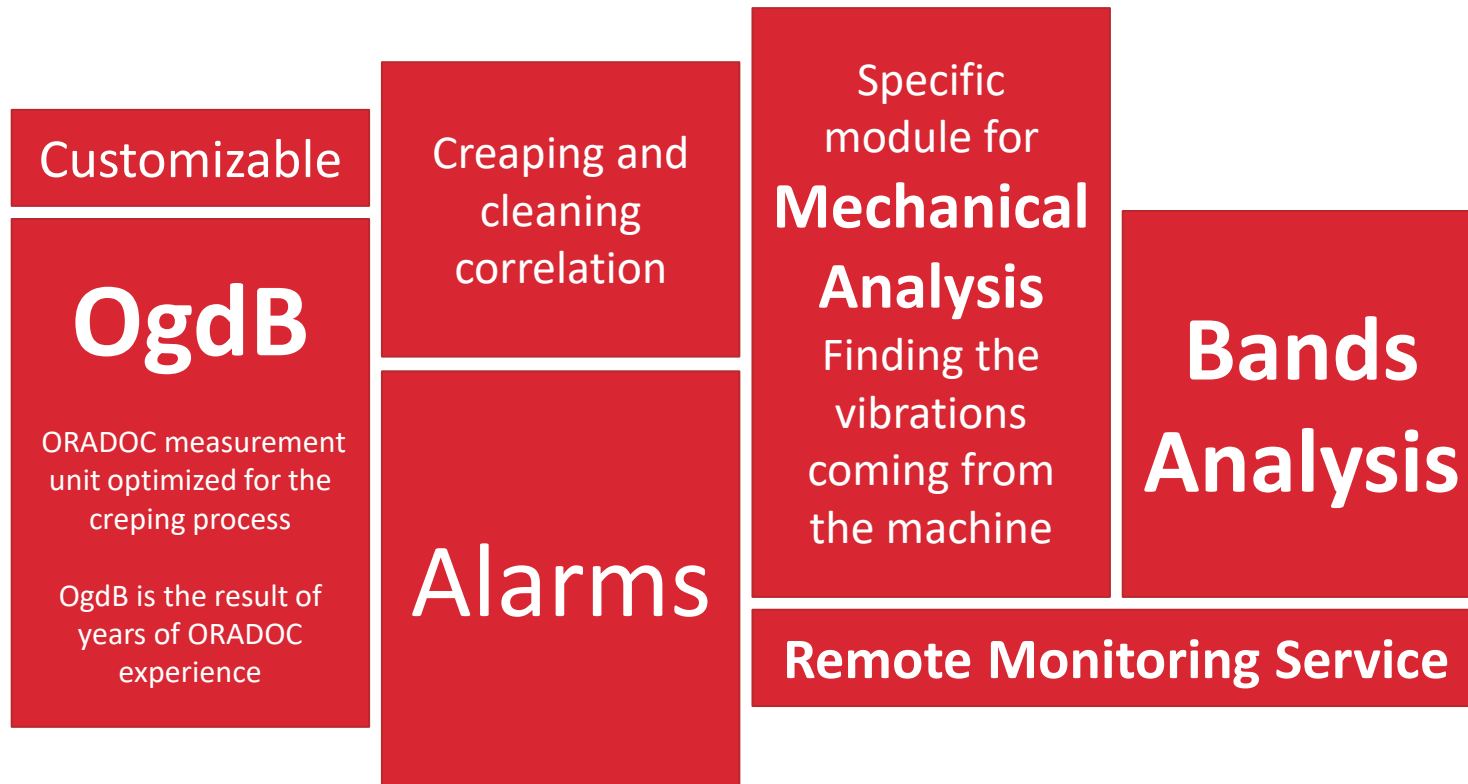
- ✓ Increase reliability and performance of the Yankee
- ✓ Prevent surface spot damage
- ✓ Identify external source of vibrations dangerous for creping process and Yankee surface
- ✓ Prevent surface spot damage



OraTec FX-20 interface example

Oradoc Vibration measuring systems - OraTec FX-20

OraTec™ FX-20



Products - OraTec P-10

OraTec P-10 Portable Vibration measuring system

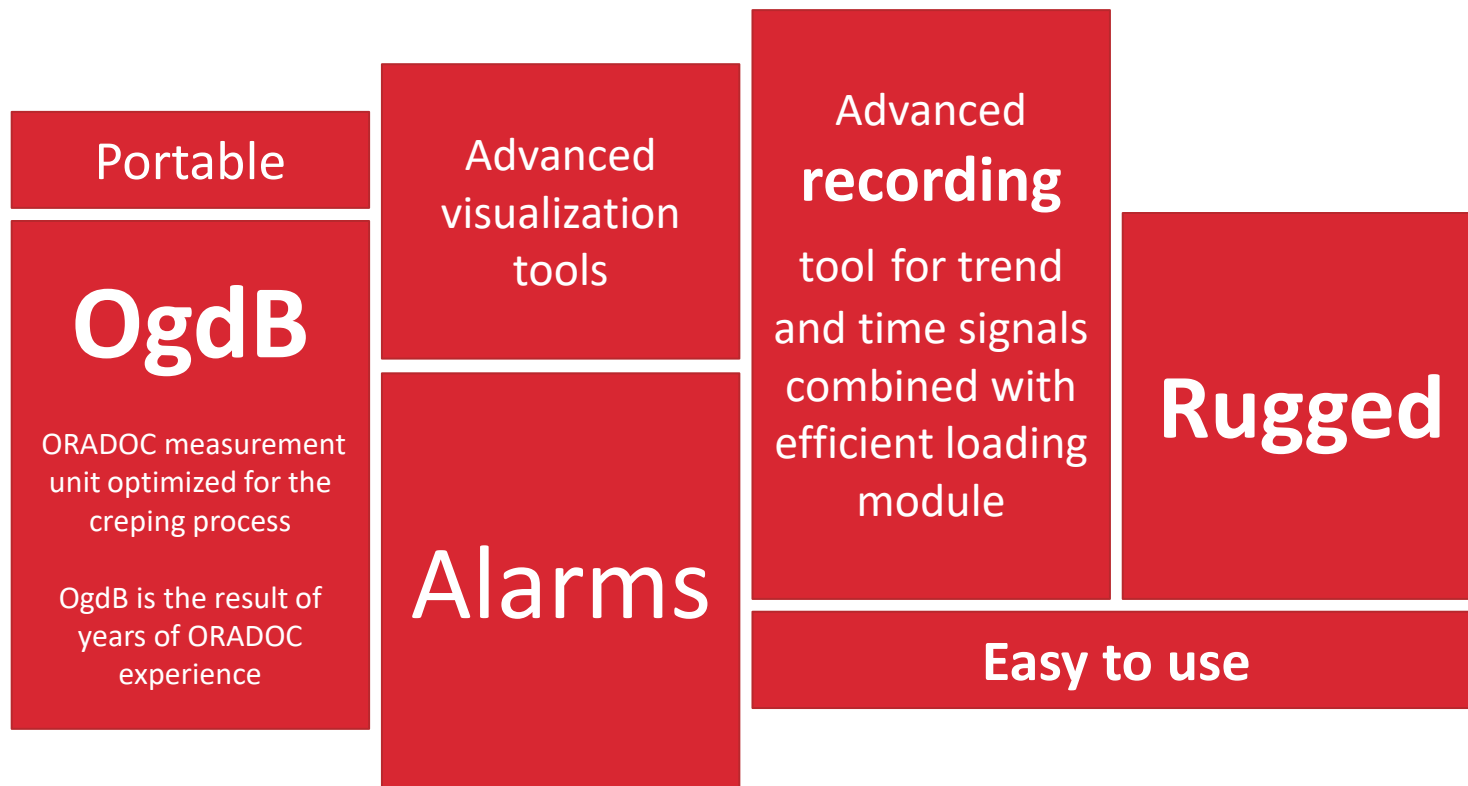
FEATURES

- ✓ Easy to use on any creping/cleaning doctor as a portable instrument
- ✓ Fast response and comparison between different process condition
- ✓ Understanding creping process in few steps



Oradoc Vibration measuring systems

OraTec™ P-10



Drainage systems

- ✓ Ceramic and Plastic Drainage Elements
- ✓ Deckel Board
- ✓ Fab Curl System
- ✓ Stainless steel drainage boxes
 - Vacuum foil
 - Duoflow
 - Suction box
- ✓ Stainless steel boxes
 - Hydrofoil
 - Modulated flat
 - Variofoil
 - Single foil
- ✓ Uhle box



Vacuum system



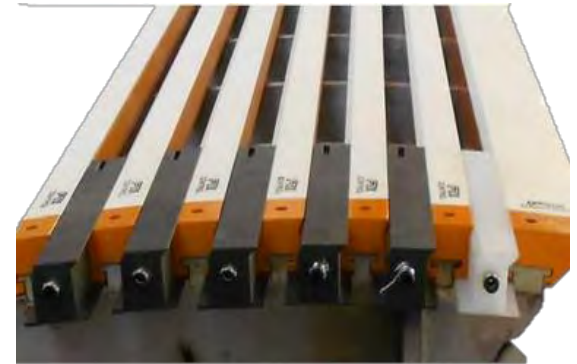
Dewatering system

Drainage systems: Ceramic Material



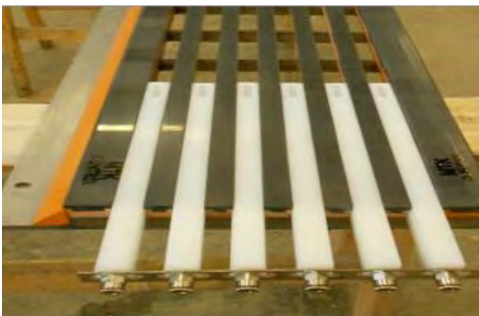
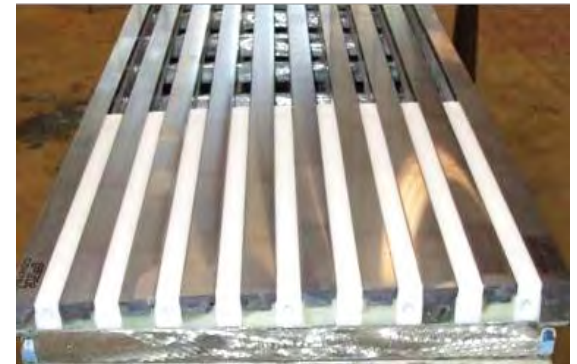
← Al-Oxid

ZTA →



← Zr-Oxid

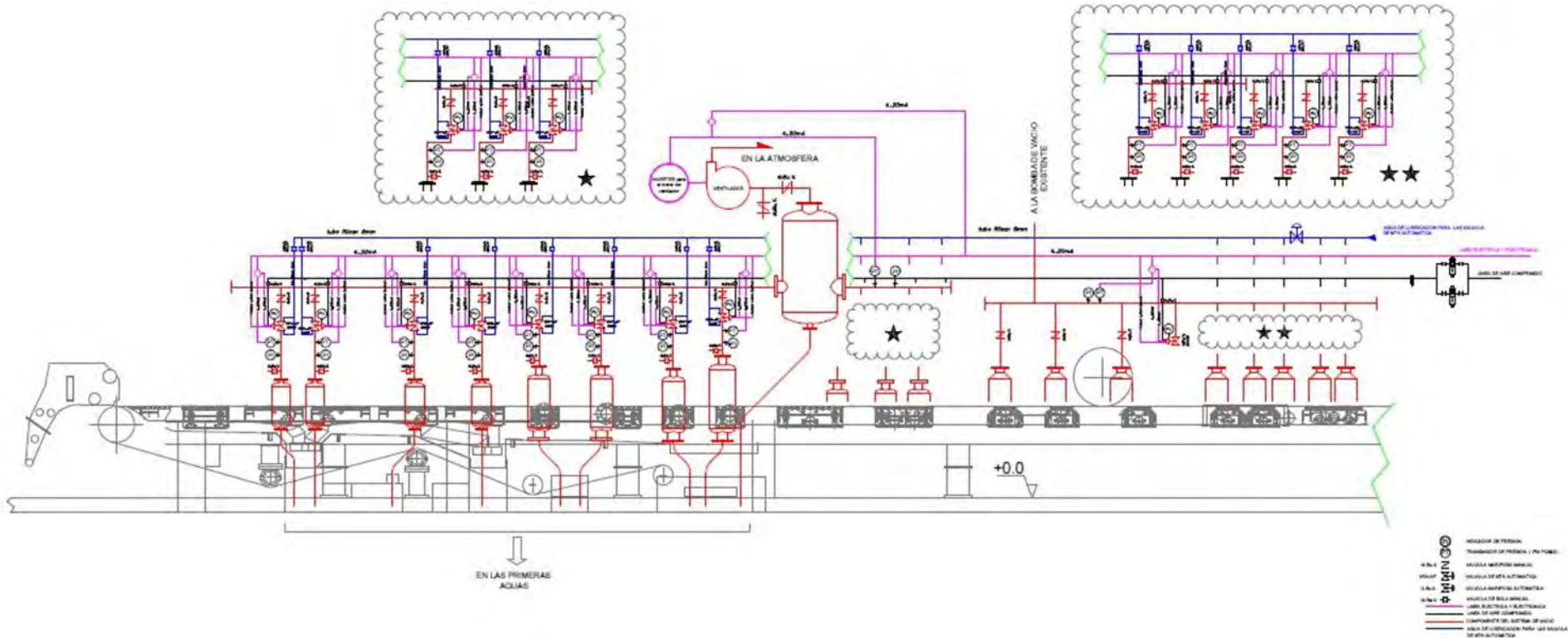
Si-Nitride →



← Pw-Nitride

Drainage systems

✓ VACUUM SYSTEMS



Drainage systems: Engineering

Design and improvement

✓ New Plant

- Design and develop drainage systems in order to optimize quality of paper and energy consumption
- Design and develop a customize solution as per customer needs
- Performance a simulation of drainage systems

✓ Rebuilding/Upgrade existing drainage systems

- Optimize existing drainage systems
- Improve the grade paper and energy consumption
- Modify configuration to reach a better performance and reduce energy consumption



Drainage Systems: Initial & Formation Area

- ✓ Design of formation equipment means:
 - Choice of adequate ceramic material to guarantee performance for long time
 - Set the optimal design of the boxes in terms of material and number of ceramic elements
 - Choice best profile to guarantee the best performance in terms of runnability of the machine and paper quality



Drainage systems: Adjustable angle Hydrofoil boxes

Developed to:

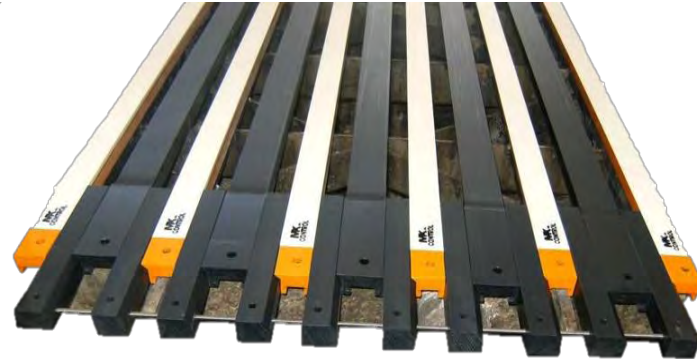
- ✓ Create a best activity in relation to basis weight produced
- ✓ Obtain an optimal drainage and formation
- ✓ Possibility to automate the rotation mechanism for a constant drainage control
- ✓ Infinitely adjustable angle from 0° to 4°
- ✓ Adjustable during machine operation



Drainage system: Modulated flat box

Developed to:

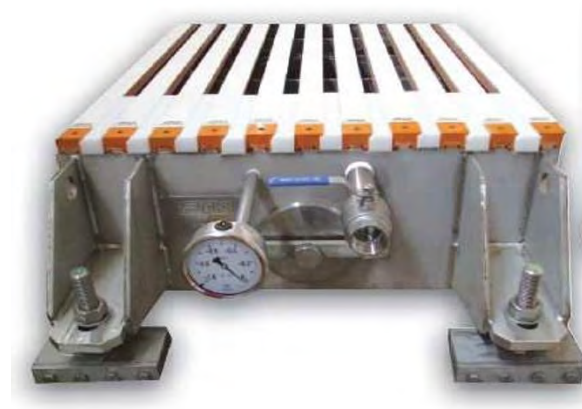
- ✓ Improve the sheet quality of any paper grade
- ✓ Adjustable dewatering capacity on the basis production
- ✓ Generate a controlled microturbulence



Drainage system: Low-Medium Vacuum Box

Developed to:

- ✓ Water's removal in a gradual way
- ✓ Control the water line by medium vacuum boxes;
- ✓ Depending on the speed and weight can reach up to 7% of dry the sheet



Drainage system: High vacuum box

Developed to:

- ✓ Optimize and compact sheet structure with high vacuum
- ✓ Set high vacuum to obtain desired dryness



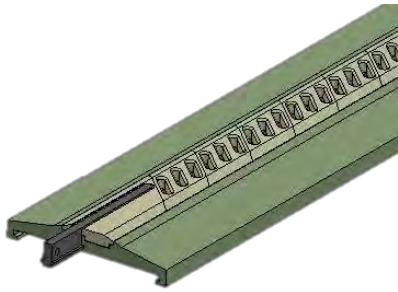
Drainage systems: Uhle Box

- ✓ Developed to obtain the best felt's condition
- ✓ Design to pick up position
- ✓ Different design and material in order to reach the best result



Drainage systems: Uhle Box

✓ Example of some supplies



Type - A



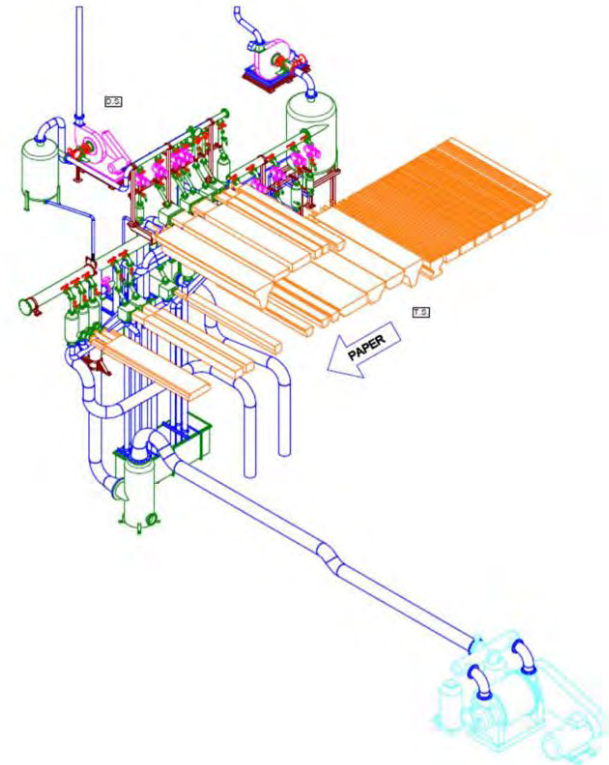
Type - B



Type - C

Drainage systems: vacuum system

- ✓ Engineering
- ✓ Stainless steel air/water separator
- ✓ Automatic control valve VRV-AF
- ✓ Automatic Vacuum control system



Services

- ✓ Doctors overhaul
- ✓ Grinding of Draining Elements
- ✓ Technical services
- ✓ Modifications & Upgrades



Service – Doctors overhaul

- ✓ Doctoring systems technical audits
- ✓ Revision and fixing interventions
- ✓ Blades check



Service – Grinding of Draining Elements

- ✓ Inspection of the draining elements
- ✓ Study of the cover and the box in order to decide how to intervene
- ✓ Grinding and finish of draining elements



Technical services

- ✓ Dimensional measurements
- ✓ Design
- ✓ Installation, set up and start up
- ✓ Maintenance, fixing and set up



Services - Modifications & Upgrades

- ✓ Optimization of new installation
- ✓ Revamping of existing system
- ✓ Study and design of improvement
- ✓ Customized solution

