

30
YEARS

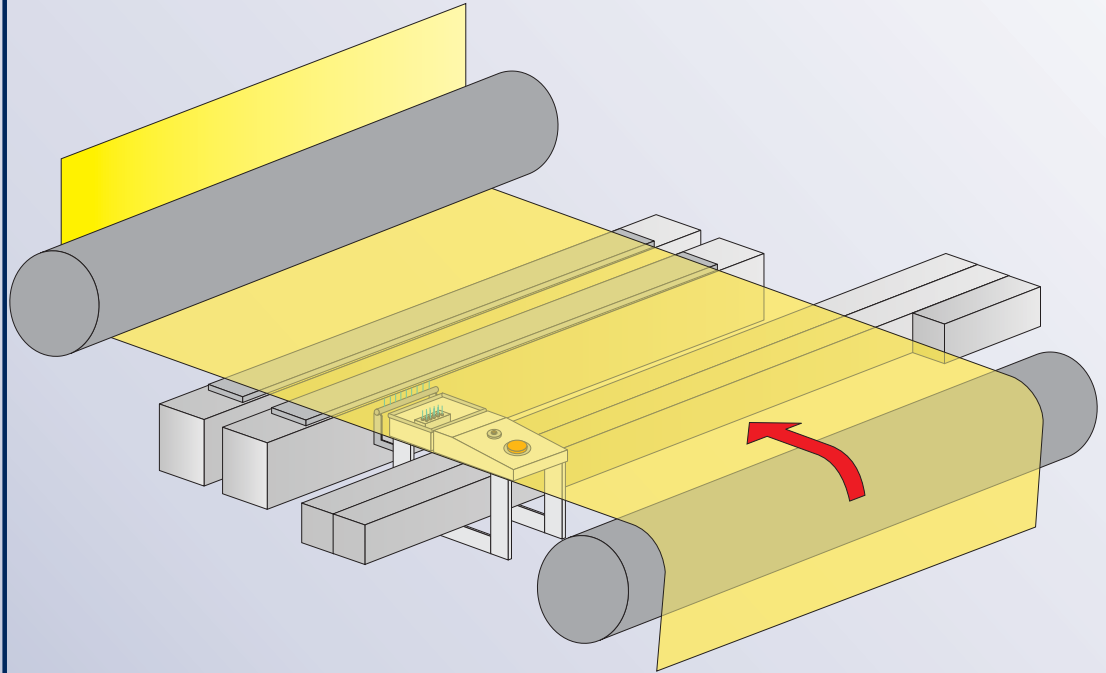
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ROBO PAPER SMART CLEANER

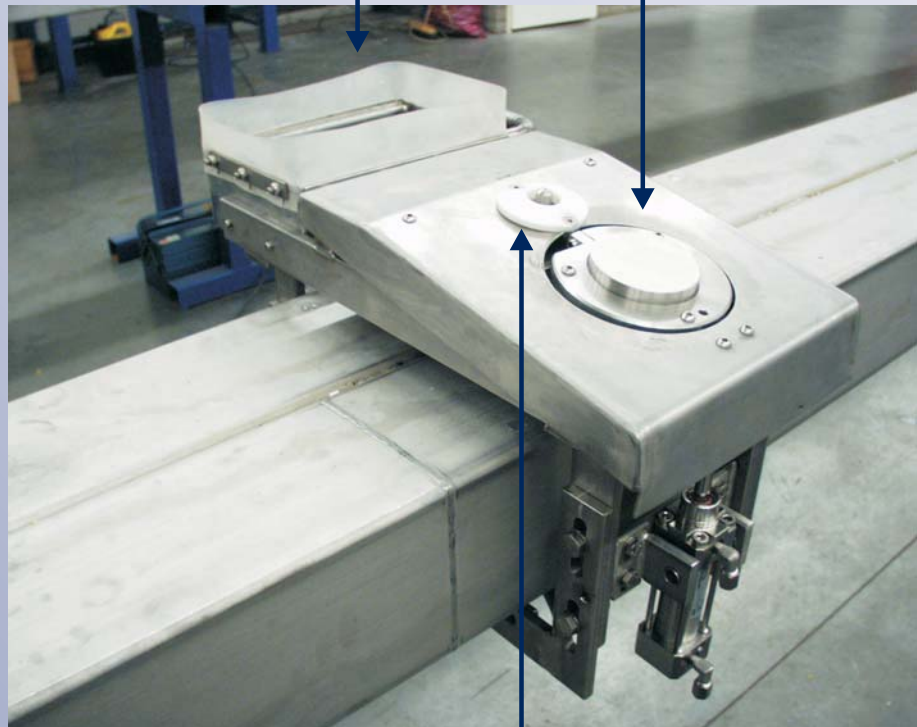
A CONTINUOUS FULLWIDTH PRESS FELT CLEANING DEVICE
INCLUDING ON-LINE CD MOISTURE CONTENT &
WATER PERMEABILITY MEASURING

SMART CLEANER



CLEANING DEVICE
(PRESS) F(ELT) CLEANER

MOISTURE CONTENT
SENSOR



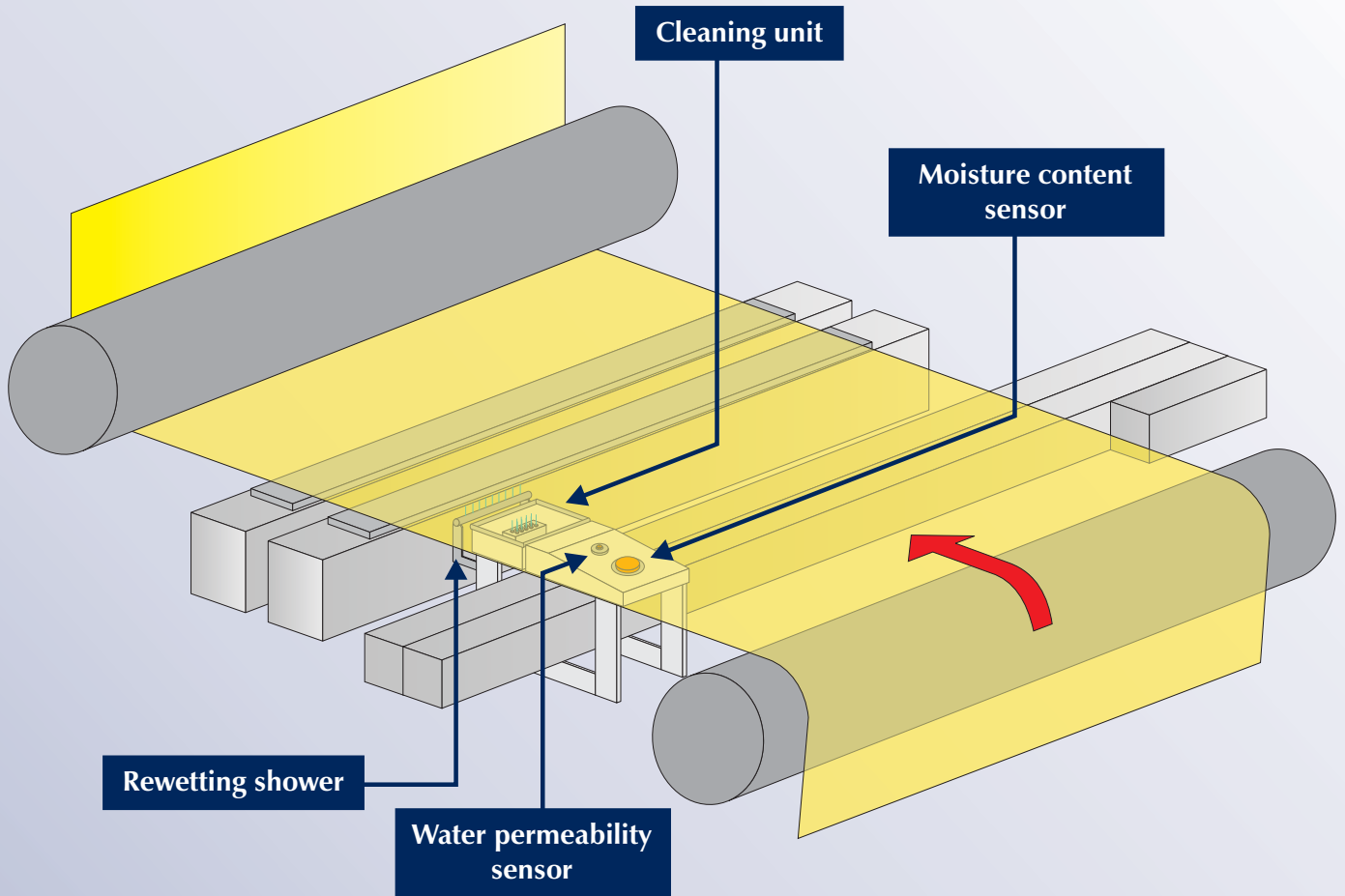
WATER PERMEABILITY
SENSOR

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CONTINUOUS FULLWIDTH PRESS FELT MEASURING AND CLEANING DURING PRODUCTION WITH ROBO SMART CLEANER

MEASURING IS KNOWING



For each press felt the optimum solution



CONTINUOUS PRESS FELT CLEANING DURING PRODUCTION WITH ROBO P(RESS) F(ELT) CLEANER

R(ETURN) O(F) I(NVESTMENT) ROBO SMART CLEANER

1. Decreasing waterconsumption

1.1 Example regarding oscillating shower:

Press felt width	: 6200 mm
Number of nozzles	: 62 pcs. ($\phi - \phi = 100$ mm)
Orifice of each nozzle	: \emptyset 1 mm
Waterpressure	: 20 bar
Waterconsumption	: $62 \times 2,2 = 136,4$ ltr/min

1.2 Example regarding PF Cleaner:

Number of nozzles installed in the traversing cleaningblock	: 12 pcs.
Orifice of each nozzle	: \emptyset 0,8 mm
Waterpressure	: 25 bar
Waterconsumption	: $12 \times 1,45 = 17,4$ ltr/min
Watersaving:	$136,4 - 17,4 = 119$ ltr/min

At a year base: $119 \times 60 \times 24 \times 360 = 61.689.600$ ltr = 61.689,6 m³

Remark:

If only one conventional oscillating shower will be exchanged against one PF Cleaner, than the existing HP waterpump will be maintained.

But if all the existing oscillating showers will be exchanged than the existing HP waterpump has to much overcapacity and will be exchanged by a new pump.

This new pump will have a watercapacity for all the PF Cleaners, by which the electric power will be decreased.

2. Decreasing electric power

2.1 Example regarding electric power

If 3 (three) press sections, than are installed 6 (six) oscillating showers.

* Waterconsumption for 6 (six) oscillating showers:

$$6 \times 136,4 \text{ ltr/min} = 918,4 \text{ ltr/min.}$$

* Electric power for this HP waterpump is: 55 kW.

2.2 Electric power for HP waterpump if all these 3 (three) press sections are provided with PF Cleaners:

* Waterconsumption for 6 (six) PF Cleaners: $6 \times 17,4 \text{ ltr/min} = 104,4 \text{ ltr/min.}$

* Electric power for this HP waterpump: 5,5 kW.

3. Increasing equal cleaning over the total press felt width.

3.1 No stripes in the felt.

3.2 Additional cleaning for the edges to increase the compressibility.

4. Increasing lifetime of the press felt.

5. Optimising the moisture cross profile of the felt.

6. Optimising the water permeability of the felt.

7. Increasing the dewatering capacity of the felt.

8. 100% mistfree cleaning during production.

9. Decreasing at least 20% chemical consumption.

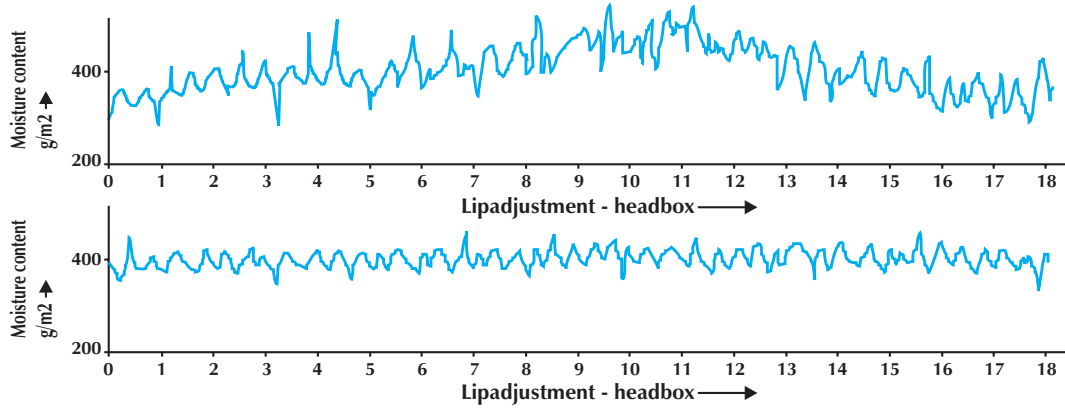
10. Decreasing vacuum capacity from the existing suction boxes, which means less electric power as well as less wear for the press felt.

11. Continuous press felt measuring during production, as well moisture content as water permeability over the total press felt.

12. Exact localisation from unaccepted differences in moisture-, and/or water permeability cross-profile of the press felt (stripes).

PF Cleaner comparing to Oscillating Shower

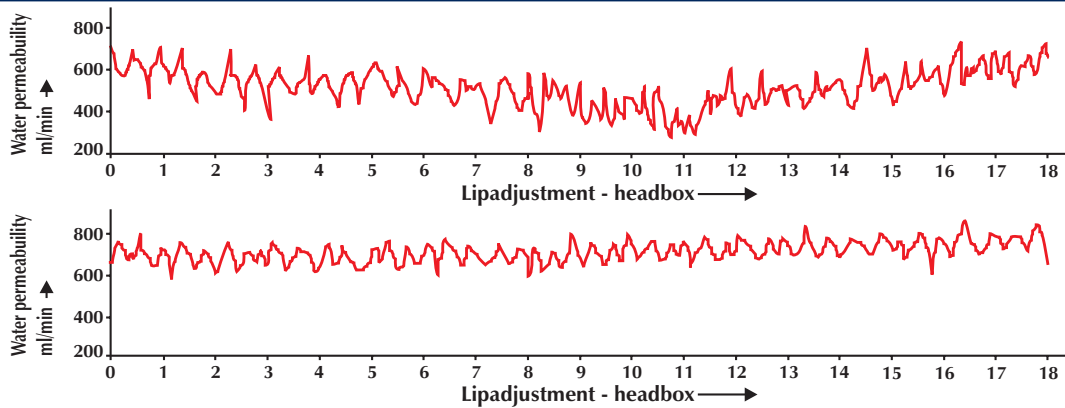
CD - Moisture profile press felt



Moisture profile conventional oscillating shower

Moisture profile Robo P(res) F(elt) Cleaner measured by moisture sensor Smart Cleaner

CD - Water permeability press felt



Water permeability profile conventional oscillating shower

Water permeability profile Robo P(res) F(elt) Cleaner measured by Permeability sensor Smart Cleaner

Dewatering capacity press felt

Installed cleaning unit:		PF Cleaner	Oscillating shower	Oscillating shower	Oscillating shower				
Stretch stroke:	m	0,35	0,25	0,40	-				
	m	0,25	0,35	0,35					
Total stretch stroke:	m	0,60	0,60	0,75					
Felt-thickness FS:	mm	2,10	2,20	2,10	2,50				
Felt-thickness BS:	mm	2,10	2,20	2,10	2,50				
Felt-thickness Ra:	mm	3,70	2,80	2,40	3,70				
Felt-thickness new:	mm	4,70	-	-	-				
Felt-tension:	bar	1,25	1,50	1,35	1,50				
	Direction	FS to		BS close to		-			
Line pressure:		Pickup		2.Press		SDP - top		SDP - bottom	
		FS	BS	FS	BS	FS	BS	FS	BS
1. Press	KN/m	93	93						
-	KN/m								
2. Press	KN/m			85	85				
HP-Press	KN/m					300	290	300	290
Pickup roll (PUZ)	mbar	-530							
Vacuum box 1	mbar	-300		-380		-500		-380	
Airspeed	m/s	7,2		6,3		3,8		not achieved	
HP - shower	bar	20,0		19,0		22,0		21,0	
Edge FS/BS		closed		BS open		closed		-	
LP - shower		open		closed		closed		closed	
Nip water	l/min	-		-		-		-	
Vacuum box water	l/min	-		-		-		-	
Total	l/min	#VALUE!		#VALUE!		#VALUE!		#VALUE!	
Dewatering capacity									
Press entering	g/m²	-		-		-		-	
Press leaving	g/m²								
Difference	g/m²	#VALUE!		#VALUE!		#VALUE!		#VALUE!	
Before vacuum box	g/m²	750		620		552		625	
After vacuum box	g/m²	670		597		540		610	
Difference	g/m²	-80		-23		-12		-15	
Vacuum box data	Amount	1		1		1		1	
Vacuum box 1		1	20	1	20	1	20	1	20
	Type	ZigZag	mm	ZigZag	mm	ZigZag	mm	ZigZag	mm