

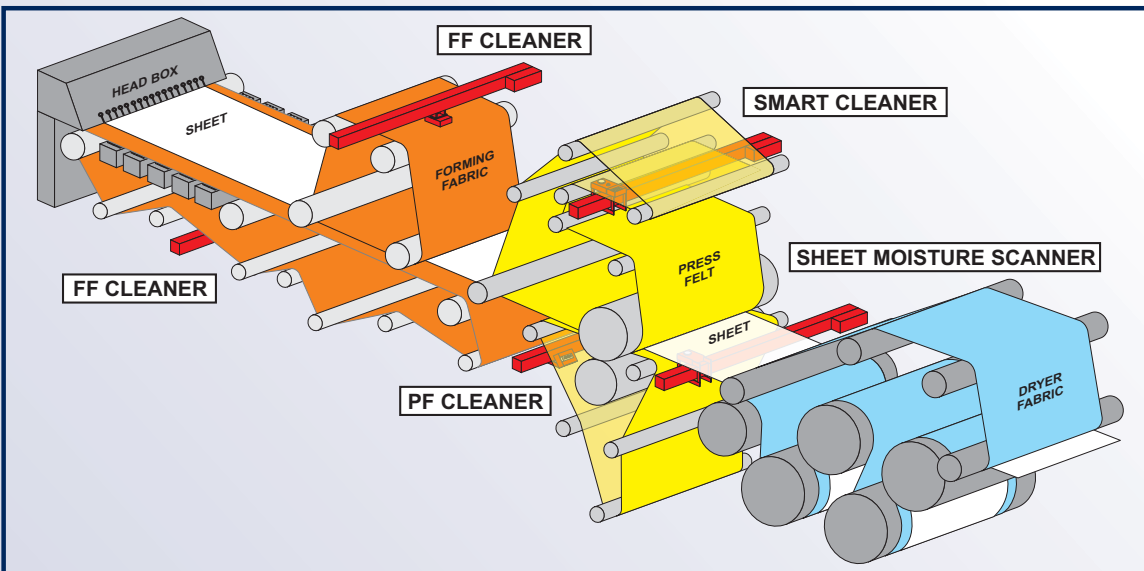
30 YEARS



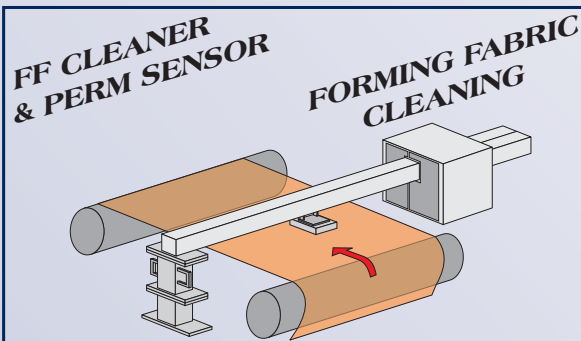
OP-Zuid
Europees Economisch Stimuleringsprogramma

ROBO WET SCAN

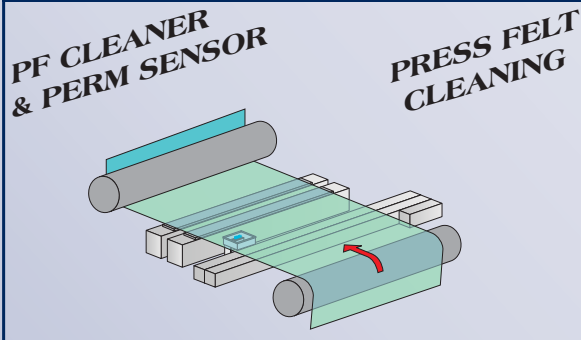
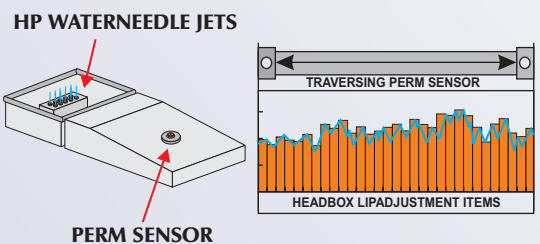
THE DISTRIBUTED CONTROL SYSTEM FOR WET SECTION



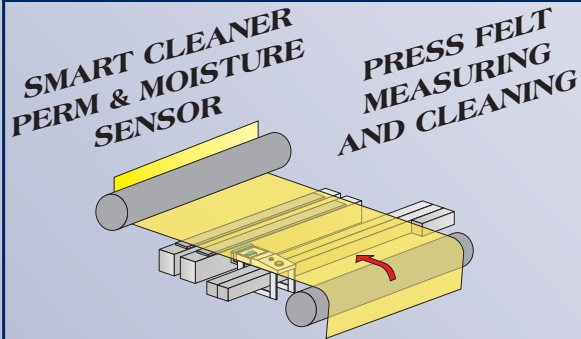
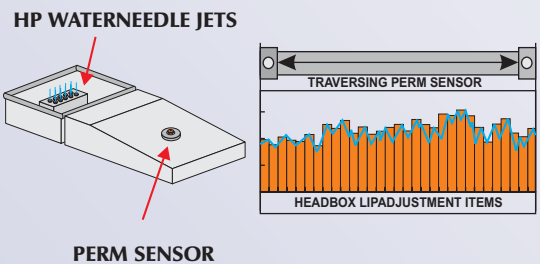
MEASURING - CONDITIONING - VISUALISATING



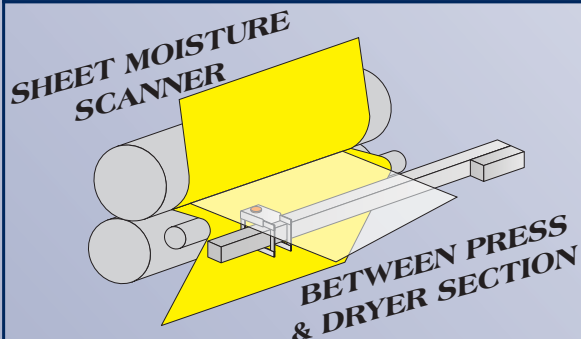
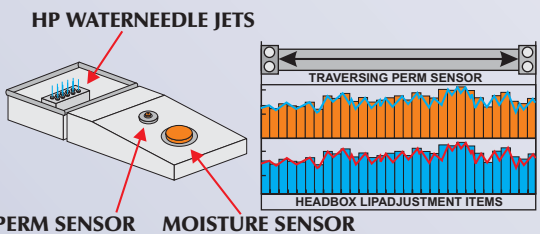
MEASURING - CONDITIONING - VISUALISATION



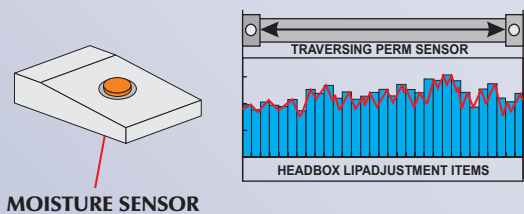
MEASURING - CONDITIONING - VISUALISATION



MEASURING - CONDITIONING - VISUALISATION



MEASURING - VISUALISATION



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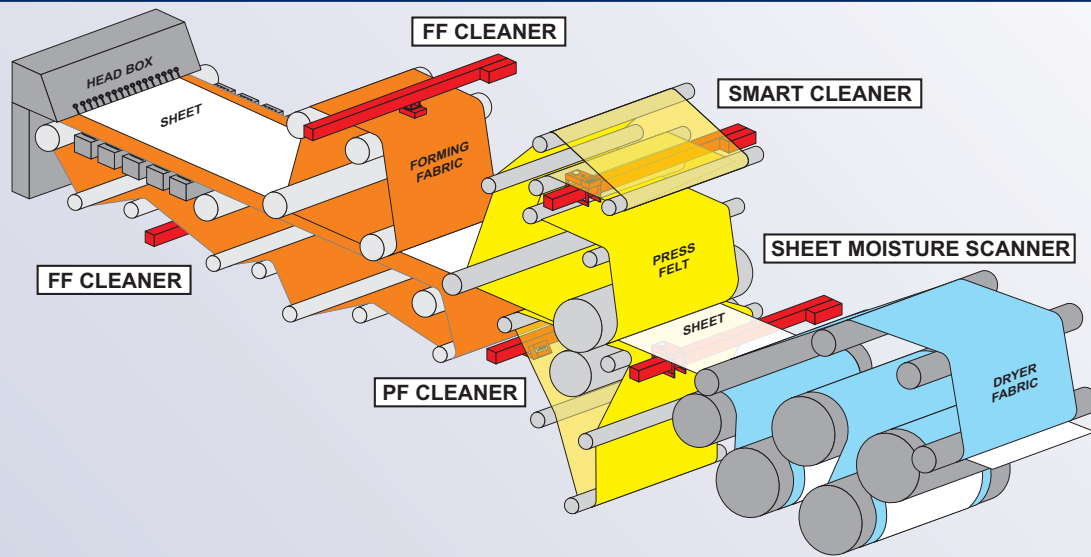
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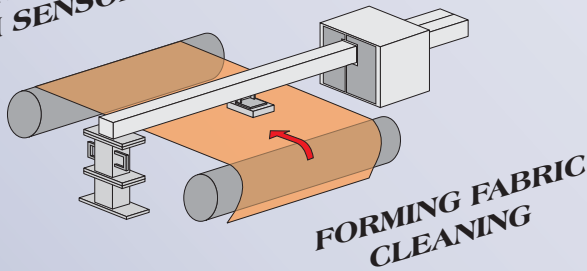
ROBO WET SCAN

THE DISTRIBUTED CONTROL SYSTEM FOR WET SECTION

MEASURING - CONDITIONING - VISUALISATING

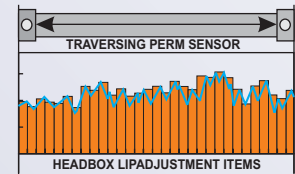
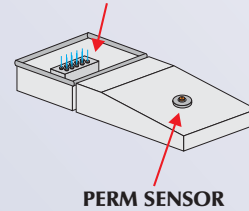


FF CLEANER & PERM SENSOR



MEASURING - CONDITIONING - VISUALISATION

HP WATERNEEDLE JETS



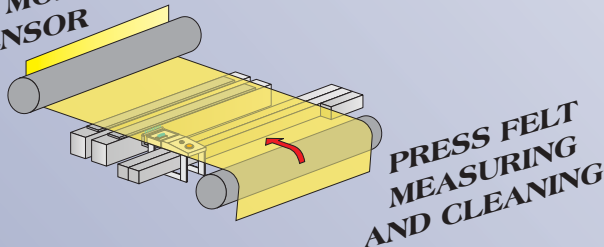
Technological guarantees:

1. Mistfree cleaning at paperside
2. Equal cleaning over total width
3. Optimum permeability
4. Increasing life time
5. Nozzle check and exchanging during production
6. Visualisation cross profile
7. Discontinuously water perm measuring

Payback values:

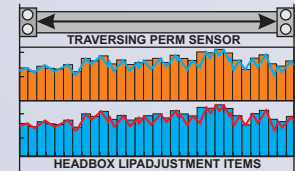
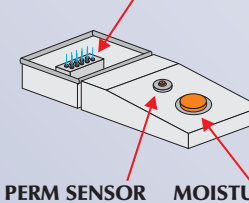
- Decreasing water consumption up to 80%
- Increasing fabric life time up to 20%
- Decreasing chemicals up to 100%
- Decreasing electric energy up to 70%

SMART CLEANER PERM & MOISTURE SENSOR



MEASURING - CONDITIONING - VISUALISATION

HP WATERNEEDLE JETS



Technological guarantees:

1. Equal cleaning over the total width
2. Increasing absolute sheet dryness
3. Nozzle check and exchanging during production
4. Discontinuously water perm measuring
5. Discontinuously moisture measuring
6. Visualisation felt cross profile
7. Increasing felt life time

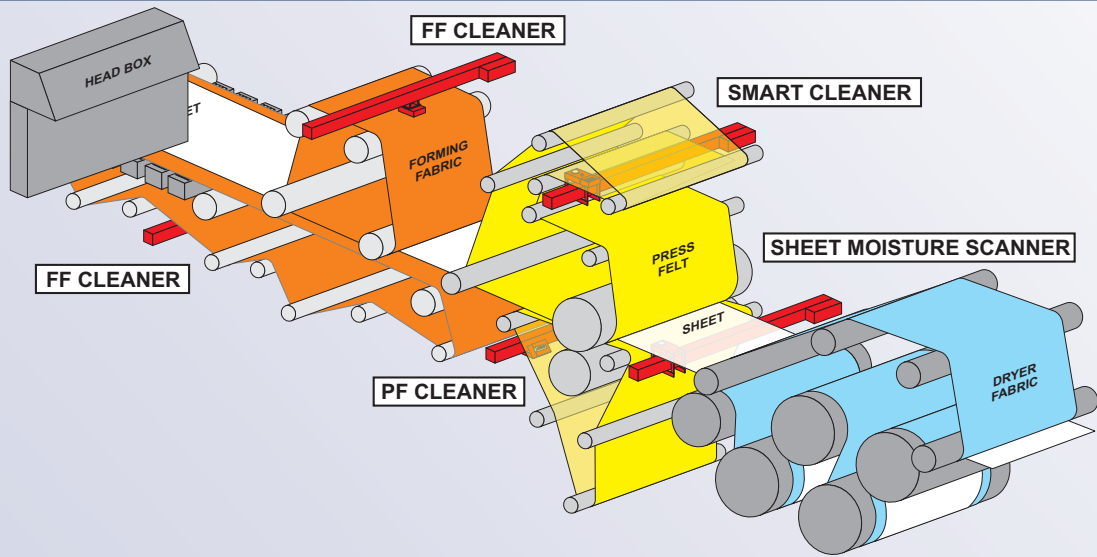
Payback values:

- Increasing felt life time up to 50%
- Decreasing water consumption up to 80%
- Decreasing chemicals up to 50%
- Decreasing electric energy up to 50%
- Increasing sheet dryness up to 1%
- Decreasing electric energy vacuum
- Decreasing felt wear
- Increasing sheet adhesion re tail transfer

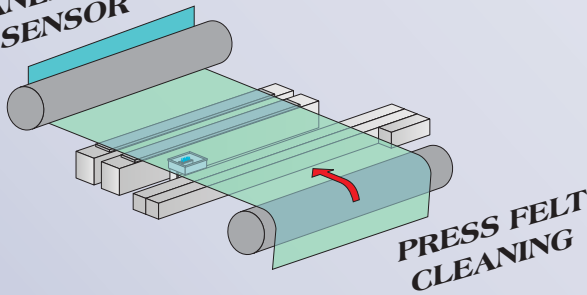
ROBO WET SCAN

THE DISTRIBUTED CONTROL SYSTEM FOR WET SECTION

MEASURING - CONDITIONING - VISUALISATING

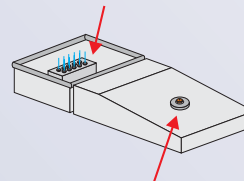


PF CLEANER
& PERM SENSOR

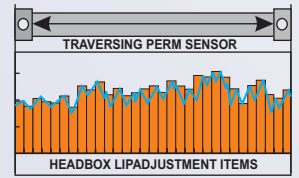


MEASURING - CONDITIONING - VISUALISATION

HP WATERNEEDLE JETS



PERM SENSOR



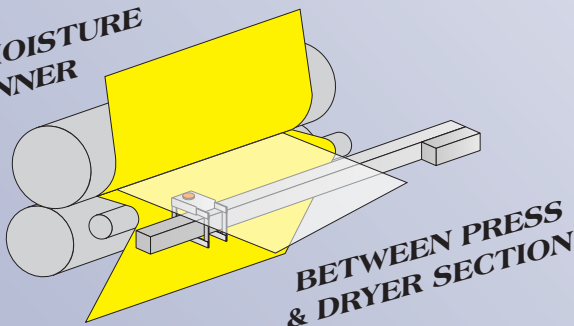
Technological guarantees:

1. Equal cleaning over the total felt width
2. Nozzle check and exchanging during production
3. Increasing absolute dryness from the sheet
4. Discontinuously water perm measuring
5. Visualisation felt cross profile
6. Increasing felt life time

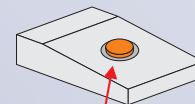
Payback values:

- Increasing felt life time up to 50%
- Decreasing water consumption up to 80%
- Decreasing chemicals up to 50%
- Decreasing electric energy up to 50%
- Increasing sheet dryness up to 1%

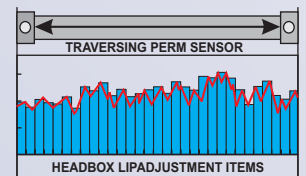
SHEET MOISTURE
SCANNER



MEASURING - VISUALISATION



MOISTURE SENSOR



Technological guarantees:

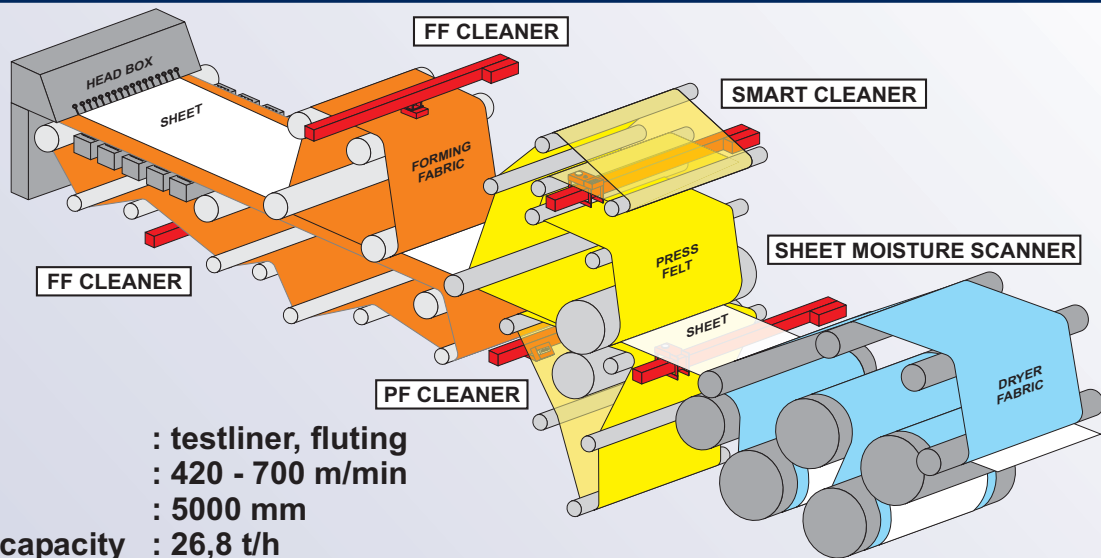
1. Measuring absolute sheet moisture content
2. Visualisation moisture cross profile
3. Link to press felt profile

Payback values:

- Continuous information re press dewatering capacity
- Indicating sheet moisture differences
- Decreasing unsaleable paper

ROBO WET SCAN

THE DISTRIBUTED CONTROL SYSTEM FOR WET SECTION



PM data:

Paper : testliner, fluting
PM speed : 420 - 700 m/min
Sheet width : 5000 mm
Production capacity : 26,8 t/h

RETURN OF INVESTMENT

achieved by:

FF Cleaner - PF Cleaner - Smart Cleaner - Sheet Moisture Scanner

1. Increasing production, achieved by increasing sheet adry with 0,6%

- 1.1 Production capacity (see example): 26,8 t/h = 200.000 t/year
 1.2 Increasing 0,6 % x 200.000 = 1200 t/year
 1.3 Increasing turnover / prices January 2009

Kraftliner:	€ 470 / t x 1200 =	€ 564.000,- =
Fluting:	€ 510 / t x 1200 =	€ 612.000,- =
White toplineer:	€ 700 / t x 1200 =	€ 840.000,- =
Testliner	€ 410 / t x 1200 =	€ 492.000,- =

Profit / year
 € 56.400,-
 € 61.200,-
 € 84.000,-
 € 49.200,-



2. Decreasing electric energy by FF Cleaner

- 2.1 kWh existing HD water pump : 35 kwh
 kWh HP water pump FF Cleaner : 5 kwh
 2.2 Savings 30 kW x EUR. 0,10/h x 24 x 360 =

€ 25.920,-



3. Decreasing steam consumption by increasing adry with 0,6%

- 3.1 Steam consumption per 1 ton test liner = 2 ton steam
 3.2 Savings 0,6 x 200.000 = 1200 ton x € 10,- / ton x 2 =

€ 24.000,-



4. Decreasing water consumption from 270 ltr/min to 4 ltr/min

- 4.1 1 (one) HP water shower, 50 nozzles, 30 bar / Ø 0,1 mm = 135 ltr/min
 1 (one) HP FF Cleaner, 10 nozzles, 80 bar / Ø 0,2 mm = 3 ltr/min
 4.2 Savings 0,132 m³ x 60 x 24 x 360 = 68.428 m³ / year
 Saving: 68.428 x € 1,28 =

€ 87.587,-



5. Decreasing costs press felts

- 5.1 Existing life time: 28 days
 5.2 Existing costs 13 periods x € 15.000 press felt = € 195.000,- / year
 5.3 Savings 20% = 2 press felts =

€ 30.000,-



6. Decreasing breaks caused by unequal fabric cleaning

10 breaks / month x 10 minutes = 1200 min/year = 20 hours/year lost production.
 Turnover / yearly = 20 x 26,8 x € 410,- (Testliner) = € 219.760,- =

€ 21.976,-



7. Decreasing unsaleable paper by improved diagnostic fault analyses

Turnover: 0,6% x 200.000 ton = 1200 ton x € 410,- (Testliner) = € 492.000.
 Profit yearly:

€ 49.200,-



8. Optimum database by DCS: RoboWet Scan

- Condition forming fabric
- Condition press felt
- Condition papersheet
- Lifetime forming fabric / press felt
- Electric power consumption
- Water consumption / water pressure
- Vacuum capacity

