



Building Leadership Excellence



STORA ENSO ANJALA MILL PM 2

MAJOR SPEED INCREASE WITH DRYER SECTION RUNNABILITY IMPROVEMENTS

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Sales Director & Runnability Specialist of EV Group



EV Group - The Runnability Team

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PaperCon 2011
Northern Kentucky Convention Center

RETHINK PAPER:
Lean and Green

CUSTOMIZED TECHNOLOGY AND SERVICES TO OPTIMIZE PM RUNNABILITY, EFFICIENCY, ENERGY SAVING AND PAPER QUALITY



TECHNOLOGY AND SERVICES FOR PM WIRE-, PRESS-, AND DRYER SECTIONS

Over 1200 pcs of stabilizing components delivered nearly to 30 countries world wide with excellent results.

We deliver projects as OEM delivery to several paper machine suppliers.

We have our own highly professional Survey Team for paper machine survey services. We have done over 200 survey projects.



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STORA ENSO ANJALA MILL, FINLAND



Established in 1872, stands by the Kymi river in the city of Kouvola, in the village of Inkeroinen.

Product areas: Book papers, Improved newsprint grades, Business papers

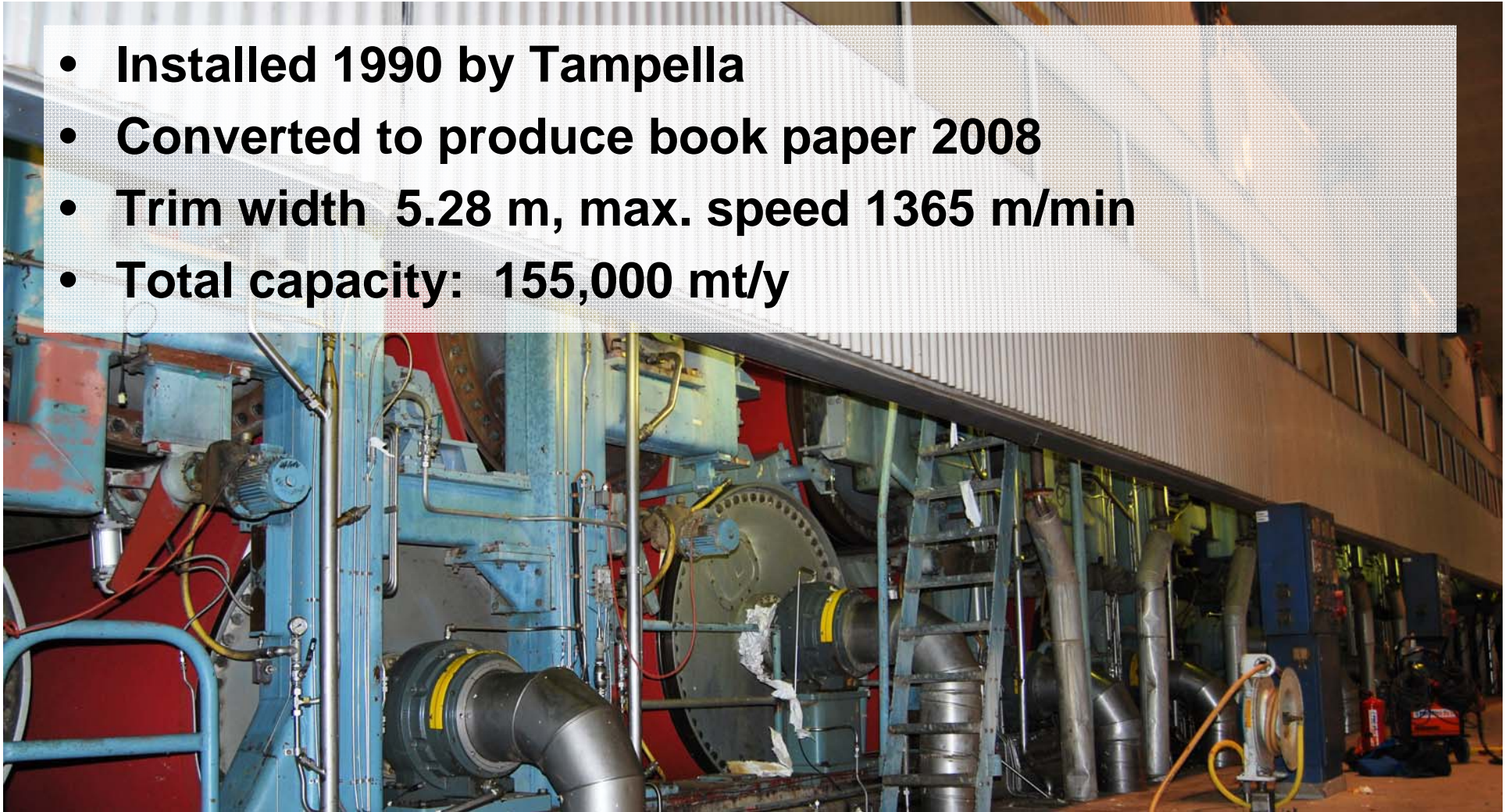
Two paper machines PM 2 and PM 3



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STORA ENSO ANJALA MILL, PM 2

- Installed 1990 by Tampella
- Converted to produce book paper 2008
- Trim width 5.28 m, max. speed 1365 m/min
- Total capacity: 155,000 mt/y

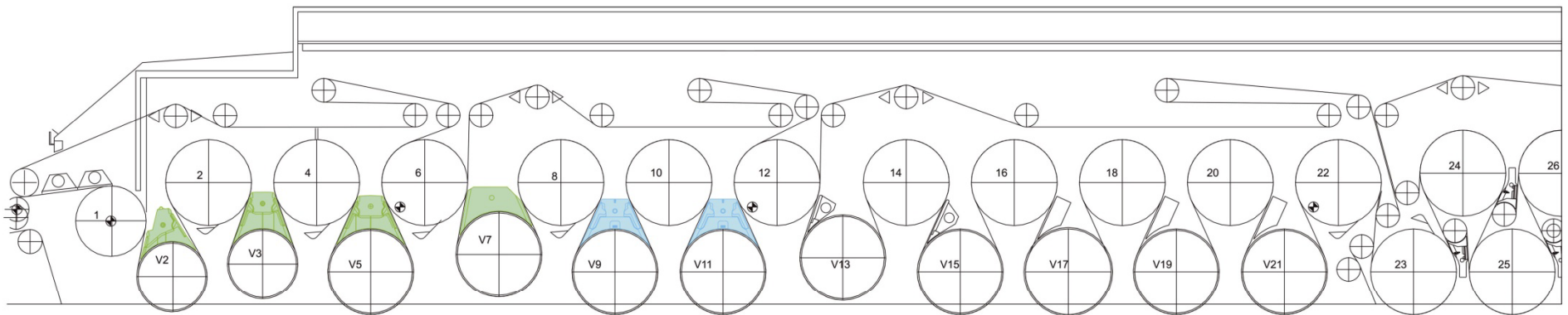


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PROBLEMS AT STORA ENSO ANJALA MILL PM 2

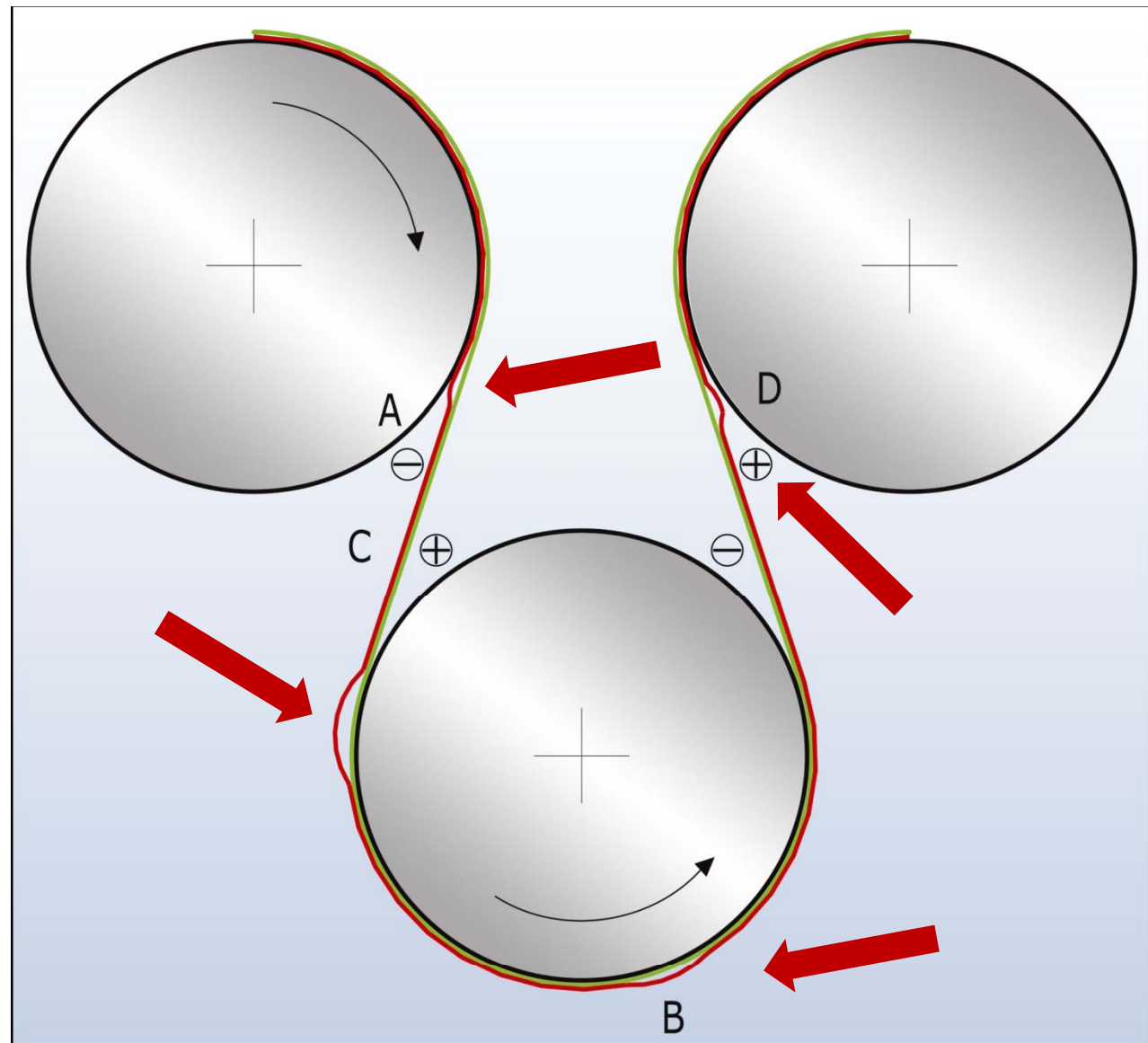
- ⚡ More web breaks over 1200 m/min speed
- ⚡ Sheet fluttering → sheet creasing, wrinkles
- ⚡ Sheet release from contact unstable
- ⚡ Steam of dryers #4 and #10 had to be closed



SHEET FLUTTERING AND SHEET CREASING PROBLEM:

SHEET DOES NOT
RELEASE
FROM CONTACT
AND FOLLOWS
THE CYLINDER

→ CREASING
→ WEB BREAKS



HOW TO KEEP UP EXCELLENT RUNNABILITY AND EFFICIENCY AT DRYING SECTION:



**KEEP UP EXCELLENT
RUNNABILITY**

**KEEP FABRICS AND
CYLINDERS CLEAN**

**REDUCE ENERGY
CONSUMPTION**



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HOW TO KEEP UP EXCELLENT RUNNABILITY AND EFFICIENCY AT DRYING SECTION:

- ✓ Survey and analysis of production line
- ✓ Tailored rebuilds as web stabilizers, section upgrades, optimized machine layout
- ✓ Clean fabrics and cylinder surfaces
- ✓ Maintenance



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SOLUTIONS AT STORA ENSO ANJALA MILL PM 2

STEP 1:

OPTIMIZATION OF DOUBLE FELTED SECTION – 4th dryer section

- Machine geometry modification
- 8 units of EVdf Web Stabilizers



STEP 2:

OPTIMIZATION OF SINGLE FELTED SECTION – 1st and the 2nd dryer groups

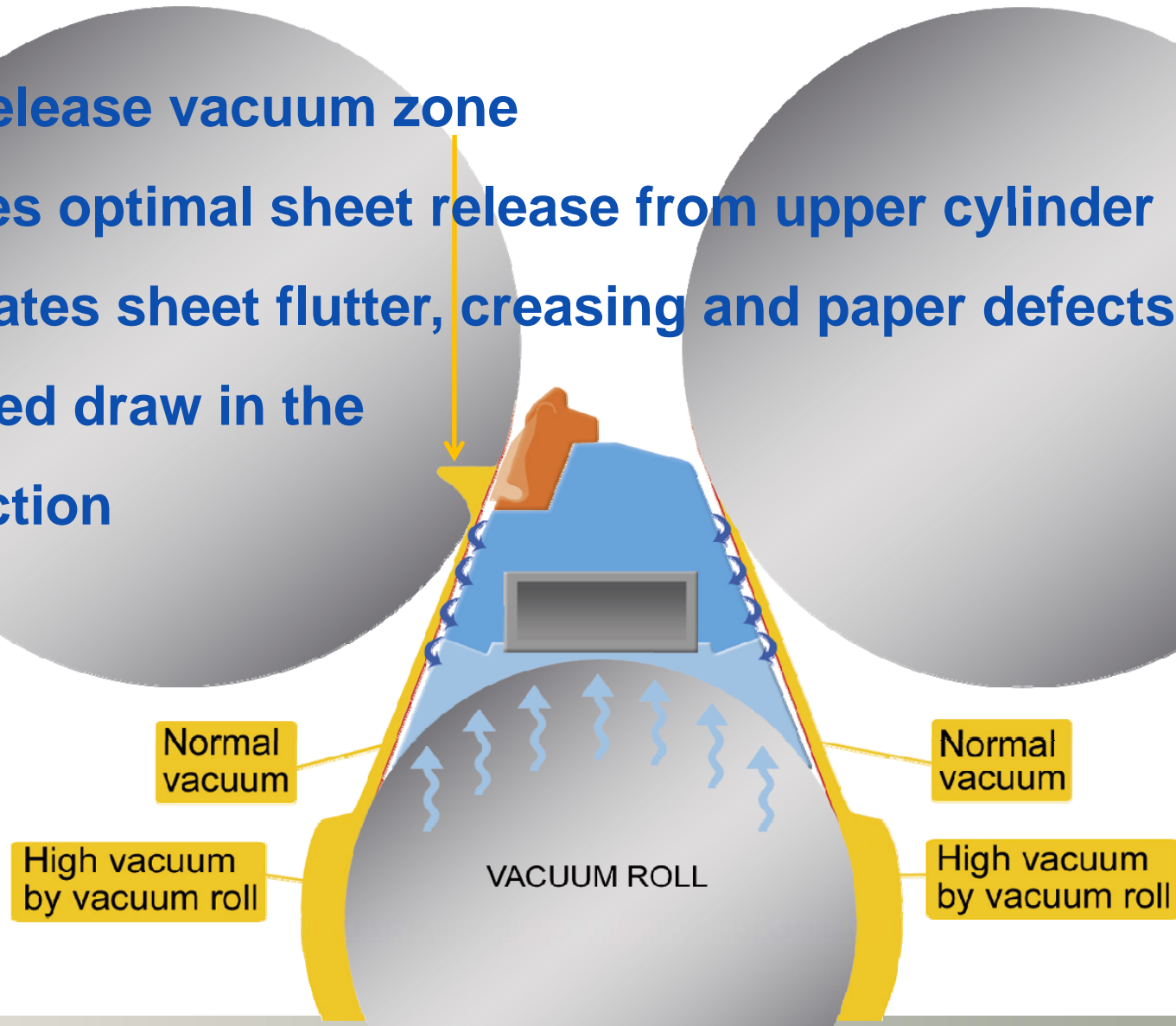
- 6 units of EV EasyOne stabilizing concepts



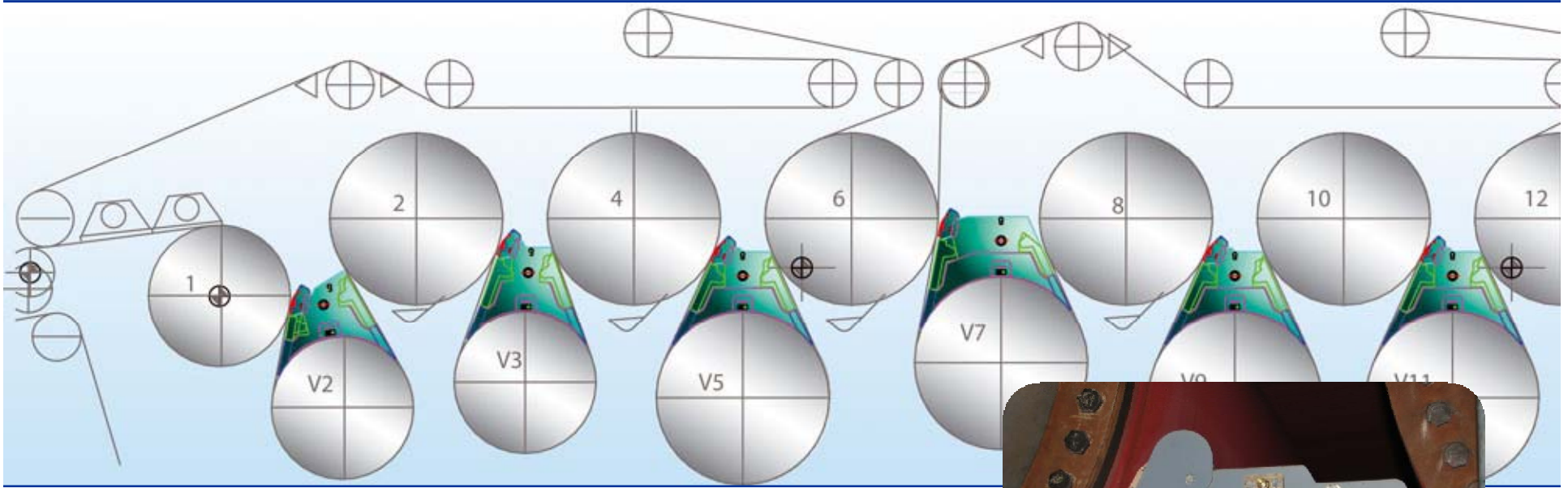
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EV EASYONE™ CONCEPT FOR SINGLE FELTED SECTION

- ✓ High release vacuum zone
- ✓ Ensures optimal sheet release from upper cylinder
- ✓ Eliminates sheet flutter, creasing and paper defects
- ✓ Reduced draw in the dryer section



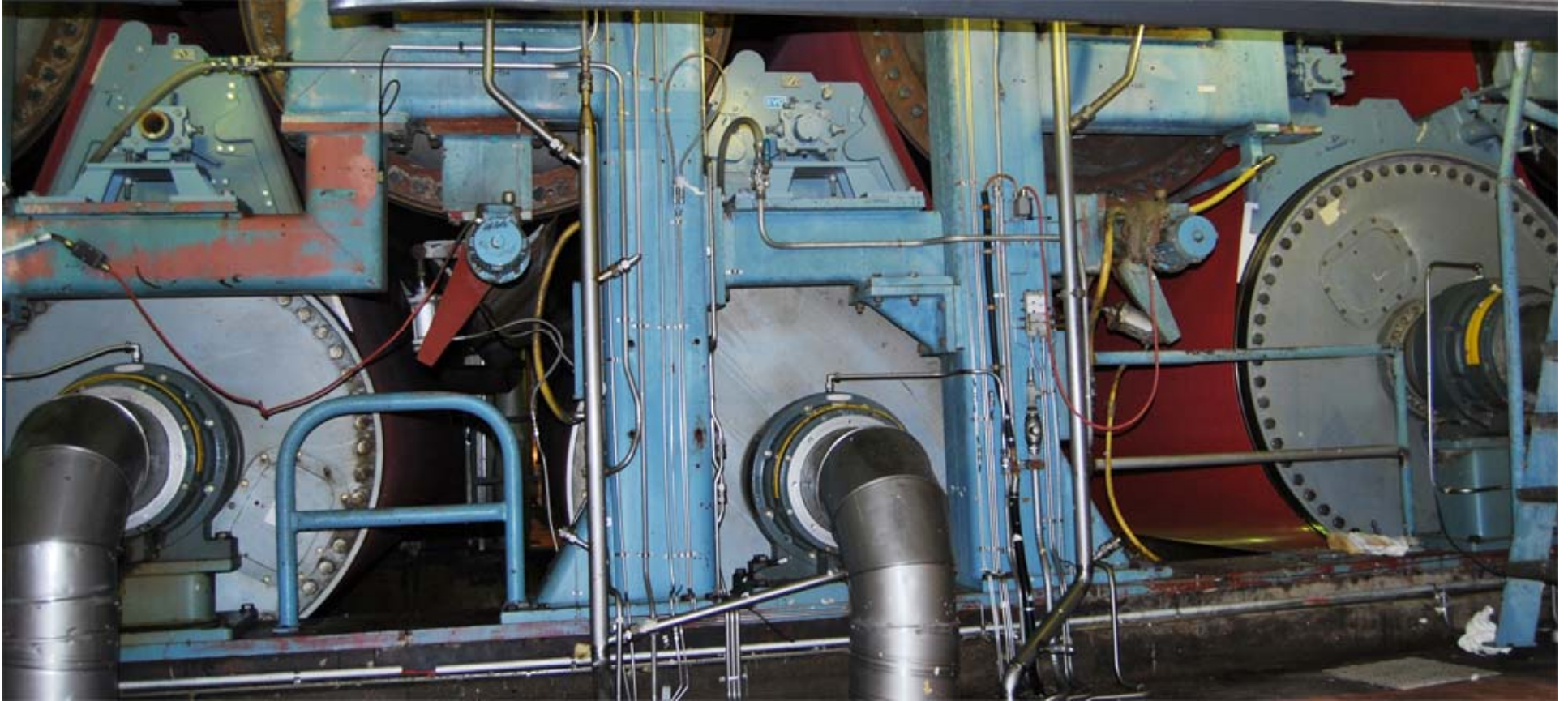
NEW STABILIZING CONCEPT FOR SINGLE FELTED SECTION IN STORA ENSO ANJALA PM 2



- 6 pcs EVsf3 stabilizers
- compressor capacity 110 Mm3/min (1 bar)
- air flow at flange 0.9 m3/s (1500 Pa)



NEW STABILIZING CONCEPT FOR SINGLE FELTED SECTION IN STORA ENSO ANJALA PM 2



WITH A HIGH RELEASE VACUUM AS 2000 Pa, SHEET RELEASE CAN BE OPTIMIZED UP TO SPEED OF 1500-1600 m/min



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RESULTS AT STORA ENSO ANJALA PM 2

AFTER OPTIMIZATION OF DOUBLE FELTED SECTION:

- ✓ Speed up from 1250 m/min → 1300 m/min
- ✓ Runnability clearly improved
- ✓ No wrinkles

AFTER OPTIMIZATION OF SINGLE FELTED SECTION:

- ✓ New speed 1365 m/min → Increased by 9 %!
- ✓ Runnability even better
- ✓ No sheet fluttering
- ✓ Less draw
- ✓ Increased steam pressure, no closed cylinders



RESULTS AT STORA ENSO ANJALA PM 2

- ✓ REMARKABLE IMPROVED RUNNABILITY
- ✓ INCREASED SPEED ENABLES ADDITIONAL PRODUCTION
- ✓ MORE EFFICIENT DRYING
- ✓ IMPROVED PAPER QUALITY



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"The problems because of poor runnability are eliminated after the web stabilizing projects in single and double felted sections. We have now more stable sheet run, and the drying section runnability enables also higher speed."

Antti Outinen, Production Manager,
Stora Enso Anjala PM2



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**We can help you to improve your
PM productivity.**

THANK YOU!



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