46th International Meeting of Slovene paper Industry



Postojna 2019

Operational cost reduction in a paper mill Runtech

Energy savings – a Must for all of us

Less Energy – Better Runnability – More Profitability



Systems



Content

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 - Vege PM 1 Fine paper Production
 - DS-Smith Kemsley PM 6 Linerboard production
- Summary / Conclusion





Company founded 1997

- 100% privately owned
- 1/2003 First composite factory 2003
- 7/2008 Acquisition of Ecopump Oy
- 4/2010 New 4.000 m² composite factory to Kolho
- 11/2011 Acquisition of Selotek Oy
- 3/2014 New 3.000 m² Turbo factory to Kotka
- 11/2016 Runtech Systems China is founded
- 12/2016 1.000 m² factory extension in Kotka
- 03/2017 Runtech Systems Inc is founded
- 05/2017 Acquisition of EV Group Oy
- 02/2018 Part of Gardner Denver
- Manufacturing in Kolho and Kotka
- Innovative product portfolio with 60 patents









Engineered Solutions for Pulp and Paper Industry

Runtech is a global provider of engineered systems tailored to the pulp and paper industries. We work with customers to better understand and control their operational conditions to maximize efficiency and cost effectiveness.



AUDITS & Consulting



We perform comprehensive on-site paper machine audits that enable the identification of production problems in the paper machine.

We will give you valuable information and recommendations how to improve your process and decrease energy consumption.

ENERGY & Vacuum Systems



Environmentally friendly and energy efficient RunEco provides a reliable, completely water free vacuum solution that is ideal for the paper industry applications.

CLEANLINESS & Dewatering



Tailor-made solution **RunDry** significantly improves dewatering, doctoring and cleaning processes leading to increased dryness after press section, measurable savings and enhanced productivity.

RUNNABILITY & Tail Threading



Runnability orientated **RunPro** offers web stabilizing, machine geometry modifications and ropeless tail threading concepts to eliminate runnability problems and to ensure fluent paper making process.

ENERGY & Vacuum Systems - RunEco



- EP Turbo Vacuum Blowers
- EcoFlow Family
- EcoSep Water Separators
- EcoDrop Drop Separators
- Heat recovery systems
- Drying Hood
- Machine hall ventilation
- Vacuum System Engineering
- Vacuum Audits





CLEANLINESS & Dewatering - RunDry



- AirBlade doctors for grooved and suction rolls
- **CompoAdapt** retractable blade holder
- **CompoDoc** doctor beams
- Double doctors
- EcoFlow Family
- **ReDoc** cylinder / roll cleaning and reconditioning
- Mist Removal System
- Save-Alls

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• WingBlade shaped doctor blades for suction rolls



RUNNABILITY & Tail Threading - RunPro



- Web Stabilizers for the press section
- **Press RunShooter** Press Section Tail Threading
- EasyOne high release web stabilizers
- **Single Blow** slalom section tail threading
- Web Stabilizers & pocket ventilation for double felted drying section
- **TailBlade M and Runshooter D** ropeless tail threading for double felted drying sections
- RunShooter F long open draws / transfer to the ropes
- Rope System Optimization
- Trim handling equipment
- Tail Threading Audits



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Benchmarking – Brown Papers







Benchmarking – Tissue Papers





Runtech

Case studies









Smurfit Kappa Ania PM2 / Italy Linerboard(110 – 175 gsm)

Scope of supply

- Press section dewatering improvement
- Combipress save-all with RSE Air Blade
- Shoe press doctor with RSP Air Blade and backing bar
- Forming and press section Ecoflow system
- Vacuum system was modified with control valves and pressure transmitters.
- All vacuum levels can be optimized from DCS based on Ecoflow information



Scope of supply







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Compi Press Save-all With RSE Air Blade





INTERNAL USE ONLY



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RSP Air Blade for shoe press sleeves



- Special RSP Air Blade model is used with grooved belts
- Removes all water from the belt grooves
 - Minimized rewetting
 - No back splash
 - Higher dryness
 - Better profiles





Project results



- Originally 7 pcs liquid ring pumps were used
- After the rebuild customer has stopped 3 pumps. Some grades 4 pumps can be stopped.
 - Energy saving 1,8 GWh/a > 120 000 EUR/a
 - SEC from 66 kWh/t to 43 kWh/t
 - Water saving 10 000 m³/a
 - 0,5% dryness increase after press
- Vacuum levels optimized
 - One Uhle box closed from the PU felt
 - 3rd press Uhle box closes
- Even with maximum nip dewatering minimum rewetting





Vege PM1 11 t/h Fine paper (70 – 110 gsm) in Turkey

Scope of supply

- Vacuum system
- New single stage EP500-700-D10
- New compact Ecodrop 2000 water separator
- Ecoflow Multi dewatering measurement
- Press section dewatering improvement
- Combi press save-all with RSE Air Blade
- 3rd press bottom roll doctor with RSP Air Blade



Ecoflow Multi











Vege PM1, Turkey

VACUUM SYSTEM REBUILD WITH EP TURBO BLOWERS (3-NIP PRESS FINE PAPER, 370-650 M/MIN)

Old system	kW
LRP x 7	
Altogether	930

New system	kW
EP500-700-D10	
Altogether	230



Old system vs. Turbo blower



RESULTS

- Energy savings 700 kW
- Specific steam consumption reduced by 10%.
- Savings of el. Energy and Steam amounts up to 850.000 EUR / year
- + additionally 60 000 m³/a water savings
 Gardner
 Denver



Runtech

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Energy saving







DS Smith Kemsley PM6, UK



Linerboard up to 1000 m/min; Production 35-40 t/h

Vacuum system rebuild

Old system:

2x Multisatge blowers from competition, 2x LRP

New System:

- Runtech Scope of supply:
- 4 x EP600 Turbos
- Ecodrop water separators
- Ecoflow system update



Dismantling old blower







Foundation for EP Turbo







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Three weeks later







DS Smith Kemsley PM6 MULTISTAGE BLOWER SYSTEM REBUILD

Old system	kW	New system	kW
Multistage blower #1		EP600-700-D1	
Multistage blower #2		EP600-700-D1	
LRP x 2		EP600-700-S	
Altogether	2700	EP600-700-S	
		Altogether	1200

Old system vs. Turbo blowers



RESULTS

- Project main target was to improve system reliability.
- System adjustability is much better than before.
- Power consumption is at the moment 45% of the original situation. **Gardner**





Denve

Summary and Conclusion



The RunEco, RunDry and RunPro portfolio / family will help to save energy, improve the efficiency, runnability and output of Papermachines

For example

- 100% speed controlled Ecopump Turbos save energy
- Ecoflow dewatering measurement allows vacuum optimization, a relatively small investment with a big impact on saving of felt lifetime, of electricity because of optimized vacuum levels, optimized run in time and less shut downs
- Optimal Doctoring and save all minimize rewetting → higher dry content = less drying energy, less breaks, more production
- Web stabilization reduces the draw, web breaks and allows higher PM speeds → more production
- Automated tailtreading increases safety, reduces gradechange time and start up times and thereby increase the PM output



Summary and Conclusion



By the way, did you know that Papermachine optimization with Runtech Products saves worldwide (Status March 2018)

- Energy of 1100 GWh / year = 55 milj. EUR per year (50 EUR /MWh) or 66 days production of the KRSKO Nuclear Powerplant
- Water saving 15 milj. m³ / year = 104 minutes the waterflow of the Niagara Falls or about 8 hours water flow from Save river.
- Shut down of 700 liquid ring pumps worldwide
- And the saving continues



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Thank You!



Runtech by Gardner Denver

www.flowtec.at

www.runtech.fi