Billerud Packaging Seminar

Bangkok, Thailand

Smart Manufacturing of Paper Sacks

Jochen Scheil I 11.10.2023

WINDMÖLLER & HÖLSCHER

BILLERUD


THANK
YOU

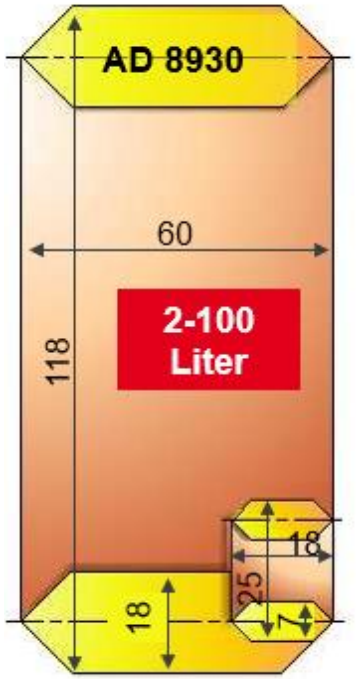

WINDMÖLLER & HÖLSCHER
Your trusted partner in paper sack production
AD 8930
AD 8930
NextGen bottomer with Digital Pasting technology
Learn more
ruby
The IoT platform by W&H
RUBY Track for paper sack production.
Dig up your hidden potentials!
• Quick overview of important job and machine KPI's (scrap rates, downtimes, OEE, ...)
• Identify benchmarks and weak points to increase production efficiency
Learn more
www.wh.group
AD 8320 CL
Your bottomer for Cement Sack production
Learn more

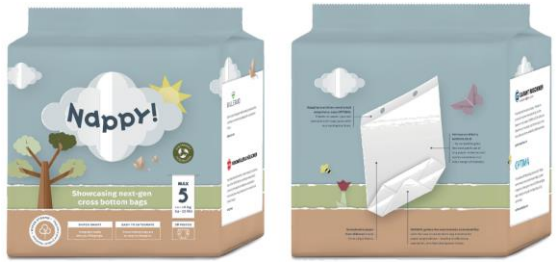
Jochen Ulrich Scheil, General Manager Industrial Packaging

- ✔52 years, married,1 daughter
- ✔Certified Aircraft Mechanic (German Air Force)
- ✔Studied Mechanical Engineering in Germany
- ✔Over 20 years experience in Asia-Pacific in various leading management positions (mostly in packaging machinery industry)
- ✔Lived/Worked in Singapore (4y) and Shanghai (11y)
- ✔Joined W&H in Bangkok in October 2021 as General Manager Industrial Packaging

Key Learnings - Answers

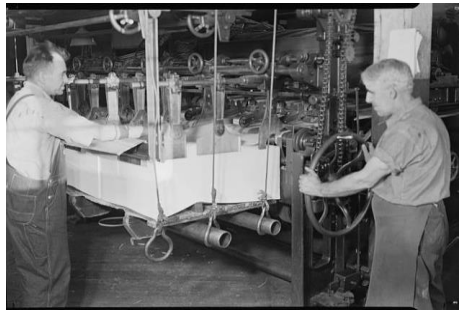
- How are paper sacks manufactured today in a smart/efficient way?
- How digital IoT systems can help to identify hidden production potential?
- Best practice sharing/market feedback
- News in eCommerce/Hygiene Packaging

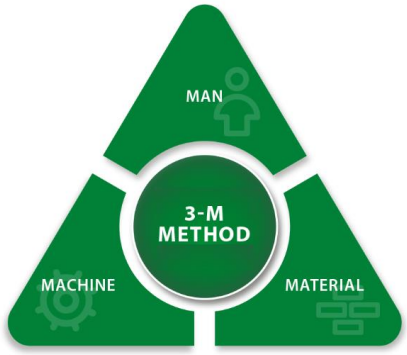




Current Challenges in Paper Sack Manufacturing

- High labor costs
- Skill level of operators
- Recyclability (e.g. no film ply)
- Low Carbon Footprint
- Moisture protection (e.g. special coatings)
- Sift proof designs (e.g. sealable valves)
- Reduced material (e.g. one ply concepts)





How to tackle those challenges?

W&H Asia Pacific On-Site Services & Maintenance Service technician team

78
Service Technicians in Asia-Pacific

Specialists
- ✓ 31x Extrusion
- ✓ 15x Printing
- ✓ 22x Converting

2x | 27x | 4x | 3x | 3x
1x | 3x | 2x | 22x | 3x

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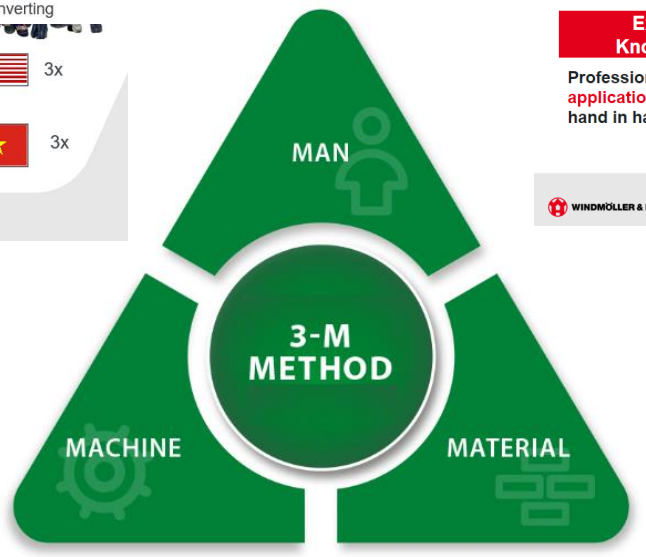
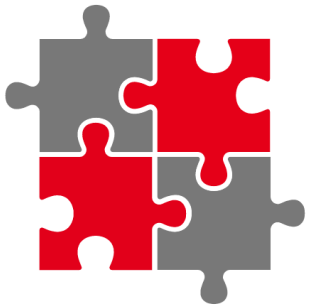


The W&H Academy is our competence center for training specialized for the flexible packaging market

Certified trainers
Our trainers are certified and have many years of practical experience

Expert Know-How
Professional product and application know-how go hand in hand



Individual concepts
We develop training concepts tailored to the customer's needs

Innovative Environment
Learning in an innovative environment with optimal conditions

WINDMÖLLER & HÖLSCHER ACADEMY

AM 8735

AD 8930

400!

60-118-18

- More **OUTPUT**
- Less **SETUP**
- Better **QUALITY**
- Less **MAINTENANCE**
- New **ASSISTANCE**

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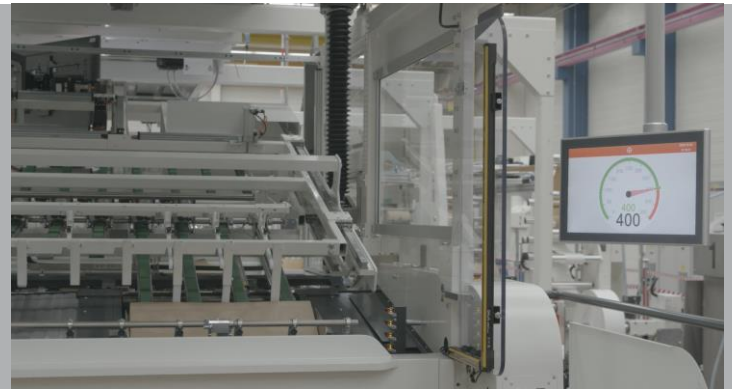
MORE OUTPUT!

No stops for roll changes!

New non-stop AM unwinders with pneumatic shafts eliminate downtimes for roll changes.

- Usable for paper and film
- Roll change according to print image (pre-printed outer ply!)
- Fast re-start after AM quick stop!



Higher speeds at rotary feeder!

Todays difficult sacks (e.g. high porous, bleached paper) can be run at higher speeds.

New design of rotary feeder (e.g. tube package, vacuum control) overcomes present speed limitations.

400 spm - fastest AD ever!

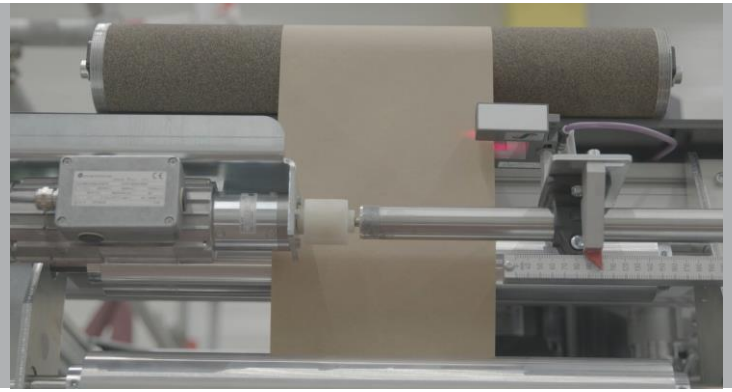
Maximum bottomer speeds of 400 sacks per minute represent a new market benchmark.

New direct drive concept implements more power.

LESS SETUP!

Smarter bottomer!

1) Suction cups are selected / activated automatically according to formats.
2) Loader forks are selected / activated automatically according to formats.
3) Pre-calculation of bottom opening station for start-up of new jobs



More automation!

Additional CNC axes implemented at bottomer, e.g.

- position of web guides at patch units
- pressing rollers after sack opening
- pressing rollers at delivery
- fingers for tube package at feeder
- pre-positioning of patch color decks
- …

Simultaneous setup of units!

Task sharing for job preparation leads to quicker bottomer setup!

Easier setup for a single operator as units can be prepared without interference and iterations.

Feasible because of new direct drive concept.

BETTER QUALITY!

Clean unwinding!

New acceleration and braking system avoids paper fibres contamination within the sack or on the print image.

Of special interest for hygienically sensitive markets.

Accurate geometry!

Improved sack transfer system with direct driven belts leads to a more accurate sack geometry and positioning.

Direct driven transport belts with automatic speed synchronisation of upper to lower belt.

Bottom edge pressing!

Additional pair of pressing rollers at delivery for improved bottom edge pressing.

CNC positioning of rollers according to format.

LESS MAINTENANCE

1) Replacement of **transition belts** (feeder to aligner) easily done within **minutes** instead of hours!

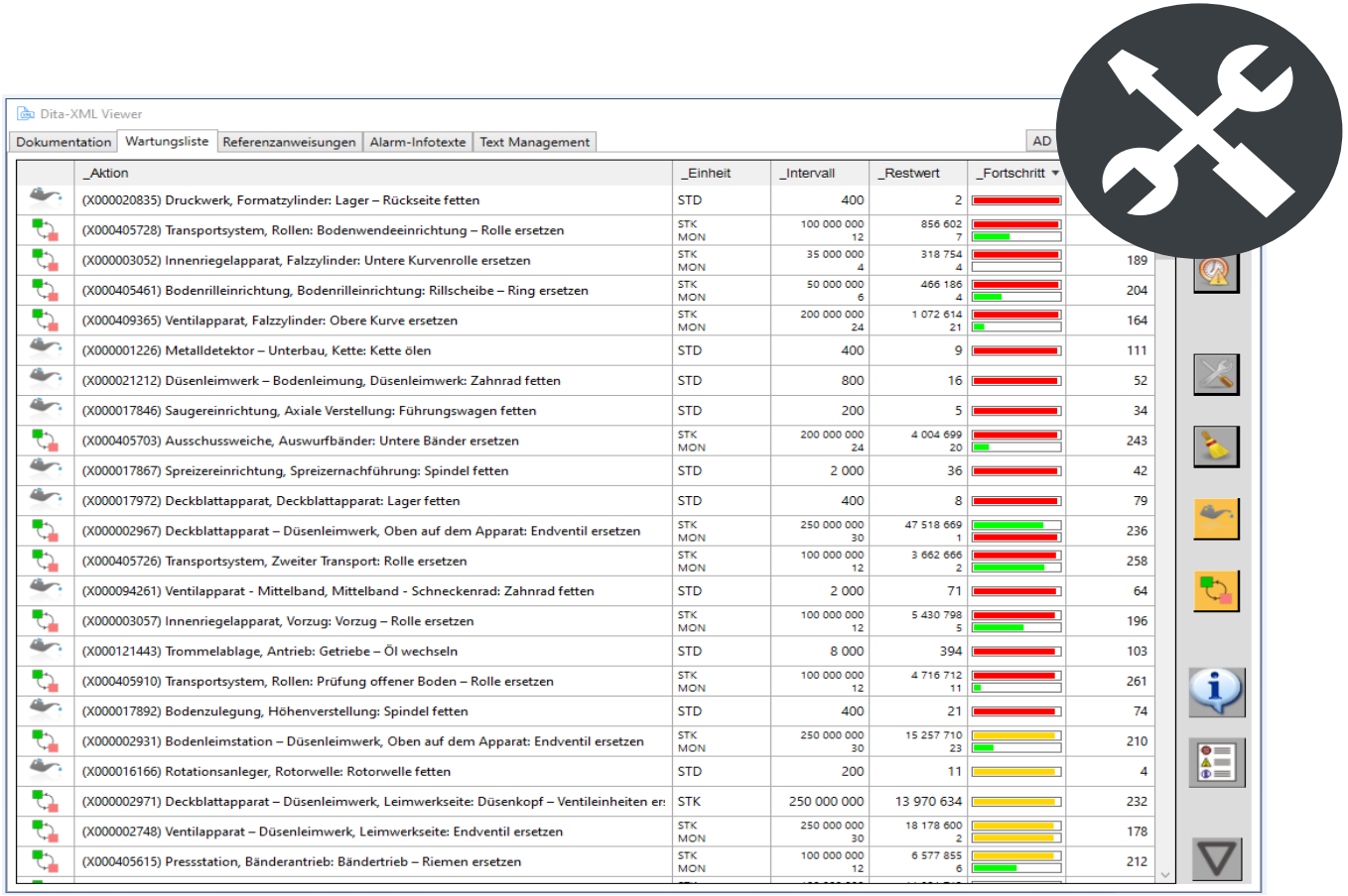
2) Less efforts for **transport belt adjustments** due to direct drives. No spreader discs but PROCONTROL means no long, mechanical, iterative but a quick, electrical, direct approach.

NEW ASSISTANCE!

Remind your staff!

Guided preventive maintenance!

- Remaining time/units to replacement
- Information of pending tasks
- Documentation of executed tasks



_Aktion	_Einheit	_Intervall	_Restwert	_Fortschritt	
(X000020835) Druckwerk, Formatzylinder: Lager – Rückseite fetten	STD	400	2		
(X000405728) Transportsystem, Rollen: Bodenwendeeinrichtung – Rolle ersetzen	STK MON	100 000 000 12	856 602 7		
(X000003052) Innenriegelapparat, Falzzylinder: Untere Kurvenrolle ersetzen	STK MON	35 000 000 4	318 754 4		189
(X000405461) Bodenrilleinrichtung, Bodenrilleinrichtung: Rillscheibe – Ring ersetzen	STK MON	50 000 000 6	466 186 4		204
(X000409365) Ventilapparat, Falzzylinder: Obere Kurve ersetzen	STK MON	200 000 000 24	1 072 614 21		164
(X000001226) Metalldetektor – Unterbau, Kette: Kette ölen	STD	400	9		111
(X000021212) Düsenleimwerk – Bodenleimung, Düsenleimwerk: Zahnrad fetten	STD	800	16		52
(X000017846) Saugereinrichtung, Axiale Verstellung: Führungswagen fetten	STD	200	5		34
(X000405703) Ausschussweiche, Auswurfbänder: Untere Bänder ersetzen	STK MON	200 000 000 24	4 004 699 20		243
(X000017867) Spreizereinrichtung, Spreizernachführung: Spindel fetten	STD	2 000	36		42
(X000017972) Deckblattapparat, Deckblattapparat: Lager fetten	STD	400	8		79
(X000002967) Deckblattapparat – Düsenleimwerk, Oben auf dem Apparat: Endventil ersetzen	STK MON	250 000 000 30	47 518 669 1		236
(X000405726) Transportsystem, Zweiter Transport: Rolle ersetzen	STK MON	100 000 000 12	3 662 666 2		258
(X000094261) Ventilapparat - Mittelband, Mittelband - Schneckenrad: Zahnrad fetten	STD	2 000	71		64
(X000003057) Innenriegelapparat, Vorzug: Vorzug – Rolle ersetzen	STK MON	100 000 000 12	5 430 798 5		196
(X000121443) Trommelablage, Antrieb: Getriebe – Öl wechseln	STD	8 000	394		103
(X000405910) Transportsystem, Rollen: Prüfung offener Boden – Rolle ersetzen	STK MON	100 000 000 12	4 716 712 11		261
(X000017892) Bodenzulegung, Höhenverstellung: Spindel fetten	STD	400	21		74
(X000002931) Bodenleimstation – Düsenleimwerk, Oben auf dem Apparat: Endventil ersetzen	STK MON	250 000 000 30	15 257 710 23		210
(X000016166) Rotationsanleger, Rotorwelle: Rotorwelle fetten	STD	200	11		4
(X000002971) Deckblattapparat – Düsenleimwerk, Leimwerkseite: Düsenkopf – Ventileinheiten er:	STK	250 000 000	13 970 634		232
(X000002748) Ventilapparat – Düsenleimwerk, Leimwerkseite: Endventil ersetzen	STK MON	250 000 000 30	18 178 600 2		178
(X000405615) Pressstation, Bänderantrieb: Bändertrieb – Riemen ersetzen	STK MON	100 000 000 12	6 577 855 6		212

Challenge for paper sack producers

How do I get better performance out of my current production?

- Do I still have hidden efficiency potentials?
- Why and where do I lose efficiency?
- Which products are operated unprofitably?
- Which of my actions and measures provide impact?
- …

MODERN PAPER SACK PRODUCTION!

READY FOR RUBY!

… get production data transparency

… make decisions based on **reliable data**

… identify weak points and benchmarks

…uncover your hidden potentials!

Combine your data with W&H know-how

Uncover the hidden treasure in your packaging production: Data. RUBY is the new IoT system to digitize your value chain. RUBY is offered as a platform with various freely combinable extensions in order to provide you with an individually tailored range of functions.

- Clear, modern web user interface
- Accessible via PC, laptop or tablet
- Unlimited number of users

ruby

Make use of hidden potentials?
RUBY Track is the enabler!

ruby

With RUBY Track you will…

… get data transparency

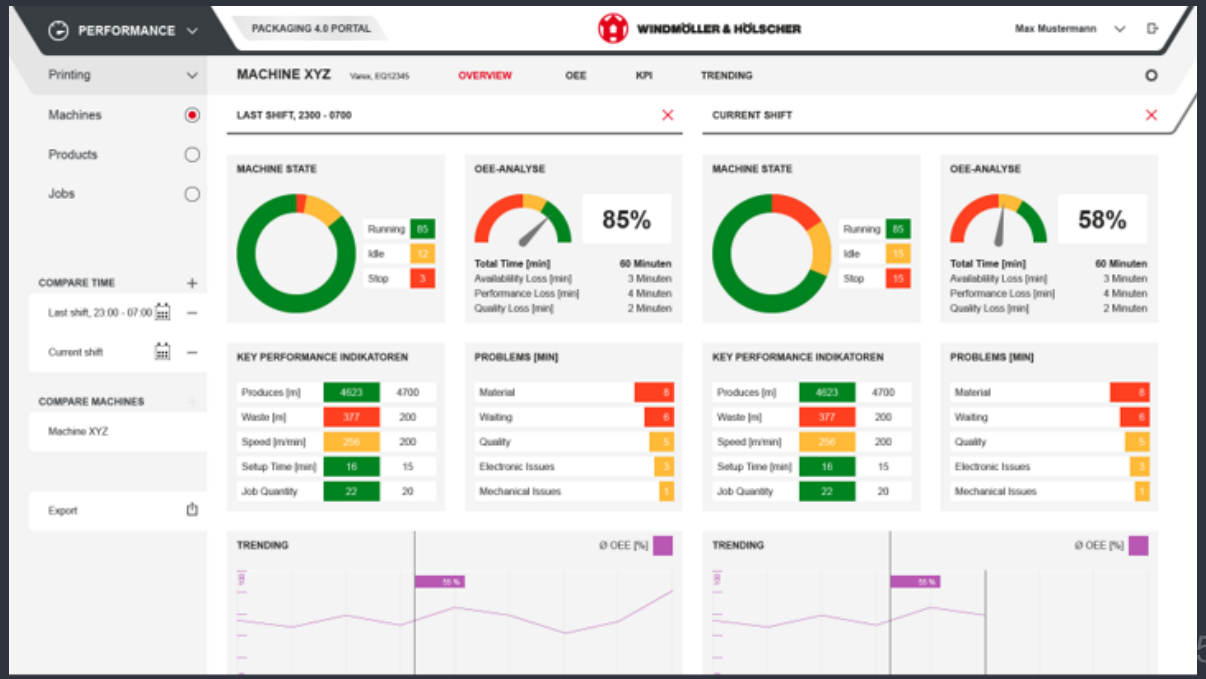
… make decisions based on reliable data

… identify weak points and benchmarks

… track your actions

… make use of W&H Know-How

… increase your efficiency



Market Feedback: NextGen Papersack Line & RUBY

Thanks to RUBY Track we can benchmark our production runs and optimize target speeds. It was possible to generate more output.

Reinhard Schulze-Edinghausen
CEO, Papiersackfabrik Tenax GmbH & Co. KG

ruby

„The output of the whole line is enormous, we have never seen figures like this in our industry before“

Reinhard Schulze-Edinghausen, CEO of TENAX

TENAX

The W&H Group: Flexible packaging experts under one umbrella

W&H

Parent company

- ✔ Extrusion
- ✔ Printing
- ✔ Converting
- ✔ Service

W&H Machinery

Subsidiary

- ✔ Wovens machinery
- ✔ Production in CZ (retrofits/ components)

Garant

Subsidiary

- ✔ Paper and plastic bag machines
- ✔ Refurbished machinery

Aventus

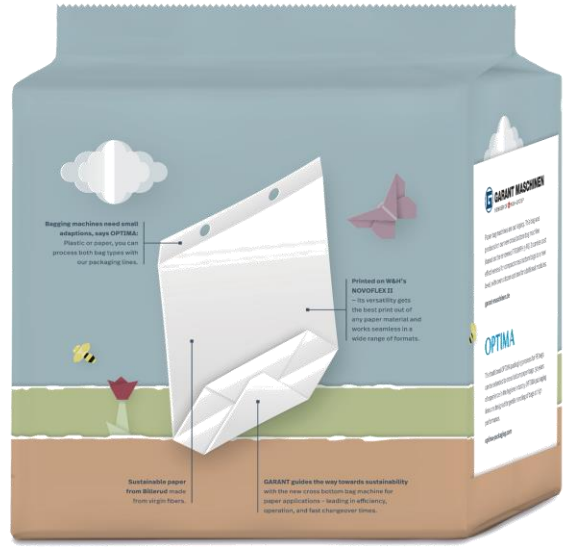
Joint Venture with Haver & Boecker

- ✔ Specialist for FFS-lines (complete lines)

Paper based Hygiene Packaging / eCommerce

GARANT MASCHINEN
MEMBER OF W&H-GROUP

The future - Paper cross bottom bag



The future – Paper eBags

WINDMÖLLER & HÖLSCHER

EXTRUSION | PRINTING | CONVERTING

GARANT MASCHINEN

MEMBER OF W&H-GROUP

감사합니다

شكرا MERCI ขอบคุณครับ/ค่ะ 非常感谢

DANKE ÇOK TEŞEKKÜRLER

Thank You !

Большое спасибо MUCHAS GRACIAS

GRAZIE MUITO OBRIGADO

DZIĘKUJĘ SERDECZNIE