The wood-mechanising company

CASE STUDY HANDLOS HOLZWERKE / TRAGWEIN(AUT)
WOOD MANUFACTURING 2010 – Rotorua(NZL) / Melbourne(AUS)

Jürgen Schmidt / 01. September 2010

Agenda

• SPRINGER group

• TRImATIC ONE PLANT - THREE PRODUCTS

• Case study
  HANDLOS(AUT)
  – Concept
  – NEWTON 1400

• Questions and discussion

Our technology partners

MiCROTEC
LINCK
EWD
SPRINGER Group

- an international operating family-run business
- was founded in 1952
- has 5 sites
- Europe’s no. 1 in high-performance plants (8 of 10 plants since 2002)
- employs more than 270 people
- had a turnover of 75 mio. EUR in 2009
- exports 75%

Head Office Friesach (AUT)

SPRINGER Group
business structure and sites

- SPRINGER Maschinenfabrik AG Friesach (AUT)
- SPRINGER Holztechnik GmbH Rangersdorf (AUT)
- SPRINGER France SAS Oberna (FRA)
- SPRINGER Industrial Services GmbH Friesach (AUT)
- SPRINGER Maschinenfabrik AG Moscow (GUS)
- MICROTEC s.r.l./GmbH Brixen (ITA)
- MICROTEC Industrieautomation GmbH Linz (AUT)
- MICROTEC North America Vancouver (CAN)

Map showing locations in Europe with key cities and sites highlighted.
TRIMATIC is a plant concept with a modular construction system for the manufacture of three products of glue laminated timber - finger jointed beams, squares and DUO-TRIO beams.

- Variable application of main machines
- Core component: patented timber laminating press **NEWTON 1400**
  (press time 15-30 min – latest generation of PU, EPI or Melamine)
- Performance: 30,000 - 100,000 m³/year output (3 shifts)
- High flexibility in production and a compact, extendable solution for further wood processing

TRIMATIC is delivered as turn-key plant comprising:

- Main machines like finger jointing plant, planing machines, presses
- Mechanisation and plant interlinking
- Supply of adhesive agents and applications plants
- Supply of compressed air and extraction
- All components fully assembled and controlled

TRIMATIC can also be delivered as a component system where SPRINGER delivers the plant interlinking and the relevant, mechanisation.
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TRIMATIC can be expanded as required:

- Online mechanical quality sorting + pre-planing + GoldenEye Scanner from MICROTEC
- Exchange of the glue laminated plant to achieve improved laminated performance
- Extension of the NEWTON 1400 to improve performance and capacity
- Extension of post-processing(cosmetics) for better quality
- Packing machine, foil wrapping stations, CNC routing station, etc.

What kind of products are produced by TRIMATIC

The use of glue laminated timber, DUO/TRIO-beams or finger jointed beams and squares plays an important role in residential building, as well as in the construction of public utilities or industrial buildings.

Laminated wood products fulfil the most exigent requirements regarding static, durability and optical characteristics.

With TRIMATIC Springer offers wood processing enterprises the best possible flexibility in production and, at the same time, a compact, extendable first solution to further wood processing.

FINGER JOINTED BEAMS (KVH)  DUO-/TRIO BEAMS  GLUE LAMINATED BEAMS (BSH)
STAGE 2: FINGER JOINTED BEAMS, DUO-/TRIO-BEAMS, GLUE LAMINATED TIMBER

OUT FEED STORAGE  LAMELLA PLANING  GLUE APPLICATION  2 x PRESS „NEWTON 1400”

2 ADD. STORAGE TRAYS

STAGE 3: FINGER JOINTED BEAMS, DUO-/TRIO-BEAMS, GLUE LAMINATED TIMBER
CAPACITY INCREASE

4 x PRESS „NEWTON 1400”  COSMETIC STATION

4 ADD. STORAGE TRAYS  2nd FINGER JOINTING LINE
TECHNICAL DATA

<table>
<thead>
<tr>
<th>WORKSHOP SIZE</th>
<th>CONSTRUCTION STAGE 1</th>
<th>CONSTRUCTION STAGE 2</th>
<th>CONSTRUCTION STAGE 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4300 m³</td>
<td>5300 m³</td>
<td>5300 m³</td>
</tr>
<tr>
<td>ANNUAL PRODUCTION (3 SHIFTS)</td>
<td>approx. 46,000 m³</td>
<td>approx. 60,000 m³</td>
<td>approx. 80,000 m³</td>
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<tr>
<td>Finger jointed beams (KVK)</td>
<td>Finger jointed beams (KVK)</td>
<td>Finger jointed beams (KVK)</td>
<td></td>
</tr>
<tr>
<td>DUO-/TRIO beams</td>
<td>DUO-/TRIO beams</td>
<td>DUO-/TRIO beams</td>
<td></td>
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<tr>
<td>Glue laminated beams (ESH)</td>
<td>Glue laminated beams (ESH)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAW MATERIAL</td>
<td>Length: 3.80-5.20m</td>
<td>Length: 3.00-5.20m</td>
<td>Length: 3.00-5.20m</td>
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<tr>
<td>Width: 80-300mm</td>
<td>Width: 80-300mm</td>
<td>Width: 80-300mm</td>
<td></td>
</tr>
<tr>
<td>Thickness: 37-110mm</td>
<td>Thickness: 37-110mm</td>
<td>Thickness: 37-110mm</td>
<td></td>
</tr>
<tr>
<td>Package size: 1.2m x 1.2m (w x h)</td>
<td>Package size: 1.2m x 1.2m (w x h)</td>
<td>Package size: 1.2m x 1.2m (w x h)</td>
<td></td>
</tr>
<tr>
<td>MATERIAL AT CUT FEED</td>
<td>Length: 4.4 to 10m</td>
<td>Length: 4.4 to 10m</td>
<td>Length: 4.4 to 10m</td>
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<tr>
<td>Width: 800x800mm to 310x165mm</td>
<td>Cross section: KVK 80x80mm to 310x165mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thickness: 110-210mm</td>
<td>Cross section: ESH 80x80mm to 165x165mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Package size: 1.2m x 1.2m (w x h)</td>
<td>Package size: 1.2m x 1.2m (w x h)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEFECT MARKING</td>
<td>Manual by operator on 1 unit</td>
<td>Manual by operator on 1 unit</td>
<td>Manual by operator on 2 units</td>
</tr>
<tr>
<td>FINGER JOINTING</td>
<td>Performance: 7.5 connections / minute</td>
<td>Performance: 7.5 connections / minute</td>
<td>Performance: 15 connections / minute</td>
</tr>
<tr>
<td>GLUE HARDENING</td>
<td>1 cross conveyor storage size approx. 25m</td>
<td>1 cross conveyor storage size approx. 25m</td>
<td>1 cross conveyor storage size approx. 25m</td>
</tr>
<tr>
<td>LAMELLA STORAGE</td>
<td>1 cross conveyor storage size approx. 25m</td>
<td>1 cross conveyor storage size approx. 25m</td>
<td>1 cross conveyor storage size approx. 25m</td>
</tr>
<tr>
<td>LAMELLA PLANER</td>
<td>2 storage trays; storage size approx. 30m</td>
<td>4 storage trays; storage size approx. 30m</td>
<td>4 storage trays; storage size approx. 30m</td>
</tr>
<tr>
<td>GLUE APPLICATION</td>
<td>Feed speed: 250mm/min, glue system P/S, EP/LMF</td>
<td>Feed speed: 250mm/min, glue system P/S, EP/LMF</td>
<td>Feed speed: 250mm/min, glue system P/S, EP/LMF</td>
</tr>
<tr>
<td>PRESS</td>
<td>2 Springer Newton 1400 glue lamp press</td>
<td>4 Springer Newton 1400 glue lamp press</td>
<td></td>
</tr>
<tr>
<td>CUTTING UNIT</td>
<td>Springer length trim saw unit 4 to 16m</td>
<td>Springer length trim saw unit 4 to 16m</td>
<td>Springer length trim saw unit 4 to 16m</td>
</tr>
<tr>
<td>FINISH PLANING</td>
<td>4 side + 4 edge cut + special profile cutting unit, feed speed max. 50m/min</td>
<td>4 side + 4 edge cut + special profile cutting unit, feed speed max. 50m/min</td>
<td>4 side + 4 edge cut + special profile cutting unit, feed speed max. 50m/min</td>
</tr>
<tr>
<td>COSMETIC</td>
<td>Pre cosmetic with semi automatic turning station</td>
<td>Pre cosmetic with semi automatic turning station</td>
<td>Pre cosmetic with semi automatic turning station</td>
</tr>
<tr>
<td>PACKAGING UNIT</td>
<td>Package size max. 1200x800mm (BxH)</td>
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</tr>
</tbody>
</table>

CASE STUDY
HANDLOS HOLZWERKE(AUT)
GLUE LAMB MANUFACTURE

ANNUAL CAPACITY (3 shifts): 80,000m³ Glue lam. beams, DUO-TRIO-beams, finger jointed beams
Raw material dimension: Board dimensions: length 3-5m, width 80-310mm, thickness 24-100mm
Dimension finished product: Beams: height 80-600mm, width 80-300mm, length 3-13m
Total workshop size: 3,750 m²

INTERGARTED MAIN MACHINES:
1 Finger jointing: GreCon Turbo LH
1 Lamella planer: Rex – integrated in finger jointing unit
1 Glueing line: Casco Maximum feed speed 250 meter / minute
7 Press units: Springer Newton 1400
1 Pre-planer: Rex, working width 600mm, integr. Splitt saw horizontal
1 Finish planer: Rex, working width 600mm, feed speed max. 60m/min
1 Final length cutting unit: Working width max. 600mm, single piece cutting or package cutting
1 PVC Filling machine for single beams: Böhl, feed speed max. 50m/min
1 PVC Filling machine for packages: Böhl, feed speed max. 25m/min
CASE STUDY
HANDLOS HOLZWERKE (AUT)
GLUE LAMB MANUFACTURE

Finger jointing unit with cut station

Lamella pre-planing

Length cutting unit and lamella storage

In-feed to
SPRINGER NEWTON 1400
laminated timber press
NEWTON 1400
Glue laminated beams press

TECHNICAL DATA:
- Beam height: 0-1400mm
- Beam width: 88 - 310mm
- Beam length: up to 28m
- Pressing pressure max. 1.2N/mm²
- Spacing between press cylinders: 800mm
- Length press shoe: 600mm

• Modular system: Press cylinders working from bottom – single beam up to 1400mm
• Special side pressure units (cylinders) – perfect alignment of beam
• All mechanical and hydraulic functions are controlled fully automatic by MICROTEC

NEWTON 1400
Glue laminated beams press

MODULAR SYSTEM:
- 1 start module [flexible pressure]
- 2 middle modules [1.2 N/mm²]
- 1 end module [1.2 N/mm²]
  100% alignment of each board

ADVANTAGES:
- Units designed for transport
- Short start up times
- Pre assembled with hydraulik, electric, etc… in our workshop
- Tested and approved
NEWTON 1400
Glue laminated beams press

BASICS:

- DIN 1052 regulation: 0.8 up to 1.2 N/mm²
- Different length – various pressure at start – end section of board
- Only two pressure control valves

ALIGNMENT OF BOARDS:

- Directly after gluing station
- Moveable even end [800 mm]
- Board alignment according to end press table
- Constant pressure according to length of beam
- Tested and approved

LAMELLE FILLING PROCESS:

Side pressure arms for alignment of boards.
Lamella length max. 26m
NEWTON 1400
Glue laminated beams press

FILLING FUNCTION:

- Directly after gluing to press channel
- Stacked in channel and side alignment
- Only each 3rd press table needed for filling
- Press table with automatic filling control
- Short manipulation times
- Time from gluing to pressing is minimized
- No wait time while pressing
- Filling of next channel

SIDE ALIGNMENT:

- Side pressure by parallelogram arms (0-1400mm height)
- Alignment of stack each 5th board
**NEWTON 1400**
Glue laminated beams press

**PRESSING PROCESS:**
- Press flap is closed and locked
- Side alignment is under stabilization pressure
- All press cylinders are pushing from the bottom against the beam [1.2 N/mm²]
- While specific press time -> next channel can be filled
- No waiting time

**OUT-FEED PROCESS:**
- Discharge in longitudinal direction
- Beam will be moved down to out-feed rollcase
- Beam will be pulled down on 90° for further transport

Press out-feed at "Schwörer Haus" in Oberstetten (AT)
Maximum beam length 26m
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NEWTON 1400
Glue laminated beams press

MOVIE „ NEWTON 1400 “

CASE STUDY
HANDLOS HOLZWERKE(AUT)
GLUE LAMB MANUFACTURE

Lamella turning station
Finish planing

Manual lamella cosmetic double station
CASE STUDY
HANDLOS HOLZWERKE (AUT)
GLUE LAMB MANUFACTURE

Packaging unit with stacker
High bay wall storage

Package foiling unit

Thank you for your attention!