Sheet handling systems – Professional and customer-oriented solutions

we’re on it.
Sheet handling – Optimize processes, with our solutions

Metal decorating is in many ways a logistical challenge. In addition to the high line speeds, optimised transport processes are decisive for efficient production.

As the leading system supplier, Koenig & Bauer MetalPrint offers all the components necessary to ensure smooth, highly automated production, and offers individually tailored solutions for process optimisation and automation, including adaptation to any relevant local circumstances.

The product range
- Pallet changers
- Feeder logistics
- Sheet management systems / Inspection sheet removal
- Intermediate transport solutions / Bridges and wide belt conveyors
- Modular stacking / Delivery logistics solutions
- Pile turners
Specifications

Pallet changer, type 775

- Maximum weight of pile for fork: approx. 300 kg (approx. 661.39 lbs)
- Maximum pile height with pallet (corresponds to max. clearance height): 500 mm (19.69 in)
- Minimum pallet skid height: 65 mm (2.56 in)
- Length without roller conveyor: 2,280 mm (89.76 in)
- Height: 3,345 mm (131.69 in)

Pallet changer, type 636

- Maximum weight of pile for fork: approx. 661.39 lbs
- Maximum pile height with pallet: approx. 720 mm (28.35 in)
- Minimum pallet skid height: 65 mm (2.56 in)
- Length without roller conveyor: approx. 2,280 mm (89.76 in)
- Height: 3,290 mm (129.53 in)

Function principle

- The forks stand in a waiting position until the remaining pile is reduced to a defined height.
- As soon as this height is reached, the operator receives a signal that the forks must be inserted under the pallet in the feeder.
- The forks take over further lifting of the pile and the main pile frame can be lowered.
- A new pile can now be placed on the frame and raised to a waiting position under the forks.
- When the pile in the feeder is empty, the forks automatically remove the empty wooden pallet.
- The new pile is then raised by the operator and production resumes as soon as the pallet reaches its top position in the feeder.
- It is possible to use standard wooden pallets – minimum runner height 65 mm for type 775 and type 636.

Pallet changer –
type 775 / type 636

The pallet changer reduces pallet changeover times to 20–30 seconds. That alone is a basis for significantly increased productivity.
Customer-specific logistics at the feeder

We offer a diversity of solutions tailored to your individual needs and space availability.

Solutions for every need
- Roller conveyor extensions with or without Stop & Turn
- Stop & Turn functionality for fast and automatic front alignment of the pallet for feeder 780 and MetalStar 3
- Facilities for pallet loading from one or two sides within the feeder frame
- Single-side chain conveyor outside the feeder frame, in combination with a roller conveyor (not available in combination with a pallet changer or Stop & Turn)
- Side chain conveyors in various lengths and for different transport weights
- Turntables 90° – 180°

Your benefits
- Fast pile changes
- Better access to the production line with forklifts
- Simpler and faster loading
Inspection sheet ejection – type 880

Optimised for use on Mailänder printing lines and MetalCoat coating lines.

Specifications

- **Maximum sheet size**: 1000 x 1200 mm (39.37 x 47.24 in)
- **Minimum sheet size**: 510 x 710 mm (20.08 x 27.95 in)
- **Sheet thickness standard**: 0.14 – 0.50 mm (0.0055 – 0.0197 in)
- **Sheet thickness on request**: 0.100 mm (0.00394"")
- **Maximum sheet weight**: 2.6 kg (5.73 lbs)
- **Maximum speed¹**: up to 7000 sheets/h, up to 116 spm

¹ The specified speed is the maximum mechanical running speed. The maximum speed actually attainable in production is dependent on the substrate, the quality of the materials used and other internal production conditions.

Applications

- Ideal for space-saving use in combination with a thermal dryer
- Can be used in place of a conveyor bridge to compensate height differences between the dryer and upstream line modules
- Optional re-insertion with manual selection of the insertion point is only available for Mailänder 280 UV printing lines
Sheet Management System – SMS, type 881

Reliable and damage-free ejection and re-insertion of inspected sheets at maximum production speed. Waste sheets can also be ejected safely and conveniently for re-use.

The Sheet Management System is designed for flexible configuration: Sheet transport is already by way of wide belts as standard, meaning that no manual belt adjustment is necessary when changing formats.

1 Ejection
- In the basic version, a single sheet can be ejected smoothly for inspection during on-going production

2 Ejection with re-insertion
- This variant combines ejection with a facility for re-insertion at full production speed
- After inspection, the sheet is re-inserted precisely into the gap arising when the next inspection sheet is ejected

3 Ejection with waste box
- For this variant, a waste box is added to the SMS
- A pre-selected number of waste sheets (up to a maximum height of 200 mm, including pallet) can be ejected automatically. These waste sheets can then be removed to the side with the aid of a trolley
- The waste box is equipped with motorised format setting as standard

4 Ejection with re-insertion and waste box
- Combines description 2 and 3

Your benefits
- Maximum operating convenience
- Safe and reliable handling
- High level of operator safety

Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>SMS Sheet Management System, type 881</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum sheet size</td>
<td>1000 x 1200 mm</td>
</tr>
<tr>
<td>Minimum sheet size</td>
<td>510 x 710 mm</td>
</tr>
<tr>
<td>Sheet thickness standard</td>
<td>0.12 – 0.50 mm</td>
</tr>
<tr>
<td></td>
<td>(0.100 mm on request)</td>
</tr>
<tr>
<td>Maximum sheet weight</td>
<td>2.6 kg</td>
</tr>
<tr>
<td>Maximum speed</td>
<td>up to 8500 sheets/h</td>
</tr>
<tr>
<td>Maximum weight of pile in waste sheet stacker</td>
<td>approx. 300 kg</td>
</tr>
<tr>
<td>Maximum pile height with pallet in waste sheet stacker</td>
<td>approx. 200 mm</td>
</tr>
</tbody>
</table>

1 The specified speed is the maximum mechanical running speed. The maximum speed actually attainable in production is dependent on the substrate, the quality of the materials used and other internal production conditions.
Bridge conveyors – Maximum flexibility for your production

A bridge conveyor enables sheets to be passed on from a printing line to a subsequent coating line.

Applications
- Telescopically extendable bridge conveyor between two production lines in combination with an intermediate feeder serving the downstream line
- In combination with stacking at the end of the upstream line, the bridge conveyor incorporates front stops for realignment of the sheets
- Or in combination with stacker type 806 with dynamic sheet control for an upstream conventional line
- Or with stacker type 806 MagStack / VacStack for an upstream UV printing line

Your benefits
- Reliable and damage-free transport
- High flexibility

Bridge conveyor between two production lines

Bridge conveyor with additional front edge alignment in combination with an intermediate feeder (viewed from the drive side)
Wide belt conveyors – Customer-oriented solutions for printing and coating lines

Wide belt conveyors are available in different lengths and versions:
- For image inspection systems
- As an extension/flow-out zone after a MetalCoat 470/480 coating machine or an integrated coater on a MetalStar 5 ahead of UV final drying
- For height compensation between two line components
- As a conveyor for the UV final drying
- After a UV backside dryer

Sheet transport with special UV-resistant belts after a UV backside dryer

Wide belt conveyor for image inspection systems

Wide belt conveyor as height compensation

Flow-out zone / wide belt conveyor with sheets

UV final dryer
Stacker – type 803 / type 806

Reliable and proven technology.

Stacker – type 803
Standard stacking unit in combination with the unloader of a drying oven.

- Quiet operation thanks to spring front stops and side guides
- Gentle dropping of the sheets with the aid of an adjustable air cushion
- Manual format setting

Your benefits
- Reliable and stable production
- Simple operation

Stacker – type 806
The stacker type 806 is fitted with a dynamic sheet brake as standard. The sheets are decelerated dynamically by way of a vacuum acting on the underside, and then deposited gently into the stacker box with the aid of an adjustable air cushion. To this end, the sheets are aligned by way of spring front stops and side guides. This stacker is only available as a single-box unit.

As an option, the stacker can be equipped with motorised adjustment of all format-dependent components via a touchscreen display.

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Stacker, type 803</th>
<th>Stacker, type 806</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maximum sheet size</td>
<td>Maximum sheet size</td>
</tr>
<tr>
<td></td>
<td>1000 x 1200 mm</td>
<td>1000 x 1200 mm</td>
</tr>
<tr>
<td>Sheet thickness standard</td>
<td>0.12 – 0.50 mm (0.100 mm on request)</td>
<td>0.12 – 0.50 mm (0.100 mm on request)</td>
</tr>
<tr>
<td>Maximum sheet weight</td>
<td>2.6 kg</td>
<td>2.6 kg</td>
</tr>
<tr>
<td>Maximum speed¹</td>
<td>up to 6000 sheets/h</td>
<td>up to 7000 sheets/h</td>
</tr>
<tr>
<td>Maximum weight of pile with pallet</td>
<td>1500 kg</td>
<td>1500 kg</td>
</tr>
</tbody>
</table>

¹ The specified speed is the maximum mechanical running speed. The maximum speed actually attainable in production is dependent on the substrate, the quality of the materials used and other internal production conditions.
Specifications
Stacker, type 806 MagStack / VacStack

- Maximum sheet size 1000 x 1200 mm 39.37 x 47.24 in
- Minimum sheet size 510 x 710 mm 20.08 x 27.95 in
- Sheet thickness standard 0.12 – 0.50 mm (0.0047 – 0.0197 in)
- Maximum sheet weight 2.6 kg 5.73 lbs
- Maximum speed up to 8500 sheets/h up to 141 spm

- Both the single- and double-box variants can be combined with a separate waste stacking unit (triple-box stacking)
- As an option, the stacker can be equipped with motorised adjustment of all format-dependent components via a touchscreen display
- Interface to an image inspection system to control waste ejection upon request

Your benefits
- Quiet and damage-free stacking
- Maximum production outputs also with sensitive materials
- Operator-friendly
- Uninterrupted production
- High level of automation reduces make-ready times
- High productivity

The high-tech stacker type 806 MagStack / VacStack features a dynamic overhead brake and is designed for absolutely damage-free stacking at the highest speeds. The design enables configuration in single-, double- and triple-box versions.

- The suspended sheets are held from above by way of either magnets (MagStack) or vacuum (VacStack); under electronic control, they can in this way be slowed down from production speed to zero at precisely the right time to be dropped vertically
- The benefits are precise and scratch-free stacking at the maximum possible speed
- Suitable for tinplate, ECCS (TFS) and aluminium sheets (VacStack only)
- This form of stacking is ideal for scroll sheets and – in the MagStack version – also extremely quiet
- To enable non-stop operation, the modular stacker can be configured as a double-box unit
- Both the single- and double-box variants can be combined with a separate waste stacking unit (triple-box stacking)
- As an option, the stacker can be equipped with motorised adjustment of all format-dependent components via a touchscreen display
- Interface to an image inspection system to control waste ejection upon request

Your benefits
- Quiet and damage-free stacking
- Maximum production outputs also with sensitive materials
- Operator-friendly
- Uninterrupted production
- High level of automation reduces make-ready times
- High productivity
Logistics solutions on the delivery side

Customer-specific solutions to match your individual needs and space availability.

Solutions for every need
- Roller conveyor extensions as stack buffer zone
- Roller conveyors with geared drive for jerk-free transport
- Stack removal by either roller conveyor or side chain conveyor
- Turntables 90° - 180°
- Inline pile turner type 821

Your benefits
- Better access to the production line with forklifts
- Smooth stack changes
- Simpler and faster unloading

Double-box stacking unit with additional waste stacking and side chain conveyor

Roller conveyor with turntable and inline pile turner type 821

Optional stack removal via a side chain conveyor
Specifications

Pile turner, type 822

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Pile turner, type 822</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum pile weight</td>
<td>3500 kg</td>
</tr>
<tr>
<td>Maximum sheet size¹</td>
<td>1000 x 1200 mm</td>
</tr>
<tr>
<td>Size of the support plates (L x W)</td>
<td>860 x 1120 mm</td>
</tr>
<tr>
<td>Max. space between the support plates</td>
<td>280 mm</td>
</tr>
<tr>
<td>Min. space between the support plates</td>
<td>1102 mm</td>
</tr>
<tr>
<td>Floor space (L x W)</td>
<td>2546 x 1422 mm</td>
</tr>
<tr>
<td>Turning time²</td>
<td>approx. 30 sec.</td>
</tr>
<tr>
<td>Installed electric power</td>
<td>9 kW</td>
</tr>
<tr>
<td>Weight without roller conveyor³</td>
<td>2450 kg</td>
</tr>
</tbody>
</table>

¹ On request special design for larger sheet sizes available.
² Without insertion of the empty pallet.
³ 2800 kg (6172.94 lbs) including seaworthy packing.

Dimensions

Pile turner, type 822

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Pile turner, type 822</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height of machine (A)</td>
<td>1258 mm</td>
</tr>
<tr>
<td>Width of machine</td>
<td>1422 mm</td>
</tr>
<tr>
<td>Length of machine (B)</td>
<td>2548 mm</td>
</tr>
<tr>
<td>The roller conveyor can be extended by segments of</td>
<td>1244 mm</td>
</tr>
</tbody>
</table>

Your benefits

- Minimal space requirements resulting from single sided operation
- Rapid operation of the unit allows the Pile turner 822 to serve up to 8 lines
- Easy access for forklift or manual lift trucks
- Damage-free turning of large and small piles
- Low pile grip pressure avoids sheet sticking problems
- Automatic operation
- Solid construction

Operation

- The pile is placed in the turner by a forklift truck. A second pallet has to be placed on the top (see figure 1).
- A push button starts the turning operation which goes through the following automatic operations:
  - The support plates close (figure 1)
  - The pile is lifted (figure 2)
  - Rotation takes place (figure 3)
  - The pile is then lowered to the original position
  - The support plates open allowing the pile to be withdrawn
- The pallet is removed from the top of the pile which can then be removed by a forklift truck.

Figure 1: Closing of the support plates
Figure 2: Lifting
Figure 3: Turning

The hydraulic Pile turner 822 is designed for a standalone configuration (offline).
Pile turner – type 821

The 821 model of pile turner can be placed behind the stacking machine as an inline unit or used as a free-standing machine capable of handling the output from three metal decorating lines.

Your benefits
- No pressure is applied to the pile during turning thus avoiding sheet sticking
- Solid construction

Operating sequence – free-standing
- The pile is placed in the unit by a forklift truck and a second pallet has to be placed on top.
- The upper support plate is lowered until it touches the top pallet without exerting pressure \( \text{①} \) after which rotation is started automatically \( \text{②} \).
- After turning the pile is lowered and the top pallet can be removed \( \text{③} \).
- Pressing a control button will return the turner to the start position.

Operating sequence – inline
- The pile is lowered in the stacker.
- The electrically driven roller conveyor moves the pile into the turner. A second pallet has to be placed on top.
- The upper support plate is lowered until it touches the top pallet without exerting pressure \( \text{①} \) after which rotation is started automatically \( \text{②} \).
- After turning the pile is lowered and the top pallet can be removed. On pressing a button, the pile is discharged on a roller conveyor \( \text{③} \).
- The pile turner returns to the start position by pressing a second button.
- If the pile does not require turning, the rear wall of the turner can be swung out of the way to allow the pile to be conveyed straight through the unit \( \text{④} \).

Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Pile turner, type 821</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum pile weight</td>
<td>3500 kg</td>
</tr>
<tr>
<td>Maximum sheet area (L x W)</td>
<td>1500 x 1200 mm</td>
</tr>
<tr>
<td>Size of the support plates</td>
<td>910 x 1350 mm</td>
</tr>
<tr>
<td>Max. space between the support plates</td>
<td>800 mm</td>
</tr>
<tr>
<td>Min. space between the support plates</td>
<td>300 mm</td>
</tr>
<tr>
<td>Pile capacity (L x W)</td>
<td>1380 x 2750 mm</td>
</tr>
<tr>
<td>Turning time</td>
<td>approx. 50 sec.</td>
</tr>
<tr>
<td>Installed electric power</td>
<td>6 kW</td>
</tr>
<tr>
<td>Weight without roller conveyor</td>
<td>2150 kg</td>
</tr>
</tbody>
</table>

Dimensions

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Pile turner, type 821</th>
</tr>
</thead>
<tbody>
<tr>
<td>Height of machine (A)</td>
<td>1600 mm</td>
</tr>
<tr>
<td>Width of machine</td>
<td>1224 mm</td>
</tr>
<tr>
<td>Length of machine (B)</td>
<td>2900 mm</td>
</tr>
<tr>
<td>Length including standard roller conveyor when being used as “inline pile turner”</td>
<td>2657 mm</td>
</tr>
<tr>
<td>The roller conveyor can be extended by segments of 1244 mm</td>
<td>48.98 in</td>
</tr>
</tbody>
</table>

1 On request special design for larger sheet sizes available.
2 Without loading/unloading via the roller conveyor and insertion of the empty pallet.
3 2500 kg (5511.56 lbs) including seaworthy packing.
As a system supplier to the metal packaging industry, Koenig & Bauer MetalPrint offers innovative systems for the decoration of 2- and 3-piece cans. For the 3-piece market, Koenig & Bauer MetalPrint supplies complete production lines for the printing, coating and drying of tinplate and aluminium sheets. The product range comprises multicolour printing presses and coating machines in combination with thermal drying ovens or UV curing systems. Further specialities are material handling systems and state-of-the-art, energy-efficient installations for exhaust air purification.

The name Koenig & Bauer MetalPrint stands for quality, innovation and continuous further development. We offer complete solutions which are tailored specifically to the customer’s individual requirements.
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