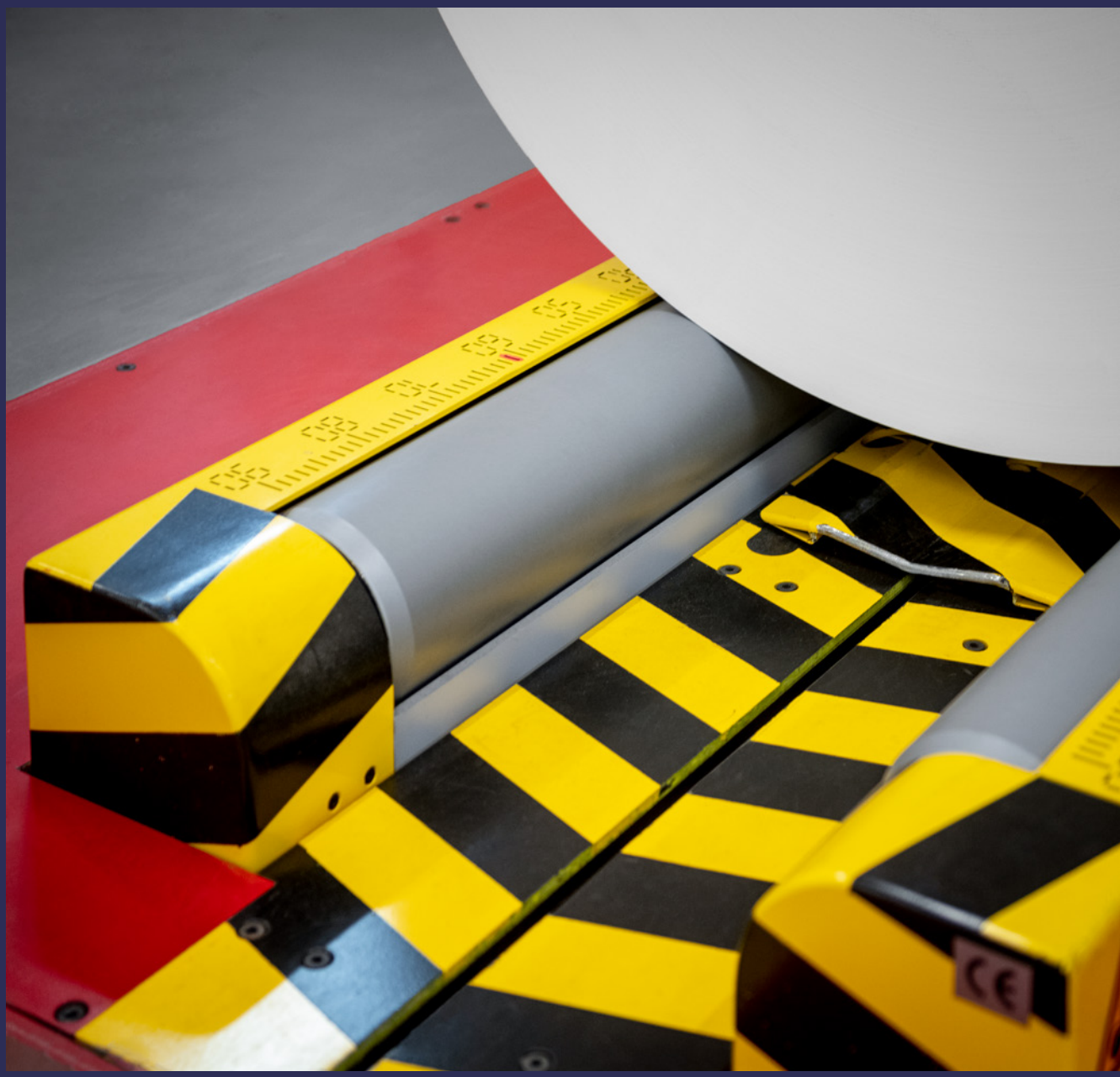
KOENIG & BAUER

Patras



we’re on it.

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Patras – modular systems for materials logistics

Whatever the press, whether offset, flexo or digital, for many companies, Patras is a tried and tested high-performance transport system for reel transport to and from manual and automatic unwinders and re-winders.

A modular design strategy allows the system to be customized to suit specific production scenarios and printing-plant architecture. The choice of options ranges from a manual version – for printers with a low throughput of reels – to completely automated systems controlling goods inwards through to reel storage and disposal of residual reels – for large plants consuming a high volume of materials.

Patras can deliver enormous time and cost savings – as well as waste reduction – thereby significantly enhancing the efficiency of your plant. Koenig & Bauer plans and implements logistics solutions designed to suit your layout and business needs.

The management and control of the processes on modern control consoles represents a decisive advantage. Patras and the latest fully automatic Koenig & Bauer autosplicers are networked to an integrated logistics solution via a production management system. Manual interventions are an exception.

Modular design – from manual to completely automated

The Patras modular reel-supply system can handle reels with a maximum diameter of 1,800 mm (70.9 in), a maximum width of 2,800 mm (110.2 in) and a maximum weight of 6 t (6.6 US tons).

Patras M
The budget-priced standard version, Patras M, consists of a manually operated transfer table and reel trolleys (viz. trucks) along with the associated rails and turntables. Reel stripping and splice preparation are also manual.

Patras M is engineered for small to medium-sized press installations. Subsequent automation in the reelstand zone is no problem because the foundations have standardised dimensions and predesigned installation paths.

A low-cost version of Patras M is also available with a reduced foundation. It accepts reels 840 mm (33 in) to 1,000 mm (39.4 in) in width and no more than 1.3 tonnes (1.4 US tons) in weight.

Patras A
A choice of automation levels, storage and transport systems allows Patras A to be configured to your precise specifications. Equipment includes SRVs (storage and retrieval vehicles), AGVs (automated guided vehicles), automated reel-stripping and splice-preparation systems, high-bay stores, chimney stores, tipping stations and slat conveyors etc. Here Koenig & Bauer acts as the main contractor, thus ensuring that the systems and components delivered are the most cost-effective and logistically appropriate for your individual production scenario.

All the automated versions have low-maintenance AC drives, whose reliability and durability have been proven thousands of times over.

The automated versions deliver the greatest economic benefits in conjunction with big, multi-unit web presses processing large volumes of paper.

Reliable, tried and tested: Patras reel handling for newspaper presses such as a Commander CL

Reel handling by AGV – Automated Guided Vehicle

The use of AGVs for reel supply and removal is ideal for high-performance printing presses. Offloading from the delivery trucks at goods reception may be automated as an option, onward transport to the main store is automated using AGVs. Reel placement in the store is by SRV and computerised.

With a fully automatic production schedule, reels are delivered to the reel-preparation zone by clamp AGV. Preparation can be manual or automatic. Whether they are subsequently transported to the daily store or directly integrated in the production workflow is determined by the registration codes assigned to the reels in the main store, which are read by the materials management system controlling the SRVs.

Transport
Clamp AGVs transport the reels from the main store to the branch lines ready for preparation. A tipping station tilts the reels into the horizontal for loading onto a Patras trolley.

The first stop is the stripping station, where the wrapping is quickly removed from the reels manually and with a minimum of waste. The stripped and splice-ready reels are loaded onto the trolleys and transported automatically according to production requirements: either to the daily store or directly to the designated reelstands, where they are automatically positioned and loaded onto the chucks. Stub removal and disposal are also automated. This space-saving system in daily production also has other benefits such as high throughput and enhanced cost efficiency.

The daily store that has proved such a useful addition to many workflow systems is managed using cutting-edge technology. Store capacity can be adjusted to individual production scenarios and plant architecture. Up to three reels can be stored one above the other. Our experienced scheduling specialists ensure that space and building costs are kept to an absolute minimum. If necessary, a reel handling system can be adapted to suit the structural design prevailing in a printing plant.

Automated reel transport with computer-controlled clamp AGVs

Automatic supply to unwinders,
also for particularly wide reels

The printed reels are
automatically transported
from the rewinder to
the main store

Integrated materials logistics from Koenig & Bauer

The prime focus for Koenig & Bauer engineers is the smooth, trouble-free production workflow.

Integrated material logistics from Koenig & Bauer includes the full automation of the entire material flow beginning with offloading from trucks at goods reception, on-demand transport of the reels to the unwinders through to removal of the residual reels and their disposal. Removal of the finished printed reels of substrate is also automatic.

A crucial component in this system is electronic sequence control from high-tech consoles. Patras, the unwinders and rewinders, are networked together via a sophisticated production management system to form a single logistics workflow which largely eliminates the need for manual intervention. Press personnel assume a purely supervisory function.

New-generation unwinders and rewinders
Koenig & Bauer offers various versions of reelstands, rewinders and unwinders which are rated for production speeds up to 17.2 m/s (56.4 feet/s). With an automatic system, the reel change is activated taking into account the type and thickness of the substrate, production speed and residual reel diameter set. The pasting roller and web severer are activated by aluminium foil integrated in the splicing tape or a special release paper.

Koenig and Bauer reelstands are designed for minimum maintenance, a high degree of reliability and ease of operation – and have proved themselves in the field many times over.

Automation
Paper logistics are, of course, fully embedded in the Koenig & Bauer press console controls and upstream production scheduling system.

The respective production data (stub diameter, countdown to next reel change etc.) can be monitored using clearly laid-out data screens. Functions carried out by the system, such as reel changes, are documented for subsequent evaluation.

EcoSPLICE – splice preparation made easy

EcoSPLICE is a fully automated device from Koenig & Bauer for preparing splices. Depending on how it is embedded in the reel-logistics workflow, the unit can prepare up to twelve reels per hour and is an optional component of our Patras A automated reel-handling system.

Stripped reels are transferred to the EcoSPLICE splice-preparation station by the Patras A in-floor transport system. The splicing tape with integrated aluminium tag is then applied automatically and the preparation process completed.

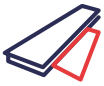
EcoSPLICE applies the tape with absolute precision – irrespective of operator skill – and is therefore totally reliable. Web breaks are reduced to a minimum. But enhanced reliability and safety during automatic reel changes are not the only benefits it delivers: it also shortens preparation times, facilitates handling and reduces personnel costs.


EcoSPLICE
NO SMOKING
SICK

Materials logistics for various printing processes

Patras is suitable for the transport of reels in various sizes or for pallets. It is just as suitable for reel supply to classic offset presses as it is for rolls of foil for flexo presses or piles of board for packaging machines and many others. This flexibility opens up a large window of opportunity for your processing operations. In the following chapter we provide some workflow examples which illustrate the multitude of options available.

Machinery to print flexible packaging
Patras as an integrated materials logistics solution ensures efficient reel supply and removal – irrespective of whether for a flexo, digital, gravure or offset press.



Machinery to print laminates
Whether flexo, digital or rotogravure, the modular system offers integrated logistics solutions for printers outputting products in different shapes and sizes.

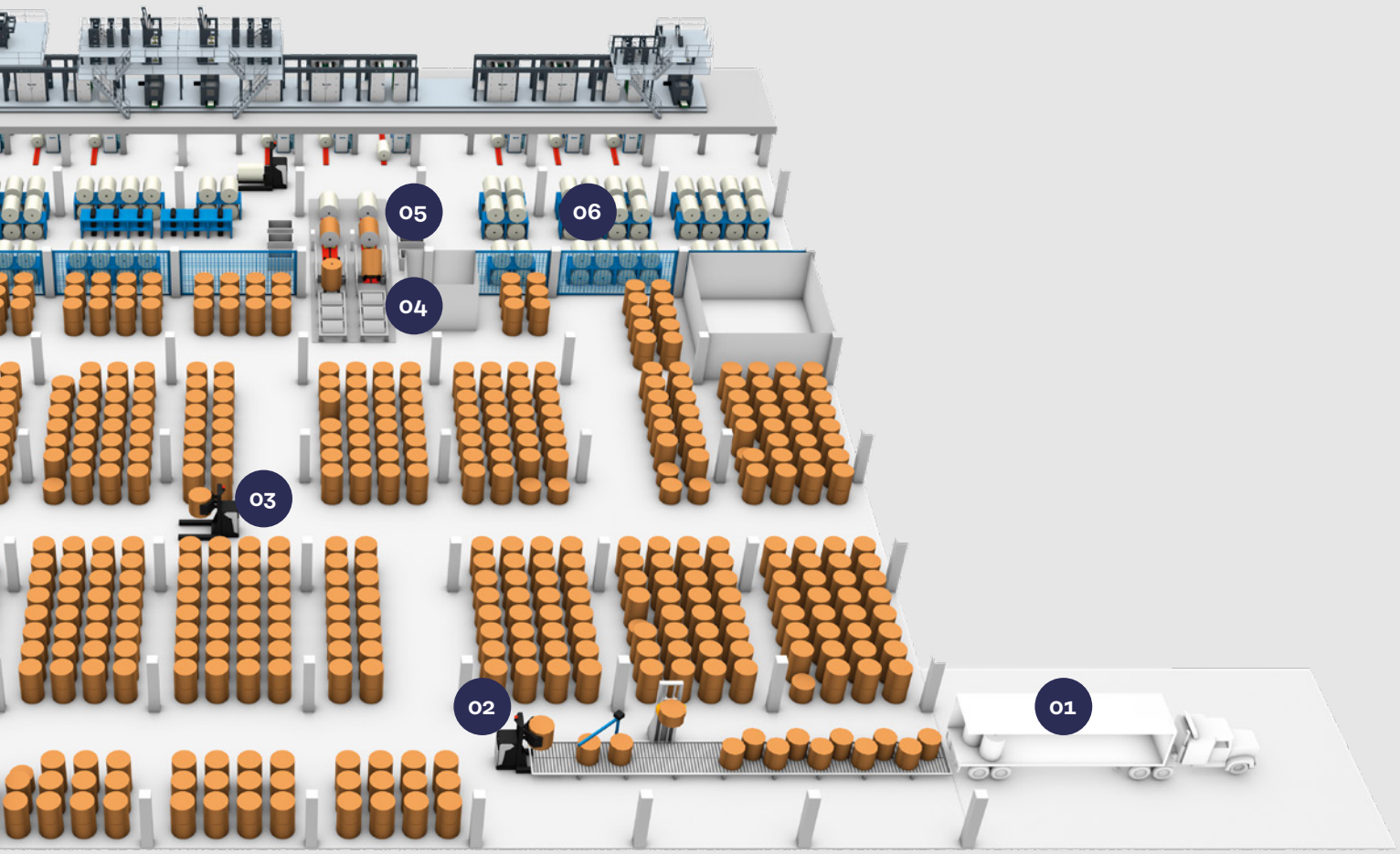
Commercial web offset presses
Given the frequent change in the type of paper, reel diameters and widths, Patras is an ideal solution for an intelligent production workflow.

Newspaper printing presses
Efficient, proven and established: Patras is THE reel logistics system in newspaper printing plants.

Machines to print corrugated
Given the modular design of the system, Patras can be configured to provide the best solution for differing printing and production configurations for post-printing corrugated board.

Complete materials logistics for newspaper

Patras A as complete solution:
The illustration on this two-page spread is of an existing production facility in Europe for newspaper and commercial printing.

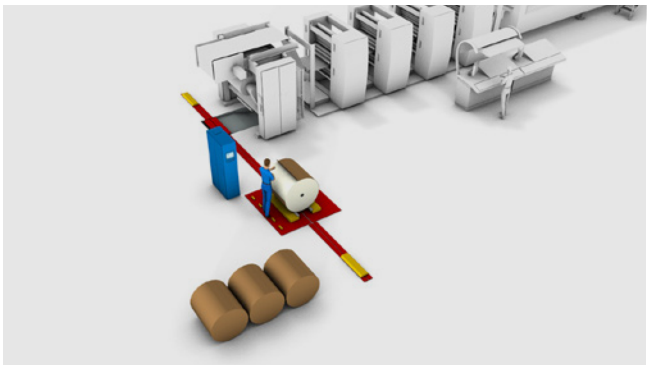


1. Fully automatic unloading of the supply trucks
2. Reel transport with forklift AGV
3. Reel transport to the daily store by forklift AGV
4. Placing the reel onto the Patras trolley with the tipping station
5. Stripping and weighing station
6. Reel transport to the daily store by forklift AGV
7. Automatic loading onto the reelstands with forklift AGV
8. Emptying the waste/reel-stub container

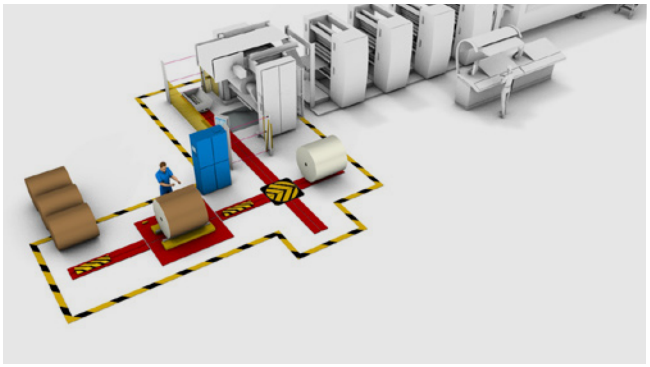
Patras for reel feed to commercial web-offset presses

Thanks to its modular design, reel logistics with Patras can also be configured to suit the individual production needs and layout requirements for commercial web presses.

Version 1:
Patras M – manual reel handling, stripping, transport, loading and stub ejection. The reels are conveyed manually to the Patras M reel-handling system. Reel transport, stripping and splice preparation are all manual, also reel loading and stub ejection.

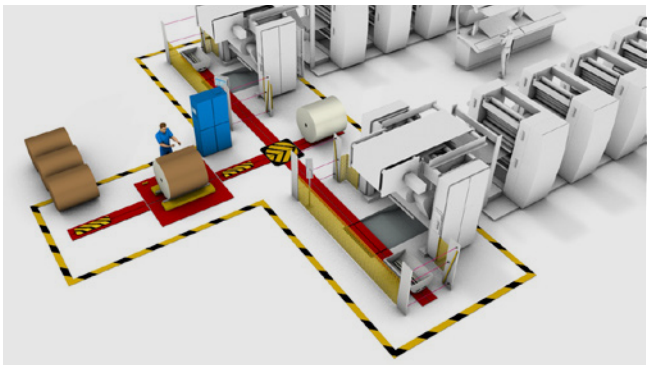


Version 2:
Patras A – automated reel handling, reel stripping, automated transport, loading and stub ejection. The reels are conveyed manually to the Patras A reel-handling system. Onward reel transport is automated, stripping and splice preparation are manual. The reels are loaded automatically onto the reelstands and stubs ejected automatically. Splice-ready reels can be stored at the turntable.



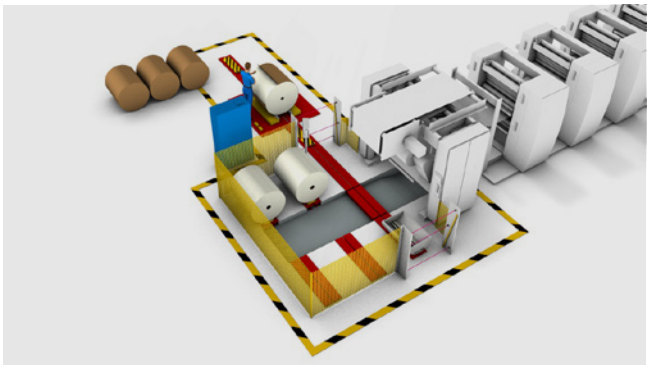
Version 3:
Patras A – automated reel handling for two press lines, reel stripping, automated transport, loading and stub ejection.

Reel stripping as with version 2. The splice-ready reels are assigned to the appropriate press line at the stripping station, and one splice-ready reel can be stored at the turntable.

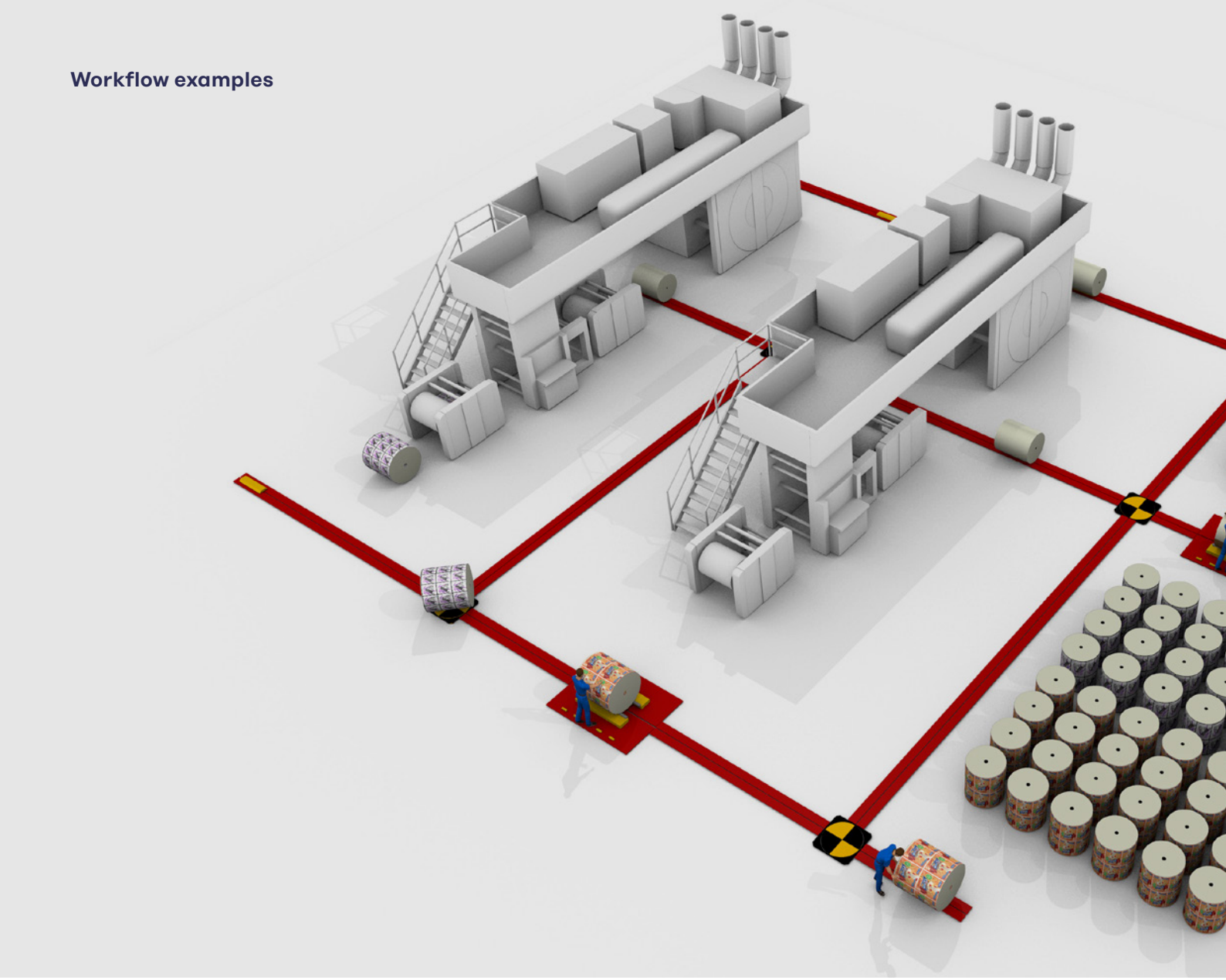


Version 4:
Patras A – automated reel loading with reel store, reel stripping, automated transport, loading and stub ejection. Reel stripping as with version 2.

Initially the splice-ready reels are taken to a buffer store. From there they can be conveyed to the reelstand on demand, with no loss of time.

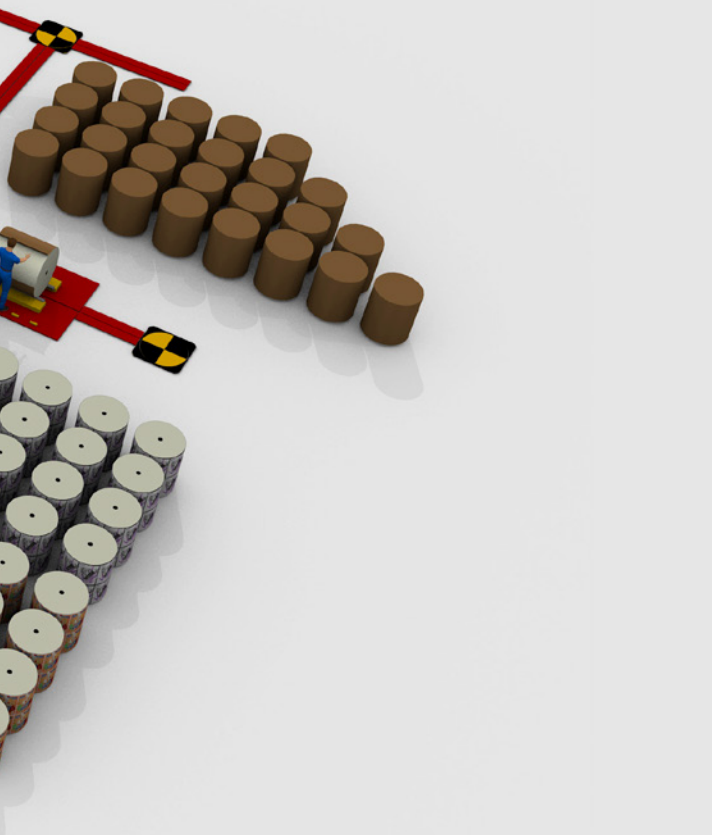


Illustrations from top to bottom: Patras versions 1–4



Efficient material handling for CI flexo presses

The packaging sector is characterised by high substrate variability, the specific requirements depending on the packaging segment, and the size of the manufacturing facility. Koenig & Bauer offers various Patras versions customized to meet customers' needs.



Patras M on two CI flexo presses with stations to unstrip the unprinted reels and pack the finished printed ones.

The production of packaging materials demands a sustained increase in efficiency and productivity due to the constant diversification of final products to be packaged, their shapes and sizes as well as the packaging materials themselves.

The Patras product family offers the appropriate configuration in order to increase productivity by ensuring materials logistics in the plant are suited to in-house system requirements. From a basic logistics system for a CI flexo press to a complete solution – from delivery of the raw materials through printing and finishing and on to storage in the intermediate store or dispatch room – there are also many options for the packaging sector.

The Koenig & Bauer modular logistics system can also be integrated in printing presses from other manufacturers – and their finishing lines. It is also possible to transport palletized raw or final products.

Patras offers the best possibility to efficiently organize internal transport and boost productivity of your company by supplying to the press precisely the right substrate for the job in hand.

Patras for digital printing

Digital printing is already firmly established in all sectors of the printing industry. The Patras reel logistics system is an important component to consolidate this trend in the market.

Whether for books, decor, packaging or personalized mailing: Digital printing has become an indispensable part of production in many sectors.

The presses used offer many new possibilities due to their high degree of automation and flexibility. In order to benefit from such possibilities as efficiently as possible, adjustment to the entire manufacturing workflow may be beneficial.

Patras is therefore the ideal supplement for every digital press user. The modular system consisting of compatible components ensures that all stages of the process are optimally interlinked. Starting with the delivery of the substrate by truck – through to transport to the press and storage of the printed reel – Patras can handle all material logistics.

Opposite page (top): Preparation of a reel of paper at the stripping station

Opposite page (bottom): Patras supplies the unwinder on a HP PageWide Web Press T1100S with reels of up to 2.800 mm (110.2 in) in width

Workflow at digital presses

If required, the complete logistics workflow can be automated with Patras A.

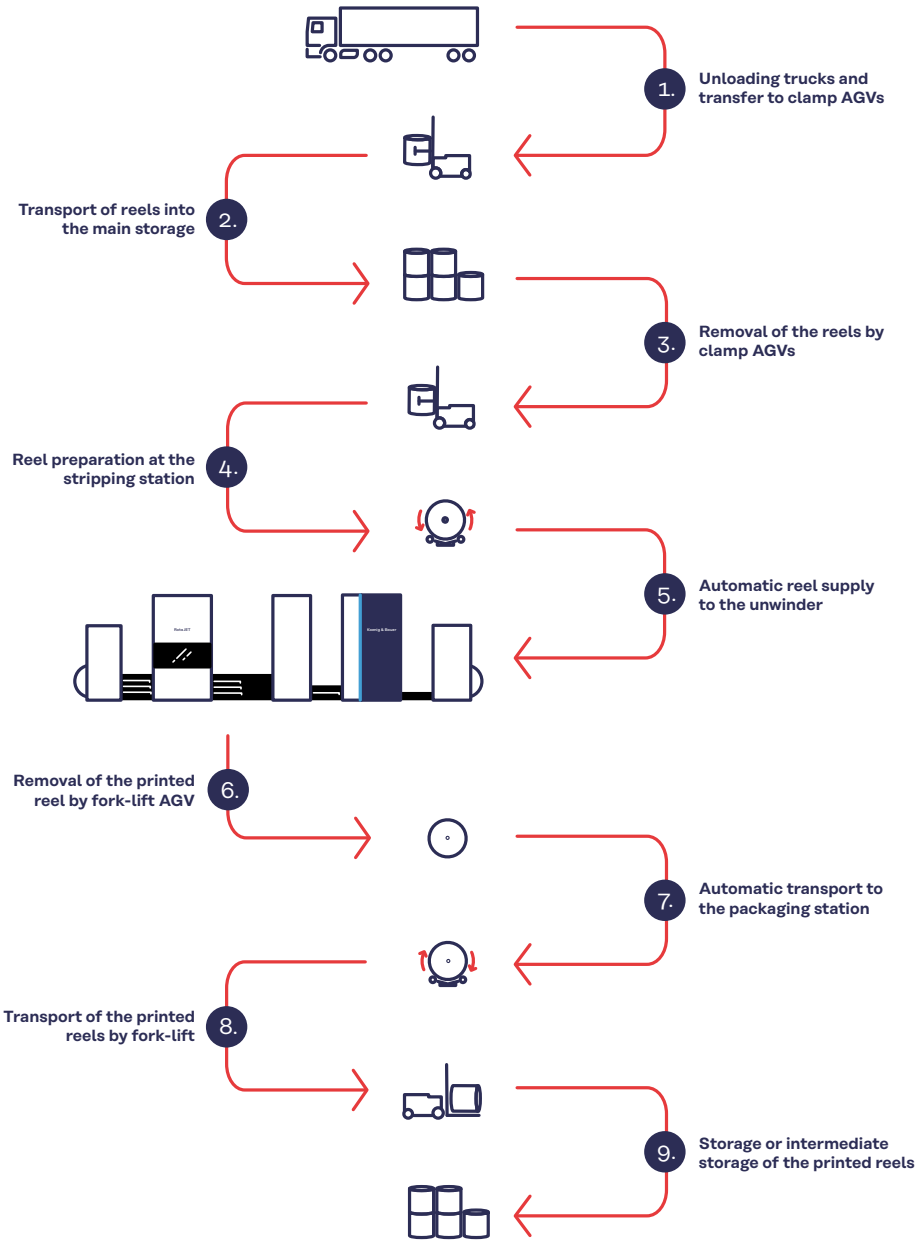


Illustration: Example of the Patras logistics workflow chain for a RotaJET from Koenig & Bauer

Technical Data [1]	
Reel weight:	max. 6,000 kg (6,6 US tons)
Reel diameter:	max. 1,800 mm (70.9 in)
Reel width	min. 300 mm to max. 2,800 mm

Patras M – scope of supply and options
Manual reel transport, in-floor rail system
Reel ramps, manually operated reel trolley, reel data capture with manual scanner

Patras A – scope of supply and options
Automated offloading from trucks at goods reception
Semi-automated goods reception (manual offloading from truck)
Automated goods reception and automated reel allocation
Automated barcode scanning
Automated main reel store with clamp AGVs
Automated main reel store with SRVs
Automated reel preparation
Automated reel ramps in conjunction with manual main store and reel preparation
Automated reel store (Patras A conveyor system)
Automated daily reel store with forklift AGVs
Automated daily reel store with SRVs
Automated reel loading and stub removal at the reelstand
Automated transport and emptying of stub and waste containers via Koenig & Bauer disposal stations
Materials management system with link to customer production scheduling systems (Prime interface)

EcoSplice[2]	
Reel diameter	Reel diameter min. 900 mm (34.4 in) to max. 1,524 mm (60 in)
Reel width	max. 2,100 mm (82.7 in)
Paper weight	36–80 g/m² (23 – 51.5 lbs)
Reel weight	max. 3,000 kg (3.4 US tons)
Cycle time	5 min (12 reels per hour)

[1] Other reel diameters and width upon request.

[2] Only suitable when using reels of paper.

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04/2020-EN
Printed in Germany