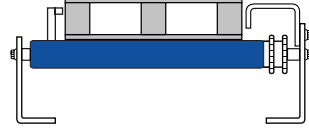


Innoline

Pallet Conveying, Magazining, Checking



Modular, Versatile, Highly Productive –
Solve Pallet Conveying Tasks with KHS. Made to Order!



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The information contained in this brochure is non-binding.
Only the technical specifications of our quotes are determinative with regard to design and scope of delivery.
Subject to design modifications.

Innoline Pallet Conveyors – Pallet Conveying – Magazining – Checking

Fully automatically controlled material flows, clocked to constantly maintain maximum efficiency of your lines, require custom-made solutions in the areas of pallet infeed and discharge.

Geared to your pallet types, the available space, and your flow capacity requirements.

KHS Innoline pallet conveying systems provide you the perfect solution by offering a multitude of special modules.

All from one construction set. All from one source.



Innoline Pallet Conveyors – Maximizing the Capacity and Availability of Your Line



Roller conveyor or chain conveyor? That is the basic question.
 A question answered by the characteristics of the pallets.
 By the type of bearing surface and the direction of pallet travel.
 The standard construction set of the Innoline conveying system covers the majority of the types of pallets used worldwide.
 KHS develops special designs in particular cases.
 You should provide us one of each of your pallet types during the planning phase.
 We know which system is best for your type of pallet.
 This will avoid any misinterpretation, save a lot of time and money.



Excerpt of possible pallet types

Pallet type	Length mm	Width mm	Height mm
Euro pallets	1200	800	144
1/2 Euro pallets	800	600	144
1/2 Euro pallets, one-way	1200	800	134
Industrial pallets	1200	1000	144
Brewery pallets	1200	1000	166
Standard mineral water pallets	1100	1070	166
Reusable Düsseldorfer pallets	800	600	164
CHEP pallets	1200	1000	162
1/2 CHEP pallets	1000	600	162

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Innoline Pallet Conveyors – Perfect Solutions with the Modular-type Design from KHS

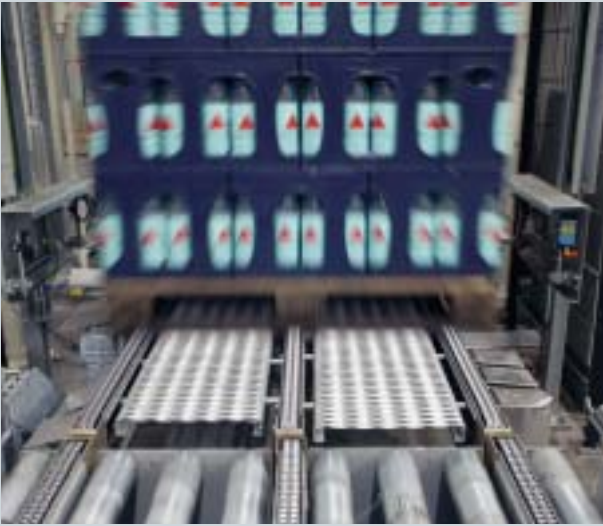


You specify your requirements.
We will recommend the most economical and best functional solution in each case. Based on the modular KHS Innoline pallet conveying system with:

- Pallet, horizontal, and vertical conveyors
- Turntable segments
- Right angle transfer conveyors
- Lift transfer conveyors
- Shuttle cars
- Accumulation conveyors
- Pallet alignment devices
- Pallet magazines
- Pallet inspection and control systems

Just leave the planning and implementation of your conveying systems to KHS.
Take advantage of our years of experience, competence, and extensive know-how.





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Innoline Pallet Conveyors – Pallet Infeed and Pallet Discharge



- Standard single or double configuration model.
Inexpensive solution for the entry capacity range.
- Roller or chain conveyors as the standard means of conveyance.
Rugged forklift drive-up boxes with stops for pallet alignment.
Great stability and long service life.



- Multiple infeed and discharge stations for up to six pallets simultaneously.

Ideal for the medium and high capacity ranges.

- Roller conveyor, lifting tines, and shuttle units as the means of conveyance.

Rugged forklift drive-up box with sturdy pallet limit stop.

Highly hardwearing unit. Long service life.



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Innoline Pallet Conveyors – Pallet Chain Conveyors



- Torsionally rigid, rugged design.
High load capacity coupled with long service life.
- Variable number of conveying chain strands:
Two, three, four, and six strands for kegs.
Exact layout according to the type, size, and weight of your pallets.
- The chains are moved by a center drive.
Forward/reverse servicing mode possible.
For you, this means plenty of flexibility in the layout of your conveying system.



- Shaft-mounted gear motors.
No intermediate transmissions necessary.
Low-maintenance design.
- Lubricated-for-life roller bearings.
Saves you the cost of servicing.
- Frequency-controlled drives available on request.
For even smoother startups.
More reliable and gentler conveying.
Performance-optimized conveying.



Innoline Pallet Conveyors – Pallet Roller Conveyors



- Rugged steel design
High loading capacity and long service life.
- Rollers are installed from above in slots in the segment sides.
Less installation time and effort.
- Double sprocket wheels for roll-to-roll drive in pairs.
Low-noise operation.
- Enclosed roller drive area equipped with safety guard.
Safety for your operating personnel.
- Lubricated-for-life roller bearings.
Saves you the cost of servicing.





- Three-phase geared motor mounted under the segment.
Safe from external damage.
- The three-phase geared motor can also be mounted on the side of the segment.
The motor is easily accessible from all sides.
- Frequency-controlled drives available on request
For even smoother startups.
More reliable and gentler conveying.
Performance-optimized conveying.
- Various roller layouts possible.
Optimum adaptation to your type of pallet and conveying loads.



Innoline Pallet Conveyors – Shuttle Cars



- A choice of two different models is available:
 1. Pallet removal at floor-level with rails embedded in the floor.
Vehicles such as forklifts can drive over this system.
 2. Pallet removal to a rack with a platform conveyor for the shuttle car.
Keeps the system clean.
No special requirements for floor layout.
Compensation of inclined floors possible.



- Power can be supplied by trailing cable chain, overhead line, or daisy chain.

Variable line layout.

- Setup with pallet roller conveyor or pallet chain conveyor segments. Crosswise or lengthwise to the direction of travel.

Variability of use.

- Safety equipment available according to local conditions and regulations. Safety fence combined with safety light barriers for pallet infeed and discharge areas.

Airtight safety. High personnel safety.

- With bumpers (safety switch mats).
The machine stops immediately when pressure is applied to a point or a larger surface.

- Capabilities for transferring one or more pallets simultaneously.

Higher volume flow for increased performance.



Innoline Pallet Conveyors – Turntable Segments



- Ball bearing rims with large-sized external gearing.
Driven by a three-phase motor and cog wheel.
High load capacity design.
Low-noise operation.
- Entry at any angle of rotation within 360°.
Optimum utilization of available space.
Flexibility for better project planning.
- Can be used for roller or chain conveyors.
Greater variability in the area of application.
- Central lubrication point.
Less time required for servicing.





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Innoline Pallet Conveyors – Right Angle Transfer Conveyors



■ A combination of pallet roller and a pallet chain conveyors.

The roller conveyor is lifted by a three-phase gear motor and cam plate.

The pallets are transferred at right angles from lengthwise to crosswise travel.

Maximum right-angle transfer within the conveying system.



Innoline Pallet Conveyors – Lift Transfer Conveyors



- A combination comprised of a pallet turntable segment and a pallet lift transfer conveyor. You can transfer your pallets from crosswise to lengthwise travel and vice versa without having to change the direction of travel. Line planning flexibility.



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Innoline Pallet Conveyors – Vertical Conveyors



- Pallets entering the lift section are raised or lowered to the next level.
This enables you to convey pallets at several levels.
- Capabilities for conveying one or two pallets.
Adaptation according to your performance requirements.
- Variable lifting capacities.
Lifting heights are adapted to the structure of your buildings.
- Rugged design.
**Long service life and high availability.
Less servicing effort.**
- Delivered pre-assembled in sections.
**Less time required for installation,
fast commissioning.**



Innoline Pallet Conveyors – Pallet Stackers



- The pallet stacker stacks and destacks layers of kegs on pallets.
 - Stacking/destacking by a lift equipped with gripping units attached to cog belts.
 - The destacker is equipped with an additional centering facility to align off-center pallets.
- Variable lifting heights.
The lifting height is adapted to the goods to be processed.
- Rugged design.
Long service life and high availability.
Less servicing effort.



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Innoline Pallet Conveyors – Accumulation Conveyors



- For the single configuration – one pallet per segment – light barriers can be used to detect whether each conveying segment is “occupied” or “unoccupied”. Further pallet conveying is controlled accordingly. Optimum equipment for smooth pallet flows.
- Accumulation conveyor as an alternative to a multiple configuration. Segment-by-segment conveying by raising and lowering the conveying chain pneumatically. This enables you to implement long buffer segments in your conveying system.



Innoline Pallet Conveyors – Centering Facilities



- Four-sided centering in a centering well
Reliable and perfect pallet conveying.
Contour pieces for adaptation to your special operating conditions.
- Four-sided centering of pallets and loads.
Slightly off-center layer patterns of empties are formatted.
No problems when processing empties.
Nothing can fall off.



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Innoline Pallet Conveyors – MPH Pallet Magazines



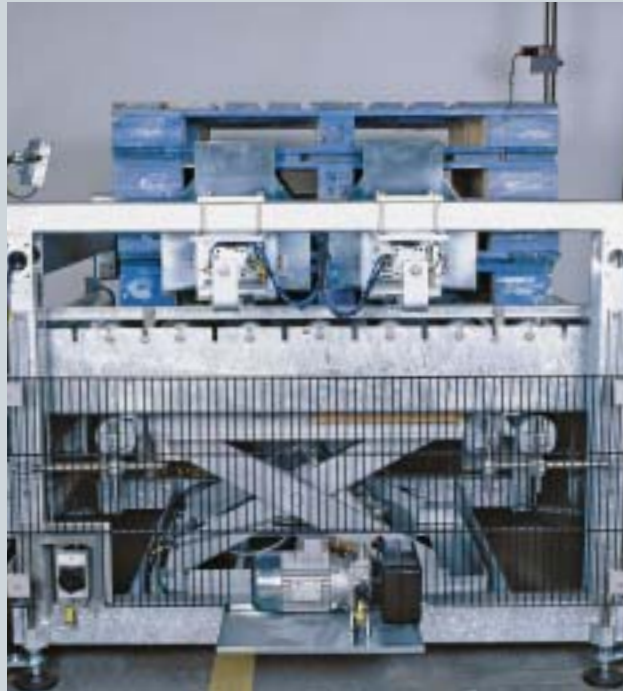
- Mode of operation with holding tines (top) and scissor-type lift table (bottom).
Fast and reliably operating system with great flexibility.
- Lifting by a simple and rugged model scissor-type lift table.
Proven, tried and tested system.
Few wear parts. Minimum servicing.
- Variable number of holding tines according to the type of pallets to be processed, e.g. full-size Euro and 1/2 Euro, in pairs.
Greater variability in application capabilities.
- Pneumatically driven holding tines.
The tines stop when they meet resistance.
Maximum operational safety.
The magazine stops automatically after sensing.



- Suitable for roller and chain conveyors.
Can be used for all conveying systems.

- Doubling capabilities, e.g. placing two loaded 1/2 Euro pallets on one full-size Euro pallet.
Doubler reliably conveys the entire pallet unit to storage or forklifts.

- Special models available for special tasks.
Examples:
 1. Various transfer facilities designed similar to the pallet magazine.
 2. Gantry-type design for rotated formatted pallet placement.
 3. Separation of 1/4 pallets and full-size pallets.
 Many special designs to solve very special types of tasks within your pallet conveying area.



Innoline Pallet Conveyors – Pallet Checkers – from Single Checking to Checking Stations



Checking – only pallets that are intact ensure reliable flows through the line.

Tell us what you would like to have to pallets checked for in accordance with your liability requirements and we will offer you exactly the checking devices you need. From single pallet checking to complex pallet checking stations.

You can carry out these checks:

- Scanner checks deckboards from above.
Scanner checks bottom deckboards from below.
The number of scanners depends on the type of pallet.
No weak points remain undetected.
- Two scanners per row of blocks check spacer blocks.
Block widths are checked exactly.
Crooked blocks are detected.
- Clearance check by measuring the distance between outside blocks.
Detection precision: 10 mm.
A key prerequisite for high-lift warehouse safety.
- Press roller checks nails.
Protruding nails and other metal parts are reliably forced back in.
- Light barrier checks pallets lengths.
Detection precision: 10 mm.
- Side pushers and sensor check pallet widths.
Detection precision: 10 mm.



- Height check by means of a press roller to reliably check if aligned pallets are within dimension limits.
Detection precision: 10 mm.

- Outside board check of deckboards by means of right/left sensing roller.
Any flawed pallets or pallets with dimensions not within defined limits are sorted out.
A key prerequisite for a trouble-free flow of pallets through your line.

- Pallet brush-off facility equipped with motor-driven rotating or stationary pallet brushes.
Only clean pallets are sent to the line.
No dirt brought in from the outside.

- Safety barrier with access doors and emergency stop switches.
High level of safety for operating personnel.

- Checking tasks can be performed individually.
Adaptation of your investment costs to your overall operational concept.





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