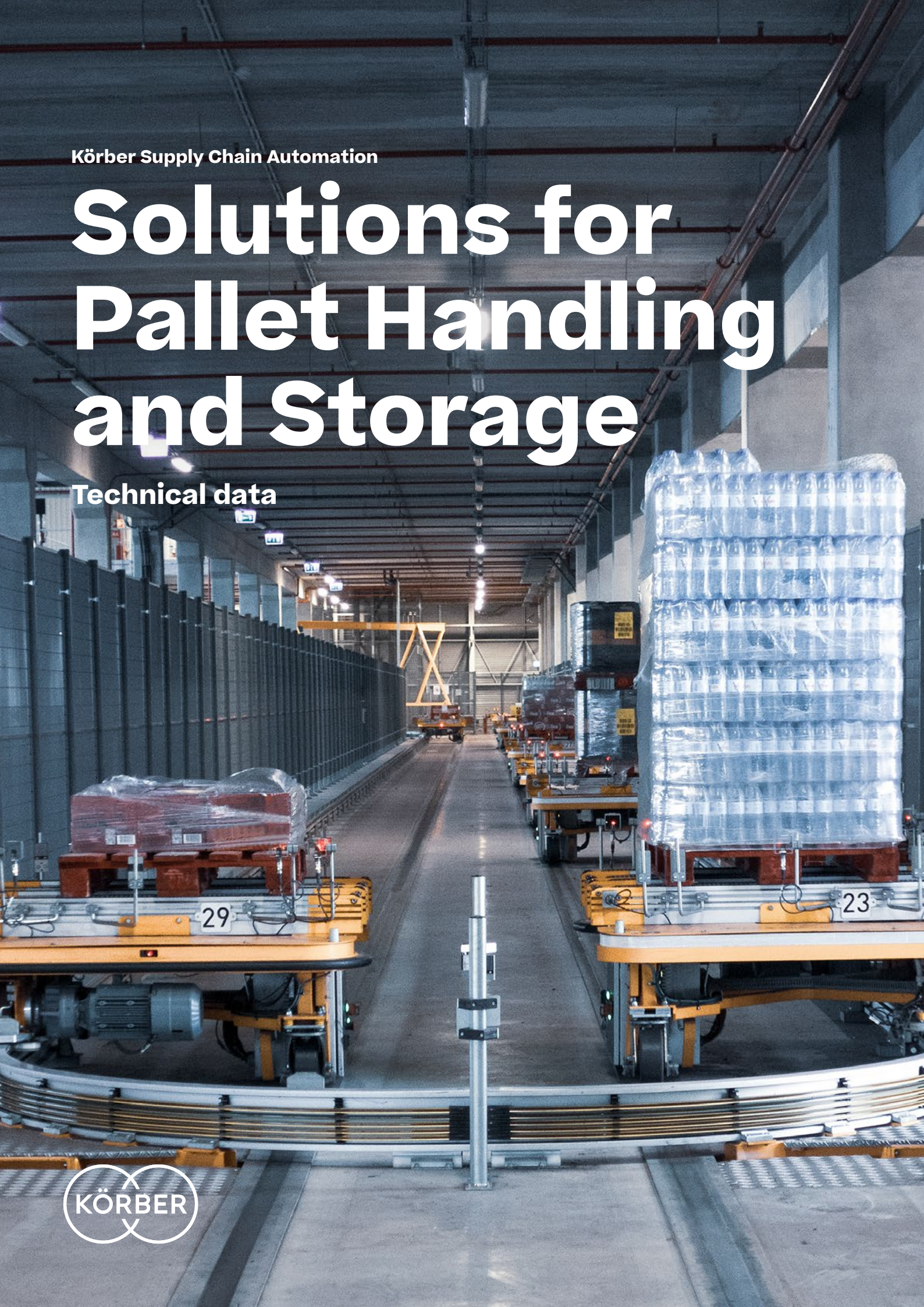


Körber Supply Chain Automation

Solutions for Pallet Handling and Storage

Technical data



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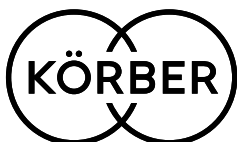
Increase your warehouse performance

At Körber we design our K.Store Pallet Stacker Crane to allow full control of warehouse activities ensuring error-free, smooth, fast and safe storage and retrieval operations. Our portfolio is developed to meet the market's latest requirements for flexibility, energy efficiency and performance. Its modular and highly standardized design guarantees high reliability and reduction of delivery timeframes.

Traveling automatically along warehouse aisles, **K.Store Pallet Stacker Crane** is designed to efficiently handle the storage and retrieval of palletized goods in racking systems with single, double or multiple deep storage configurations.

High speed and efficiency

Körber stacker cranes offer greater storage density, height and speed than manually operated trucks, as well as higher accuracy in your operations. Controlled by a warehouse management system, Körber stacker cranes can easily respond to the specific needs of your warehouse. Our modular stacker cranes can be configured in terms of size, payload, building height and performance, and can be made suitable for a wide range of industry segments.



The Körber standard portfolio incorporates two main stacker crane types, single and double mast, responding to extended customer requirements for unit load handling in warehouses.

Additionally, each type is divided into two ranges: low-bay and high-bay ranges which ensures the most appropriate product selection according to each project specifications.



Low-bay Single Mast Pallet Stacker Crane

Unit Loads information

Handling unit	type	Pallets (EPAL, Euro, Industrial, etc.)
Weight	Kg	Up to 1.500
Dimensions (WxLxH)	mm	Up to 1.100x1.300x2.400

Technical data

Total Height	m	Up to 20
Load handling device	type	Single or double deep storage with telescopic forks, multiple deep storage with satellite vehicle
Working conditions	%	Relative humidity: 5 to 85 (non-condensing/no ice formation)
	°C	Temperature: 0 to 40

Performance data

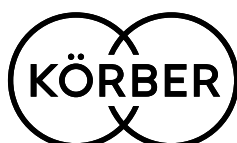
Traveling speed	m/min	Up to 240
Traveling acceleration	m/s ²	Up to 0,8
Hoisting speed	m/min	Up to 90
Hoisting acceleration	m/s ²	Up to 0,6

Options

Other unit loads upon analysis

Power regeneration

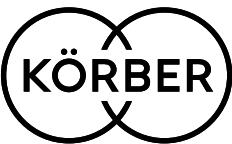
Working conditions temperature: -30 to 0°C

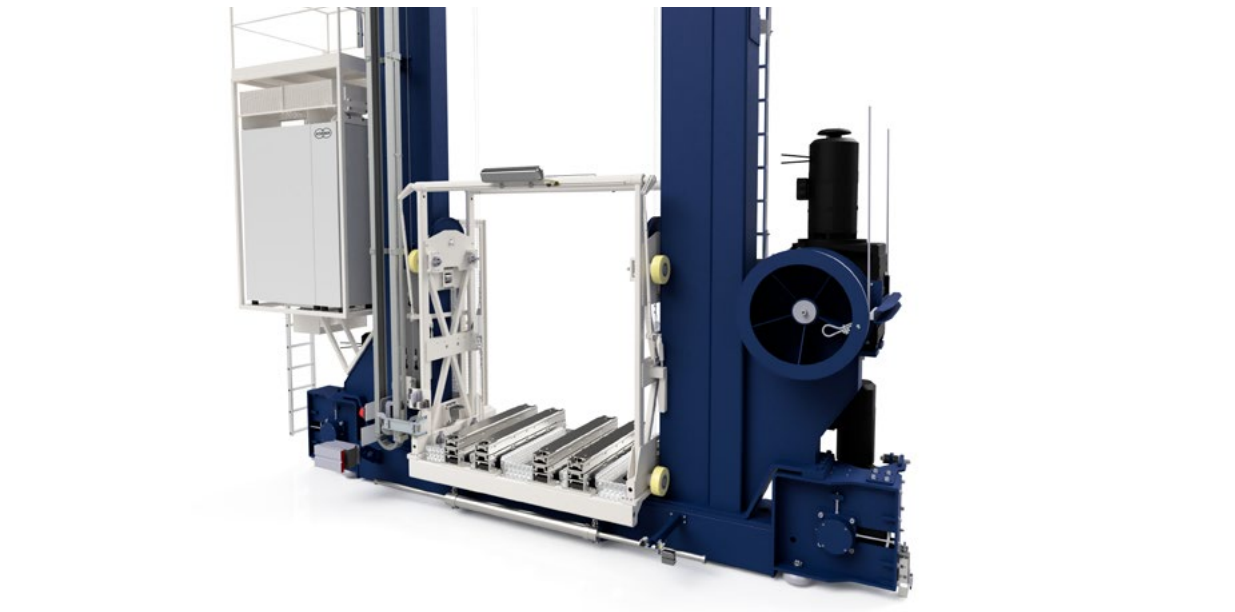




High-bay Single Mast Stacker Crane

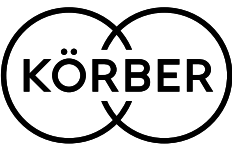
Unit Loads information		
Handling unit	type	Pallets (EPAL, Euro, Industrial, etc.)
Weight	Kg	Up to 1.500
Dimensions (WxLxH)	mm	Up to 1.100x1.300x2.400
Technical data		
Total Height	m	Up to 40
Load handling device	type	Single or double deep telescopic forks, multiple deep storage with satellite vehicle
Working conditions	%	Relative humidity: 5 to 85 (non-condensing/no ice formation)
	°C	Temperature: 0 to 40
Performance data		
Traveling speed	m/min	Up to 240
Traveling acceleration	m/s²	Up to 0,8
Hoisting speed	m/min	Up to 90
Hoisting acceleration	m/s²	Up to 0,6
Options		
Other unit loads upon analysis		
Higher reach and performances upon analysis		
Power regeneration		
Working conditions temperature: -30 to 0°C		





Low-bay Double Mast Stacker Crane

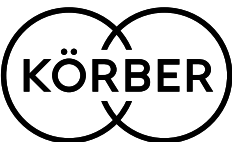
Unit Loads information		
Handling unit	type	Pallets (EPAL, Euro, Industrial, etc.)
Weight	Kg	Up to 3.000
Dimensions (WxLxH)	mm	Up to 1.100x1.300x2.400
Technical data		
Total Height	m	Up to 20
Load handling device	type	Single or double deep telescopic forks, multiple deep storage with satellite vehicle
Working conditions	%	Relative humidity: 5 to 85 (non-condensing/no ice formation)
	°C	Temperature: 0 to 40
Performance data		
Traveling speed	m/min	Up to 240
Traveling acceleration	m/s²	Up to 0,8
Hoisting speed	m/min	Up to 90
Hoisting acceleration	m/s²	Up to 0,6
Options		
Other unit loads upon analysis		
Power regeneration		
Working conditions temperature: -30 to 0°C		





High-bay Double Mast Stacker Crane

Unit Loads information		
Handling unit	type	Pallets (EPAL, Euro, Industrial, etc.)
Weight	Kg	Up to 3.000
Dimensions (WxLxH)	mm	Up to 1.100x1.300x2.400
Technical data		
Total Height	m	Up to 45
Load handling device	type	Storage with telescopic forks, multiple deep storage with satellite vehicle
Working conditions	%	Relative humidity: 5 to 85 (non-condensing/no ice formation)
	°C	Temperature: 0 to 40
Performance data		
Traveling speed	m/min	Up to 240
Traveling acceleration	m/s²	Up to 0,8
Hoisting speed	m/min	Up to 90
Hoisting acceleration	m/s²	Up to 0,6
Options		
Other unit loads upon analysis		
Higher reach and performances upon analysis		
Power regeneration		
Working conditions temperature: -30 to 0°C		



Improving your material flow

Product transportation is an essential element of in-plant logistics. Precision handling is a prerequisite for optimal material flow.

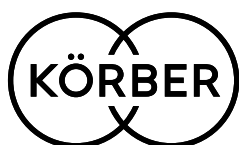
Körber designs and builds tailor-made conveyor systems for in-plant transport tasks. Our conveyor units will transport your palletized goods to any given position within the plant – from processing to the warehouse, from the warehouse to shipping. Your unique and individually planned pallet handling installation evolves from a multitude of standard components.

Körber has an extensive range of automated material handling equipment, allowing for efficient pallet flow to be implemented in a distribution, warehousing or manufacturing process. Our conveyor system elements are designed to ensure fast, efficient and smooth transfer of your goods between operational areas in an automated way.

The right conveyor for every need

Körber's conveyor systems are used in various areas and industries, such as deep-freeze warehouses or the food and beverage industry, among others. Whether for production connection or buffer storage, the right conveyor system is crucial for your success. All major functions of an automated pallet handling system are covered by our own product portfolio which improves your productivity and reduces labor constraints and costs.

Our portfolio covers a wide range of unit loads. Its modular and highly standardized design guarantees higher reliability and reduction of delivery timeframes.



Vertical Transfer Device

Vertical transfer devices (VTD), commonly known as vertical conveyors or lifters, are devices with hoisting and lowering movements in the path of conveyors in which loads are transferred from one level to another. The VTD is composed of a mast structure manufactured with heavy steel HE-type profiles and a hoisting carriage which is guided along the mast by sets of rollers. This equipment ensures a compact, precise and smooth operation, withstanding one or two pallets on-board. VTDs are designed according to EN619 standard and they incorporate progressive safety gears for hoisting strokes over 1,5 meters.

The hoisting carriage can be customized with several types of load handling devices. For maintenance operations a maintenance platform may be assembled at the top of the mast. Various optional extras are available for the VTD.



Technical data

Handling unit	type
Load capacity	kg
Load handling device	type
	length
	type
	length
Hoisting stroke	m
Drive	type
Working conditions	%
	°C

Performance data

Hoisting speed	m/s
Hoisting acceleration	m/s ²

Heavy load range

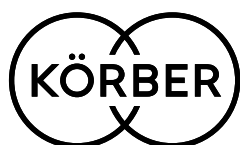
Medium load range

Pallets (EPAL, Euro, Industrial, etc.)	
Up to 3,000	Up to 1,500
Roller conveyor	
Up to 3,0 m	Up to 1,5 m
Chain conveyors	
Up to 2,4 m	Up to 1,4 m
Up to 12	
Gearmotor w/ frequency inverter and brake (top assembly)	
Relative humidity: 5 to 85 (non-condensing/no ice formation)	
Temperature: 0 to 40	

Heavy load range

Medium load range

Up to 1,2	
Up to 0,6	



Vertical Transfer Device



Options

Other unit loads upon analysis

Higher hoisting stroke models (up to 40m)

Lower drive assembly models

Other load handling devices (e.g. transfer tables or rotating tables)

Gearmotor replacement tool

Maintenance platform

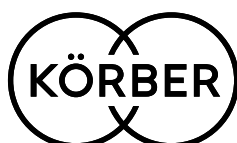
Pre-assembled back-up gearmotor

Automatic locking pins

Higher performance upon request

Power regeneration

Working conditions temperature: -30 to 0°C



Chain Conveyor

Chain conveyors are used to transport pallets wide side leading over long distances. Based on modular construction the chain conveyor comes with different configurations to fit each specific load unit characteristics.



Technical data

Handling unit	type	Pallets (EPAL, Euro, Industrial, etc.)
Load capacity	kg	Up to 1.500 / unit load and up to 5.000 / conveyor
Conveyor width (between outer stringers axis)	mm	1.050
Conveyor length	mm	1.000 - 5.000
Transport height	mm	450 - 1.300
Number of stringers	nr	2/3/4
Drive Power	kW	0,37 - 1,5
Working conditions	%	Relative humidity: 5 to 85 (non-condensing/no ice formation)
	°C	Temperature: 0 to 40

Performance data

Speed	m/s	Up to 0,5
Acceleration	m/s ²	Up to 0,5

Options

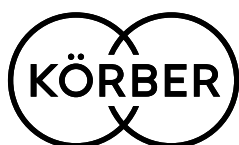
Other unit loads upon analysis

Maintenance-free chains

Adjustable side guides

Central free roller track on 2 stringer model

Working conditions temperature: -30 to 0°C



Roller Conveyor

Roller conveyors are used to transport pallets narrow side leading over long distances. Based on modular construction the roller conveyor count with different configurations to fit each specific load unit characteristics.



Technical data

Handling unit	type	Pallets (EPAL, Euro, Industrial, etc.)
Load capacity	kg	Up to 1.500 / unit load and up to 3.000 / conveyor
Conveyor width	mm	1.005 / 1.205 / 1.405
Conveyor length	mm	1.000 - 5.000
Conveyor roller pitch	mm	127/ 150,8 / 198,4
Transport height	mm	450 - 1.300
Drive Power	kW	0,37 - 1,1
Working conditions	%	Relative humidity: 5 to 85 (non-condensing/no ice formation)
	°C	Temperature: 0 to 40

Performance data

Speed	m/s	Up to 0,5
Acceleration	m/s ²	Up to 0,5

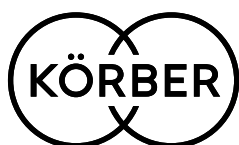
Options

Other unit loads upon analysis

Maintenance-free chains

Lower transport heights possible

Working conditions temperature: -30 to 0°C



Rotating Table

Rotating tables are used to redirect material flows or merge different material flows without changing the unit load orientation. This equipment is fully guarded in both roller and chain conveyor options. Rotating angles up to 270° are ensured with any number of stops, according to each layout solution.



Rotating table with roller conveyor

Technical data

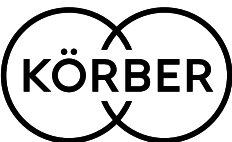
Handling unit	type	Pallets (EPAL, Euro, Industrial, etc.)
Load Capacity	kg	Up to 3.000 (2 unit loads)
Rotating table diameter	mm	1.950 (1 unit load) / 3.200 (2 unit loads)
Conveyor width	mm	1.005 / 1.205 / 1.405
Transport height	mm	450 - 1.300 aligned with RCV, CCV
Drive Power	kW	0,37 - 1,1 (conveyor)
	kW	0,37 - 0,55 (rotation)
Working conditions	%	Relative humidity: 5 to 85 (non-condensing/no ice formation)
	°C	Temperature: 0 to 40

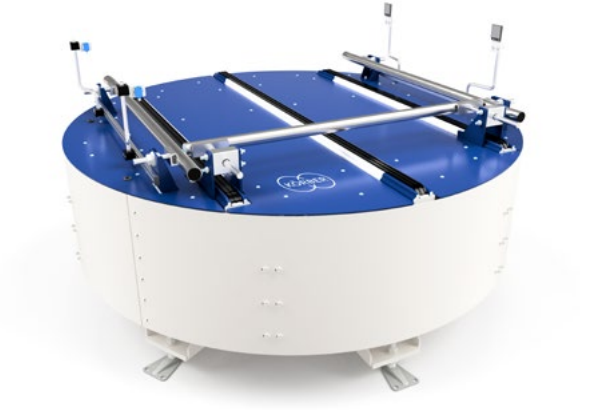
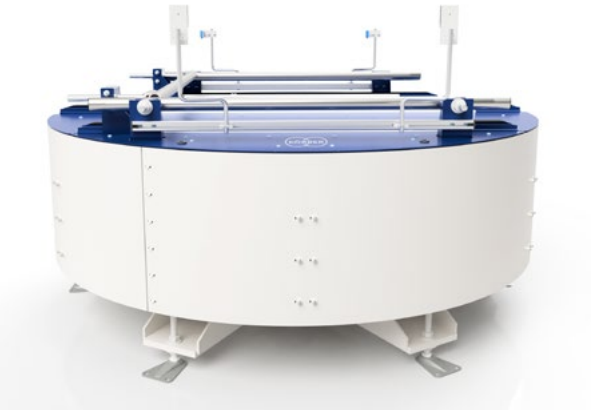
Performance data

Conveyor speed	m/s	Up to 0,5
Conveyor acceleration	m/s²	Up to 0,5
Turning speed	s	Min. 3s for 90°

Options

Other unit loads upon analysis
Maintenance-free chains
Working conditions temperature: -30 to 0°C





Rotating table with chain conveyor

Technical data

Handling unit	type	Pallets (EPAL, Euro, Industrial, etc.)
Load capacity	kg	Up to 3.000 (2 unit loads)
Rotating table diameter	mm	1.840 (1 unit load) / 3.200 (2 unit loads)
Conveyor width (between outer stringers axis)	mm	1.050
Conveyor number of stringers	nr	2/3/4
Transport height	mm	450 - 1.300 aligned with RCV, CCV
Drive Power	kW	0,37 - 1,5 (conveyor)
	kW	0,37 - 0,55 (rotation)
Working conditions	%	Relative humidity: 5 to 85 (non-condensing/no ice formation)
	°C	Temperature: 0 to 40

Performance data

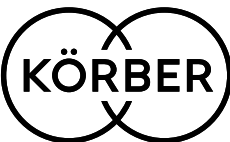
Conveyor Speed	m/s	Up to 0,5
Conveyor Acceleration	m/s ²	Up to 0,5
Turning speed	s	Min. 3s for 90°

Options

Other unit loads upon analysis

Maintenance-free chains

Working conditions temperature: -30 to 0°C



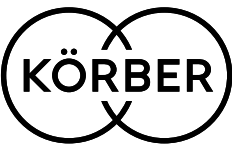
Transfer table

Used for changing the direction of the transported unit loads and/or to allow crossing of two material flows, performs the link between roller and chain conveyors. Based on a modular construction, it is adapted to the types of unit loads.



Technical data		
Handling unit	type	Pallets (EPAL, Euro, Industrial, etc.)
Load capacity	Kg	Up to 1.500 / unit load
Roller Conveyor width	mm	1.075 / 1.275 / 1.475
Fits with chain conveyor (not included)	type	2 / 3 / 4 stringers
Conveyor length	mm	1.450 / 1.600
Transport height	mm	450 - 1.300
Drive Power	kW	0,25 – 0,55 (roller conveyor)
	kW	0,55 (lifting)
Working conditions	%	Relative humidity: 5 to 85 (non-condensing/no ice formation)
	°C	Temperature: 0 to 40
Performance data		
Conveyor speed	m/s	Up to 0,5
Conveyor acceleration	m/s²	Up to 0,5
Lifting time	s	Min. 3
Lifting course	mm	60

Options
Other unit loads upon analysis
Maintenance-free chains
Working conditions temperature: -30 to 0°C



Floor level drop-off point

The floor level drop-off point is a set of equipment designed for the interface of pallet trucks with an automated conveyor system. It ensures a pallet drop-off and pick-up point at a maximum height from the floor level of 80mm, without the need of slab pits.

This drop-off point includes two main equipment pieces:

- The drop-off input conveyor which is a special roller conveyor for the interface with pallet trucks. Provides entry paths for the pallet truck wheels and a 80mm high pallet delivery height.
- The drop-off point mini-lifter which hoists pallets from 80mm transport level up to the height of a main conveyor system transport level



Drop-off point mini-lifter

Technical data

Handling unit	type	Pallets (EPAL, Euro, Industrial, etc.)
Hoisting Stroke	mm	80 - 1.300
Load capacity	Kg	Up to 1.500 / unit load
Load handling device	type	Roller conveyor
Drive Power	kW	0,25 – 1,1 (conveyor)
	kW	1,1 - 2,2 (hoisting)
Working conditions	%	Relative humidity: 5 to 85 (non-condensing/no ice formation)
	°C	Temperature: 0 to 40

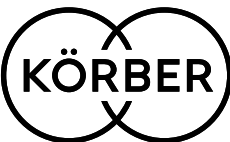
Performance data

Hoisting speed	m/s	Up to 0,25
Hoisting acceleration	m/s ²	Up to 0,25

Options

Other unit loads upon analysis

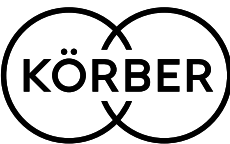
Working conditions temperature: -30 to 0°C





Drop-off point input conveyor

Technical data		
Handling unit	type	Pallets (EPAL, Euro, Industrial, etc.)
Load capacity	Kg	Up to 1.500 / unit load
Installation	type	floor level with no need of slab pit
Pallet entrance/retrieval level from pallet truck	mm	80
Roller pitch	mm	140 or 150,8
Drive Power	kW	0,25 - 0,55
Drive position	type	Lateral
Working conditions	%	Relative humidity: 5 to 85 (non-condensing/no ice formation)
	°C	Temperature: 0 to 40
Performance data		
Speed	m/s	Up to 0,3
Acceleration	m/s²	Up to 0,3
Options		
Other unit loads upon analysis		
Maintenance-free roller chains		
Working conditions temperature: -30 to 0°C		

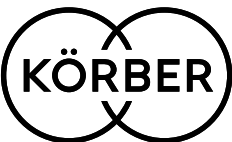


Empty Pallet (de)stacker

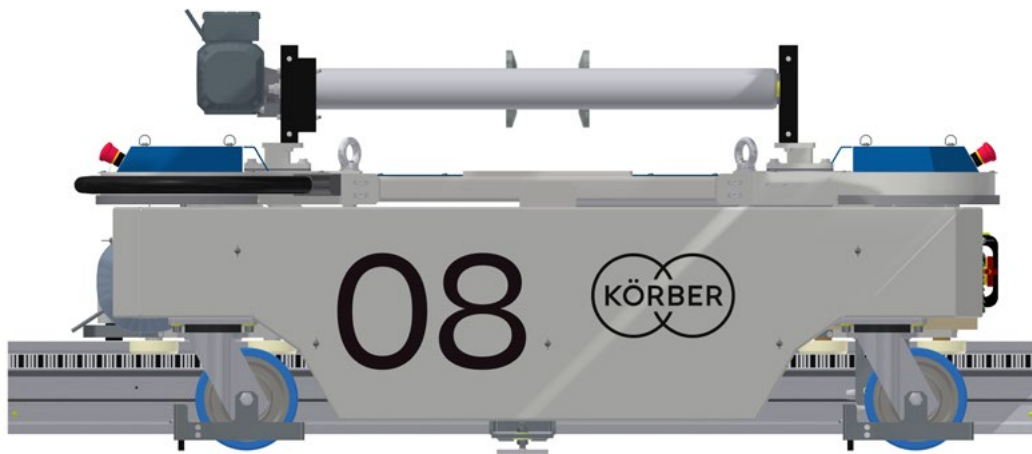
Used to manage empty pallets stacking or destacking within the automated conveyor system. Main applications are solutions where unit loads need to be slaved into system pallets (pallets which never leave the automated system), due to low quality or non-standard handling units used for load transportation, or pallet building solutions at receipt or picking activities.



Technical data		
Handling unit	type	Pallets (EPAL, Euro, Industrial, etc.)
Pallet infeed/outfeed	type	Roller Conveyor or Chain Conveyor
Drive Power	kW	2x0,25 (clamps) / 0,37 (hoisting)
Working conditions	%	Relative humidity: 5 to 85 (non-condensing/no ice formation)
	°C	Temperature: 0 to 40
Performance data		
Stacking time	s	Min. 3 per pallet
Stack height	m	Up to 2,4
Options		
Other unit loads upon analysis		
Working conditions temperature: -30 to 0°C		



Unique and flexible solution for unit loads transportation



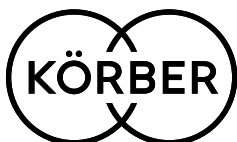
Rail Guided Vehicle (RGV) System is based on an intelligent high-speed monorail guided carrier operating within a loop-based track system and that provides transport solutions to a wide range of applications.

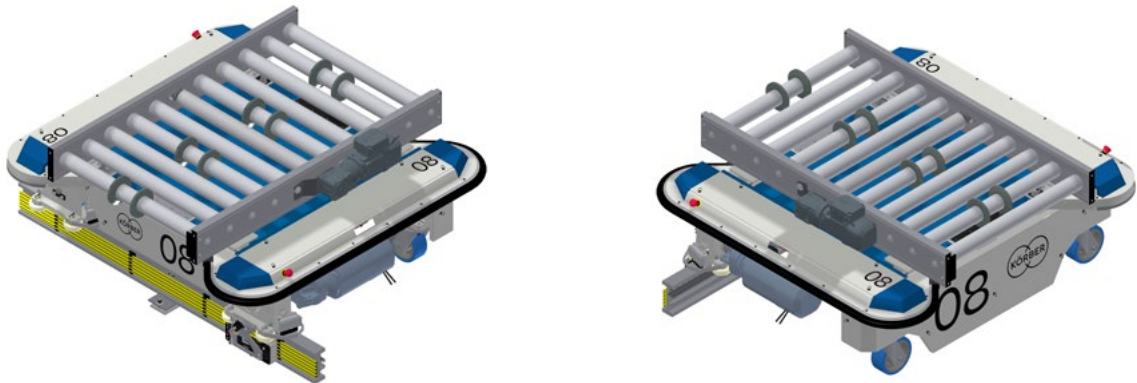
K.Move Pallet RGV is a cost-effective and high-speed option for the connection of very distant points with a light infrastructure. It is also a cost and space efficient solution for palletized load sorting applications.

RGVs can be customized to meet each customer's specific load requirements. Various load handling device types can be integrated into the vehicles, and RGVs can be designed to carry not only single but also multiple load units.

As long-distance transportation by an RGV is done with load units standing still on-board the vehicles, it is also a good alternative for handling units not suited for traveling along conventional conveyor system.

Körber's RGV Systems can execute nearly any possible route by means of a track rail system where a smooth and constant transport is assured. If path crossings are required, devices such as rail switches are easily integrated to ensure safe and fast route changes. Moreover, within an RGV System solution, flexibility and modularity are always assured, as all vehicles are interchangeable and main maintenance activities can be addressed without stopping the system, in dedicated areas.





RGV (Rail Guided Vehicle)

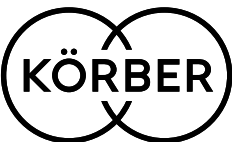
Technical data		
Handling unit	type	Pallets (EPAL, Euro, Industrial, etc.)
Load handling device	type	Chain conveyor / Roller conveyor / Telescopic forks
Load capacity	kg	Up to 1.500kg/unit load
Guiding	type	1 rail (Aluminium profile)
Power Supply	type	Power Bus Bar
Positioning	type	Barcode
Working conditions	%	Relative humidity: 5 to 85 (non-condensing/no ice formation)
	°C	Temperature: 0 to 40
Performance data		
Traveling speed	m/s	Straight: Up to 3,5 / Curve: Up to 1,0
Traveling acceleration	m/s ²	Up to 0,8

RGV Track System

Running rails in aluminum profiles and tracks
Rail switching devices for path crossing
Parking areas to allow balancing the number of active RGVs within the track system and reducing the energy consumption according to the throughput demands
Maintenance dedicated areas that enable these activities to happen aside the normal operation of the system

Options

Other unit loads upon analysis
Working conditions temperature: -30 to 0°C



Handle and sort your goods rapidly

Körber high-speed solutions guarantee efficient operations whenever loads transportation between different processes or operational areas is required.

K.Move Pallet Shuttle Car is a rail guided vehicle transporting the loads between two or more linear points. It is an efficient and high-speed option for connection of distant points or pallet sorting applications.



Technical data

Handling unit	type	Pallets (EPAL, Euro, Industrial, etc.)
Load handling device	type	Chain conveyor / Roller conveyor / Telescopic Forks
Load capacity	kg	Up to 1.500/unit load
Positioning	type	laser system
Communication	type	Profinet
Power Supply	type	Power Bus Bar
Guiding	type	2 rails (H beams)
Working conditions	%	Relative humidity: 5 to 85 (non-condensing/no ice formation)
	°C	Temperature: 0 to 40

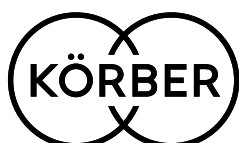
Performance data

Traveling speed	m/s	Up to 0,5
Traveling acceleration	m/s ²	Up to 0,8

Options

Other unit loads upon analysis

Working conditions temperature: -30 to 0°C



Streamline your warehouse performance

Körber's supply chain technology is revolutionizing the way we handle and store products.

Customer demand has been skyrocketing, but our warehouse space isn't growing along with it – and we all know adding space is expensive. Körber technology is here to help you conquer this supply chain complexity.

A multiple-deep automated warehouse is comprised by a racking system with an undefined number of aisles, storage channels in length and levels in height where loads are stored and retrieved automatically by a set of different equipment. Within each storage channel loads are stored in rows up to a certain depth.

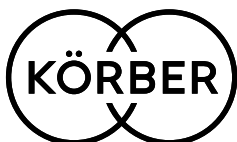
Körber's Pallet Shuttle solution is an automated multi-deep storage system which holds many advantages to overcome your warehouse complexity. It delivers a high-density storage configuration with the highest load storage & retrieval performance per aisle. It is also a flexible and modular solution, able to adjust easily to existing facilities and market demands.



Sustainability

When your warehouse is sufficiently insulated, less energy is wasted. This reduces your carbon footprint and your energy overheads. Throughout a modern and environmentally conscious equipment design, we assure low energy consumption, by using a smart and efficient power supply.

K.Store Pallet Shuttle is a smart solution to address the challenges faced by all organizations that need to store large quantities of goods with a high rotation, such as FMCG retailers and manufacturers. It is also fitted for cold chain storage applications with temperature down to -30°C, where a high storage density is key to keep operational costs at a minimum.



Pallet Shuttle System overview

A **Pallet Shuttle** based storage solution comprises various pieces of equipment to fulfill all the pallet handling movements within the racking system. Vertical movements are achieved through **vertical conveyors (VTD)**; movements along the aisles are performed by the **in-rack shuttle cars**; and storage/retrieval movements are handled by **autonomous satellite vehicles**.



Autonomous Satellite Vehicle (ASV)

The satellite directly handles the loads, transferring them between different storage positions or input/output stations.



Technical data

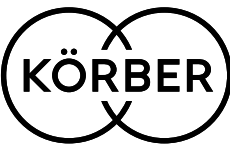
Unit loads	type	Pallets (EPAL, Industrial, etc.)
Drive	type	DC Motor (traveling) / Planetary Gear (hoisting)
Logical Control	type	Standard PLC & Safety I/Os
Communication	type	Wi-Fi
Positioning	type	Incremental encoder with laser or holes positioning sensors
Power Supply	type	Lithium Traction Batteries (24V) or Supercapacitors (48V)
Working conditions	%	Relative humidity: 5 to 85 (non-condensing/no ice formation)
	°C	Temperature: 0 to 40
Load capacity	kg	Up to 1,500

Performance data

Traveling speed	m/s	Up to 1,0
Traveling Acceleration	m/s²	Up to 1,0
Lifting Time	s	1
Max. Lifting Stroke	mm	35

Options

Working conditions temperature: -30 to 0°C



In-rack Shuttle Car

The in-rack shuttle car is a rail guided vehicle that travels along the aisles and carries both the autonomous satellite vehicle and the unit load between different storage lanes on the same storage level.



Technical data		
Unit loads	type	Pallets (EPAL, Industrial, etc.)
Load Handling Device	type	On-board Autonomous Satellite Vehicle and fixed chain conveyor (if required)
Drive	type	AC Gearmotor
Power Supply	type	Power Bus Bar
Logical Control	type	Standard PLC & Safety I/Os
Positioning	type	Barcode scanning or laser system
Communication	type	WiFi or Infrared
Working conditions	%	Relative humidity: 5 to 85 (non-condensing/no ice formation)
	°C	Temperature: 0 to 40
Performance data		
Traveling speed	m/s	Up to 5,0
Traveling Acceleration	m/s²	Up to 1,0
Load capacity	kg	Up to 1.500
Options		
Working conditions temperature: -30 to 0°C		

