



## AIRPORT LOGISTICS SOLUTIONS

We create  
space and time





OVERVIEW OF AIRPORT LOGISTICS SOLUTIONS:



**AIR CARGO**

Systems and individual components for cost-efficient transportation, storage and build & break of unit load devices and consignments.

> P 04 - 11



**BAGGAGE ULD HANDLING**

Intelligent solutions for efficient baggage sorting and process-reliable loading of baggage in ULDs.

> P 14 - 15



**ULD HANDLING**

Autonomous and intelligent transportation of ULDs with automated guided vehicles.

> P 12 - 13



**ASSEMBLY AND MAINTENANCE**

Automated handling of stored aircraft parts and tools, and working platforms, lifting and lowering equipment for all work on the aircraft.

> P 16 - 17



## WE CREATE SPACE AND TIME

The success of airport logistics depends on the speed of the workflows and the reliability of the processes.

The systems designed by Lödige for reliably handling any amount of cargo and baggage at airports take cycle times to a new dimension. We combine proven technology, innovative processes and intelligent workflows to ensure success, guaranteeing faster handling, efficient space utilisation, and the highest levels of availability.

With nearly 70 years of experience and the constantly increasing expertise of our specialists, we guarantee optimal handling and secure workflows around the globe – 365 days a year, 24 hours a day.



### CATERING LOGISTICS

Systems for handling, storing and cooling in-flight catering that are efficient in terms of space, time and cost.

> P 18 – 19



### SERVICE AND MODERNISATION

Customised service and maintenance packages. Permanent availability and optimised performance thanks to scheduled maintenance, servicing and modernisation of your assets.

> P 20 – 21



### GLOBAL REFERENCES

Some of the successful projects executed with the help of Lödige's expertise.

> P 22 – 23



*Pallet and Container handling system of AAT includes four Elevating Transfer Vehicles (45 m height).*

*Freight handling facility of Lufthansa Cargo, JFK Airport New York*



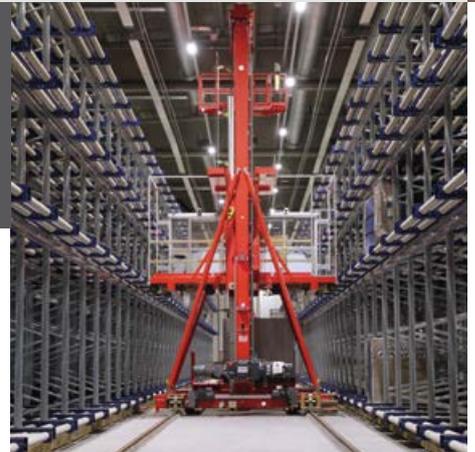
## NOT A SECOND LONGER THAN NECESSARY ON THE GROUND

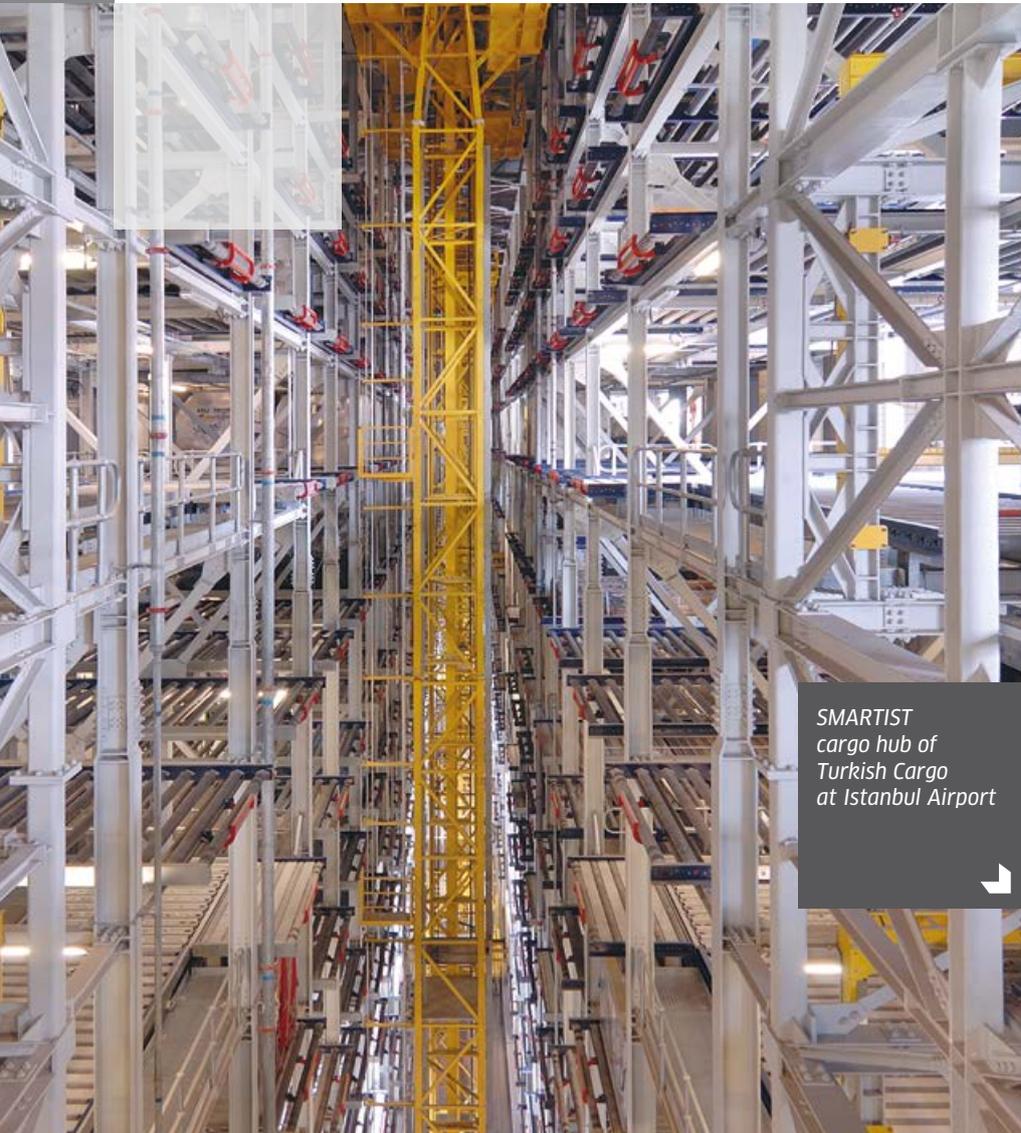
We make sure your cargo business is profitable. System solutions from Lödige ensure optimised turnaround performance and generate real time benefits - so your aircraft can earn money.

In addition to the fleet, the biggest investment facing air cargo business is the construction of air cargo terminals. The best possible handling facilities have to be provided on limited space to sustainably ensure the cost efficiency of the fleet. After all: aircraft are there to fly, with the highest load factors possible!

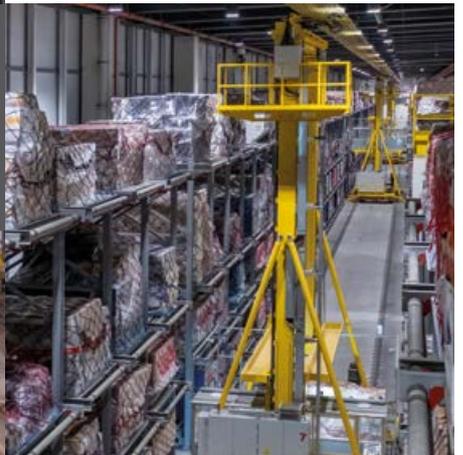
This calls for the strength of the market leader: Since 1975, Lödige has been implementing air cargo handling systems on all scales imaginable. A recognised innovator, Lödige brought the Lift and Run Terminal concept to the market in the 1990's, dramatically increasing the efficiency of mega cargo terminal design. We help you to identify the optimal solution for your throughput and capacity requirements.

*Automatic ETV ULD Handling System*

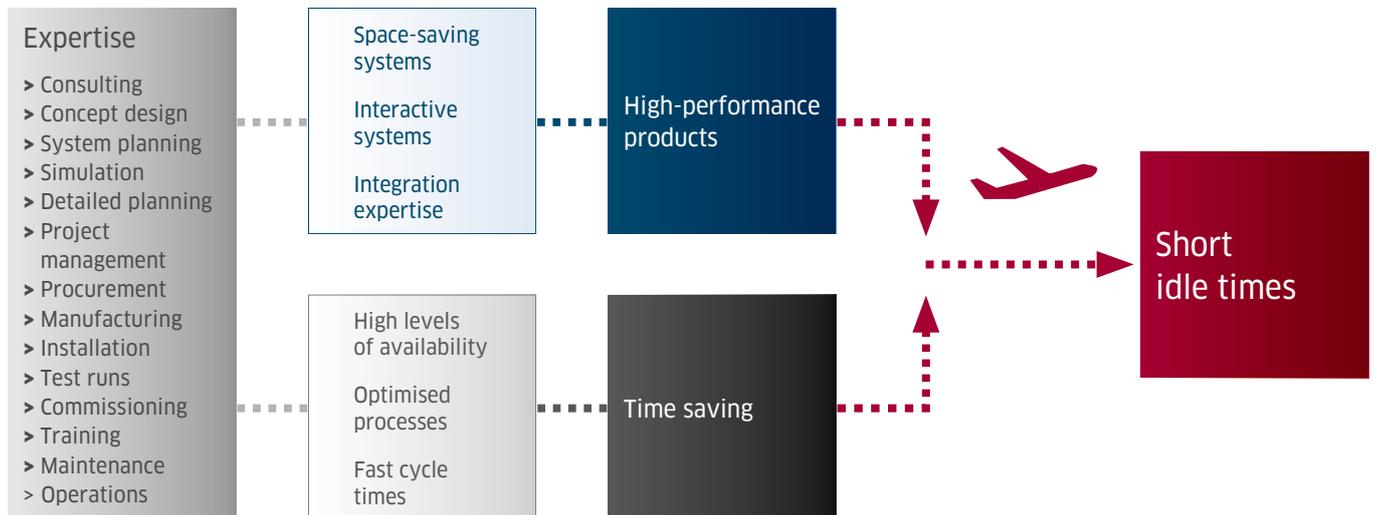




SMARTIST cargo hub of Turkish Cargo at Istanbul Airport



OPTIMISED WORKFLOWS FOR A QUICKER TAKE OFF:





*Lödige FlexLoader:  
The mobile  
all-rounder for  
ULD handling*



## FLEXIBLE OPTIMISED PROCESSES

We offer a comprehensive range of conveying equipment. The flexible equipment and special machinery deployed by Lödige make working in HUBs particularly efficient and reliable. The modular design of the integrated components enables customised system planning and rapid responses to changing conditions.

*Pallet Mover  
with powered  
slave pallet*





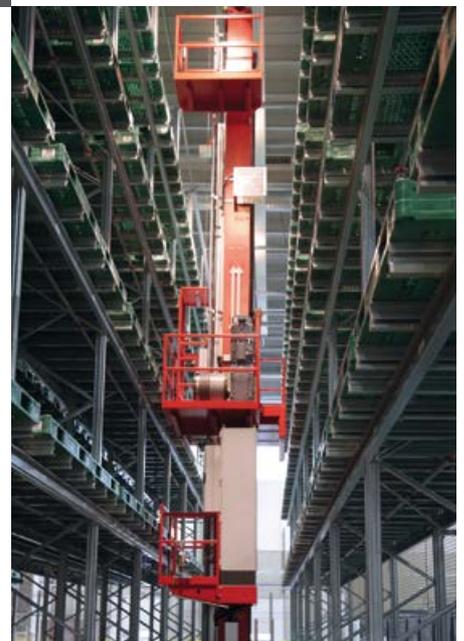
Automated Storage  
& Retrieval System



Stacker crane



Lödige pallet  
(1,700 x 1,700 mm)





## CARGO OPTIMISED MOVEMENT

Combine mechanised and manual solutions for handling and storing air cargo according to your requirements. Products are designed specifically for air cargo and optimally support standard cargo units.

Conveyor systems have to hold up in the rough cargo processing environment. For decades, Lödige's terminal equipment has been proving its performance capabilities in cargo facilities worldwide, and helping our customers around the globe to turn their cargo around quickly, safely and efficiently.



### **1** SLAVE PALLET

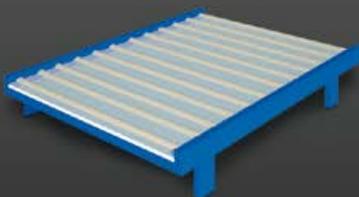
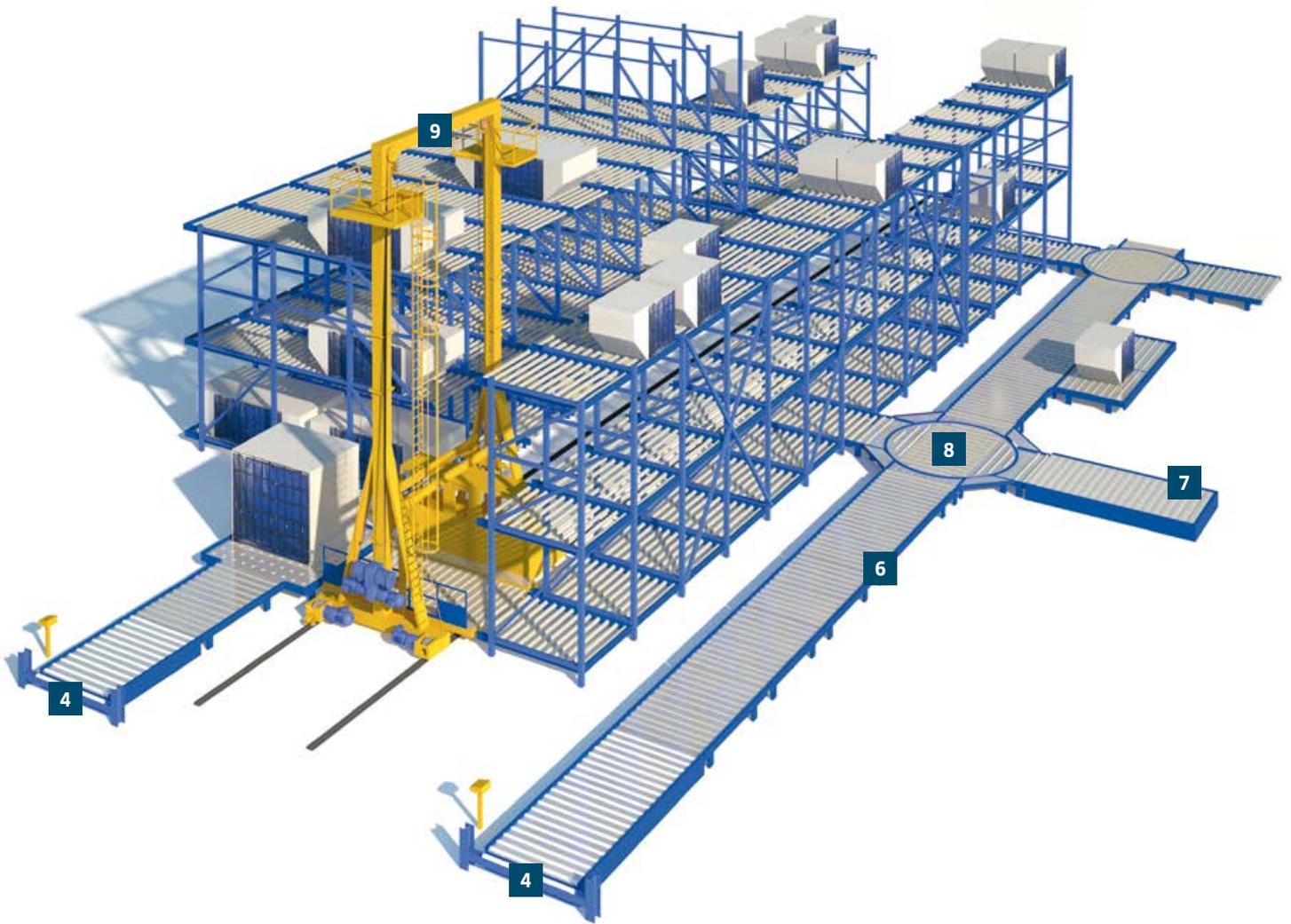
The basis for moving cargo, even in non-mechanised terminals. The pallet is mounted on 16 rollers to ensure the safe handling of ULDs.



### **2** SLAVE PALLET MOVER

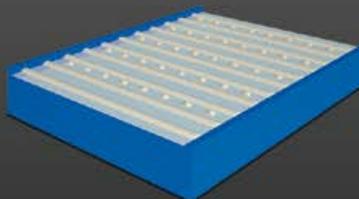
The slave pallet mover is an electrically operated floor conveyor for transporting slave pallets. It is powered by a battery and has a lifting unit for elevating pallets. Three forks ensure the ULDs are transferred safely. This means slave pallets can be moved throughout the building quickly and easily.





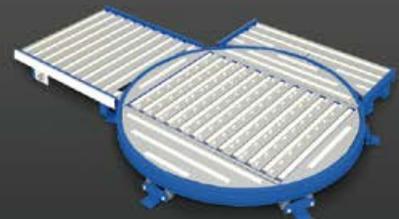
**6 ROLLER DECK**

The roller deck is used to transport ULDs in a single direction on a horizontal plane and is combined with other elements to create an overall system.



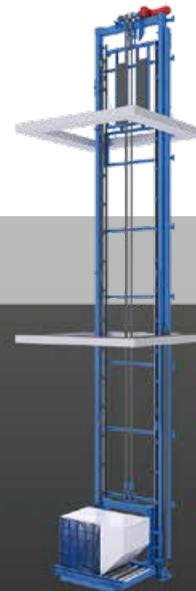
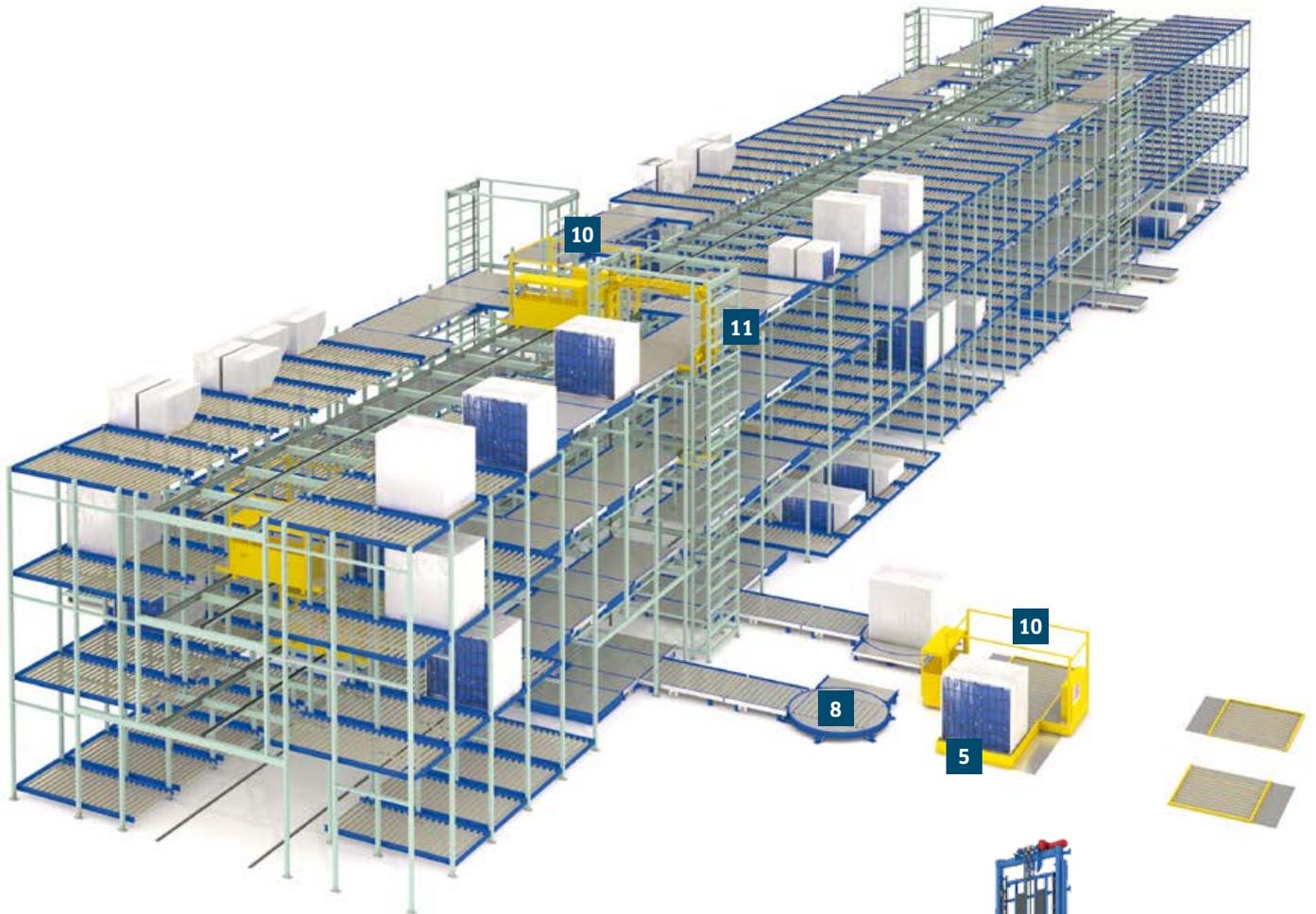
**7 RIGHT ANGLE DECK**

Changes the direction of travel of ULDs by 90 degrees by combining two conveyors in a single unit.



**8 TURNTABLE**

Allows the ULD to be aligned according to preference.



**9 ELEVATING TRANSFER VEHICLE**

This storage and retrieval vehicle is used for storing ULDs in racks. Equipped with a lift, the vehicle transports ULDs vertically and horizontally at the same time. It runs on rails which also supply the power needed.

**10 TRANSFER VEHICLE**

The transfer vehicle is used for transporting cargo horizontally on a single level. The individual loading units are moved on and off the racking by interconnecting the integrated roller conveyor with external roller decks. As well as transporting ULDs which can take up the entire surface of the roller deck, it is possible to transfer two containers simultaneously.

**11 HOIST**

Hoists connect the different levels of an air cargo terminal.



*AGV for 10 ft  
cargo ULD  
transportation*



## INTELLIGENT TRANSPORTATION **AUTOMATED GUIDED VEHICLE**

Lödige Industries is revolutionising the response to current challenges in air cargo handling with the introduction of intelligent automated guided vehicles (AGV) for flexible and scalable ULD transportation. As integral element of fully automated cargo terminals, our new AGVs provide the link between import/export areas and build & break workzones as well as automated storage and retrieval systems. In manual terminals, they can enable cargo handlers to take the first step towards the benefits of automation.

*AGV for 5 ft  
baggage ULD  
transportation*





# Always on time!

## Automated ULD delivery

### MAXIMUM FLEXIBILITY FOR YOUR CARGO TERMINAL

Quickly and easily route transportation inside your terminal. Assign routes via your warehouse management system (WMS) and free personnel for other tasks. Reduce stationary equipment and create flexible, scalable and reliable cargo flows.

### OPTIMUM ACCURACY & EFFICIENCY

The data-based intelligence of our AGVs enables absolute accuracy and complete control over cargo flows. Reduce the potential for ULD damage, enable 24/7 operations and free workforce for higher value tasks.



# 7,000 kg

or more are lifted every day by a baggage handler. It is high time to facilitate his work and minimise the cost.



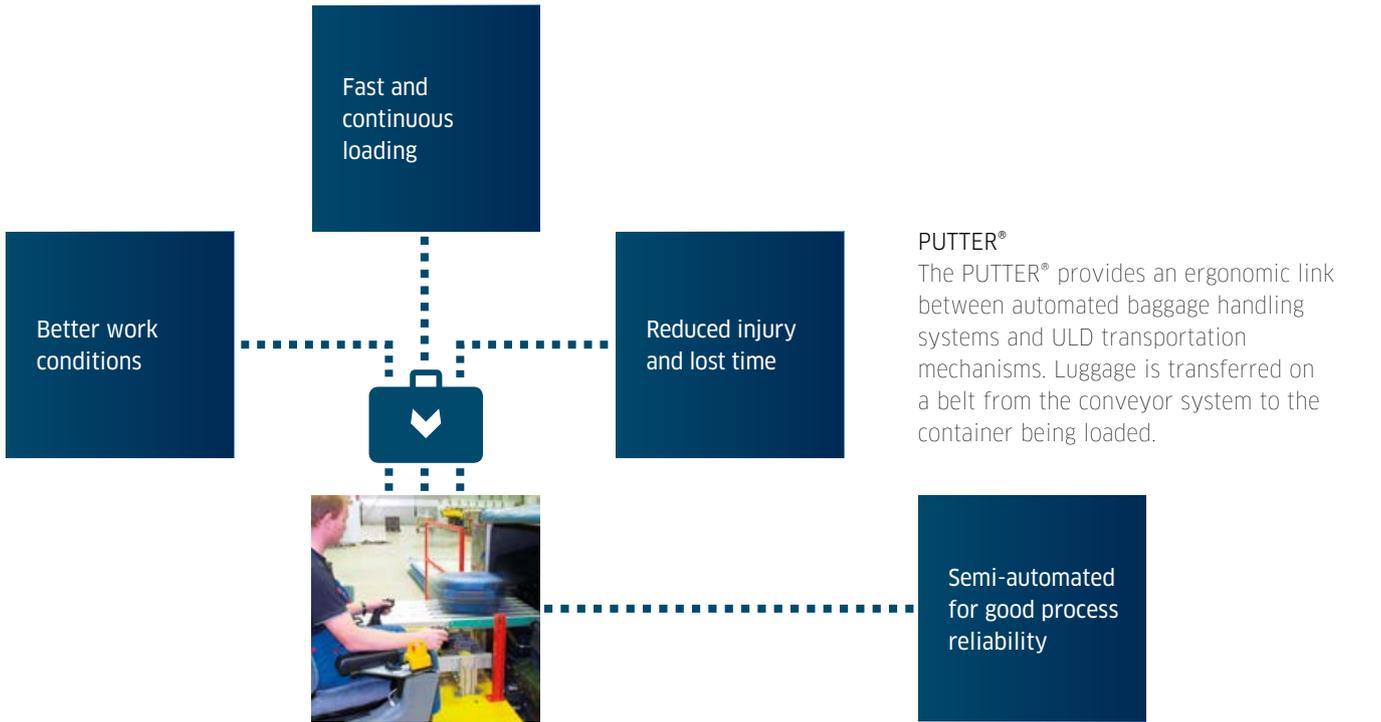
## MAKING WORK EASIER MINIMISING COST

Not much time is allowed for transferring baggage to an aircraft. Fast handling combined with good process reliability are the factors that drive efficiency. But the baggage handlers should not be exposed to unnecessary stress. The aim must be to reduce days off work for illness, and to avoid fluctuations and early retirement.

Lödige offers solutions that lead the way in terms of speed, cost efficiency and safety. Our approach completely eliminates the need to lift and lower baggage. And allows you to adhere to the minimal connecting times without any problems.



ULD Storage



**PUTTER®**  
The PUTTER® provides an ergonomic link between automated baggage handling systems and ULD transportation mechanisms. Luggage is transferred on a belt from the conveyor system to the container being loaded.



Movable platform

Low fork height for maximum loading

Continuous supply of baggage

Sturdy system technology



↖  
*Aircraft hangar  
with heavy-duty  
platform*



*Heavy-duty  
platform for  
aircraft  
maintenance*



Lödige develops intelligent storage systems that fully satisfy all customer requirements - after all, aircraft parts and tools need to be quickly and easily accessible. All parts can be stored and transported fully automatically.

Solutions that combine power and mobility are also available for working on aircraft.

#### LIFTING PLATFORMS/LOWERABLE GROUND ELEMENTS

Heavy-duty platforms that raise the aircraft for maintenance and lower it for works on the undercarriage.

#### WORK STATIONS

Work platforms for painting at different heights.

#### PARTS STORAGE

Space-saving and automated solutions, commissioning and distribution for storing aircraft parts and tools of different sizes.



## WE CARE ABOUT AIRCRAFT

Lödige offers efficient manufacturing and maintenance systems and components that are tailored to the size of the aircraft.

Special equipment for raising and lowering the aircraft are used for working on the undercarriage, and provide good access to all of the relevant assembly areas. We have also developed lifting equipment for working on the aircraft interior.

Work platforms allow paint to be applied at any height – and are even used for huge aircraft, such as the Airbus A380.



*Work platform for painting aircrafts*

*Lifting platform for landing gear inspection*





## KEEPING COOL WHEN THE GOING GETS HOT

The cycle time for loading in-flight catering is 15 minutes. The food and drink not only has to be first sorted quickly and efficiently by passenger class; it also has to be cooled consistently and cost efficiently.

Lödige has developed a compact storage and transportation system that relieves the burden on airport kitchens in every respect. The trolleys, transport containers and frames are stored in specially designed elevator towers where preliminary sorting takes place and the food is also cooled at the same time. As such, it is only the tower, and not the building, that has to be cooled to storage temperature. Space saving, efficient, and with a high throughput - the perfect supply system.



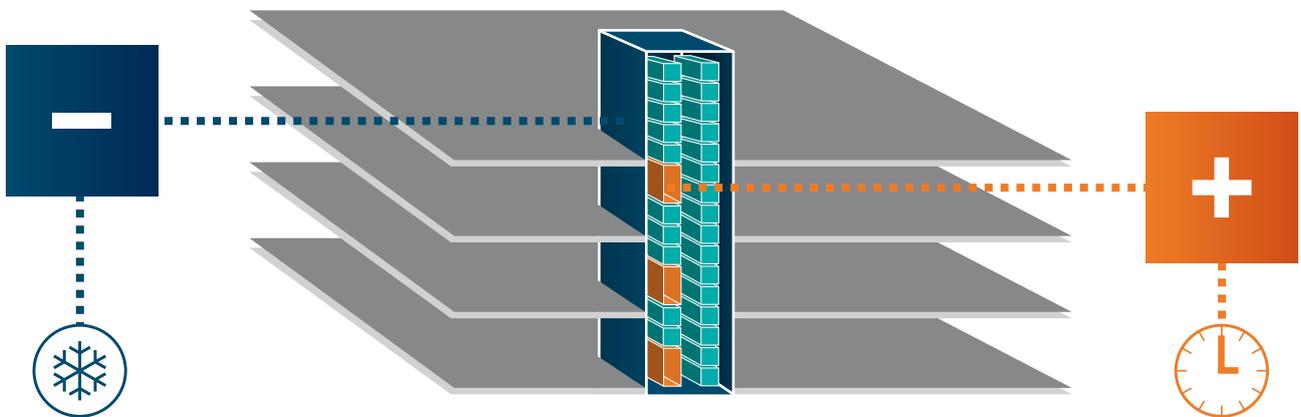


Typical array of temperature controlled Trolley Towers.



SPACE TOWER forms an integral part of the production process.

SPACE TOWER - THE PERFECT COOLING AND TRANSPORTATION SYSTEM



**LESS REFRIGERATION SPACE**  
Only the storage towers are cooled, which lowers unit costs.

**MORE TIME, MORE PROFIT**  
Time-saving preliminary sorting of the trolleys, transport containers and frames increases throughput and efficiency.

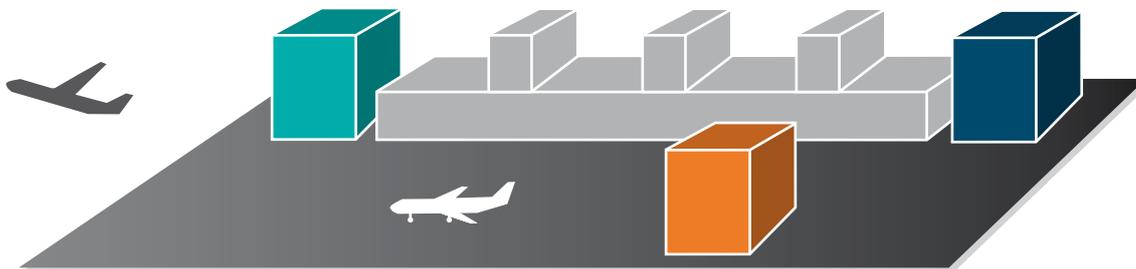


24/7 Lödige  
Remote Assistance

Professional Service  
on the highest level



ALWAYS THERE WHERE WE ARE NEEDED



### Operation

Host interface management

Work planning

Operator supervision

### Maintenance

System check

Preventive maintenance

SLA improvement

24/7 Remote Control Centre

### Modification/Modernisation

Upgrade

Extension

Relocate



*Lödige Service  
Technicians  
are available  
worldwide.*



## ALWAYS AT YOUR SERVICE

Systems designed by Lödige are renowned for the highest levels of availability. In addition to the engineering quality and redundant design, our comprehensive preventive maintenance concept ensures added safety. We operate service centres around the globe and very close to the logistics centres of our customers to ensure our ability to respond immediately when problems arise.

Depending on the maintenance contract, the services provided by Lödige range from maintenance, modernisation and repairs to individual assets, right up to monitoring and modernising entire air cargo systems.

Lödige maintenance organisations are typically located close to international cargo hubs worldwide. Our full service contracts guarantee the highest availability of cargo handling systems and are mediated at the lowest possible cost.

Our local teams are backed up by international experts such that no problem is too difficult to solve and no part impossible to obtain.

### OVERVIEW OF SERVICES

#### MAINTENANCE

Customised maintenance strategies ensure the safety and value preservation of individual assets and systems. Multi-level maintenance contracts enable you to adapt the maintenance of your assets in accordance with your specific requirements.

#### REPAIR AND SPARE PARTS

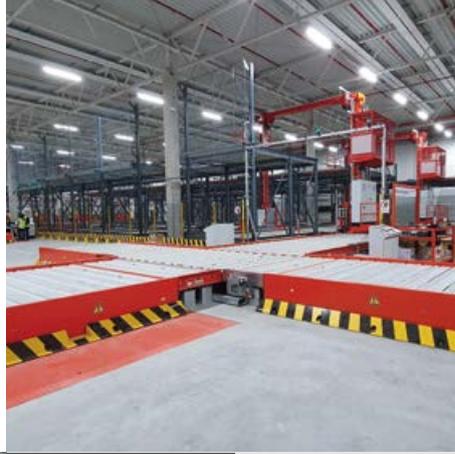
Our regional proximity enables us to respond quickly when problems arise and repairs are needed.

#### MODIFICATION AND MODERNISATION

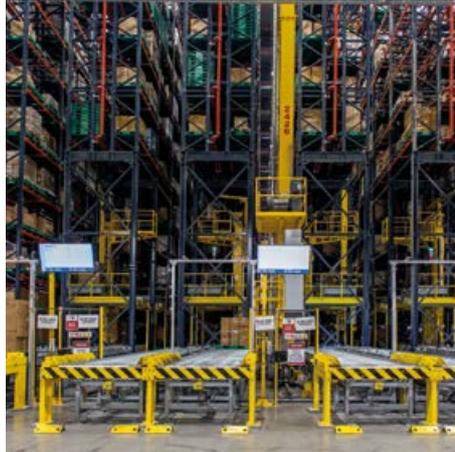
Lödige Service offers you a whole host of options for adapting your assets to changed work conditions and for bringing them in line with the current state of technology.

#### CUSTOMER CARE CENTRE

We offer 24/7 remote monitoring for all Lödige products. Errors in the system can be detected quickly via remote diagnosis and in many cases corrected directly from the control centre without having to resort to a local technician.



Cargo terminal  
of Swissport,  
Frankfurt,  
Germany



SMARTIST  
cargo hub of  
Turkish Cargo,  
Istanbul,  
Turkey

## MORE THAN 28 M TONS OF AIR CARGO

handled annually by Lödige Industries  
systems around the world.

### EXAMPLES OF REFERENCES

- AAT Asia Airfreight Terminal T2, Hong Kong
- BAA, T5, London Heathrow, UK
- British Airways, World Cargo Centre, London Heathrow, UK
- Cargo City Süd, Fraport Cargo Services, Frankfurt, Germany  
Cargo City Süd, Schenker, Frankfurt, Germany  
Cargo City Süd, Cargoport, Frankfurt, Germany
- Cargologic, Zürich, Switzerland
- Lufthansa Cargo, New York, USA
- NDIA New Doha International Airport, Doha, Qatar
- SCSC, Ho-Chi-Minh, Vietnam
- MAskargo Malaysia, Kuala Lumpur, Malaysia
- KLM Cargo, Amsterdam, the Netherlands
- Finnair Cargo, Helsinki, Finland
- Moscow Cargo, Moscow, Russia
- Cathay Pacific Catering Services, Hong Kong
- Turkish Cargo, Istanbul





# GLOBAL PRESENCE - LÖDIGE INDUSTRIES



Founded in 1948, Lödige Industries is headquartered in Warburg, Germany. Today we have more than a thousand employees in Europe, Asia, the Middle East and the United States.

Lödige Industries supplies solutions for a broad range of industries and specialises in providing complex material flow systems for logistics tasks.



## SMART CITY SOLUTIONS

Innovative parking and last mile delivery solutions for urban living spaces.



## AIRPORT LOGISTICS

High-performance logistics solutions from the market leader.



## INDUSTRIAL LOGISTICS

State of the art systems for automated handling of goods and merchandise.



## LIFT SOLUTIONS

High-performance lift solutions for goods and passengers.



## LIFE CYCLE SERVICE

Global excellence in service, support and maintenance.

