

Linde load-train solutions.
Logistic Train & Factory Train:
Focused on efficiency improvement
in intra-logistics

Linde Material Handling

Linde





The efficient truck complement to cope with increasing cost pressure

The increasing cost pressure is also putting external and internal transportation to the test. Every movement, every interruption and every use of operating material is scrutinized intensely. At the same time, more parts have to be moved to the flexible production line with less space per part.

Making already tightly planned processes in the material flow even more efficient, requires regrouping and optimizing of similar work steps. A Linde Logistic Train or Factory Train is the more cost-effective solution for horizontal transport which can guarantee a continuous flow of material to and from production. Forklift trucks, on the other hand, are designed for vertical movements. This is where their enormous lifting power can be effectively used.

Consequently, a Linde load-train solution is not a replacement for a truck, but a logical complement. The optimal combination of the two increases the cost-effectiveness of all industrial trucks employed and lowers overall operating costs. Fewer separate trips and empty trips reduce the risk of accident and background noise.



More efficient processes for certain

Round-trips with trailer trains

Continuous, clocked material provision

Structured, linear processes

Smaller aisle width, space savings

Processes

No turning of forklift trucks

Less intersecting traffic, less oncoming traffic

Reduced risk of accidents

Safety

Lower personnel costs

Smaller transport volume, fewer empty trips

Better handling performance

Cost effectiveness

Lower process costs and greater safety due to an innovative material circulation

Safe: A larger number of containers in one transport cuts down on internal traffic. The circumferential view for the driver plus the visual feedback from the integrated tractor drive-lock, together with curve-speed reduction prevents unsafe driving situations.

Powerful: The ingenious solid modular structure with stable lifting systems has no difficulty carrying loads up to 2 t. Combined with the energy efficient electric power units this is the basis for high durability and long product life.

Comfortable: Operating elements situated within easy reach offer the user the ultimate in comfort and the SE-type tires reduce noise to a minimum. Long-lasting standard connectors enable easy coupling of tow tractors and train elements.

Easy servicing: The reliable Linde service organization is able to carry out a comprehensive service for the logistics train. This ensures availability of spare parts to the greatest extent possible. Easily exchanged wear parts combined with service-free electric spindle-units means short service periods and correspondingly low repair costs.



8 Returning empty units eg. packaging/container to defined destination



1 Loading the trolleys directly from the storage or manually roll in trolleys



2 Driving to destination, stable driving and cornering



7 Round-up trip: distribute full trolleys, collect returns



3 Pre-lowering load from the operating panel



6 Load-lifting via footswitch



5 Loading the empties for returning transports



4 Unloading at destination, trolley taken to location, fill-up defined line-locations

An individual solution for every need

With its flexibility regarding load-dimensions and weights, the load train meets all demands and offers a suitable solution for every need: transporting small containers, long parts or even six euro-pallets at a time.

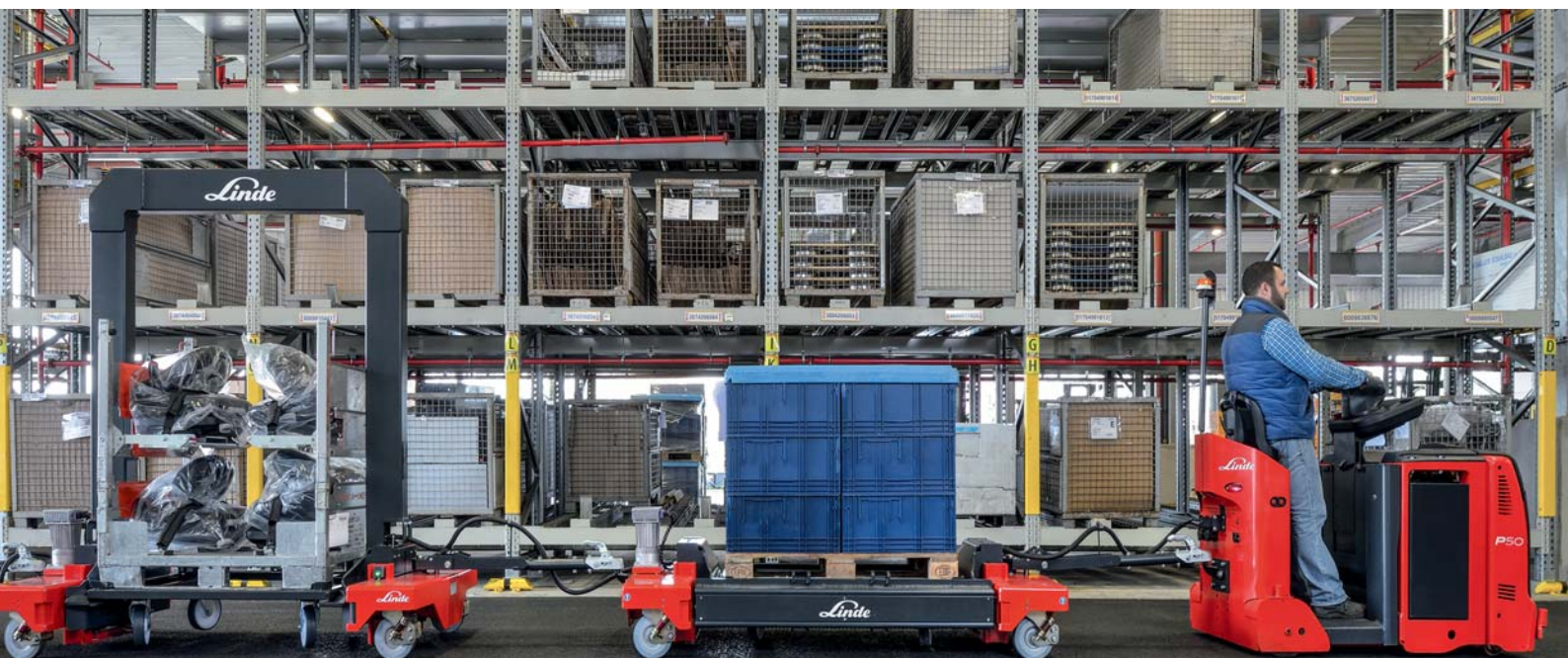
Because of the possibility of holding all types of load carriers and trolleys, the trains are excellently suitable in precisely timed processes.

The optional high class weather protection gear makes the Linde Factory train the perfect solution for horizontal transportation outdoors.

The bridge type carriers are eminently suitable for deployment in challenging infrastructures with narrow driveways.

Consumption reduced electrically powered spindles are the lifting force. And with a unique steering system: the articulated steering for the Factory Train as well as the 4-wheel steering at the Logistic Train, together with the variety of possible wheel-bases, even the most individual demands can be accommodated.

A Linde train is not an off-the-shelf purchase; each of these intelligent devices is planned with individual construction and equipment with the assistance of our experts, who are at your service for advice from the very beginning, and is then customer-specifically produced.



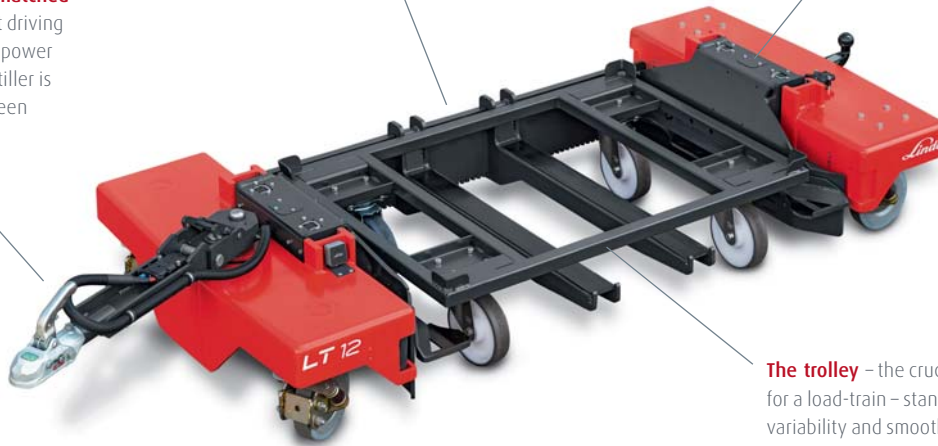
Logistic Train (LT)

Functionally constructed modular trailer system

A wide variety of loads and weights can be held under a wide range of deployment conditions. The axle/load-frame/axle design with its free open area easily adapts to various requirements.

A compact lift mast with lifting power up to 2 t provides a compact overall design, allowing for direct loading by forklift.

Tiller/coupling concept matched to each trailer for perfect driving behaviour. Apart from the power supply, the backlash-free tiller is the only connection between two trailers.



The trolley – the crucial element for a load-train – stands out for its variability and smooth movement when rolling in and out.

The bridge-type trailer allows trolleys to roll-in and out to both sides. The walk-through height offers a space saving solution especially for narrow driveways.



The optional 4-wheel steering reduces the turning radius to a minimum and gives a high degree of manoeuvrability.

The intuitive operation of the foot switch, combined with the function indication on the trailer and/or on the tow tractor permits fast deployment without training.

Trailer designs

Operation



Operation
CAN bus panel
on the tow tractor



Condition display
on the trailer



Foot switch
operation
on the trailer

Lifting function



Electrical lift



Movable forks

Tyres



Standard
non marking
indoor tyre



SE-tyre
heavy duty

Holding Performance



Double europallet 1600x1200 mm
Industrial pallet 1200x1000 mm
Europallet 1200x800 mm
Chep pallet 600x800 mm
Special dimensions on request



LT C-frame
electrical lift



LT-Z C-frame
no lift



LT-B bridge
electrical lift

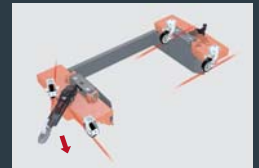


LT-BZ bridge
no lift

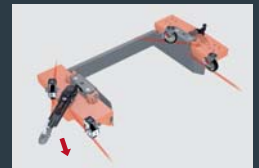


LT-P platform

Steering systems



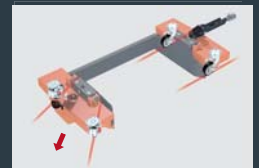
Mechanical 2-wheel steering



Mechanical 4-wheel steering



Electrical 4-wheel steering



2 swivelling / 2 fixed wheels

Fields of use



Indoor mainly
Cold store environment
Clean room field
Foodstuffs field
Industry

Factory Train (FT)

Modular designed load-train system

A train that ensures motivated operators also by the strain-free ergonomics while opening or closing the slide-up curtain in upright position. The superb characteristics of the articulated steering system realizes a comfortable driving and best in class directional stability. With its supplementary crab steering, it allows an angled side-moving of the whole train.



The train connector system is a uniquely designed, standardized feature that safely connects the load carrying construction with the modules.

The load carrier safely hooks into the train. It is available in different designs allowing the adaptation to specific requirements. On its supporting wheels, it can easily be moved for exchange.

The weather protection with its double sealed curtain offers optimized ergonomics for handling and secures the goods from environmental impact.



The front module connects the train to a tow tractor. The shock-absorbing element is one of the features needed for the smooth and controlled driving.

The main module interacts with related modules for lifting and lowering the load carriers and for steering the whole train. The CAN bus communication leads to the marvelous manoeuvrability and the small turning circle.

The rear module restricts the train in curves to the limited speed until its wheels are back in straight position.

Capacity



FT08 - 800 kg
FT16 - 1600 kg



FT10 - 1000 kg
FT20 - 2000 kg

Operation



Operation
CAN bus panel
on the tow tractor
with lift position
indication



Operation
on the trailer

Lifting



The load carriers
are lifted by the
electrical spindles
of the adjacent
modules

Steering



The main module
gives 90° turning,
the load carriers
extend this with
2 times 15° to 120°

The optional crab
function moves
the train obliquely
to the side

Examples of carrier designs



Flaps locking
the trolleys

QS-frame



C-frame



Locking bars
lift and lower
automatically

Bridge-frame

Weather protection



No bending down for
opening and closing
Double sealed curtain

Fields of use



Industry
Double pendulum chassis
for outdoor conditions
like uneven surfaces



Indoor
without weather protection
eg. cold store environment



The benefits for you

- Fewer transport trucks
- Less noise
- Fewer personnel
- Lower costs
- Higher space efficiency



Isn't it about time to get on board this train?

The demands placed on internal plant logistics are increasing steadily for a number of reasons. While the forklift truck with its highly flexible deployability had no competition in the past, a Linde load-train as a complement to trucks is now often the only way to increase efficiency. This innovative symbiosis of trucks and load-trains is not only saving personnel and transport costs at more and more locations; it also ensures more precisely targeted deliveries that fit the needs of production lines with higher and higher cycle speeds. Are you on board yet?



Linde Material Handling ranks among the world's leading manufacturers. This position has been justly earned. Linde trucks excel not only with their recognized innovative technology but especially their low energy and operating costs, which can be as much as 40% less than competitors.

High quality in production is matched by the standard of the services we provide. With a comprehensive network of local sales partners, we are at your call around the clock and around the world.

Your local Linde partner offers you a complete single-source package. From qualified pre-sales consulting through the sale to after-sales service; including finance packages matched to your business requirements. Leasing, rental or hire purchase. Flexibility is maintained in your operational and decision-making processes.

Engineered for your Performance