



Linde load-train solutions.
 Logistic Train and Factory Train

Linde Material Handling *Linde*



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



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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	No turning of forklift trucks	Lower personnel costs
Structured, linear processes	Less intersecting traffic, less oncoming traffic	Smaller transport volume, fewer empty trips
Smaller aisle width, space savings	Reduced risk of accidents	Better handling performance
Processes	Safety	Cost effectiveness

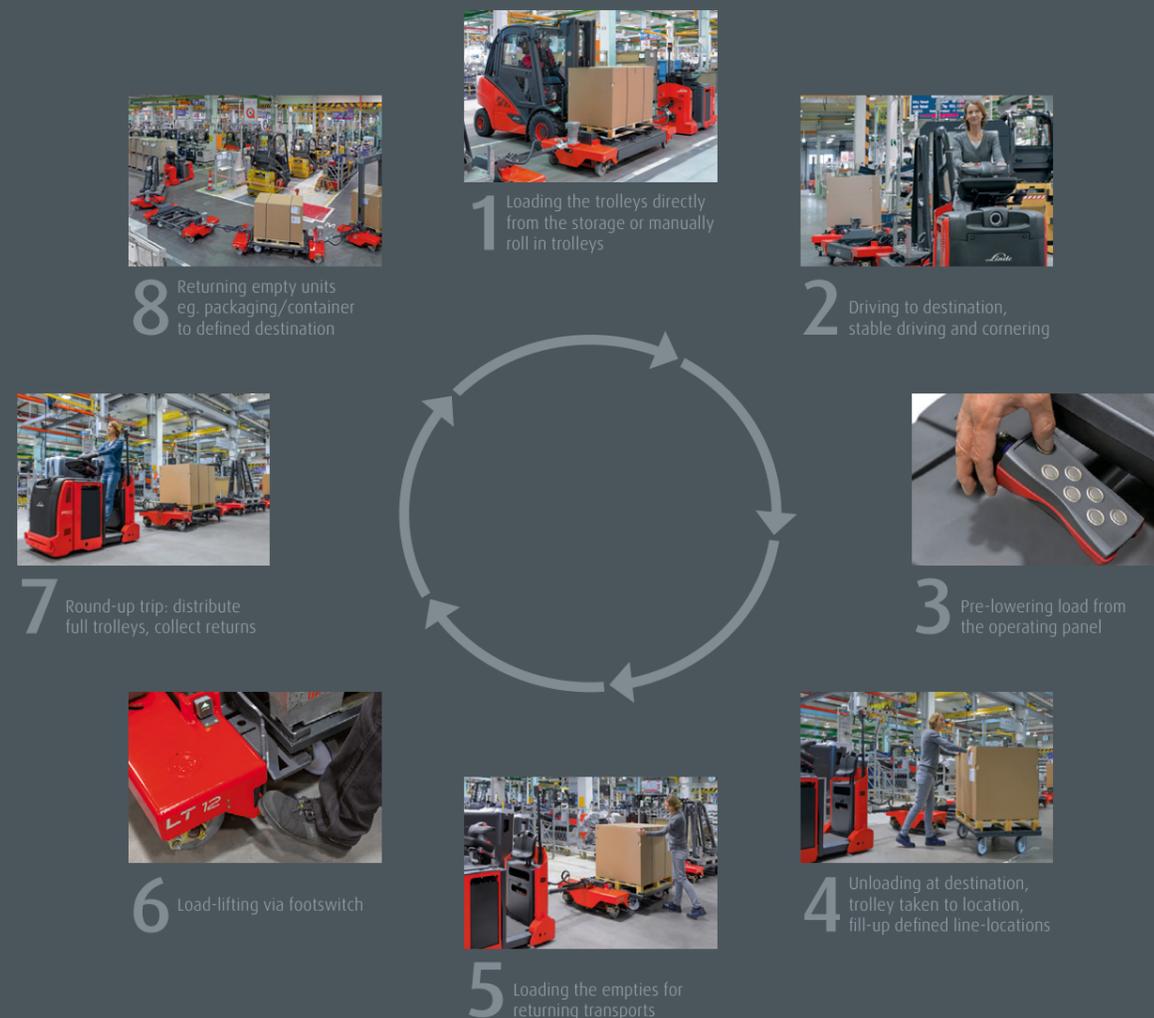
Lower process costs and greater safety due to an innovative material circulation

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.



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.

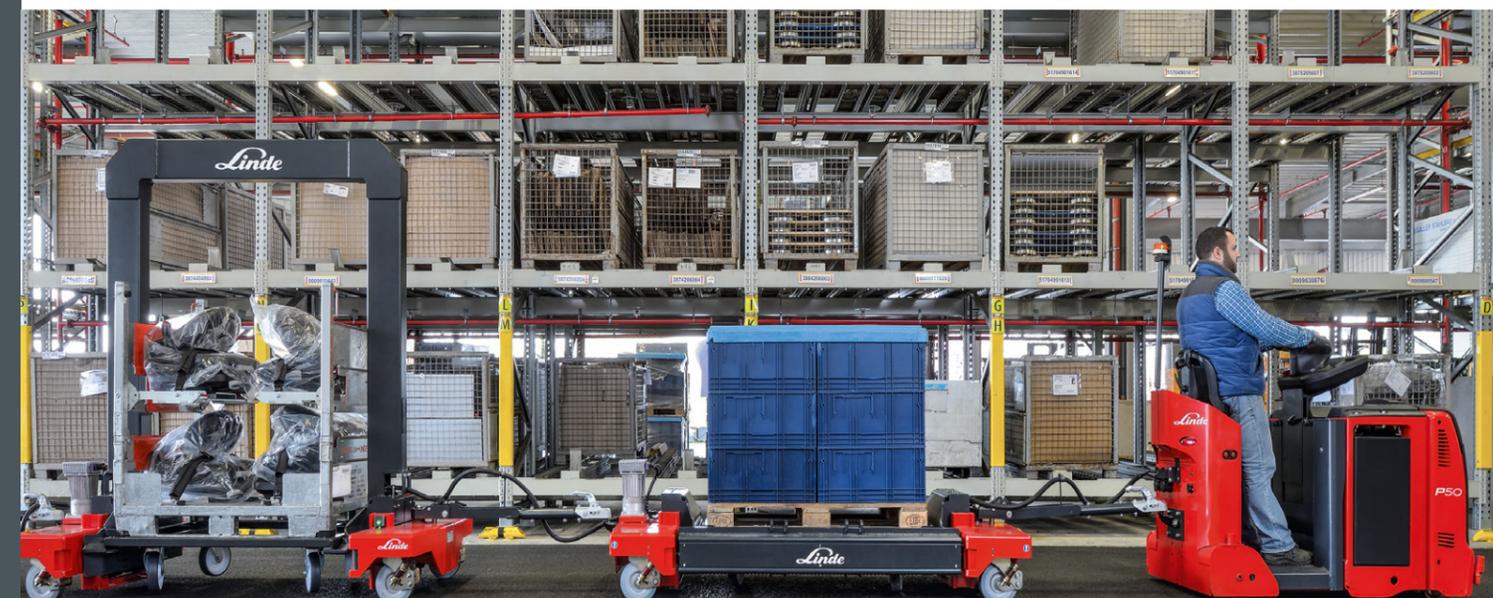
Because of the possibility of holding all types of load carriers and trolleys, the trains are excellently suitable in precisely timed processes.

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 an 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.



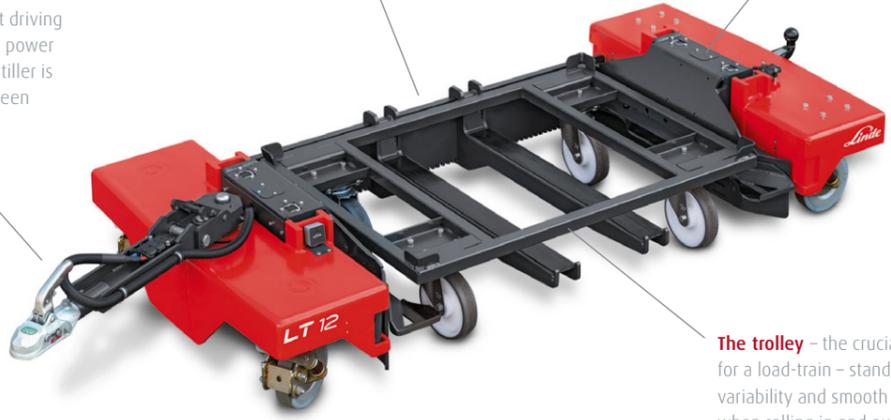
LT – Logistic Train

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.

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.

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



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

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

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

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.



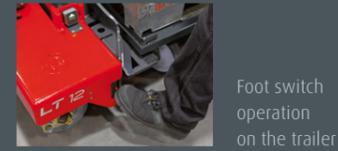
Operation



Operation
CAN bus panel
on the tow tractor



Condition display
on the trailer



Foot switch
operation
on the trailer

Lifting function

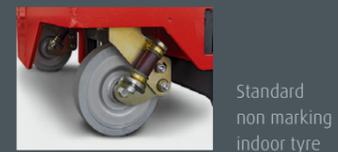


Electrical lift

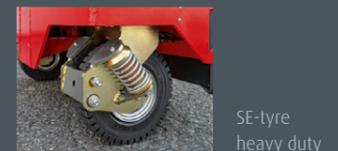


Movable forks

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

Trailer designs



LT C-frame
electrical lift



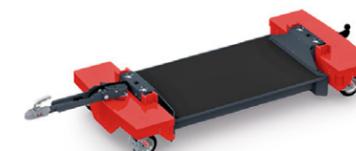
LT-Z C-frame
no lift



LT-B bridge
electrical lift

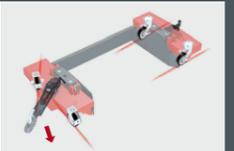


LT-BZ bridge
no lift

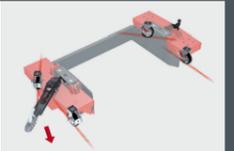


LT-P platform

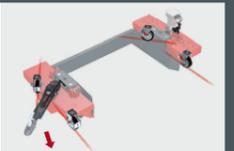
Steering systems



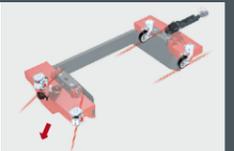
Mechanical 2-wheel steering



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

FTC – Factory Train Compact

Single modular trailers for highest flexibility

The innovative FTC brings a new dimension to efficient and safe material flows for production plants. The 3-point construction ensures that all wheels of the train remain in constant contact to the ground also on uneven surface applications. With its interchangeable load carrier modules, the FTC is an efficient and cost-effective solution for a rapid load transfer.



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

The special ball type coupling easily adapts to any Linde tractor



The front module connects the train to a tow tractor and lift the front of the first load carrier module.

The load carrier modules are designed for consistent reliability in demanding outdoor and indoor applications. The rugged construction of the low-maintenance modules and the backlash-free connections guarantee safe and stable transports for years.

Examples of load carrier module designs

Capacity



FT08 C - 800 kg
FT10 C - 1600 kg
FT16 C - 1600 kg
FT20 C - 2000 kg

Operation



Operation
CAN bus panel
on the tow tractor



Operation
on the trailer



Support leg
for manual
manoeuvring
of single load
carrier module

Lifting



The load carrier
modules are lifted by
electrically powered
recirculating ball
screw spindles

Steering



Fully electrical steering
for best manoeuvrability
and optimized driving-
behaviour



QS-frame



E-frame



C-frame



Platform-frame



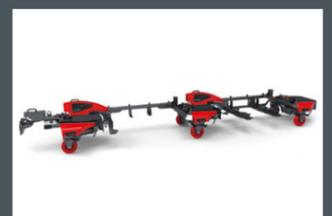
Bridge-frame

Weather protection



No bending down for
opening and closing
Double sealed curtain

Fields of use



Indoor mainly,
e.g. cold store environment



Modular train also available
with best in class outdoor kit

FT – Factory Train

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

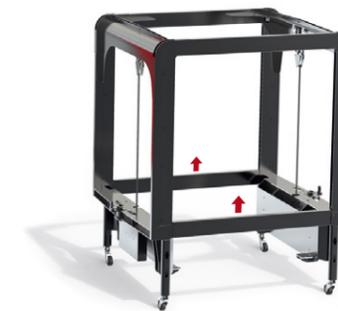


QS-frame

Flaps locking the trolleys



C-frame



Bridge-frame

Locking bars lift and lower automatically

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