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# Логистический поезд LT06-LT20 LINDE MH. Техническое описание



## Standard equipment/optional equipment

### Standard equipment

Maximum total weight of trailers with load for one train: 8,000 kg (depends on towing capacity of tractor)

CAN bus controller

Option of four different steering systems:

Electrical 4-wheel steering/mechanical 4-wheel steering /mechanical 2-wheel steering/2 swiveling plus 2 fixed wheels (4-wheel steering for highest directional driving stability)

Robust, durable load-frame construction with release guard and stable front and rear axle

Warp-resistant lifting system powered by quiet electrical spindles

Exchangeable trolley lifting profile at front and rear side of the trolley compartment

2 or 4 lifting spindles depending on load capacity

Lifting height 30 – 100 mm, adjustable

Lifting speed 18 mm/s

Load capacity: from 600 kg to 2,000 kg

Holding capacity for various load/trolley dimensions:

400x600 up to 2000x1200 mm

Lifting function operated from panel at tow tractor

and additional lift operation at trailer via footswitch,

Footswitch with immediate-stop function

Automatic tractor drive lock when lifting in lowered position

Low energy consumption

Trailers designed for a small turning radius

Optional: without lifting system, trolleys remain on own wheels

C frame configurable for trolley opening left or right side

Bridge frame for trolley opening on both sides

Backlash-free ball type coupling system

Linde red/anthracite paintwork

Requires adaptation of the tractor (electrical connector, ball type coupling, operating panel)

### Optional equipment

Heavy duty version with SE tires 250x85 mm and lifting height 30-200 mm, adjustable

Adaptable to customer-specific trolley

Mechanical trolley locking, foot-operated

Load handling of other load dimensions on request

Foot pedal for locking dolly

Alternative paintwork

Weather protection

1 or 2 sets of movable forks

ESD conductivity (ESD wheels)

Lighting system

Stainless steel version for foodstuffs field

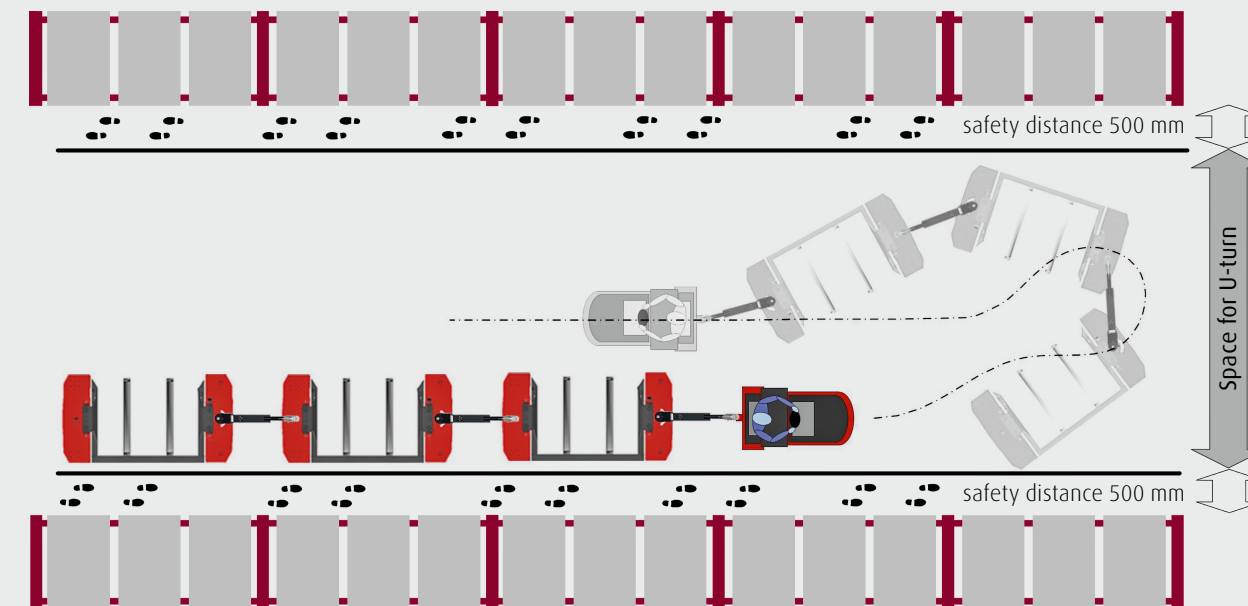
Wet grip drive wheel for tow tractor (P50 C, recommended for towed load of 3600 kg and above)

Tractor Tractor P20/P30C/P50C/P60/P80 or P250

Additional optional equipment on request

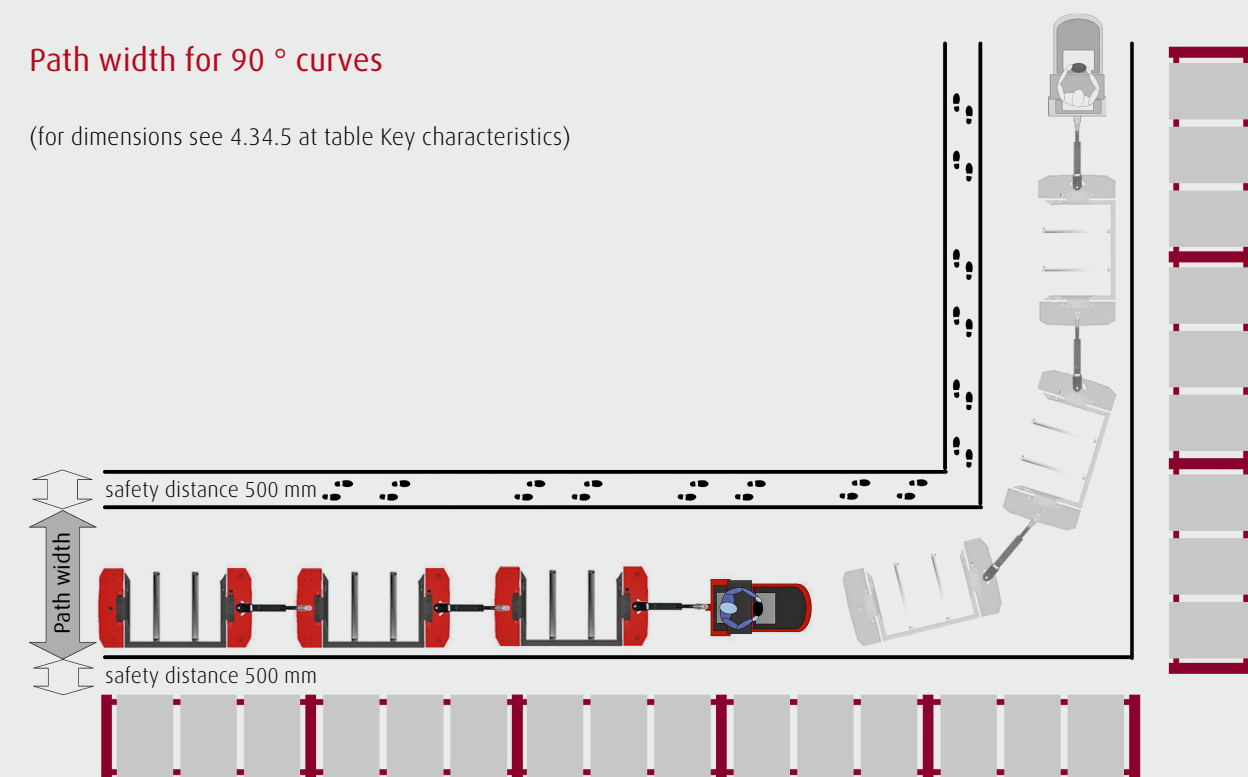
### Space required for U-turn with optimized tractor driving line

(for dimensions see 4.35 at label Key characteristics)



### Path width for 90 ° curves

(for dimensions see 4.34.5 at table Key characteristics)



Linde Logistic Train LT06 – LT20  
Load capacity 600 – 2000 kg

BR1196

### Safety

The innovative Linde Logistic Train is an ideal solution for the tightly scheduled material flow in modern production plants. Raising varying loads on pallet undercarriages (=trolleys) above the floor creates a load-protecting, low-noise and low-wear load handling process. An integral drive-lock prevents the tractor moving with lowered lifting units. Load lifting, for safety reasons, can also be controlled direct at the trailer

### Performance

Goods are safely transported due to the sturdy frame construction. The Linde Logistic Train can transport up to four trailers safely at the same time, greatly improving goods handling capacity. The optional 4-wheel steering and the special trailer chassis design ensure outstanding maneuverability and high directional stability. The electrical lifting function performs up to 2.0 t.

### Comfort

The Logistic Train was designed to offer the best possible ergonomics for the operator. Foot-switch in the trailer for hands-free operation, pre-lowering from the tractor combined with the smooth-running trolleys allow for comfortable follow up on the internal deliveries. The wheel suspension, the electrically driven lifting spindles and the backlash-free coupling provide for quiet operation. The bridge type trailer allows a simple roll-in and out from both sides.



### Reliability

Solid framework surrounds and intelligent construction, incorporating release guard and the low-maintenance electrical lift design offer excellent levels of reliability. A high-strength trailer tiller, fitted with ball type coupling as well as smooth-running wheels with integrated suspension enable long-term use. No lurching, even with high load heights.

### Serviceability

Sturdy and service friendly, the trailers can simply be uncoupled for exchange. The unique construction consisting of two axles and the drop-in-position load-frame are very easy to maintain. The sealed electrical lifting spindles are service-free and easy to replace. Each trailer has its own CAN bus controller that memorizes operations and failures. The tiller with its ball type coupling is almost wear-free in use.

## Product information

### Directionally stable trailers

- Directionally stable trailers for optimal maneuverability
- A range of four different steering systems for adaptation to individual driveway situations
- Electrical steering for optimized driving in tight turning circles and narrow curves
- Wide wheelbase for excellent driving stability
- Minimum space requirements

### Low noise

- The electrically powered spindles lift and lower quickly and quietly
- The wheels with integrated suspension in combination with the backlash-free ball type coupling reduce the noise emissions to a minimum

### Serviceability

- Easily maintained basic construction
- CAN bus controller with data memory
- Interchangeable rollers and axles are easily accessible for servicing

### Energy management

- Energy-optimized lifting system
- Reduced rolling resistance due to optimal roller pivot bearings

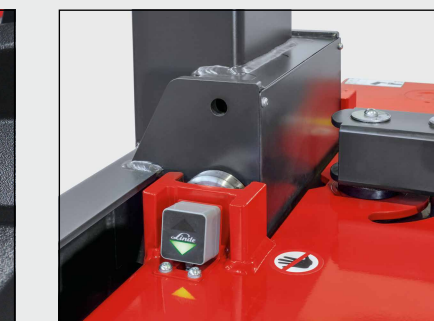
### Safety

- Safety pre-lowering from the tractor panel: trolleys remain locked until released via footswitch at the trailer
- Drive lock function: The tractor cannot be started whilst the load is in the lowered position
- Footswitch with stop-movement-function



### Operation

- Safe operation from the operating panel at the tow tractor or directly at the trailers' footswitch
- Trailer fitted with Lift function indication
- Operating panel at the tow tractor provides visual feedback of lift units position
- For on-site-control the lift can be operated directly at the trailer
- Drive can only be enabled when the loads are raised



### Lifting device

- Pre-adjustable lifting height from 30-100 mm, Optional heavy duty version 30-200 mm
- Load securing by load stops, on request also a foot-pedal-activated mechanical locking



### Towing device

- Trailers are equipped with backlash-free ball type coupling
- The slackless coupling offers the highest directional driving stability
- No backlash noise when driving
- Robust, durable train tiller

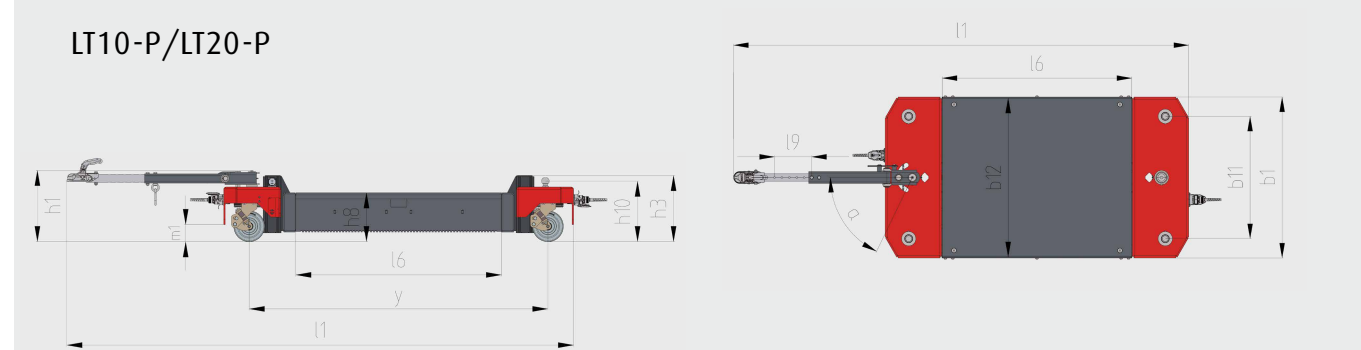
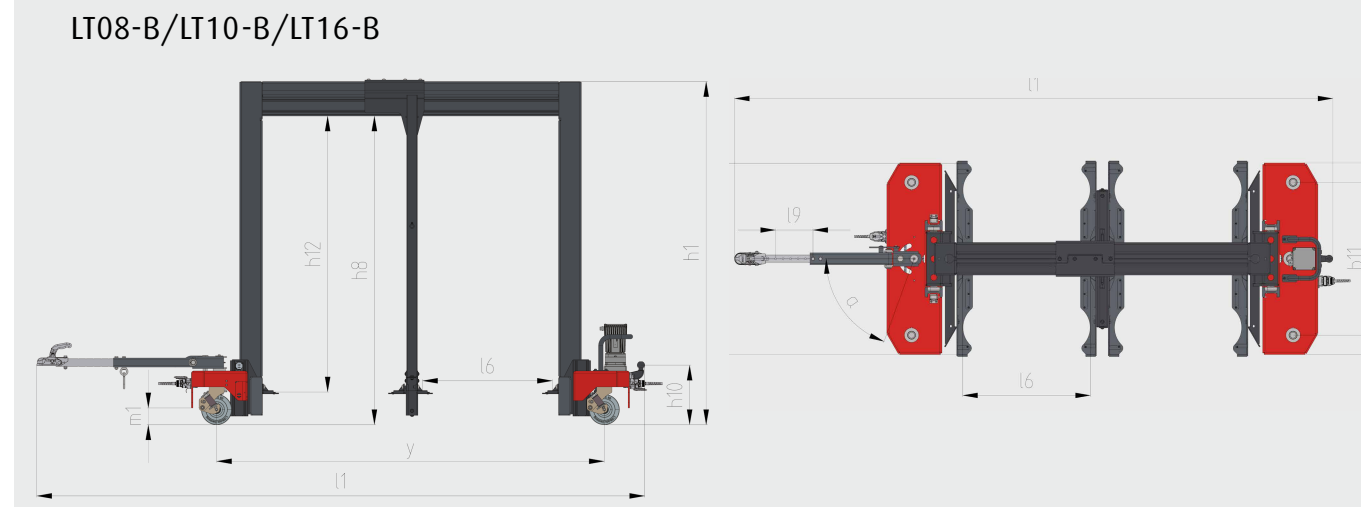
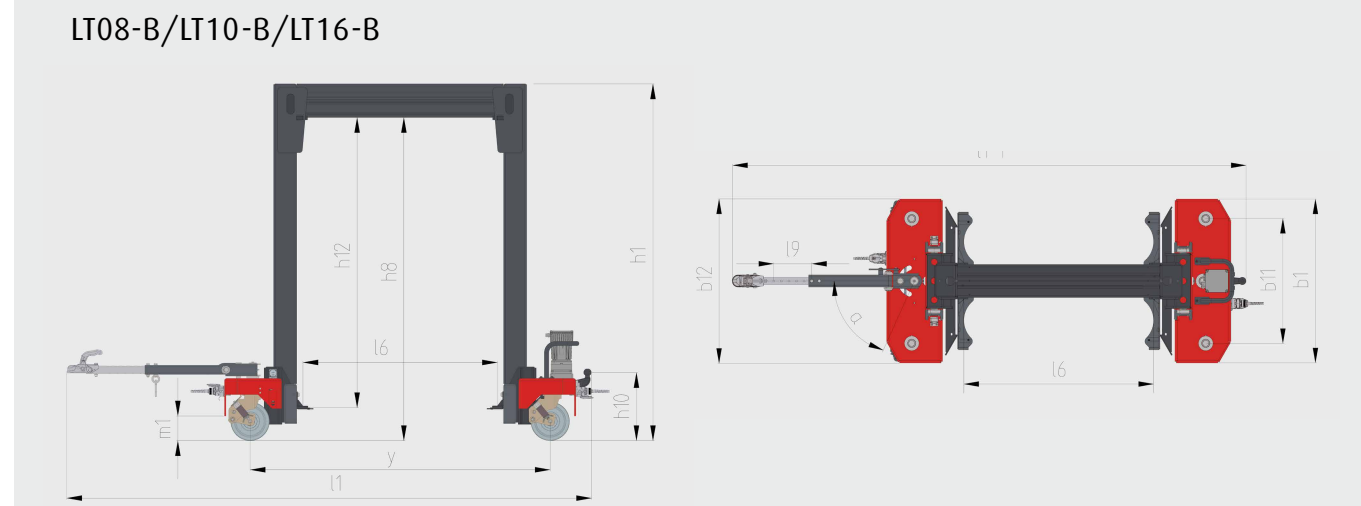
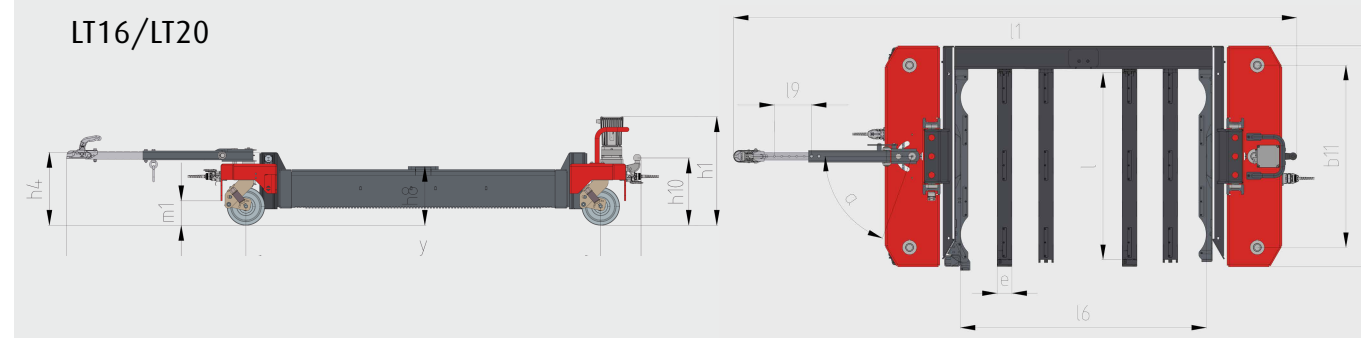
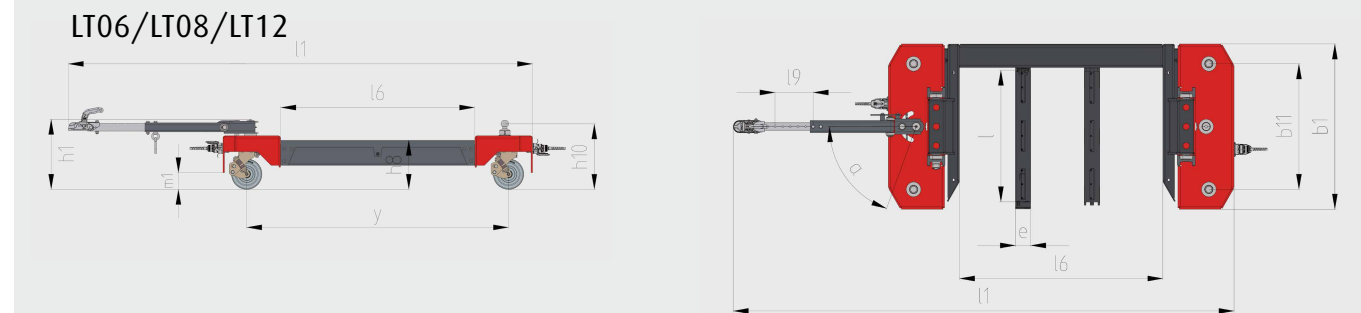




# Key characteristics (according VDI 2198)

			Distinguishing mark												
			1.1	1.2	1.2a	1.5	1.9	2.1	3.1	3.2	3.3	3.5			
	Manufacturer (abbreviation)	LINDE	LINDE	LINDE	LINDE	LINDE	LINDE	LINDE	LINDE	LINDE	LINDE	LINDE	LINDE	LINDE	
	Manufacturer's type designation	LT06 / LT08 / LT12	LT06 / LT08 / LT12	LT16	LT20	LT08-B / LT10-B	LT10-B(2) / LT16-B(2)	LT16-B(2)	LT16-B(2)	LT16-B(2)	LT16-B	LT10-P / LT20-P			
	Series	1196	1196	1196	1196	1196	1196	1196	1196	1196	1196	1196			
	Rated capacity/rated load	Q(t)	0.6/0.8/1.2	0.6/0.8/1.2	1.6	2.0	0.8/1.0	1.0/1.6	1.6	1.6	1.6	1.0/2.0			
	Wheelbase	y(mm)	1937	1937	2337	2737	1937	2149	2549	2949	2337	1937 / 2337			
	Service weight	(kg)	540 / 540 / 550	560 / 560 / 570	750	770	620 / 630	720 / 720	860	890	770	305 / 360			
	Tyres: solid rubber, superelastic, polyurethane		SE (opt. PU)	SE (opt. PU)	SE (opt. PU)	SE	SE (opt. PU)	SE (opt. PU)	SE (opt. PU)	SE (opt. PU)	SE (opt. PU)	SE (opt. for LT10-P; PU)			
	Tyre size, front		Ø 200x50 / x50 / x80	Ø 200x50 / x50 / x80	Ø 200x80	Ø 250x80	Ø 200x50 / x80	Ø 200x50 / Ø 250x80	Ø 250x80	Ø 250x80	Ø 250x80	Ø 200x50 / Ø 250x80			
	Tyre size, rear		Ø 200x50 / x50 / x80	Ø 200x50 / x50 / x80	Ø 200x80	Ø 250x80	Ø 200x50 / x80	Ø 200x50 / Ø 250x80	Ø 250x80	Ø 250x80	Ø 250x80	Ø 200x50 / Ø 250x80			
	Wheels, number front/rear		2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2	2/2			
	Tread	b10(mm)	820	1020	1220	1220	820	820	1020	1020	1020	820 / 1020			
Dimensions	4.2.1	Overall height mech./el. steering (opt. f. wheel-Ø250mm mech./el. steering)	h1(mm)	462/688 (487/713)	462/688 (487/713)	462/688 (487/713)	487/713	2275 2300	2305 2330	2305 2330	2305 2330	2275 2300	462/688 (487/713)		
	4.4	Lift (optional)	h3(mm)	100 (200)	100 (200)	100 (200)	100 (200)	100 (200)	100 (200)	100 (200)	100 (200)	100 (200)	100 (200)		
	4.4d	Lifting function		electrical	electrical	electrical	electrical	electrical	electrical	electrical	electrical	electrical	electrical		
	4.12	Coupling height, 200 resp. 250mm wheel	h10(mm)	417 resp. 442	417 resp. 442	417 resp. 442	417 resp. 442	417 resp. 442	417 resp. 442	417 resp. 442	417 resp. 442	417 resp. 442	417 resp. 442		
	4.19	Overall length (Drawbar short / upright) <sup>1)</sup>	l1(mm)	3086 / 2268	3486 / 2668	3486 / 3068	3141 / 2268	3353 / 2480	3753 / 2880	4153 / 3280	4153 / 3280	3541 / 2668	3086 / 2268 3486 / 2668		
	4.19.1	Length in train <sup>1)</sup> (depending on length of adjustable drawbar)	(mm)	2826 - 3326	2826 - 3326	3226 - 3726	3626 - 4126	3086 - 3586	3298 - 3798	3698 - 4198	4098 - 4598	3486 - 3986	2826 - 3326 / 3226 - 3726		
	4.16.1	Opening length for loads	l6(mm)	1334	1334	1734	2134	1334	1546	1946	2346	1734	1334 / 1734		
	4.21	Overall width	b1/b2(mm)	1079	1279	1479	1479	1079	1079	1279	1279	1279	1079 / 1279		
	4.22	Fork dimensions (depth for trolleys x width)	s/e/l(mm)	860x100	1060x100	1260x100	1260x100	-	-	-	-	-	-		
	4.22.1	Lifting profile (depth x width for trolleys)	(mm)	860x64	1060x64	1260x64	1260x64	1060x64	1060x64	1260x64	1260x64	1260x64	-		
4.31	Ground clearance axle 200 resp. 250mm wheel	(mm)	56 resp. 104	56 resp. 104	56 resp. 104	56 resp. 104	56 resp. 104	56 resp. 104	56 resp. 104	56 resp. 104	56 resp. 104	56 resp. 104			
4.33	Load dimension	(mm)	1200x800	1200x1000 1200x800	1600x1200 With 2 pair of forks: 2pcs. 1200x800 4pcs. 800x600	2000x1200 With 2 pair of forks: 2pcs. 1200x1000 2pcs. 1200x800 4pcs. 1000x600	1200x800 (or 2pcs. 1200x400) 1200x1000 (or 2pcs. 1200x500)	1200x800 1200x1000 Adjustable center support allows different load dimensions + combinations.	1600x1200 2pcs. 1200x800 Adjustable center support allows different load dimensions + combinations.	2000x1200 2pcs. 1200x1000 Adjustable center support allows different load dimensions + combinations.	1600x1200	allows only loads without trolleys: max. 1200x1000 / max. 1600x1200			
4.34.5	Driveway width 90°-curves: without safety; safety l/r each 500mm	1 trailer 2 trailers 3 trailers 4 trailers	(mm)	1800 1950 2100 2250	1900 2050 2200 2350	2000 2150 2300 2450	2200 2350 2500 2650	1700 1850 2000 2150	1800 1950 2100 2250	2000 2150 2300 2450	2200 2350 2500 2650	1900 1850 / 2050 2000 / 2200 2150 / 2350			
4.35	Required space for U-Turn: without safety; safety l/r each 500mm	1 trailer 2 trailers 3 trailers 4 trailers	(mm)	3500 3800 4100 4250	3700 4000 4300 4450	4100 4400 4700 4850	4300 4600 4900 5050	3500 3800 4100 4250	3650 3950 4250 4400	4050 4350 4650 4800	4450 4750 5050 5200	4000 4300 4600 4700	LT10-P: 3500/3800/4100/4250; LT20-P: 3600/4050/4450/4850		
Performance data	5.2	Lift speed with / without load	(mm/s)	18	18	18	18	18	18	18	18	18	18		
	5.3	Lowering speed with / without load	(mm/s)	18	18	18	18	18	18	18	18	18	18		
	5.7	Gradeability with / without load	(%)	4 <sup>2)</sup>	4 <sup>2)</sup>	4 <sup>2)</sup>	4 <sup>2)</sup>	4 <sup>2)</sup>	4 <sup>2)</sup>	4 <sup>2)</sup>	4 <sup>2)</sup>	4 <sup>2)</sup>	4 <sup>2)</sup>		
	5.10	Service brake		without	without	without	without	without	without	without	without	without	without		
	6.2	Lift motor rating at 53 15 %	(kW)	0,24	0,24	0,24	0,24	0,24	0,24	0,24	0,24	0,24	-		
6.21	Number of lift motors		2 / 2 / 4	2 / 2 / 4	4	4	2 / 4	4 / 4	4	4	4	-			
8.5	Coupling		ball coupling Ø 50	ball coupling Ø 50	ball coupling Ø 50	ball coupling Ø 50	ball coupling Ø 50	ball coupling Ø 50	ball coupling Ø 50	ball coupling Ø 50	ball coupling Ø 50	ball coupling Ø 50			

<sup>1)</sup> all values are calculated; due to tolerances and suspension travels and plays in components, reality could differ  
<sup>2)</sup> until 4%; between 4% and max. 7% test necessary



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