



Logistic Train Solutions

LT16 Ch/BMh

Capacity 1.6 t | Series 8972

Robust Outdoor Train

- Robust two-axle design with large outdoor tyres for external transport of goods
- Copes effortlessly with longer runs and difficult ground conditions
- Frames available with adjustable central supports (BMh) or forks (Ch) for flexible transport of pallets, stillages or larger loads
- The frames can be equipped with Linde trolleys or adapted to fit the customer's own load carriers

TECHNICAL DATA (according to VDI 2198)

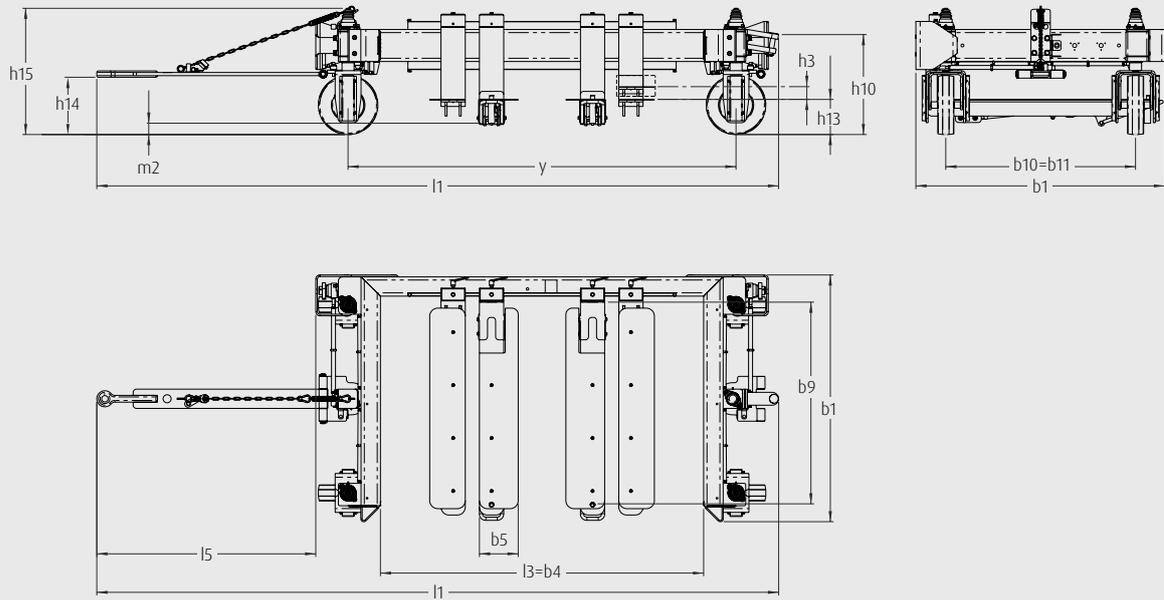
For simplicity, representative models shown. Ask your local contact person for the final data, which may vary depending on the customer-specific scope and configuration.

Characteristics	1.1	Manufacturer	Linde MH	Linde MH	Linde MH	Linde MH	Linde MH
	1.2	Manufacturer's type designation	LT16 Ch 2xTR1200×800 ¹⁾	LT16 Ch 2xTR1200×800 ¹⁾ WP ²⁾	LT16 Ch 2xTR1200×1000 ³⁾	LT16 BMh 4xTR800×600 ⁴⁾	LT16 BMh 4xTR800×600 ⁴⁾ WP ²⁾
	1.2a	Series	8972	8972	8972	8972	8972
Weights	1.5	Load capacity/Load	Q (t)	1.6 ⁵⁾	1.6 ⁵⁾	1.6 ⁵⁾	1.6 ⁵⁾
1.9	Wheelbase	y (mm)	2400	2400	2800		
Weights	2.1	Empty weight	kg	960	1192	1060	
Wheels/Tyres	3.1	Tyres (solid rubber, super-elastic, pneumatic, polyurethane)	SE	SE	SE		
	3.2	Tyre size, front		Ø 368 × 115	Ø 368 × 115	Ø 368 × 115	
	3.3	Tyre size, rear		Ø 368 × 115	Ø 368 × 115	Ø 368 × 115	
	3.5	Wheels, number front/rear (x = driven)		2/2	2/2	2/2	
	3.6	Track width, front	b10 (mm)	1174	1174	1174	
	3.7	Track width, rear	b11 (mm)	1174	1174	1174	
	Dimensions	4.2.1	Total height	h15 (mm)	800/880 ⁶⁾	2205/2285 ⁶⁾	800/880 ⁶⁾
4.4		Lift	h3 (mm)	80 ⁷⁾	80 ⁷⁾	80 ⁷⁾	
4.4a		Lifting function		hydraulic	hydraulic	hydraulic	
4.9		Tiller arm height	h14 (mm)	356/436 ⁶⁾	356/436 ⁶⁾	356/436 ⁶⁾	
4.12		Towing coupling height	h10 (mm)	593/673 ⁶⁾	593/673 ⁶⁾	593/673 ⁶⁾	
4.13		Load height without load	h11 (mm)	-	1900	-	
4.15		Height, lowered	h13 (mm)	220	220	220	
4.16		Load bed length	l3 (mm)	2000	2000	2400	
4.17		Overhang length	l5 (mm)	1355	1355	1355	
4.18		Load bed width	b9 (mm)	1255	1255	1255	
4.19		Overall length	l1 (mm)	4218	4218	4618	
4.21		Overall width	b1 (mm)	1540	1639	1540	
4.25		Distance between fork arms	b5 (mm)	240 ⁸⁾	240 ⁸⁾	240 ⁸⁾	
4.26		Width between load wheel supports/ load beds	b4 (mm)	2000	2000	2400	
4.32		Ground clearance, centre of wheelbase	m2 (mm)	55/135 ⁶⁾	55/135 ⁶⁾	55/135 ⁶⁾	
4.33		Load dimensions	b × l (mm)	2x 810 × 1210 ⁹⁾	2x 810 × 1210 ⁹⁾	2x 1010 × 1210 ¹⁰⁾	
4.34		Aisle width	Ast (mm)	7200 ¹¹⁾ /8500 ¹²⁾	7200 ¹¹⁾ /8500 ¹²⁾	7800 ¹¹⁾ /9100 ¹²⁾ 13)	
4.34b	Aisle width for 90° curve	Ast1 (mm)	3790 ¹¹⁾ /4290 ¹²⁾	3790 ¹¹⁾ /4290 ¹²⁾	4090 ¹¹⁾ /4590 ¹²⁾ 13)		
4.35	Turning radius	Wa (mm)	3100 ¹¹⁾ /3750 ¹²⁾	3100 ¹¹⁾ /3750 ¹²⁾	3400 ¹¹⁾ /4050 ¹²⁾ 13)		
Performance	5.1	Travel speed, with/without load	km/h	15 ¹⁴⁾	15 ¹⁴⁾	15 ¹⁴⁾	
	5.2	Lifting speed, with/without load	m/s	0.01	0.01	0.01	
	5.7	Climbing ability, with/without load	%	7.0 ¹⁵⁾	7.0 ¹⁵⁾	7.0 ¹⁵⁾	
	5.10	Service brake		none ¹⁶⁾	none ¹⁶⁾	none ¹⁶⁾	
Others	10.8	Towing coupling, design/type, DIN 15 170		Ø 25/Ø 30 ¹⁷⁾	Ø 25/Ø 30 ¹⁷⁾	Ø 25/Ø 30 ¹⁷⁾	

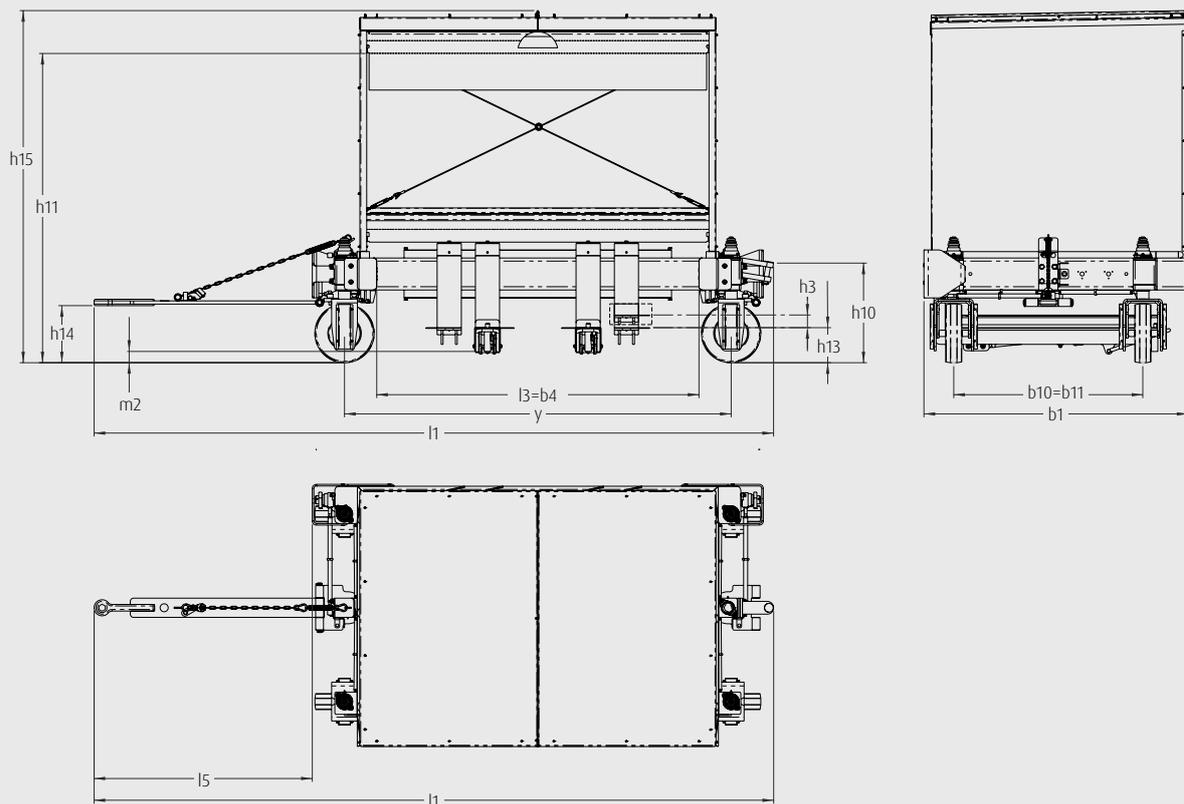
If you would like further information, please get in touch with your local contact person.

- 1) Frame design for transport of two Linde trolleys TR1200×800 with one frame
- 2) Equipped with standard weather protection
- 3) Frame design for transport of two Linde trolleys TR1200×1000 with one frame
- 4) Frame design for transport of either four Linde trolleys TR800×600 or two Linde trolleys TR1200×800 with one frame by adjusting the central support to the appropriate positions
- 5) Max. permissible load capacity per fork pair/lift profile pair = 1000 kg
- 6) When lowered/raised
- 7) After lifting has been initiated, the complete frame together with load handling equipment is hydraulically raised by 80 mm. Free lift = 15 mm
- 8) Load-handling forks with an overall length (incl. suspension) of 1335 mm and a fork height (lowest to uppermost point incl. suspension) of 164 mm
- 9) Load bed dimensions b9×l3 for Linde trolleys TR1200×800 = 810×1210 mm (Outer dimensions b1×l1 incl. catch edges = 860×1260 mm)
- 10) Load bed dimensions b9×l3 for Linde trolleys TR1200×1000 = 1010×1210 mm (Outer dimensions b1×l1 incl. catch edges = 1060×1260 mm)
- 11) For two frames in combination with a P60 – P80, series 1191. Ast values = incl. safety distance of 1000 mm (a/2 = 500 mm on each side)
- 12) For two frames in combination with a P250 (short wheelbase), series 5007, Ast values = incl. safety distance of 1000 mm (a/2 = 500 mm on each side)
- 13) Values are calculated; final values may vary
- 14) Depends on the tractor used
- 15) Do not exceed 6 km/h when operating on ramps. Ramps up to 7% can be driven on without a radius. Gradients in excess of 7% must be examined as part of the specific project
- 16) The frames can be equipped with a mechanical braking system (overrun brake) as an option
- 17) Logistic train tiller system for LT Ch and LT BMh. Frames are connected to the tractor (two-stage coupling, three-stage coupling or Rockinger coupling) using a Ø 25 mm bolt, and to each other using a Ø 30 mm bolt

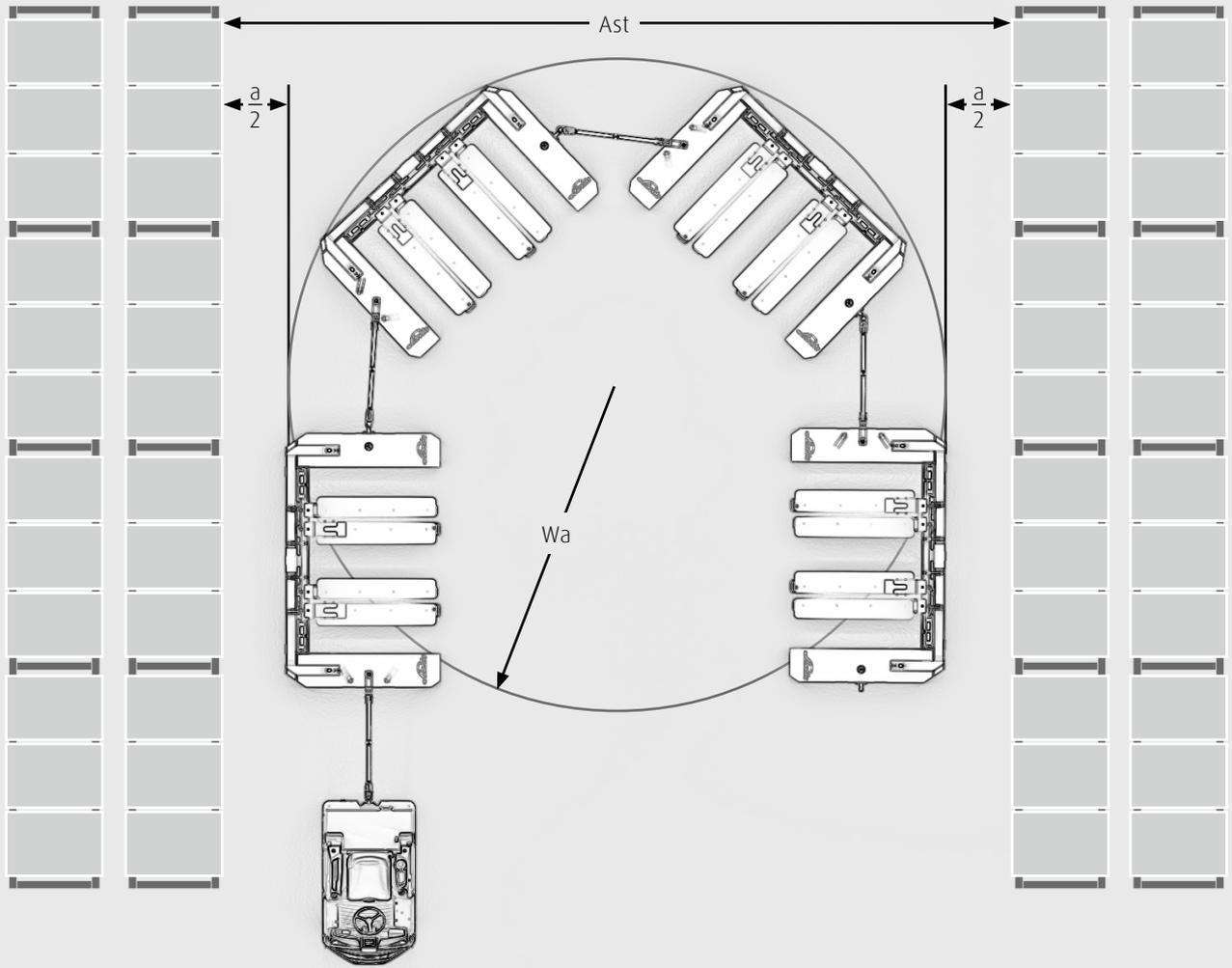
LT16 Ch



LT16 Ch WP (WITH WEATHER PROTECTION)



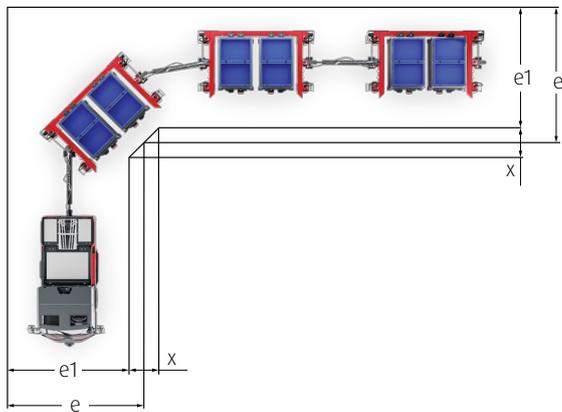
AST



AISLE WIDTHS

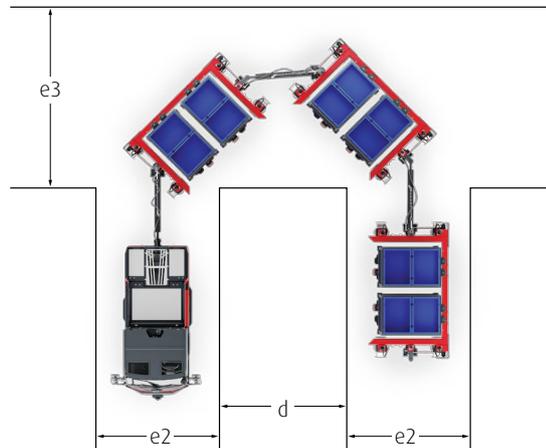
Frame type	Frame size	Frames per train	Loads per train	Train length (mm)	e (mm) ¹⁾	e1 (mm) ¹⁾	x (mm)	e2 (mm) ¹⁾	e3 (mm) ¹⁾	d (mm)	e4 (mm) ²⁾³⁾⁴⁾
LT16 Ch	2xTR1200×800	1	1	5970 ²⁾ /7370 ³⁾	2540 ²⁾ /3040 ³⁾	2540	0 ²⁾ /1000 ³⁾	2550 ²⁾ /3100 ³⁾	2550 ²⁾ /3100 ³⁾	800	3850
		2	2	10110 ²⁾ /11510 ³⁾	2790 ²⁾ /3290 ³⁾	2540	500 ²⁾ /1500 ³⁾	2800 ²⁾ /3200 ³⁾	2800 ²⁾ /3200 ³⁾	800	3850
		3	3	14250 ²⁾ /15650 ³⁾	3040 ²⁾ /3290 ³⁾	2540	1000 ²⁾ /1500 ³⁾	3050 ²⁾ /3400 ³⁾	3050 ²⁾ /3400 ³⁾	800	3850
	2xTR1200×800WP ⁵⁾	1	1	5970 ²⁾ /7370 ³⁾	2540 ²⁾ /3040 ³⁾	2540	0 ²⁾ /1000 ³⁾	2550 ²⁾ /3100 ³⁾	2550 ²⁾ /3100 ³⁾	800	3950
		2	2	10110 ²⁾ /11510 ³⁾	2790 ²⁾ /3290 ³⁾	2540	500 ²⁾ /1500 ³⁾	2800 ²⁾ /3200 ³⁾	2800 ²⁾ /3200 ³⁾	800	3950
		3	3	14250 ²⁾ /15650 ³⁾	3040 ²⁾ /3290 ³⁾	2540	1000 ²⁾ /1500 ³⁾	3050 ²⁾ /3400 ³⁾	3050 ²⁾ /3400 ³⁾	800	3950
	2xTR1200×1000	1	1	6370 ²⁾ /7770 ³⁾	2840 ²⁾ /3340 ³⁾	2840	0 ²⁾ /1000 ³⁾	2850 ²⁾ /3400 ³⁾	2850 ²⁾ /3400 ³⁾	800	3850
		2	2	10510 ²⁾ /11910 ³⁾	3090 ²⁾ /3590 ³⁾	2840	500 ²⁾ /1500 ³⁾	3100 ²⁾ /3500 ³⁾	3100 ²⁾ /3500 ³⁾	800	3850
		3	3	14650 ²⁾ /16050 ³⁾	3340 ²⁾ /3590 ³⁾	2840	1000 ²⁾ /1500 ³⁾	3350 ²⁾ /3700 ³⁾	3350 ²⁾ /3700 ³⁾	800	3850
LT16 BMh	4xTR800×600	1	4/2 ⁶⁾	If you would like further information, please get in touch with your local contact person.							
2	8/4 ⁶⁾										
3	12/6 ⁶⁾										

90° CURVES



e = Aisle width without corner modification
 e1 = Aisle width with corner modification
 x = Inward modification of corners

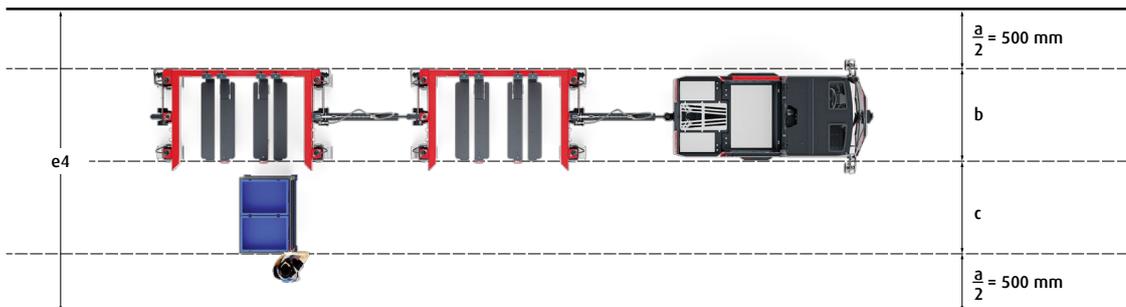
180° CURVES



e2 = Aisle width before/after a 180° curve
 e3 = Aisle width when negotiating a 180° curve
 d = Distance between aisles

LOADING AND UNLOADING ZONES

e4 = Required aisle width for loading and unloading process
 a = Added margin + added for handling
 b = Width of logistic train incl. play
 c = Trolley dimensions incl. play



1) Without oncoming traffic and without safety distance. We suggest maintaining a safety distance of 1000 mm (a/2 = 500 mm on each side). Recommendation: The longer the train, the larger the safety distance required to mitigate any potential uncertainty resulting from driver operation
 2) In combination with P60-P80 of series 1191. Note: Values are calculated; final values may vary slightly
 3) In combination with P250 (short wheelbase) of series 5007. Note: Values are calculated; final values may vary slightly
 4) Suggestion: e4 = a + b + c. With no oncoming traffic and no overtaking
 5) Equipped with standard weather protection
 6) Frame design for transport of either four Linde trolleys TR800×600 or two Linde trolleys TR1200×800 with one frame by adjusting the central support to the appropriate positions

LOGISTIC TRAIN SYSTEM OVERVIEW

TOW TRACTORS

P20



P40-P60 C | P40 C B



P60-P80



P120-P350



FRAMES

M-frame



LT06 M LT10 M



LT10 M for 2xTR

W-frame



LT10 W



LT10 W for 3xTR

C-frame



LT10 C LT20 C

B-frame



LT10 B

BM-frame



LT10 BM LT16 BM

Ch-frame



LT16 Ch



LT16 Ch WP

BMh-frame



LT16 BMh

TROLLEYS

TR trolleys

with modular racking structures



TR800×600 TR1200×800 TR1200×1000 TR1600×1200

BR trolleys

with modular racking structures



BR1200×800 BR1200×1000

STANDARD AND OPTIONAL EQUIPMENT

Manufacturer's type designation/Equipment		LT16 Ch	LT16 BMh
Safety	Mechanical load securing with automatic locking when loaded	●	●
	Traction interlocked when trolley lift in lowered position.	●	●
	Lifting and lowering function deactivated when train is in motion	●	●
	Two-axle-design with central load space and wide wheelbase for enhanced operator safety	●	●
	Weather protection with one or two opening(s) to secure the load during outdoor use (RAL 7021)	○	○
	Weather protection labelling (safety features or customer logo)	○	○
	Anti-slip mats for forks and lift profiles	○	○
Service	Fall protection (2x) between frames	○	○
	Low-maintenance tiller and coupling system	●	●
	Maintenance-free hydraulic lifting system with synchronised lifting via all 4 wheels ¹⁾	●	●
Operation/Load Handling	Frame-specific spare parts list accessible by scanning the QR code on the identification plate	●	●
	Ground-level loading and unloading	●	●
	One-sided loading of trolleys	●	●
	Two-sided loading of trolleys	–	●
	Unloading of trolleys in the direction of the operator during the unloading process	●	●
	Push-through-locking: Push-through of trolleys in both directions	–	○
	Fork ejection mechanism to provide ergonomic support during the unloading process	●	–
	Three central load supports: 1 fixed in the centre and 2 adjustable supports in 20 mm increments	–	●
	Opening side on the left in the travel direction ²⁾	●	●
	Opening side on the right in the travel direction ²⁾	○	●
	Opening height of 2100 mm ³⁾	–	●
	Linde trolleys in various designs for insertion into logistic train frames	○	○
	Frame size for 2x Linde trolleys TR1200×800	●	●
	Frame size for 2x Linde trolleys TR1200×1000	○	○
	Frame size for 1x Linde trolley TR1600×1200 or 2x Linde trolleys TR1200×800 ⁴⁾	○	○
	Frame size for 2x Linde trolleys TR1200×800 or 4x Linde trolleys TR800×600 ⁵⁾	○	●
	Non-standard frames for customer-specific trolleys upon request	○	○
	Lift height of 80 mm: Lifting of load by 65 mm in addition to free lift	●	●
	Lift height of 115 mm: Lifting of load by 100 mm in addition to free lift	○	○
	Automatic mode: Lifting/lowering of all frames as soon as the operator enters/exits the tow tractor	●	●
Connecting hose with stopcock: Decoupling and coupling of frames when lifted	○	○	
Logistic Train Controller (Software) with step-by-step support for dynamic routing processes ⁶⁾	○	○	
Attachments/ Forks	Fork pairs: Centred lifting of trolleys with broad support for secure hold	●	–
	Each individual fork is laterally adjustable (manually with additional accessories)	●	–
	Module for easy fork positioning (without additional accessories)	○	–
	Lifting profile pair: Lateral lifting of trolleys (central support bars equipped with additional pair)	–	●
Axles and Tyres	Super-elastic (SE) tyres, 368 × 115 – shock absorption (colour: black)	●	●
	Super-elastic (SE) tyres, 368 × 115 – shock absorption (colour: white, non-marking)	○	○
	Mudflaps for load wheels	○	○
Drive and Brake System	Mechanical 4-wheel steering: Very tight turning circle and high degree of tracking consistency without veering	●	●
	Frame compatibility: Use of LT Ch and LT BMh in one train	●	●
	Compatibility with Linde tow tractors P60-P80 and P120-P350 with appropriate preparation	○	○
	Mechanical braking system in combination with a drum brake for travelling on ramps (overrun brake)	○	○
Lighting	Rotating beacon incl. LED lamp to make the frame visible in low-light environments	○	○
	Rear lights (2x) – indicator, tail lights, brake lights and number plate light (ISO 1724)	○	○

● Standard equipment ○ Optional equipment – Not available

- 1) After lifting has been initiated, the complete frame together with load handling equipment is raised
- 2) For LT Ch: Subsequent changes can be made by service technicians
- 3) When lifting is initiated, the bracket frame is also raised. We suggest a maximum load height incl. trolley of 2000 mm
- 4) Flexibility: Handling of either one large trolley or two small trolleys with one frame using a special load-handling and locking solution
- 5) Flexibility: Handling of either two large or four small trolleys with one frame by adjusting the central support into the appropriate positions
- 6) Consulting, designing solutions and implementation as part of a separate project

CHARACTERISTICS



Optional safety package: Weather protection, mudflaps and lighting

Safety

- Traction interlock activated when load frame is lowered
- Lowering mechanism deactivated during transport for accident-free runs
- Mechanical load locking to ensure retention of the load while in motion
- Large, robust SE tyres and optional overrun brakes for outdoor use in the most challenging conditions
- Available options include weather protection, mudflaps and various forms of lighting



Fork unlocking mechanism with ergonomic ejection mechanism for LT Ch

Ergonomics

- Ground-level loading and unloading of trailers for stress-free work
- Automatic interlock of the loading frame to reduce time and effort
- Unlocking device at an ergonomic height for convenient foot operation
- Ch loading frame with ergonomic ejection mechanism for trouble-free load handling



Optionally available module for easy fork adjustment for LT Ch

Handling

- Precision all-wheel steering of trailers to ensure manoeuvrability, tracking consistency and tip stability
- Automatic lifting and lowering of the load frame to ensure work comfort
- Adjustable central support (BMh-frame) and adjustable forks (Ch-frame) for flexible transport of loads with various dimensions
- Ability to load and unload the BMh-frame from both sides provides a high degree of flexibility
- Optional overrun brakes for maximum performance on steep terrain



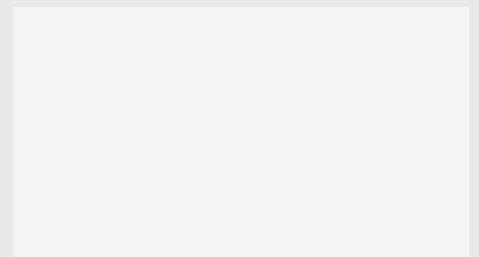
Low-maintenance tiller system

Service

- Simple frame design with few components to minimise servicing time and effort and maintenance costs
- Two-axle design with central load space for easy access during servicing work
- Wear-free tiller and coupling system ensures minimal maintenance requirements
- Service-friendly locking device for quick maintenance and repair work

Subject to modification in the interest of progress. Illustrations and technical specifications could include options and are not binding for actual constructions. All dimensions subject to usual tolerances.

Presented by:



Linde Material Handling GmbH

Carl-von-Linde-Platz | 63743 Aschaffenburg | Germany
Tel.: + 49 6021 99 0 | Fax + 49 6021 99 1570
www.linde-mh.com | info@linde-mh.com

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