



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
- Frames available with Linde trolleys or adaptable to customer-supplied load carriers

TECHNICAL DATA (according to VDI 2198)

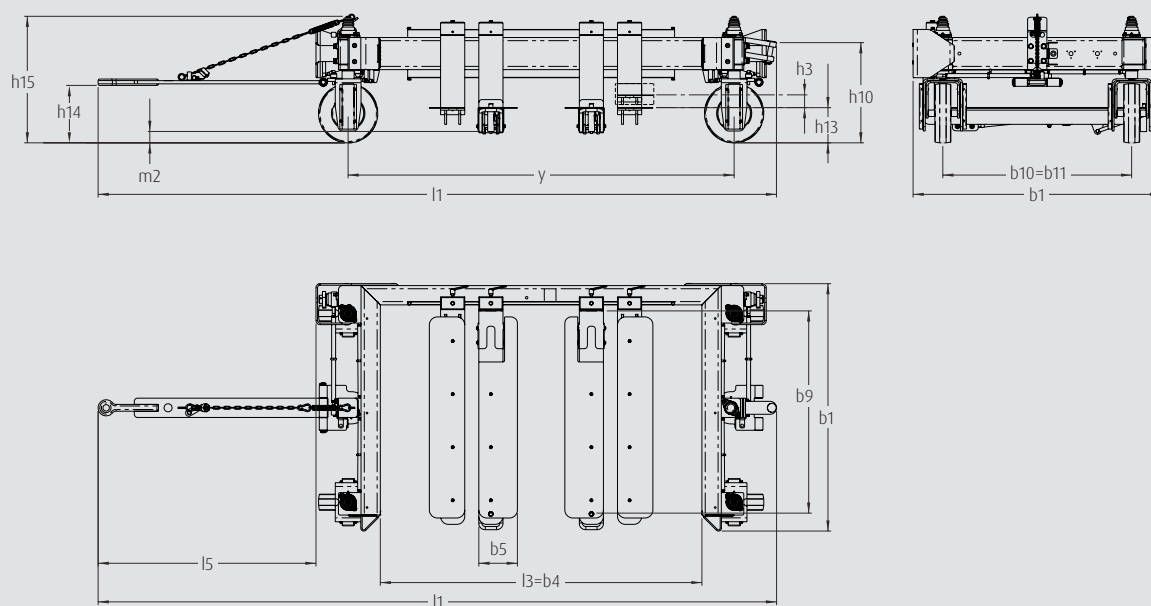
For simplicity, representative models are shown. Ask your local contact person for the final data, which may vary depending on the customer-specific scope and configuration.

Characteristics	1.1	Manufacturer		Linde MH	Linde MH	Linde MH	Linde MH	Linde MH
	1.2	Manufacturer's type designation		LT16 Ch 2x TR1200 × 800	LT16 Ch 2x TR1200 × 800 WP	LT16 Ch 2x TR1200 × 1000	LT16 BMh 4x TR800 × 600	LT16 BMh 4x TR800 × 600 WP
	1.2a	Series		8972 ⁽¹⁾	8972 ⁽¹⁾	8972 ⁽²⁾	8972 ⁽⁴⁾	8972 ⁽⁶⁾
	1.5	Rated capacity/rated load	Q (t)	1.6 ⁽²⁾	1.6 ⁽²⁾	1.6 ⁽²⁾	1.6 ⁽²⁾	1.6 ⁽²⁾
	1.9	Wheelbase	y (mm)	2400	2400	2800	3927	3927
Weights	2.1	Service weight	kg	970	1203	1070	1430	1830
Tyres/chassis	3.1	Tyres: solid rubber, superelastic, pneumatic, polyurethane		SE	SE	SE	SE	SE
	3.2	Tyre size, front		Ø 368 × 115	Ø 368 × 115	Ø 368 × 115	Ø 368 × 115	Ø 368 × 115
	3.3	Tyre size, rear		Ø 368 × 115	Ø 368 × 115	Ø 368 × 115	Ø 368 × 115	Ø 368 × 115
	3.5	Wheels, number front/rear (x = driven wheels)		2/2	2/2	2/2	2/2	2/2
	3.6	Tread, front	b10 (mm)	1174	1174	1174	1174	1174
	3.7	Tread, rear	b11 (mm)	1174	1174	1174	1110	1110
Dimensions	4.2.1	Overall height	h15 (mm)	800/880 ⁽³⁾	2202/2282 ⁽³⁾	800/880 ⁽³⁾	2337	2381
	4.4	Lift	h3 (mm)	80 ⁽⁴⁾	80 ⁽⁴⁾	80 ⁽⁴⁾	80 ⁽⁴⁾	80 ⁽⁴⁾
	4.4a	Lift function		Hydraulic	Hydraulic	Hydraulic	Hydraulic	Hydraulic
	4.9	Height drawbar in driving position min./max.	h14 (mm)	357/437 ⁽³⁾	357/437 ⁽³⁾	357/437 ⁽³⁾	357/437 ⁽³⁾	357/437 ⁽³⁾
	4.12	Coupling height	h10 (mm)	569/649 ⁽³⁾	569/649 ⁽³⁾	569/649 ⁽³⁾	561/641 ⁽³⁾	561/641 ⁽³⁾
	4.13	Loading height, unladen	h11 (mm)	-	1940	-	2104	2010
	4.15	Height, lowered	h13 (mm)	220	220	220	225	225
	4.16	Length of loading surface	l3 (mm)	2000	2000	2400	3191	3191
	4.17	Overhang	l5 (mm)	1300	1300	1300	1315	1315
	4.18	Width of loading surface	b9 (mm)	1257	1257	1257	904	904
	4.19	Overall length	l1 (mm)	4163	4163	4563	5690	5690
	4.21	Overall width	b1/b2 (mm)	1542	1640	1542	1403	1403
	4.25	Fork spread	b5 (mm)	240 ⁽⁵⁾	240 ⁽⁵⁾	240 ⁽⁵⁾	33 ⁽⁵⁾	33 ⁽⁵⁾
	4.26	Distance between wheel arms/loading surfaces	b4 (mm)	2000	2000	2000	640 - 1214 ⁽⁵⁾	640 - 1214 ⁽⁵⁾
	4.32	Ground clearance, centre of wheelbase	m2 (mm)	55/135 ⁽³⁾	55/135 ⁽³⁾	55/135 ⁽³⁾	41/121 ⁽³⁾	41/121 ⁽³⁾
	4.33	Load dimension b12 × l6	b12 × l6 (mm)	2x 810 × 1210 ⁽⁶⁾	2x 810 × 1210 ⁽⁶⁾	2x 1010 × 1210 ⁽³⁾	4x 630 × 820/ 2x 810 × 1210 ⁽⁴⁾	4x 630 × 820/ 2x 810 × 1210 ⁽⁴⁾
	4.34	Aisle width predetermined load dimen- sions	Ast (mm)	7200/8500 ⁽⁷⁾	7200/8500 ⁽⁷⁾	7800/9100 ⁽⁷⁾	9800/11100 ⁽⁷⁾	9800/11100 ⁽⁷⁾
	4.34b	Aisle width, 90° curve	Ast1 (mm)	3790/4290 ⁽⁷⁾	3790/4290 ⁽⁷⁾	4090/4590 ⁽⁷⁾	4250/4650 ⁽⁷⁾	4250/4650 ⁽⁷⁾
	4.35	Turning radius	Wa (mm)	3100/3750 ⁽⁷⁾	3100/3750 ⁽⁷⁾	3400/4050 ⁽⁷⁾	4400/5050 ⁽⁷⁾	4400/5050 ⁽⁷⁾
Performance	5.1	Travel speed, laden/unladen	km/h	15 ⁽⁹⁾	15 ⁽⁹⁾	15 ⁽⁹⁾	15 ⁽⁹⁾	15 ⁽⁹⁾
	5.2	Lifting speed, laden/unladen	m/s	0.01	0.01	0.01	0.01	0.01
	5.7	Gradeability, laden/unladen	%	7.0 ⁽⁹⁾	7.0 ⁽⁹⁾	7.0 ⁽⁹⁾	7.0 ⁽⁹⁾	7.0 ⁽⁹⁾
	5.10	Service brake		without	without	without	without	without
Electric- engine	6.2	Lift motor rating at S3 15%	kW	-	-	-	-	-
Others	10.8	Towing coupling, design/type, DIN		Ø 25/Ø 30 ⁽¹⁰⁾	Ø 25/Ø 30 ⁽¹⁰⁾	Ø 25/Ø 30 ⁽¹⁰⁾	Ø 25/Ø 30 ⁽¹⁰⁾	Ø 25/Ø 30 ⁽¹⁰⁾

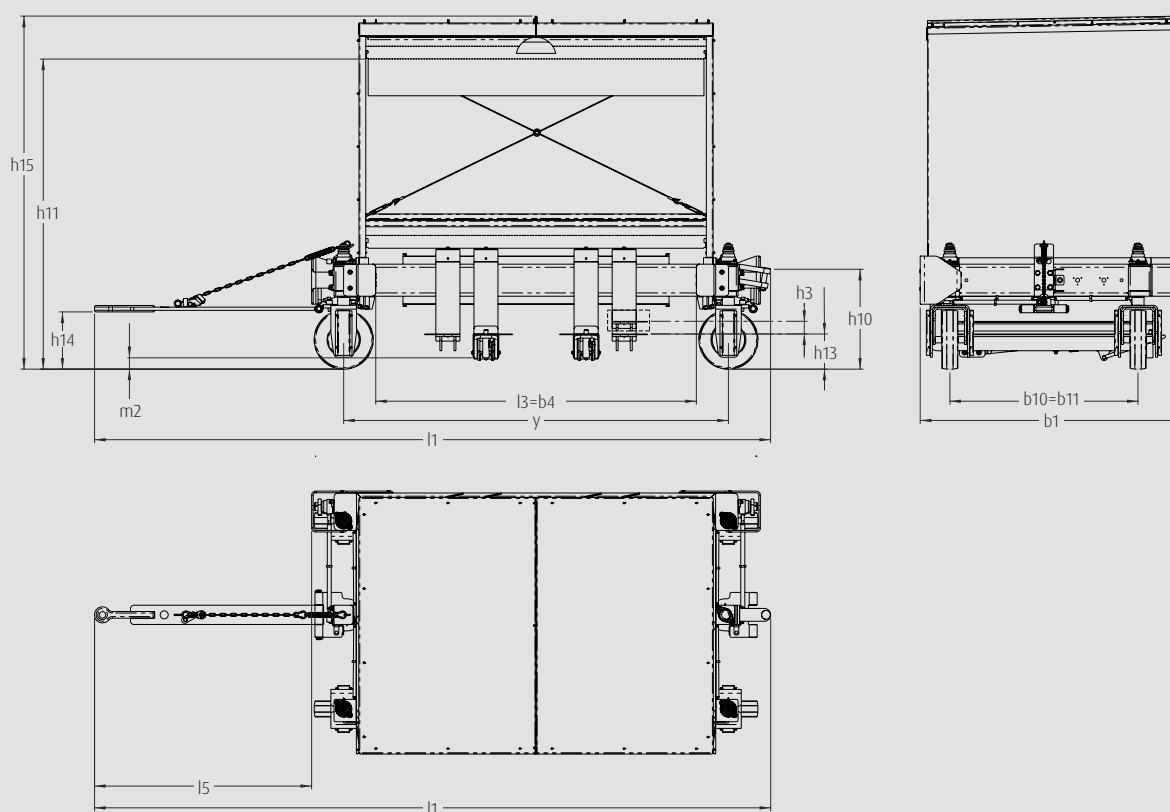
- Chassis type for transport of two Linde trolleys TR1200x800 with one frame
- Max. permissible load capacity per fork pair (LT Ch)/lifting profile pair (LT BMh) = 1000 kg
- In lowered/raised position
- After lift initiation, the complete frame including load pick-up device is lifted hydraulically by 80 mm. Free lift: 15 mm (LT Ch) and 10 mm (LT BMh)
- LT Ch: Load handling tines/LT BMh: Lifting profiles
- Loading surface dimensions b9×l3 of Linde trolley TR1200x800 = 810 × 1210 mm (outer dimensions b1×l1 incl. fang corners = 860 × 1260 mm)/Loading surface dimensions b9×l3 of Linde trolley TR800×600 = 630 × 820 mm (outer dimensions b1×l1 incl. fang corners = 680 × 870 mm)
- In combination with P60 – P80/P120 – P250 and two frames. Ast values = incl. safety distance of 1000 mm (a/2 = 500 mm on each side)
- Depends on the tractor used
- In case of gradients the max. allowed speed is 6 km/h. Up to 7% ramp possibility to operate the frames without driving a radius. Ramps beyond this value needs to be reviewed in detail

- Logistic train drawbar system for LT Ch and LT BMh. Frames are connected to the tow tractor (1-level-coupling, 2-level-coupling, 3-level-coupling or rockinger coupling) with a Ø 25 mm bolt & to each other with a Ø 30 mm bolt
- Frame design for transport of two Linde trolleys TR1200 × 800 with one frame and equipped with a standard weather protection
- Frame design for transport of two Linde trolleys TR1200 × 1000 with one frame
- Loading surface dimensions b9 × l3 of Linde trolley TR1200 × 1000 = 1010 × 1210 mm (outer dimensions b1 × l1 incl. fang corners = 1060 × 1260 mm)
- Frame design for transport of either four Linde trolleys TR800 × 600 or two Linde trolleys TR1200 × 800 with one frame (one fixed middle support and two movable middle supports)
- Movable middle support in central position: l3 = 640 mm; movable middle support on side stop: l3 = 1214 mm
- Frame design for transport of either four Linde trolleys TR800 × 600 or two Linde trolleys TR1200 × 800 with one frame (one fixed middle support and two movable middle supports) and equipped with a standard weather protection

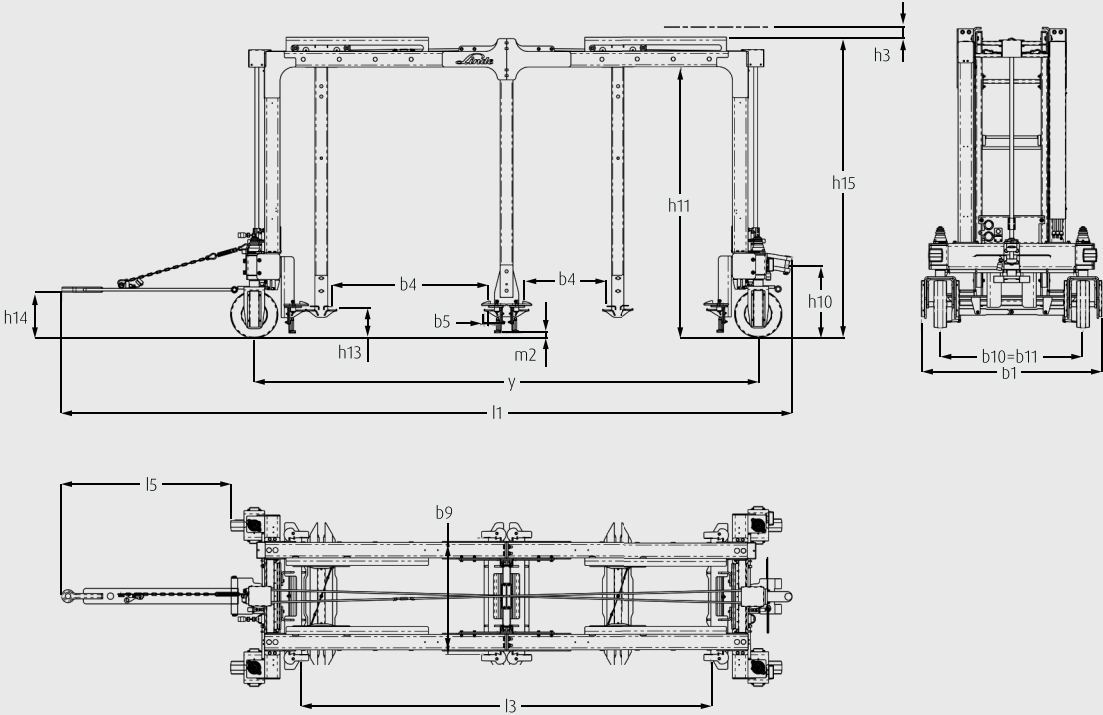
LT16 Ch



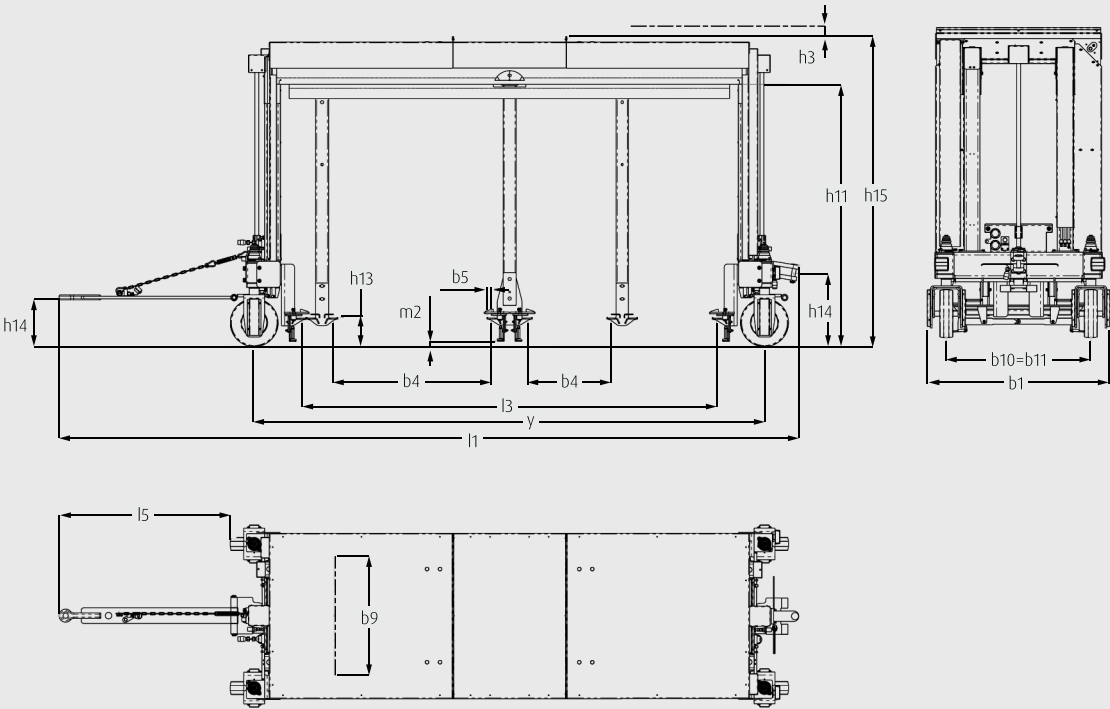
LT16 Ch WP (WITH WEATHER PROTECTION)



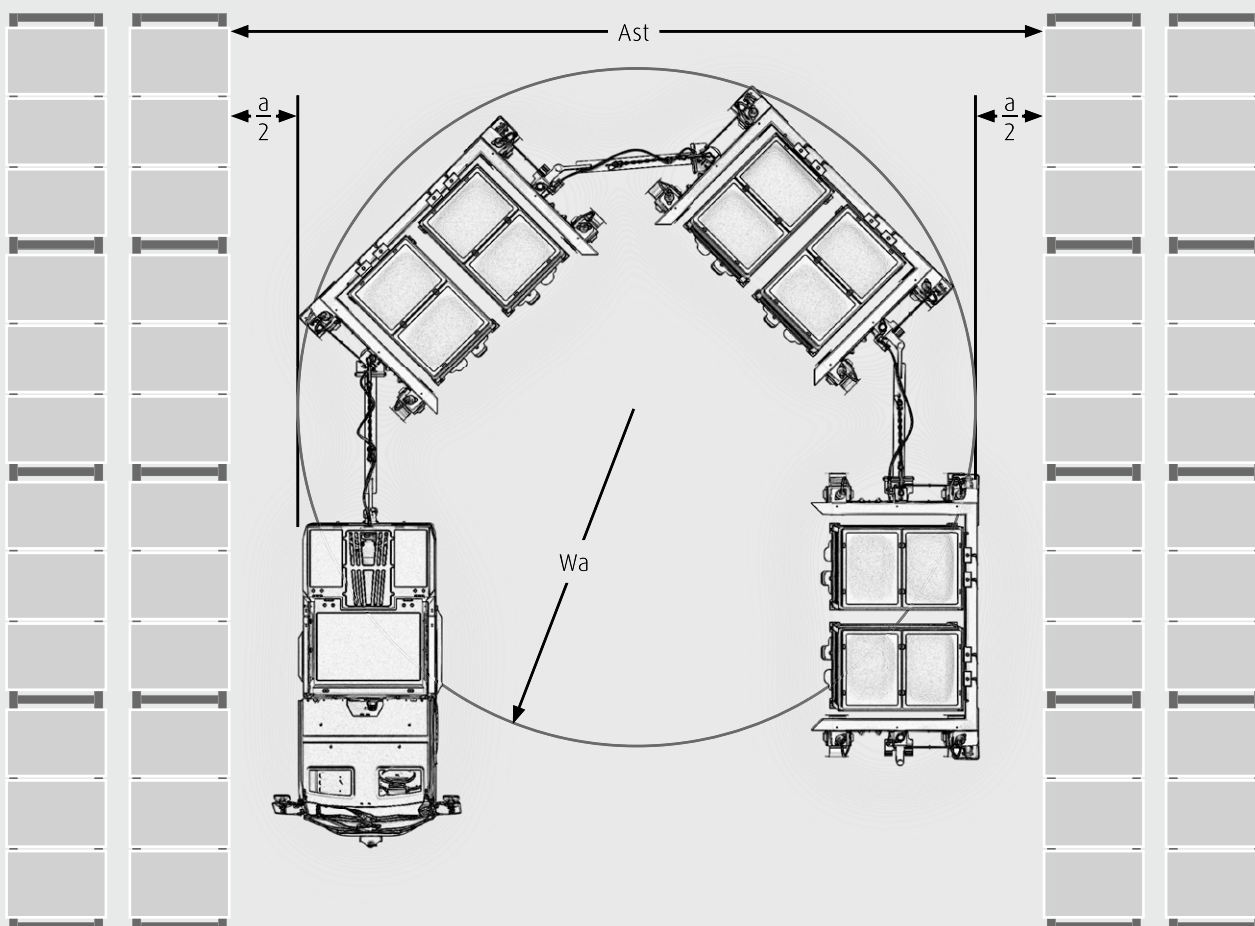
LT16 BMh



LT16 BMh WP (WITH WEATHER PROTECTION)



AST

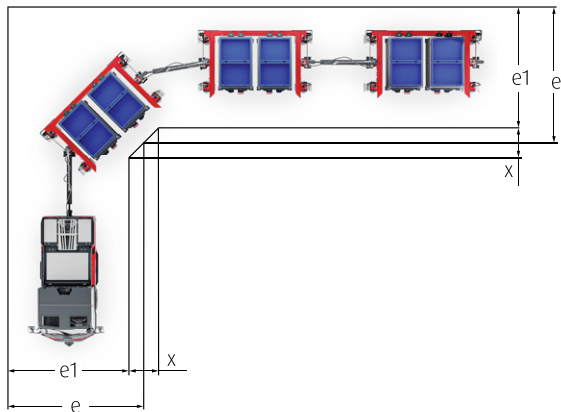


EXAMPLES OF AISLE WIDTHS

Frame type	Frame size	Frames per train	Loads per train	Total 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	2x TR1200×800	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
	2x TR1200×800 WP 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
	2x TR1200×1000	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	4x TR800×600	1	4/2 ⁶⁾	7442 ²⁾ /8842 ³⁾	2950 ²⁾ /3250 ³⁾	2750	500 ²⁾ /1500 ³⁾	3850 ²⁾ /4150 ³⁾	2650 ²⁾ /3300 ³⁾	800	3300
		2	8/4 ⁶⁾	13054 ²⁾ /14454 ³⁾	3250 ²⁾ /3650 ³⁾	3050	500 ²⁾ /1500 ³⁾	4000 ²⁾ /4650 ³⁾	3200 ²⁾ /3550 ³⁾	800	3300
	4x TR800×600 WP	1	4/2 ⁶⁾	7442 ²⁾ /8842 ³⁾	2950 ²⁾ /3250 ³⁾	2750	500 ²⁾ /1500 ³⁾	3850 ²⁾ /4150 ³⁾	2650 ²⁾ /3300 ³⁾	800	3300
		2	8/4 ⁶⁾	13054 ²⁾ /14454 ³⁾	3250 ²⁾ /3650 ³⁾	3050	500 ²⁾ /1500 ³⁾	4000 ²⁾ /4650 ³⁾	3200 ²⁾ /3550 ³⁾	800	3300

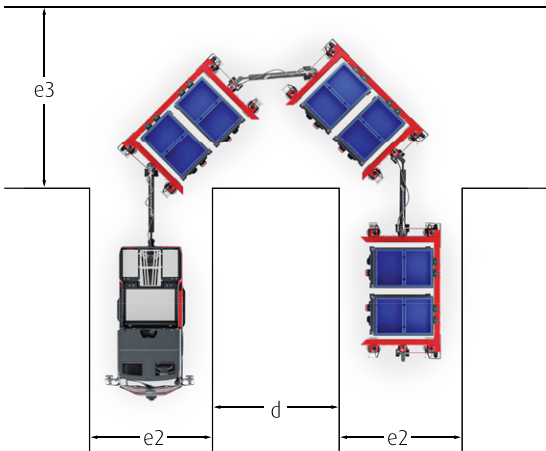
- 1) Without oncoming traffic and without safety distance. We suggest maintaining a safety distance of 1000 mm (a/2 = 500 mm on each side).
Recommendation: The longer the train, the larger the required distance to mitigate any potential uncertainties arising from driver operation
- 2) In combination with P60-P80 of series T191. 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

90° CURVES



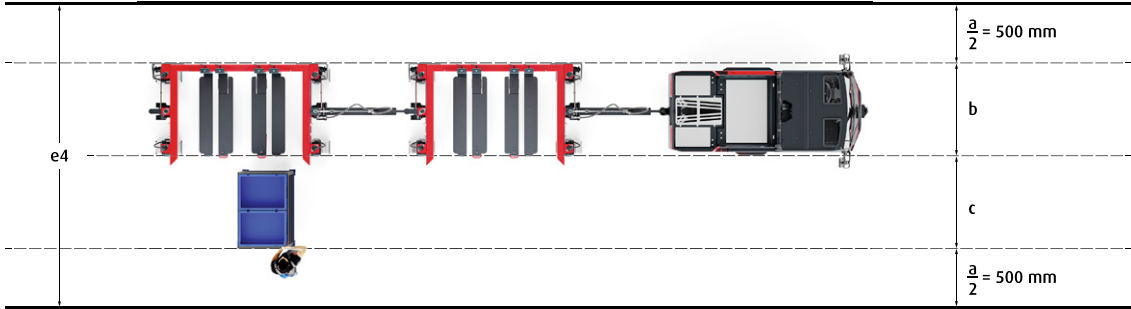
- e = Aisle width without corner modification
- e1 = Aisle width with corner modification
- x = Inward modification of corners

180° CURVE (SAMPLE AISLE CHANGE)



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

LOADING & 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

LOGISTIC TRAIN SYSTEM OVERVIEW



TOW TRACTORS

P20



P40 – P60 C | P40 C B



P60 – P80



P120 – P350



FRAMES

M-Frames



LT06 M



LT10 M

LT10 M for 2xTR

W-Frames



LT10 W



LT10 W for 3xTR

WX-Frames



LT10 WX

Ch-Frames



LT16 Ch

BMh-Frames



LT16 BMh

C-Frames



LT10 C

LT20 C

B-Frames



LT10 B

BM-Frames



LT10 BM

LT16 BM

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

LT = Logistic Train **M** = M-type frame **W** = W-type frame **WX** = W-type frame with scissor tow bar system

Ch = C-type frame, hydraulic version **BMh** = Bridge-type frame with middle support, hydraulic version **C** = C-type frame

B = Bridge-type frame **BM** = Bridge-type frame with middle support **TR** = Trolley **BR** = BaseRunner Trolley

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: One fixed in the centre and two 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	○	○
Attachments/ forks	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	○	○
	Fork pairs: Centred lifting of trolleys with broad support for secure hold	●	—
	Each individual fork is laterally adjustable (manually with additional accessories)	●	—
Axles and tyres	Module for easy fork positioning (without additional accessories)	○	—
	Lifting profile pair: Lateral lifting of trolleys (central support bars equipped with additional pair)	—	●
	Super-elastic (SE) tyres, 368 × 115 – shock absorption (colour: black)	●	●
	Super-elastic (SE) tyres, 368 × 115 – shock absorption (colour: white, non-marking)	○	○
Drive and brake system	Mudflaps for load wheels	○	○
	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	○	○
Lighting	Mechanical braking system in combination with a drum brake for travelling on ramps (overrun brake)	○	○
	Rotating beacon incl. LED lamp to make the frame visible in low-light environments	○	○
Lighting	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



Fork unlocking mechanism with ergonomic ejection mechanism for LT Ch



LT16 BMh: Flexible load handling thanks to adjustable central supports



Low-maintenance tiller system

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

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

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

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

Presented by:

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.



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

DS_LT16_Ch_BMh_8972_en_B_0926