Linde Material Handling

Logistic Train Solutions

LT10 WX

Capacity 1.0 t | Series 8974

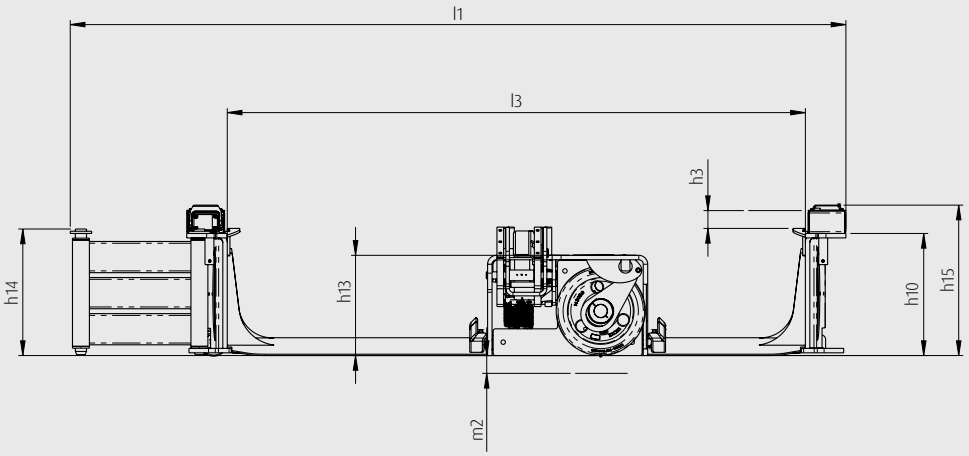
High-volume express

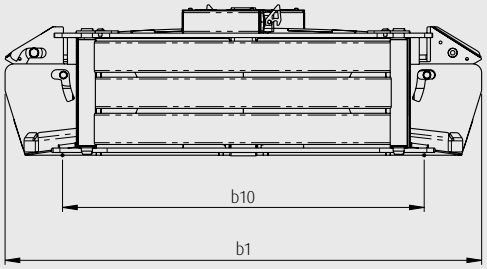
→ Logistic train trailers for standardised operations with high transport volume
→ Compact scissor drawbar (X) allows up to eight trailers per train
→ Load capacity of 1.000 kg per trailer
→ Hydraulic or electric lifting option available
→ Compatible with standard full-size or half-size trolleys
→ Frames available with Linde trolleys or adaptable to customer-supplied load carriers

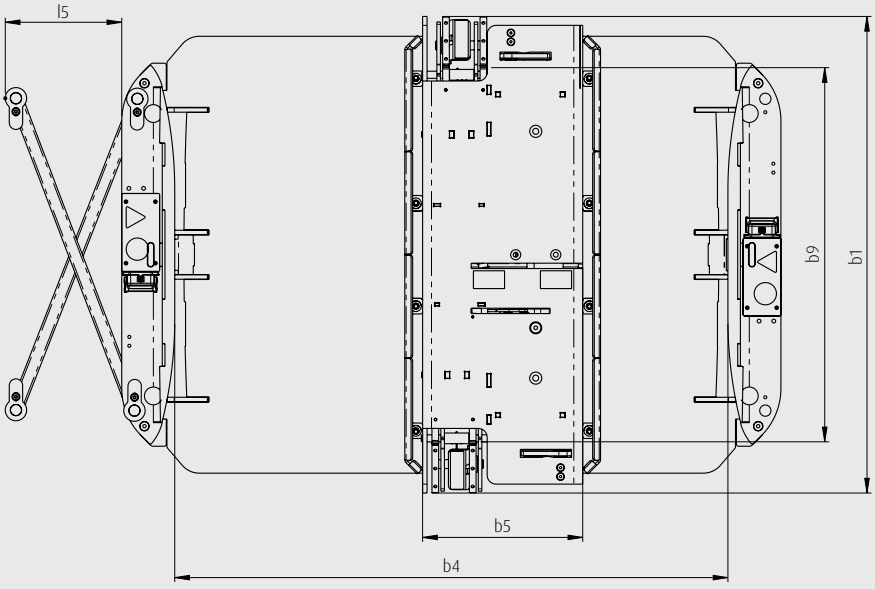
TECHNICAL DATA (according to VDI 2198)

Characteristics	1.1	Manufacturer (abbreviation)		Linde MH	Linde MH
	1.2	**Manufacturer's type designation**		**LT10 WX 1 x TR1200×800**	**LT10 WX 1 x TR1200×1000**
	1.2a	Series		8974[1)]	8974[11)]
	1.5	Rated capacity/rated load	Q (t)	1.0	1.0
Weight	2.1	Service weight	kg	234/247[2)]	275/292[12)]
Tyres/chassis	3.1	Tyres: solid rubber, superelastic, pneumatic, polyurethane		Polyurethane	Polyurethane
	3.2	Tyre size, front		Ø200×50	Ø200×50
	3.3	Tyre size, rear		Ø200×50	Ø200×50
	3.5	Wheels, number front/rear (x = driven wheels)		2	2
	3.6	Tread, front	b10 (mm)	812	1012
	3.7	Tread, rear	b11 (mm)	-	-
Dimensions	4.2.1	Overall height	h15 (mm)	354/394[3)]	354/394[3)]
	4.4	Lift	h3 (mm)	40[4)]	40[4)]
	4.4a	Lift function		hydraulic/electric[4)]	hydraulic/electric[4)]
	4.9	Height drawbar in driving position min./max.	h14 (mm)	284/324[3)]	284/324[3)]
	4.12	Coupling height	h10 (mm)	274/314[3)]	274/314[3)]
	4.13	Loading height, unladen	h11 (mm)	-	-
	4.15	Height, lowered	h13 (mm)	225	225
	4.16	Length of loading surface	l3 (mm)	1298	1298
	4.17	Overhang	l5 (mm)	262	335
	4.18	Width of loading surface	b9 (mm)	840	1040
	4.19	Overall length	l1 (mm)	1742	1815
	4.21	Overall width	b1 (mm)	1070	1270
	4.25	Fork spread	b5 (mm)	360[5)]	360[5)]
	4.26	Distance between wheel arms/loading surfaces	b4 (mm)	1242	1242
	4.32	Ground clearance, centre of wheelbase	m2 (mm)	0/40[3)]	0/40[3)]
	4.33	Load dimension b12×l6	b12×l6 (mm)	1x 810×1210/ 1x 630×820[6)]	1x 1010×1210/ 1x 630×1020[13)]
	4.34	Aisle width predetermined load dimensions	Ast (mm)	5500/5700[7)]	6100/6500[7)]
	4.34b	Aisle width, 90° curve	Ast1 (mm)	3200/3500[7)]	3400/3700[7)]
	4.35	Turning radius	Wa (mm)	2250/2350[7)]	2550/2750[7)]
Performance data	5.1	Travel speed, laden/unladen	km/h	12/10/8[8)]	12/10/8[8)]
	5.2	Lifting speed, laden/unladen	m/s	0.01	0.01
	5.7	Gradeability, laden/unladen	%	7.0[9)]	7.0[9)]
	5.10	Service brake		without	without
Electric-engine	6.2	Lift motor rating at S3 15%	kW	0.4[4)]	0.4[4)]
Additional data	10.8	Towing coupling, design/type, DIN		Ø25[10)]	Ø25[10)]

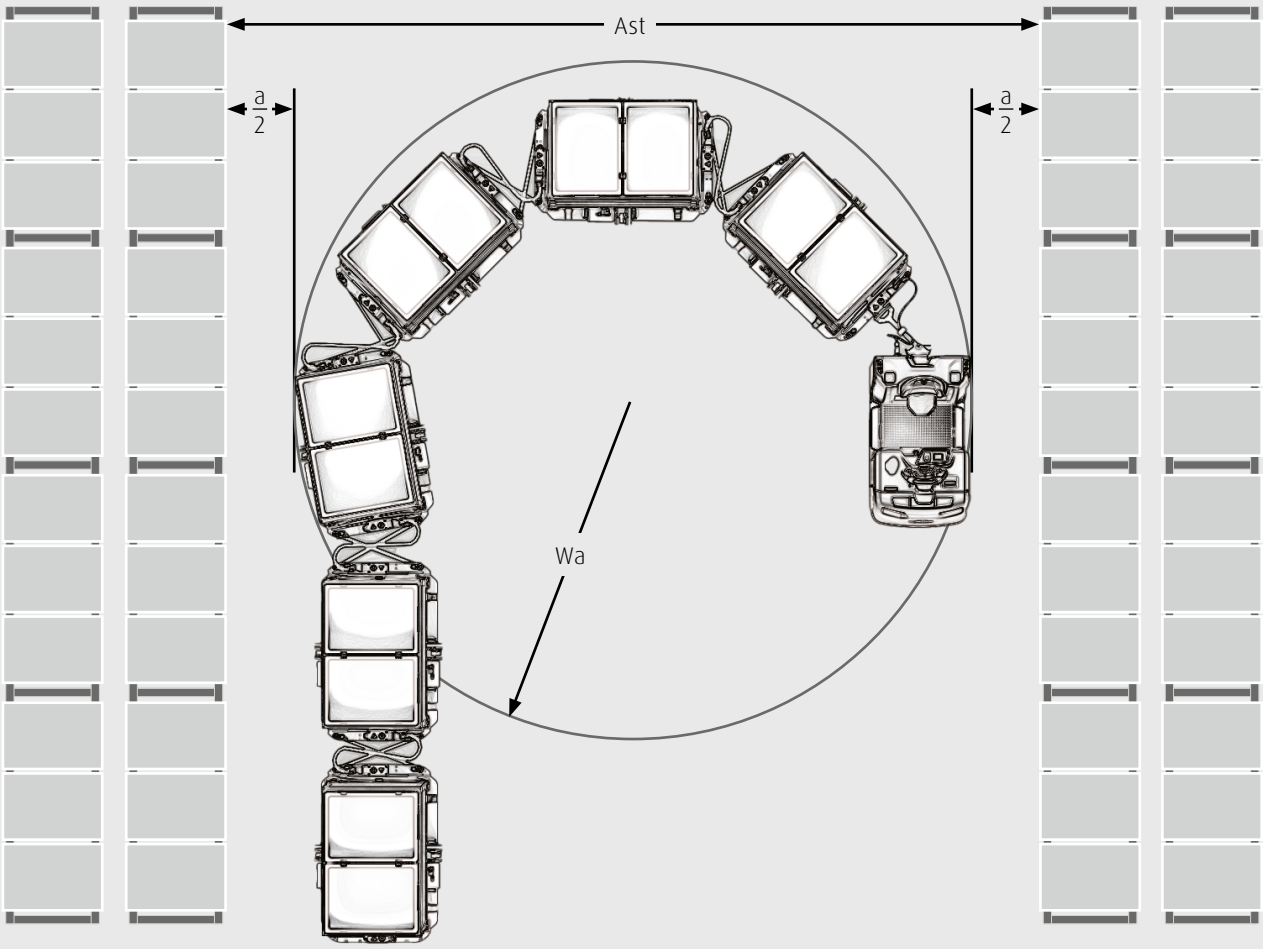
1) Frame design for transport of either one Linde trolley TR1200×800 or one Linde trolley TR800×600 with one frame
2) Hydraulic/electric version (each plus drawbar approx. 18 kg)
3) In lowered/raised position
4) After lift initiation, the complete frame including load pick-up device is lifted hydraulically by 40 mm. An electric lifting function is available as an option (1x lifting motor)
5) Middle block
6) Loading surface dimensions b9×l3 of Linde trolley TR1200×800 = 810×1210 mm (outer dimesions b1×l1 incl. fang corners = 860×1260 mm)
   Loading surface dimensions b9×l3 of Linde trolley TR800×600 = 630×820 mm (outer dimesions b1×l1 incl. fang corners = 680×870 mm)
7) 6/8 frames in comb. with tow tractor P60 C of series 4595. AST values = incl. safety space of 1000 mm (a/2 = 500 mm on each side)
8) V max. with 4/6/8 frames
9) In case of gradients the max. allowed speed is 6 km/h. Up to 7% the ramp can be driven on without a radius. Ramps beyond this value needs to be reviewed in detail
10) Logistic train drawbar system for LT WX. Frames are connected to the tow tractor (2-level-coupling) with a Ø25 mm bolt & to each other with a scissor drawbar system
11) Frame design for transport of either one Linde trolley TR1200×1000 or one Linde trolley TR1000×600 with one frame
12) Hydraulic/electric version (each plus drawbar approx. 20 kg)
13) Loading surface dimensions b9×l3 of Linde trolley TR1200×1000 = 1010×1210 mm (outer dimesions b1×l1 incl. fang corners = 1060×1260 mm)
    Loading surface dimensions b9×l3 of Linde trolley TR1000×600 = 630×1020 mm (outer dimesions b1×l1 incl. fang corners = 680×1070 mm)


l1
l3
h3
h14
h13
h10
h15
m2


b10
b1


l5
b9
b1
b5
b4

AST

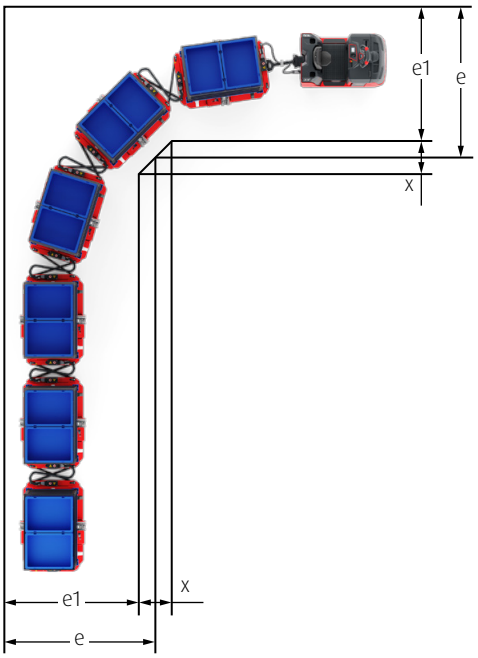


EXAMPLES OF AISLE WIDTHS

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]
LT10 WX	1x TR1200×800	2	2	5077[2]/5431[3]	1800	1600	500	2000	2200[2]/2400[3]	2000	2950
		4	4	8437[2]/8791[3]	2000	1800	500	2000	2200[2]/2400[3]	2000	2950
		6	6	11797[2]/12151[3]	2200	2000	500	2000	3000[2]/3200[3]	2000	2950
		8	8	15157[2]/15511[3]	2500	2300	500	2000	3200[2]/3400[3]	2000	2950
	1x TR1200×1000	2	2	5112[2]/5466[3]	2000	1800	500	2000	2500[2]/2700[3]	2000	3350
		4	4	8542[2]/8896[3]	2200	2000	500	2000	2500[2]/2700[3]	2000	3350
		6	6	11972[2]/12326[3]	2400	2200	500	2000	3300[2]/3500[3]	2000	3350
		8	8	15402[2]/15756[3]	2700	2500	500	2000	3500[2]/3700[3]	2000	3350

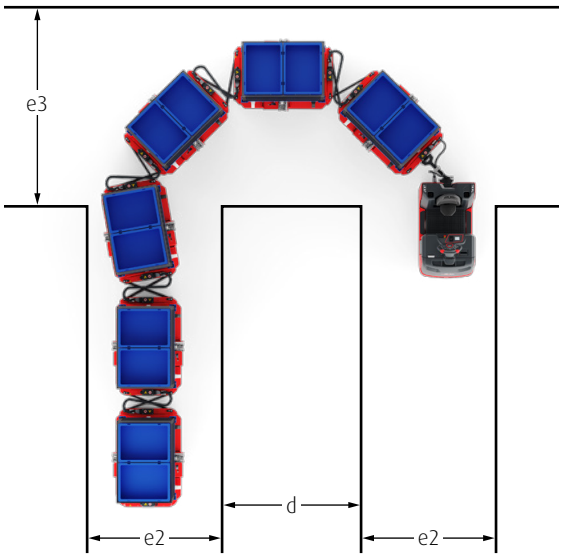
1) Without oncoming traffic and without safety distance. We suggest maintaining a safety distance of 1000 mm (a/2 = 500 mm on each side)
Recommendation: The longer the train, the larger the safety distance required to mitigate any potential uncertainty resulting from driver operation
2) In combination with P40 C/P60 C and P40 CB of series 4595. Note: Values are calculated; final values may vary slightly
3) In combination with P60/P80 of series 1191. Note: Values are calculated; final values may vary slightly
4) Recommendation: e4 = a + b + c. With no oncoming traffic and no overtaking

90°-CURVES



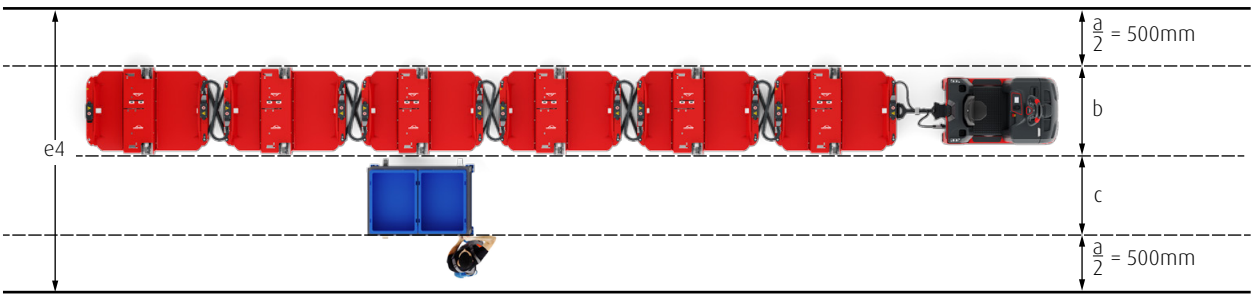
e = Aisle width without corner modification
e1 = Aisle width with corner modification
x = Inward modification of corners

180°-CURVES (SAMPLE AISLE CHANGE)



e2 = Aisle width before/after 180°-curve
e3 = Aisle width when negotiating 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

BR-Trolleys
with modular racking structures

TR800×600 TR1200×800 TR1200×1000 TR1600×1200 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	LT10 WX
Safety	Mechanical load securing with automatic interlock after insertion	●
	Redundant load securing: An additional lock is activated during lift	●
	Traction interlocked when trailers are lowered	●
	Deactivated lifting function while driving	●
	Narrow frame spacing to significantly reduce step-through accessibility	●
	Design-based foot protection through low lift height	●
	Front support wheel ensures stability on uneven ground	●
	Weather protection with dual openings for load security (RAL 7021)	○
	Weather protection labelling (safety features or customer logo)	○
	Anti-slip mats on load-bearing surfaces	○
	Safety flags (2x) for improved visibility and orientation during loading	○
	Assistance system with traffic light indicator: Movement only when frame is secured	○
Service	Low-maintenance tiller and coupling system	●
	Emergency operation: Integrated lift tool allows manual frame lifting in case of power failure	●
	Spare parts list and manuals accessible via QR code on nameplate	●
	Electric version equipped with low-maintenance energy chain for maximum durability	○
Operation/load handling	Scissor drawbar system: Transporting up to eight frames per train[1)]	●
	Loading and unloading from either side ensures high process flexibility	●
	Ergonomic support during the loading and unloading process thanks to sloped platform	●
	Automatic lifting and lowering for fast handling processes	●
	Side insertion profiles for smooth loading and unloading	●
	Linde trolleys in various designs for use with logistic train frames	○
	Frame size for 1x Linde trolley TR1200×800/1x Linde trolley TR800×600[2)]	●
	Frame size for 1x Linde trolley TR1200×1000/1x Linde trolley TR1000×600[2)]	○
	Non-standard frame sizes for customer-specific trolleys upon request	○
	Lift height of 40 mm: Lifting of platform, including load, by 40 mm	●
	Lift height of 60 mm: Lifting of platform, including load, by 60 mm	○
	Hydraulic lifting system with synchronised lifting across both wheels[3)]	●
	Electric lifting system with synchronised lifting across both wheels[3)]	○
	Connection hose with shut-off cock for decoupling and coupling of frames when lifted	○
Electronics	Low-noise and low-maintenance lift motor (1x) for electric lifting function	○
	Modular plug-and-play connection for electric lift	○
Tyres	Single-axle system with two wheels for compact design and improved trailing action	●
	Polyurethane tyres (PU; Shore hardness of 75) Ø200×50, non-marking (colour: red)	●
	Polyurethane tyres (PU; Shore hardness of 92) Ø200×60, for increased load capacity	○
Lighting	Tail lights (2x) – turn indicator, reverse, brake and number plate light (ISO 1724)	○

● Standard Equipment ○ Optional Equipment

1) The standard scissor drawbar system consists of fixed and movable drawbars and requires an even number of frames (2, 4, 6, or 8)
2) Flexibility: Handling of either one large trolley or one small trolley with one frame
3) After lifting has been initiated, the complete frame together with load handling equipment is raised

CHARACTERISTICS

Compact trailer spacing – enhanced safety, reduced risk

Safety

→ The lowering mechanism is automatically deactivated during driving
→ Patented locking system secures each trolley when inserted
→ A second locking mechanism, activated during the lifting process, provides additional safety
→ An optional assistance system with traffic light indicator monitors the trolley locking mechanism
→ A small distance between trailers makes it difficult to enter the gap and thus reduces the risk of injury

Foot-operated release at ergonomic height for effortless access

Ergonomics

→ Automatic locking mechanism when the trolley is inserted, without additional handling
→ Foot-operated release at ergonomic working height
→ Automatic lifting of the frames when entering the towing vehicle platform
→ Guide-side insertion profiles for quick, easy loading and unloading
→ Compact train length reduces distances between vehicle and trailers

Minimal turning radius with six frames thanks to scissor drawbar

Handling

→ Up to eight trailers for high transport volume with minimal space requirements
→ Automatic lifting and lowering speeds up and simplifies the handling process
→ Precise tracking behaviour and excellent directional stability
→ The WX frames offer maximum flexibility thanks to their dual-sided loading and unloading capabilities
→ Accommodating a full or half trolley size with the same frame

Simple mechanical design and maintenance-free energy chain

Service

→ Simple mechanical design with minimal electronics
→ Service-friendly mechanical locking mechanism
→ The included lever allows for manual lifting in an emergency
→ QR code for direct access to documentation and spare parts lists
→ Maintenance-free energy chain with optional electric lift

Presented by:

Linde Material Handling

Linde Material Handling GmbH
Carl-von-Linde-Platz | 63743 Aschaffenburg | Germany
Phone + 49 6021 99 0 | Fax + 49 6021 99 1570
www.linde-mh.com | info@linde-mh.com

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