Pedestrian Pallet Trucks for potentially hazardous areas Capacity 2000 kg and 3000 kg T 20 Ex, T 30 Ex

SERIES 131

Linde Material Handling

Explosion-Protected Trucks

The T 20 Ex and T 30 Ex pedestrian pallet truck for use in explosion-hazard areas is based on the standard truck model design-Series 131.
These specialised trucks also incorporate the high performance and unique features of the standard high volume models: Exemplary ergonomics, advanced technology, high stability, excellent economy and extended working life.

The trucks comply with EG regulations for use in potentially explosive environments (EN 1755) and the ATEX version has been type-tested to Directive 94/4/EC by the „Institut National De L'environnement Industriel et des Risques" (INERIS). **Type Examination Certificate: 02ATEX3001 X.**

Accordingly, these type-tested trucks, which have passed a gas penetration test, are approved for use in potentially hazardous areas as follows:
Zone 2 (3G), II A or II B, temperature class by T4

Safety

AC drive motors, lift hydraulics and controls are gas-tight to comply with Ex-proof regulations. The permanent working control unit is protected by a pressure-tight "d" casing to ensure its functionality and reliability.

Gates, relays and electrical buffers are protected by gas-tight steel modules. All motors, brakes, oil-valves and controls are temperature monitored. The multifunction display, hour meter and pressure-tight battery discharge indicator provide the trucks operating status.

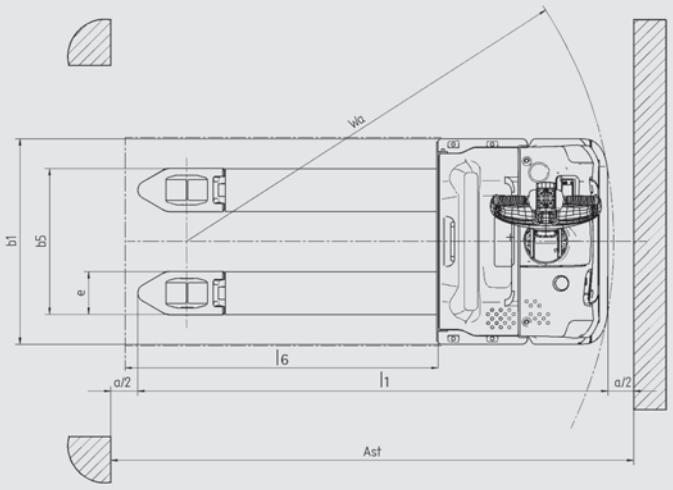
Additionally, electrically conducting tyres and a non-sparking fork coating enhances the trucks safety levels for operation in potentially hazardous areas.

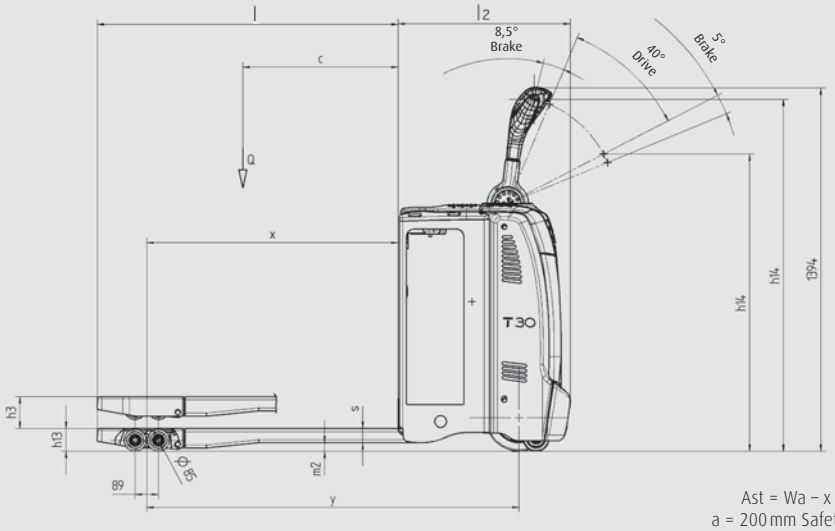
Technical data

Characteristics	1.1	Manufacturer		LINDE	LINDE
	1.2	Model Designation		**T20 Ex**	**T30 Ex**
	1.3	Power unit		Battery	Battery
	1.4	Operation		Pedestrian	Pedestrian
	1.5	Load capacity	Q (kg)	2000	3000
	1.6	Load centre	c (mm)	600	600
	1.8	Axle centre to fork face (fork raised/lowered)	x (mm)	895/962	895/962
	1.9	Wheelbase (fork raised/lowered)	y (mm)	1359/1425	1359/1425
Weights	2.1	Service weight (with battery item 6.5)	kg	800	800
	2.2	Axle load with load, drive side/load side	kg	1295/2505	1295/2505
	2.3	Axle load without load, drive side/load side	kg	620/180	620/180
Wheels/Tyres	3.1	Tyre treads: Polyurethane, Rubber		G+P/P	G+P/P
	3.2	Tyre size, drive side	mm	Ø 254 x 102	Ø 254 x 102
	3.3	Tyre size, load side	mm	Ø 85 x 105	Ø 85 x 105
	3.4	Auxiliary wheels (dimensions)	mm	Stab. Ø 100 x 40	Stab. Ø 100 x 40
	3.5	Wheels number, drive side/load side (x=driven)		1x+2/2	1x+2/2
	3.6	Track width, drive side	mm	544	544
	3.7	Track width, load side	mm	355/395/515	355/395/515
Dimensions	4.4	Lift	h_3 (mm)	125	125
	4.9	Height of the tiller arm in operating position, min./max.	h_{14} (mm)	1140/1350	1140/1350
	4.15	Fork height, lowered	h_{13} (mm)	85	85
	4.19	Overall length	l_1 (mm)	1810	1810
	4.20	Length to fork face	l_2 (mm)	660	660
	4.21	Overall width	b_1 (mm)	790	790
	4.22	Forks dimensions	s/e/l (mm)	63 x 172 x 1154	63 x 172 x 1154
	4.25	Fork spread	b_5 (mm)	527/567/680	527/567/680
	4.32	Ground clearance, centre of wheelbase min./max.	m_2 (mm)	25/150	25/150
	4.33	Aisle width with pallet 1000 x 1200 across forks	Ast (mm)	1950	1950
	4.34	Aisle width with pallet 800 x 1200 along forks	Ast (mm)	2150	2150
	4.35	Turning radius (fork raised)	Wa (mm)	1645	1645
Performance	5.1	Travel speed, with/without load	km/h	6.0/6.0	6.0/6.0
	5.2	Lifting speed, with/without load	m/s	0.024/0.035	0.024/0.035
	5.3	Lowering speed, with/without load	m/s	0.067/0.066	0.067/0.066
	5.8	Maximum climbing ability, with/without load	%	10/20	10/20
	5.10	Service brake		Elektromagnetic	Elektromagnetic
Drive	6.1	Drive motor, 60 minutes rating	kW	1.5	1.5
	6.2	Lift motor rating 15 %	kW	1.5	1.5
	6.3	Battery according to DIN 43 531/35/36 A, B, C, no		DIN 43 535 B	DIN 43 535 B
	6.4	Battery voltage/rated capacity (5 h)	V/Ah	24/240	24/240
	6.5	Battery weight	kg	200	200
Others	8.1	Type of drive control		LAC-Controller	LAC-Controller
	8.4	Sound level at operator's ear	dB(A)	< 70	< 70

Standard truck figures varying according to equipements.

According to VDI 2198





Ast = Wa – x + l6 + a
a = 200 mm Safety clearance

All Ex-components are protected and undergo a gas-penetration-test, which is demanded by EN 1755 as well for vehicles with Gas safety systems.

This ensures the highest safety levels for the operator.

The monitoring system consisting of sensor and control unit is operating continuously and ensures a constant availability.
The sensor measures gas concentration in ambient air.
The control unit records data and will raise an audible signal, if there is 10 % gas concentration in ambient air.
The operator has to acknowledge the warning.
After exceeding the upper limit of 25 % gas concentration, the truck cuts off.
Following acknowledgement and after the gas concentration falls below the upper limit, the operator can immediately continue working.

Re-calibration of the system is not necessary.
All permanently energised electrical components are protected in gas-tight modules.
The electrical back up control remains functional for up to 120 minutes in the event of a power interruption (battery change).
A battery connection ensures that the control unit remains energised during battery charging.
The temperature monitoring of drive, steering and lift motors, brakes and control module provides additional safety.
The trucks are also equipped with anti-spark, stainless steel plated forks.

Calibration of the Linde Gas safety system is only necessary every three months/quarterly (see manual).

Gas sensor

Control unit

Calibration set

Features

Chassis/Forks
- → Rounded contours eliminate sharp edges
- → Robust pressed steel construction
- → Low chassis skirt enhances operator safety
- → Stainless steel to prevent sparking

AC motor
- → Powerful, smooth-running motor 1.5 kW at 100 % performance
- → Gradeability 10 % fully laden
- → No rollback on gradient start ups
- → Special protection and temperature monitoring for use in Ex-areas

Control
- → Controls and components tuned to the Ex-environment
- → All truck parameters can be configured by the service technician to achieve optimum performance in every application

Instrumentation (Workstation)
- → Digital multifunction display including component failure alarm, maintenance due alert, battery discharge indicator and hour meter

Instrument cluster with discharge indicator for safety system
- → Battery discharge indicator and hour meter in pressure-tight Ex-version module

Brakes
- → Automatic braking on releasing the travel switch
- → Seamless countercurrent braking
- → Electromagnetic braking initiated by the emergency Stop button acts on the drive motor, proportional to the load carried

Ex-battery
- → Ex-tested battery cells, battery cover and additional connections for monitoring unit
- → Simply side change

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