

# Electric Pallet Stackers for Explosion-hazard Areas 1400 and 1600 kg



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The L 14 Ex, L 14 AP Ex, L 16 Ex and L 16 AP Ex pallet stackers for use in explosion-hazard areas incorporate the same features as the standard-production models L 14, L 14 AP, L 16 and L 16 AP. Four-point support results in high payload capacities and safe travelling. Due to the centrally positioned tiller arm and low truck height, the operator has a clear view of the load and route ahead through the high-visibility mast. The models with rider platform are particularly convenient when travelling longer distances. Deck and box pallet loads can be transported and stacked economically. These trucks are also distinguished by high performance, exemplary ergonomics, easy operation and optimized reliability.

The trucks comply with EC regulations pertaining to use in explosion-hazard environments and the Atex version for example has been type-tested to Directive 94/9 EC by the French Institut National de l'Environnement Industriel et des Risques (INERIS), Certificate No. 14362/98.

According to their actual equipment, these type-tested EX trucks are approved for use in hazardous areas as follows:

- Zone 1 II B T4 or T5 Atex to 94/9EC (INERIS Certificate No. 14362/98)
- Zone 2 II B T4 or T5 Atex
- Zone 1 or 2 II B T4 or T5 (INERIS Certificate No. 12705/95)
- Explosive Materials to ZH 1/168

Essential components of these explosion-proof trucks are identical with the corresponding standard Linde models. The following description highlights the modifications incorporated in the version for Zone 1 application.

#### Ergonomic tiller control

All controls are explosion-protected ("d" flameproof enclosure) without sacrificing ergonomic convenience. The control tiller is outwardly identical to that fitted on standard version trucks and ensures the same maximum protection for the operator's hands. Its rugged cast aluminium construction provides equal protection for the electronic components.

#### Explosion-protected traction motor

The traction motor and brake are flameproof enclosed in a sturdy steel casing. Its performance data are largely identical to those on the standard truck version. A high-temperature cut-out reliably limits surface heating.

#### Explosion-protected lift motor

The lift motor is installed in a separate flameproof casing. Here again, a cut-out ensures that surface heating is controlled within the defined maximum safe temperature.

#### Efficient controller

The benefits of Linde LTM control have been retained in these special-duty versions. They include powerful acceleration and millimetre-accurate positioning. All operator controls and the circuitry are installed in the

same pressure-tight casing. A power economizer switches the truck off automatically if it is idle for 9 minutes. This adds to safe prevention of the truck accidentally being under live power.

#### Insulation monitoring

Trucks rated for Zone 1 Atex are equipped as standard with insulation monitoring, which reliably detects any decrease in insulation resistance below 1 kOhm/Volt. Insulation monitoring is continuously signalled by LED. Drop of insulation resistance below the set limit actuates a warning light and shuts down the device concerned.

#### Standard equipment

Mast for 2750 mm lift height, fork length 1150 mm, width over forks 560 mm, LTM drive controller, horn, ignition switch and key, automatic parking brake, polyurethane load wheels and caster wheel, electrically conductive rubber drive wheel, tandem load wheels, flameproof enclosed hour meter and battery discharge indicator, battery compartment for 3 PZS 270 L batteries, battery cable and connector.

#### Optional equipment

Standard, duplex and triplex masts to 4250 mm height of lift. Alternative fork lengths and widths. Combined hour meter/battery discharge indicator with lift cut-out. Initial lift mechanism (2000 kg load capacity, 125 mm initial lift height).

Other options available on request.

LINDE		Pallet Stackers		Data sheet for material handling equipment			EGV	VDI 2198
March 2003		Designation to VDI 3586					to VDI 3586	
Characteristics	1.1	Manufacturer		Linde	Linde	Linde	Linde	
	1.2	Model designation		<b>L 14 Ex</b>	<b>L 14 AP Ex</b>	<b>L 16 Ex</b>	<b>L 16 AP Ex</b>	
	1.3	Power unit: battery, diesel, petrol, LP gas, mains power		Battery	Battery	Battery	Battery	
	1.4	Operation: manual, pedestrian, stand-on, seated, order picker		Pedestrian	Pedestrian	Pedestrian	Pedestrian	
	1.5	Load capacity	Q (kg)	1400	1400	1600	1600	
Weights	1.6	Load centre	c (mm)	600	600	600	600	
	1.8	Load distance	x (mm)	693	693	693	693	
	1.9	Wheelbase	y (mm)	1301	1301	1301	1301	
	2.1	Service weight	kg	1155	1240	1155	1240	
	2.2	Axle load with load, front / rear	kg	922/1633	985/1655	938/1819	1001/1841	
Wheels and tyres	2.3	Axle load without load, front / rear	kg	822/333	885/355	822/333	885/355	
	3.1	Tyres, front / rear (SE = CS superelastic, P = pneumatic)		VU/VU	VU/VU	VU/VU	VU/VU	
	3.2	Tyre size, front	mm	250 x 105	250 x 105	250 x 105	250 x 105	
	3.3	Tyre size, rear	mm	85 x 60	85 x 60	85 x 60	85 x 60	
	3.4	Additional wheels (Dimensions)		1/125x45	1/125x45	1/125x45	1/125x45	
Dimensions	3.5	Wheels, number front / rear (x = driven)		1x + 1/4	1x + 1/4	1x + 1/4	1x + 1/4	
	3.6	Track width, front	b <sub>10</sub> (mm)	560	560	560	560	
	3.7	Track width, rear	b <sub>11</sub> (mm)	370	370	370	370	
	4.2	Height of mast, lowered	h <sub>1</sub> (mm)	1905	1905	1905	1905	
	4.3	Free lift	h <sub>2</sub> (mm)	150	150	150	150	
	4.4	Lift	h <sub>3</sub> (mm)	2750	2750	2750	2750	
	4.5	Height of mast, extended	h <sub>4</sub> (mm)	3330	3330	3330	3330	
	4.6	Initial lift	h <sub>5</sub> (mm)	125 <sup>3)</sup>	125 <sup>3)</sup>	125 <sup>3)</sup>	125 <sup>3)</sup>	
	4.9	Height of tiller in operating position min. / max.	h <sub>14</sub> (mm)	880/1240	880/1425	880/1240	880/1425	
	4.15	Height lowered	h <sub>13</sub> (mm)	94	94	94	94	
	4.19	Overall length	l <sub>1</sub> (mm)	1930	2075 (2420 <sup>4)</sup>	1930	2075 (2420 <sup>4)</sup>	
	4.20	Length to fork face	l <sub>2</sub> (mm)	778	923/1268 <sup>4)</sup>	778	923/1278 <sup>4)</sup>	
	4.21	Overall width	b <sub>1</sub> /b <sub>2</sub> (mm)	845	845	845	845	
	4.22	Fork dimensions	s/e/l (mm)	57 x 196 x 1154	57 x 196 x 1154	57 x 196 x 1154	57 x 196 x 1154	
	4.24	Fork width	b <sub>3</sub> (mm)	800	800	800	800	
4.25	Surface width of fork	b <sub>5</sub> (mm)	567	567	567	567		
4.32	Ground clearance, centre of wheelbase	m <sub>2</sub> (mm)	22	22	22	22		
4.33	Aisle width with pallets 1000 x 1200 across forks	Ast (mm)	2374	2497/2841 <sup>4)</sup>	2374	2497/2841 <sup>4)</sup>		
4.34	Aisle width with pallets 800 x 1200 along forks	Ast (mm)	2345	2469/2813 <sup>4)</sup>	2345	2469/2813 <sup>4)</sup>		
4.35	Turning radius	Wa (mm)	1500	1623/1967 <sup>4)</sup>	1500	1623/1967 <sup>4)</sup>		
Performance	5.1	Travel speed, with / without load	km/h	4.2/5.1	4.2/5.1	4.2/5.1	4.2/5.1	
	5.2	Lifting speed, with / without load	m/s	0.087/0.185	0.087/0.185	0.087/0.185	0.087/0.185	
	5.3	Lowering speed, with / without load	m/s	0.344/0.17	0.344/0.17	0.344/0.17	0.344/0.17	
	5.7	Climbing ability, with / without load	%	6/9	6/9	6/9	6/9	
	5.8	Maximum climbing ability, with / without load	%	10/16	10/16	10/16	10/16	
Drive	5.10	Service brake		electric	electric	electric	electric	
	6.1	Drive motor (S <sub>2</sub> 60 min.)	kW	1.2	1.2	1.2	1.2	
	6.2	Lift motor (S <sub>3</sub> 15%)	kW	3.0	3.0	3.0	3.0	
	6.3	Battery according to IEC		254-2	254-2	254-2	254-2	
	6.4	Battery voltage, rated capacity (K5)	V/Ah	24/270L	24/270L	24/270L	24/270L	
6.5	Battery weight	kg	230	230	230	230		
8.1	Type of drive control		LTM transistor control	LTM transistor control	LTM transistor control	LTM transistor control		

1) Stacking aisle width according to VDI 2198, June 1980. 2) Not suitable for stacking box pallets. 3) Available as option. 4) Rider platform up/down.

