

Rider-Stand Electric Pallet Stackers 1400 and 1600 kg

Linde



372

Linde L14 AP, L14 APi, L16 AP and L16 APi pallet stackers are perfect machines for expert warehouse, storeroom and workshop load handling operations, designed to optimize distance transport. They are versatile in application and their compact length with the operator platform folded up allows working in tight spaces. With their superb performance, resulting notably from electric steering and the highly responsive OptiLift®, they contribute greatly to optimizing load storage and retrieval operations. Versions equipped with initial lift (L14 APi and L16 APi) are particularly advantageous for loading freight trucks or trailers and running on uneven floors. Initial lift moreover allows duplicate use as a 2000 kg low-lift pallet truck.

Main features

- Productivity increased 50% by fold-down rider stand platform
- Precise proportional load lifting and lowering by OptiLift® control directly on tiller head
- Operator's hands safely protected by ergonomic Linde tiller design
- Superior driving comfort with minimum effort due to electric steering
- Excellent stability and high residual capacities achieved by low center of gravity and four-point truck support
- Chassis same width as pallet, avoids snagging on obstacles
- Linde-Digital-Control (LDC), advanced microprocessor control system with adjustable operating parameters

- Automatic electronic braking on releasing travel control switch (Linde-Brake-Control, LBC)
- Initial lift for load legs with level compensation (L14 APi, L16 APi)

Chassis

Convenient maneuvering in tight places is no problem with the rounded contours of the heavy-gauge steel chassis. Optimized number of parts and welds results in high strength and long life. Low truck center of gravity adds to stability. All internal components and servicing points well accessible behind detachable steel hood.

Rider stand platform

Soft mat on platform for high operator comfort. Platform suspension absorbs vibration and shock. Side guard arms integral with truck contours afford high level of operator protection. Side arms are comfortably padded and lock at selected position for enhanced safety.

Operation

Easy, accurate guiding and positioning with electric steering, about 90% less steering effort needed. Operator's hands safely protected within sturdy aluminium guard. Rounded contours prevent snagging on obstacles. Ergonomic handles and controls made of pleasant-touch material. Controls for travel, lifting/lowering, initial lift (L14 APi, L16 APi) and horn can be operated reliably with either hand resting firmly on the tiller handlebars. Central tiller position provides utmost maneuverability. Active safety feature of automatic speed reduction when cornering.

OptiLift® control

Responsive, exact proportional control of lift and lower functions by ergonomic OptiLift® control rocker switches directly on the tiller head. Wide range of precision control by 60-degree switch actuating radius. Accurate load positioning by control acting directly on lift motor. Optional ultra fast lifting gives up to 70% faster lifting of empty forks or loads to 300 kg, greatly improving productivity in warehouse operations. Electronic control economizes use of battery power. Soft landing feature reduces fork carriage speed when lowering to floor for safe load handling. Energy-efficient high-performance lift unit with 3 kW high-pressure gear pump, oil tank, filter and relief valve.

Mast

Safe working assured by optimized visibility through rigid clear-view mast. Optionally single, duplex or triplex mast, lift height to 4802 mm, available with or without free lift. Rigid visibility-optimized fork carriage.

Initial lift on L14 APi and L16 APi:

Load leg initial lift providing 2000 kg capacity and 125 mm height enables pallets to be engaged on short or long side and loads to be transported smoothly over loading dock ledges or ground clearance to be raised when travelling over ramps.

Level compensation fitted as standard keeps all four wheels in contact on uneven ground, heightening truck grip and stability.

LINDE

**Electric
Pallet Stackers**

Designation to VDI 3586

**Data Sheet for
Material Handling Equipment**

EGV

Symbol to VDI

January 2002

Characteristics	1.1	Manufacturer		Linde	Linde	Linde
	1.2	Model designation		L 14 AP	L 16 AP	L 14 APi
	1.3	Power unit: Battery, diesel, gasoline, LP gas, AC		Battery	Battery	Battery
	1.4	Operation: Manual, pedestrian, rider seat, rider stand, order picker		Pedestrian	Pedestrian	Pedestrian
	1.5	Load capacity	Q (kg)	1400	1600	1400 (2000) ¹⁾
	1.6	Load center	c (mm)	600	600	600
	1.8	Load distance	x (mm)	726	726	648/726 ²⁾
1.9	Wheelbase	y (mm)	1303	1303	1225/1203	
Weights	2.1	Service weight	kg	-	-	-
	2.2	Axle load with load, operator/load side	kg	-	-	-
	2.3	Axle load without load, operator/load side	kg	-	-	-
Wheels and tyres	3.1	Tyres, operator/load side: Rubber (R), polyurethane (PU)		R+PU/PU	R+PU/PU	R+PU/PU
	3.2	Tyre size, operator side	mm	Ø 230 x 90	Ø 230 x 90	Ø 230 x 90
	3.3	Tyre size, load side	mm	Ø 85 x 85	Ø 85 x 85	Ø 85 x 85
	3.4	Auxiliary wheels, size	mm	2x Ø 140 x 50	2x Ø 140 x 50	2x Ø 140 x 50
	3.5	Wheels, number operator/load side (x = driven)		1x+1/2	1x+1/2	1x+1/4
	3.6	Track width, operator side	mm	520	520	520
	3.7	Track width, load side	mm	380	380	380
Measurements	4.2	Mast height, lowered	h ₁ (mm)	1990	1990	1990
	4.3	Free lift	h ₂ (mm)	150	150	150
	4.4	Lift	h ₃ (mm)	2924	2844	2924
	4.5	Mast height, extended	h ₄ (mm)	3460	3380	3460
	4.6	Initial lift	h ₅ (mm)	-	-	125
	4.9	Tiller height, travel position, min./max.	h ₁₄ (mm)	1095/1217	1095/1217	1095/1217
	4.15	Fork height, lowered	h ₁₃ (mm)	86	86	86
	4.19	Overall length	l ₁ (mm)	2030/2420	2030/2420	2030/2420
	4.20	Length to fork face	l ₂ (mm)	880/1270	880/1270	880/1270
	4.21	Overall width	b ₁ /b ₂ (mm)	800	800	800
	4.22	Fork dimensions	s/e/l (mm)	71/180/1150	71/180/1150	71/180/1150
	4.24	Fork carriage width	b ₃ (mm)	780	780	780
	4.25	Fork spread	b ₅ (mm)	560	560	560
	4.32	Ground clearance, center of wheelbase	m ₂ (mm)	30	30	145/20
	4.33	Aisle width, 1000 x 1200 mm pallet crosswise	Ast (mm)	-	-	-
4.34	Aisle width, 800 x 1200 mm pallet lengthwise	Ast (mm)	2455/2830	2455/2830	2455/2830	
4.35	Turning radius	Wa (mm)	1640/2010	1640/2010	1560/1930	
Performance	5.1	Travel speed, with/without load	km/h	7.0/9.0	6.5/9.0	7.0/9.0
	5.2	Lift speed, with/without load	m/s	0.16/0.25 (0.40) ³⁾	0.14/0.22 (0.37) ³⁾	0.16/0.25 (0.40) ³⁾
	5.3	Lower speed, with/without load	m/s	0.45/0.45	0.40/0.35	0.45/0.45
	5.7	Climbing ability, with/without load	m/s	-	-	-
	5.8	Max. climbing ability, with/without load	%	9.0-10	8.0-10	9.0-10
	5.10	Service brake		Electromechanical	Electromechanical	Electromechanical
Drive	6.1	Drive motor output (60 min. rating)	kW	1.5	1.5	1.5
	6.2	Lift motor output (15% rating)	kW	3.0	3.0	3.0/0.8
	6.3	Battery (IEC)		254-2	254-2	254-2
	6.4	Battery voltage	V/Ah	24/220	24/220	24/220
	6.5	Battery weight	kg	200	200	200
	6.6	Energy consumption, VDI Cycle	kWh/h	-	-	-
Other	8.1	Drive controller		LDC with microprocessor	LDC with microprocessor	LDC with microprocessor
	8.4	Sound level at driver's ear	dB (A)	< 65	< 65	< 65

Figures for standard version may vary when optional equipment is fitted.

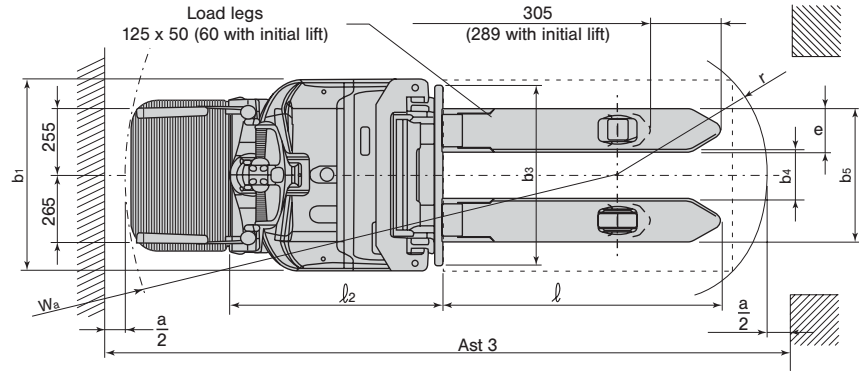
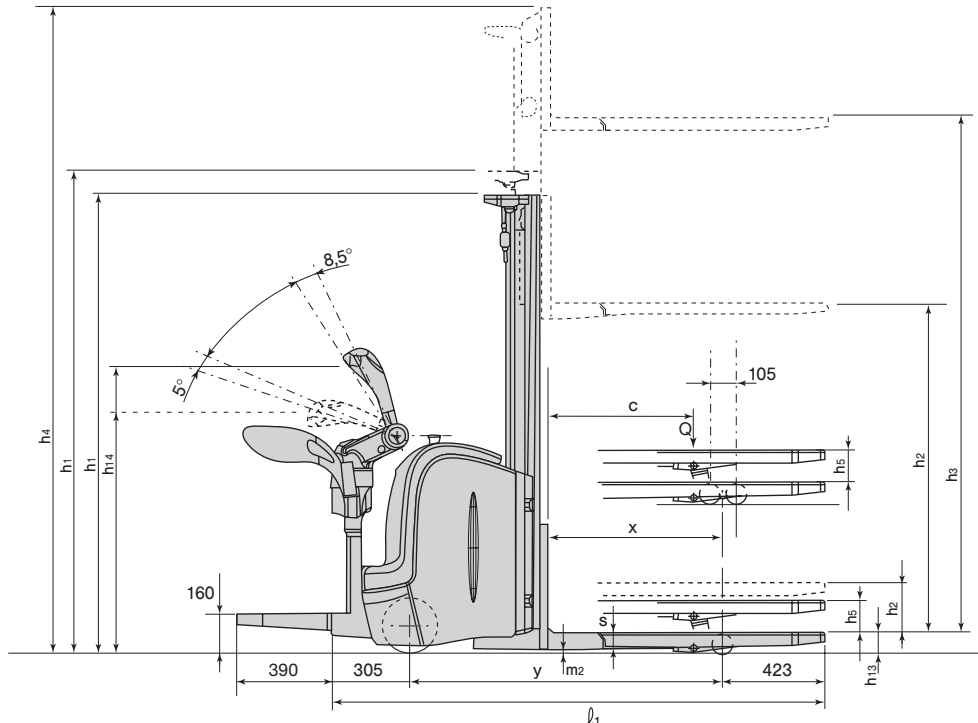
1) Capacity for load leg initial lift.

2) Initial lift up/down.

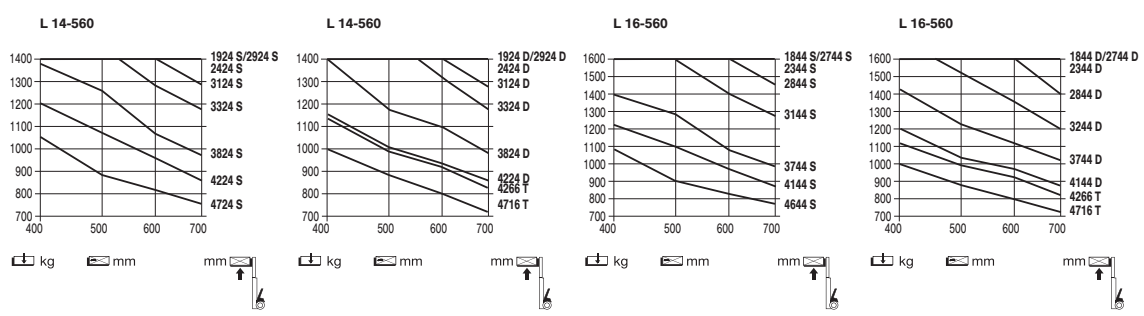
3) Figures in parentheses for optional ultra fast lifting.

VDI 2198

Linde
L 16 APi
Battery
Pedestrian
1600 (2000) ¹⁾
600
648/726 ²⁾
1225/1203
-
-
-
R+PU/PU
Ø 230 x 90
Ø 85 x 85
2x Ø 140 x 50
1x+1/4
520
380
1990
150
2844
3380
125
1095/1217
86
2030/2420
880/1270
800
71/180/1150
780
560
145/20
-
2455/2830
1560/1930
6.5/9.0
0.14/0.22 (0.37) ³⁾
0.40/0.35
-
8.0-10
Electromechanical
1.5
3.0/0.8
254-2
24/220
200
-
LDC with microprocessor
<65



Turning radius $A_{st} = W_a + r + a$
(Safety clearance $a = 200$ mm)



Masts (in mm)	L14	1924S	2424S	2924S	3324S	3824S	4224S	4724S	1924D	2424D	2924D	3324D	3824D	4224D	4266T	4716T
Lift	h3	1924	2424	2924	3324	3824	4224	4724	1924	2424	2924	3324	3824	4224	4266	4716
Lift and fork height	h3+h13	2010	2510	3010	3410	3910	4310	4810	2010	2510	3010	3410	3910	4310	4352	4802
Height lowered	h1	1490	1740	1990	2190	2440	2640	2890	1415	1665	1915	2115	2365	2565	1915	2065
Height extended	h4	2460	2960	3460	3860	4360	4760	5260	2460	2960	3460	3860	4360	4760	4802	5252
Free lift	h2	150	150	150	150	150	150	150	862	1212	1462	1662	1912	2112	1379	1529

Masts (in mm)	L16	1844S	2344S	2844S	3244S	3744S	4144S	4644S	1844D	2344D	2844D	3244D	3744D	4144D	4266T	4716T
Lift	h3	1844	2344	2844	3244	3744	4144	4644	1844	2344	2844	3244	3744	4144	4266	4716
Lift and fork height	h3+h13	1930	2430	2930	3330	3830	4230	4730	1930	2430	2930	3330	3830	4230	4352	4802
Height lowered	h1	1490	1740	1990	2190	2440	2640	2890	1415	1665	1915	2115	2365	2565	1915	2065
Height extended	h4	2380	2880	3380	3780	4280	4680	5180	2380	2880	3380	3780	4280	4680	4760	5252
Free lift	h2	150	150	150	150	150	150	150	879	1129	1379	1579	1829	2029	1379	1529

Other masts on request.

Equipment



Drive

Fast travel at speeds up to 9 km/h available with self-ventilating 1.5 kW traction motor designed for heavy duty. Advanced Linde-Digital-Control (LDC) system contains a programmable microprocessor and controls the truck to give smooth, precise starting, powerful acceleration, accurate travel at selected speed and exact load positioning. Other LDC benefits:

- Special starting circuit prevents truck from rolling back when starting on up-gradients
- Safety circuit cutout performs self-test every time power is turned on
- Current limiter avoids overloading and lengthens truck life

LDC control parameters can be programmed for specific truck applications.

Braking and safety

Three-way braking system:

- Automatic braking by LBC on releasing travel control switch
- Electromechanical braking when tiller is moved fully up or fully down
- Electronic braking by reversing travel control switch
- Emergency stop button interrupts all electric circuits and actuates electromechanical brake
- Rounded truck contours, no sharp edges

- All wheels contained within chassis, do not turn beyond truck contours
- Foot protection by low chassis base rounded inwards
- Hands protected within tiller head guard
- Plexiglas shield on mast
- Automatic lowering of initial lift on elevating forks for increased stability (L14 API, L16 API)

Standard equipment

- All safety items listed above
- Proportional control of lifting and lowering motions by OptiLift®
- Soft landing by reducing fork carriage speed when lowering to floor (in conjunction with OptiLift®)
- Active electric steering (Linde-Electrical-Steering, LES)
- Electronic drive controller (LDC) with programmable operating parameters
- Active electronic braking (LBC)
- Solid rubber-tyred drive wheel
- Single polyurethane load wheels with string guard
- Polyurethane twin swivel caster wheel
- Fork length 1150 mm
- Fork spread 560 mm
- Operating environment to -10°C

- Battery cable and plug
- Spare parts catalogue and operator manual
- Load leg initial lift and level compensation (L14 API, L16 API)

Batteries and chargers

- 24 V batteries, 220 to 330 Ah
- Optional built-in charger for batteries to 240 Ah or large choice of external standard or quick chargers

Optional equipment

- Various masts: standard, free-lift duplex, triplex; lift heights from 2010 to 4802 mm
- Alternative fork sizes
- Load backrest
- Ultra fast lifting for loads up to 300 kg (in conjunction with OptiLift®)
- ISO fork carriages with hook-on forks
- Greasable initial lift system
- Wire mesh mast shield
- Polyurethane or grooved solid rubber drive wheel
- Side roll-out battery change
- Single-battery change stand
- Two-battery change stand

Other options on request.