

Electric Forklift Trucks 1400 to 2000 kg



Linde E14 – E20P Electric Forklift Trucks are the best answer to a wide range of material handling requirements:

- High stability and a small turning circle allow working at fast pace for high productivity on the job
- Electric motors specially designed for maximum performance are highly economical due to low energy consumption
- Functional and ergonomic convenience of the operator compartment contributes to productivity by saving waste of time and effort
- Standard truck version is fully suitable for inside-container working

High-comfort operator compartment

Linde invests considerable resources in achieving an advanced functional and ergonomic standard of the operator compartment to ensure fatigue-free and productive working. Comfortable hydraulically damped suspension seat adjusts individually to operator's body size and weight. Using only his feet and not shifting them off the twin drive pedals, the operator can drive the truck under perfect speed control, change smoothly between forward and reverse and brake by electric power without mechanical wear. LLC (Linde Load Control) enables two mast functions to be performed simultaneously with minimum effort and maximum precision by a single lever integrated in the adjustable armrest. All important truck status data is presented on a multifunction display. Unitized module of overhead guard and operator compartment can be complemented as a fully enclosed

all-weather cab. Tiltback of the hinged operator module provides clear access for quick and easy battery change and servicing jobs.

Rugged chassis

Superbly engineered and of high-grade construction, the chassis stands up to the toughest punishment at work. All-around enclosure of the chassis protects internal components from soiling while adding extra strength.

Optimally balanced drive

Excellent acceleration, climbing power and traction are delivered by the two wheel drive motors, specially designed for this line of forklifts and integrated in the front axle. Linde electric forklifts duplicate the responsive driving, smooth direction reversing and accurate positioning characteristics of Linde hydrostatic transmission on the company's diesel and LP gas trucks. In normal driving situations the operator uses regenerative braking by simply easing up the drive pedal. This high-efficiency system returns up to 16% energy to the battery, extending run time and maximizing operating economy. Unit assembly of drive axle and mast results in shorter load distance and greater maneuverability. When tilting the mast back, the wheelbase is lengthened, making driving at speed more comfortable and safer.

Digital control system

Linde electric forklifts operate under the LDC (Linde Digital Control) system, which imparts drivability very similar to the superior qualities of hydrostatic transmission. Perfect control of

speed, quick and smooth change of travel direction, better cornering and highest accuracy of positioning add up to increased productivity and low energy consumption. Electronic control components are connected by CAN bus, the advanced technology for fast and reliable data transfer. Fault diagnostics incorporated in the control system greatly reduce time and expense for maintenance.

Effortless steering

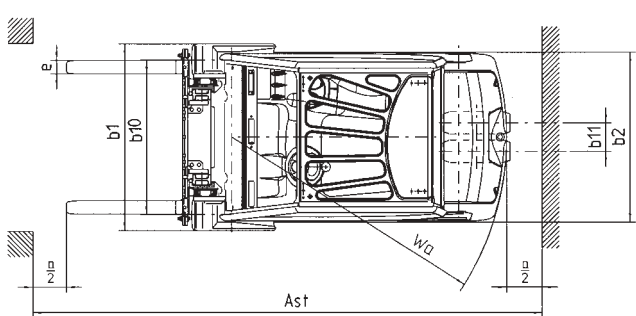
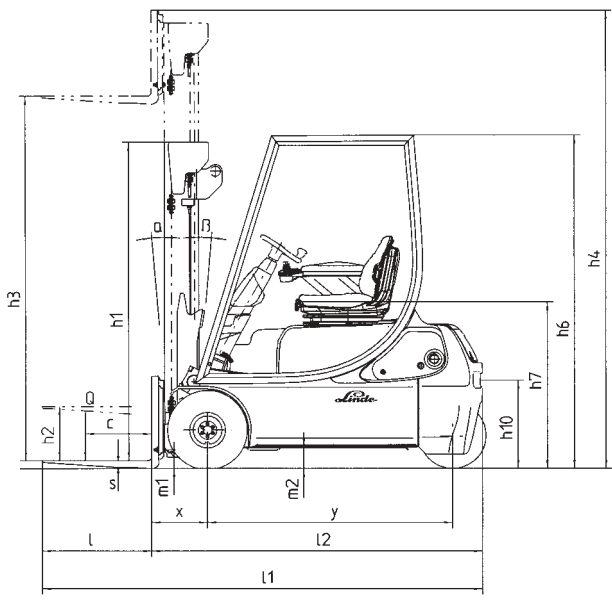
Anti-kick hydrostatic power steering is almost entirely free from play. Steering effort required is a mere 20N with the ergonomically advantageous 300 mm diameter steering wheel. Active steering means that rotating direction of the drive wheels is controlled exactly as a function of steering angle, resulting in utmost ease of negotiating tight bends and permitting turning around in place. Twin tyres fitted on the approved pivot-beam axle of the three-wheel E 14, E 16 C, E 16 and E 18 C reduce tyre wear and also wear on floors when turning sharply. With the patented Linde combi axle combining the advantages of the pivot-beam and half-shaft designs, the E 16 P, E 18 P and E 20 P maneuver as easily as a three-wheeler coupled with the safety and comfort of four wheels, especially when cornering.

Excellent visibility

Auxiliary hydraulics lines run behind the slim uprights of the mast, which is optimized for clear forward view and a correspondingly high level of safety when handling loads and travelling.

LINDE		Forklift trucks		Data sheet for			EFG	
July 2004		Designation acc. to VDI 2198		material handling equipment			Abbreviation acc. to	
Characteristics	1.1	Manufacturer	Linde	Linde	Linde	Linde	Linde	
	1.2	Model designation	E 14	E 16 C	E 16	E 18 C	E 16 P	
	1.3	Power unit: battery, diesel, petrol, LP gas, mains power	Battery	Battery	Battery	Battery	Battery	
	1.4	Operation: manual, pedestrian, stand-on, seated, order picker	seated	seated	seated	seated	seated	
	1.5	Load capacity Q (kg)	1400	1600	1600	1800	1600	
	1.6	Load centre c (mm)	500	500	500	500	500	
	1.8	Axle centre to fork face x (mm)	330	330	330	335	330	
	1.9	Wheelbase y (mm)	1230 ¹⁾	1336 ¹⁾	1375 ¹⁾	1444 ¹⁾	1383 ¹⁾	
Weights	2.1	Service weight kg	2865	2995	3200	3160	3200	
	2.2	Axle load with load, front/rear kg	3690/575 ¹⁾	4055/540 ¹⁾	4200/600 ¹⁾	4440/520 ¹⁾	4210/590 ¹⁾	
	2.3	Axle load without load, front/rear kg	1345/1520 ¹⁾	1465/1530 ¹⁾	1550/1650 ¹⁾	1600/1560 ¹⁾	1600/1600 ¹⁾	
Wheels and tyres	3.1	Tyres, front/rear (SE = CS superelastic, P = pneumatic)	SE (P)/SE (P)	SE (P)/SE (P)	SE (P)/SE (P)	SE/SE	SE (P)/SE (P)	
	3.2	Tyre size, front	18 x 7 – 8	18 x 7 – 8	18 x 7 – 8	200/50 – 10	18 x 7 – 8	
	3.3	Tyre size, rear	15 x 4 1/2 – 8	15 x 4 1/2 – 8	15 x 4 1/2 – 8	15 x 4 1/2 – 8	16 x 6 – 8	
	3.5	Wheels, number front/rear (x = driven)	2 x/2	2 x/2	2 x/2	2 x/2	2 x/2	
	3.6	Track width, front b ₁₀ (mm)	910	910	910	910	910	
	3.7	Track width, rear b ₁₁ (mm)	168	168	168	168	757	
Dimensions	4.1	Mast/fork carriage tilt, forward/backward °	4.8/7.5	4.8/7.5	4.5/7	4.8/7.5	4.5/7	
	4.2	Height of mast, lowered h ₁ (mm)	2100 ⁴⁾	2100 ⁴⁾	2100 ⁴⁾	2100 ⁴⁾	2100 ⁴⁾	
	4.3	Free lift h ₂ (mm)	150	150	150	150	150	
	4.4	Lift h ₃ (mm)	3050 ²⁾	3050 ²⁾	3050 ²⁾	3050 ²⁾	3050 ²⁾	
	4.5	Height of mast, extended h ₄ (mm)	3658 ²⁾	3658 ²⁾	3658 ²⁾	3658 ²⁾	3658 ²⁾	
	4.7	Height of overhead guard (cabin) h ₆ (mm)	1970 ⁵⁾	1970 ⁵⁾	2075 ⁵⁾	1970 ⁵⁾	2075 ⁵⁾	
	4.8	Height of seat/stand-on platform h ₇ (mm)	927	927	1032	927	1032	
	4.12	Tow coupling height h ₁₀ (mm)	510	510	595	510	570	
	4.19	Overall length l ₁ (mm)	2688 ¹⁾	2745 ¹⁾	2791 ¹⁾	2858 ¹⁾	2848 ¹⁾	
	4.20	Length to fork face l ₂ (mm)	1788 ¹⁾	1845 ¹⁾	1891 ¹⁾	1958 ¹⁾	1948 ¹⁾	
	4.21	Overall width b ₁ /b ₂ (mm)	1083	1083	1083	1155	1083	
	4.22	Fork dimensions s/e/l (mm)	40 x 80 x 900	40 x 80 x 900	40 x 80 x 900	45 x 100 x 900	40 x 80 x 900	
	4.23	Fork carriage to DIN 15173, class/form A, B	2A	2A	2A	2A	2A	
	4.24	Width of fork carriage b ₃ (mm)	1040	1040	1040	1040	1040	
	4.31	Ground clearance, mast m ₁ (mm)	79	78	77	84	77	
	4.32	Ground clearance, centre of wheelbase m ₂ (mm)	114	113	113	119	113	
	4.33	Aisle width with pallets 1000 x 1200 across forks Ast (mm)	3114 ¹⁾	3171 ¹⁾	3212 ¹⁾	3289 ¹⁾	3274 ¹⁾	
4.34	Aisle width with pallets 800 x 1200 along forks Ast (mm)	3236 ¹⁾	3293 ¹⁾	3334 ¹⁾	3411 ¹⁾	3396 ¹⁾		
4.35	Turning radius Wa (mm)	1455 ¹⁾	1512 ¹⁾	1553 ¹⁾	1625 ¹⁾	1615 ¹⁾		
4.36	Minimum distance between centres of rotation b ₁₃ (mm)	0	0	0	0	0		
Performance	5.1	Travel speed, with / without load km/h	14.6/15.3	14.4/15.3	14.5/15.5	14.2/15.2	14.5/15.4	
	5.2	Lifting speed, with / without load m/s	0.38/0.55	0.37/0.55	0.37/0.55	0.35/0.55	0.37/0.55	
	5.3	Lowering speed, with / without load m/s	0.55/0.51	0.56/0.52	0.56/0.52	0.57/0.53	0.56/0.52	
	5.5	Tractive force, with / without load, 60 minute rating N	1945/2190	1885/2170	1878/2160	1815/2130	1878/2160	
	5.6	Maximum tractive force, with / without load, 5 minute rating N	7060/7305	7000/7285	6998/7275	6930/7250	6992/7275	
	5.7	Climbing ability, with / without load, 30 minute rating %	6/9.9	5.5/9.4	5.4/9.2	4.9/8.7	5.4/9.2	
	5.8	Maximum climbing ability, with / without load, 30 minute rating %	17.1/26.9	15.7/25.6	15.1/25.1	14.3/23.7	15.1/25.1	
	5.9	Acceleration, with / without load (first 10 m) s	4.8/4.3	4.8/4.4	4.9/4.6	4.9/4.5	4.8/4.3	
	5.10	Service brake	hydr./electr.	hydr./electr.	hydr./electr.	hydr./electr.	hydr./electr.	
	Drive	6.1	Drive motor, 60 minute rating kW	2 x 4	2 x 4	2 x 4	2 x 4	2 x 4
6.2		Lift motor, 15% rating kW	9.0	9.0	9.0	9.0	9.0	
6.3		Battery according to DIN 43531/35/36 A, B, C, no	43531 A	43531 A	43531 A	43531 A	43531 A	
6.4		Battery voltage/rated capacity (5 h) V/Ah	48/440 ³⁾	48/550 ³⁾	48/700 ³⁾	48/660 ³⁾	48/700 ³⁾	
6.5		Battery weight (± 5%) kg	708	856	1118	1015	1118	
6.6		Energy consumption rated to VDI cycle kWh/h	-	-	-	-	-	
Other	8.1	Type of drive control	Microprocessor	Microprocessor	Microprocessor	Microprocessor	Microprocessor	
	8.2	Working pressure for attachments bar	180	200	200	220	200	
	8.3	Oil supply for attachment l/min	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	20 ⁶⁾	
	8.4	Mean noise level at driver's ear dB (A)	68	68	68	68	68	
	8.5	Tow coupling, design/type DIN, No.	-	-	-	-	-	
1) At 0° tilt angle			5) With lights (3) and (4) fitted: + 200 mm					
2) For additional mast heights refer to page 3			6) At 80% rated pressure					
3) Optional other battery capacities available								
4) With 150 mm free lift								

Linde	Linde
E 18 P	E 20 P
Battery	Battery
seated	seated
1800	2000
500	500
335	339
1383 ¹⁾	1383 ¹⁾
3300	3570
4520/580 ¹⁾	4740/830 ¹⁾
1640/1660 ¹⁾	1670/1900 ¹⁾
SE/SE	SE/SE
200/50 - 10	200/50 - 10
16 x 6 - 8	16 x 6 - 8
2x/2	2x/2
910	910
757	757
4.5/7	4.5/7
2100 ⁴⁾	2100 ⁴⁾
150	150
3050 ²⁾	3050 ²⁾
3658 ²⁾	3658 ²⁾
2075 ⁵⁾	2075 ⁵⁾
1032	1032
570	560
2853 ¹⁾	2954 ¹⁾
1953 ¹⁾	2054 ¹⁾
1155	1155
45 x 100 x 900	45 x 100 x 900
2A	2A
1040	1040
83	83
119	118
3279 ¹⁾	3386 ¹⁾
3401 ¹⁾	3509 ¹⁾
1615 ¹⁾	1719 ¹⁾
0	0
14.5/15.2	14.4/15.2
0.35/0.55	0.34/0.55
0.57/0.53	0.58/0.54
1815/2130	1737/2091
6930/7245	6852/7205
4.9/8.7	4.2/8.0
14.3/23.7	12.9/21.9
4.9/4.5	5.1/4.6
hydr./electr.	hydr./electr.
2 x 4	2 x 4
9.0	9.0
43531 A	43531 A
48/700 ³⁾	48/700 ³⁾
1118	1118
-	-
Microprocessor	Microprocessor
220	250
20 ⁶⁾	20 ⁶⁾
68	68
-	-



Safety distance a = 200 mm

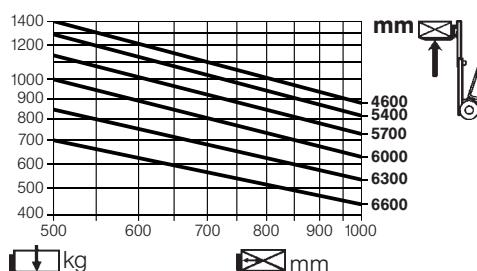
Standard mast (in mm)	E 14/E16C/E18C	E14...E20P				
Lift h ₃	2850	3050	3250	3850	4250	4850
Overall height of mast retracted with free lift h ₁	2000	2100	2200	2500	2700	3000
Overall height of mast extended h ₄	3458	3658	3858	4458	4858	5458
Free lift h ₂	150	150	150	150	150	150

Duplex mast (in mm)	E 14/E16C/E18C			E14...E20P		
Lift h ₃	2770	3070	3770	4170	3070	3770
Overall height of mast retracted with free lift h ₁	1925	2075	2425	2625	2075	2425
Overall height of mast extended h ₄	3378	3678	4378	4778	3678	4378
Free lift h ₂	1318	1468	1818	2018	1468	1818

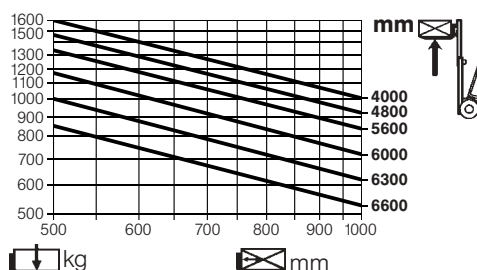
Triplex mast (in mm)	E 14/E16C/E18C		E14...E20P			
Lift h ₃	4020	4470	5470	5920	6220	
Overall height of mast retracted with free lift h ₁	1925	2075	2475	2625	2725	
Overall height of mast extended h ₄	4628	5078	6078	6528	6828	
Free lift h ₂	1318	1468	1868	2018	2118	

Alternative lift heights available on request

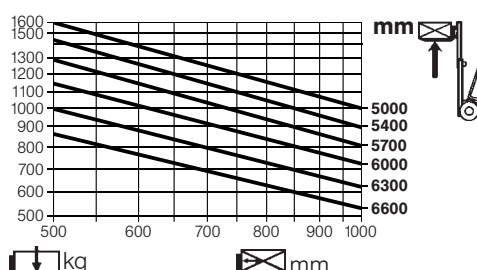
E 14



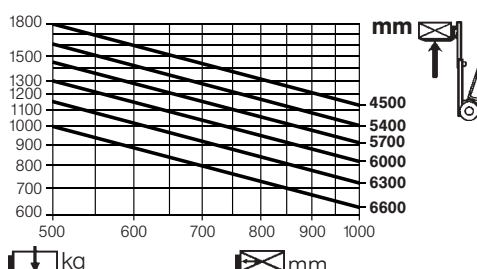
E 16 C



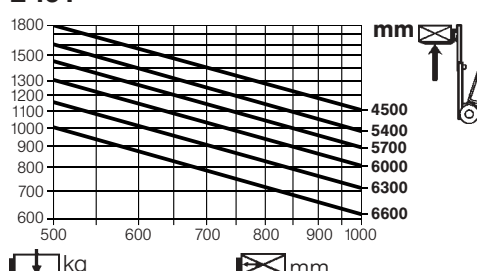
E16/E16 P



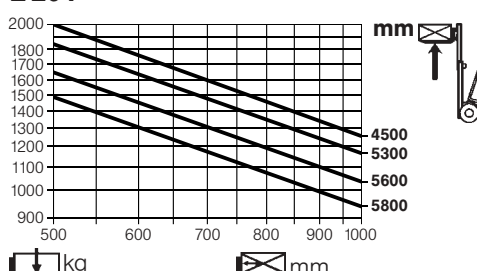
E18 C



E 18 P



E 20 P



Lifting capacity diagrams are valid for SE tyres and standard masts

Equipment



Wear-free braking

- Releasing the twin drive pedals to brake the truck via the wheel drive motors in normal driving situations avoids mechanical brake wear
- A separate foot brake is provided for emergency stopping
- The parking brake lever is located in convenient reach beside the operator's seat

Safety

Every conceivable attention is paid to safety aspects:

- Three independent braking systems
- Emergency circuit cutout
- Automatic drive motor shutoff when tilting back operator module
- Electric horn
- Electronic and hydraulic overload protection
- Anti-kick all-hydrostatic power steering
- Advanced ergonomic design to minimize operator fatigue
- Low noise level

- Safe braking while carrying loads by lengthening of wheelbase when tilting mast back
- High stability
- Excellent view upward, of load, and to all sides

Standard equipment

- Independent front wheel drive by two electric motors with automatic control of speed and rotation on turns
- Microprocessor controller for infinitely variable, energy-saving control of travel speed and hydraulic functions
- Battery discharge indicator with automatic lift motor slowdown at 80% discharge level
- Traction and hydraulic pump motor brush wear monitoring
- Fork carriage width $b_3 = 1040$ mm
- Fork length $l = 900$ mm
- Suspension seat adjustable fore and aft, adjustable backrest angle
- Seat adjustable to operator's body weight
- Standard mast, lift height $h_3 = 3050$ mm
- Inside-container version (equipped with appropriate mast)
- Tilt-back operator module for easy and quick battery change

Options

- Standard masts, lift height 2850 to 5650 mm
- Duplex masts, full free lift, lift height 2770 to 4170 mm
- Triplex masts, full free lift, lift height 4020 to 6220 mm
- Single or double auxiliary hydraulic circuits for all mast types
- Alternative fork lengths
- Load backrest
- Warning flasher lamps
- Truck lights
- Work lamps
- Operator module add-ons, from front windscreen to full cab enclosure
- Cloth-upholstered seat
- Heater
- Sideshift
- Cushion tyres (track width $b_1 = 1000$ mm)

Other options available on request.

Subject to modification in the interests of progress. Illustrations and technical details not binding for actual construction. All dimensions subject to customary tolerances.