



Electric Counterbalance Trucks Capacity 1600 – 2000 kg E 16, E 18, E 20

SERIES 386

Safety

Linde ProtectorFrame: The protective overhead guard and its supporting frame together form a strong and completely enclosed protective zone providing optimum structural integrity, safety and protection for the operator. The top mounted tilt cylinders provide seamless, smooth control of the tilt movements for excellent load stability in all operating conditions. This unique design also enables slimmer mast profiles to be fitted for outstanding visibility.

Performance

One would expect a high performance truck to have a high performance traction system – and that is exactly what the Linde compact drive axle and lift system delivers. Powerful motors, maintenance-free brakes and intelligent electronic control form an impressive power pack to deliver the highest levels of efficiency and productivity.

Comfort

Consistently high levels of performance and efficiency for extended periods is only possible if the operator is comfortable. The ergonomic layout of all the controls, the adjustability the armrest and seat, Linde Load Control, and twin accelerator pedals provide the best possible intuitive interface between the truck and the operator.

Reliability

An electric fork lift truck depends on reliable electronic systems. The Linde electronic control system provides a high level of reliability because of its dual circuit monitoring system and the sealed aluminium housing which provides total protection for the electronics from the ingress of dust and moisture. For additional adaptability a simple programming system enables the performance parameters to be adjusted to meet individual application requirements.

Productivity

Effective in operation, efficient in reducing costs: the unique Linde energy management system ensures intelligent and economical consumption of energy. Energy can also be obtained quickly utilising the optional built-in charging unit or one of the five simple and rapid battery changing methods. The result: more uptime and increased productivity.

Linde Material Handling

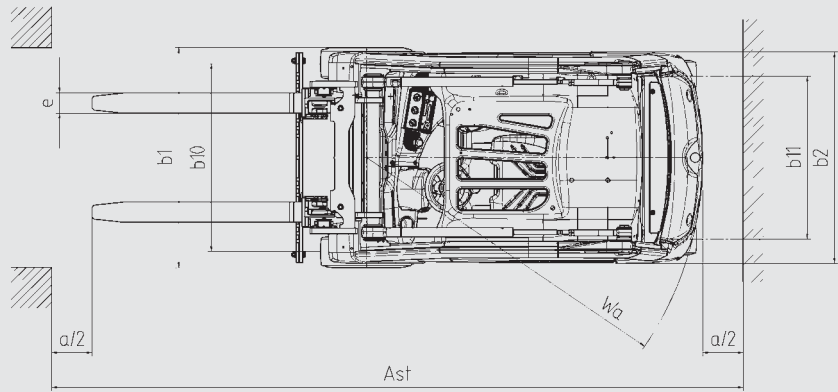
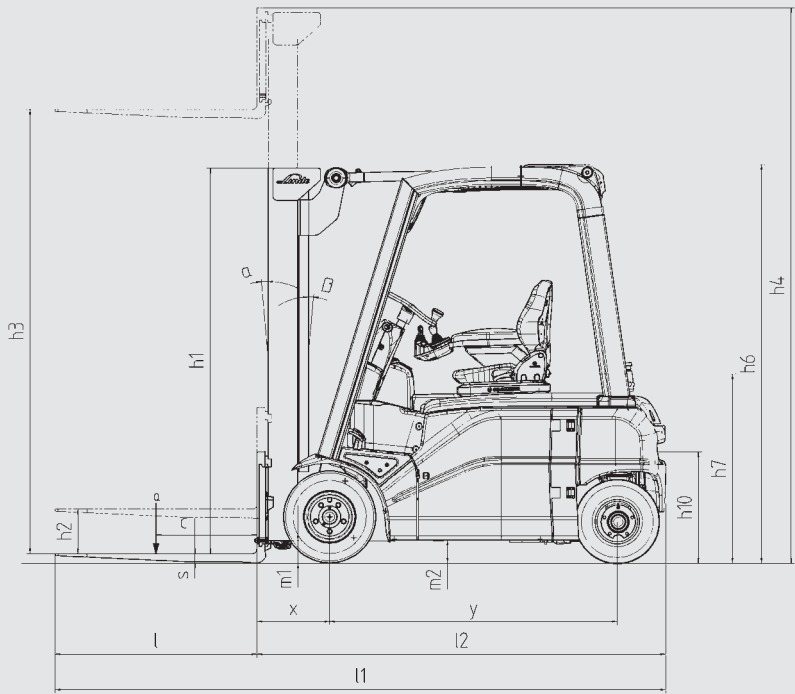
Linde

Technical data

Distinguishing mark		Model group	E 16 P		E 18 P	
	1.1	Manufacturer (abbreviation)	LINDE	LINDE	LINDE	LINDE
	1.2	Manufacturer's type designation	E 16 P	E 16 PH	E 18 PH	E 20 PL
	1.3	Drive: electric (battery or mains), diesel, petrol, fuel gas	Battery	Battery	Battery	Battery
	1.4	Operator type: hand, pedestrian, standing, seated, order-picker	Seated	Seated	Seated	Seated
	1.5	Load capacity/rated load Q (t)	1.6	1.6	1.8	2.0
	1.6	Load centre distance c (mm)	500	500	500	500
	1.8	Load distance, centre of drive axle to fork x (mm)	365	365	370	374
	1.9	Wheelbase y (mm)	1429 ¹⁾	1481 ¹⁾	1481 ¹⁾	1537 ¹⁾
Weight	2.1	Service weight kg	3017	3158	3335	3386
	2.2	Axle loading, laden front/rear kg	4084/533	4197/561	4554/582 ¹⁾	4784/603
	2.3	Axle loading, unladen front/rear kg	1516/1501	1633/1495	1696/1639 ¹⁾	1646/1740
Tyres, chassis	3.1	Tyres: solid rubber, superelastic, pneumatic, polyurethane	SE	SE	SE	SE
	3.2	Tyre size, front	18 x 7 – 8 ²⁾	18 x 7 – 8 ²⁾	200/50–10 ³⁾	200/50–10 ³⁾
	3.3	Tyre size, rear	16 x 6–8 ⁴⁾	16 x 6–8 ⁴⁾	16 x 6 – 8	16 x 6–8
	3.5	Wheels, number front rear (x = driven wheels)	2 x / 2	2 x / 2	2 x / 2	2 x / 2
	3.6	Tread, front b10 (mm)	930	930	965	965
	3.7	Tread, rear b11 (mm)	807	807	807	807
Dimensions	4.1	Tilt of mast/fork carriage forward/backward Grad	5/7.5	5/7.5	5/7.5	5/7.5
	4.2	Height, mast lowered h1 (mm)	2194 ⁶⁾	2194 ⁶⁾	2194 ⁶⁾	2194 ⁶⁾
	4.3	Free lift h2 (mm)	150	150	150	150
	4.4	Lift h3 (mm)	3110	3110	3110	3110
	4.5	Height, mast extended h4 (mm)	3713	3713	3713	3713
	4.7	Height of overhead guard (cabin) h6 (mm)	1970	2130	2130	1970
	4.8	Seat height/stand height h7 (mm)	908	1065	1065	908
	4.12	Coupling height h10 (mm)	538	602	602	538
	4.19	Overall length l1 (mm)	2929	2978	2983	3045
	4.20	Length to face of forks l2 (mm)	2029	2078	2083	2145
	4.21	Overall width b1 / b2 (mm)	1090/1050 ⁷⁾	1090/1050 ⁷⁾	1172/1050 ⁷⁾	1172/1050
	4.22	Fork dimensions s/e/l (mm)	40 x 80 x 1000	40 x 80 x 1000	40 x 80 x 1000	40 x 80 x 1000
	4.23	Fork carriage DIN 15 173, class/type A, B	2A	2A	2A	2A
	4.24	Fork-carriage width b3 (mm)	1040	1040	1040	1040
	4.31	Ground clearance, laden, below mast m1 (mm)	97	97	97	97
	4.32	Ground clearance, centre of wheelbase m2 (mm)	103	103	103	103
	4.33	Aisle width for pallets 1000 x 1200 crossways Ast (mm)	3355	3404	3409	3470
	4.34	Aisle width for pallets 800 x 1200 lengthways Ast (mm)	3479	3528	3533	3595
Performance data	4.35	Turning radius Wa (mm)	1664	1713	1713	1771
	4.36	Internal turning radius b13 (mm)	–	–	–	–
	5.1	Travel speed, laden/unladen km / h	20/20	20/20	20/20	20/20
	5.2	Lift speed, laden/unladen m / s	0.48/0.6	0.48/0.6	0.47/0.6	0.45/0.6
	5.3	Lowering speed, laden/unladen m / s	0.58/0.5	0.58/0.5	0.58/0.5	0.58/0.5
	5.5	Drawbar pull, laden/unladen N	2300/2300	2300/2300	2300/2300	2300/2300
	5.6	Max. drawbar pull, laden/unladen N	10000/10000	10000/10000	10000/10000	10000/10000
	5.7	Gradeability, laden/unladen %	6.8/10.4	6.6/9.9	6.1/9.4	5.8/9.2
	5.8	Max. gradeability, laden/unladen %	22.6/35.9	21.9/34.1	20.3/32.1	19.3/31.6
	5.9	Acceleration time, laden/unladen s	4.5/4.0	4.5/4.0	4.5/4.0	4.6/4.0
Electric-engine	5.10	Service brake	Hydraulic/mechanical	Hydraulic/mechanical	Hydraulic/mechanical	Hydraulic/mechanical
	6.1	Drive motor rating S2 60 min kW	2 x 5	2 x 5	2 x 5	2 x 5
	6.2	Lift motor rating at S3 15 % kW	11	11	11	11
	6.3	Battery acc. to DIN 43 531/35/36 A, B, C, no	43531 A	43531 A	43531 A	43531 A
	6.4	Battery voltage, nominal capacity K ₅ V / Ah	48/550 (575) ⁹⁾	48/700 (700) ⁹⁾	48/700 (700) ⁹⁾	48/660 (690) ⁹⁾
	6.5	Battery weight kg	856	1118	1118	1013
Addition data	6.6	Energy consumption acc. to VDI cycle kWh / h	6.8	7.1	7.4	7.6
	8.2	Operating pressure for attachments bar	170	170	170	170
	8.3	Oil volume for attachments l / min	32 ⁸⁾	32 ⁸⁾	32 ⁸⁾	32 ⁸⁾
	8.4	Sound level at the driver's ear according to DIN 12053 dB (A)	< 65	< 65	< 65	< 65
	8.5	Towing coupling, type DIN	–	–	–	–
1) With lifting mast vertical			5) Optional: wrap-around tyres		9) Data between brackets are taken from the instruction leaflet on "Use of European-standard DIN-standard batteries" (July 2002 edition)	
2) Optional: pneumatic tyres, 18 x 7-8 7 16PR or wrap-around			6) With 150 mm free lift			
3) Optional: pneumatic tyres, 15x4 1/2-8/12PR			7) With wrap-around tyre, 18 x 6 b1 – 1074			
4) Optional: pneumatic tyres, 16 x 68 / 10PR			8) At 80% nominal pressure (8.2)			

E20P	
LINDE	LINDE
E20 PH	E20 PHL
Battery	Battery
Seated	Seated
2.0	2.0
500	500
374	374
1481 ¹⁾	1589 ¹⁾
3516	3514
4890/626	4909/605
1710/1806	1809/1705
SE	SE
200/50-10 ⁵⁾	200/50-10 ⁵⁾
16 x 6 - 8 ⁵⁾	16 x 6 - 8 ⁵⁾
2 x/2	2 x/2
965	965
807	807
5/7.5	5/7.5
2194 ⁶⁾	2194 ⁶⁾
150	150
3110	3110
3713	3713
2130	2130
1065	1065
602	602
2987	3095
2087	2195
1172/1050	1172/1050
40 x 80 x 1000	40 x 80 x 1000
2A	2A
1040	1040
97	102
103	103
3412	3520
3537	3645
1713	1821
-	-
20/20	20/20
0.45/0.6	0.45/0.6
0.58/0.5	0.58/0.5
2300/2300	2300/2300
10000/10000	10000/10000
5.7/8.9	5.7/8.9
18.8/30.3	18.8/30.3
4.6/4.0	4.7/4.1
Hydraulic/mechanical	Hydraulic/mechanical
2 x 5	2 x 5
11	11
43531A	43531A
48/700 (700) ⁹⁾	48/840 (840) ⁹⁾
1118	1309
7.6	7.9
170	170
32 ⁸⁾	32 ⁸⁾
<65	<65
-	-

the ZVEI
series cells in
on).



Safety distance a = 200 mm

Standard mast (in mm)		E 16 P/E 20 PL			E 16 PH/E 18 PH/E 20 PH/E 20 PHL		
Lift	h3	2760	3110	4210	-	3110	4210
Overall height, retracted (to 150 mm free lift)	h1	2021	2196	2746	-	2196	2746
Overall height, extended	h4	3363	3713	4813	-	3713	4813

Duplex mast (in mm)		E 16 P/E 20 PL			E 16 PH/E 18 PH/E 20 PH/E 20 PHL		
Lift	h3	2775	3125	3825	-	3125	3825
Overall height, retracted	h1	1946	2579	2929	-	2579	2929
Overall height, extended	h4	3377	3727	4427	-	3727	4427
Special free lift	h2	1343	1518	1868	-	1518	1868

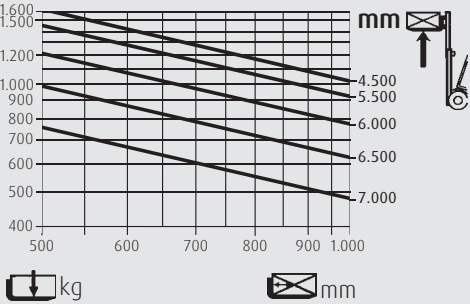
Triplex mast (in mm)		E 16 P/E 20 PL			E 16 PH/E 18 PH/E 20 PH/E 20 PHL		
Lift	h3	4100	4625	5475	-	4625	5475
Overall height, retracted	h1	1946	2121	2471	-	2121	2471
Overall height, extended	h4	4702	5227	6077	-	5227	6077
Special free lift	h2	1344	1519	1781	-	1519	1781

Other lift heights on request
Minimum lift height does not apply to tall vehicle

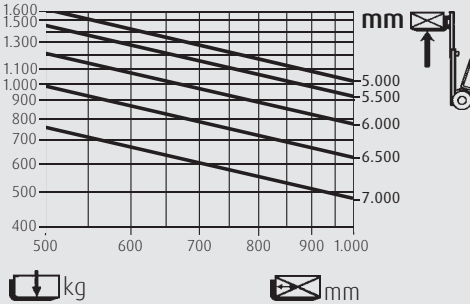


Lifting capacity diagrams

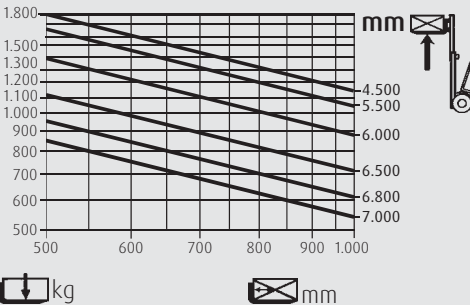
E 16 P



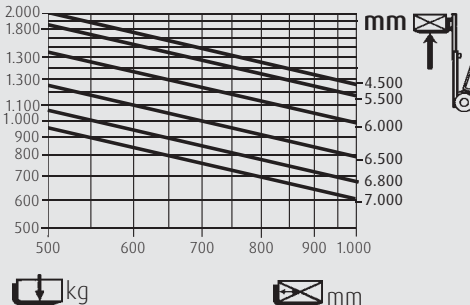
E 16 PH



E 18 PH



E 20 PL/E 20 PH/E 20 PHL



Standard and optional equipment

Standard equipment

Truck

Hydrostatic power steering
Linde twin accelerator pedals for all vehicle movements
Four wheeled configuration
Dual axis fingertip joystick controls (Linde Load Control) integrated into the adjustable arm rest
2 x 5.0 kW maintenance free AC drive motors
11 kW AC maintenance free lift motor
Proportional reduction of travel speed when cornering (Linde Driver Assistant)
Seamless electronic control of all traction and hydraulic movements
Standard chassis suitable for working in ISO containers with appropriate mast
Hydraulically adjustable full suspension PVC operator’s seat with armrest

Comprehensive digital instrument display
Superelastic tyres
Generous storage facilities for writing materials and miscellaneous items
Battery capacity for flat version (height h6=1,970 mm) E 16 P = 24 V/575 Ah, E 20 PL = 24 V/690 Ah
Raised version for greater battery capacity (height h6 = 2,130 mm) E 16 PH = 48 V/700 Ah, E 18 PH = 48 V/700 Ah, E 20 PH = 48 V/700 Ah, E 20 PHL = 48 V/840 Ah

Mast

Clearview standard mast 3,110 mm lift
Fork length 1,000 mm
Fork carriage width 1,040 mm

Options

Single pedal accelerator with forward/reverse selector in the armrest
Standard mast lifts up to 5,610 mm
Duplex mast lifts (full free lift) up to 3,825 mm
Triplex mast lifts (full free lift) up to 6,075 mm
Integrated sideshift
Integrated fork spreader
Tilt cylinder protection
Load guard
Single and double additional hydraulics for attachments
Alternative fork lengths
Alternative fork carriage widths
Polycarbonate top screen on overhead guard
Front and rear screens, wipers and top screen
Full cab with hinged doors
Overhead guard sun blind
Heating (with pollen protection filter)
Radio with cassette player
Fabric covered comfort seat

Super-comfort seat with air suspension, heater and backrest extension
Swivelling seat
Integrated charger unit, 2-phase and 3-phase versions, optionally with electrolytic recirculation
Individual hydraulic control joysticks
Scanner terminal docking port
Truck lighting/flashing amber beacon/working lamps
Driving mirror
Full road lighting
Audible reversing alarm
Clipboard
Cold store protection
Alternative colour schemes
Linde Fleet Management (LFM)
Alternative tyre types

Other options available on request

Features

Linde clearview mast design

- with top mounted tilt cylinders for seamless load control and stability
- Excellent view of load and surroundings through the robust yet slim mast profiles
- Nominal capacity retained to maximum lift heights
- High residual capacities in all applications
- Exceptionally stable



Linde combi axle

- Unique Linde combi axle offers total flexibility
- Combi axle gives this four wheeled truck the maneuverability of a three wheeler
- Excellent four wheeled stability and safety on hard uneven surfaces
- The perfect flexible combination for inside/outside working

Linde twin accelerator control

- Seamless, rapid reversing without repositioning the feet
- Short pedal travel
- Fatigue-free working
- Increased throughput and performance



Linde Load Control

- Safe and seamless load handling with millimetre accuracy
- Effortless fingertip control of all mast functions
- Joystick controls integrated into the armrest



Economical AC drive

- Two powerful AC drive motors integrated in the front axle
- Seamless acceleration and variable torque characteristics
- Excellent structural integrity and stability
- Extremely quiet in operation



Linde operator's compartment

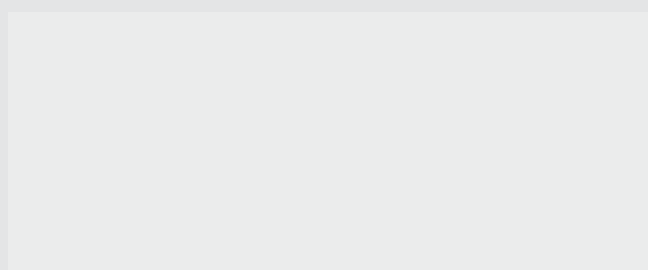
- Ergonomically designed for efficient, fatigue-free working
- Spacious operator's compartment with generous floor plate area
- Cushioned comfort – mast and drive axle are isolated from the chassis and cab by a unique resilient suspension system that absorbs shock loadings

Linde compact drive axle

- Twin drive design with high performance Linde AC technology
- Integrated AC lift motor
- Optimum energy efficiency
- Maintenance-free oil-bath vane brake
- Electronic components housed in sealed unit for complete protection

Linde energy management

- Optimised energy consumption
- Accurate battery condition indicator
- Simple horizontal or vertical battery changing options
- Optional built-in high frequency charger for convenience and flexibility
- Record of battery usage



Linde AG

Linde Material Handling Division, Postfach 10 01 36, 63701 Aschaffenburg, Germany
Phone +49.60 21.99-0, Fax +49.60 21.99-15 70, www.linde-forklifts.com, info@linde-forklifts.com



The manufacturer reserves the right to alter specifications without notice.
All dimensions are subject to manufacturing tolerances.