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 Lithium-ION 

# ELECTRIC COUNTERBALANCE TRUCK E16 – E20 EVO

## CAPACITY 1600 - 2000 KG | SERIES 386

### Safety

The protective overhead guard forms 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 and intelligent electronic control form an impressive power pack to deliver the highest levels of productivity.

### Comfort

Consistently high levels of performance and efficiency for extended periods are only possible if the operator feels comfortable. The ergonomic layout of all the controls, the adjustability of 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.

### 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.





# STANDARD EQUIPMENT / OPTIONAL EQUIPMENT

## STANDARD EQUIPMENT

Linde twin drive pedals to control forward/reverse travel and braking

Original Linde Load Control integrated in armrest

Hydraulic suspended seat with extensive range of adjustment

Hydrostatic power steering

Four wheel configuration with patented Linde combi steering axle

Linde compact drive axle with maintenance free oil-bath disc brake

Famous Linde dual motor drive with 2 x 5 kW maintenance free AC motors

11 kW maintenance free AC lift motor

Curve Assist for automatic, proportional speed adaption

Plenty of storage space for writing utensils, beverage cans ...

Anti-glare display with clock, hour meter, service information and accurate battery condition indicator

Standard truck fits into ISO containers

Superelastic tyres

Battery capacity for low version (h6 = 1970 mm):  
E16 P = 48 V/575 Ah, E20 PL = 48 V/690 Ah

Battery capacity for high version with increased battery capacity (h6 = 2130 mm):  
E16 PH = 48 V/700 Ah, E18 PH = 48 V/700 Ah  
E20 PH = 48 V/700 Ah, E20 PHL = 48 V/840 Ah

Self-activating parking brake

Individual drive dynamic mode providing perfect combination of performance and efficiency

Showing battery operating time by the minute

## OPTIONAL EQUIPMENT

Single drive pedal with direction selector on armrest

Overhead guard can be upgraded to full cabin with roof, front-, rear screens and doors (also available with tinted glass)

Wiper-washers for front, rear and roof screens

Further seats with additional comfort and adjustments

Cab heater with integrated pollen filter

Radio with speakers

Sun screen, clipboard and interior light

Standard mast lifts up to 5650 mm

Duplex mast (full free lift) lifts up to 4145 mm

Triplex mast (full free lift) lifts up to 6075 mm

Single or double additional hydraulics for all mast types

Tilt cylinder- and roof protection

Integrated sideshift

Integrated fork positioner

Mirrors

Linde original BlueSpot™

Linde TruckSpot™

Linde Speed Assist

Safety assistance system Linde Safety Pilot

Road traffic specification

Load backrest

Swivel seat

12 V socket

Truck lighting

Working lamps

LED stripes

VertiLights

Cold store protection

Custom paintwork

Linde Fleet Management (Linde connect)

Active ventilation while charging

Linde energy management

Customized horizontal and vertical battery change incl. NEW hydraulic battery shift

Built-in high frequency onboard charger for convenience and flexibility

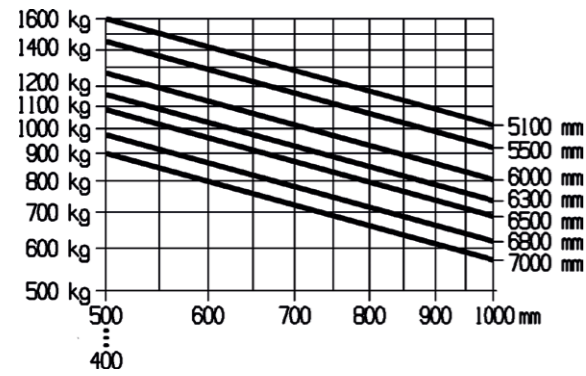
Recirculation of electrolyte

Other options available on request

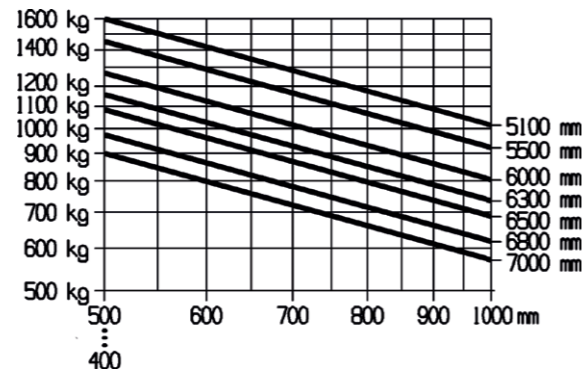


# LIFTING CAPACITY DIAGRAM

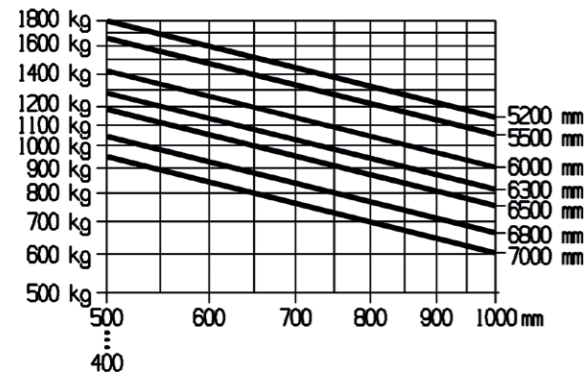
## E16 P



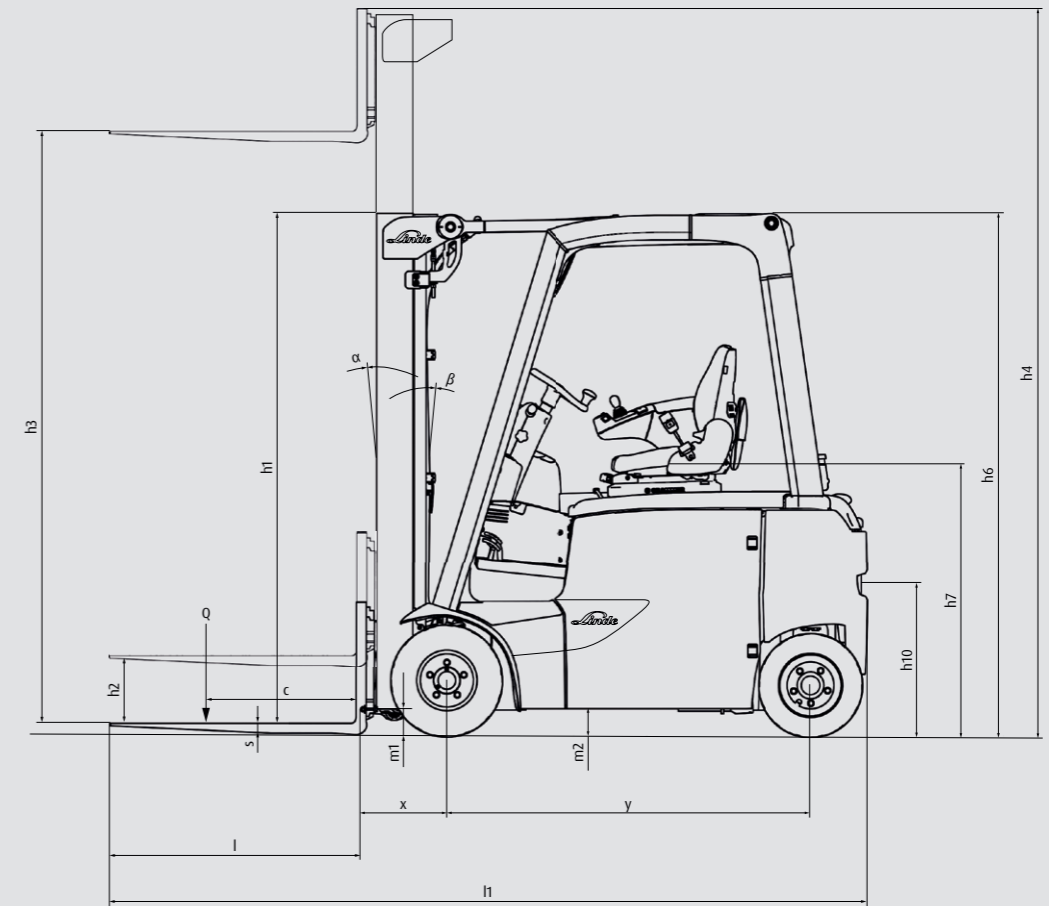
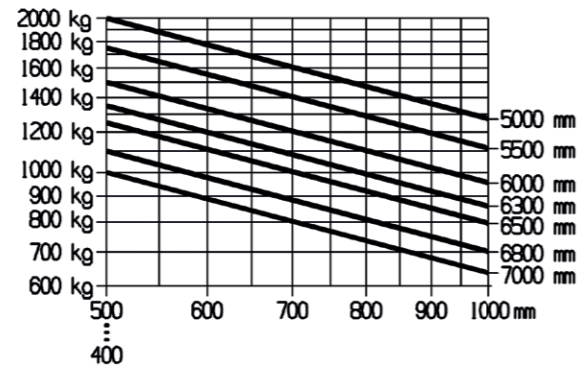
## E16 PH



## E18 PH



## E20 PL / E20 PH / E20 PHL



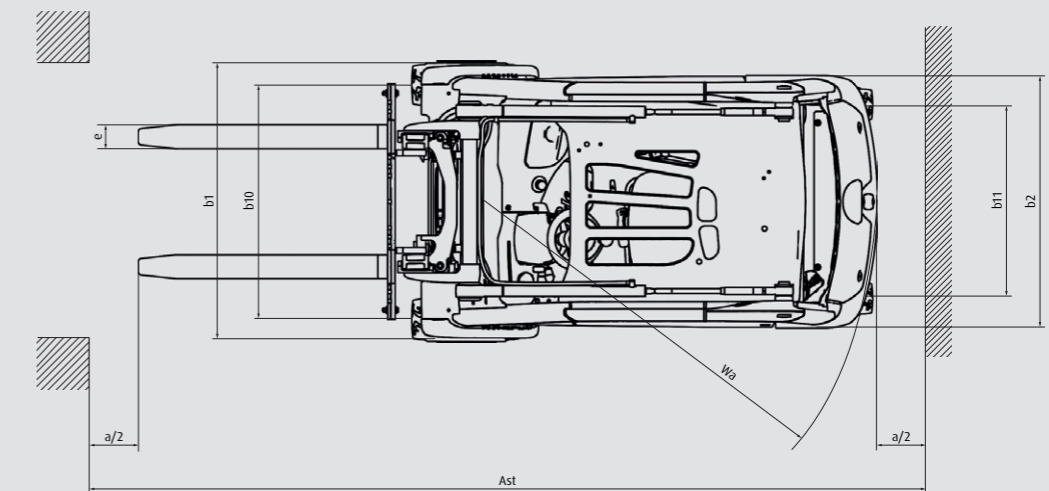
# MAST TABLES

Standard masts (mm)		E16 P / E20 PL			E16 PH / E18 PH / E20 PH / E20 PHL		
Lift	$h_3$	2800	3150	4250	3150	4250	565
Overall height, retracted (to 150 mm free lift)	$h_1$	2021	2196	2746	2196	2746	3446
Overall height extended	$h_4$	3363	3713	4813	3713	4813	6251

Duplex masts (mm)		E16 P / E20 PL			E16 PH / E18 PH / E20 PH / E20 PHL		
Lift	$h_3$	2795	3145	3845	3145	3845	4145
Overall height, retracted (to 150 mm free lift)	$h_1$	1946	2121	2471	2121	2471	2671
Overall height extended	$h_4$	3377	3727	4427	3727	4427	4745
Special free lift	$h_2$	1343	1518	1868	1518	1868	2069

Triplex masts (mm)		E16 P / E20 PL			E16 PH / E18 PH / E20 PH / E20 PHL		
Lift	$h_3$	4100	4625	5475	4625	5475	6075
Overall height, retracted (to 150 mm free lift)	$h_1$	1946	2121	2471	2121	2471	2671
Overall height extended	$h_4$	4708	5227	6077	5227	6077	7075
Special free lift	$h_2$	1344	1519	1781	1519	1781	2069

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



# TECHNICAL DATA

## ACCORDING TO VDI 2198

			E16 P		E16 PH		E18 PH		E20 PH		E20 PHL		E20 PL	
Characteristics	1.1	Manufacturer		Linde	Linde	Linde	Linde	Linde	Linde	Linde	Linde	Linde	Linde	Linde
	1.2	Model designation		E16 P	E16 PH	E18 PH	E20 PH	E20 PHL	E20 PL					
	1.3	Power unit		Battery	Battery	Battery	Battery	Battery	Battery	Battery	Battery	Battery	Battery	Battery
	1.4	Operation		Seat	Seat	Seat	Seat	Seat	Seat	Seat	Seat	Seat	Seat	Seat
	1.5	Load capacity / Load	Q (t)	1.6	1.6	1.8	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	1.6	Load centre distance	c (mm)	500	500	500	500	500	500	500	500	500	500	500
	1.8	Axle centre to fork face	x (mm)	365	365	370	374	374	374	374	374	374	374	374
	1.9	Wheelbase	y (mm)	1429 <sup>1)</sup>	1481 <sup>1)</sup>	1481 <sup>1)</sup>	1481 <sup>1)</sup>	1481 <sup>1)</sup>	1481 <sup>1)</sup>	1481 <sup>1)</sup>	1481 <sup>1)</sup>	1481 <sup>1)</sup>	1481 <sup>1)</sup>	1481 <sup>1)</sup>
	2.1	Service weight	kg	3003 <sup>2)</sup>	3334 <sup>2)</sup>	3362 <sup>2)</sup>	3507 <sup>2)</sup>	3578 <sup>2)</sup>	3578 <sup>2)</sup>	3578 <sup>2)</sup>	3578 <sup>2)</sup>	3578 <sup>2)</sup>	3578 <sup>2)</sup>	3578 <sup>2)</sup>
Weights	2.2	Axle load with load, front/rear	kg	4092/511	4201/733	4562/600	4888/619	4906/672	4906/672	4906/672	4906/672	4906/672	4906/672	4906/672
	2.3	Axle load without load, front/rear	kg	1523/1480 <sup>2)</sup>	1666/1668 <sup>2)</sup>	1705/1657 <sup>2)</sup>	1708/1799 <sup>2)</sup>	1806/1772 <sup>2)</sup>	1806/1772 <sup>2)</sup>	1806/1772 <sup>2)</sup>	1806/1772 <sup>2)</sup>	1806/1772 <sup>2)</sup>	1806/1772 <sup>2)</sup>	1806/1772 <sup>2)</sup>
	3.1	Tyres rubber, SE, pneumatic, polyurethane		SE	SE	SE	SE	SE	SE	SE	SE	SE	SE	SE
Wheels and tyres	3.2	Tyre size, front		180/70 - 8 (18 × 7 - 8)	180/70 - 8 (18 × 7 - 8)	200/50 - 10	200/50 - 10	200/50 - 10	200/50 - 10	200/50 - 10	200/50 - 10	200/50 - 10	200/50 - 10	200/50 - 10
	3.3	Tyre size, rear		16 × 6 - 8	16 × 6 - 8	16 × 6 - 8	16 × 6 - 8	16 × 6 - 8	16 × 6 - 8	16 × 6 - 8	16 × 6 - 8	16 × 6 - 8	16 × 6 - 8	16 × 6 - 8
	3.5	Wheels, number front/rear (x = driven)		2x/2	2x/2	2x/2	2x/2	2x/2	2x/2	2x/2	2x/2	2x/2	2x/2	2x/2
	3.6	Track width, front	b10 (mm)	930	930	965	965	965	965	965	965	965	965	965
	3.7	Track width, rear	b11 (mm)	807	807	807	807	807	807	807	807	807	807	807
	4.1	Mast / fork carriage tilt, forward/backward	α / β (°)	5,0/7,0	5,0/7,0	5,0/7,0	5,0/7,0	5,0/7,0	5,0/7,0	5,0/7,0	5,0/7,0	5,0/7,0	5,0/7,0	5,0/7,0
	4.2	Height of mast, lowered	h1 (mm)	2019	2194	2194	2194	2194	2194	2194	2194	2194	2194	2194
Dimensions	4.3	Free Lift	h2 (mm)	150	150	150	150	150	150	150	150	150	150	
	4.4	Lift	h3 (mm)	2800	3150	3150	3150	3150	3150	3150	3150	3150	3150	
	4.5	Height of mast, extended	h4 (mm)	3401	3751	3751	3751	3751	3751	3751	3751	3751	3751	
	4.7	Height of overhead guard (cabin)	h6 (mm)	1970	2130	2130	2130	2130	2130	2130	2130	2130	2130	
	4.8	Height of seat / stand on platform	h7 (mm)	908	1065	1065	1065	1065	1065	1065	1065	1065	1065	
	4.12	Towing coupling height	h10 (mm)	538	602	602	602	602	602	602	602	602	602	
	4.19	Overall length	l1 (mm)	2929	2978	2983	2987	3095	3095	3095	3095	3095	3095	
	4.20	Length to fork face	l2 (mm)	2029	2078	2083	2087	2195	2195	2195	2195	2195	2195	
	4.21	Overall width	b1 / b2 (mm)	1090 / 1050	1090 / 1050	1172 / 1050	1172 / 1050	1172 / 1050	1172 / 1050	1172 / 1050	1172 / 1050	1172 / 1050	1172 / 1050	
	4.22	Fork dimensions DIN ISO 2331	s / e / l (mm)	40 × 80 × 900	40 × 80 × 900	45 × 100 × 900	45 × 100 × 900	45 × 100 × 900	45 × 100 × 900	45 × 100 × 900	45 × 100 × 900	45 × 100 × 900	45 × 100 × 900	
	4.23	Fork carriage to ISO 2328, class / type A,B		2A	2A	2A	2A	2A	2A	2A	2A	2A	2A	
	4.24	Width of fork carriage	b3 (mm)	980	980	980	980	980	980	980	980	980	980	
	4.31	Ground clearance, below mast	m1 (mm)	97	97	97	97	97	97	97	97	97	97	
	4.32	Ground clearance, center of wheelbase	m2 (mm)	103	103	103	103	103	103	103	103	103	103	
	4.34.1	Aisle width for pallets 1000 × 1200 crossways	Ast (mm)	3355 <sup>3)</sup>	3404 <sup>3)</sup>	3409 <sup>3)</sup>	3412 <sup>3)</sup>	3520 <sup>3)</sup>	3520 <sup>3)</sup>	3520 <sup>3)</sup>	3520 <sup>3)</sup>	3520 <sup>3)</sup>	3520 <sup>3)</sup>	
	4.34.2	Aisle width with pallet 800 × 1200 along forks	Ast (mm)	3479 <sup>3)</sup>	3528 <sup>3)</sup>	3533 <sup>3)</sup>	3537 <sup>3)</sup>	3645 <sup>3)</sup>	3645 <sup>3)</sup>	3645 <sup>3)</sup>	3645 <sup>3)</sup>	3645 <sup>3)</sup>	3645 <sup>3)</sup>	
	4.35	Turning radius	Wa (mm)	1664	1713	1713	1713	1821	1821	1821	1821	1821	1821	
	4.36	Minimum pivoting point distance	b13 (mm)	0	0	0	0	0	0	0	0	0	0	
	Performances	5.1	Travel speed, with/without load	km/h	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20	20/20
5.2		Lifting speed, with/without load	m/s	0.5/0.6	0.5/0.6	0.5/0.6	0.5/0.6	0.5/0.6	0.5/0.6	0.5/0.6	0.5/0.6	0.5/0.6	0.5/0.6	
5.3		Lowering speed, with/without load	m/s	0.58/0.5	0.58/0.5	0.58/0.5	0.58/0.5	0.58/0.5	0.58/0.5	0.58/0.5	0.58/0.5	0.58/0.5	0.58/0.5	
5.5		Tractive force, with/without load	N	2300/2300	2300/2300	2300/2300	2300/2300	2300/2300	2300/2300	2300/2300	2300/2300	2300/2300	2300/2300	
5.6		Maximum tractive force, with/without load	N	11000 / 11000	11000 / 11000	11000 / 11000	11000 / 11000	11000 / 11000	11000 / 11000	11000 / 11000	11000 / 11000	11000 / 11000	11000 / 11000	
5.7		Climbing ability, with/without load	%	6.8 / 10.4	6.6 / 9.9	6.1 / 9.4	5.7 / 8.9	5.7 / 8.9	5.7 / 8.9	5.7 / 8.9	5.7 / 8.9	5.7 / 8.9	5.7 / 8.9	
5.8		Maximum climbing ability, with/without load	%	25.0 / 40.1	23.2 / 35.4	22.2 / 35.1	20.7 / 33.6	20.4 / 32.8	20.4 / 32.8	20.4 / 32.8	20.4 / 32.8	20.4 / 32.8	20.4 / 32.8	
5.9		Acceleration time, with/without load	s	4.5 / 3.8	4.5 / 3.8	4.5 / 3.8	4.5 / 3.8	4.5 / 3.8	4.5 / 3.8	4.5 / 3.8	4.5 / 3.8	4.5 / 3.8	4.5 / 3.8	
5.10		Service brake		hydr. / mech.	hydr. / mech.	hydr. / mech.	hydr. / mech.	hydr. / mech.	hydr. / mech.	hydr. / mech.	hydr. / mech.	hydr. / mech.	hydr. / mech.	
Drive		6.1	Drive motor rating S2 60 min	kW	2x 5	2x 5	2x 5	2x 5	2x 5	2x 5	2x 5	2x 5	2x 5	2x 5
	6.2	Lift motor rating at S3 15 %	kW	11	11	11	11	11	11	11	11	11	11	
	6.3	Battery according to DIN 43535/36 A/B/C/no		43531 A/[L-ION]	43531 A	43531 A	43531 A	43531 A	43531 A	43531 A	43531 A	43531 A	43531 A	
	6.4	Battery voltage / capacity (5 h)	V / Ah	48 / 575 / 625 [48 / 335] <sup>4)</sup>	48 / 700 / 775	48 / 700 / 775	48 / 700 / 775	48 / 840 / 930	48 / 840 / 930	48 / 840 / 930	48 / 840 / 930	48 / 840 / 930	48 / 840 / 930	
	6.4.a	Battery energy content	kWh	24 [16.33] <sup>4) 5)</sup>	29.76	29.76	29.76	35.71	35.71	35.71	35.71	35.71	35.71	
	6.5	Battery weight (± 5 %)	kg	856 [802]	1118	1118	1118	1309	1309	1309	1309	1309	1309	
6.6	Power consumption according to VDI cycle	kWh/h	4.9	5.1	5.3	5.6	5.6	5.6	5.6	5.6	5.6	5.6		
Others	8.1	Type of drive unit		Digital / stepless	Digital / stepless	Digital / stepless	Digital / stepless	Digital / stepless	Digital / stepless	Digital / stepless	Digital / stepless	Digital / stepless	Digital / stepless	
	10.1	Operating pressure for attachments	bar	170	170	170	170	170	170	170	170	170	170	
	10.2	Oil flow for attachments	l/min	32	32	32	32	32	32	32	32	32	32	
	10.7	Sound pressure level LpAZ (at the driver's seat)	db (A)	< 65	< 65	< 65	< 65	< 65	< 65	< 65	< 65	< 65	< 65	
	11.1	Rated capacity up to lift height	mm	4000	5000	4500	4500	4500	4500	4500	4500	4500	4500	
11.2	Static stability		1.53	1.78	1.57	1.52	1.78	1.78	1.78	1.78	1.78	1.78		

<sup>1)</sup> Mast in vertical position

<sup>2)</sup> Figures with battery, see line 6.4 / 6.5.

<sup>3)</sup> Including a 200 mm (min.) operating aisle clearance.

<sup>4)</sup> Figures in [ ] with Li-ION battery see line 6.4

<sup>5)</sup> Option 48 V 928 Ah / 45.7 kWh

# 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 manoeuvrability 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

- Small tactile joystick integrated in an adjustable armrest
- Precise and effortless fingertip joystick control of all mast functions
- Safe and highly efficient load handling



## Linde Dual Motor Drive

- Two powerful AC drive motors
- Seamless acceleration and variable torque characteristics
- Power moduls in DCB-technology for high performance and efficiency cooling



## 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 disc brake
- Efficient power moduls housed in sealed unit for complete protection
- Short, energy saving power connections

## 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

Subject to modification in the interest of progress. Illustrations and technical details could include options and not binding for actual constructions. All dimensions subject to usual tolerances.

Linde Material Handling

**Linde**

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