

# Electric Forklift Truck 1000 kg

Linde

E 10



334-02

## Introduction

The new concept counterbalance model E 10, has been designed with a unique stand-on operating position resulting in a compact, highly manoeuvrable truck suited for a main range of applications: such as storage/retrieval, block stacking and rapid load transfer. Available in two versions: standard version and lower container version.

## Features

- Stand-on operating position angled to the direction of travel providing excellent visibility, complete operator protection and comfort
- Energy saving Digital Control of traction, steering and hydraulics providing quiet, infinitely variable operation
- Two independent braking systems including automatic electric braking (LBC)
- Low overhead guard height enabling operation in ISO containers.

## Operator's compartment

The operator's compartment has been designed to ensure optimum operator comfort for high productivity and minimum fatigue. The low access step can be hydraulically raised to achieve the best operating position for individual operators. A padded backrest provides a safe and comfortable operating environment.

The operator is diagonally positioned to the direction of travel which minimises head and body movements when changing from forward to reverse.

A multi-grip control operated by the left hand incorporates a twist grip for travel speed, direction, automatic and reverse electric braking plus push buttons for lift/lower and also tilting forks, when fitted. Operation of the ergonomically designed steering wheel is by the right hand.

A combined hour meter and battery discharge indicator with lift interlock enables cost effective planning of maintenance intervals and battery charging schedules for optimum performance and safety.

## Chassis

The compact chassis with integrated mast and overhead guard has been designed to achieve maximum strength, rigidity and stability, and is profiled for optimum manoeuvrability and visibility. The motors, sub-components and electronics are all protected within the rugged structure and are accessed via an easily removable steel cover. Access to the battery is via steel top and side covers enabling battery changing from the side using independent lifting equipment.

## Drive and transmission

The drive unit consists of a centrally mounted split field, series wound, 2.2 kW motor driving the spur and bevel transmission unit.

## Electrical system

The truck is fitted with the advanced digital control system which governs traction and hydraulics and gives optimum utilisation of battery energy together with precise, responsive and infinitely variable speed control, smooth acceleration plus automatic and reverse electric braking.

The system is self diagnostic and very quiet due to the high frequency actuation of the power transistors.

The efficiency of the system allows a high number of work cycles from each battery charge.

## Steering

Hydrostatic power steering requiring only five and a quarter turns lock to lock and a very low steering effort for outstanding manoeuvrability giving maximum operator efficiency with minimum fatigue.

## Mast and hydraulics

The clearview mast, which is bolted to the overhead guard and chassis, has been developed with the aid of the finite element method for optimum strength, rigidity and visibility.

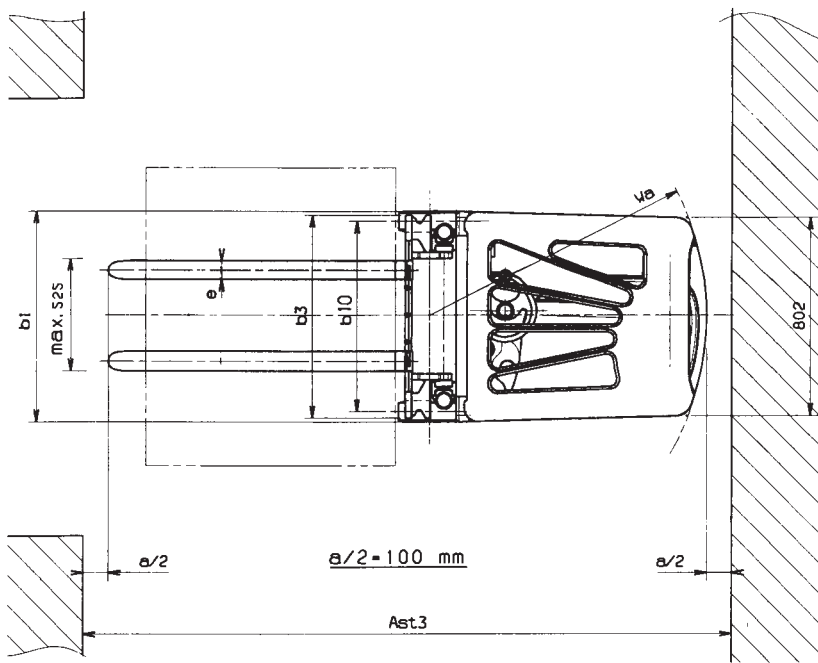
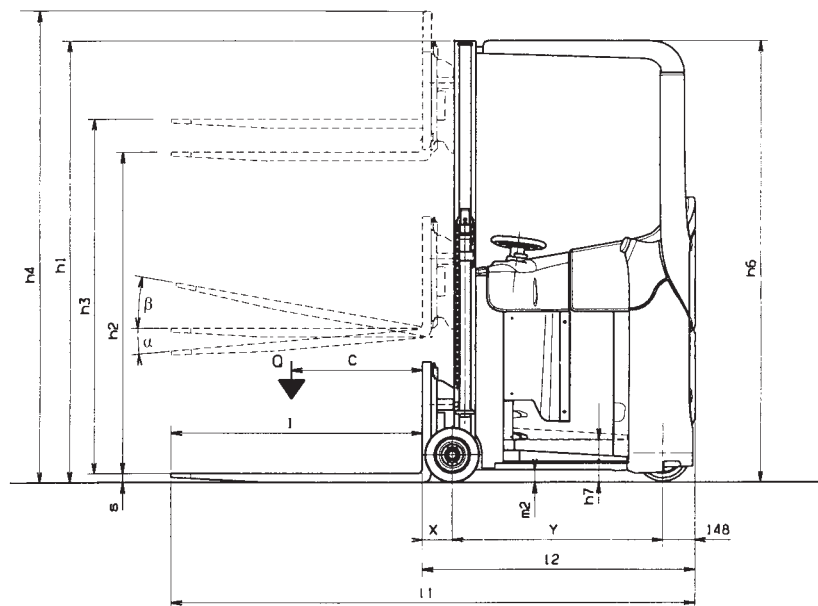
A choice of simplex, duplex and triplex, full free lift masts is available.

A powerful 3.0 kW motor gives fast lift speeds for high productivity.

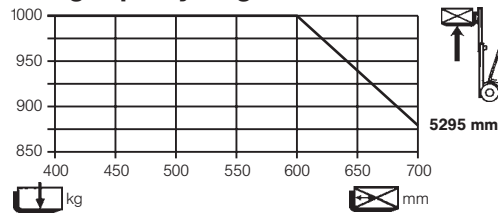
LINDE		Forklift Truck		Data sheet for materials handling equipment		ES
July 2001		Designation VDI 3586				acc. VD
Characteristics	1.1	Manufacturer		Linde	Linde	
	1.2	Model designation		<b>E 10 Simplex</b>	<b>E 10 Duplex</b>	
	1.3	Power unit: battery, diesel, petrol, LP gas, mains power		Battery	Battery	
	1.4	Operation: manual, pedestrian, stand-on, seated, order picker		Stand-on	Stand-on	
	1.5	Load capacity	Q (kg)	1000	1000	
	1.6	Load centre	c (mm)	600	600	
	1.8	Axle centre to fork face	x (mm)	138	138	
Weight	1.9	Wheelbase	y (mm)	966	966	
	2.1	Service weight	kg	1973	2070	
	2.2	Axle load with load, front/rear	kg	2487/493	2583/500	
Wheels and tyres	2.3	Axle load without load, front/rear	kg	723/1257	819/1264	
	3.1	Tyres: solid rubber, contoured solid (superelastic), pneumatic, polyurethane		Polyurethane	Polyurethane	
	3.2	Tyre size, front		250/80-170	250/80-170	
	3.3	Tyre size, rear		254/100-210	254/100-210	
	3.5	Wheels, number front/rear (x = driven)		2/1x	2/1x	
	3.6	Track width, front	b <sub>10</sub> (mm)	770	770	
	3.7	Track width, rear	b <sub>11</sub> (mm)	0	0	
Dimensions	4.1	Mast/fork carriage tilt, forward/backward	$\alpha/\beta$ (deg.)	1.4/4 1)	1.4/4 1)	
	4.2	Height of mast, lowered	h <sub>1</sub> (mm)	2120 (2000)	2180 (2060)	
	4.3	Free lift	h <sub>2</sub> (mm)	1578 (1460)	1633 (1515)	
	4.4	Lift	h <sub>3</sub> (mm)	1600 (1480)	3520 (3280)	
	4.5	Height of mast, extended	h <sub>4</sub> (mm)	2145 (2025)	4065 (3825)	
	4.7	Height of overhead guard (cabin)	h <sub>6</sub> (mm)	2130 (2010)	2130 (2010)	
	4.8	Height of seat/stand-on platform	h <sub>7</sub> (mm)	95-195	95-195	
	4.19	Overall length	l <sub>1</sub> (mm)	2402	2402	
	4.20	Length to fork face	l <sub>2</sub> (mm)	1252	1252	
	4.21	Overall width	b <sub>1</sub> /b <sub>2</sub> (mm)	850	850	
	4.22	Fork dimensions	s/e/l (mm)	40/80/1150	40/80/1150	
	4.23	Fork carriage to DIN 15173, class/form A, B		II/A	II/A	
	4.24	Width of fork carriage	b <sub>3</sub> (mm)	820	612	
	4.31	Ground clearance, mast	m <sub>1</sub> (mm)	63	48	
	4.32	Ground clearance, centre of wheelbase	m <sub>2</sub> (mm)	56	56	
4.33	Aisle width with pallet 1000 x 1200 crosswise	A <sub>st</sub> (mm)	2600	2600		
4.34	Aisle width with pallet 800 x 1200 lengthwise	A <sub>st</sub> (mm)	2710	2710		
4.35	Turning radius	W <sub>a</sub> (mm)	1114	1114		
Performances	5.1	Travel speed, with/without load	km/h	8.0/9.0	8.0/9.0	
	5.2	Lifting speed, with/without load	m/s	0.17/0.27	0.16/0.26	
	5.3	Lowering speed, with/without load	m/s	0.30/0.30	0.30/0.30	
	5.8	Maximum climbing ability, with/without load	%	8/15	8/15	
	5.9	Acceleration time, with/without load	s	7.5/6.7	7.5/6.7	
	5.10	Service brake		Hydr./mech.	Hydr./mech.	
Drive	6.1	Drive motor (S <sub>2</sub> 60 min.)	kW	2.2	2.2	
	6.2	Lift motor (S <sub>3</sub> 15%)	kW	3.0	3.0	
	6.3	Battery according to IEC		254-2	254-2	
	6.4	Battery voltage/rated capacity (5 h)	V/Ah	24/420	24/420	
	6.5	Battery weight ( $\pm$ 5%)	kg	385	385	
Other	8.1	Type of drive control		Digital with mikroprozessor	Digital with mikroprozessor	
	8.2	Working pressure for attachments	bar	200	200	
	8.3	Oil flow for attachment	l/min	8	8	
	8.4	Noise level at operator's ear	dB (A)	68	68	
1) With optional tilting fork carriage unit.						
() Value in brackets for container version.						

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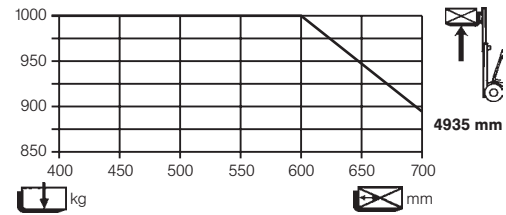
Linde
<b>E 10 Triplex</b>
Battery
Stand-on
1000
600
138
966
2189
2706/501
942/1265
Polyurethane
250/80-170
254/100-210
2/1x
770
0
1.4/4 (1)
2230 (2110)
1685 (1565)
5255 (4895)
5795 (5435)
2130 (2010)
95-195
2402
1252
850
40/80/1150
II/A
612
48
56
2600
2710
1114
8.0/9.0
0.16/0.25
0.30/0.30
8/15
7.5/6.7
Hydr./mech.
2.2
3.0
254-2
24/420
385
Digital with microprozessor
200
8
68



**Lifting capacity diagrams: E 10 Standard**



**E 10 Container**



**Standard**

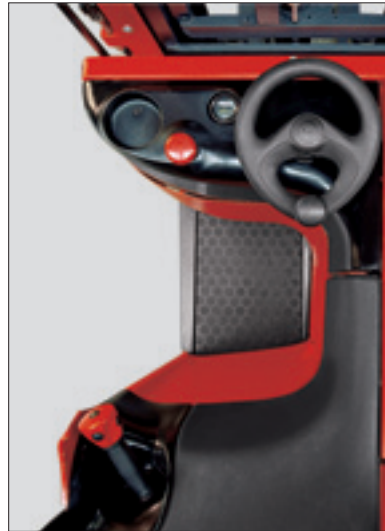
Mast unit Variations (in mm)	Lift	Lift height	Height, mast lowered	Free lift	Height, mast raised	Tilt (1)
	h3	h3+s	h1	h2	h4	V/R
Simplex lift mast	1600	1640	2120	1578	2145	1.4/4
Duplex lift mast	3520	3560	2180	1633	4065	1.4/4
Triplex lift mast	5255	5295	2230	1685	5795	1.4/4

**Container**

Mast unit Variations (in mm)	Lift	Lift height	Height, mast lowered	Free lift	Height, mast raised	Tilt (1)
	h3	h3+s	h1	h2	h4	V/R
Simplex lift mast	1480	1520	2000	1460	2025	1.4/4
Duplex lift mast	3280	3320	2060	1515	3825	1.4/4
Triplex lift mast	4895	4935	2110	1565	5435	1.4/4

(1) With optional tilting fork carriage unit.

# Features



## Braking

The truck has two independent braking systems:

- 1) Hydraulic drum brakes via a mechanical linkage acting on the load wheels operated by the deadman platform switch in conjunction with traction interlock or by separate brake pedal.
- 2) Automatic electric braking (LBC) actuated when twist grip speed control is returned to neutral or by selecting opposite direction of travel.

## Safety

- Two independent braking systems
- Emergency circuit isolator
- Keyswitch
- Fail-to-safe circuitry
- Electric horn
- Electrical and hydraulic overload protection
- Overhead guard.

## Standard equipment

- All items as shown under safety
- Multi-grip control of traction and hydraulic functions
- Combined hour meter and battery discharge indicator with lift cut-out
- 2.2 kW drive motor
- Polyurethane tyres
- Linde Digital Control of traction and hydraulics
- Hydrostatic power steering
- 3.0 kW lift motor
- Clearview masts – lift height 1640 mm (simplex), 3560 mm (duplex) or 5295 mm (triplex)
- Fork length – 1000 mm.

## Batteries and chargers

24 V, 420 Ah. A range of chargers is available to suit application and mains supply requirements.

## Optional equipment

- Tilting carriage
- Alternative fork lengths
- Steering indicator
- One additional hydraulic
- Built-in-charger.

Other options available on request.