



reddot design award
winner 2007



Modular very narrow aisle (VNA) dual purpose combi truck capacity up to 1500 kg K

SERIES 011

Safety

The new K range is a versatile, dual-purpose rising cab VNA system truck designed for high density storage and retrieval of unit loads, as well as order picking in very narrow aisles. In addition to modern, functional styling, the K range provides an environment in which the operator can work in complete comfort and safety.

Performance

Intuitive use of the control panels enables throughput of goods to be increased without removing the hands. The operator can check the truck's status via the multi-functional display in the control panel. Designed for low energy consumption, the K truck also returns energy to the battery during braking and main mast/cab lowering.

Comfort

The K truck enables the operator to immediately feel at ease and acclimatised. With protection against draughts and noise, the cab offers a comfortable operational environment and allows the operator to work effectively and with minimum fatigue.

Reliability

Modern technology, combined with Linde's vast experience in very narrow aisle applications, guarantees high quality and extended product life. CAN bus diagnostics enable rapid fault finding and repair.

Productivity

The unique modular design ensures that an individual K truck's specification can be tailored to match the application precisely in order to maximise productivity at all times. The smart electronics of Linde System Control (LSC) continuously monitors the truck's technical potential in order to deliver optimum simultaneous lift and travel speeds relative to lift height and load weight.

Linde Material Handling

Linde

Equipment

Standard equipment

Modular designed truck for perfect customization

Operators compartment

Operators cabin "Combi" for easy stacking or order picking

Height adjustable and stowable fabric seat

Suspension-mounted cab to absorb shock and vibration

Very soft and comfortable platform surface

Steering knob

Truck access via key

Low step on height for easy on and off

Optic and acoustic user guidance with signalling

Basic functions without changing position of grip

Multipurpose display with keypad

Sensor area for 2nd hand for 2 handed driving

Throughput

LSC standard

Synchronized lowering

Energy recovery when braking or lowering the cabin

Mast Forks

L Head or telescopic forks

Motors

7 KW drive motor

20 KW lift motor

Optional equipment

Operators compartment

Different types of cabins (combi, truck, comfort, closed, coldstore)

Comfortable seats (air suspended, heated, adjustable backrests, armrests, etc.)

Polycarbonate cover for overhead guard

Radio preparation integrated in the overhead guard

Rearview (left/right) and panorama mirror

Clipboard DIN A4

Wind protection for lateral doors and loadside (glazed doors and cabin)

Cushion for cabin barrier

Operator fan in the overhead guard

Lighting for operators compartment

Working lights into racking

Steering wheel

PIN code access

LFM

Extendable fixing point on overhead guard for emergency escape harness

Different speed reductions and end aisle stop options

Personal safety equipment (PSE)

Lifting and driving cut off

Non contact collision avoiding sensor

Audible warnings

Masts / Forks

Standard masts: 11800 mm

Triplex masts available up to 12850 mm lift height

Different masts for supplementary lift

Mast bracing

Telescopic forks

Forks for different pallet sizes

Manual or hydraulical adaptable forks

Gear rack cover of L-Head

Throughput

LSC with load recognition, load sensor or weight and load recognition

Automatic fork cyclus

Overreach of forks

Lift height preselection

Battery

Different battery (compartment) sizes

Battery roller for lateral change

Battery carrier

Cable for additional battery

Electrical verification for battery lock

Side covering for battery

Drive

Different drive and lift motors available

Rail or wire guidance options

Environment

Cold store protection (optional with 2nd sliding door, Intercom)

Antistatic guide rollers

Safety

Load wheel brake for increased safety at emergency stop

Improved residual capacity

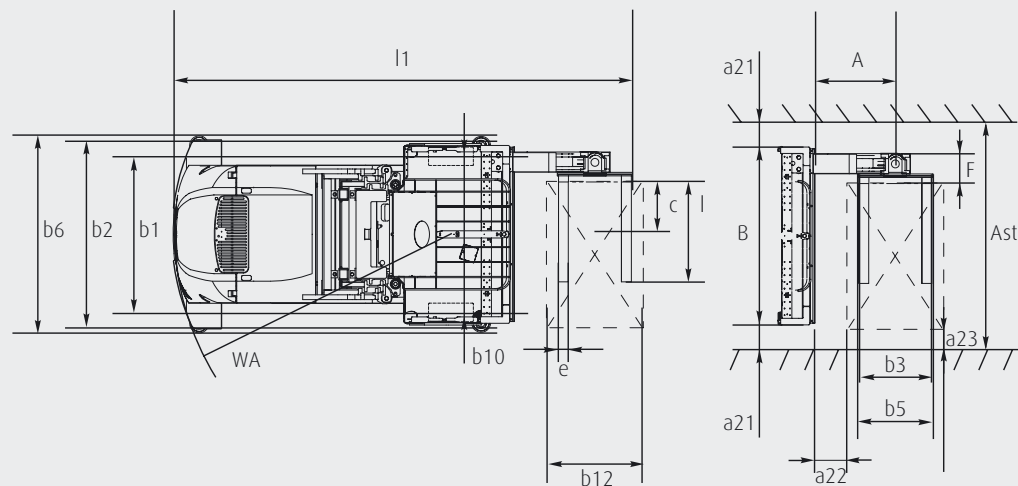
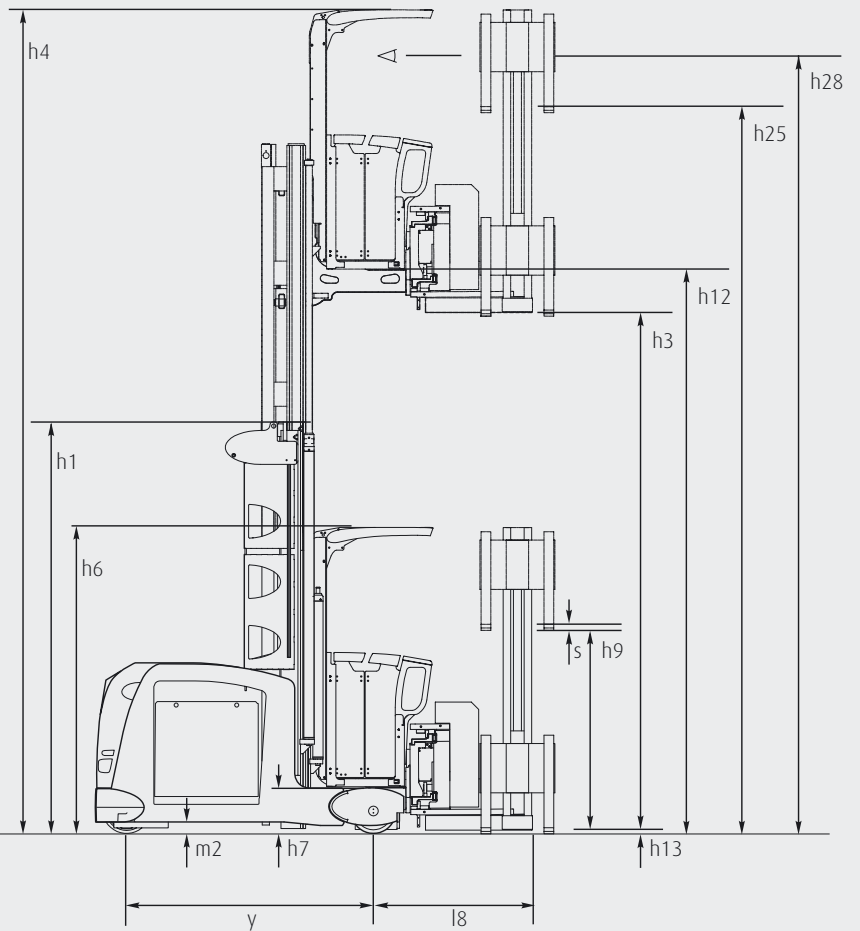
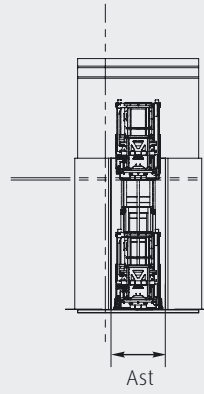
Service

Hydraulic oil filling assistance

Technical data

Characteristics	1.1	Manufacturer		LINDE	LINDE	LINDE
	1.2	Model designation		K	K	K
	1.3	Power type: battery, diesel, petrol, LPGas, mains power		Battery	Battery	Battery
	1.4	Control type: manual, pedestrian, stand-on, seated, order picker		Stand-on/seated	Stand-on/seated	Stand-on/seated
	1.5	Load capacity	Q (kg)	1000	1000	1250
	1.6	Load centre distance	c (mm)	600	600	600
1.9	Wheelbase	y (mm)	1586	1586	1676	
Weights	2.1	Service weight (with battery)	kg	6122	6791	6944
	2.2	Axle load with load, drive side / load side	kg	1421/5701	1710/6081	1852/6343
	2.3	Axle load without load, drive side / load side	kg	2189/3933	2478/4312	2630/4315
Chassis	3.1	Tyres (Solid rubber, vulkollan, pneumatic, polyurethane)		Polyurethane	Polyurethane	Polyurethane
	3.2	Tyre size, drive side	mm	360/140	400/170	406/170
	3.3	Tyre size, load side	mm	370/160	370/160	370/160
	3.5	Wheels, number drive side / load side (x=driven)		1x/2	1x/2	1x/2
	3.6	Track width, front	b10 mm	1240	1240	1190
	3.7	Track width, rear	b11 mm	-	-	-
	Dimensions	4.2	Height of mast, lowered	h1 (mm)	2900	2900
4.4		Lift	h3 (mm)	3600	3600	3200
4.5		Height of mast, extended	h4 (mm)	6155	6155	5755
4.7		Height of overhead guard (cab)	h6 (mm)	2555	2555	2555
4.8		Height of platform	h7 (mm)	445	445	445
4.11		Auxiliary lift	h9 (mm)	1675	1675	1675
4.14		Platform height, raised	h12 (mm)	4045	4045	3645
4.14.1		Picking height (h12 + 1600)	h28 (mm)	5645	5645	5245
4.15		Lowered fork height	h13 (mm)	60	60	60
4.19		Overall length (over forks)	l1 (mm)	3391	3401	3296
4.21		Overall width of chassis / axle bracket	b1/b2 (mm)	1160/1450	1160/1450	1160/1400
4.22		Fork dimensions	s/e/l (mm)	50/120/1200	50/120/1200	50/120/1200
4.24		Fork carriage width	b3 (mm)	710	710	710
4.25		Fork spread min.	b5 min (mm)	470	470	470
4.25		Fork spread max.	b5 max (mm)	640	640	640
4.27		Width over guide rollers	b6 (mm)	1615	1615	1495
4.29		Traverse stroke	b7 (mm)	1300	1300	1300
4.31		Ground clearance under mast, with load	m1 (mm)	40	40	40
4.32		Ground clearance, centre of wheelbase	m2 (mm)	87	87	87
4.34		Aisle width	Ast (mm)	1640	1640	1640
4.35		Turning radius	Wa (mm)	1842	1852	1942
4.38		Fork pivot point	l8 (mm)	1194	1194	999
4.39		Rotator length	A (mm)	675	675	480
4.40		Traverse frame width	B (mm)	1415	1415	1415
4.41		Rotator width	F (mm)	240	240	240
4.42		Transfer aisle width, min.	Au (mm)	3975	3985	3715
4.44		Cab entrance clear width.	(mm)	495	495	495
4.45	Cab clear height	(mm)	2000	2000	2000	
Performance	5.1	Travel speed, with/without load	km/h	9.0/9.0	10.5/10.5	10.5/10.5
	5.2	Lift speed, with/without load	m/s	0.38/0.40	0.38/0.47	0.36/0.47
	5.3	Lower speed, with/without load	m/s	0.45/0.45	0.45/0.45	0.45/0.45
	5.4	Traverse speed, with/without load	m/s	0.30/0.30	0.30/0.30	0.30/0.30
	5.9	Acceleration time, with/without load (first 10 m)	s	6/6	6/6	6/6
	5.10	Service brake		Regenerative	Regenerative	Regenerative
Drive	6.1	Drive motor	kW	6.5kW/S2=60min	7.0kW/S2=60min	7.0kW/S2=60min
	6.2	Lift motor	kW	13.0kW/S3=20%	20.0kW/S3=40%	20.0kW/S3=40%
	6.3	Battery to IEC 254-2; A, B, C, No		IEC 254-2; B	IEC 254-2; A	IEC 254-2; A
	6.4	Battery type, voltage, rated capacity (Ks)	V/Ah	PzS, 48 V, 775 Ah	PzS, 80 V, 420 Ah	PzS, 80 V, 465 Ah
	6.5	Battery weight (± 5 %) (varying with make)	kg	1119	1238	1238
Other	8.1	Drive controller		Microprocessor	Microprocessor	Microprocessor
	8.4	Noise level at operator's ear	dB (A)	68	68	68

LINDE	LINDE
K	K
Battery	Battery
Stand-on/seated	Stand-on/seated
1500	1500
600	600
1820	2108
7501	8201
2057/6944	2660/7041
2926/4575	3409/4792
Polyurethane	Polyurethane
406/170	406/170
370/160	370/160
1x/2	1x/2
1290	1290
-	-
2900	2900
3200	3200
5755	5755
2555	2555
445	445
1675	1675
3645	3645
5245	5245
60	60
3440	3728
1160/1500	1160/1500
50/120/1200	50/120/1200
710	710
470	470
640	640
1595	1595
1300	1300
40	40
87	87
1640	1640
2086	2374
999	999
480	480
1415	1415
240	240
3859	4147
495	495
2000	2000
10.5/10.5	12.0/12.0
0.38/0.47	0.48/0.60
0.45/0.45	0.45/0.45
0.30/0.30	0.30/0.45
6/6	6/6
Regenerative	Regenerative
7.0kW/S2=60min	7.0kW/S2=60min
20.0kW/S3=40%	24.0kW/S3=15%
IEC 254-2; A	IEC 254-2; A
PzS, 80 V, 620 Ah	PzS, 80 V, 930 Ah
1558	2178
Microprocessor	Microprocessor
68	68





Features

Cabin

- 5 different cabins available (combi (Standard) / truck / comfort / closed / cold store)
- Reduced shock and vibration due to the isolation of the cab from the chassis
- Easy and low heights access
- Different comfortable and adjustable seat options



Linde System Control (LSC)

- The Linde system control (LSC) represents a significant advance in the smart control of VNA trucks
- LSC Standard dynamical diagram of residual capacity depending on the actual speed and lifting heights.
- LSC with load recognition 3.1. Detection of load. additional lifting functions are adjusted
- With load sensor 3.2. Detection of load. Additional lifting functions are adjusted as well the driving parameters.
- LSC with weight and load recognition 3.3. Driving profile depending on the actual transported weight. Plus the 3.1 optimization

Modular concept

- Unique modular designed truck enables the perfect specification for each application
- Combination of different lift and drive motors (heavy duty/normal), chassis, masts, batteries, cabins, etc.

Control panels

- Easy and comfortable use, without the need to encompass
- Combined driving and lifting/lowering
- Always in perfect reach, for the heights of the panels can be adapted

Braking

- 2 independent wearless working braking systems:
 - electric regenerated braking actuated as the accelerator is released or opposite direction of travel is selected
 - electromagnetic, spring loaded parking and emergency brake



Mast

- New modular design for exceptionally stable low deflection characteristics
- Different standard and triplex masts for all headroom requirements
- Automatic soft stop of lift, rotate and traverse movements

Drive

- Encapsulated, maintenance free AC drive motors
- 3 different motors for different applications

Batteries

- Battery changing from both sides possible through forklift or roller bed
- 4 different battery sizes available (420Ah – 930Ah)

