Engine-powered Laden Container Handler 36 000 kg and 40 000 kg

C 360
C 400

Introduction
The development of the Container Handling Forklift Trucks, models C 360 and C 400, is based on a thorough analysis of the handling requirements typical for container terminals, followed by extensive trials on Linde's own testing ground as well as in severe, practical applications. The result is a new range of high-performance container handling forklift trucks suitable for a great variety of application characteristics, guaranteeing reliable operation and long service life.

The major characteristics at a glance
- Ultra-wide lift mast combining excellent rigidity with optimum visibility
- Capability of transporting and stacking all containers compatible with ISO standards (with optional lock stops)
- Ergonomically optimised driver's compartment
- Powerful, modern diesel engine combining low fuel consumption with excellent exhaust emission characteristics fully satisfying the latest standards TIER 2
- High engine torque at low rpm, facilitating fast as well as accurate manoeuvring
- On-demand working hydraulics: Hydraulic power output always corresponds to actual demand
- Automatic four-speed transmission incorporating a reverse interlock, enabling safe, efficient working and providing high rates of acceleration and slowdown

Driver's compartment with optimised ergonomics
Steps on either side of the vehicle provide access to the centralised driver's compartment. A comfortable suspension-type driver's seat is standard with full adjustment for weight and size of the operator. Operator controls satisfy the ergonomic standards defined by ISO 6682, and have all been further optimised for easy, effortless operation. A multifunction single hydraulic control lever provides all load control movements, facilitating smooth easy load handling. Control and supervision instruments installed below the lower front cross member of the overhead guard. Major components constantly monitored, malfunctions are signalled through a central warning light – the driver is able to concentrate fully on the job in hand, in the safe knowledge that all important truck functions are subject to permanent, automatic supervision.

Stable, robust chassis
The chassis frame incorporates two large 'I' section side members. Front and rear cross chassis load plates; ensures excellent rigidity and stress handling. All mechanical and hydraulic components are located well inside the chassis structure where they are perfectly protected from outside damage.

High-tech diesel engine
Cummins 6-cylinder diesel engine of 11 litres cubic capacity, equipped with turbocharger and intercooler. Rated output 246 kW. Maximum engine torque of 1674 Nm is attained at 1100 rpm. This modern propulsion unit is notable particularly smooth running with low noise emissions and outstandingly clean exhaust.

The automatic transmission and drive axle
Torque converter-coupled automatic fourspeed powershift transmission. Reversing interlock. Speed-controlled downshift protection. For accurate lower-speed handling and positioning, a brake plate pressure switch is coupled to the accelerator pedal to enable transmission disconnect whilst maintaining high engine speed for hydraulic operations. Wide-track front drive axle incorporates two-stage reduction gearboxes. High-quality steel plate construction optimised for heavy-load handling.

Powerful brakes
Oil-actuated, hub-mounted wet disc brake units. Fail-safe oil-actuated brake system. Input shaft, disc mounted hand brake unit. Foot brake application by applied pressure to the centralised brake plate. Parking brake application electrical switch situated on the operator's console.

Smooth power steering
Hydrostatic power steering allows full steering lock to be attained even at standstill. Accurate manoeuvrability with minimum effort. Line-mounted anti-shock valve. Cab-mounted anti-kick valve. Heavy-duty steer axle is mounted to the chassis via spherelastic bushes allowing axle articulation over uneven ground. Steering lock stops preventing cylinder overstroke.

Working hydraulics with on-demand characteristics
On-demand working hydraulic system. Multi-pump installation always supplying hydraulic power in proportion to actual demand. This innovative arrangement leads to reduced fuel consumption, minimises wear of all hydraulic components and also reduces the frequency of the oil change.

LINDE

December 2003

Container Trucks

Designation to VDI 3586

Data sheet for material handling equipment

Characteristics	1.1	Manufacturer		Linde	Linde	Linde	
	1.2	Model designation		**C 360 / 3**	**C 360 / 4**	**C 360 / 5**	
	1.3	Power unit: battery, diesel, LP gas, mains power		Diesel	Diesel	Diesel	
	1.4	Operation: manual, pedestrian, stand-on, seated, order picker		Rider seated	Rider seated	Rider seated	
	1.5	Load capacity	Q (kg)	36000	36000	36000	
	1.6	Load centre	C (mm)	1220/1460	1220/1460	1220/1460	
	1.8	Axle centre to fork face	x (mm)	1030	1030	1030	
	1.9	Wheelbase	y (mm)	5500	5500	5500	
Weight	2.1	Service weight	kg	65660	67970	70280	
	2.2	Axle load with load, front/rear	kg	90240/11420	92750/11220	95350/11030	
	2.3	Axle load without load, front/rear	kg	39420/26240	41920/26050	44420/25860	
Wheels and tyres	3.1	Tyres, front/rear (SE = superelastic, P = pneumatic)		P/P	P/P	P/P	
	3.2	Tyre size, front		18.00 x 25/40 pr	18.00 x 25/40 pr	18.00 x 25/40 pr	
	3.3	Tyre size, rear		18.00 x 25/40 pr	18.00 x 25/40 pr	18.00 x 25/40 pr	
	3.5	Wheels, number, front/rear (x=driven)		4x/2	4x/2	4x/2	
	3.6	Track width, front	b_{10} (mm)	3030	3030	3030	
	3.7	Track width, rear	b_{11} (mm)	2786	2786	2786	
Dimensions	4.1	Mast/fork carriage/truck tilt, forward/backward	a/b (°)	2/5	2/5	2/5	
	4.2	Heigth of mast, lowered	h_1 (mm)	7665	9165	10665	
	4.4	Lift	h_3 (mm)	7000	10000	13000	
	4.5	Height of mast, extended	h_4 (mm)	11000	14000	17000	
	4.7	Height of overhead guard (cabin)	h_6 (mm)	4690	4690	4690	
	4.8	Height, operator's seat/stand-on platform	h_7 (mm)	3500	3500	3500	
	4.12	Towing coupling height	h_{10} (mm)	600	600	600	
	4.15	Twistlock height lowered	h_{13} (mm)	2300	2300	2300	
	4.19	Overall length	l_1 (mm)	10168	10168	10168	
	4.20	Length to fork face	l_2 (mm)	7730	7730	7730	
	4.21	Overall width	b_1/b_2 (mm)	4180/3400	4180/3400	4180/3400	
	4.24	Width of attachment 20'/40'	b_3 (mm)	6050/12150	6050/12150	6050/12150	
	4.28	Reach travel	l_4 (mm)	240	240	240	
	4.31	Ground clearance, mast	m_1 (mm)	445	445	445	
	4.32	Ground clearance, centre of wheelbase	m_2 (mm)	500	500	500	
	4.33	Aisle width with 20' container	Ast (mm)	11500	11500	11500	
	4.34	Aisle width with 40' container	Ast (mm)	14500	14500	14500	
	4.35	Turning radius	Wa (mm)	7600	7600	7600	
	4.36	Minimum pivoting point distance	b_{13} (mm)	2925	2925	2925	
Performance	5.1	Travel speed, with/without load	km/h	23.3 / 24.9	23.3 / 24.9	23.3 / 24.9	
	5.2	Lift speed, with/without load	m/s	0.30 / 0.40	0.30 / 0.40	0.30 / 0.40	
	5.3	Lowering speed, with/without load	m/s	0.50/0.50	0.50/0.50	0.50/0.50	
	5.5	Tractive force, with/without load	N	234/–	234/–	234/–	
	5.6	Maximum tractive force, with/without load	N	290/–	290/–	290/–	
	5.7	Climbing ability, with/without load 1 kph	%	30.9	30.9	30.9	
	5.9	Acceleration time, with/without load	s	–	–	–	
	5.10	Service brake		Wet disc	Wet disc	Wet disc	
	6.4	Battery voltage, rated capacity	V/Ah	2x 12/128	2x 12/128	2x 12/128	
Engine	7.1	Engine manufacturer/type		Cummins QSM 11	Cummins QSM 11	Cummins QSM 11	
	7.2	Engine performance according to ISO 1585	kW	246	246	246	
	7.3	Rated speed	1/min	2100	2100	2100	
		Maximum engine torque/speed	Nm/rpm	1674/1100	1674/1100	1674/1100	
	7.4	Number of cylinders/displacement	/cm³	6/10820	6/10820	6/10820	
	7.5	Fuel consumption according to VDI cycle	l/h	–	–	–	
Other	8.1	Type of drive control		Torque converter 4/4	Torque converter 4/4	Torque converter 4/4	
	8.2	Working pressure for attachments	bar	240	240	240	
	8.3	Oil flow for attachments	l/min	–	–	–	
	8.4	Noise level, at operator's ear, overhead guard/cab	dB (A)	74	74	74	
	8.5	Trailer coupling, design/type DIN	l (mm)	50	50	50	

Container load weight

C 360 / 3

8' Container		8'6" Container		9'6" Container	
Q	Height (mm)	**Q**	Height (mm)	**Q**	Height (mm)
36 t	7314	**36 t**	7773	**36 t**	8688
36 t	4876	**36 t**	5182	**36 t**	5792
36 t	2438	**36 t**	2591	**36 t**	2896

to c = 1220/1460 mm

C 360 / 4

8' Container		8'6" Container		9'6" Container	
Q	Height (mm)	**Q**	Height (mm)	**Q**	Height (mm)
36 t	9752	**36 t**	10364	**36 t**	11584
36 t	7314	**36 t**	7773	**36 t**	8688
36 t	4876	**36 t**	5182	**36 t**	5792
36 t	2438	**36 t**	2591	**36 t**	2896

to c = 1220/1460 mm

C 36

8' Container		8'6" Co	
Q	Height (mm)	**Q**	
36 t	14628		
36 t	12190	**36 t**	
36 t	9752	**36 t**	
36 t	7314	**36 t**	
36 t	4876	**36 t**	
36 t	2438	**36 t**	

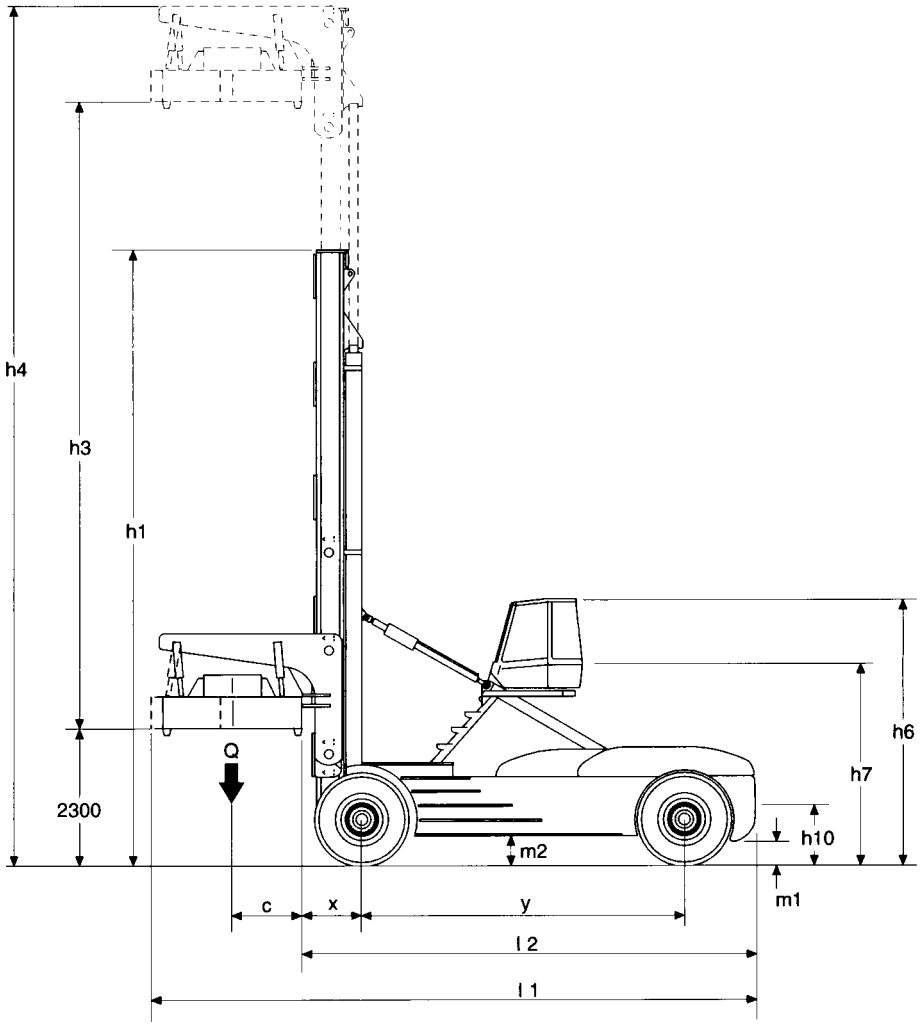
to c = 1220

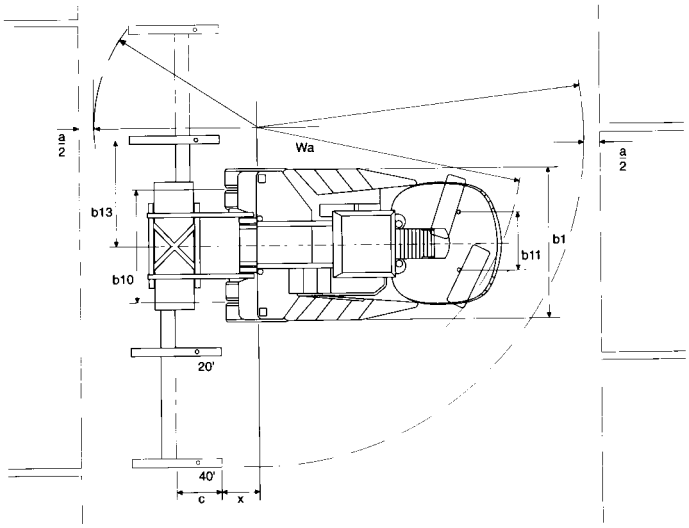
DFG

Registration note

VDI 2198

	Linde	Linde
	C 400 / 3	**C 400 / 4**
	Diesel	Diesel
	Rider seated	Rider seated
	40000	40000
	1220/1460	1220/1460
	1030	1030
	5500	5500
	67660	69970
	95835/11825	98385/11585
	39410/28250	41920/28050
	P/P	P/P
	18.00 x 25/40 pr	18.00 x 25/40 pr
	18.00 x 25/40 pr	18.00 x 25/40 pr
	4x/2	4x/2
	3030	3030
	2786	2786
	2/5	2/5
	7665	9165
	7000	10000
	11000	14000
	4690	4690
	3500	3500
	600	600
	2300	2300
	10168	10168
	7730	7730
	4180/3400	4180/3400
	6050/12150	6050/12150
	240	240
	445	445
	500	500
	11500	11500
	14500	14500
	7600	7600
	2925	2925
	23.3/24.9	23.3/24.9
	0.30/0.40	0.30/0.40
	0.50/0.50	0.50/0.50
	234/–	234/–
	290/–	290/–
	30.9	30.9
	–	–
	Wet disc	Wet disc
	2x 12/128	2x 12/128
	Cummins QSM 11	Cummins QSM 11
	246	246
	2100	2100
	1674/1100	1674/1100
	6/10820	6/10820
	–	–
	Torque converter 4/4	Torque converter 4/4
	240	240
	–	–
	74	74
	50	50





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ntainer		**9'6" Container**
Height (mm)	**Q**	Height (mm)
12955	**36 t**	14480
10364	**36 t**	11584
7773	**36 t**	8688
5182	**36 t**	5792
2591	**36 t**	2896
/1460 mm		

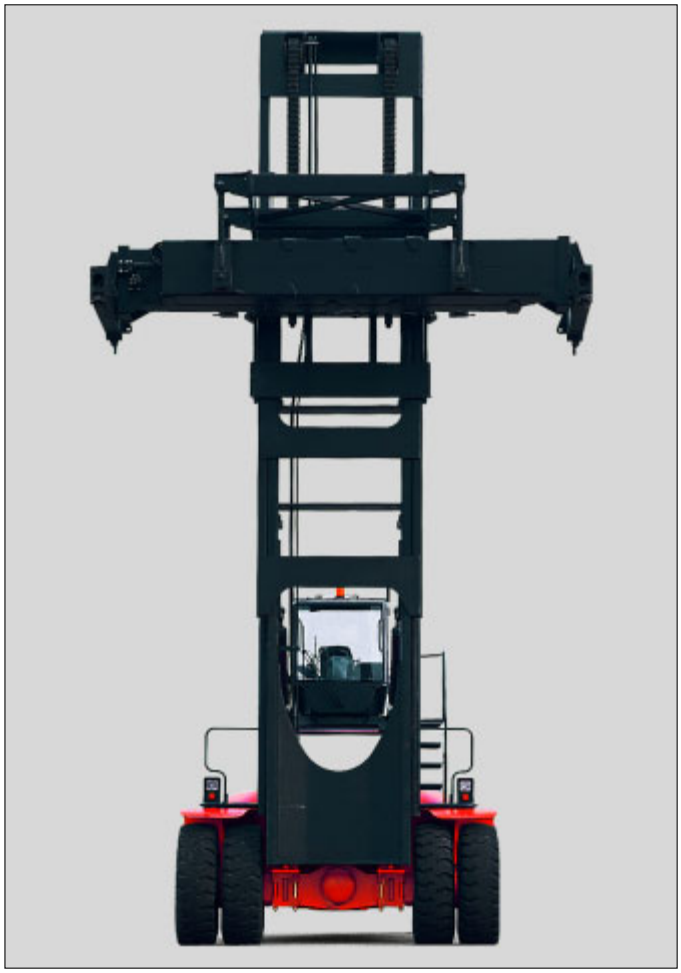
C 400 / 3

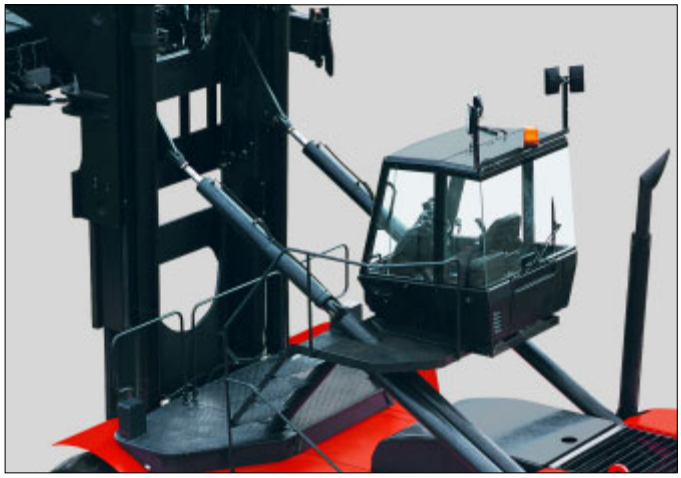
8' Container		**8'6" Container**		**9'6" Container**	
Q	Height (mm)	**Q**	Height (mm)	**Q**	Height (mm)
40 t	7314	**40 t**	7773	**40 t**	8688
40 t	4876	**40 t**	5182	**40 t**	5792
40 t	2438	**40 t**	2591	**40 t**	2896
to c = 1220/1460 mm					

C 400 / 4

8' Container		**8'6" Container**		**9'6" Container**	
Q	Height (mm)	**Q**	Height (mm)	**Q**	Height (mm)
40 t	9752	**40 t**	10364	**40 t**	11584
40 t	7314	**40 t**	7773	**40 t**	8688
40 t	4876	**40 t**	5182	**40 t**	5792
40 t	2438	**40 t**	2591	**40 t**	2896
to c = 1220/1460 mm					

Equipment





Innovative lift mast
The design of the ultra-wide clearview lift mast qualifies as revolutionary: in contrast to established fork truck design principles, the inner mast is pivoted on the chassis whereas it is the outer mast that telescopes. Increased forward visibility. Mast construction extremely stiff in torsion, guaranteeing perfect load elevation up to maximum lift. The transmission of torsional stresses from mast to chassis is minimised by a special valve controlling the tilt jacks.

Telescopic spreader
Telescopic spreader 20ft to 40ft. Incorporates self-levelling suspension cylinders. 240 mm outreach. ± 3 degrees slew. ± 200 mm sideshift. The toplift assembly is mounted directly onto the outside of the wide telescoping lift mast.

Safety
- Transmission – integrated forward/reverse interlock and downshift protection
- Engine neutral start transmission safety interlock
- Power unit integrated safety monitors
- Steering control – integrated 'anti-kick' valve
- Steering axle proximity mounted shock valve
- Twistlock position indicators, lights and safety interlock
- Safe load lowering valve
- High-mounted cabin – excellent all-round visibility
- Low noise emissions
- Central warning lamp (instrument monitoring)
- Horn

Standard equipment
- Fully equipped centrally located driver's cab with hinged doors, sliding window on left side, wipers and washers for windscreen, rear screen and overhead guard screen, heater and demister
- Adjustable steering column
- Fully adjustable suspension-type seat
- Comprehensive instrumentation
- Cummins diesel engine with turbocharger and intercooler
- Safety monitors for engine oil pressure, and temperature
- Clark 4-speed powershift transmission with integrated forward/reverse safety interlock; automatic transmission ratio selection
- Heavy-duty double hub reduction drive axle, incorporating oil bath-type multi-disc brakes with zero maintenance requirements
- Anti-stall engine speed-up device for all working hydraulics
- On-demand working hydraulics, oil supply by multi-pump installation
- Power-assisted hydraulic controls
- High lift and lowering speeds
- Hydrostatic power steering
- Telescopic spreader with integrated outreach, slew and sideshift
- Unique reverse section mast
- Road lighting
- Pneumatic tyres

Optional equipment
- Central greasing system
- Spreader stops 30ft and 24ft
- Cabin pre-heat system
- Climate control
- Automatic reversing light
- Working lights on spreader
- Working lights on mast
- Rotating beacon
- Load weight indicator
- Cold climate specification to – 25 °C
- Radio/CD player
- Reverse driving mirrors
- Dry-type fire extinguisher 2.5 kg
- Alternative colour schemes

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