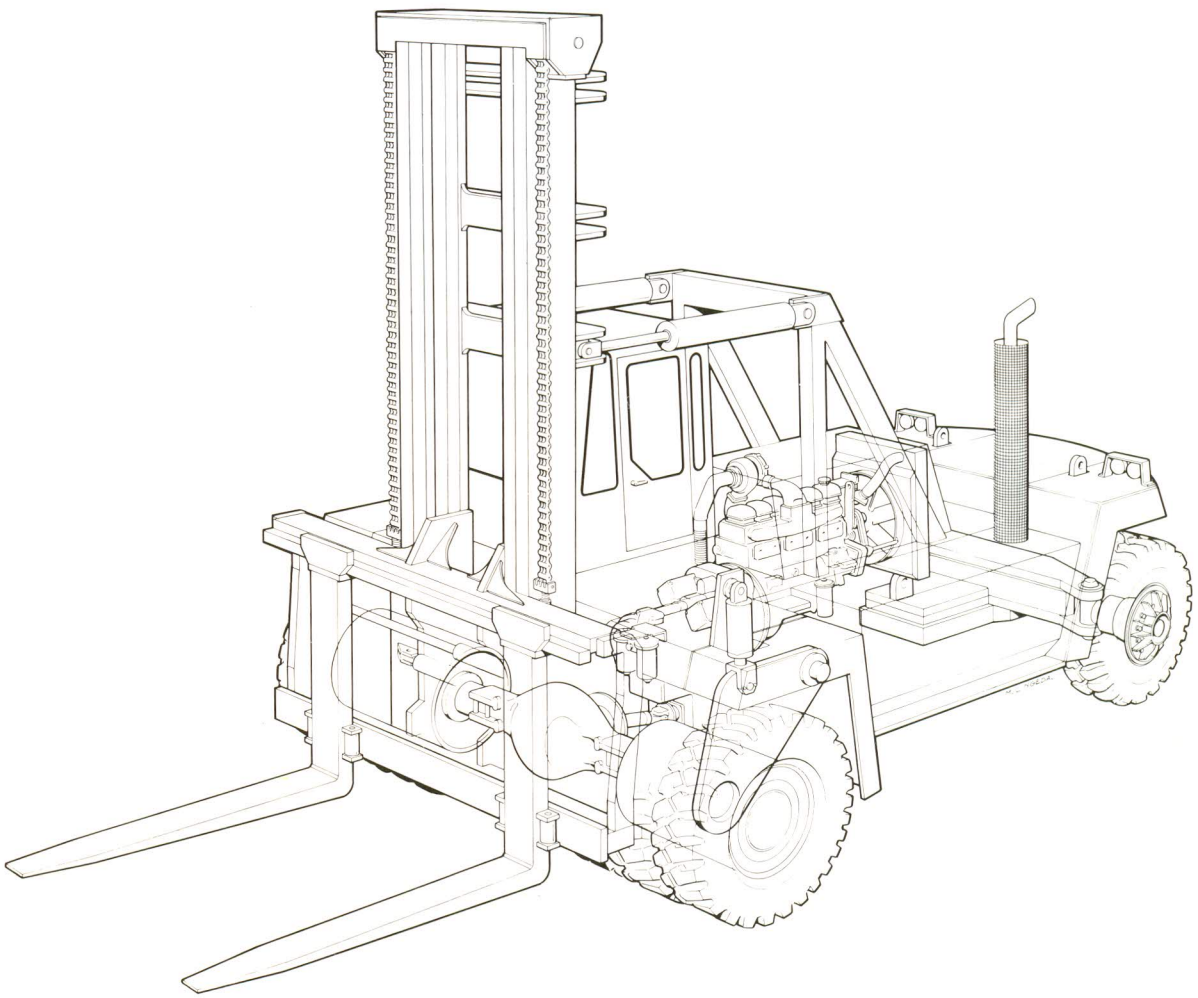
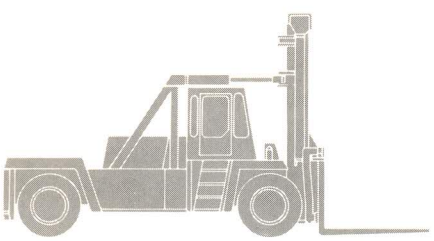
Kalmar

GB

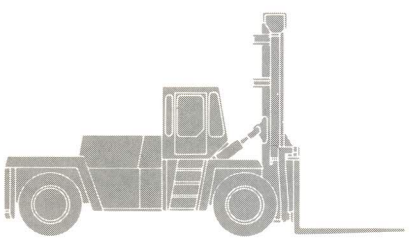
DC 28-52

Technical information

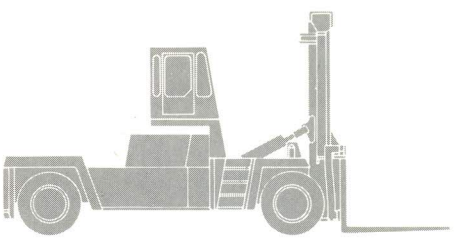




Standard model



Low-built model



Container Special

Electrical system

The electrical system is standardised throughout the range of trucks, with components grouped in an electrical distribution box in the cab. The system is reliable and easy to service. It consists of circuit boards and plug-in components.

The two 12 V batteries are connected in series and thus give a system voltage of 24 V. The batteries are charged by an alternator, equipped with rectifying and voltage-stabilising electronics. The system has a high output, even at low engine speeds, and has ample capacity for extra equipment, in addition to the standard range of road lights, working lights, riding lights and various types of warning lamps.

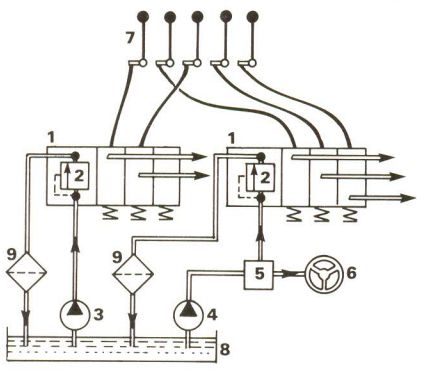
Hydraulic system

The hydraulic system comprises two vane type hydraulic pumps which supply:

- the steering
- lift 1 and tilt
- lift 2, sideshifting and fork positioning

The system has ample capacity for additional attachments, such as container handling frames, timber grabs, etc. The lift 2 function is controlled by a separate lever to provide a higher lift speed.

The control levers are mechanically connected to the main valves. An idling relief valve incorporated into each main valve reduces the pressure drop in the system to a minimum. The valve opens when all spools are in the neutral position, which minimises the pressure drop losses and also lowers the temperature in the hydraulic system. Hydraulic and electro-hydraulic servo systems are available as options. A priority valve allows the steering pump to be used in the main hydraulic system, when steering is not in use, such as when the truck is stationary.



1 Main valve
2 Pressure-limiting valve
3 Hydraulic pump for working hydraulics
4 Hydraulic pump for steering + boost for the working hydraulics
5 Priority valve for the steering system
6 Steering valve
7 Control levers
8 Hydraulic fluid tank
9 Return filter

Masts

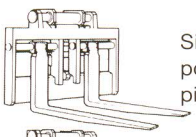
Kalmar LMV masts are extremely strong, slender structures and are available in a large number of options – simplex, duplex or triplex design.

Due to this wide range of masts, a truck can easily be adapted to widely varying tasks. Kalmar LMV has long been a leader in the continual development towards better visibility, and all masts – with or without free lift – are now of free-visibility design.

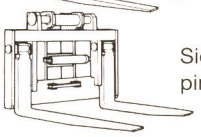
The following main mast types are available:

- Duplex
- Duplex, free lift
- Triplex, free lift

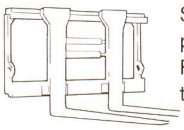
All mast rollers are hardened and are fitted with SKF bearings. The mast sections are made of high-strength steel and are designed to provide the best possible field of vision. The lift cylinders, hoses and chains are located in the "blind angles" of the mast.



Sideshift and fork positioning carriage, pin-type.



Sideshift carriage, pin-type.



Sideshift and fork positioning carriage. Free visibility roller type.

Fork carriages

The fork carriage offers improved visibility, since the distance between horizontal beams has been increased. The fork carriage is available with manually movable forks or forks equipped with roller mountings and two hydraulic cylinders for fork positioning and sideshifting.

The trucks can also be equipped with "pin-type" carriages, with separate hydraulic sideshifting and two hydraulic cylinders for fork positioning. A carriage with a "fork shaft system", in which each fork is mounted in a separate fork holder, is available for simple and fast change-over between forks and other attachments, mainly for container handling.

Chassis

The low profile chassis is of new design, to provide better visibility. The mounting of high-level mast tilt cylinders has also been modified to improve the field of vision.

The new trucks are available in three versions.

- 28-42-1200 LB with low-level tilt cylinders.
- 28-52-1200 with high-level tilt cylinders.
- 28-52-1200 CS with low-level tilt cylinders and the high-level cab located well back from the mast.

A powered travelling cab with low-level tilt cylinders and different types of elevated cabs are available as an option.

The chassis is of all-welded, unit construction with high torsional strength and is built around two I-section longitudinal members.

Engine

The standard trucks are powered by Volvo engines. These are six-cylinder, in-line, direct-injection turbocharged diesel engines which are famous for their reliability and economy.

Turbocharging contributes to low fuel consumption, efficient combustion and thus cleaner exhaust gases, and reduced exhaust noise, due to the additional silencing effect of the turbo charger.

Catalytic exhaust gas emission control and particle filters, which eliminate the injurious substances in the exhaust gases, without causing engine power loss, are available as an option.

Power transmission

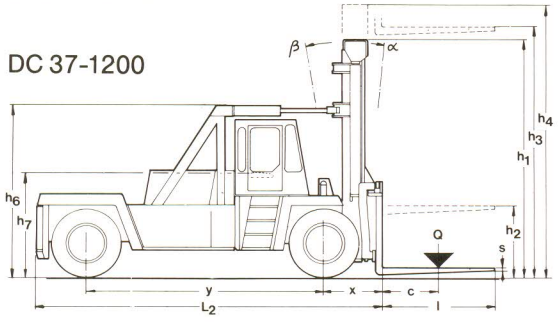
The engine power is transmitted to the propeller shaft and the drive axle through a hydraulic transmission - incorporating a torque converter and Powershift gearbox. The torque converter increases the output torque smoothly and steplessly as the speed of the truck drops.

The gearbox is of the constant-mesh type and gear-shifting is carried out by hydraulically actuated clutches. The selector lever is electrically connected to the gearbox valve body. The "soft-shift function" provides smooth reversal of the direction of travel. Disengagement is hydraulically actuated by the left foot brake. The low oil pressure ensures long service life and reliable operation. The torque converter oil is cooled in an external cooler, in which the engine coolant is used as the cooling medium. This is an efficient system which prevents overheating of

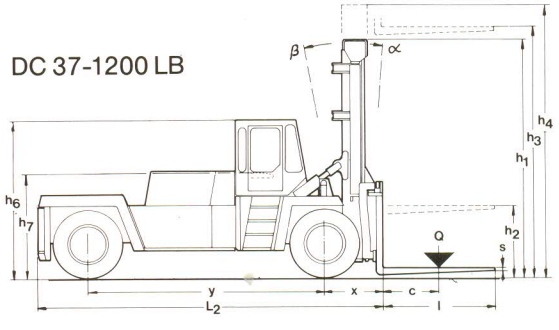
						28-1200			32-1200			37-1200			42-1200			52-1200		
	2 **Version**					Std	LB	CS	Std	LB	CS	Std	LB	CS	Std	LB	CS	Std	—	CS
Specification	3 **Lifting capacity**				kg	28 000			32 000			37 000			42 000			52 000		
	4 **Load centre**			L4	mm	1 200			1 200			1 200			1 200			1 200		
	5 **Power unit**					Diesel engine			Diesel engine			Diesel engine			Diesel engine			Diesel engine		
	6 **Steering**					Steering wheel in the cab			Steering wheel in the cab			Steering wheel in the cab			Steering wheel in the cab			Steering wheel in the cab		
	7 **Tyre type**	Front/rear				Pneumatic			Pneumatic			Pneumatic			Pneumatic			Pneumatic		
	8 **Wheels**	Number at front/rear *=driven				4*/2			4*/2			6(4*)/2			6(4*)/2			4*/2		
Dimensions	9 **Lift**, duplex mast	Standard		H4	mm	5 000	5 000	5 500	5 000	5 000	5 500	5 000	5 000	5 000	5 000	5 000	5 000	5 000	—	5 000
	10	Free lift, normal		H2	mm															
	11	Free lift, special (optional)		H2	mm															
	12																			
	13 **Forks**, thickness			H1	mm	110	110	110	110	110	110	135	135	135	135	135	135	145	—	145
	width			B1	mm	300	300	300	300	300	300	300	300	300	300	300	300	300	—	300
	standard length			L1	mm	2 400	2 400	2 400	2 400	2 400	2 400	2 400	2 400	2 400	2 400	2 400	2 400	2 400	—	2 400
	Distance between forks	Min 1)		V	mm	1 550	1 550	1 550	1 550	1 550	1 550	1 950	1 950	1 950	1 950	1 950	1 950	1 900	—	1 900
		Max 1)		V	mm	2 750	2 750	2 750	2 750	2 750	2 750	2 750	2 750	2 750	2 750	2 750	2 750	2 700	—	2 700
	Sideshift	Max ± 1)		V1	mm	300 (when V=2 150)			300 (when V=2 150)			200 (when V= 2350)			200 (when V= 2350)			200 (when V= 2 300)		
	14 **Mast tilt angle**	Forward/backwards		α/β	°	5/10	5/10	5/10	5/10	5/10	5/10	5/10	5/10	5/10	5/10	5/10	5/10	5/10	—	5/10
	15 **Overall dimansions**	Length without forks		L	mm	6 675	6 675	6 675	6 925	6 925	6 925	7 295	7 295	7 295	7 795	7 795	7 795	8 930	—	8 930
	16	Width		B	mm	3 410	3 410	3 410	3 410	3 410	3 410	4 500	4 500	4 500	4 500	4 500	4 500	4 400	—	4 400
	17	Mast height, min		H3	mm	4 520	4 520	4 770	4 520	4 520	4 770	5 070	5 070	5 070	5 070	5 070	5 070	5 620	—	5 620
	18	Mast height, max		H5	mm	7 020	7 020	7 520	7 020	7 020	7 520	7 570	7 570	7 570	7 570	7 570	7 570	8 120	—	8 120
	19	Height		H6	mm	3 700	3 400	4 300	3 700	3 400	4 300	3 700	3 400	4 300	3 700	3 400	4 300	3 850	—	4 550
	20	Seat height		H7	mm	2 350	2 350	3 250	2 350	2 350	3 250	2 350	2 350	3 250	2 350	2 350	3 250	2 500	—	3 500
	21 **Turning radius**	Outer		R1	mm	6 350	6 350	6 350	6 600	6 600	6 600	6 900	6 900	6 900	7 400	7 400	7 400	9 000	—	9 000
		Inner		R2	mm	850	850	850	1 000	1 000	1 000	600	600	600	800	800	800	1 900	—	1 900
	22 **Distance from front axle centre to load**			L2	mm	1 125	1 125	1 125	1 125	1 125	1 125	1 245	1 245	1 245	1 245	1 245	1 245	1 380	—	1 380
	23 **Aisle for 90° stacking**	incl. 200 mm safety margin		A1	mm	9 875	9 875	9 875	10 125	10 125	10 125	10 545	10 545	10 545	11 045	11 045	11 045	12 980	—	12 980
Performance	**Stability**	ISO 1074 Yes/No				Yes (standard mast)			Yes (standard mast)			Yes (standard mast)			Yes (standard mast)			Yes (standard mast)		
	24 **Speeds**	Travelling, F and R laden/unladen			km/h	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	25/25	20/20	—	20/20
		Lifting laden/unladen			m/s	0,20/0,30	0,20/0,30	0,20/0,30	0,20/0,30	0,20/0,30	0,20/0,30	0,15/0,25	0,15/0,25	0,15/0,25	0,15/0,25	0,15/0,25	0,15/0,25	0,13/0,18	—	0,13/0,18
		Lowering laden/unladen			m/s	0,30/0,20	0,30/0,20	0,30/0,20	0,30/0,20	0,30/0,20	0,30/0,20	0,30/0,20	0,30/0,20	0,30/0,20	0,30/0,20	0,30/0,20	0,30/0,20	0,25/0,18	—	0,25/0,18
	27																			
	28 **Drawbar pull**	Max laden			kN	188	188	188	259	259	259	259	259	259	259	259	259	350	—	350
	29 **Gradeability**	Cont. at 2 km/h laden			%	17	17	17	25	25	25	20	20	20	19	19	19	19	—	19
	30	Max at 0 km/h laden			%	27	27	27	34	34	34	27	27	27	25	25	25	33	—	33
	31 **Acceleration time**	Distance of 15 m laden/unladen			S															
Weight	32 **Gross vehicle weight**				kg	39 000	39 000	39 500	40 500	40 500	41 000	49 000	49 000	49 000	50 000	50 000	50 000	59 500	—	59 500
	33 **Axle load**	Unladen front			kg	20 000	20 000	20 500	20 000	20 000	20 500	25 700	25 700	25 700	26 000	26 000	26 000	32 500	—	32 500
		Laden front			kg	62 500	62 500	63 000	67 700	67 700	68 200	80 800	80 800	80 800	86 700	86 700	86 700	105 100	—	105 100
	34	Uniaden rear			kg	19 000	19 000	19 000	20 500	20 500	20 500	23 300	23 300	23 300	24 000	24 000	24 000	27 000	—	27 000
		Laden rear			kg	4 500	4 500	4 500	4 800	4 800	4 800	5 200	5 200	5 200	5 300	5 300	5 300	6 400	—	6 400
Tyres, chassis, brake system	35 **Tyres**	Number front/rear			st	4/2	4/2	4/2	4/2	4/2	4/2	6/2	6/2	6/2	6/2	6/2	6/2	4/2	—	4/2
	36	Size front			inch	16,00×25	16,00×25	16,00×25	16,00×25	16,00×25	16,00×25	16,00×25	16,00×25	16,00×25	16,00×25	16,00×25	16,00×25	23,5×25	—	23,5×25
	37	rear			inch	16,00×25	16,00×25	16,00×25	16,00×25	16,00×25	16,00×25	16,00×25	16,00×25	16,00×25	16,00×25	16,00×25	16,00×25	18,00×25	—	18,00×25
	38 **Wheelbase**			L3	mm	4 500	4 500	4 500	4 750	4 750	4 750	5 000	5 000	5 000	5 500	5 500	5 500	6 500	—	6 500
	39 **Track**	Between centres driven wheels			mm	2 420	2 420	2 420	2 420	2 420	2 420	2 960	2 960	2 960	2 960	2 960	2 960	3 030	—	3 030
	40 **Ground clearance**	Under the mast			mm	300	300	300	300	300	300	300	300	300	300	300	300	300	—	300
	41	Mid-way along the wheel base			mm	490	490	490	490	490	490	490	490	490	490	490	490	490	—	490
	42 **Foot brake system**	Type/brakewheels				Hydraulic/driven wheels 3)			Hydraulic/driven wheels 3)			Hydraulic/driven wheels 3)			Hydraulic/driven wheels 3)			Hydraulic/driven wheels 3)		
	43 **Parking brake**	Type/brake wheels				Spring brake/driven wheels			Spring brake/driven wheels			Spring brake/driven wheels			Spring brake/driven wheels			Spring brake/driven wheels		
	Steering system, type					Hydraulic servo assisted			Hydraulic servo assisted			Hydraulic servo assisted			Hydraulic servo assisted			Hydraulic servo assisted		
Drive system	44–48 (for electric trucks)																			
	49 **Engine**	Manufacturer - type				Volvo — TD71 AW			Volvo — TD 100 G 2)			Volvo — TD 100 G 2)			Volvo — TD 100 G 2)			Volvo — TD 121 G		
		Rating ISO 3046/2534			kW(hk)	140(148) — 190(201)			182(203) — 247(284)			182(203) — 247(284)			182(203) — 247(284)			231(256) — 314(348)		
		Rated speed			l/min	2 400			2 200			2 200			2 200			2 200		
		Peak torque - at engine speed			Nm-1/min	750 — 1 000			1 057 — 1 400			1 057 — 1 400			1 057 — 1 400			1 310 — 1 400		
	52	Number of cylinders - swept volume			(cm^3)	6 — 6 730			6 — 9 600			6 — 9 600			6 — 9 600			6 — 1 198		
		Compression ratio				14,5:1			14,3:1			14,3:1			14,3:1			13,1:1		
	53	Fuel consumption			l/h	13			20			20			20			25		
	Alternator	Type — Rating			W	AC — 1 540			AC — 1 540			AC — 1 540			AC — 1 540			AC — 1 540		
	Starting battery	Voltage - capacity			V — Ah	2×12 — 135			2×12 — 135			2×12 — 135			2×12 — 135			2×12 — 135		
	54 **Drive axle**	Type				Rockwell diff. axle with hub red.			Rockwell diff. axle with hub red.			Rockwell diff. axle with hub red.			Rockwell diff. axle with hub red.			Rockwell diff. axle with hub red.		
	55 **Gearbox**	Type - numb. of gears forw./rev.				Clark powershift — 3/3			Clark powershift — 4/4			Clark powershift — 4/4			Clark powershift — 4/4			Allison CRT 5633 — 3/3		
	56 **Clutch**	Clutch type				Torque converter			Torque converter			Torque converter			Torque converter			Torque converter		
	57 **Hydraulic pressure**	For attachments			Bar	120	120	120	120	120	120	120	120	120	120	120	120	120	—	120
	58 **Sound level**	Overhead guard/cab 4)			dB(A)	85/75	85/75	85/75	85/75	85/75	85/75	85/75	85/75	85/75	85/75	85/75	85/75	85/75	—	85/75

The tabulated figures refer to VDI 2198. Blank lines are intended specifically for particulars to DIN standard. The table refers to a truck with standard equipment, with the exceptions of:
1) Refers to FLT with sideshift and fork positioning carriage
2) Option: 32–42 TD 121 G
3) Option: Wet disc brakes
4) Average valua at operator's ear level, according to DIN 45635

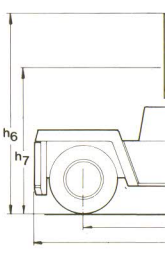
DC 37-1200

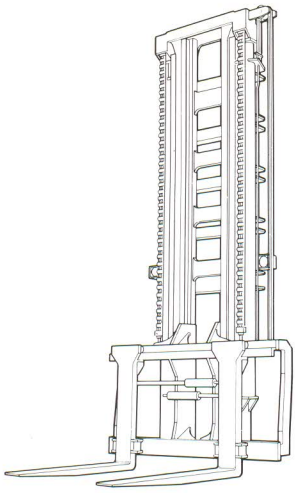


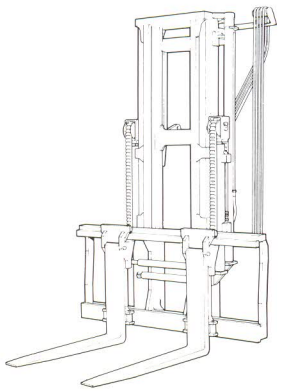
DC 37-1200 LB

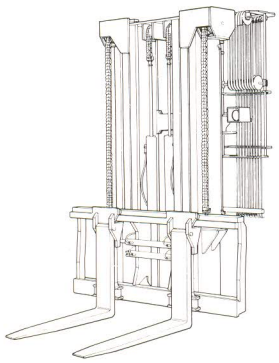


DC 37-1200 C





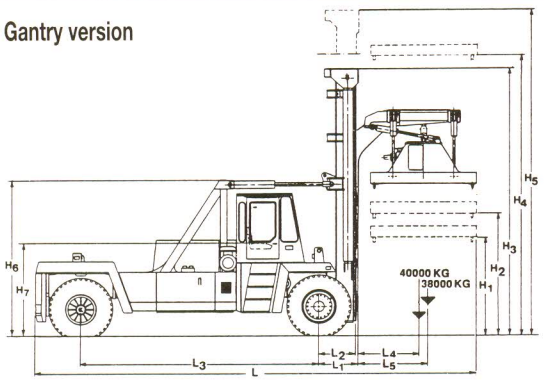




Mast	Lifting height	28-1200 — 32-1200 Mast height									37-1200 — 42-1200 Mast height									52-1200 Mast height	
		Std			LB			CS			Std			LB			CS			Std	
		Free l. H2	Min. H3	Max. H5	Free l. H2	Min. H3	Max. H5	Free l. H2	Min. H3	Max. H5	Free l. H2	Min. H3	Max. H5	Free l. H2	Min. H3	Max. H5	Free l. H2	Min. H3	Max. H5	Min. H3	Max. H5
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
Duplex standard	4 500	—	4 270	6 520	—	4 270	6 520	—	—	—	—	4 820	7 070	—	4 820	7 070	—	—	—	5 370	7 620
	5 000	—	4 520	7 020	—	4 520	7 020	—	—	—	—	5 070	7 570	—	5 070	7 570	—	5 070	7 570	5 620	8 120
	5 500	—	4 770	7 520	—	4 770	7 520	—	4 770	7 520	—	5 320	8 070	—	5 320	8 070	—	5 320	8 070	5 870	8 620
	6 000	—	5 020	8 020	—	5 020	8 020	—	5 020	8 020	—	5 570	8 570	—	5 570	8 570	—	5 570	8 570	6 120	9 120
	6 500	—	5 270	8 520	—	5 270	8 520	—	5 270	8 520	—	5 820	9 070	—	5 820	9 070	—	5 820	9 070	6 370	9 620
	7 000	—	5 520	9 020	—	—	—	—	5 520	9 020	—	6 070	9 570	—	—	—	—	6 070	9 570	6 620	10 120
	7 500	—	5 770	9 520	—	—	—	—	5 770	9 520	—	6 320	10 070	—	—	—	—	6 320	10 070	6 870	10 620
	8 000	—	6 020	10 020	—	—	—	—	6 020	10 020	—	6 570	10 570	—	—	—	—	6 570	10 570	7 120	11 120
	8 500	—	6 270	10 520	—	—	—	—	6 270	10 520	—	6 820	11 070	—	—	—	—	6 820	11 070	7 370	11 620
	9 000	—	6 520	11 020	—	—	—	—	6 520	11 020	—	7 070	11 570	—	—	—	—	7 070	11 570	7 620	12 120
	9 500	—	6 770	11 520	—	—	—	—	6 770	11 520	—	7 320	12 070	—	—	—	—	7 320	12 070	7 870	12 620
	10 000	—	7 020	12 020	—	—	—	—	7 020	12 020	—	7 570	12 570	—	—	—	—	7 570	12 570	8 120	13 120
Duplex free lift	3 500	—	—	—	1 750	3 770	5 520	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	3 700	1 850	3 870	5 720	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	4 000	2 000	4 020	6 020	2 000	4 020	6 020	—	—	—	2 000	4 570	6 570	2 000	4 570	6 570	2 000	4 570	6 570	—	—
	4 500	2 250	4 270	6 520	2 250	4 270	6 520	—	—	—	2 250	4 820	7 070	2 250	4 820	7 070	2 250	4 820	7 070	—	—
	5 000	2 500	4 520	7 020	2 500	4 520	7 020	—	—	—	2 500	5 070	7 570	2 500	5 070	7 570	2 500	5 070	7 570	—	—
	5 500	2 750	4 770	7 520	2 750	4 770	7 520	2 750	4 770	7 520	2 750	5 320	8 070	2 750	5 320	8 070	2 750	5 320	8 070	—	—
	6 000	3 000	5 020	8 020	3 000	5 020	8 020	3 000	5 020	8 020	3 000	5 570	8 570	3 000	5 570	8 570	3 000	5 570	8 570	—	—
	6 500	3 250	5 270	8 520	3 250	5 270	8 520	3 250	5 270	8 520	3 250	5 820	9 070	3 250	5 820	9 070	3 250	5 820	9 070	—	—
	7 000	3 500	5 520	9 020	—	—	—	3 500	5 520	9 020	3 500	6 070	9 570	3 500	6 070	9 570	3 500	6 070	9 570	—	—
	7 500	3 750	5 770	9 520	—	—	—	3 750	5 770	9 520	3 750	6 320	10 070	3 750	6 320	10 070	3 750	6 320	10 070	—	—
	8 000	4 000	6 020	10 020	—	—	—	4 000	6 020	10 020	4 000	6 570	10 570	—	—	—	—	—	—	—	—
	8 500	4 250	6 270	10 520	—	—	—	4 250	6 270	10 520	4 250	6 820	11 070	—	—	—	—	—	—	—	—
	9 000	4 500	6 520	11 020	—	—	—	4 500	6 520	11 020	4 500	7 070	11 570	—	—	—	—	—	—	—	—
	9 500	4 750	6 770	11 520	—	—	—	4 750	6 770	11 520	4 750	7 320	12 070	—	—	—	—	—	—	—	—
	10 000	—	—	—	—	—	—	—	—	—	5 000	7 570	12 570	—	—	—	—	—	—	—	—
Triplex free lift	4 650	—	—	—	—	—	—	—	—	—	1 650	4 025	7 005	—	—	—	—	—	—	—	—
	5 000	1 745	3 870	7 125	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	5 500	1 910	4 035	7 625	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	6 000	2 080	4 200	8 125	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	6 450	—	—	—	—	—	—	—	—	—	2 250	4 625	8 825	—	—	—	—	—	—	—	—
	6 500	2 250	4 365	8 615	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	7 000	2 410	4 530	9 120	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	7 050	—	—	—	—	—	—	—	—	—	2 450	4 825	9 425	—	—	—	2 450	4 825	9 425	—	—
	7 500	2 580	4 695	9 615	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	8 000	2 750	4 860	10 110	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	8 500	2 900	5 025	10 625	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	8 575	—	—	—	—	—	—	—	—	—	2 925	5 300	10 950	—	—	—	2 925	5 300	10 950	—	—
	9 000	3 090	5 190	11 100	—	—	—	—	—	—	3 100	5 475	11 375	—	—	—	3 100	5 475	11 375	—	—
	9 500	3 250	5 355	11 605	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	9 900	—	—	—	—	—	—	—	—	—	3 400	5 775	12 275	—	—	—	3 400	5 775	12 275	—	—
	10 000	3 350	5 520	12 170	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

N.B. All dimensions may vary slightly, depending on tyres fitted. The dimensions tabulated above are for trucks fitted with tyres of Kalmar LMV standard. Lifting heights other than those tabulated above are available on request. For lifting heights over 7 500 mm the capacity might be reduced depending on local stability standards.

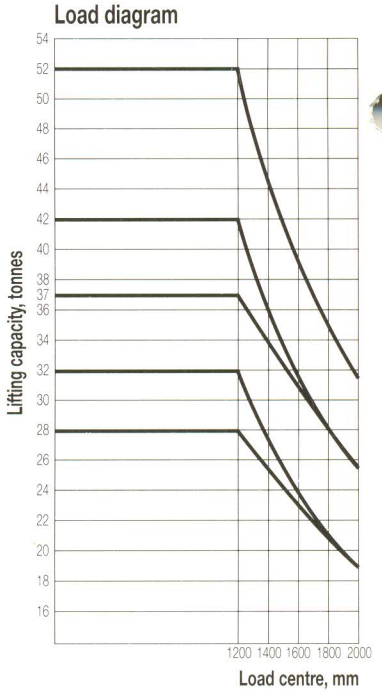
Gantry version



	DC 37-1200 G	DC 42-1200 G
Lifting capacity in retracted position (L4)	35000	40000
Lifting capacity in extracted position (L5)	33000	38000

A fact sheet giving further information on this version is available on request

Load diagram



Load centre from the support face of the forks. The lifting capacity is valid when the mast is in the vertical position.