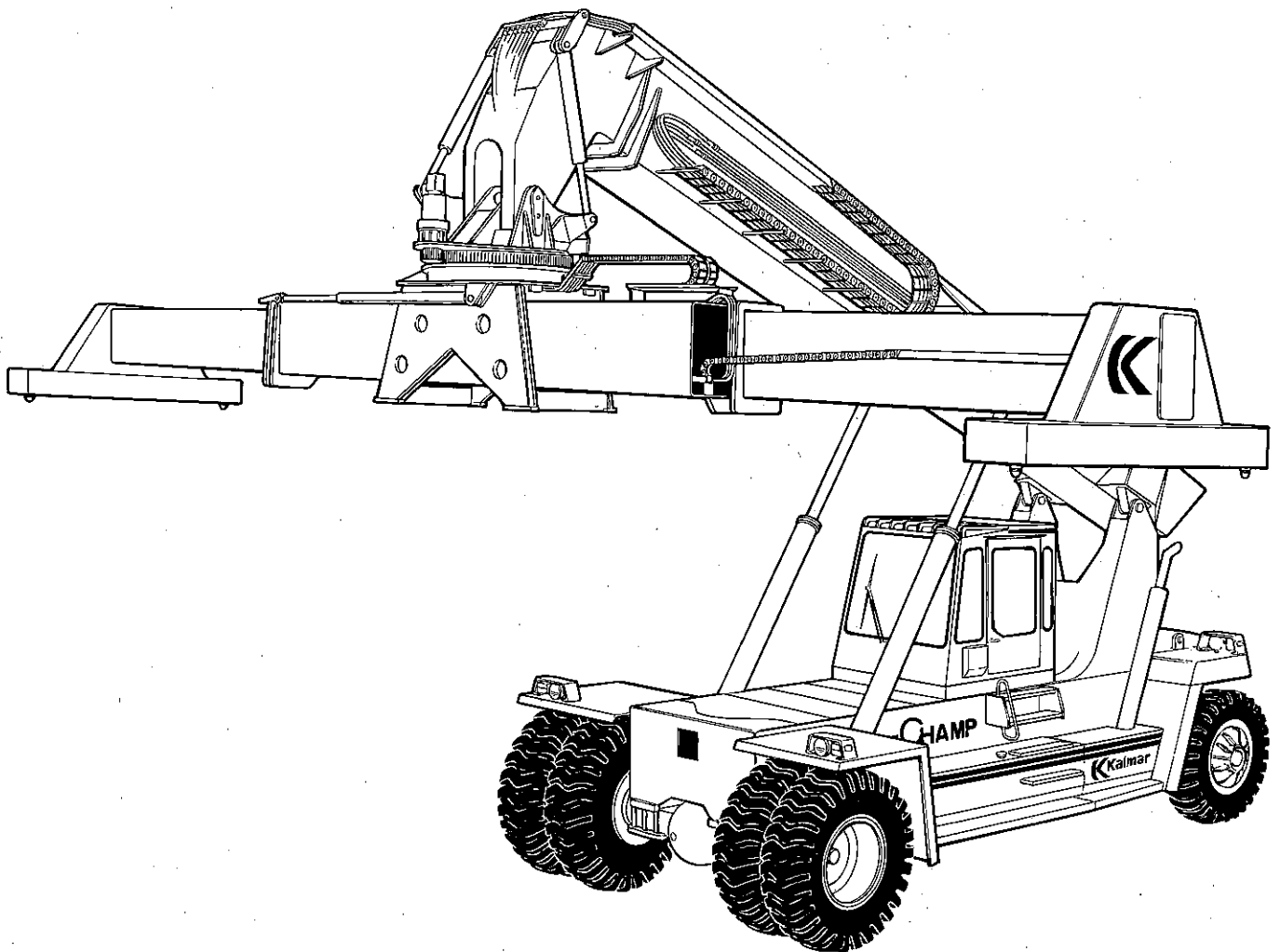




ContChamp DC 4160/4560

Technical information



Technical information – DC 4160/4560

Chassis

- All-welded, self-supporting design, based on square section profile to give highest strength.
- Extremely low centre of gravity. The steering axle gives additional counterweight.
- Attaching points are provided in the chassis for lifting cylinders, drive axle, steering axle, transmission unit, and boom.
- Hydraulic and fuel tanks are bolted to the sides of the chassis.
- Low profile model that offers very good all-round visibility.

Electrical system

- Reliable and easy to service.
- 24 V voltage (two 12 V batteries connected in series) with a capacity of 135 Ah.
- Alternator with a rating of 1540 W.
- High output even at low engine speeds.
- Capacity for extra equipment.
- Warning lamps and instruments are easily accessible, and placed to the right of the steering wheel.

Engine

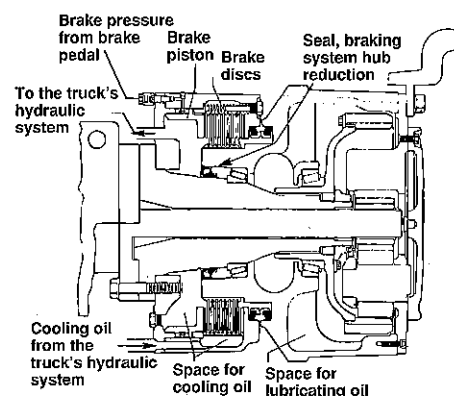
- The Volvo TWD1030ME an in-line, six-cylinder, four-stroke engine. Reliable and economical.
- Power output: 212 kW at 2200 rpm (ISO3046).
- Torque: 1260 Nm at 1200 rpm (ISO3046).
- The engine is turbocharged.
- Closed fluid cooling system.
- The engine is lubricated by a force-feed lubrication system
- The air intake system has a two-stage air cleaner.
- Alternative engines are available on request.

Transmission

- The transmission unit consists of a torque converter integrated with the gearbox.
- The gearbox is a Clark 15.5 HR 34432, with all gears in constant mesh.
- Electrohydraulic gear shifting facility that actuates the gearbox by means of solenoid valves.
- Number of gears: 4 forward, 4 reverse.
- Drive axle: Rockwell PRC-5324 W4H wide-track with gear reduction in two stages: differential and hub reduction.
- The drive axle design gives low stress, since the maximum torque is attained first at the drive wheels.
- The drive axle is provided with an oil-cooled wet disc brake system (refer also to the section describing the brakes).

Braking system

- The oil-cooled wet disc brakes consist of hydraulically operated and oil-cooled discs.
- The discs are pressed together by hydraulic pressure to give more efficient braking power.
- Entirely maintenance-free system; no brake adjustment necessary, no wear, and no fading in tough operating conditions.
- The braking system is fully enclosed to prevent any water or impurities from penetrating into the system.
- The parking brake consists of a disc brake on the drive axle's input shaft, and is applied by a powerful spring in the parking brake's hydraulic cylinder.
- The parking brake also functions as an emergency brake.



Steering shaft

- The steering axle is pendulum-mounted with a double-action steering cylinder.
- A minimum of movable parts results in fewer service points and easier maintenance.
- The axle is mounted in the chassis by maintenance-free rubber elements.
- The rear mounting is articulated, and is used to indicate when the load on the axle is too low (refer also to 'overload indication system').

Hydraulic system

- The hydraulic system is served by vane pumps.
- The hydraulic system consists of the following subsystems:
 - Hydraulic units (servo hydraulics, telescopic jib, raising and lowering of the boom, rotation of bridle, securing/releasing of twist-locks).
 - Operation of trailer legs (DC 4560).
 - Service brake system, (which consists of wet disc brakes).
 - Parking brake system.
 - Steering system.
 - Hydraulic units are operated by an electrohydraulic servo system.
 - Lifting cylinders are connected in parallel and fed by the two main valves provided from two hydraulic pumps.
 - High pressure filter in hydraulic circuit.

- The cylinder for extending the boom is supplied with hydraulic pressure from one section in each main valve to utilise the flow from two hydraulic pumps.
- An overcenter valve prevents the boom from moving inwards too quickly as a result of the load, and also functions as a hose failure monitoring device.

Power steering

- The truck's power steering does not have any mechanical connection between the steering rod and wheels. The movement of the steering wheel is transferred hydraulically to the wheels.
- The steering system is provided with priority valves that permit the flow of oil from the steering pump to be used as additional capacity to the unit functions when it is not required for actual steering.

Telescopic boom with rotator

- The boom is of a robust design and made of high tensile steel. The number of welds has been reduced to a minimum to give the highest possible strength.

The boom comprises three parts:

- Outer boom
- Inner boom
- Hydraulic cylinder

- The rotator's upper and lower bridles are linked by a ball-bearing gear ring to enable the lower bridle to be turned in relation to the upper bridle.
- Slide plates are located on the inside of the outer boom and on the outside of the inner boom.

Wheels

- Pneumatic tyres at both front and rear.
- Tyre sizes, front and rear, on DC4160: 18.00x25; DC4560: 23.5x25/18.00x25.
- Tyre pressure, front and rear: 0.9 MPa.

Driver's cab

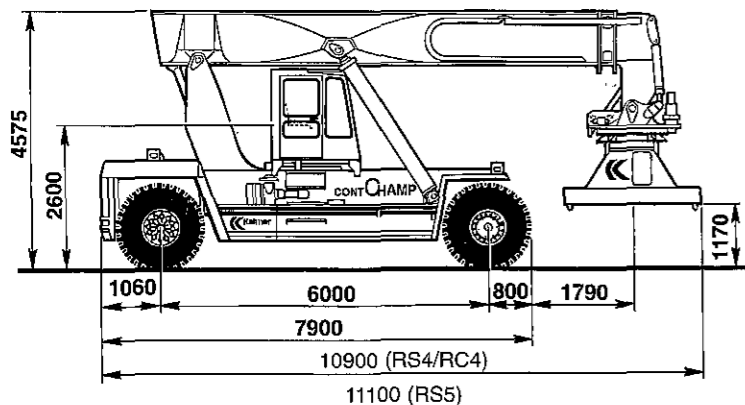
- An effective and safe place to work in.
- Individual adjustment of the driver's seat, steering wheel and hydraulic control levers.
- Rubber-mounted on chassis.
- Effective noise insulation that gives a low in-cab noise level and minimum vibration.
- Conveniently low cab entry/exit step with anti-slip surfaces on both sides.
- Excellent all-round visibility, with large windows extending downwards in doors.
- In-cab climate unit with fan and heating unit as standard, and a complete air-conditioning system as an optional extra.
- In standard version, the cab is moved by mechanical means both forwards and backwards. Hydraulic system is available as an optional extra.

Miscellaneous

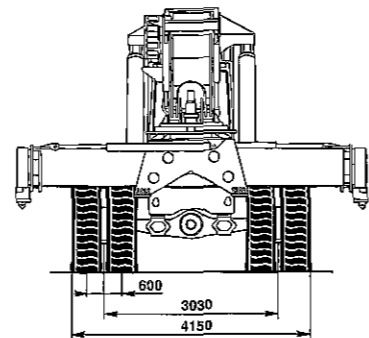
- The stability factor complies with FEM 4-0012 and ISO 10525.
- The boom strength complies with DIN 15018 H2B4.

Sizes and dimensions (dims. in mm)

DC4160RS4/DC4160RS5/DC4560RC4

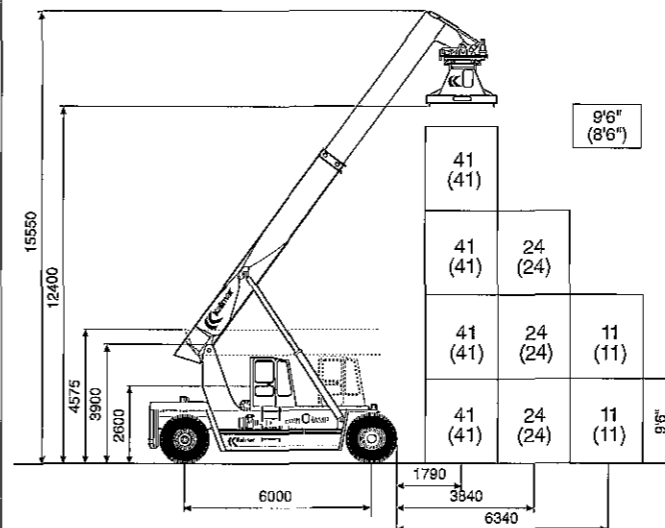


DC4160RS4/DC4160RS5

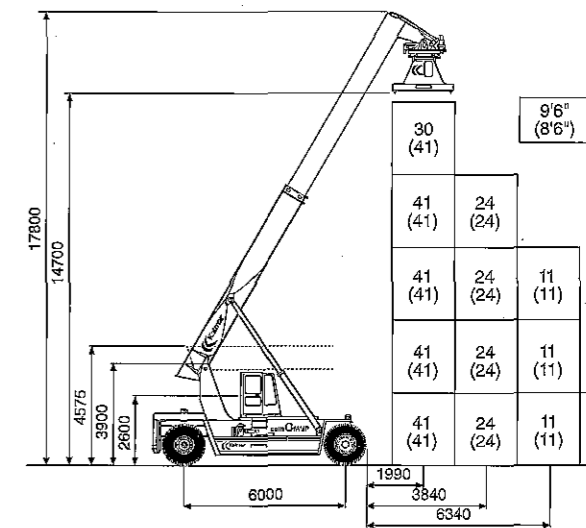


Capacity (dims. in mm)

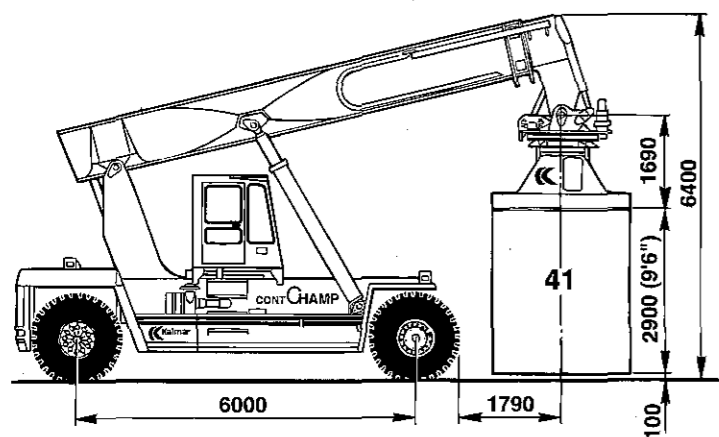
DC4160RS4



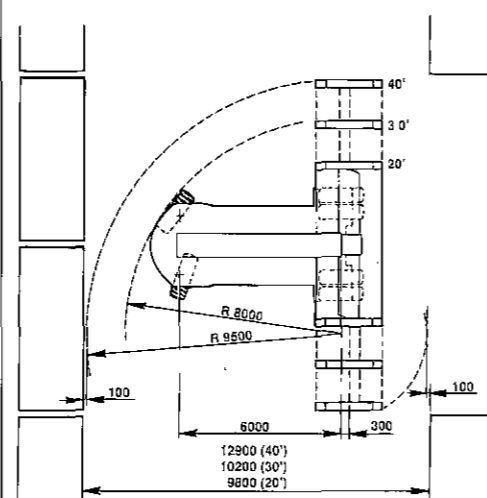
DC4160RS5



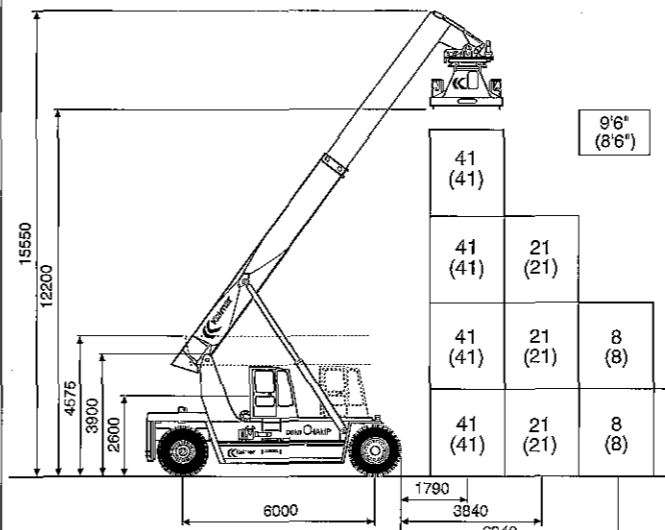
Lifting a 9'6" container with DC4160



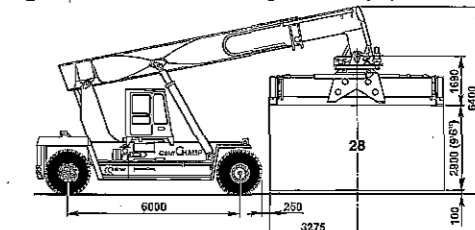
Turning circle - Aisle width



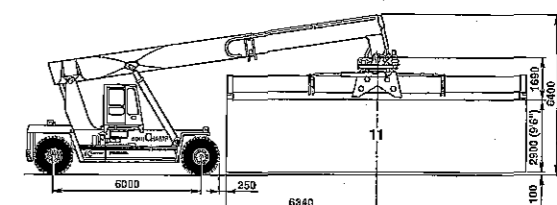
DC4560RC4



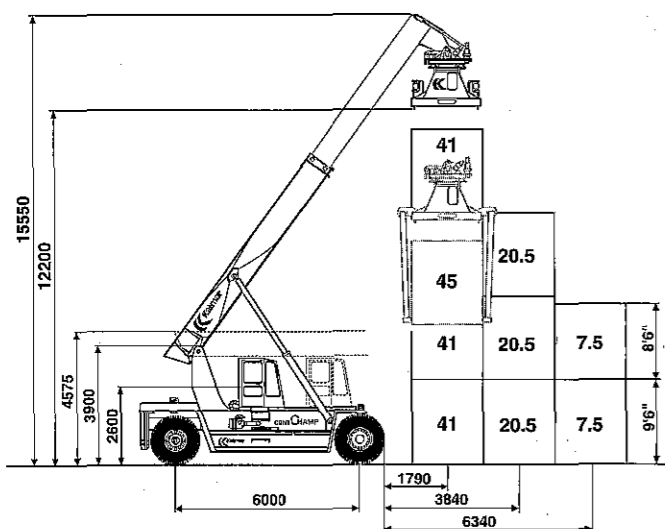
DC4160 Lifting a 20' container longitudinally (90° rotation)



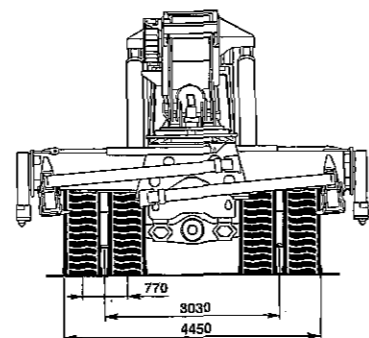
DC4160 Lifting a 40' container longitudinally (90° rotation)



Lifting a 9'6" container with DC4560RC4



DC4560RC4

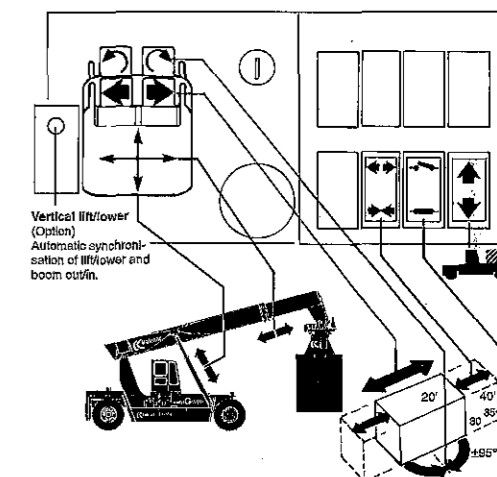
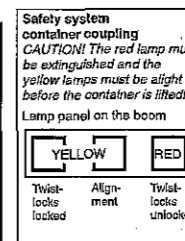
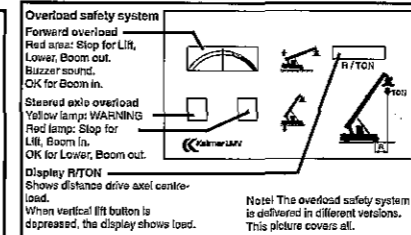
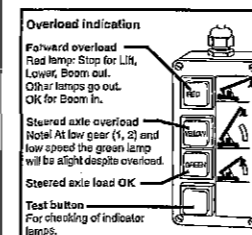
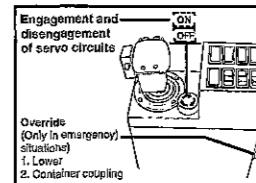


Overload indication system, DC4160

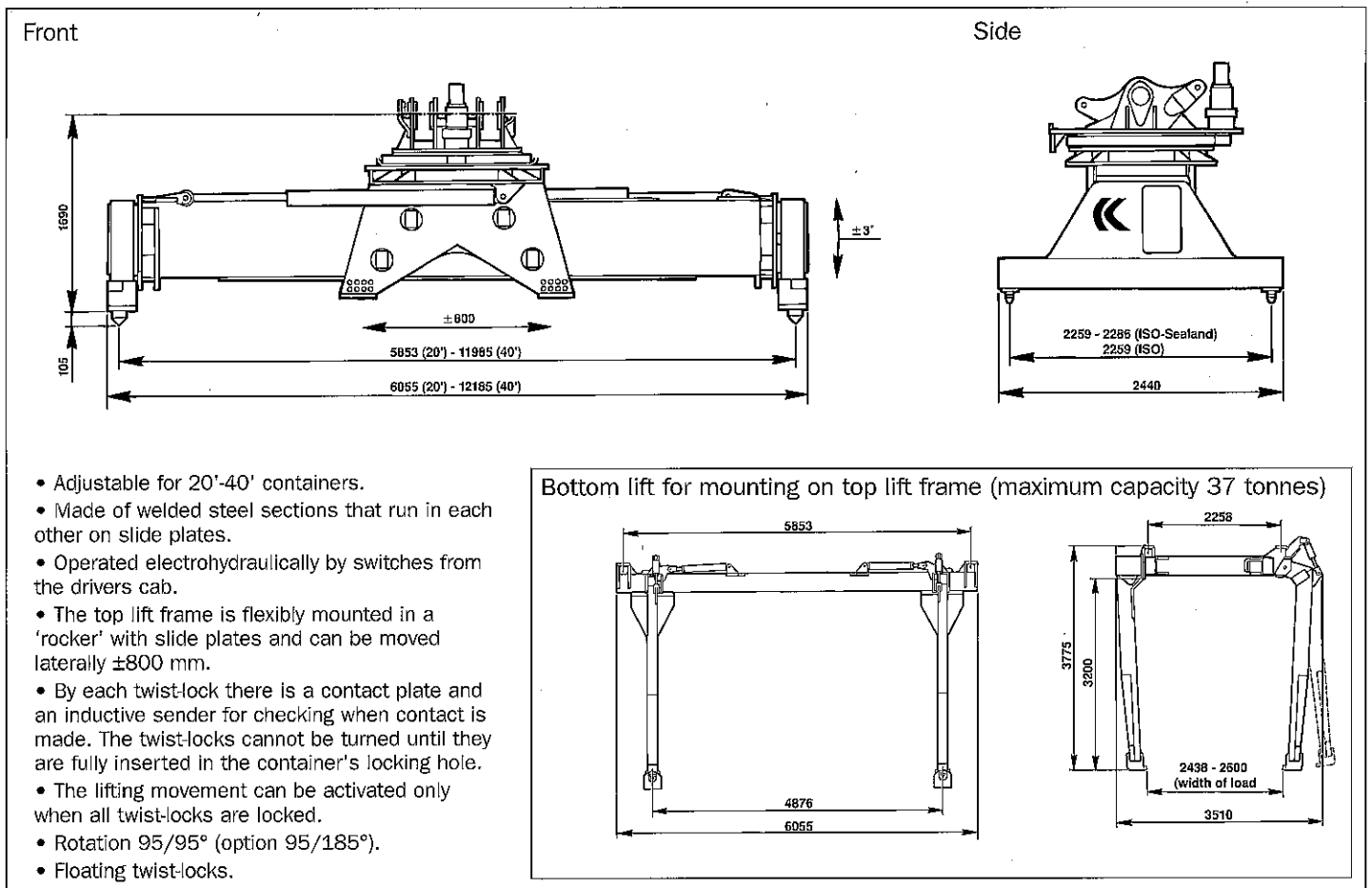
To prevent damage caused by overloading, the machines are equipped with an overload indication system that monitors the load both at the front and at the rear. The system automatically interrupts lifting and extension of the boom when there is overloading.

The system consists of:

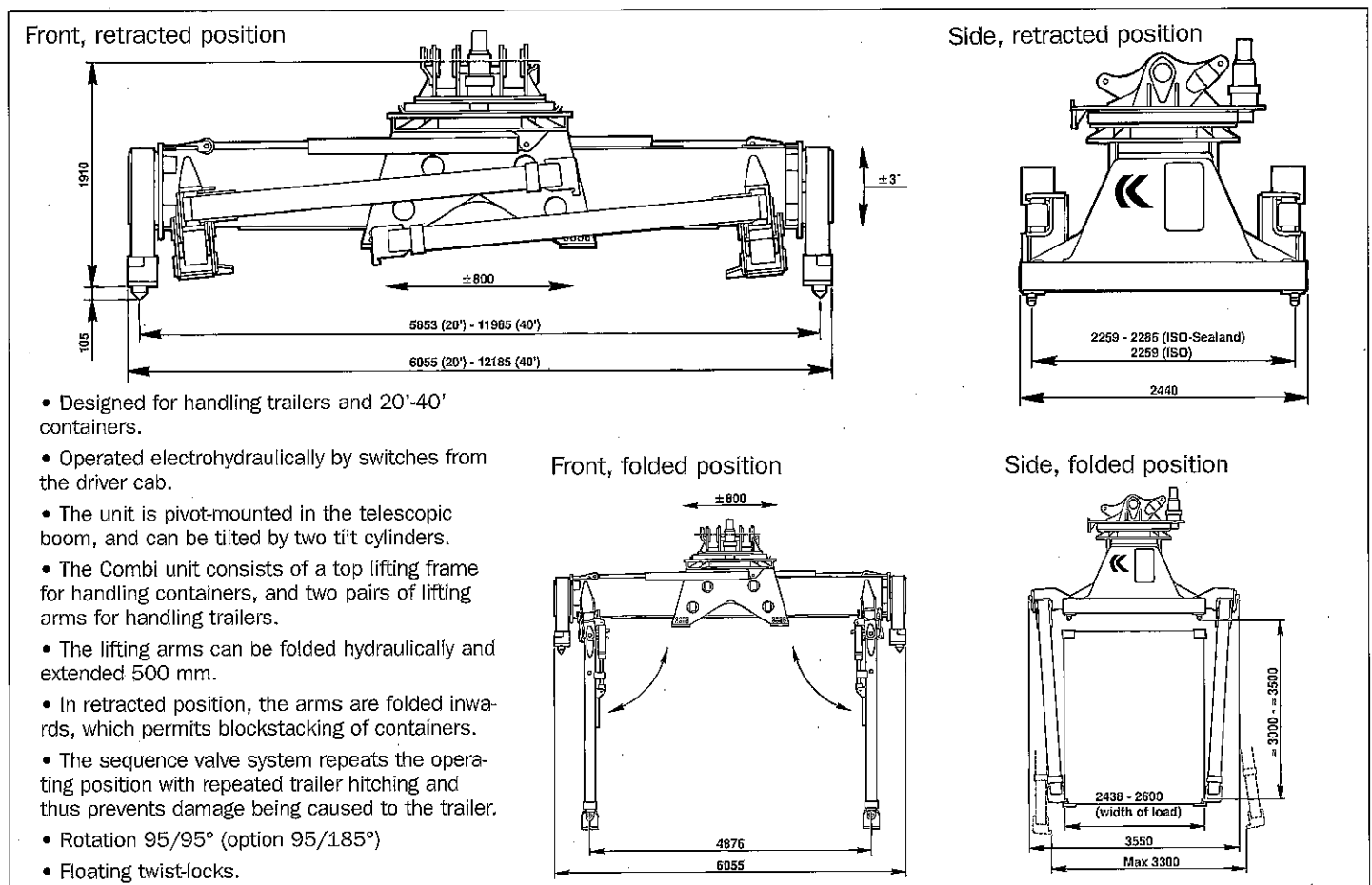
- A sensor in the steering axle mounting for indication of overload at the front, which starts to function when the margin of safety is exceeded.
- Two sensors in the boom for indication of overload on the steering axle, which is corrected by lowering or extending the boom.

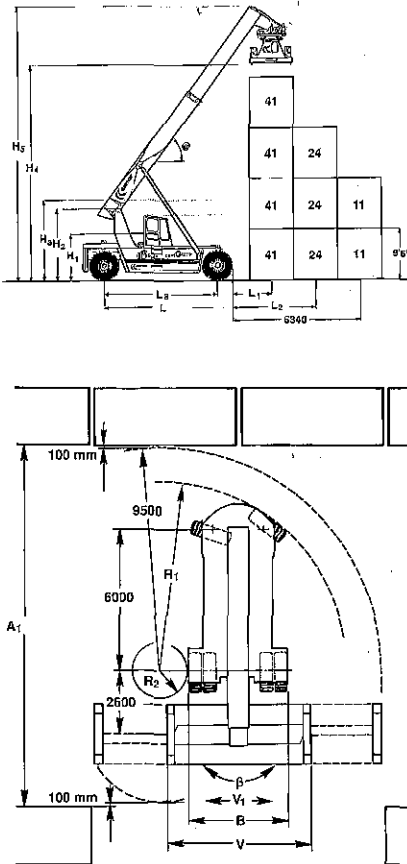


Top lift (dims. in mm)



Combi unit (dims. in mm)





Instrument panel

Standard equipment includes warning lamps for parking brake, battery charging, low brake pressure, high coolant temperature, low lubricating oil pressure in the engine, low oil pressure in gearbox, high oil temperature in gearbox, low coolant level, high temperature of cooling oil to the braking system, and gauges for operating time, fuel level, coolant temperature, and oil pressure in gearbox.

Optional equipment

- Air-condition
- Radio with cassette player
- Air suspension seat
- Cab that can be hydraulically moved
- Synchronised lifting and lowering movement facility
- Electronic load indicator
- Automatic gear shifting
- ISO/Sealand twist-locks
- High pressure filter for steering pump
- Additional noise insulation

Specification			Kalmar LMV	Kalmar LMV	Kalmar LMV	
1	Manufacturer		DC 4160 RS4	DC 4160 RS5	DC 4560 RC4	
2	Model					
3	Lifting capacity	At load center, L1, top lift	41 000	41 000	41 000	
		At load center, L1, bottom lift			45 000	
		At load center, L2, top lift	24 000	24 000	20 500	
4	Load center	First row	1 790	1 790	1 790	
		Second row	3 840	3 840	3 840	
5	Power		Diesel engine	Diesel engine	Diesel engine	
6	Steering		By steer, wheels fr. driver's seat	By steer, wheels fr. driver's seat	By steer, wheels fr. driver's seat	
7	Type of tyre		Pneumatic	Pneumatic	Pneumatic	
8	Wheels	No. front/rear *=-driven	4*/2	4*/2	4*/2	
9	Lifting height	H4 mm	12 400	14 700	12 200	
10-12 (for electric trucks)						
13	Width over container unit	Max.	12 192	12 192	12 192	
		Min.	6 060	6 060	6 060	
	Side shifting	Max. ±	800	800	800	
14	Jib angle	Max./min.	58/0	62/0	58/0	
		Swiveling angle	Max. ±	95/185	95/185	95/185
15	Over all dimensions	Overall length	10 900	10 900	10 900	
		Truck width	4 150	4 150	4 450	
16	Jib height, min.	H3 mm	4 575	4 575	4 575	
17	Jib height, max.	H5 mm	15 550	17 800	15 550	
18	Truck height without jib	H2 mm	3 900	3 900	3 900	
19	Seat height	H1 mm	2 600	2 700	2 600	
21	Turning radius	Outer	R1 mm	8 000	8 000	8 000
		Inner	R2 mm	1 200	1 200	1 200
22	Distance from front axle load to load	mm	1 200	1 200	1 200	
23	Aisle for 90° stacking incl. 200 mm safety margin	20' container	A1 mm	12 050	12 050	12 050
		40' container	A2 mm	14 500	14 500	14 500
	Stability	ISO 1074 Yes/no	Yes	Yes	Yes	
24	Speeds	Travelling with/without load	km/h	21-25	20-24	
25		Lifting with/without load	m/s	0.21-0.23	0.20-0.21	
26		Lowering with/without load	m/s	0.25-0.23	0.25-0.21	
27	Towing ability					
28		Max. with load	kN	320	320	320
29	Incline, driving ability	Continuous at 2 km/h with load	%	20	18	
30		Max. at 0 km/h with load	%	31	28	
31	Acceleration time	10 m distance with/without load	S			
32	Gross vehicle weight		kg	60 400	61 100	65 700
33	Axle load	L1 without/with load front	kg	30 700-39 500	31 800-42 000	37 300-101 800
		L2 without/with load front	kg	34 900-77 500	35 800-78 400	42 900-79 300
34		L1 without/with load rear	kg	29 700-11 900	29 300-10 100	28 400-8 900
		L2 without/with load rear	kg	25 500-6 900	25 300-6 700	22 800-6 900
35	Tyres	No. front/rear	st	4/2	4/2	
36		Size front	inch	18.00x25	18.00x25	23.50x25
37		Size rear	inch	18.00x25	18.00x25	18.00x25
38	Wheel base		L3 mm	6 000	6 000	6 000
39	Track	c/c front	mm	3 030	3 030	3 030
40	Ground clearance					
41		at centre of wheelbase	mm	475	475	475
42	Foot brake system	Type/wheels activated		Hydraulic/driven wheels	Hydraulic/driven wheels	Hydraulic/driven wheels
43	Parking brake system	Type		Spring brake/driven wheels	Spring brake/driven wheels	Spring brake/driven wheels
	Steering system			Hydraulic servo assisted	Hydraulic servo assisted	Hydraulic servo assisted
44-48 (for electric trucks)						
49	Engine	Manufacturer - type	hp	Volvo TWD 1030 ME	Volvo TWD 1030 ME	Volvo TWD 1030 ME
50		Power ISO 3046/2534	kW	212(288)	212(288)	212(288)
51		Rated speed		2 200	2 200	2 200
		Max. torque - at rpm		1 260-1 200	1 260-1 200	1 260-1 200
52		No. of cyls. swept volume	(cm³)	6	6	6
		Compression ratio		18:1	18:1	18:1
53	Fuel consumption	l/h		14-16	14-16	
53	Alternator	Type - output	W	AC-1540	AC-1540	AC-1540
53	Starter battery	Voltage - capacity	V Ah	2x12-135	2x12-135	2x12-135
54	Drive axle	Type		Rockwell PRC 5324W4H	Rockwell PRC 5324W4H	Rockwell PRC 5324W4H
55	Gearbox	Type - no. of gears f/r		Clark 15.5 HR34432	Clark 15.5 HR34432	Clark 15.5 HR34432
56	Clutch	Type		Torque converter	Torque converter	Torque converter
57	Hydraulic pressure	For additional unit	Bar	18.5	18.5	18.5
58	Noise level	1)	dB(A)	<75	<75	<75

The figures in the table refer to VDI 2198, blank lines reserved specially for DIN data.

1) Average reading at ear level inside the cab, as per DIN 45635



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