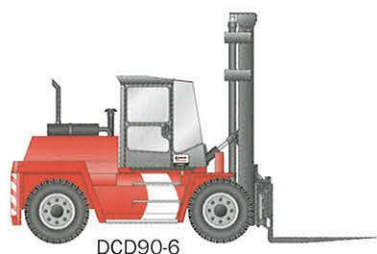
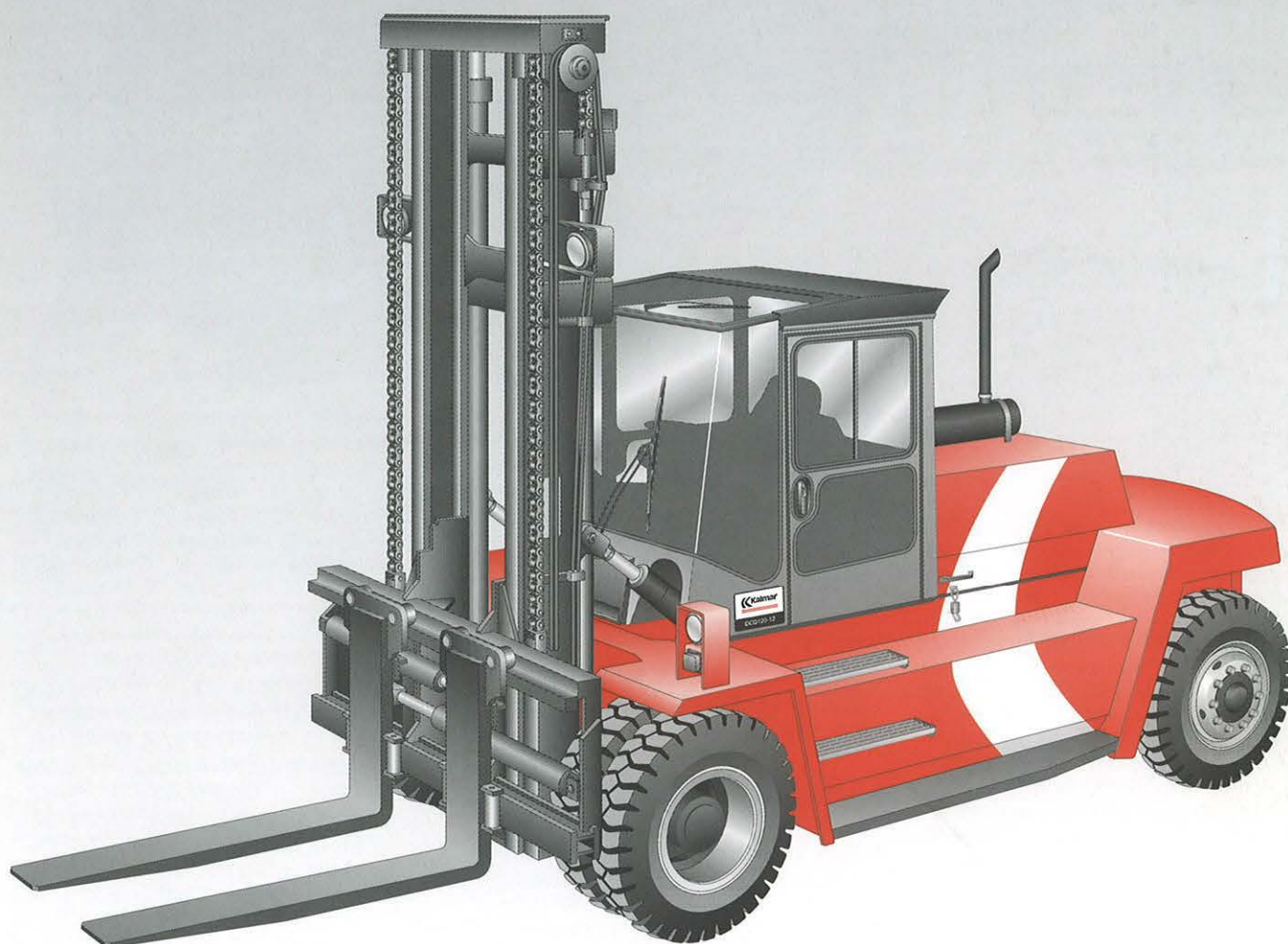


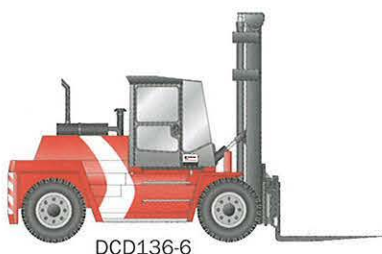
Technical Information

Forklift trucks 9-18 tonnes

Kalmar DCD90-180, diesel



DCD90-6



DCD136-6



DCD160-12

DCD90-180

The DCD90-180 with a lift capacity of 9-18 tonnes is the new generation of forklift trucks in the medium segment of Kalmar's comprehensive range of 4-90 ton trucks - a well proven range of trucks incorporating the latest design solutions for optimum productivity and overall economy.

A comprehensive range of optional equipment packages facilitates adaptation to special handling environments and different types of goods.

Type designation:

DCD100-12

Diesel engine
Counter-balance truck
Generation
Lift capacity, decitonnes
Load centre, decimetre

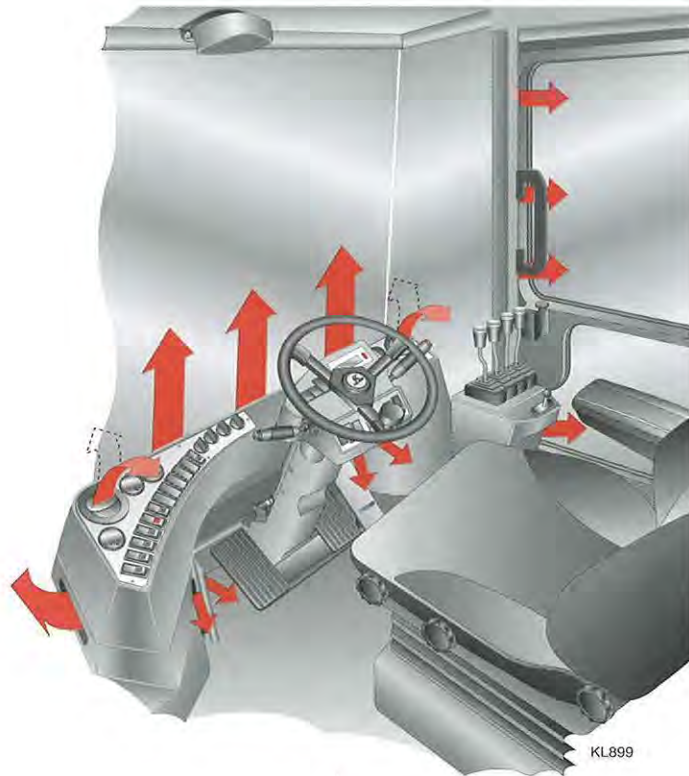
**Operator Environment**

The Spirit Delta cab is of a completely new and modern design that provides the operator with an efficient and safe place of work. The design of the cab is the result of a comprehensive analysis of operators' working conditions providing optimum visibility with large glass areas and no forward corner posts to inhibit the field of vision. The instrument panel is gently rounded and ergonomically designed with an uninhibited clear view of all essential information. Access to the cab is comfortable and secure thanks to the three steps up to the cab and many well located hand rails.

All cabs in the series can be tilted, for optimum service access. Noise and vibration levels are extremely low thanks to the insulated mounting to the chassis. The tilting cylinders operate against the cab which is isolated by means of rubber elements.

The operator's seat, steering wheel and hydraulic controls are all individually adjustable for optimum working position. Two easily operated, ergonomically positioned multi-function levers are provided for gear changing, wind-screen wipers, washers and horn.

An extremely powerful heating/ventilation unit ensures a comfortable cab temperature. An easily replaced fresh air filter cleans the incoming air.



The unit slides out to give easy access for service. As standard, the equipment includes a powerful 3-speed fan for cooling, heating, defrosting and recirculation.

Optional Extras:

- Extra high cab, +200 mm
- Elevated cab, +300 mm
- Overhead guard
- Roof mounted grid protection
- Complete climate control system
- Partially/fully rotatable operator seat

Instrumentation

The instrument panel has logically grouped units, all within easy reach.

Standard instrumentation includes warning lamps for battery charging, low engine lubrication oil pressure, low brake pressure, high coolant temperature, high gearbox oil temperature and applied parking brake. In addition, gauges display values for engine coolant temperature, fuel quantity and operating time.

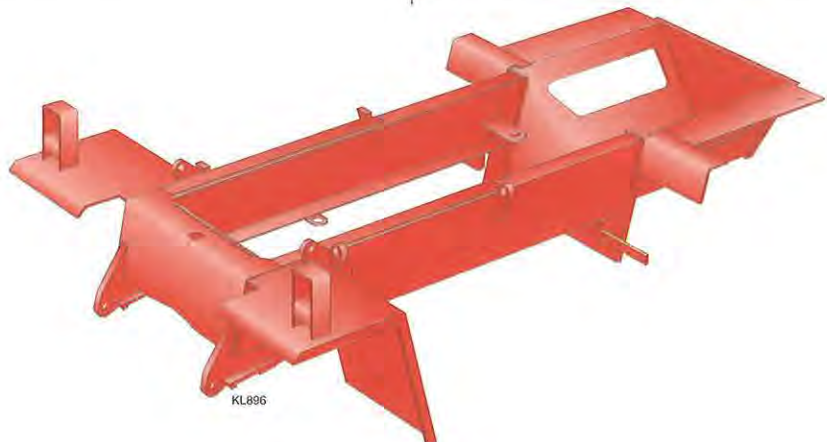
Trucks fitted with ECS monitoring are not normally equipped with warning lamps or gauges. These functions are handled by the ECS which has a single warning lamp and full text display showing current values and any faults that occur.

Chassis

The chassis is built of fully welded steel profiles which gives a rigid construction with extremely strong mounting points for the drive axle and lift equipment.

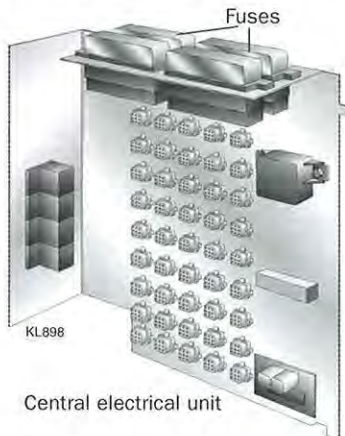
Stress concentrations have been eliminated for optimum tensile strength. The chassis is flexible and is used for a number of different drive line combinations. The space at the rear of the chassis is used for counter-weights, the number of which are adapted to the machine in question.

The chassis has an extremely low profile for good visibility. The tanks are separately constructed and bolted to the chassis in a position that also contributes to good visibility.



Electrical System

The electrical system is logically structured, easily serviced and completely coordinated with the other trucks in the Kalmar range. The system is supplied by two 12V batteries connected in series charged by an alternator, with related electronics for rectification and current stabilization. The system provides high power levels even at low engine revs. The electrical fuses, relays and connectors are located in an easily accessible position within a central electrical unit inside the cab, behind the operator's seat.



ECS (Optional)

- Electronic Control System

Trucks can be equipped with ECS, a state of the art system for optimum operational security and overall economy. The system consists of a number of modules that can be combined in different ways, depending on the nature of the operations. For example, the following functions are available:

- Automatic gear changing (Load sensing system)
- Lever steering
- Mini-steering
- Monitoring
- Electro-servo

See also separate information about the Kalmar ECS System.

Engine

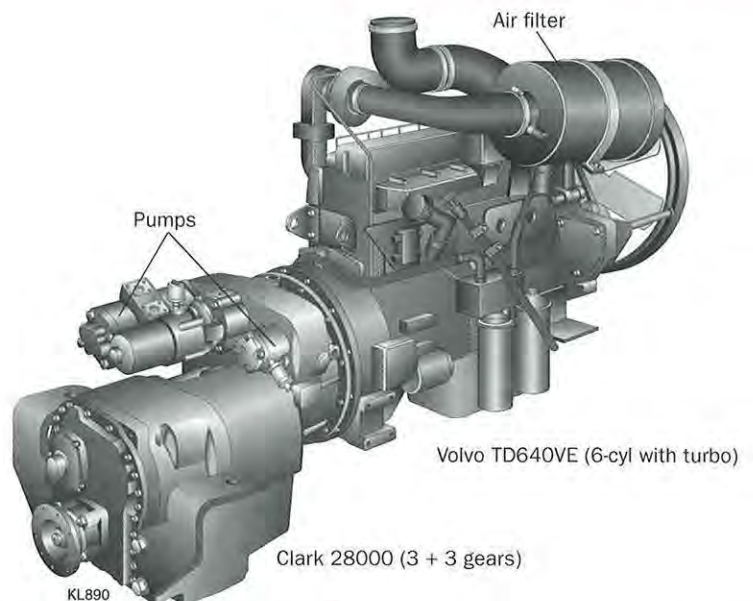
As standard, the DCD90-180 truck is equipped with Volvo's TD640VE diesel engine and as option the DCD90-136 with the Perkins 1006-60T1, both turbo-charged straight six diesel engines adapted to the specialized working requirements of a forklift truck, with high power and torque levels, even at low engine speeds. The engine has low exhaust emission levels and complies with today's stringent legal environmental demands (EU, CARB, EPA).

All engines are characterized by low fuel consumption and low noise and vibration levels.

Alternative engines:

- Perkins 1006-60T2
- Volvo TD730VE
- Volvo TWD731VE
- Scania DI9
- Cummins 6BTA 5.9-C200

See Alternative drive lines table



Transmission

All trucks in the series are equipped with Clark's well proven hydrodynamic transmission systems (3+3), with integrated gearbox and torque converter, for smooth, quick acceleration with a minimum of "clutch-slip".

A number of different transmissions systems are available, depending on the selected engine (see separate combination table). Constant mesh gears and gear changing by hydraulically applied clutches (Powershift) are, however, common to all gearboxes.

Gear changing is electrically achieved via solenoid valves, with three reverse and three forward gears, controlled by means of an easily operated multi-function lever.

Drive axle

The Kessler D81 drive axle is of an extremely robust design to be able to cope with tough working environments such as in the paper and pulp industries, saw mills, steel works, ports and terminals.

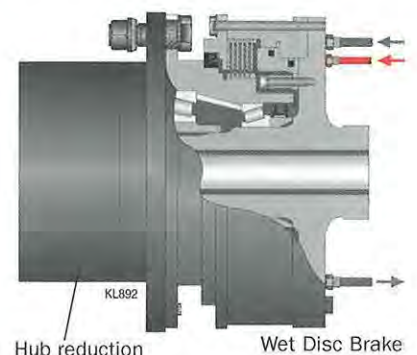
The axle has reduction in two stages - differential and hub reduction - which ensures a minimum of strain on the transmission system. The drive axle is fitted with hydraulic braking system (see Service Brake System).

Parking Brake System

The parking brake system consists of a dry disc brake on the in-going shaft of the drive axle. The disc brake is applied by means of a powerful spring in the parking brake cylinder and is released by means of hydraulic pressure from the parking brake valve in the cab.

Service Brake System

The service brake system is of the Wet Disc Brake type, a system with oil-cooled discs that are alternately fixed to and rotating with the hub. When the brakes are applied, the discs are pressed together by hydraulic pressure from the brake pedal, which provides extremely effective braking. The system is virtually maintenance free and can cope with heavy loads over an extended period of time, with no fade and without the need for brake adjustments. The heat generated during braking is dissipated via a cooling circuit in which the truck's total volume of hydraulic fluid comes into play. A special filter protects the braking system from any impurities.

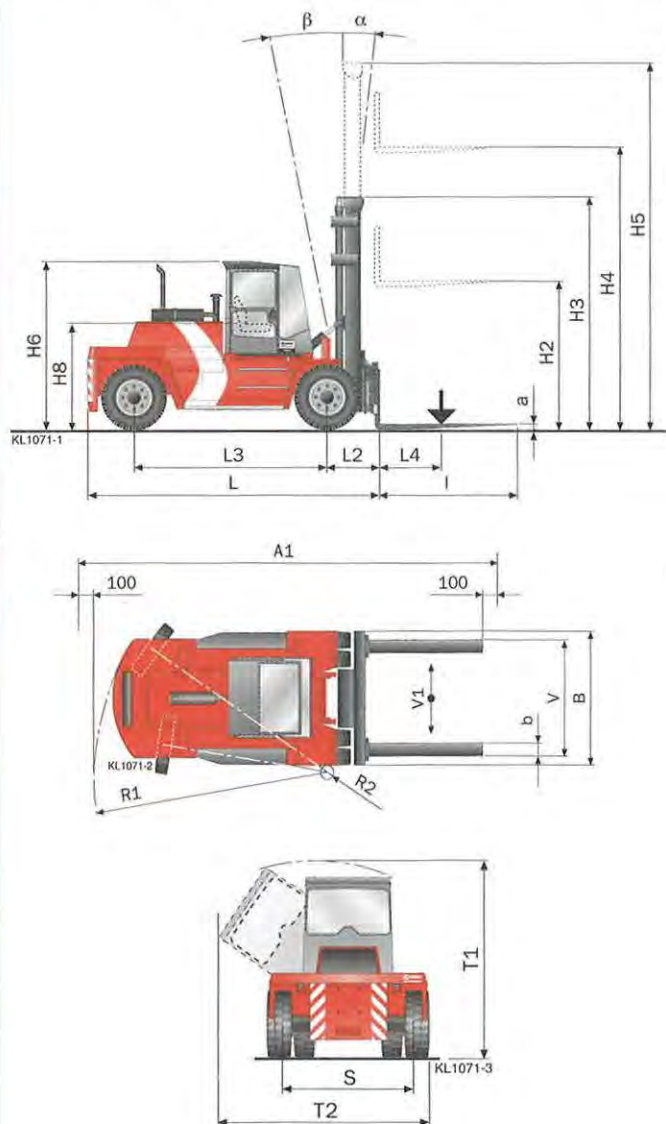


The graph illustrates the relationship between lifting capacity and load centre for different DCD models. The y-axis represents lifting capacity in tonnes, ranging from 5 to 19. The x-axis represents the load centre in millimeters, ranging from 0 to 2000. Each model's performance is shown as a red line that starts at a constant capacity for low load centres and then slopes downward as the load centre increases.

Model	Initial Capacity (tonnes)	Initial Load Centre (mm)	Capacity at 1200 mm (tonnes)
DCD180-6 (B)	18.0	600	13.5
DCD160-6 (B)	16.0	600	12.0
DCD160-9 (B)	16.0	900	11.0
DCD160-12 (B)	16.0	1200	10.0
DCD150-12 (B)	15.0	1200	9.0
DCD136-6 (A)	13.5	600	10.5
DCD120-6 (A)	12.0	600	9.0
DCD120-12 (B)	12.0	1200	8.0
DCD100-6 (A)	10.0	600	8.0
DCD100-12 (A)	10.0	1200	7.0
DCD90-6 (A)	9.0	600	6.5

KL1073

- A. Perkins engine
- B. Volvo engine
1. DCD90-6 to DCD180-6 models:
Full lifting capacity up to 5000 mm lift height with Duplex/Duplex free-lift/Triplex masts and integrated sideshift/fork positioning carriage.



	1 Model Lifting capacity, deciton - Load centre distance, decimetre A = Perkins engine B = Volvo engine					
Lifting data	2 Lifting capacity	Rated	kg			
		At max lifting height	kg			
	3 Lifting speed	Unloaded	m/s			
		At rated load	m/s			
Performance	4 Lowering speed	Unloaded	m/s			
		At rated load	m/s			
	5 Driving speed forward/ reverse	Unloaded	km/h			
		At rated load	km/h			
Weight	6 Gradient capability	Max, unloaded	%			
		Max at rated load	%			
		At 2 km/h, unloaded	%			
		At 2 km/h, at rated load	%			
Drive system	7 Draw bar pull	Max	kN			
	8 Stability ISO 1074/10525	Yes/No				
	9 Service weight		kg			
	10 Axle load front	Unloaded	kg			
Wheels, brakes, steering	11 Axle load back	At rated load	kg			
		Unloaded	kg			
	12 Engine	At rated load	kg			
		A. Perkins B. Volvo				
Misc.	13 Alternator	Manufacturer - type designation				
		Fuel - type of engine				
		Rating ISO 3046 - at revs	kW/hp - rpm			
		Peak torque ISO 3046 - at revs	Nm - rpm			
		No of cylinders - displacement	cm ³			
		Fuel consumption, normal operation	l/h			
	14 Starting battery	Type - power	W			
	15 Gearbox	Voltage - capacity	V - Ah			
	Dimensions	16 Drive axle	C. Clark 20000 D. Clark 28000			
			Manufacturer - type designation			
			Clutch, type			
			Gearbox, type			
No. of gears forward - reverse						
Type						
Wheels, brakes, steering	17 Wheels/tyres	Type front and rear				
		Dimensions, front and rear/Ply	inches/number			
		No. of wheels, front - rear (*driven)				
		Inflation pressure	MPa			
Misc.	18 Steering system	Type - maneuvering				
	19 Service brake system	Type - affected wheels				
	20 Parking brake system	Type - affected wheels				
	21 Hydraulic pressure	Max	MPa			
Dimensions	22 Noise level DIN 45635-36	Equivalent noise level in cab (Lm)				
	23 Fuel volume		L			
	24 Hydraulic fluid volume		L			
	Dimensions	25 Minimum aisle width for 90° stacking with forks	A1	mm		
Truck length without forks			L	mm		
Truck width			B	mm		
Height, basic machine			H6	mm		
Seat height			H8	mm		
Distance between centre of front axle - front face of fork arm			L2	mm		
Wheelbase			L3	mm		
Load centre			L4	mm		
Track (c-c) front - rear			S	mm		
Turning radius, outer			R1	mm		
Turning radius, inner			R2	mm		
Ground clearance, min				mm		
Max height when tilting cab			T1	mm		
Max width, tilted cab			T2	mm		
26 Truck		Lifting height	H4	mm		
		Mast height, min.	H3	mm		
		Mast height, max.	H5	mm		
		Mast tilting, forwards - backwards	α-β	°		
		Ground clearance, min		mm		
		27 Standard duplex mast	Width	b	mm	
28 Forks	Thickness	a	mm			
	Length of fork arms	l	mm			
	Width across fork arms, max	V	mm			
	Width across fork arms, min	V	mm			
	Sideshift ± at width across fork arms	V1-V	mm			

This table relates to trucks fitted with standard equipment, for optional equipment, see separate tables.

- ¹⁾ More powerful engines are available, up to 167 kW/230 hp
²⁾ Stronger gearboxes are available, Clark 32000 (3+3)
³⁾ Semi-solid tyres are available for all models (Super-Elastic)

We reserve the right to alter design and material specifications, without prior notice

15 TON

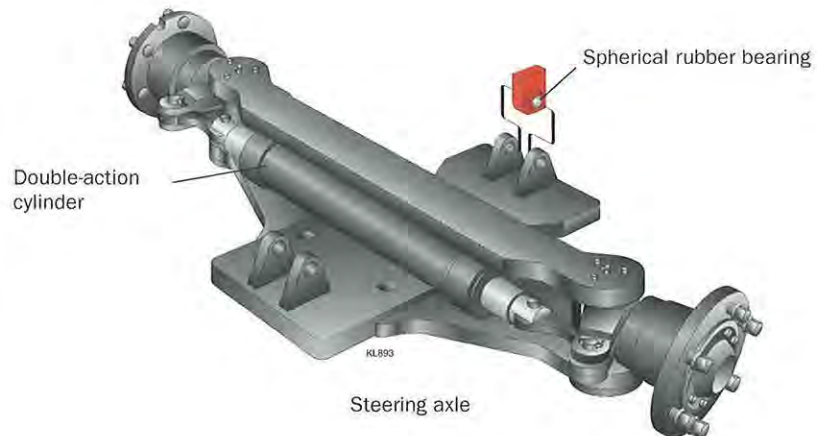
DCD 90-6 A	DCD 90-6 B	DCD 100-6 A	DCD 100-6 B	DCD 100-12 A	DCD 100-12 B	DCD 120-6 A	DCD 120-6 B	DCD 120-12 B	DCD 136-6 A	DCD 136-6 B	DCD 150-12 B	DCD 160-6 B	DCD 160-9 B	DCD 160-12 B	DCD 180-6 B	
9000		10000				12000			13600		15000	16000			18000	
9000		10000				12000			13600		15000	16000			18000	
0.40	0.50	0.40	0.50	0.40	0.50	0.35	0.40		0.35	0.40	0.40	0.40			0.40	
0.35	0.45	0.35	0.45	0.35	0.45	0.30	0.35		0.30	0.35	0.35	0.35			0.35	
0.40		0.40				0.40			0.40		0.40	0.40			0.40	
0.40		0.40				0.40			0.40		0.40	0.40			0.40	
30	30	30	30	30	30	30	30		30	30	30	30			30	
28	30	28	30	28	30	28	30		28	30	30	30			30	
65	133	61	117	40	65	53	95	61	50	85	54	63	57	51	55	
34	54	31	49	24	37	26	41	33	23	36	28	29	28	26	26	
45	89	42	82	30	51	37	71	49	36	65	44	50	46	41	44	
24	43	22	39	18	30	19	33	27	18	29	23	24	23	22	21	
77	111	77	111	73	105	75	109	105	73	105	105	105			105	
Yes																
13800		14500		18900		15600		19700	16000		21400	19200	20600	22400	21100	
7200		7800		10300		7900		10100	7900		9400	10000	9600	10500	9800	
21100		22800		27000		25900		29600	27800		33800	33200	34200	35800	36600	
6600		6700		8600		7700		9600	8100		12000	9200	11000	11900	11300	
1700		1700		1900		1700		2100	1800		2600	2000	2400	2600	2500	
A.	B.	A.	B.	A.	B.	A.	B.	B.	A.	B.	B.	B.	B.	B.	B.	
A. Perkins - 1006-60T1 (Turbo)												B. Volvo - TD640VE (Turbo) ¹⁾				
Diesel - 4-stroke												Diesel - 4-stroke				
85/116 - 2300												129/175 - 2400				
465 - 1400												690 - 1400-1500				
6 - 5985												6 - 5480				
5 - 7												7 - 10				
AC - 1260												AC - 1540				
2x12 - 140												2x12 - 140				
C.	D.	C.	D.	C.	D.	C.	D.	D.	C.	D.	D.	D.	D.	D.	D.	
C. Clark - 1207 FT 20302												D. Clark - 13.7HR 28000 ²⁾				
Torque converter												Torque converter				
Hydro-dynamic Powershift												Hydro-dynamic Powershift				
3 - 3												3 - 3				
Differential and hub reduction												Differential and hub reduction				
Pneumatic ³⁾																
10.00x20/16PR				12.00x20/20PR		11.00x20/16PR		12.00x20/20PR				12.00x20/20PR HD				
4* - 2																
0.7		0.8		0.9		0.9		0.9		0.9		0.9		1.0	1.0	
Hydraulic-servo - Steering Wheel																
Oil cooled disc brakes (Wet disc brakes) - drive wheels																
Dry, spring activated disc brake - drive wheels																
16.0		17.5		19.5		17.5	15.0		18.5		16.5		17.5		19.0	
70	73	70	73	70	73	70	73	70	73	70	73	70	73	70	73	
145		205		205		205			205		205		205		205	
180		180		220		180	220		220		220		220		220	
6240		6470		7945		6475	8370		6665		8380	7160	7770	8770	6745	
4470		4720		5065		4725	5315		4985		5375	5305	5315	5575	5115	
2465		2465		2530		2480	2530		2530		2530		2530		2600	
2880		2880		2910		2890	2910		2910		2910		2910		2910	
1760		1760		1790		1770	1790		1790		1790		1790		1760	
890		890		985		895	985		905		995	975	985	995	985	
2750		3000		3250		3000	3500		3250		3500	3500		3750	3250	
1840-1960		1840-1960		1855-1960		1840-1960					1855-1960					
600		600		1200		600	1200		600		1200	600	900	1200	600	
3950		4180		4360		4180	4785		4360		4785	4785		5175	4360	
75		75		125		75	420		125		420	420		600	125	
320		320		350		330	350		350		350	350			350	
3395		3395		3425		3405	3425		3425		3425	3425			3425	
3380		3380		3380		3380			3380		3380	3380			3380	
5000		5000		5000		5000	5000		5000		5000	5000			5000	
3990		3990		4185		4000	4185		4020		4185	4185			4185	
6490		6490		6685		6500	6685		6520		6685	6685			6685	
5-10		5-10		5-10		5-10			5-10		5-10	5-10			5-10	
240		240		250		250			250		250	250			250	
200		200		220		200	220		200		250	200	220	250	220	
65		65		90		70	90		80		100	80	90	100	90	
1200		1200		2400		1200	2400		1200		2400	1200	1800	2400	1200	
2330		2330		2360		2330	2360		2330		2360	2360			2360	
570		570		640		570	640		570		700	600	640	700	640	
440-1450		440-1450		430-1500		440-1450	430-1500		440-1450		415-1530	440-1480	430-1500	415-1530	430-1500	

Steering System

The steering system is completely hydraulic and is fed from hydraulic pump 1 (see the hydraulic system diagram), via a priority valve. When the steering wheel is turned, the steering valve transmits a load signal to the priority valve which ensures that the steering system always has sufficient hydraulic pressure.

The steering axle is an extremely robust construction with double-action cylinder.

The pendulum suspension of the axle over powerful, spherical rubber bearings has a long operative lifespan and provides good shock-absorption. The minimal number of parts ensures operational reliability, a minimum of service points and easy maintenance. The steering geometry allows large wheel displacement and thereby, a tight turning circle.



Hydraulic System

The hydraulic system includes the following sub-systems:

- Working hydraulics
- Service brake system with braking circuit and cooling circuit
- Parking brake system
- Hydraulic servo (standard)
- Steering system

In standard form, the hydraulic system is built around two gear wheel type pumps - one double and one single. The pumps are driven from the outlet of the torque converter. The flow from the pumps is fed to a valve block with a large number of in-built functions (see diagram). The valve block enables easy installation with a minimum number of hydraulic lines/hoses.

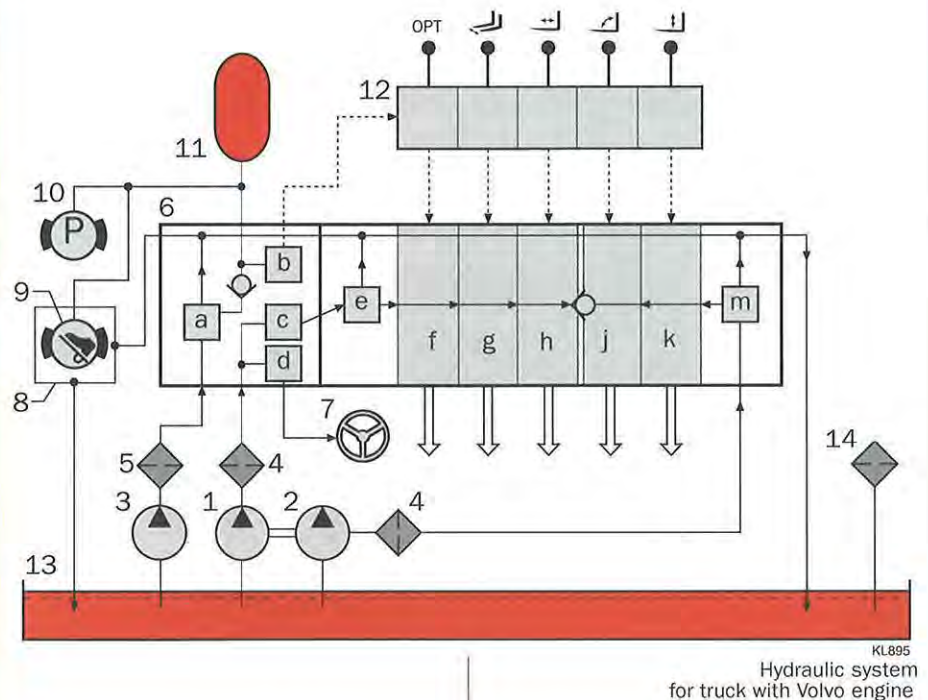
The outer section of the double pump feeds the lift and tilt functions, whilst the inner section feeds other working hydraulic functions. With full extension of the lift function, both sections of the double pump operate to provide maximum lift capacity.

The separate single pump feeds the hydraulic accumulator, which in turn, supplies the brake and servo systems. As a safety measure, the accumulator ensures sufficient brake pressure to be able to brake several times, should the engine temporarily stop.

The excess flow from the pumps is led to the brake cooling circuit to dissipate the heat generated during braking, before being returned to the hydraulic tank.

Optional extras:

- Load sensing variable pumps
- Electro-servo controls
- Piston type accumulator
- Additional hydraulic functions
- Hydraulic joystick



1. Hydraulic pump, working hydraulics, steering system
2. Hydraulic pump, lift/tilt
3. Hydraulic pump, accumulator charging
4. High pressure filter
5. High pressure filter
6. Main valve with double valve block
 - a. Accumulator charge valve
With fully charged accumulator feed to brake cooling circuit or return to tank
 - b. Feed, servo system
 - c. Priority valve, steering system
 - d. Feed, steering system
 - e. Main pressure limitation valve
 - f. Control valve, LEVELLING
 - g. Control valve, FORK POSITIONING
 - h. Control valve, SIDE-SHIFT
 - j. Control valve, TILT
 - k. Control valve, LIFT
 - m. Main pressure limitation valve

7. Steering system
8. Cooling circuit for service brake system
9. Brake circuit, service brake system
10. Parking brake system
11. Accumulator
12. Servo assisted control levers
13. Hydraulic tank
14. Breather filter, hydraulic tank

Trucks with Perkins engines are equipped with a simpler hydraulic system with only one double pump. One section of the pump feeds the working hydraulics whilst the other section feeds the steering system and charges the accumulator. The main valve is fitted with a valve block, input section and main pressure limitation valve.

Lift Masts

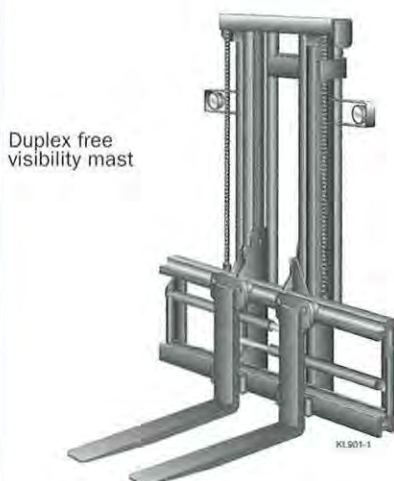
All masts, both duplex and triplex, are constructed on the "free visibility principle" and can be supplied with the area steered free-lift system which, in terms of function, is extremely reliable and secure.

The robust mast profiles are of high tensile steel, dimensioned for minimal obstruction of the field of vision and long service life. The lift cylinders are positioned in the "dead" angles of the mast. All mast wheels are hardened and fitted with high quality bearings.

As standard, trucks are fitted with the duplex free visibility mast.

Optional extras:

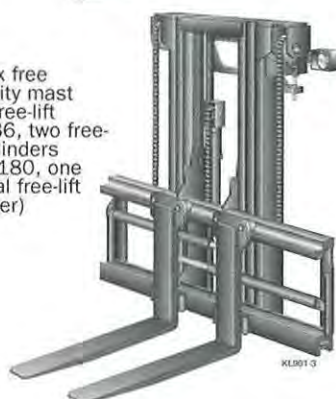
- Duplex free visibility mast with free-lift
- Triplex free visibility mast with free-lift



Duplex free visibility mast with free-lift



Triplex free visibility mast with free-lift 90-136, two free-lift cylinders (150-180, one central free-lift cylinder)

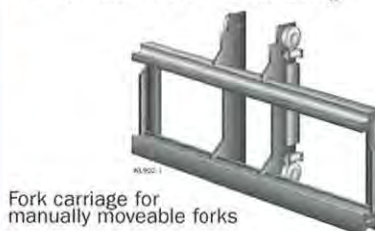


Fork Carriages

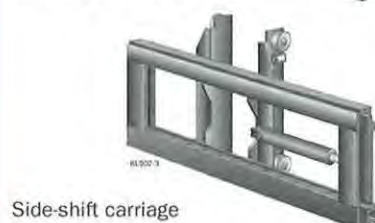
A number of different models of fork carriages are available, all of them with excellent through-vision. The standard model has manually moveable forks. However, the majority of trucks are supplied with hydraulic side-shift and fork positioning.

Optional extras:

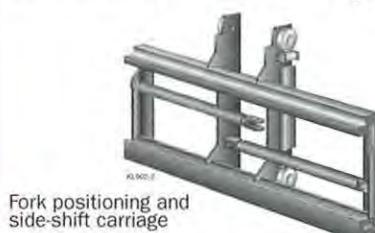
- Fork positioning/side-shift
- Fork positioning/side-shift with levelling
- Fork positioning/side-shift with centre levelling
- Side-shift carriage
- Fork shaft system
- Additional types of clamp attachments
- Coil rams for steel handling



Fork carriage for manually moveable forks



Side-shift carriage



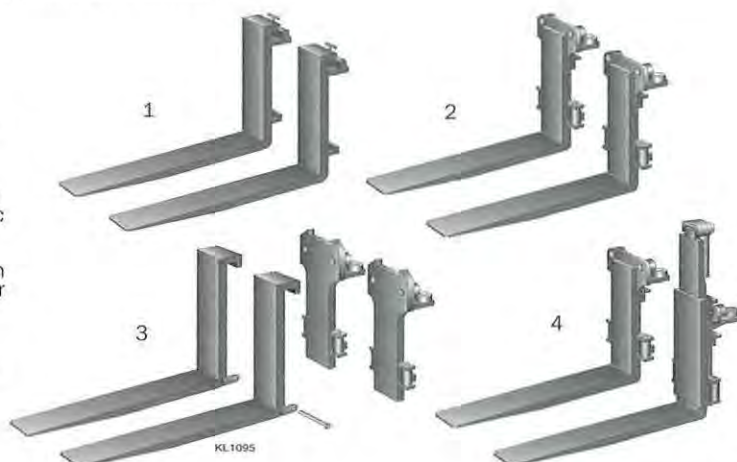
Fork positioning and side-shift carriage

Forks

The forks are one-piece forged in high tensile steel. The standard fitting is over hooks on the fork carriage, whilst hydraulically controlled forks are fitted over rollers running on bearings - four upper rollers and two lower support for each fork.

For ease of changing between forks and other attachments, a fork shaft system is available, where the forks are mounted on a separate fork holder.

1. Standard forks for manual manoeuvring
2. Forks with roller fittings for hydraulic manoeuvring
3. Fork shaft system with separate holder for each fork
4. Forks with hydraulic levelling



Lift mast	Lift height H4 mm	Lift mast height		Free-lift H2 mm	Lift mast height		Free-lift H2 mm
		Min 1) H3 mm	Max 1) H5 mm		Min H3 mm	Max H5 mm	
		90-6-136-6			100-12-180-6		
Duplex free visi- bility	3000	3000	4500	—	3185	4685	—
	3250	3125	4750	—	3310	4935	—
	3500	3250	5000	—	3435	5185	—
	3750	3375	5250	—	3560	5435	—
	4000	3500	5500	—	3685	5685	—
	4250	3625	5750	—	3810	5935	—
	4500	3750	6000	—	3935	6185	—
	4750	3875	6250	—	4060	6435	—
	5000	4000	6500	—	4185	6685	—
	5250	4125	6750	—	4310	6935	—
	5500	4250	7000	—	4435	7185	—
	5750	4375	7250	—	4560	7435	—
	6000	4500	7500	—	4685	7685	—
	6250	4625	7750	—	4810	7935	—
	6500	4750	8000	—	4935	8185	—
6750	4875	8250	—	5060	8435	—	
7000	5000	8500	—	5185	8685	—	
Duplex free visi- bility, free-lift	3000	3000	4500	1500	3175	4675	1500
	3250	3125	4750	1625	3300	4925	1625
	3500	3250	5000	1750	3425	5175	1750
	3750	3375	5250	1875	3550	5425	1875
	4000	3500	5500	2000	3675	5675	2000
	4250	3625	5750	2125	3800	5925	2125
	4500	3750	6000	2250	3925	6175	2250
	4750	3875	6250	2375	4060	6425	2375
	5000	4000	6500	2500	4175	6675	2500
	5250	4125	6750	2625	4300	6925	2625
	5500	4250	7000	2750	4425	7175	2750
	5750	4375	7250	2875	4550	7425	2875
	6000	4500	7500	3000	4675	7675	3000
	6250	4625	7750	3125	4800	7925	3125
	6500	4750	8000	3250	4925	8175	3250
6750	4875	8250	3375	5050	8425	3375	
7000	5000	8500	3500	5175	8675	3500	
Triplex, free visi- bility, free-lift	4500	2940	5940	1500	3120	6180	1500
	4750	3025	6190	1580	3205	6435	1580
	5000	3110	6440	1665	3285	6685	1665
	5250	3195	6690	1750	3370	6930	1750
	5500	3280	6940	1830	3450	7180	1830
	5750	3360	7190	1915	3535	7435	1915
	6000	3445	7440	2000	3615	7685	2000
	6250	3530	7690	2080	3700	7940	2080
	6500	3615	7940	2165	3780	8180	2165
	6750	3700	8190	2250	3865	8435	2250
	7000	3780	8440	2340	3945	8685	2340

1) These figures are based on the 120-6 and vary with tyre dimensions. H3 and H5 alter - 10 mm for 90-100-6 +20 mm for 136-6

Service Access

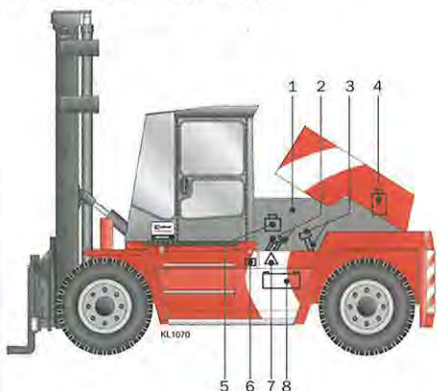
Routine daily service checks contribute to a safer work place and reduce the risk of break-downs.

Daily service checks are made easier thanks to well thought out and grouped service points. The operator can reach all service points without having to climb up onto the truck.

The cab can be tilted by means of a hydraulic cylinder operated by a manual pump. When the cab has been tilted, the gearbox, hydraulic pumps, hydraulic fluid filter, parking brake, main valves, control valves, etc., are readily accessible for service.

The engine hood is divided into three sections - a fixed middle section that bears the silencer and hinged outer sections to each side.

1. Indicator for air filter
2. Gearbox oil, dip-stick and filler cap
3. Engine oil, dip-stick and filler cap
4. Coolant
5. Screen wash liquid
6. Fuel, filler cap
7. Main switch, electrical system
8. Batteries 2x12 V - 140 Ah



Truck with overhead guard.

Standard equipment

The standard specification of our trucks includes important and vital components that contribute to the efficiency and safety of the truck.

- Robust truck chassis 9-18 ton
- Spirit Delta operator environment with low noise level
- Tilttable cab insulated against vibration
- Powerful ventilation unit with efficient filter
- Roof window of lexan
- Sliding window on the left hand side
- Wash/wipers, front, rear and roof
- Lockable cab doors
- Wide bottom access step and two extra steps on both sides
- Adjustable, shock absorbing, ergonomic operator seat with safety belt
- Three-way adjustable steering console
- Two-way adjustable hydraulic lever console
- Arm support on right hand side
- Environment friendly powerful engines
- Fully dimensioned radiator for engine and oil cooler for gearbox
- Powerful gearboxes with powershift
- Drive axle with oil cooled disc brakes
- Free visibility lift equipment
- Steering axle with double-action cylinder
- Hydraulic system with finger tip control
- Simple, reliable electrical system
- Comprehensive and logically grouped instrumentation
- Accelerator, brake pedal and forward-reverse selector
- Lighting: Working lights, indicators, brake, reversing and positional lights
- Large service hatches and tilttable cab for daily inspections
- Towing pin (manual)
- Complete documentation

Safety

All Kalmar trucks are CE-marked and are constructed to and comply with the following norms:

- EN1551
- ASME B56.1 (USA, trucks up to 13.6 tonnes)
- EN12895 (EMC test, Europe)

Optional equipment

A wide range of optional equipment and packages are available for our trucks, to satisfy further specialization and provide added efficiency

- Alternative engines and gearboxes
- Load sensing hydraulic system
- Exterior and interior cab equipment, such as air conditioning, etc.
- Lighting, mirrors and protective grid
- Different types of lift equipment, attachments, exhaust controls, air filters, etc.
- ECS with different types of module
- Catalytic converter and particle filter

Summary

Kalmar's medium trucks are of a well proven design, manufactured in large volumes for demanding environments such as:

- Timber, paper and pulp industries
- Steel works and foundries
- Concrete industry
- Ports and terminals
- Other heavy industries

A well planned and protected operator environment makes Kalmar's trucks efficient and comfortable working implements.

Readily accessible service points for ease of maintenance.

Alternative drive lines

● = Standard ○ = Optional

	90-6	100-6	100-12	120-6	136-6	120-12	150-12	160-6	160-9	160-12	180-6
Engine *Turbo **Turbo, intercooler											
Volvo TD640VE*	●	●	●	●	●	●	●	●	●	●	●
Perkins 1006-60T1*	○	○	○	○	○	○	○	○	○	○	○
Volvo TD730VE*		○	○	○	○	○	○	○	○	○	○
Volvo TWD731VE**		○	○	○	○	○	○	○	○	○	○
Perkins 1006-60T2*	○	○	○	○	○	○	○	○	○	○	○
Scania DI9**		○	○	○	○	○	○	○	○	○	○
Cummins 6BTA5.9-C200**	○	○	○	○	○	○	○	○	○	○	○
Gearbox with powershift, 3+3 gears											
Clark 13.7HR 28000 (Volvo TD640VE, TD730VE, Perkins 1006-60T2, Cummins 6BTA)	●	●	●	●	●	●	●	●	●	●	●
Clark 1207 FT 20302 (Perkins 1006-60T1)	○	○	○	○	○	○	○	○	○	○	○
Clark 13.7HR 32000 (Volvo TD640VE, TD730VE, Volvo TWD731VE, Scania DI9, Cummins 6BTA)	○	○	○	○	○	○	○	○	○	○	○
Drive axle with Wet Disc Brakes	●	●	●	●	●	●	●	●	●	●	●
Pneumatic tyres 10.00x20"/16PR	●	●									
11.00x20"/16PR			●								
12.00x20"/20PR				●	●	●	●	●	●	●	●
Optional: Semi-solid tyres (Super-Elastic)	○	○	○	○	○	○	○	○	○	○	○

Kalmar



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