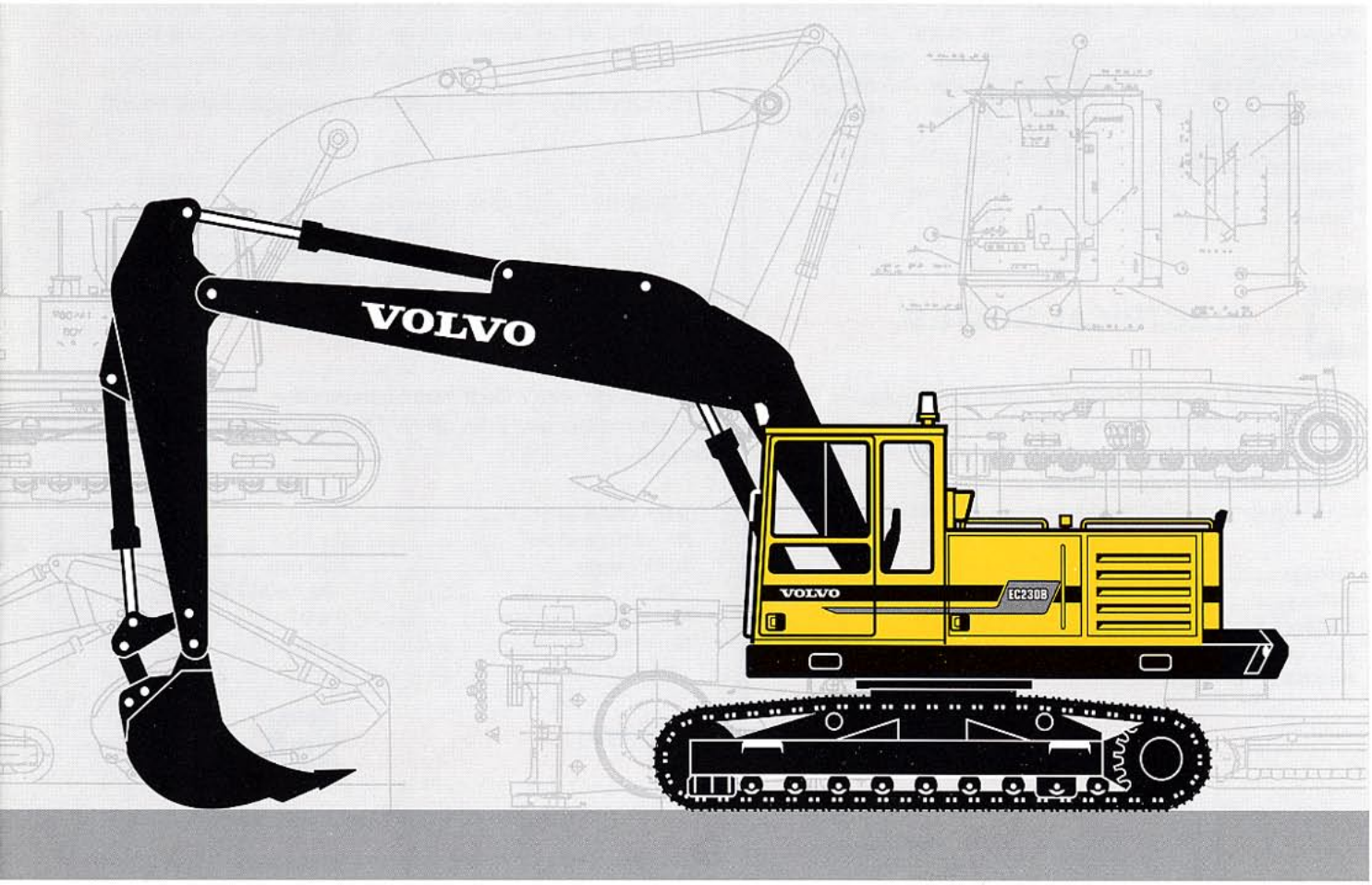
VOLVO EXCAVATOR

EC230B



- **Engine Power: 127 kW (173 hp)**
- **Operating Weight: 23,2 – 24,6 t**
- **Buckets: 725 – 1300 l**
- Low-emission, turbo-charged Volvo diesel engine with direct injection and intercooler
- Three-circuit multilevel priority hydraulic system
- COS = Capacity Optimized System – all three pumps for the digging movements
- Mode Selector and electronically controlled pump regulation SSC (Speed Sensing control)
- Care cab
  - computerized monitoring system
  - ergonomic environment
  - low sound level
  - filtered air
- Rugged digging equipment with spherical steel bearings
- Long undercarriage for good stability
- Slew circuit in oil bath
- Highest flexibility for extra equipment/hydraulics
- High travel speed – 5,2 km/h

VOLVO

ENGINE

The engine is a low-emission, turbocharged, 4-stroke diesel engine with intercooler, specially developed for excavator use. The machine can work at low engine speeds, contributing to good fuel economy, low sound level, less wear and longer life.

Air filter: 3-stage

Auto idling: Reduces the engine speed to an idling speed when levers and pedals are not activated.

Make	Volvo	
Model	TD 63 KIE	
Power output at	35 r/s	(2 100 r/min)
Net (ISO 9249 / SAE J1349)	119 kW	(162 hp)
Gross (SAE J1349)	127 kW	(173 hp)
No. of cylinders	6	
Displacement, total	5,48 l	
Bore	98,43 mm	
Stroke	120 mm	

ELECTRICAL SYSTEM

Micro processor for monitoring of engine and hydraulic system. High capacity and well protected electric system. Printed, circuit board based electric central with clearly arranged fuses and relays. Central prepared for connecting optional equipment. Battery disconnector standard.

Voltage	24 V
Battery	4 x 12 V
Battery capacity	120 Ah
A.C. Generator	28 V / 55 A
Alternator rating	1 540 W

SLEW SYSTEM

The superstructure is slewed by an axial piston motor through a servo released slew holding brake, into the planetary gear box giving torque to the inner tooth race of the slew ring. The slew ring runs in an oil bath.

Slew, start to stop*	
90° turn	5,2 s
180° turn	7,1 s
Slew speed	7,4 r/min

** Empty bucket – equipment extended*

SERVICE REFILL CAPACITIES

Fuel tank	340 l
Fuel pump capacity	60 l/min
Hydraulic system, total	400 l
Diesel engine oil	22 l
Cooling system (incl. glycol)	32 l
Slew ring	17 l
Travel gear box	2 x 3,4 l
Slew gear box	18 l

UNDERCARRIAGE

Undercarriage with robust frame construction. Permanently lubricated rollers and front idlers. Three derailing shields are standard.

Track chain size	D55
No. of track shoes	2 x 50
Track gauge	600 mm
alt.	700 / 800 / 900 mm
No. of bottom rollers	2 x 9
No. of top rollers	2 x 2
alt. skid rails	2 x 1

DRIVE TRAIN

Each track is powered by a axial-piston motor. The track brakes are of multidisc type and are spring applied and hydraulically released. Motors, brakes and planetary gears are fully enclosed in the crawler frame.

Max. tractive force, gross	222 kN
Max. tractive force, net	164 kN
Max. travel speed	5,2 km/h
Gradeability	45°

CARE CAB

Operator's cab with a supporting frame structure. Large panes for all round good visibility. The upper front pane can be pushed up under the ceiling, and the lower one can be removed. Sliding side window in the cab door.

Heater and defroster: Pressurized and filtered cab air is supplied by a 3-speed fan underneath the operator's seat. The air passes through the cab heater and can be distributed via 14 nozzles. Prepared for air conditioning.

Operator's seat: Electrically heated operator's seat with adjustable suspension and headrest. The fore/aft position, height and angle of the seat are adjustable, as the lumbar support. Individually adjustable armrests and control levers.

Sound level: Approved according to Directive 86/662/EEC.

Exterior noise (ISO 6 395)
Average value L_{wA} (sound power level) ..... 105 dB(A)
Operators position (ISO 6 396)
with the door closed
L_{pA} (sound pressure level) ..... 78 dB(A)

WEIGHT AND GROUND PRESSURE

Machine with **5,2 m monobloc boom**, 2,25 m dipper arm, 160 kg quickfit, 1 300 l bucket and 3 500 kg counterweight.

Track gauge	Operating weight	Ground pressure
600 mm	23 200 kg	47,3 kPa
700 mm	23 200 kg	40,5 kPa
800 mm	23 500 kg	35,8 kPa
900 mm	23 900 kg	32,5 kPa

Machine with **5,9 m 2-piece boom**, 2,25 m dipper arm, 160 kg quickfit, 1 300 l bucket and 3 500 kg counterweight.

Track gauge	Operating weight	Ground pressure
600 mm	23 900 kg	48,6 kPa
700 mm	23 900 kg	41,7 kPa
800 mm	24 200 kg	36,9 kPa
900 mm	24 600 kg	33,3 kPa

HYDRAULIC SYSTEM

3-circuit hydraulic system all-servo controlled.

Pumps: P1 is a pressure controlled variable pump with priority to slew circuit. P2 and P3 are power and pressure controlled variable pumps with opposite cross flow to boom, dipper arm, bucket and transport. Electrically controlled pump regulation for highest power output.

Mode selector. Three working modes:
Powerboost (HLD) = Heavy Lift Device
ECO = Economy
CAP = Capacity

Powerboost (HLD) is temporarily selectable 10 sec. even in Economy and Capacity mode.

Valve system: Boom, dipper arm and bucket are operated by dual main valves, connected in accordance with our patented priority valve system, to obtain best combination of precision manoeuvrability and minimized fuel consumption.

Float position: Boom cylinder equipped with floating position valve for improved comfort and increased the digging speed.

Security: Hose rupture valve on boom cylinder is standard.

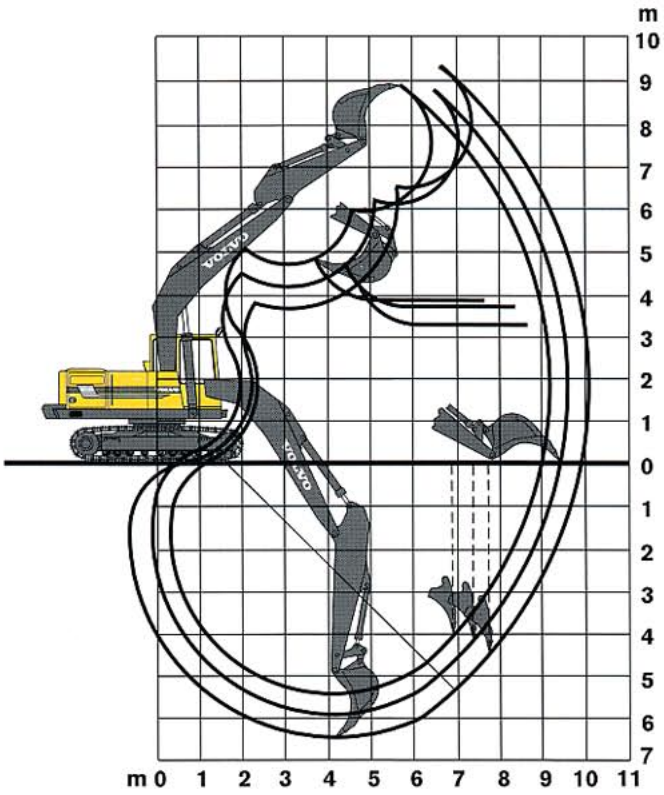
Pump P1
Max. pressure ..... 26 MPa
Max. flow ..... 88 l/min

Pumps P2 and P3
Max. pressure ..... 28 MPa
Power Boost (HLD) ..... 32 MPa
Max. flow ..... 2 x 142 l/min

Servo pump
Pressure ..... 6,5 MPa
Flow ..... 20 l/min

DIGGING RANGES

Monobloc boom 5,2 m and dipper arm 2,25 m, 2,80 m, 3,30 m



Monobloc boom	**m**	**5,2**	**5,2**	**5,2**
Dipper arm	**m**	**2,25**	**2,80**	**3,30**
Max. reach	m	9,4	9,8	10,2
Max. reach at ground level	m	9,2	9,6	10,0
Max. digging depth	m	5,6	6,1	6,5
Max. height ground				
– tooth tip	m	8,9	8,9	9,3
Max. dumping height	m	6,0	6,2	6,5
Max. practical dumping height	m	3,8	3,7	3,2
Practical digging depth for a material				
with a 45° angle of repose	m	4,6	4,9	5,3
Max. vertical digging depth	m	4,1	4,2	4,6
Min. front slew radius	m	4,1	4,1	4,2

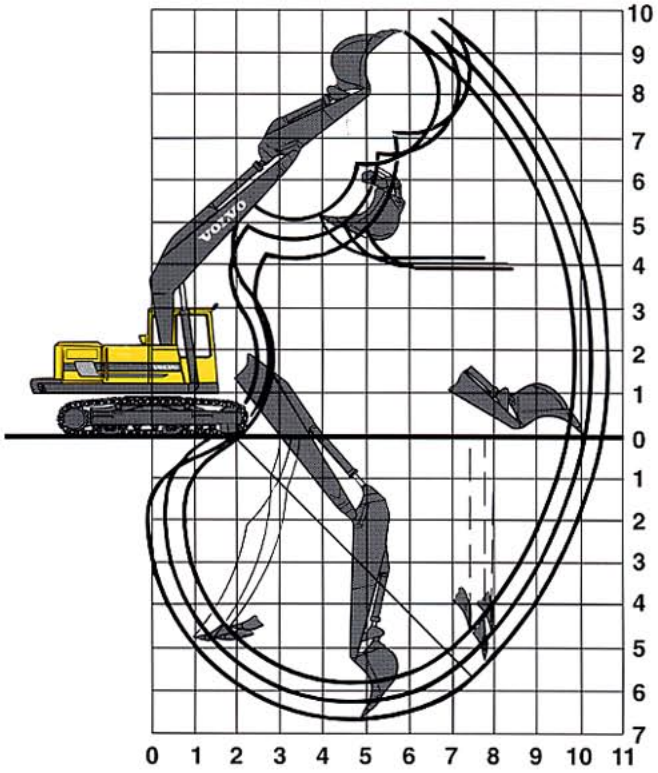
Digging forces* with quickfit and 900 l bucket:				
Breakout force	kN	177	177	177
Teraout force	kN	120	105	99

* According to Standard SAE J1179

Max. permitted **buckets** for quickfit:				
GP-bucket, 1,5 t/m³ material density	l	1 480	1 340	1 200
GP-bucket, 1,8 t/m³ material density	l	1 300	1 170	1 060
RB-bucket, 1,8 t/m³ material density	l	1 240	1 120	1 010
RB-bucket, 2,0 t/m³ material density	l	1 150	1 040	940

DIGGING RANGES

Monobloc boom 5,7 m and dipper arm 2,25 m, 2,80 m, 3,30 m



Monobloc boom	**m**	**5,7**	**5,7**	**5,7**
Dipper arm	**m**	**2,25**	**2,80**	**3,30**
Max. reach	m	9,9	10,3	10,7
Max. reach at ground level	m	9,8	10,1	10,6
Max. digging depth	m	5,9	6,3	6,7
Max. height ground				
– tooth tip	m	9,6	9,6	10,0
Max. dumping height	m	6,5	6,7	7,2
Max. practical dumping height	m	4,3	4,1	4,1
Practical digging depth for a material				
with a 45° angle of repose	m	5,1	5,4	5,7
Max. vertical digging depth	m	4,6	4,7	5,4
Min. front slew radius	m	4,2	4,2	4,3

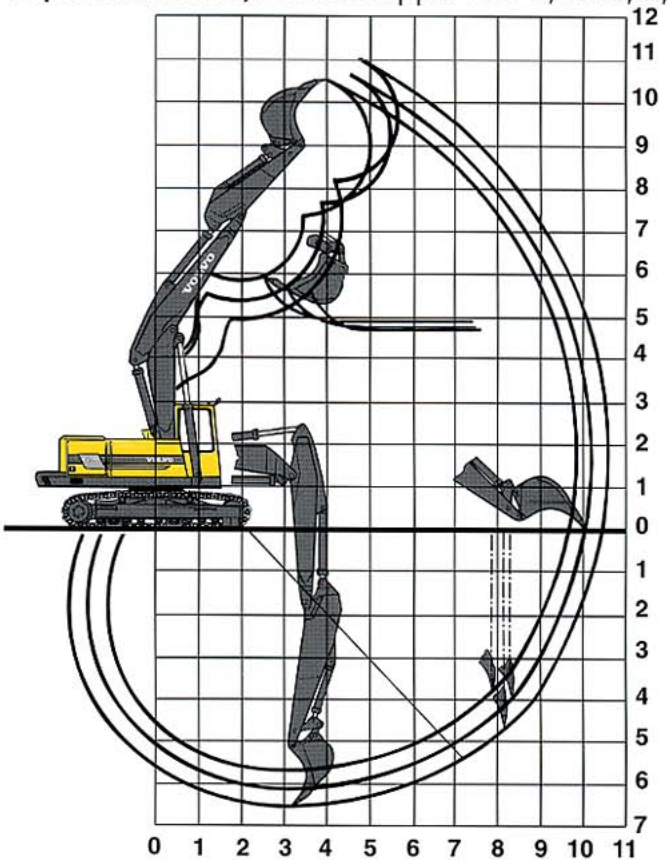
Digging forces* with quickfit and 900 l bucket:				
Breakout force	kN	177	177	177
Teraout force	kN	120	105	99

* According to Standard SAE J1179

Max. permitted **buckets** for quickfit:				
GP-bucket, 1,5 t/m³ material density	l	1 340	1 230	1 090
GP-bucket, 1,8 t/m³ material density	l	1 170	1 060	960
RB-bucket, 1,8 t/m³ material density	l	1 120	1 030	910
RB-bucket, 2,0 t/m³ material density	l	1 040	930	850

DIGGING RANGES

2-piece boom 5,9 m and dipper arm 2,25 m, 2,80 m, 3,30 m



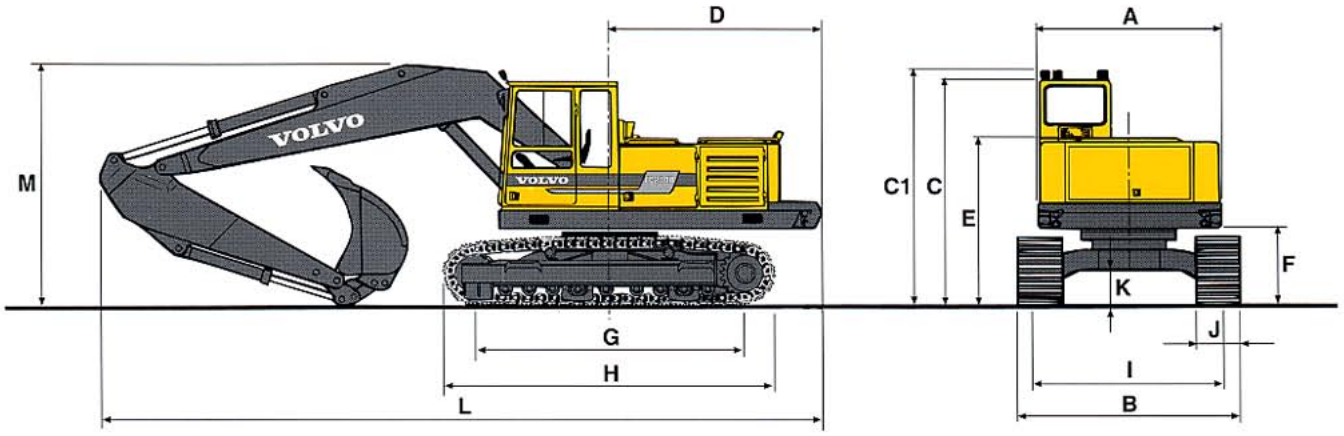
2-piece boom	**m**	**5,9**	**5,9**	**5,9**
Dipper arm	**m**	**2,25**	**2,80**	**3,30**
Max. reach	m	10,1	10,4	10,8
Max. reach at ground level	m	9,9	10,3	10,7
Max. digging depth	m	5,8	6,2	6,6
Max. height ground				
– tooth tip	m	10,8	10,9	11,3
Max. dumping height	m	7,6	7,9	8,4
Max. practical dumping height	m	5,1	4,9	4,9
Practical digging depth for a material				
with a 45° angle of repose	m	4,9	5,2	5,5
Max. vertical digging depth	m	3,9	4,1	4,8
Min. front slew radius	m	3,0	3,0	3,4

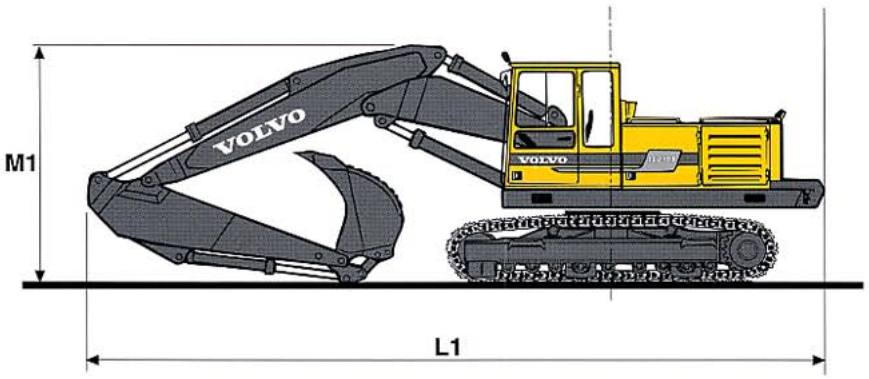
Digging forces* with quickfit and 900 l bucket:				
Breakout force	kN	177	177	177
Teraout force	kN	120	105	99

* According to Standard SAE J1179

Max. permitted **buckets** for quickfit:				
GP-bucket, 1,5 t/m³ material density	l	1 220	1 090	990
GP-bucket, 1,8 t/m³ material density	l	1 070	960	870
RB-bucket, 1,8 t/m³ material density	l	1 030	920	830
RB-bucket, 2,0 t/m³ material density	l	950	850	770

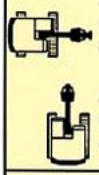
DIMENSIONS





						Boom	Dipper arm
A:	mm	2 490	L:	mm	9 020	5,2 m	2,25 m
B:	mm	2 990/ 3 090/ 3 190/ 3 290	L:	mm	9 040	5,2 m	2,80 m
C:	mm	3 010	L:	mm	8 980	5,2 m	3,30 m
C1:	mm	3 150					
			L:	mm	9 740	5,7 m	2,25 m and 2,80 m
D:	mm	2 870	L:	mm	9 580	5,7 m	3,30 m
E:	mm	2 220					
F:	mm	1 030	L1:	mm	9 900	5,9 m 2-piece	2,25 m, 2,80 m and 3,30 m
G:	mm	3 730	M:	mm	3 200	5,2 m	2,25 m
H:	mm	4 540	M:	mm	3 250	5,2 m	2,80 m
I:	mm	2 400	M:	mm	3 870	5,2 m	3,30 m
J:	mm	600/ 700/ 800/ 900	M:	mm	3 210	5,7 m	2,25 m
K:	mm	470	M:	mm	3 240	5,7 m	2,80 m
			M:	mm	3 720	5,7 m	3,30 m
			M1:	mm	3 280	5,9 m 2-piece	2,25 m
			M1:	mm	3 250	5,9 m 2-piece	2,80 m
			M1:	mm	3 710	5,9 m 2-piece	3,30 m

LIFTING CAPACITY (In the quickfit lifting hook without bucket. Unit: 1 000 kg.)



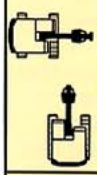
Lifting point related to ground level	Reach from machine center										
	4,5 m		6,0 m		7,5 m		9,0 m		Max. reach		
											Max. m
5,2 m monobloc boom, 2,25 m dipper arm, Quickfit, 600 mm track gauge											
6,0 m											
4,5 m			4,8	5,3*	3,4	5,0*			3,2	4,1*	7,9
3,0 m	6,7	8,0*	4,5	6,2*	3,3	5,3*			2,8	3,0*	8,4
1,5 m	6,3	9,7*	4,3	6,9*	3,2	5,3			2,7	4,2*	8,4
0,0 m	6,3	10,3*	4,2	7,1	3,1	5,2			2,8	4,2*	8,2
-1,5 m	6,2	9,9*	4,1	7,1	3,1	5,2			3,1	5,1*	7,6
-3,0 m	6,3	8,6*	4,3	6,3*					3,8	5,4*	6,6
5,2 m monobloc boom, 2,80 m dipper arm, Quickfit, 600 mm track gauge											
6,0 m					3,6	3,9*			3,0*	3,0*	7,7
4,5 m			4,8*	4,8*	3,5	4,6*			2,9	3,1*	8,4
3,0 m	6,9	7,2*	4,6	5,7*	3,3	5,0*			2,6	3,0*	8,8
1,5 m	6,4	9,3*	4,3	6,6*	3,2	5,3			2,5	3,0*	8,9
0,0 m	6,2	10,1*	4,2	7,1	3,1	5,2			2,5	3,1*	8,7
-1,5 m	6,1	10,0*	4,1	7,0	3,0	5,1			2,7	3,2*	8,2
-3,0 m	6,2	9,2*	4,1	6,8*					3,3	4,7*	7,2
5,2 m monobloc boom, 3,30 m dipper arm, Quickfit, 600 mm track gauge											
6,0 m					3,6	3,9*			2,9*	2,9*	8,3
4,5 m					3,5	4,1*	2,5	2,7*	2,5	2,7*	9,0
3,0 m	6,4*	6,4*	4,7	5,2*	3,3	4,6*	2,5	4,1	2,3	3,1*	9,3
1,5 m	6,5	8,5*	4,3	6,2*	3,2	5,2*	2,4	4,0	2,2	3,0*	9,4
0,0 m	6,2	9,8*	4,1	7,0*	3,0	5,1	2,3	3,9	2,3	3,2*	9,2
-1,5 m	6,1	10,1*	4,0	7,0	3,0	5,0			2,4	3,7*	8,7
-3,0 m	6,1	9,5*	4,0	7,0	3,0	5,1			2,8	3,8*	7,9
- 4,5 m	6,3	7,7*	4,2	5,5*					3,8	4,7*	6,5
5,7 m monobloc boom, 2,25 m dipper arm, Qucikfit, 600 mm track gauge											
6,0 m					3,5	4,6*			3,3	3,6*	7,8
4,5 m	6,5*	6,5*	4,7	5,4*	3,4	4,8*			2,8	3,8*	8,5
3,0 m	6,5	8,4*	4,4	6,2*	3,2	5,2*			2,5	3,5*	8,9
1,5 m			4,2	6,9*	3,1	5,2			2,4	4,1	8,9
0,0 m	6,0	10,1*	4,0	7,0	3,0	5,1			2,5	4,2	8,7
-1,5 m	6,1	9,6*	4,0	7,0	3,0	5,1			2,7	4,5	8,2
-3,0 m	6,2	8,*	4,1	6,3*					3,2	4,7*	7,3

Note: For lift capacity including bucket, simply subtract actual weight of bucket from the above values.

* Limited by hydraulic lifting capacity.

The above loads are in compliance with ISO standard 10 567. They do not exceed 87 % of hydraulic lifting capacity or 75 % of tipping load, with the machine on firm and level ground. Working pressure with HLD = 32 MPa (320 bar)

LIFTING CAPACITY (In the quickfit lifting hook without bucket. Unit: 1 000 kg.)



Across under-carriage

Along under-carriage

Lifting point related to ground level	Reach from machine center										
	4,5 m		6,0 m		7,5 m		9,0 m		Max. reach		
											Max. m
5,7 m mono-bloc boom, 2,80 m dipper arm, Quickfit 600 mm track gauge											
6,0 m					3,5	4,1*			2,9	3,2*	8,3
4,5 m			4,8	4,9*	3,4	4,4*	2,5	3,0*	2,5	3,0*	9,0
3,0 m	6,6	7,7*	4,4	5,7*	3,2	4,9*	2,4	4,0	2,3	3,4*	9,3
1,5 m	6,1	9,4*	4,1	6,6*	3,0	5,1	2,3	3,9	2,2	3,3*	9,4
0,0 m	6,0	10,0*	4,0	6,9	2,9	5,0	2,3	3,9	2,2	3,6*	9,2
-1,5 m	6,0	9,7*	3,9	6,9	2,9	5,0			2,4	4,0*	8,7
-3,0 m	6,0	8,9*	4,0	6,6*	2,9	5,0			2,8	4,1*	7,9
-4,5 m	6,2	6,9*	4,1	5,0*					3,8	4,5*	6,4
5,7 m mono-bloc boom, 3,30 m dipper arm, Quickfit 600 mm track gauge											
7,5 m					3,6	3,8*			3,2*	3,2*	7,9
6,0 m					3,6	3,7*			2,6	3,1*	8,9
4,5 m					3,4	4,1*	2,5	3,1	2,3	2,8	9,5
3,0 m	6,8	6,8*	4,5	5,3*	3,2	4,0	2,4	3,0	2,1	2,5	9,9
1,5 m	6,2	8,5	4,2	5,4	3,1	3,8	2,3	2,9	2,0	2,5	9,9
0,0 m	5,9	8,2	4,0	5,1	2,9	3,7	2,3	2,8	2,0	2,5	9,7
-1,5 m	5,9	8,1	3,9	5,0	2,9	3,6	2,2	2,8	2,1	2,6	9,3
-3,0 m	5,9	8,2	3,9	5,0	2,9	3,6			2,5	3,0	8,5
-4,5 m	6,1	7,7*	4,0	5,2					3,1	3,9	7,3
5,9 m 2-piece boom, 2,25 m dipper arm, Quickfit 600 mm track gauge											
9,0 m	5,6*	5,6*							5,2*	5,2*	4,6
7,5 m			5,3	5,9*					4,3	4,4*	6,7
6,0 m	7,3*	7,3*	5,1	6,0*	3,5	5,3*			3,2	4,0*	7,9
4,5 m	7,2	8,4*	4,7	6,5*	3,3	5,4*			2,7	4,1*	8,6
3,0 m	6,3	9,5*	4,3	6,9*	3,1	5,3	2,4	3,9*	2,4	3,9*	9,0
1,5 m			4,0	7,0	3,0	5,1	2,3	3,9	2,2	3,8*	9,1
0,0 m	5,7	8,9*	3,8	6,8	2,8	4,9			2,2	3,9	8,9
-1,5 m	5,8	7,4*	3,8	6,0*	2,8	4,6*			2,4	3,7*	8,4
5,9 m 2-piece boom, 2,80 m dipper arm, Quickfit 600 mm track gauge											
7,5 m			5,4	5,4*					3,0*	3,0*	7,4
6,0 m			5,2	5,6*	3,6	5,0*			2,9	3,2*	8,4
4,5 m	7,5	7,8*	4,8	6,1*	3,4	5,2*	2,4	3,5*	2,4	3,0*	9,1
3,0 m	6,5	9,2*	4,4	6,6*	3,2	5,3	2,3	4,0	2,1	2,7*	9,5
1,5 m	5,8	9,7*	4,0	7,0	2,9	5,1	2,2	3,9	2,0	3,4*	9,5
0,0 m	5,6	9,3*	3,8	6,8	2,8	4,9	2,1	3,8	2,0	3,6	9,3
-1,5 m	5,6	8,1*	3,7	6,2*	2,7	4,8			2,2	3,4*	8,9
-3,0 m	5,6	6,2*	3,7	4,9*	2,7	3,7*			2,5	3,1*	8,0

Note: For lift capacity including bucket, simply subtract actual weight of bucket from the above values.

* Limited by hydraulic lifting capacity.

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STANDARD EQUIPMENT

Engine and Electrical System
Computerized monitoring system
Battery disconnector and fuel shut-off cock
Auto idling
3-stage air filter with indicator
Hour meter
Tachometer
Fuel level gauge
Temperature gauge for coolant and hydraulic oil
Electric preheating coil
24 V electrical system

Undercarriage
Hydraulic track tensioner
Derailing shields, 3 per side
Slew ring in oil bath

Superstructure
Counterweight 3 500 kg

Safety and Comfort
Safety bar to prevent accidental actuation via levers and pedals
Hose rupture valve on boom cylinder
Hydraulically powered fuelling pump, 60 l/min
Overload alarm
Working lights (halogen):
5 front
1 rear
Interior lighting in cab,engine and fuel filling compartment
Rear view mirrors:
4 exterior
1 interior
Cab heating and filtered air intake
Ergonomic, electrically heated operator's seat
Cab skylight
Sliding side window in the cab door
Emergency exit through rear window
Tinted windows (clear front)
Interior sun visor
Upper and lower windscreen wipers with intermittent function
Windscreen washer
Horn

Hydraulics
Float position
3 variable axial piston pumps
Mode selector, 3 steps
Power boost (HLD)
Dual main valve for the travel and equipment functions
Standard filter cartridges for return, leak oil and breathing filter
Swing-out oil cooler

Digging Equipment
Spherical steel link bearings in all large pivot points
Electric end dampening on boom- and dipper arm cylinder
Safety lifting hook
Friction-welded piston rod eyes

ALTERNATIVE EQUIPMENT

Undercarriage
Top rollers
Skid rails

Track shoes
600/700/800/900 mm track shoes with triple grousers and mud holes

Digging equipment
Booms
5,2 m monobloc
5,7 m monobloc
5,9 m 2-piece

Dipper arms
2,25 m
2,80 m
3,30 m

Buckets
Buckets for quickfit
725 l
825 l
900 l
1 000 l
1 150 l
1 300 l

Hydraulic quickfit
(weight: 160 kg)

OPTIONAL EQUIPMENT *(Standard on certain markets)*

Engine and Electrical System
Diesel driven engine and cab heater with digital timer
Electric over speed protector
Electric engine heater, 220 V
Extra headlights on boom

Undercarriage
Toolbox

Safety and Comfort
Protective net for windscreen
Protective bars for skylight (FOPS 3 449-approved)
Protective cab roof (FOGS ISO 10 262-approved)
Fire extinguisher
Seat belts
Rotating warning beacon
Protection against overfilling fuel
Extra circulation pump for heating system
Extra hose rupture valve on dipper arm cylinder

Exterior sun visor
Rear window jalousie
Air conditioning
Micro filter for the cab
Radio with tape player
Tool kit

Hydraulics
Biodegradeable hydraulic oil
Hydraulic equipment for:
Slope bucket
Rototilt
Grab
Hydraulic hammer
Shears
Crusher
Jib
Magnet
Hydraulic Quickfit
Installation of a 4th working pump
Thermostat kit

Under our policy of continuous product improvement, we reserve the right to change specifications and design without prior notice. The illustrations do not necessarily show the standard version of the machine.

VOLVO

Volvo Construction Equipment Group

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