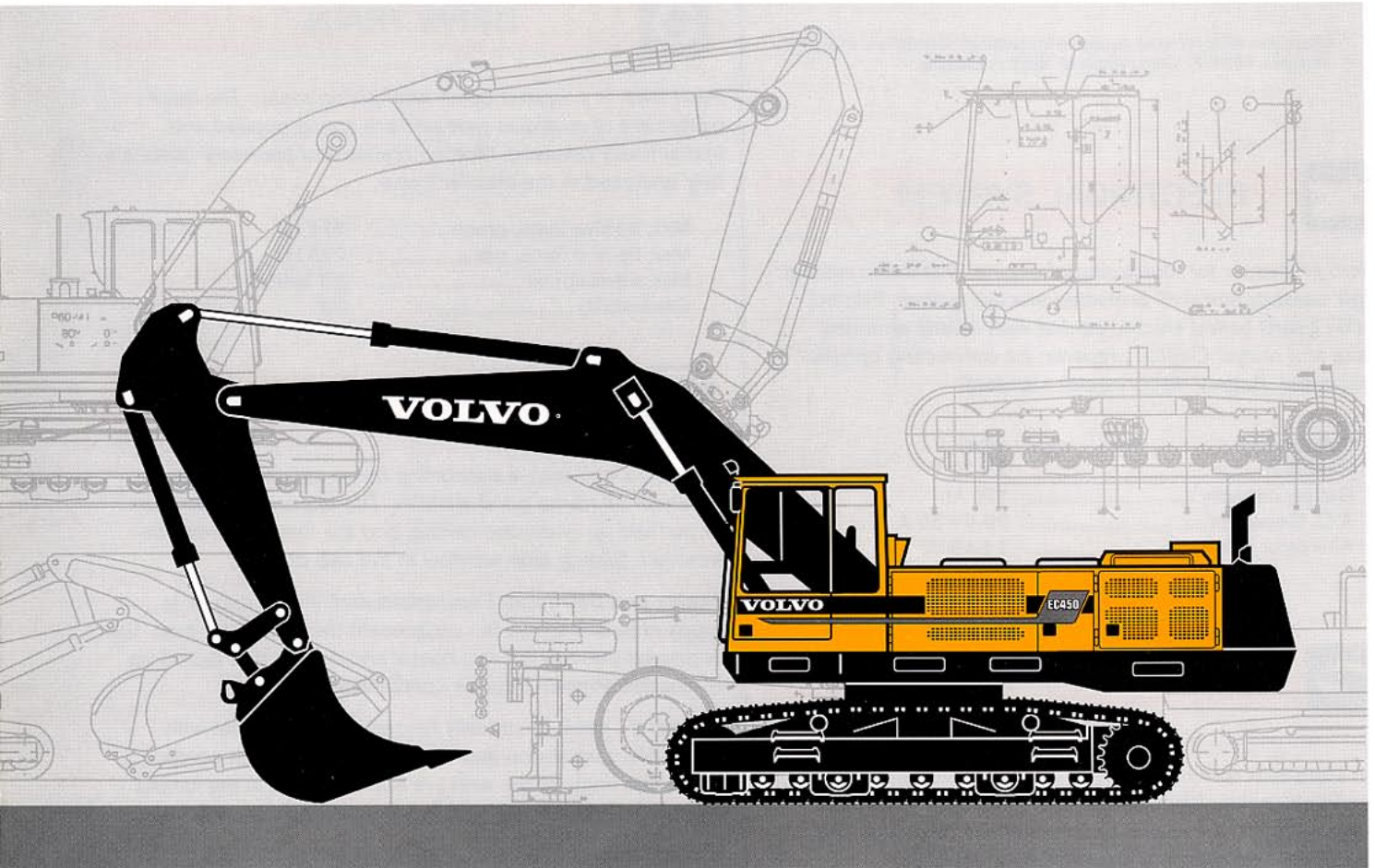


VOLVO EXCAVATOR

EC450



- **Engine Power:**
227 kW (309 hp)
- **Operating Weight:**
44,5 – 46,0 t
- **Buckets:**
1 700 – 3 360 l
- Low-emission, turbo-charged Volvo diesel engine with direct injection and intercooler
- Three-circuit hydraulic system
- COS = Capacity Optimized System – all three pumps for the digging movements
Mode selector and electronically controlled pump regulation Speed Sensing Control (SSC)
- Care cab
 - computerized monitoring system
 - ergonomic environment
 - low sound level
 - filtered air
- Rugged digging equipment with spherical steel bearings
- High digging and breakout forces for tough digging conditions
- Highest flexibility for extra equipment/hydraulics

VOLVO



ENGINE

The engine is a low emission*, turbocharged and charge air cooled, direct injected, water cooled 4-stroke diesel engine.

Model	Volvo TD 122 KKE
Output at	28 r/s (1 700 r/min)
Net (ISO 9249/DIN 6271)	227 kW (309 hp)
Gross (SAE J1349)	237 kW (322 hp)
No. of cylinders	6
Displacement, total	11,98 l
Bore	130,17 mm
Stroke	150 mm

* Complies with off-road equipment emission restrictions that was effective 1996 in California and 1997 in Europe.



ELECTRICAL SYSTEM

Micro processor for monitoring of engine / 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 disconnecter standard.

Voltage	24 V
Battery	2 x 12 V
Battery capacity	170 Ah
A.C. Generator	28 V / 55 A
Alternator rating	1 540 W



SLEWING SYSTEM

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

Slew, start to stop*	
90° turn	6,4 s
180° turn	9,0 s
Slew speed	6,0 r/min

* Empty bucket and equipment extended.



SERVICE REFILL CAPACITIES

Fuel tank	770 l
Fuel pump capacity	60 l/min
Hydraulic system, total	770 l
Diesel engine oil	29 l
Cooling system (incl. glycol)	72 l
Slew ring	17 l



UNDERCARRIAGE

Heavy duty box designed body. Lifetime lubricated rollers and front idlers.

Track chain size	D85HD
No. of track shoes	2 x 51
Track gauge	700 mm
alt.	600 / 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 an 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	374 kN
Max. tractive force, net	275 kN
Max. travel speed	3,7 km/h
Gradeability	38°



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 is the lumbar support. Individually adjustable armrests and control levers.

Acoustics: Approved according to Directive 86/662/EEC.

Exterior noise (ISO 6 395)	
Average value L_{wA} (sound power level)	109 dB(A)
Operators position (ISO 6 396)	
with the door closed	
L_{pA} (sound pressure level)	76 dB(A)



WEIGHT AND GROUND PRESSURE

Machine with 6,65 m boom, 2,5 m dipper arm, 2 900 l bucket and 8 500 kg counterweight or,

Machine with 7,25 m boom, 4,0 m dipper arm, 1 800 l bucket and 8 500 kg counterweight.

Track gauge	Operating weight	Ground pressure
600 mm	44 500 kg	78,7 kPa
700 mm	45 000 kg	68,3 kPa
900 mm	46 000 kg	54,3 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 to boom, dipper arm, bucket and transport. Electronically controlled pump regulation for highest power output.

Mode selector. Three working modes:

HLD = Power Boost (Heavy Lift Device)

ECO = Economy

CAP = Capacity

Powerboost (HLD) are 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. Boom cylinder movement equipped with floating position to increase the digging speed. Hose rupture valve on the boom cylinders are standard.

Pump P1

Max. pressure 29 MPa
Max. flow 151 l/min

Pumps P2 and P3

Max. pressure 31 MPa
Power Boost 35 MPa
Max. flow 2 x 245 l/min

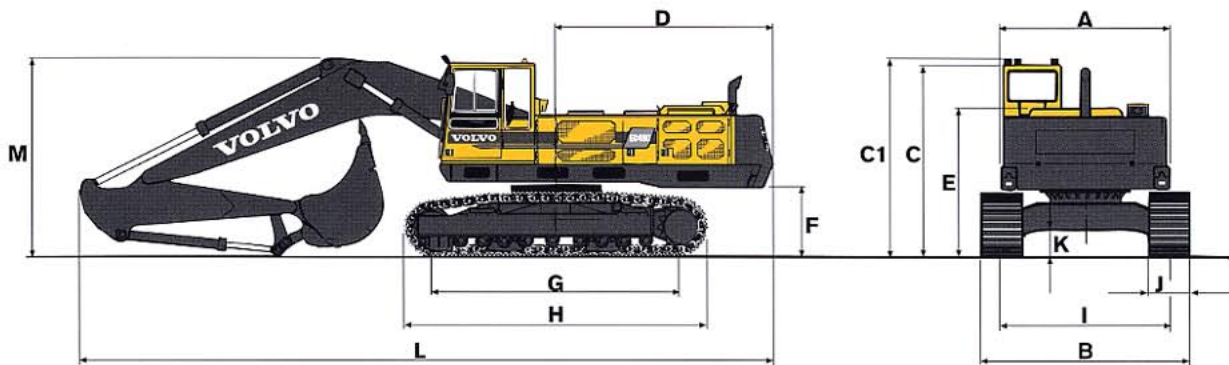
Servo pump

Pressure 6,5 MPa
Flow 20,5 l/min

Fan pump

Pressure 17,5 MPa
Flow 23,6 l/min

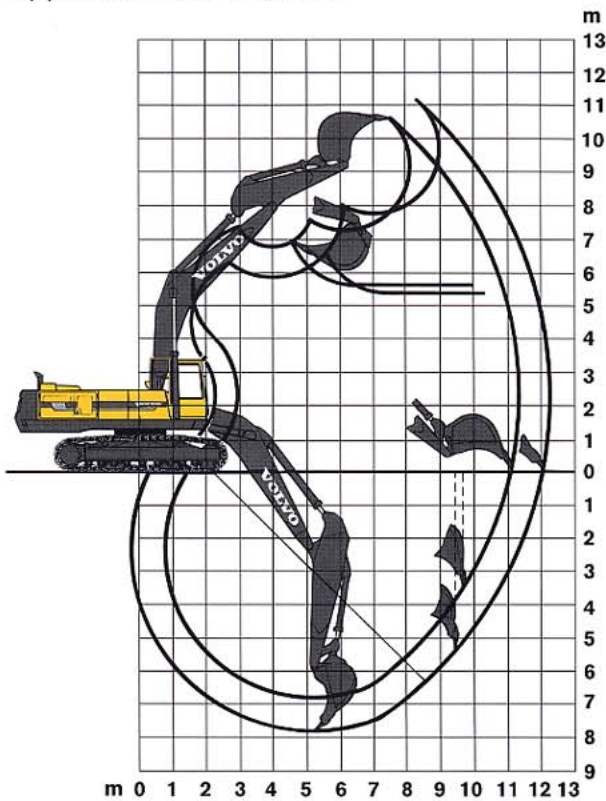
DIMENSIONS



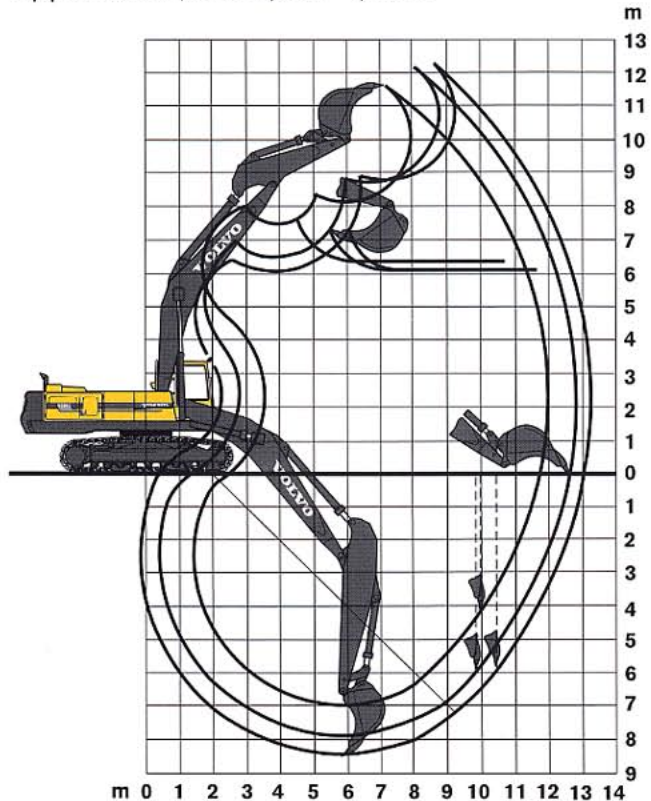
			Boom	Dipper arm
A:	2 900 mm	L: 11 950 mm	6,65 m	2,5 m
B:	3 500/ 3 600/ 3 800 mm	L: 12 000 mm	6,65 m	3,5 m
C:	3 350 mm	L: 12 600 mm	7,25 m	2,5 m
C1:	3 490 mm	L: 12 650 mm	7,25 m	3,5 m
D:	3 770 mm	L: 12 600 mm	7,25 m	4,0 m
E:	2 600 mm			
F:	1 190 mm	M: 3 400 mm	6,65 m	2,5 m
G:	4 260 mm	M: 3 450 mm	6,65 m	3,5 m
H:	5 260 mm			
I:	2 900 mm	M: 3 450 mm	7,25 m	2,5 m
J:	600/ 700/ 900 mm	M: 3 550 mm	7,25 m	3,5 m
K:	490 mm	M: 3 400 mm	7,25 m	4,0 m

DIGGING RANGES

Boom 6,65 m and
dipper arm 2,50 / 3,50 m



Boom 7,25 m and
dipper arm 2,50 / 3,50 / 4,00 m



Boom	m	6,65	6,65	7,25	7,25	7,25
Dipper arm	m	2,50	3,50	2,50	3,50	4,00
Max. reach	m	11,3	12,3	12,0	12,9	13,3
Max. reach at ground level	m	11,1	12,0	11,7	12,7	13,1
Max. digging depth	m	6,8	7,8	7,0	7,9	8,4
Max. height ground – tooth tip	m	10,6	11,2	11,6	12,3	12,3
Max. dumping height	m	7,3	7,8	8,1	8,8	8,8
Max. practical dumping height	m	5,7	5,4	6,3	6,1	6,1
Practical digging depth for a material with a 45° angle of repose	m	5,7	6,3	6,1	6,8	7,1
Max. vertical digging depth	m	3,7	5,4	4,2	5,9	5,7
Min. front slew radius	m	5,1	5,1	5,2	5,0	5,0

Digging forces with pin-on GP bucket:

Bucket radius	m	1,74	1,80	1,74	1,80	1,79
Breakout force	kN	295	285	295	285	287
Teraout force	kN	230	189	230	189	171
Rotation angle, bucket	°	134	134	134	134	134













Max. permitted buckets for pin-on:

GP-bucket 1,5 t/m ³		3 360	2 820	2 810	2 430	2 270
GP-bucket 1,8 t/m ³		2 960	2 480	2 480	2 140	2 000
RB-bucket 1,8 t/m ³		2 870	2 410	2 400	2 070	1 930
RB-bucket 2,0 t/m ³		2 660	2 230	2 230	1 920	1 800

Max. permitted buckets for quickfit:

GP-bucket 1,5 t/m ³		3 250	2 710	2 710	2 320	2 160
GP-bucket 1,8 t/m ³		2 860	2 390	2 380	2 040	1 900
RB-bucket 1,8 t/m ³		2 780	2 310	2 310	1 980	1 840
RB- bucket 2,0 t/m ³		2 580	2 150	2 150	1 840	1 710

LIFTING CAPACITY *(In dipper pin without bucket. Unit: 1 000 kg.)*

 Across under-carriage  Along under-carriage	Lifting point related to ground level	Reach from machine center										
		6,0 m		7,5 m		9,0 m		10,5 m		Max. reach		Max. m
												
6,65 m boom 2,50 m dipper arm 700 mm track gauge	7,5 m			10,2	10,9*					9,7	10,2*	7,7
	6,0 m	12,0*	12,0*	9,9	11,0*					8,2	10,7*	8,5
	4,5 m	13,0	14,0*	9,6	11,9*	7,4	10,8			7,3	9,4*	9,1
	3,0 m	12,4	16,3*	9,2	13,1*	7,2	10,6			6,9	10,1	9,3
	1,5 m	11,9	18,0*	8,9	13,3	7,0	10,4			6,8	9,9	9,3
	0,0 m	11,8	18,3*	8,8	13,2	7,0	10,3			7,0	10,2	9,0
	-1,5 m	11,8	18,3*	8,7	13,1					7,5	11,2	8,5
	-3,0 m	11,9	17,0*	9,0	13,1*					8,8	12,8*	7,6
-4,5 m	12,4	13,3*							11,9	12,6*	6,2	
6,65 m boom 3,50 m dipper arm 700 mm track gauge	9,0 m			8,8*	8,8*					7,6*	7,6*	7,7
	7,5 m			8,8*	8,8*					7,3*	7,3*	8,8
	6,0 m			9,3*	9,3*	7,5	9,2*			6,6*	6,6*	9,6
	4,5 m	12,0*	12,0*	9,6	10,4*	7,3	9,7*			6,2	7,3*	10,0
	3,0 m	12,5	14,4*	9,1	11,8*	7,0	10,4*			5,9	7,8*	10,2
	1,5 m	11,9	16,6*	8,8	13,0*	6,8	10,2			5,7	8,1*	10,2
	0,0 m	11,5	17,9*	8,5	13,0	6,7	10,0			5,8	8,2*	10,0
	-1,5 m	11,4	17,9	8,4	12,8	6,6	10,0			6,2	9,3	9,5
-3,0 m	11,5	17,8*	8,5	12,9					7,0	10,6	8,7	
-4,5 m	11,7	15,9*	8,8	11,8*					8,8	11,8*	7,5	
7,25 m boom 2,50 m dipper arm 700 mm track gauge	7,5 m			10,0	10,5*					8,4	10,5*	8,4
	6,0 m	12,6*	12,6*	9,7	11,0*	7,4	10,4*			7,1	10,4*	9,2
	4,5 m	12,5	14,8*	9,2	12,0	7,2	10,6			6,4	9,5	9,7
	3,0 m	11,8	16,9*	8,8	13,1	6,9	10,3			6,1	9,0	9,9
	1,5 m	11,5	18,0	8,5	13,0	6,8	10,1			6,0	8,9	9,9
	0,0 m	11,3	17,9	8,4	12,8	6,7	10,0			6,1	9,1	9,7
	-1,5 m	11,4	17,6*	8,4	12,8	6,7	10,0			6,6	9,9	9,1
	-3,0 m	11,5	16,1*	8,5	12,9*					7,6	11,1*	8,3
-4,5 m	11,9	13,3*							9,6	10,5*	7,1	
7,25 m boom 3,50 m dipper arm 700 mm track gauge	9,0 m			8,9*	8,9*					7,6*	7,6*	8,5
	7,5 m			9,0*	9,0*	7,5	8,8*			6,9	7,5*	9,5
	6,0 m			9,7*	9,7*	7,4	9,0*			6,0	7,3*	10,2
	4,5 m	12,9	12,9*	9,3	10,8*	7,1	9,6*	5,6	8,3	5,4	6,6*	10,7
	3,0 m	12,0	15,2*	8,8	12,0*	6,8	10,2	5,4	8,1	5,1	6,9*	10,9
	1,5 m	11,3	16,9*	8,4	12,9	6,6	9,9	5,3	8,0	5,0	7,0*	10,9
	0,0 m	11,0	17,6	8,1	12,6	6,4	9,7	5,2	7,9	5,1	7,8	10,6
	-1,5 m	10,9	17,4	8,0	12,4	6,3	9,6			5,4	8,2	10,2
-3,0 m	10,9	16,8*	8,0	12,5	6,4	9,7			6,1	9,2	9,4	
-4,5 m	11,2	14,9*	8,2	11,7*					7,2	9,7*	8,4	
-6,0 m	11,1*	11,1*							11,1*	11,1*	6,0	
7,25 m boom 4,00 m dipper arm 700 mm track gauge	9,0 m					6,2*	6,2*			6,2*	3,4*	9,0
	7,5 m					7,6	8,1*	5,7	6,7*	5,7*	3,1*	10,0
	6,0 m			9,0*	9,0*	7,4	8,4*	5,5	8,3	5,6	2,9*	10,6
	4,5 m	11,9*	11,9*	9,4	10,1*	7,1	9,0*	5,4	8,1	5,0	3,0*	11,1
	3,0 m	12,1	14,3*	8,9	11,4*	6,8	9,8*	5,2	7,9	4,8	3,1*	11,3
	1,5 m	11,4	16,2*	8,4	12,6*	6,5	9,9	5,1	7,8	4,7	3,3*	11,2
	0,0 m	11,0	17,4*	8,1	12,5	6,3	9,6	5,1	7,7	4,8	3,4*	11,0
	-1,5 m	10,8	17,3	7,9	12,3	6,2	9,5			5,0	4,3*	10,6
-3,0 m	10,8	17,1*	7,9	12,3	6,2	9,5			5,5	4,9*	9,9	
-4,5 m	10,9	15,6*	8,0	12,3*					6,5	5,8*	8,9	
-6,0 m	11,3	12,6*							8,6	6,6*	7,4	

Note: For lift capacity including quickfit or bucket, simply subtract actual weight of quickfit or bucket from the above values. (Quickfit S3, weight 300 kg.)

* 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 = 35 MPa (350 bar/ 5 080 psi)

STANDARD EQUIPMENT

Engine and Electrical System

Computerized monitoring and alarm system
 Battery disconnect and fuel shut-off cock
 Key switch-off, engine
 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
 Well-protected electrical system

Undercarriage

Slew ring in oil bath
 Hydraulic track tensioner
 Derailing shields, 3 per side
 Eyes for towing and tying, 4 pcs

Superstructure

Counterweight 8 500 kg

Safety and Comfort

Safety bar to prevent accidental actuation via levers and pedals
 Hose rupture valve on the boom cylinders
 Hydraulic refueling 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 with 14 outlets
 Ergonomic, electrically heated operator's seat
 Filtered air intake
 Skylight of special plastic
 Sliding 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
 Three variable axial piston pumps
 Dual main valve for the travel and equipment functions
 Mode selector, 3 steps
 Power boost (HLD)
 Hydraulic cylinders with internal end dampening
 Standard filter cartridges for return, leak oil and breathing filter

Digging Equipment

Spherical steel link bearings in all large pivot points
 Security lifting hook
 Friction-welded piston rod eyes

ALTERNATIVE EQUIPMENT

Undercarriage

Top rollers
 Skid rails

Track shoes

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

Digging equipment

Booms
 6,65 m
 7,25 m

Dipper arms

2,5 m
 3,5 m
 4,0 m

Buckets

Pin-on buckets and buckets for quickfit S3

General Purpose bucket (GP)

2 100 l
 2 400 l
 2 500 l
 2 900 l

Hydraulic quickfit S3

(Weight: 300 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
 Oil bath filter for improved filtering of the intake air
 Extra fuel filter
 Coolant filter

Undercarriage

Brake valves on crawler motors
 Tool box

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
 Extra headlights on boom
 Protection against overfilling fuel
 Extra circulation pump for heating system - interval heating
 Extra hose rupture valve - dipper arm cylinder
 Extra hose rupture valve - bucket cylinder

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

Hydraulics

Biodegradeable hydraulic oil
 Hydraulic equipment for:
 A. Slope bucket/rotator
 B. Hammer/shears/grab/clam shell
 C. Quickfit
 D. 4th working pump

Material Handling Equipment

8,6 m boom
 6,5 m dipper arm

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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