



Åkerman EC450



- **Engine Power:**
227 kW (304 hp)
- **Operating Weight:**
45 t
- **Buckets:**
2 100 – 3 300 l
- Volvo lowemission, turbo-charged, diesel engine with direct injection
- Åkerman three-circuit hydraulic system
- COS = Capacity Optimized System – all three pumps for the digging movements. Mode Selector and electronically controlled pump regulation SSC (SSC = Speed Sensing Control)
- **Comfort cab**
 - computerized control and warning system
 - ergonomic environment
 - low sound level
 - filtered air
- Heavy duty equipment with spherical steel link bearings
- Digging and breakout forces for tough conditions
- Highest flexibility for extra equipment/hydraulics

ÅKERMAN

ENGINE



The engine is a lowemission*, turbocharged, 4-stroke diesel engine with water cooling, direct injection and intercooler.

Make			Volvo	
Model			TD 122 KKE	
Output at	r/s	(r/min)	28	(1700)
Net (ISO 9249 / DIN 6271)	kW	(hp)	227	(304)
Gross (SAE J1349)	kW	(hp)	237	(318)
No. of cylinders			6	
Displacement, total	l		11,98	
Bore	mm		130,17	
Stroke	mm		150	

* Complies with off-road equipment emission restrictions that will be effective 1996 in California.

UNDERCARRIAGE



Heavy duty box-designed body with solid slew ring support. Lifetime lubricated rollers and front idlers.

Track chain size		D85HD
No. of track shoes		2 x 51
Track width	mm	600
alt.	mm	700, 900
No. of bottom rollers		2 x 9
No. of top rollers		2 x 2

ELECTRIC 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 connection of optional equipment. Battery disconnecter standard.

Voltage	V	24
Battery	V	2 x 12
Battery capacity	Ah	170
A.C. Generator	V/A	28/55
Alternator rating	W	1540

CAB



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

Heater and defroster: Pressurized and filtered cab. A 3-speed fan provides efficient heating and defrosting through 14 outlets. Prepared for Air Conditioning.

Operator's seat: Adjustable suspension operator's seat with heating coils, headrest and individually adjustable armrests and hand controls.

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

DRIVE TRAIN



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

Max. tractive force	kN	374
Max. travel speed	km/h	3,7
Gradeability, continuously	°	(%) 38 (80)

Surroundings (ISO 6393)		
L_{WA} (acoustic power)	dB(A)	104
Inside the cab (ISO 6394)		
with the door closed		
L_{pA} (acoustic pressure)	dB(A)	73

SERVICE REFILL CAPACITIES



Fuel tank	l	770
Fuel pump capacity	l/min	90
Hydraulic system, total	l	770
Diesel engine	l	32
Cooling system (incl. glycol)	l	72
Slew ring	l	25

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	s	approx. 6,3
180° turn	s	approx. 8,9

* Empty bucket and equipment extended

HYDRAULIC SYSTEM



Åkerman 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, arm, bucket and transport.

Mode selector: Three working modes:

HLD = Heavy Lift Device and Power Boost

ECO = Economy

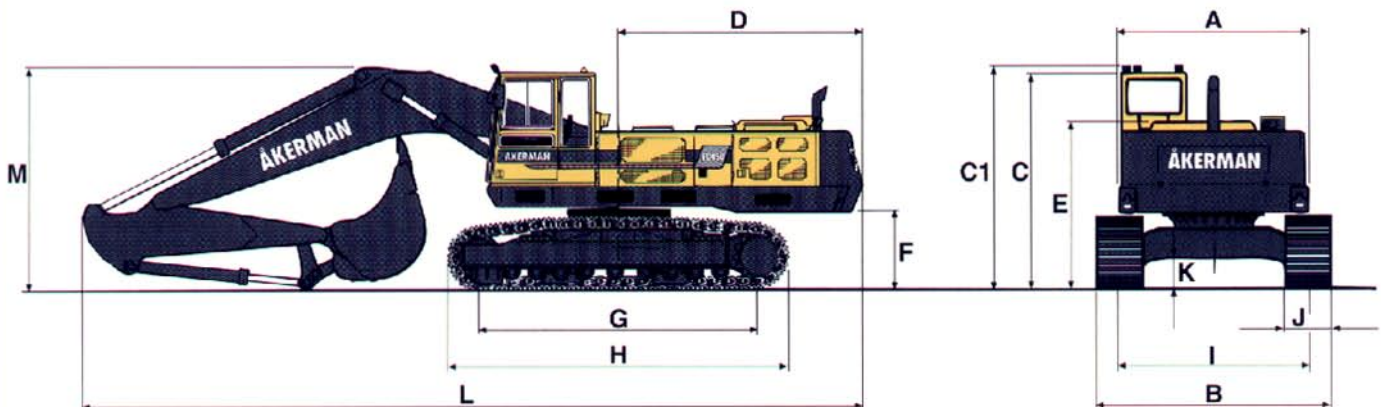
CAP = Capacity

Powerboost temporarily selectable 10 sec. even in Economy and Capacity mode. Electronically controlled pump regulation for highest power output.

Valve system: Boom, 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. Security hose rupture valve on the boom cylinders.

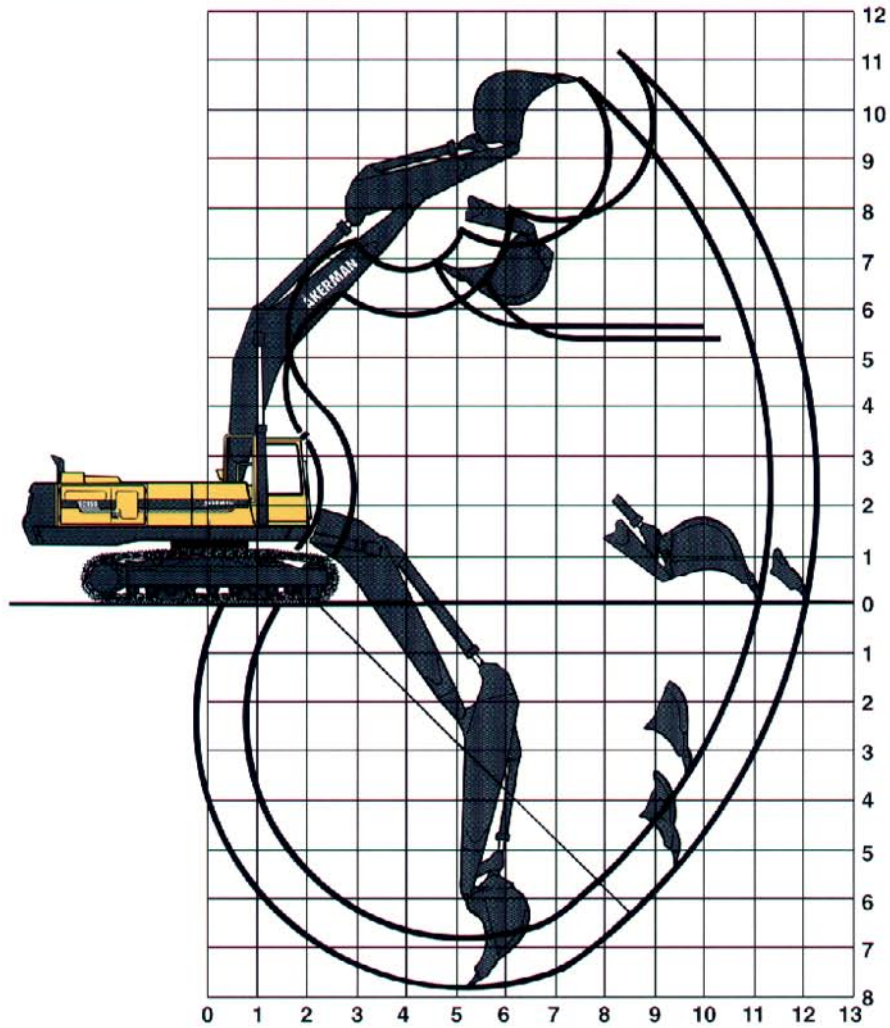
Pump P1			
Max. pressure	MPa		29
Max. flow	l/min		151
Pumps P2 and P3			
Max. pressure	MPa		31
Power boost	MPa		35
Max. flow	l/min		2 x 245
Servo pump			
Pressure	MPa		6,5
Flow	l/min		20,5

DIMENSIONS



A:	mm	2900	
B:	mm	3500/3600/3800	
C:	mm	3350	
C1:	mm	3490	
D:	mm	3770	
E:	mm	2610	
F:	mm	1190	
G:	mm	4260	
H:	mm	5260	
I:	mm	2900	
J:	mm	600/700/900	
K:	mm	490	
L:	mm	11950	(2,5 m arm)
L:	mm	12000	(3,5 m arm)
M:	mm	3400	(2,5 m arm)
M:	mm	3450	(3,5 m arm)

WORKING RANGES



Boom	m	6,65	6,65
Arm	m	2,5	3,5
Max reach	m	11,3	12,3
Max. reach at ground level	m	11,1	12,0
Max. digging depth	m	6,8	7,8
Max. height, ground – tooth tip	m	10,6	11,2
Max. dumping height	m	7,3	7,8
Max. practical dumping height	m	5,6	5,4
Practical digging depth at a repose of material of 45°	m	5,7	6,3
Max. vertical digging depth	m	3,5	5,4
Min. slewing radius in front	m	5,1	5,1

DIGGING FORCE

Bucket digging force*	kN	285
Dipper arm force*	kN	233

* HD-bucket, 2100 l SAE, and 2,5 m dipper arm.

BUCKET AND ARM COMBINATIONS

BUCKETS	Volume SAE l	Cutting width mm	Weight kg	Fitting *	Suitable for arm	
					2,5 m	3,5 m
Material weight 2,0 t/m ³	2500 ¹⁾	1600	2600	DF+QF	•	•
	2100 ¹⁾	1500	1975	DF+QF	•	•
Material weight 1,8 t/m ³	2900	2000	2600	DF	•	•
	2400 ¹⁾	1700	2200	DF+QF	•	•
Material weight 1,5 t/m ³	3400	2100	2400	DF	•	•
	3300	2100	2400	QF	•	•
	2900	2000	2200	DF	•	•

¹⁾ Available from factory

* DF=Direct fitting, QF=Quickfit

WEIGHT AND GROUND PRESSURE



Standard machine, 6,65 m boom, 2,5 m dipper arm, 2 900 l bucket and counterweight 8 500 kg.

Track shoes	Machine 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

STABILITY AND LIFTING CAPACITIES

In the bucket lifting hook. Unit: 1000 kg.

Across carriage Along carriage	Lifting hook 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 2,5 m arm 2900 l bucket Bucket weight: 2200 kg 600 mm track shoes	9,0 m			12,3 8,03	18,6 8,03					11,6 7,16	17,4 7,16	7,8	
	7,5 m			12,1 8,55	18,3 8,55	8,69 7,54	13,3 7,54			8,49 7,10	13,0 7,10	9,1	
	6,0 m	16,6 10,6	25,7 10,6	11,7 9,38	17,8 9,38	8,47 8,81	13,0 8,81			6,88 6,43	10,7 6,43	10,0	
	4,5 m	15,6 12,8	24,5 12,8	11,0 10,5	17,0 10,5	8,11 9,32	12,6 9,32	6,07 6,75	9,63 6,75	6,07 6,75	9,63 6,75	10,5	
	3,0 m	14,7 15,8	23,4 15,8	10,4 11,7	16,3 11,7	7,74 10,0	12,1 10,0	5,89 8,31	9,43 8,31	5,59 5,93	8,99 5,93	10,8	
	1,5 m	14,2 17,5	22,9 17,5	9,99 12,8	15,8 12,8	7,45 10,5	11,8 10,5	5,74 8,66	9,27 8,66	5,56 7,82	8,98 7,82	10,7	
	0,0 m	14,0 17,8	22,7 17,8	9,78 13,4	15,6 13,4	7,35 10,7	11,8 10,7	5,69 7,04	9,20 7,04	5,69 7,04	9,20 7,04	10,5	
	-1,5 m	14,0 17,4	22,8 17,4	9,76 13,3	15,6 13,3	7,39 10,5	11,8 10,5			6,30 8,88	10,1 8,88	9,9	
6,65 m boom 3,5 m arm 2400 l bucket Bucket weight: 2200 kg 600 mm track shoes	9,0 m					8,80 5,93	13,4 5,93			8,59 5,33	13,1 5,33	9,1	
	7,5 m					8,78 6,84	13,4 6,84			6,51 4,43	10,2 4,43	10,3	
	6,0 m			11,5 7,66	17,7 7,66	8,50 7,23	13,1 7,23	6,16 6,46	9,76 6,46	5,52 4,76	8,88 4,76	11,0	
	4,5 m	16,3 10,6	25,4 10,6	11,2 8,92	17,3 8,92	8,10 7,97	12,6 7,97	5,96 7,26	9,53 7,26	4,85 4,44	7,98 4,44	11,5	
	3,0 m	14,9 13,4	23,8 13,4	10,5 10,3	16,4 10,3	7,67 8,81	12,1 8,81	5,72 7,87	9,26 7,87	4,53 4,76	7,58 4,76	11,7	
	1,5 m	14,1 15,9	22,8 15,9	9,89 11,7	15,8 11,7	7,29 9,56	11,7 9,56	5,49 8,23	9,02 8,23	4,42 4,89	7,45 4,89	11,7	
	0,0 m	13,7 17,2	22,4 17,2	9,54 12,7	15,4 12,7	7,04 10,1	11,4 10,1	5,34 8,35	8,85 8,35	4,58 6,00	7,71 6,00	11,4	
	-1,5 m	13,6 17,4	22,3 17,4	9,41 13,1	15,3 13,1	6,93 10,3	11,3 10,3	5,31 8,30	8,83 8,30	4,97 6,78	8,31 6,78	10,9	
6,65 m boom 3,5 m arm 2400 l bucket Bucket weight: 2200 kg 600 mm track shoes	-3,0 m	13,7 16,7	22,5 16,7	9,46 12,6	15,3 12,6	7,03 9,90	11,4 9,90			5,70 6,51	9,37 6,51	10,2	
	-4,5 m	14,0 14,6	22,8 14,6	9,73 11,0	15,6 11,0	7,29 8,00	11,7 8,00			7,29 8,00	11,7 8,00	9,0	

Tipping load*

Hydr. lifting capacities**



* Regardless of the hydraulic lifting capacity of the machine.

** Regardless of the stability of the machine.

Working pressure with HLD = 35 MPa (350 bar)

STANDARD EQUIPMENT

Engine and electrical system

Computer controlled monitoring system
 Disconnecter for battery and main fuel tap
 Engine stop solenoid
 Air filter with indicator
 Hour meter
 Electric starter element
 Revs counter
 Fuel meter
 Temperature meter for cooling fluid and hydraulic oil
 24 volt electrical system with 2 standard batteries
 3-step air cleaner incl. exhaust ejector
 Cranked exhaust pipe
 Automatic idling speed (Fuel-miser)

Undercarriage

Slew ring in oil bath
 Top rollers, 2 pcs
 Tripple grousers
 600 mm track shoes with mud holes
 Hydraulic track adjuster
 Derailing shields, 3 pcs

Safety and Comfort

Cab heating with 14 outlets
 Filtered air intake
 Cab skylight
 Tinted windows (clear front)
 Openable side pane
 Emergency exit through rear window
 Ergonomically designed and adjustable operator's seat, with heating coils
 Internal sun visor
 Rear view mirrors, 4 exterior, 1 interior
 Lights:
 5 working lights, front, halogen
 1 working light, rear, halogen
 Instrument lighting
 Illuminated cab, engine compartment and fuel filling compartment
 Safety bar for control levers
 Double intermittent windscreen wipers
 Windscreen washers
 Hose rupture valve on boom cylinder
 Hydraulic refuelling pump, 90 l/min
 Compressor horn
 Over load indicator
 Radio console

Hydraulics

Three variable axial piston working pumps
 Mode selector, 3 steps
 Standard filter cartridges for return, leak oil and breathing filter.
 Dual main valve for the travel and equipment functions
 Float position on boom
 Power boost
 High pressure cut-off

Equipment

6.65 m monobloc boom
 2.5 m dipper arm
 End dampening on all cylinders
 Spherical steel link bearings in all connections
 Security lifting hook
 Friction welded piston rod eyes

OPTIONAL EQUIPMENT *(Standard on certain markets)*

Engine and Electrical System

Electric over speed protector
 Rear lights
 Volvo diesel driven engine and cab heater with digital timer
 Immersion heater, 220 V
 Oil bath cleaner
 Extra fuel filter
 Coolant filter

Undercarriage

700/900 mm track shoes
 Brake valves on crawler motors
 Skid rails

Safety and Comfort

Protective grid for front pane/roof pane
 Falling object protective structures (FOPS)
 Seat belts
 Air conditioning
 Micro filter for the cab
 Extra circulation pump for the heating system
 Radio cassette player
 Fire extinguisher
 Rotating beacon
 Exterior glare shields
 Rear window jalousie
 Extra hose rupture valve on dipper arm/bucket cylinders
 Protection against overfilling fuel

Hydraulics

Biologically degradeable oil
 Hydraulic equipment for:
 slope bucket
 grab
 hydraulic hammer
 crusher
 shears
 Installation of a 4th working pump

Equipment

3.5 m dipper arm
 Hydraulic quickfit
 Extra headlights on the boom
 Automatic lubrication

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.

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