

Åkerman EC300



- **Engine Power:**
154 kW (209 hp)
- **Operating Weight:**
31,0 – 32,0 t
- **Buckets:**
448 – 1900 l
- Direct injection, turbocharged Volvo diesel engine
- Åkerman 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)
- **Comfort cab**
 - computerized control and warning system
 - ergonomic environment
 - low sound level
 - filtered air
- Heavy duty equipment with spherical bearings
- Digging and breakout forces for tough conditions
- Slew ring in oil bath
- Highest flexibility for extra equipment/hydraulics
- Long undercarriage for high stability
- High crawler speed – 5,2 km/h

ÅKERMAN

ENGINE



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

Make		Volvo
Model		TD 71 GE
Net output at	r/s (r/min)	33,3 (2000)
ISO 3046 / DIN 6271*	kW (hp)	154 (209)
No. of cylinders		6
Displacement, total	l	6,73
Bore	mm	104,77
Stroke	mm	130

* Fan excluded

UNDERCARRIAGE



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

Track chain size		B6
No. of track shoes		2 x 53
Track width	mm	650
alt.	mm	650*/750/880
No. of bottom rollers		2 x 9
No. of top rollers		2 x 2

* Asymmetric

ELECTRIC SYSTEM



Micro processor for monitoring of engine/hydraulic system. High capacity and well protected electric system. Most relays and fuses are centralized in the cab. Battery disconnecter standard.

Voltage	V	24
A.C. Generator	V/A	28/45
Battery	V	4 x 12
Battery capacity	Ah	120
Alternator rating	W	1260

CAB



Operator's cab with a supporting frame structure. Large panes for all round for 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.

Surroundings (ISO 6393)		
(10 m distance from the machine)		
Average value L_{WA} (acoustic power)	dB(A)	108
Inside the cab (ISO 6394)		
with the door closed		
L_{pA} (acoustic pressure)	dB(A)	75

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	285
Max. travel speed	km/h	5,2
Gradeability, continuously	° (%)	46 (102)

SLEWING SYSTEM



The superstructure is slewed by an axial piston motor through a servo released slew brake, into the two-step slew gear 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	4,8
180° turn	s	7,1

* Empty bucket and equipment extended

SERVICE REFILL CAPACITIES



Fuel tank	l	340
Fuel pump capacity	l/min	90
Hydraulic system, total	l	430
Diesel engine	l	25
Cooling system (incl. glycol)	l	48
Slew ring	l	20

HYDRAULIC SYSTEM



Åkerman 3-circuit multilevel priority 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 priority to boom, bucket and arm.

Mode selector: Three working modes:

HLD = Heavy Lift Device

ECO = Economy

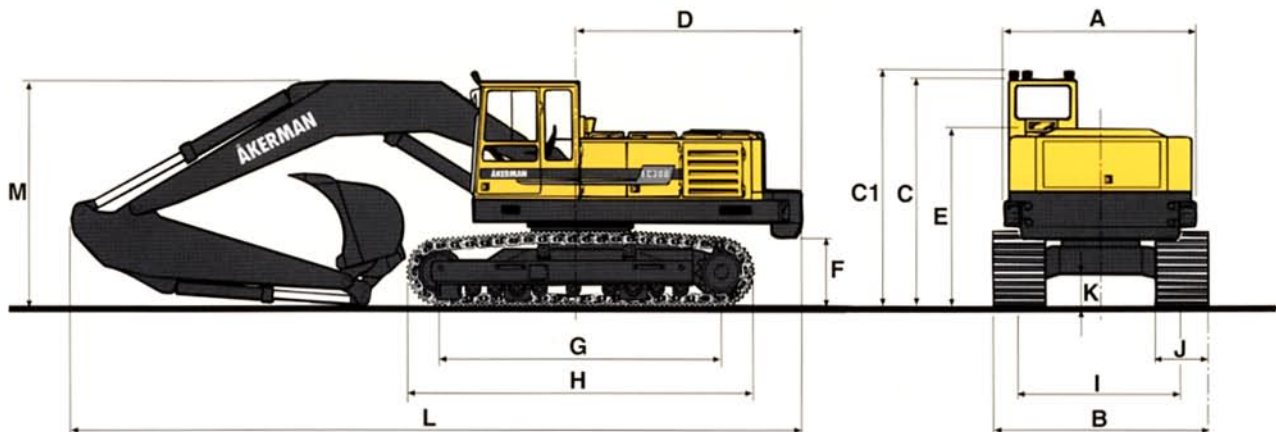
CAP = Capacity.

Powerboost temporarily selectable 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 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 cylinder.

Pump P1			
Max. pressure	MPa		26
Max. flow	l/min		110
Pumps P2 and P3			
Max. pressure	MPa		26
Power boost	MPa		30
Max. flow	l/min		2 x 170
Servo pump			
Pressure	MPa		6,5
Flow	l/min		20

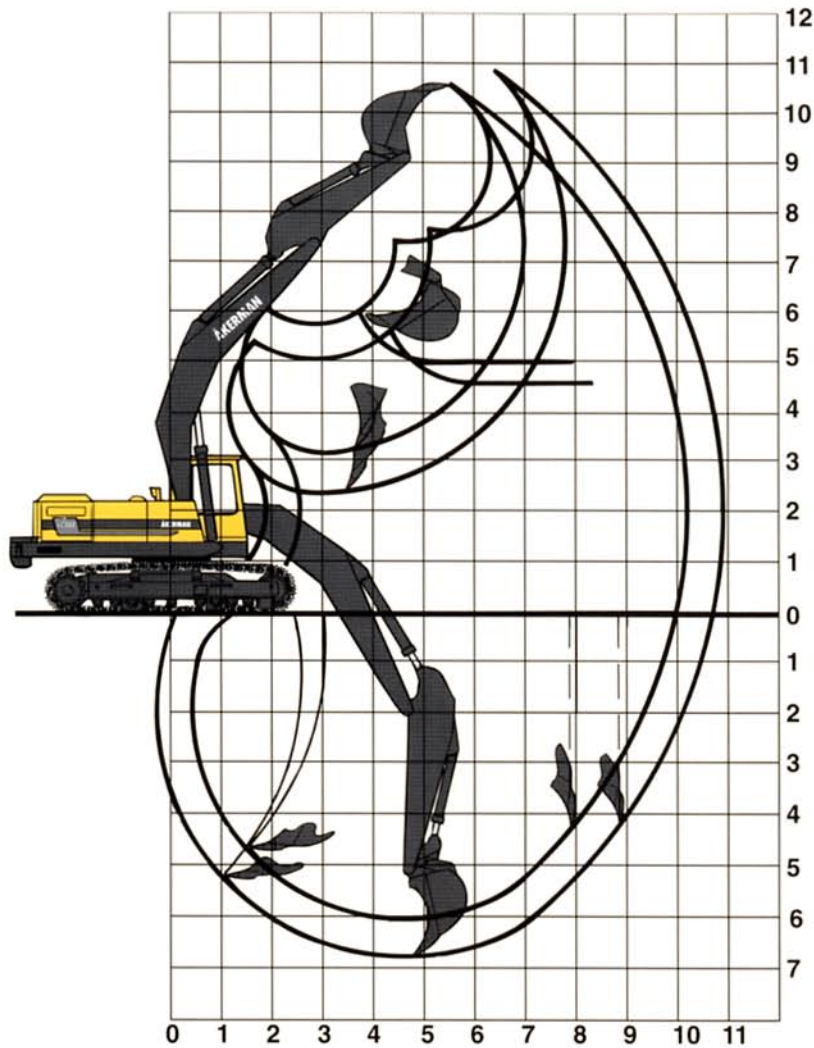
DIMENSIONS



A:	mm	2750	H:	mm	5130
B:	mm	3000 */3100/3200/3330	I:	mm	2450
C:	mm	3170	J:	mm	650 */650/750/880
C1:	mm	3310	K:	mm	435
D:	mm	3160	L:	mm	10300 (2,5 m arm)
E:	mm	2360	L:	mm	10300 (3,2 m arm)
F:	mm	974	M:	mm	3310 (2,5 m arm)
G:	mm	4210	M:	mm	3310 (3,2 m arm)

* Assymetric

WORKING RANGES



Arm	m	2,5	3,2
Max reach	m	10,4	10,9
Max. reach at ground level	m	10,2	10,7
Max. digging depth	m	6,2	6,8
Max. height, ground – tooth tip	m	10,6	10,6
Max. dumping height	m	7,2	7,4
Max. practical dumping height	m	4,9	4,6
Practical digging depth at a repose of material of 45°	m	5,1	5,4
Max. vertical digging depth	m	4,3	4,4
Min. slewing radius in front	m	4,1	4,0

BUCKET AND ARM COMBINATIONS

BUCKETS	Volume SAE l	Cutting width mm (ins)	Weight kg	Fitting *	Suitable for arm	
					2,50 m	3,20 m
Rock 2 t/m ³	1250	1200(48)	1125	D	•	•
	1250	1200(48)	1125	QF	•	
Heavy Duty 2 t/m ³	1515	1500(60)	1460	QF	•	
	1515	1500(60)	1520	D	•	
Bulk 1,5 t/m ³	1900	1900(75)	1700	QF	•	
	1700	1500(60)	1450	QF	•	
G.P./Trench 1.6 t/m ³	448	600(24)	540	QF	•	•
	818	900(36)		QF	•	•
	1180	1200(48)		QF	•	•
Ditch Cleaning		1800(72)		QF	•	•
		2400(95)		QF	•	•

DIGGING FORCE

Bucket digging force*	kN	186
Dipper arm force*	kN	153

* HD-bucket, 1515 l SAE and 2,5 m dipper arm.

D = Direct mount
QF = Quick fit

WEIGHT AND GROUND PRESSURE



Standard machine, 2,50 m dipper arm, hydraulic quickfit, 1700 l bucket and 5000 kg counterweight.

Track shoes	Machine weight	Ground pressure
650 mm	31 000 kg	51,4 kPa
750 mm	31 400 kg	45,1 kPa
880 mm	32 000 kg	39,2 kPa

LIFTING CAPACITIES

Max. load at dipper pin. Unit: 1 000 kg.

		Reach from machine centre											
		4,5 m		6,0 m		7,5 m		9,0 m		Max. reach		Max. m	
Across carriage	Along carriage	Lifting hook related to ground level											
5,87 m boom 2,5 m arm 650 mm track shoes 5000 kg counterweight	7,5 m			6,7 *	6,7 *					5,4 *	5,4 *	6,6	
	6,0 m			6,7 *	6,7 *	5,3	6,5 *			5,2	5,3 *	7,6	
	4,5 m	9,2 *	9,2 *	7,1	7,7 *	5,1	7,2 *			4,5	5,5 *	8,2	
	3,0 m	9,9	12,4 *	6,7	9,1 *	4,9	7,8 *			4,1	5,7 *	8,5	
	1,5 m	9,4	14,8 *	6,4	10,4 *	4,8	8,4 *			4,0	6,4 *	8,5	
	0,0 m	9,3	15,7 *	6,2	11,2 *	4,7	8,3			4,1	6,0 *	8,3	
	-1,5 m	9,2	15,5 *	6,2	11,4 *	4,7	8,3			4,5	7,9 *	7,7	
	-3,0 m	9,3	14,3 *	6,3	10,7 *					5,4	8,7 *	6,8	
5,87 m boom 3,2 m arm 650 mm track shoes 5000 kg counterweight	6,0 m			5,7 *	5,7 *	5,3	5,9 *			3,6 *	3,6 *	8,3	
	4,5 m	7,6 *	7,6 *	6,7 *	6,7 *	5,1	6,3 *			4,0	4,1 *	8,8	
	3,0 m	10,2	10,7 *	6,8	8,2 *	4,9	7,1 *	3,7	4,9 *	3,7	4,1 *	9,1	
	1,5 m	9,4	13,5 *	6,4	9,6	4,7	7,9 *	3,6	5,5 *	3,6	4,6 *	9,1	
	0,0 m	9,1	15,0 *	6,1	10,7 *	4,5	8,2			3,6	4,6 *	8,9	
	-1,5 m	9,0	15,4 *	6,0	11,2 *	4,5	8,1			3,9	5,1 *	8,4	
	-3,0 m	9,0	14,8 *	6,0	11,0 *	4,6	7,1 *			4,5	5,4 *	7,6	
	-4,5 m	9,3	12,9 *	6,3	9,3 *					6,0	8,8 *	6,2	

* Limited by hydraulic lifting capacity.

The above loads are in compliance with ISO standard 10567. They do not exceed 87% of hydraulic lifting capacity or 75 % of tipping load, with the machine on firm, level ground.

Working pressure with HLD = 30 MPa (300 bar/4350 psi)

STANDARD EQUIPMENT

Engine and Electrical System

Computer controlled monitoring system
 Battery disconnecter and main fuel tap
 Automatic idling speed (Fuel-miser)
 Air filter with indicator
 Hour meter
 Revs counter
 Fuel meter
 Temperature meter for cooling fluid and hydraulic oil
 Electric preheating element
 24 volt electrical system with 4 standard batteries
 Cranked exhaust pipe

Undercarriage

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

Safety and Comfort

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

Hydraulics

Float position on boom
 Dual main valve for the travel and equipment functions
 Power boost
 Mode selector, 3 steps
 Three variable axial piston working pumps
 Standard filter cartridges for return, leak oil and respiration filter systems
 Swing-out oil cooler
 Hydraulic equipment for quickfit

Equipment

5,87 m monobloc boom
 2,5 m dipper arm
 Hydraulic quickfit
 End dampening on all cylinders
 Security lifting hook
 Spherical link bearings in all connections
 Friction welded piston rod eyes

OPTIONAL EQUIPMENT *(Standard on certain markets)*

Engine and Electrical System

Electric over speed protector
 Volvo diesel driven engine and cab heater with digital timer
 Immersion heater, 220 V
 Precyclone with exhaust ejector

Undercarriage

650 mm asymmetrical track shoes
 750/880 mm track shoes
 Tool box
 Skid rails

Safety and Comfort

Protective grid for front pane/roof pane
 Fire extinguisher
 Seat belts
 Rotating beacon
 Protection against overfilling fuel
 Extra circulation pump for the heating system
 Extra hose rupture valve on dipper arm/bucket cylinders
 Rear lights
 Exterior glare shields
 Rear window jalousie
 Air conditioning
 Micro filter for the cab

Hydraulics

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

Equipment

3,2 m dipper arm
 Extra headlights on the boom

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 Construction Equipment

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