

# Åkerman EC300



- **Engine Power: 209 hp (154 kW)**
- **Operating Weight: 68,300 – 70,500 lb (31.0 – 32.0 t)**
- **Buckets: 1.3 – 2.6 yd<sup>3</sup> (1,000 – 2,000 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 steel link 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 – 3.2 mile/h (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 ISO 9249 / DIN 6271*	2,000 r/min	(33.3 r/s)
	209 hp	(154 kW)
No. of cylinders	6	
Displacement, total	411 in <sup>3</sup>	(6.73 l)
Bore	4.12 in	(104.77 mm)
Stroke	5.12 in	(130 mm)

\* Fan excluded

## UNDERCARRIAGE



Heavy-duty, box-designed body with solid, swing circle support.  
Lifetime lubricated rollers and front idlers.

Track chain size	B6HD	
No. of track shoes	2 x 53	
Track width - standard	30"	(750 mm)
- optional	26"/26" */35"	(650/650*/880 mm)
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 electrical system. Printed circuit board-based electrical system with clearly arranged fuses and relays. The system is designed to accept optional equipment. Battery disconnect standard.

Voltage	24 V	
Battery	4 x 12 V	
Battery capacity	120 Ah	
Alternator	28/45 V/A	
Alternator rating	1,260 W	

## CAB



The operator's cab offers a heavy-duty supporting frame structure. Large windows provide excellent 360° visibility. The upper front window slides up into the ceiling, and the lower one can be removed for ventilation. A sliding side window in the cab door provides additional cross-ventilation.

**Heater and defroster:** Air for the operator's cab is recirculated through a unique micro/macro filtration system. A 3-speed fan provides efficient heating and defrosting through 14 vents. Prepared for air conditioning.

**Operator's seat:** Adjustable suspension operator's seat with heating, headrest and individually adjustable armrests. Hand controls are conveniently located.

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

Exterior noise (ISO 6393)	
Average value $L_{WA}$ (sound power level)	108 dB(A)
Operators position (ISO 6394) with the door closed	
$L_{pA}$ (sound pressure level)	75 dB(A)

## DRIVE TRAIN



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

Max. tractive force	64,070 lbf	(285 kN)
Max. travel speed	3.2 mile/h	(5.2 km/h)
Gradeability, continuously	102 %	(46°)

## SWING SYSTEM



The superstructure is rotated by an axial piston motor through a servo-released swing brake, into the two-step swing gear giving torque to the inner tooth race of the swing circle. The entire swing circle runs in a dust-protected oil bath.

Swing, start to stop*	
90° turn	4.8 s
180° turn	7.1 s
Swing speed	5.8 r/min

\* Empty bucket and equipment extended

## SERVICE REFILL CAPACITIES



Fuel tank	89.8 gal	(340 l)
Fuel refilling pump capacity	23.8 gal/min	(90 l/min)
Hydraulic system, total	11.6 gal	(430 l)
Diesel engine oil	6.6 gal	(25 l)
Cooling system (incl. antifreeze)	12.7 gal	(48 l)
Swing Gearbox	5.3 gal	(20 l)

## HYDRAULIC SYSTEM



**Åkerman all servo controlled, 3-circuit hydraulic system.**

**Pumps:** P1 is a pressure-controlled variable pump with priority to the swing circuit. P2 and P3 are power and pressure-controlled variable pumps to the boom, stick, bucket and travel circuits.

**Mode selector:** Three working modes:

**HLD** = Heavy Lift Device and Power Boost

**ECO** = Economy

**CAP** = Capacity

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

**Valve system:** Boom, stick and bucket are operated by dual main valves, connected in accordance with our patented priority valve system, to obtain best combination of precision maneuverability 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

Maximum pressure 3,770 psi (26 MPa)

Maximum flow 29.1 gal/min (110 l/min)

Pumps P2 and P3

Maximum pressure 3,770 psi (26 MPa)

Power boost 4,350 psi (30 MPa)

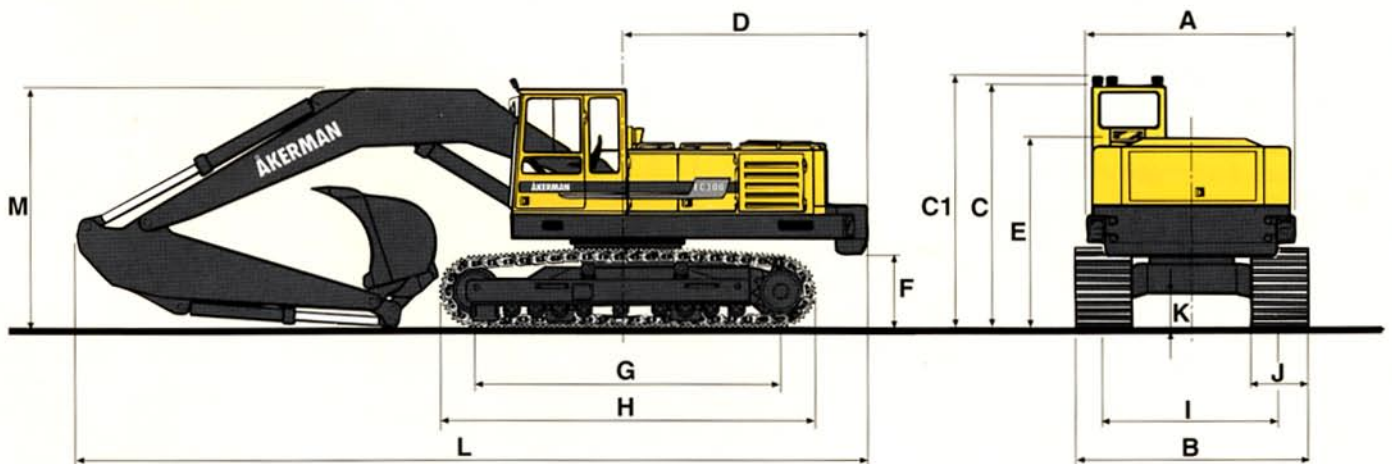
Maximum flow 2 x 44.9 gal/min (2 x 170 l/min)

Servo pump

Pressure 940 psi (6.5 MPa)

Flow 5.3 gal/min (20 l/min)

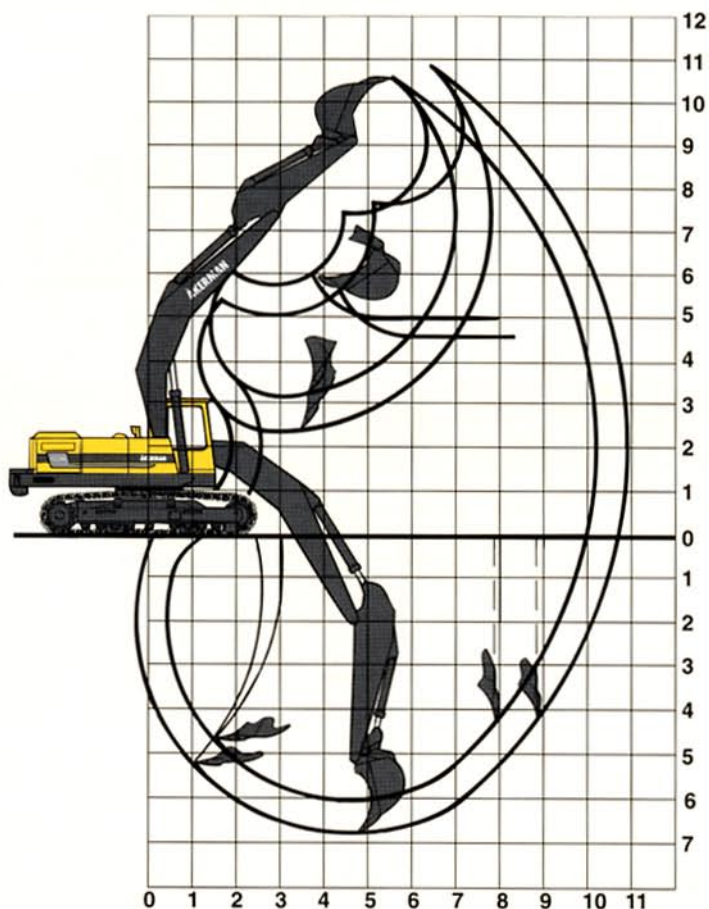
## DIMENSIONS



A:	9'	(2,750 mm)	H:	16'10"	(5,130 mm)
B:	9'10" */10'2"/10'6"/10'11"	(3,000 */3,100/3,200/3,330 mm)	I:	8'	(2,450 mm)
C:	10'5"	(3,170 mm)	J:	26" */26"/30"/35"	(650 */650/750/880 mm)
C1:	10'10"	(3,310 mm)	K:	17"	(435 mm)
D:	10'4"	(3,160 mm)	L:	33'10" – 8'2" stick	(10,300 mm – 2.5 m stick)
E:	7'9"	(2,360 mm)	L:	33'10" – 10'6" stick	(10,300 mm – 3.2 m stick)
F:	3'2"	(974 mm)	M:	10'10" – 8'2" stick	(3,310 mm – 2.5 m stick)
G:	13'10"	(4,210 mm)	M:	10'10" – 10'6" stick	(3,310 mm – 3.2 m stick)

\* Asymmetric

## WORKING RANGES



<b>Boom</b>	<b>19'3"</b>	<b>(5.87 m)</b>	<b>19'3"</b>	<b>(5.87 m)</b>
<b>Stick</b>	<b>8'2"</b>	<b>(2.5 m)</b>	<b>10'6"</b>	<b>(3.2 m)</b>
Max. reach	34'1"	(10.4 m)	35'9"	(10.9 m)
Max. reach at ground level	33'6"	(10.2 m)	35'1"	(10.7 m)
Max. digging depth	20'4"	(6.2 m)	22'4"	(6.8 m)
Max. height, ground				
– tooth tip	34'9"	(10.6 m)	34'9"	(10.6 m)
Max. dumping height	23'7"	(7.2 m)	24'3"	(7.4 m)
Max. pract. dumping height	16'1"	(4.9 m)	15'1"	(4.6 m)
Practical digging depth for a material with a 45° angle of repose	16'9"	(5.1 m)	17'9"	(5.4 m)
Max. vertical digging depth	14'1"	(4.3 m)	14'5"	(4.4 m)
Min. swing radius in front	13'5"	(4.1 m)	13'1"	(4.0 m)

### DIGGING FORCE

Bucket digging force*	41,800 lbf	(186 kN)
Stick force*	34,400 lbf	(153 kN)

\* HD-bucket, 1.96 yd<sup>3</sup> (1,500 l) SAE and 8'2" (2.5 m) stick.

## BUCKET AND STICK COMBINATIONS

BUCKETS	Volume SAE yd <sup>3</sup> (l)	Cutting width in (mm)	Weight lb (kg)	Fitting *	Suitable for stick	
					8'2" (2.5 m)	10'6" (3.2 m)
Material weight 3,370 lb/yd <sup>3</sup>	1.96 (1,500)	47" (1,200)	2,811 (1,275)	DF	•	
	1.90 (1,450)	47" (1,200)	2,756 (1,250)	QF	•	
Material weight 3,030 lb/yd <sup>3</sup>	2.22 (1,700)	57" (1,450)	3,042 (1,380)	DF	•	
	2.22 (1,700)	57" (1,450)	3,042 (1,380)	QF	•	
	1.90 (1,450)	47" (1,200)	2,756 (1,250)	QF	•	•
	1.90 (1,450)	47" (1,200)	2,756 (1,250)	QF	•	•
Material weight 2,530 lb/yd <sup>3</sup>	2.62 (2,000)	71" (1,800)	2,646 (1,200)	QF	•	
Articulated slope bucket	1.31 (1,000)	79" (2,000)	2,403 (1,090)	QF	•	•

\* DF=Direct fitting, QF=Quick fit

## WEIGHT AND GROUND PRESSURE



Standard machine, 19'3" (5.87 m) boom,  
10'6" (3.2 m) stick, quick fit, 2.22 yd<sup>3</sup> (1,700 l) bucket  
and 11,020 lb (5,000 kg) counterweight.

Track shoes		Machine weight		Ground pressure	
26"	(650 mm)	68,340 lb	(31,000 kg)	7.5 psi	(51.4 kPa)
30"	(750 mm)	69,225 lb	(31,400 kg)	6.5 psi	(45.1 kPa)
35"	(880 mm)	70,550 lb	(32,000 kg)	5.7 psi	(39.2 kPa)

## LIFTING CAPACITIES

At the quick fit lifting hook without bucket. Unit: pounds.

Across carriage Along carriage	Lifting hook related to ground level	Reach from machine centerline										
		15'		20'		25'		30'		Max. reach		Max. ft.
<b>19'3" (5.87 m) boom</b> <b>8'2" (2.5 m) stick</b> <b>Quick fit</b> <b>30" (750 mm) track shoes</b>	25'											
	20'			13,280*	13,280*	11,850	13,280*			8,240*	8,240*	27.7
	15'	19,290*	19,290*	15,770	16,160*	11,390	14,560*			7,500*	7,500*	29.9
	10'	2,560	26,870*	14,700	19,210*	10,840	16,350*	8,340	13,310*	7,970	8,050*	30.9
	5'	20,500	31,900*	13,930	22,430*	10,380	17,920*	8,110	14,220	7,420*	7,420*	31.1
	0'	20,540	34,050*	13,560	24,250*	10,090	18,060	8,000	12,120*	8,660*	8,660*	30.2
	- 5'	20,520	33,160*	13,490	24,440*	10,030	17,990			8,830*	8,830*	28.4
- 10'	20,740	30,460*	13,680	22,760*	10,350	13,140*			10,250	10,770*	25.2	
- 15'												
<b>19'3" (5.87 m) boom</b> <b>10'6" (3.2 m) stick</b> <b>Quick fit</b> <b>30" (750 mm) track shoes</b>	25'											
	20'					11,410*	11,410*	5,860*	5,860*	5,860*	5,860*	30.0
	15'			14,000*	14,000*	11,470	12,950*	8,560	11,490*	5,550*	5,550*	32.0
	10'	22,100	23,550*	14,900	17,200*	10,850	14,890*	8,250	13,440*	6,050*	6,050*	32.9
	5'	20,500	30,170*	13,920	20,650*	10,290	16,680*	7,940	14,060	6,310*	6,310*	33.0
	0'	19,970	33,070*	13,350	23,190*	9,890	17,890	7,730	13,810	6,320*	6,320*	32.3
	- 5'	19,870	33,230*	13,140	24,160*	9,720	17,690	7,690	12,270*	6,910*	6,910*	30.6
- 10'	20,080	31,660*	13,220	23,460*	9,800	17,790			8,390*	8,390*	27.7	
- 15'	20,590	27,260*	13,650	20,170*					10,640*	10,640*	23.2	

\* 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 and level ground.  
 Working pressure with HLD = 4,350 psi (30 MPa / 300 bar)

## STANDARD EQUIPMENT

### Engine and Electrical System

Computer controlled monitoring system  
 Battery disconnect and main fuel shutoff  
 Automatic idling speed (Fuel-miser)  
 Air filter with indicator  
 Hour meter  
 Tachometer  
 Fuel gauge  
 Temperature gauge for cooling fluid and hydraulic oil  
 Electric preheating element  
 24 V electrical system with 2 standard batteries  
 Exhaust pipe elbow

### Undercarriage

Swing circle in oil bath  
 30" (750 mm) track shoes with mud holes  
 Triple 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 refueling pump, 23.8 gal/min (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 vents  
 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 sun visor  
 Double intermittent windshield wipers  
 Windshield washers  
 Compressor horn  
 Radio console

### 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 breathing filter  
 Swing-out oil cooler  
 Hydraulic equipment for quickfit

### Equipment

19'3" (5.87 m) monobloc boom  
 10'6" (3.2 m) stick  
 Hydraulic quick fit  
 End dampening on all cylinders  
 Security lifting hook  
 Spherical steel link bearings in all connections  
 Friction welded piston rod eyes

## OPTIONAL EQUIPMENT

### 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

26" (650 mm) and 35" (880 mm) track shoes  
 Skid rails  
 Tool box

### Safety and Comfort

Protective grid for front window and roof window  
 Fire extinguisher  
 Seat belts  
 Rotating beacon  
 Protection against over filling fuel  
 Extra circulation pump for the heating system  
 Extra hose rupture valves on stick/bucket cylinders  
 Rear lights  
 Exterior glare shields  
 Rear window jalousie  
 Air conditioning  
 Micro filter for the cab  
 Radio cassette player

### Hydraulics

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

### Equipment

8'2" (2.5 m) stick  
 Extra working lights on 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

Ref. No. 22 2 430 0001 U.S.

Printed in Sweden 01.04.96 EXC