

# Åkerman EC230B



- **Engine Power:**  
122 kW (166 hp)
- **Operating Weight:**  
23,0 – 24,0 t
- **Buckets:**  
900 – 1400 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
- Long undercarriage for high stability
- High crawler speed – 5,2 km/h
- Heavy duty equipment with spherical bearings
- Digging and breakout forces for tough conditions
- Highest flexibility for extra equipment/hydraulics

**ÅKERMAN**

## ENGINE



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

Make		Volvo	
Model		TD 61 GE	
Net output at	r/s (r/min)	35 (2100)	
ISO 3046 / DIN 6271*	kW (hp)	122 (166)	
No. of cylinders		6	
Displacement, total	l	5,48	
Bore	mm	98,43	
Stroke	mm	120	

\* Fan excluded

## UNDERCARRIAGE



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

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

## 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	28/55
Battery	V	4 x 12
Battery capacity	Ah	120
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 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	222
Max. travel speed	km/h	5,2
Gradeability, continuously	° (%)	45 (100)

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) 77

## SERVICE REFILL CAPACITIES



Fuel tank	l	340
Fuel pump capacity	l/min	90
Hydraulic system, total	l	400
Diesel engine	l	22
Cooling system (incl. glycol)	l	32
Slew ring	l	17

## 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 6,2

180° turn s 8,2

\* Empty bucket and extended equipment.

## 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

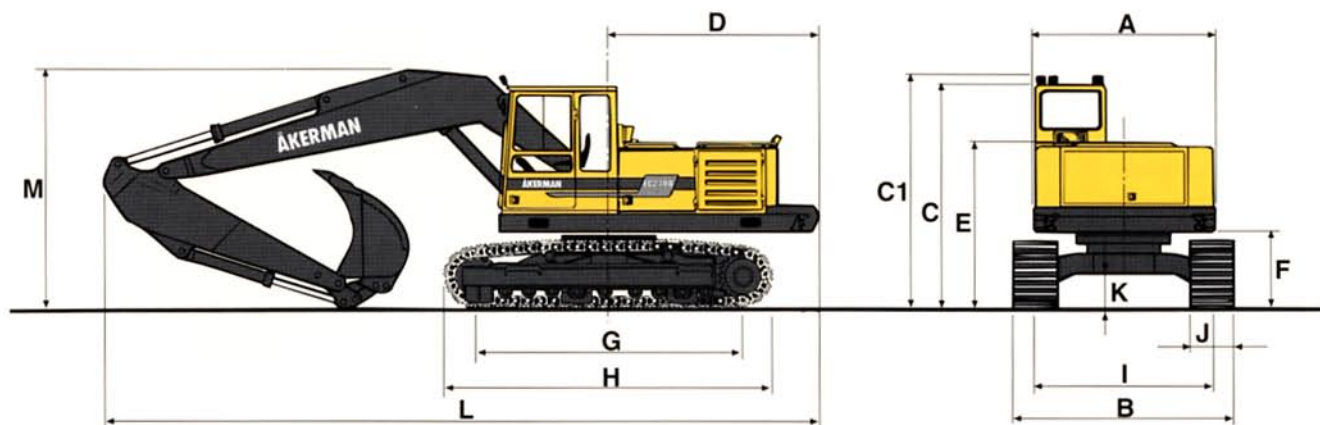
**CAP** = Capacity

Powerboost temporarily selectable 10 sec. even in Economy and Capacity mode.

**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 equipped with floating position valve for improved comfort and increased digging speed. Security hose rupture valve on the boom cylinder and dipper cylinder.

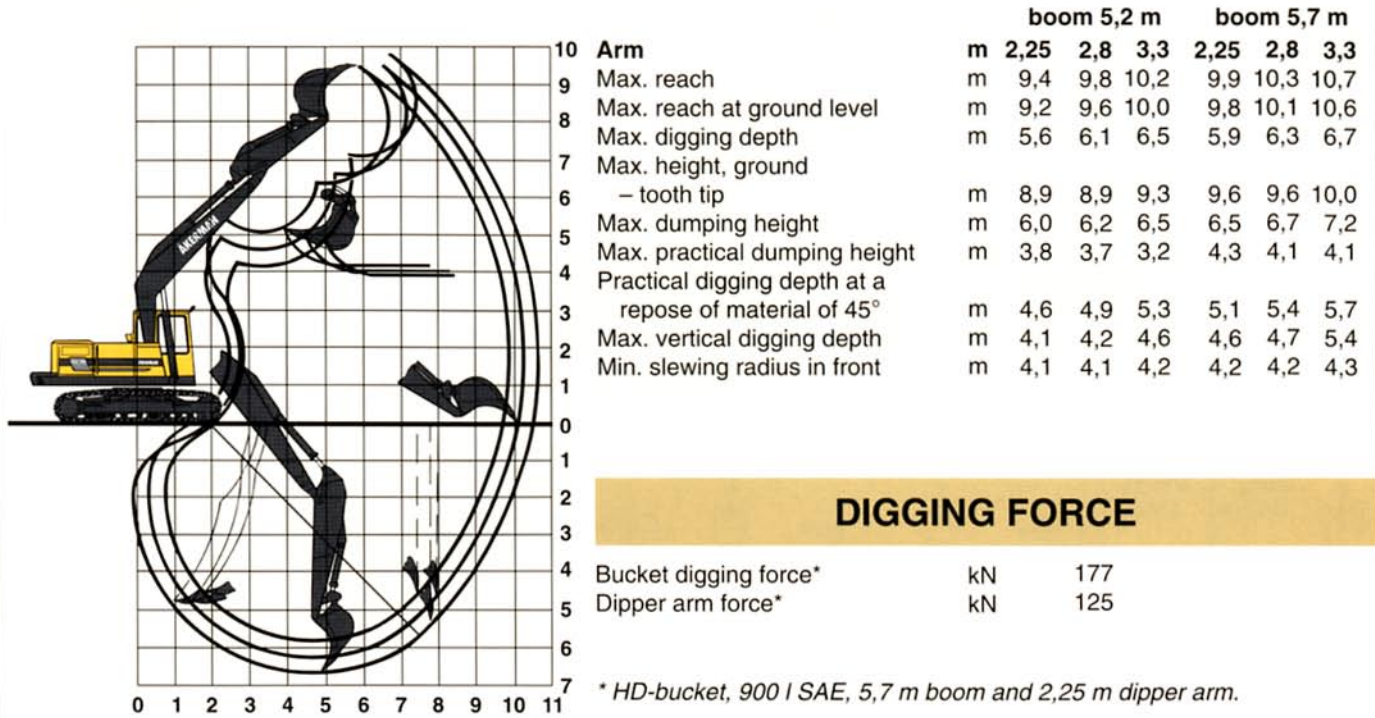
Pump P1			
Max. pressure	MPa	26	
Max. flow	l/min	88	
Pumps P2 and P3			
Max. pressure	MPa	28	
Power boost	MPa	32	
Max. flow	l/min	2 x 142	
Servo pump			
Pressure	MPa	6,5	
Flow	l/min	20	

## DIMENSIONS



A:	mm	2490	
B:	mm	3000/3100/3300	
C:	mm	3010	
C1:	mm	3150	
D:	mm	2870	
E:	mm	2220	
F:	mm	1030	
G:	mm	3730	
H:	mm	4540	
I:	mm	2400	
J:	mm	600/700/900	
K:	mm	470	
L:	mm	9740	(2,25 and 2,8 m arm)
L:	mm	9580	(3,30 m arm)
M:	mm	3210	(2,25 m arm)
M:	mm	3240	(2,80 m arm)
M:	mm	3720	(3,30 m arm)

## WORKING RANGES



## DIGGING FORCE

4 Bucket digging force*	kN	177
5 Dipper arm force*	kN	125

\* HD-bucket, 900 l SAE, 5,7 m boom and 2,25 m dipper arm.

## BUCKET AND ARM COMBINATIONS

BUCKETS	Volume SAE l	Cutting width mm (ins)	Weight kg	Fitting *	Suitable for boom 5,7 m and arm			Suitable for boom 5,2 m and arm		
					2,25 m	2,80 m	3,30 m	2,25 m	2,80 m	3,30 m
Rock 2 t/m <sup>3</sup>	900	1050(41)	760	D	•	•	•	•	•	•
	900	1050(41)	760	QF	•	•	•	•	•	•
	1000	1050(41)	850	QF	•	•	•	•	•	•
	1000	1050(41)	960	D	•	•	•	•	•	•
Heavy Duty 2 t/m <sup>3</sup>	1200	1200(48)	920	QF	•	•	•	•	•	•
Bulk 1.5 t/m <sup>3</sup>	1460	1500(60)	1080	QF	•	•	•	•	•	•
G.P./Trench 1.6 t/m <sup>3</sup>	345	500(20)	510	QF	•	•	•	•	•	•
	443	600(24)	550	QF	•	•	•	•	•	•
	768	900(36)	720	QF	•	•	•	•	•	•
	1093	1200(48)	860	QF	•	•	•	•	•	•
Ditch cleaning	970	1500(60)	570	QF	•	•	•	•	•	•
	1175	1800(72)	650	QF	•	•	•	•	•	•

\* D = Direct fitting

QF = Quickfit

## WEIGHT AND GROUND PRESSURE















Machine with 5,2 m boom, 2,8 m dipper arm,  
1460 l bucket and counterweight 3500 kg.

Track shoes	Machine weight (approx.)	Ground pressure
600 mm	23 300 kg	47,3 kPa
700 mm	23 300 kg	40,5 kPa
900 mm	24 000 kg	32,5 kPa

## LIFTING CAPACITIES

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

 Across carriage  Along carriage	Lifting hook related to ground level	Reach from machine centre										
		4,5 m		6,0 m		7,5 m		9,0 m		Max. reach		Max. m
												
5,7 m boom 2,25 m arm 700 mm track shoes	6,0 m			5,00	5,25 *					4,00	5,34 *	6,9
	4,5 m	6,71 *	6,71 *	4,77	5,63 *	3,42	5,26 *			3,28	5,15 *	7,7
	3,0 m	6,66	8,44 *	4,51	6,32 *	3,31	5,45 *			2,96	4,70 *	8,1
	1,5 m	6,31	9,80 *	4,29	7,01 *	3,20	5,31			2,89	4,80	8,1
	0,0 m	6,18	10,2 *	4,16	7,14	3,13	5,24			2,95	4,90	7,9
	-1,5 m	6,16	9,75 *	4,13	7,11					3,21	5,36	7,4
	-3,0 m	6,24	8,57 *	4,22	6,33 *					3,86	5,48 *	6,5
5,7 m boom 2,8 m arm 700 mm track shoes	6,0 m					3,49	4,21 *			3,49	4,21 *	7,5
	4,5 m			4,80	5,13 *	3,42	4,79 *			2,95	3,87 *	8,2
	3,0 m	6,76	7,66 *	4,52	5,89 *	3,28	5,09 *			2,72	4,42 *	8,5
	1,5 m	6,29	9,22 *	4,26	6,66 *	3,15	5,26			2,60	4,34	8,6
	0,0 m	6,07	9,95 *	4,10	7,08	3,05	5,15			2,64	4,43	8,4
	-1,5 m	6,01	9,86 *	4,03	7,01	3,03	5,13			2,85	4,80	7,9
	-3,0 m	6,07	9,02 *	4,07	6,71 *					3,32	5,25 *	7,1
5,2 m boom 2,8 m arm 700 mm track shoes	6,0 m			4,85 *	4,85 *					3,94 *	3,94 *	6,9
	4,5 m			4,89	5,16 *	3,46	4,76 *			3,39	4,06 *	7,6
	3,0 m	7,00	7,28 *	4,64	5,88 *	3,36	5,28 *			3,04	3,95 *	8,0
	1,5 m	6,52	9,00 *	4,40	6,69 *	3,24	5,36			2,91	3,93 *	8,1
	0,0 m	6,27	10,0 *	4,24	7,23	3,16	5,27			2,96	4,16 *	7,9
	-1,5 m	6,19	10,1 *	4,17	7,16					3,21	4,39 *	7,4
	-3,0 m	6,24	9,26 *	4,23	6,70 *					3,92	6,04 *	6,4
5,2 m boom 3,3 m arm 700 mm track shoes	6,0 m					3,53	3,79 *			3,53	3,79 *	7,5
	4,5 m			4,66 *	4,66 *	3,48	4,60 *			2,99	3,48 *	8,2
	3,0 m	6,58 *	6,58 *	4,69	5,45 *	3,36	4,92 *			2,76	3,91 *	8,5
	1,5 m	6,63	8,43 *	4,43	6,34 *	3,23	5,36 *			2,64	3,88 *	8,6
	0,0 m	6,29	9,71 *	4,23	7,06 *	3,12	5,24			2,68	4,21 *	8,4
	-1,5 m	6,16	10,1 *	4,13	7,13	3,08	5,19			2,89	4,85	7,9
	-3,0 m	6,17	9,63 *	4,14	7,04 *					3,37	5,28 *	7,1
-4,5 m	6,34	7,81 *							4,64	5,51 *	5,7	

\* 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 = 32 MPa (320 bar)

## 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  
 Electric preheating element  
 Revs counter  
 Fuel meter  
 Temperature meter for cooling fluid and hydraulic oil  
 24 volt electrical system with 4 standard batteries  
 Cranked exhaust pipe

### Undercarriage

Slew ring in oil bath  
 700 mm track shoes with mud holes  
 Tripple grousers  
 Hydraulic track adjuster  
 Derailing shields, 3 pcs  
 Skid rails

### Superstructure

Counterweight 3500 kg

### 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 sun visor  
 Double intermittent windscreen wipers  
 Windscreen washers  
 Compressor horn  
 Radio cassette

### Hydraulics

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

### Equipment

5,2 m monobloc boom  
 2,8 m dipper arm  
 Hydraulic quickfit  
 End dampening on all cylinders  
 Spherical 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  
 Volvo diesel driven engine and cab heater, with digital timer  
 Immersion heater, 220 V  
 Precyclone with exhaust ejector

### Undercarriage

600 mm and 900 mm track shoes  
 Asymmetrical track shoes  
 Top rollers, 2 pcs  
 Tool box

### 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  
 magnet  
 Installation of a 4th working pump

### Equipment

5,7 m monobloc boom  
 5,9 m 2-piece boom  
 2,25 m and 3,3 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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