



Åkerman EC230



- **Engine Power:**
122 kW (166 hp)
- **Operation Weight:**
22,0–22,8 t
- **Buckets:**
0,3–1,3 m³
- *Direct injection, turbocharged Volvo diesel engine*
- *Åkerman three-circuit computerized multilevel priority hydraulic system (COS = capacity optimized system)*
- *New Comfort cab. Ergonomic, roomy and silent. Filtrated air*
- *Computerized control and warning system*
- *Heavy duty equipment with spherical bearings*
 - *Digging and breakout forces for tough conditions*
- *Highest flexibility for extra equipment/hydraulics*
- *Long undercarriage for high stability*

ÅKERMAN

ENGINE



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

Make		Volvo	
Model		TD 61 ACE	
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	

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.

Voltage	V	24
A.C. Generator	V/A	28/55
Battery	V	4x12
Battery capacity	Ah	120
Alternator rating	W	1540

DRIVE TRAIN



Each track is powered by an axial piston hydraulic motor. The track brakes are of multidisc type and are activated by spring force and hydraulically released.

Max. tractive force	kN	225
Max. travel speed	km/h	3,0
Gradeability, continuously	° (%)	48 (110)

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

UNDERCARRIAGE



Heavy duty box designed body with solid slew ring support.

Track chain size	B60
No. of track shoes	2x50
Track width	mm 650
alt.	mm 750, 900
No. of bottom rollers	2x10
No. of top rollers	2x2

CAB



Tested cab structure according to FOPS ISO 3471. Large panes all-round for good visibility. The upper front pane can be pushed up in the ceiling, and the lower one can be removed.

Slide pane in the cab door.

Heater and defroster: A three-step fan creating overpressure in the all-filtered cab. Defroster, heating all together 14 inlets. Prepared for Air Conditioning.

Operator's seat: Adjustable suspension operator's seat with 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_{pA} (acoustic pressure)	dB(A) 77
Average value L_{WA} (acoustic power)	dB(A) 105
Inside the cab (ISO 6394)	
with the door closed	
L_{pA} (acoustic pressure)	dB(A) 75

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 4,6
180° turn	s 6,5

* Empty bucket and extended equipment.

HYDRAULIC SYSTEM



Åkerman 3-circuit multilevel priority system all-servo manoeuvring.

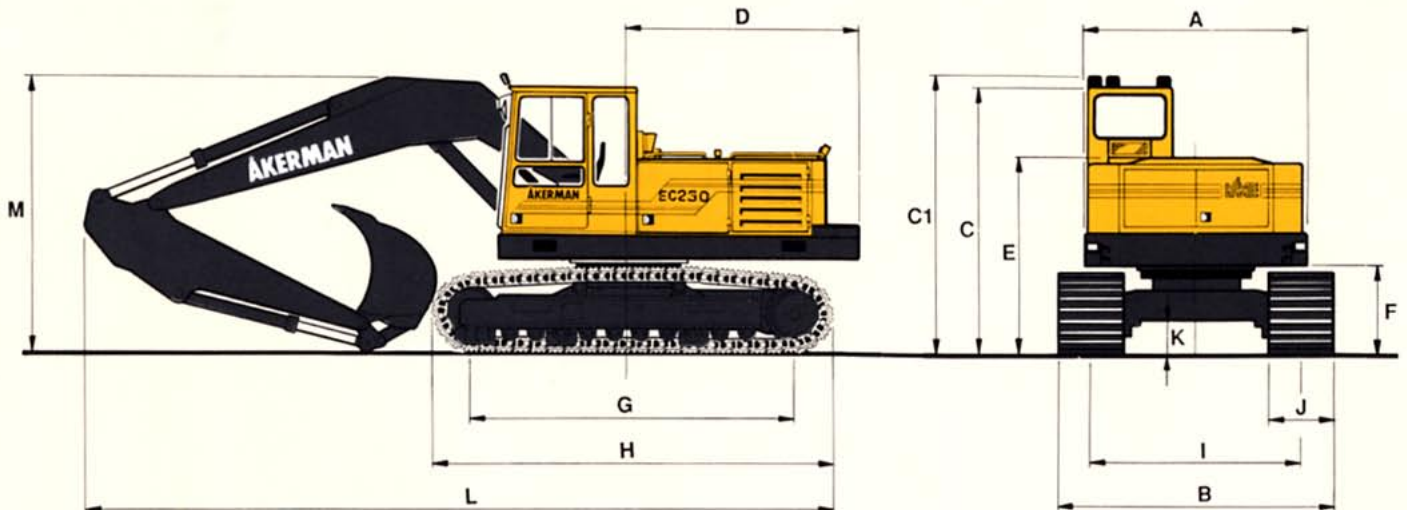
Pumps: P1 is a pressure controlled variable pump with priority to slew circuit. P2 and P3 are power and pressure controlled variable pumps with opposite cross flow priority to boom, bucket and arm.

Mode selector: Three working modes: **HLD** = Heavy Lift Device, **ECO** = Economy, **CAP** = Capacity. Powerboost temporarily selectable even in Economy and Capacity mode.

Valve system: Boom, arm and bucket are operated by dual main valves to obtain best combination of precision manoeuvrability and minimized fuel consuming. Boom cylinder equipped with floating position valve for improved comfort and increased digging speed. Security hose rupture valve on the boom cylinder.

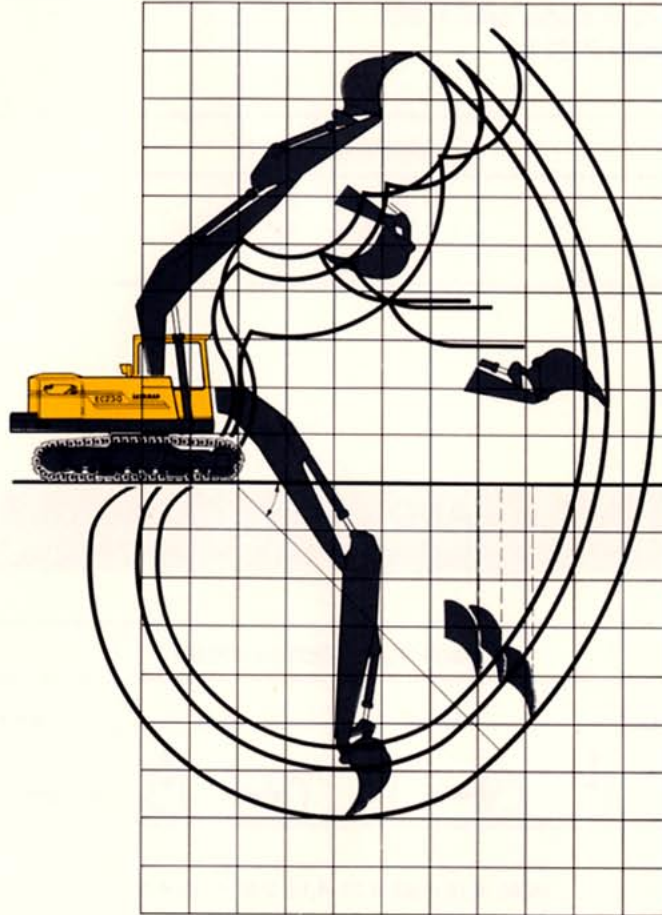
Pump P1			
Max. pressure	MPa		26
Max. flow	l/min		88
Pumps P2 and P3			
Max. pressure	MPa		26
Power boost	MPa		30
Max. flow	l/min		2x142
Servo pump			
Pressure	MPa		6,5
Flow	l/min		21

DIMENSIONS



A:	mm	2490	
B:	mm	3000	
C:	mm	3010	
C1:	mm	3150	
D:	mm	2680	
E:	mm	2240	
F:	mm	1020	
G:	mm	3730	
H:	mm	4530	
I:	mm	2350	
J:	mm	650/750/900	
K:	mm	410	
L:	mm	9000	(2,25 m arm)
L:	mm	9000	(2,80 m arm)
L:	mm	9000	(3,30 m arm)
M:	mm	3200	(2,25 m arm)
M:	mm	3250	(2,80 m arm)
M:	mm	3900	(3,30 m arm)

WORKING RANGES



Arm	m	2,25	2,80	3,30
Max reach	m	9,4	9,8	10,2
Max. reach at ground level	m	9,2	9,6	10,0
Max. digging depth	m	5,6	6,1	6,5
Max. height, ground – tooth tip	m	8,9	8,9	9,3
Max. dumping height	m	6,0	6,2	6,5
Max. practical dumping height	m	3,8	3,7	3,2
Practical digging depth at a repose of material of 45°	m	4,6	4,9	5,3
Max. vertical digging depth	m	4,1	4,2	4,6
Min. slewing radius in front	m	4,1	4,1	4,2

BUCKET AND ARM COMBINATIONS

BUCKETS	Volume SAE l	Cutting width mm	Weight kg	Fitting *	Suitable for arm		
					2,25 m	2,80 m	3,30 m
Heavy Duty 2 t/m ³	1000	1050	850	QF	•	•	•
	900	1050	760	QF	•	•	•
	1100	1050	970	QF	•	•	•
	900	1050	760	Std.	•	•	•
	1050	1050	960	Std.	•	•	•
	1150	1050	980	Std.	•	•	•
Light material 1,5 t/m ³	900	1125	585	QF	•	•	•
	1300	1250	835	QF	•	•	•
Articulated slope bucket	700	1600	840	QF	•	•	•
Articulated slope bucket	800	1800	880	QF	•	•	•
Ditch cleaning	700	1600	550	QF	•	•	•
Ditch cleaning	800	1800	590	QF	•	•	•
Cable bucket	280	550	385	QF	•	•	•

DIGGING FORCE

Bucket digging force*	kN	145
Dipper arm force*	kN	112

* Std. HD-bucket, 1150 l SAE, and 2,25 m dipper arm.

* Std. = Direct fitting

QF = Quickfit

WEIGHT AND GROUND PRESSURE



Standard machine, 2,25 m dipper arm, 1150 l bucket and counterweight 2600 kg.

Track shoes	Machine weight	Ground pressure
650 mm	22 000 kg	41,4 kPa
750 mm	22 300 kg	36,3 kPa
900 mm	22 800 kg	31,0 kPa

STABILITY AND LIFTING CAPACITIES

In the quickfit lifting hook without bucket. Unit: 1000 kg.

	Lifting hook related to ground level	Reach from machine centre								Max. reach		
		4,5 m		6,0 m		7,5 m		9,0 m				
		Across carriage	Along carriage	Across carriage	Along carriage	Across carriage	Along carriage	Across carriage	Along carriage	Across carriage	Along carriage	Max. m
5,20 m boom 2,25 m arm Quickfit 650 mm track shoes	6,0 m											
	4,5 m			5,90 4,19	9,93 5,12	4,18 2,97	6,98 4,77			3,83 2,72	6,43 4,56	7,9
	3,0 m	8,21 5,83	14,9 7,76	5,52 3,92	9,46 5,93	4,01 2,84	6,77 4,80			3,37 2,39	5,72 3,80	8,4
	1,5 m	7,68 5,45	14,3 9,37	5,21 3,70	9,08 6,45	3,84 2,73	6,57 4,66			3,28 2,33	5,61 3,98	8,4
	0,0 m	7,57 5,38	14,2 9,94	5,03 3,57	8,88 6,31	3,74 2,65	6,45 4,58			3,34 2,37	5,74 4,07	8,2
	-1,5 m	7,57 5,37	14,2 9,53	4,99 3,55	8,84 6,28	3,75 2,66	6,48 4,60			3,70 2,63	6,38 4,53	7,6
	-3,0 m	7,68 5,45	14,3 8,24	5,14 3,65	9,03 6,04					4,57 3,24	7,90 5,14	6,6
5,20 m boom 2,80 m arm Quickfit 650 mm track shoes	6,0 m					4,30 3,05	7,16 4,19			4,09 2,91	6,84 3,76	7,7
	4,5 m			5,90 4,19	9,96 4,58	4,18 2,97	6,99 4,31			3,44 2,44	5,81 3,93	8,4
	3,0 m	8,42 5,98	15,2 6,84	5,57 3,95	9,53 5,44	3,99 2,83	6,76 4,74			3,09 2,19	5,28 3,75	8,8
	1,5 m	7,71 5,47	14,3 8,90	5,20 3,69	9,09 6,26	3,79 2,69	6,53 4,63			2,95 2,09	5,09 3,61	8,9
	0,0 m	7,43 5,28	14,0 9,73	4,96 3,52	8,82 6,26	3,65 2,59	6,37 4,52			2,99 2,12	5,19 3,68	8,7
	-1,5 m	7,38 5,24	14,0 9,60	4,88 3,46	8,72 6,19	3,61 2,56	6,32 4,48			3,23 2,29	5,62 3,99	8,2
	-3,0 m	7,46 5,30	14,0 8,74	4,93 3,50	8,78 6,24					3,91 2,78	6,81 4,84	7,2
5,20 m boom 3,30 m arm Quickfit 650 mm track shoes	6,0 m					4,36 3,09	7,22 3,68			3,60 2,55	6,04 3,75	8,3
	4,5 m					4,22 3,00	7,04 3,93	3,04 2,16	5,19 3,48	3,04 2,16	5,19 3,48	9,0
	3,0 m	8,61 6,08	15,5 6,12	5,67 4,02	9,67 5,01	4,01 2,85	6,80 4,41	2,97 2,11	5,09 3,61	2,80 1,99	4,82 3,43	9,3
	1,5 m	7,86 5,58	14,6 8,21	5,26 3,73	9,19 5,91	3,80 2,70	6,55 4,65	2,86 2,03	4,97 3,53	2,67 1,90	4,65 3,30	9,4
	0,0 m	7,44 5,29	14,1 9,49	4,97 3,53	8,86 6,29	3,63 2,58	6,36 4,51	2,79 1,98	4,88 3,47	2,70 1,92	4,74 3,36	9,2
	-1,5 m	7,32 5,20	13,9 9,69	4,83 3,43	8,70 6,18	3,55 2,52	6,26 4,45			2,91 2,07	5,11 3,63	8,7
	-3,0 m	7,36 5,23	14,0 9,11	4,84 3,44	8,71 6,18	3,59 2,55	6,31 4,48			3,37 2,39	5,90 4,19	7,9
-4,5 m	7,57 5,38	14,2 7,34	5,03 3,57	8,94 5,23					4,56 3,24	7,99 4,44	6,5	

Tipping load



Lifting capacities*

* The stated lifting capacities do not exceed the hydraulic lifting capacity or 71,4% of the tipping load, with the machine on firm, level ground.

STANDARD EQUIPMENT

Engine and electrical system

Computer controlled monitoring system
 Battery disconnecter and main fuel tap
 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

Undercarriage

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

Safety and Comfort

Cab heating with 14 inlets
 Filtred air intake
 Cab skylight
 Openable side pane
 Emergency exit through rear window
 Ergonomically designed and adjustable operator's seat
 Rear view mirrors,
 2 exterior
 1 interior
 Lights:
 5 pcs working lights, halogen, front
 1 pc working light, halogen, rear
 Illuminated cab, engine compartment and fuel filling compartment
 Safety bar for control levers
 Double intermittent windscreen wipers
 Hydraulic refuelling pump, 90 l/min
 Compressor horn

Hydraulics

Three variable axial piston working pumps
 Mode selector, 3 steps
 Standard filter cartridges for return, leak oil and respiration filter systems.
 Double manoeuvre valves for the travel and equipment functions
 Float position on boom
 Hose rupture valve on boom
 Refilling pump for hydraulic oil
 Precision honed/ground centre passage
 Automatic idling speed (Fuel-miser)
 Power boost

Equipment

5,2 m monobloc boom
 2,25 m dipper arm
 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
 Rear lights
 Exhaust pipe bend
 Digital timer
 Combined cab/engine heater Primus 2460
 Engine heater Primus 2400/2440
 Level meter indicator

Undercarriage

750 mm and 900 mm track shoes
 Tool box
 Skid rails

Safety and Comfort

Immersion heater
 Tinted panes
 Interior and exterior glare shields
 Protective grid for front pane/roof pane
 Vandal guards
 Fire extinguisher
 Operator's seat with air cushion suspension
 Seat belts
 Rotating warning light
 Sun visor
 Sun shield
 Rear window jalousie
 Air conditioning
 Fine filter for the cab

Micro filter for the cab
 Circulation pump for the heating system
 Radio and cassette player Blaupunkt
 Tropical equipment
 Windscreen washers

Hydraulics

Hydraulic equipment for:
 slope bucket
 grab
 hydraulic hammer
 jib
 crusher
 shears
 Installation of a 4th working pump
 Socket for hydraulic hand tools

Equipment

Dipper arm 2,8 m and 3,3 m
 Extra headlights on the boom
 Extra hose rupture valve on dipper arm/bucket cylinders
 Automatic grease system
 Hydraulic quickfit
 Mechanic quickfit

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.

VME Excavators AB

Box 115, S-241 22 ESLÖV SWEDEN

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