



# Åkerman EW230B



- **Engine Power:**  
166 hp (122 kW)
- **Operating Weight:**  
44,100 lbs (20 t)
- **Buckets:**  
0.92 – 1.70 cu.yd. (700 – 1300 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
- Digging and breakout forces for tough conditions
- Highest flexibility for extra equipment/hydraulics
- Permanent 4-wheel drive
- Four travel speeds – max 18.6 mph (30 km/h)
- Individually operated outriggers and dozer blade

**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	rpm	(r/s)	2100 (35)
ISO 3046 / DIN 6271*	hp	(kW)	166 (122)
No. of cylinders	6		
Displacement, total	cu.in	(l)	334 (5.48)
Bore	in.	(mm)	3.88" (98.43)
Stroke	in.	(mm)	4.72" (120)

\* Fan excluded

## 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	4 x 12
Battery capacity	Ah	120
A.C. Alternator	V/A	28/55
Alternator rating	W	1540

## SERVICE REFILL CAPACITIES



Fuel tank	gal	(l)	89.8	(340)
Fuel refilling pump capacity	gpm	(l/min)	23.8	(90)
Hydraulic system, total	gal	(l)	105.7	(400)
Diesel engine	gal	(l)	5.8	(22)
Cooling system (incl. glycol)	gal	(l)	8.5	(32)
Swing ring	gal	(l)	9.2	(35)
Travel gearbox	gal	(l)	1.3	(5)

## BRAKES



Brake system corresponds to ISO 3450.

**Service brakes** consist of a 2-circuit oil servo system with drum brakes on each axle.

**Parking brake** of drum type mounted on the gearbox. It is activated by spring power and servo released.

**Digging brake** without play is obtained through the same drum brake system.

**Security system:** The 2-circuit travel brakes are supplied with two accumulators in the event of failure in the service brake system.

## UNDERCARRIAGE



**Drive Train:** One variable piston motor on the mid-mounted two-step gearbox gives power to front and rear axles, both with hub reductions.

**Framework and supports:** All-welded torsion box frame with two outriggers on rear end and a dozer blade on the front end. These 3 supports can by choice be operated separately or simultaneously for quick re-positioning.

**Wheels:** Alternative single and twin wheels available.

**Front axle:** Oscillating 8°.

Twin wheels, standard	10.00 – 20 PR16		
Max tractive force	lbf.	(kN)	33,270 (148)
Travel speed, road travel	mph	(km/h)	0 - 18.6 (0 - 30)
Travel speed, site travel	mph	(km/h)	0 - 5.0 (0 - 8)
Turning radius, front wheels	ft	(m)	26'3" (8)

## CAB



Operator's cab with a supporting frame structure. Large windows for all round good visibility. The upper front window 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 headrest and individually adjustable armrests and hand controls.

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

Surroundings (ISO 6393)	(32'10" 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

## SWING SYSTEM



The superstructure is swung 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 ring. The entire swing ring runs in a dust protected oil bath.

Swing, start to stop*		
90° turn	s	6.2
180° turn	s	8.2
Swing speed	rpm	7.4

\* 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 swing circuit. P2 and P3 are power and pressure controlled variable pumps with opposite cross flow priority to boom, bucket and stick.

**Mode selector:** Three working modes:

**HLD** = Heavy Lift Device

**ECO** = Economy

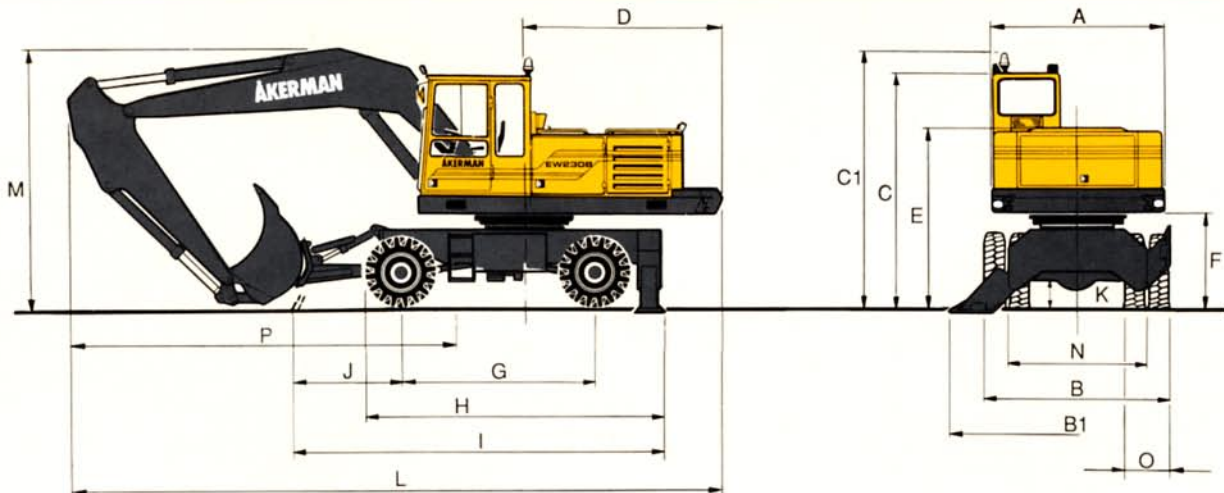
**CAP** = Capacity

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

**Valve system:** Boom, stick 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.

<b>Pump P1</b>				
Max. pressure	psi	(MPa)	3770	(26)
Max. flow	gpm	(l/min)	23.2	(88)
<b>Pumps P2 and P3</b>				
Max. pressure	psi	(MPa)	4060	(28)
Power boost	psi	(MPa)	4640	(32)
Max. flow	gpm	(l/min)	2x37.5	(2x142)
<b>Servo pump</b>				
Pressure	psi	(MPa)	943	(6.5)
Flow	gpm	(l/min)	7.4	(28)
<b>Steering pump</b>				
Pressure	psi	(MPa)	2030	(14)
Flow	gpm	(l/min)	9.0	(34)

## DIMENSIONS

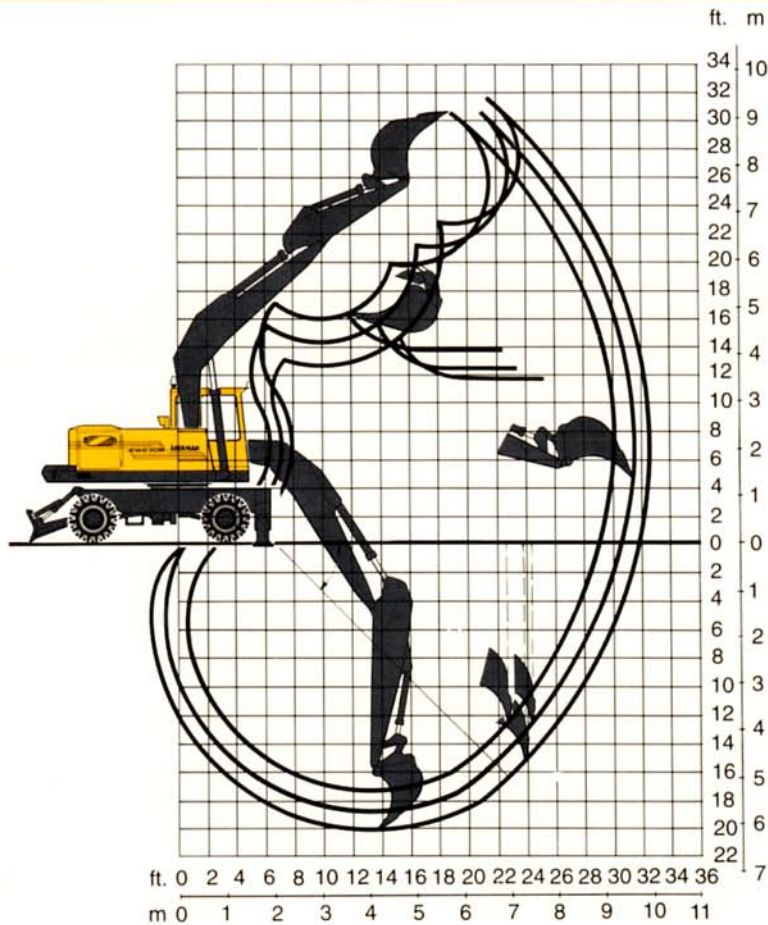


A:	ft in.	(mm)	8'2"	(2490)		
B:	ft in.	(mm)	8'1"	(2470)	(2580 *)	
B1:	ft in.	(mm)	10'11"	(3330)	(3350 **)	
C:	ft in.	(mm)	10'8"	(3260)		
C1:	ft in.	(mm)	11'7"	(3530)		
D:	ft in.	(mm)	9'5"	(2870)		
E:	ft in.	(mm)	8'1"	(2460)		
F:	ft in.	(mm)	4'2"	(1270)		
G:	ft in.	(mm)	9'1"	(2780)		
H:	ft in.	(mm)	14'4"	(4360)		
I:	ft in.	(mm)	16'4"	(4990)		
J:	ft in.	(mm)	3'10"	(1170)		
K:	ft in.	(mm)	13"	(330)		
L:	ft in.	(mm)	31'2"	(9500)	(7'5" stick)	
L:	ft in.	(mm)	31'2"	(9500)	(9'2" stick)	
L:	ft in.	(mm)	31'6"	(9600)	(10'10" stick)	
M:	ft in.	(mm)	11'1"	(3380)	(7'5" stick)	
M:	ft in.	(mm)	11'1"	(3390)	(9'2" stick)	
M:	ft in.	(mm)	12'10"	(3900)	(10'10" stick)	
N:	ft in.	(mm)	6'3"	(1900)		
O:	ft in.	(mm)	24"	(600)		
P:	ft in.	(mm)	17'11"	(5450)		

\* with widening rings

\*\* with articulated plate

## WORKING RANGES



<b>Boom</b>	ft	17'1"	17'1"	17'1"
<b>Stick</b>	ft	7'5"	9'2"	10'10"
Max reach	ft	30'10"	32'2"	33'6"
Max. reach at ground level	ft	29'10"	31'2"	32'6"
Max. digging depth	ft	17'9"	19'	20'4"
Max. height, ground	ft			
– tooth tip	ft	30'2"	30'2"	31'2"
Max. dumping height	ft	20'	20'8"	22'4"
Max. practical dumping height	ft	13'1"	12'6"	12'2"
Practical digging depth at a repose of material of 45°	ft	14'9"	15'9"	16'9"
Max. vertical digging depth	ft	12'10"	12'10"	15'1"
Min. swing radius in front	ft	13'5"	13'5"	13'9"

### DIGGING FORCE

Bucket digging force*	lb.	(kN)	39,790	(177)
Stick force*	lb.	(kN)	28,100	(125)

\* HD-bucket, 1.18 cu.yd. SAE, and 7'5" stick.

### BUCKET AND STICK COMBINATIONS

BUCKETS	Volume SAE cu.yd	Cutting width in.	Weight lbs	Fitting *	Suitable for stick		
					7'5"	9'2"	10'10"
Heavy duty	1.08	39"	1389	QF	•	•	•
	1.18	41"	1676	QF	•	•	
	1.31	41"	1874	QF	•	•	
	1.18	41"	1676	D	•	•	•
	1.37	41"	2116	D	•	•	
	1.50	41"	2161	D	•		
General purpose	1.44	49"	1367	QF	•	•	
	1.70	49"	1841	QF	•	•	
	1.70	49"	1962	D	•	•	
Articulated slope bucket	0.92	63"	1352	QF	•	•	•
	1.05	71"	1940	QF	•	•	
Ditch cleaning	0.92	63"	1213	QF	•	•	•
	1.05	71"	1301	QF	•	•	•
Cable bucket	0.37	22"	849	QF	•	•	•

\* QF = Quick fitting  
D = Direct fitting

## WEIGHT AND GROUND PRESSURE















Machine with 17'1" boom, 10'10" stick, quickfit,  
1.31 cu.yd. bucket and 6610 lbs. counterweight.

Total machine weight (incl. dozer blade)	lbs	(kg)	44,100	(20,000)
Axle load (incl. dozer blade)				
Front axle	lbs	(kg)	20,300	(9,200)
Rear axle	lbs	(kg)	23,800	(10,800)

## STABILITY AND LIFTING CAPACITIES

In the bucket lifting hook. 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>17'1" boom</b> <b>7'5" stick</b> <b>Quickfit</b> <b>Support down</b>	20'			10,080	10,940 *					7,460	9,640 *	23.9
	15'	14,500 *	14,500 *	9,610	12,360 *	6,750	9,300			6,140	8,510	26.4
	10'	13,480	18,760 *	8,970	12,520	6,460	8,980			5,550	7,740	27.6
	5'	12,670	18,520	8,460	11,960	6,200	8,690			5,350	7,500	27.8
	0'	12,500	18,350	8,200	11,680	6,050	8,540			5,550	7,810	26.8
	-5'	12,520	18,330	8,170	11,650					6,240	8,780	24.7
	-10'	12,770	18,260 *	8,500	12,020					8,010	11,270	21.0
-15'												
<b>17'1" boom</b> <b>9'2" stick</b> <b>Quickfit</b> <b>Support down</b>	20'					6,960	9,560			6,600	7,580 *	25.7
	15'			9,730	11,120 *	6,760	9,320			5,530	7,310 *	28.0
	10'	13,800	16,650 *	9,040	12,610	6,430	8,960			4,990	6,880 *	29.2
	5'	12,680	18,540	8,440	11,950	6,120	8,610			4,820	6,830	29.3
	0'	12,270	18,080	8,070	11,560	5,900	8,380			4,960	7,040	28.4
	-5'	12,210	18,020	7,960	11,440	5,870	8,350			5,470	7,760	26.5
	-10'	12,400	18,220	8,120	11,600					6,750	9,560	23.1
-15'												
<b>17'1" boom</b> <b>10'10" stick</b> <b>Quickfit</b> <b>Support down</b>	20'					7,050	8,880 *			5,820	7,860 *	27.6
	15'					6,820	9,320 *			4,940	6,930	29.8
	10'	14,280	15,030 *	9,200	12,150 *	6,470	9,010	4,750	6,700	4,520	6,410	30.8
	5'	12,920	18,830	8,530	12,070	6,120	8,630	4,590	6,530	4,350	6,210	31.0
	0'	12,270	18,120	8,080	11,580	5,860	8,340	4,490	6,420	4,450	6,360	30.2
	-5'	12,100	17,930	7,890	11,380	5,740	8,230			4,880	6,970	28.3
	-10'	12,220	18,060	7,940	11,440	5,900	8,400			5,840	8,310	25.2
-15'	12,680	15,640 *							8,750	11,160 *	19.4	

\* Limited by hydraulic lifting capacity. The above loads are in compliance with SAE hydraulic excavator lift capacity ratings standard J1097, they do not exceed 87% of hydraulic lifting capacity or 75% of tipping capacity.  
Working pressure with HLD = 4640 psi (32 MPa)

## 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  
 Rpm guage  
 Fuel guage  
 Temperature guage for cooling fluid and hydraulic oil  
 24 volt electrical system with 4 standard batteries

### Undercarriage

Twin wheels 10.00 – 20 PR16  
 Dozer blade in front, and two outriggers rear  
 4-wheel drive  
 Oscillating front axle  $\pm 8^\circ$

Axles with hub reduction  
 Swing ring in oil bath  
 2-circuit travel brakes

### Safety and Comfort

Cab heating with 14 outlets  
 Filtered air intake  
 Cab inner lighting  
 Emergency exit through rear window  
 Ergonomically designed and adjustable operator's seat  
 Rear view mirrors,  
 2 exterior  
 1 interior  
 Lights:  
 headlights,  
 full and dipped beam  
 asymmetrical, halogen  
 3 working lights, front, halogen  
 1 working light, rear, halogen  
 Brakelights  
 Rear lights  
 Direction indicators  
 Instrument lighting

Illuminated cab, engine compartment and fuel filling compartment  
 Safety bar for control levers  
 Adjustable steering wheel  
 Double intermittent windshield wipers  
 Windshield washers  
 Hazard flashers  
 Hydraulic refuelling pump  
 Compressor horn  
 Rotating beacon  
 Hose rupture valve on boom cyl.

### Hydraulics

Three variable axial piston working pumps  
 Mode selector, 3 steps  
 Power boost  
 Standard filter cartridges for return, leak oil and respiration filter systems  
 Dual main valve for the travel and equipment functions

Float position on boom  
 Refilling pump for hydraulic oil  
 Automatic idling speed (Fuel-miser)

### Equipment

17'1" monobloc boom  
 Stick 10'10"  
 End dampening on all cylinders  
 Spherical link bearings in all connections  
 Security lifting hook  
 Friction welded piston rod eyes

## OPTIONAL EQUIPMENT

### Engine and Electrical System

Electric over speed protector  
 Cranked exhaust pipe  
 Combined cab/engine heater Primus 2460  
 Engine heater Primus 2400/2440  
 Immersion heater, 220 V  
 Digital timer  
 Precyclone with exhaust ejector

### Undercarriage

Twin wheels  
 11.00 – 20 PR16  
 12.00 – 20 PR16  
 Single tyres  
 Solid tyres  
 Mud guards  
 Stone protection rings  
 Widening rings 2 x 2"  
 Oscillating outriggers plates  
 Tool box

### Safety and Comfort

Immersion heater  
 Tinted windows  
 Interior and exterior glare shields  
 Protective grid for front window/roof window (FOPS)  
 Vandal protective guards  
 Support for fire extinguisher  
 Operator's seat with air cushion suspension  
 Seat belts  
 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 cab roof  
 Extra hose rupture valve on stick/bucket cylinders

### Hydraulics

Hydraulic equipment for:  
 articulated bucket  
 grapple  
 hydraulic hammer  
 roto-tilt  
 jib  
 crusher  
 shears  
 magnet  
 Installation of a 4th working pump

### Equipment

Stick 7'5" and 9'2"  
 Extra headlights on the boom  
 Automatic grease system  
 Hydraulic quickfit  
 Mechanical quickfit  
 Various buckets

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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