Åkerman EW200

- ***Engine Power:***
  107 kW (145 hp)
- ***Operating Weight:***
  16,9 – 18,0 t
- ***Buckets:***
  306 – 1010 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 with pump regulation PCS. (Pressure 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*
- *Four travel speeds – max. 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	r/s	(r/min)	30 (1800)
ISO 3046 / DIN 6271*	kW	(hp)	107 (145)
No. of cylinders			6
Displacement, total	l		5,48
Bore	mm		98,43
Stroke	mm		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. Battery disconnector standard.

Voltage	V	24
A.C. Generator	V/A	28/55
Battery	V	4 x 12
Battery capacity	Ah	120
Alternator rating	W	1540

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.

Slew, start to stop*		
90° turn	s	5,0
180° turn	s	7,0

* *Empty bucket and extended equipment.*

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 is obtained through the same drum brake system.
Security system: The 2-circuit travel brakes are supplied by two accumulators in the event of failure in the service brake system.

UNDERCARRIAGE

Drive Train: One big 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 robust 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 ±7°.

Twin wheels, standard		10.00 - 20 PR14
Max tractive force	kN	114
Travel speed, road travel	km/h	0 - 30
Travel speed, site travel	km/h	0 - 7
Turning radius, front wheels	m	8,0

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 (optional).

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)		
L_{wA} (acoustic power)	dB(A)	aprox. 104
Inside the cab (ISO 6394)		
with the door closed		
L_{pA} (acoustic pressure)	dB(A)	aprox. 74

SERVICE REFILL CAPACITIES

Fuel tank	l	290
Fuel pump capacity	l/min	90
Hydraulic system, total	l	320
Diesel engine	l	22
Cooling system (incl. glycol)	l	32
Travel gearbox	l	4,0
Slew gearbox	l	16,0

HYDRAULIC SYSTEM

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

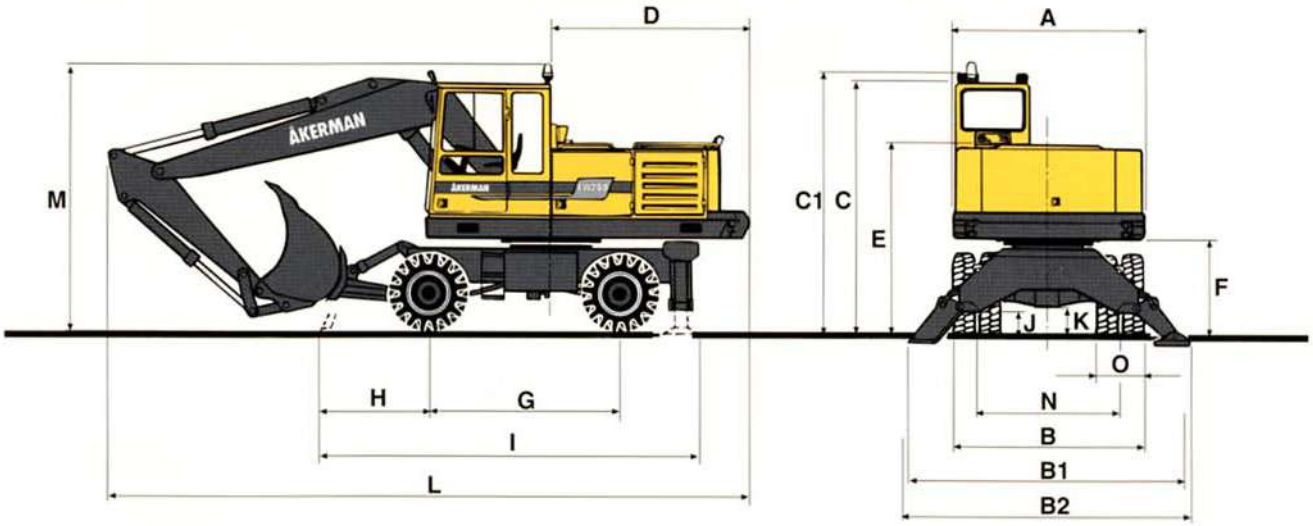
Pumps: P1 is a pressure controlled variable pump with priority to slew circuit. P2 and P3 are power and pressure controlled variable pumps with opposite cross flow priority to boom, bucket and arm.

Mode selector: Three working modes:
HLD = Heavy Lift Device
ECO = Economy
CAP = Capacity
Powerboost temporarily selectable in 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 and dipper cylinders.

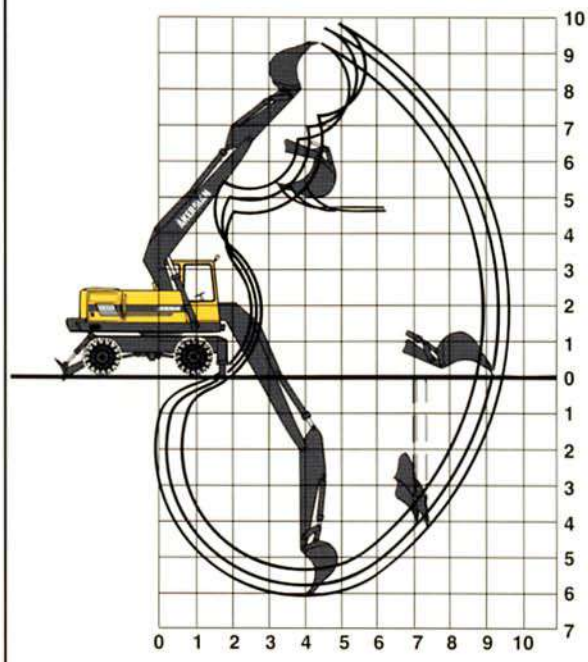
Pump P1		
Max. pressure	MPa	28
Max. flow	l/min	64
Pumps P2 and P3		
Max. pressure	MPa	26
Power boost	MPa	30
Max. flow	l/min	2 x 114
Servo pump		
Pressure	MPa	6,5
Flow	l/min	24
Steering pump		
Pressure	MPa	14
Flow	l/min	29

DIMENSIONS



A:	mm	2490	
B:	mm	2500	
B1:	mm	3690	
B2:	mm	3750	
C:	mm	3220	
C1:	mm	3360	
D:	mm	2600	
E:	mm	2410	
F:	mm	1180	
G:	mm	2500	
H:	mm	1240	
I:	mm	4750	
J:	mm	330	
K:	mm	360	
L:	mm	8300	*(2,0 m arm and 4,65 m boom)*
L:	mm	8200	*(2,4 m arm and 4,65 m boom)*
L:	mm	8000	*(2,8 m arm and 4,65 m boom)*
M:	mm	3500	*(2,0 m arm and 4,65 m boom)*
M:	mm	3600	*(2,4 m arm and 4,65 m boom)*
M:	mm	3800	*(2,8 m arm and 4,65 m boom)*
N:	mm	1910	
O:	mm	590	

WORKING RANGES



		boom 4,65 m			boom 5,2 m		
Arm	**m**	**2,0**	**2,4**	**2,8**	**2,0**	**2,4**	**2,8**
Max. reach	m	8,5	8,9	9,2	9,1	9,4	9,7
Max. reach at ground level	m	8,3	8,7	9,0	8,9	9,2	9,5
Max. digging depth	m	5,0	5,4	5,7	5,6	5,8	6,1
Max. height, ground – tooth tip	m	9,1	9,5	9,7	9,4	9,7	9,9
Max. dumping height	m	6,2	6,6	6,9	6,5	6,9	7,3
Max. practical dumping height	m	4,2	4,1	4,2	4,6	4,6	4,6
Practical digging depth at a repose of material of 45°	m	4,1	4,4	4,6	4,5	4,7	4,9
Max. vertical digging depth	m	3,6	4,1	4,2	3,8	4,2	4,3
Min. slewing radius in front	m	3,1	3,3	3,4	3,3	3,5	3,5

DIGGING FORCE

Bucket digging force*	kN	126
Dipper arm force*	kN	94

** HD-bucket, 725 l SAE and 2,0 m dipper arm.*

BUCKET AND ARM COMBINATIONS

BUCKETS	Volume SAE l	Cutting width mm (ins)	Weight kg	Fitting *	Suitable for boom **4,65 m** and arm			Suitable for boom **5,2 m** and arm		
					2,0 m	2,4 m	2,8 m	2,0 m	2,4 m	2,8 m
Rock 2 t/m³	900	1125 (44)	585	QF	•	•	•	•	•	•
Heavy duty 2 t/m³	895	1200 (48)	750	QF	•	•	•	•	•	•
	895	1200 (48)	740	D	•	•	•	•	•	•
Bulk 1,5 t/m³	1130	1500 (60)	810	QF	•	•	•	•	•	
G.P. Trench 1,6 t/m³	306	500 (20)	400	QF	•	•	•	•	•	•
	395	600 (24)	440	QF	•	•	•	•	•	•
	606	750 (34)	520	QF	•	•	•	•	•	•
	768	900 (36)	580	QF	•	•	•	•	•	•
	1093	1200 (48)	690	QF	•	•	•	•	•	•
Ditch cleaning	970	1500 (60)	570	QF	•	•	•	•	•	•
	1175	1800 (72)	680	QF	•	•	•	•	•	•

** D = Direct fitting* *QF = Quickfit*

WEIGHT AND AXLE LOAD

Standard machine, 4,65 m boom, 2,8 m dipper arm, 900 l bucket and counterweight 2200 kg.

Total machine weight (incl. dozer blade)	kg	16 950
Axle load		
Front axle	kg	7 750
Rear axle	kg	9 200

Machine with 5,2 m boom, 2,4 m dipper arm, quickfit, 950 l bucket and 2600 kg counterweight.

Total machine weight (incl. dozer blade)	kg	17 500
Axle load		
Front axle	kg	7 700
Rear axle	kg	9 800

LIFTING CAPACITIES

Max. load at dipper pin. Unit: 1000 kg.

Across carriage / Along carriage	Lifting hook related to ground level	Reach from machine centre										
		3,0 m		4,5 m		6,0 m		7,5 m		Max. reach		Max. m
4,65 m boom 2,8 m arm Outriggers and dozer blade down 2 600 kg Counterweight	6,0 m					3,84 *	3,84 *			3,09 *	3,09 *	6,5
	4,5 m			4,18 *	4,18 *	3,94 *	3,94 *			2,64 *	2,64 *	7,3
	3,0 m			5,36 *	5,36 *	4,41 *	4,41 *	3,20	3,84 *	2,45 *	2,45 *	7,7
	1,5 m			6,59 *	6,59 *	4,35	4,95 *	3,13	4,13 *	3,02	3,17 *	7,7
	0,0 m	6,26 *	6,26 *	6,51	7,26 *	4,23	5,28 *	2,98 *	2,98 *	2,98 *	2,98 *	7,5
	-1,5 m	10,4 *	10,4 *	6,43	7,15 *	4,18	5,14 *			3,47	3,58 *	6,9
	-3,0 m	8,93 *	8,93 *	6,06 *	6,06 *					3,80 *	3,80 *	5,9
5,2 m boom 2,8 m arm Outriggers and dozer blade down 2 600 kg Counterweight	7,5 m					3,53 *	3,53 *			3,53 *	3,53 *	6,0
	6,0 m					3,34 *	3,34 *			3,51 *	3,51 *	7,1
	4,5 m			4,05 *	4,05 *	3,63 *	3,63 *	3,24	3,48 *	3,03	3,40 *	7,8
	3,0 m			5,32 *	5,32 *	4,17 *	4,17 *	3,16	3,65 *	2,74	3,15 *	8,2
	1,5 m			6,51 *	6,51 *	4,25	4,74 *	3,07	3,90 *	2,64	2,92 *	8,3
	0,0 m			6,31	7,08 *	4,11	5,10 *	3,00	4,03 *	2,74	3,71	8,0
	-1,5 m	6,95 *	6,95 *	6,24	7,00 *	4,05	5,10 *	2,99	3,77 *	2,99	3,77 *	7,5
	-3,0 m	9,05 *	9,05 *	6,26 *	6,26 *	4,09	4,47 *			3,69	3,85 *	6,5
	-4,5 m			4,20 *	4,20 *					3,74 *	3,74 *	4,8
5,1 m 2-piece boom 2,4 m arm Outriggers and dozer blade down 2 600 kg Counterweight	7,5 m			5,24 *	5,24 *					5,11 *	5,11 *	5,3
	6,0 m			5,13 *	5,13 *	4,53 *	4,53 *			3,96	4,45 *	6,6
	4,5 m			5,70 *	5,70 *	4,57	4,65 *			3,23	4,08 *	7,4
	3,0 m			6,57 *	6,57 *	4,37	4,95 *	3,11	4,06 *	2,92	3,72 *	7,8
	1,5 m			6,44	7,11 *	4,19	5,16 *	3,04	4,01 *	2,88	3,77 *	7,8
	0,0 m			6,27	6,88 *	4,08	5,03 *	3,01	3,62 *	2,96	3,46 *	7,6
	-1,5 m			5,89 *	5,89 *	4,07	4,32 *			3,07 *	3,07 *	7,0
	-3,0 m											

* *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)

STANDARD EQUIPMENT

Engine and Electrical System
Computer controlled monitoring system
Battery disconnector 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
Twin wheels 10.00 – 20 PR14
4-wheel drive
Dozer blade in front, and two outriggers rear
Oscillating front axle ±7°
Axles with hub reduction
2-circuit travel brakes

Superstructure
Counterweight 2600 kg

Safety and Comfort
Safety bar for control levers
Hose rupture valve on boom
Hydraulic refuelling pump, 90 l/min
Overload indicator
Lights:
- headlights, full and dipped beam asymmetrical, halogen
- Brakelights
- Rear lights
- Direction indicators
- Rotating beacon
- Hazard flashers
- 3 working lights, front, halogen
- 1 working light, rear, halogen

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
Adjustable steering wheel
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 player

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
Hammer hydraulics

Equipment
4,65 m monobloc boom
2,8 m dipper arm
Hydraulic quickfit
End dampening on all cylinders
Security lifting hook
Friction welded piston rod eyes

OPTIONAL EQUIPMENT *(Standard on certain markets)*

Engine and Electrical System
Electric over speed protector
Volvo dieseldriven engine and cab heater with digital timer
Immersion heater, 220 V
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 50 mm
Oscillating outriggers plates
Tool box
Tow hook

Superstructure
Counterweight
- 1750 kg
- 2200 kg

Safety and Comfort
Protective grid for front pane/roof pane
Fire extinguisher
Seat belts
Protection against overfilling fuel
Extra circulation pump for the heating system
Extra hose rupture valves
Exterior glare shields
Rear window jalousie
Air conditioning
Micro filter for the cab
Cruise controller

Hydraulics
Biologically degradable oil
Hydraulic equipment for:
- slope bucket
- grab
- roto-tilt
- jib
- crusher
- shears

Installation of a 4th working pump

Equipment
5,2 m monobloc boom
5,1 m 2-piece boom
2,0 m and 2,4 m dipper arm
Extra headlights on the boom

Volvo Construction Equipment

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