

# Åkerman EW200



- **Engine Power:** 145 hp (107 kW)
- **Operating Weight:** 37,300 – 39,700 lb (16.0 – 18.0 t)
- **Buckets:** 0.95 – 1.44 yd<sup>3</sup> (725 – 1,100 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 hydraulic pump regulation PSC (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 – 18.6 mile/h (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 ISO 3046 / DIN 6271*	1,800 r/min	(30 r/s)
	145 hp	(107 kW)
No. of cylinders	6	
Displacement, total	334 in <sup>3</sup>	(5.48 l)
Bore	3.88 in	(98.43 mm)
Stroke	4.72 in	(120 mm)

\* Fan excluded

## 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	28/55 V/A
Alternator rating	1,540 W

## 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.

Swing, start to stop*	
90° turn	5.0 s
180° turn	7.0 s
Swing speed	7.9 r/min

\* Empty bucket and equipment extended

## 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 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 repositioning.

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

**Front axle:** Oscillating  $\pm 7^\circ$ .

Twin wheels, standard	10.00-20PR14	
Max tractive force	25,630 lbf	(114 kN)
Travel speed, road	18.6 mile/h	(30 km/h)
Travel speed, job site	4.3 mile/h	(7 km/h)
Turning radius, front wheels	26'3"	(8.0 m)

## 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)	104 dB(A)
Operators position (ISO 6394)	
with the door closed	
$L_{pA}$ (sound pressure level)	74 dB(A)

## SERVICE REFILL CAPACITIES



Fuel tank	76.6 gal	(290 l)
Fuel refilling pump capacity	23.8 gal/min	(90 l/min)
Hydraulic system, total	84.5 gal	(320 l)
Diesel engine oil	5.8 gal	(22 l)
Cooling system (incl. antifreeze)	8.5 gal	(32 l)
Swing Gearbox	4.2 gal	(16 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.

**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 4,060 psi (28 MPa)

Maximum flow 16.9 gal/min (64 l/min)

**Pumps P2 and P3**

Maximum pressure 3,770 psi (26 MPa)

Power boost 4,350 psi (30 MPa)

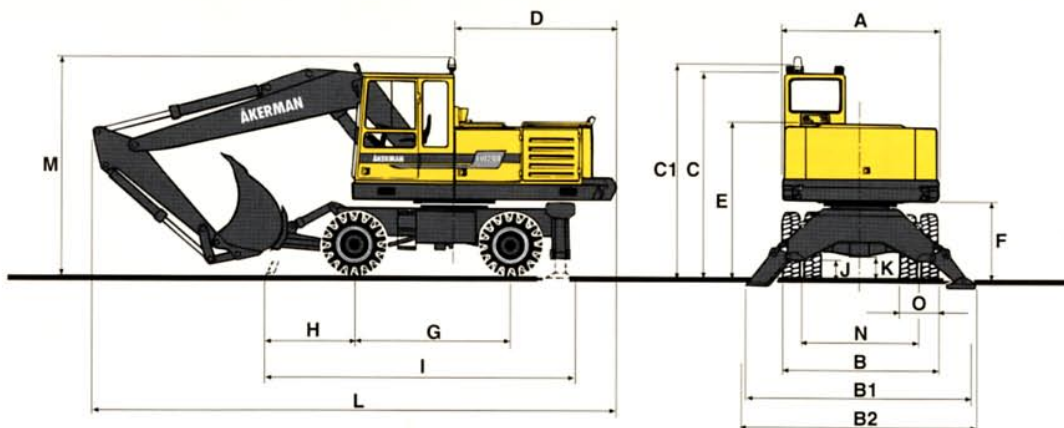
Maximum flow 2 x 30.1 gal/min (2 x 114 l/min)

**Servo pump**

Pressure 940 psi (6.5 MPa)

Flow 6.3 gal/min (24 l/min)

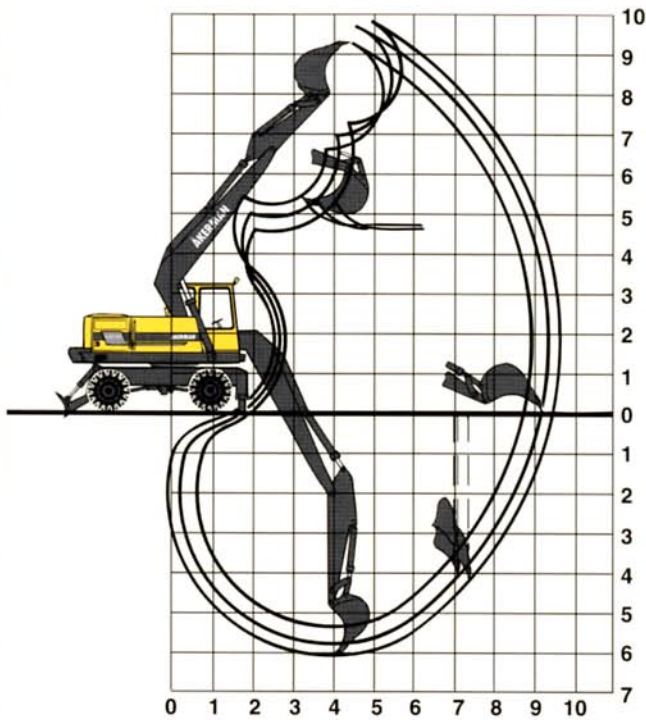
## DIMENSIONS



A:	8'2"	(2,490 mm)	I:	15'7"	(4,750 mm)
B:	8'2"	(2,500 mm)	J:	1'1"	(330 mm)
B1:	12'1"	(3,690 mm)	K:	1'2"	(360 mm)
B2:	12'4"	(3,750 mm)	L:	27'3" with 6'7" stick and 15'3" boom	(8,300 mm)
C:	10'7"	(3,220 mm)	L:	26'3" with 9'2" stick and 15'3" boom	(8,000 mm)
C1:	11'	(3,360 mm)	L:	28'10" with 9'2" stick and 17'1" boom	(8,800 mm)
D:	8'6"	(2,600 mm)	M:	11'6" with 6'7" stick and 15'3" boom	(3,500 mm)
E:	7'11"	(2,410 mm)	M:	12'6" with 9'2" stick and 15'3" boom	(3,800 mm)
F:	3'10"	(1,180 mm)	M:	12'2" with 9'2" stick and 17'1" boom	(3,700 mm)
G:	8'2"	(2,500 mm)	N:	6'3"	(1,910 mm)
H:	4'1"	(1,240 mm)	O:	1'11"	(590 mm)

## WORKING RANGES

	boom 15'3" ( 4.65 m)						boom 17'1" ( 5.2 m)						
	ft (m)	6'7"	7'10"	9'2"	(2.0)	(2.4)	(2.8)	6'7"	7'10"	9'2"	(2.0)	(2.4)	(2.8)
Stick	ft (m)	27'11"	29'2"	30'2"	(8.5)	(8.9)	(9.2)	29'10"	30'10"	31'10"	(9.1)	(9.4)	(9.7)
Max. reach at ground level	ft (m)	27'3"	28'7"	29'6"	(8.3)	(8.7)	(9.0)	29'2"	30'2"	31'2"	(8.9)	(9.2)	(9.5)
Max. digging depth	ft (m)	16'5"	17'9"	18'8"	(5.0)	(5.4)	(5.7)	18'4"	19'	20'	(5.6)	(5.8)	(6.1)
Max. height, ground-tooth tip	ft (m)	29'10"	31'2"	31'10"	(9.1)	(9.5)	(9.7)	30'10"	31'10"	32'6"	(9.4)	(9.7)	(9.9)
Max. dumping height	ft (m)	20'4"	21'8"	22'8"	(6.2)	(6.6)	(6.9)	21'4"	22'8"	23'11"	(6.5)	(6.9)	(7.3)
Max. pract. dumping height	ft (m)	13'9"	13'5"	13'9"	(4.2)	(4.1)	(4.2)	15'1"	15'1"	15'1"	(4.6)	(4.6)	(4.6)
Pract. digging depth for a material with a 45° angle of repose	ft (m)	13'5"	14'5"	15'1"	(4.1)	(4.4)	(4.6)	14'9"	15'5"	16'1"	(4.5)	(4.7)	(4.9)
Max. vertical digging depth	ft (m)	11'10"	13'5"	13'9"	(3.6)	(4.1)	(4.2)	12'6"	13'9"	14'1"	(3.8)	(4.2)	(4.3)
Min. swing radius in front	ft (m)	10'2"	10'10"	11'2"	(3.1)	(3.3)	(3.4)	10'10"	11'6"	11'6"	(3.3)	(3.5)	(3.5)



## DIGGING FORCE

Bucket digging force*	28,330 lbf	(126 kN)
Stick force*		
with 6'7" stick (2.0 m)	21,130 lbf	(94 kN)
with 7'10" stick (2.4 m)	18,880 lbf	(84 kN)
with 9'2" stick (2.8 m)	16,860 lbf	(75 kN)

\* Bucket, 0.95 yd<sup>3</sup> (725 l) SAE.

## BUCKET AND STICK COMBINATIONS

BUCKETS for quickfit	Volume SAE yd <sup>3</sup>	Cutting width in	Weight lb	Volume SAE l	Cutting width mm	Weight kg	Suitable for Counterweight 5,730 lb (2,600 kg)					
							boom 15'3" (4.65 m) and arm			boom 17'1" (5.2 m) and arm		
							6'7" (2.0 m)	7'10" (2.4 m)	9'2" (2.8 m)	6'7" (2.0 m)	7'10" (2.4 m)	9'2" (2.8 m)
Material weight 3,030 lb/yd <sup>3</sup>	0.95	39"	1190	725	990	540	•	•	•	•	•	•
	1.08	39"	1367	825	990	620	•	•	•	•	•	•
	1.24	43"	1367	950	1100	620	•	•	•	•	•	•
Material weight 2,530 lb/yd <sup>3</sup>	1.18	44"	1290	900	1125	585	•	•	•	•	•	•
	1.44	49"	1367	1100	1250	620	•	•	•	•	•	•
Articulated slope bucket	0.92	63"	1852	700	1600	840	•	•	•	•	•	•
	1.05	71"	1940	800	1800	880	•	•	•	•	•	•
Fixed slope bucket	1.05	71"	1301	800	1800	590	•	•	•	•	•	•
Trenching bucket	0.37	22"	849	280	550	385	•	•	•	•	•	•



## WEIGHT AND AXLE LOAD



Machine with 17'1" (5.2 m) boom,  
7'10" (2.4 m) stick, quick fit, 1.08 yd<sup>3</sup> (825 l)  
bucket and 5,730 lb (2,600 kg) counterweight.













Machine with 15'3" (4.65 m) boom, 9'2" (2.8 m) stick,  
quick fit, 1.08 yd<sup>3</sup> (825 l) bucket and 5,730 lb  
(2,600 kg) counterweight.

Total machine weight	38,580 lb	(17,500 kg)
Axle load		
Front axle	16,975 lb	(7,700 kg)
Rear axle	21,605 lb	(9,800 kg)

Total machine weight	38,360 lb	(17,400 kg)
Axle load		
Front axle	16,645 lb	(7,550 kg)
Rear axle	21,715 lb	(9,850 kg)

## 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										
		10'		15'		20'		25'		Max. reach		Max. ft
												
<b>15'3" (4.65 m) boom</b> <b>7'10" (2.4 m) stick</b> <b>Quick fit</b> <b>5,730 lb (2,600 kg) counterweight</b> <b>Support down</b>	25'											
	20'					7,900*	7,900*			5,510*	5,510*	22.1
	15'			9,370*	9,370*	8,470*	8,470*	4,550*	4,550*	4,550*	4,550*	25.0
	10'			12,230*	12,230*	9,700	9,740*	6,870	8,500*	4,460*	4,460*	26.4
	5'			14,350	14,980*	9,300	10,890*	6,700	8,870*	5,020*	5,020*	26.6
	0'			13,960	15,880*	9,040	11,420*	6,590	8,800*	4,870*	4,870*	25.8
	- 5'	22,380*	22,380*	13,910	14,990*	8,980	10,860*			5,460*	5,460*	23.7
- 10'	17,140*	17,140*	11,680*	11,680*					7,360*	7,360*	19.8	
<b>15'3" (4.65 m) boom</b> <b>9'2" (2.8 m) stick</b> <b>Quick fit</b> <b>5,730 lb (2,600 kg) counterweight</b> <b>Support down</b>	25'											
	20'					7,070*	7,070*			4,240*	4,240*	23.7
	15'			8,290*	8,290*	7,790*	7,790*	7,030	7,340*	4,060*	4,060*	26.3
	10'			11,280*	11,280*	9,160*	9,160*	6,870	8,080*	4,130*	4,130*	27.6
	5'			14,200*	14,200*	9,300	10,470*	6,660	8,610*	3,880*	3,880*	27.9
	0'	13,850*	13,850*	13,890	15,680*	8,980	11,210*	6,510	8,770*	4,090*	4,090*	27.1
	- 5'	23,320*	23,320*	13,760	15,230*	8,870	11,030*	6,330*	5,510*	4,800*	4,800*	25.1
- 10'	18,920*	18,920*	12,750*	12,750*	8,870*	8,870*			6,500*	6,500*	21.5	
<b>17'1" (5.2 m) boom</b> <b>7'10" (2.4 m) stick</b> <b>Quick fit</b> <b>5,730 lb (2,600 kg) counterweight</b> <b>Support down</b>	20'					6,990*	6,990*			5,860*	5,860*	24.3
	15'			9,260*	9,260*	7,940*	7,940*	6,980	7,360*	5,840*	5,840*	26.8
	10'			12,180*	12,180*	9,270*	9,270*	6,770	7,890*	5,610	5,780*	28.1
	5'			13,870	14,750*	9,050	10,410*	6,540	8,430*	5,410	5,510*	28.4
	0'			13,590	15,460*	8,780	11,080*	6,390	8,630*	5,580	5,940*	27.6
	- 5'	16,270*	16,270*	13,560	14,780*	8,700	10,800*	6,390	8,080*	6,210	5,480*	25.6
	- 10'	17,830*	17,830*	12,570*	12,570*	8,860	9,060*			7,320*	7,320*	22.2

\* 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 4 standard batteries  
 Exhaust pipe elbow

### Undercarriage

Twin wheels 10.00 – 20 PR14  
 4-wheel drive  
 Dozer blade in front, and two outriggers rear  
 Oscillating front axle  $\pm 7^\circ$   
 Axles with hub reduction  
 2-circuit travel brakes

### Superstructure

Counterweight 5,730 lb (2,600 kg)

### 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:  
   headlights,  
   high and low 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 vents  
 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 windshield wipers  
 Windshield washers  
 Compressor horn  
 Radio console

### 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 breathing filter  
 Swing-out oil cooler  
 Hydraulic equipment for quick fit

### Equipment

15'3" (4.65 m) monobloc boom  
 9'2" (2.8 m) stick  
 Hydraulic quick fit  
 End dampening on all cylinders  
 Security lifting hook  
 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

Twin wheels  
   11.00 – 20 PR16  
   12.00 – 20 PR16  
 Single tyres  
 Solid tyres  
 Mud guards  
 Stone protection rings  
 Widening rings 2 x 2" (2 x 50 mm)  
 Oscillating outriggers plates  
 Support blade, rear  
 Tool box  
 Tow hook

### Superstructure

Counterweight  
   3,860 lb (1,750 kg)  
   4,850 lb (2,200 kg)

### 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  
 Exterior glare shields  
 Rear window jalousie  
 Air conditioning  
 Micro filter for the cab  
 Radio cassette player  
 Cruise controller

### Hydraulics

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

### Equipment

17'1" (5.2 m) boom  
 16'9" (5.1 m) 2-piece boom  
 6'7" (2.0 m) and 7'10" (2.4 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 0011 U.S.

Printed in Sweden 01.04.96 EXC