

VOLVO COMPACT EXCAVATOR

# EW50



- **Net Power :**  
D.80/1269 CEE :  
33.7 kW / 45.8 hp

- **Operating Weight :**  
5190 - 5295 kg

- **Bucket Capacities :**  
70 - 231 l.

- **Maximum Digging Depth :**  
3130 - 3530 mm

- **Load Sensing Hydraulic System**  
for very precise controls under all  
load conditions.

- **Simultaneous digging  
movements and high speed  
operations** for faster cycle times  
and increased productivity.

- **TOPS and FOPS** cab for a better  
operator safety.

- **Compact dimensions.**  
**Wrap-around** counterweight  
protects the rear compartment  
against all impacts.

- **Excellent serviceability** thanks to  
easy access to the engine and  
hydraulics compartments.

**VOLVO**

# More power, more profitability

## COMPACT EXCAVATOR EW50

With its exceptional power and stability, and its extraordinary sturdiness, the wheeled Volvo EW50 works with maximum speed and efficiency on the most difficult sites. Its high degree of mobility, its remarkable quietness and its compact dimensions make it the ideal machine for all public works applications. A Volvo tradition, this machine meets a strict specification with a single objective : to make a difference on the site.



A unique feature : the quick coupling system available as an option enables bucket or accessory to be changed without the operator leaving the cab. Appreciated by all users, this device saves a lot of time and increases comfort considerably without altering the bucket's performances or sequence of operations.



The wrap-around shape of the counterweight protects the back of the machine perfectly and makes it possible to work on the narrowest sites.



All the hydraulic hoses are sheathed and free of any friction or wear and are connected at the bottom of the boom for very quick replacement, if necessary. The boom is mounted on a double-swivel articulated pivot which enables a long pin to be mounted and provides greater rigidity in the boom-chassis link. The boom cylinder's rod is fully protected against any knocks by sturdy armoring.



Very effective corrosion protection : all the nuts and bolts, the pins and the hydraulic pipes are zinc-plated.



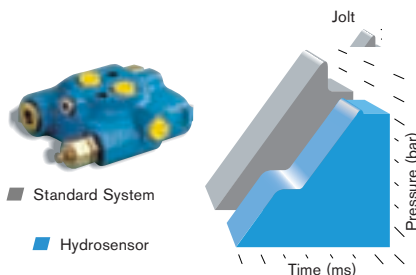
Thanks to its compact dimensions and the boom's hydraulic offset, the EW50 is at ease in all site configurations, even alongside a wall.

# Precision and flexibility of the Load-Sensing

## COMPACT EXCAVATOR EW50



A unique feature : the radial piston slow slewing motor. This motor has a very high starting torque for flexible manoeuvres, and drives the crown directly without a mechanical reducer. The result is fewer moving parts and therefore less risk of wear. The automatic hydraulic brake integrated in the slewing motor immobilises the turret in all positions and guarantees optimum working safety even on a slope.



The hydrosensor valve on the slewing circuit damps the pressure peaks and hydraulic shocks common on starting and stopping on conventional circuits. The result : a progressive pressure increase, greater flexibility and precision, less stressed and therefore more reliable mechanical parts



The back cover opens completely, giving excellent access to the engine and hydraulic pumps. All maintenance and checking points are conveniently located close to hand.



The coolers for the hydraulic circuit and engine are placed side by side to facilitate their cleaning. The battery and the air filter too are very easily accessible.



- Continuous and immediate load sensing control of the hydraulic pump's flow and pressure to suit the work done by the excavator.
- All hydraulic functions are independent and can be operated simultaneously : more operating comfort and productivity.
- Control valves with closed centre : pump flow zero on standby, no unnecessary oil circulation. No loss of power or deterioration of oil by overheating.
- Hydraulic power continuously adapted to suit the load : optimum use of the engine's power.
- Straight-line travel maintained even when the equipment or the turret are moving : more safety
- Excellent precision of the controls, even with a large load : safety of handling work.
- Hydraulic priority on braking and steering circuits : more safety.
- Four-speed hydrostatic transmission.

# A very high level of comfort and safety



The side consoles supporting the manipulators are rigidly linked to the seat's suspension : operating precision is independent of the machine's movements and the operator is sure of finding an operating position ideally suited to him.



Operator comfort is a priority for Volvo. The operator's cab is spacious and easily accessible. The hydraulic controls are power-assisted and very progressive for more flexibility and precision.

Volvo's ergonomic manipulators feel good and are complemented by side arm rests which give a natural and very comfortable operating position.

The EW50's cab and canopy have a very high level of safety, guaranteed by the FOPS 1 (Falling Object Protection Structure), and TOPS (Roll and Tip Over Protection Structure) certifications. The seatbelt is part of the standard equipment.

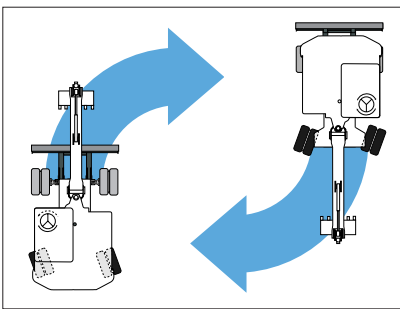
The PUMA system on the EW50 continuously monitors all the machine's vital functions and immediately informs the operator if there is a fault. The operator is therefore free to concentrate fully on operating the machine.

# Incomparable Power

## COMPACT EXCAVATOR EW50



The steering front axle is oscillating with an angle of 15° in order to travel over all terrains. A hydraulic oscillation locking device ensures perfect stability of the excavator in all positions.



The Auto-Reverse system, available as an option, automatically reverses the steering direction when the excavator is facing the back. Thanks to this exclusive system, the wheels are always oriented in the direction of rotation of the steering wheel, for greater precision and safety in operation.

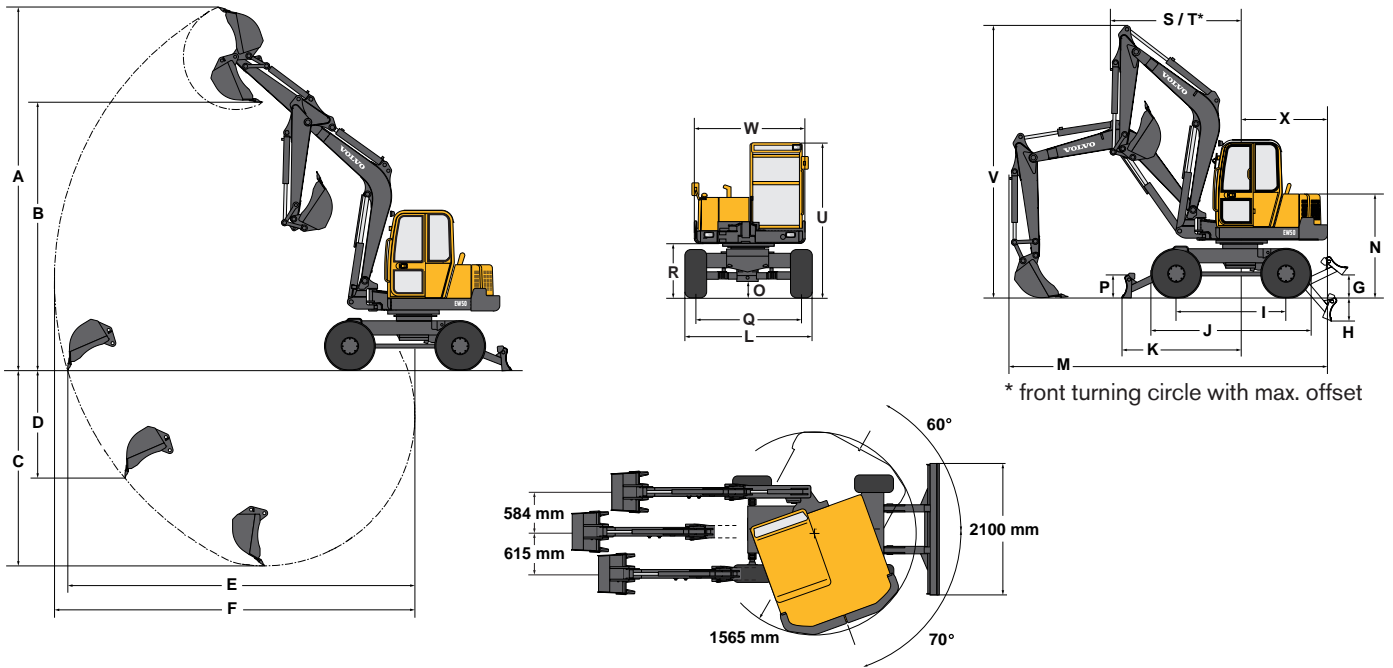







The EW50 is equipped as standard with a sturdy blade controlled by two rams fitted with safety valves. This can be replaced by two separately controlled stabilisers to which a removable blade can be added (optional equipment).





The articulated boom increases the EW50's versatility. The boom's additional joint reduces the equipment's overall dimensions and makes it possible to position the bucket on a larger ground surface, even in the immediate proximity of the machine.

## DIMENSIONS - SINGLE-PIECE BOOM



Buckets	 Width	 Weight	 Capacity
 Backhoe buckets	350 mm	87 kg	70 l
	450 mm	100 kg	98 l
	600 mm	122 kg	142 l
	750 mm	143 kg	187 l
 Ditch bucket	900 mm	166 kg	231 l
	1500 mm	185 kg	265 l

Dipper	A	B	C	D	E	F
 1500 mm	5437	3987	3133	2026	5450	5712
 1900 mm	5643	4193	3533	2400	5843	6092

G	H	I	J	K	L	M	N	O
652	232	2050	2965	1745	2164	5279	1871	291






P	Q	R	S	T	U	V	W	X
373	1749	1025	2481	2071	2875	4254	1790	1482






With standard tires

in mm

## LOAD CAPACITIES - SINGLE-PIECE BOOM

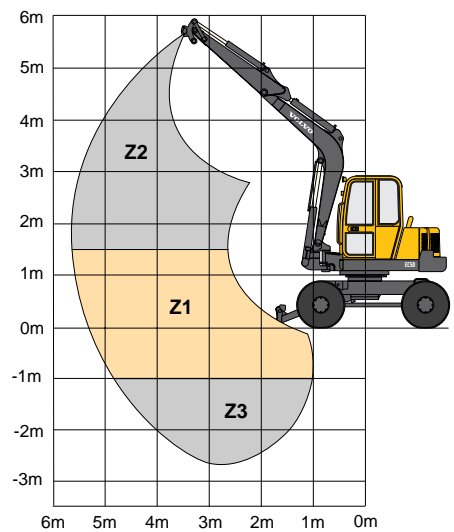
These capacities are given for a machine without a bucket or quick-release coupling. The handling capacity is 75% of the tipping load or 87% of the hydraulic limit. Caution : In accordance with standard EN 474-5, the machine must be equipped with a safety valve on the boom ram and an overload indicator (available as options) to carry out handling operations.



Horizontal Range		2.00 m	3.00 m	4.00 m	Maxi 4.5 m	
 1500 mm	 	Z2	1235*	970*	910	
		Z1	2620*	1600	1055	900
		Z3	3135*	1620		
	 	Z2	1235*	900	760	
		Z1	2545	1320	880	750
		Z3	2595	1340		



Horizontal Range		2.00 m	3.00 m	4.00 m	Maxi 5.24 m	
 1900 mm	 	Z2	1260*	765*		
		Z1	1965*	1590	1045	725
		Z3	2955*	1595	1050	
	 	Z2	1260*	765*		
		Z1	1970*	1310	870	605
		Z3	2550	1315	875	

\* hydraulic limit

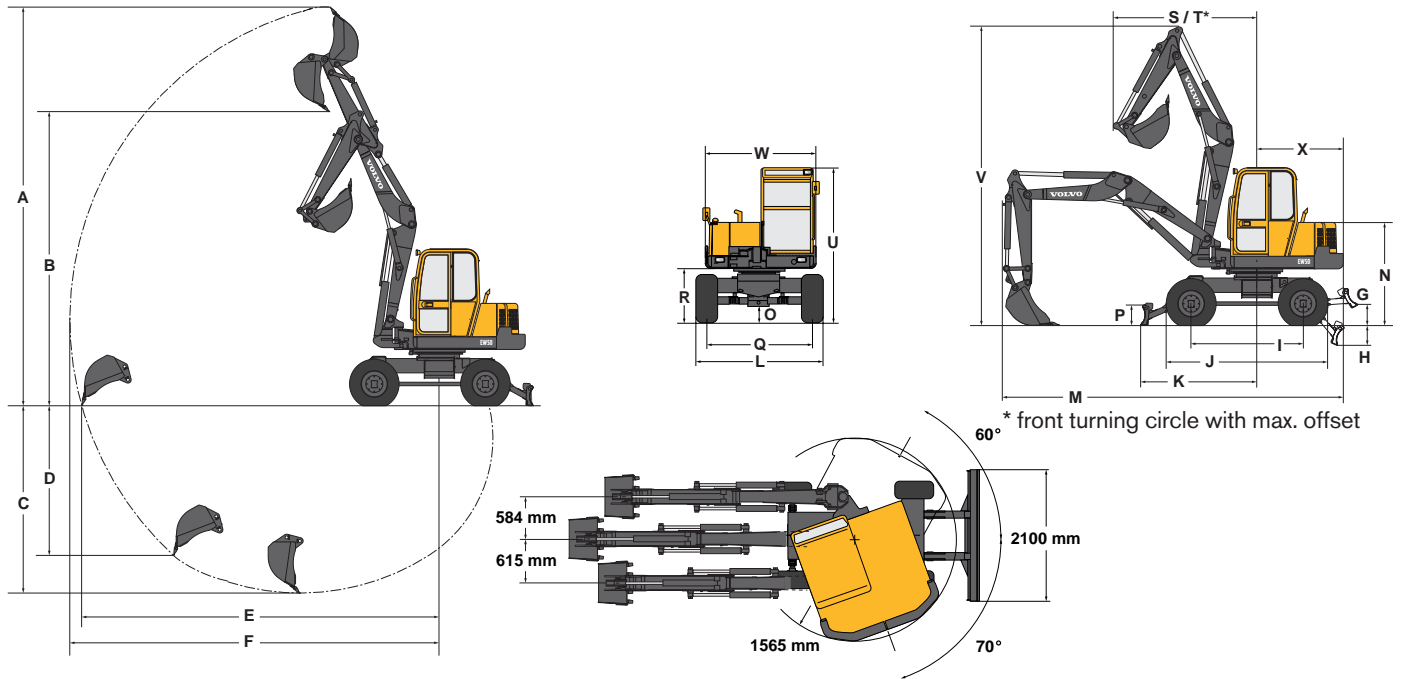
in kg



  Lifting capacity in total rotation over 360° with the blade or the stabilizers resting on the floor.

  Lifting capacity in total rotation over 360° with the blade or the stabilizers raised.

## DIMENSIONS - ARTICULATED BOOM



Buckets	Width	Weight	Capacity
Backhoe buckets	350 mm	87 kg	70 l
	450 mm	100 kg	98 l
	600 mm	122 kg	142 l
	750 mm	143 kg	187 l
Ditch bucket	900 mm	166 kg	231 l
	1500 mm	185 kg	265 l

Dipper	A	B	C	D	E	F
1500 mm	6563	5710	3130	2967	5900	6147
1900 mm	6898	5224	3530	3070	6303	6538

G	H	I	J	K	L	M	N	O
652	232	2050	2965	1745	2164	3862	1871	291

P	Q	R	S	T	U	V	W	X
373	1750	1025	2380	1972	2875	5713	1790	1482

With standard tires

in mm

## LOAD CAPACITIES - ARTICULATED BOOM

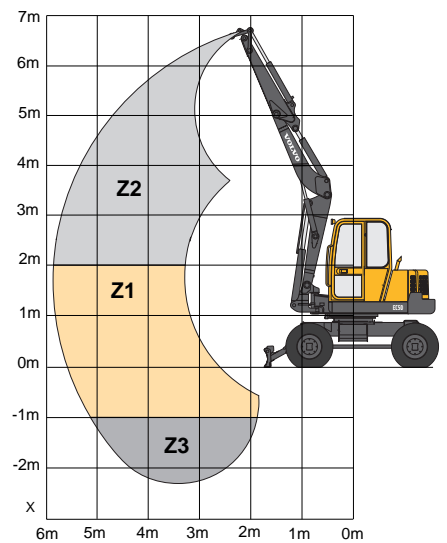
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Horizontal Range		2.00 m	3.00 m	4.00 m	Maxi 5.3 m
		Z2	2100*	1130*	915*
		Z1	2100*	1130*	870
		Z3	2555*	1325	875
		Z2	2100*	1130*	890
		Z1	1955*	1130*	815
		Z3	2395	1230	820

Horizontal Range		2.00 m	3.00 m	4.00 m	Maxi 5.7 m
		Z2	1145*	760*	
		Z1	1890*	1175*	820*
		Z3	2645*	1430*	880
		Z2	1120*	735*	
		Z1	1620*	1150*	795*
		Z3	2350	1210	805

\* hydraulic limit

in kg



Lifting capacity in total rotation over 360° with the blade or the stabilizers resting on the floor.

Lifting capacity in total rotation over 360° with the blade or the stabilizers raised.





## ENGINE

### Water-cooled 4-cylinder diesel engine.

Displacement, total .....	2216 cc
Power, installed (D.80/1269 CEE) .....	33.7 kW (45.8 hp) at 2500 r/min
Maximum torque (D.80/1269 CEE) .....	139 Nm at 2050 r/min
Bore x stroke .....	80 mm x 100 mm



## ELECTRICAL SYSTEM

Rated voltage .....	12 V
Battery capacity .....	12 V - 90 Ah
Alternator rating .....	12 V - 55 A
Starter motor output .....	12 V - 2 kW



## HYDRAULIC SYSTEM

### Closed centre Load Sensing hydraulic system providing total independence of each movement.

Control .....power-assisted hydraulic controls

### Variable displacement Load Sensing pump for all the equipment and travel circuits :

Maximum flow .....	102.5 l/min
Maximum operating pressure .....	25 MPa (250 bars)

### Gear pump for the circuit of the blade and slewing :

Maximum flow .....	40 l/min
Maximum operating pressure .....	25 MPa (250 bars)

### Double-acting hydraulic circuit for accessories :

Maximum flow .....	75 l/min
Maximum operating pressure .....	25 MPa (250 bars)

### End-of-stroke cushioning

On boom ram .....at the end of the rod extension  
On dipper ram .....at the end of the rod retraction



## SLEWING SYSTEM

**360° slewing is provided by a radial piston hydraulic motor which drives directly (without a reduction gear) a ball internal crown wheel with remote lubrication.**

Slewing speed .....	10 r/min
Turntable braking .....	automatic multi-disc brake
Absorption of hydraulic shocks .....	Hydrosensor shockless valve



## BUCKET PERFORMANCE

Breakout force .....	3654 daN
Tearout force .....	2733 daN



## UNDERCARRIAGE

### Hydrostatic transmission with reverser and driving of the four drive wheels by transfer box and two rigid axles.

Two slow speeds .....	3 and 6 kph
Two fast speeds .....	9 and 18 kph
Max. tractive force .....	2865 daN
Maximum permitted slope .....	58% (30°)
Standard wheels .....	12 x 18
Wide wheels as an option .....	15.5 x 55 R 18

### Power-assisted hydrostatic steering with Autoreverse device available as an option.

Outside turning radius (with standard wheels) .....5115 mm

### Braking system.

Service brake .....multiple disc on all 4 wheels  
Parking and emergency brake .....on the front axle

### Stabilisation system.

Stabilising blade .....	standard
Two stabilisers in place of the blade .....	option
Removable blade on the stabilisers .....	option

The stabiliser or blade rams are equipped as standard with safety valves.



## SERVICE FILL CAPACITIES

Fuel tank .....	80 l
Hydraulic system, total .....	70 l
Hydraulic tank .....	106 l
Engine oil .....	8 l
Cooling system .....	8 l



## WEIGHT

### Operational weight with standard bucket and blade :

With single-piece boom .....	5190 kg
With articulated boom .....	5295 kg



## NOISE LEVELS

### Results of dynamic measurements :

Noise level exterior (LwA) .....	99 dB(A)
Noise level in the cab (LpA) .....	80 dB(A)
The noise levels conform to directive n° 86/662 EEC and its amendments.	

## STANDARD EQUIPMENT

### Engine

Dry-type air filter.  
Electric pre-heating device.  
Transparent diesel oil filter, pre-filter and sediment chamber.  
Oil sump sheet metal guard.  
Continuous adjustment of engine speed.

### Electrical system

12 V - 90 Ah battery.  
Horn.  
12 V power socket for inspection lamp.

### Undercarriage

12 x 18 tyres.  
Stabilisation and backfilling blade with two rams equipped with safety valves.  
Hydrostatic transmission with 4 drive wheels.  
Remote lubrication of the slewing crown wheel.

### Hydraulic system

ISO power-assisted hydraulic control.  
Additional double-acting hydraulic control valve for an attachment circuit with folding control pedal and circuit for direct return of oil to the hydraulic tank.  
Attachment circuit piping (double-acting + return) as far as the bottom of the boom.

Power-assisted control of the hydraulic offset of the boom by the left control lever.

### Cab

Level 1 FOPS (Falling Objects Protective Structure).  
TOPS (Tip-Over Protective Structure).  
Multi-adjustable sprung consoles-seat assembly.  
Fabric-covered superior comfort seat.  
Non-slip floor with two foot rests.  
Grab handles for access to the driver's cab.  
Seat belt.  
Cab mounted on rubber mountings.  
Three working lights.  
Two-speed heating and ventilation.  
Cab heating adjustment.  
Windscreen with opening system power-assisted by two gas rams.  
Sliding window (right).  
Door stops.  
Provision for a radio (location for a radio and two speakers, aerial and electric wiring already fitted).  
Interior lighting.  
Anti-corrosion protection of the cab by electrophoresis.  
Windscreen wiper and washer (front).

### Instrumentation and monitoring

PUMA on-board message transfer control circuit providing continuous monitoring of the machine.  
Monitoring and warning light for the following functions :  
pre-heating, engine oil pressure, water temperature, hydraulic oil temperature, battery charging, hydraulic filter restriction, air filter restriction.  
Fuel gauge with minimum level warning light.  
Total elapsed hour meter.  
Partial elapsed hour meter with controlled reset.  
Rev. counter.  
Display of machine's serial number (anti-theft marking).

### Handling and earthwork equipment

2700 mm long monobloc boom or articulated boom.  
1500 mm dipper.  
130° hydraulic boom offset.  
Cushions on the boom and dipper rams.  
Remote lubrication of the bottom of the offset ram.

### Safety

Device for locking the earthwork equipment's controls when the left console is raised to gain access to the driver's cab.  
Engine starting safety device : the left console must be raised to operate the starter.  
Pressure accumulator on the power assistance circuit in order to be able to put the equipment on the ground if the engine is switched off.  
Key-lockable toolbox.

### Official approval

Machine conforming to directive n° 98/37 EEC and its amendments.  
Soundproofing conforming to directive n° 86/662 EEC and its amendments.  
FOPS 1 conforming to ISO standard 3449.  
TOPS conforming to ISO standard 12117.  
Electromagnetic compatibility (EMC) conforming to directive n° 89/336 EEC and its amendments.

## OPTIONAL EQUIPMENT

### Working equipment

Long dipper (1700 mm).  
Handling device safety valve piloted by the power assistance circuit on the boom ram and overload indicator conforming to EN standard 474-5.  
Safety valve on the dipper ram.  
Hydraulically-controlled quick-release attachment coupling.

### Hydraulic circuits for attachments

Circuit for hydraulic breaker with direct return to the tank.  
Hydraulic circuit for double-acting attachments.  
Hydraulic circuit for operating a clam-shell bucket (opening/closing and rotation of the bucket).

### Undercarriage

15.5/55 R 18 low-profile tyres.  
Autoreverse device.

Right/left independently-controlled stabilisers in place of the blade.  
Removable blade mounted on the stabilisers.

### Lighting

Additional working light on the boom.  
Additional rear working light.  
Revolving light.

### Environmental protection

Bio-degradable hydraulic oil.  
Catalytic exhaust.

### Comfort and safety

Radio.  
Anti-theft system (2 programmable codes).  
Electric circuit-breaker.

### Service and maintenance

Tool kit.

### Miscellaneous

Special customised paint (RAL specifications).

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

Volvo Construction  
Equipment

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