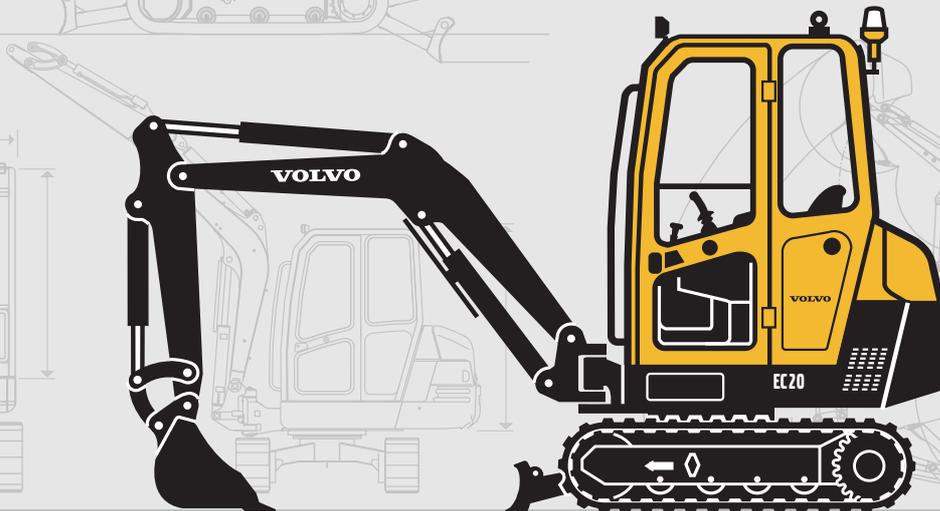


## VOLVO COMPACT EXCAVATOR

# EC20

**TWO-SPEED / FIXED UNDERCARRIAGE**  
**TWO-SPEED / VARIABLE WIDTH UNDERCARRIAGE**



- **Gross Power :**  
ISO 9249 : 14 kW / 19 hp
- **Net Power :**  
ISO 9249 : 11.3 kW / 15.5 hp
- **Operating Weight :**  
1650 - 1780 kg (two-speed / fixed undercarriage)  
1745 - 1875 kg (two-speed / variable width undercarriage)
- **Bucket Capacities :**  
30 - 115 l.
- **Maximum Digging Depth :**  
2570 - 2810 mm

- **Hydraulically adjustable crawler undercarriage** for better stability and access to narrow sites.
- **Power Control Hydraulic System** for a better use of the engine power and low fuel consumption.
- **Simultaneous digging movements and high speed operations** for faster cycle times and increased productivity.
- **ROPS, TOPS and FOPS cab** and for a better operator safety.

- **Compact dimensions.** **Wrap-around** counterweight protects the rear compartment against all impacts.
- **Two travel speeds** for higher mobility on job sites.
- **Excellent serviceability** thanks to easy access to the engine and hydraulics compartments.

# VOLVO

# Solid as a rock

## COMPACT EXCAVATOR EC20

### Ultra performance

With two travel speeds to save time on site, the EC20 is available with two undercarriage versions :  
- a 1200 mm wide fixed undercarriage offering good lateral stability  
- a variable width undercarriage 1000 to 1350 mm to enable this exceptionally high-performance machine to access narrow sites.



### Fast travelling to save time

The EC20 is provided with two travel speeds, including a fast speed to speed up machine travel on the site.



### The boom offset for working alongside a wall

The hydraulic offset of the boom makes it possible to reduce the overall dimensions of the excavator and to work alongside a wall.



### Quick coupling

The exclusive quick coupling enables an accessory or a bucket to be hooked quickly without leaving the operator's cab. Unlocking can be either mechanical or hydraulic.



### Compact rear impact protection

The very compact dimensions of the Volvo machines enable them to work safely on the narrowest sites. The wrap-around shape of the counterweight provides the machine with excellent protection against all impacts.



### A sturdy top chassis

The double-yoke pivot multiplies the bearing surface on the chassis by two and enables a long pin to be fitted for a better distribution of stress and therefore less wear and less slackening.



### Smooth and very precise controls

The smoothness and precision of the power-assisted controls enable the most delicate work to be done quickly and well.



### Direct slewing crown wheel drive

This hydraulic motor drives the crown wheel directly, without a reduction gear. No wear and no play in the crown wheel drive, therefore no maintenance costs to allow for.





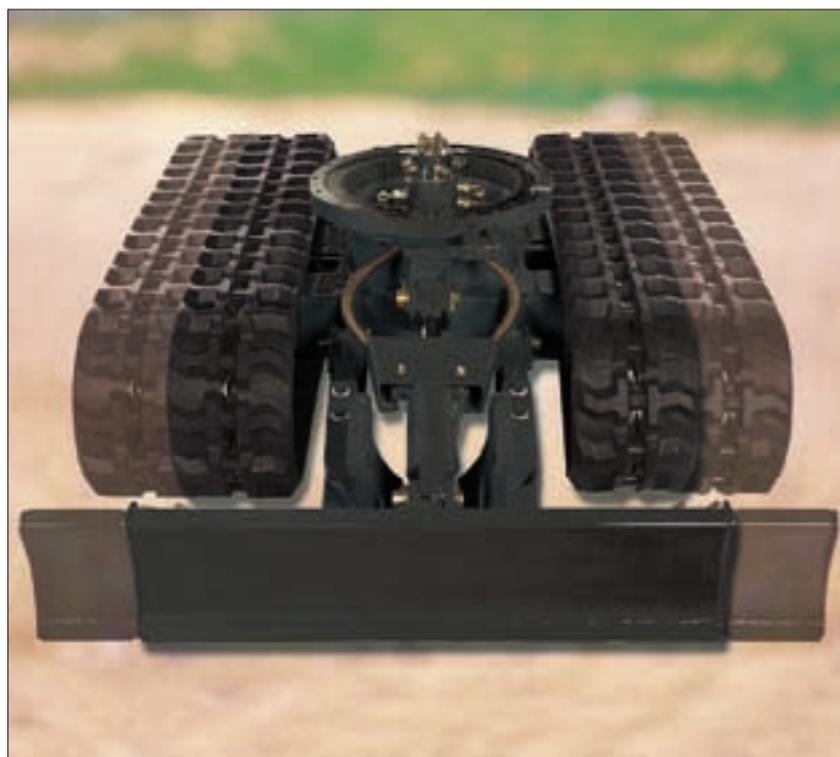
### **Variable-width undercarriage : two machines in one**

With the variable-width undercarriage Volvo offers you the possibility of choosing at any time between the exceptional stability of an extra-wide undercarriage and the versatility of a machine whose overall width is reduced to less than one metre for those narrow doors.



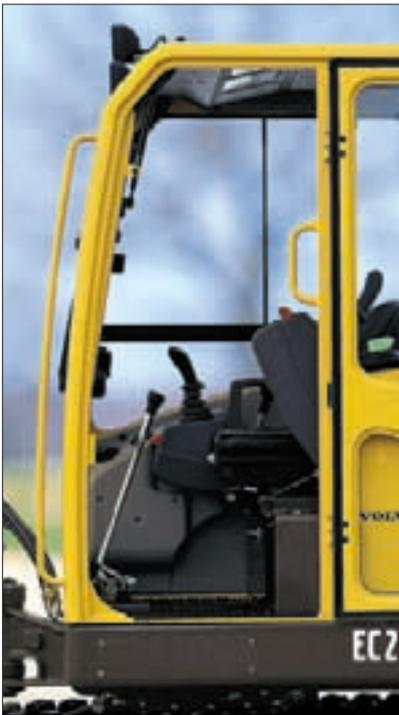
### **Blade extensions**

The blade has two side extensions which can be fitted or removed quickly without any tools. In the narrow position, extensions are secured on supports provided on the blade arms.



# A very high level of comfort and safety

## COMPACT EXCAVATOR EC20



### Safe access to the operator's cab

To facilitate access to the operator's cab, the cab door offers a wide opening, and the console swings up out of the way. The cab floor and step are non-slip.



### Large floor area

The flat floor provides considerable area for the operator's feet. The hydraulic accessory control pedal is positioned to the right so as not to hinder access. It folds away when not in use to provide use of floor space.



### Excellent visibility

Thanks to the cab's very large glazed surface area, visibility all round the excavator is excellent. This is an important safety element for the property and people in the vicinity of the machine when it is in use, particularly on narrow or congested sites. The rounded contour and very compact shape of the engine cover also provides good visibility to the rear.



### Operator information

Placed within the operator's line of sight, the instrument panel groups together all the useful machine control information. An anti-theft keypad, available as an option, enables machine starting and the main hydraulic functions to be locked.



### A spacious and comfortable cab

The EC20's cab offers incomparable comfort and operating quietness. Even tall operators immediately feel at ease in this generously sized cab.



### FOPS 1, ROPS and TOPS protection

The EC20's cab and canopy have a very high level of safety, guaranteed by the FOPS 1 (Falling Object Protection Structure), ROPS and TOPS (Roll and Tip Over Protection Structure) certifications. The seatbelt is part of the standard equipment.

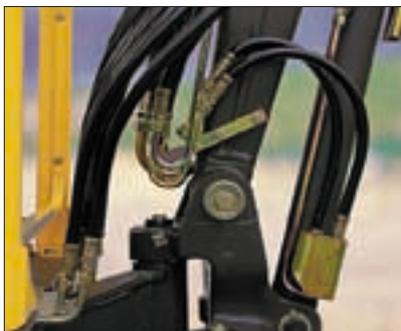
### Tilting counterweight

This innovation provides optimum protection of the rear area thanks to its wraparound shape, while at the same time providing, when it is tilted, total access to the engine compartment. The hydraulic oil cooler is mounted on a sliding support allowing good access for cleaning cooler fins. The fuel supply circuit has a transparent pre-filter which is very easy to monitor and features a self-priming electric pump.



### Ergonomically-designed armrests

The short responsive manipulators avoid excessive operating movements and reduce fatigue. The position of the forearms resting on the ergonomically designed armrests permits very precise control of the manipulators.



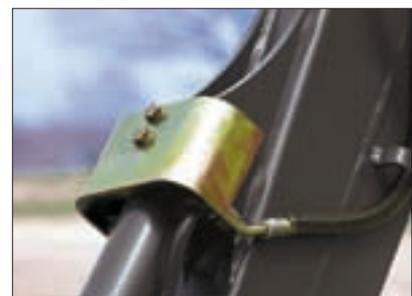
### Loose fitting hoses at the base of the boom

All of the hoses which supply the boom are fitted loose, without going into the pivot, and are connected on the outside of the machine. They are thus subject to neither rubbing nor wear, and can easily be replaced if necessary.



### Access from both sides

Very useful for working in confined areas : the two consoles on the canopy version can be lifted to permit access from the right or from the left.



### Solid as a rock

The boom and dipper structures incorporate cast steel parts on all the heavily stressed areas. All the hydraulic connectors are protected by sturdy steel plates.



## ENGINE

Water-cooled low emissions Mitsubishi L3E diesel engine.

Displacement, total ..... 952 cc  
Gross power, rated (ISO 9249) ..... 14.0 kW (19.0 hp) at 2800 rpm  
Power, installed (ISO 9249) ..... 11.3 kW (15.5 hp) at 2200 rpm  
Maximum torque (ISO 9249) ..... 54 Nm at 1850 rpm  
Bore x stroke ..... 76 mm x 70 mm



## ELECTRICAL SYSTEM

Rated voltage ..... 12 V  
Battery capacity ..... 12 V - 45 Ah  
Alternator rating ..... 12 V - 40 A  
Starter motor output ..... 12 V - 1.6 kW



## HYDRAULIC SYSTEM

Variable flow Power Control hydraulic system. The oil flow is continuously adapted to suit the forces required for a better use of the engine's power.

Control ..... power-assisted hydraulic controls

Variable displacement double pump for the equipment (boom, dipper and bucket) and travel circuits :

Maximum flow ..... 2 x 21.5 l/min  
Maximum operating pressure ..... 21 MPa (210 bar)

Gear pump for the slewing, offset and blade circuits :

Maximum flow ..... 14 l/min  
Maximum operating pressure ..... 19 MPa (190 bar)

Double-acting hydraulic circuit for accessories :

Maximum flow ..... 43 l/min  
Maximum operating pressure ..... 21 MPa (210 bar)



## SLEWING SYSTEM

Turntable slewing is provided by an Orbitrol hydraulic motor which drives directly (without a reduction gear) a ball internal crown wheel with remote lubrication :

Slewing speed ..... 10 rpm



## BUCKET PERFORMANCE

Breakout force ..... 1850 daN  
Tearout force ..... 1250 daN



## SERVICE FILL CAPACITIES

Fuel tank ..... 21 l  
Hydraulic system, total ..... 23 l  
Engine oil ..... 3.6 l  
Cooling system ..... 4.5 l



## UNDERCARRIAGE

Two-speed / fixed undercarriage :

Track width ..... 250 mm  
Track tension ..... by grease piston  
Blade height ..... 240 mm  
Width of the blade ..... 1200 mm

Two-speed / variable width undercarriage :

Track width ..... 250 mm  
Track tension ..... by grease piston  
Blade height ..... 240 mm  
Width of the blade ..... 980 mm and 1350 mm



## DRIVETRAIN

Each track is driven by an axial piston hydraulic motor equipped with two speeds and an epicyclic reduction gear.

Max. speed (low/high speed) ..... 2.7 - 4.7 km/h  
Max. tractive force ..... 1770 daN



## WEIGHT

Two-speed / fixed undercarriage :

Operating mass and ground pressure	Rubber Tracks	Steel Tracks
Canopy version	1650 kg 0.27 kg/cm <sup>2</sup>	1710 kg 0.28 kg/cm <sup>2</sup>
Cab version	1780 kg 0.29 kg/cm <sup>2</sup>	1840 kg 0.30 kg/cm <sup>2</sup>

Transport mass (according to standard ISO 6016)	Rubber Tracks	Steel Tracks
Canopy version	1525 kg	1585 kg
Cab version	1655 kg	1715 kg

Two-speed / variable width undercarriage :

Operating mass and ground pressure	Rubber Tracks	Steel Tracks
Canopy version	1745 kg 0.28 kg/cm <sup>2</sup>	1805 kg 0.29 kg/cm <sup>2</sup>
Cab version	1875 kg 0.30 kg/cm <sup>2</sup>	1935 kg 0.31 kg/cm <sup>2</sup>

Transport mass (according to standard ISO 6016)	Rubber Tracks	Steel Tracks
Canopy version	1620 kg	1680 kg
Cab version	1750 kg	1810 kg



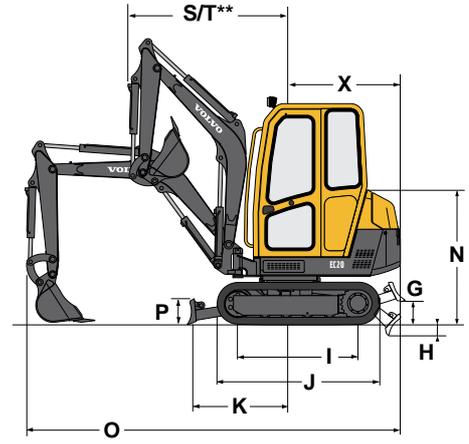
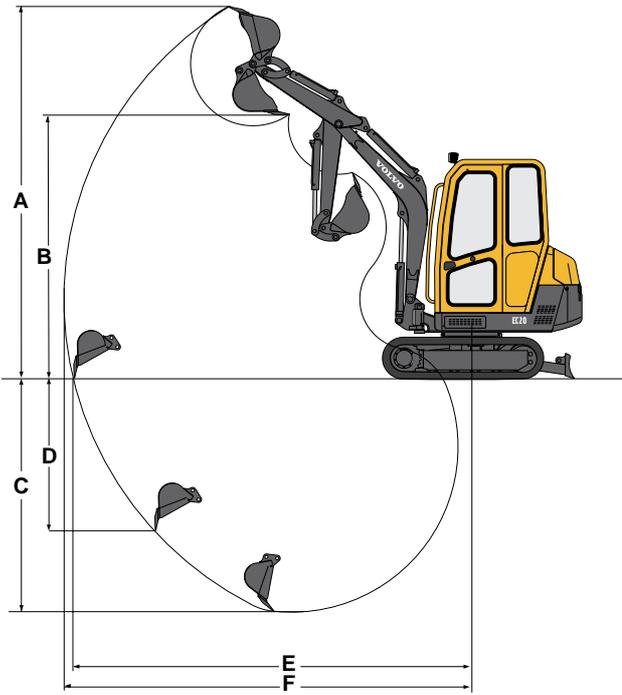
## NOISE LEVELS

Results of dynamic measurements :

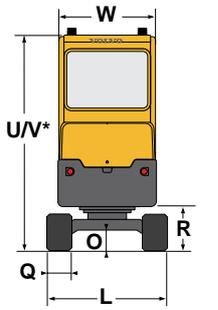
Noise level exterior (LwA) ..... 93 dB(A)  
Noise level in the cab (LpA) ..... 83 dB(A)  
Noise level under the canopy (LpA) ..... 81 dB(A)

The noise levels conform to directive n° 86/662 EEC and its amendments.

# DIMENSIONS

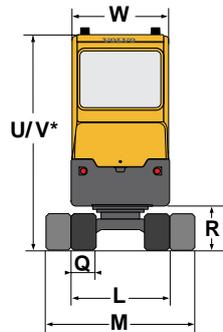


\*\* Front turning circle with max. offset



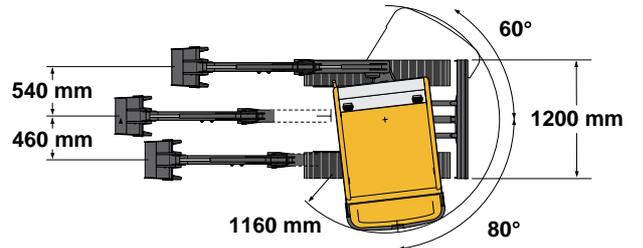
Two-speed / fixed undercarriage

\* Canopy

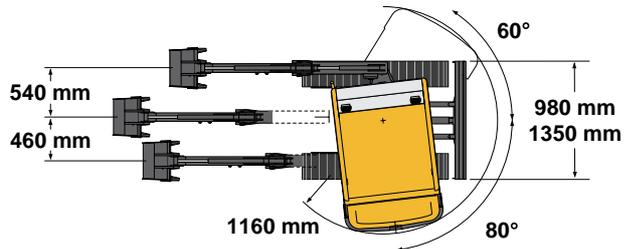


Two-speed / variable width undercarriage

\* Canopy

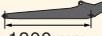


Two-speed / fixed undercarriage



Two-speed / variable width undercarriage

Buckets	 Width	 Weight	 Capacity
	250 mm	33 kg	30 l
	300 mm	36 kg	32 l
	400 mm	42 kg	47 l
	450 mm	46 kg	55 l
	500 mm	50 kg	62 l
	600 mm	55 kg	77 l
	1000 mm	102 kg	115 l

Dipper	A	B	C*	C	D	E	F
	3750	2670	2570	2350	1580	4010	4100
	3900	2820	2810	2600	1800	4250	4340

\* Dig depth with blade down.

Two-speed / fixed undercarriage :

G	H	I	J	K	L	N	O	
250	275	1240	1630	1075	1200	1360	3780	
P	Q	R	S	T	U	V	W	X
260	250	470	1620	1310	2270	2210	980	1120

(mm)

Two-speed / variable width undercarriage :

G	H	I	J	K	L	M	N	O
240	230	1240	1630	945	1000	1350	1360	3780
P	Q	R	S	T	U	V	W	X
260	250	470	1620	1310	2270	2210	980	1120

## STANDARD EQUIPMENT

### Engine

Dry-type air filter.  
Electric pre-heating device.  
Transparent diesel oil filter, pre-filter and sediment bowl.  
Oil sump sheet metal guard.  
Hand throttle.

### Electrical system

12 V - 45 Ah maintenance-free battery.  
Horn.  
12 V power socket for inspection lamp.

### Undercarriage

250 mm wide rubber tracks.  
Fixed or variable width undercarriage according to version.  
Blade extensions with supports on the blade arms (variable width undercarriage).  
Towing and anchoring points.  
Remote lubrication of the slewing crown ring.

### Hydraulic system

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.

Control of forward movement by two levers.  
Hydraulic oil cooler.

### Cab (cab version)

Level 1 FOPS (Falling Objects Protective Structure).  
TOPS (Tip-Over Protective Structure).  
ROPS (Roll-Over Protective Structure).  
Vinyl-covered multi-adjustable sprung seat.  
Non-slip floor and grab handles for access to the driver's cab.  
Seatbelt.  
Cab mounted on rubber mountings.  
Two working lights.  
Two-speed heating and ventilation.  
Cab heat adjustment.  
Front window 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.  
Windscreen wiper and washer (front).  
Emergency exit via the rear window.

### Canopy (Canopy version)

Level 1 FOPS (Falling Objects Protective Structure).  
TOPS (Tip-Over Protective Structure).  
ROPS (Roll-Over Protective Structure).  
Vinyl-covered all weather multi-adjustable sprung seat.  
Non-slip floor and grab handle for access to the driver's cab.  
Seat belt.  
Working light on the canopy frame.

### Instrumentation and monitoring

Monitoring and warning light for : pre-heating, engine oil pressure, water temperature, battery charging, air filter restriction.  
Fuel gauge.  
Hour meter.  
Shut down for automatic switching off engine in the event of overheating or drop in oil pressure.

### Working equipment

1900 mm long monobloc boom.  
1050 mm dipper.  
140° hydraulic boom offset.  
Cushion on the boom ram.  
Handling equipment : lifting hook on the bucket with load chart displayed in the driver's cab.  
Remote lubrication of the bottom of the offset ram.

### Safety

Engine safety start device : the left console must be raised to operate the starter.  
Nitrogen accumulator on the power assistance circuit in order to be able to put the equipment on the ground if the engine is switched off.  
Window-breaker hammer (cab).  
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.  
Handling device conforming to EN standard 474-5.  
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 (1300 mm).  
Mechanically-controlled quick-release attachment bracket.

### Hydraulic circuits for attachments

Circuit for hydraulic breaker with direct return to the tank.  
Hydraulic circuit for double-acting attachments (Auger ...)

Hydraulic circuit for operating a clam-shell bucket (opening/closing and rotation of the bucket).

### Undercarriage

Steel tracks (230 mm wide).

### Lighting

Additional working light on the boom.  
Additional rear working light.  
Rotating beacon

### Environmental protection

Bio-degradable hydraulic oil.  
Catalytic exhaust.

### Comfort and safety

Radio (cab).  
Anti-theft system (2 programmable codes).  
Rear wind-deflector on canopy.  
Battery isolator switch.

### 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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