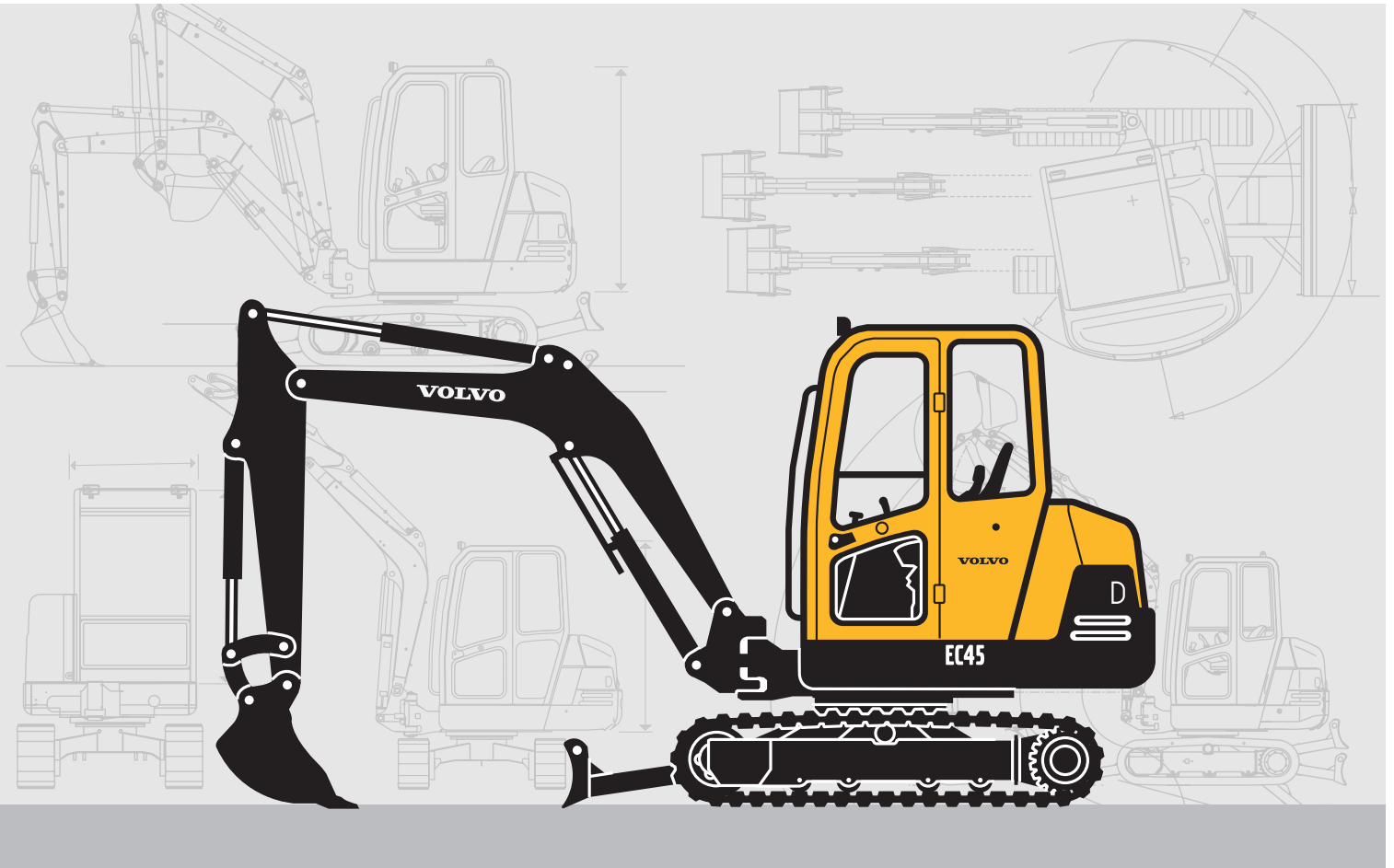


VOLVO COMPACT EXCAVATOR

EC45



- **Gross Power :**
ISO 9249 : 31 kW

- **Net Power :**
ISO 9249 : 27.2 kW

- **Operating Weight :**
4098 - 4387 kg

- **Bucket Capacities :**
46 - 164 l.

- **Maximum Digging Depth :**
3510 - 3800 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.

- **ROPS, TOPS and FOPS** cab and canopy 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.

- **X-shaped lengthened undercarriage** for better rigidity and stability.

VOLVO

Solid as a rock

COMPACT EXCAVATOR EC45

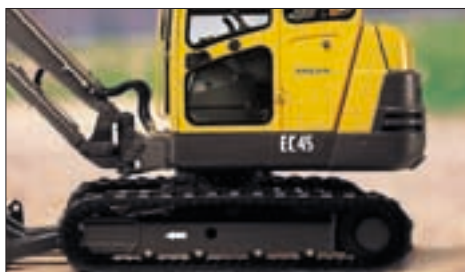
Even more efficient !

Like all Volvo machines, the EC45 develops an impressive level of performances. The bucket forces and digging depth are amongst the best on the market to give you improved productivity on all your sites.



Excellent equipment performances

The bucket has a very large range of movement : over 200°. This characteristic guarantees a good attack and square excavations at all depths.



Long chassis for more stability

The considerable length of the tracks provides exceptional stability and offers more output and safety, whilst reducing ground pressure.



Volvo quick coupling

The exclusive Volvo 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.



Load-Sensing system : never has a compact excavator been so easy to operate.

Power, smoothness, independence of movements : the hydraulic Load-Sensing circuit fitted to the EC45 machines represents the best available technology.



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 counter-weight provides the machine with excellent protection against all impacts.



Locking of the offset ram

The offset ram is equipped with a balancing valve, which blocks the ram and prevents it from sliding. The result : the boom's offset is solidly held in the position chosen by the operator even during long and difficult work.



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.



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.



Total independence of all movements

The hydraulic Load-Sensing circuit enables all the machine's controls to be combined. Travelling in a straight line is maintained even when other movements are actuated.



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.



A X-shaped undercarriage

This X shape makes for a better distribution of the loads on the side members, giving more rigidity and sturdiness. The top part of the side members slopes to prevent earth depositing itself there and to make it easier to clean.

Smooth operation

The cushions on the rams and the Hydrosensor valve on the hydraulic slewing motor ensure smooth movements.

A very high level of comfort and safety

COMPACT EXCAVATOR EC45



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.



A spacious and comfortable cab

The EC45's cab offers incomparable comfort and operating quietness. Even tall operators immediately feel at ease in this generously sized cab.

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 and combined with two wide grab handles. To avoid any risk of an accident when the operator gets into or out of the cab, all of the

machine's controls are locked when the left console is raised. This locking also concerns the travel controls which are locked in the neutral position when the console is raised.



A perfect operating position

The Volvo operator's cab has been the subject of extensive ergonomic to make the operating position as pleasant as possible and to reduce operator fatigue. The sprung seat can be adjusted in many ways to suit the operator's morphology.



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.



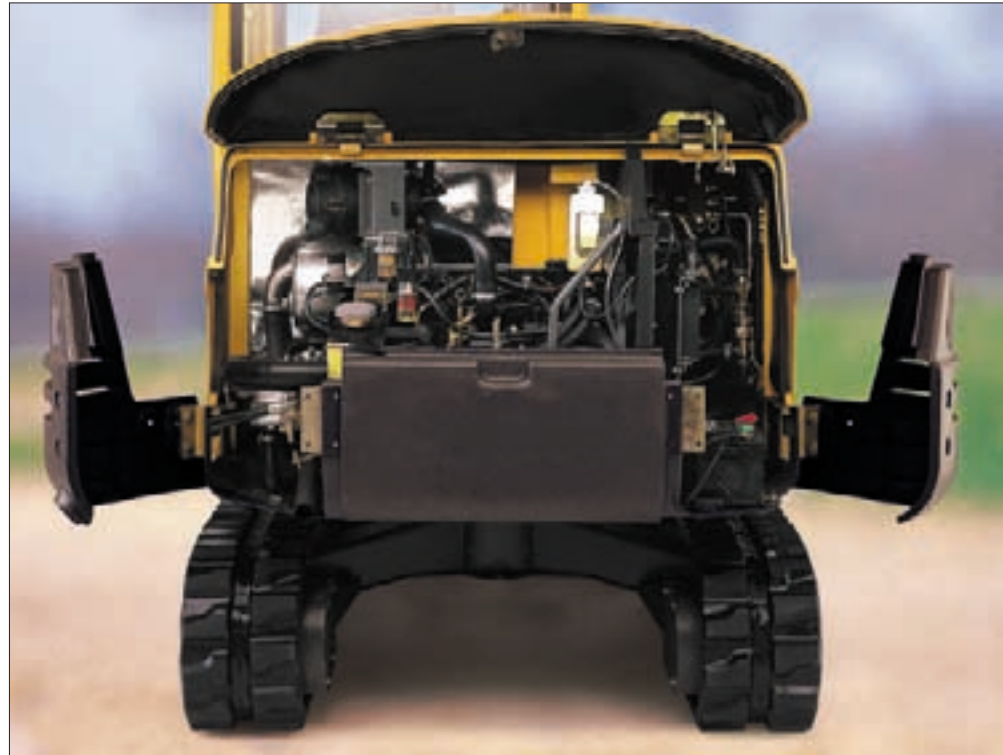
Excellent visibility

Thanks to the cabs 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.



FOPS 1, ROPS and TOPS protection

The EC45's cab has 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.



Exclusive to Volvo : the opening counterweight

This Volvo innovation permits excellent accessibility of the engine compartment whilst providing total protection to the rear of the machine thanks to the wrap-around shape of the counterweight.



Perfect accessibility of the hydraulics compartment

The control valves and all of the hydraulic components are located in a hydraulics compartment located on the side of the machine to facilitate access.



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.



ENGINE

Water-cooled Mitsubishi 4-cylinder diesel engine.

Model K4N
Gross power, rated (ISO 9249) 31 kW (42 hp) at 2600 r/min
Power, installed (ISO 9249) 27.2 kW (37 hp) at 2000 r/min
Displacement, total 2290 cc
Maximum torque (ISO 9249) 137 Nm at 1400 r/min
Bore x stroke 90 mm x 90 mm



ELECTRICAL SYSTEM

Rated voltage 12 V
Battery capacity 12 V - 70 Ah
Alternator rating 12 V - 40 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 99 l/min
Maximum operating pressure 26 MPa (260 bars)

Gear pump for the power assistance circuit :

Maximum flow 17.6 l/min
Maximum operating pressure 3.2 MPa (32 bars)

Double-acting hydraulic circuit for accessories :

Maximum flow 60 l/min
Maximum operating pressure 26 MPa (260 bars)

End-of-stroke cushions

On boom ram at the end of the rod extension
On dipper ram at the end of the rod retraction
On offset ram on both sides

Offset ram lock

The equipment's offset ram is equipped with a balancing valve which holds the boom offset angle in the position chosen by the operator in all working conditions.



SLEWING SYSTEM

Turntable 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 3240 daN
Tearout force 2480 daN



UNDERCARRIAGE

The undercarriage is made up of an "X" box fabricated centre part for more rigidity and of sloping side members for a better clearance of materials. The rollers and the tensioning wheels are lubricated for life.

Bottom/top rollers per side 4 / 1
Track width 400 mm
Track tension by grease piston
Blade (width x height) 1850 x 370 mm

The blade cylinder is equipped with a safety valve.



TRAVEL SYSTEM

Each track is driven by an axial piston hydraulic motor equipped with two speeds and an epicyclic reduction gear. Braking is performed automatically by an oil bath multiple disc brake on each motor.

Max. speed (low/high speed) 2.9 km/h / 4.3 km/h
Max. tractive force 4080 daN

The forward movement control is automatically locked when the operator raises the left console.



SERVICE FILL CAPACITIES

Fuel tank 66 l
Hydraulic system, total 62 l
Hydraulic tank 37 l
Engine oil 7.7 l
Cooling system 8 l



WEIGHT

Operational weight and ground pressure :

	Rubber Tracks	Steel Tracks
Cab version	4250 kg 0.25 kg/cm ²	4387 kg 0.26 kg/cm ²



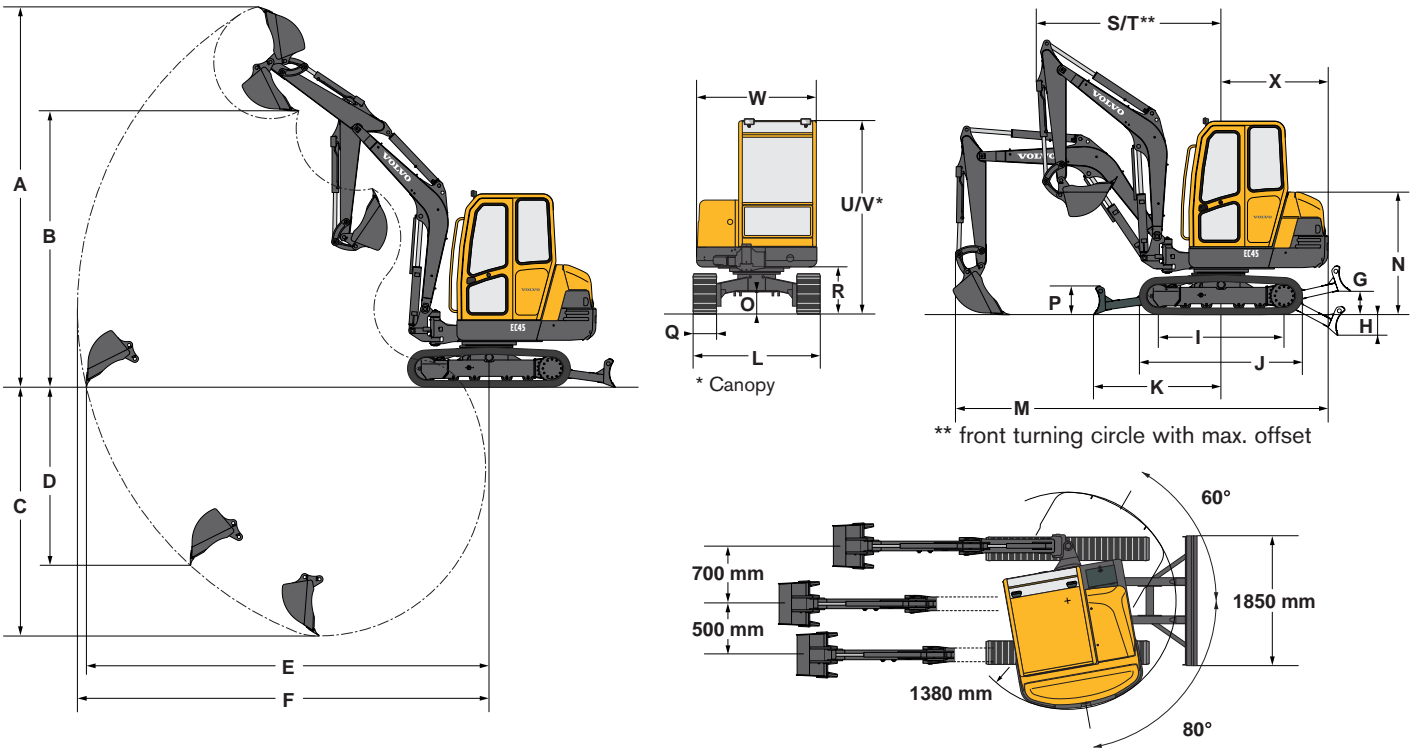
NOISE LEVELS

Results of dynamic measurements :

Noise level exterior (LwA) 95 dB(A)
Noise level in the cab (LpA) 78 dB(A)

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

DIMENSIONS



Buckets	Width	Weight	Capacity
Backhoe buckets	300 mm	56 kg	46 l
	450 mm	68 kg	80 l
	600 mm	86 kg	115 l
	750 mm	111 kg	151 l
Ditch bucket	1300 mm	125 kg	164 l

Dipper	A	B	C*	C	D	E	F
1400 mm	4930	3640	3510	3320	2310	5280	5400
1700 mm	5110	3810	3800	3620	2550	5570	5690

* Dig depth with blade down.

G	H	I	J	K	L	M	N	O
410	480	1770	2280	1620	1800	4930	1610	320

P	Q	R	S	T	U	V	W	X
370	400	650	2220	1740	2510	2400	1570	1360

in mm

TOTAL ROTATION LOAD CAPACITIES

These capacities are given for a machine without a bucket or quick-release coupling and fitted with rubber tracks for a 360° total rotation lifted load.

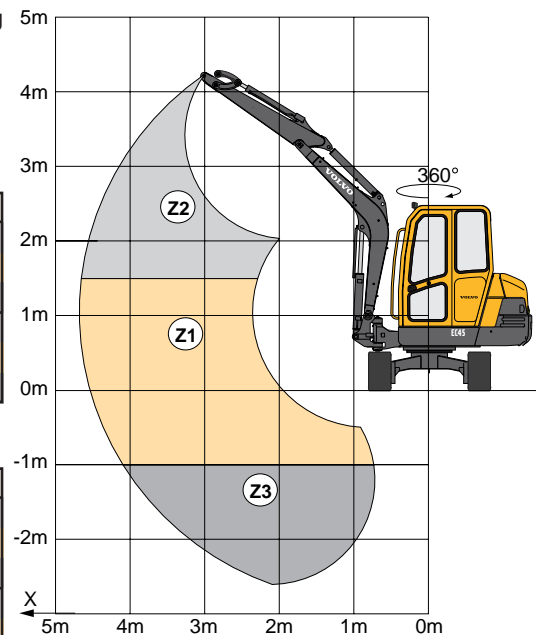
The handling capacity is 75% of the tipping load or 87% of the hydraulic limit.

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.

Outreach		1.50 m	2.00 m	2.50 m	3.00 m	3.50 m	4.00 m	4.50 m	
	1400 mm	Z2		1195*	825*	745*	820*	905*	
		Z1	1625*	1495*	1645*	1270*	1090*	995*	950*
		Z3	2410*	1840*	1940*	1495*	1395*	1230*	
	1700 mm	Z2			1355*	855*	700*	690*	770*
		Z1	1465*	1570*	1355*	1100*	975*	900*	865*
		Z3	2055*	2365*	1745*	1660*	1305*	1190*	

Outreach		1.50 m	2.00 m	2.50 m	3.00 m	3.50 m	4.00 m	4.50 m	
	1400 mm	Z2		1195*	825*	745*	675	575	
		Z1	1625*	1495*	1260	970	785	660	565
		Z3	2410*	1810	1270	975	790	665	
	1700 mm	Z2			1355*	855*	700*	690*	570
		Z1	1465*	1570*	1245	960	775	650	555
		Z3	2055*	1785	1250	960	775	650	

Lifting capacity in total rotation over 360° with the blade raised. *hydraulic limit (kg)



STANDARD EQUIPMENT

Engine

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

Electrical system

12 V - 70 Ah battery.
Horn.
12 V power socket for inspection lamp.

Undercarriage

400 mm wide rubber tracks.
Dozer blade.
Towing and anchoring rings.
Remote lubrication of the slewing crown ring.
Safety valve on the blade cylinder.

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.

Control of forward movement by two levers coupled to pedals.

Cab

Level 1 FOPS (Falling Objects Protective Structure).
TOPS (Tip-Over Protective Structure).
ROPS (Roll-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.
Two working lights.
Two-speed heating and ventilation.
Cab heating adjustment.
Windscreen with opening system power-assisted by two gas rams.
Quickly removable front bottom window, and window fixing support behind the seat.
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).
Emergency exit via the front window.

Instrumentation and monitoring

PUMA 2 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).
Device for automatic switching off of engine in the event of overheating or drop in oil pressure.

Handling and earthwork equipment

2600 mm long monobloc boom.
1400 mm dipper.
140° hydraulic boom offset.
Non-return valve on the offset ram.
Cushions on the boom, dipper and offset rams.
Remote lubrication of the bottom of the offset ram.

Safety

Device for locking the earthwork equipment's controls and the travel levers 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.
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 (1700 mm).
Safety valve piloted by the power assistance circuit on the boom ram with overload indicator (for handling loads over 1000 kg).
Safety valve on the dipper ram.
Mechanically-controlled quick-release attachment coupling.
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

Steel tracks (400 mm wide).

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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