

VOLVO COMPACT EXCAVATORS

# ECR28, ECR38

2.74-3.425 t 18.8-27.3 hp





# OUTSTANDING COMFORT WITHIN A SHORT SWING.

Make the long working days easier. Test the Volvo Models ECR28 and ECR38. Short swing radius excavators with a real difference. They turn within the width of their own tracks, ideal for tight job sites.

Both models have a short swing radius superstructure so the counterweight turns within the track width. You can work in confined spaces, eliminating the risk of hitting a wall or obstacles. Enhanced safety on congested job sites is an obvious result.

The spacious cab features an uncluttered floor and a deluxe, adjustable suspension seat with a high back and armrests to reduce fatigue. There's excellent visibility because of the large, glazed surface area on all four sides, the thin cab pillars, the wide windscreen, and the compact engine cover. Exterior rearview mirrors help improve visibility and safety.

The instrument panel features both gauges and lights and is located within easy view of the operator so he can keep an eye on all key machine functions.

Both units feature easy-grip, highly responsive control levers mounted to the seat for precise movement and less operator fatigue. The right control lever also has a roller to control the accessory circuit with the fingertips for better control of attachments. In addition, there's a button on the front of the joystick that sends maximum flow to accessories such as breakers for better productivity.

The Volvo ECR28 and ECR38 are designed for low noise, both inside and outside of the cab. The cab is placed on rubber mountings to help reduce vibration and there's high-performance soundproofing foam that helps insulate against noise. In addition, the quiet, new-generation Volvo engine has an extremely efficient exhaust system.

As a result, the low sound levels help reduce operator fatigue and increase productivity.



- Short tail swing offers the ultimate manoeuvrability.



- Spacious cab help to improve productivity.



- Wide cab offers plenty of legroom for better comfort.





- Excellent performance even in tight job sites.
- Controls provide easy, precise movement.
- Wide cab, deluxe seat and 360° visibility.





# OUTSTANDING PERFORMANCE AND ENVIRONMENTAL CARE.

The ECR28 and ECR38 provide no compromise performance when using a Volvo short swing radius machine. Both models offer the same care and respect for the environment that you expect from every Volvo product.

The model ECR28 and ECR38 are short swing radius machines, perfect for use on tight job sites. More productivity, increased machine capabilities and improved safety.

Both machines have new-generation Volvo diesel engines that provide excellent performance. In addition, the Model ECR38 also features direct injection for fast, efficient mixing of fuel and air. Both models provide low exhaust emissions complying with the strictest legal standards.

To work more efficiently the ECR28 & ECR38 feature an auto-idling system that lowers the engine speed to idle if the operator controls are not used for five seconds or more. The system returns the engine to the pre-selected speed once the operator uses any control.

The system can be disabled when you need to warm the engine.

The finger tip control for accessories enables the operator to progressively adjust the flow to the attachment for more precision.

The load-sensing hydraulics are the best technology available, providing simplicity and efficiency. The speed of the hydraulic movements depends only on the position of the power-assisted, multi function control levers. Regardless of load and number of simultaneous cylinder movements. Instantly supplying only the power to meet the demand. Smooth and precise operation is a reality.

The operator can move the machine forward or reverse whilst continuing to dig, important when grading and working in tight spaces.

The ECR28 and ECR38 also feature impressive breakout and tear-out forces, allowing them to power through the toughest working conditions.



- New Volvo engine offers excellent performance.



- Auto-idling reduces fuel consumption and noise.



- Impressive breakout and tear-out force.





- Progressive finger-tip control of attachments.
- Excellent reach to reduce machine positioning.
- Load sensing hydraulics for precise movement.





# ENDURING QUALITY THAT PROTECTS MAN AND MACHINE.

The Volvo ECR series are built with durability throughout. They will last for years and retain a high resale value. Safety is built in, to protect both the operator and others working near the machine. They're also easy to service to help ensure a long productive life.

The engine is located on the side of the machine and has a large hood that can be opened wide for complete and unobstructed access to all routine service points, including filters and fluid levels. The fuses are grouped together in the engine compartment, protected in a dust and damp-proof box for easy access.

There are many high quality features to ensure a long life, such as bucket cylinder hoses that are protected on the inside of the dipper. The ORFS (O-Ring Face Seal) technology of the hydraulic connectors provides a leak-free joint.

The O-Rings provide excellent resistance to pressure peaks, vibrations and twisting. The wiring looms and connectors meet high standards, protecting the cables from their harsh operating environment.

The cab door can be locked open and it is protected on the inside of the chassis to prevent damage.

As with all Volvo products, the units offer the best in safety features to help protect the operator. Volvo cabs and canopies come standard with a FOPS 1, ROPS and TOPS safety structure to prevent injury from falling objects, rollover or tipover. A standard safety belt keeps the operator fully in his seat.

Attention to detail has put the instrument panel where it is easy for the operator to see, making efficient operation a reality.

The laminated windscreen is made of two pieces of glass bonded together with a clear plastic sheet in between. If the windscreen breaks, it stays in one piece.

All machine controls are locked out when the console is raised to help prevent the risk of an accident when the operator is getting into or out of the cab.



- Open door is protected in the width of the chassis.



- Laminated windscreen increase operator safety.



- High quality electrical and hydraulic connections.



- All controls lock out when console is raised.
- Instrument panel provides clear view of functions.
- Side engine hood opens wide for easy service.





# SPECIFICATIONS - ECR28

## Engine

Low emission, water-cooled, Volvo 3-cylinder diesel engine, meeting TIER 4i environmental regulations and equipped with an automatic return to idling system.

<b>Model</b>	Volvo D1.2
<b>Gross power, rated (ISO 9249)</b>	13.8 kW (18.8 hp) at 2200 r/min
<b>Power, installed (ISO 9249)</b>	13.5 kW (18.3 hp) at 2200 r/min
<b>Displacement, total</b>	1116 cc
<b>Maximum torque</b>	65.5 Nm at 1600 r/min
<b>Bore x stroke</b>	76 mm x 82 mm
<b>Gas emission</b>	PM: 0.4 g/kwh NOx + HC : 7.5 g/kwh CO: 6.6 g/kwh

## Electrical system

<b>Battery capacity</b>	12 V - 65 Ah
<b>Alternator rating</b>	12 V - 40 A
<b>Starter motor output</b>	12 V - 1.1 kW

## Hydraulic system

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

<b>Control</b>	power-assisted hydraulic controls
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Variable displacement Load Sensing pump for all the equipment and travel circuits :

<b>Maximum flow</b>	64.4 l/min
<b>Maximum operating pressure</b>	21 MPa (210 bars)

Gear pump for the power assistance circuit :

<b>Maximum flow</b>	13.8 l/min
<b>Maximum operating pressure</b>	3.5 MPa (35 bars)

Double-acting hydraulic circuit for accessories :

<b>Maximum adjustable flow</b>	45 l/min
<b>Maximum operating pressure</b>	21 MPa (210 bars)

End-of-stroke cushions :

<b>On boom ram</b>	at the end of the rod extension
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## Bucket performance

<b>Breakout force</b>	2068 daN
<b>Tearout force short arm</b>	1491 daN
<b>Tearout force long arm</b>	1291 daN

## 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 :


<b>Slewing speed</b>	10 rpm
<b>Turntable braking</b>	automatic multi-disc brake
<b>Absorption of hydraulic shocks</b>	Shockless valve

## Lifting capacity

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			2 m	3 m	4 m	Maxi
	1050 mm	Z2	-	440	-	-
		Z1	760	420	-	305
		Z3	780	430	-	-
	1300 mm	Z2	-	445*	290	-
		Z1	755	420	285	280
		Z3	770	425	-	-

\*hydraulic limit

(kg)

## 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.

<b>Bottom/top rollers per side</b>	3 / 1
<b>Track width</b>	300 mm
<b>Track tension</b>	by grease piston
<b>Blade (width x height)</b>	1550 x 340 mm

## Drivetrain

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

<b>Max. speed (low speed/ high speed)</b>	2.4 km/h / 3.8 km/h
<b>Max. tractive force</b>	2200 daN

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

## Service fill capacities

<b>Fuel tank</b>	49 l
<b>Hydraulic tank</b>	18 l
<b>Hydraulic system, total</b>	37 l
<b>Engine oil</b>	3.3 l
<b>Cooling system</b>	4 l

## Weight and ground pressure

Operating weight according to ISO 6016

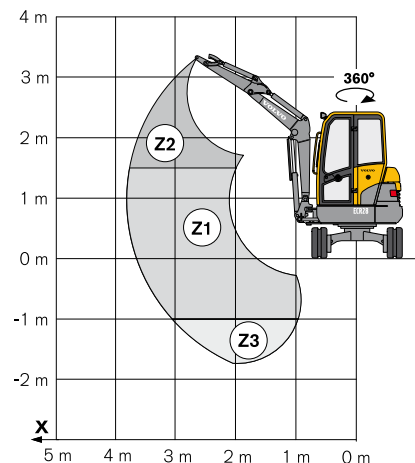
(according to most usual configuration and including 75kg operator)

<b>Operating weight</b>	<b>(kg)</b>	2810
<b>Ground pressure cab</b>	<b>kg/cm<sup>2</sup> kPa</b>	0.29 (28.5)
<b>Ground pressure canopy</b>	<b>kg/cm<sup>2</sup> kPa</b>	0.28 (27.5)
<b>Transport weight</b> (Heated cab, 300mm rubber tracks, short arm, 500mm direct-fit bucket, full fuel tank)	<b>(kg)</b>	2735
<b>With canopy</b>	<b>(kg)</b>	-130
<b>With long arm</b>	<b>(kg)</b>	+8

## Sound Level

<b>Interior sound level according to ISO 6396 (LpA)</b>	<b>dB(A)</b>	79
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<b>External sound level according to ISO 6395 and EU Noise Directive (2000/14/EC) and 474-1:2006+A1:2009 (LwA)</b>	<b>dB(A)</b>	93
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# SPECIFICATIONS - ECR38

## Engine

Low emission, water-cooled, direct injection Volvo 3-cylinder diesel engine, meeting TIER 4i / EU Stage 3A environmental regulations and equipped with an automatic return to idling system.

<b>Model</b>	Volvo D1.6D
<b>Gross power, rated (ISO 9249)</b>	20.4 kW (27.3 hp) at 2200 r/min
<b>Power, installed (ISO 9249)</b>	19.7 kW (26.4 hp) at 2200 r/min
<b>Displacement, total</b>	1642 cc
<b>Maximum torque</b>	103 Nm at 1300 r/min
<b>Bore x stroke</b>	88 mm x 90 mm
<b>Gas emission</b>	PM: 0.3 g/kwh NOx + HC : 7.5 g/kwh CO: 5.5 g/kwh

## Electrical system

<b>Battery capacity</b>	12 V - 65 Ah
<b>Alternator rating</b>	12 V - 40 A
<b>Starter motor output</b>	12 V - 1.7 kW

## Hydraulic system

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

<b>Control</b>	power-assisted hydraulic controls
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Variable displacement Load Sensing pump for all the equipment and travel circuits :

<b>Maximum flow</b>	94.3 l/min
<b>Maximum operating pressure</b>	24 MPa (240 bars)

Gear pump for the power assistance circuit :

<b>Maximum flow</b>	18.4 l/min
<b>Maximum operating pressure</b>	3.5 MPa (35 bars)

Finger-tip controlled double-acting hydraulic circuit for accessories :

<b>Maximum adjustable flow</b>	60 l/min
<b>Maximum operating pressure</b>	24 MPa (240 bars)

End-of-stroke cushions :

<b>On boom ram</b>	at the end of the rod extension
<b>On dipper ram</b>	at the end of the rod retraction

## Bucket performance

<b>Breakout force</b>	2875 daN
<b>Tearout force short arm</b>	1915 daN
<b>Tearout force long arm</b>	1860 daN

## 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 :

<b>Slewing speed</b>	10 rpm
<b>Turntable braking</b>	automatic multi-disc brake


<b>Absorption of hydraulic shocks</b>	Shockless valve
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## Lifting capacity

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			2 m	3 m	4 m	Maxi
	1050 mm	Z2	-	540*	380	-
		Z1	975	535	360	325
		Z3	940	510	-	-
	1300 mm	Z2	-	590*	375	-
		Z1	955	520	360	295
		Z3	920	495	-	-

\*hydraulic limit

## 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.

<b>Bottom/top rollers per side</b>	4 / 1
<b>Track width</b>	300 mm
<b>Track tension</b>	by grease piston
<b>Blade (width x height)</b>	1650 x 370 mm

## Drivetrain

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

<b>Max. speed (low speed/ high speed)</b>	2.7 km/h / 3.9 km/h
<b>Max. tractive force</b>	3050 daN

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

## Service fill capacities

<b>Fuel tank</b>	49 l
<b>Hydraulic tank</b>	18 l
<b>Hydraulic system, total</b>	48 l
<b>Engine oil</b>	7 l
<b>Cooling system</b>	5 l

## Weight and ground pressure

Operating weight according to ISO 6016

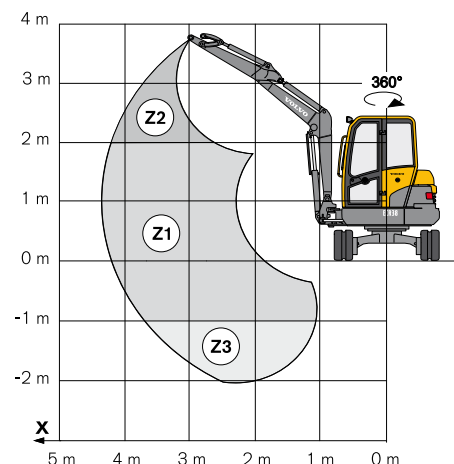
(according to most usual configuration and including 75kg operator)

<b>Operating weight</b>	<b>(kg)</b>	3425
<b>Ground pressure cab</b>	<b>kg/cm<sup>2</sup> kPa</b>	0.32 (31.5)
<b>Ground pressure canopy</b>	<b>kg/cm<sup>2</sup> kPa</b>	0.31 (30.5)
<b>Transport weight</b> (Heated cab, 300mm rubber tracks, short arm, 500mm direct-fit bucket, full fuel tank)	<b>(kg)</b>	3350
<b>With canopy</b>	<b>(kg)</b>	-130
<b>With long arm</b>	<b>(kg)</b>	+10
<b>With 300mm steel tracks</b>	<b>(kg)</b>	+70

## Sound Level

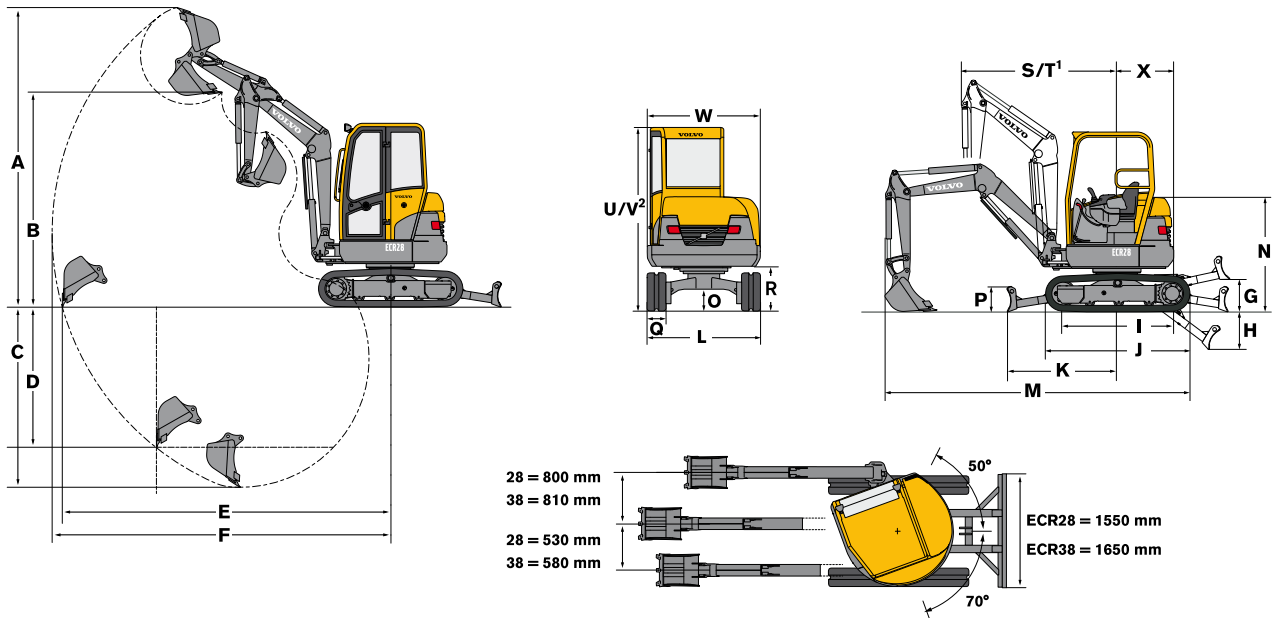
<b>Interior sound level according to ISO 6396 (LpA)</b>	<b>dB(A)</b>	80
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<b>External sound level according to ISO 6395 and EU Noise Directive (2000/14/EC) and 474-1:2006+A1:2009 (LwA)</b>	<b>dB(A)</b>	94
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# SPECIFICATIONS - ECR28, ECR38



## ECR28

Dipper	A	B	C	C*	D	E	F
1050 mm	3950	<b>2840</b>	<b>2380</b>	<b>2660</b>	1820	4330	4470
1300 mm	4090	<b>2970</b>	<b>2630</b>	<b>2910</b>	2060	4580	4700

G	H	I	J	K	L	M	N	O
430	498	1440	1890	1509	1550	4000	1510	280

P	Q	R	S	T1	U	V2	W	O
335	300	570	2080	1710	2440	2380	1500	280

\* : Maximum dig depth

1 : Front turning radius with maximum offset

2 : Canopy

## ECR38

Dipper	A	B	C	C*	D	E	F
1250 mm	4430	<b>3190</b>	<b>2740</b>	<b>3060</b>	2540	4810	5040
1500 mm	4560	<b>3330</b>	<b>2990</b>	<b>3310</b>	2790	5150	5270

G	H	I	J	K	L	M	N	O
375	510	1600	2070	1620	1620	4420	1520	290

P	Q	R	S	T1	U	V2	W	X
370	300	580	2270	1880	2440	2390	1620	810

\* : Maximum dig depth

1 : Front turning radius with maximum offset

2 : Canopy



## STANDARD EQUIPMENT

### Engine

Low-emission Volvo diesel engine.  
Dry-type air filter.  
Electric heating device.  
Fuel filter + transparent sediment chamber.  
Purge plug under the diesel oil tank.  
Oil sump sheet metal guard.  
Automatic return to idling system.

### Electrical system

Water-resistant electrical connectors (IP67).  
Two working lights on cab version.  
Working light on the canopy frame.  
12V power socket

### Hydraulic system

Load-sensing system.  
ISO power-assisted hydraulic controls.  
Power-assisted control of the hydraulic offset of the boom by the left control lever.  
Control of forward and backward movement by two levers coupled to pedals.  
Double-acting hydraulic circuit for accessories fitted as far as the end of the arm.  
3-way valve to select the single-acting mode for direct return of oil to the hydraulic tank.  
Progressive finger-tip control of the accessory circuit.

### Seat

ECR28 : fabric or vinyl-covered multi-adjustable sprung seat.  
ECR38 : "Deluxe" fabric or vinyl-covered superior comfort multi-adjustable sprung seat with a high back and fully-suspended consoles

### Cab (cab version)

Cab mounted on rubber mountings.  
In cab heating and ventilation adjustment.  
Front window with opening system power-assisted by a gas ram.  
Provision for a radio (location for a radio and two speakers, aerial and electric wiring already fitted).  
Anti-corrosion protection of the cab by electrophoresis.  
Windscreen wiper and washer (front).

### Instrumentation and monitoring

Warning lights for hydraulic filter and air filter restriction.  
Gauges : water temperature, fuel level.  
Hour meter.  
Warning lights, coupled to an audible signal, in the event of overheating or drop in oil pressure.

### Earthwork equipment

ECR28 :  
- 2000 mm long monobloc boom.  
- 1050 mm dipper.  
ECR38 :  
- 2300 mm long monobloc boom.  
- 1250 mm dipper.

### Safety

Cab and canopy versions :  
- Level 1 FOPS (Falling Objects Protective Structure).  
- TOPS (Tip-Over Protective Structure).  
- ROPS (Roll-Over Protective Structure).  
- Seatbelt.  
- 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 in order to be able to put the equipment on the ground if the engine is switched off.  
- Laminated glass front window (cab).  
- Rear view mirror right.

### Official approval

Machine conforming to European directive 2006/42/EC  
Noise emissions in the environment conforming to directive 2000/14/EC  
Hand Arm Vibrations - Whole Body Vibrations compliant with directive 2002/44/EC  
Electromagnetic compatibility (EMC) conforming to European directive 2004/108/EC and its amendments.  
Object handling device conforming to EN 474-1 and EN 474-5 standards.  
FOPS 1 conforming to ISO 3449 standard.  
ROPS conforming to ISO 3471-1 and SAE J1040 standards.  
TOPS conforming to ISO 12117 and EN 13531 standards.  
OPG 1 conforming to ISO 10262 standard.

## OPTIONAL EQUIPMENT

### Handling and earthwork equipment

Long dipper (1300 mm on ECR28, 1500 mm on ECR38).  
The long arm is recommended only for special applications with long reach and low density materials.  
Boom cylinder safety valve with overload indicator.  
Dipper arm cylinder with safety valve.  
Single-acting or double-acting hydraulic circuit for quick coupler.  
Mechanical Volvo pin grabber quick coupler  
Mechanical Lehnhoff quick coupler  
Complete range of Volvo genuine trenching and ditching buckets (pin-on, LQC).

### Hydraulic circuits for attachments

Hydraulic circuit for operating a clam-shell bucket (opening/closing and rotation).  
Additional adjustment roller of max. delivery available on the accessory circuit.

### Undercarriage

Steel tracks ECR38 : 300 mm wide.

### Cab / Canopy

Retractable seatbelt.  
ECR28 : "Deluxe" fabric or vinyl-covered superior comfort multi-adjustable sprung seat with a high back and fully-suspended consoles.

### Lighting

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

### Environmental protection

Bio-degradable hydraulic oil.

### Comfort and safety

Radio CD/MP3.  
Anti-theft system (2 programmable codes).  
Electric circuit-breaker.  
Rear view mirror left.

### Service and maintenance

Tool kit.

### Miscellaneous

Special customised paint (RAL specifications).



# VOLVO CONSTRUCTION EQUIPMENT



Volvo Construction Equipment is different. Our machines are designed, built and supported in a different way. That difference comes from an engineering heritage of over 180 years. A heritage of thinking first about the people who actually use the machines. About how to help them be safer, more comfortable, more productive. About the environment we all share. The result of that thinking is a growing range of machines and a global support network dedicated to helping you do more. People around the world are proud to use Volvo. And we're proud of what makes Volvo different.

Not all products are available in all markets. Under our policy of continuous 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**  
**[www.volvoce.com](http://www.volvoce.com)**

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CEX