

# VOLVO COMPACT EXCAVATORS

## ECR28, ECR38



- **Power installed:**

ECR28 : 13.5 kW / 18.1 hp  
ECR38 : 19.7 kW / 26.4 hp

- **Operating Weight :**

ECR28 : 2727 - 2821 kg  
ECR38 : 3343 - 3437 kg

- **Maximum Digging Depth :**

ECR28 : 2660 - 2910 mm  
ECR38 : 3060 - 3310 mm

- **Short swing radius** for increased manoeuvrability : no risk to hit obstacles with the counterweight.

- **Spacious and comfortable cab** for less fatigue therefore more productivity.

- **Automatic return to idling** for less noise, a reduced fuel consumption and a longer engine lifetime.

- **Volvo engine** with high performance and low exhaust emission for more environmental care.

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

- **Load Sensing** Hydraulic System for a total independence of the movements : better controllability.

- **Finger tip control of the accessory circuit** for more precision and comfort.

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

**MORE CARE. BUILT IN.**



# SPECIFICATIONS - ECR28

## Engine

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

<b>Model</b>	Volvo D1.2
<b>Gross power, rated (ISO 9249)</b>	14.4 kW (19.3 hp) at 2200 r/min
<b>Power, installed (ISO 9249)</b>	13.5 kW (18.1 hp) at 2200 r/min
<b>Displacement, total</b>	1116 cc
<b>Maximum torque</b>	65.6 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
----------------	-----------------------------------

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
--------------------	---------------------------------

## Bucket performance

<b>Breakout force</b>	1970 daN
<b>Tearout force</b>	1460 daN

## 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

## 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

## 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>	250 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.

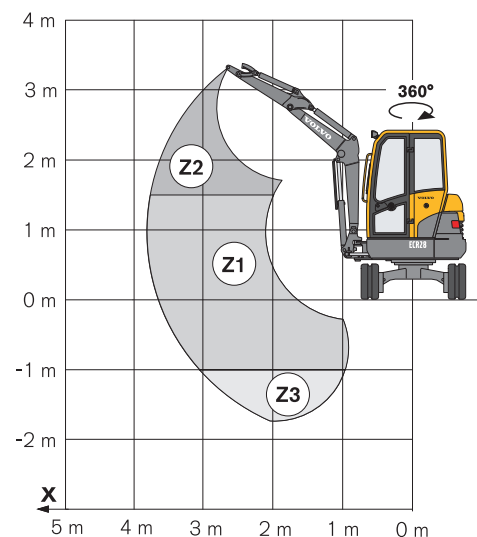
## Service fill capacities

<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

Weight and ground pressure with 250 mm rubber tracks :

	Operating	Transport
<b>Canopy version</b>	2727 kg - 0.34 kg/cm <sup>2</sup>	2584 kg
<b>Cab version</b>	2821 kg - 0.35 kg/cm <sup>2</sup>	2678 kg



# SPECIFICATIONS - ECR38

## Engine

Low emission, water-cooled, direct injection Volvo 3-cylinder diesel engine, meeting TIER 3, STAGE IIIA 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
----------------	-----------------------------------

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</b>	1915 daN

## 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	
	1250 mm	Z2	-	540°	380	
		Z1	975	535	360	325
		Z3	940	510	-	-
	1500 mm	Z2	-	590°	375	-
		Z1	955	520	360	295
		Z3	920	495	-	-

\*hydraulic limit

## 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

## 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.

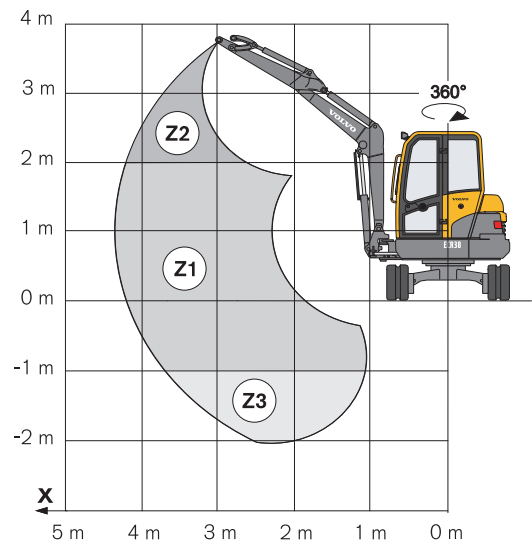
## Service fill capacities

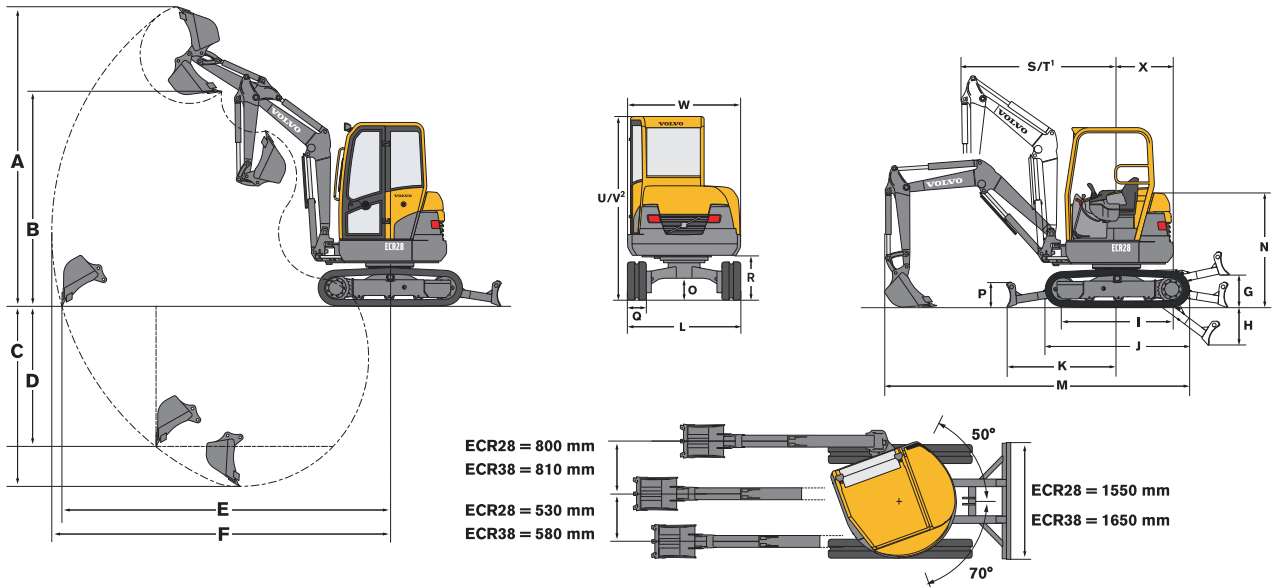
<b>Fuel tank</b>	49 l
<b>Hydraulic tank</b>	18 l
<b>Hydraulic system, total</b>	48 l
<b>Engine oil</b>	7 l
<b>Cooling system</b>	5 l

## Weight

Weight and ground pressure with 300 mm rubber tracks :

	Operating	Transport
<b>Canopy version</b>	3343 kg - 0.31 kg/cm <sup>2</sup>	3182 kg
<b>Cab version</b>	3437 kg - 0.32 kg/cm <sup>2</sup>	3276 kg





### ECR28

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

G	H	I	J	K	L	M	N	O
430	500	1440	1910	1470	1500	4000	1510	280

P	Q	R	S	T¹	U	V²	W	X
340	250³	570	2080	1710	2440	2380	1500	750

Buckets ECR28			
	Width	Weight	Capacity
Standard	250 mm	46 kg	35
	300 mm	49 kg	37 l
	400 mm	57 kg	55 l
	450 mm	63 kg	65 l
	500 mm	68 kg	73 l
Ditch	1200 mm	104 kg	119 l

- \* : Digging depth with the blade down  
 1 : Front turning radius with maximum offset  
 2 : Canopy  
 3 : Option 300 mm (rubber)

### ECR38

Dipper	A	B	C	C*	D	E	F
1250 mm	4430	3190	2740	3060	2540	4810	5040
1500 mm	4560	3330	2990	3310	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

Buckets ECR38			
	Width	Weight	Capacity
Standard	300 mm	60 kg	37 l
	450 mm	71 kg	59 l
	600 mm	86 kg	84 l
	750 mm	105 kg	111 l
Ditch	1300 mm	116 kg	153 l

- \* : Digging depth with the blade down  
 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.

### 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).

### Official approval

Machine conforming to European directive 98/37/EC.  
Noise emissions in the environment conforming to directive 2000/14/EC.  
Object handling device conforming to EN 474-5 standard.  
FOPS 1 conforming to ISO 3449 standard.  
TOPS conforming to ISO 12117 and EN 13531 standards.  
Electromagnetic compatibility (EMC) conforming to European directive 89/336/EC and its amendments.

## 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.  
Safety valve piloted by the power assistance circuit on the boom ram with overload indicator.  
Safety valve on the dipper ram.  
Mechanically or hydraulically-controlled quick-change attachment coupling.  
Single-acting or double-acting hydraulic circuit for quick-coupling.

### 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

Wide rubber tracks :  
ECR28 : 300 mm wide.  
Steel tracks :  
ECR28 : 250 mm wide.  
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.  
Catalytic exhaust.

### Comfort and safety

Radio (cab).  
Anti-theft system (2 programmable codes).  
Electric circuit-breaker.  
Left and right rear side view mirrors.

### Service and maintenance

Tool kit.  
Dual stage air-filter.

### Miscellaneous

Special customised paint (RAL specifications).



Volvo Construction Equipment is different. It's designed, built and supported in a different way. That difference comes from an engineering heritage of over 170 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 – **More care. Built in.**



*All products are not 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**

**Construction Equipment**

**[www.volvoce.com](http://www.volvoce.com)**

Ref No. 21 4 432 1144  
Printed in PDF  
Volvo, Belley

English  
2008.01  
CEX