

VOLVO COMPACT EXCAVATORS

**EC27C**

2.66-2.79 t 27.4 hp



# THE POWER TO ACHIEVE. GUARANTEED

You get the best of Volvo with the EC27C Compact Excavator. The new generation engine, increased bucket power and advanced hydraulic control system are just a few of the winning solutions we've built in to guarantee this model's great performance and lasting value.

## Proven efficiency

The EC27C's diesel engine delivers top performance and fuel efficiency. Direct injection ensures efficient mixing within the cylinder to meet Tier4i / stage 3A standards for lower emissions, less noise on site and reduced fuel consumption. And the large fuel filler makes it quick and easy to fill from a container or pump. All of which adds up to reduced whole life operating costs.

## Twin track speeds

The twin speed travel motors not only maximizes fuel savings. To boost productivity. It automatically shifts from high to low speed according to the load when working on slopes, levelling or backfilling with the blade. So whatever the job in hand, the EC27C will get it done fast and smoothly for you.

## In your hands

Volvo's Advanced hydraulic system matches engine power to hydraulic output, giving the joystick its smooth, intuitive feel when handling any series of movements. Ideal for simultaneous slew and offset, the power-assisted controls put exactly the right balance of power, precision and speed within your grasp, with no compromise on safety.

## A win-win solution

The EC27C is Ideal for ground levelling, backfilling, grading and contouring. On the one hand, its solid tractive force boosts your power to get the job done sooner. On the other, its float blade enables precision finishing with minimal effort. Pushing forward on the blade lever engages the blade cylinder to exert a minimal yet consistent down force to complete the task faster.

## Fast, safe change outs

The hydraulic quick coupler allow to change of accessories without leaving the cab. A wide range of Volvo genuine trenching and ditching buckets ensure the optimum versatility for any task you choose. The enhanced quick coupler delivers the maximum breakout force, like a dedicated quick coupler, enabling buckets to be used in face-mode position.



- Powerful Volvo 3-cylinder engine.



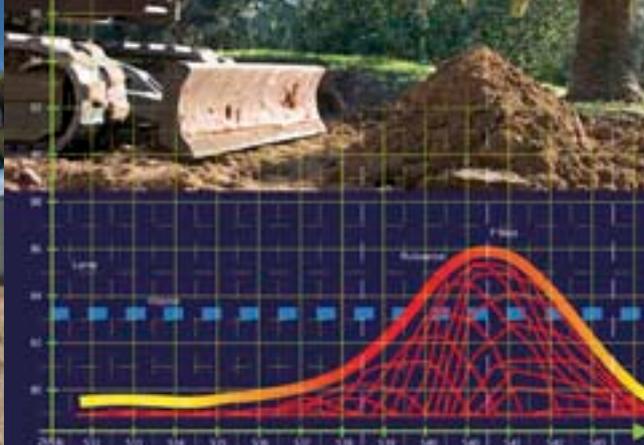
- Volvo pin grabber quick coupler.



- Fast, two-speed operation.



- Power-assisted hydraulics for smooth handling.



- Exceptional breakout and tear-out forces.
- Automatic twin speed.
- Slew and offset are efficiently combined.

B + T + L = 5622 daN



# TACKLE ANY TASK. COMFORTABLY

While you may need a compact excavator for the obvious reasons – reliability, power and performance – there are lots of other reasons to choose an EC27C. To begin with, try the cab. It's among the most spacious in its category and has safety features that put this model in a class of its own.

## Everything under control

A roller on the right joystick gives precise fingertip control of the accessory circuit and boom offset. Electroproportional control enables the amount and direction of flow to be adjusted at a touch. Or for the most demanding applications you can fine-tune the auxiliary hydraulic flow with a twist of the dial on the optional potentiometer.

## Inside the cab

Ready for a full day's work? Check out all the space there is for you and storage inside the Volvo cab. The high-backed seat is sprung and secured by a seat belt that retracts when not in use. A visual alarm on the new, easy to see instrument panel warns if it is not fully engaged.

## Staying alert

Hot, dusty conditions are tough to stay alert in. So the cab's ventilated with cool, filtered air to fight fatigue. Or the heating system can be turned up to warm to beat the chill and keep windows free of ice, frost and mist in cold weather. Optional air conditioning keeps you cool when working in hot, humid or dusty conditions.

## All round visibility

The contoured cab is glazed-in on all four sides, which makes it easier to avoid obstacles and position the machine quickly. Narrow pillars and a new design featuring only one rear pillar improve the view without compromising safety, ensuring all-around visibility on site.

For uninterrupted ventilation and conversation with colleagues on the ground, the windscreen, lower and upper front windows all open wide and slide away easily.

## Safety at work

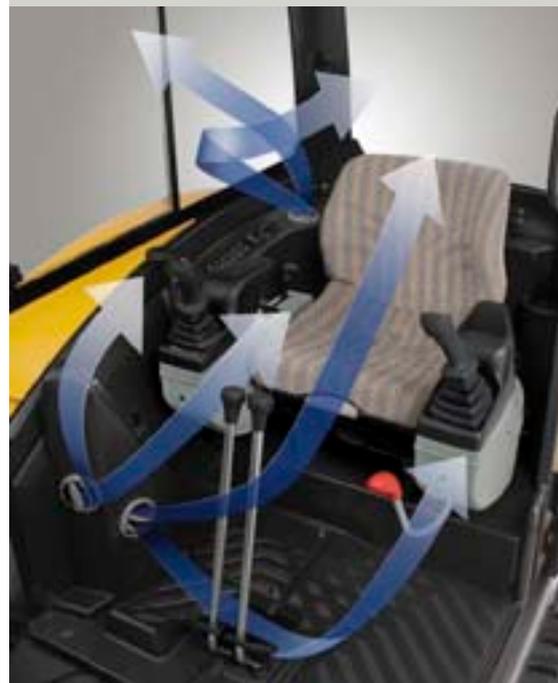
The Volvo EC27C cab and canopy exceed FOPS 1, ROPS and TOPS standards to provide all-round protection against falling objects and the risks of roll-over or tipping. The battery disconnect switch on the outside can cut off the power for safety. And the turntable is held still by an automatic braking system on the slewing motor, even when heavily loaded, while working on slopes or banks

## Built-in reliability

The machine is equipped with ORFS (O-ring face seal) hydraulic fittings. To eliminate short-circuits when the machine is being washed, the EC27C is fitted with waterproof electrical connections throughout and a dust- and damp-proof box under the seat protects all of its fuses.



- Fingertip control, precise performance.



- Built-in air conditioning.



- Keep it together with Bucket Transport.



- Opening windows with fold-up screen.
- Potentiometer to adjust auxiliary flow.
- More room to work in the spacious cab.



# YOU CAN RELY ON VOLVO

We make the world's most durable, most productive construction equipment. So your cab is more comfortable. Your engine does more on less fuel. There's more uptime between maintenance – and servicing is made easier too.

## Staying power

When the going gets tough, Volvo's EC27C simply soaks up the shock and vibration. Even the most punishing day's work is easier to take because the cabin seat and consoles are mounted on the same independent suspension system. This means the operator is fully isolated from vibration.

## Fuel economy

The EC27C engine automatically reverts to idling after 5 seconds, when no controls are operated, which saves fuel and causes less nuisance on site. Then it picks up rpm almost instantly to revert to the pre-selected speed as soon as the operator operates any control. To protect against theft and vandalism, the access panel concealing the fuel filler and toolbox can be locked with the ignition key.

## Reduced wear and tear

Sweeping the spacious cabin interior clean is no problem because there's no offset pedal to clutter the floor, and the mat has no ribs for the dust, dirt or gravel to collect in. Likewise the sloping side members of the undercarriage, prohibits the build-up of earth to save cleaning and maintenance time. All of which makes maintaining the machine, and its market value, a little easier every day.

## Built-in reliability

Components are bolted together by threaded screws and nuts to ensure they stay fixed rather than shaking apart, and for faster, reliable removal when refitting. The sturdy undercarriage is a welded structure; x-shaped like these on larger excavators; to make it more rigid and better distribute the load on the side members. All pivot points (pins, bushings, borings) are designed and manufactured to Volvo's exacting quality standards for reliability with minimal slip or play throughout the machine's lifetime.

## Easier upkeep

To save time and reduce maintenance costs the engine is located on the side for easier access. The large cover lifts wide open to facilitate the checking and cleaning of engine oil levels, fuel circuits, air filters; coolants, radiator water and the throttle cable. Hydraulic maintenance is equally quick and simple. By undoing just three screws the back cover can be removed for direct access to control valve; hydraulic oil filter; solenoid valves; servo circuit's pressure accumulator (sphere) and pressure test ports.



- Volvo dealers are on call worldwide.



- Easy access to side-mounted engine.



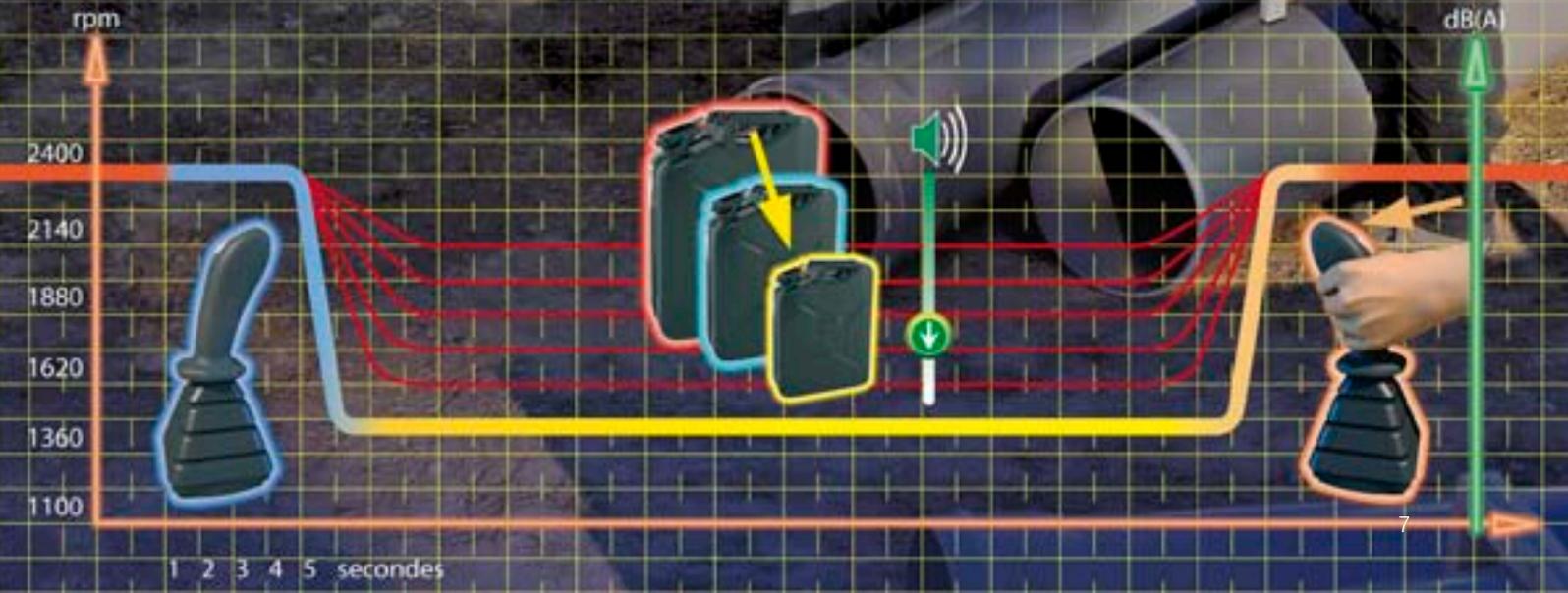
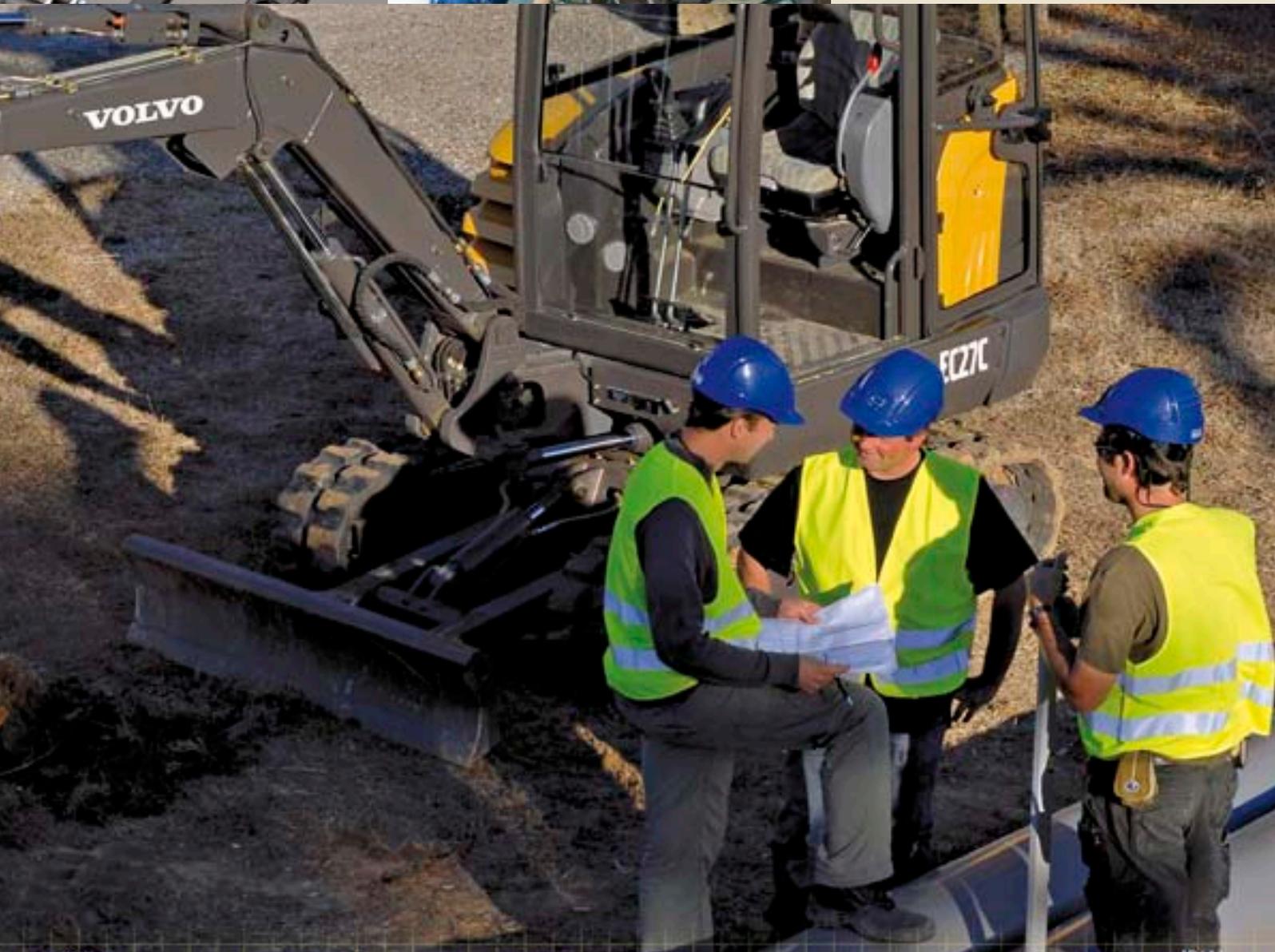
- All hydraulic components in easy reach.



- Active locking.



- Resilient X-shaped undercarriage.
- Volvo quality for lasting value.
- Fuel efficiency cuts running costs.



# SPECIFICATIONS

## Engine

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

<b>Model</b>	D1.6DCAE4
<b>Gross power, rated (ISO 9249)</b>	20.4 kW +/- 3% @ 2200 rpm
<b>Power, installed (ISO 9249)</b>	19.7 kW +/- 3% @ 2200 rpm
<b>Displacement, total</b>	1640 cc
<b>Maximum torque</b>	103.2 Nm +/- 5% @ 1320 +/- 100 rpm
<b>Bore x stroke</b>	88 mm x 90 mm
<b>Gas emission (g/kwh)</b>	CO: 5.5 / Nox + HC: 7.5 / P.M.: 0.3

## Electrical system

<b>Rated voltage</b>	12 V
<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>	62 l/m
<b>Maximum operating pressure</b>	25 MPa (250 bars)

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

<b>Maximum adjustable flow</b>	45 l/min
<b>Maximum operating pressure</b>	25 MPa (250 bars)

Second hydraulic circuit for attachments (optional) :

<b>Maximum adjustable flow</b>	23 l/min
<b>Maximum operating pressure</b>	25 MPa (250 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
<b>On offset ram</b>	on both sides

## Bucket performance

<b>Breakout force</b>	2459 daN
<b>Tearout force short arm</b>	1805 daN
<b>Tearout force long arm</b>	1664 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>	9.5 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 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 335 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>	2.6 km/h - 4.9 km/h
<b>Max. tractive force</b>	2550 daN

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

## Service fill capacities

<b>Fuel tank</b>	59 l
<b>Hydraulic system, total</b>	47 l
<b>Hydraulic tank</b>	20 l
<b>Engine oil</b>	6.7 l
<b>Cooling system</b>	5 l

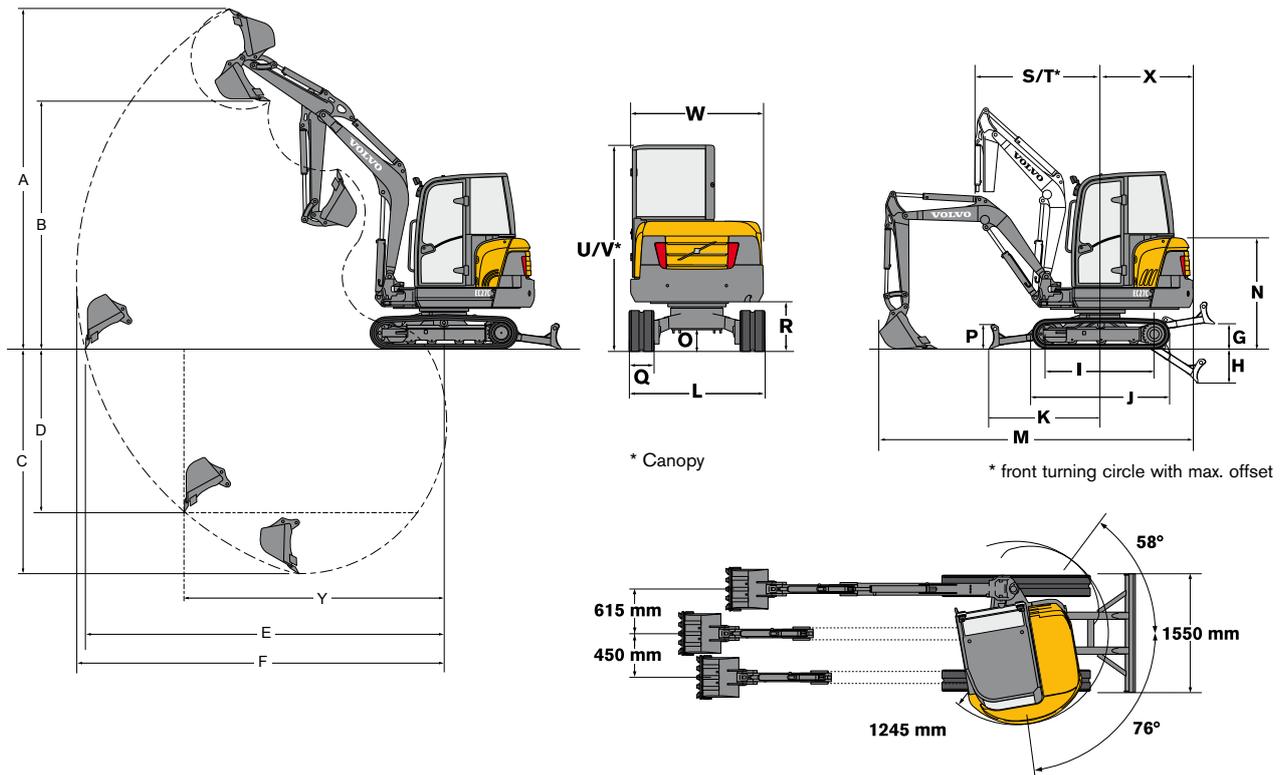
## Weight and ground pressure

Operating weight according to ISO 6016 (according to most usual configuration and including 75kg operator)

<b>Operating weight</b>	(kg)	2790
<b>Ground pressure cab</b>	kg/cm <sup>2</sup> kpa	0.29 (28.5)
<b>Ground pressure canopy</b>	kg/cm <sup>2</sup> kpa	0.28 (27.5)
<b>Transport weight</b> (Heated cab, 300mm rubber tracks, short arm, 500mm direct-fit bucket, full fuel tank)	(kg)	2715
<b>With canopy</b>	(kg)	-130
<b>With long arm</b>	(kg)	+14

## Sound Level

<b>Interior sound level according to ISO 6396 (LpA)</b>	dB(A)	78
<b>External sound level according to ISO 6395 and EU Noise Directive (2000/14/EC) and 474-1:2006 +A1:2009 (LwA)</b>	dB(A)	94



\* Canopy

\* front turning circle with max. offset

Dipper	A	B	C*	C	D	E	F	Y
1200 mm	4362	3165	2798	2510	2072	4422	4553	2945
1500 mm	4550	3343	3096	2810	2366	4717	4838	3011

\* Maximum dig depth

G	H	I	J	K	L	M	N	O
430	498	1440	1890	1509	1550	4406	1549	296

P	Q	R	S	T*	U	V*	W	X
335	300	563	1805	1422	2457	2425	1482	1245

mm

### Lifting capacity

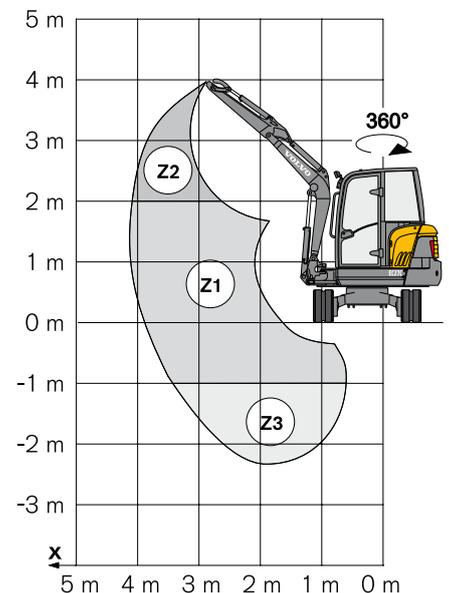
These capacities are given for a machine without a bucket or quick-release coupling and fitted with rubber tracks for a 360° total rotation lifted load.

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	(kg)	1,00 m	1,50 m	2,00 m	2,50 m	3,00 m	3,50 m	4,00 m	Max
 1200 mm	Z2	-	-	1049	732	585	470	-	408
	Z1	1387*	1111*	956	690	528	450	-	397
	Z3	2003*	1599	956	707	528	-	-	-
 1500 mm	Z2	-	-	934*	790	504*	479	392	370
	Z1	1151*	1099*	934*	504*	479	392	376	360
	Z3	1610*	1580	978	704	548	447	-	-

\* hydraulic limit



## STANDARD EQUIPMENT

### Engine

Side mounted low-emission  
EPA Tier 4i / EU Stage IIIA Volvo diesel engine.  
Automatic return to idling system.  
Dry-type air filter.  
Electric fuel supply pump.  
Fuel filter + transparent sediment chamber.  
Purge plug under the diesel oil tank.  
Telene engine hood.

### Electrical system

Water-resistant electrical connectors (IP67).  
Two working lights on cab version.  
Working light on the canopy frame.  
Easy access inside of the cab to fuse box.  
12V power socket.

### Hydraulic system

Load-sensing system.  
ISO power-assisted hydraulic controls.  
Control of forward and backward movement by two levers coupled to pedals.  
Double-acting hydraulic circuit for accessories.  
Progressive finger-tip control of the accessory circuit & offset.  
Cushion on boom cylinder.  
Cushion on arm cylinder.

### Seat

High resistant fabric or vinyl seat.

### 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.  
Right hand side sliding window.  
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).  
2 foot rests incorporated to the floor mat.  
Easy to clean floor mat.  
Low noise cab.

### 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

2000 mm long monobloc boom.  
1200 mm dipper.  
Float blade.

### Safety

Cab and canopy versions are:  
Level 1 FOPS (Falling Objects Protective Structure).  
TOPS (Tip-Over Protective Structure).  
ROPS I (Roll-Over Protective Structure).  
All-around visibility.  
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.  
Seat belt with visible indicator.  
Vibration level limitation.  
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.  
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.

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## OPTIONAL EQUIPMENT

### Handling and earthwork equipment

Long dipper (1500 mm).  
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 & dipper rams with overload indicator.  
Single-acting or double-acting hydraulic circuit for quick coupler.  
Breaker & clamshell option.  
Hammer line extension to arm end.

### Hydraulic circuits for attachments

Hydraulic circuit for operating a clam-shell bucket (opening/closing and rotation).  
Proportional 2nd accessory circuit (X3) to arm end with max flow adjustment.  
1st accessory circuit (X1) with maximum flow adjustment.  
Drain kit-Direct return to hydraulic tank.  
2 or 4 Flat Face hydraulic quick couplings.

### Lighting

Additional working light protected under the boom.  
Additional rear working light & rotating beacon.

### Environmental protection

Bio-degradable hydraulic oil: VG46.  
Bio-degradable oil for cold conditions: VG32.  
Hydraulic oil for hot conditions: VG68.

### Comfort

Canopy.  
"Deluxe" fabric or vinyl-covered superior comfort multi-adjustable sprung seat with a high back and fully-suspended consoles.  
Retracting seat belt with visual indicator (2").  
Radio CD/MP3 (cab version).  
Pattern selector inside the cab.

### Safety

Left side view mirror.  
Anti-theft system.  
Safety valve certification.

### Service and maintenance

Tool kit.  
Dual stage air-filter.

### Miscellaneous

Special customised paint (RAL specifications).

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## ATTACHEMENT OFFER

Hydraulic Breaker and dedicated tools

Mechanical Volvo pin grabber quick coupler  
Mechanical Lehnhoff quick coupler

Complete range of Volvo genuine trenching and ditching buckets (pin-on, LQC)



# 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**  
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