

# VOLVO COMPACT EXCAVATORS

# EC35, EC45 PRO



- **Gross Power:**  
ISO 9249 : 27.1 kW

- **Net Power:**  
ISO 9249 : 26 kW

- **Operating Weight:**  
EC35: 3442 - 3582 kg  
EC45 Pro: 4413 - 4687 kg

- **Bucket Capacities:**  
EC35: 46 - 175 l.  
EC45 Pro: 70 - 187 l

- **Maximum Digging Depth:**  
EC35: 3420 - 3710 mm  
EC45 Pro: 3620 - 3910 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.

- **EC45 Pro Only:** 5 tons bucket interface for more productivity and attachments compatibility with EC55B.

# VOLVO

# SPECIFICATIONS

## Engine

Water-cooled Volvo 4-cylinder diesel engine.

<b>Model</b>	<b>D2.2</b>
<b>Gross power, rated (ISO 9249)</b>	27.1 kW (36.3 hp) at 2200 r/min
<b>Power, installed (ISO 9249)</b>	26 kW (34.9 hp) at 2200 r/min
<b>Maximum torque (ISO 9249)</b>	1140 Nm @ 1100 rpm ± 100rpm
<b>Bore x stroke</b>	88 mm x 90 mm

## Electrical system

<b>Rated voltage</b>	12 V
<b>Battery capacity</b>	12 V - 74 Ah
<b>Alternator rating</b>	12 V - 55 A
<b>Starter motor output</b>	12 V - 2.3 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>	105 l/min
<b>Maximum operating pressure</b>	<b>EC35:</b> 23 MPa (230 bars) <b>EC45 Pro:</b> 26 MPa (260 bars)

Double-acting hydraulic circuit for accessories:

<b>Maximum flow</b>	60 l/min
<b>Maximum operating pressure</b>	<b>EC35:</b> 23 MPa (230 bars) <b>EC45 Pro:</b> 26 MPa (260 bars)

End-of-stroke cushions

<b>On the 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

## 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.

<b>Slewing speed</b>	10 r/min
<b>Turntable braking</b>	Automatic multi-disc brake
<b>Absorption of hydraulic shocks</b>	Shockless valve

## Bucket performance

<b>Breakout force</b>	<b>EC35:</b> 2920 daN <b>EC45 Pro:</b> 3360 daN
<b>Tearout force</b>	<b>EC35:</b> 2190 daN <b>EC45 Pro:</b> 2420 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.

<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

## 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.

<b>Max. speed (low/high speed)</b>	<b>EC35:</b> 2.8 km/h / 4.3 km/h <b>EC45 Pro:</b> 3 km/h / 4.4 km/h
<b>Max. tractive force</b>	<b>EC35:</b> 3630 daN <b>EC45 Pro:</b> 4080 daN

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

## Service fill capacities

<b>Fuel tank</b>	66 l
<b>Hydraulic system, total</b>	62 l
<b>Hydraulic tank</b>	37 l
<b>Engine oil</b>	8.6 l
<b>Cooling system</b>	6 l

## Weight

<b>EC35</b>		
<b>Operational weight</b>	<b>Rubber Tracks</b>	<b>Steel Tracks</b>
<b>Cab version</b>	3540 kg	3582 kg
<b>Canopy version</b>	3422 kg	3464 kg

<b>Ground pressure</b>	<b>Rubber Tracks</b>	<b>Steel Tracks</b>
<b>Cab version</b>	0,33 kg/cm <sup>2</sup>	0,34 kg/cm <sup>2</sup>
<b>Canopy version</b>	0,31 kg/cm <sup>2</sup>	0,32 kg/cm <sup>2</sup>

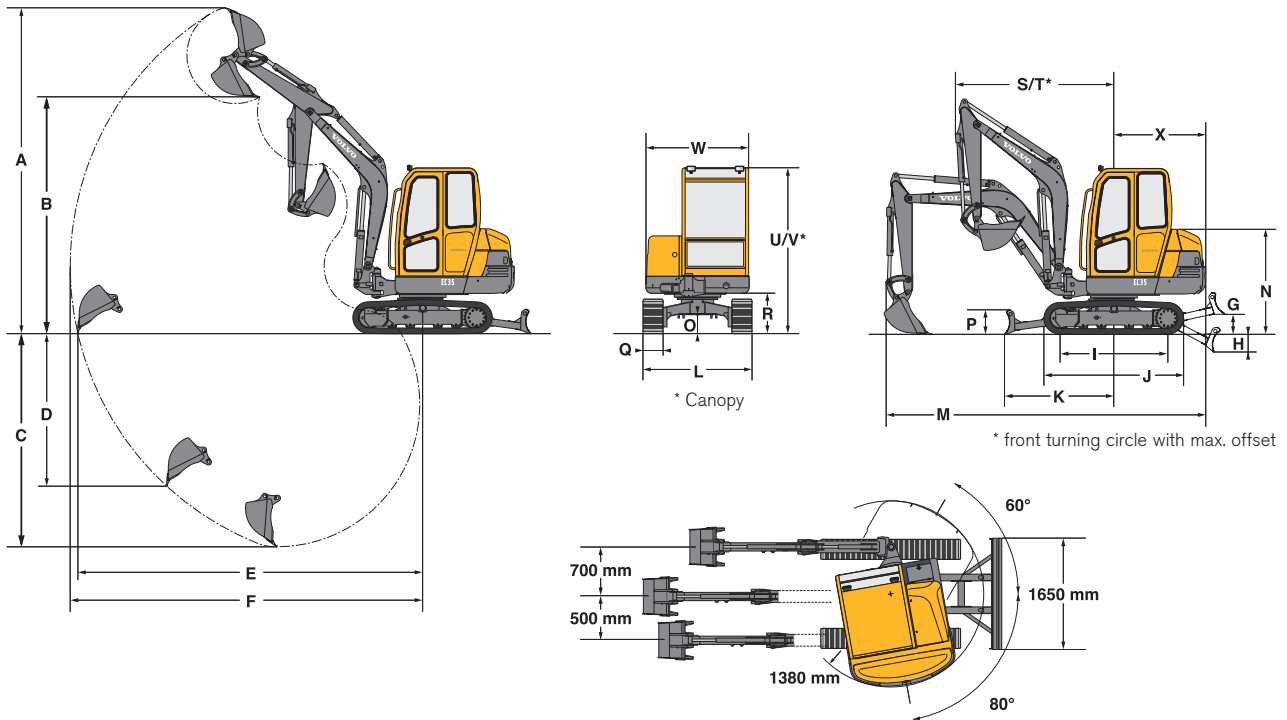
<b>EC45 Pro</b>		
<b>Operational weight</b>	<b>Rubber Tracks</b>	<b>Steel Tracks</b>
<b>Cab version</b>	4550 kg	4687 kg
<b>Canopy version</b>	4413 kg	4550 kg

<b>Ground pressure</b>	<b>Rubber Tracks</b>	<b>Steel Tracks</b>
<b>Cab version</b>	0,25 kg/cm <sup>2</sup>	0,26 kg/cm <sup>2</sup>
<b>Canopy version</b>	0,24 kg/cm <sup>2</sup>	0,25 kg/cm <sup>2</sup>

## Noise levels

The EC35 and EC45 Pro conform to the 2006 European Machine Directive Noise Level (2000/14/CE) of 96 dB(A) for this class of machine.

# SPECIFICATIONS EC35



Buckets			
	Width	Weight	Capacity
Backhoe	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	1300 mm	125 kg	175 l

Dipper	A	B	C*	C	D	E	F
1400 mm	4840	3530	3420	3170	2200	5130	5240
1700 mm	5020	3720	3710	3470	2500	5420	5530

\* Dig depth with the blade down.

G	H	I	J	K	L	M	N	O
380	510	1600	2070	1620	1620	4750	1560	290

P	Q	R	S	T	U	V	W	X
370	300	600	2040	1570	2460	2350	1570	1360

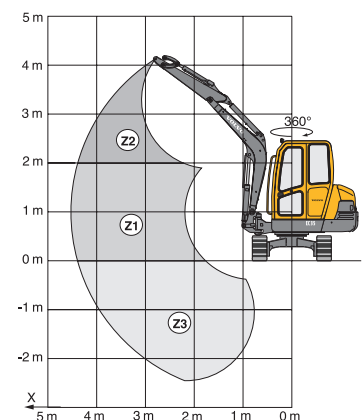
These capacities are given for a machine without a bucket or quick-release coupling and fitted with rubber tracks for a 360° total rotation lifted load.

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

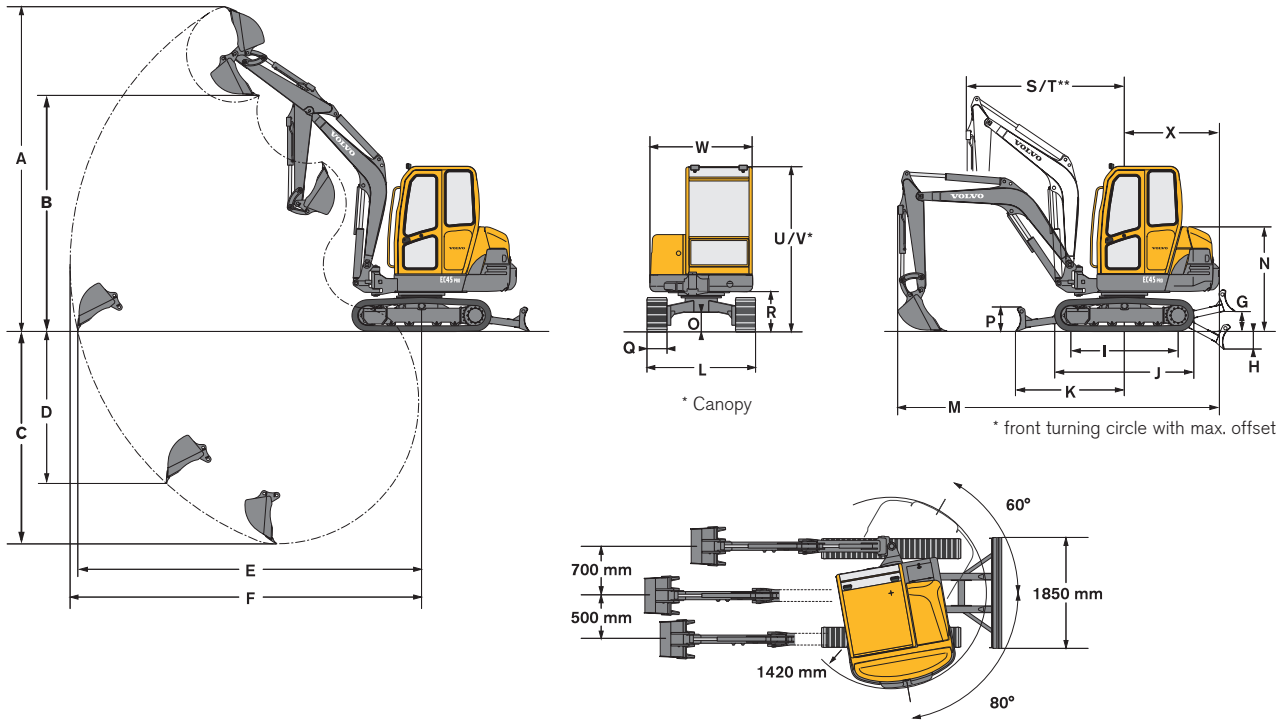
Caution : In accordance with standard EN 474-5, the machine must be equipped with a safety valve on the boom ram and an overload indicator (available as options) to carry out handling operations.

Outreach		1,50 m	2,00 m	2,50 m	3,00 m	3,50 m	4,00 m	4,50 m	4,80 m
	1400 mm	Z2		955	720	570	465		
		Z1	1555*	1190	845	655	530	445	380
		Z3	2040*	1215	855	660	535		
	1700 mm	Z2			730	575	465	385	
		Z1	1395*	1175	835	645	520	435	370
		Z3	1945*	1190	840	645	520	435	

\* hydraulic limit



# SPECIFICATIONS EC45 PRO



Buckets			
	Width	Weight	Capacity
Backhoe	300 mm	85 kg	70 l
	450 mm	97 kg	98 l
	600 mm	118 kg	142 l
	750 mm	138 kg	187 l
Ditch	1300 mm	125 kg	175 l

Dipper	A	B	C*	C	D	E	F
1400 mm	4930	3520	3620	3450	1990	5380	5500
1700 mm	5080	3670	3910	3750	2270	5670	5780

\* Dig depth with the blade down.

G	H	I	J	K	L	M	N	O
410	480	1770	2280	1620	1800	5020	1610	320

P	Q	R	S	T	U	V	W	X
370	400	650	2380	1910	2540	3860	1570	1410

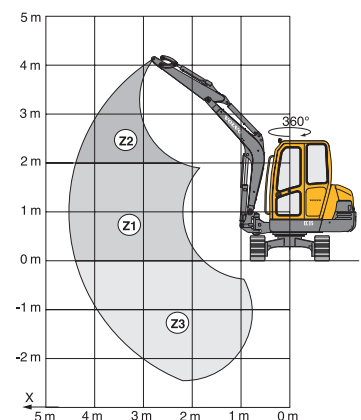
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The handling capacity is 75% of the tipping load or 87% of the hydraulic limit.

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	4,5 m	
	1400 mm	Z2		1165*	805*	735*	700	595	
		Z1	1690*	1825	1290	1000	815	680	585
		Z3	2515	1840	1305	1005	815	690	
	1700 mm	Z2			1320*	830*	625*	675*	590
		Z1	1530*	1650*	1275	985	800	670	575
		Z3	2150*	1805	1280	985	800	670	

\* hydraulic limit



## STANDARD EQUIPMENT

### Engine

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

### Electrical system

12 V - 74 Ah battery.  
Horn.  
12 V power socket for inspection lamp.

### Undercarriage

300 mm wide rubber tracks.  
Dozer blade.  
Towing and anchoring rings.  
Remote lubrication of the slewing crown ring.

### 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.  
EC35: 2450 mm long monobloc boom.  
EC45 Pro: 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.  
EC45 Pro: 5 tons bucket interface compatible with EC55B.

### 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.  
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

300 mm wide steel tracks.

### 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.

## 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.**



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