

## VOLVO COMPACT EXCAVATOR

# EC45



- **Gross Power:**  
ISO 9249 : 31 kW / 42 hp
- **Net Power:**  
ISO 9249 : 27.2 kW / 37 hp
- **Operating Weight:**  
4098 - 4387 kg / 9036 - 9673 lbs
- **Bucket Capacities:**  
43 - 164 l. / 0.056 - 0.214 yd<sup>3</sup>
- **Maximum Digging Depth:**  
3510 - 3800 mm / 11'6" - 12'6"
- **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 or 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.
- **Control pattern selector (ISO/SAE)** for a quick change of operating modes.
- **Excellent serviceability** thanks to easy access to the engine and hydraulic compartments.
- **X-shaped lengthened undercarriage** for better rigidity and stability.

# VOLVO



## ENGINE

Water-cooled Mitsubishi 4-cylinder diesel engine in conformity with US EPA regulation.

Model .....K4N  
Gross power, rated (ISO 9249) ....31 kW (42 hp) @ 2600 r/min (43.3 rps)  
Power, installed (ISO 9249) .....27.2 kW (37 hp) @ 2000 r/min (33.3 rps)  
Displacement, total .....2290 cc (139.7 in<sup>3</sup>)  
Maximum torque (ISO 9249) ..137 Nm @1400 r/min (101 lbf/ft @ 23.3 rps)  
Bore x stroke .....90 mm x 90 mm (3.54 in x3.54 in)



## ELECTRICAL SYSTEM

Rated voltage .....12 V  
Battery capacity.....12 V - 70 Ah  
Alternator rating.....12 V - 50 A  
Starter motor output .....12 V - 2.7 hp



## HYDRAULIC SYSTEM

Closed center 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 (26.2 US gpm)  
Maximum operating pressure .....26 MPa (3770 PSI)

Gear pump for the power assistance circuit:

Maximum flow .....17.6 l/min (4.65 US gpm)  
Maximum operating pressure .....3.2 MPa (464 PSI)

Double-acting hydraulic circuit for accessories:

Maximum flow .....60 l/min (15.9 US gpm)  
Maximum operating pressure .....26 MPa (3770 PSI)

End-of-stroke dampening:

On boom cylinder .....piston rod  
On dipper cylinder .....piston rod  
On offset cylinder.....on both sides

Offset cylinder lock:

The equipment's offset cylinder is equipped with a balancing valve that 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 rpm  
Turntable braking.....automatic multi-disc brake  
Absorption of hydraulic shocks .....Hydrosensor shockless valve



## BUCKET PERFORMANCE

Breakout force .....3240 daN (7283 lbf)  
Tearout force .....2480 daN (5575 lbf)



## UNDERCARRIAGE

The undercarriage is made up of an "X" box fabricated center part, for more rigidity, 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 (1'4")  
Track tension .....by grease  
Blade (width x height) .....1850 x 370 mm (6'1" x 1'3")

The blade cylinder is equipped with a safety pressure valve for safe lifting.



## 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 speed/ high speed) ....2.9 km/h/4.3 km/h (1.8 mph/2.7 mph)  
Max. tractive force .....4080 daN (9172 lbf)

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



## SERVICE FILL CAPACITIES

Fuel tank .....66 l (17.4 US gal)  
Hydraulic system, total.....62 l (16.4 US gal)  
Hydraulic tank.....37 l (9.8 US gal)  
Engine oil .....7.7 l (2 US gal)  
Cooling system .....8 l (2.1 US gal)

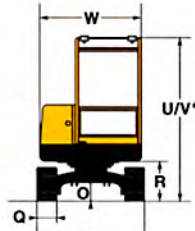
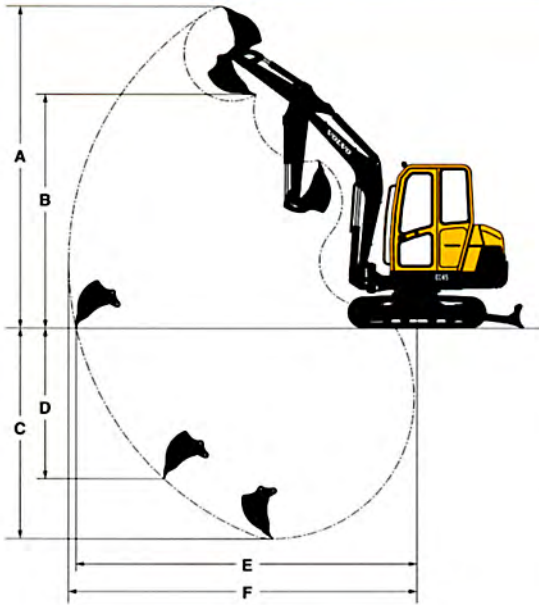


## WEIGHT

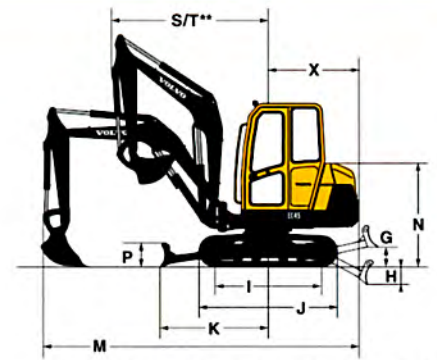
Operating mass	Rubber Tracks	Steel Tracks
Canopy version	4098 kg (9,036 lbs)	4235 kg (9,338 lbs)
Cab version	4250 kg (9,371 lbs)	4387 kg (9,673 lbs)

Ground pressure	Rubber Tracks	Steel Tracks
Canopy version	0.24 kg/cm <sup>2</sup> (3.6 lbs/in <sup>2</sup> )	0.25 kg/cm <sup>2</sup> (3.5 lbs/in <sup>2</sup> )
Cab version	0.25 kg/cm <sup>2</sup> (3.6 lbs/in <sup>2</sup> )	0.26 kg/cm <sup>2</sup> (3.7 lbs/in <sup>2</sup> )

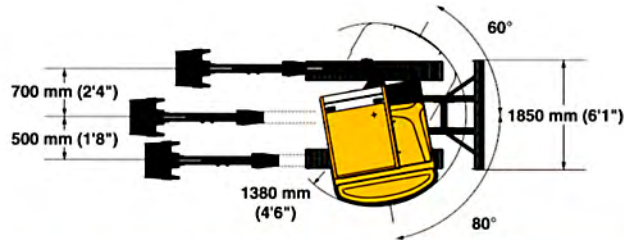
## DIMENSIONS



\* Canopy version



\*\* Front turning circle with max. offset



Buckets	Width	Weight	Capacity
Backhoe buckets	300 mm (12 in)	55 kg (121 lbs)	43 l (0.056 yd <sup>3</sup> )
	450 mm (18 in)	66 kg (145 lbs)	80 l (0.104 yd <sup>3</sup> )
	600 mm (24 in)	83 kg (183 lbs)	132 l (0.172 yd <sup>3</sup> )
	750 mm (30 in)	104 kg (229 lbs)	157 l (0.205 yd <sup>3</sup> )
Ditch bucket	1300 mm (51 in)	125 kg (275 lbs)	164 l (0.214 yd <sup>3</sup> )

Dipper	A	B	C*	C	D	E	F
1400 mm (4'7")	4930 mm (16'2")	3640 mm (11'11")	3510 mm (11'6")	3320 mm (10'11")	2310 mm (7'7")	5280 mm (17'4")	5400 mm (17'9")
1700 mm (5'7")	5110 mm (16'9")	3810 mm (12'6")	3800 mm (12'6")	3620 mm (11'11")	2550 mm (8'4")	5570 mm (18'3")	5690 mm (18'8")

\* Dig depth with blade down.

G	H	I	J	K	L	M	N	O
410 mm (1'4")	480 mm (1'7")	1770 mm (5'10")	2280 mm (7'6")	1620 mm (5'4")	1800 mm (5'11")	4930 mm (16'2")	1610 mm (5'3")	320 mm (1'1")

P	Q	R	S	T	U	V	W	X
370 mm (1'3")	400 mm (1'4")	650 mm (2'2")	2220 mm (7'3")	1740 mm (5'9")	2510 mm (8'3")	2400 mm (7'10")	1570 mm (5'2")	1360 mm (4'6")

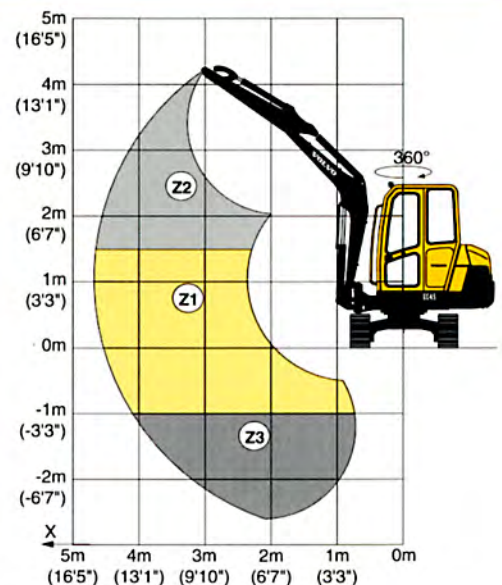
## TOTAL ROTATION LOAD CAPACITIES

These capacities are given for a machine without a bucket or quick-release coupling and fitted with 1400 mm (4'7") dipper arm, rubber tracks and cab. The handling capacity is 75% of the tipping load or 87% of the hydraulic limit.

Outreach	1.50 m (4'11")	2.00 m (6'7")	2.50 m (8'2")	3.00 m (9'10")	3.50 m (11'6")	4.50 m (14'9")	
1	Z2			1195 kg* (2,420 lbs)*	825 kg* (1,671 lbs)*	745 kg* (1,509 lbs)*	905 kg* (1,833 lbs)*
	Z1	1625 kg* (3,291 lbs)*	1495 kg* (3,027 lbs)*	1630 kg* (3,301 lbs)*	1260 kg* (2,552 lbs)*	1085 kg* (2,197 lbs)*	945 kg* (1,914 lbs)*
	Z3	2,415 kg* (4,890 lbs)*	1885 kg* (3,817 lbs)*	1955 kg* (3,959 lbs)*	1510 kg* (3,058 lbs)*	1400 kg* (2,835 lbs)*	
2	Z2			1195 kg* (2,420 lbs)*	825 kg* (1,671 lbs)*	745 kg* (1,509 lbs)*	550 kg (1,114 lbs)
	Z1	1625 kg* (3,291 lbs)*	1495 kg* (3,027 lbs)*	1205 kg (2,440 lbs)	930 kg (1,883 lbs)	755 kg (1,529 lbs)	540 kg (1,094 lbs)
	Z3	2415 kg* (4,890 lbs)*	1735 kg (3,513 lbs)	1220 kg (2,471 lbs)	935 kg (1,893 lbs)	760 kg (1,539 lbs)	

1 - Lifting capacity in front longitudinal position and resting on the blade.  
2 - Lifting capacity in total rotation over 360° with the blade raised.

\* hydraulic limit



## STANDARD EQUIPMENT

<p><b>Engine</b></p> <p>Dry-type air filter. Electric pre-heating device. Fuel water trap with sediment bowl. Purge plug under the diesel oil tank. Oil Pan guard. Continuous adjustment of engine speed.</p> <p><b>Electrical system</b></p> <p>12 V - 70 Ah battery. Horn. 12 V power socket for inspection lamp. Battery isolator switch.</p> <p><b>Undercarriage</b></p> <p>400 mm (1'4") wide rubber tracks. Dozer blade. Towing and anchoring points. Remote lubrication of the slewing crown ring. Safety valve on the blade cylinder.</p> <p><b>Hydraulic system</b></p> <p>Control pattern selector valve (ISO/SAE). Circuit for hydraulic breaker with folding control pedal and direct return of oil to the hydraulic tank. Piping as far as dipper arm. 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.</p>	<p><b>Cab and canopy</b></p> <p>Level 1 FOPS (Falling Objects Protective Structure). TOPS (Tip-Over Protective Structure). ROPS (Roll-Over Protective Structure). Multi-adjustable consoles with suspended seat assembly. Superior comfort seat. Non-slip floor with two foot rests. Grab handles for access to the driver's cab. Seat belt. One working light. <u>For cab versions only:</u> Cab mounted on rubber mountings. Two working lights. Two-speed heating and ventilation. 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, antenna and electric wiring already fitted). Interior lighting. Anti-corrosion protection of the cab. Windscreen wiper and washer (front). Emergency exit via the front window.</p>	<p><b>Instrumentation and monitoring</b></p> <p>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). Automatic switching off of engine in the event of overheating or drop in oil pressure.</p> <p><b>Handling and earthwork equipment</b></p> <p>2600 mm (8'6") long monoblock boom. 1400 mm (4'7") dipper. 140° hydraulic boom offset. Non-return valve on the offset cylinder. Damper on the boom, dipper and offset cylinders. Handling equipment: hook on the bucket with load chart displayed in the driver's cab. Remote lubrication of the bottom of the offset cylinder.</p>	<p><b>Safety</b></p> <p>System for locking the working equipment controls and the travel levers when the left console is raised to gain access to the operator's cab. Engine safety start: 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.</p> <p><b>Official approval</b></p> <p>FOPS 1 conforming to ISO standard 3449 and SAE J1043. TOPS conforming to ISO standard 12117. ROPS conforming to SAE J1040 and ISO 3471. Engine in conformity with US EPA regulation.</p>
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## OPTIONAL EQUIPMENT

<p><b>Working equipment</b></p> <p>Mechanically-controlled quick-release attachment bracket. Hydraulically-controlled quick-release attachment bracket.</p> <p><b>Hydraulic circuits for attachments</b></p> <p>Long dipper (1700 mm - 5'7"). Hydraulic circuit for double-acting attachments (Auger...). Hydraulic circuit for operating a clam-shell bucket (opening/closing and rotation of the bucket).</p>	<p><b>Undercarriage</b></p> <p>Steel tracks (400 mm - 1'4" wide).</p> <p><b>Lighting</b></p> <p>Additional working light on the boom. Additional rear working light. Turning beacon.</p>	<p><b>Environmental protection</b></p> <p>Bio-degradable hydraulic oil. Catalytic exhaust.</p> <p><b>Comfort and safety</b></p> <p>Radio. Anti-theft system (2 programmable codes).</p>	<p><b>Service and maintenance</b></p> <p>Tool kit.</p> <p><b>Miscellaneous</b></p> <p>Special customized paint (RAL specifications).</p>
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*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

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