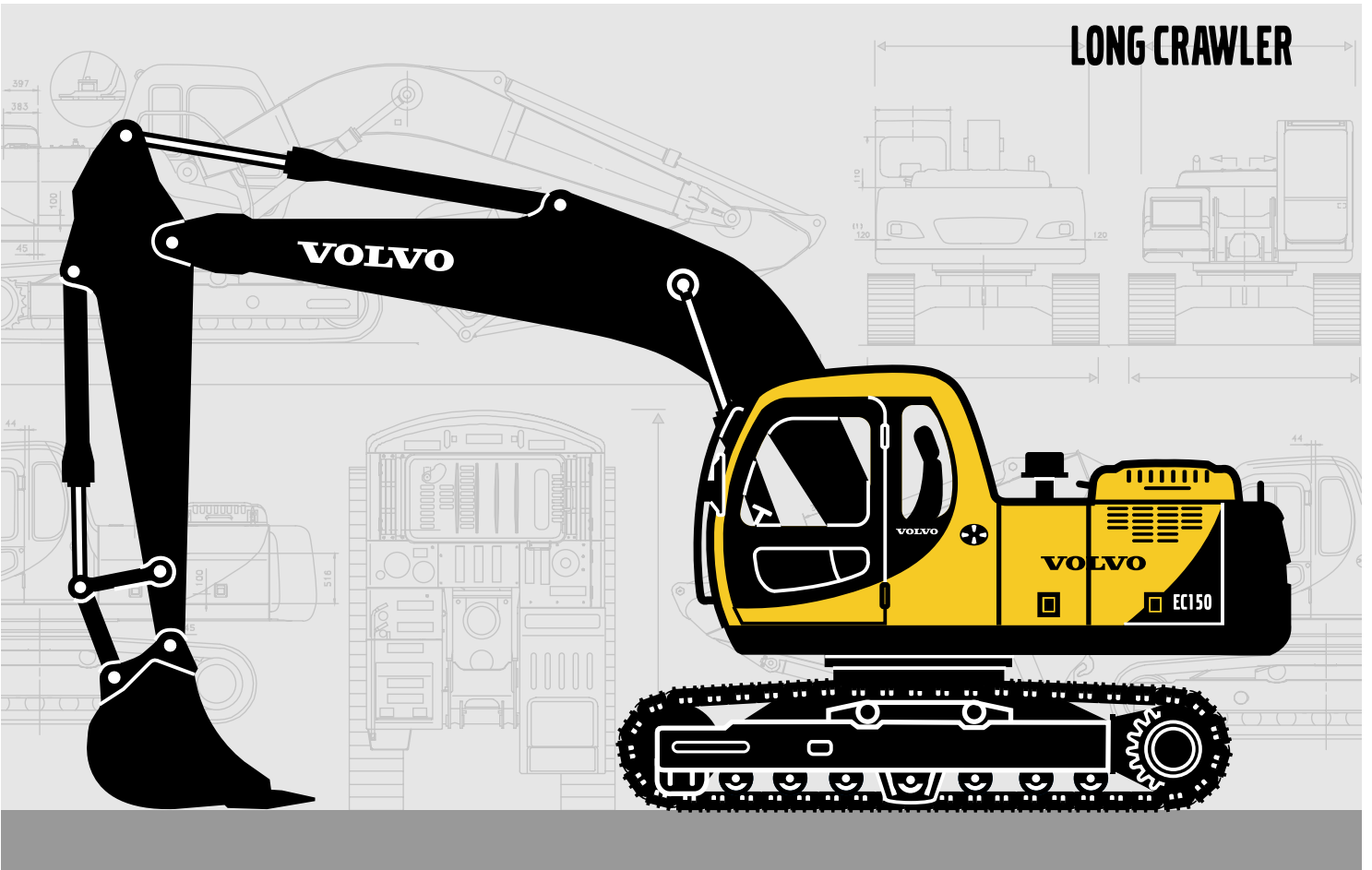


VOLVO EXCAVATOR

EC150

LONG CRAWLER



- Engine power, gross: 79.4 kW (107 hp)
- Operating weights: 15.9 ~ 16.8 t
- Buckets (SAE): 530 ~ 820 l
- Low-emission, turbocharged Cummins diesel engine with direct injection
- Integrated mode selection system and electronically controlled system (ACS)
- 2 variable displacement axial piston pumps. Independent and simultaneous movements of the digging equipment are controlled by the "Automatic sensing work mode."
- Cab
 - Ergonomic environment
 - Low sound level
 - Filtered air
 - Hydraulic dampening mounts
- Strong digging equipment, produced by robotic welding
- High lifting, breakout and tearout forces for tough digging conditions
- Long undercarriage for good stability
- Prepared for a number of optional items

VOLVO



ENGINE

The engine is a low-emission, turbocharged, 4-stroke diesel engine with water cooling, direct injection and aftercooler, especially developed for excavator use.

The machine can work at any job site, contributing to good fuel economy, low sound level, less wear and a longer life.

Air filter: 3-stage, includes pre-cleaner

Automatic idling system: Reduces the engine speed to an idling speed when levers and pedals are not activated.

Maker	CUMMINS
Model	B3.9-C
Power output at	35 r/s (2100 rpm)
Net (ISO 9249/DIN 6271)	75 kW (102 ps / 101 hp)
Gross (SAE J1349).....	79.4 kW (108 ps / 107 hp)
Max. torque	431 N·m (44 kg·m)
	at 1600 rpm
No. of cylinders	4
Displacement	3.9 l
Bore	102 mm
Stroke	120 mm



ELECTRICAL SYSTEM

Well-protected electrical system with high capacity. Double lock harness plugs are waterproof to ensure secure connections and prevent corrosion.

The relays and solenoid valves are shielded to prevent accidental damage or terminal contact.

The master switch, for disconnecting the battery, is standard.

ACS system, providing integrated mode selection functions and self-diagnostic mode, is standard.

Voltage	24 V
Batteries	2 X 12 V
Battery capacity	150 Ah
Alternator	24 V / 50 A



SWING SYSTEM

The superstructure is swung by the means of an axial piston motor and a planetary reduction unit. Automatic swing holding brake and anti-rebound valve are standard.

Max. swing speed	11.9 rpm
------------------------	----------



SERVICE REFILL CAPACITIES

Fuel tank	260 l
Hydraulic system, total	275 l
Hydraulic tank	150 l
Engine oil	17.5 l
Engine coolant	24.5 l
Swing reduction unit	3.8 l
Travel reduction units	2 X 5.8 l



UNDERCARRIAGE

The undercarriage has an X-shaped frame.

The greased and sealed track chain is standard.

No. of track pads	2 X 44
Link pitch	190 mm
Shoe width, triple grouser	600/700/800 mm
No. of lower track rollers	2 X 7
No. of upper rollers	2 X 2



DRIVE

Each track is powered by an automatic two-speed travel motor.

The track brakes are multi-disc, spring-applied and hydraulic-released.

The travel motors, brake and planetary gears are well-protected in the track frame.

Max. tractive effort	140 kN
	(14.3 ton)
Max. travel speed (1st/2nd)	3.1/5.3 km/h
Gradeability	35° (70 %)



HYDRAULIC SYSTEM

The hydraulic system, named "Automatic Sensing Work Mode," is designed for high productivity, high digging capacity, high maneuvering precision and good fuel economy.

The summation system, boom priority, arm priority, swing priority, and regeneration system of the boom and arm flows are provided for the best operation.

The following important functions are included in the system;

Summation system: providing full use of the pump oil flow.

Boom priority: gives priority to the boom operation for fast raising when loading or deep excavating.

Arm priority: gives priority to the arm operation for faster cycle times in leveling and for increased bucket filling when digging.

Swing priority: supplies priority to the swing operation for faster swing during simultaneous operations.

Regeneration system: enhances the cylinder life cycle to prevent cavitation and provides priority to other movements during simultaneous operations.

Power boost: All digging and lifting forces are increased.

Holding valves: Boom and arm holding valves are standard.

Power Max: All function speeds are increased.

Pumps

Main pump:

Type 2 X variable displacement axial piston pumps
Maximum flow 2 X 145 l/min

Pilot pump:

Type Gear pump
Maximum flow 21 l/min

Hydraulic motors

Travel 2 X variable displacement axial piston motors
Swing Fixed displacement piston motor with mechanical brake

Relief valve setting

Attachment 31.4/34.3 MPa (320/350 kg/cm²)
Travel circuit 34.3 MPa (350 kg/cm²)
Swing circuit 24.5 MPa (250 kg/cm²)
Pilot circuit 3.9 MPa (40 kg/cm²)

Hydraulic cylinders

Boom 2
bore X stroke \varnothing 115 mm X 1165 mm
Arm 1
bore X stroke \varnothing 120 mm X 1345 mm
Bucket 1
bore X stroke \varnothing 105 mm X 1000 mm



CAB

Easily accessible cab with a wide door and lined with sound-absorbing material.

The cab, which is supported by hydraulic dampening mounts to reduce shock and vibration, has all-around visibility.

The front windshield can slide up into the ceiling and the lower front glass can be removed.

Integrated air-conditioning and heating system:

The pressurized and filtered cab air is supplied by a 4-speed fan. The air is distributed via 8 vents.

Ergonomic operator's seat: The adjustable seat and control consoles move independently to accommodate the operator well. The seat has eight different adjustments and a seat belt to meet any operator's requirement.

Sound level: According to the Directive 86/662/EEC.

Exterior noise (ISO 6395)	
mean value of L _{WA} (sound power level)	101.9 dB(A)
Operator's position (ISO 6396)	
with the door closed	
mean value of L _{PA} (sound pressure level)	73 dB(A)



GROUND PRESSURE

- Machine with 5.2 m boom, 2.6 m arm, 460 kg bucket and 2650 kg counterweight.

Description	Shoe width	Operating weight	Ground pressure	Overall width
Triple grouser	600 mm	15910 kg	38 kPa (0.38 kg/cm ²)	2590 mm
	700 mm	16130 kg	33 kPa (0.33 kg/cm ²)	2690 mm
	800 mm	16370 kg	29 kPa (0.30 kg/cm ²)	2790 mm

- Machine with 5.2 m boom, 2.6 m arm, 460 kg bucket and 3100 kg counterweight.

Description	Shoe width	Operating weight	Ground pressure	Overall width
Triple grouser	600 mm	16360 kg	39 kPa (0.39 kg/cm ²)	2590 mm
	700 mm	16580 kg	34 kPa (0.34 kg/cm ²)	2690 mm
	800 mm	16820 kg	30 kPa (0.30 kg/cm ²)	2790 mm

BUCKET & ARM COMBINATION

Note: 1. Bucket size based on SAE-J296, heaped material with a 1:1 angle of repose.

2. "Max. permitted sizes" are for reference only and are not necessarily available from the factory.

- Max. permitted bucket volume for direct fit:
counterweight 2650 kg / 3100 kg *

Description	unit	2.3 m Arm	2.6 m Arm	3.0 m Arm
GP bucket 1.5 t/m ³	l	1025 / 1100 *	975 / 1050 *	875 / 950 *
GP bucket 1.8 t/m ³	l	900 / 975 *	850 / 900 *	775 / 825 *

- Max. permitted bucket volume for quick fit - For (S1) size Volvo quick fits
counterweight 2650 kg / 3100 kg *

Description	unit	2.3 m Arm	2.6 m Arm	3.0 m Arm
GP bucket 1.5 t/m ³	l	950 / 1050 *	900 / 1000 *	850 / 925 *
GP bucket 1.8 t/m ³	l	825 / 925 *	775 / 875 *	725 / 825 *

- Max. permitted bucket volume for quick fit - For (S6) size Volvo quick fits
counterweight 2650 kg / 3100 kg *

Description	unit	2.3 m Arm	2.6 m Arm	3.0 m Arm
GP bucket 1.5 t/m ³	l	975 / 1075 *	925 / 1000 *	850 / 950 *
GP bucket 1.8 t/m ³	l	850 / 925 *	800 / 875 *	750 / 825 *

BUCKET & ARM COMBINATION

● Volvo GP bucket (curved side) and 2650 kg / 3100 kg* counterweight.

Bucket		Direct fit - GP bucket			
Bucket capacity (SAE / CECE)		530 / 690 l	630 / 820 l	690 / 900 l	820 / 1070 l
Cutting width		800 mm	900 mm	1000 mm	1200 mm
Weight		430 kg	460 kg	490 kg	535 kg
No. of teeth		4	4	5	5
Arm options	2.3 m	◎/◎*	◎/◎*	◎/◎*	○/◎*
	2.6 m	◎/◎*	◎/◎*	◎/◎*	○/○*
	3.0 m	◎/◎*	◎/◎*	○/◎*	□/○*

● Volvo GP bucket (curved side) and 2650 kg / 3100 kg* counterweight.

Bucket		S6 size Volvo quick fit - GP bucket		S1 size Volvo quick fit - GP bucket
Bucket capacity (SAE / CECE)		630 / 820 l	690 / 900 l	630 / 820 l
Cutting width		900 mm	1000 mm	850 mm
Weight		430 kg	460 kg	480 kg
No. of teeth		4	5	4
Arm options	2.3 m	◎/◎*	◎/◎*	◎/◎*
	2.6 m	◎/◎*	◎/◎*	◎/◎*
	3.0 m	◎/◎*	○/◎*	○/◎*

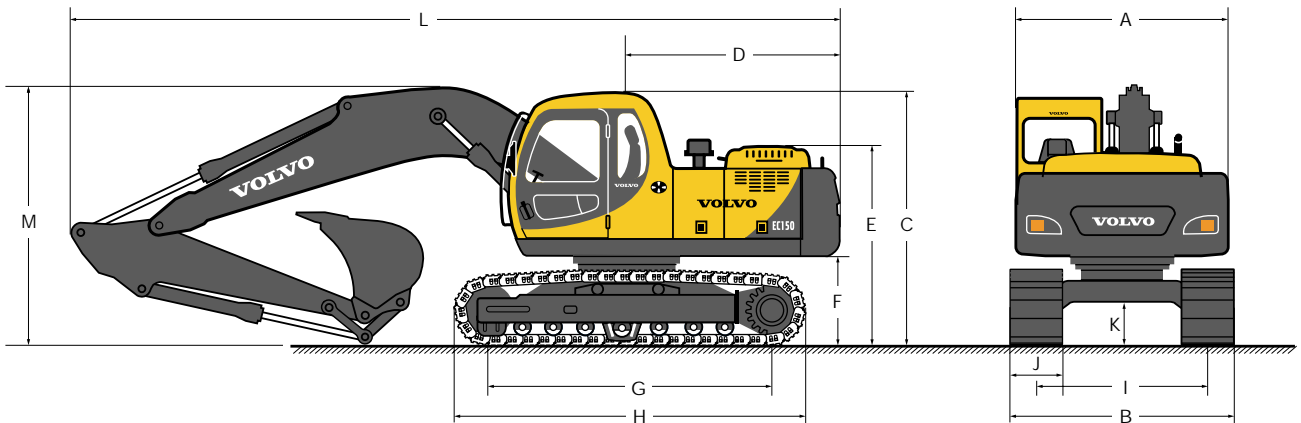
◎ : Applicable for material density up to 2.0 t/m³

○ : Applicable for material density up to 1.8 t/m³

□ : Applicable for material density up to 1.5 t/m³

△ : Applicable for material density up to 1.2 t/m³

DIMENSIONS

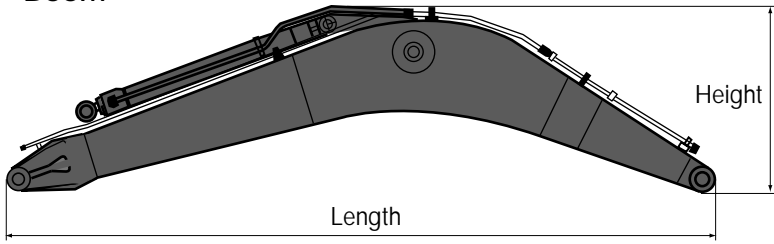


Boom	unit	5.2 m		
Arm	unit	2.3 m	2.6 m	3.0 m
A. Overall width of upper structure	mm	2460	2460	2460
B. Overall width	mm	2590	2590	2590
C. Overall height of cab	mm	2900	2900	2900
D. Tail swing radius	mm	2450	2450	2450
E. Overall height of engine hood	mm	2265	2265	2265
F. Counterweight clearance*	mm	1010	1010	1010
G. Tumbler length	mm	3180	3180	3180
H. Track length	mm	3970	3970	3970
I. Track gauge	mm	1990	1990	1990
J. Shoe width-Std.	mm	600	600	600
K. Min. ground clearance*	mm	460	460	460
L. Overall length	mm	8800	8690	8730
M. Overall height of boom	mm	2980	2900	3020

* Without shoe grouser

DIMENSIONS

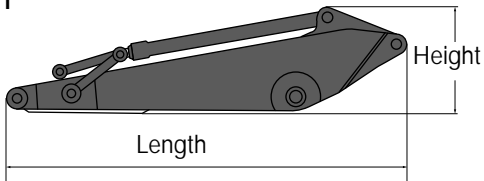
● Boom



Description	5.2 m
Length	5400 mm
Height	1630 mm
Width	565 mm
Weight *	1215 kg

* Includes cylinder, piping and pin

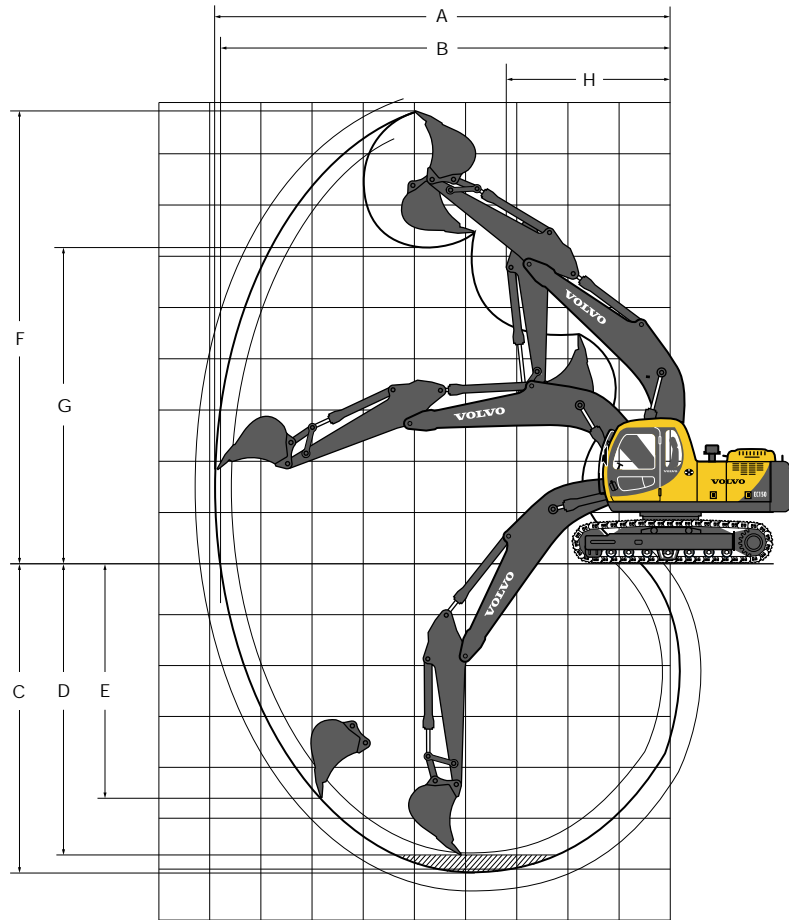
● Arm



Description	2.3 m	2.6 m	3.0 m
Length	3240 mm	3500 mm	3900 mm
Height	850 mm	850 mm	840 mm
Width	400 mm	400 mm	400 mm
Weight *	670 kg	705 kg	765 kg

* Includes cylinder, linkage and pins

WORKING RANGES



● 5.2 m boom with direct fit bucket



Arm	unit	2.3 m	2.6 m	3.0 m
A. Max. digging reach	mm	8650	8970	9340
B. Max. digging reach on ground	mm	8480	8800	9180
C. Max. digging depth	mm	5730	6030	6430
D. Max. digging depth (8° level)	mm	5430	5770	6200
E. Max. vertical wall digging depth	mm	4210	4690	5080
F. Max. cutting height	mm	8580	8830	9030
G. Max. dumping height	mm	6110	6340	6550
H. Min. front swing radius	mm	3070	3070	3070

Digging forces with direct fit bucket:		unit	2.3 m	2.6 m	3.0 m
Bucket tip radius		mm	1315	1315	1315
Breakout force-bucket (Normal / Power boost)	SAE	kN (ton)	93.1 / 101.8 (9.5 / 10.4)	93.1 / 101.8 (9.5 / 10.4)	93.1 / 101.8 (9.5 / 10.4)
	ISO	kN (ton)	104.8 / 114.7 (10.7 / 11.7)	104.8 / 114.7 (10.7 / 11.7)	104.8 / 114.7 (10.7 / 11.7)
Tearout force-arm (Normal / Power boost)	SAE	kN (ton)	82.5 / 90.3 (8.4 / 9.2)	73.4 / 80.2 (7.5 / 8.2)	66.4 / 72.6 (6.8 / 7.4)
	ISO	kN (ton)	84.9 / 92.8 (8.7 / 9.5)	75.2 / 82.3 (7.7 / 8.4)	67.9 / 74.3 (6.9 / 7.6)
Rotation angle, bucket		°	183°	183°	182°

LIFTING CAPACITY (At the arm end without bucket)

Note: For lifting capacity including bucket, simply subtract actual weight of the direct fit bucket or the bucket with quick fit from the following values.

EC150 (Shoe 600 mm, Counterweight 2650 kg)









 Across under-carriage  Along under-carriage	Lifting hook related to ground level	3 m		4.5 m		6 m		7.5 m		Max.reach		Max. mm
		kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	
Boom 5.2 m + Arm 2.3 m	6 m									3120	*4280	5878
	4.5 m			4630	*4730	2970	4420			2450	3650	6756
	3 m			4310	*6260	2850	4280			2150	3230	7215
	1.5 m			4010	6320	2710	4130			2030	3080	7337
	0 m			3850	6140	2610	4020			2070	3150	7138
	-1.5 m	7060	*9870	3810	6100	2580	3900			2290	3510	6588
	-3 m	7190	*12340	3870	6160					2900	4480	5582
	-4.5 m											
Boom 5.2 m + Arm 2.6 m	6 m					3050	*3940			2820	*3840	6269
	4.5 m			*4350	*4350	2990	*4170			2270	3380	7098
	3 m	7950	*9240	4350	*5880	2860	4290	2020	3040	2000	3020	7535
	1.5 m			4040	6360	2710	4130	1960	2980	1900	2890	7651
	0 m	*5120	*5120	3850	6140	2600	4010			1930	2950	7461
	-1.5 m	7000	*9020	3780	6070	2550	3960			2110	3240	6938
	-3 m	7110	12600	3820	6110					2600	4010	5994
	-4.5 m	7380	*10240							4200	6670	4347
Boom 5.2 m + Arm 3.0 m	6 m					3080	*3490			2530	*3250	6718
	4.5 m					3010	*3800			2070	3100	7496
	3 m	*7800	*7800	4410	*5330	2870	4310	2020	3040	1840	2790	7911
	1.5 m	*5140	*5140	4060	6390	2700	4130	1940	2960	1750	2670	8021
	0 m	*5580	*5580	3830	6130	2580	3900	1880	2900	1770	2720	7840
	-1.5 m	6900	*8440	3740	6020	2510	3920			1910	2960	7345
	-3 m	6990	12460	3750	6040	2520	3930			2290	3550	6463
	-4.5 m	7210	*11160	3880	6190					3380	5310	4981

- Notes :
- Machine in "Fine Mode-F" (Power Boost), for lifting capacities
 - The above loads are in compliance with SAE and ISO Hydraulic Excavator Lifting Capacity Standards.
 - Rated loads do not exceed 87% of hydraulic lifting capacity or 75% of tipping load.
 - Rated loads marked with an asterisk (*) are limited by hydraulic capacity rather than tipping load.

LIFTING CAPACITY (At the arm end without bucket)

Note: For lifting capacity including bucket, simply subtract actual weight of the direct fit bucket or the bucket with quick fit from the following values.

EC150 (Shoe 600 mm, Counterweight 3100 kg)

 Across under-carriage  Along under-carriage	 Lifting hook related to ground level	 kg		 kg		 kg		 kg		 kg		Max. mm
		kg	kg	kg	kg	kg	kg	kg	kg	kg	kg	
Boom 5.2 m + Arm 2.3 m	6 m									3350	*4280	5878
	4.5 m			*4730	*4730	3200	*4440			2650	3880	6756
	3 m			4640	*6260	3070	4560			2330	3450	7215
	1.5 m			4340	6740	2930	4410			2210	3290	7337
	0 m			4180	6560	2840	4300			2250	3380	7138
	-1.5 m	7640	*9870	4140	6510	2810	4270			2490	3760	6588
	-3 m	7770	*12340	4200	6580					3140	4790	5582
	-4.5 m											
Boom 5.2 m + Arm 2.6 m	6 m					3270	*3940			3040	*3840	6269
	4.5 m			*4350	*4350	3210	*4170			2450	3600	7098
	3 m	8530	*9240	4680	*5880	3080	4570	2190	3250	2180	3220	7535
	1.5 m			4360	6770	2940	4410	2130	3180	2070	3090	7651
	0 m	*5120	*5120	4170	6560	2830	4290			2100	3160	7461
	-1.5 m	7580	*9020	4110	6490	2780	4240			2300	3470	6938
	-3 m	7690	*12750	4150	6530					2820	4290	5994
	-4.5 m	7960	*10240							4550	*7060	4347
Boom 5.2 m + Arm 3.0 m	6 m					3310	*3490			2730	*3250	6718
	4.5 m					3230	*3800			2240	*3190	7496
	3 m	*7800	*7800	4730	*5330	3090	*4500	2190	3250	2010	2980	7911
	1.5 m	*5140	*5140	4390	6810	2930	4410	2120	3170	1910	2870	8021
	0 m	*5580	*5580	4160	6550	2800	4270	2060	3100	1930	2910	7840
	-1.5 m	7480	*8440	4060	6440	2740	4200			2090	3170	7345
	-3 m	7570	*13160	4080	6450	2750	4210			2500	3810	6463
	-4.5 m	7790	*11160	4210	6610					3670	5670	4981

- Notes :
1. Machine in "Fine Mode-F" (Power Boost), for lifting capacities
 2. The above loads are in compliance with SAE and ISO Hydraulic Excavator Lifting Capacity Standards.
 3. Rated loads do not exceed 87% of hydraulic lifting capacity or 75% of tipping load.
 4. Rated loads marked with an asterisk (*) are limited by hydraulic capacity rather than tipping load.

STANDARD EQUIPMENT

Engine

Low-emission engine with air heater, complying with EPA (Environment Protection Agency, USA) emission standards
2-stage air filter with indicator
Air pre-cleaner
Electric engine shut-off
Fuel filter and water separator

Electronic control system

Advanced control system (ACS)
Integrated mode selection system
Self-diagnostic system
Machine status indication
Engine speed sensing power control
"Power Max" mode system
Automatic idling system

One-touch power boost
Automatic engine warm-up
Safety stop/start function
Adjustable monitor
Master disconnect switch
Engine restart prevention circuit
Powerful halogen lights:
- Frame mounted 2
- Boom mounted 2
Batteries, 2 x 12V/150Ah
Start motor, 24V/3.7kW

Hydraulic system

Automatic sensing work mode
- Summation system
- Boom priority
- Arm priority
- Swing priority
Boom and arm flow regeneration
Swing anti-rebound valve

Boom and arm holding valves
Multi-stage filtering system
Cylinder cushions
Cylinder contamination seals
Auxiliary hydraulic valve
Straight travel circuit
Automatic two-speed travel motors
Hydraulic oil, ISO VG 46

Superstructure

Access way with handrail
Tool storage area
Punched metal anti-slip plates

Cab and interior

Hydraulic dampening cab mounts
Adjustable operator seat and control console
Flexible antenna
Hydraulic safety lock lever

Cab, all-weather sound suppressed, includes:
- Ashtray
- Cigar lighter
- Door locks
- Floor mat
- Horn
- Large storage area
- Pull-up type front window
- Removable lower windshield
- Seat belt
- Safety glass
- Windshield wiper with intermittent feature
Stereo cassette radio (AM/FM)
Master ignition key

Undercarriage

Hydraulic track adjusters
Greased and sealed track chain
Track guards

ALTERNATIVE EQUIPMENT

Engine

Alternator, 50A / 70A
Fuel filler pump: 35 lpm / 50 lpm / 50 lpm, with automatic shut-off

Hydraulic system

Pilot-operated wrist control joysticks
- Semi-long joysticks
- Joysticks, with 3 switches ea.
- Joysticks, with 5 switches ea.

Superstructure

Counterweight, 2650 kg / 3100 kg

Cab and interior

Leather seat
Fabric seat
Fabric seat, with heater and air suspension

Track shoes

600/700/800 mm track shoes with triple grousers

Digging equipment

Boom: 5.2 m monobloc
Arm: 2.3 / 2.6 / 3.0 m

OPTIONAL EQUIPMENT (Standard in certain markets)

Engine

Block and oil pan heater: 120V, 240V
Fuel warmer
Tropical kit

Electronic control system

Pump flow control for hammer & shear
Extra work lights (4):
- Cab-mounted 3 (front 2, rear 1)
- Counterweight-mounted 1
Rotating warning beacon
Travel alarm

Hydraulic system

Hydraulic piping
- Hammer & shear:
1 pump flow
2 pump flow
Additional return filter
Extra piping for slope & rotator
Volvo Hydraulic quick fit, S1 or S6 sizes
Hydraulic oil, ISO VG 32
Hydraulic oil, ISO VG 68

Superstructure

Undercover (heavy duty), 4.5 mm

Cab and interior

Air-conditioner
Heater
Falling object guard (FOG)
Cab mounted falling object protective structures (FOPS)
Rain shield, front
Sun shield, front
Clear tinted roof hatch
Safety mesh for front window
Anti-vandalism kit
Sliding rear window
Specific key

Undercarriage

Undercover (heavy duty), 10 mm

Service

Hand lamp
Spare parts
Tool kit

All products are not available on 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 Group

Ref. No. 30 1 435 1612 English (for International region)
Printed in Korea 2000.08-1 KOR
Volvo, Seoul