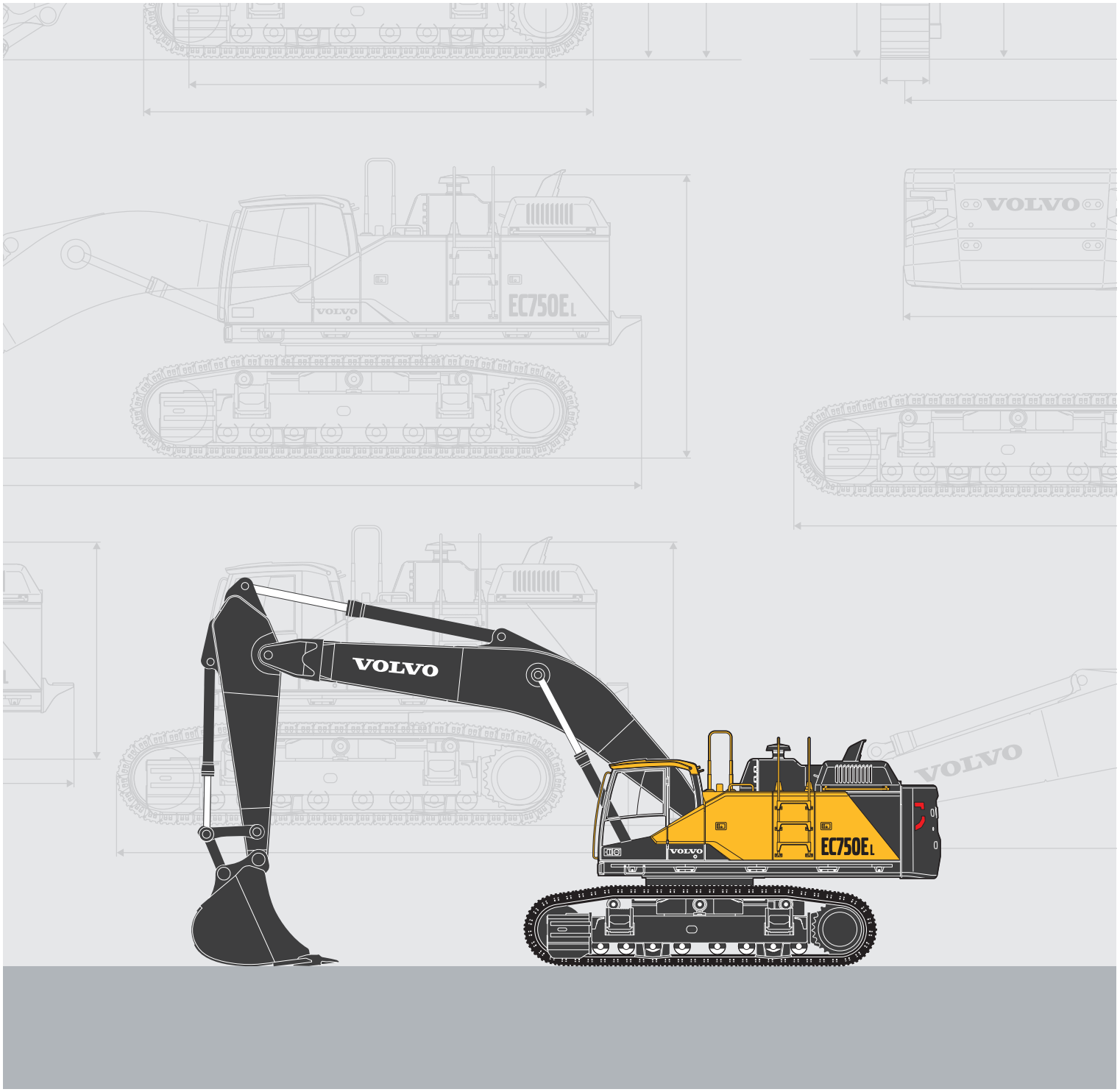
Volvo Construction Equipment

VOLVO EXCAVATORS

Environmental Declaration



Environmental Declaration

Crawler and Wheeled Excavators

Environmental characteristics below specified by the manufacturer, relate to machines leaving the manufacturers production line. For other technical specifications, see specification sheet and operator manual for the respective machine.

Manufacturer:
Volvo Construction Equipment Korea,
160, Doosanvolvo-ro, Seongsan-gu, Changwon-si, Gyeongsangnam-do

Manufacturer:
Volvo Construction Equipment Germany GmbH
54329 Konz
Germany

Model	Unit	EC140E	EC160E	EC180E	EC220E	EC250E	EC300E
Engine type		D4J	D4J	D4J	D6J	D8J	D8J
Engine power, ISO 9249, SAE J1349 net	kW	89	109	109	128	159	179
Metric	ps	121	148	148	174	216	243
Engine power, ISO 9249, SAE J1349 net	kW	89	109	109	128	159	179
Imperial	hp	119	146	146	172	213	240
Engine power, ISO14396, SAE J1995 gross	kW	90	110	110	129	160	180
Metric	ps	122	150	150	175	218	245
Engine power, ISO14396, SAE J1995 gross	kW	90	110	110	129	160	180
Imperial	hp	121	148	148	173	215	241

Model	Unit	EC350E	EC380E	EC480E	EC750E	ECR145E	ECR235E	ECR305C
Engine type		D13J	D13J	D13J	D16J	D4J	D6J	D7E
Engine power, ISO 9249, SAE J1349 net	kW	225	225	277	374	89	128	143
Metric	ps	306	306	376	509	121	174	194
Engine power, ISO 9249, SAE J1349 net	kW	225	225	277	374	89	128	143
Imperial	hp	302	302	371	501	119	172	192
Engine power, ISO14396, SAE J1995 gross	kW	226	226	278	385	90	129	153
Metric	ps	307	307	378	523	122	175	208
Engine power, ISO14396, SAE J1995 gross	kW	226	226	278	385	90	129	153
Imperial	hp	303	303	373	516	121	173	205

Model	Unit	EW140D	EWR150E	EW160E	EW180E	EW210D	EW230C
Engine type		D4H	D4J	D6J	D6J	D6H	D6E
Engine power, ISO 9249, SAE J1349 net	kW	102	102	112	112	126	125
Metric	ps	139	139	152	152	171	170
Engine power, ISO 9249, SAE J1349 net	kW	102	102	112	112	126	125
Imperial	hp	137	137	150	150	169	168
Engine power, ISO14396, SAE J1995 gross	kW	105	105	115	115	129	130
Metric	ps	143	143	156	156	175	176
Engine power, ISO14396, SAE J1995 gross	kW	105	105	115	115	129	130
Imperial	hp	141	141	154	154	173	174

Core values

Quality, safety and environmental care are Volvo's core values.
They are designed from the beginning into the product's entire service life. This includes design and engineering, material selection, manufacturing processes, use and recycling.

Manufacturers

The assembly of the complete machines takes place at one of Volvo Construction Equipment's production plants. Our production facilities are all certified according to ISO 14001.
Many of our components and parts are purchased from external suppliers. Volvo Construction Equipment works closely with these suppliers in order to safeguard the environmental requirements for purchased components and parts.

Declarations

Upholstery and other materials in the cab do not contain mercury.
Plastics and other interior materials are fire-classed according to Volvo standard 104-0001.
Brake pads do not contain cadmium or asbestos.
The complete machine does not contain any mercury, cadmium or asbestos.
If the machine is equipped with air conditioning (option), refrigerant type R134A (0,65~1,2 kg / 1.43 - 2.65 lb) is used.

Paint and Surface Treatment

In order to reduce solvent emissions, the machines are painted using high solid paints. To reduce consumption of water and chemicals, cleaning and recirculation takes place during the pre-treatment processes in the factories.

Specification of paint

Main components	Paint type	Heavy metals	Chlorine	Pre-treatment
Cab	Two component	no	no	Water and alkaline wash
Axles and transmission	Two component	no	no	Solvent washing
Doors and Covers	Two component	no	no	Water and alkaline wash
Frame and Attachment	Two component	no	no	Shot blasting
Tanks	Two component	no	no	Water and acid wash

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Engine/emissions

The engine is certified at official testing according to EU Directive 97/68/EC 2010/26/EU, Stage IIIB, Stage IV
The engine is certified at official testing according to
US requirements: US EPA Tier4i, Tier4f and CARB US EPA.
Exhaust emissions are measured as specific emissions in g/ kWh according to ISO 8178-1 and ISO 8178-4, cycle C1 and the Non-Road Transient Cycle (NRTC).
A family engine (parent engine) is certified within an engine family.
The parent engine is the engine with the highest fuel injection volume at maximum torque. Engines with the same design or similar technology will then belong to this family. Therefore, the values required by law are only given for the parent engine.

*Emission standards are applied to each machine in accordance with the emission requirements

Emission levels	NOx (g/kWh)	HC (g/kWh)	PM (g/kWh)	CO (g/kWh)	Power range (kW)
EU Directive 2010/26/EU, Stage IIIB	3.3	0.19	0.025	5.0	75-130
EU Directive 2010/26/EU, Stage IIIB	2.0	0.19	0.025	3.5	130-560
US EPA Tier 4i+ CARB	3.3	0.19	0.02	5.0	56-130
US EPA Tier 4i+ CARB	2.0	0.19	0.02	3.5	130-560

Emission levels	NMHC+NOx(g/kWh)	PM (g/kWh)	CO (g/kWh)	Power range (kW)
EU Directive 2010/26/EU, Stage IIIA	4.0	0.3	5.0	75-130
EU Directive 2010/26/EU, Stage IIIA	4.0	0.2	3.5	130-560
US EPA Tier 3+ CARB	4.0	0.3	5.0	75-130
US EPA Tier 3+ CARB	4.0	0.2	3.5	130-560

Emission levels	NOx (g/kWh)	HC (g/kWh)	PM (g/kWh)	CO (g/kWh)	Power range (kW)
EU Directive 2010/26/EU, Stage IV	0.4	0.19	0.025	5.0	56 ≤ P < 130
EU Directive 2010/26/EU, Stage IV	0.4	0.19	0.025	3.5	130 ≤ P ≤ 560
US EPA Tier 4f+ CARB	0.4	0.19	0.02	5.0	56 ≤ P < 130
US EPA Tier 4f+ CARB	0.4	0.19	0.02	3.5	130 ≤ P ≤ 560

Sound levels

If the machine is specified for sale within the EU, it is certified according to EU Directive 2000/14/EC (external sound level) with supplement 2005/88/EC.

A decal with external sound level and inner sound pressure is also provided on the machine.

Model		EC140E	EC160E	EC180E	EC220E	EC250E	EC300E
External sound power level	dB(A)	100	101	101	102	103	104
Sound pressure level,	LpA dB(A)	69	69	69	69	70	70

Model		EC350E	EC380E	EC480E	EC750E	ECR145E	ECR235E	ECR305C
External sound power level	dB(A)	105	105	106	108	97	101	103
Sound pressure level,	LpA dB(A)	71	71	71	72	71	71	72

Model		EW140D	EWR150E	EW160E	EW180E	EW210D	EW230C
External sound power level	dB(A)	101	100	100	101	103	103
Sound pressure level,	LpA dB(A)	70	71	70	70	70	72

Operator's environment

Incoming air for the cab first passes through a pre-filter which separates coarser particles, and then through the main filter in to the cab. Up to 90% of all air can be recirculated through the main filter. This creates an overpressure in the cab, which results in a cleaner work environment.

Service

To facilitate draining and to reduce the risk of spilling engine oil and hydraulic oil, there are special hoses supplied with each machine. For bleeding air from axles, transmission and hydraulic oil tank there is a breather filter to reduce appearance of any oil mist.

The hydraulic tank as well as front and rear axles have a protective valve in the breather filter, minimizing leakage in case of machine turn-over/rollover.

Oils and fluids

Ethylene glycol coolant is filled at the factory. Biologically degradable oil for the hydraulic system is available as an option. For service intervals and other maintenance, see applicable operator's manuals for each respective machine model. All engines have a system for cleaning the crankcase ventilation's emissions of oil particles.

Tires (EW140D, EWR150E, EW160E, EW180E, EW210D, EW230C)

Tires without high-aromatic oils (HA-oils) are available from our suppliers.

Recycling

Volvo Excavators are designed to be at least 95% recyclable at the end of their useful working life. The recycling rate is according to ISO16714:2008. Materials can be reused in new Volvo Construction Equipment products. The majority of our plastic parts are marked for recycling according to Volvo standard 103-0002; 5052,41; 5052,411, and 5052,412.

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Recycling

The materials included in machines are divided into the following approximate weights:

Model	Units (rounded)	EC140E	EC160E	EC180E	EC220E	EC250E	EC300E
Steel and iron	kg	12 675	15 685	16 649	20 146	24 913	29 114
Lead (batteries)	kg	50	63	63	50	67	67
Other non-iron metals	kg	136	149	157	186	274	275
Glass	kg	70	70	70	69	72	72
Polymer and rubber	kg	403	300	278	492	660	697
Tires	kg	-	-	-	-	-	-
Oil	kg	303	321	329	445	515	584
Total recyclable material	kg	13 637	16 588	17 546	21 388	26 500	30 810
Total weight of machine	kg	13 919	16 943	17 844	21 773	26 883	31 243
Recycling quota	%	98	98	98	98	99	99
Steel and iron	lb	27,940	34,570	36,700	44,414	11,300	13,206
Lead (batteries)	lb	110	130	130	110	30	30
Other non-iron metals	lb	290	320	340	410	124	125
Glass	lb	150	150	150	152	33	33
Polymer and rubber	lb	880	660	610	1,084	299	316
Tires	lb	-	-	-	-	-	-
Oil	lb	660	700	720	981	233	265
Total recyclable material	lb	30,030	36,530	38,650	47,152	12,020	13,975
Total weight of machine	lb	30,680	37,350	39,340	48,001	12,194	14,171
Recycling quota	%	98	98	98	98	99	99

Model	Units (rounded)	EC350E	EC380E	EC480E	EC750E	ECR145E	ECR235E	ECR305C
Steel and iron	kg	34 244	35 569	44 206	70 259	13 629	22 603	33 295
Lead (batteries)	kg	67	67	67	112	50	50	66
Other non-iron metals	kg	278	306	272	440	157	224	197
Glass	kg	68	69	69	69	69	69	32
Polymer and rubber	kg	486	603	575	428	360	441	337
Tires	kg	-	-	-	-	-	-	-
Oil	kg	699	697	714	742	288	402	460
Total recyclable material	kg	35 842	37 310	45 903	72 050	14 552	23 788	34 388
Total weight of machine	kg	36 246	37 710	46 307	72 700	14 621	23 857	34 589
Recycling quota	%	99	99	99	99	99	99	99
Steel and iron	lb	75,496	78,417	97,459	154,921	30,040	49,830	73,402
Lead (batteries)	lb	147	147	147	247	110	110	145
Other non-iron metals	lb	612	674	601	970	340	490	434
Glass	lb	150	152	152	152	150	150	71
Polymer and rubber	lb	1,071	1,328	1,268	944	790	970	743
Tires	lb	-	-	-	-	-	-	-
Oil	lb	1,541	1,537	1,574	1,636	630	880	1,014
Total recyclable material	lb	79,017	82,255	101,200	158,870	32,060	52,430	75,812
Total weight of machine	lb	79,908	83,137	102,089	160,304	32,230	52,590	76,256
Recycling quota	%	99	99	99	99	99	99	99

Model	Units (rounded)	EW140D	EWR150E	EW160E	EW180E	EW210D	EW230C
Steel and iron	kg	13 740	15 275	15 700	17 600	19 015	21 260
Lead (batteries)	kg	80	80	80	80	80	80
Other non-iron metals	kg	190	200	210	210	210	210
Glass	kg	70	70	70	70	70	70
Polymer and rubber	kg	150	160	160	160	160	160
Tires	kg	450	450	450	450	450	450
Oil	kg	190	200	210	240	265	275
Total recyclable material	kg	14 870	16 435	16 880	18 810	20 250	22 515
Total weight of machine	kg	15 650	17 300	17 770	19 800	21 260	23 700
Recycling quota	%	95	95	95	95	95	95
Steel and iron	lb	30,292	33,675	34,613	38,801	41,921	46,870
Lead (batteries)	lb	176	176	176	176	176	176
Other non-iron metals	lb	419	441	463	463	463	463
Glass	lb	154	154	154	154	154	154
Polymer and rubber	lb	331	353	353	353	353	353
Tires	lb	992	992	992	992	992	992
Oil	lb	419	441	463	529	584	606
Total recyclable material	lb	32,783	36,232	37,214	41,469	44,644	49,637
Total weight of machine	lb	34,502	38,140	39,176	43,652	46,870	52,249
Recycling quota	%	95	95	95	95	95	95

The calculation of the weights is based on defined machines. Variations are caused by different equipment. These material fractions can be recycled (material recycled and energy recycled) where possible.

Producer responsibility

In most countries today, there is a producer responsibility for our products, applicable to components such as batteries, tires, etc. There are special regulations for these components.

For further information, contact your dealer.

Machine model: _____ Place for stamp

Delivery date: _____

Machine's serial number: _____

Engine Type: _____

Engine's manufacturing number: _____

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