

VOLVO EXCAVATORS

# ECR145D, ECR235D

14.4-16.8 t 114 hp | 23.7-27.6 t 173 hp



# A PASSION FOR PERFORMANCE.

At Volvo Construction Equipment, we're not just coming along for the ride. Developing products and services that raise productivity – we are confident we can lower costs and increase profits for industry experts. Part of the Volvo Group, we are passionate about innovative solutions to help you work smarter – not harder.

## Helping you to do more

Doing more with less is a trademark of Volvo Construction Equipment. High productivity has long been married to low energy consumption, ease of use and durability. When it comes to lowering life-cycle costs, Volvo is in a class of its own.

## Designed to fit your needs

There is a lot riding on creating solutions that are suited to the particular needs of different industry applications. Innovation often involves high technology – but it doesn't always have to. Some of our best ideas have been simple, based on a clear and deep understanding of our customers' working lives.



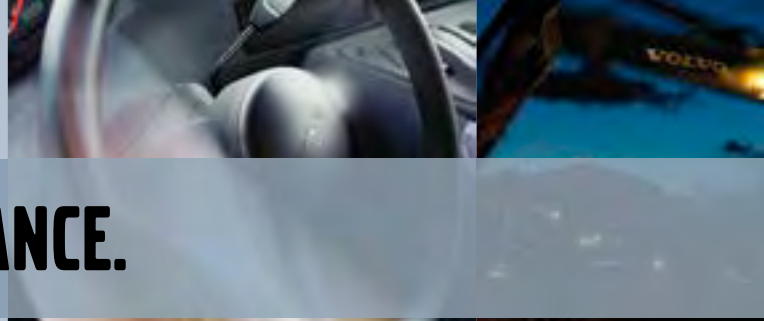
## You learn a lot in 180 years

Over the years, Volvo has advanced solutions that have revolutionized the use of construction equipment. No other name speaks Safety louder than Volvo. Protecting operators, those around them and minimizing our environmental impact are traditional values that continue to shape our product design philosophy.

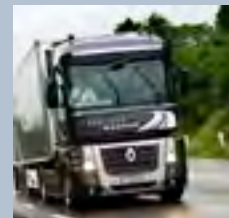
## We're on your side

We back the Volvo brand with the best people. Volvo is truly a global enterprise, one that is on standby to support customers quickly and efficiently – wherever they are.

## We have a passion for performance.



Volvo Trucks



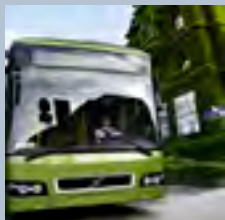
Renault Trucks



Mack Trucks



UD Trucks



Volvo Buses



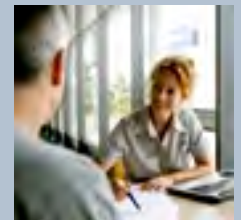
Volvo Construction Equipment



Volvo Penta



Volvo Aero



Volvo Financial Services

# GET THE JOB DONE.

Get productive with these short swing radius machines – perfect for maneuvering in and out of confined areas with ease. Featuring class-leading digging depth with a 2.4 m flat level and superior stability, you can achieve more with Volvo.



## Narrow design

These machines feature a narrow design compared to the classic crawler excavators but still maintain the stability, balance and performance that you would expect from a conventional model. The boom is positioned in the center of the machine.



#### Compact swing radius

Short front and rear radius ensures safe and easy operation within a confined space – reducing the risk of damage to the rear compartments in urban construction.

# ENGINEERED FOR EFFICIENCY.



## Efficient engine

Volvo's fuel efficient Stage IIIB/ Tier 4 Interim diesel engine gives you more power, while consuming less fuel. Benefit from reduced operating costs as well as low emission levels for ultimate efficiency and environmental care.

Fuel efficiency is at the heart of Volvo's ECR145D and ECR235D. Featuring the Stage IIIB/ Tier 4 Interim engine, ECO mode and improved hydraulics, these machines deliver reduced fuel consumption and cycle times, as well as increased digging performance. Save time and money with Volvo.

**Regeneration**

Soot collected by the Diesel Particulate Filter is oxidized every eight hours, depending on application. Volvo's unique, operator controlled, 25 minute system does not interrupt operation, performance or productivity. For increased safety, regeneration can be postponed.

**ECO mode**

Volvo's unique ECO mode features sophisticated electronic pump control technology for increased fuel efficiency. It can be used in-conjunction with any working mode. There is no loss of performance in the majority of operating conditions.



**Auto idling system**

Reduces rpm to idle when the controls are inactive for a specified time – between 3-20 seconds. The length of time is set up via the I-ECU monitor. This system delivers reduced fuel consumption and running costs.

**Work modes**

For added versatility operators can select the best work mode for the task at hand to ensure optimum performance and fuel efficiency. Easily choose the correct mode, within the throttle control, according to your working conditions.

# MORE POWER. MORE SPEED.

Volvo understands that machines need to perform day in, day out. With strong digging power and various work modes the ECR145D and ECR235D are ideally suited to extracting hard and compact materials. Additional pump flow provides faster cycle times. Trust Volvo to increase your productivity.

## Idle (I) Mode

For reduced fuel consumption and more environmental care, the higher I-stage of the Idle Mode is used for auto idling – which is highly recommended when truck loading. The second stage (lower I-stage) is typically used for warm up and cool down.



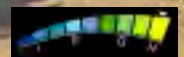
## Fine (F) Mode

The Fine control mode provides high hydraulic pressure setting same as power boost function for maximum lifting capability. It is also used for precise grading operation.

## General (G) Mode

The General Mode features three different stages of speed. The highest G setting is recommended for maximum fuel saving and good productivity in digging and truck loading. The middle and low G settings can be used for ditching, levelling, slope finishing and spreading where moderate speed is needed.





#### **Heavy (H) Mode and Power (P) Mode**

H Mode is used for high productivity in intensive and bulk earthmoving applications. It is used for hard digging, trenching and truck loading from deep trenches. P Mode (not available in North America) provides an additional 100rpm for maximum speed and performance. H Mode is more fuel efficient than P Mode.

# WORK IN COMFORT.



## Industry-leading cab

Volvo's spacious convex cab design is Roll Over Protective Structure (ROPS) certified for increased peace of mind in the unlikely event of machine roll over. The cab features a sliding door and a tilting type left-hand console for easy entry and exit to the machine.

VOLVO

Space matters – especially in the cab. That's why Volvo has designed a premier operator environment with built in safety, comfort and all-round visibility. Featuring ample leg room and easy to access controls for increased productivity. See everything from all angles in the Volvo's spacious cab.

#### I-ECU monitor

Large color monitor provides excellent clarity in all lighting conditions. Using a control panel, the operator and service technician can make quick visual and diagnostic checks, increasing uptime and productivity. The monitor also displays camera images – up to four at a time.

#### Visibility

Slim cab pillars and large expanses of glass ensure excellent all-round visibility. Enhanced vision delivers improved safety and also allows operators to increase their productivity.



#### Seat

Featuring nine different adjustments for superb operator comfort and reduced vibration, Volvo's superior seat provides comfort to all operators – resulting in more productivity.

#### Control panel

Optimally positioned control panel ensures there is no need for operators to move or lean forward to change settings or navigate through the I-ECU monitor. This increases operator comfort and safety.

# MORE UPTIME.



## Service points

Large, wide compartment doors provide ground level access (wherever possible) to grouped filters and greasing points, reducing maintenance downtime. Excellent centralized access for quick servicing and increased uptime.

## Anti-slip plates

Added operator and service mechanic safety from punched anti-slip plate on the superstructure. This provides superb grip, especially in wet or icy conditions.



#### Service access

Conveniently located boom and arm greasing points are grouped for simplicity and ease of access. In general applications greasing is needed at 50 hour intervals but this can be extended to 500 hours with long life bushings. Slew ring greasing is at 250 hours.



#### Air filters

Conveniently located air filter elements offer easy access for more machine uptime. The primary air filter removes all major particles and may be cleaned up to five times or used for one year. A secondary protective filter is in place in case of malfunction.



#### Main control valve

Access to the main control valve is available at ground level, minimizing the amount of service downtime.

# TOP PERFORMANCE DESERVES SUPPORT.

The day you receive your new Volvo short swing radius crawler excavator is just the start of your working relationship with Volvo. From service and maintenance to our CareTrack telematics system – Volvo has a comprehensive and sophisticated aftermarket portfolio to continuously add value to your business.

Volvo designed and built your machines, so no-one knows how to keep them working in top condition more than us. When it comes to your machine, our Volvo trained technicians are the experts.

Our technicians work with industry leading diagnostic tools and techniques, using only Genuine Volvo Parts to deliver the highest levels of quality and service. Talk to your Volvo dealer about how genuine Volvo services can best provide the service and maintenance plan that is the right fit for you and your business.



State-of-the-art machines require state-of-the-art support and your Volvo dealer can provide a catalogue of services designed to get the most out of your machine, helping you maximise uptime, productivity and residual value. Your Volvo dealer can provide a number of sophisticated support offers, including:

Service plans ranging from routine wear inspections, through to comprehensive maintenance and repair agreements.

Analysis and diagnostics to help you understand how your machine is running, highlight potential maintenance issues and identify where performance can be improved.

Eco Operator training courses can help your operators work towards a safer, more productive and fuel efficient performance.



#### CareTrack\*

Each Volvo short swing radius crawler excavator comes standard equipped with CareTrack, the Volvo telematics system. CareTrack provides information for better planning and smarter working; including fuel consumption reports, location reports and service reminders. Save fuel. Reduce costs. Maximise profitability. You can with CareTrack.

\* In markets where CareTrack is available

# PROFILING YOUR NEW EXCAVATOR.

## Boom and arm

Available with a mono or two piece boom, and with different arm configurations, for increased flexibility and versatility.

## CareTrack\*

Volvo's telematics system guides machine owners towards optimized productivity and their next service – remotely.



## Power and speed

Perform at a higher level with increased digging power and faster cycle times for greater productivity.



## Swing radius

Short front and rear radius ensures safe and easy operation within a confined space.

## ECO mode

Volvo's unique ECO mode improves fuel efficiency without sacrificing performance.

## Undercarriage

Three-piece, high tensile steel undercarriage is designed and built to withstand the toughest conditions.

\* In markets where CareTrack is available







#### **Volvo cab**

Spacious, convex cab design with excellent all-round visibility and easy to access controls. ROPS certified.

#### **MATRIS**

Machine Tracking Information System (MATRIS) displays machine performance data on an easy to understand graph.



#### **Efficient engine**

Volvo's fuel efficient Stage IIIB/ Tier 4 Interim diesel engine gives you more power while consuming less fuel.



#### **Service access**

Premium service access from large opening doors and grouped service points.

#### **Auxiliary hydraulics**

Optional, additional auxiliary hydraulic piping kits allow other hydraulic attachments like hydraulic breakers and rotating grabs to be operated.

#### **Reinforced frames**

Reinforced undercarriage and superstructure for improved durability and reliability.

# VOLVO ECR145D, ECR235D IN DETAIL.

## Engine

The latest generation, Volvo engine Stage IIIB/Tier4 Interim emissions compliant diesel engine fully meets the demands of the latest, emissions regulations. The engine uses precise, highpressure fuel injectors, turbo charger and air-to-air intercooler, and electronic engine controls to optimize machine performance, Air Filter: 2-stage air cleaner. Automatic Idling System: Reduces engine speed to idle when the levers and pedals are not activated resulting in less fuel consumption and low cab noise levels.

### ECR145D

Engine Stage IIIB/ Tier4 Interim	Volvo	D4H
Max power at	r/s / r/min	33/2 000
Net, ISO 9249/SAE J1349	kW / hp	84/113
Gross, ISO 14396/ SAE J1995	kW / hp	85/114
Max torque at	Nm / r/min	535/1 500
No, of cylinders		4
Displacement	l	4.0
Bore	mm	101
Stroke	mm	126

### ECR235D

Engine Stage IIIB/ Tier4 Interim	Volvo	D6H
Max power at	r/s / r/min	30/1 800
Net, ISO 9249/SAE J1349	kW / hp	128/172
Gross, ISO 14396/ SAE J1995	kW / hp	129/173
Max torque at	Nm / r/min	849/1 350
No, of cylinders		6
Displacement	l	5.7
Bore	mm	98
Stroke	mm	126

## Electrical system

High-capacity electrical system that is well protected, Waterproof double-lock harness plugs are used to secure corrosion-free connections, The main relays and solenoid valves are shielded to prevent damage, The master switch is standard. Contronics provides advanced monitoring of machine functions and important diagnostic information on the I-ECU.

		ECR145D	ECR235D
Voltage	V	24	24
Batteries	V	2 x 12	2 x 12
Battery capacity	Ah	100	150
Alternator	V / Ah	28 / 110	28 / 110

## Swing system

The swing system uses an axial piston motors, driving a planetary gearbox for maximum torque. An automatic holding brake and anti-rebound valve are standard.

		ECR145D	ECR235D
Max, slew speed	r/min	12.2	11.2
Max, slew torque	kNm	41.9	82.5

## Drive

Each track is powered by an automatic two-speed shift travel motor. The track brakes are multi-disc, spring-applied and hydraulic released, The travel motor, brake and planetary gears are well protected within the track frame.

Max, drawbar pull	kN	119	200
Max. travel speed	km/h	3.2/5.5	3.1/5.5
Gradeability	°	35	35

## Undercarriage

The undercarriage has a robust X-shaped frame. Greased and sealed track chains are standard.

Track pads		2 x 46	2 x 49
Link pitch	mm	171.45	190
Shoe width, triple grouser	mm	500/600/ 750	600/700/ 800/900
Shoe width, triple grouser (HD)	mm	600/700	600
Shoe width, rubber grouser	mm	500	600
Shoe width, double grouser	mm		700
Bottom rollers		2 x 7	2 x 8
Top rollers		2 x 1	2 x 2

## Hydraulic system

The hydraulic system, also known as the "Automatic Sensing Work Mode," is designed for high-productivity, high-digging capacity, high-maneuvering precision and excellent fuel economy. The summation system, boom, arm and swing priority along with boom, arm and bucket regeneration provides optimum performance.

The following important functions are included in the system:

**Summation system:** Combines the flow of both hydraulic pumps to ensure quick cycle times and high productivity.

**Boom priority:** Gives priority to the boom operation for faster raising when loading or performing deep excavations.

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

**Swing priority:** Gives priority to swing functions for faster simultaneous operations.

**Regeneration system:** Prevents cavitation and provides flow to other movements during simultaneous operations for maximum productivity.

**Power boost:** All digging and lifting forces are increased.

**Holding valves:** Boom and arm holding valves prevent the digging equipment from creeping.

		ECR145D	ECR235D
Main pump, Type 2 x variable displacement axial piston pumps			
Maximum flow	l/min	2x124	2x207
Pilot pump, Type Gear pump Maximum flow	l/min	20	18

## Hydraulic motors

**Travel:** Variable displacement axial piston motor with mechanical brake. **Slew:** Fixed displacement axial piston motor with mechanical brake

### Relief valve setting

Implement	MPa	32.3/34.3	34.3/36.3
	psi	4 690/4 980	4 980/5 260
	kg/cm <sup>2</sup>	330/350	350/370
Travel circuit	MPa	34.3	34.3
	psi	4 980	4 980
	kg/cm <sup>2</sup>	350	350
Slew circuit	MPa	26.5	27.9
	psi	3 840	4 050
	kg/cm <sup>2</sup>	270	285
Pilot circuit	MPa	3.9	3.9
	psi	570	570
	kg/cm <sup>2</sup>	40	40

## Hydraulic cylinders

		ECR145D	ECR235D
Mono boom		2	2
Bore x Stroke	ø x mm	105x1 055	130x1 420
1st boom of 2 piece boom		2	2
Bore x Stroke	ø x mm	110x980	130x1 345
2nd boom of 2 piece boom		1	1
Bore x Stroke	ø x mm	160x765	160x1 070
Arm		1	1
Bore x Stroke	ø x mm	120x1 045	135x1 540
Bucket		1	1
Bore x Stroke	ø x mm	100x865	120x1 065
Dozer blade		2	2
Bore x Stroke	ø x mm	130x270	140x320

## Service refill capacities

Fuel tank	l	210	321
Hydraulic system, total	l	200	280
Hydraulic tank	l	59	113
Engine oil	l	15.5	25
Engine coolant	l	26.0	30.0
Swing reduction unit	l	3.9	7
Travel reduction unit	l	2x2.2	2x5

## Cab

The operator's cab has easy access via a wide door opening. The cab is supported on hydraulic dampening mounts to reduce shock and vibration levels. These along with sound absorbing lining provide low noise levels. The cab has excellent all-round visibility. The front windshield can easily slide up into the ceiling, and the lower front glass can be removed and stored in the side door. Integrated air-conditioning and heating system: The pressurized and filtered cab air is supplied by an automatically-controlled fan. The air is distributed throughout the cab from 14 vents. Ergonomic operator's seat: The adjustable seat and joystick console move independently to accommodate the operator. The seat has nine different adjustments plus a seat belt for the operator's comfort and safety.

## Sound Level

Sound level in cab according to ISO 6396

LpA (standard)	dB(A)	71	71
LpA (tropical)	dB(A)	72	72

External sound level according to ISO 6395 and EU Noise Directive (2000/14/EC) and 474-1:2006 +A1:2009

LwA (standard)	dB(A)	100	101
LwA (tropical)	dB(A)	101	102

# SPECIFICATIONS.

## MAXIMUM PERMITTED BUCKETS

		Max bucket capacity	Max bucket weight	Max bucket capacity	Max bucket weight	Max bucket capacity	Max bucket weight	Max bucket capacity	Max bucket weight	Max bucket capacity	Max bucket weight	Max bucket capacity	Max bucket weight
Material density	t/m <sup>3</sup>	ℓ	kg	ℓ	kg	ℓ	kg	ℓ	kg	ℓ	kg	ℓ	kg
<b>Boom</b>	m	<b>4.6</b>						<b>4.72m 2-piece</b>					
<b>Arm</b>	m	<b>2.1</b>		<b>2.5</b>		<b>3.0</b>		<b>2.1</b>		<b>2.5</b>		<b>3.0</b>	
<b>ECR145DL with 600mm shoe</b>													
<b>For direct fit Buckets</b>													
GP Bucket	1.5	875	750	725	600	625	500	850	700	725	600	625	500
	1.8	775	650	650	550	550	450	750	650	650	550	550	450
HD Bucket	1.8	750	750	625	600	525	500	725	700	625	600	525	500
	2.0	700	700	575	550	500	500	675	650	575	550	500	500
<b>For S6 quick fit buckets</b>													
GP Bucket	1.5	825	700	675	550	575	500	825	700	675	550	575	500
	1.8	750	600	600	500	500	400	725	600	600	500	500	400
HD Bucket	1.8	700	700	575	550	475	450	675	650	575	550	475	450
	2.0	650	650	525	500	450	450	625	600	525	500	450	450
<b>For U quick fit buckets</b>													
GP Bucket	1.5	800	650	650	550	550	450	775	650	650	550	550	450
	1.8	700	600	575	500	475	400	700	550	575	500	475	400
HD Bucket	1.8	675	650	550	550	450	450	650	650	550	550	450	450
	2.0	625	600	500	500	425	400	600	600	500	500	425	400
<b>ECR145DL with 700mm shoe</b>													
<b>For direct fit Buckets</b>													
GP Bucket	1.5	875	750	725	600	625	500	875	750	725	600	625	500
	1.8	775	650	650	550	550	450	775	650	650	550	550	450
HD Bucket	1.8	750	750	625	600	525	500	750	750	625	600	525	500
	2.0	700	700	575	550	500	500	700	700	575	550	500	500
<b>For S6 quick fit buckets</b>													
GP Bucket	1.5	825	700	675	550	575	500	825	700	675	550	575	500
	1.8	750	600	600	500	500	400	750	600	600	500	500	400
HD Bucket	1.8	700	700	575	550	475	450	700	700	575	550	475	450
	2.0	650	650	525	500	450	450	650	650	525	500	450	450
<b>For U quick fit buckets</b>													
GP Bucket	1.5	800	650	650	550	550	450	800	650	650	550	550	450
	1.8	700	600	575	500	475	400	700	600	575	500	475	400
HD Bucket	1.8	675	650	550	550	450	450	675	650	550	550	450	450
	2.0	625	600	500	500	425	400	625	600	500	500	425	400
<b>Boom</b>	m	<b>5.7</b>						<b>5.76m 2-piece</b>					
<b>Arm</b>	m	<b>2.5</b>		<b>2.9</b>		<b>2.5</b>		<b>2.9</b>		<b>2.5</b>		<b>2.9</b>	
<b>ECR235DL with 600mm shoe</b>													
<b>For direct fit Buckets</b>													
GP Bucket	1.5	1 475	1 250	1 325	1 100	1 400	1 150	1 275	1 100				
	1.8	1 300	1 100	1 175	1 000	1 225	1 050	1 150	950				
HD Bucket	1.8	1 250	1 250	1 125	1 100	1 175	1 150	1 075	1 050				
	2.0	1 150	1 150	1 050	1 050	1 100	1 100	1 000	1 000				
<b>For S1 quick fit buckets</b>													
GP Bucket	1.5	1 350	1 150	1 200	1 000	1 250	1 050	1 150	950				
	1.8	1 200	1 000	1 050	900	1 100	950	1 025	850				
HD Bucket	1.8	1 125	1 100	1 000	1 000	1 050	1 050	975	950				
	2.0	1 050	1 050	925	900	975	950	900	900				
<b>For U quick fit buckets</b>													
GP Bucket	1.5	1 400	1 150	1 250	1 050	1 300	1 100	1 200	1 000				
	1.8	1 225	1 050	1 100	900	1 150	950	1 050	900				
HD Bucket	1.8	1 175	1 150	1 050	1 050	1 100	1 100	1 000	1 000				
	2.0	1 075	1 050	975	950	1 025	1 000	925	900				
<b>ECR235DL with 700mm shoe</b>													
<b>For direct fit Buckets</b>													
GP Bucket	1.5	1 500	1 250	1 325	1 100	1 425	1 200	1 300	1 100				
	1.8	1 325	1 100	1 175	1 000	1 250	1 050	1 150	950				
HD Bucket	1.8	1 250	1 250	1 125	1 100	1 175	1 150	1 100	1 100				
	2.0	1 175	1 150	1 050	1 050	1 100	1 100	1 025	1 000				
<b>For S1 quick fit buckets</b>													
GP Bucket	1.5	1 350	1 150	1 200	1 000	1 275	1 050	1 175	1 000				
	1.8	1 200	1 000	1 050	900	1 125	950	1 025	850				
HD Bucket	1.8	1 150	1 150	1 000	1 000	1 075	1 050	975	950				
	2.0	1 075	1 050	925	900	1 000	1 000	925	900				
<b>For U quick fit buckets</b>													
GP Bucket	1.5	1 400	1 200	1 250	1 050	1 325	1 100	1 225	1 000				
	1.8	1 250	1 050	1 100	900	1 175	1 000	1 075	900				
HD Bucket	1.8	1 175	1 150	1 050	1 050	1 100	1 100	1 025	1 000				
	2.0	1 100	1 100	975	950	1 025	1 000	950	950				

Note: 1. Bucket size based on ISO 7451, 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.

3. Bucket widths are less than bucket's tip radius.

## GROUND PRESSURE

### ECR145DL with 2.5m Arm, 419kg bucket, 3 200 kg counterweight

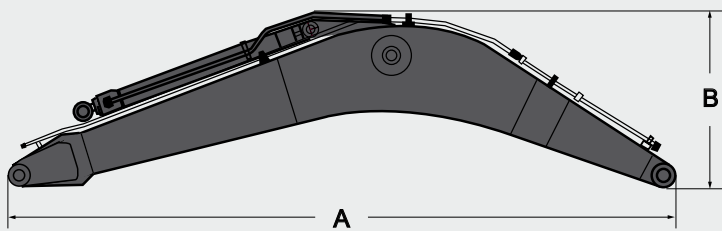
	Shoe width	Operating weight	Ground pressure	Ground pressure	Overall width	Operating weight	Ground pressure	Ground pressure	Overall width
	mm	kg	kPa	psi	mm	kg	kPa	psi	mm
			<b>4.6m boom</b>				<b>4.72m 2-piece boom</b>		
<b>Triple grouser</b>	500	14 960	44.5	6.5	2 490	15 360	45.7	6.6	2 490
	600	15 160	37.6	5.5	2 590	15 560	38.6	5.6	2 590
	750	15 540	30.8	4.5	2 740	15 940	31.6	4.6	2 740
<b>Triple grouser (HD)</b>	600	15 230	37.8	5.5	2 590	15 630	38.8	5.6	2 590
	700	15 430	32.8	4.8	2 690	15 830	33.7	4.9	2 690
<b>Rubber shoe</b>	500	15 000	44.7	6.5	2 490	15 400	45.8	6.6	2 490
			<b>4.6m boom, Dozer blade</b>				<b>4.72m 2-piece boom, Dozer blade</b>		
<b>Triple grouser</b>	500	15 830	47.1	6.8	2 490	16 230	48.3	7	2 490
	600	16 040	39.8	5.8	2 590	16 440	40.8	5.9	2 590
	750	16 420	32.6	4.7	2 740	16 820	33.4	4.8	2 740
<b>Triple grouser (HD)</b>	600	16 110	40	5.8	2 590	16 510	41	5.9	2 590
	700	16 310	34.7	5	2 690	16 710	35.5	5.2	2 690
<b>Rubber shoe</b>	500	15 870	47.2	6.9	2 490	16 270	48.4	7	2 490

### ECR235DL with 2.9m Arm, 693kg bucket, 6 400 kg counterweight

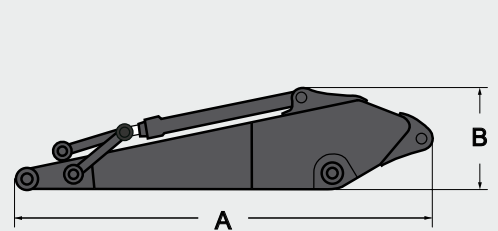
			<b>5.7m boom</b>			<b>5.76m 2-piece boom</b>			
			kPa	psi		kPa	psi		
<b>Triple grouser</b>	600	24 650	51.1	7.4	2 990	25 230	52.3	7.6	2 990
	700	25 100	44.6	6.5	3 090	25 680	45.6	6.6	3 090
	800	25 380	39.4	5.7	3 190	25 960	40.4	5.9	3 190
	900	25 670	35.5	5.1	3 290	26 250	36.3	5.3	3 290
<b>Triple grouser (HD)</b>	600	24 820	51.4	7.5	2 990	25 400	52.6	7.6	2 990
<b>Double grouser</b>	700	25 380	45.1	6.5	3 090	25 960	46.1	6.7	3 090
<b>Rubber shoe</b>	600	24 940	51.7	7.5	2 990	25 520	52.9	7.7	2 990
			<b>5.7m boom, Dozer blade</b>			<b>5.76m 2-piece boom, Dozer blade</b>			
<b>Triple grouser</b>	600	26 030	53.9	7.8	2 990	26 610	55.1	8	2 990
	700	26 500	47.1	6.8	3 090	27 080	48.1	7	3 090
	800	26 790	41.6	6	3 190	27 370	42.5	6.2	3 190
	900	27 080	37.4	5.4	3 290	27 660	38.2	5.5	3 290
<b>Triple grouser (HD)</b>	600	26 200	54.3	7.9	2 990	26 780	55.5	8	2 990
<b>Double grouser</b>	700	26 780	47.6	6.9	3 090	27 360	48.6	7	3 090
<b>Rubber shoe</b>	600	26 320	54.5	7.9	2 990	26 900	55.7	8.1	2 990

## DIMENSIONS

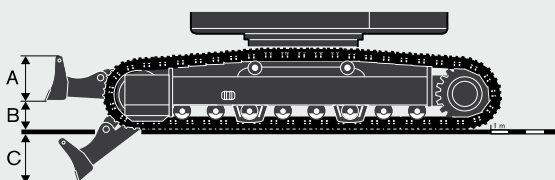
### Boom



### Arm



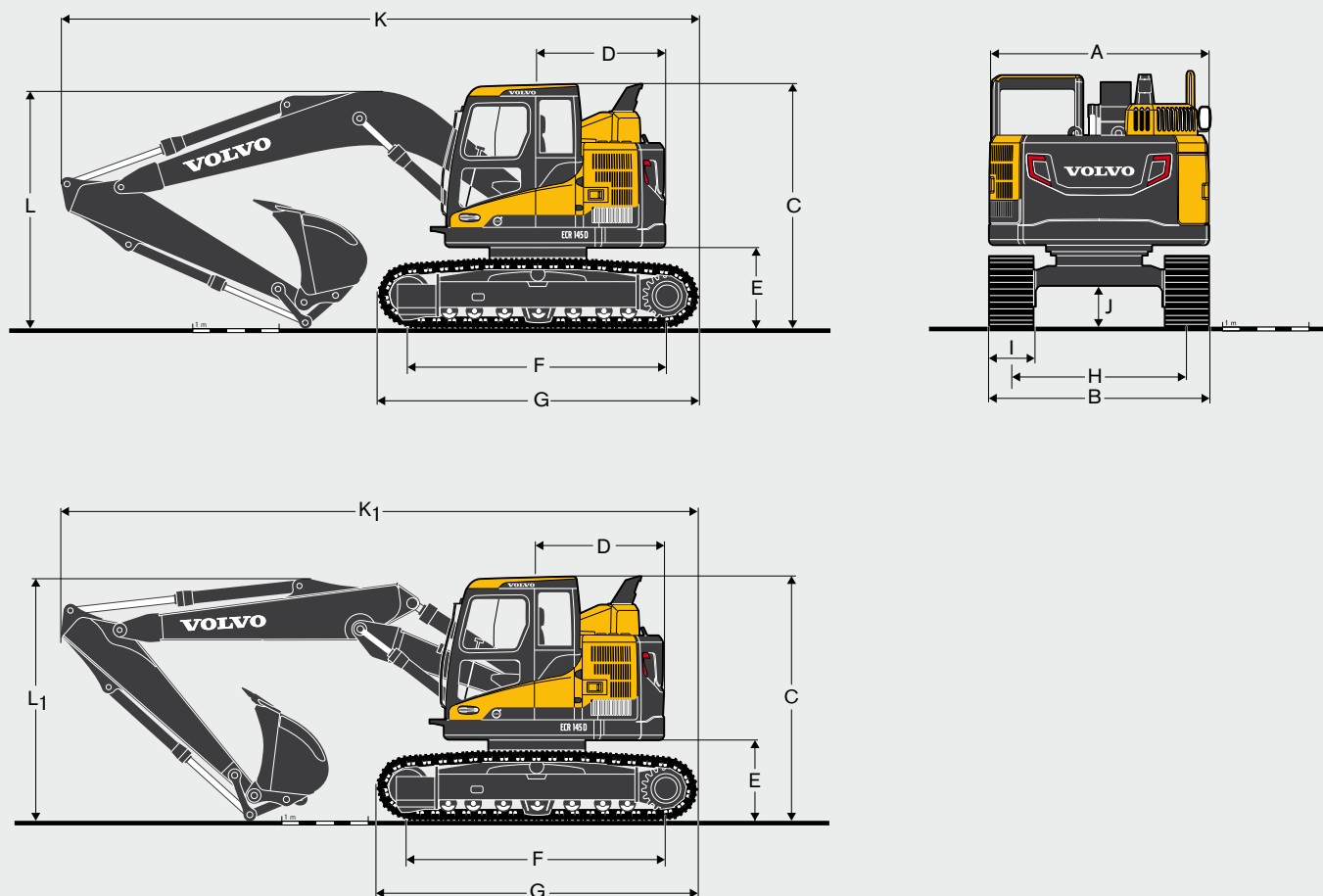
Boom		ECR145DL		ECR235DL		Arm		ECR145DL			ECR235DL	
	Unit	mono	2-piece	mono	2-piece		Unit					
Boom	m	4.6	4.72	5.7	5.76	Arm	m	2.1	2.5	3.0	2.5	2.9
A. Length	mm	4 770	4 885	5 910	5 965	A. Length	mm	2 790	3 195	3 690	3 525	3 910
B. Height	mm	1 370	1 135	1 770	1 300	B. Height	mm	680	675	750	860	860
Width	mm	545	545	670	670	Width	mm	275	275	275	440	440
Weight	kg	1 130	1 450	2 000	2 570	Weight	kg	560	624	684	975	1 000



Front Dozer Blade		Unit	ECR145DL	ECR235DL
A. Height	mm		580	600
Width 500mm shoe	mm		2 490	-
Width 600mm shoe	mm		2 590	2 990
Width 700mm shoe	mm		2 690	3 090
Width 800mm shoe	mm		-	3 190
Weight	kg		460	790
B. Lift height	mm		590	610
C. Digging depth	mm		570	480

# SPECIFICATIONS.

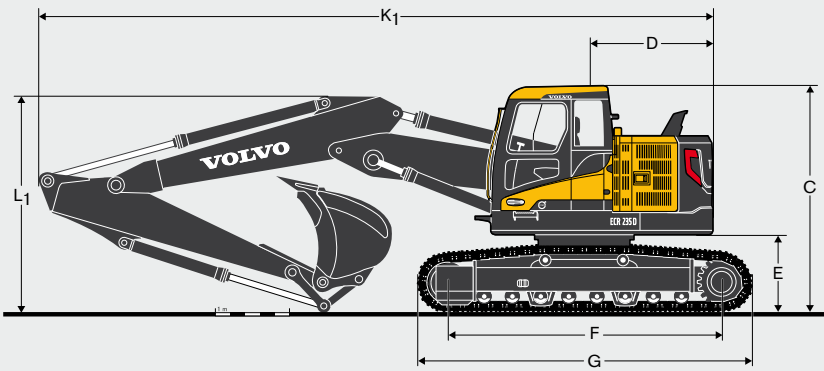
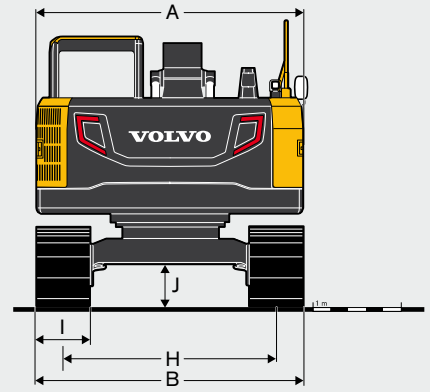
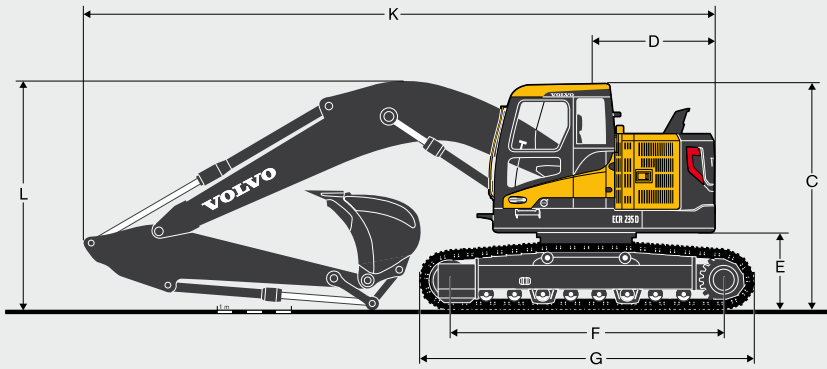
## DIMENSIONS ECR145DL



Description	Unit	ECR145DL		
		4.6 mono or 4.72 2-piece		
Boom	m	4.6 mono or 4.72 2-piece		
Arm	m	2.1	2.5	3.0
A. Overall width of upper structure	mm	2 490	2 490	2 490
B. Overall width	mm	2 690	2 690	2 690
C. Overall height of cab	mm	2 855	2 855	2 855
D. Tail slew radius	mm	1 494	1 494	1 494
E. Counterweight clearance *	mm	900	900	900
F. Tumbler length	mm	3 040	3 040	3 040
G. Track length	mm	3 750	3 750	3 750
H. Track gauge	mm	1 990	1 990	1 990
I. Shoe width	mm	700	700	700
J. Min. ground clearance *	mm	430	430	430
K. Overall length	mm	7 400	7 405	7 345
K'. Overall length	mm	7 505	7 470	7 370
L. Overall height of boom	mm	2 745	2 865	3 270
L'. Overall height of boom	mm	2 665	2 860	3 350

\* Without shoe grouser

## DIMENSIONS ECR235DL

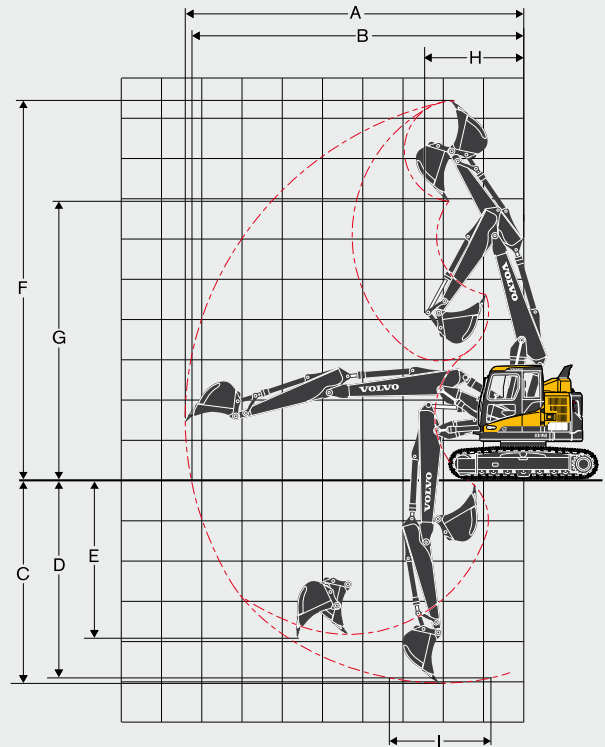
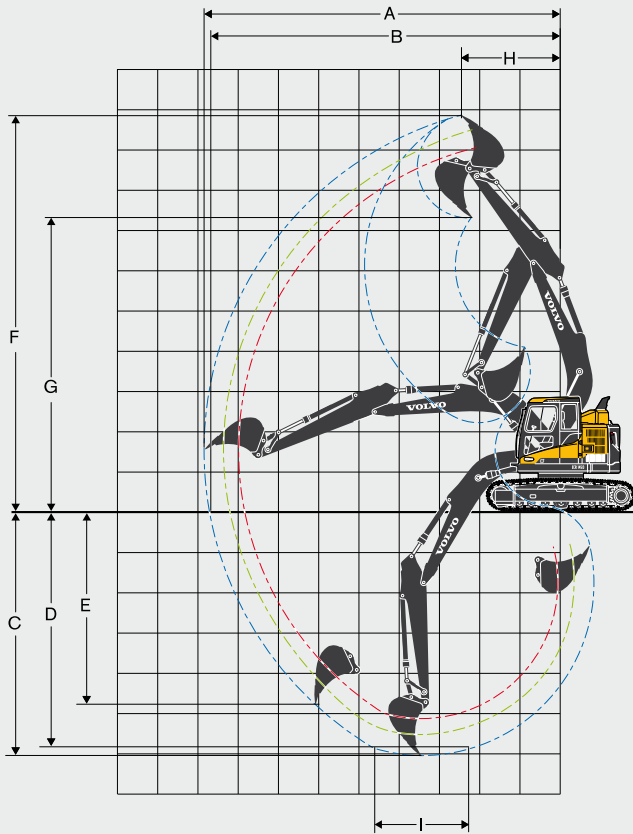


Description	Unit	ECR235DL	
Boom	m	5.7 mono or 5.76 2-piece	
Arm	m	2.5	2.9
A. Overall width of upper structure	mm	2 990	2 990
B. Overall width	mm	3 090	3 090
C. Overall height of cab	mm	3 040	3 040
D. Tail slew radius	mm	1 720	1 720
E. Counterweight clearance *	mm	1 025	1 025
F. Tumbler length	mm	3 660	3 660
G. Track length	mm	4 460	4 460
H. Track gauge	mm	2 390	2 390
I. Shoe width	mm	700	700
J. Min. ground clearance *	mm	460	460
K. Overall length	mm	9 080	8 985
K'. Overall length	mm	9 120	9 100
L. Overall height of boom	mm	3 235	3 080
L'. Overall height of boom	mm	3 005	2 905

\* Without shoe grouser

# SPECIFICATIONS.

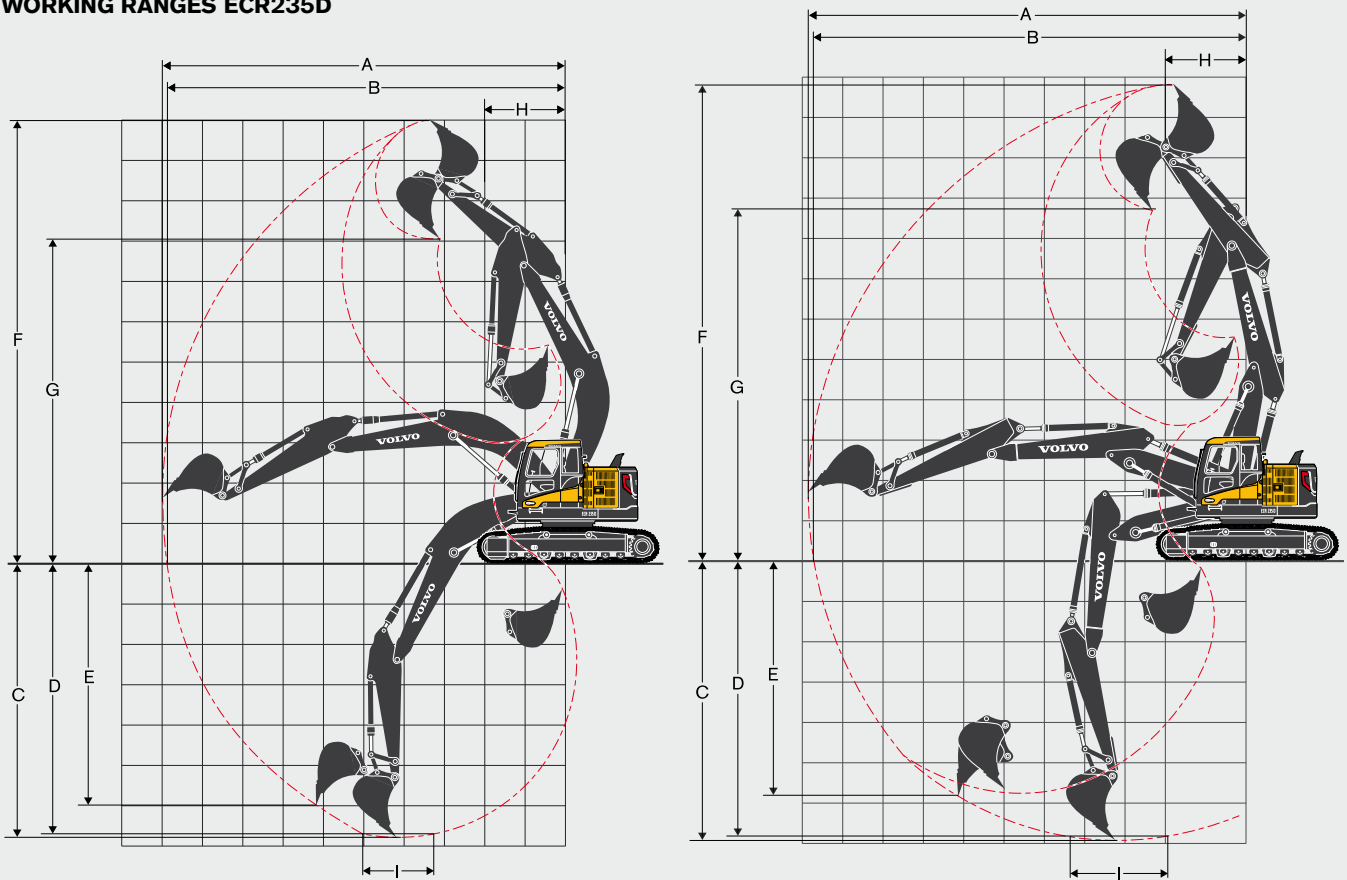
## WORKING RANGES ECR145D



Description		Unit	ECR145DL						
			4.6 mono			4.72 2-piece			
Boom		m							
Arm		m	2.1	2.5	3.0	2.1	2.5	3.0	
A. Max. digging reach		mm	7 980	8 350	8 840	8 210	8 600	9 090	
B. Max. digging reach on ground		mm	7 830	8 210	8 700	8 060	8 450	8 960	
C. Max. digging depth		mm	5 110	5 510	6 010	5 220	5 620	6 120	
D. Max. digging depth (l.= 2.44m level)		mm	4 860	5 290	5 830	5 100	5 510	6 020	
E. Max. vertical wall digging depth		mm	3 920	4 290	4 810	4 120	4 480	4 970	
F. Max. cutting height		mm	9 100	9 420	9 860	9 390	9 740	10 210	
G. Max. dumping height		mm	6 570	6 900	7 330	6 850	7 210	7 680	
H. Min. front swing radius		mm	1 800	1 980	2 340	2 230	2 470	2 890	
<b>Digging forces with direct fit bucket</b>									
Bucket radius		mm	1 270	1 270	1 270	1 270	1 270	1 270	
Breakout force - bucket	Normal	SAE	kN	80.8	80.8	80.8	80.8	80.8	80.8
	Power boost		kN	85.7	85.7	85.7	85.7	85.7	85.7
	Normal	ISO	kN	91	91	91	91	91	91
	Power boost		kN	96.6	96.6	96.6	96.6	96.6	96.6
Tearout force - dipper arm	Normal	SAE	kN	69.6	62.2	55.4	69.6	62.2	55.4
	Power boost		kN	73.8	66.1	55.8	73.8	66.1	55.8
	Normal	ISO	kN	71.3	63.6	56.4	71.3	63.6	56.4
	Power boost		kN	75.8	67.4	59.8	75.8	67.4	59.8
Rotation angle, bucket		°	178						



## WORKING RANGES ECR235D



Description		Unit	ECR235DL				
Boom		m	5.7 mono		5.76 2-piece		
Arm		m	2.5	2.9	2.5	2.9	
A. Max. digging reach		mm	9 500	9 880	9 680	10 070	
B. Max. digging reach on ground		mm	9 330	9 720	9 510	9 910	
C. Max. digging depth		mm	6 310	6 710	5 910	6 310	
D. Max. digging depth (l.= 2.44m level)		mm	6 080	6 510	5 800	6 210	
E. Max. vertical wall digging depth		mm	5 180	5 650	4 850	5 270	
F. Max. cutting height		mm	10 620	10 940	11 170	11 530	
G. Max. dumping height		mm	7 600	7 910	8 130	8 510	
H. Min. front swing radius		mm	2 280	2 000	2 150	2 010	
<b>Digging forces with direct fit bucket</b>							
Bucket radius		mm	1 525	1 525	1 525	1 525	
Breakout force - bucket	Normal	SAE	kN	126.3	126.3	126.3	126.3
	Power boost		kN	133.5	133.5	133.5	133.5
	Normal	ISO	kN	142.1	142.1	142.1	142.1
	Power boost		kN	150.2	150.2	150.2	150.2
Tearout force - dipper arm	Normal	SAE	kN	117.1	101.2	117.1	101.2
	Power boost		kN	123.8	107	123.8	107
	Normal	ISO	kN	120.4	103.7	120.4	103.7
	Power boost		kN	127.3	109.7	127.3	109.7
Rotation angle, bucket		°	175				





















# SPECIFICATIONS.

## ECR145DL Lifting capacity 700mm track shoe, 3 200 kg counterweight

At the arm end without bucket

For Lifting capacity including bucket, simply subtract actual weight of the direct fit bucket or the bucket with quick fit from the following values

	Lifting Point m	1.5m		3.0m		4.5m		6.0m		7.5m		Max. reach		Max. m
		 kg	 kg	 kg	 kg	 kg	 kg	 kg	 kg	 kg	 kg	 kg	 kg	
2PCS Boom: 4.72m Arm: 3.0m	7.5	-	-	-	-	*3 980	*3 980	-	-	-	-	*3 180	*3 180	4.97
	6	-	-	-	-	*3 770	*3 770	*3 530	2 500	-	-	*2 640	2 210	6.4
	4.5	-	-	-	-	*3 730	*3 730	3 960	2 480	-	-	*2 440	1 780	7.23
	3	-	-	-	-	*5 060	3 730	3 850	2 380	2 690	1 650	*2 390	1 570	7.69
	1.5	-	-	-	-	5 810	3 450	3 710	2 260	2 640	1 600	*2 460	1 500	7.82
	0	-	-	-	-	5 570	3 240	3 600	2 160	2 600	1 570	2 530	1 520	7.66
	-1.5	-	-	*7 460	5 800	5 470	3 150	3 550	2 110	-	-	2 770	1 660	7.18
-3	-	-	*6 170	5 890	*4 530	3 170	*2 830	2 140	-	-	*2 260	2 030	6.3	
2PCS Boom: 4.72m Arm: 2.1m + Dozer blade down	7.5	-	-	*6 240	*6 240	-	-	-	-	-	-	*5 300	*5 300	3.37
	6	-	-	*5 290	*5 290	*5 480	4 560	-	-	-	-	*3 950	3 490	5.27
	4.5	-	-	*5 480	*5 480	*5 690	4 480	*4 790	2 850	-	-	*3 580	2 640	6.27
	3	-	-	-	-	*6 320	4 260	*4 900	2 790	-	-	*3 500	2 300	6.79
	1.5	-	-	-	-	*6 780	4 040	*4 970	2 690	-	-	*3 630	2 180	6.94
	0	-	-	-	-	*6 530	3 910	*4 690	2 630	-	-	*3 750	2 240	6.76
-1.5	-	-	*6 990	*6 990	*5 410	3 880	*3 600	2 630	-	-	*3 190	2 530	6.21	
2PCS Boom: 4.72m Arm: 2.5m + Dozer blade down	7.5	-	-	*5 310	*5 310	-	-	-	-	-	-	*4 030	*4 030	4.12
	6	-	-	-	-	*4 690	4 620	-	-	-	-	*3 210	3 040	5.77
	4.5	-	-	*4 100	*4 100	*4 890	4 520	*4 570	2 870	-	-	*2 940	2 390	6.69
	3	-	-	-	-	*6 060	4 300	*4 760	2 790	-	-	*2 880	2 100	7.18
	1.5	-	-	-	-	*6 670	4 050	*4 930	2 690	-	-	*2 980	2 010	7.33
	0	-	-	-	-	*6 630	3 890	*4 790	2 610	-	-	*3 250	2 050	7.15
	-1.5	-	-	*7 870	7 160	*5 760	3 830	*4 030	2 580	-	-	*3 110	2 270	6.63
-3	-	-	-	-	*3 840	*3 840	-	-	-	-	-	-	-	5.67
2PCS Boom: 4.72m Arm: 3.0m + Dozer blade down	7.5	-	-	-	-	*3 980	*3 980	-	-	-	-	*3 180	*3 180	4.97
	6	-	-	-	-	*3 770	*3 770	*3 530	2 900	-	-	*2 640	2 570	6.4
	4.5	-	-	-	-	*3 730	*3 730	*3 990	2 880	-	-	*2 440	2 080	7.23
	3	-	-	-	-	*5 060	4 330	*4 530	2 780	*3 170	1 940	*2 390	1 860	7.69
	1.5	-	-	-	-	*6 410	4 050	*4 790	2 660	*3 760	1 900	*2 460	1 770	7.82
	0	-	-	-	-	*6 630	3 830	*4 800	2 550	*3 470	1 860	*2 640	1 800	7.66
	-1.5	-	-	*7 460	6 990	*6 040	3 740	*4 310	2 500	-	-	*2 910	1 970	7.18
-3	-	-	*6 170	*6 170	*4 530	3 760	*2 830	2 540	-	-	*2 260	*2 260	6.30	

Notes: 1. Machine in "Fine Mode-F" (Power boost) for lifting capacities.

2. The above loads are in compliance with SAE J1097 and ISO 10567 Hydraulic Excavator Lifting Capacity Standards.

3. Rated loads do not exceed 87% of hydraulic lifting capacity or 75% tipping load.

4. Rated loads marked with an asterisk (\*) are limited by hydraulic capacity rather than tipping load.









# EQUIPMENT.

## STANDARD EQUIPMENT

	ECR145D	ECR235D
<b>Engine</b>		
Turbocharged, 4 stroke diesel engine with water cooling, direct injection and charged air cooler that meets Stage IIIB/ Tier 4 Interim requirements		
Air filter with indicator	•	•
Air intake heater	•	•
Electric engine shut-off	•	•
Fuel filter and water separator	•	•
Fuel filler pump: 35 l/min, with automatic shut-off	•	•
Alternator, 80 A	•	•
<b>Electric/Electronic control system</b>		
Contronics	•	•
- Advanced mode control system	•	•
- Self-diagnostic system	•	•
Machine status indication	•	•
Engine speed sensing power control	•	•
Automatic idling system	•	•
One-touch power boost	•	•
Safety stop/start function	•	•
Adjustable LCD color monitor	•	•
Master electrical disconnect switch	•	•
Engine restart prevention circuit	•	•
High-capacity halogen lights:	•	•
- Frame-mounted 2	•	•
- Boom-mounted 2	•	•
<b>Batteries:</b>		
2 x 12 V / 100 Ah (ECR145D)	•	
2 x 12 V / 150 Ah (ECR235D)		•
Start motor, 24 V / 5.5 kW	•	•
<b>Hydraulic system</b>		
Hose rupture valve: boom	•	•
Overload warning device	•	•
Automatic sensing hydraulic system	•	•
- Summation system	•	•
- Boom priority	•	•
- Arm priority	•	•
- Swing priority	•	•
ECO mode fuel saving technology	•	•
Boom, arm and bucket regeneration valves	•	•
Swing anti-rebound valves	•	•
Boom and arm holding valves	•	•
Multi-stage filtering system	•	•
Cylinder cushioning	•	•
Cylinder contamination seals	•	•
Auxiliary hydraulic valve	•	•
Automatic two-speed travel motors	•	•
Hydraulic oil, long life oil, ISO VG 46	•	•
<b>Frame</b>		
Access way with handrail	•	•
Tool storage area	•	•
Punched metal anti-slip plates	•	•
Undercover (heavy-duty)	•	•
Full height counterweight:		
3 200 kg	•	
6 400 kg		•
<b>Cab and interior</b>		
ROPS (ISO12117-2) certified cab	•	•
Silicon oil and rubber mounts with spring	•	•
Travel pedals and hand levers	•	•

	ECR145D	ECR235D
Adjustable operator seat and joystick control console	•	•
Control joysticks with 4 switches each	•	•
Heater & air-conditioner, automatic	•	•
Flexible antenna	•	•
AM/FM stereo with CD player and MP3 input	•	•
Hydraulic safety lock lever	•	•
Cab, all-weather sound suppressed, includes:	•	•
- Cup holders	•	•
- Door locks	•	•
- Tinted glass	•	•
- Floor mat	•	•
- Horn	•	•
- Large storage area	•	•
- Pull-up type front window	•	•
- Removable lower windshield	•	•
- Seat belt	•	•
- Safety glass	•	•
- Sun screens, front, roof, rear	•	•
- Rain shield	•	•
- Windshield wiper with intermittent feature	•	•
Rear view camera	•	•
Master key	•	•
<b>Undercarriage</b>		
Undercover (heavy-duty)	•	•
Hydraulic track adjusters	•	•
Greased and sealed track link	•	•
Track Guard	•	•
Track shoes		
600 mm (24") with triple grousers	•	•
<b>Digging equipment</b>		
Boom: 4.6 m monoblock	•	
Arm: 2.5 m	•	
Boom: 5.7 m monoblock		•
Arm: 2.9 m		•
Manual centralized lubrication	•	•

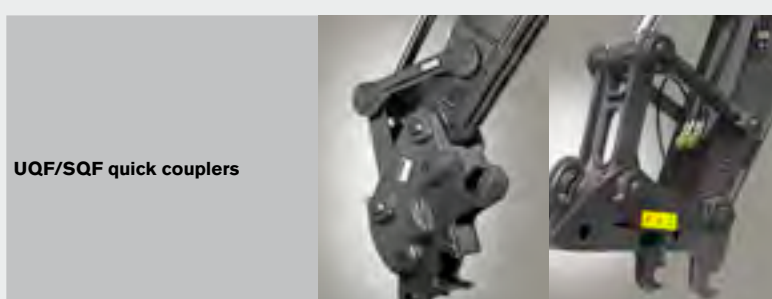
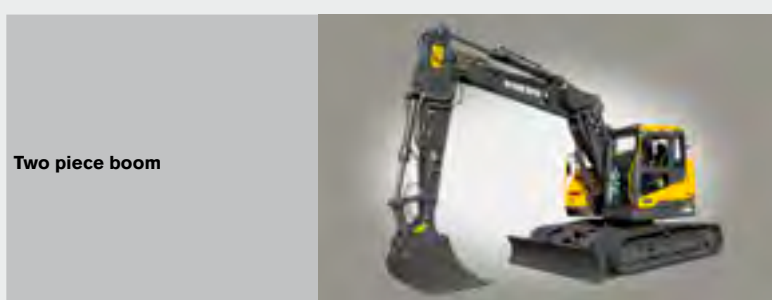
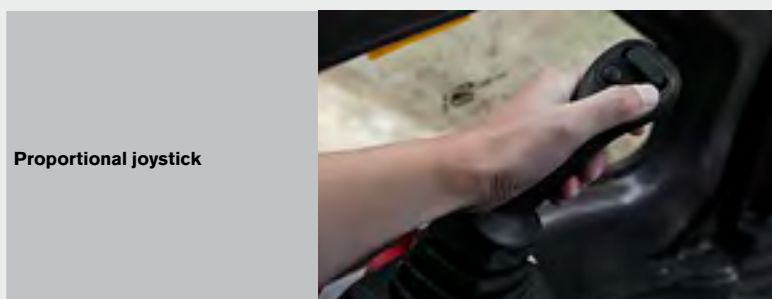
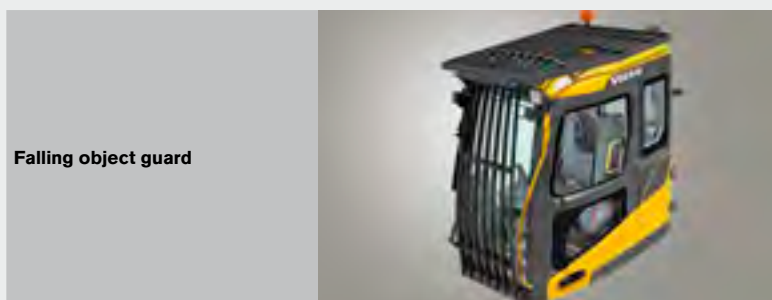
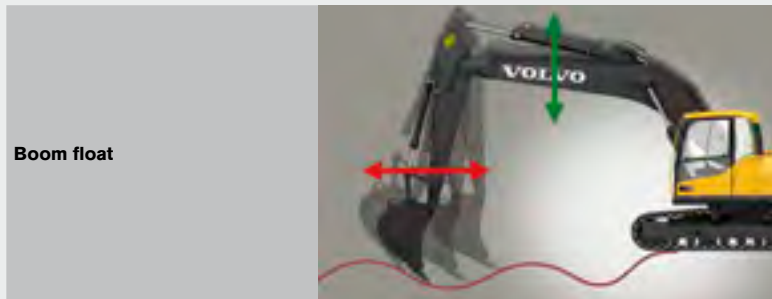
## OPTIONAL EQUIPMENT

	ECR145D	ECR235D
<b>Engine</b>		
Block heater: 120 V, 240 V	•	•
Diesel coolant heater, 5 kW	•	•
Water separator with heater	•	•
Auto engine shutdown	•	•
<b>Electric</b>		
Extra lights:	•	•
- Cab-mounted 2	•	•
- Boom-mounted 2	•	•
- Counterweight-mounted 1	•	•
Travel alarm	•	•
Anti-theft system	•	•
Rotating warning beacon	•	•
<b>Hydraulic system</b>		
Hose rupture valve: arm	•	•
Boom float function with HRV	•	•
Boom float function without HRV	•	•
<b>Hydraulic piping:</b>		
- Attachment management system (up to 18 programmable memories)	•	•
- Hammer & shear, 1 and 2 pump flow	•	•

## OPTIONAL EQUIPMENT

	ECR145D	ECR235D
- Hammer & shear:		
variable flow and pressure pre-setting	•	•
- Slope & rotator	•	•
- Grapple	•	•
- Oil leak (drain) line	•	•
- Quick coupler piping	•	•
Volvo hydraulic quick coupler S6	•	
Volvo hydraulic quick coupler S1		•
Volvo hydraulic quick coupler U14	•	
Volvo hydraulic quick coupler U21		•
Hydraulic oil, biodegradable 46	•	•
Hydraulic oil, longlife oil 32	•	•
Hydraulic oil, longlife oil 46	•	•
Hydraulic oil, longlife oil 68	•	•
<b>Cab and interior</b>		
Fabric seat with heater	•	•
Fabric seat with heater and air suspension	•	•
Pilot control pattern change	•	•
Opening top hatch	•	•
Falling object guard (FOG)	•	•
- Cab-mounted	•	•
Cab-mounted falling object protective structure (FOPS)	•	•
Smoker kit (ashtray and lighter)	•	•
Screen guard for front window	•	•
Anti-vandalism kit	•	•
Specific key	•	•
<b>Undercarriage</b>		
Full track guard		•
<b>Track shoes</b>		
500mm / 750mm with triple grousers	•	
600mm / 700mm with HD triple grousers	•	
500mm with rubber shoe	•	
700mm / 800mm / 900 mm with triple grousers		•
700mm with HD triple grousers		•
700mm with double grousers		•
600mm with rubber shoe		•
<b>Digging equipment</b>		
Boom: 4.72 m 2piece boom	•	
Boom: 5.76 m 2piece boom		•
Arm: 2.1 m, 3.0 m	•	
Arm: 2.5 m HD		•
Linkage with lifting eye	•	•
Extended greasing bushing	•	•
<b>Service</b>		
Tool kit, daily maintenance	•	•
Tool kit, Compact	•	•

## SELECTION OF VOLVO OPTIONAL EQUIPMENT



# 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.

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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