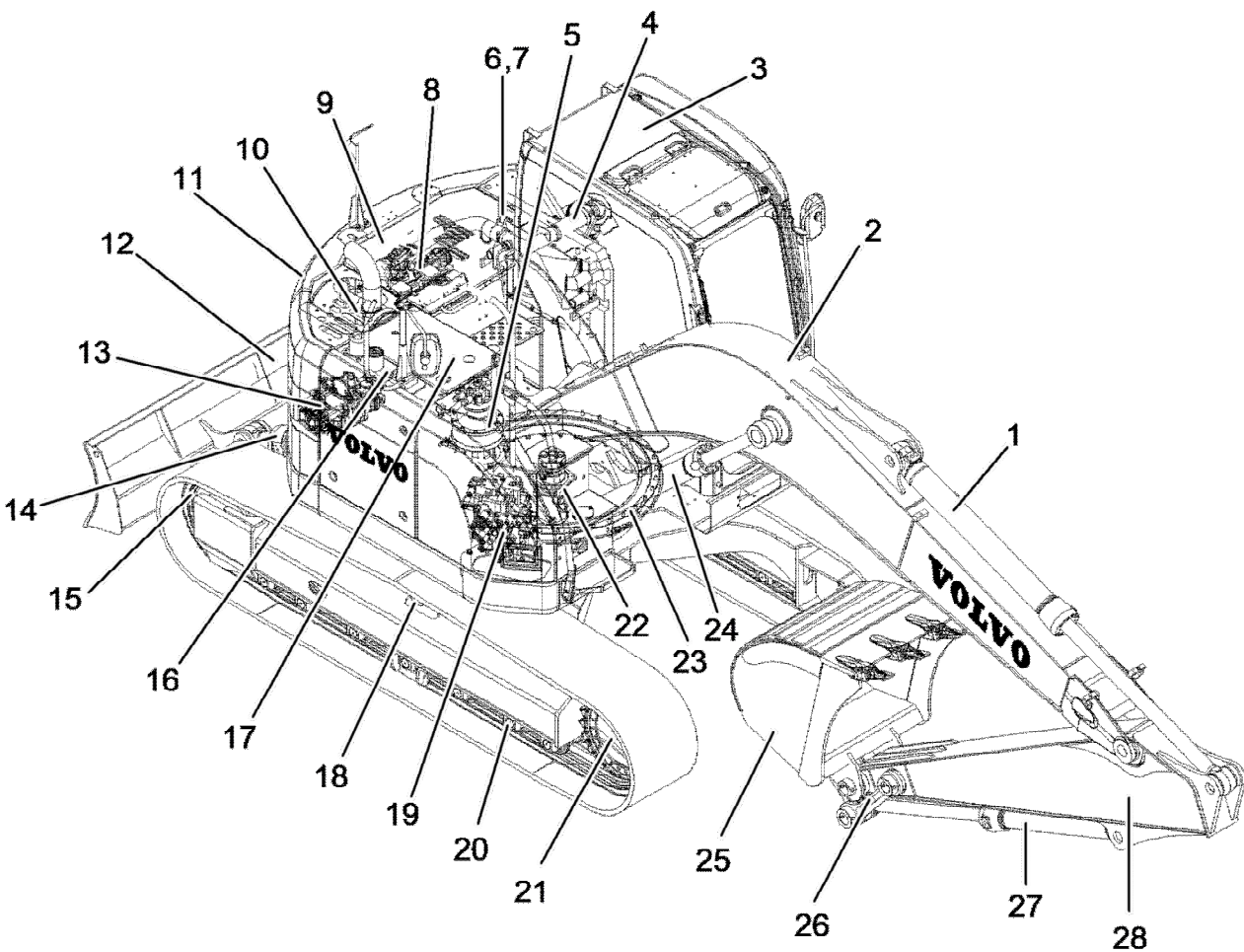


Document Title: <b>Machine view</b>	Function Group: <b>000</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

## Machine view

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
ECR145C L Volvo			



V1055477

**Figure 1**

Component position

1	Dipper arm cylinder	15	Idler
2	Boom	16	Fuel tank
3	Operator cab	17	Hydraulic tank
4	Air cleaner	18	Top roller

Sample manual. Download All 2339 pages at:

<https://www.arepairmanual.com/downloads/ecr145cl-volvo-excavator-service-manual/>

Product: ECR145CL Volvo Excavator Service Manual

Full Download: <https://www.arepairmanual.com/downloads/ecr145cl-volvo-excavator-service-manual/>

5	Swing motor and gearbox	19	Main control valve
6	Oil cooler	20	Bottom roller
7	Radiator and charge air cooler	21	Track motor and gearbox
8	Engine	22	Center passage
9	Rear hood	23	Swing ring gear
10	Muffler	24	Boom cylinder
11	Counterweight	25	Bucket
12	Dozer Blade	26	Link
13	Main pump	27	Bucket cylinder
14	Dozer Blade cylinder	28	Dipper arm

Sample manual. Download All 2339 pages at:

<https://www.arepairmanual.com/downloads/ecr145cl-volvo-excavator-service-manual/>

Document Title: <b>Product plates</b>	Function Group: <b>000</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

## Product plates

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
ECR145C L Volvo			

When ordering spare parts, and in all telephone enquiries or correspondence the model designation and the Product Identification Number (PIN) must always be quoted.

### Product plate

The product plate on the machine shows the manufacturer's name and address, model designation, PIN, machine weight, engine output, production year and year of delivery. There is also room for the CE mark. The plate is positioned under the boom on the superstructure frame.

### Models (General application)

Volvo Crawler excavators and Wheel excavators are available in different sizes from 5 ton to 95 ton. Some machines can be equipped with different Attachments, Demolition, High Reach Demolition, Pipe Layer, Rotating Pipelayer Kit machine and Dozer blade.

EC	Excavator Crawler	EW	Excavator Wheel
ECR	Excavator Crawler Short-Swing-Radius	AG	Agricultural machines
PL	Pipe Layer	FE	Feller Bunchers
L, LC	Long Crawler	NLD	Narrow Crawler Demolition
N, NC	Narrow Crawler	HR	High Reach Demolition
NL, NLC	Narrow Long Crawler	F, FX	Forestry Application
LM, LCM	Long Crawler Marsh	LD, LCD	Long Crawler Demolition
LR	Long Reach Boom & Arm	LC4	Long Crawler 4
LHDS	Long Crawler Heavy Duty Shanghai	LS	Long Crawler Shanghai
LHDC	Long Crawler Heavy Duty Changwon	NH	Narrow Heavy Duty
LRC4	Long Reach Crawler 4 (Boom & Arm)		

### Supplementary PIN plate (EU countries only)

V	C	E	E	C	3	5	C	C	0	0	0	1	2	3	4	5
A			B			C			D							

V1076896

Figure 1

Example of 17 digit PIN number on PIN plate

- A. World Manufacturing Code
- B. Machine description
- C. Check letters
- D. Serial number

The supplementary plate contains information about machine mass in kg, engine net power in Kw, manufacturing year,

machine serial number and a CE-mark.

#### **Machine mass**

The machine mass in kg on the supplementary PIN plate is based on:

- cab or canopy
- most used track type
- most usual bucket (without load)
- full fuel tank

For safety reasons, 103 % of the machine mass will be shown on the supplementary PIN plate.

#### **Engine**

The engine product plate contains type designation and part and serial numbers and is positioned on the engine inside the rear engine cover on the right side of the machine.

#### **Attachment quick coupler**

The attachment quick coupler nameplate is attached on the outside of the attachment quick coupler. (shows part number and weight)

#### **Bucket**

The bucket nameplate is attached on the top of the bucket. (shows the bucket model order No, Serial number, bucket part number, rated capacity, weight, cutting width, tooth part number and adapted part number)

#### **Cab**

The nameplate is attached on the inside of the cab and indicates the product number, serial number, model type, and weight.

Document Title: <b>Volvo standard tightening torques</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

## Volvo standard tightening torques

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
ECR145C L Volvo			

The tightening torques in the following tables apply to bolts and nuts with tensile strength. The tables should be used as a general instruction for tightening bolts and nuts without specified values. The charts contains values for course thread bolts and nuts.

Torque values should be increased with  $\approx 10\%$ , for flange bolts.

All standard torques for bolts are without surface treatment.

The standard torque for bolts lubricated with oil should be reduced with 20% of the given value.

### Standard tightening torque charts

Bolt size Metric Coarse Threads	Tensile strength 8.8		Tensile strength 10.9	
	(Nm)	(lbf ft)	(Nm)	(lbf ft)
M5	6	4	8	6
M6	10	7	14	11
M8	25	18	35	26
M10	50	37	70	52
M12	87	64	122	90
M14	139	103	195	144
M16	213	157	299	220
M18	293	216	413	305
M20	416	307	585	432
M24	719	530	1010	745
M27	1060	782	1490	1100
M30	1140	840	2025	1493
M36	2500	1844	3600	2653

Bolt size Inch SAE Coarse Threads	Tensile strength 5		Tensile strength 8	
	(lbf ft)	(Nm)	(lbf ft)	(Nm)
1/4	10	13,6	14	19
5/16	21	28,5	29	39,3
3/8	37	50,2	52	70
7/16	59	80	84	114
1/2	90	122	128	174
9/16	130	176	184	250
5/8	180	244	254	345

3/4	320	434	451	612
7/8	515	700	728	988
1	775	1052	1091	1480
1 1/8	953	1290	1545	2100
1 1/4	1344	1823	2180	2960
1 3/8	1600	2170	2650	3600
1 1/2	2000	2714	3200	4340

### Hydraulic connections, general

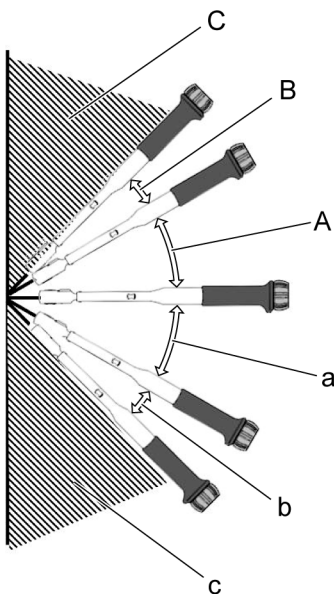
Before fitting pipe couplings, plugs and hoses:

- Make sure that the sealing surfaces are clean and free from pores or scratches.
- Check elastic seal rings for defects.
- Oil in threads, sealing surfaces and contact surfaces except for ORFS-connections (ORFS = O-Ring Face Seal).

### Applying Torque correction factor by tool angle

Tool angle	Correction factor	
	ORFS	Stud-end
Allowable tolerance	±10%	- 0%, +10%
±0° ~ ±30°	5% over torque	
±30° ~ ±45°	20% over torque	
±45°	NOT allowable	

### Tool access angle



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**Figure 1**

Tool access angle

A: +0° ~ +30°

B: +30° ~ +45°

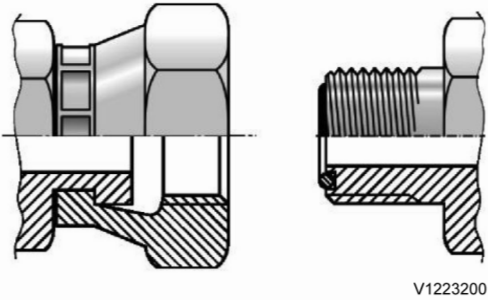
C: +45°

a: -0° ~ -30°

b: -30° ~ -45°

c: -45°

**ORFS female swivel fitting**

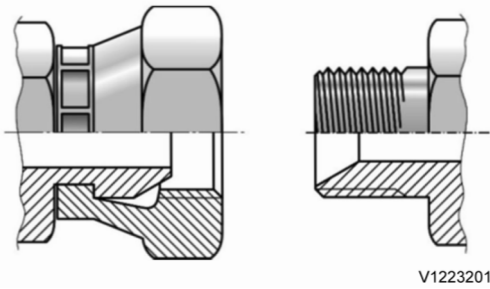


**Figure 2**

Thread s type	Assembl y position	Threads	Standard torque		±0° ~ ±30°		±30° ~ ±45°	
			(Nm)	(lbf ft)	(Nm)	(lbf ft)	(Nm)	(lbf ft)
UN- UNF	ORFS	UNF 9/16-18	29 ±3	21.4 ±2.2	30.5 ±3.1	22.1 ±2.2	36.5 ±3.7	26.9 ±2.7
		UN 11/16-16	44 ±4	32.5 ±3.0	46.2 ±4.6	34.1 ±3.4	55.4 ±5.5	40.9 ±4.1
		UN 13/16-16	63 ±6	46.5 ±4.4	66.2 ±6.6	48.8 ±4.9	79.4 ±7.9	58.6 ±5.9
		UNS 1-14	106 ±8	78.2 ±5.9	111.3 ±11.1	82.1 ±8.2	133.6 ±13.4	98.5 ±9.9
		UN 1 3/16-12	140 ±12	103.3 ±8.9	147.0 ±14.7	108.4 ±10.8	176.4 ±17.6	130.1 ±13.0
		UN 1 7/16-12	175 ±15	129.1 ±11.1	183.8 ±18.4	135.6 ±13.6	220.5 ±22.1	162.6 ±16.3
		UN 1 11/16-12	270 ±20	199.1 ±14.8	283.5 ±28.4	209.1 ±20.9	340.2 ±34.0	250.9 ±25.1
	Stud-end	UNF 7/16-20	21 +2.1	15.4 +1.5	22.1 +2.2	16.3 +1.6	26.5 +2.7	19.5 +2.0
		UNF 1/2-20	37 +3.7	27.3 +2.7	38.9 +3.9	28.7 +2.9	46.6 +4.7	34.4 +3.4
		UNF 9/16-18	47 +4.7	34.7 +3.5	49.4 +4.9	36.4 +3.6	59.2 +5.9	43.7 +4.4
		UNF 3/4-16	81 +8.1	59.7 +6.0	85.1 +8.5	62.8 +6.3	102.1 +10.2	75.3 +7.5
		UNF 7/8-14	141 +14.1	104.0 +10.4	148.1 +14.8	109.2 +10.9	177.7 +17.8	131.1 +13.1
		UN 1 1/16-12	189 +18.9	139.4 +13.9	198.5 +19.9	146.4 +14.6	238.1 +23.8	175.6 +17.6
		UN 1 5/16-12	284 +28.4	209.5 +21.0	298.2 +29.8	219.9 +22.0	357.8 +35.8	263.9 +26.4
UN 1 5/8-12	347 +34.7	255.9 +25.6	364.4 +36.4	268.8 +26.9	437.2 43.7	322.5 +32.3		

UN 1 7/8-12	425 +42.5	313.5 +31.4	446.3 +44.6	329.2 +32.9	535.5 +53.6	395.0 +39.5
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**G thread 30° cone female swivel fitting**



**Figure 3**

Thread s type	Assembl y position	Threads	Standard torque		±0° ~ ±30°		±30° ~ ±45°	
			(Nm)	(lbf ft)	(Nm)	(lbf ft)	(Nm)	(lbf ft)
PF	ORFS	G 1/4-19	25 ±2.5	18.4 ±1.8	26.3 ± 2.6	19.4 ±1.9	31.5 ±3.2	23.2 ±2.3
		G 3/8-19	49 ±4.9	36.1 ±3.6	51.5 ± 5.2	38.0 ±3.8	61.7 ±6.2	45.5 ±4.6
		G 1/2-14	59 ±5.9	43.5 ±4.4	62.0 ± 6.2	45.7 ±4.6	74.3 ±7.4	54.8 ±5.5
		G 3/4-11	119 ±11.9	87.8 ±8.8	125.0 ±12.5	92.2 ±9.2	149.9 ±15.0	110.6 ±11.1
		G 1-11	140 ±14	103.3 ±10.3	147.0 ±14.7	108.4 ±10.8	176.4 ±17.6	130.1 ±13.0
		G 1 1/4-11	173 ±17.3	127.6 ±12.8	181.7 ±18.2	134.0 ±13.4	218.0 ±21.8	160.8 ±16.1
		G 1 1/2-11	205 ±20.5	151.2 ±15.1	215.3 ±21.5	158.8 ±15.9	258.3 ±25.8	190.5 ±19.1
	Stud-end	G 1/8-19	22 +2.2	16.2 +1.6	23.1 +2.3	17.0 +1.7	27.7 +2.8	20.4 +2.0
		G 1/4-19	52 +5.2	38.4 +3.8	54.6 +5.5	40.3 +4.0	65.5 +6.6	48.3 +4.8
		G 3/8-19	85 +8.5	62.7 +6.3	89.3 +8.9	65.9 +6.6	107.1 +10.7	79.0 +7.9
		G 1/2-14	105 +10.5	77.4 +7.7	110.3 +11.0	81.4 +8.1	132.3 +13.2	97.6 +9.8
		G 3/4-11	210 +21	154.9 +15.5	220.5 +22.1	162.6 +16.3	264.6 +26.5	195.2 +19.5
		G 1-11	400 +40	295.0 +29.5	420.0 +42.0	309.8 +31.0	504.0 +50.4	371.7 +37.1
		G 1 1/4-11	525 +52.5	387.2 +38.7	551.3 +55.1	406.6 +40.7	661.5 +66.2	487.9 +48.8
G 1 1/2-11	630 +63.1	464.7 +46.5	661.5 +66.2	487.9 +48.8	793.8 +79.4	585.5 +58.6		

Document Title: <b>Measurement conversion tables</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

## Measurement conversion tables

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
ECR145C L Volvo			

### Length

Unit	cm	m	km	in	ft	yd	mile
cm	1	0.01	0.00001	0.3937	0.03281	0.01094	0.000006
m	100	1	0.001	39.37	3.2808	1.0936	0.00062
km	100000	1000	1	39370.7	3280.8	1093.6	0.62137
in	2.54	0.0254	0.000025	1	0.08333	0.02777	0.000015
ft	30.48	0.3048	0.000304	12	1	0.3333	0.000189
yd	91.44	0.9144	0.000914	36	3	1	0.000568
mile	160930	1609.3	1.6093	63360	5280	1760	1

1 mm = 0.1 cm, 1 mm = 0.001 m

### Area

Unit	cm <sup>2</sup>	m <sup>2</sup>	km <sup>2</sup>	a	ft <sup>2</sup>	yd <sup>2</sup>	in <sup>2</sup>
cm <sup>2</sup>	1	0.0001	-	0.000001	0.001076	0.000012	0.155000
m <sup>2</sup>	10000	1	0.000001	0.01	10.764	1.1958	1550.000
km <sup>2</sup>	-	1000000	1	10000	1076400	1195800	-
a	0.01	100	0.0001	1	1076.4	119.58	-
ft <sup>2</sup>	-	0.092903	-	0.000929	1	0.1111	144.000
yd <sup>2</sup>	-	0.83613	-	0.008361	9	1	1296.00
in <sup>2</sup>	6.4516	0.000645	-	-	0.006943	0.000771	1

1 ha = 100 a, 1 mile<sup>2</sup> = 259 ha = 2.59 km<sup>2</sup>

### Volume

Unit	cm <sup>3</sup> = cc	m <sup>3</sup>	Liter	in <sup>3</sup>	ft <sup>3</sup>	yd <sup>3</sup>
cm <sup>3</sup> = m liter	1	0.000001	0.001	0.061024	0.000035	0.000001
m <sup>3</sup>	1000000	1	1000	61024	35.315	1.30796
Liter	1000	0.001	1	61.024	0.035315	0.001308
in <sup>3</sup>	16.387	0.000016	0.01638	1	0.000578	0.000021
ft <sup>3</sup>	28316.8	0.028317	28.317	1728	1	0.03704
yd <sup>3</sup>	764529.8	0.76453	764.53	46656	27	1

1 gal(US) = 3785.41 cm<sup>3</sup> = 231 in<sup>3</sup> = 0.83267 gal(UK)

## Weight

Unit	g	kg	t	oz	lb
g	1	0.001	0.000001	0.03527	0.0022
kg	1000	1	0.001	35.273	2.20459
t	1000000	1000	1	35273	2204.59
oz	28.3495	0.02835	0.000028	1	0.0625
lb	453.592	0.45359	0.000454	16	1

1 tonne(metric) = 1.1023 ton(US) = 0.9842 ton(UK)

## Pressure

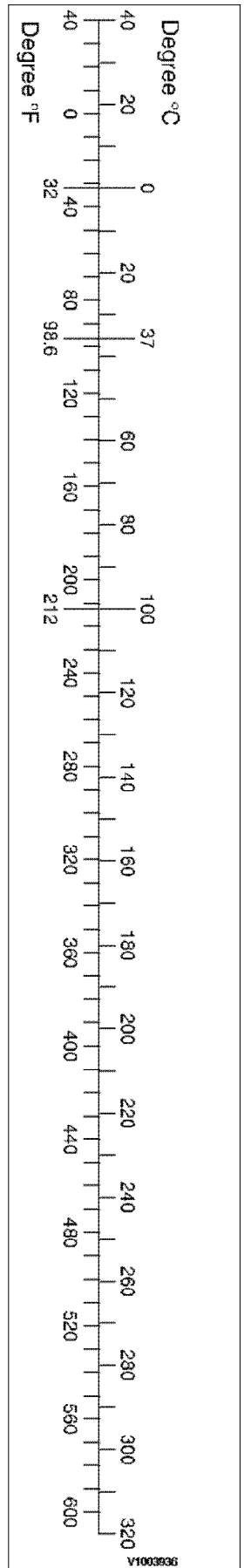
Unit	kgf/cm <sup>2</sup>	bar	Pa=N/m <sup>2</sup>	kPa	lbf/in <sup>2</sup>	lbf/ft <sup>2</sup>
kgf/cm <sup>2</sup>	1	0.98067	98066.5	98.0665	14.2233	2048.16
bar	1.01972	1	100000	100	14.5037	2088.6
Pa=N/m <sup>2</sup>	0.00001	0.001	1	0.001	0.00015	0.02086
kPa	0.01020	0.01	1000	1	0.14504	20.886
lbf/in <sup>2</sup>	0.07032	0.0689	6894.76	6.89476	1	144
lbf/ft <sup>2</sup>	0.00047	0.00047	47.88028	0.04788	0.00694	1

1 kgf/cm<sup>2</sup> = 735.56 Torr(mmHg) = 0.96784 atm

## Approximate conversions

SI	Conversion	Non-SI	Conversion	SI
Unit	Factor	Unit	Factor	Unit
<b>Torque</b>				
newton meter (N·m)	x 10.2	= kgf·cm	x 0.8664	= (lbf·in)
newton meter (N·m)	x 0.74	= lb·ft	x 1.36	= N·m
newton meter (N·m)	x 0.102	= kgf·m	x 7.22	= (lbf·ft)
<b>Pressure (Pa = N/m<sup>2</sup>)</b>				
kilopascal (kPa)	x 4.0	= in. H <sub>2</sub> O	x 0.249	= kPa
kilopascal (kPa)	x 0.30	= in. Hg	x 3.38	= kPa
kilopascal (kPa)	x 0.145	= psi	x 6.89	= kPa
(bar)	x 14.5	= psi	x 0.069	= (bar)
(kgf/cm <sup>2</sup> )	x 14.22	= psi	x 0.070	= (kgf/cm <sup>2</sup> )
(newton/mm <sup>2</sup> )	x 145.04	= psi	x 0.069	= (bar)
megapascal (MPa)	x 145	= psi	x 0.00689	= MPa
<b>Power (W = J/s)</b>				
kilowatt (kW)	x 1.36	= PS (cv)	x 0.736	= kW
kilowatt (kW)	x 1.34	= HP	x 0.746	= kW
kilowatt (kW)	x 0.948	= Btu/s	x 1.055	= kW
watt (W)	x 0.74	= ft·lb/s	x 1.36	= W

Note: ( ) non-si unit

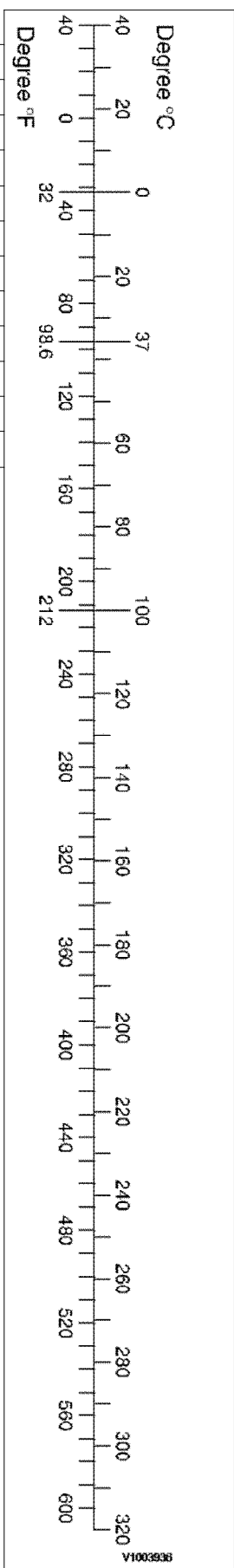


**Approximate conversions**

SI Unit	Conversion Factor	Non-SI Unit	Conversion Factor	SI Unit

Energy (J = N·m)				
kilojoule (kJ)	x 0.948	= Btu	x 1.055	= kJ
joule (J)	x 0.239	= calorie	x 4.19	= J
Velocity and Acceleration				
meter per sec <sup>2</sup> (m/s <sup>2</sup> )	x 3.28	= ft/s <sup>2</sup>	x 0.305	= m/s <sup>2</sup>
meter per sec (m/s)	x 3.28	= ft/s	x 0.305	= m/s
kilometer per hour (km/h)	x 0.62	= mph	x 1.61	= km/h
Horse power/torque				
BHP x 5252 rpm = TQ (lb-ft)			TQ x rpm 5252 = B.H.P.	
Temperature				
°C = (°F - 32) / 1.8		°F = (°C x 1.8) + 32		
Flow Rate				
liter/min (dm <sup>3</sup> /min)	x 0.264	= US gal/min x 3.785		= liter/min

Note: ( ) non-si unit



Document Title: <b>Engine, specifications</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

## Engine, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
ECR145C L Volvo			

### Specifications

Item	Unit	Specifications
Engine model	-	D4E EAE3
Type	-	4 cycle diesel Turbocharged Water cooled
Fuel injection type	-	Deutz common rail system
Number of cylinders	-	4, vertical in-line
Displacement	cc (US gal)	4000 (1.07)
Bore x stroke	mm (in)	101 x 126 (3.98 x 4.96 )
Rotational direction		Facing flywheel, counterclockwise
Compression ratio	-	18:1
Compression pressure	bar (MPa)	
Injection order	-	1-3-4-2
Maximum power	PS (kw) / rpm	109 (80) / 2000
Maximum torque (Gross)	Nm / rpm	472 / 1600
Low idle	rpm	950
Tier 3 emission certifications		US EPA40 CFR: part 9.86 and 89 CARB EU 97/68/EC ECE R24-3

Document Title: <b>Engine, weight</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

## Engine, weights

Showing Selected Profile

<b>Valid for serial numbers</b>			
<b>Model</b>	<b>Production site</b>	<b>Serial number start</b>	<b>Serial number stop</b>
ECR145C L Volvo			

Engine, dry, approx.	450 kg (992 lbs)
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Document Title: <b>Valve clearance, specifications</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

## Valve system specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
ECR145C L Volvo			

Valves	
Valve head diameter:	
inlet	44.4 ±0.1 mm (1.75 ±0.004 in)
exhaust	38.7 ±0.1 mm (1.52 ±0.004 in)
Valve stem, diameter:	
inlet	7.94 – 0.04 mm (0.31 –0.0015 in)
exhaust	7.94 – 0.04 mm (0.31 –0.0015 in)
Valve clearance, cold engine, value when adjusting:	
inlet	To zero clearance, then 75° counter-clockwise
exhaust	To zero clearance, then 120° counter-clockwise
Measurement between valve disc and cylinder head's face:	
inlet	0.9 +0.15 –0.1 mm (0.035 +0.006 –0.0039 in)
exhaust	0.9 +0.15 –0.1 mm (0.035 +0.006 –0.0039 in)
Valve head edge, thickness:	
inlet	2.36 mm (0.09 in)
exhaust	1.8 mm (0.07 in)

Valve guides	
Max. clearance valve stem - guide, wear tolerance:	
Inlet	0.012 mm (0.00047 in)
Outlet	0.014 mm (0.00055 in)

Valve springs	
Inlet/exhaust	
Length, unloaded	59 ±1.9 mm (2.32 ±0,039 in)
Diameter, thread	4 ±0.03 mm (0.157 ±0,012 in)

Rocker arm	
Hole diameter inlet/exhaust	21.02 +0.033 (0.828 +0.0013 in)
Tapp	21 –0.021 (0.827 –0.0008 in)

Valve seat	
Valve seat diameter:	
Inlet	46.09 –0.02 mm

Outlet	39.99 -002 mm
Valve seat angle:	
Inlet	30°
Outlet	45°

Document Title: <b>Flywheel, weight</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

## Flywheel, weight

Showing Selected Profile

<b>Valid for serial numbers</b>			
<b>Model</b>	<b>Production site</b>	<b>Serial number start</b>	<b>Serial number stop</b>
ECR145C L Volvo			

Flywheel, approx.	42 kg (92.6 lbs)
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Document Title: <b>Lubrication specifications</b>	Function Group: <b>system, 030</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

## Lubrication system, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
ECR145C L Volvo			

Lubrication system	
Oil pressure maximum warm engine, high idling speed	400–500 kPa (4–5 bar) (58–72 psi)
Min. oil pressure, hot engine, low idling speed	60 kPa (0.6 bar) (8.7 psi)

Document Title: <b>Fuel specifications</b>	Function Group: <b>pressure, 030</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

## Fuel pressure, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
ECR145C L Volvo			

Fuel feed pressure	
Minimum pressure in engine starting condition	0.35 ±0.05 MPa, 51 ±7 psi, 3.5 ±0.5 bar
Minimum pressure in engine running condition	0.6 ±0.05 MPa, 87 ±7 psi, 6.0 ±0.5 bar
Maximum pressure in the pump pressure relive valve	1.15 ±0.15 MPa, 167 ±22 psi, 11.5 ±1.5 bar

Fuel control unit (FCU) pressure	
Pressure in engine starting condition	0.07 ±0.04 MPa, 10 ±6 psi, 0.7±0.4 bar
Pressure without load in engine running condition	0.1 ±0.01 MPa, 15 ±2 psi, 1 ±0.1 bar
Pressure with load in engine running condition	0.09–0.21 MPa, 13–31 psi, 0.9–2.1 bar
Pressure without regulation in engine running condition	0.45 ±0.02 MPa, 65 ±3 psi, 4.5 ±0.2 bar

High pressure fuel pump output pressure at testing condition	
Output pressure	55 ±5 MPa, 7979 ±725 psi, 550 ±50 bar

Fuel rail pressure	
Pressure in engine starting condition	30 ±5 MPa, 4352 ±725 psi, 300 ±50 bar (at charge air pressure 0 MPa, 0 psi, 0 bar)
Pressure with rail PRV open in running conditions	70 ±5 MPa, 10153 ±725 psi, 700 ±50 bar
Pressure with <b>load above 60%</b> in engine running condition	80–150 MPa, 11606–21762 psi, 800–1500 bar (at charge air pressure 0.05–0.25 MPa, 7.3–36.3 psi, 0.5–2.5 bar)

Document Title: <b>Fuel system, tightening torques</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

## Fuel system, tightening torques

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
ECR145C L Volvo			

### **NOTICE**

**Regarding bolted joints which are not listed here, see “Volvo standard tightening torques”**

Fuel rail, attaching bolts	30 Nm (22 lbf ft)
Electrical cables, attaching bolts	1.4 ±0.1 Nm (1.03 lbf ft)
Fuel delivery line (between fuel rail and injector)	
Step 1:	10 Nm (7.4 lbf ft)
Step 2:	60° <sup>+15°</sup>
Injector, yoke	
Step 1:	5 Nm (3.7 lbf ft)
Step 2:	120° <sup>+5°</sup>
Fuel control valve (FCV)	30 Nm (22 lbf ft)
Return line to control valve	39 Nm (28.8 lbf ft)
Fuel feed filter, attaching bolts	30 Nm (22 lbf ft)
Feed line to control valve (from fuel filter)	49 Nm (39.1 lbf ft)
Feed pipe (on control valve)	34 Nm (25.1 lbf ft)
High-pressure pump, attaching bolts	
Step 1:	10 Nm (7.4 lbf ft)
Step 2:	50 Nm (36.9 lbf ft)
Safety valve (PRV), fuel rail	100 Nm (73.8 lbf ft)
High-pressure sensor, fuel rail	70 Nm (51.6 lbf ft)

Document Title: <b>Fuel tank, specifications</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

## Fuel tank, specifications

Showing Selected Profile

<b>Valid for serial numbers</b>			
<b>Model</b>	<b>Production site</b>	<b>Serial number start</b>	<b>Serial number stop</b>
ECR145C L Volvo			

<b>Fuel tank</b>	
Volume	220 liters (58 US gal)
Weight	120 kg (265 lbs)

Document Title: <b>Fuel filler pump, specifications</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

## Fuel filler pump, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
ECR145C L Volvo			

### Specifications

	Fuel filler pump 35 LPM + auto stop
Rated voltage	24 V
Output flow	35 liter/min (9.2 gal/min) at 3 m head

Document Title: <b>Injectors, specifications</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

## Injectors, specifications

Showing Selected Profile

<b>Valid for serial numbers</b>			
<b>Model</b>	<b>Production site</b>	<b>Serial number start</b>	<b>Serial number stop</b>
ECR145C L Volvo			

Nozzle type injector	7 holes
Common rail system pressure	30-160 MPa (300-1600 bar, 4352-23212 psi)

Document Title: <b>Cooling specifications</b>	Function Group: <b>system, 030</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

## Cooling system, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
ECR145C L Volvo			

### Specifications

Item		Unit	Specifications
Radiator	Core size (W × H × D)	mm	600 × 321 × 140
		in	23.6 × 12.6 × 5.5
Hydraulic oil cooler	Core size (W × H × D)	mm	600 × 333 × 140
		inch	23.6 × 13.1 × 5.5
Charge air cooler	Core size (W × H × D)	mm	600 × 190 × 140
		inch	23.6 × 7.5 × 5.5
Complete cooling system weight		kg (lb)	40 (88.2)

Document Title: <b>Coolant pump, thermostat, specifications</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

## Coolant pump, thermostat, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
ECR145C L Volvo			

Coolant pump, type	Belt-driven centrifugal pump
Thermostat, type	Piston thermostat
Quantity	1
Coolant thermostat begins to open at	83 °C (181 °F)
Coolant thermostat fully open at	95 °C (203 °F)
Coolant thermostat stroke distance	8 mm (0.32 in)

Document Title: <b>Engine - Pump control, specification</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

## Engine - Pump control, specification

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
ECR145C L Volvo			

### Except North America

Mode		Engine speed control switch		Max pump input torque, Nm (kgfm, lbf ft)	Power (Ps)
		Switch steps	Engine speed (rpm) No-load / Load		
Power maximum	P	9	2100 / above 2000	321.6 (32.8, 236.8)	94
Heavy	H		2000 / above 1900	306.9 (31.3, 226)	
General	G1	8	1900 / above 1800	291.3 (29.7, 214.4)	
	G2	7	1800 / above 1700		
	G3	6	1700 / above 1600		
Fine	F1	5	1600-	228.5 (23.3, 168.2)	
	F2	4	1500		
	F3	3	1400		
Idle	I1	2	1100	136.3 (13.9, 100.4)	
	I2	1	950		

### North America

Mode		Engine speed control switch		Max pump input torque, kgf m (lbf ft)	Power (Ps)
		Switch steps	Engine speed (rpm) No-load / Load		
Heavy	H	9	2100 / above 2000	321.6 (32.8, 236.8)	94
General	G1	8	2000 / above 1900	306.9 (31.3, 226)	
	G2	7	1900 / above 1800	291.3 (29.7, 214.4)	
	G3	6	1800 / above 1700		
Fine	F1	5	1700	228.5 (23.3, 168.2)	
	F2	4	1600		
	F3	3	1500		
Idle	I1	2	1100	136.3 (13.9, 100.4)	
	I2	1	950		

Document Title: <b>Engine speed control switch, specifications</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

## Engine speed control switch, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
ECR145C L Volvo			

Item	Specification
Power supply	DC 24 V
Duty	10 - 90% 5V
Type	PWM signal generator

Document Title: <b>Electrical specifications</b>	Function Group: <b>system, 030</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

## Electrical system, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
ECR145C L Volvo			

Electrical system	
System voltage	24 V

Document Title: <b>Engine control unit E-ECU, specifications</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>3/20/2026</b>
Profile: <b>ECR145C L Volvo</b>			

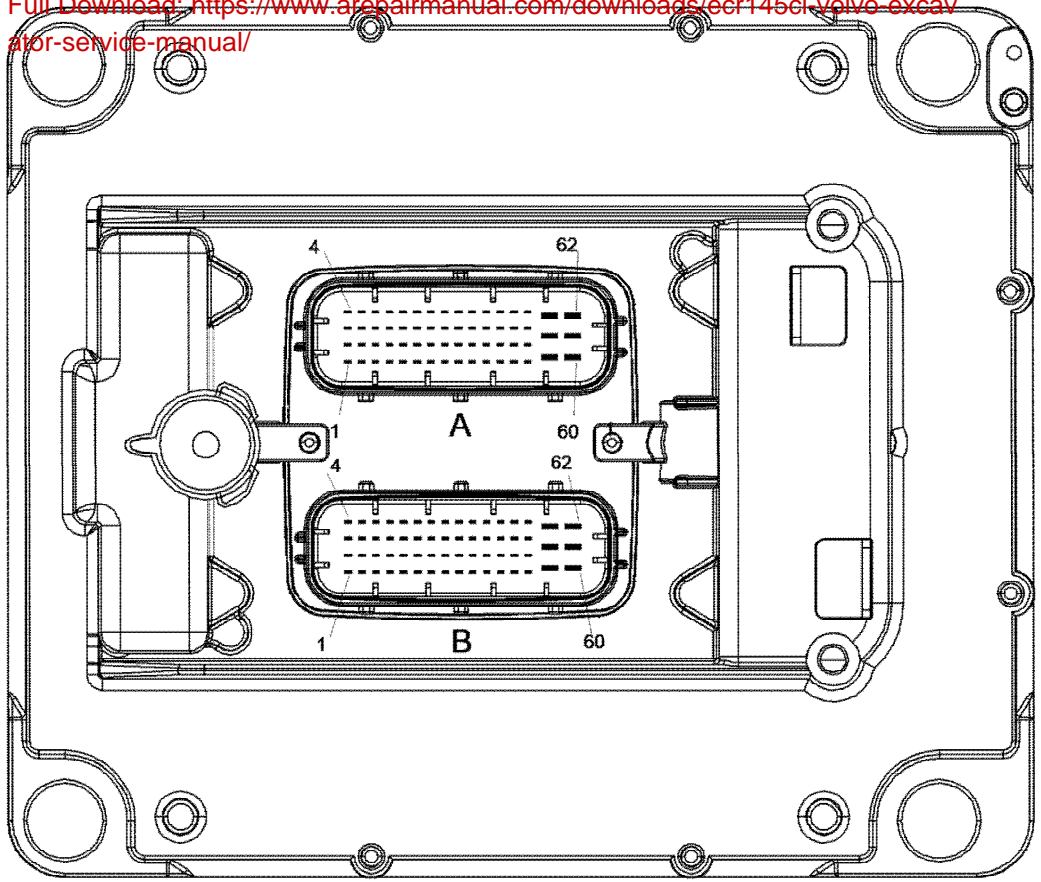
## Engine control unit E-ECU, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
ECR145C L Volvo			

### E-ECU pin, specifications

Pin No.	Description	Pin No.	Description
A7	Feed to sensor (5 V)	B3	Engine oil level, low
A11	Signal ground to sensor	B4	Engine oil level, high
A12	Actuator MPROP common rail	B7	Preheating diagnostics coil
A15	Ambient filter ground	B8	Water in fuel, signal
A16	Actuator MPROP common rail ground	B10	Switch ground
A19	Rail pressure sensor	B11	Engine oil pressure, signal
A22	Boost pressure signal	B15	Emergency switch (IVS)
A29	Air cleaner indicator	B16	Fuel pressure, signal
A31	Oil temperature signal	B17	Feed to sensor
A33	SAE J1587 B information bus	B18	Signal ground to sensor
A34	SAE J1587 A information bus	B23	Coolant level, signal
A35	Fan clutch speed sensor, signal	B25	Preheating relay (coil)
A37	Engine crank speed, plus (+)	B27	Coolant temperature, engine, signal
A38	Engine crank speed, minus (-)	B29	Start lock
A36	Injector cylinder 2	B30	—
A39	Fan clutch speed sensor, ground	B31	Ambient air temperature sensor
A40	Injector cylinder 3	B49	Fan clutch speed sensor, ground
A45	Engine camshaft speed, plus (+)	B51	SAE J1937 H control bus
A46	Engine camshaft speed, plus (-)	B55	SAE J1937 L control bus
A47	Boost temperature, signal	B57	Voltage feed (ECU supply)
A48	Injector cylinder 4	B58	ECU ground
A56	Injector cylinder 1	B59	ECU ground
A57	ECU ground	B60	Voltage feed (ECU supply)
A59	Injector cylinder 1,4 (sv) — ground	B61	ECU ground
A60	Injector cylinder 2, 3 (sv) — ground		



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**Figure 1**  
E-ECU, connectors

- 
- A 62 pin Tyco Connector, A
  - B 62 pin Tyco Connector, B