

Document Title: Description	Function Group: 000	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Description

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo			

The L180E is a four-wheel drive wheel loader with articulated frame steering.

The L180E has a six-cylinder, direct-injected, four-stroke, turbocharged diesel engine of type D12C.

The hydraulic transmission, HTE220, is hydromechanical with all gear wheels in constant mesh.

Between the engine and transmission, there is a single-stage hydraulic torque converter.

Front and rear axles have fully floating drive axles with planetary gears in the hubs. The front axle is equipped with a differential lock.

The parking and service brakes of the machine are wet multi-disc brakes. The parking brake is positioned on the output shaft in the hydraulic transmission and the service brakes are built into each wheel hub.

The steering system is hydrostatic with a variable load-sensing axial piston pump and two hydraulic cylinders (steering cylinders).

Hydraulic system, see Section 9.

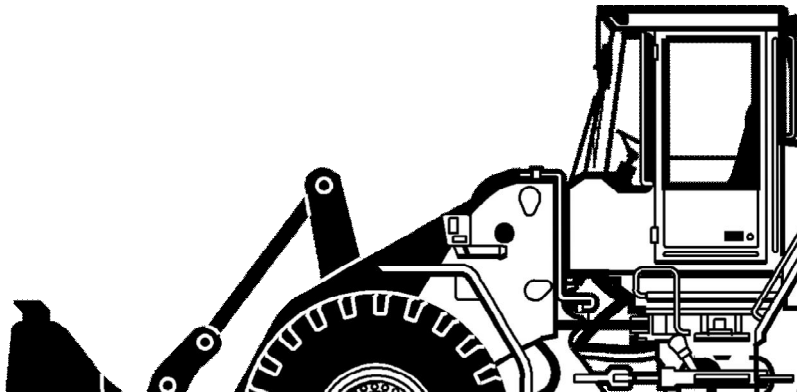


Figure 1
L180E wheel loader



Document Title: Measurement conversion tables	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Measurement conversion tables

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E 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 ²	m ²	km ²	a	ft ²	yd ²	in ²
cm ²	1	0.0001	-	0.000001	0.001076	0.000012	0.155000
m ²	10000	1	0.000001	0.01	10.764	1.1958	1550.000
km ²	-	1000000	1	10000	1076400	1195800	-
a	0.01	100	0.0001	1	1076.4	119.58	-
ft ²	-	0.092903	-	0.000929	1	0.1111	144.000
yd ²	-	0.83613	-	0.008361	9	1	1296.00
in ²	6.4516	0.000645	-	-	0.006943	0.000771	1

1 ha = 100 a - 1 mile² = 259 ha = 2.59 km²

Volume

Unit	cm ³ = cc	m ³	l	in ³	ft ³	yd ³
cm ³ = ml	1	0.000001	0.001	0.061024	0.000035	0.000001
m ³	1000000	1	1000	61024	35.315	1.30796
dm ³ (l)	1000	0.001	1	61.024	0.035315	0.001308
in ³	16.387	0.000016	0.01638	1	0.000578	0.000021
ft ³	28316.8	0.028317	28.317	1728	1	0.03704
yd ³	764529.8	0.76453	764.53	46656	27	1

1 gal (US) = 3785.41 cm³ = 231 in³ = 0.83267 gal (UK)

Sample manual. Download All 1940 pages at:

<https://www.arepairmanual.com/downloads/l180e-volvo-wheel-loaders-service-manual/>

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

Pressure

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

kg/cm² = 735.56 Dry (mmHg) = 0.96784 atm

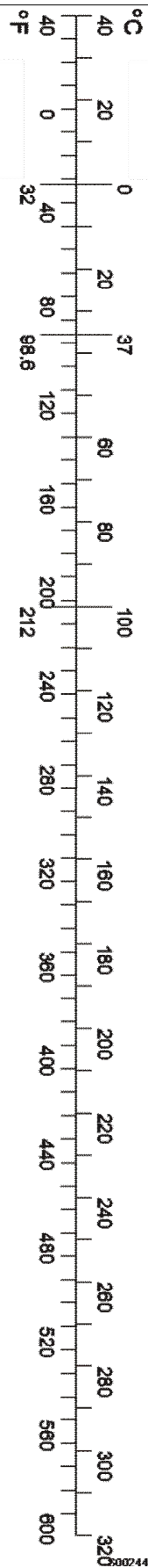
Unit explanations

Unit	abbreviation
Newton meter	Nm
Kilopoundmeter	kpm
Kilopascal	kPa
Megapascal	MPa
Kilowatt	kW
kilojoule	kJ
British thermal unit	Btu
Calorie	ca

Approx. conversion

SI unit	Conversion factor	Non SI	Conversion factor	SI
Torque				
Nm	x10.2	=kg/cm	x0.8664	=lb in
Nm	x0.74	=lbf-ft	x1.36	=Nm
Nm	x0.102	=kg/m	x7.22	=lbft
Pressure (Pa = N/m²)				
kPa	x4.0	=in.H ₂ O	x0.249	=kPa
kPa	x0.30	=in.Hg	x3.38	=kPa
kPa	x0.145	=psi	x6.89	=kPa
bar	x14.5	=psi	x0.069	=bar
kp/cm ²	x14.22	=psi	x0.070	=kp/cm ²
N/mm ²	x145.04	=psi	x0.069	=bar
MPa	x145	=psi	x0.00689	=MPa
Power (W = J/s)				

kW	x1.36	=hp(cv)	x0.736	=kW
kW	x1.34	=bhp	x0.746	=kW
kW	x0.948	=Btu/s	x1.055	=kW
W	x0.74	=ft.lb/s	x1.36	=W
Energy (J = Nm)				
kJ	x0.948	=Btu	x1.055	=kJ
J	x0.239	=calorie	x4.19	=J
Speed and acceleration				
m/s ²	x3.28	=ft/s ²	x0.305	=m/s ²
m/s	x3.28	=ft/s	x0.305	=m/s
km/h	x0.62	=mph	x1.61	=km/h
Horsepower/torque				
Bhp x5252 rpm= TQ (lb-ft)			TQ x rpm 5252=bhp	
Temperature				
°C =(°F-32)/1.8			°F =(°C x1.8) +32	
Flow factor				
l/min (dm ³ /min)	x0.264	= US gal/min	x3.785	=liter/min



Document Title: Volvo standard tightening torques	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Volvo standard tightening torques

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Model	Production site	Serial number start	Serial number stop
L180E 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

Document Title: Engine, weight	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
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Engine, weight

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo	Arvika	5001	7398
L180E Volvo	Asheville	62501	69999

Engine	
Engine	1350 kg (2980 lbs)
Engine hood	240 kg (530 lbs)
Partition, engine hood	45 kg (100 lbs)

Document Title: Engine, weight	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Engine, weight

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo	Arvika	5001	7418
L180E Volvo	Asheville	62501	69999

Engine	
Engine	1350 kg (2980 lbs)
Engine hood	240 kg (530 lbs)
Partition, engine hood	45 kg (100 lbs)

Document Title: Axles, tightening torques	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Tightening torques

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo			

	Nm
Bolts, differential carrier housing	290–330
Crown wheel	280–300
Differential bearing caps	460–500
Adjusting nuts for differential bearings	30 Nm + 2–3 notches
Bolts for lock plates, adjusting nuts for differential bearings	24–30
Pinion shaft nut	2000–2500
Attaching bolts, hub reduction	290–330
Hub nut, inner	2500–3000
Hub nut, outer	400–800
Centre cover	40–50
Stop screw, differential lock	27–33

Document Title: Engine, volume	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Engine, volume

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo			

NOTICE

Stated capacity applies when changing, unless otherwise stated.

Engine	
Engine oil, incl. filter when changing	48 l (12.7 US gal)

Document Title: Engine, specifications	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

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Engine, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo			

Engine	
Type designation	D12C LCE2
Product number	8188170
Flywheel output at 23.3 r/s (1400 rpm)	200 kW (268 hp) DIN 70020 Net
Flywheel output at 23.3 r/s (1400 rpm)	221 kW (296 hp) ISO 9249
Flywheel output at 23.3 r/s (1400 rpm)	221 kW (296 hp) J1349 Net
Flywheel output at 23.3 r/s (1400 rpm)	221 kW (296 hp) DIN 6271 Net
Flywheel output at 23.3 r/s (1400 rpm)	223 kW (299 hp) SAE J1995 Gross
Drop-off effect at 32 r/s (1900 rpm)	212 kW (284 hp) SAE J1995 Gross
Maximum torque at 20 r/s (1200 rpm)	1566 Nm (1155 lbf ft) DIN 70020 Net
Maximum torque at 20 r/s (1200 rpm)	1690 Nm (1246 lbf ft) ISO 9249
Maximum torque at 20 r/s (1200 rpm)	1690 Nm (1246 lbf ft) SAE J1349 Net
Maximum torque at 20 r/s (1200 rpm)	1690 Nm (1246 lbf ft) DIN 1671 Net
Maximum torque at 20 r/s (1200 rpm)	1700 Nm (1254 lbf ft) J1995 Gross
Number of cylinders	6
Cylinder bore	131 mm (5.16 in)
Stroke	150 mm (5.91 in)
Cylinder capacity, total	12.13 dm ³ (litres) (740 in ³)
Compression ratio	18.5:1
Order of injection	1-5-3-6-2-4
Specific fuel consumption at 1400 rpm (23.3 r/s)	198 g/kWh DIN 6271 Net
Idle speed, low (frequency, SE201)	11.7 ±0.4 r/s (700 ±25 rpm) (887 ±31 Hz)
Idle speed, high (frequency, SE201)	34.8 ±0.4 r/s (2085 ±25 rpm) (2641 ±31 Hz)
Stall speed with torque converter (frequency, SE201)	30.2 ±0.6 r/s (1810 ±35 rpm) (2294 ±44 Hz)
Stall speed with torque converter + working hydraulics (frequency, SE201)	29.3 ±0.8 r/s (1760 ±50 rpm) (2229 ±63 Hz)

Document Title: Engine, specifications	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

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Engine, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo	Arvika	8001	10999

Engine	
Designation	D12DLAE3
Flywheel output at 23.3-26.7 r/s (1400-1600 rpm)	234 kW, ISO 9249, SAE J1349
Flywheel output at 23.3-26.7 r/s (1400-1600 rpm)	235 kW (hp), SAE J1995 gross
Flywheel output at 23.3-26.7 r/s (1400-1600 rpm)	212 kW (284 hp), DIN 70020, net
Torque at 23.3 r/s (1400 rpm)	1594 Nm (lbf ft), ISO 9249, SAE J1349
Torque at 23.3 r/s (1400 rpm)	1603 Nm (lbf ft) SAE J1995 gross
Torque at 13.3-15 r/s (800-900 rpm)	1580 Nm (lbf ft), DIN 70020, net
Number of cylinders	6
Cylinder bore	131 mm (5.16 in)
Stroke	150 mm (5.91 in)
Cylinder capacity	12.13 dm ³ (litres) (740 in ³)
Compression ratio	18.5:1
Injection sequence	1-5-3-6-2-4
Idling speed, low	725 rpm
Idle speed, high	2060 rpm
Stall speed with torque converter	1815 - 1850 rpm

Document Title: Fuel tank, volume	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Fuel tank, volume

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo			

Fuel tank total/potential	370/335 dm ³ (98/88 US gal)
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Document Title: Lighting, specifications	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Lighting, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo			

Bulbs	Watt	Socket
Headlights, asymmetric	75/70	P 43t - 38 (H4)
Parking light, front	4	BA 9 s
Parking light, rear	10	BA 15 s
Tail lights	10	BA 15 s
Brake lights	21	BA 15 s
Direction indicators, rear	21	BA 15 s
Direction indicators, side	21	BA 15 s
Side running lights	5	SV 8.5
Cab lighting	10	BA 15 s
Instrument lighting	2	BA 9 s
Control light panel	1.2	W 2x 4.6 d
Switches' guide lights	1.2	W 2x 4.6 d
Work lights, front halogen, cab ^(a)	70	PK 22 s (H3)
Work lights, rear halogen, cab ^(a)	70	PK 22 s (H3)
Work lights, front halogen[T1] ⓘ	70	PK 22 s (H3)
Work lights, rear halogen ^(a)	70	PK 22 s (H3)

[T1]Optional equipment.

Document Title: Engine mounting, tightening torque	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Engine suspension, tightening torques

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo			

NOTICE

Regarding bolted joints which are not listed here, see "Volvo standard tightening torques"

Engine	
Engine member – Frame	220 Nm (220 lbf ft)
Flywheel housing – Hydraulic transmission	54 Nm (40 lbf ft)
Rubber damper – Member	85 Nm (63 lbf ft)
Rubber damper – Engine bracket	140 Nm (103 lbf ft)

Document Title: Unit injectors, specifications	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Unit injectors, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo			

Injectors	
Type	Unit injectors
Order of injection	1-5-3-6-2-4

Document Title: Tightening torques, control valve	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Tightening torques, control valve

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo	Arvika	8002	9407

Engine		
	Nm	kgf m
Control valve (VEB)	20	2.0

Document Title: Lubrication specification	Function Group: system, 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Lubrication system, specifications

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo			

Lubrication system	
Oil pressure, operating rpm	300–600 kPa (44–87 psi)
Oil pressure min. low idle, warm engine	70–110 kPa (10–16 psi)

Document Title: Oil filter specifications	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Oil filter, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo			

Oil filter	
Full-flow	2 pcs
Partial flow	1 pc
Overflow (relief) valve	
spring, length unloaded	68.8 mm (2.71 in)
loaded with 17 - 19 N (3.8–4.3 lbf)	40 mm (1.57 in)
Reduction valve colour marking	Blue
Piston cooling valve marking	Orange

Document Title: Oil cooler, specifications	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Oil cooler, specifications

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo			

Oil cooler, delivery valve	
Marking	124

Document Title: Valve system specifications	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Valve system specifications

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo	Arvika	5001	7418
L180E Volvo	Asheville	62501	62543

Valve mechanism	
Valve arrangement	Overhead valves
Valve clearance, hot/cold engine	
Inlet valves	0.20 mm (0.008 in)
Exhaust valves	0.50 mm (0.020 in)

Document Title: Valve mechanism, double rocker arm	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Valve mechanism, double rocker arm

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo	Arvika	8002	10999

Valve mechanism	
Inlet valves, valve clearance	0.20 mm
Exhaust valves (IEGR), valve clearance	0.70 mm
Clearance between double rocker arm and base circle on camshaft.	Measure with gauge 88820003

Clearance measured between double rocker arm and base circle on camshaft.

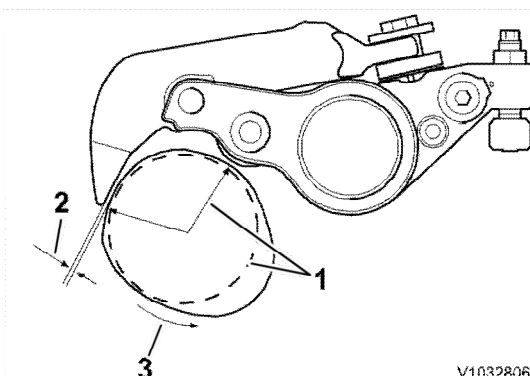


Figure 1

Checking clearance between double rocker arm and base circle

1. Base circle
2. Clearance
3. Camshaft's rotational direction

Checking and adjusting interval double rocker arm

Checking and adjustment, if needed, of the double rocker arm's clearance shall take place after 1000 hours. Thereafter together with [Valves, adjusting](#) every 4000 hours.

Document Title: Fuel feed pump, specifications	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
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Fuel feed pump, specifications

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo			

Fuel feed pump	
Type	Gear-driven pump
Feed pressure	300–350 kPa (44–51 psi) at low idling speed min. 350 kPa (51 psi) at over 1000 rpm

Document Title: Fuel feed pump, specifications	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Fuel feed pump, specifications

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo			

Fuel feed pump	
Type	Gear-driven pump
Feed pressure	300–350 kPa (44–51 psi) at low idling speed min. 350 kPa (51 psi) at over 1000 rpm

Document Title: Fuel tank, volume	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Fuel tank, volume

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo			

Fuel tank total/potential	370/335 dm ³ (98/88 US gal)
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Document Title: Unit injectors, specifications	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
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Unit injectors, specifications

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Model	Production site	Serial number start	Serial number stop
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Injectors	
Type	Unit injectors
Order of injection	1-5-3-6-2-4

Document Title: Injectors, tightening torques	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Injectors, tightening torques

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo			

NOTICE

Regarding bolted joints which are not listed here, see "Volvo standard tightening torques"

Injectors	
Electrical cables, attaching bolts	1.4 ±0.1 Nm (1.03 lbf ft)

Document Title: Emission specifications	system	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo				

Emission system specifications

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo			

Emission system	
Emissions	Meet requirements according to ISO 8178C1

Document Title: Turbocharger, specifications	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Turbocharger, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo			

Turbocharger	
Designation	GT45

Product: L180E Volvo Wheel Loaders Service Manual

Full Download: <https://www.arepairmanual.com/downloads/l180e-volvo-wheel-loaders-service-manual/>



Service Information

Document Title: Oil-bath air cleaner, volume	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180E Volvo			

Oil-bath air cleaner, volume

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180E Volvo			

Volume	
Oil-bath air cleaner	9.1 l (2.4 US gal)

Sample manual. Download All 1940 pages at:

<https://www.arepairmanual.com/downloads/l180e-volvo-wheel-loaders-service-manual/>