

Document Title: Volvo standard tightening torques	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

Volvo standard tightening torques

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180G 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	200	271	284	388
3/4	270	365	384	520
7/8	340	460	480	650
1	410	550	576	770
1 1/8	500	670	704	940
1 1/4	590	790	832	1100
1 3/8	680	910	960	1280
1 1/2	770	1040	1088	1460
1 3/4	860	1160	1216	1640
2	950	1280	1344	1820
2 1/4	1140	1540	1632	2190
2 3/4	1330	1800	1920	2570
3	1520	2060	2208	2940
3 1/2	1710	2320	2496	3320
4	1900	2580	2784	3700
4 1/2	2090	2840	3072	4080
5	2280	3100	3360	4460
5 1/2	2470	3360	3648	4840
6	2660	3620	3936	5220
6 1/2	2850	3880	4224	5600
7	3040	4140	4512	5980
7 1/2	3230	4400	4800	6360
8	3420	4660	5088	6740
8 1/2	3610	4920	5376	7120
9	3800	5180	5664	7500
9 1/2	3990	5440	5952	7880
10	4180	5700	6240	8260
10 1/2	4370	5960	6528	8640
11	4560	6220	6816	9020
11 1/2	4750	6480	7104	9400
12	4940	6740	7392	9780
12 1/2	5130	7000	7680	10160
13	5320	7260	7968	10540
13 1/2	5510	7520	8256	10920
14	5700	7780	8544	11300
14 1/2	5890	8040	8832	11680
15	6080	8300	9120	12060
15 1/2	6270	8560	9408	12440
16	6460	8820	9696	12820
16 1/2	6650	9080	9984	13200
17	6840	9340	10272	13580
17 1/2	7030	9600	10560	13960
18	7220	9860	10848	14340
18 1/2	7410	10120	11136	14720
19	7600	10380	11424	15100
19 1/2	7790	10640	11712	15480
20	7980	10900	12000	15860
20 1/2	8170	11160	12288	16240
21	8360	11420	12576	16620
21 1/2	8550	11680	12864	17000
22	8740	11940	13152	17380
22 1/2	8930	12200	13440	17760
23	9120	12460	13728	18140
23 1/2	9310	12720	14016	18520
24	9500	12980	14304	18900
24 1/2	9690	13240	14592	19280
25	9880	13500	14880	19660
25 1/2	10070	13760	15168	20040
26	10260	14020	15456	20420
26 1/2	10450	14280	15744	20800
27	10640	14540	16032	21180
27 1/2	10830	14800	16320	21560
28	11020	15060	16608	21940
28 1/2	11210	15320	16896	22320
29	11400	15580	17184	22700
29 1/2	11590	15840	17472	23080
30	11780	16100	17760	23460
30 1/2	11970	16360	18048	23840
31	12160	16620	18336	24220
31 1/2	12350	16880	18624	24600
32	12540	17140	18912	24980
32 1/2	12730	17400	19200	25360
33	12920	17660	19488	25740
33 1/2	13110	17920	19776	26120
34	13300	18180	20064	26500
34 1/2	13490	18440	20352	26880
35	13680	18700	20640	27260
35 1/2	13870	18960	20928	27640
36	14060	19220	21216	28020
36 1/2	14250	19480	21504	28400
37	14440	19740	21792	28780
37 1/2	14630	20000	22080	29160
38	14820	20260	22368	29540
38 1/2	15010	20520	22656	29920
39	15200	20780	22944	30300
39 1/2	15390	21040	23232	30680
40	15580	21300	23520	31060
40 1/2	15770	21560	23808	31440
41	15960	21820	24096	31820
41 1/2	16150	22080	24384	32200
42	16340	22340	24672	32580
42 1/2	16530	22600	24960	32960
43	16720	22860	25248	33340
43 1/2	16910	23120	25536	33720
44	17100	23380	25824	34100
44 1/2	17290	23640	26112	34480
45	17480	23900	26400	34860
45 1/2	17670	24160	26688	35240
46	17860	24420	26976	35620
46 1/2	18050	24680	27264	36000
47	18240	24940	27552	36380
47 1/2	18430	25200	27840	36760
48	18620	25460	28128	37140
48 1/2	18810	25720	28416	37520
49	19000	25980	28704	37900
49 1/2	19190	26240	28992	38280
50	19380	26500	29280	38660
50 1/2	19570	26760	29568	39040
51	19760	27020	29856	39420
51 1/2	19950	27280	30144	39800
52	20140	27540	30432	40180
52 1/2	20330	27800	30720	40560
53	20520	28060	31008	40940
53 1/2	20710	28320	31296	41320
54	20900	28580	31584	41700
54 1/2	21090	28840	31872	42080
55	21280	29100	32160	42460
55 1/2	21470	29360	32448	42840
56	21660	29620	32736	43220
56 1/2	21850	29880	33024	43600
57	22040	30140	33312	43980
57 1/2	22230	30400	33600	44360
58	22420	30660	33888	44740
58 1/2	22610	30920	34176	45120
59	22800	31180	34464	45500
59 1/2	22990	31440	34752	45880
60	23180	31700	35040	46260
60 1/2	23370	31960	35328	46640
61	23560	32220	35616	47020
61 1/2	23750	32480	35904	47400
62	23940	32740	36192	47780
62 1/2	24130	33000	36480	48160
63	24320	33260	36768	48540
63 1/2	24510	33520	37056	48920
64	24700	33780	37344	49300
64 1/2	24890	34040	37632	49680
65	25080	34300	37920	50060
65 1/2	25270	34560	38208	50440
66	25460	34820	38496	50820
66 1/2	25650	35080	38784	51200
67	25840	35340	39072	51580
67 1/2	26030	35600	39360	51960
68	26220	35860	39648	52340
68 1/2	26410	36120	39936	52720
69	26600	36380	40224	53100
69 1/2	26790	36640	40512	53480
70	26980	36900	40800	53860
70 1/2	27170	37160	41088	54240
71	27360	37420	41376	54620
71 1/2	27550	37680	41664	55000
72	27740	37940	41952	55380
72 1/2	27930	38200	42240	55760
73	28120	38460	42528	56140
73 1/2	28310	38720	42816	56520
74	28500	38980	43104	56900
74 1/2	28690	39240	43392	57280
75	28880	39500	43680	57660
75 1/2	29070	39760	43968	58040
76	29260	40020	44256	58420
76 1/2	29450	40280	44544	58800
77	29640	40540	44832	59180
77 1/2	29830	40800	45120	59560
78	30020	41060	45408	59940
78 1/2	30210	41320	45696	60320
79	30400	41580	45984	60700
79 1/2	30590	41840	46272	61080
80	30780	42100	46560	61460
80 1/2	30970	42360	46848	61840
81	31160	42620	47136	62220
81 1/2	31350	42880	47424	62600
82	31540	43140	47712	62980
82 1/2	31730	43400	48000	63360
83	31920	43660	48288	63740
83 1/2	32110	43920	48576	64120
84	32300	44180	48864	64500
84 1/2	32490	44440	49152	64880
85	32680	44700	49440	65260
85 1/2	32870	44960	49728	65640
86	33060	45220	50016	66020
86 1/2	33250	45480	50304	66400
87	33440	45740	50592	66780
87 1/2	33630	46000	50880	67160
88	33820	46260	51168	67540
88 1/2	34010	46520	51456	67920
89	34200	46780	51744	68300
89 1/2	34390	47040	52032	68680
90	34580	47300	52320	69060
90 1/2	34770	47560	52608	69440
91	34960	47820	52896	69820
91 1/2	35150	48080	53184	70200
92	35340	48340	53472	70580
92 1/2	35530	48600	53760	70960
93	35720	48860	54048	71340
93 1/2	35910	49120	54336	71720
94	36100	49380	54624	72100
94 1/2	36290	49640	54912	72480

Product: L180G Volvo Wheel Loaders Service Manual

Full Download: <https://www.arepairmanual.com/downloads/l180g-volvo-wheel-loaders-service-manual/>

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

Sample manual. Download All 2748 pages at:

<https://www.arepairmanual.com/downloads/l180g-volvo-wheel-loaders-service-manual/>

Document Title: Tightening torque, cylinder head	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

Tightening torque, cylinder head

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180G Volvo			

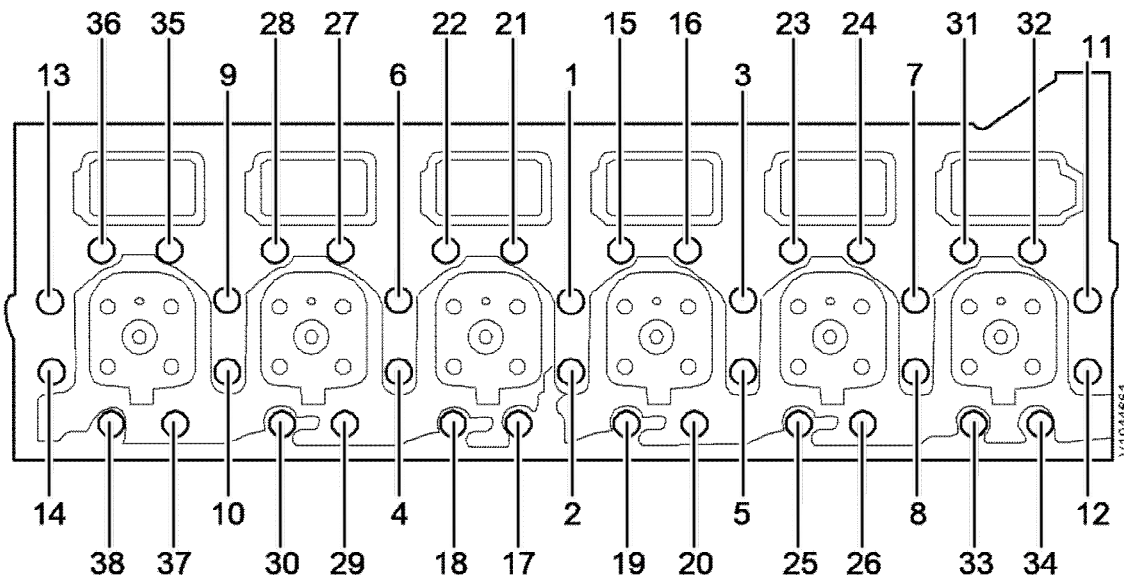


Figure 1
Cylinder head, D13

NOTE!

Tighten the bolts in the sequence shown in the figure.

Step 1	100±5Nm(74±3.7 lbf ft)
Step 2	120±5° Angle-tightening
Step 3	90±5° Angle-tightening

Document Title: Lubrication specifications	system, 030	Function Group:	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo				

Lubrication system, specifications

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180G Volvo			

Oil pressure

Low idle	Min. 220 kPa (31.9 PSI)
High idle	350 kPa (50.7 PSI)

Oil temperature

Operating temperature, coolant temperature 75–95 °C (167–203 °F)	90–110 °C (194–230 °F)
Heavy load	Up to 125 °C (up to 257 °F)

Oil filter

Full flow filter	2
Bypass filter	1

Oil consumption

Oil consumption in percentage of fuel consumption	Max. 0.45 %
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NOTE!

A new or fully overhauled engine often uses more oil than an engine already in operation. It is only possible to determine the correct oil consumption, of the engine, after 1000-1500 operating hours.

Document Title: Oil cooler, tightening torques	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

Oil cooler, tightening torques

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Model	Production site	Serial number start	Serial number stop
L180G Volvo			

Oil cooler

Oil cooler, attaching bolts:	Nm	lbf ft
Tighten the bolts crosswise	27 ±4	20±3

Oil cooler, cover

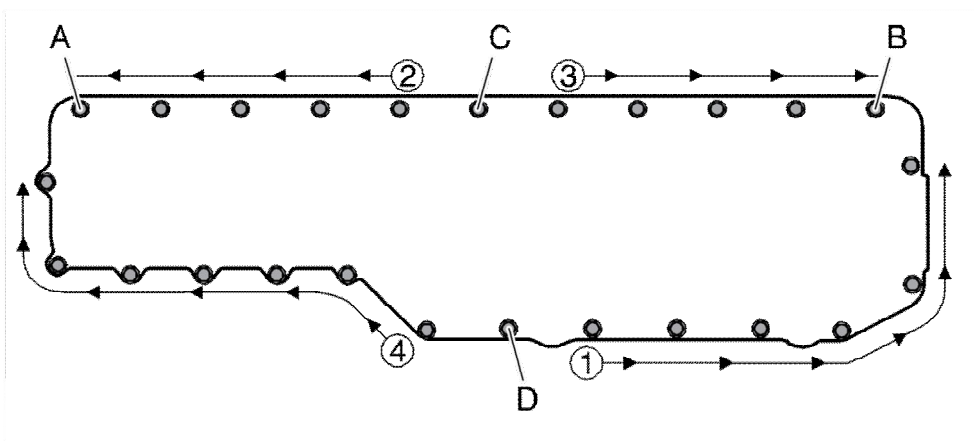


Figure 1

Oil cooler, cover:	Nm	lbf ft
Install the cover on the engine block and insert bolt A in the oval hole		
Press the cover against the coolant pump housing and install bolt B		
Install bolts C and D and tighten	24 ±4	18±3
Tighten the cover's bolts in order, see diagram	24 ±4	18±3
Finish by tightening bolts C and D again	24 ±4	18±3

Document Title: Tightening torques, unit injector	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

[Go back to Index Page](#)

Tightening torques, unit injector

Showing Selected Profile

Valid for option/configuration			
Model	Option no.	Option	Configuration
L180G Volvo	85420	Engine	D13H US Tier 4 interim
L180G Volvo	85421	Engine	D13H EU Stage IIIB

NOTE!

The stated torques apply to lubricated bolts.

Steel sleeve

Fastener yoke, unit injectors	
Step 1	20 Nm +5/-0 (14.8 +3.7/-0 lbf ft)
Step 2: Angle-tightening	180° ±5°
Step 3: Loose the yoke's bolt until the torque is	10–15 Nm (7.4–11 lbf ft)
Step 4	20 Nm +5/-0 (14.8 +3.7/-0 lbf ft)
Step 5: Angle-tightening	90° ±5°

Fastener yoke, unit injectors (new steel sleeve or new cylinder head)	
Step 1	30 Nm +5/-0 (22.1 +3.7/-0 lbf ft)
Step 2: Angle-tightening	150° ±5°
Step 3: Loose the yoke's bolt until the torque is	10–15 Nm (7.4–11 lbf ft)
Step 4	30 Nm +5/-0 (22.1 +3.7/-0 lbf ft)
Step 5: Angle-tightening	75° ±5°

NOTE!

When replacing/dismantling an injector with washer, a new washer must always be used. Never reuse the washer.

Unit injectors, tightening torques	
Unit injectors, preload	Tighten the adjusting screw to zero clearance against the camshaft, then turn it 240° ±20°
Lock nut for adjusting screw	52±2 Nm (38.4±1.5 lbf ft)
Fuel pump	24 ±2 Nm (17.7 ±1.5 lbf ft)

Document Title: Tightening torques, unit injector	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

[Go back to Index Page](#)

Tightening torques, unit injector

Showing Selected Profile

Valid for option/configuration			
Model	Option no.	Option	Configuration
L180G Volvo	85424	Engine	D13F Stage II

NOTE!

The stated torques apply to lubricated bolts.

Copper sleeve

Fastener yoke, unit injectors	
Step 1	20 Nm +5/-0 (14.8 +3.7/-0 lbf ft)
Step 2: Angle-tightening	180° ±5°
Step 3: Loose the yoke's bolt until the torque is	10–15 Nm (7.4–11 lbf ft)
Step 4	20 Nm +5/-0 (14.8 +3.7/-0 lbf ft)
Step 5: Angle-tightening	90° ±5°

Fastener yoke, unit injectors (new steel sleeve or new cylinder head)	
Step 1	20 Nm +5/-0 (14.8 +3.7/-0 lbf ft)
Step 2: Angle-tightening	180° ±5°
Step 3: Loose the yoke's bolt until the torque is	10–15 Nm (7.4–11 lbf ft)
Step 4	25 Nm +5/-0 (18.4 +3.7/-0 lbf ft)
Step 5: Angle-tightening	90° ±5°

NOTE!

When replacing/dismantling an injector with washer, a new washer must always be used. Never reuse the washer.

Unit injectors, tightening torques	
Unit injectors, preload	Tighten the adjusting screw to zero clearance against the camshaft, then turn it 240° ±20°
Lock nut for adjusting screw	52 ±4 Nm (38,4 ±2.95 lbf ft)
Fuel pump	24 ±2 Nm (17.7 ±1.5 lbf ft)

Document Title: Exhaust aftertreatment system, specifications	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

Exhaust aftertreatment system, specifications

Showing Selected Profile

Valid for option/configuration			
Model	Option no.	Option	Configuration
L180G Volvo	85420	Engine	D13H US Tier 4 interim
L180G Volvo	85421	Engine	D13H EU Stage IIIB

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180G Volvo	Arvika	19001	22034
L180G Volvo	Arvika	22035	99999

Differential pressure DPF

Maximum permitted differential pressure before service regeneration	15.2 kPa (2.2 psi)
Maximum permitted differential pressure after service regeneration	9 kPa (1.3 psi)

Fuel pressure

Atomization unit	690 ±35 kPa (100 ±5 psi)
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NOTICE

Risk of machine damage.

Adjusting the pressure could damage the regulator.

Do not attempt to adjust the pressure.

Air pressure

Air pressure at the nozzle's pressure sensor	414 ±35 kPa (60 ±5 psi)
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NOTICE

Risk of machine damage.

Adjusting the pressure could damage the regulator.

Do not attempt to adjust the pressure.

Exhaust aftertreatment system fuel flow, checking

Maximum permitted difference between the metered fuel and the VCADS PRO result:	20%
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Unit converter for fuel (kg to litres)

x = fuel in kg y = volume in litres Fuel density = 0.82 kg/dm ³ at 20 °C	$x/0.82 = y$
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US units

1 l = 0.264 US gallon

1 kg = 2.204 lb

VCADS value (g)	Litres (l)	US gallon
170	0.207	0.055
180	0.219	0.058
190	0.231	0.061
200	0.243	0.064
210	0.256	0.068
220	0.268	0.071
230	0.280	0.074
240	0.292	0.077
250	0.304	0.080
260	0.317	0.084
270	0.329	0.087
280	0.341	0.090
290	0.354	0.094
300	0.365	0.096
310	0.378	0.100
320	0.390	0.103

Document Title: Compressed-air system, specifications	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

Compressed-air system, specifications

Showing Selected Profile

Valid for option/configuration			
Model	Option no.	Option	Configuration
L180G Volvo	85420	Engine	D13H US Tier 4 interim
L180G Volvo	85421	Engine	D13H EU Stage IIIB

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180G Volvo	Arvika	19001	22034
L180G Volvo	Arvika	22035	99999

Compressed air regulator	
Cut-in pressure	810 – 730 kPa (8.1 – 7.3 bar) (117 – 106 psi)
Cut-out pressure	830 – 870 kPa (8.3 – 8.7 bar) (120 – 126 psi)

Document Title: Turbocharger, specifications	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

[Go back to Index Page](#)

Turbocharger, specifications

Showing Selected Profile

Valid for option/configuration			
Model	Option no.	Option	Configuration
L180G Volvo	85420	Engine	D13H US Tier 4 interim
L180G Volvo	85421	Engine	D13H EU Stage IIIB

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180G Volvo	Arvika	19001	22034
L180G Volvo	Arvika	22035	99999

Radial clearance	0.254–0.356 mm (0.010–0.014 in)
Axial clearance	0.025–0.127 mm (0.001–0.005 in)

Document Title: Turbocharger, specifications	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

[Go back to Index Page](#)

Turbocharger, specifications

Showing Selected Profile

Valid for option/configuration			
Model	Option no.	Option	Configuration
L180G Volvo	85424	Engine	D13F Stage II

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180G Volvo	Arvika	16001	16301
L180G Volvo	Arvika	16302	19000

Basic setting value:
106 ±1 kPa (15.4 ±0.145 psi) gives a rocker arm movement of 3 ±0.3 mm (0.118 ±0.012 in).

Document Title: Thermostat, specifications	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

Thermostat, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180G Volvo			

Cooling system	
Thermostat begins to open at	82 °C (180 °F)
Thermostat fully open at	92 °C (198 °F)

Document Title: Rocker arm shaft, shaft, tightening torques	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

Rocker arm shaft, tightening torques

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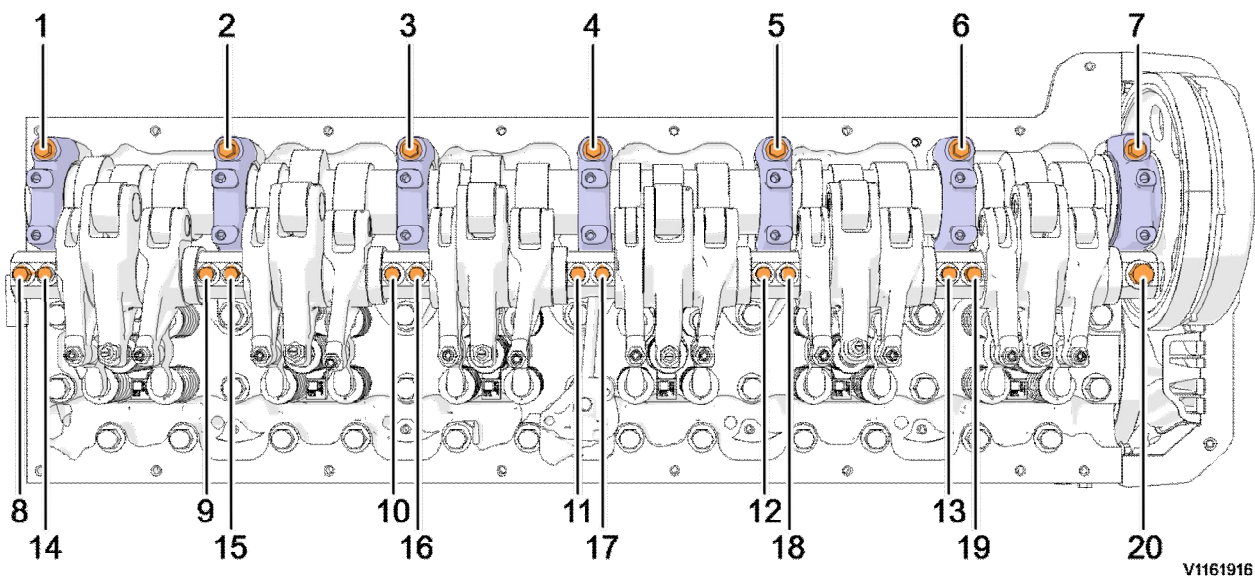


Figure 1

Camshaft and bearing caps in place	
Tighten the bolts 1–7 in the order 4, 3, 5, 2, 6, 1, 7.	40 ±3 Nm (30 ±2.2 lbf ft)
Rocker arm shaft in place	
Step 1: Tighten the bolts 14–20 gradually in the order 17, 16, 18, 15, 19, 14, 20 until the rocker arm shaft is tighten to contact with the camshaft bearing caps.	
Step 2: Tighten the bolts 14–20 in the order 17, 16, 18, 15, 19, 14, 20.	60 ±5 Nm (44 ±3.7 lbf ft)
Step 3: Angle-tighten the bolts 1–7 in the order 4, 3, 5, 2, 6, 1, 7. NOTE! Skip this step if the camshaft bearing caps has not been removed.	90° ±5°
Step 4: Tighten the bolts 8–13 in the order 11, 10, 12, 9, 13, 8.	40 ±3 Nm (30 ±2.2 lbf ft)

Step 5: Angle-tighten the bolts 8–13 in the order 11, 10, 12, 9, 13, 8.	120° ±5°
Step 6: Loosen the bolts 14–19.	
Step 7: Tighten the bolts 14–19 in the order 17, 16, 18, 15, 19, 14.	40 ±3 Nm (30 ±2.2 lbf ft)
Step 8: Angle-tighten the bolts 14–20 in the order 17, 16, 18, 15, 19, 14, 20.	120° ±5°

Document Title: Tightening torques, valve cover	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

Valve cover, tightening torques

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180G Volvo			

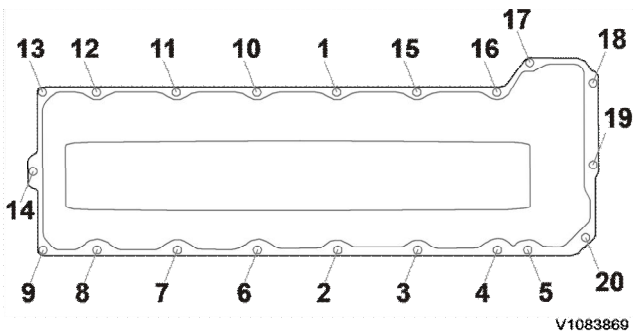


Figure 1
Figure 1 **Tightening diagram, valve cover**

Valve cover	
Valve cover, screws	25 ± 3 Nm (18 ± 2 lbf ft)

Document Title: Exhaust manifold, tightening torques	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

[Go back to Index Page](#)

Exhaust manifold, tightening torques

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Valid for option/configuration			
Model	Option no.	Option	Configuration
L180G Volvo	85420	Engine	D13H US Tier 4 interim
L180G Volvo	85421	Engine	D13H EU Stage IIIB

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180G Volvo	Arvika	19001	22034
L180G Volvo	Arvika	22035	99999

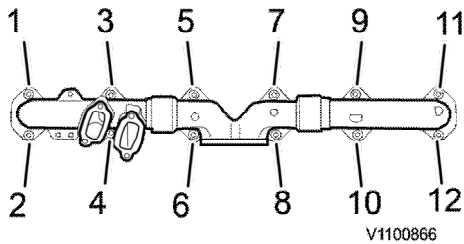


Figure 1

Step 1:	
Tighten bolts 1, 4, and 5, 8, and 9, 12 to contact	10±1.5 Nm (7.4±1.1 lbf ft)
Step 2:	
Tighten bolts 3 and 2	48±8 Nm (35.4±5.9 lbf ft)
Tighten bolts 7 and 6	48±8 Nm (35.4±5.9 lbf ft)
Tighten bolts 11 and 10	48±8 Nm (35.4±5.9 lbf ft)
Tighten bolts 1 and 4	48±8 Nm (35.4±5.9 lbf ft)
Tighten bolts 5 and 8	48±8 Nm (35.4±5.9 lbf ft)
Tighten bolts 9 and 12.	48±8 Nm (35.4±5.9 lbf ft)

Document Title: Exhaust manifold, tightening torques	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

[Go back to Index Page](#)

Exhaust manifold, tightening torques

Showing Selected Profile

Valid for option/configuration			
Model	Option no.	Option	Configuration
L180G Volvo	85424	Engine	D13F Stage II

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180G Volvo	Arvika	16001	16301
L180G Volvo	Arvika	16302	19000

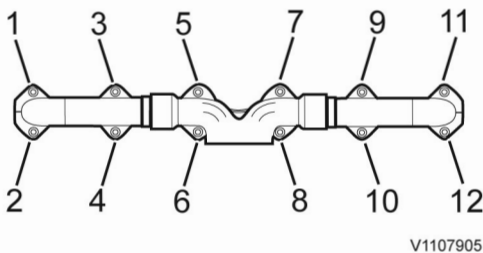


Figure 1

Step 1:	
Tighten bolts 1, 4, and 5, 8, and 9, 12 to contact	10±1.5 Nm (7.4±1.1 lbf ft)
Step 2:	
Tighten bolts 3 and 2	48±8 Nm (35.4±5.9 lbf ft)
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Tighten bolts 1 and 4	48±8 Nm (35.4±5.9 lbf ft)
Tighten bolts 5 and 8	48±8 Nm (35.4±5.9 lbf ft)
Tighten bolts 9 and 12.	48±8 Nm (35.4±5.9 lbf ft)

Document Title: EGR system, tightening torques	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

EGR system, tightening torques

Showing Selected Profile

Valid for option/configuration			
Model	Option no.	Option	Configuration
L180G Volvo	85420	Engine	D13H US Tier 4 interim
L180G Volvo	85421	Engine	D13H EU Stage IIIB

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180G Volvo	Arvika	19001	22034
L180G Volvo	Arvika	22035	99999

V-clamp, EGR-valve	20 ±4 Nm (15 ±2.9 lbf ft)
Flange bolt, EGR-valve (exhaust manifold) Tighten the bolts crosswise!	Step 1: 20 ±4 Nm (15 ±2.9 lbf ft) Step 2: 61 ±3 Nm (45 ±2.2 lbf ft)
Oil pressure hose	
Fitting nut	25 ±4 Nm (18.4 ±3 lbs ft)
Hollow screw	48 ±8 Nm (35.4 ±5.9 lbs ft)

Document Title: Cooling fan rpm, specifications	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

Cooling fan rpm, specifications

Showing Selected Profile

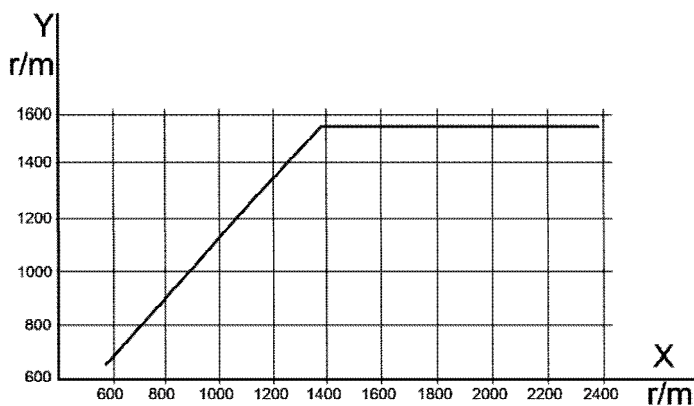
Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180G Volvo			

VCADS Pro parameter GDR is used to set max. cooling fan speed by selecting sound reduction level (A, B, or C) depending on the demands for cooling of engine, charge-air, transmission, and hydraulic oil.

Cooling fan	
Min. rpm	0 rpm
Base speed	400 rpm

GDR	Max. cooling fan speed (rpm) at high idle	Description
A	1000 rpm	Low sound level
B	1100 rpm	Standard cooling
C	1550 rpm [1]	Maximal cooling

Fan rpm in relation to engine rpm at pressure test



V1096609

Figure 1

Y-axis = Fan rpm

X-axis = Engine rpm

Pressure in relation to fan rpm

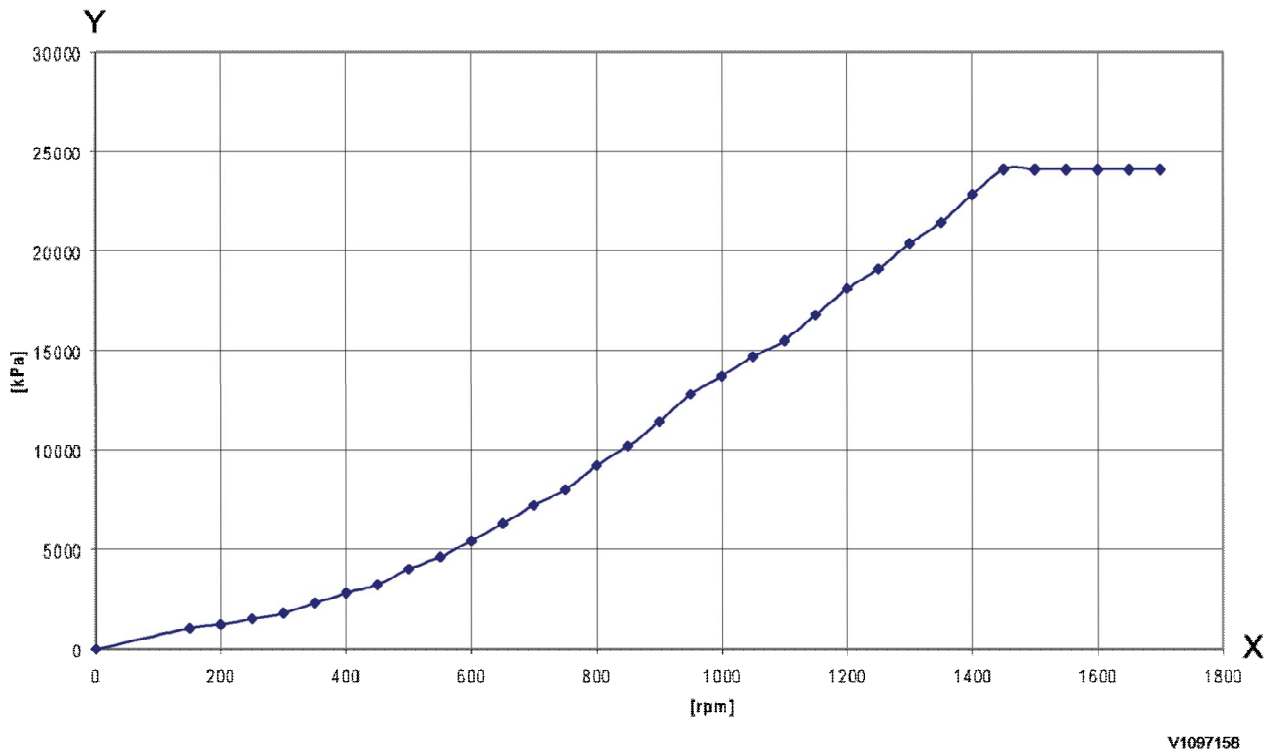


Figure 2
Pressure in relation to fan rpm (without axle oil cooler)

Y-axis = Pressure (kPa)
X-axis = Fan speed (rpm)

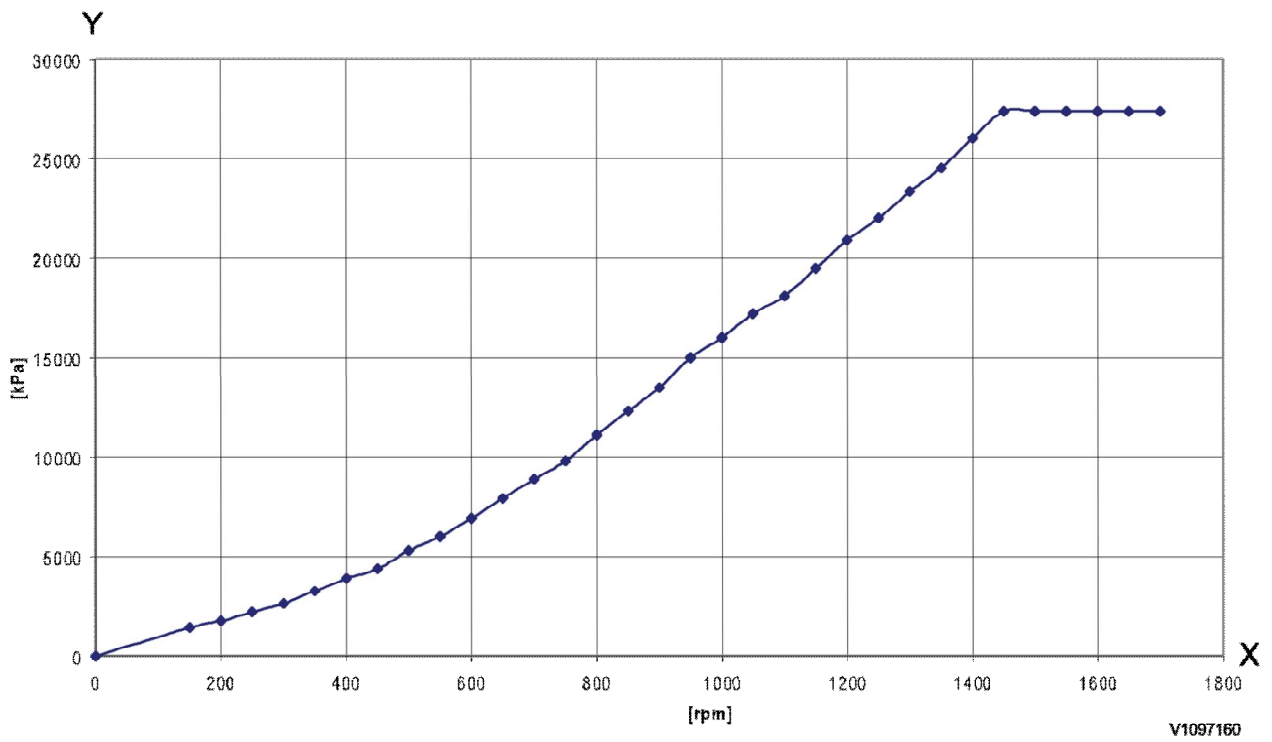


Figure 3
Pressure in relation to fan rpm (with axle oil cooler)

Y-axis = Pressure (kPa)

X-axis = Fan speed (rpm)

[1]1350 rpm if axle oil cooling is installed

Document Title: Conversion tables	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

Conversion tables

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180G 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)

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

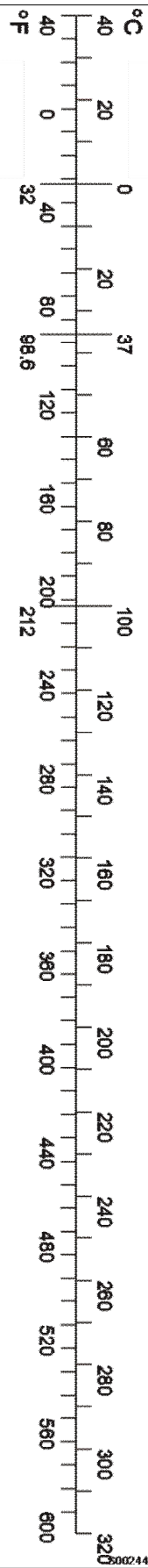
Unit explanations

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

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				
$^{\circ}\text{C} = (^{\circ}\text{F} - 32) / 1.8$			$^{\circ}\text{F} = (^{\circ}\text{C} \times 1.8) + 32$	
Flow factor				
l/min (dm ³ /min)	x0.264	= US gal/min	x3.785	= liter/min



Document Title: Fuel system, specifications	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

Fuel system, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180G Volvo			

Fuel feed pump	
Type	Gear pump
Feed pressure at:	
600 rpm	min. 220 kPa (2.2 bar)
1200 rpm	min. 375 kPa (3.75 bar)

Overflow valve	
Opening pressure	300-550 kPa (3 – 5.5 bar)
Tightening torques	48± 5 Nm (35±3.7 lbf ft)

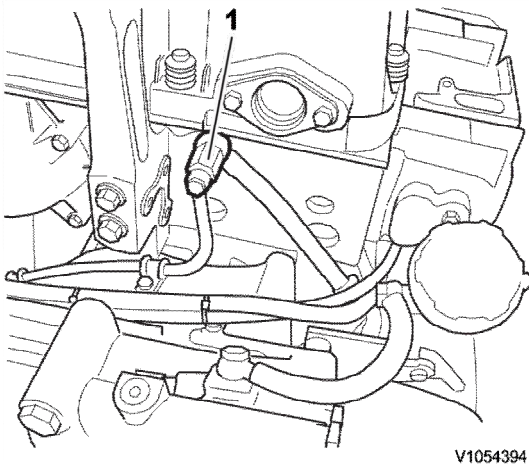


Figure 1

The figure shows D16

1. Overflow valve

Document Title: Engine, specifications	Function Group: 030	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

Engine, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180G Volvo			

General

Number of cylinders	6
Cylinder bore	131 mm (5.16 in)
Stroke	158 mm (6.22 in)
Displacement	12.78 litres (3.38 US gal)
Injection order	1-5-3-6-2-4
Low idle	
D13F	700 rpm
D13H	600 rpm
High idle (run out speed)	2030 - 2070 rpm
Weight, engine	1380 kg (3045 lbs)

Stall speed torque converter⁽¹⁾

L150G ⁽²⁾	
HTL222B (22591)	1670–1760 rpm
HTL222 (22586)	1670–1760 rpm
HTL221 (22574)	1740–1830 rpm
L180G, L180G HL ⁽²⁾	
HTL222B (22591)	1720–1810 rpm
HTL222 (22586)	1720–1810 rpm
HTL221 (22574)	1790–1870 rpm
L220G ⁽²⁾	
HTL307 (22581)	1780–1880 rpm
HTL306 (22575)	1780–1880 rpm
L250G ⁽²⁾	
HTL307 (22581)	1830–1890 rpm

(1) Shall be performed on gear 2, APS-mode service (manual), and without using the hydraulics.

(2) The transmission part number can be found in the machine card in PROSIS.

Document Title: Operation numbers for additional work	Function Group: 070	Information Type: Service Information	Date: 4/10/2026
Profile: Wheel Loaders (WLO)			

Operation numbers for additional work

Showing Selected Profile

These operations can be used to identify work that is not included in the time guide or described in the methods in the Service Manual. When these operations are used, a description of the work that has been performed must be provided.

Other work related to engine

Op. no. 070-210

This operation can be used when work has been done related to the engine and function group 2 when no applicable method description was available. When this operation is used, additional information is required:

- Description of work that has been done

Other work related to electrical system

Op. no. 070-310

This operation can be used when work has been done related to the electrical system and function group 3 when no applicable method description was available. When this operation is used, additional information is required:

- Description of work that has been done

Other work related to transmission, gearbox, travel motor, swing motor

Op. no. 070-410

This operation can be used when work has been done related to the transmission, gearbox, travel motor or swing motor and function group 4 when no applicable method description was available. When this operation is used, additional information is required:

- Description of work that has been done

Other work related to drive axle

Op. no. 070-470

This operation can be used when work has been done related to the drive axle and function group 46 when no applicable method description was available. When this operation is used, additional information is required:

- Description of required work that have been done

Other work related to brake system

Op. no. 070-510

This operation can be used when work has been done related to the brake system and function group 5 when no applicable

method description was available. When this operation is used, additional information is required:

- Description of work that has been done

Other work related to steering system

Op. no. 070-610

This operation can be used when work has been done related to the steering system and function group 6 when no applicable method description was available. When this operation is used, additional information is required:

- Description of work that has been done

Other work related to frame link, axle suspension

Op. no. 070-710

This operation can be used when work has been done related to the frame link, axle suspension and other parts related to function group 7 when no applicable method description was available. When this operation is used, additional information is required:

- Description of work that has been done

Other work related to cab, air conditioning

Op. no. 070-810

This operation can be used when work has been done related to the cab, air conditioning and other parts related to function group 8 when no applicable method description was available. When this operation is used, additional information is required:

- Description of work that has been done

Other work related to hydraulic system

Op. no. 070-910

This operation can be used when work has been done related to the hydraulic system and other parts related to function group 9 when no applicable method description was available. When this operation is used, additional information is required:

- Description of work that has been done

Document Title: E1680, Holder	Function Group: 080	Information Type: Service Information	Date: 4/10/2026
Profile: L180G Volvo			

E1680, Holder

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L180G Volvo			

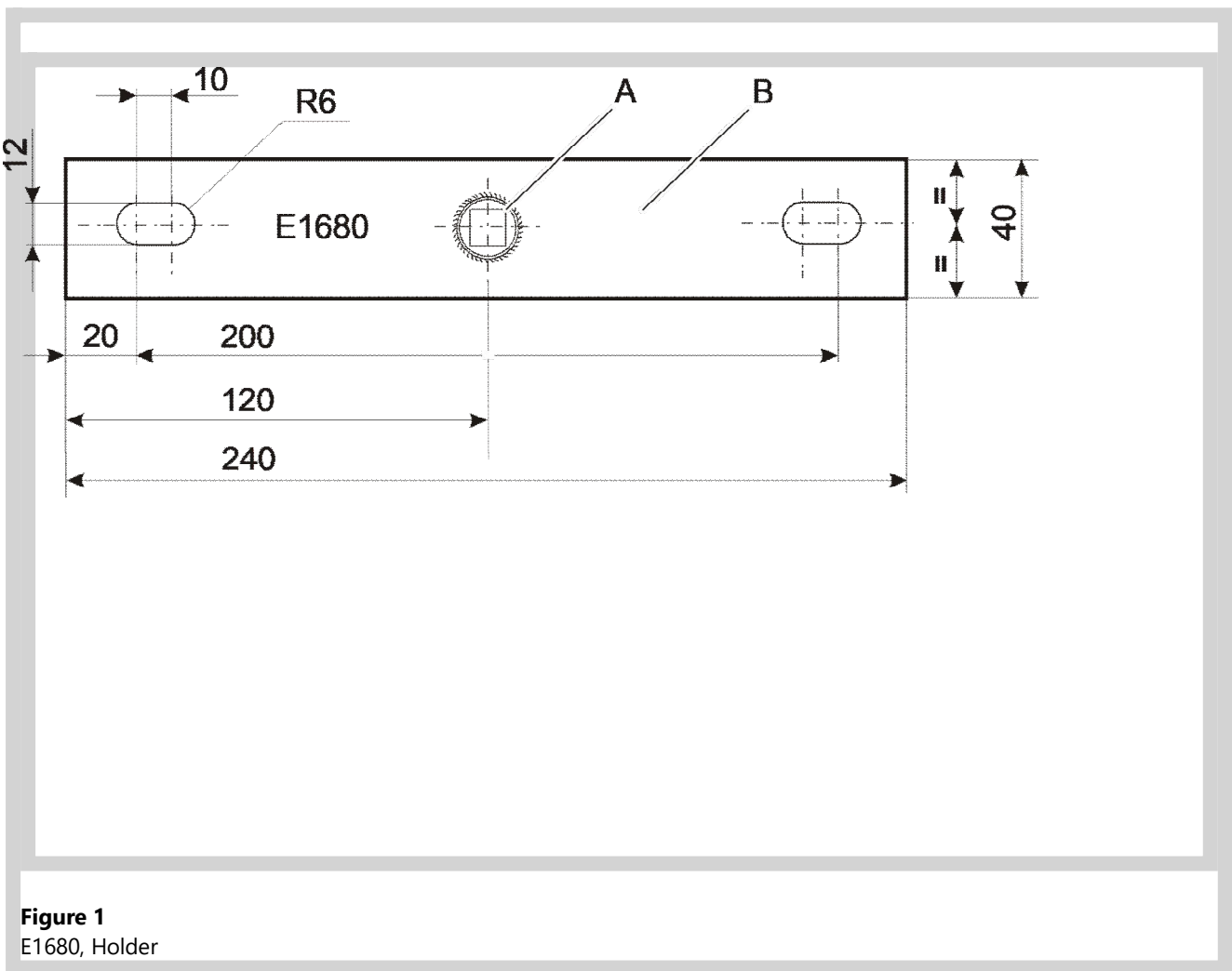


Figure 1
E1680, Holder

A	1/2" Socket
B	Flat iron bar 5 mm