

Document Title: Volvo standard tightening torques	Function Group: 030	Information Type: Service Information	Date: 5/19/2026
Profile: L150G Volvo			

Volvo standard tightening torques

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L150G 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	350	474	500	672
1	440	594	624	840
1 1/8	540	730	768	1040
1 1/4	650	880	924	1240
1 3/8	770	1040	1092	1470
1 1/2	900	1210	1260	1700
1 3/4	1040	1400	1456	1960
2	1200	1620	1680	2240
2 1/4	1400	1880	1952	2640
2 3/4	1600	2150	2224	2960
3	1800	2430	2496	3360
3 1/2	2100	2830	2896	3920
4	2400	3240	3304	4440
4 1/2	2700	3650	3712	5000
5	3000	4060	4120	5560
5 1/2	3300	4470	4528	6120
6	3600	4880	4936	6680
6 1/2	3900	5290	5344	7240
7	4200	5700	5752	7800
7 1/2	4500	6110	6160	8360
8	4800	6520	6568	8920
8 1/2	5100	6930	6976	9480
9	5400	7340	7384	10040
9 1/2	5700	7750	7792	10600
10	6000	8160	8200	11160
10 1/2	6300	8570	8608	11720
11	6600	8980	9016	12280
11 1/2	6900	9390	9424	12840
12	7200	9800	9832	13400
12 1/2	7500	10210	10240	13960
13	7800	10620	10648	14520
13 1/2	8100	11030	11056	15080
14	8400	11440	11464	15640
14 1/2	8700	11850	11872	16200
15	9000	12260	12280	16760
15 1/2	9300	12670	12688	17320
16	9600	13080	13096	17880
16 1/2	9900	13490	13504	18440
17	10200	13900	13912	19000
17 1/2	10500	14310	14320	19560
18	10800	14720	14728	20120
18 1/2	11100	15130	15136	20680
19	11400	15540	15544	21240
19 1/2	11700	15950	15952	21800
20	12000	16360	16360	22360
20 1/2	12300	16770	16768	22920
21	12600	17180	17176	23480
21 1/2	12900	17590	17584	24040
22	13200	18000	17992	24600
22 1/2	13500	18410	18400	25160
23	13800	18820	18808	25720
23 1/2	14100	19230	19216	26280
24	14400	19640	19624	26840
24 1/2	14700	20050	19632	27400
25	15000	20460	19640	27960
25 1/2	15300	20870	19648	28520
26	15600	21280	19656	29080
26 1/2	15900	21690	19664	29640
27	16200	22100	19672	30200
27 1/2	16500	22510	19680	30760
28	16800	22920	19688	31320
28 1/2	17100	23330	19696	31880
29	17400	23740	19704	32440
29 1/2	17700	24150	19712	33000
30	18000	24560	19720	33560
30 1/2	18300	24970	19728	34120
31	18600	25380	19736	34680
31 1/2	18900	25790	19744	35240
32	19200	26200	19752	35800
32 1/2	19500	26610	19760	36360
33	19800	27020	19768	36920
33 1/2	20100	27430	19776	37480
34	20400	27840	19784	38040
34 1/2	20700	28250	19792	38600
35	21000	28660	19800	39160
35 1/2	21300	29070	19808	39720
36	21600	29480	19816	40280
36 1/2	21900	29890	19824	40840
37	22200	30300	19832	41400
37 1/2	22500	30710	19840	41960
38	22800	31120	19848	42520
38 1/2	23100	31530	19856	43080
39	23400	31940	19864	43640
39 1/2	23700	32350	19872	44200
40	24000	32760	19880	44760
40 1/2	24300	33170	19888	45320
41	24600	33580	19896	45880
41 1/2	24900	33990	19904	46440
42	25200	34400	19912	47000
42 1/2	25500	34810	19920	47560
43	25800	35220	19928	48120
43 1/2	26100	35630	19936	48680
44	26400	36040	19944	49240
44 1/2	26700	36450	19952	49800
45	27000	36860	19960	50360
45 1/2	27300	37270	19968	50920
46	27600	37680	19976	51480
46 1/2	27900	38090	19984	52040
47	28200	38500	19992	52600
47 1/2	28500	38910	19960	53160
48	28800	39320	19968	53720
48 1/2	29100	39730	19976	54280
49	29400	40140	19984	54840
49 1/2	29700	40550	19992	55400
50	30000	40960	19960	55960
50 1/2	30300	41370	19968	56520
51	30600	41780	19976	57080
51 1/2	30900	42190	19984	57640
52	31200	42600	19992	58200
52 1/2	31500	43010	19960	58760
53	31800	43420	19968	59320
53 1/2	32100	43830	19976	59880
54	32400	44240	19984	60440
54 1/2	32700	44650	19992	61000
55	33000	45060	19960	61560
55 1/2	33300	45470	19968	62120
56	33600	45880	19976	62680
56 1/2	33900	46290	19984	63240
57	34200	46700	19992	63800
57 1/2	34500	47110	19960	64360
58	34800	47520	19968	64920
58 1/2	35100	47930	19976	65480
59	35400	48340	19984	66040
59 1/2	35700	48750	19992	66600
60	36000	49160	19960	67160
60 1/2	36300	49570	19968	67720
61	36600	49980	19976	68280
61 1/2	36900	50390	19984	68840
62	37200	50800	19992	69400
62 1/2	37500	51210	19960	69960
63	37800	51620	19968	70520
63 1/2	38100	52030	19976	71080
64	38400	52440	19984	71640
64 1/2	38700	52850	19992	72200
65	39000	53260	19960	72760
65 1/2	39300	53670	19968	73320
66	39600	54080	19976	73880
66 1/2	39900	54490	19984	74440
67	40200	54900	19992	75000
67 1/2	40500	55310	19960	75560
68	40800	55720	19968	76120
68 1/2	41100	56130	19976	76680
69	41400	56540	19984	77240
69 1/2	41700	56950	19992	77800
70	42000	57360	19960	78360
70 1/2	42300	57770	19968	78920
71	42600	58180	19976	79480
71 1/2	42900	58590	19984	80040
72	43200	59000	19992	80600
72 1/2	43500	59410	19960	81160
73	43800	59820	19968	81720
73 1/2	44100	60230	19976	82280
74	44400	60640	19984	82840
74 1/2	44700	61050	19992	83400
75	45000	61460	19960	83960
75 1/2	45300	61870	19968	84520
76	45600	62280	19976	85080
76 1/2	45900	62690	19984	85640
77	46200	63100	19992	86200
77 1/2	46500	63510	19960	86760
78	46800	63920	19968	87320
78 1/2	47100	64330	19976	87880
79	47400	64740	19984	88440
79 1/2	47700	65150	19992	89000
80	48000	65560	19960	89560
80 1/2	48300	65970	19968	90120
81	48600	66380	19976	90680
81 1/2	48900	66790	19984	91240
82	49200	67200	19992	91800
82 1/2	49500	67610	19960	92360
83	49800	68020	19968	92920
83 1/2	50100	68430	19976	93480
84	50400	68840	19984	94040
84 1/2	50700	69250	19992	94600
85	51000	69660	19960	95160
85 1/2	51300	70070	19968	95720
86	51600	70480	19976	96280
86 1/2	51900	70890	19984	96840
87	52200	71300	19992	97400
87 1/2	52500	71710	19960	97960
88	52800	72120	19968	98520
88 1/2	53100	72530	19976	99080
89	53400	72940	19984	99640
89 1/2	53700	73350	19992	100200
90	54000	73760	19960	100760
90 1/2	54300	74170	19968	101320
91	54600	74580	19976	101880
91 1/2	54900	74990	19984	102440
92	55200	75400	19992	103000
92 1/2	55500	75810	19960	103560
93	55800	76220	19968	104120
93 1/2	56100	76630	19976	104680
94	56400	77040	19984	105240

Product: L150G Volvo Wheel Loaders Service Manual

Full Download: <https://www.arepairmanual.com/downloads/l150g-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 2758 pages at:

<https://www.arepairmanual.com/downloads/l150g-volvo-wheel-loaders-service-manual/>

Document Title: Tightening torque, cylinder head	Function Group: 030	Information Type: Service Information	Date: 5/19/2026
Profile: L150G Volvo			

Tightening torque, cylinder head

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L150G Volvo			

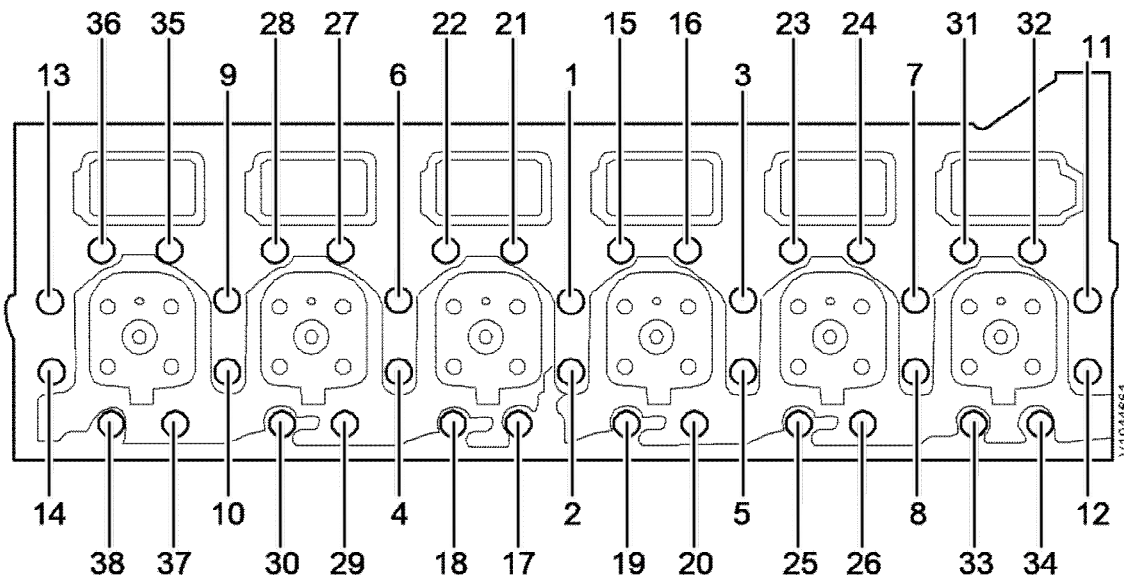


Figure 1
Cylinder head, D13

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	Function Group: system, 030	Information Type: Service Information	Date: 5/19/2026
Profile: L150G Volvo			

Lubrication system, specifications

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L150G 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: 5/19/2026
Profile: L150G Volvo			

Oil cooler, tightening torques

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Model	Production site	Serial number start	Serial number stop
L150G Volvo			

Oil cooler

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

Oil cooler, cover

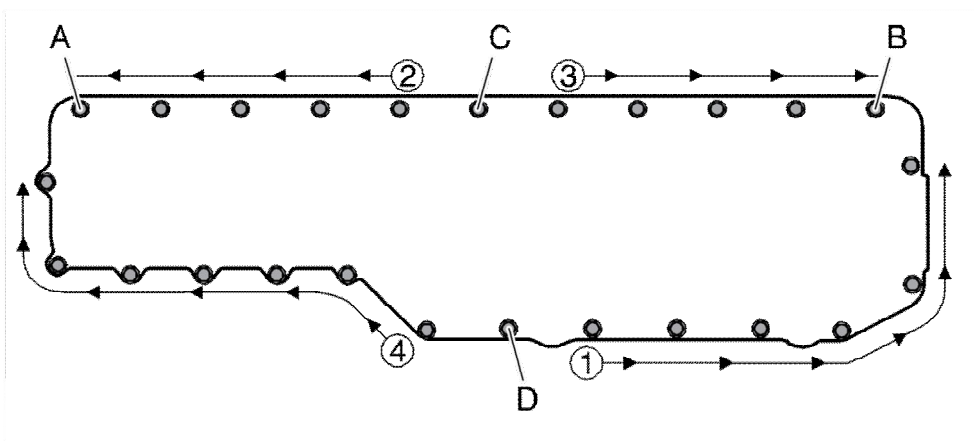


Figure 1

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: 5/19/2026
Profile: L150G Volvo			

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Tightening torques, unit injector

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Valid for option/configuration			
Model	Option no.	Option	Configuration
L150G Volvo	85420	Engine	D13H US Tier 4 interim
L150G 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: 5/19/2026
Profile: L150G Volvo			

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Tightening torques, unit injector

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Valid for option/configuration			
Model	Option no.	Option	Configuration
L150G 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: 5/19/2026
Profile: L150G Volvo			

Exhaust aftertreatment system, specifications

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Valid for option/configuration			
Model	Option no.	Option	Configuration
L150G Volvo	85420	Engine	D13H US Tier 4 interim
L150G Volvo	85421	Engine	D13H EU Stage IIIB

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L150G Volvo	Arvika	22001	23294
L150G Volvo	Arvika	23295	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: 5/19/2026
Profile: L150G Volvo			

Compressed-air system, specifications

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Valid for option/configuration			
Model	Option no.	Option	Configuration
L150G Volvo	85420	Engine	D13H US Tier 4 interim
L150G Volvo	85421	Engine	D13H EU Stage IIIB

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L150G Volvo	Arvika	22001	23294
L150G Volvo	Arvika	23295	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: 5/19/2026
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Turbocharger, specifications

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Valid for option/configuration			
Model	Option no.	Option	Configuration
L150G Volvo	85420	Engine	D13H US Tier 4 interim
L150G Volvo	85421	Engine	D13H EU Stage IIIB

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L150G Volvo	Arvika	22001	23294
L150G Volvo	Arvika	23295	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: 5/19/2026
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Turbocharger, specifications

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Valid for option/configuration			
Model	Option no.	Option	Configuration
L150G Volvo	85424	Engine	D13F Stage II

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L150G Volvo	Arvika	18501	18927
L150G Volvo	Arvika	18928	22000

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: 5/19/2026
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Thermostat, specifications

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L150G Volvo			

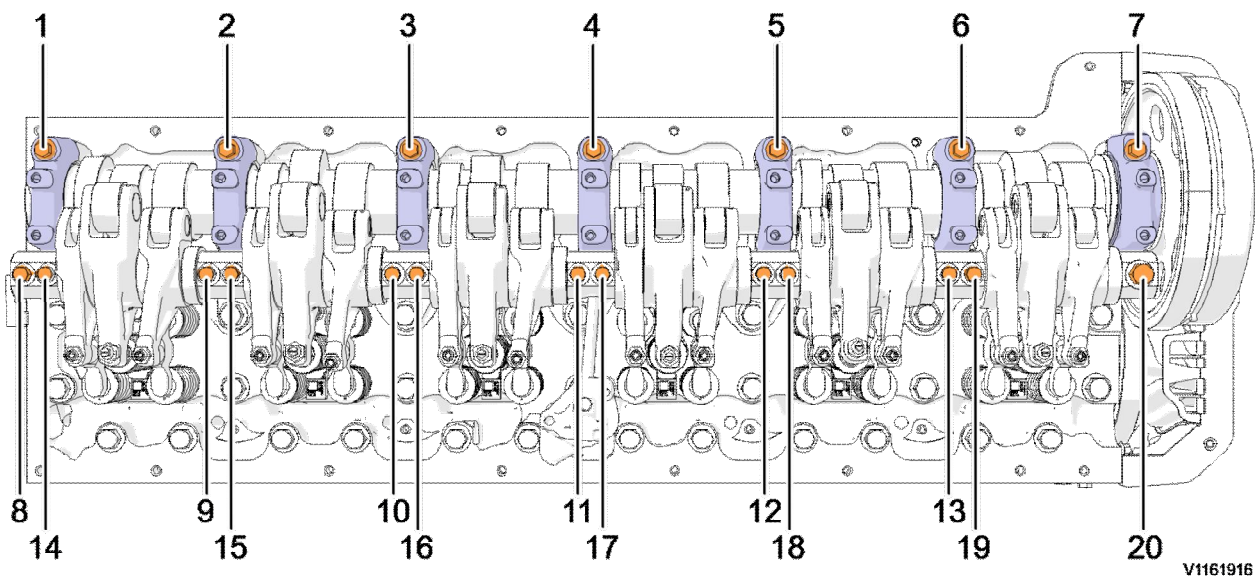
Cooling system	
Thermostat begins to open at	82 °C (180 °F)
Thermostat fully open at	92 °C (198 °F)

Document Title: Rocker arm shaft, shaft, tightening torques	Function Group: 030	Information Type: Service Information	Date: 5/19/2026
Profile: L150G Volvo			

Rocker arm shaft, tightening torques

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V1161916

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: 5/19/2026
Profile: L150G Volvo			

Valve cover, tightening torques

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L150G Volvo			

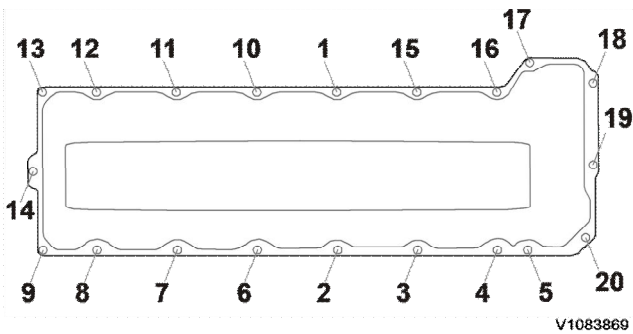


Figure 1
Figure 1 **Tightening diagram, valve cover**

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: 5/19/2026
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Exhaust manifold, tightening torques

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Valid for option/configuration			
Model	Option no.	Option	Configuration
L150G Volvo	85420	Engine	D13H US Tier 4 interim
L150G Volvo	85421	Engine	D13H EU Stage IIIB

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L150G Volvo	Arvika	22001	23294
L150G Volvo	Arvika	23295	99999

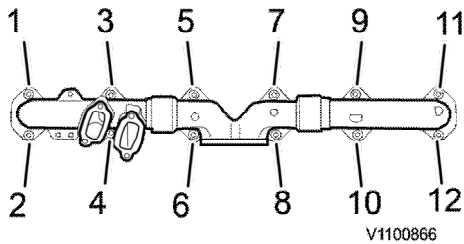


Figure 1

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: 5/19/2026
Profile: L150G Volvo			

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Exhaust manifold, tightening torques

Showing Selected Profile

Valid for option/configuration			
Model	Option no.	Option	Configuration
L150G Volvo	85424	Engine	D13F Stage II

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L150G Volvo	Arvika	18501	18927
L150G Volvo	Arvika	18928	22000

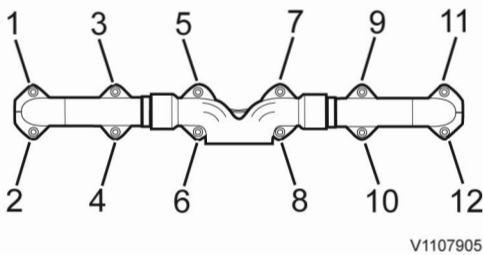


Figure 1

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: 5/19/2026
Profile: L150G Volvo			

EGR system, tightening torques

Showing Selected Profile

Valid for option/configuration			
Model	Option no.	Option	Configuration
L150G Volvo	85420	Engine	D13H US Tier 4 interim
L150G Volvo	85421	Engine	D13H EU Stage IIIB

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L150G Volvo	Arvika	22001	23294
L150G Volvo	Arvika	23295	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: 5/19/2026
Profile: L150G Volvo			

Cooling fan rpm, specifications

Showing Selected Profile

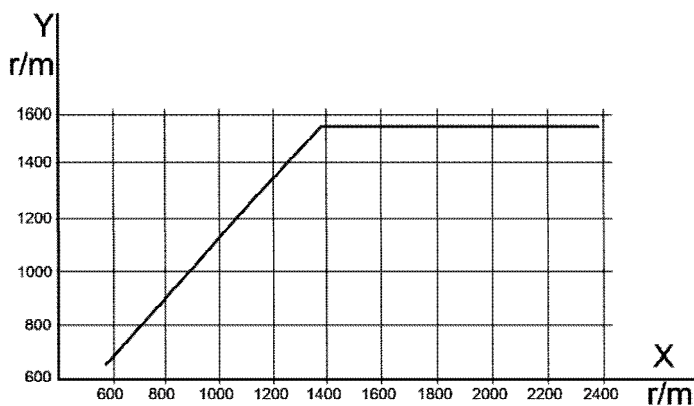
Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L150G Volvo			

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

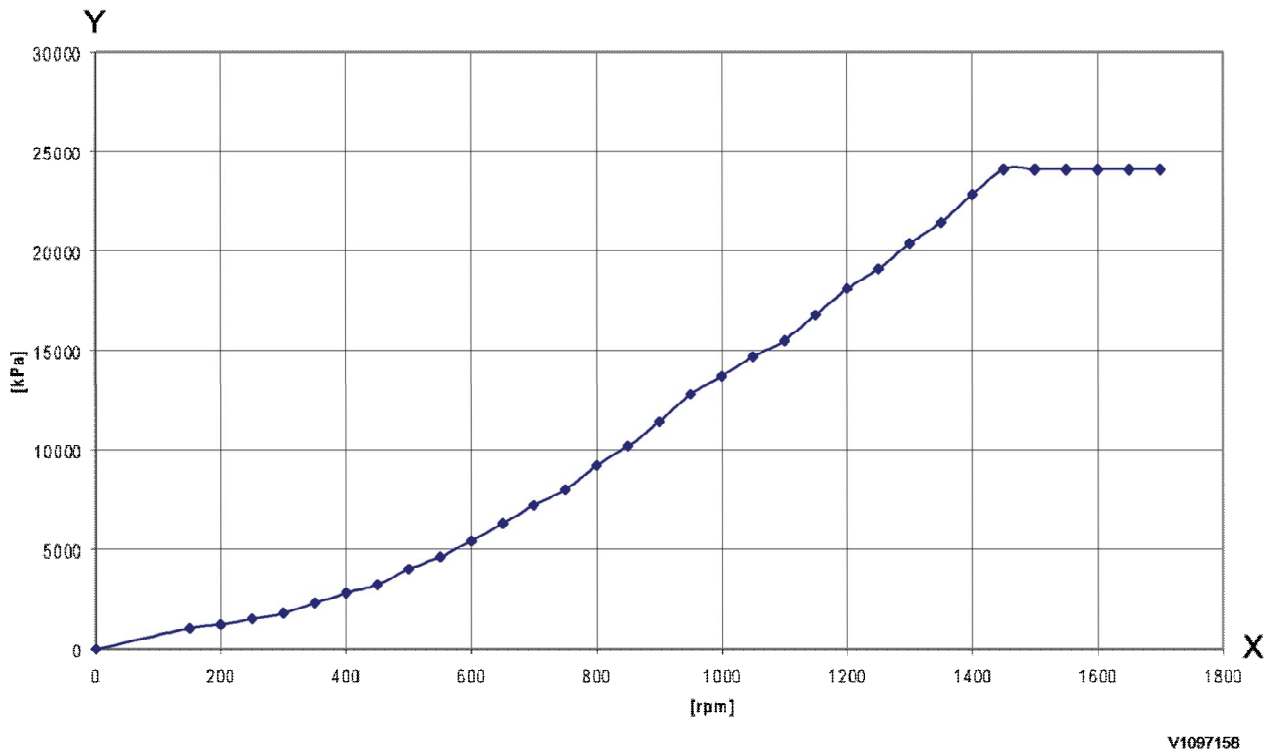


Figure 2
Pressure in relation to fan rpm (without axle oil cooler)

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

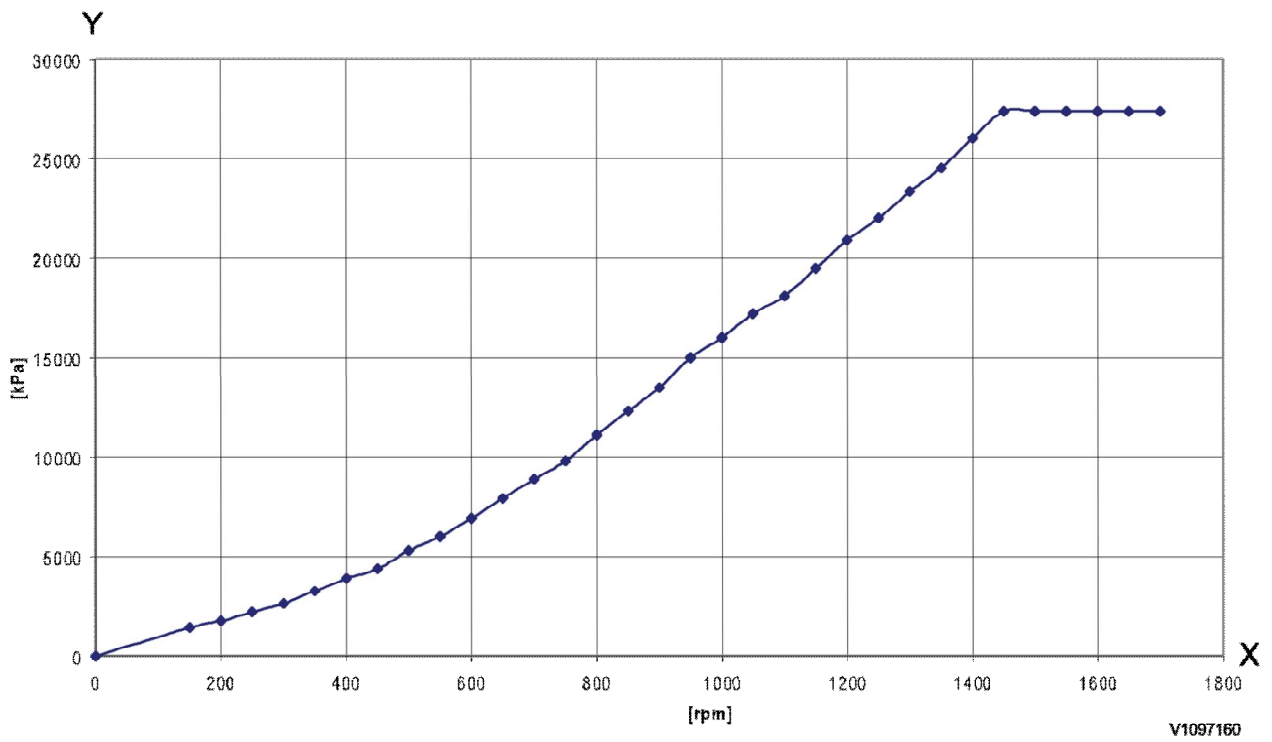


Figure 3
Pressure in relation to fan rpm (with axle oil cooler)

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: 5/19/2026
Profile: L150G Volvo			

Conversion tables

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L150G 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

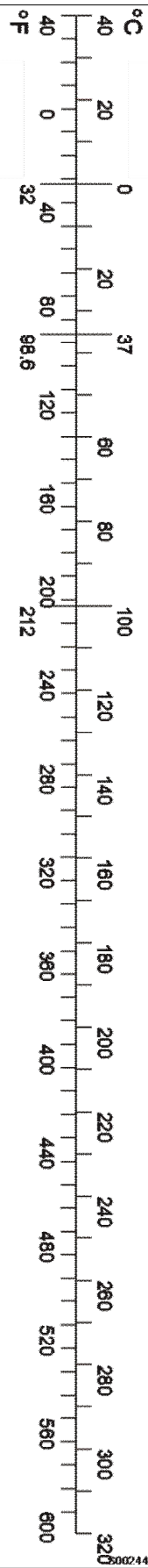
Unit explanations

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: 5/19/2026
Profile: L150G Volvo			

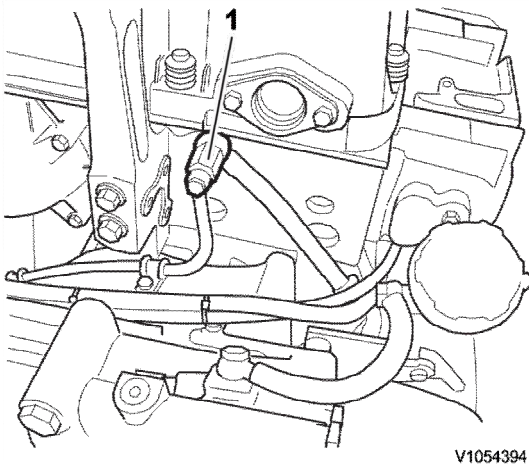
Fuel system, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L150G 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)



V1054394

Figure 1

The figure shows D16

1. Overflow valve

Document Title: Engine, specifications	Function Group: 030	Information Type: Service Information	Date: 5/19/2026
Profile: L150G Volvo			

Engine, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L150G 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) HTL222 (22586) HTL221 (22574)	1670–1760 rpm 1670–1760 rpm 1740–1830 rpm
L180G, L180G HL ⁽²⁾ HTL222B (22591) HTL222 (22586) HTL221 (22574)	1720–1810 rpm 1720–1810 rpm 1790–1870 rpm
L220G ⁽²⁾ HTL307 (22581) HTL306 (22575)	1780–1880 rpm 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: 5/19/2026
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: 5/19/2026
Profile: L150G Volvo			

E1680, Holder

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L150G Volvo			

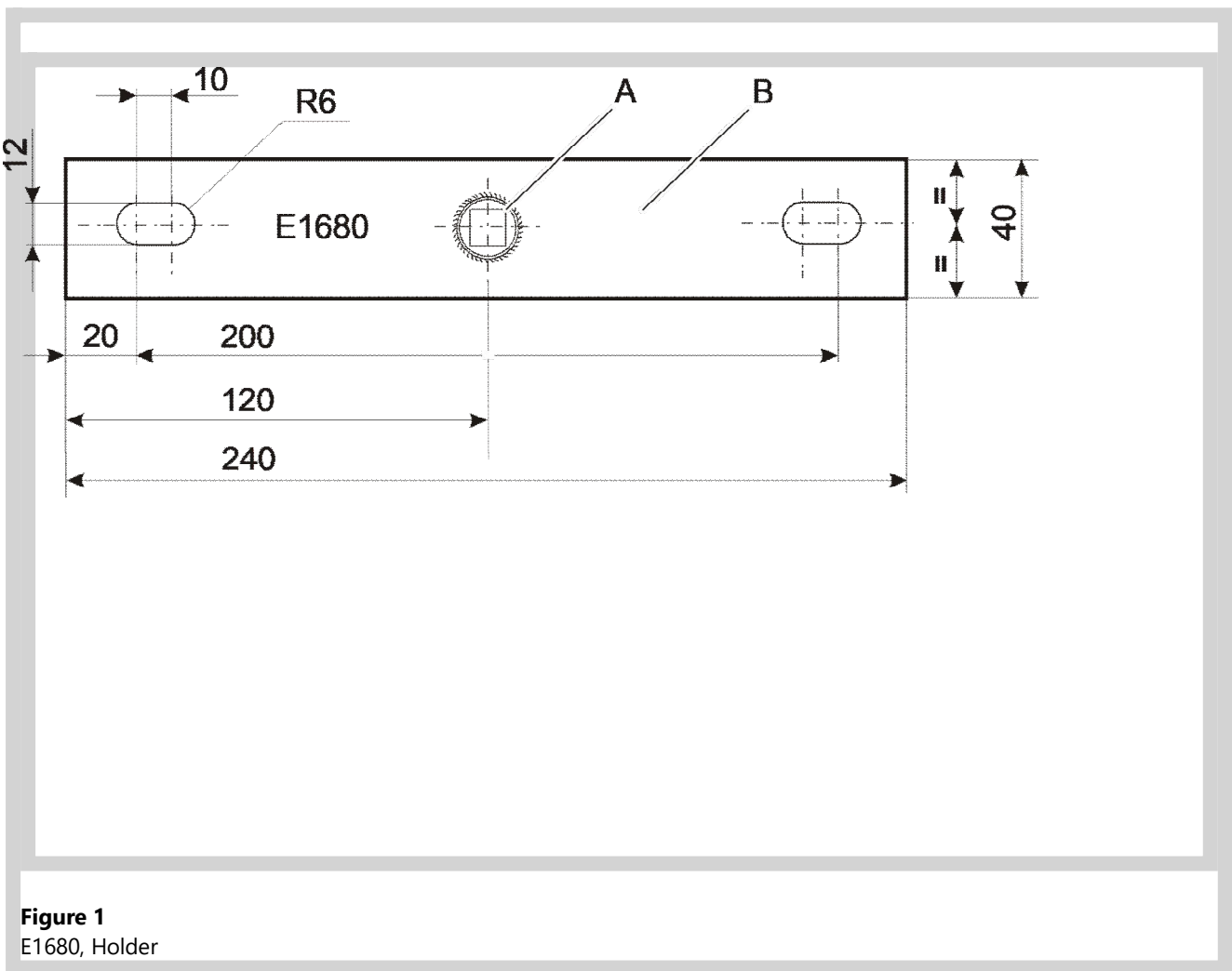


Figure 1
E1680, Holder

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