



Document Title: Volvo standard tightening torques	Function Group: 030	Information Type: Service Information	Date: 4/19/2026
Profile: L90G Volvo			

Volvo standard tightening torques

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L90G 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	390
3/4	270	365	384	520
7/8	340	460	484	655
1	410	550	584	795
1 1/8	500	675	714	965
1 1/4	590	800	844	1135
1 3/8	680	920	974	1325
1 1/2	770	1045	1104	1525
1 5/8	860	1165	1234	1735
1 3/4	950	1285	1364	1955
1 7/8	1040	1405	1494	2185
2	1130	1525	1624	2425
2 1/8	1220	1645	1754	2675
2 1/4	1310	1765	1884	2935
2 3/8	1400	1885	2014	3205
2 1/2	1490	2005	2144	3485
2 5/8	1580	2125	2274	3775
2 3/4	1670	2245	2404	4075
2 7/8	1760	2365	2534	4385
3	1850	2485	2664	4705
3 1/8	1940	2605	2794	5035
3 1/4	2030	2725	2924	5375
3 3/8	2120	2845	3054	5725
3 1/2	2210	2965	3184	6085
3 5/8	2300	3085	3314	6455
3 3/4	2390	3205	3444	6835
3 7/8	2480	3325	3574	7225
4	2570	3445	3704	7625
4 1/8	2660	3565	3834	8035
4 1/4	2750	3685	3964	8455
4 3/8	2840	3805	4094	8885
4 1/2	2930	3925	4224	9325
4 5/8	3020	4045	4354	9775
4 3/4	3110	4165	4484	10235
4 7/8	3200	4285	4614	10705
5	3290	4405	4744	11185
5 1/8	3380	4525	4874	11675
5 1/4	3470	4645	5004	12175
5 3/8	3560	4765	5134	12685
5 1/2	3650	4885	5264	13205
5 5/8	3740	5005	5394	13735
5 3/4	3830	5125	5524	14275
5 7/8	3920	5245	5654	14825
6	4010	5365	5784	15385
6 1/8	4100	5485	5914	15955
6 1/4	4190	5605	6044	16535
6 3/8	4280	5725	6174	17125
6 1/2	4370	5845	6304	17725
6 5/8	4460	5965	6434	18335
6 3/4	4550	6085	6564	18955
6 7/8	4640	6205	6694	19585
7	4730	6325	6824	20225
7 1/8	4820	6445	6954	20875
7 1/4	4910	6565	7084	21535
7 3/8	5000	6685	7214	22205
7 1/2	5090	6805	7344	22885
7 5/8	5180	6925	7474	23575
7 3/4	5270	7045	7604	24275
7 7/8	5360	7165	7734	24985
8	5450	7285	7864	25705
8 1/8	5540	7405	7994	26435
8 1/4	5630	7525	8124	27175
8 3/8	5720	7645	8254	27925
8 1/2	5810	7765	8384	28685
8 5/8	5900	7885	8514	29455
8 3/4	5990	8005	8644	30235
8 7/8	6080	8125	8774	31025
9	6170	8245	8904	31825
9 1/8	6260	8365	9034	32635
9 1/4	6350	8485	9164	33455
9 3/8	6440	8605	9294	34285
9 1/2	6530	8725	9424	35125
9 5/8	6620	8845	9554	35975
9 3/4	6710	8965	9684	36835
9 7/8	6800	9085	9814	37705
10	6890	9205	9944	38585
10 1/8	6980	9325	10074	39475
10 1/4	7070	9445	10204	40375
10 3/8	7160	9565	10334	41285
10 1/2	7250	9685	10464	42205
10 5/8	7340	9805	10594	43135
10 3/4	7430	9925	10724	44075
10 7/8	7520	10045	10854	45025
11	7610	10165	10984	45985
11 1/8	7700	10285	11114	46955
11 1/4	7790	10405	11244	47935
11 3/8	7880	10525	11374	48925
11 1/2	7970	10645	11504	49925
11 5/8	8060	10765	11634	50935
11 3/4	8150	10885	11764	51955
11 7/8	8240	11005	11894	52985
12	8330	11125	12024	54025
12 1/8	8420	11245	12154	55075
12 1/4	8510	11365	12284	56135
12 3/8	8600	11485	12414	57205
12 1/2	8690	11605	12544	58285
12 5/8	8780	11725	12674	59375
12 3/4	8870	11845	12804	60475
12 7/8	8960	11965	12934	61585
13	9050	12085	13064	62705
13 1/8	9140	12205	13194	63835
13 1/4	9230	12325	13324	64975
13 3/8	9320	12445	13454	66125
13 1/2	9410	12565	13584	67285
13 5/8	9500	12685	13714	68455
13 3/4	9590	12805	13844	69635
13 7/8	9680	12925	13974	70825
14	9770	13045	14104	72025
14 1/8	9860	13165	14234	73235
14 1/4	9950	13285	14364	74455
14 3/8	10040	13405	14494	75685
14 1/2	10130	13525	14624	76925
14 5/8	10220	13645	14754	78175
14 3/4	10310	13765	14884	79435
14 7/8	10400	13885	15014	80705
15	10490	14005	15144	81985
15 1/8	10580	14125	15274	83275
15 1/4	10670	14245	15404	84575
15 3/8	10760	14365	15534	85885
15 1/2	10850	14485	15664	87205
15 5/8	10940	14605	15794	88535
15 3/4	11030	14725	15924	89875
15 7/8	11120	14845	16054	91225
16	11210	14965	16184	92585
16 1/8	11300	15085	16314	93955
16 1/4	11390	15205	16444	95335
16 3/8	11480	15325	16574	96725
16 1/2	11570	15445	16704	98125
16 5/8	11660	15565	16834	99535
16 3/4	11750	15685	16964	100955
16 7/8	11840	15805	17094	102385
17	11930	15925	17224	103825
17 1/8	12020	16045	17354	105275
17 1/4	12110	16165	17484	106735
17 3/8	12200	16285	17614	108205
17 1/2	12290	16405	17744	109685
17 5/8	12380	16525	17874	111175
17 3/4	12470	16645	18004	112675
17 7/8	12560	16765	18134	114185
18	12650	16885	18264	115705
18 1/8	12740	17005	18394	117235
18 1/4	12830	17125	18524	118775
18 3/8	12920	17245	18654	120325
18 1/2	13010	17365	18784	121885
18 5/8	13100	17485	18914	123455
18 3/4	13190	17605	19044	125035
18 7/8	13280	17725	19174	126625
19	13370	17845	19304	128225
19 1/8	13460	17965	19434	129835
19 1/4	13550	18085	19564	131455
19 3/8	13640	18205	19694	133085
19 1/2	13730	18325	19824	134725
19 5/8	13820	18445	19954	136375
19 3/4	13910	18565	20084	138035
19 7/8	14000	18685	20214	139705
20	14090	18805	20344	141385
20 1/8	14180	18925	20474	143075
20 1/4	14270	19045	20604	144775
20 3/8	14360	19165	20734	146485
20 1/2	14450	19285	20864	148205
20 5/8	14540	19405	20994	149935
20 3/4	14630	19525	21124	151675
20 7/8	14720	19645	21254	153425
21	14810	19765	21384	155185
21 1/8	14900	19885	21514	156955
21 1/4	14990	20005	21644	158735
21 3/8	15080	20125	21774	160525
21 1/2	15170	20245	21904	162325
21 5/8	15260	20365	22034	164135
21 3/4	15350	20485	22164	165955
21 7/8	15440	20605	22294	167785
22	15530	20725	22424	169625
22 1/8	15620	20845	22554	171475
22 1/4	15710	20965	22684	173335
22 3/8	15800	21085	22814	175205
22 1/2	15890	21205	22944	177085
22 5/8	15980	21325	23074	178975
22 3/4	16070	21445	23204	180875
22 7/8	16160	21565	23334	182785
23	16250	21685	23464	184705
23 1/8	16340	21805	23594	186635
23 1/4	16430	21925	23724	188575
23 3/8	16520	22045	23854	190525
23 1/2	16610	22165	23984	192485
23 5/8	16700	22285	24114	194455
23 3/4	16790	22405	24244	196435
23 7/8	16880	22525	24374	198425
24	16970	22645	24504	200425
24 1/8	17060	22765	24634	202435
24 1/4	17150	22885	24764	204455
24 3/8	17240	23005	24894	206485
24 1/2	17330	23125	25024	208525
24 5/8	17420	23245	25154	210575
24 3/4				

Product: L90G Volvo Wheel Loaders Service Manual

Full Download: <https://www.arepairmanual.com/downloads/l90g-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 2250 pages at:

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Document Title: Engine, software specifications	Function Group: 030	Information Type: Service Information	Date: 4/19/2026
Profile: L90G Volvo			

Engine, software specifications

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
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Engine protection

Function	Action	Limit/cause
High coolant temperature	Yellow lamp on Red lamp on Both lamps off [T1] ⓘ Engine shut down	104°C (219°F) 107°C (225°F) 100°C (212°F) 116°C (241°F)
High inlet manifold air pressure	Red lamp on Red lamp off	0.35 MPa (51 PSI) 0.25 MPa (36 PSI)
High inlet manifold air temperature	Yellow lamp on Red lamp on	120°C (240°F) 140°C (284°F)
High oil temperature	Yellow lamp on Red lamp on Both lamps off [T2] ⓘ	125°C (257°F) 128°C (262°F) 123°C (253°F)
Low oil pressure	Red lamp and forced idle Engine shut down	0.5– 2 MPa (73–290 PSI)[T3] ⓘ
Low coolant level	Yellow lamp	[T4] ⓘ
High temperature of cooled EGR exhausts after the EGR cooler	Yellow lamp on Red lamp on Derate	200°C (392°F) 240°C (464°F) [T5] ⓘ
High E-ECU temperature	Red lamp on and derate	95°C (203°F)
High soot load	Yellow lamp Buzzer	100%
	Yellow lamp Buzzer Start derate	130%
	Red lamp Buzzer continuous Max derate [T6] ⓘ	140%
	Red lamp Buzzer continuous Max derate [T7] ⓘ	170%
	Red lamp Buzzer continuous Max derate [T8] ⓘ	200%
Air pump failure	Red lamp Derate [T9] ⓘ	Air pump failure

[T1] If the temperature has triggered yellow or red lamp, the temperature has to decrease to specified value for turning the lamps off.

[T2] If the temperature has triggered yellow or red lamp, the temperature has to decrease to specified value for turning the lamps off.

[T3] The red lamp is lit and force idle is performed when the oil pressure is lower than the specified value for 80% of the time during a 4 sec period. When vehicle speed is ~0km/h the engine will be forced shut off.

[T4] Yellow lamp is lit when the coolant level in the expansion tank has been below low level for 90% of the time during a 15 sec period.

[T5] If the temperature exceeds specified value for yellow lamp for more than 20% within a 30 sec period, the derate starts. At specified value for red lamp the derate will be 100%.

[T6] Stand still regeneration required

[T7] Service regeneration required

[T8] DPF replacement required

[T9] Startup delay 30 seconds.

Document Title: Thermostat, specifications	Function Group: 030	Information Type: Service Information	Date: 4/19/2026
Profile: L90G Volvo			

Thermostat, specifications

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L90G Volvo			

Cooling system	
Thermostat begins to open at	83 °C (181 °F)
Thermostat fully open at	95 °C (203 °F)

Document Title: EGR system, tightening torques	Function Group: 030	Information Type: Service Information	Date: 4/19/2026
Profile: L90G Volvo			

EGR system, tightening torques

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L90G Volvo			

Part	Torque
Pipe brackets, fastening	13 Nm (10 lbf ft)
Bracket on crankcase (exhaust gas return)	30 Nm (22 lbf ft)
Hose bracket, exhaust pipe on Venturi tube (exhaust gas return)	4 Nm (3 lbf ft)
Pin screws on exhaust pipe	15 Nm (11 lbf ft)
Cooler	
Connection piece on cooler (exhaust gas return)	13 Nm (10 lbf ft)
Cooler on bracket (exhaust gas return)	30 Nm (22 lbf ft)
Flutter valve housing on cooler (exhaust gas return)	30 Nm (22 lbf ft)
Connection piece on cooler (exhaust gas return)	13 Nm (10 lbf ft)
Cooler on exhaust pipe	25 Nm (18 lbf ft)
Clip on bracket (exhaust gas return)	20 Nm (15 lbf ft)
Clip on clip (exhaust gas return)	20 Nm (15 lbf ft)
Actuator	
Cooler on bracket, actuator	30 Nm (22 lbf ft)
Actuator on bracket	13 Nm (10 lbf ft)
Positioning level	15 Nm (11 lbf ft)
Heat shield on bracket	13 Nm (10 lbf ft)
Screw in nozzle	49 Nm (36 lbf ft)
Pipe union pipe \varnothing 10 mm, ring piece	39 Nm (29 lbf ft)
Adjusting rod on position lever	20 Nm (15 lbf ft)
Shut off valve	
Shut off valve on cooler	5 Nm (3.7 lbf ft)

For the tightening procedure according to torque using a torque wrench, a maximum variation of the tightening torque of $\pm 10\%$ is permissible.

Document Title: Conversion tables	Function Group: 030	Information Type: Service Information	Date: 4/19/2026
Profile: L90G Volvo			

Conversion tables

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

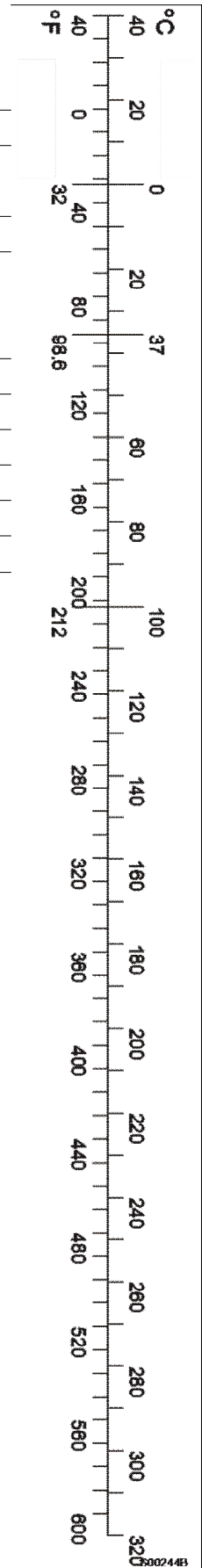
Unit explanations

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: 4/19/2026
Profile: L90G Volvo			

Fuel system, specifications

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L90G Volvo			

Fuel feed pump	
Type	Gear pump
Safety valve	1.5 MPa (217.6 psi)
Opening pressure	0.975 MPa (141.4 psi)
Fully opened	1.45 MPa (210.3 psi)
Feed pressure at:	
600 rpm	min. 0.56–0.64 MPa (81.2–92.8 psi)
1200 rpm	min. 0.56–0.65 MPa (81.2–94.3 psi)

Fuel Control Valve (FCV) — Overflow valve	
Opening pressure	0.46 MPa (66.7 psi)

Fuel rail	
Injection pressure at injectors	between 30–155 MPa (4351–22481 psi)
Maximum pressure	155 MPa (22481 psi)
Over-pressure (PRV opening pressure 1)	180–200 MPa (26107–29008 psi)
Injector fuel return flow, idling speed	Max 95 ml/min (3.21 US oz./min)
D4H	Max 115 ml/min (3.89 US oz./min)
D6H	

Pressure Release Valve (PRV)	
Opening pressure	180–200 MPa (26107–29008 psi)
Pressure when open	70–90 MPa (10153–13053 psi)
Life time limits:	50 openings 300 minutes in PRV open mode accumulated Lifetime limits are not monitored by main software, no error messages when limits are exceeded. PRV openings are logged in the EMS error memory

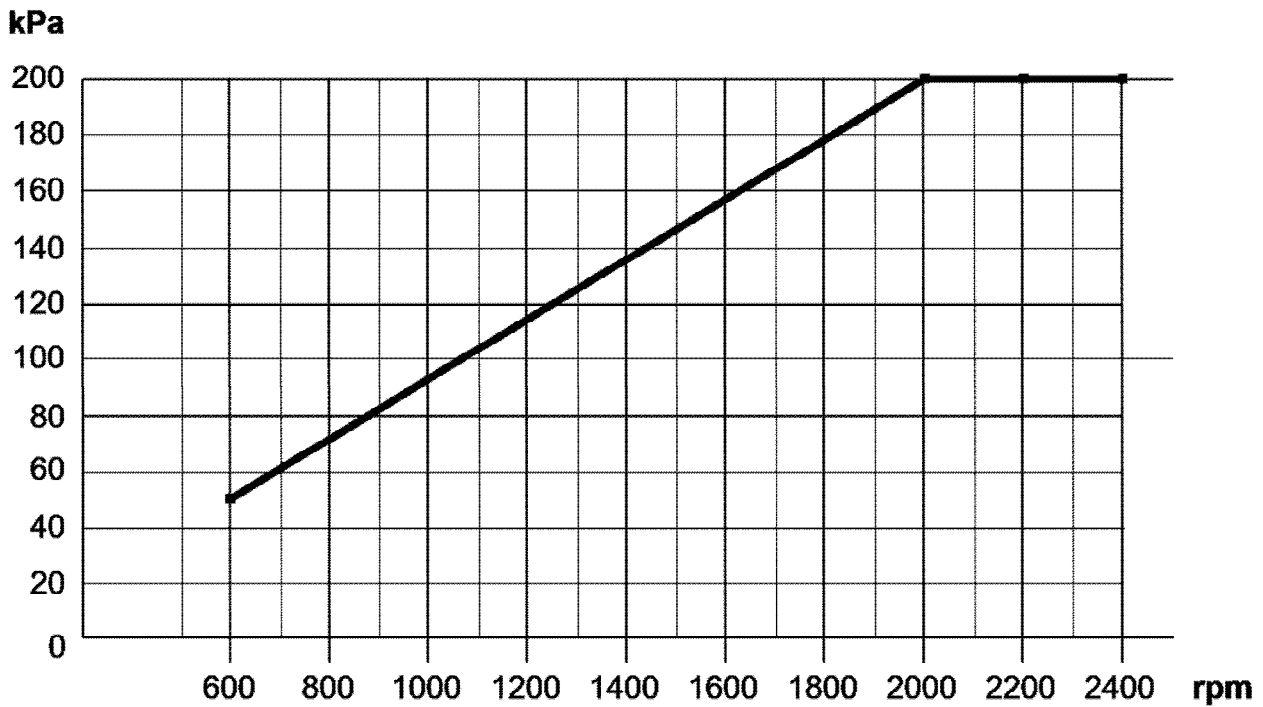
Document Title: Lubrication specifications	Function Group: system, 030	Information Type: Service Information	Date: 4/19/2026
Profile: L90G Volvo			

Lubrication system, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L90G Volvo			

Minimum oil pressure, recommendation



V1178956

Figure 1

Minimum oil pressure, guide

NOTE!

If the engine is operated continuously in the critical range, engine damage is expected in the long run.

Oil consumption

Lubricating oil, approx. maximum consumption	0.75 % of fuel consumption
--	----------------------------

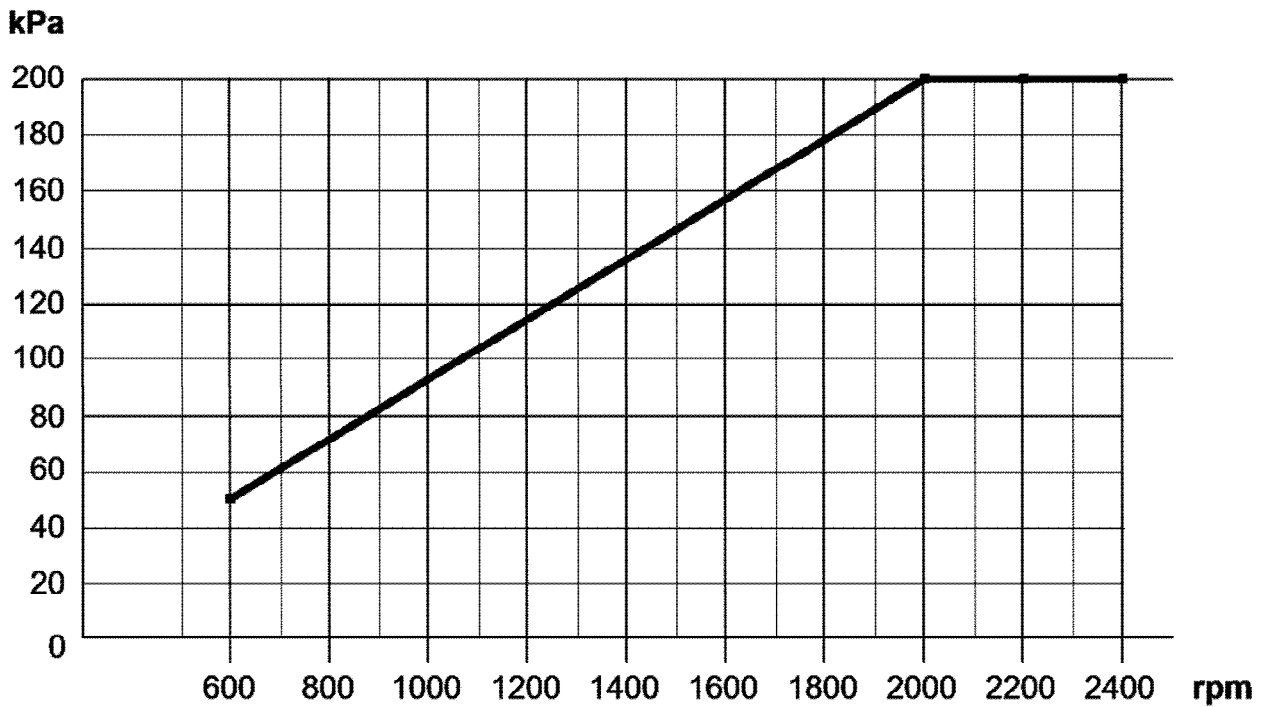
Document Title: Lubrication specifications	Function Group: system, 030	Information Type: Service Information	Date: 4/19/2026
Profile: L90G Volvo			

Lubrication system, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L90G Volvo			

Minimum oil pressure, recommendation



V1178956

Figure 1

Minimum oil pressure, guide

NOTE!

If the engine is operated continuously in the critical range, engine damage is expected in the long run.

Oil consumption

Lubricating oil, approx. maximum consumption	0.75 % of fuel consumption
--	----------------------------

Document Title: Engine, tighten torques	Function Group: 030	Information Type: Service Information	Date: 4/19/2026
Profile: L90G Volvo			

Engine, tightening torques

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L90G Volvo			

NOTICE

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

Part	Comment	Torque
Engine mounting		
Flywheel housing – hydraulic transmission		57 ±6 Nm (42 ±4 lbf ft)
Flywheel housing – crankcase, M12		99 ±10 Nm (73 ±7.3 lbf ft)
Flywheel housing – crankcase, M16		243 ±25 Nm (179 ±18 lbf ft)
Front engine mount, rubber pads – frame		92 ±9 Nm (68 ±7 lbf ft)
Front engine mount, rubber pads – engine mount		150 ±15 Nm (110 ±11 lbf ft)
Front engine mount, engine member – engine block		270 ±27 Nm (199 ±20 lbf ft)
Torsional vibration damper		
Belt pulley/torsional vibration damper	Step 1	40 Nm (30 lbf ft)
Belt pulley/torsional vibration damper	Step 2, angle tightening	60°
Belt pulley/torsional vibration damper	Step 3, angle tightening	60°
V-belt pulley		110 Nm (81 lbf ft)
Cylinder head cover		
Cylinder head cover on cylinder head	Tighten screws alternately	8.5 Nm (6 Lbf ft)
Cable duct on cylinder head cover		8.5 Nm (6 Lbf ft)
Cable connection on injector		1.5 Nm (1 Lbf ft)
Flywheel		
Flywheel on crankshaft	Step 1 Tighten screws alternately	30 ±3 Nm (22 ±2 lbf ft)
	Step 2, angle-tightening Tighten screws alternately	60°
	Step 3, angle-tightening Tighten screws alternately	60°
Valve mechanism		
Inlet valves, angle-tightening		To zero clearance, then 75° counter-clockwise
Exhaust valves, angle-tightening		To zero clearance, then 120° counter-clockwise
Lock nut, valves		20 ±2 Nm (14.8 ±1.5 lbf ft)
Valve cover		8,5 Nm (6.3 lbf ft)

Document Title: Engine, specifications	Function Group: 030	Information Type: Service Information	Date: 4/19/2026
Profile: L90G Volvo			

Engine, specifications

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L90G Volvo			

General

Number of cylinders	6
Cylinder bore	98 mm (3.86 in)
Stroke	126 mm (4.96 in)
Displacement	5.70 litres (1.51 US gal)
Injection order	1-5-3-6-2-4
Low idle	700 rpm
High idle (run out speed)	2375 rpm
Weight, engine	610 kg (1345 lbs)

Stall speed torque converter⁽¹⁾

L60G ⁽²⁾ HTE125 (22579)	1970–2060 rpm
L70G ⁽²⁾ HTE125 (22579)	2020–2150 rpm
L90G ⁽²⁾ HTE125 (22579)	2050–2170 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: 4/19/2026
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: E1706	Function Group: 080	Information Type: Service Information	Date: 4/19/2026
Profile: L90G Volvo			

E1706

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L90G Volvo			

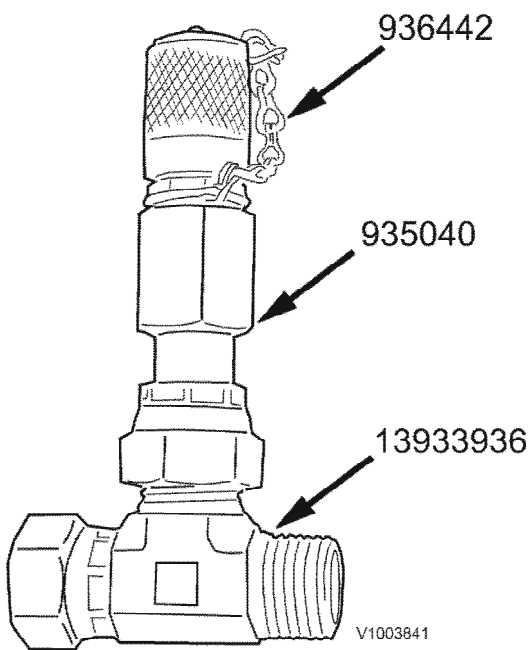


Figure 1

Document Title: E 1708, Checking point	Function Group: 080	Information Type: Service Information	Date: 4/19/2026
Profile: L90G Volvo			

E 1708, Checking point

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L90G Volvo			

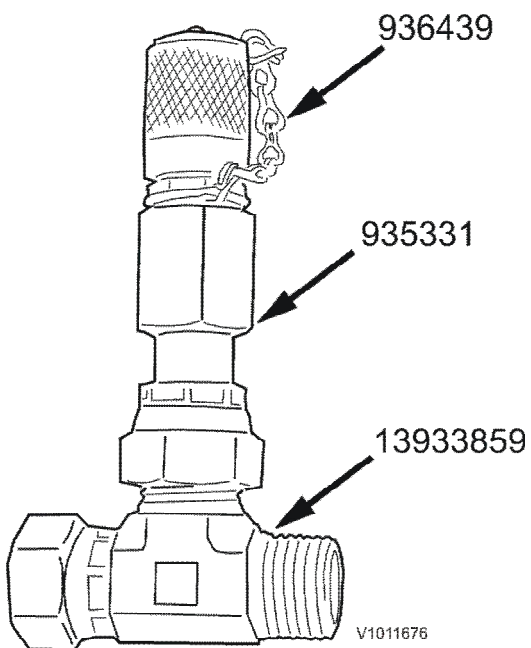


Figure 1

Document Title: E1711	Function Group: 080	Information Type: Service Information	Date: 4/19/2026
Profile: L90G Volvo			

E1711

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L90G Volvo			

E1711

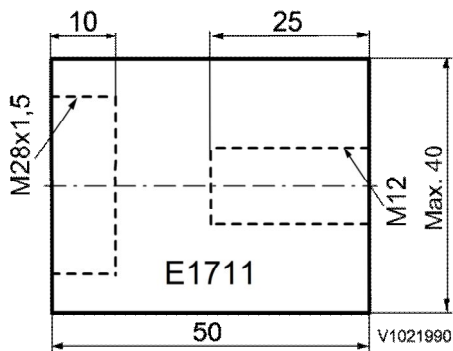


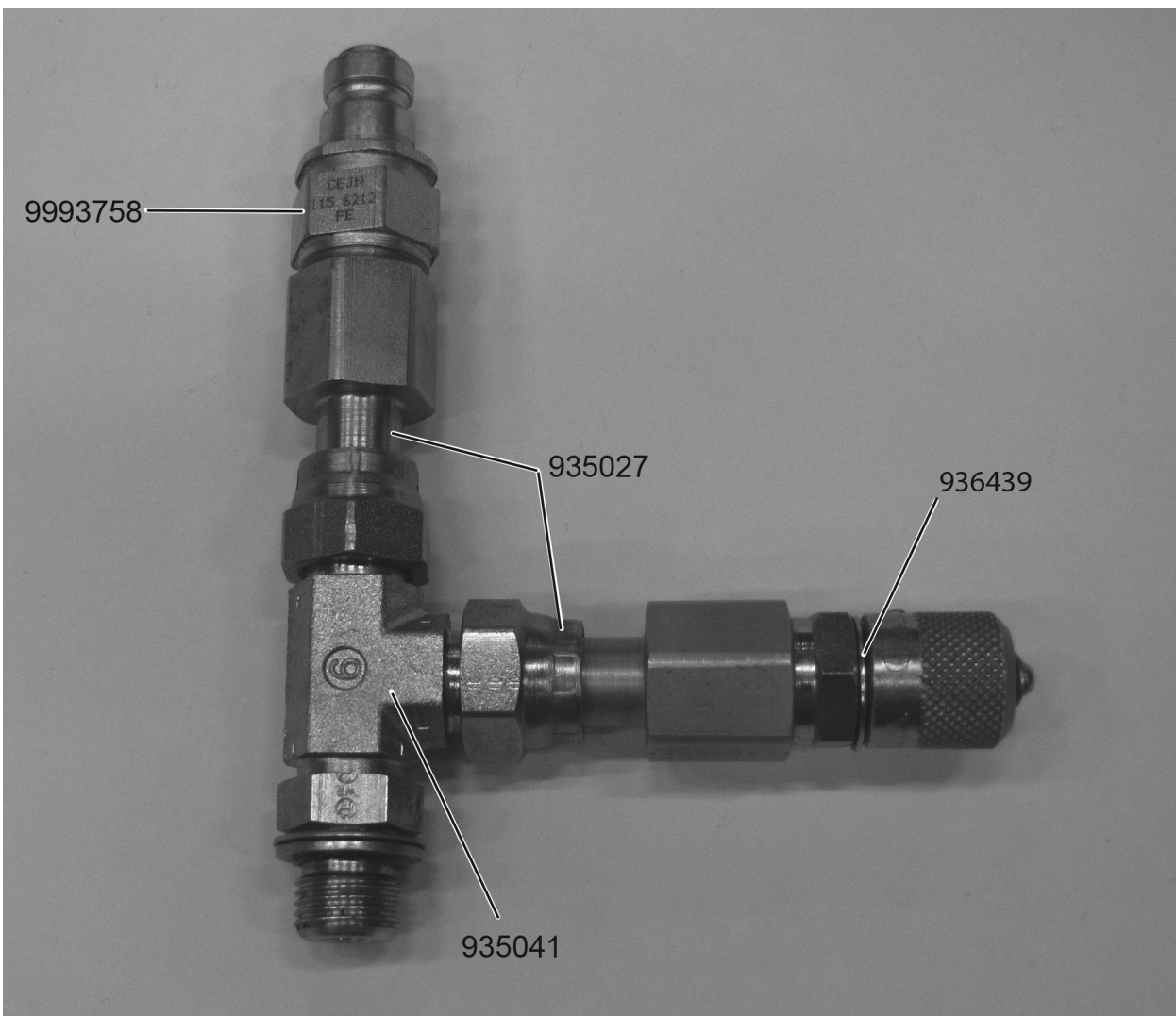
Figure 1
E1711

Document Title: E-2000	Function Group: 080	Information Type: Service Information	Date: 4/19/2026
Profile: L90G Volvo			

E-2000

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L90G Volvo			



V1139126

Figure 1

Document Title: E-2001	Function Group: 080	Information Type: Service Information	Date: 4/19/2026
Profile: L90G Volvo			

E-2001

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L90G Volvo			

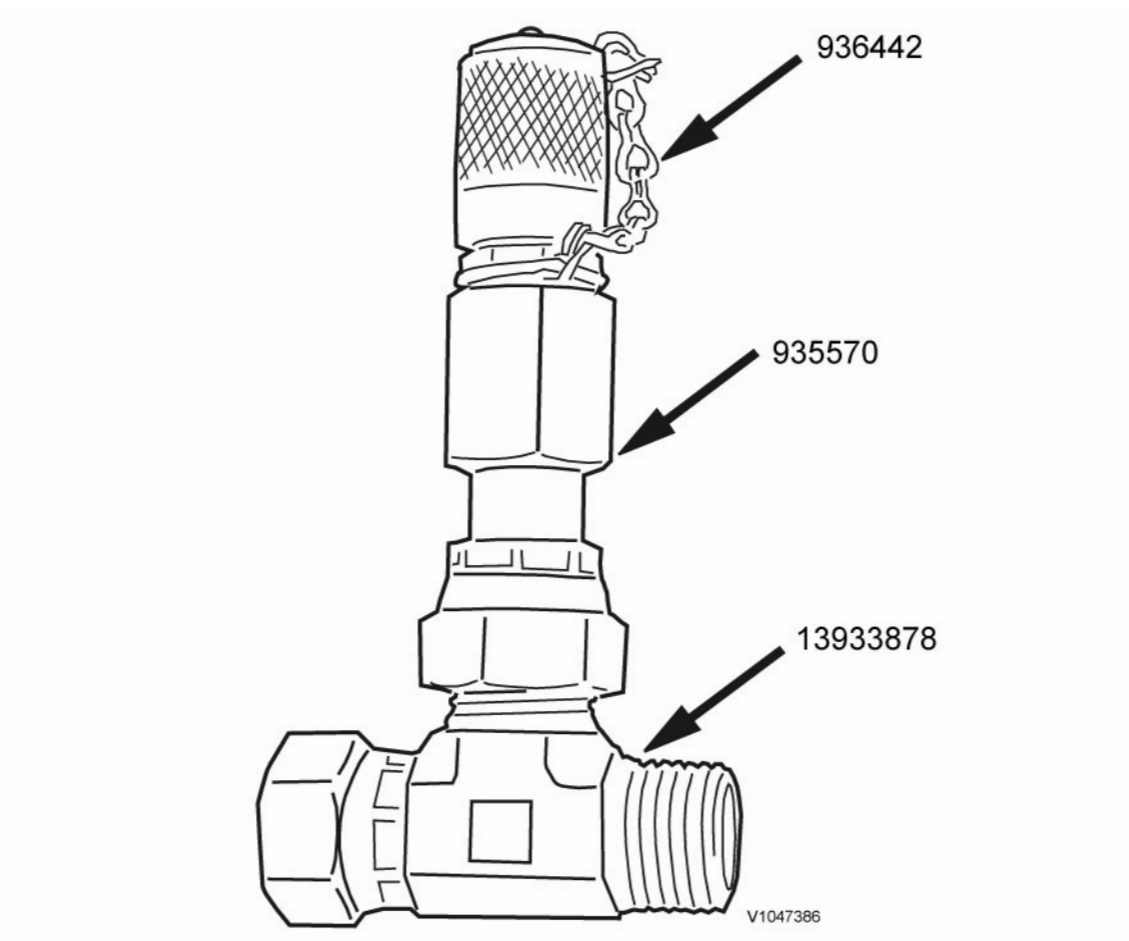


Figure 1

Document Title: E-2030	Function Group: 080	Information Type: Service Information	Date: 4/19/2026
Profile: L90G Volvo			

E-2030

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L90G Volvo			

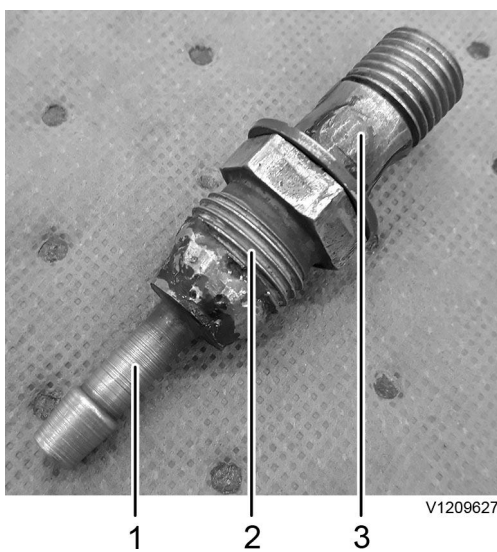


Figure 1

1. Hose nipple, diameter of approx. 8 mm
2. 21023622
3. Holes welded shut

Document Title: E-2032	Function Group: 080	Information Type: Service Information	Date: 4/19/2026
Profile: L90G Volvo			

E-2032

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L90G Volvo			



Figure 1

1. 995895
2. Washers (2 pcs)

Document Title: 9993807 Lifting tool user instructions	Function Group: 080	Information Type: Service Information	Date: 4/19/2026
Profile: L90G Volvo			

9993807 Lifting tool user instructions

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L90G Volvo			

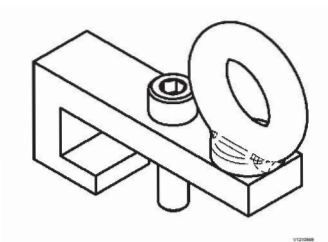


Figure 1

9993807 Lifting tool

Instructions

This instruction is a guide on how to use and maintain the lifting tool correctly. The instructions must be studied carefully by the personnel concerned before the lifting tool can be put into use.

The instructions must always be available to the personnel maintaining and using the lifting tool daily.

It is also important to:

- Keep the instructions and other applicable documents during the entire lifetime of the lifting tool.
- Pass the instructions to other owners or users of the lifting tool.
- Update the instructions with additions or changes made by the manufacturer.

Pay careful attention to information about warnings mentioned in the instructions and found on the warning signs on the lifting tools. If this information is not observed, severe personal injuries and equipment damage can arise.

Responsibility

The instructions describe the authorized method to use the lifting tool.

The lifting tool may only be used by personnel with adequate technical training or corresponding professional experience and in consultation with the manufacturer.

If the instructions have not been followed, the manufacturer is not responsible for personal injuries or damage to equipment.

Marking

Do not remove or make machine labels or other labels unreadable.

The lifting tool is marked with a CE mark, which means that it is designed, manufactured and described in accordance with EC Machinery Directive 2006/42/EC.

Warning decals and CE mark on lifting tool must be clearly visible. If a part provided with warning decals or CE mark is changed, a new warning decal and CE mark must be mounted in the same place. Defective decals and CE marks must be replaced immediately.



V1141218

Figure 2

CE-marking

Manufacturer

Company: Volvo Construction Equipment AB

Address: CE-46840, RLA 0301

Postal address: 631 85 Eskilstuna, Sweden

Rebuilding

If the lifting tool is rebuilt or supplemented with other parts without permission by the manufacturer, the CE marking does not include this part. If such rebuilding or added parts changes the function of the lifting tool, the CE marking in its entirety is no longer valid. After rebuilding, it is important that the instructions are supplemented with the necessary illustrations, photos and texts.

NOTE!

If not explicitly stated otherwise, always assume this instruction reference the use of two 9993807 Lifting tools.

Intended usage

The lifting toll specified in this document is only intended for lifting torque converters with a maximum weight of 100 kg. Intended users are appointed and trained personnel, the lifting gear is not intended to be used by unauthorised or underage personnel.

To fulfil the requirements for intended use, the user must follow all instructions and maintenance directions written by the manufacturer.

Technical data

Type designation: lifting tool for torque converter

Maximum load, lifting tool x 2: 100 kg (220 lb)

Mass, lifting tool x 2 with shackles and chain slings: 5 kg (11 lb)

Test factor for static testing (for lifting tools): 1.5

Safety information

Limits of use

The lifting tools may only be used for the intended purpose. All other use is forbidden.

Lifting hooks must be equipped with a self-locking hook.

Shackles should be used for connecting the tools.

Lifting sling and straps should be marked with lifting capacity.

All accessories for the lift must have sufficient lifting capacity.

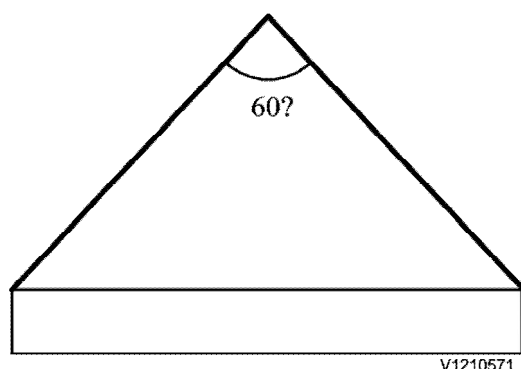


Figure 3

Max lift-angle

Maximum lift angles must not exceed 60°.

Handling

To meet the requirements for intended use, the user must observe all user and maintenance instructions prescribed by the manufacturer.

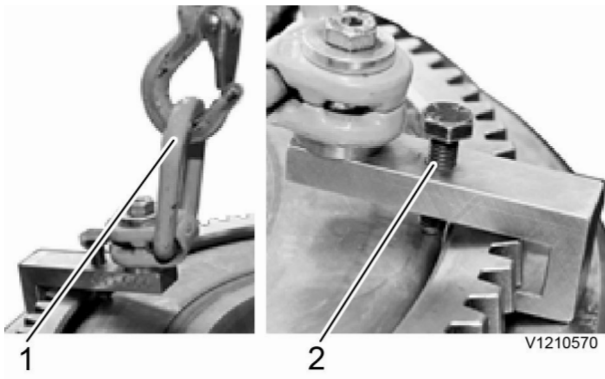


Figure 4

1. **Lifting equipment**
 Use lifting sling with sufficient lifting capacity, 100 kg (220 lb).
 Always use lifting hooks equipped with a self-locking hook.
 Use shackles with sufficient lifting capacity, 100 kg (220 lb).
2. **Bolts**
 Position the lifting tool under gear ring and tighten the bolts.
 Tighten until the lifting tool is unable to move independently of the gear ring.

Intended user

The lifting device is intended to be used by trained personnel, it is not intended to be used by unauthorized or underage personnel.

Conditions and preparatory measures

Lifting tool with damaged parts must not be used.
 Before lifting, check that the lifting tool does not have indications of cracks or deformations.

Maintenance

Maintenance must be performed by person with appropriate technical training or equivalent professional experience and in consultation with the manufacturer.

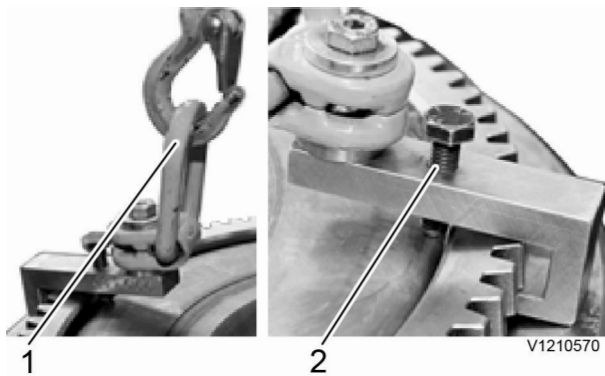


Figure 5

Detail/interval	Control/oversight
1 Shackles. Annual check.	Check that shackles does no have visible defects, cracks or deformations.
2 9993807 Lifting tool. Annual check.	Check that the lifting tool with threads and bolt does no have visible defects, cracks or deformations.

General

A defective lifting tool must be replaced.

Workplace

Protective shoes must be used.

The workplace should be kept free from equipment that can cause slipping or tripping risks.

The lifting tool is intended to be used in a workshop environment, outdoor usage is forbidden.

Continuous supervision

The lifting tool must be subjected to continuous supervision before use.

- Check for cracks.
- Check if the lifting tool is bent or deformed.
- Check that threaded screws and bolts are intact and do not have indications of breakage or deformation.

Document Title: 11668007 Lifting tool user instructions	Function Group: 080	Information Type: Service Information	Date: 4/19/2026
Profile: L90G Volvo			

11668007 Lifting tool user instructions

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
L90G Volvo			



V1210648

Figure 1
11668007 lifting tool

Instructions

This instruction is a guide on how to use and maintain the lifting tool correctly. The instructions must be studied carefully by the personnel concerned before the lifting tool can be put into use.

The instructions must always be available to the personnel maintaining and using the lifting tool daily.

It is also important to:

- Keep the instructions and other applicable documents during the entire lifetime of the lifting tool.
- Pass the instructions to other owners or users of the lifting tool.
- Update the instructions with additions or changes made by the manufacturer.

Pay careful attention to information about warnings mentioned in the instructions and found on the warning signs on the lifting tools. If this information is not observed, severe personal injuries and equipment damage can arise.

Responsibility

The instructions describe the authorized method to use the lifting tool.

The lifting tool may only be used by personnel with adequate technical training or corresponding professional experience and in consultation with the manufacturer.

If the instructions have not been followed, the manufacturer is not responsible for personal injuries or damage to

equipment.

Marking

Do not remove or make machine labels or other labels unreadable.

The lifting tool is marked with a CE mark, which means that it is designed, manufactured and described in accordance with EC Machinery Directive 2006/42/EC.

Warning decals and CE mark on lifting tool must be clearly visible. If a part provided with warning decals or CE mark is changed, a new warning decal and CE mark must be mounted in the same place. Defective decals and CE marks must be replaced immediately.

Manufacturer

Company: BM Lindahl AB

Address: Älmedal 6

Postal address: 364 33 Åseda, Sweden

Rebuilding

If the lifting tool is rebuilt or supplemented with other parts without permission by the manufacturer, the CE marking does not include this part. If such rebuilding or added parts changes the function of the lifting tool, the CE marking in its entirety is no longer valid. After rebuilding, it is important that the instructions are supplemented with the necessary illustrations, photos and texts.

Intended usage

11668007 Lifting tool consists of stand, lifting jack, extensions and locking pins.

Intended users are appointed and trained personnel, the lifting tool is not intended to be used by unauthorized or underage personnel.

To fulfil the requirements for intended use, the user must follow all instructions and maintenance directions written by the manufacturer.

The lifting tool is only intended for lifting Volvo Wheel Loaders and Volvo Articulated Haulers. Maximum load: 15 000 kg (33 070 lb).

Technical data

Type designation: lifting tool

Maximum load: 15 000 kg (33 070 lb), with two 11668007 lifting tools: 30 000 kg (66 140 lbs)

Mass: 78 kg (172 lb)

Test factor for static testing: For lifting tools and manually operated machines: 1.5. For other machines: 1.25

Height: 500–800 mm (19.7–31.5 in), with extensions: 600–900 mm (23.6–35.4 in)

Safety information

Limits of use

The lifting tools may only be used for the intended purpose. All other use is forbidden.

For Volvo Wheel Loaders, the lifting tool is only intended to lift the rear axle.



V1071600

Always secured loads with safety pins. To stay under raised load without locking pins, is associated with life danger.



V1071600

To prevent breakage and sliding, the lifting tool must always be used with a vertical load.

To prevent oblique loads, always use two 11668007 lifting tools.

Handling

To meet the requirements for intended use, the user must observe all user and maintenance instructions prescribed by the manufacturer.

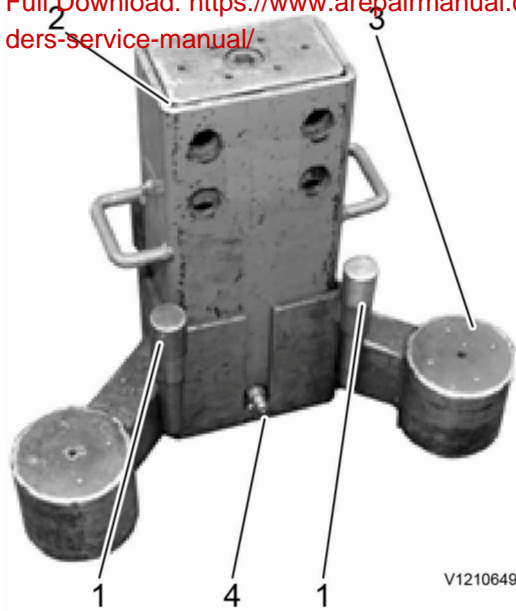


Figure 2

Pre use check

1. **Safety pins**
Make sure that safety pins are supplied along with the lifting tool.
Check that the safety pins are intact and do not have indications of breakage or deformation.
2. **Inner and outer lifting beam**
Check that the beam with pin holes is intact and do not have indications of breakage or deformation.
3. **Support legs**
The lifting tool has three support legs.
Check that the stand is intact and does not have indications of breakage or deformation.
4. **Connection nipple**
Connection nipple for pneumatic pump.

Pneumatic pump

Check that pneumatic pump with hose kit and couplings does not have indications of breakage or deformation. Always replace defective units.

Intended user

The lifting device is intended to be use by trained personnel, it is not intended to be used by unauthorized or underage personnel.

Conditions and preparatory measures

Lifting tool with damaged parts must not be used.



V1071600

Make sure that there are no people in the vicinity who may be at risk when operating this lifting tool.

Lifting



V1071600

Never stay under raised load with the safety pins disconnected.

1. **Steering linkage lock**
Lock steering linkage with steering linkage lock.
If an articulated hauler is being lifted, place body support.
Connect stops.
2. **Assemble**
Place the lifting jack into the stand.
Make sure the nipple fits in the groove.

Sample **Place the Lifting tool** All 2250 pages at:

<https://www.aresairmanual.com/downloads/l90g-volvo-wheel-loaders-service-manual/>