Document Title: **Volvo standard tightening torques**	Function Group: **030**	Information Type: **Service Information**	Date: **4/12/2026**
Profile: **L220G Volvo**			

Volvo standard tightening torques

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
L220G 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 ≈10%, for flange bolts.
All standard torques for bolts are without surface treatment.
The standard torque for bolts lubricated with oil should be reduced with 20% of the given value.

Standard tightening torque charts

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

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

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

Document Title: **Tightening torque, cylinder head**	Function Group: **030**	Information Type: **Service Information**	Date: **4/12/2026**
Profile: **L220G Volvo**			

Tightening torque, cylinder head

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Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
L220G Volvo			

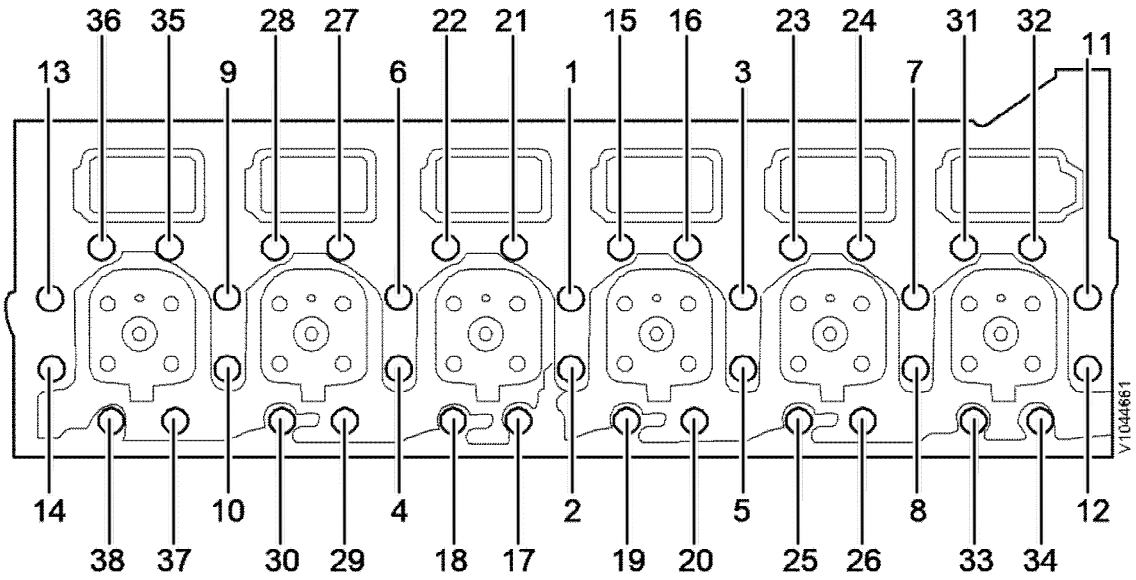

Figure 1
Cylinder head, D13
NOTE!
Tighten the bolts in the sequence shown in the figure.

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

Document Title: **Lubrication system, specifications**	Function Group: **030**	Information Type: **Service Information**	Date: **4/12/2026**
Profile: **L220G Volvo**			

Lubrication system, specifications

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
L220G 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 %

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: **4/12/2026**
Profile: **L220G Volvo**			

Oil cooler, tightening torques

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
L220G Volvo			

Oil cooler

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

Oil cooler, cover

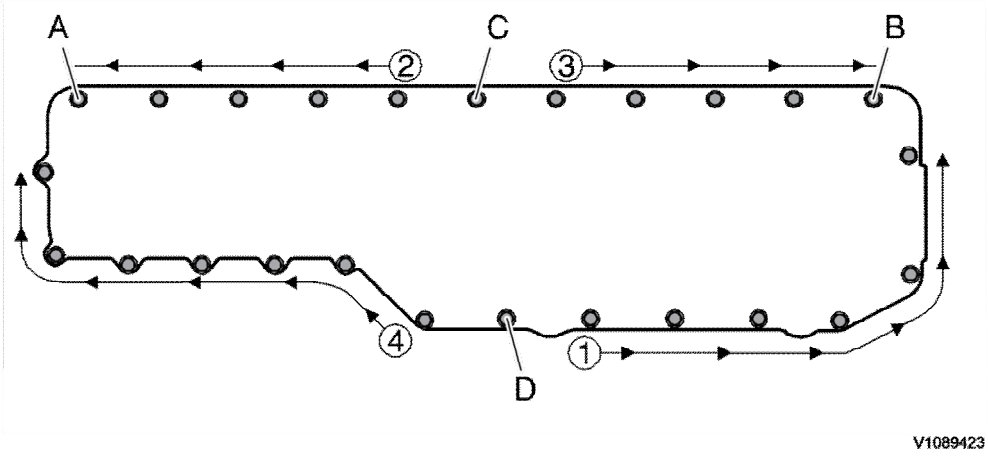

Figure 1

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: **4/12/2026**
Profile: **L220G Volvo**			

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Tightening torques, unit injector

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Valid for option/configuration			
Model	**Option no.**	**Option**	**Configuration**
L220G Volvo	85420	Engine	D13H US Tier 4 interim
L220G 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: **4/12/2026**
Profile: **L220G Volvo**			

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Tightening torques, unit injector

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Valid for option/configuration			
Model	**Option no.**	**Option**	**Configuration**
L220G 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: **4/12/2026**
Profile: **L220G Volvo**			

Exhaust aftertreatment system, specifications

Showing Selected Profile

Valid for option/configuration			
Model	**Option no.**	**Option**	**Configuration**
L220G Volvo	85420	Engine	D13H US Tier 4 interim
L220G Volvo	85421	Engine	D13H EU Stage IIIB

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
L220G Volvo	Arvika	12001	12852
L220G Volvo	Arvika	12853	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)

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)

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%

Unit converter for fuel (kg to litres)

x = fuel in kg y = volume in litres Fuel density = 0.82 kg/dm³ at 20 °C	x / 0.82 = y

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: **4/12/2026**
Profile: **L220G Volvo**			

Compressed-air system, specifications

Showing Selected Profile

Valid for option/configuration			
Model	**Option no.**	**Option**	**Configuration**
L220G Volvo	85420	Engine	D13H US Tier 4 interim
L220G Volvo	85421	Engine	D13H EU Stage IIIB

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
L220G Volvo	Arvika	12001	12852
L220G Volvo	Arvika	12853	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: **4/12/2026**
Profile: **L220G Volvo**			

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Turbocharger, specifications

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Valid for option/configuration			
Model	**Option no.**	**Option**	**Configuration**
L220G Volvo	85420	Engine	D13H US Tier 4 interim
L220G Volvo	85421	Engine	D13H EU Stage IIIB

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
L220G Volvo	Arvika	12001	12852
L220G Volvo	Arvika	12853	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: **4/12/2026**
Profile: **L220G Volvo**			

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Turbocharger, specifications

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Valid for option/configuration			
Model	**Option no.**	**Option**	**Configuration**
L220G Volvo	85424	Engine	D13F Stage II

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
L220G Volvo	Arvika	9001	9374
L220G Volvo	Arvika	9375	12000

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: **4/12/2026**
Profile: **L220G Volvo**			

Thermostat, specifications

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
L220G 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, tightening torques**	Function Group: **030**	Information Type: **Service Information**	Date: **4/12/2026**
Profile: **L220G Volvo**			

Rocker arm shaft, tightening torques

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Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
L220G Volvo			

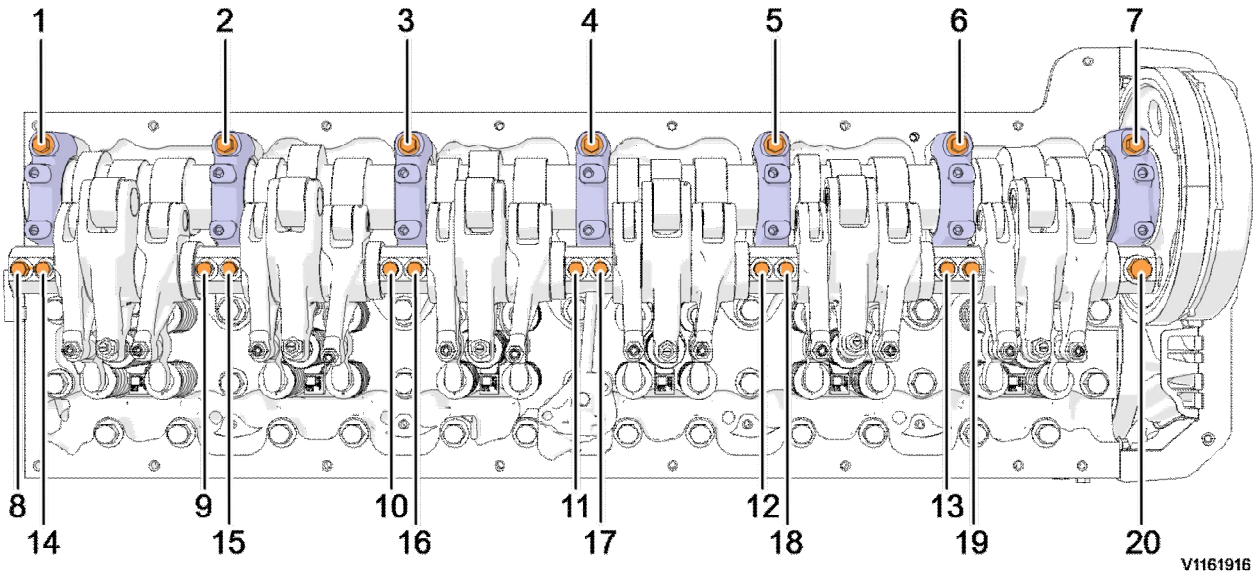

Figure 1

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: **4/12/2026**
Profile: **L220G Volvo**			

Valve cover, tightening torques

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
L220G Volvo			

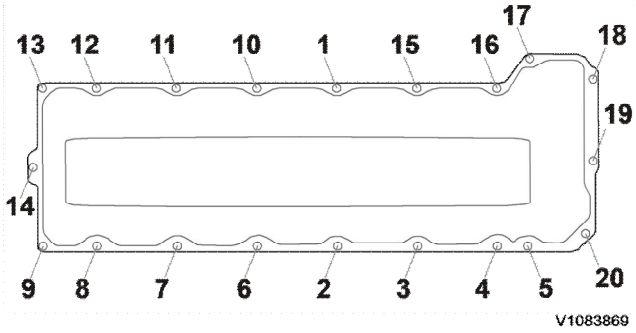

Figure 1
Figure 1 **Tightening diagram, valve cover**

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

VOLVO

Service Information

Document Title: **Exhaust manifold, tightening torques**	Function Group: **030**	Information Type: **Service Information**	Date: **4/12/2026**
Profile: **L220G Volvo**			

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Exhaust manifold, tightening torques

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Valid for option/configuration			
Model	**Option no.**	**Option**	**Configuration**
L220G Volvo	85420	Engine	D13H US Tier 4 interim
L220G Volvo	85421	Engine	D13H EU Stage IIIB

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
L220G Volvo	Arvika	12001	12852
L220G Volvo	Arvika	12853	99999

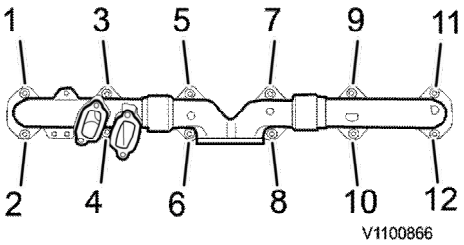

Figure 1

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: **4/12/2026**
Profile: **L220G Volvo**			

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Exhaust manifold, tightening torques

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Valid for option/configuration			
Model	**Option no.**	**Option**	**Configuration**
L220G Volvo	85424	Engine	D13F Stage II

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
L220G Volvo	Arvika	9001	9374
L220G Volvo	Arvika	9375	12000

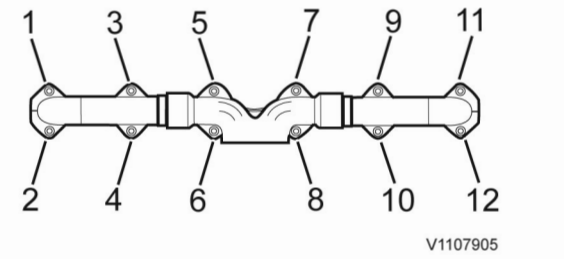


Figure 1

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: **EGR system, tightening torques**	Function Group: **030**	Information Type: **Service Information**	Date: **4/12/2026**
Profile: **L220G Volvo**			

EGR system, tightening torques

Showing Selected Profile

Valid for option/configuration			
Model	**Option no.**	**Option**	**Configuration**
L220G Volvo	85420	Engine	D13H US Tier 4 interim
L220G Volvo	85421	Engine	D13H EU Stage IIIB

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
L220G Volvo	Arvika	12001	12852
L220G Volvo	Arvika	12853	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: **4/12/2026**
Profile: **L220G Volvo**			

Cooling fan rpm, specifications

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
L220G 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	1200 rpm	Low sound level
B	1325 rpm	Standard cooling
C	1550 rpm [1]	Maximal cooling

Fan rpm in relation to engine rpm at pressure test

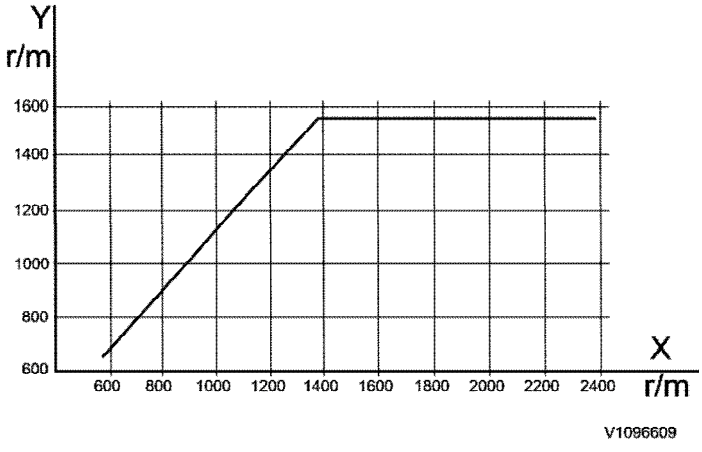


Figure 1

Y-axis = Fan rpm
X-axis = Engine rpm

Pressure in relation to fan rpm

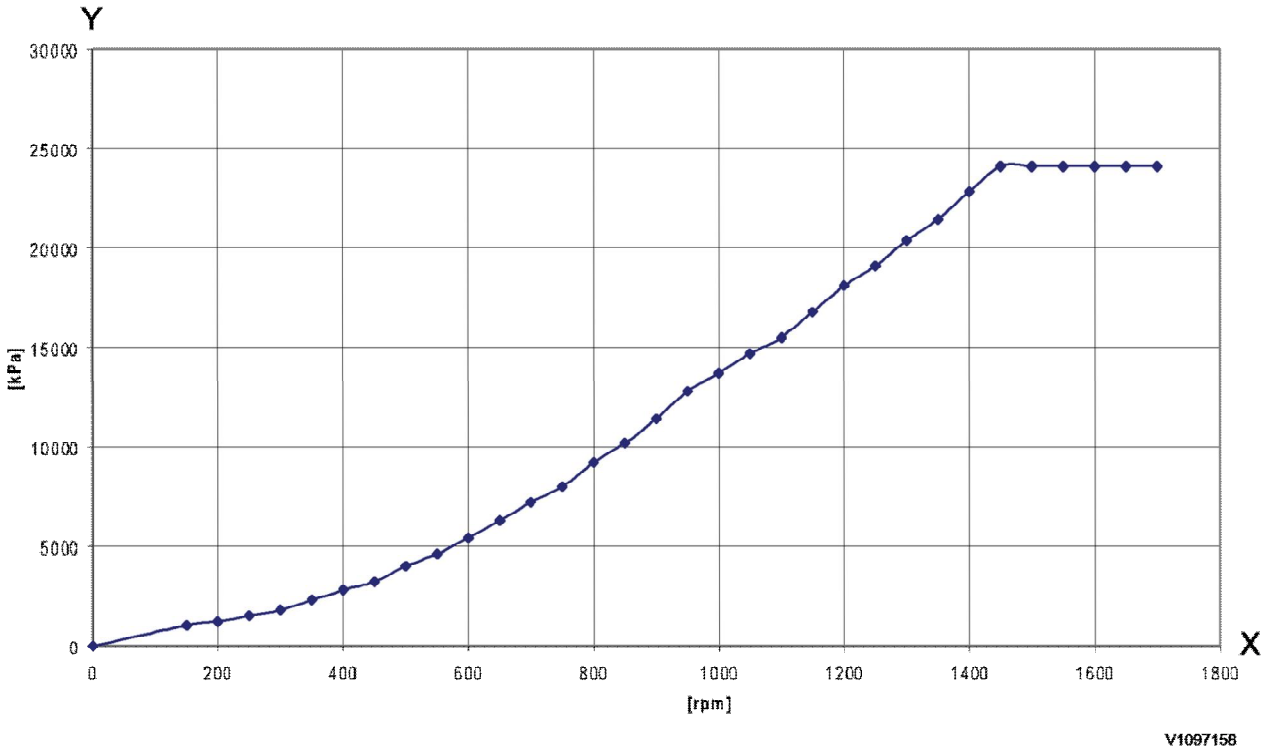


Figure 2
Pressure in relation to fan rpm (without axle oil cooler)

Y-axis = Pressure (kPa)

X-axis = Fan speed (rpm)

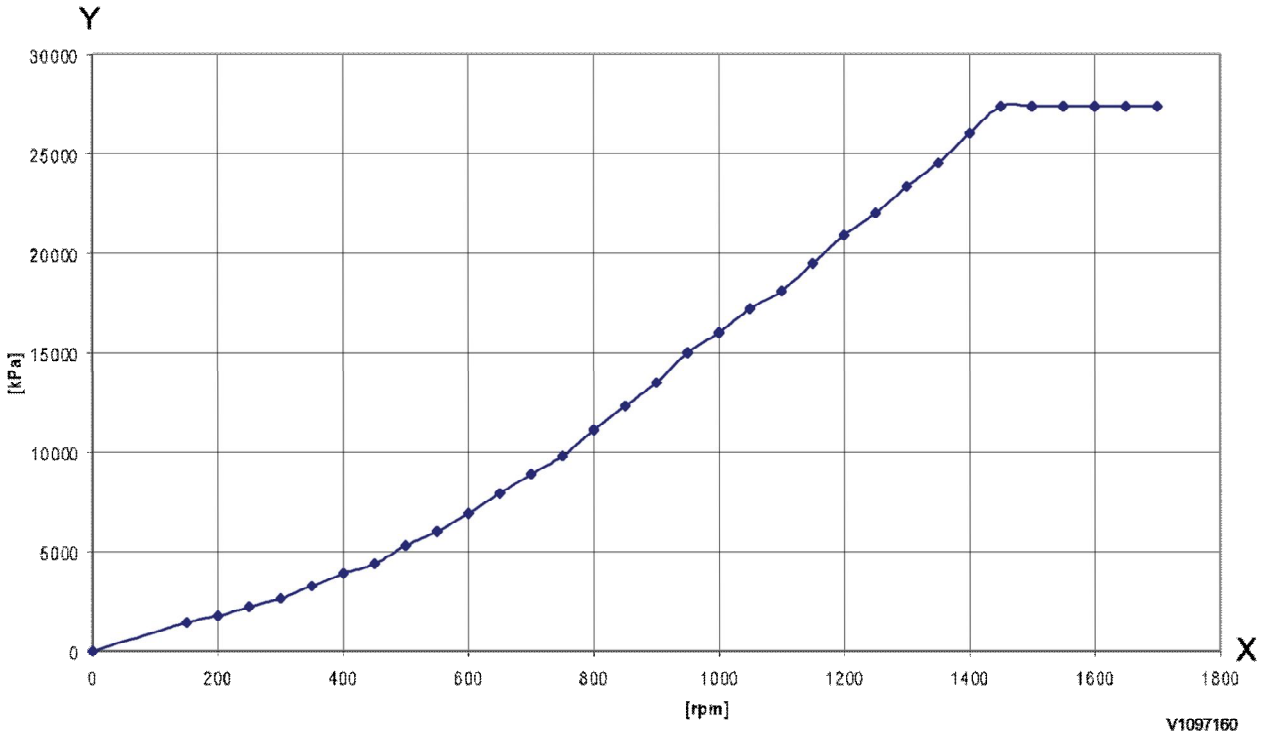


Figure 3
Pressure in relation to fan rpm (with axle oil cooler)

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: **4/12/2026**
Profile: **L220G Volvo**			

Conversion tables

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
L220G 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 mm							

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 $mile^2$ = 259 ha = 2.59 km^2							

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 cm^3 = 231 in^3 = 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/cm^2 = 735.56 Dry (mmHg) = 0.96784 atm						

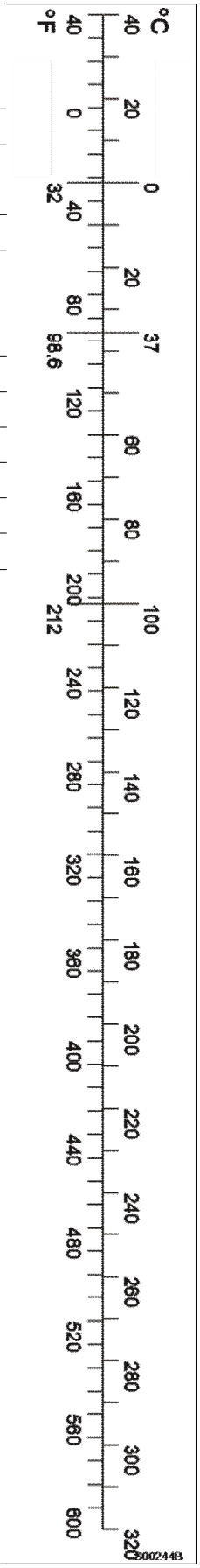
Unit explanations

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 ($Pa = N/m^2$)				
kPa	x4.0	$=in.H_2O$	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				
ºC =(ºF-32)/1.8			ºF =(ºC x1.8) +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: **4/12/2026**
Profile: **L220G Volvo**			

Fuel system, specifications

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
L220G 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)

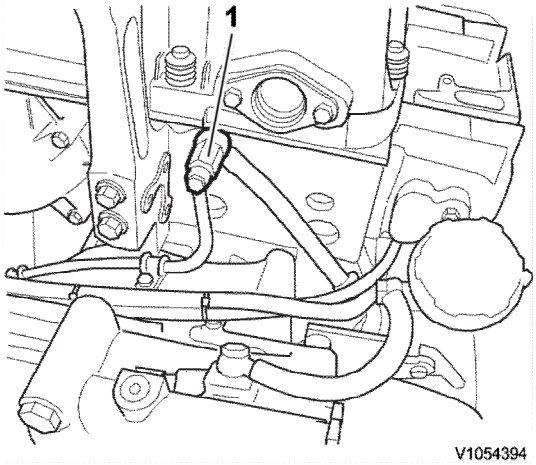


Figure 1
The figure shows D16

1. 1. Overflow valve

Document Title: **Engine, specifications**	Function Group: **030**	Information Type: **Service Information**	Date: **4/12/2026**
Profile: **L220G Volvo**			

Engine, specifications

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
L220G 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 D13H	 700 rpm 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: **4/12/2026**
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. Hhen 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: **4/12/2026**
Profile: **L220G Volvo**			

E1680, Holder

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
L220G Volvo			

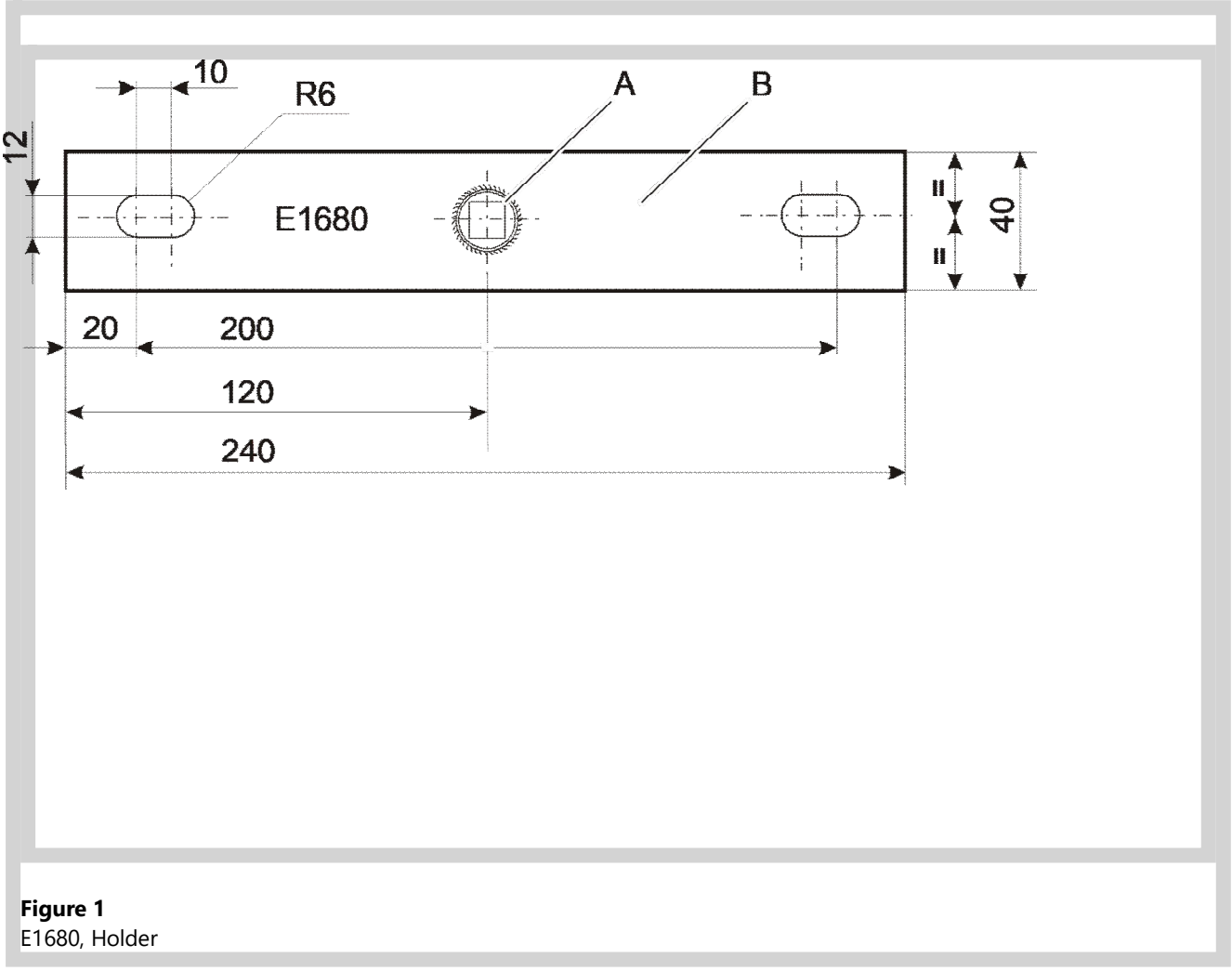


Figure 1
E1680, Holder

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