Document Title: **Machine view**	Function Group: **000**	Information Type: **Service Information**	Date: **4/25/2026**
Profile: **PL4809D Volvo**			

Machine view

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
PL4809D Volvo			

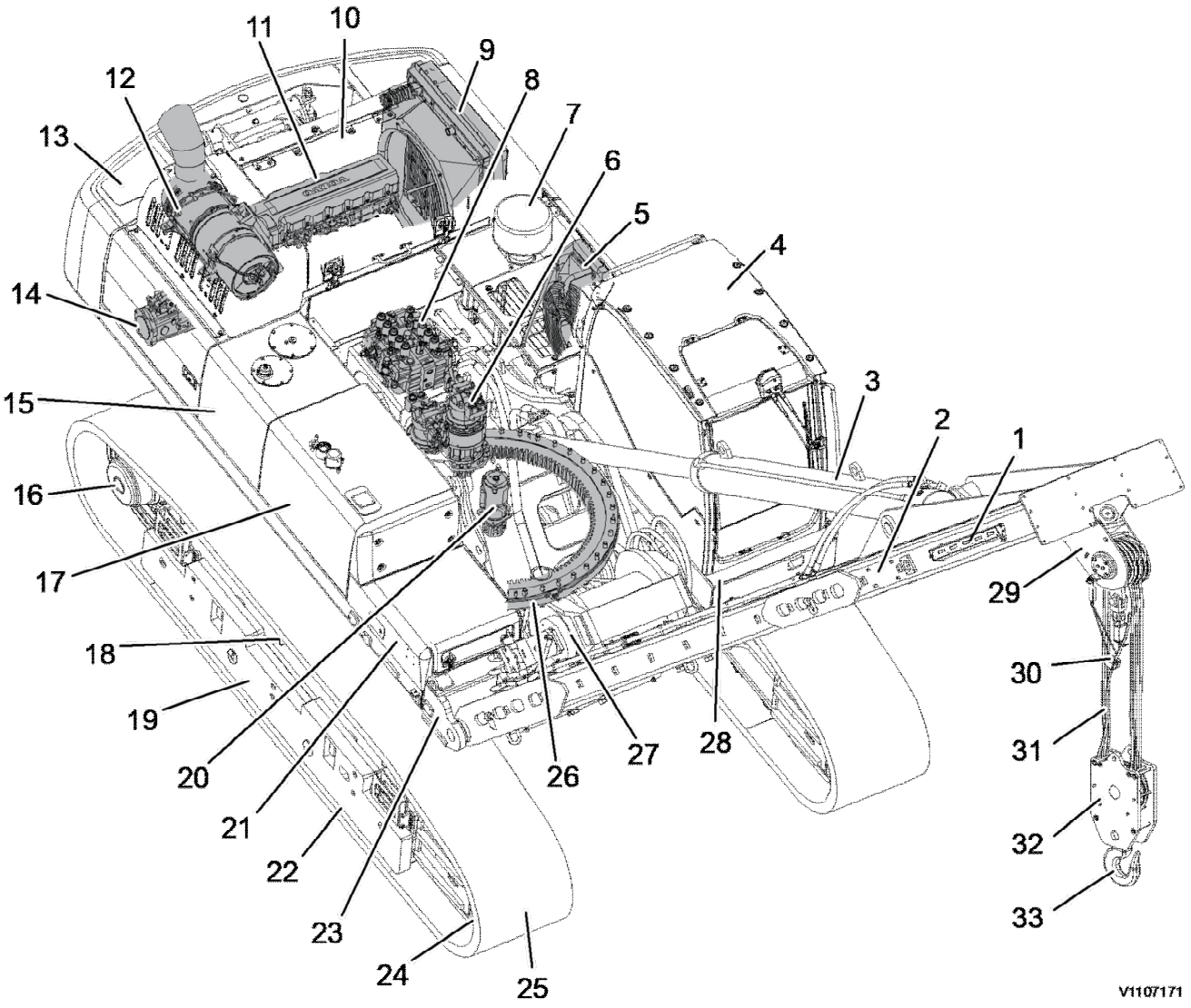


Figure 1

1	Light bar	18	Top roller
2	Boom	19	Additional counterweight
3	Boom cylinder	20	Center passage

4	Operator cab	21	Battery
5	Hydraulic oil cooler	22	Bottom roller
6	Swing motor and gearbox	23	Adapter
7	Air cleaner	24	Idler
8	Main control valve	25	Track
9	Radiator and charged air cooler	26	Swing ring gear
10	Engine hood	27	Winch and motor
11	Engine	28	Elevating cab structure
12	Diesel Particulate Filter (DPF)	29	Flag block
13	Counterweight	30	Anti-two block switch
14	Main pump	31	Wire rope
15	Hydraulic tank	32	Load block
16	Track motor and gearbox	33	Lifting hook
17	Fuel tank		

Document Title: **Product plates**	Function Group: **000**	Information Type: **Service Information**	Date: **4/25/2026**
Profile: **PL4809D Volvo**			

Product plates

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
PL4809D Volvo			

Please refer to the figure below to locate the machine product plate (1), engine product plate, cab product plate (3) and winch product plate (4).
Always use the Product Identification Number (PIN) provided on the vehicle and/or engine plates for troubleshooting purposes and/or when ordering spare parts.

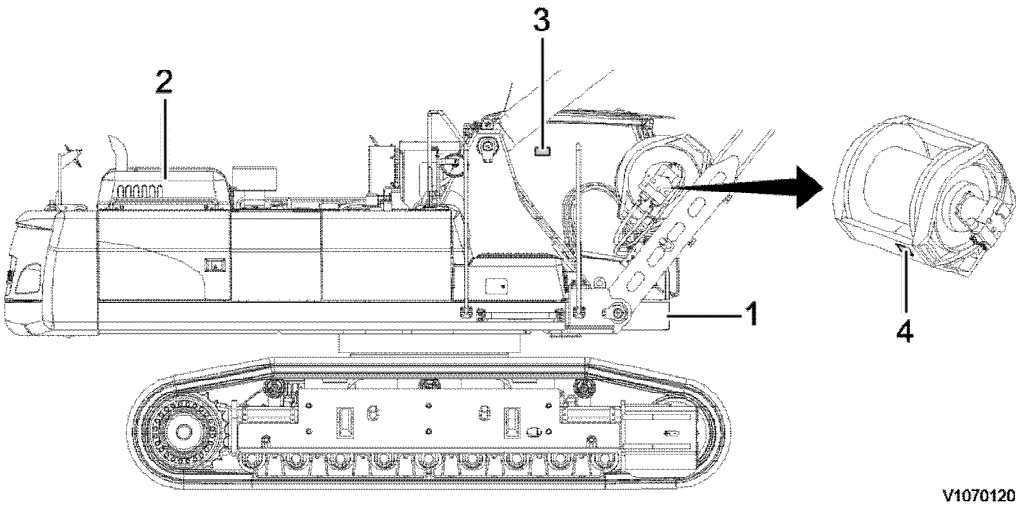


Figure 1
Product plate

Machine product plate

This plate with Product Identification Number, PIN, for the complete machine indicates the model designation, serial number and when applicable, machine weight, engine power, manufacturing year and CE approval. The plate is positioned on the right side of the upper frame.

Engine product plate

The engine product plate contains type designation, part and serial numbers. it is positioned on the engine inside the rear engine cover on the right side of the machine.

Winch product plate

The winch product plate is located on the face of the tie bar on the winch and indicates the product model and serial number.

Cab product plate

The cab product plate is attached on the inside of the cab and indicates the product number, serial number, model type, and weight.

Document Title: **Volvo standard tightening torques**	Function Group: **030**	Information Type: **Service Information**	Date: **4/25/2026**
Profile: **PL4809D Volvo**			

Volvo standard tightening torques

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
PL4809D 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

Hydraulic connections, general

Before fitting pipe couplings, plugs and hoses:

- Make sure that the sealing surfaces are clean and free from pores or scratches.
- Check elastic seal rings for defects.
- Oil in threads, sealing surfaces and contact surfaces except for ORFS-connections (ORFS = O-Ring Face Seal).

Applying Torque correction factor by tool angle

Correction factor		
Tool angle	**ORFS**	**Stud-end**
Allowable tolerance	±10%	- 0%, +10%
±0˚ ~ ±30˚	5% over torque	
±30˚ ~ ±45˚	20% over torque	
±45˚	NOT allowable	

Tool access angle

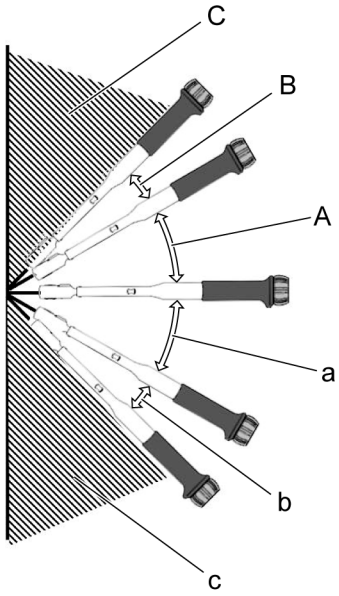


Figure 1
Tool access angle

A: +0˚ ~ +30˚

B: +30˚ ~ +45˚

C: +45˚

a: -0˚ ~ -30˚

b: -30˚ ~ -45˚

c: -45˚

ORFS female swivel fitting

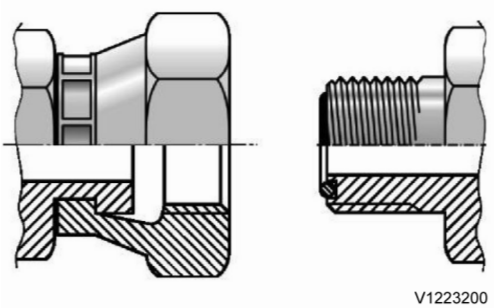


Figure 2

Threads type	Assembly position	Threads	Standard torque		±0˚ ~ ±30˚		±30° ~ ±45°	
			(Nm)	(lbf ft)	(Nm)	(lbf ft)	(Nm)	(lbf ft)
UN-UNF	ORFS	UNF 9/16-18	29 ±3	21.4 ±2.2	30.5 ±3.1	22.1 ±2.2	36.5 ±3.7	26.9 ±2.7
		UN 11/16-16	44 ±4	32.5 ±3.0	46.2 ±4.6	34.1 ±3.4	55.4 ±5.5	40.9 ±4.1
		UN 13/16-16	63 ±6	46.5 ±4.4	66.2 ±6.6	48.8 ±4.9	79.4 ±7.9	58.6 ±5.9
		UNS 1-14	106 ±8	78.2 ±5.9	111.3 ±11.1	82.1 ±8.2	133.6 ±13.4	98.5 ±9.9
		UN 1 3/16-12	140 ±12	103.3 ±8.9	147.0 ±14.7	108.4 ±10.8	176.4 ±17.6	130.1 ±13.0
		UN 1 7/16-12	175 ±15	129.1 ±11.1	183.8 ±18.4	135.6 ±13.6	220.5 ±22.1	162.6 ±16.3
		UN 1 11/16-12	270 ±20	199.1 ±14.8	283.5 ±28.4	209.1 ±20.9	340.2 ±34.0	250.9 ±25.1
	Stud-end	UNF 7/16-20	21 +2.1	15.4 +1.5	22.1 +2.2	16.3 +1.6	26.5 +2.7	19.5 +2.0
		UNF 1/2-20	37 +3.7	27.3 +2.7	38.9 +3.9	28.7 +2.9	46.6 +4.7	34.4 +3.4
		UNF 9/16-18	47 +4.7	34.7 +3.5	49.4 +4.9	36.4 +3.6	59.2 +5.9	43.7 +4.4
		UNF 3/4-16	81 +8.1	59.7 +6.0	85.1 +8.5	62.8 +6.3	102.1 +10.2	75.3 +7.5
		UNF 7/8-14	141 +14.1	104.0 +10.4	148.1 +14.8	109.2 +10.9	177.7 +17.8	131.1 +13.1
		UN 1 1/16-12	189 +18.9	139.4 +13.9	198.5 +19.9	146.4 +14.6	238.1 +23.8	175.6 +17.6
		UN 1 5/16-12	284 +28.4	209.5 +21.0	298.2 +29.8	219.9 +22.0	357.8 +35.8	263.9 +26.4
		UN 1 5/8-12	347 +34.7	255.9 +25.6	364.4 +36.4	268.8 +26.9	437.2 43.7	322.5 +32.3

	UN 1 7/8-12	425 +42.5	313.5 +31.4	446.3 +44.6	329.2 +32.9	535.5 +53.6	395.0 +39.5

G thread 30˚ cone female swivel fitting

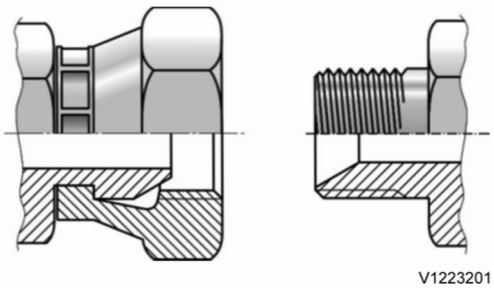


Figure 3

Threads type	Assembly position	Threads	Standard torque		±0˚ ~ ±30˚		±30° ~ ±45°	
			(Nm)	(lbf ft)	(Nm)	(lbf ft)	(Nm)	(lbf ft)
PF	ORFS	G 1/4-19	25 ±2.5	18.4 ±1.8	26.3 ± 2.6	19.4 ±1.9	31.5 ±3.2	23.2 ±2.3
		G 3/8-19	49 ±4.9	36.1 ±3.6	51.5 ± 5.2	38.0 ±3.8	61.7 ±6.2	45.5 ±4.6
		G 1/2-14	59 ±5.9	43.5 ±4.4	62.0 ± 6.2	45.7 ±4.6	74.3 ±7.4	54.8 ±5.5
		G 3/4-11	119 ±11.9	87.8 ±8.8	125.0 ±12.5	92.2 ±9.2	149.9 ±15.0	110.6 ±11.1
		G 1-11	140 ±14	103.3 ±10.3	147.0 ±14.7	108.4 ±10.8	176.4 ±17.6	130.1 ±13.0
		G 1 1/4-11	173 ±17.3	127.6 ±12.8	181.7 ±18.2	134.0 ±13.4	218.0 ±21.8	160.8 ±16.1
		G 1 1/2-11	205 ±20.5	151.2 ±15.1	215.3 ±21.5	158.8 ±15.9	258.3 ±25.8	190.5 ±19.1
	Stud-end	G 1/8-19	22 +2.2	16.2 +1.6	23.1 +2.3	17.0 +1.7	27.7 +2.8	20.4 +2.0
		G 1/4-19	52 +5.2	38.4 +3.8	54.6 +5.5	40.3 +4.0	65.5 +6.6	48.3 +4.8
		G 3/8-19	85 +8.5	62.7 +6.3	89.3 +8.9	65.9 +6.6	107.1 +10.7	79.0 +7.9
		G 1/2-14	105 +10.5	77.4 +7.7	110.3 +11.0	81.4 +8.1	132.3 +13.2	97.6 +9.8
		G 3/4-11	210 +21	154.9 +15.5	220.5 +22.1	162.6 +16.3	264.6 +26.5	195.2 +19.5
		G 1-11	400 +40	295.0 +29.5	420.0 +42.0	309.8 +31.0	504.0 +50.4	371.7 +37.1
		G 1 1/4-11	525 +52.5	387.2 +38.7	551.3 +55.1	406.6 +40.7	661.5 +66.2	487.9 +48.8
		G 1 1/2-11	630 +63.1	464.7 +46.5	661.5 +66.2	487.9 +48.8	793.8 +79.4	585.5 +58.6

Document Title: **Measurement conversion tables**	Function Group: **030**	Information Type: **Service Information**	Date: **4/25/2026**
Profile: **PL4809D Volvo**			

Measurement conversion tables

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
PL4809D 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 $mile^2$ = 259 ha = 2.59 km^2							

Volume

Unit	**cm^3 = cc**	**m^3**	**Liter**	**in^3**	**ft^3**	**yd^3**
cm^3 = m liter	1	0.000001	0.001	0.061024	0.000035	0.000001
m^3	1000000	1	1000	61024	35.315	1.30796
Liter	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 tonne(metric) = 1.1023 ton(US) = 0.9842 ton(UK)					

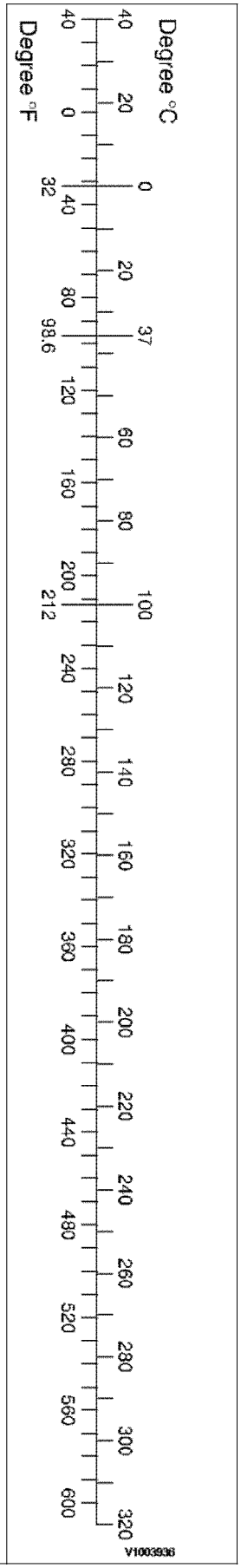
Pressure

Unit	**kgf/cm²**	**bar**	**Pa=N/m²**	**kPa**	**lbf/in²**	**lbf/ft²**
kgf/cm²	1	0.98067	98066.5	98.0665	14.2233	2048.16
bar	1.01972	1	100000	100	14.5037	2088.6
Pa=N/m²	0.00001	0.001	1	0.001	0.00015	0.02086
kPa	0.01020	0.01	1000	1	0.14504	20.886
lbf/in²	0.07032	0.0689	6894.76	6.89476	1	144
lbf/ft²	0.00047	0.00047	47.88028	0.04788	0.00694	1
1 kgf/cm² = 735.56 Torr(mmHg) = 0.96784 atm						

Approximate conversions

SI	Conversion	Non-SI	Conversion	SI
Unit	Factor	Unit	Factor	Unit
Torque				
newton meter (N·m)	x 10.2	= kgf·cm	x 0.8664	= (lbf·in)
newton meter (N·m)	x 0.74	= lb·ft	x 1.36	= N·m
newton meter (N·m)	x 0.102	= kgf·m	x 7.22	= (lbf·ft)
Pressure (Pa = N/m²)				
kilopascal (kPa)	x 4.0	= in. H_2O	x 0.249	= kPa
kilopascal (kPa)	x 0.30	= in. Hg	x 3.38	= kPa
kilopascal (kPa)	x 0.145	= psi	x 6.89	= kPa
(bar)	x 14.5	= psi	x 0.069	= (bar)
(kgf/cm²)	x 14.22	= psi	x 0.070	= (kgf/cm²)
(newton/mm²)	x 145.04	= psi	x 0.069	= (bar)
megapascal (MPa)	x 145	= psi	x 0.00689	= MPa
Power (W = J/s)				
kilowatt (kW)	x 1.36	= PS (cv)	x 0.736	= kW
kilowatt (kW)	x 1.34	= HP	x 0.746	= kW
kilowatt (kW)	x 0.948	= Btu/s	x 1.055	= kW
watt (W)	x 0.74	= ft·lb/s	x 1.36	= W

Note: ( ) non-si unit

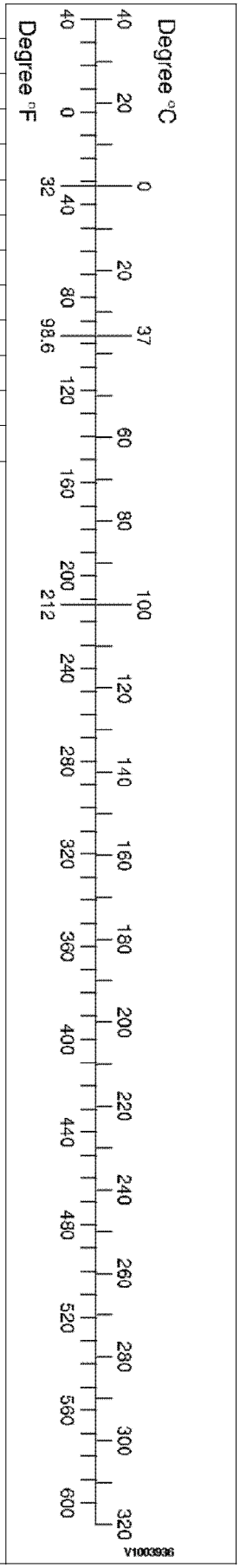


Approximate conversions

SI	Conversion	Non-SI	Conversion	SI
Unit	Factor	Unit	Factor	Unit

Energy (J = N·m)				
kilojoule (kJ)	x 0.948	= Btu	x 1.055	= kJ
joule (J)	x 0.239	= calorie	x 4.19	= J
Velocity and Acceleration				
meter per sec² (m/s²)	x 3.28	= ft/s²	x 0.305	= m/s²
meter per sec (m/s)	x 3.28	= ft/s	x 0.305	= m/s
kilometer per hour (km/h)	x 0.62	= mph	x 1.61	= km/h
Horse power/torque				
BHP x 5252 rpm = TQ (lb·ft)			TQ x rpm 5252 = B.H.P.	
Temperature				
°C = (°F - 32) /1.8	°F = (°C x 1.8) + 32			
Flow Rate				
liter/min (dm³/min)	x 0.264	= US gal/min x 3.785		= liter/min

Note: ( ) non-si unit



Document Title: **Flywheel, tightening torques**	Function Group: **030**	Information Type: **Service Information**	Date: **4/25/2026**
Profile: **PL4809D Volvo, PL4809D Volvo**			

Flywheel, tightening torques

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Valid for option/configuration			
Model	**Option no.**	**Option**	**Configuration**
PL4809D Volvo	8288863	Engine	D13H EU Stage IIIB
PL4809D Volvo	8290247	Engine	D13F Stage IIIA
PL4809D Volvo	8296274	Engine	D13H US Tier 4 interim

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
PL4809D Volvo	Changwon	210001	280000
PL4809D Volvo	Changwon	280001	310000

Tightening torques according to Volvo standard tightening torques, if not otherwise specified.

Flywheel

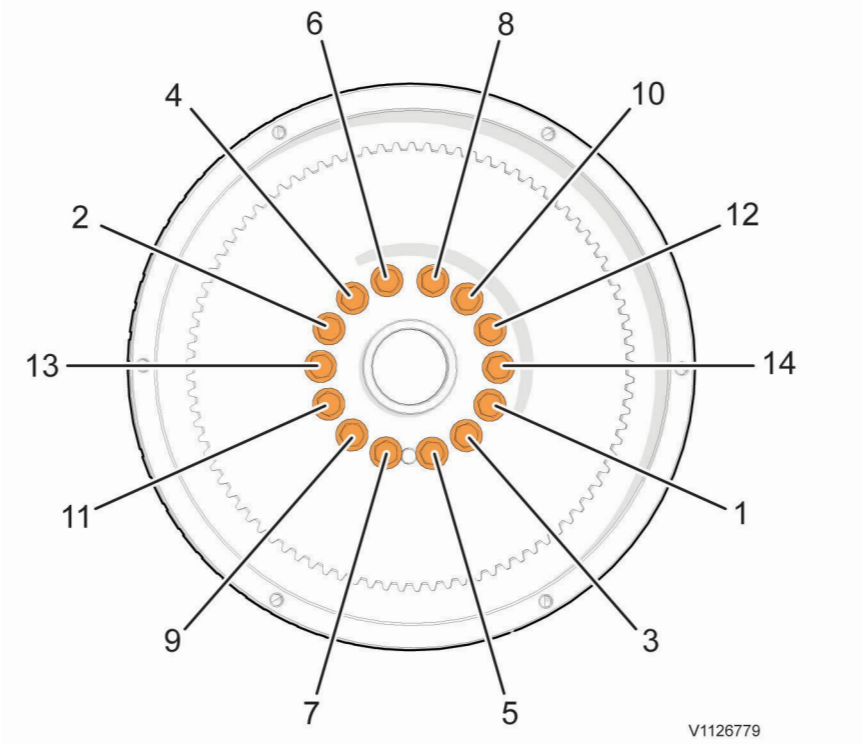

Figure 1

NOTE!
Only applies to Articulated Haulers.

NOTE!
The flywheel's bolts must not be reused.

Step 1: Tighten the bolts in numerical order according to figure	60 ±5 Nm (44 ±4 lbf ft)
Step 2: Tighten bolts 1–2	60 ±5 Nm (44 ±4 lbf ft)
Step 3: Angle–tighten the bolts in numerical order according to figure	190° ±10°

NOTE!
Only applies to Excavators and Wheel Loaders.

Step 1: Tighten the bolts in numerical order according to figure	60 ±5 Nm (44 ±4 lbf ft)
Step 2: Angle–tighten the bolts in numerical order according to figure	120° ±10°

Vibration damper, crankshaft

Step 1: Tighten the bolts crosswise	35 ±5 Nm (26 ±4 lbf ft)
Step 2: Tighten the bolts crosswise	90 ±10 Nm (66 ±7 lbf ft)

Document Title: **Operation numbers for additional work**	Function Group: **070**	Information Type: **Service Information**	Date: **4/25/2026**
Profile: **Pipelayers (PIP)**			

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: **Service positions**	Function Group: **091**	Information Type: **Service Information**	Date: **4/25/2026**
Profile: **PL4809D Volvo**			

Service positions

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
PL4809D Volvo			

Park the machine on a horizontal and firm surface.
The suitable position is indicated in the description for the various service jobs.

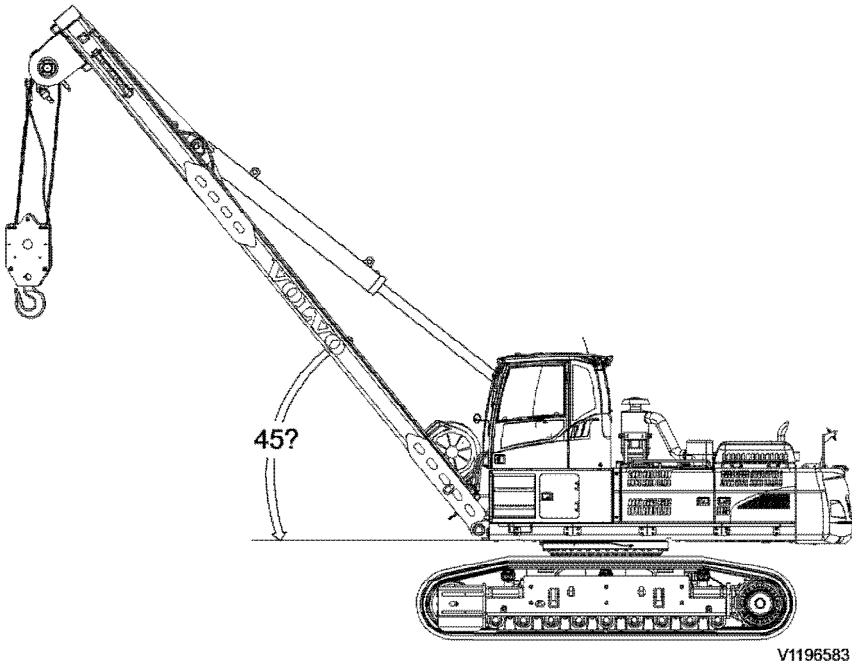

Figure 1
Service position A

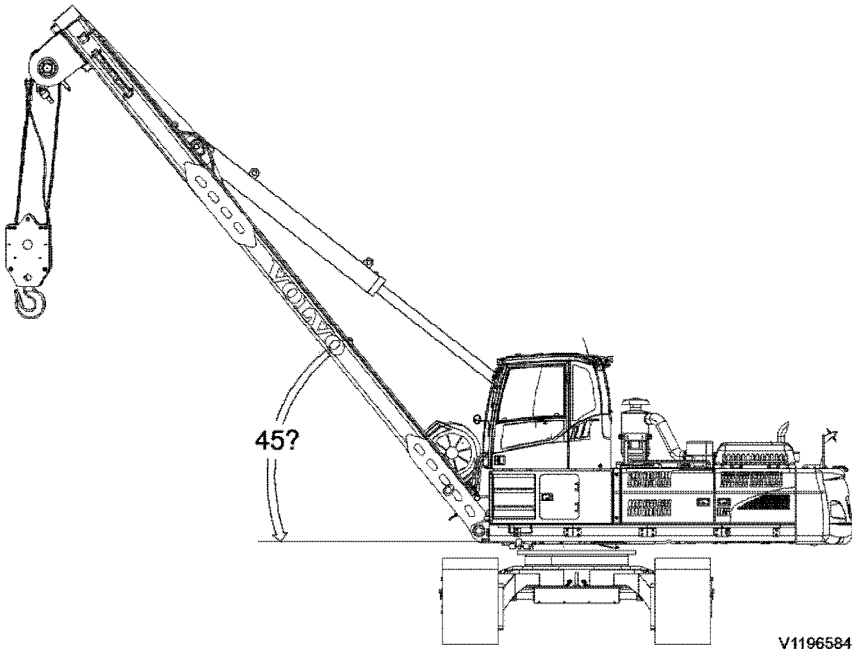

Figure 2
Service position B

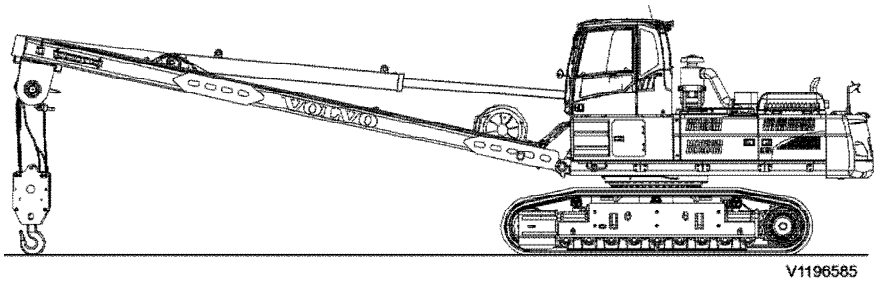

Figure 3
Service position C

Tools

– 2 x 10,000 kg (22046 lbs) jacks and block.

Remove the counterweight. See Counterweight, removing.

A. Cab in lowered position
B. Anchor rear of machine with strap or chain to prevent accidental tip over. (in counterweight)
C. Counterweight
D. Block front of machine to prevent track from slipping
E. Boom angle below 45º. (boom less than 45º)

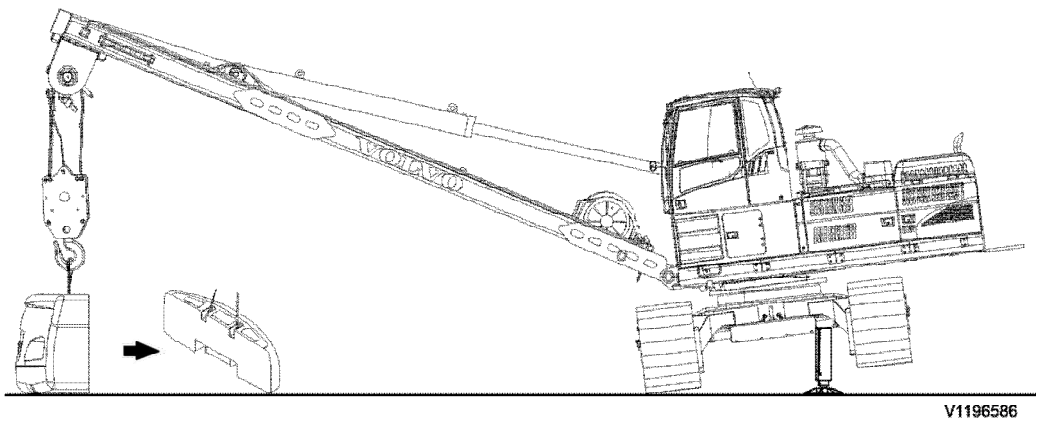

Figure 4
Service position D
– Lift one side of machine using 2 x 10,000 kg (22046 lbs) jacks.
– Position the jacks 450 mm (A) - 650 mm (B) from the center of the machine.
– Slowly lift machine until track (D) is off the ground. (C: block)
– Service rollers, track guard and others as needed.
– Slowly lower machine and return machine to normal operating condition.
– Install the counterweight. See Counterweight, installation.

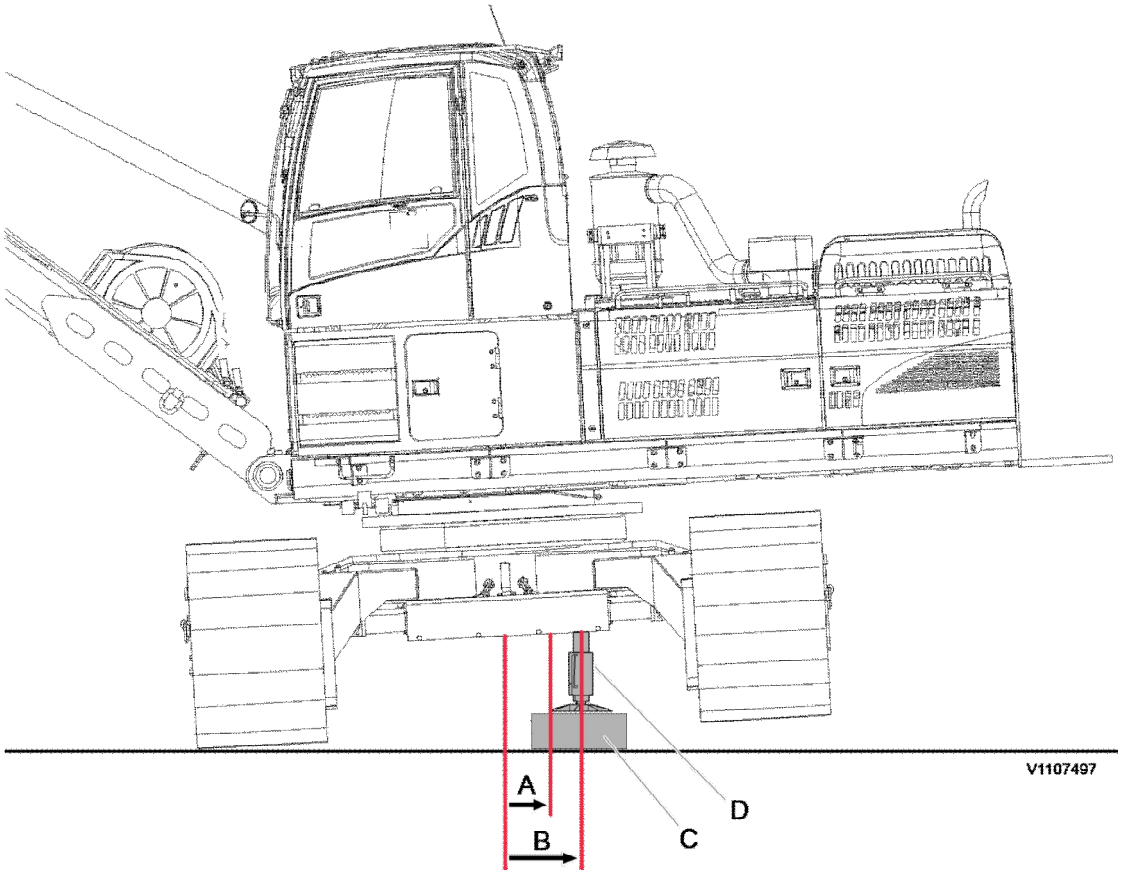

Figure 5
Service position D

Document Title: **Welding on the machine**	Function Group: **091**	Information Type: **Service Information**	Date: **4/25/2026**
Profile: **PL4809D Volvo**			

Welding on the machine

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
PL4809D Volvo			

NOTICE

During electric welding on the machine or attachments connected to the machine, components such as bearings and electric units may be damaged if the ground cable is connected incorrectly.

The following actions should be taken before starting electric welding to eliminate these risks:

1. Turn off the electric power using the battery disconnector.
2. Disconnect the batteries.
   NOTE!
   Both the plus and minus terminal.
3. Disconnect the following electronic units:
   – Vehicle electronic control unit (V-ECU)
   – Engine electronic control unit (E-ECU)
   – Instrument electronic control unit (I-ECU)
   – Electronic climate control unit (ECC)
   – Wiper control unit (CU3601)
4. Connect the welding unit's ground connection as close as possible to the welding point, and make sure that the current does not pass across a bearing.

If welding is necessary on the boom or dipper arm, the following basic rules should be followed:

1. Welding beads should be laid down in the longitudinal direction.
2. If possible, weld in the middle of the metal section and never closer than **80 mm** to an edge.
3. Do not weld near the welded connections of the cylinder mounting eyes. Minimum distance from eye's weld to weld for weld lug = **100 mm**.
4. Do not weld close to where a metal plate has been bent.

Document Title: **Hydraulic cylinders, dieseling**	Function Group: **091**	Information Type: **Service Information**	Date: **4/25/2026**
Profile: **PL4809D Volvo**			

Hydraulic cylinders, dieseling

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
PL4809D Volvo			

If air enters the hydraulic cylinders during work on the hydraulic system, this can lead to spontaneous ignition, an effect known as dieseling. This occurs if a favourable mixture of air and hydraulic oil is compressed when the piston approaches its end position in the cylinder. A sufficiently high temperature can be reached for the mixture to spontaneously ignite.

NOTICE

The dieseling effect may result in burnt piston seals and bushings.

In order to prevent dieseling, the lines for the hydraulic cylinders must be bled after work is completed, as follows:

1. No load and keep the lowest engine rpm
2. Operate the piston slowly up to the middle of cylinder in order to remove air from inner chamber of cylinder. Repeat over 5 times.
   After that, operate the piston up to the end of cylinder in order to remove residual air from cylinder, pipe and hose gradually. Repeat over 5 times.

NOTICE

If the cylinders are pressurized either through lifting of the machine or lifting of a load in the bucket, without first performing the mentioned bleeding movements, the seals will likely be damaged.

If a cylinder is to be pressure-tested after a repair, the piston rod should be run in and out a few times before increasing the pressure to testing pressure.

VOLVO

Service Information

Document Title: **Recommended lubricants**	Function Group: **160**	Information Type: **Service Information**	Date: **4/25/2026**
Profile: **PL4809D Volvo**			

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Recommended lubricants

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Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
PL4809D Volvo			

The Volvo lubricants have been specially developed to fulfil the demanding operating conditions, in which Volvo pipelayers are used in. The oils have been tested according to Volvo pipelayer specifications and therefore meet the high requirements for safety and quality. Other mineral oils can be used if they conform to our viscosity recommendations and meet our quality requirements. The approval of Volvo is required, if any other oil base quality (for example biologically degradable oil) is to be used.

System	**Oil grade**	**Recommended viscosity at varying ambient temperature**
		°C -30 -20 -10 0 +10 +20 +30 +40 +50 **°F -22 -4 +14 +32 +50 +68 +86 +104 +122**
Engine	Engine oil see page Engine oil.	**SAE 10W-30***** ***SAE 15W-40** **SAE 10W-40** **SAE 5W-30***** **SAE 5W-40**
Engine_Air pump	Volvo compressor oil (P/N: VOE17207687)	
Track gearbox	Gear oil (with EP** additive) API GL4 or GL5	***SAE 90** **SAE 140**
Swing gearbox	Gear oil (with EP** additive) API GL4 or GL5	***SAE 90** **SAE 140**
Swing ring gear (Bath and ball)	Grease	**Multi purpose EP**-grease NLGI 2**
		°C -30 -20 -10 0 +10 +20 +30 +40 +50 **°F -22 -4 +14 +32 +50 +68 +86 +104 +122**

*: Installed at factory
**: Extreme Pressure
***: VDS-4 or VDS-4.5 approved oils only. Other oils can be used up to +30°C (86°F).

System	**Oil grade**	**Recommended viscosity at varying ambient temperature**
		°C -30 -20 -10 0 +10 +20 +30 +40 +50 **°F -22 -4 +14 +32 +50 +68 +86 +104 +122**

Pin and bushing	Grease (Multi purpose EP** grease NLGI 2)	***ISO-L-XBCFB2**
Hydraulic system	Hydraulic oil (Anti-wear hydraulic oil with high viscosity index 160 or more)	**ISO VG32 HV** **ISO VG46 HV** **ISO VG68 HV**
	Bio oil (based on synthetic ester)***	**Bio oil VG46**
	Long life hydraulic oil	**ISO VG32** **ISO VG46** **ISO VG68**
Fuel	Diesel fuel	**ASTM D975 No.1** ***ASTM D975 No. 2**
Winch	Gear oil	**Recommended gear oil should be used. see page Winch lubrication.**
Cooling system	Volvo Coolant VCS	**Volvo Coolant VCS should be used only, see next page.**
Air conditioner system	Refrigerant	**HFC R134a**

°C	**-30**	**-20**	**-10**	**0**	**+10**	**+20**	**+30**	**+40**	**+50**
°F	**-22**	**-4**	**+14**	**+32**	**+50**	**+68**	**+86**	**+104**	**+122**

*: Installed at factory
**: Extreme Pressure
***: If the machine is filled with Volvo Biodegradable hydraulic oil this oil must also be used when filing and changing. The mineral oil content in bio oil should not exceed 2%. if changing from mineral oil to bio oil. contact a workshop authorised by Volvo.

NOTE!

The fuel should at least meet the legal requirement, and national and international standards for marketed fuels, for example : EN590 (with nationally adapted temperature requirements), ASTM D975 No 1-D and No 2-D, JIS KK 2204.

NOTE!

The content of Volvo coolant must not be less than 40% of the total mixture.

VOLVO

Service Information

Document Title: **Recommended lubricants**	Function Group: **160**	Information Type: **Service Information**	Date: **4/25/2026**
Profile: **PL4809D Volvo**			

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Recommended lubricants

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
PL4809D Volvo	Changwon	280001	310000

The Volvo lubricants have been specially developed to fulfil the demanding operating conditions, in which Volvo pipelayers are used in. The oils have been tested according to Volvo pipelayer specifications and therefore meet the high requirements for safety and quality. Other mineral oils can be used if they conform to our viscosity recommendations and meet our quality requirements. The approval of Volvo is required, if any other oil base quality (for example biologically degradable oil) is to be used.

System	**Oil grade**	**Recommended viscosity at varying ambient temperature**
		°C -40 -30 -20 -10 0 +10 +20 +30 +40 +50 **°F -40 -22 -4 +14 +32 +50 +68 +86 +104 +122**
Engine	Engine oil see page Engine oil.	**SAE 10W-30***** ***SAE 15W-40** **SAE 10W-40** **SAE 5W-30***** **SAE 5W-40**
Track gearbox	Gear oil (with EP** additive) API GL4 or GL5	***SAE 90** **SAE 140**
Swing gearbox	Gear oil (with EP** additive) API GL4 or GL5	***SAE 90** **SAE 140**
Swing ring gear (Bath and ball)	Grease	**Multi purpose EP**-grease NLGI 2**
		°C -40 -30 -20 -10 0 +10 +20 +30 +40 +50 **°F -40 -22 -4 +14 +32 +50 +68 +86 +104 +122**

*: Installed at factory
**: Extreme Pressure
***: VDS-4 or VDS-4.5 approved oils only. Other oils can be used up to +30°C (86°F).

System	**Oil grade**	**Recommended viscosity at varying ambient temperature**
		°C -40 -30 -20 -10 0 +10 +20 +30 +40 +50 **°F -40 -22 -4 +14 +32 +50 +68 +86 +104 +122**
Pin and bushing	Grease (Multi purpose	***ISO-L-XBCFB2**

	EP** grease NLGI 2)	
Hydraulic system	Hydraulic oil for severe cold area	**ISO VG15**
	Hydraulic oil (Anti-wear hydraulic oil with high viscosity index 160 or more)	**ISO VG32 HV** **ISO VG46 HV** **ISO VG68 HV**
	Bio oil (based on synthetic ester)***	**Bio oil VG46**
	Long life hydraulic oil	**ISO VG32** **ISO VG46** **ISO VG68**
Fuel	Diesel fuel	**ASTM D975 No.1** ***ASTM D975 No. 2**
Winch	Gear oil	**Recommended gear oil should be used. see page Winch lubrication.**
Cooling system	Volvo Coolant VCS	**Volvo Coolant VCS should be used only, see next page.**
Air conditioner system	Refrigerant	**HFC R134a**
		°C -40 -30 -20 -10 0 +10 +20 +30 +40 +50 **°F -40 -22 -4 +14 +32 +50 +68 +86 +104 +122**

*: Installed at factory
**: Extreme Pressure
***: If the machine is filled with Volvo Biodegradable hydraulic oil this oil must also be used when filing and changing. The mineral oil content in bio oil should not exceed 2%. if changing from mineral oil to bio oil. contact a workshop authorised by Volvo.

NOTE!

The fuel should at least meet the legal requirement, and national and international standards for marketed fuels, for example : EN590 (with nationally adapted temperature requirements), ASTM D975 No 1-D and No 2-D, JIS KK 2204.

NOTE!

The content of Volvo coolant must not be less than 40% of the total mixture.

VOLVO

Service Information

Document Title: **Recommended lubricants**	Function Group: **160**	Information Type: **Service Information**	Date: **4/25/2026**
Profile: **PL4809D Volvo, PL4809D Volvo**			

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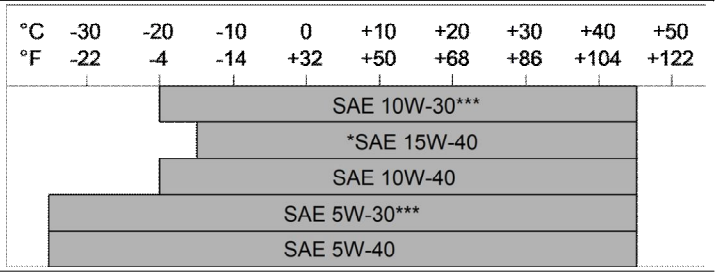
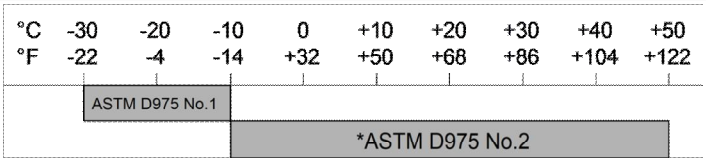
Recommended lubricants

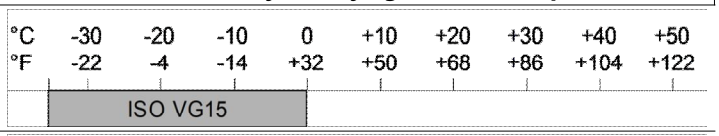
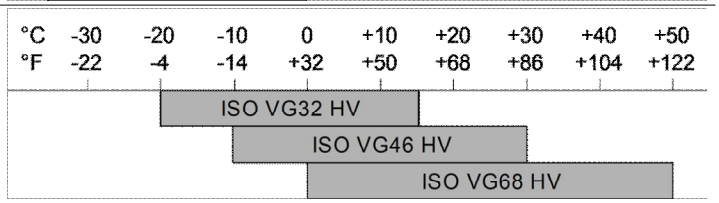
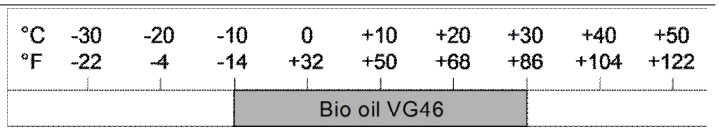
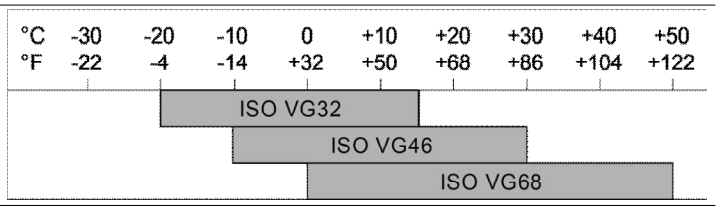
Showing Selected Profile

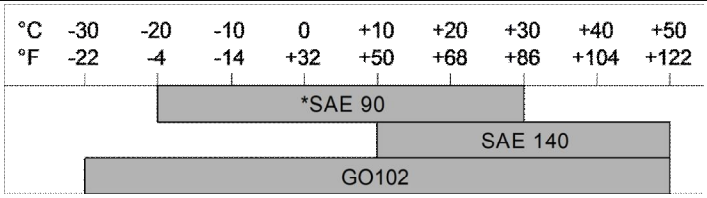
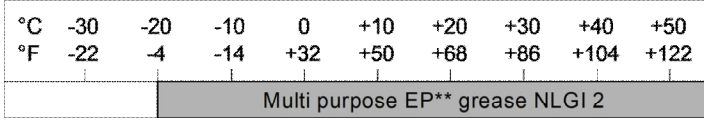
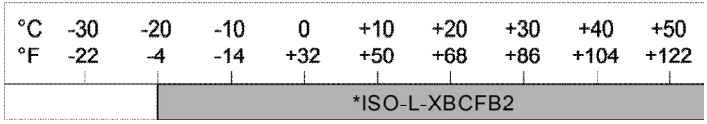
Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
PL4809D Volvo	Changwon	210001	280000
PL4809D Volvo	Changwon	280001	310000

The Volvo lubricants have been specially developed to fulfil the demanding operating conditions, in which Volvo excavators are used in. The oils have been tested according to Volvo excavator specifications and therefore meet the high requirements for safety and quality. Other mineral oils can be used if they conform to our viscosity recommendations and meet our quality requirements. The approval of Volvo is required, if any other oil base quality (for example biologically degradable oil) is to be used.

System	**Oil grade**	**Recommended viscosity at varying ambient temperature**
Engine	Engine oil For detail, see page Engine oil.	
Engine_Air pump	Volvo compressor oil	If equipped (EU Stage IIIB / US Tier 4 interim engine only), use Volvo compressor oil. (Volvo P/N: 17207687)
Fuel	Diesel fuel For detail, see page Fuel.	 **NOTE!** The fuel should at least meet the legal requirement, and national and international standards for marketed fuels, for example : EN590 (with nationally adapted temperature requirements), ASTM D975 No 1-D and No 2-D, JIS KK 2204.
Cooling system	**Volvo Coolant VCS Ready Mixed** For detail, see page Coolant.	**Volvo Coolant VCS Ready Mixed** should be used only. **NOTE!** The content of Volvo coolant must not be less than 40% of the total mixture.

*: Installed at factory
***: VDS-4 or VDS-4.5 approved oils only. Other oils can be used up to +30°C (86°F).

System	Oil grade	Recommended viscosity at varying ambient temperature
Hydraulic system	Hydraulic oil for severe cold area or if siberian option kit is installed	
	Volvo Hydraulic Oil Volvo 98609 Extra 32 or **Volvo Hydraulic Oil Volvo 98609 Extra 46** or **Volvo Hydraulic Oil Volvo 98609 Extra 68** or **Volvo Hydraulic Oil Volvo 98611 HO103 46** **Volvo Hydraulic Oil Volvo 98611 HO103 68**	
	Volvo Hydraulic Oil Volvo 98610 Biodegradable 46	 **NOTE!** If the machine is filled with Volvo Biodegradable hydraulic oil this oil must also be used when filing and changing. The mineral oil content in bio oil should not exceed 2% when changing from mineral oil to bio oil. Contact a workshop authorised by Volvo.
	Volvo Hydraulic Oil Volvo 98620 Ultra 32 or **Volvo Hydraulic Oil Volvo 98620 Ultra 46** or **Volvo Hydraulic Oil Volvo 98620 Ultra 68**	

System	Oil grade	Recommended viscosity at varying ambient temperature
Track gearbox Swing gearbox	**Volvo Axle Oil 80W-90 GL-5** or **Volvo Axle Oil 85W-140 GL-5** or **Volvo Axle Oil 97317 75W-80 GO102** or **Volvo Synthetic Axle Oil 97312 75W-90** or **Volvo Axle Oil Limited Slip 85W-90 GL-5**	 Or corresponding gearbox oil below. ○ Mobil SHC630 ○ Chevron Cetus HiPerSYN Oil 220
Swing ring gear (Bath and Ball)	**Volvo Lithium Grease EP2**	 Or corresponding grease on lithium base with EP** additives and consistency NLGI class 2.
Pin and bushing	**Ultra Grease Moly EP2** or **Volvo Lithium Grease EP2[T1]**① For detail, see page Grease.	 Or corresponding grease on lithium base with EP** additives and consistency NLGI class 2.
Air conditioner system	Refrigerant	HFC R134a

[T1] Volvo Lithium Grease EP2 is not recommended when the ambient temperature is above 40 °C.

*: Installed at factory
**: Extreme Pressure

Document Title: **Grease**	Function Group: **160**	Information Type: **Service Information**	Date: **4/25/2026**
Profile: **PL4809D Volvo**			

Grease

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
PL4809D Volvo			

Recommended grease for all digging equipment greasing points

Manufacturer	**Product name**	
	Recommendations	**Alternatives***
VOLVO	Volvo Extreme Grease 97765 GR103	Volvo Multipurpose Grease 97718 GR101
CALTEX	Molytex EP2	Multifak EP2
GULF	Gulflex Moly EP	Gulfcrown EP2
EXXONMOBIL	Beacon EP2 Moly	Beacon EP2
SHELL	Retinax HDX2 / Alvania HDX2	Retinax EP2 / Alvania EP2
TOTAL	Multis MS2	Multis EP2
CASTROL	Pyro LM	Pyroplex Red

* Alternatives are not recommended when the ambient temperature is above 40 °C.

Mixability of types of grease with different additives

	Mixability of types of grease with additives					
	Lithium	**Calcium**	**Lithium complex**	**Calcium complex**	**Aluminium complex**	**Clay**
Lithium	√	√	√			
Calcium	√	√	√			√
Lithium complex	√	√	√	√		
Calcium complex			√	√		
Aluminium complex			√		√	
Clay		√			√	√

√ : Acceptable

VOLVO

Service Information

Document Title: **Hydraulic oil**	Function Group: **160**	Information Type: **Service Information**	Date: **4/25/2026**
Profile: **PL4809D Volvo**			

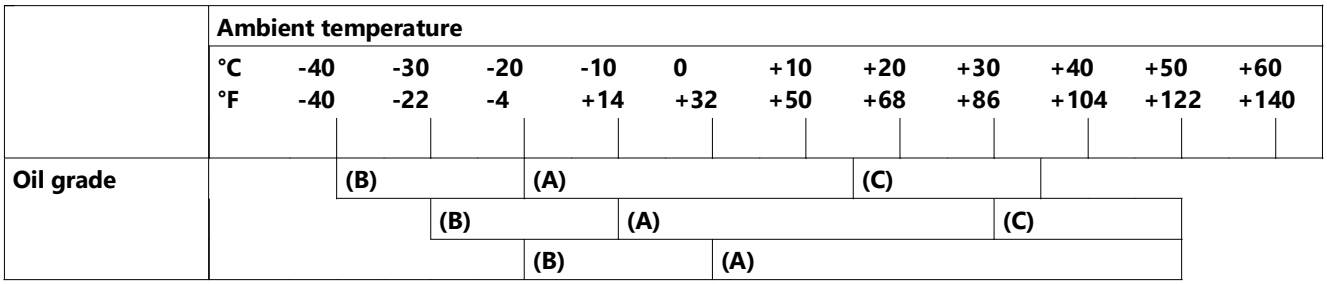
Hydraulic oil

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
PL4809D Volvo			

Only use Volvo genuine hydraulic oil approved by Volvo Construction Equipment. Do not mix different brands of hydraulic oil as this can lead to damage in the hydraulic system.

For the hydraulic oil specification, see page Recommended lubricants.



(A) : Ambient temperature recommended for general use of hydraulic system and components.
(B) : Ambient temperature guide for machine operation from a hydraulic oil viewpoint only, it does not guarantee the completion machine for other conditions like engine starting performance. In this range a warming-up period is needed to obtain proper performance.
(C) : Ambient temperature range to operate machine under special conditions, not a recommendation for general use conditions.

Additional recommendation for severe cold areas
A field solution for severe cold condition of ambient temperature between -40°C and +20°C.

- Type : Anti-wear type hydraulic oil
- Viscosity characteristic

  Viscosity index : More than 130
  Kinematic Viscosity : Less than 5,000cSt at -40°C, More than 5.6cSt at +90°C

NOTE!
This value is approximately equivalent to ISO Viscosity grade #22.

NOTE!
It is minimum theoretical recommendation without the guarantee of machine condition.

NOTE!
If the machine is filled with biodegradable Volvo hydraulic oil, it is recommended to take regular oil samples. See service bulletin “Recommendations for Oil Sampling Intervals” in function group 160.

Document Title: **Lubricants and filling capacities**	Function Group: **160**	Information Type: **Service Information**	Date: **4/25/2026**
Profile: **PL4809D Volvo**			

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Change capacities

Showing Selected Profile

Valid for serial numbers			
Model	**Production site**	**Serial number start**	**Serial number stop**
PL4809D Volvo			

Oils and other liquids	**Change capacities**
Engine oil, including filter	55 litres (14.5 US gal.)
Coolant	60 litres (16 US gal.)
Hydraulic tank	270 litres (71 US gal.)
Hydraulic system, total	525 litres (139 US gal.)
Swing gearbox (each)	6 litres (1.6 US gal.)
Track gearbox (each)	14 litres (3.7 US gal.)
Fuel tank	685 litres (181 US gal.)
Swing ring gear	45 litres (11.8 US gal.) 40.5 kg (89.3 lb)
Oil bath air cleaner	8.5 litres (2.25 US gal.)
Air pump oil	0.045 litres (0.012 US gal.)
Winch oil	38 litres (10 US gal.)