



4	Operator cab	15	Hydraulic tank	26	Swing ring gear
5	Hydraulic oil cooler	16	Track motor and gearbox	27	Winch and motor
6	Swing motor and gearbox	17	Fuel tank	28	Elevating cab structure
7	Air cleaner	18	Top roller	29	Flag block
8	Main control valve	19	Additional counterweight	30	Anti-two block switch
9	Radiator and charged air cooler	20	Center passage	31	Wire rope
10	Engine hood	21	Battery	32	Load block
11	Engine	22	Bottom roller	33	Lifting hook

**Excavator digging conversion kit (optional equipment)**

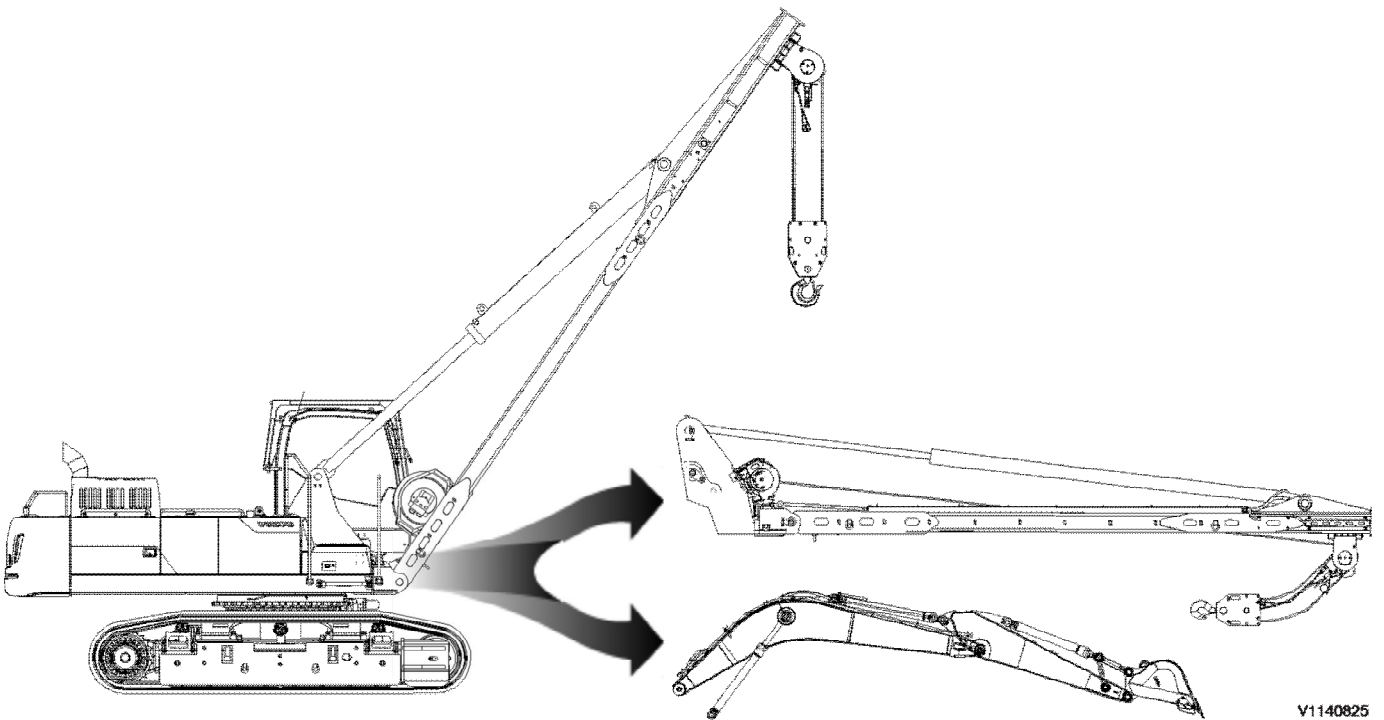
The Volvo Pipelayer can be converted into the excavator digging kit as an optional equipment to be used under normal conditions for the applications.

Refer to an appendix manual provided with conversion kit for installation and removal.

**NOTE!**

The conversion must be carried out by a qualified service technician.

Contact a workshop authorized by Volvo for clarification of or support performing the conversion kit instructions.



**Figure 2**  
Excavator digging conversion kit

Document Title: <b>Product plates</b>	Function Group: <b>000</b>	Information Type: <b>Service Information</b>	Date: <b>4/25/2026</b>
Profile: <b>PL4809E Volvo</b>			

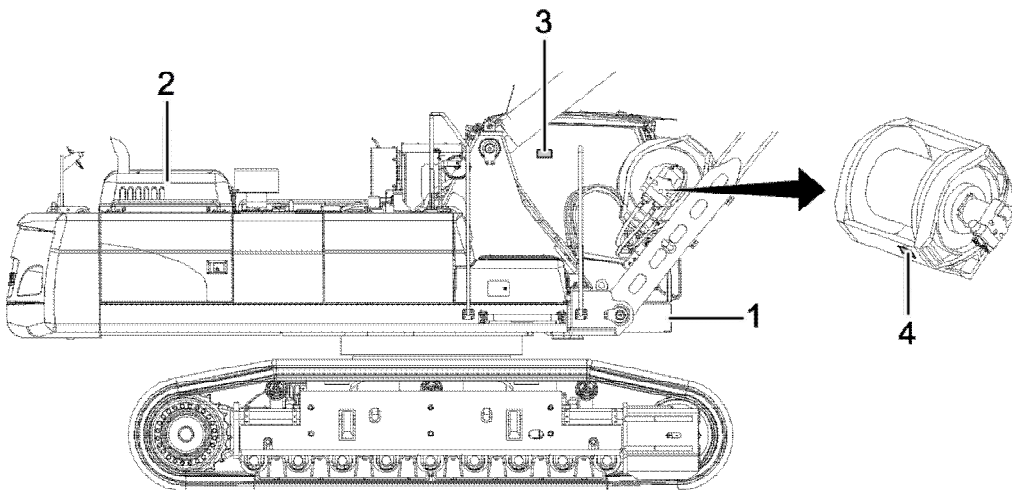
## Product plates

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
PL4809E 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.



V1070120

**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: <b>Volvo standard tightening torques</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>4/25/2026</b>
Profile: <b>PL4809E Volvo</b>			

## Volvo standard tightening torques

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
PL4809E 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	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

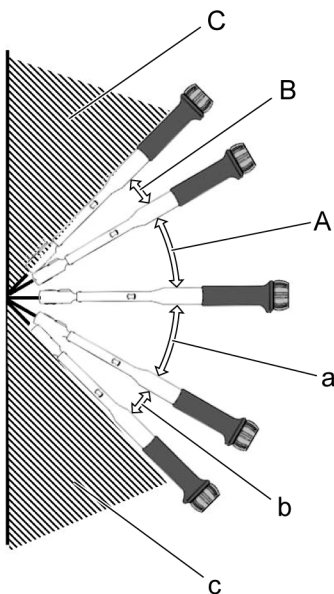
Before fitting pipe couplings, plugs and hoses:

- 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

Tool angle	Correction factor	
	ORFS	Stud-end
Allowable tolerance	$\pm 10\%$	- 0%, +10%
$\pm 0^\circ \sim \pm 30^\circ$	5% over torque	
$\pm 30^\circ \sim \pm 45^\circ$	20% over torque	
$\pm 45^\circ$	NOT allowable	

### Tool access angle



V1223202

**Figure 1**

Tool access angle

A:  $+0^\circ \sim +30^\circ$

B:  $+30^\circ \sim +45^\circ$

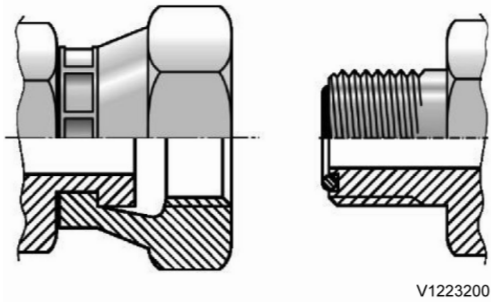
C: +45°

a: -0° ~ -30°

b: -30° ~ -45°

c: -45°

**ORFS female swivel fitting**

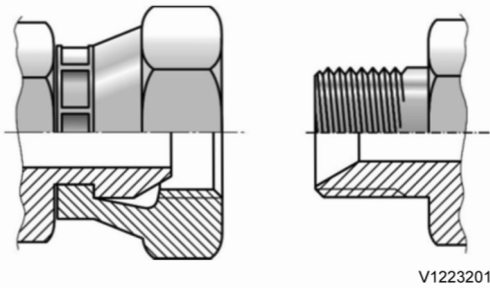


**Figure 2**

Thread s type	Assembl y 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
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**G thread 30° cone female swivel fitting**



**Figure 3**

Thread s type	Assembl y 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: <b>Measurement conversion tables</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>4/25/2026</b>
Profile: <b>PL4809E Volvo</b>			

## Measurement conversion tables

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
PL4809E 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 <sup>2</sup>	m <sup>2</sup>	km <sup>2</sup>	a	ft <sup>2</sup>	yd <sup>2</sup>	in <sup>2</sup>
cm <sup>2</sup>	1	0.0001	-	0.000001	0.001076	0.000012	0.155000
m <sup>2</sup>	10000	1	0.000001	0.01	10.764	1.1958	1550.000
km <sup>2</sup>	-	1000000	1	10000	1076400	1195800	-
a	0.01	100	0.0001	1	1076.4	119.58	-
ft <sup>2</sup>	-	0.092903	-	0.000929	1	0.1111	144.000
yd <sup>2</sup>	-	0.83613	-	0.008361	9	1	1296.00
in <sup>2</sup>	6.4516	0.000645	-	-	0.006943	0.000771	1

1 ha = 100 a, 1 mile<sup>2</sup> = 259 ha = 2.59 km<sup>2</sup>

### Volume

Unit	cm <sup>3</sup> = cc	m <sup>3</sup>	Liter	in <sup>3</sup>	ft <sup>3</sup>	yd <sup>3</sup>
cm <sup>3</sup> = m liter	1	0.000001	0.001	0.061024	0.000035	0.000001
m <sup>3</sup>	1000000	1	1000	61024	35.315	1.30796
Liter	1000	0.001	1	61.024	0.035315	0.001308
in <sup>3</sup>	16.387	0.000016	0.01638	1	0.000578	0.000021
ft <sup>3</sup>	28316.8	0.028317	28.317	1728	1	0.03704
yd <sup>3</sup>	764529.8	0.76453	764.53	46656	27	1

1 gal(US) = 3785.41 cm<sup>3</sup> = 231 in<sup>3</sup> = 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

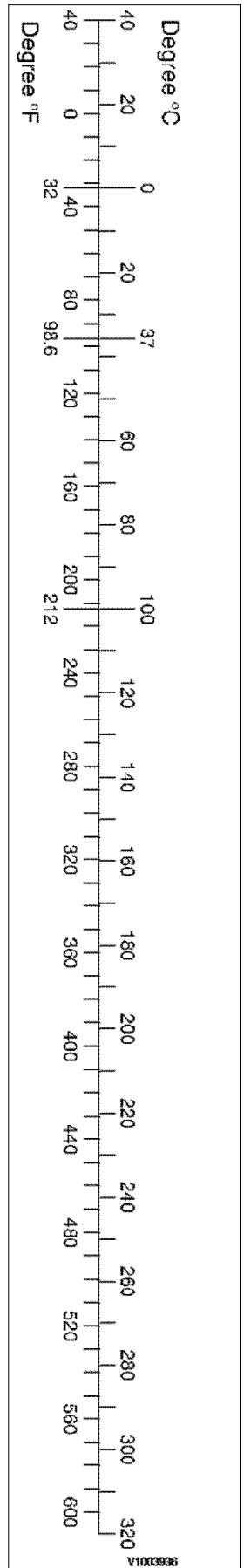
Unit	kgf/cm <sup>2</sup>	bar	Pa=N/m <sup>2</sup>	kPa	lbf/in <sup>2</sup>	lbf/ft <sup>2</sup>
kgf/cm <sup>2</sup>	1	0.98067	98066.5	98.0665	14.2233	2048.16
bar	1.01972	1	100000	100	14.5037	2088.6
Pa=N/m <sup>2</sup>	0.00001	0.001	1	0.001	0.00015	0.02086
kPa	0.01020	0.01	1000	1	0.14504	20.886
lbf/in <sup>2</sup>	0.07032	0.0689	6894.76	6.89476	1	144
lbf/ft <sup>2</sup>	0.00047	0.00047	47.88028	0.04788	0.00694	1

1 kgf/cm<sup>2</sup> = 735.56 Torr(mmHg) = 0.96784 atm

## Approximate conversions

SI	Conversion	Non-SI	Conversion	SI
Unit	Factor	Unit	Factor	Unit
<b>Torque</b>				
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)
<b>Pressure (Pa = N/m<sup>2</sup>)</b>				
kilopascal (kPa)	x 4.0	= in. H <sub>2</sub> O	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/cm <sup>2</sup> )	x 14.22	= psi	x 0.070	= (kgf/cm <sup>2</sup> )
(newton/mm <sup>2</sup> )	x 145.04	= psi	x 0.069	= (bar)
megapascal (MPa)	x 145	= psi	x 0.00689	= MPa
<b>Power (W = J/s)</b>				
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

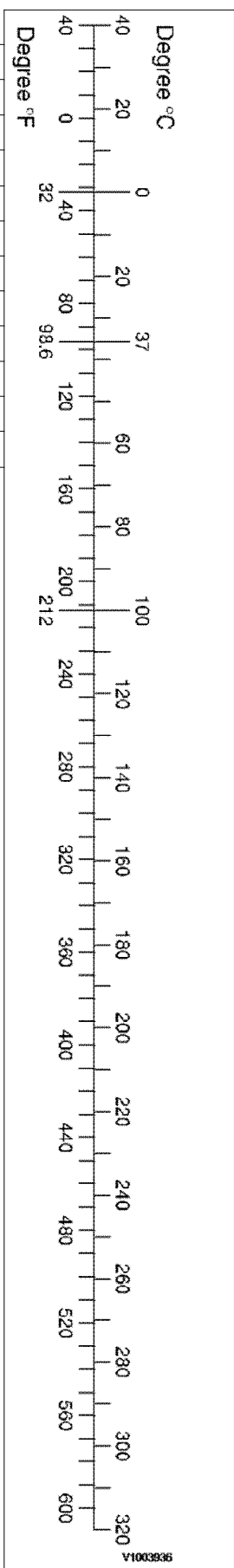


**Approximate conversions**

SI Unit	Conversion Factor	Non-SI Unit	Conversion Factor	SI 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 sec <sup>2</sup> (m/s <sup>2</sup> )	x 3.28	= ft/s <sup>2</sup>	x 0.305	= m/s <sup>2</sup>
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 (dm <sup>3</sup> /min)	x 0.264	= US gal/min x 3.785		= liter/min

Note: ( ) non-si unit



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

## 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: <b>E-2037</b>	Function Group: <b>080</b>	Information Type: <b>Service Information</b>	Date: <b>4/25/2026</b>
Profile: <b>PL4809E Volvo</b>			

### E-2037

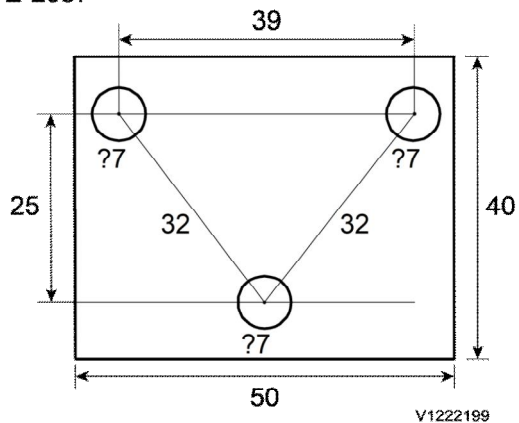
Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
PL4809E Volvo			

#### Plate

Dimensions on the drawing are given in mm.

#### E-2037



**Figure 1**

E-2037

Flat iron bar, thickness 6 mm

Document Title: <b>E-2045</b>	Function Group: <b>080</b>	Information Type: <b>Service Information</b>	Date: <b>4/25/2026</b>
Profile: <b>PL4809E Volvo</b>			

## E-2045

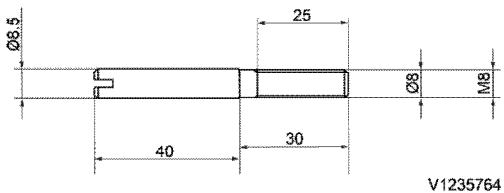
Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
PL4809E Volvo			

### Installation tool

Dimensions on the drawing are given in mm.

## E-2045

**Figure 1**

Material: S235JR

Document Title: <b>Infrared Thermometer</b>	Function Group: <b>080</b>	Information Type: <b>Service Information</b>	Date: <b>4/25/2026</b>
Profile: <b>PL4809E Volvo</b>			

## Infrared Thermometer

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
PL4809E Volvo			

### Gun Style Infrared Thermometer Laser Sight Model: SIG1

#### 9998519 Infrared thermometer (user instruction in FGI 080) Application

This tool can be used to measure fast and easy temperature differences. For instance in case of troubleshooting it is sometimes necessary to measure temperature differences on two equal parts with the same surface.



### **WARNING**

Never point the device towards the eyes permanent eye damage may occur. Use extreme caution when using the laser. Keep out of the reach of children. Be careful around mirror surfaces since mirrors can reflect the laser. Looking into the reflected laser is just as damaging as looking directly at the laser.

#### General information

1. Field of view: The SIG1 takes it's measurement from a circle of a size determined by a simple ratio of 10:1. The diameter of this circle is 1/10 the distance between the target and the tip of the SIG1. For example, if you're standing 20 feet (610 cm) from your target, the size of the circle you're taking the average temperature of will be 2 feet (61 cm) wide.
2. If you want to get the temperature of something small, such as a pipe, you must get close enough for the pipe to take up the whole viewing area circle. Otherwise the pipe and the background temperatures will be averaged into the reading.
3. You need to be aware that if the target surface is reflective enough, it may reflect infrared from other objects. For example, if you take a reading of a shiny metal surface, the infrared energy of your face may reflect enough energy off the surface to affect the reading. For this reason, it's a good idea to put non-reflective tape or paint on reflective surfaces when taking infrared temperature readings.

#### NOTE!

The measured temperature will be lower than actual.

#### Operation

1. Point the laser towards the target to be measured.
2. Pull trigger to light the target with the laser and measure its surface temperature.
3. As long as the trigger is held down, the SIG1 will constantly update the measurement and the blue backlight will illuminate the display.
4. When the trigger is pulled the red laser dot will shine about 1/4" above the centre of the circular area being measured by the thermometer.
5. Once the trigger is released, the last measurement will be shown and held until the trigger is pressed again or until the SIG1 turns off.

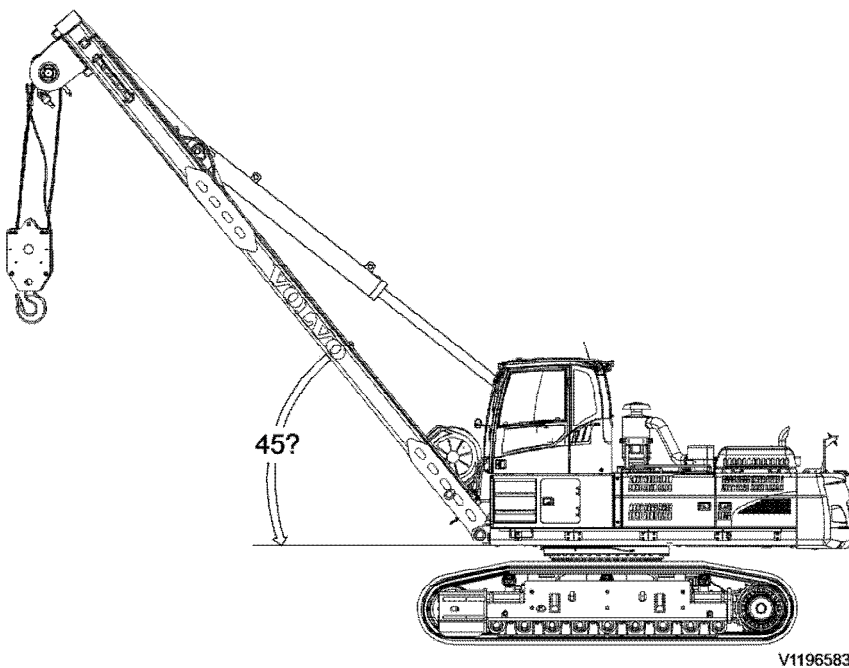
Document Title: <b>Service positions</b>	Function Group: <b>091</b>	Information Type: <b>Service Information</b>	Date: <b>4/25/2026</b>
Profile: <b>PL4809E Volvo</b>			

## Service positions

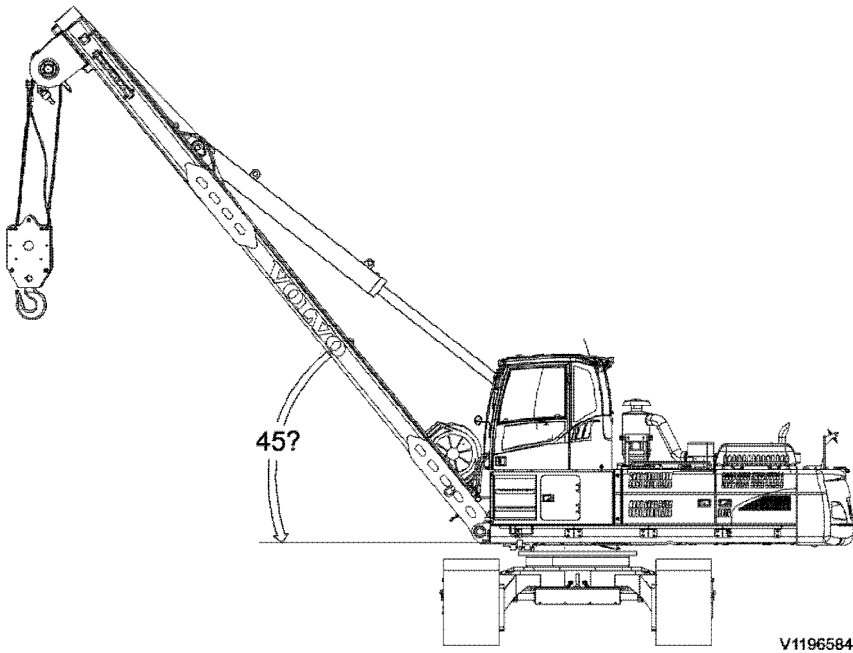
Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
PL4809E Volvo			

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

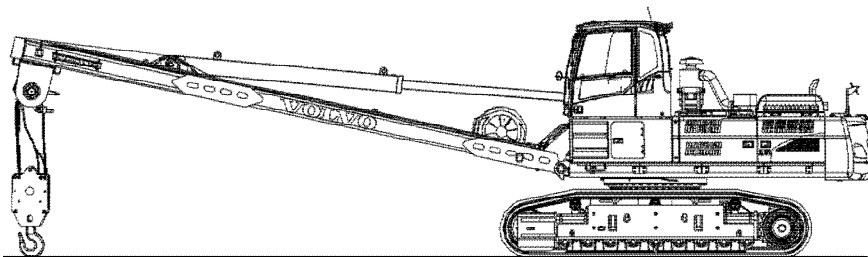


**Figure 1**  
Service position A



V1196584

**Figure 2**  
Service position B



V1196585

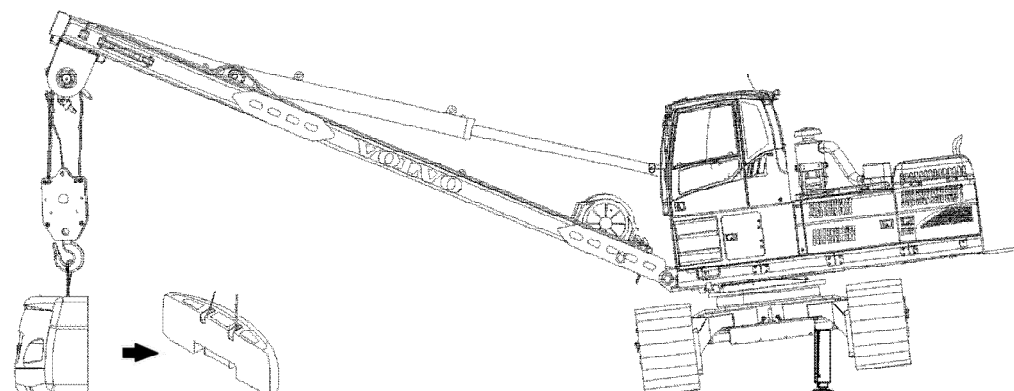
**Figure 3**  
Service position C

**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 45°. (boom less than 45°)

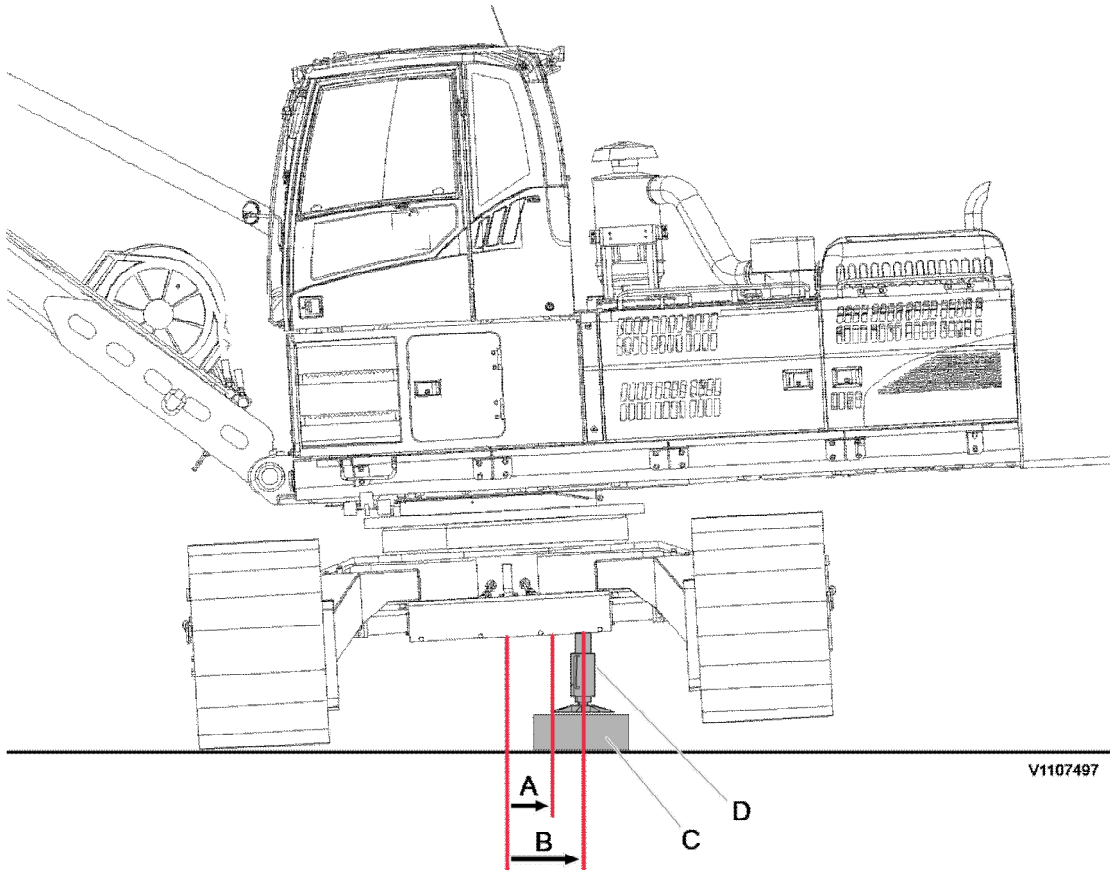


V1196586

**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: <b>Welding on the machine</b>	Function Group: <b>091</b>	Information Type: <b>Service Information</b>	Date: <b>4/25/2026</b>
Profile: <b>PL4809E Volvo</b>			

## Welding on the machine

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
PL4809E 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 disconnect.
2. Disconnect the batteries.  
**NOTE!**  
Both the plus and minus terminal.
3. Disconnect the all electronic units.
  - General Purpose Machine Electronic Control Unit 1 (GPMECU1)
  - Human Machine Interface Control Unit (HMICU)
  - Engine Control Module (ECM)
  - Instrument Control (IC)
  - Climate Control Module (CCM)
  - Aftertreatment Control Module (ACM)
  - Telemetries Electronic Control Unit (WECU)
  - Key Pad 1
  - Key Pad 2
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: <b>Hydraulic cylinders, dieseling</b>	Function Group: <b>091</b>	Information Type: <b>Service Information</b>	Date: <b>4/25/2026</b>
Profile: <b>PL4809E Volvo</b>			

## Hydraulic cylinders, dieseling

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
PL4809E 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.

Document Title: <b>Recommended lubricants</b>	Function Group: <b>160</b>	Information Type: <b>Service Information</b>	Date: <b>4/25/2026</b>
Profile: <b>PL4809E Volvo</b>			

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## Recommended lubricants

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
PL4809E Volvo			

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 see page <a href="#">Engine oil</a> .	<table border="1"> <thead> <tr> <th>°C</th> <th>-30</th> <th>-20</th> <th>-10</th> <th>0</th> <th>+10</th> <th>+20</th> <th>+30</th> <th>+40</th> <th>+50</th> </tr> <tr> <th>°F</th> <th>-22</th> <th>-4</th> <th>-14</th> <th>+32</th> <th>+50</th> <th>+68</th> <th>+86</th> <th>+104</th> <th>+122</th> </tr> </thead> <tbody> <tr> <td colspan="10" style="text-align: center;">SAE 10W-30***</td> </tr> <tr> <td colspan="10" style="text-align: center;">*SAE 15W-40</td> </tr> <tr> <td colspan="10" style="text-align: center;">SAE 10W-40</td> </tr> <tr> <td colspan="10" style="text-align: center;">SAE 5W-30***</td> </tr> <tr> <td colspan="10" style="text-align: center;">SAE 5W-40</td> </tr> </tbody> </table>	°C	-30	-20	-10	0	+10	+20	+30	+40	+50	°F	-22	-4	-14	+32	+50	+68	+86	+104	+122	SAE 10W-30***										*SAE 15W-40										SAE 10W-40										SAE 5W-30***										SAE 5W-40									
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Swing gearbox	Gear oil (with EP** additive) API GL4 or GL5	<table border="1"> <thead> <tr> <th>°C</th> <th>-30</th> <th>-20</th> <th>-10</th> <th>0</th> <th>+10</th> <th>+20</th> <th>+30</th> <th>+40</th> <th>+50</th> </tr> <tr> <th>°F</th> <th>-22</th> <th>-4</th> <th>-14</th> <th>+32</th> <th>+50</th> <th>+68</th> <th>+86</th> <th>+104</th> <th>+122</th> </tr> </thead> <tbody> <tr> <td colspan="10" style="text-align: center;">*SAE 90</td> </tr> <tr> <td colspan="10" style="text-align: center;">SAE 140</td> </tr> </tbody> </table>	°C	-30	-20	-10	0	+10	+20	+30	+40	+50	°F	-22	-4	-14	+32	+50	+68	+86	+104	+122	*SAE 90										SAE 140																																							
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Swing ring gear (Bath and Ball)	Grease	<table border="1"> <thead> <tr> <th>°C</th> <th>-30</th> <th>-20</th> <th>-10</th> <th>0</th> <th>+10</th> <th>+20</th> <th>+30</th> <th>+40</th> <th>+50</th> </tr> <tr> <th>°F</th> <th>-22</th> <th>-4</th> <th>-14</th> <th>+32</th> <th>+50</th> <th>+68</th> <th>+86</th> <th>+104</th> <th>+122</th> </tr> </thead> <tbody> <tr> <td colspan="10" style="text-align: center;">Multi purpose EP** grease NLGI 2</td> </tr> </tbody> </table>	°C	-30	-20	-10	0	+10	+20	+30	+40	+50	°F	-22	-4	-14	+32	+50	+68	+86	+104	+122	Multi purpose EP** grease NLGI 2																																																	
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\*: 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
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Hydraulic system	Volvo Extra hydraulic oil	<table border="1"> <thead> <tr> <th>°C</th> <th>-30</th> <th>-20</th> <th>-10</th> <th>0</th> <th>+10</th> <th>+20</th> <th>+30</th> <th>+40</th> <th>+50</th> </tr> <tr> <th>°F</th> <th>-22</th> <th>-4</th> <th>-14</th> <th>+32</th> <th>+50</th> <th>+68</th> <th>+86</th> <th>+104</th> <th>+122</th> </tr> </thead> <tbody> <tr> <td colspan="10"> </td> </tr> </tbody> </table>	°C	-30	-20	-10	0	+10	+20	+30	+40	+50	°F	-22	-4	-14	+32	+50	+68	+86	+104	+122										
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Volvo Biodegradable hydraulic oil (based on synthetic ester)***	<table border="1"> <thead> <tr> <th>°C</th> <th>-30</th> <th>-20</th> <th>-10</th> <th>0</th> <th>+10</th> <th>+20</th> <th>+30</th> <th>+40</th> <th>+50</th> </tr> <tr> <th>°F</th> <th>-22</th> <th>-4</th> <th>-14</th> <th>+32</th> <th>+50</th> <th>+68</th> <th>+86</th> <th>+104</th> <th>+122</th> </tr> </thead> <tbody> <tr> <td colspan="10"> </td> </tr> </tbody> </table>	°C	-30	-20	-10	0	+10	+20	+30	+40	+50	°F	-22	-4	-14	+32	+50	+68	+86	+104	+122											
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°F	-22	-4	-14	+32	+50	+68	+86	+104	+122																							
Volvo Ultra hydraulic oil (Long life hydraulic oil)	<table border="1"> <thead> <tr> <th>°C</th> <th>-30</th> <th>-20</th> <th>-10</th> <th>0</th> <th>+10</th> <th>+20</th> <th>+30</th> <th>+40</th> <th>+50</th> </tr> <tr> <th>°F</th> <th>-22</th> <th>-4</th> <th>-14</th> <th>+32</th> <th>+50</th> <th>+68</th> <th>+86</th> <th>+104</th> <th>+122</th> </tr> </thead> <tbody> <tr> <td colspan="10"> </td> </tr> </tbody> </table>	°C	-30	-20	-10	0	+10	+20	+30	+40	+50	°F	-22	-4	-14	+32	+50	+68	+86	+104	+122											
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Pin and bushing	Grease (Multi purpose EP** grease NLGI 2)	<table border="1"> <thead> <tr> <th>°C</th> <th>-30</th> <th>-20</th> <th>-10</th> <th>0</th> <th>+10</th> <th>+20</th> <th>+30</th> <th>+40</th> <th>+50</th> </tr> <tr> <th>°F</th> <th>-22</th> <th>-4</th> <th>-14</th> <th>+32</th> <th>+50</th> <th>+68</th> <th>+86</th> <th>+104</th> <th>+122</th> </tr> </thead> <tbody> <tr> <td colspan="10"> </td> </tr> </tbody> </table>	°C	-30	-20	-10	0	+10	+20	+30	+40	+50	°F	-22	-4	-14	+32	+50	+68	+86	+104	+122										
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Fuel	Diesel fuel	<table border="1"> <thead> <tr> <th>°C</th> <th>-30</th> <th>-20</th> <th>-10</th> <th>0</th> <th>+10</th> <th>+20</th> <th>+30</th> <th>+40</th> <th>+50</th> </tr> <tr> <th>°F</th> <th>-22</th> <th>-4</th> <th>-14</th> <th>+32</th> <th>+50</th> <th>+68</th> <th>+86</th> <th>+104</th> <th>+122</th> </tr> </thead> <tbody> <tr> <td colspan="10"> </td> </tr> </tbody> </table>	°C	-30	-20	-10	0	+10	+20	+30	+40	+50	°F	-22	-4	-14	+32	+50	+68	+86	+104	+122										
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Winch	Gear oil	<table border="1"> <thead> <tr> <th>°C</th> <th>-30</th> <th>-20</th> <th>-10</th> <th>0</th> <th>+10</th> <th>+20</th> <th>+30</th> <th>+40</th> <th>+50</th> </tr> <tr> <th>°F</th> <th>-22</th> <th>-4</th> <th>-14</th> <th>+32</th> <th>+50</th> <th>+68</th> <th>+86</th> <th>+104</th> <th>+122</th> </tr> </thead> <tbody> <tr> <td colspan="10"> </td> </tr> </tbody> </table>	°C	-30	-20	-10	0	+10	+20	+30	+40	+50	°F	-22	-4	-14	+32	+50	+68	+86	+104	+122										
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°F	-22	-4	-14	+32	+50	+68	+86	+104	+122																							
Cooling system	Volvo Coolant VCS	Volvo Coolant VCS should be used only, see page <a href="#">Coolant</a> .																														
Air conditioner system	Refrigerant	HFC R134a																														

\*: Installed at factory

\*\* : Extreme Pressure

\*\*\*: If the machine is filled with Volvo Biodegradable hydraulic oil this oil must also be used when filling 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.

**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.

Document Title: <b>Recommended lubricants</b>	Function Group: <b>160</b>	Information Type: <b>Service Information</b>	Date: <b>4/25/2026</b>
Profile: <b>PL4809E Volvo</b>			

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## Recommended lubricants

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
PL4809E Volvo			

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.

### NOTE!

If a high water or excessive contamination in the lubricants (e.g. engine oil, hydraulic oil, axle oil, etc.) is found by Volvo oil analysis, change the lubricants regardless of the change interval.

See service bulletins "Oil sampling" in function group 160.

System	Oil grade	Recommended viscosity at varying ambient temperature																				
Engine	Engine oil For detail, see page <a href="#">Engine oil</a> .	<table border="1"> <tr> <td>°C</td> <td>-30</td> <td>-20</td> <td>-10</td> <td>0</td> <td>+10</td> <td>+20</td> <td>+30</td> <td>+40</td> <td>+50</td> </tr> <tr> <td>°F</td> <td>-22</td> <td>-4</td> <td>+14</td> <td>+32</td> <td>+50</td> <td>+68</td> <td>+86</td> <td>+104</td> <td>+122</td> </tr> </table>	°C	-30	-20	-10	0	+10	+20	+30	+40	+50	°F	-22	-4	+14	+32	+50	+68	+86	+104	+122
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Fuel	Diesel fuel For detail, see page <a href="#">Fuel</a> .	<table border="1"> <tr> <td>°C</td> <td>-30</td> <td>-20</td> <td>-10</td> <td>0</td> <td>+10</td> <td>+20</td> <td>+30</td> <td>+40</td> <td>+50</td> </tr> <tr> <td>°F</td> <td>-22</td> <td>-4</td> <td>+14</td> <td>+32</td> <td>+50</td> <td>+68</td> <td>+86</td> <td>+104</td> <td>+122</td> </tr> </table> <p><b>NOTE!</b> 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.</p>	°C	-30	-20	-10	0	+10	+20	+30	+40	+50	°F	-22	-4	+14	+32	+50	+68	+86	+104	+122
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Cooling system	<b>Volvo Coolant VCS-2 Ready Mixed</b> For detail, see page <a href="#">Coolant</a> .	<b>Volvo Coolant VCS Ready Mixed</b> should be used only. <b>NOTE!</b> 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	<table border="1"> <tr> <td>°C</td> <td>-30</td> <td>-20</td> <td>-10</td> <td>0</td> <td>+10</td> <td>+20</td> <td>+30</td> <td>+40</td> <td>+50</td> </tr> <tr> <td>°F</td> <td>-22</td> <td>-4</td> <td>+14</td> <td>+32</td> <td>+50</td> <td>+68</td> <td>+86</td> <td>+104</td> <td>+122</td> </tr> <tr> <td colspan="10" style="text-align: center;">ISO VG15</td> </tr> </table>	°C	-30	-20	-10	0	+10	+20	+30	+40	+50	°F	-22	-4	+14	+32	+50	+68	+86	+104	+122	ISO VG15									
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	°F	-22	-4	+14	+32	+50	+68	+86	+104	+122																						
	ISO VG15																															
Volvo Hydraulic Oil 98609 Extra 32 or Volvo Hydraulic Oil 98609 Extra 46 or Volvo Hydraulic Oil 98609 Extra 68 or Volvo Hydraulic Oil 98611 HO103 32 Volvo Hydraulic Oil 98611 HO103 46 Volvo Hydraulic Oil 98611 HO103 68	<table border="1"> <tr> <td>°C</td> <td>-30</td> <td>-20</td> <td>-10</td> <td>0</td> <td>+10</td> <td>+20</td> <td>+30</td> <td>+40</td> <td>+50</td> </tr> <tr> <td>°F</td> <td>-22</td> <td>-4</td> <td>+14</td> <td>+32</td> <td>+50</td> <td>+68</td> <td>+86</td> <td>+104</td> <td>+122</td> </tr> <tr> <td colspan="10" style="text-align: center;">ISO VG32 HV ISO VG46 HV ISO VG68 HV</td> </tr> </table>	°C	-30	-20	-10	0	+10	+20	+30	+40	+50	°F	-22	-4	+14	+32	+50	+68	+86	+104	+122	ISO VG32 HV ISO VG46 HV ISO VG68 HV										
°C	-30	-20	-10	0	+10	+20	+30	+40	+50																							
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ISO VG32 HV ISO VG46 HV ISO VG68 HV																																
Volvo Hydraulic Oil 98610 Biodegradable 46	<table border="1"> <tr> <td>°C</td> <td>-30</td> <td>-20</td> <td>-10</td> <td>0</td> <td>+10</td> <td>+20</td> <td>+30</td> <td>+40</td> <td>+50</td> </tr> <tr> <td>°F</td> <td>-22</td> <td>-4</td> <td>+14</td> <td>+32</td> <td>+50</td> <td>+68</td> <td>+86</td> <td>+104</td> <td>+122</td> </tr> <tr> <td colspan="10" style="text-align: center;">Bio oil VG46</td> </tr> </table> <p><b>NOTE!</b> If the machine is filled with Volvo Biodegradable hydraulic oil this oil must also be used when filling 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.</p>	°C	-30	-20	-10	0	+10	+20	+30	+40	+50	°F	-22	-4	+14	+32	+50	+68	+86	+104	+122	Bio oil VG46										
°C	-30	-20	-10	0	+10	+20	+30	+40	+50																							
°F	-22	-4	+14	+32	+50	+68	+86	+104	+122																							
Bio oil VG46																																
Volvo Hydraulic Oil 98620 Ultra 32 or Volvo Hydraulic Oil 98620 Ultra 46 or Volvo Hydraulic Oil 98620 Ultra 68	<table border="1"> <tr> <td>°C</td> <td>-30</td> <td>-20</td> <td>-10</td> <td>0</td> <td>+10</td> <td>+20</td> <td>+30</td> <td>+40</td> <td>+50</td> </tr> <tr> <td>°F</td> <td>-22</td> <td>-4</td> <td>+14</td> <td>+32</td> <td>+50</td> <td>+68</td> <td>+86</td> <td>+104</td> <td>+122</td> </tr> <tr> <td colspan="10" style="text-align: center;">ISO VG32 ISO VG46 ISO VG68</td> </tr> </table>	°C	-30	-20	-10	0	+10	+20	+30	+40	+50	°F	-22	-4	+14	+32	+50	+68	+86	+104	+122	ISO VG32 ISO VG46 ISO VG68										
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ISO VG32 ISO VG46 ISO VG68																																

System	Oil grade	Recommended viscosity at varying ambient temperature																														
Track gearbox	Volvo Axle Oil 97321 80W-90 or	<table border="1"> <tr> <td>°C</td> <td>-30</td> <td>-20</td> <td>-10</td> <td>0</td> <td>+10</td> <td>+20</td> <td>+30</td> <td>+40</td> <td>+50</td> </tr> <tr> <td>°F</td> <td>-22</td> <td>-4</td> <td>+14</td> <td>+32</td> <td>+50</td> <td>+68</td> <td>+86</td> <td>+104</td> <td>+122</td> </tr> <tr> <td colspan="10" style="text-align: center;">*SAE 90 SAE 140</td> </tr> </table>	°C	-30	-20	-10	0	+10	+20	+30	+40	+50	°F	-22	-4	+14	+32	+50	+68	+86	+104	+122	*SAE 90 SAE 140									
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°F	-22	-4	+14	+32	+50	+68	+86	+104	+122																							
*SAE 90 SAE 140																																
Swing gearbox	Volvo Axle Oil 97321 80W-140 or																															
PTO gearbox (EC950 only)	Volvo Axle Oil 97317 75W-80 GO102 or Volvo Synthetic Axle Oil 97312 75W-90 or Volvo Axle Oil 97321 85W-90 Limited Slip	Or corresponding gearbox oil below.  <input type="radio"/> Mobil SHC630 <input type="radio"/> Volvo Synthetic Drum Eccentric Oil																														
Swing ring gear (Bath and Ball)	Volvo Multipurpose Grease 97718 GR101	<table border="1"> <tr> <td>°C</td> <td>-30</td> <td>-20</td> <td>-10</td> <td>0</td> <td>+10</td> <td>+20</td> <td>+30</td> <td>+40</td> <td>+50</td> </tr> <tr> <td>°F</td> <td>-22</td> <td>-4</td> <td>+14</td> <td>+32</td> <td>+50</td> <td>+68</td> <td>+86</td> <td>+104</td> <td>+122</td> </tr> <tr> <td colspan="10" style="text-align: center;">Multi purpose EP** grease NLGI 2</td> </tr> </table> <p>Or corresponding grease on lithium base with EP** additives and consistency NLGI class 2.</p>	°C	-30	-20	-10	0	+10	+20	+30	+40	+50	°F	-22	-4	+14	+32	+50	+68	+86	+104	+122	Multi purpose EP** grease NLGI 2									
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°F	-22	-4	+14	+32	+50	+68	+86	+104	+122																							
Multi purpose EP** grease NLGI 2																																
Pin and bushing	Volvo Extreme Grease 97765 GR103 or Volvo Multipurpose Grease 97718 GR101[T1] ⓘ For detail, see page <a href="#">Grease</a> .	<table border="1"> <tr> <td>°C</td> <td>-30</td> <td>-20</td> <td>-10</td> <td>0</td> <td>+10</td> <td>+20</td> <td>+30</td> <td>+40</td> <td>+50</td> </tr> <tr> <td>°F</td> <td>-22</td> <td>-4</td> <td>+14</td> <td>+32</td> <td>+50</td> <td>+68</td> <td>+86</td> <td>+104</td> <td>+122</td> </tr> <tr> <td colspan="10" style="text-align: center;">*ISO-L-XBCFB2</td> </tr> </table> <p>Or corresponding grease on lithium base with EP** additives and consistency NLGI class 2.</p>	°C	-30	-20	-10	0	+10	+20	+30	+40	+50	°F	-22	-4	+14	+32	+50	+68	+86	+104	+122	*ISO-L-XBCFB2									
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°F	-22	-4	+14	+32	+50	+68	+86	+104	+122																							
*ISO-L-XBCFB2																																
Air conditioner system	Refrigerant	HFC R134a																														

[T1] Volvo Multipurpose Grease 97718 GR101 is not recommended when the ambient temperature is above 40 °C.

\*: Installed at factory  
\*\*: Extreme Pressure

Document Title: <b>Grease</b>	Function Group: <b>160</b>	Information Type: <b>Service Information</b>	Date: <b>4/25/2026</b>
Profile: <b>PL4809E Volvo</b>			

## Grease

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
PL4809E Volvo			

### Recommended grease for all digging equipment greasing points

Manufacturer	Product name	
	Recommendations	Alternatives*
<b>VOLVO</b>	Volvo Extreme Grease 97765 GR103	Volvo Multipurpose Grease 97718 GR101
<b>CALTEX</b>	Molytex EP2	Multifak EP2
<b>GULF</b>	Gulflex Moly EP	Gulfcrown EP2
<b>EXXONMOBIL</b>	Beacon EP2 Moly	Beacon EP2
<b>SHELL</b>	Retinax HDX2 / Alvania HDX2	Retinax EP2 / Alvania EP2
<b>TOTAL</b>	Multis MS2	Multis EP2
<b>CASTROL</b>	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
<b>Lithium</b>	√	√	√			
<b>Calcium</b>	√	√	√			√
<b>Lithium complex</b>	√	√	√	√		
<b>Calcium complex</b>			√	√		
<b>Aluminium complex</b>			√		√	
<b>Clay</b>		√			√	√

√ : Acceptable

Document Title: <b>Hydraulic oil</b>	Function Group: <b>160</b>	Information Type: <b>Service Information</b>	Date: <b>4/25/2026</b>
Profile: <b>PL4809E Volvo</b>			

## Hydraulic oil

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
PL4809E 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](#).

	Ambient temperature											
	°C	-40	-30	-20	-10	0	+10	+20	+30	+40	+50	+60
	°F	-40	-22	-4	+14	+32	+50	+68	+86	+104	+122	+140
<b>Oil grade</b>		(B)		(A)			(C)					
			(B)		(A)			(C)				
			(B)		(A)							

(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: <b>Engine oil</b>	Function Group: <b>160</b>	Information Type: <b>Service Information</b>	Date: <b>4/25/2026</b>
Profile: <b>PL4809E Volvo</b>			

## Engine oil

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
PL4809E Volvo			

Follow recommended change intervals according to the oil's grade and sulphur content in the fuel.

Oil grade	Sulphur content in the fuel, ppm (10000 ppm = 1%)				
	< 15	15 - 500	500 - 3000	3000 - 5000	> 5000
Oil change interval (hours)					
Volvo Engine Oil VDS-4.5 10W-30 or Volvo Engine Oil VDS-4.5 15W-40 or Other approved VDS-4.5 oil	1000 [T1] ⓘ		Not applicable		
Volvo Engine Oil VDS-4.5 10W-30 or Volvo Engine Oil VDS-4.5 15W-40 or Other approved VDS-4.5 oil	500 [T2] ⓘ		Not applicable		
Other approved VDS-4 oil			Not applicable		
ACEA: E9	250		Not applicable		
API: CJ-4 or CK-4			Not applicable		

**[T1]** Only applies to the machine with Volvo High Performance engine oil filter.

**[T2]** Only applies to the machine with Volvo Performance engine oil filter.

- ACEA: European Automobile Manufacturers Association
- API: American Petroleum Institute

Document Title: <b>Engine oil filter, replacing</b>	Function Group: <b>160</b>	Information Type: <b>Service Information</b>	Date: <b>4/25/2026</b>
Profile: <b>PL4809E Volvo</b>			

## Engine oil filter, replacing

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
PL4809E Volvo			

An extended engine oil- change interval as a standard option for Tier 4f / Stage V markets.

The new service interval is extended from 500 hours to 1000 hours.

This change requires Volvo engine oil VDS 4.5 and Volvo High Performance oil filter.

The new oil filter and engine oil VDS 4.5 is installed in factory

**NOTE!**

Extended oil change interval is not compatible with earlier machines.

Oil grade	Engines meeting emission levels: Tier 4f, Stage V				
	Sulphur content in the fuel, ppm (10000 ppm = 1%)				
	<15	15-500	500-3000	3000-5000	5000-10000
					0
Oil change interval (hours)					
Volvo Engine Oil, VDS-4.5	1000*	N/A due to aftertreatment system or legal requirements			
Volvo Engine Oil, VDS-4.5	500				
Other approved VDS-4 oil	500				
ACEA: E9	250				
API: CJ-4 or CK-4	250				

\*Applies only for D4J, D6J, D8J, D8M, D13J, D16J engines.

Requirement: Volvo engine oil VDS 4.5 combined with Volvo High Performance Engine Oil Filter.

Maximum period between engine oil changes is **1000 hours or 12 months.**