

Document Title: <b>Complete machine, descriptions</b>	Function Group: <b>000</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
Profile: <b>EWR170E Volvo</b>			

## Complete machine, descriptions

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
EWR170E Volvo			

The machine is a wheeled excavator with a 360 degree swing movement.

### Engine

The machine is equipped with a straight four cylinder, four-stroke, turbocharged diesel engine with direct injection and charge air cooler.

The engine meet US Tier 4 final and California Tier 4 final emission requirements and EU Stage IV emission requirements.

See [Engine, description](#).

### Exhaust aftertreatment system

The engine features an exhaust aftertreatment system (EATS) in the form of two mufflers. The first one contains a diesel oxidation catalyst (DOC) and a diesel particulate filter (DPF) to reduce emissions of particulate matter (PM). The second one contains a selective catalytic reduction catalyst (SCR) to reduce nitrogen oxide (NOx) emissions.

The SCR uses diesel exhaust fluid, called AdBlue® or diesel exhaust fluid (DEF), to reduce the NOx emissions. An AdBlue®/DEF injection system is used to add this fluid to the exhaust.

See [Exhaust aftertreatment system, description](#).

### Electrical system

The machine is equipped with the Volvo CEA2+ (Common Electronic Architecture 2+) electrical system, a computerized monitoring and control system. The different control units are communicating via bus systems.

See [Electrical system, description](#).

See [Electronic control system, description](#).

### CareTrack

The machine is equipped with CareTrack, a telematics system developed by Volvo Construction Equipment. The system stores machine data, e.g., machine position, operating hours, fuel consumption, fuel level, that can be sent by wireless transmission to a computer.

CareTrack is available in different versions, depending on the required information level.

See [CareTrack W-ECU, description](#).

### Power Train

The machine is driven by a hydraulic drive motor with a variable displacement.

See [Travel motor \(electric proportional control\), description](#).

The travel gearbox has two hydraulically controlled gears. It is a so-called Powershift gearbox, which means that shifting is possible on the move.

The brakes for gear shifting are applied automatically with spring force and released with servo pressure. The parking brake is integrated in the gearbox and uses the gearbox brake discs, which are applied by spring force.

See [Travel gearbox, description](#).

The drive axles are equipped with a differential, planetary gear hub reductions and wet multi-disc brakes.

See [Front axle, description](#).

See [Rear axle, specification](#).

### Swing system

The swing movement of the machine is performed by a directacting motor with integrated swing brake.

<https://www.arepairmanual.com/downloads/ewr170e-volvo-excavator-service-manual/>

## Product: EWR170E Volvo Excavator Service Manual

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See [Swing motor description](#).

The swing pinion drives against a swing ring with internal ring gear. The swing ring connects the superstructure with the undercarriage.

A centre passage connects the superstructure and undercarriage hydraulically and electrically.

### Brake system

The brake system is a dual-circuit system with two accumulators, operated via the servo hydraulics.

The service brakes are servo-hydraulically operated, selfadjusting, wet, multi-disc brakes in two separate brake circuits.

The service brake pedal is also used as digging brake.

The parking brake is a negative action wet disc brake integrated in the travel gearbox. It is spring applied and pressure released.

See [Hydraulic brake system description](#).

### Steering system

The machine is provided with a hydrostatic steering system.

See [Steering system description](#).

### Cab

The cab is equipped with an automatically controlled heating and air conditioning system with defroster system for the windows and an ergonomic operator's seat.

See [HVAC system](#).

The cab is approved as a protective cab according to FOPS (Falling Object Protective Structure) and ROPS (Roll Over Protective Structure) – standards.

If any part of the cab's protective structure is affected by plastic deformation or failures, the cab shall be replaced immediately.

Never make any unauthorized changes to the cab, e.g., lowering the roof height, drilling, welding of brackets for fire extinguishers, radio antenna, or other equipment without first discussing the change with Volvo, via a dealer. Volvo decides if the change can lead to nullification of the approval.

### Hydraulic system

The machine has a load independent flow sharing hydraulic system which always ensures that each movement receives oil according to the demand and no function stops.

The diesel engine drives the machine's working pump, which gives hydraulic oil flow to the working hydraulics and the travel motor.

The double gear pump is mounted behind the working pump and supplies the servo, brake and steering hydraulics.

See [Description general](#).

### Equipment

Different combinations of boom, dipper arm and attachments can be offered. This manual describes the most common standard alternatives.

Sample manual. Download All 3883 pages at:

<https://www.arepairmanual.com/downloads/ewr170e-volvo-excavator-service-manual/>

Document Title: <b>Product identification plates</b>	Function Group: <b>000</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
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## Product identification plates

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When ordering spare parts, and in all telephone enquiries or correspondence the model designation and the Product Identification Number (PIN) must always be quoted.

### Product plate

The product plate on the machine shows the manufacturer's name and address, model designation, Product Identification Number (PIN), machine weight, engine output and the manufacturing year.

### Engine product plate

The engine product plate contains type designation, part number, serial number and is positioned on the engine.

### Travel gearbox product plate

The travel gearbox product plate contains type designation, part number, serial number and is positioned on the travel gearbox.

### Axle product plate

The axle product plate contains type designation, part number, serial number and is positioned on each axle.

### Swing gearbox

The swing gearbox product plate contains type designation, part number, serial number and is positioned on the swing gearbox.

### Main pump

The main pump product plate contains type designation, part number, serial number and is positioned on the main pump.

### Main control valve

The main control valve product plate contains type designation, part number, serial number and is positioned on the main control valve.

### Cab

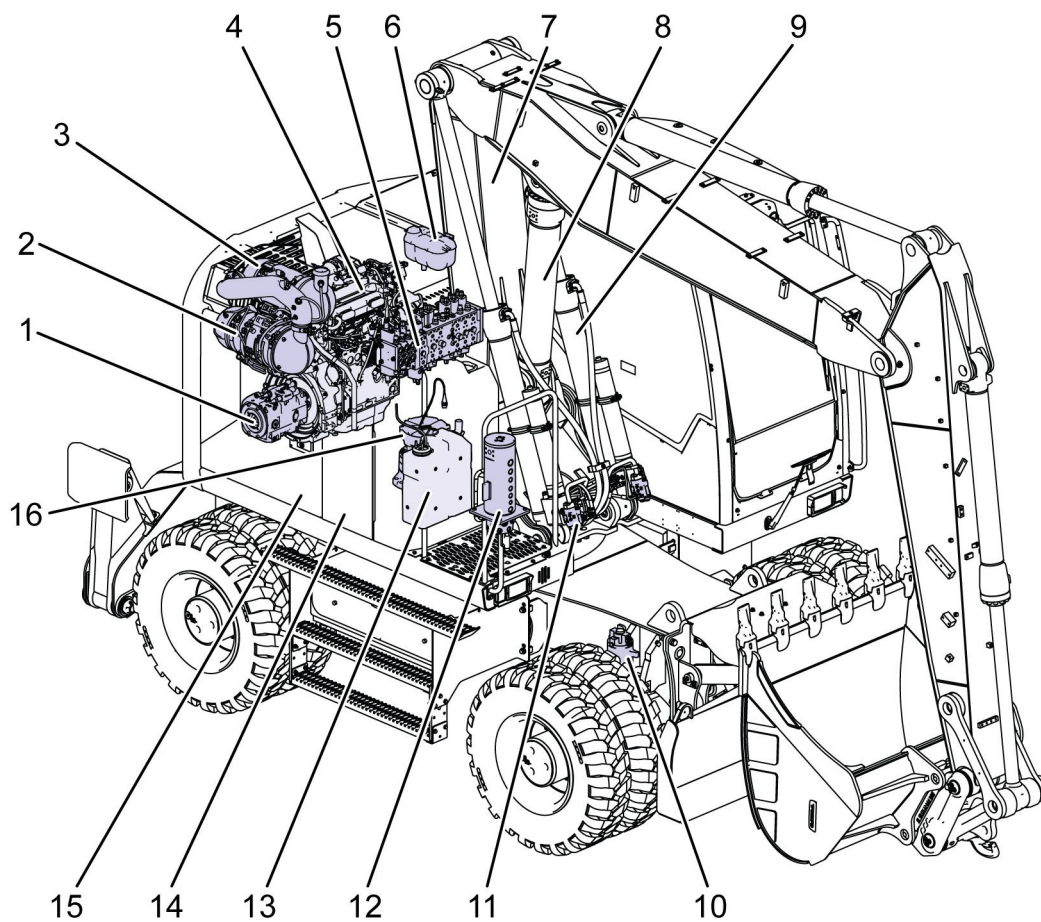
The cab product plate contains cab type, type approval, part number, serial number and is positioned on the left side in the cab.

Document Title: <b>Machine view</b>	Function Group: <b>000</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
Profile: <b>EWR170E Volvo</b>			

## Machine view

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
EWR170E Volvo			

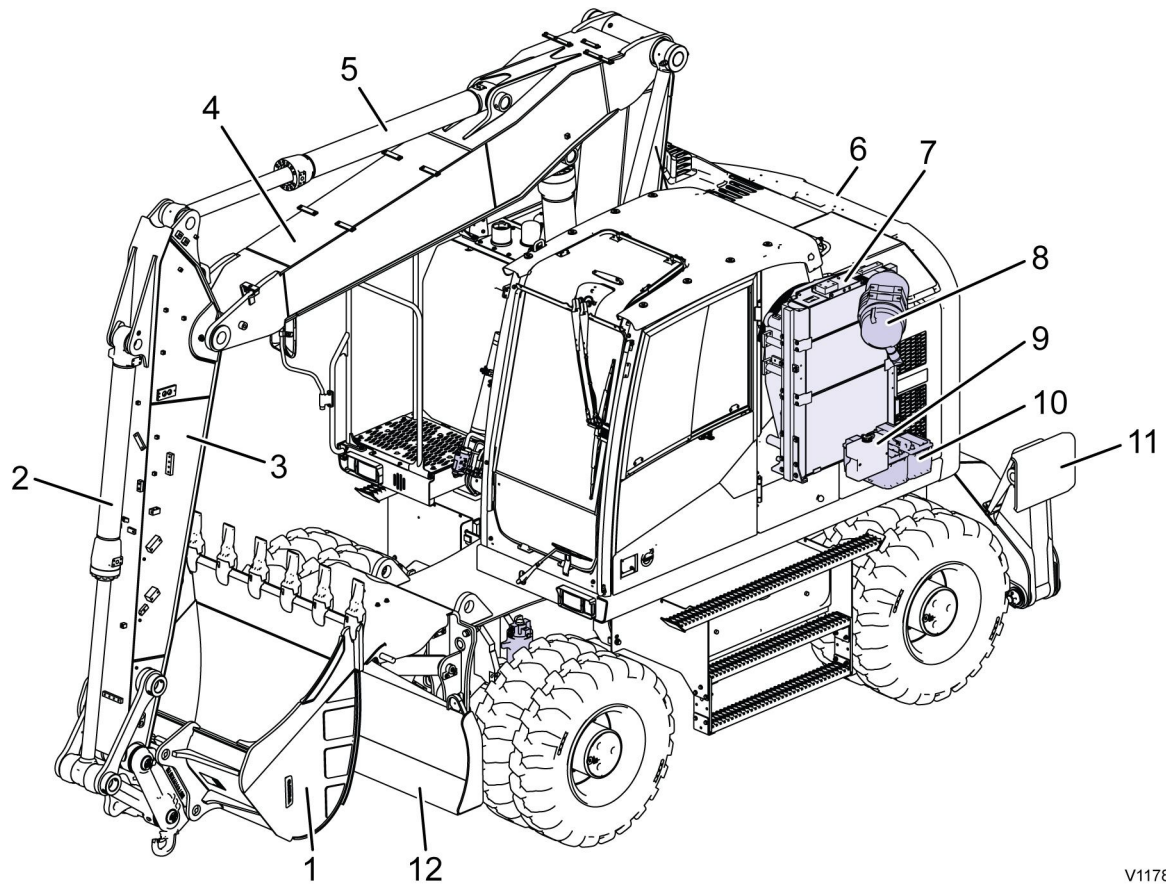


V1178017

**Figure 1**

Main component locations

1	Main pump	9	Boom cylinder
2	DPF muffler (diesel particulate filter)	10	Pivot axle locking cylinder
3	SCR muffler (selective catalytic reduction catalyst)	11	Line rupture valve
4	Engine	12	Center passage
5	Main control valve	13	AdBlue®/DEF tank
6	Expansion tank	14	Fuel tank
7	First boom	15	Hydraulic oil tank



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**Figure 2**

Main component locations

1	Bucket	7	Radiator and charge air cooler
2	Bucket cylinder	8	Engine air cleaner
3	Dipper arm	9	Windscreen washer water tank
4	Second boom	10	Batteries
5	Dipper arm cylinder	11	Stabilizer
6	Counterweight	12	Stabilizer blade

Document Title: <b>Measurement conversion tables</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
Profile: <b>EWR170E Volvo</b>			

## Measurement conversion tables

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

Unit	cm	m	km	in	ft	yd	mile
cm	1	0.01	0.00001	0.3937	0.03281	0.01094	0.000006
m	100	1	0.001	39.37	3.2808	1.0936	0.00062
km	100000	1000	1	39370.7	3280.8	1093.6	0.62137
in	2.54	0.0254	0.000025	1	0.08333	0.02777	0.000015
ft	30.48	0.3048	0.000304	12	1	0.3333	0.000189
yd	91.44	0.9144	0.000914	36	3	1	0.000568
mile	160930	1609.3	1.6093	63360	5280	1760	1

1 mm = 0.1 cm - 1 mm = 0.001 m

### Area

Unit	cm <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>	l	in <sup>3</sup>	ft <sup>3</sup>	yd <sup>3</sup>
cm <sup>3</sup> = ml	1	0.000001	0.001	0.061024	0.000035	0.000001
m <sup>3</sup>	1000000	1	1000	61024	35.315	1.30796
dm <sup>3</sup> (l)	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 ton (metric) = 1.1023 ton (US) = 0.9842 ton (UK)

## Pressure

Unit	kp/cm <sup>2</sup>	bar	Pa=N/m <sup>2</sup>	kPa	lbf/in <sup>2</sup>	lbf/ft <sup>2</sup>
kp/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

kg/cm<sup>2</sup> = 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	ca

## Approx. conversion

SI unit	Conversion factor	Non SI	Conversion factor	SI
<b>Torque</b>				
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
<b>Pressure (Pa = N/m<sup>2</sup>)</b>				
kPa	x4.0	=in.H <sub>2</sub> O	x0.249	=kPa
kPa	x0.30	=in.Hg	x3.38	=kPa
kPa	x0.145	=psi	x6.89	=kPa
bar	x14.5	=psi	x0.069	=bar
kp/cm <sup>2</sup>	x14.22	=psi	x0.070	=kp/cm <sup>2</sup>
N/mm <sup>2</sup>	x145.04	=psi	x0.069	=bar
MPa	x145	=psi	x0.00689	=MPa
<b>Power (W = J/s)</b>				

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 <sup>2</sup>	x3.28	=ft/s <sup>2</sup>	x0.305	=m/s <sup>2</sup>
m/s	x3.28	=ft/s	x0.305	=m/s
km/h	x0.62	=mph	x1.61	=km/h
Horsepower/torque				
Bhp x5252 rpm= TQ (lb-ft)			TQ x rpm 5252=bhp	
Temperature				
$^{\circ}\text{C} = (^{\circ}\text{F} - 32) / 1.8$			$^{\circ}\text{F} = (^{\circ}\text{C} \times 1.8) + 32$	
Flow factor				
l/min (dm <sup>3</sup> /min)	x0.264	= US gal/min	x3.785	= liter/min

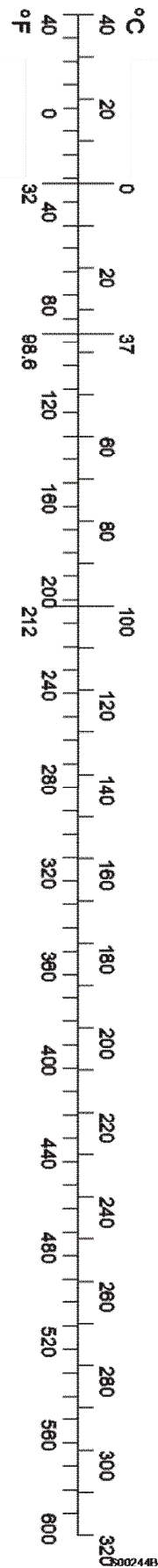


Figure 1

Document Title: <b>Volvo standard tightening torques</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
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## Volvo standard tightening torques

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EWR170E 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

Document Title: <b>Machine weights</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
Profile: <b>EWR170E Volvo</b>			

## Machine weights

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
EWR170E Volvo			

Total machine weight with	Blade rear only	Blade and outriggers
5.1 m (16 ft 9 in) two-piece boom, 2.45 m (8 ft 0.5 in) dipper arm, Attachment quick coupler S6, 410 kg / 580 l bucket	17950 kg (39573 lb)	19200 kg (42329 lb)
5.2 m (17 ft 0.7 in) two-piece offset boom, 2.45 m (8 ft 0.5 in) dipper arm, Attachment quick coupler S6, 410 kg / 580 l bucket	18500 kg (40786 lb)	19700 kg (43431 lb)

Document Title: <b>Specifications, weight</b>	Function Group: <b>030</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
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## Specifications, weight

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Valid for serial numbers			
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Machine	<a href="#">Machine weights</a>
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Engine	<a href="#">Engine, specifications</a>
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Main pump	<a href="#">Hydraulic pump, specifications</a>
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Fuel tank	<a href="#">Fuel tank, specifications</a>
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Hydraulic oil tank	<a href="#">Hydraulic tank, specifications</a>
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Transmission, gearbox	<a href="#">Travel gearbox, specifications</a>
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Swing motor	<a href="#">Swing motor, specifications</a>
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Front axle, complete	<a href="#">Front axle, specification</a>
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Rear axle, complete	<a href="#">Rear axle, specification</a>
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Counterweight	<a href="#">Counterweight, specifications</a>
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Swing ring gear	<a href="#">Swing ring gear, specifications</a>
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Cab	<a href="#">Cab, weight</a>
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Operator seat	<a href="#">Cab, weight</a>
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Document Title: <b>Lifting instructions</b>	Function Group: <b>050</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
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## Lifting instructions

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
EWR170E Volvo			

### **WARNING**

Risk of personal injury.

Faulty or improper lifting equipment could cause the machine to break away from the lifting vehicle, causing accidents, serious injury or death.

**Use certified cables, lifting straps, slings, shackles and hooks with adequate load capacity and never lift the machine with a person in or on the machine.**

For more information, see operator's manual section [Lifting machine](#).

Document Title: <b>Measurements before transporting machine</b>	Function Group: <b>050</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
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## Measurements before transporting machine

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Valid for serial numbers			
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### **NOTICE**

**The person in charge of the transport must see to that loading, positioning, lashing and transporting the machine on a trailer or other vehicle is done according to applicable laws and regulations for the country or state in question. For further information, contact your dealer.**

#### **Inspections and actions before transport:**

- Inspect lifting or tying-down attachment points on the machine and the trailer for wear and damage before transport and at each service. If they are worn or damaged they must be replaced before transport.
- Choose adequate lashing equipment according to the tables on the next pages.
- Inspect lashing equipment before use. If it shows signs of wear or damage it must not be used, replace it immediately.
- Check that the loading surface of the trailer is free of oil, dirt and ice.
- Clean the machine from mud and stones to avoid pollution on the road and damage on other vehicles.
- Fold down or remove antennas and the rotating beacon on the machine.
- Engage the pivot axle locking and swing brake on the machine before loading on the trailer, see operator's manual section: [Pivot axle locking](#).
- Lock all doors and covers on the machine.

Document Title: <b>Tying down machine</b>	Function Group: <b>050</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
Profile: <b>EWR170E Volvo</b>			

## Tying down machine

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<b>Valid for serial numbers</b>			
<b>Model</b>	<b>Production site</b>	<b>Serial number start</b>	<b>Serial number stop</b>
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For more information, see operator's manual section [Tying down machine](#).

Document Title: <b>Operation numbers for additional work</b>	Function Group: <b>070</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
Profile: <b>Excavators (EXC)</b>			

## Operation numbers for additional work

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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>Infrared Thermometer</b>	Function Group: <b>080</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
Profile: <b>EWR170E Volvo</b>			

## Infrared Thermometer

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Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
EWR170E 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.

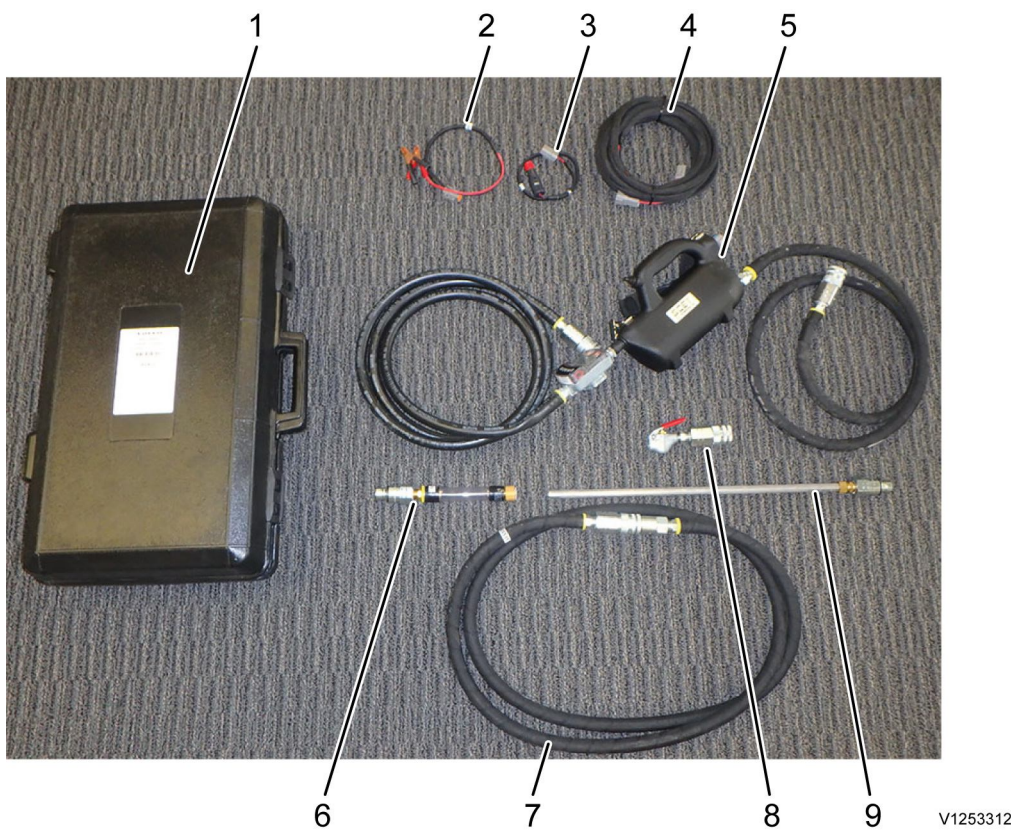
Document Title: <b>88830657 User Instruction</b>	Function Group: <b>080</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
Profile: <b>EWR170E Volvo</b>			

## 88830657 User Instruction

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
EWR170E Volvo			

88830657 Pump is adapted for draining and filling oils in the machine.  
Do not use the pump for coolant or AdBlue®/DEF.



**Figure 1**  
88830657Pump

1. Transport case
2. Power adapter, battery
3. Power adapter, 12 V/24V-outlet
4. Power cable
5. Pump with flow meter and hose 2x2 metres (79 in)
6. Hose adapter for connecting to drain/fill nipple
7. Extension hose 3 metres (118 in)
8. Adapter
9. Suction pipe

### Power supply

Connection of the pump to a power source can take place in two ways:

#### Power socket

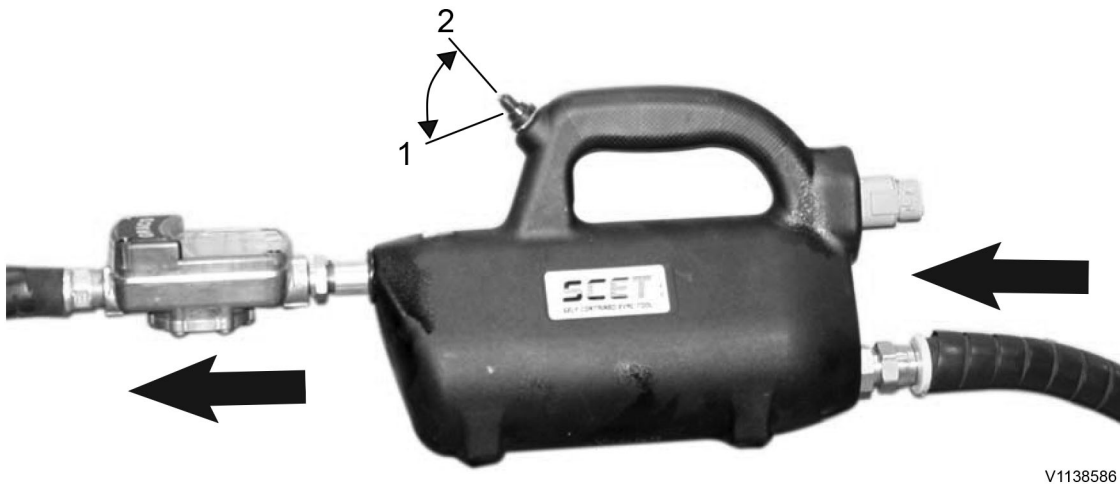
Connect the power adapter to the power socket of the machine.

#### Battery

Connect the power adapter to the battery on the machine.

Red clamp to the positive (plus) connection and black clamp to the negative (minus) connection.

### Draining / Filling



**Figure 2**

Flow direction,

1. Rocker-return pumping position
2. OFF
3. Fixed pumping position

#### NOTE!

Always complete draining and filling in one operation to avoid pumping in the wrong oil type in the system.

### Draining

1. Connect the pump to a suitable power source.
2. Connect the pump to the prescribed drain point with suitable adapter. The pump should always be connected so that the oil is pumped in the direction of the arrow, as shown in figure.
3. Hang up the pump in a suitable place for easier operation and reading of the flow meter.
4. Insert the drain hose in a suitable container.
5. Start the pump with the switch. The switch has three positions: OFF, rocker-return pumping position, and fixed pumping position.
6. Turn off the pump when the system is empty.

#### NOTE!

If the pump is not used for draining, then before filling it is important to make sure that the wrong oil type is not pumped into the system. This is done by rinsing the pump and its hoses with at least 2 litres (0.53 US gal) of the prescribed oil type.

### Filling

1. Connect the pump to the prescribed fill point with suitable adapter. The pump should always be connected so that the oil is pumped in the direction of the arrow, as shown in figure.
2. Insert the pump's suction hose with the suction pipe in a container with new oil.
3. Start the pump with the switch. The switch has three positions: OFF, rocker-return pumping position, and fixed

- pumping position.
4. Fill the indicated oil volume.

Document Title: <b>88830540 User Instruction</b>	Function Group: <b>080</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
Profile: <b>EWR170E Volvo</b>			

## 88830540 User Instruction

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
EWR170E Volvo			

### NOTE!

Optional special tool for calibrating the Dig Assist linkage.

Use in combination with laser level "Bosch GPL 3 Professional" only.

### NOTE!

If laser level "Bosch GPL 3 G PROFESSIONAL" is used, replace the bracket (1) by a modified bracket. See [E-3511](#). This is necessary due to a different height of the new laser.

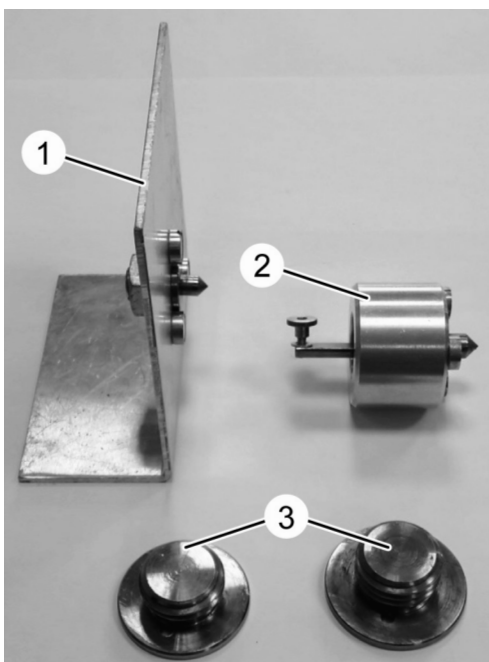
Refer to [36703-3 Dig Assist, calibration, linkage](#).

### Op nbr

### Tools:

[88830540 Fixture](#)

1. Attach the bracket (1) to an arm or boom pin.  
Place the laser level on the bracket.

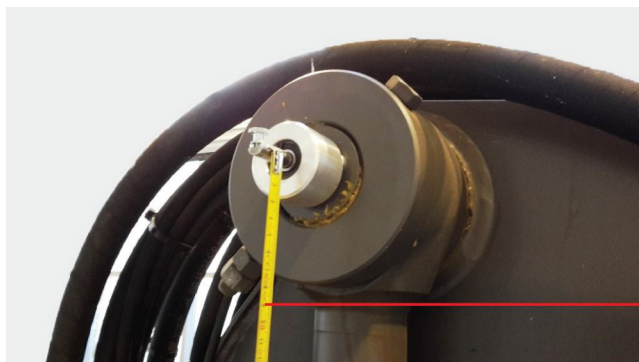


V1180925

**Figure 1**  
88830540

1. Bracket for laser level
  2. Bracket for measuring tape
  3. Centering plugs
2. Attach the bracket (2) to an arm or boom pin.  
Fix the measuring tape to the bracket.
  3. Use the centering plugs if there is no center hole in the pin.

### Examples



V1177298

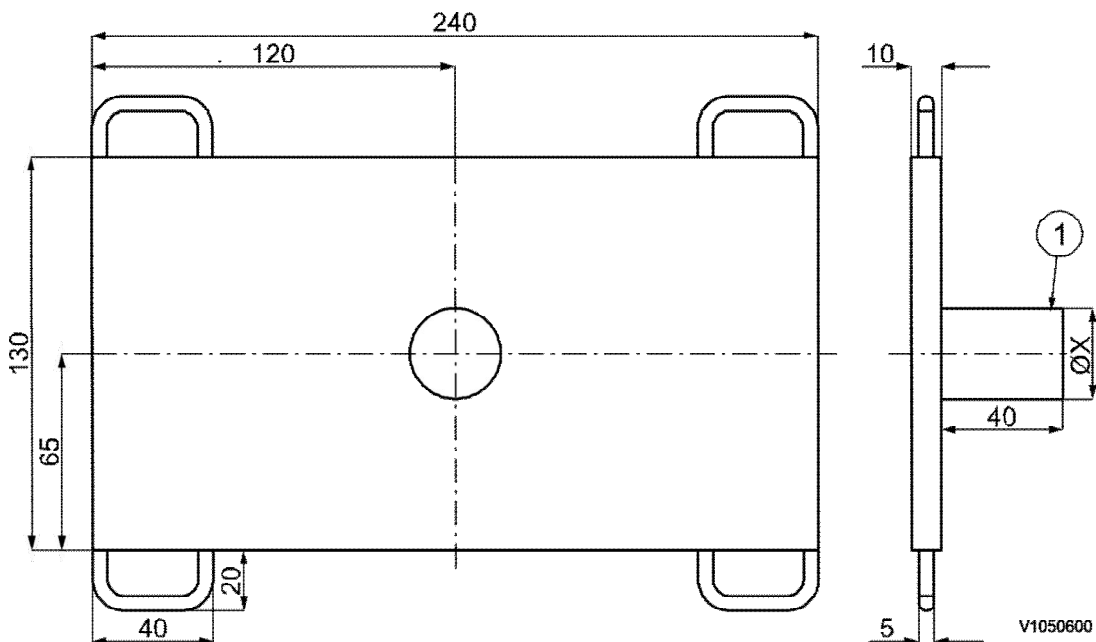
Figure 2

Document Title: <b>E-tool, 3500 Support plate for travel gearbox and motor</b>	Function Group: <b>080</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
Profile: <b>EWR170E Volvo</b>			

### E-tool, 3500 Support plate for travel gearbox and motor

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
EWR170E Volvo			



**Figure 1**

Support plate

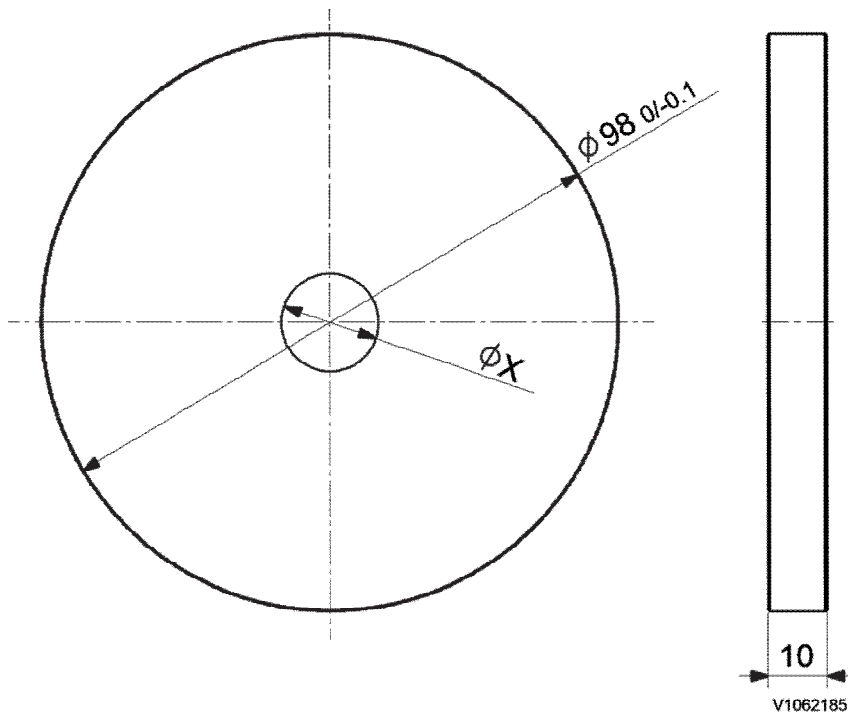
1. Axle, the dimension  $\varnothing X$  adapted to the jack

Document Title: <b>E-tool, 3502 Plate for turning crankshaft</b>	Function Group: <b>080</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
Profile: <b>EWR170E Volvo, EWR170E Volvo</b>			

## E-tool, 3502 Plate for turning crankshaft

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
EWR170E Volvo			
EWR170E Volvo			



**Figure 1**  
Support plate for engine valve clearance adjusting (unit: mm)

X: Shaft diameter of a ratchet extension

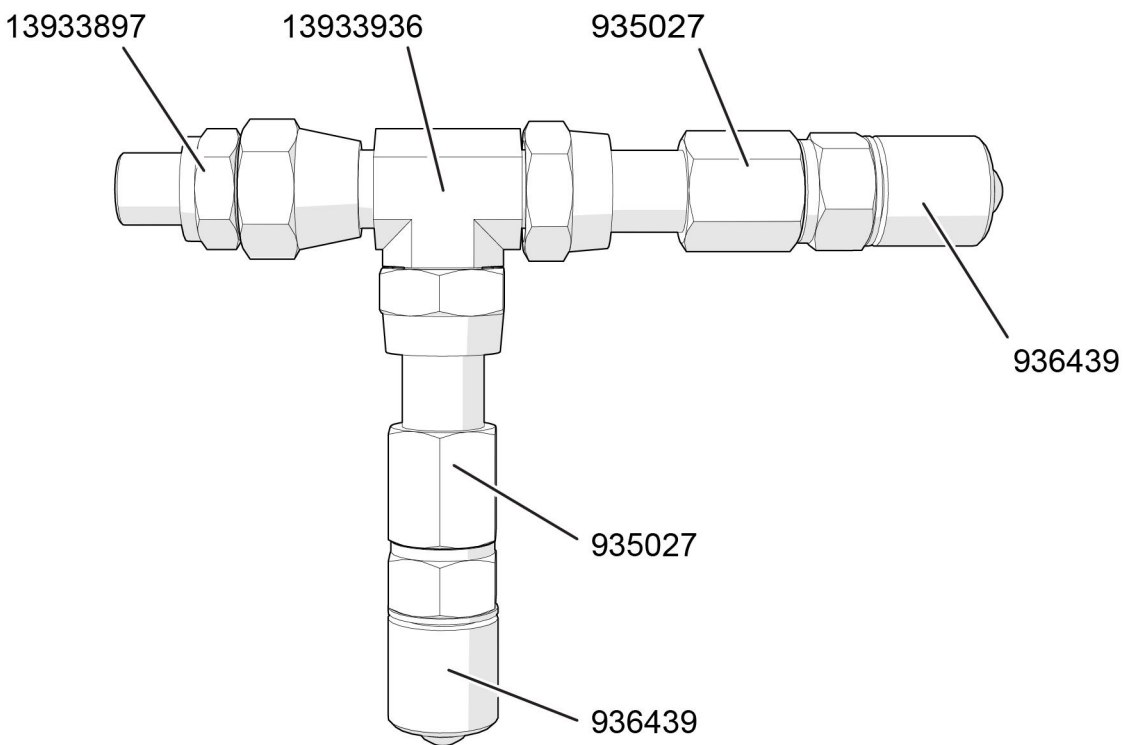
Material: Steel or plastic

Document Title: <b>E-3508</b>	Function Group: <b>080</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
Profile: <b>EWR170E Volvo</b>			

### E-3508

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
EWR170E Volvo			



V1180183

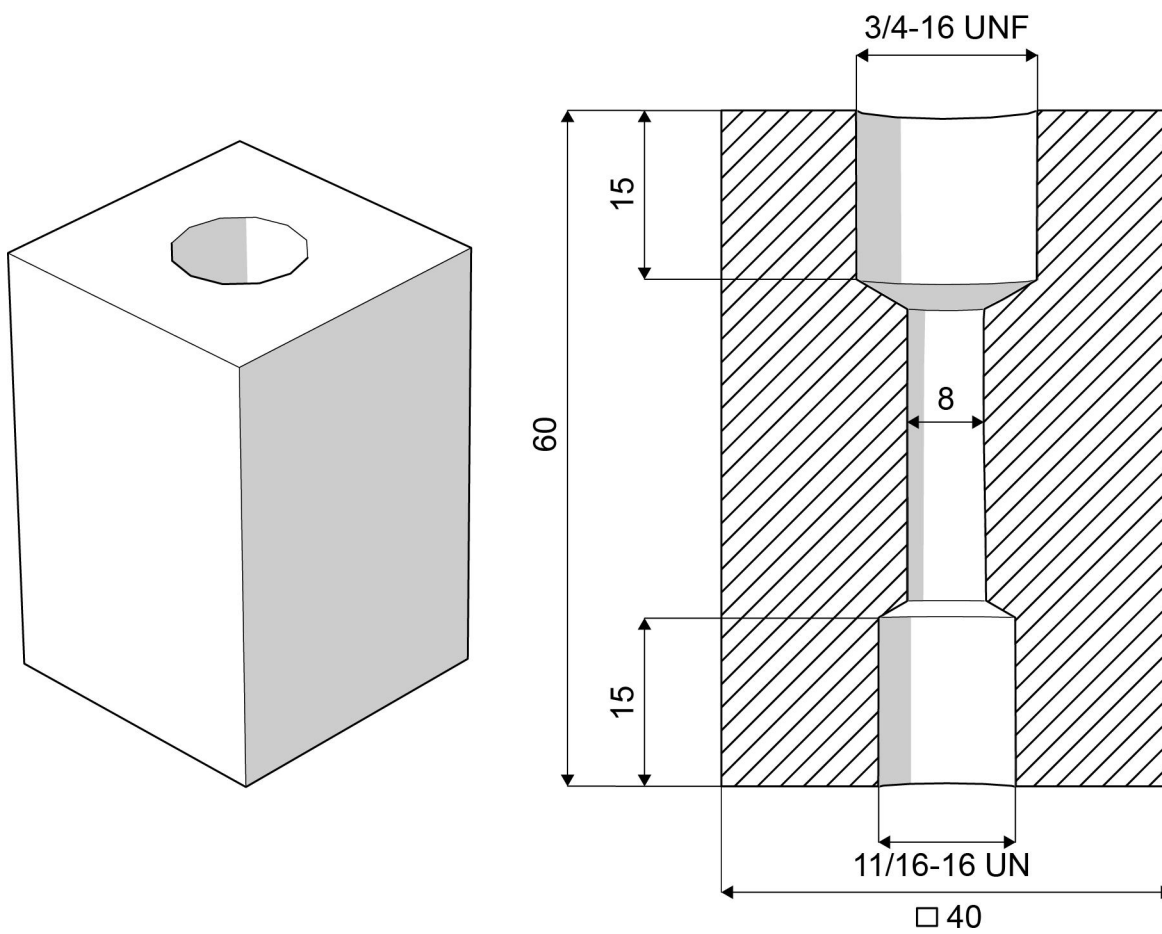
**Figure 1**  
Hydraulic components

Document Title: <b>E-3509</b>	Function Group: <b>080</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
Profile: <b>EWR170E Volvo</b>			

### E-3509

Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
EWR170E Volvo			



V1180182

**Figure 1**  
Testing block out of metal

Document Title: <b>E-3511</b>	Function Group: <b>080</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
Profile: <b>EWR170E Volvo</b>			

### E-3511

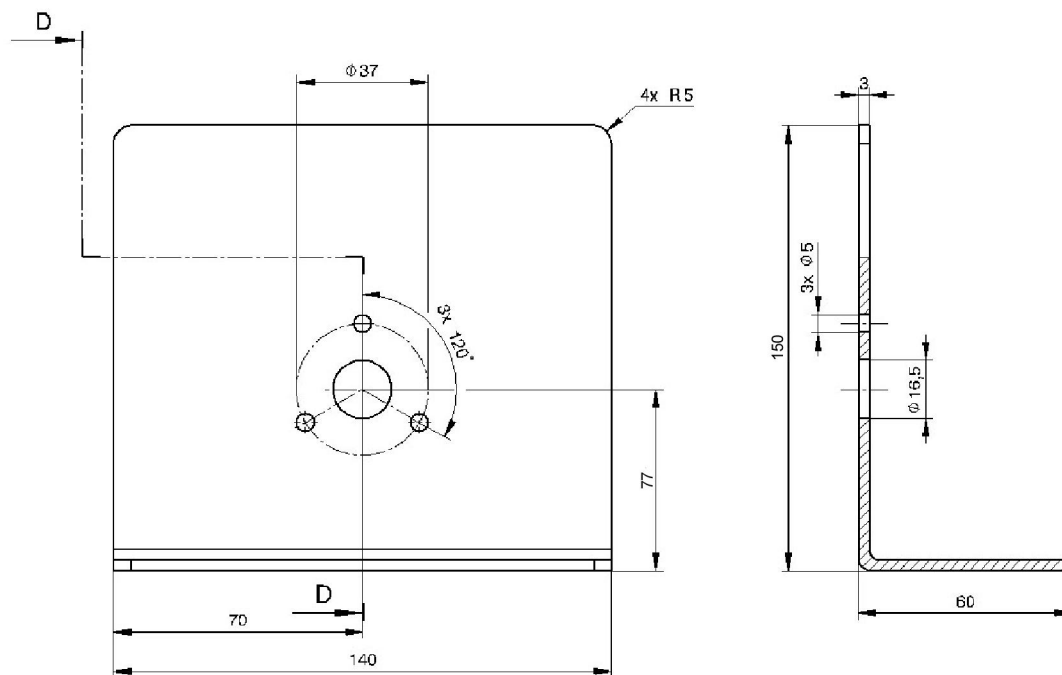
Showing Selected Profile

Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
EWR170E Volvo			

#### Bracket for new laser Bosch GPL with 77mm laserpoint – height

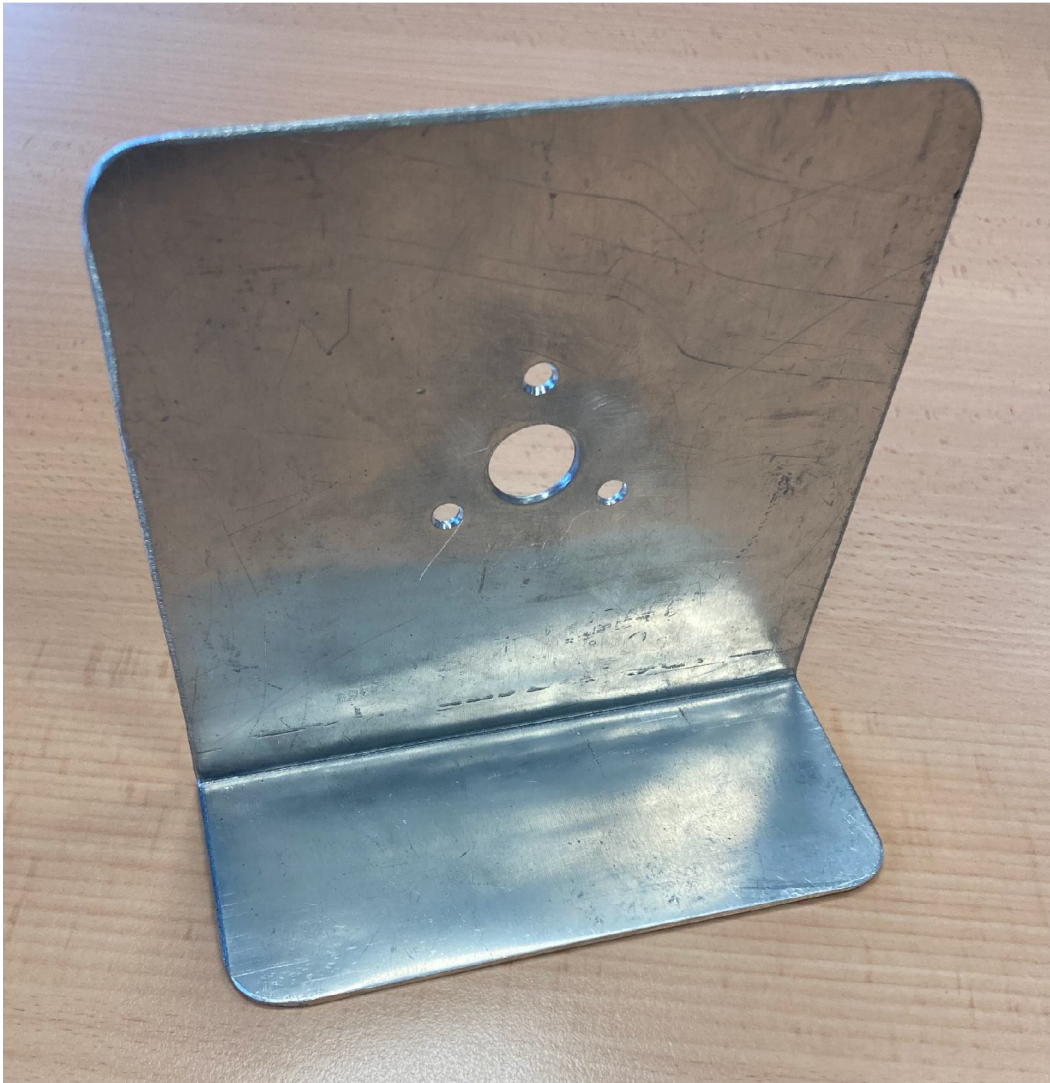
This bracket is an additional E-Tool for the Special Tool Part No.88830540 in case a laser with 77mm laserpoint height is used. see: [36703-3 Dig Assist. calibration, linkage](#)

Dimensions on the drawing are given in mm.



V1231147

**Figure 1**  
Drawing



V1231148

**Figure 2**

Bracket

Centre adjustment and magnets are to be used from the existing bracket.

Document Title: <b>E-3512</b>	Function Group: <b>080</b>	Information Type: <b>Service Information</b>	Date: <b>3/27/2026</b>
Profile: <b>EWR170E Volvo</b>			

## E-3512

Showing Selected Profile

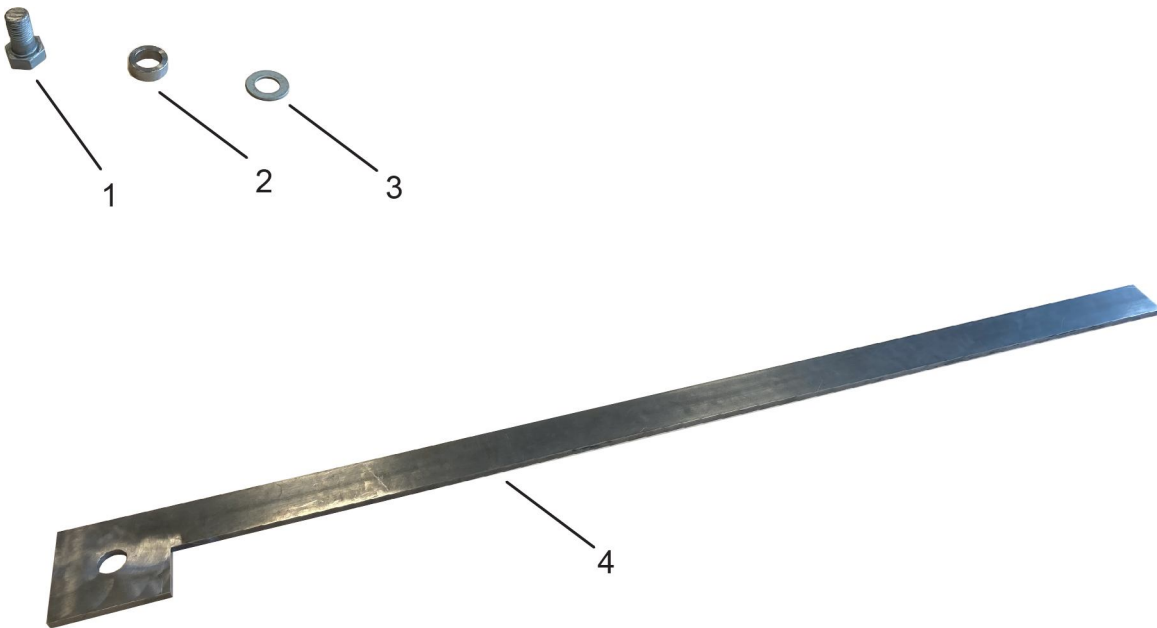
Valid for serial numbers			
Model	Production site	Serial number start	Serial number stop
EWR170E Volvo			

This tool is necessary for the Dig Assist GNSS antennas position, adjusting. see [Dig Assist GNSS antennas position, adjusting](#)

### Measuring tool to aligning with the centre point of the boom pin.

**NOTE!**

In order to use the e-tool as intended, it must consist of the following components:



V1231959

**Figure 1**

E-3512

Position in fig.1	Description	Part no	Qty
1	Hexagon Screw M30x90 (cut off 300 mm)	60110043 (Figure 4)	1