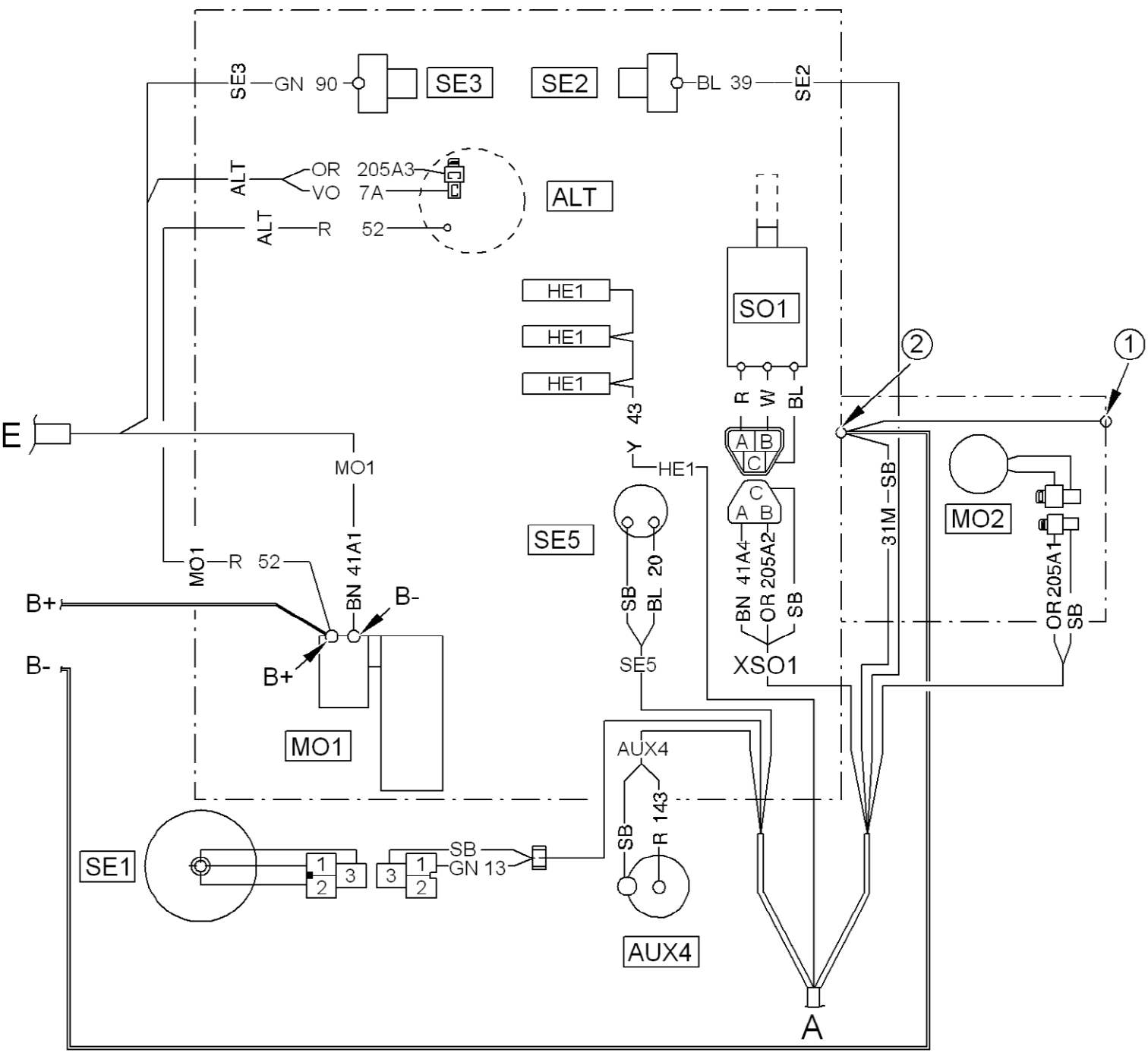

SE3
GN 90
SE3
SE2
BL 39
SE2
ALT
OR 205A3
VO 7A
ALT
ALT
R 52
ALT
HE1
HE1
HE1
43
SO1
R
W
BL
A
B
C
E
MO1
Y
HE1
C
A
B
SE5
MO1
R 52
BN 41A1
B+
B-
B+
B-
SB
BL 20
SE5
BN 41A4
OR 205A2
SB
XSO1
2
1
31M
SB
MO2
OR 205A1
SB
AUX4
SB
R 143
SE1
1
2
3
3
1
2
SB
GN 13
AUX4
A

E150108A

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Engine, hydraulic system side**	Function Group : **371**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Engine, hydraulic system side

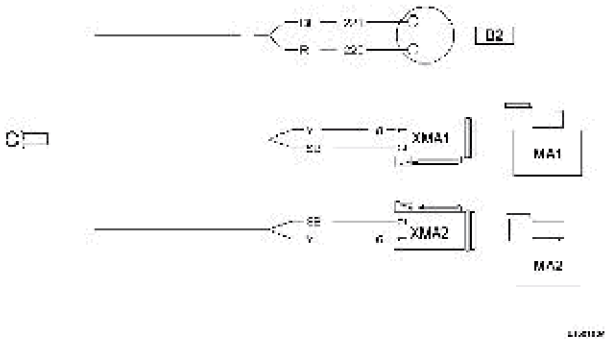
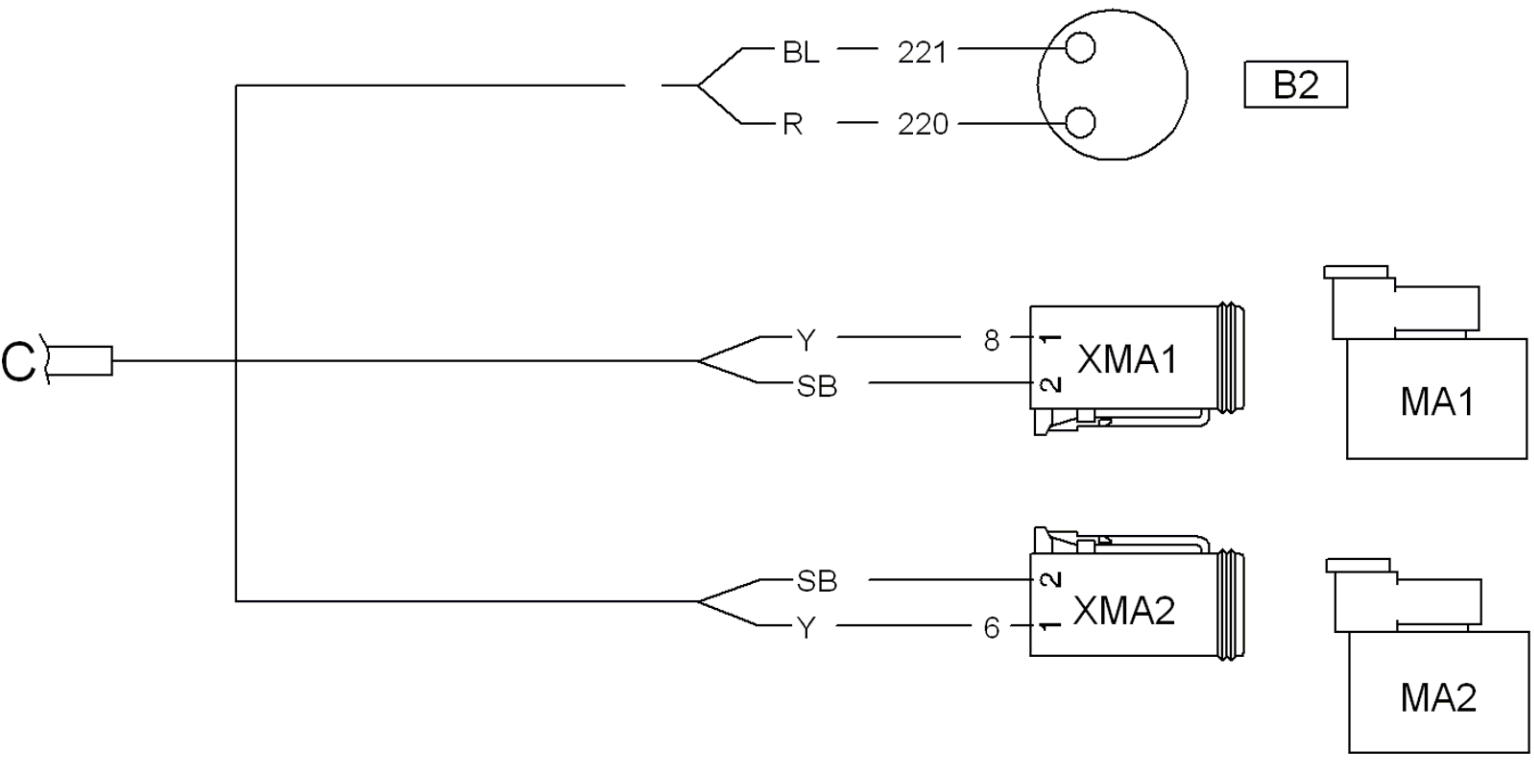


Figure 1

C To main wiring loom point **C**



E150110A

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Fuses for machine equipment**	Function Group : **372**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Fuses for machine equipment

The batteries are located under the driver"s seat, on the right hand side.

WARNING! **Use only fuses of specified capacity (amperage). Danger of damage or fire in the electrical system!**

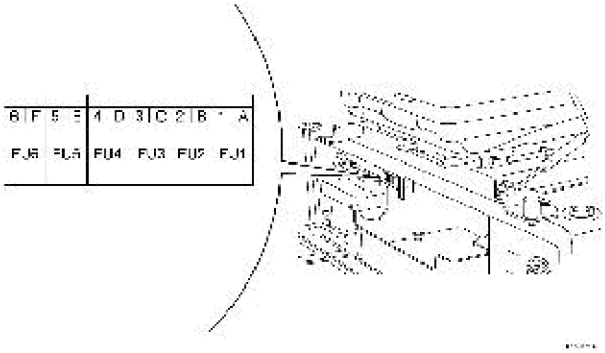


Figure 1

FU1	5 A Lock	Engine, dashboard, optional immobilizer
FU2	10 A Lock	Slewing/offset, hydraulic support, safe starting
FU3	10 A Lock	2-speeds, optional unlocking of attachments, variable track, equipment, accessories
FU4	20 A Lock	Lighting
FU5	15 A Lock	Cabin and optional travel alarm system
FU6	15 A Lock	Main signal horn, service plug, car radio memory, optional flashing beacon, immobilizer

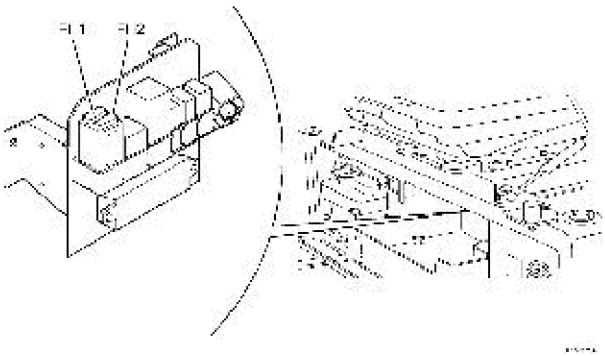
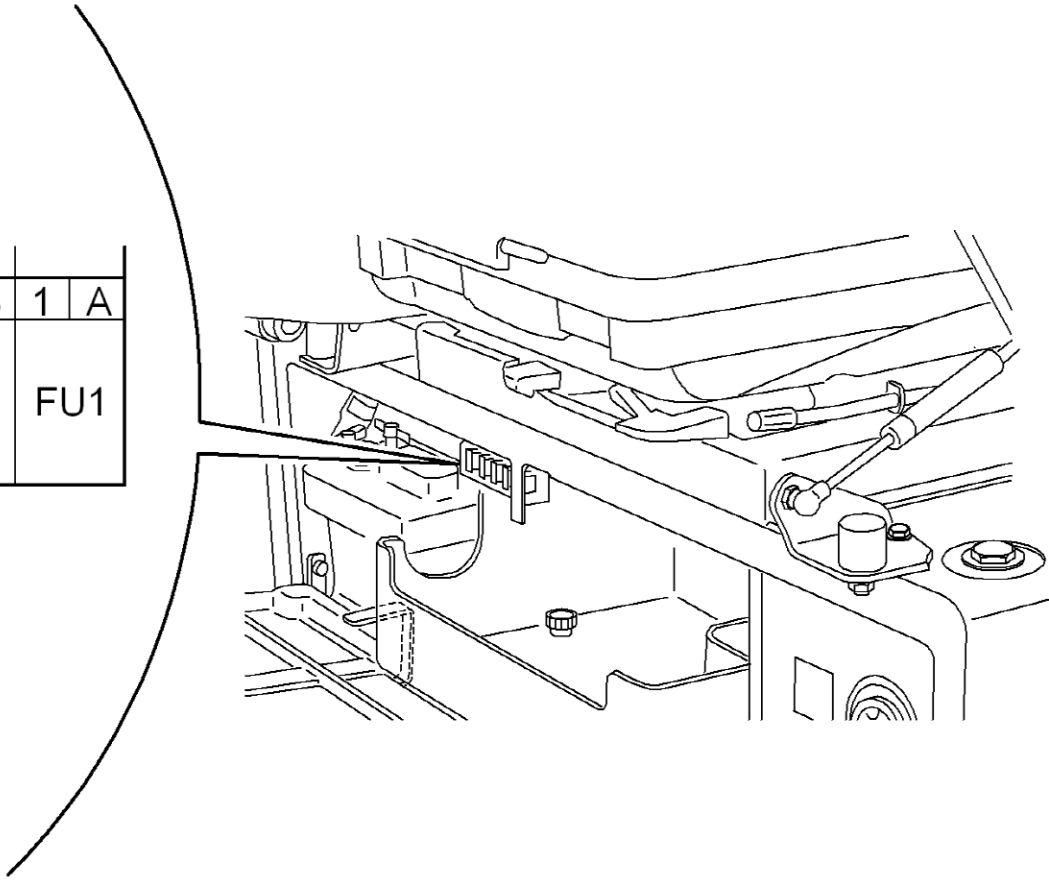


Figure 2

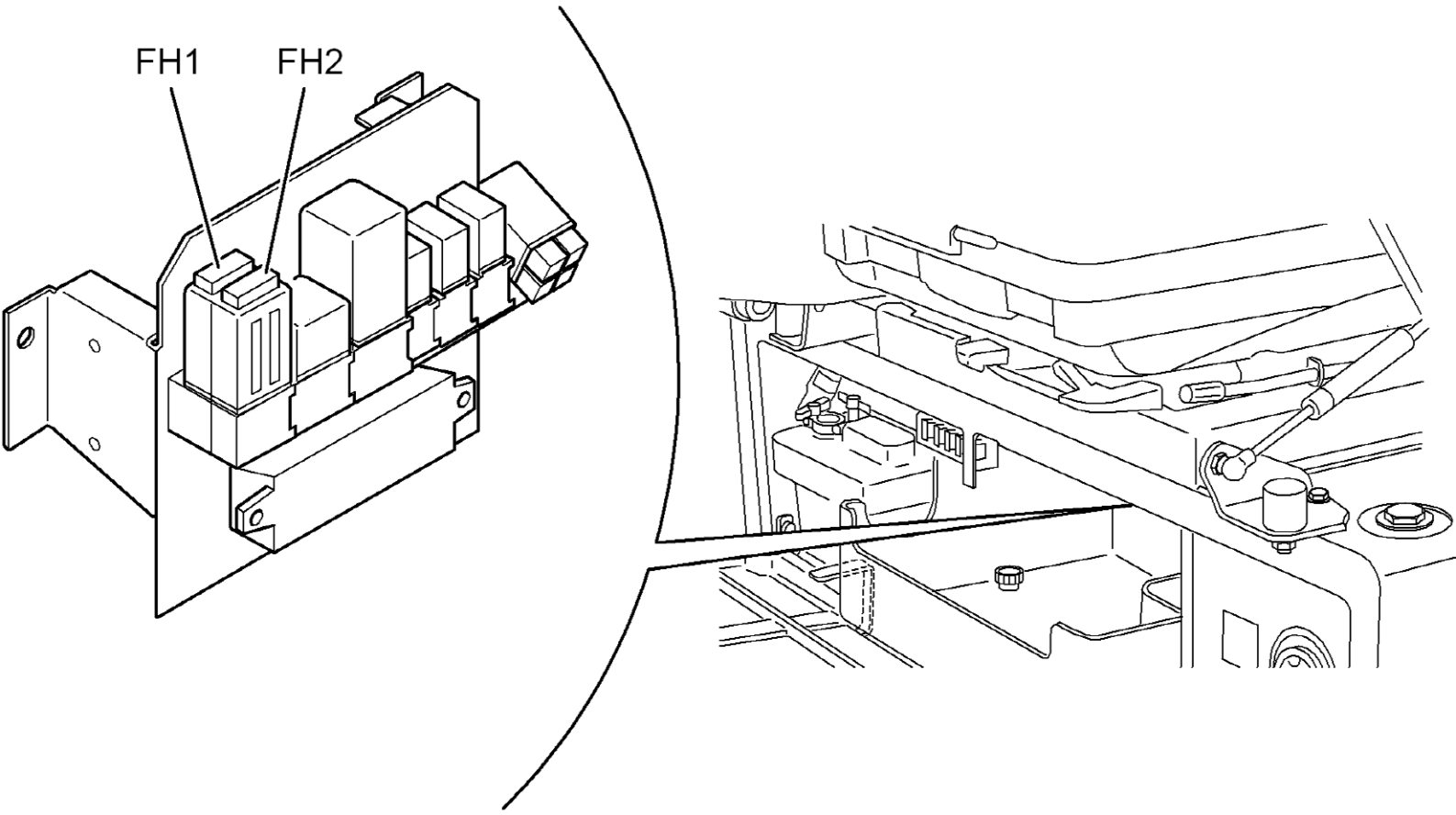
FH1	40 A Slow	Main fuse

FH2	50 A	Fuse, pre-heating element

6	F	5	E	4	D	3	C	2	B	1	A
FU6		FU5		FU4		FU3		FU2		FU1	



E150070A



E150071A

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Relay/ECU**	Function Group : **372**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Relay/ECU

The relay are located under the driver"s seat, on the right hand side.

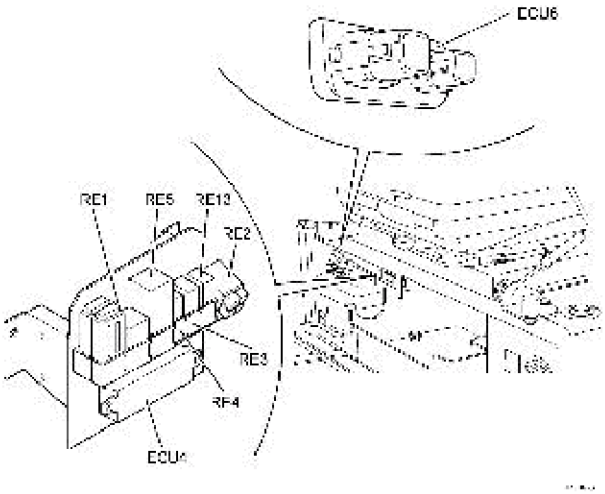
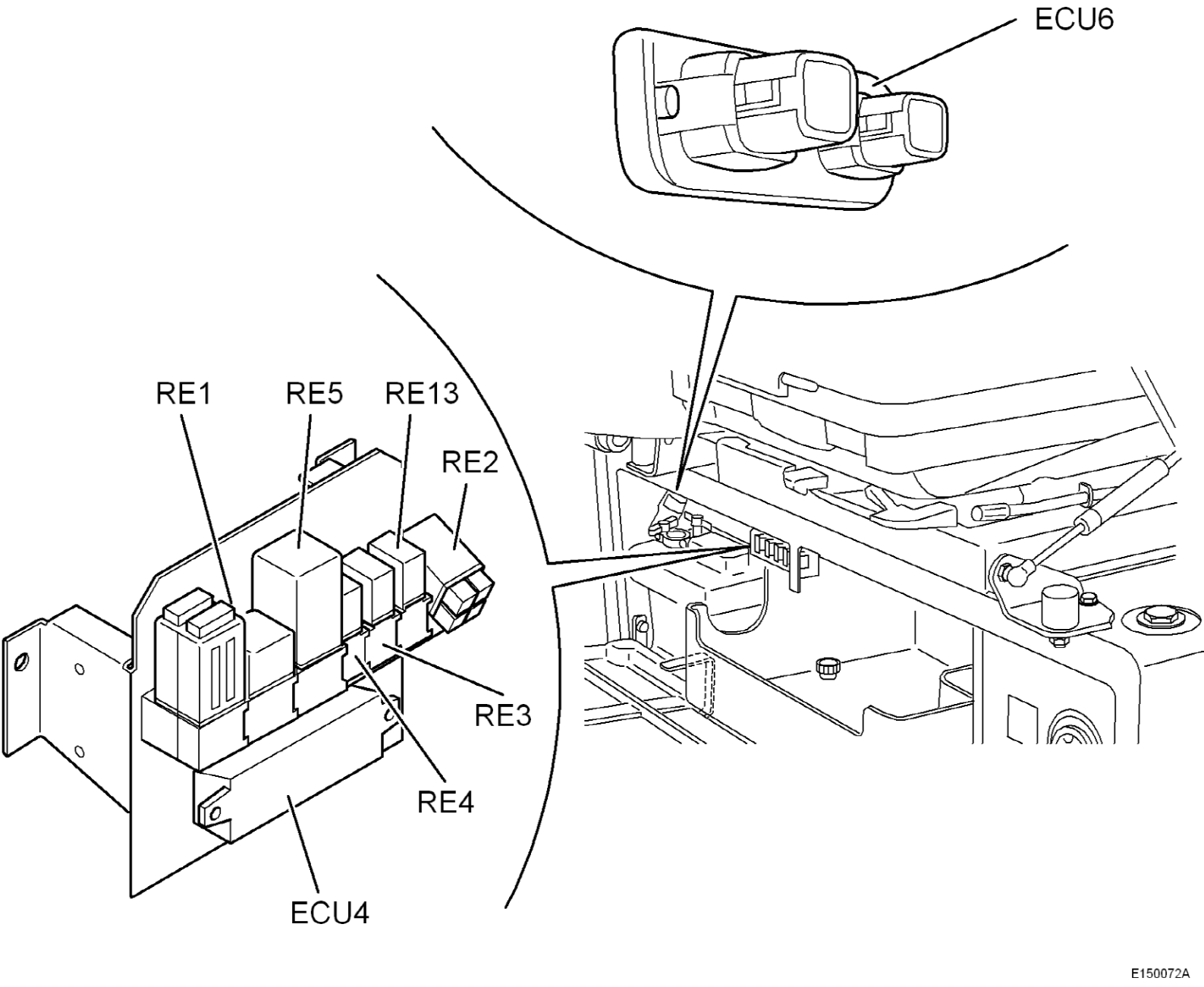


Figure 1

ECU4	Control unit	Engine control
ECU6	Relay	Congtrol unit for numerical immobilizer
RE1	Relay	Starter
RE2	Relay	Pre-heating element
RE3	Relay	Headlights, cabin/boom
RE4	Relay	Engine safety
RE5	Relay	Slewing/offsetting
RE7	Relay	Pre-heating time
RE13	Relay	Safety, hydraulics



E150072A

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Relay group**	Function Group : **372**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Relay group

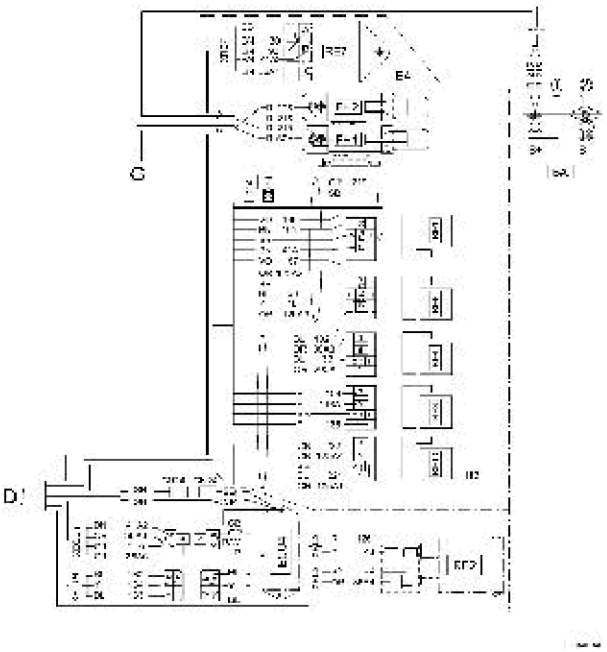
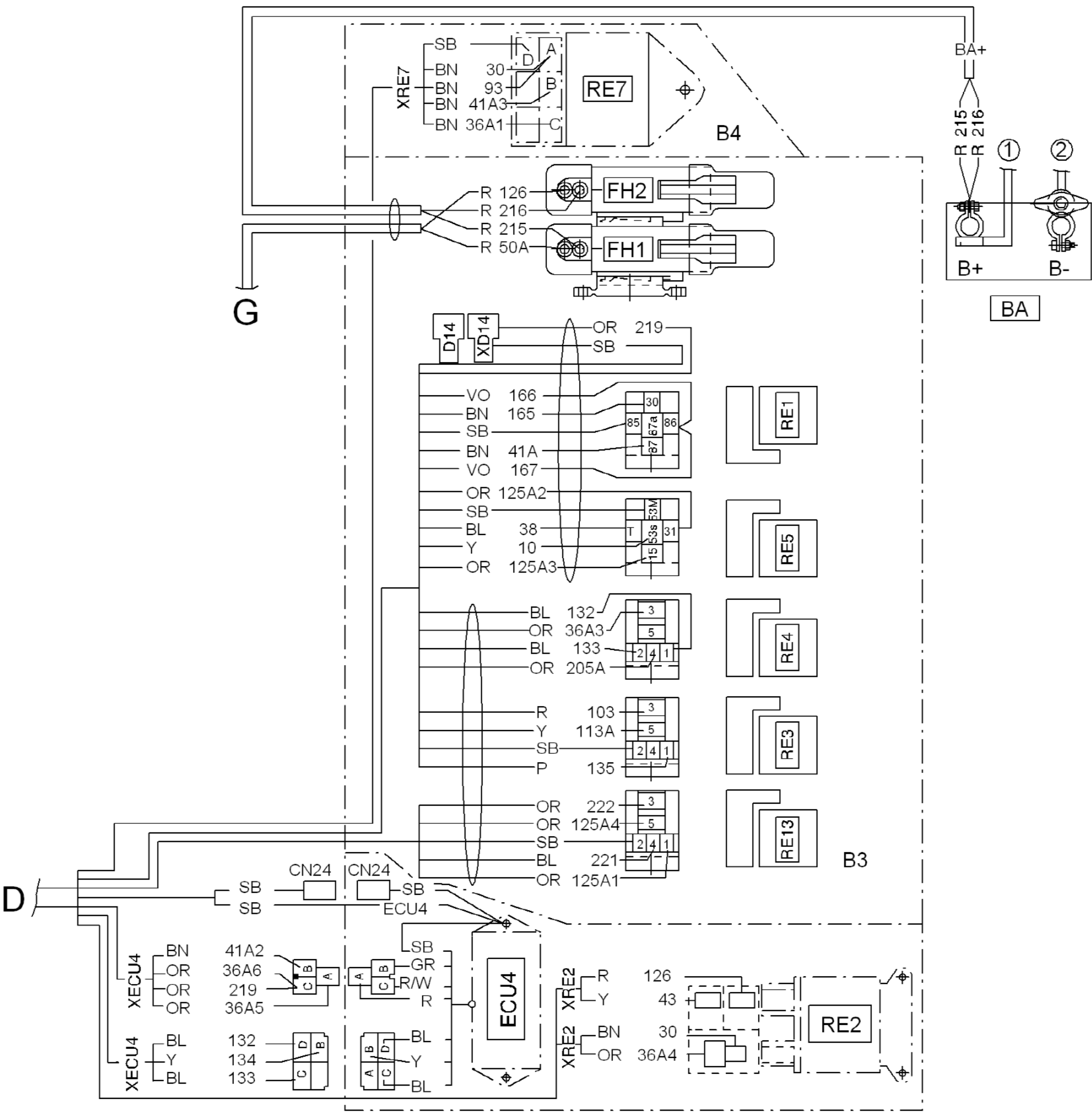


Figure 1

1 To starter, terminal R+
2 To ground connection on engine block, point **B**
D To main wiring loom point **D**
G To wiring loom for fuse box, point **G**


BA+
R 215
R 216
B+
B-
BA
RE7
XRE7
SB
BN 30
BN 93
BN 41A3
BN 36A1
B4
FH2
FH1
R 126
R 216
R 215
R 50A
G
D14
XD14
OR 219
SB
VO 166
BN 165
SB
BN 41A
VO 167
RE1
OR 125A2
SB
BL 38
Y 10
OR 125A3
RE5
BL 132
OR 36A3
BL 133
OR 205A
RE4
R 103
Y 113A
SB
P 135
RE3
OR 222
OR 125A4
SB
BL 221
OR 125A1
RE13
B3
D
CN24
CN24
SB
SB
ECU4
XECU4
BN 41A2
OR 36A6
OR 219
OR 36A5
SB
GR
R/W
R
ECU4
XECU4
BL 132
Y 134
BL 133
BL
Y
BL
XRE2
R 126
Y 43
XRE2
BN 30
OR 36A4
RE2

E150109A

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Electrical components (hydraulic system side)**	Function Group : **380**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Electrical components (hydraulic system side)

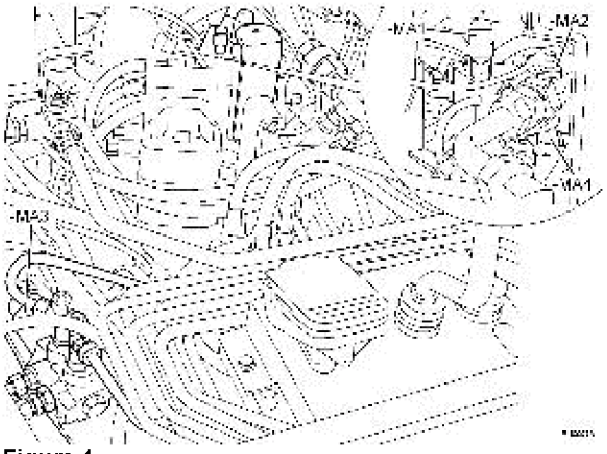
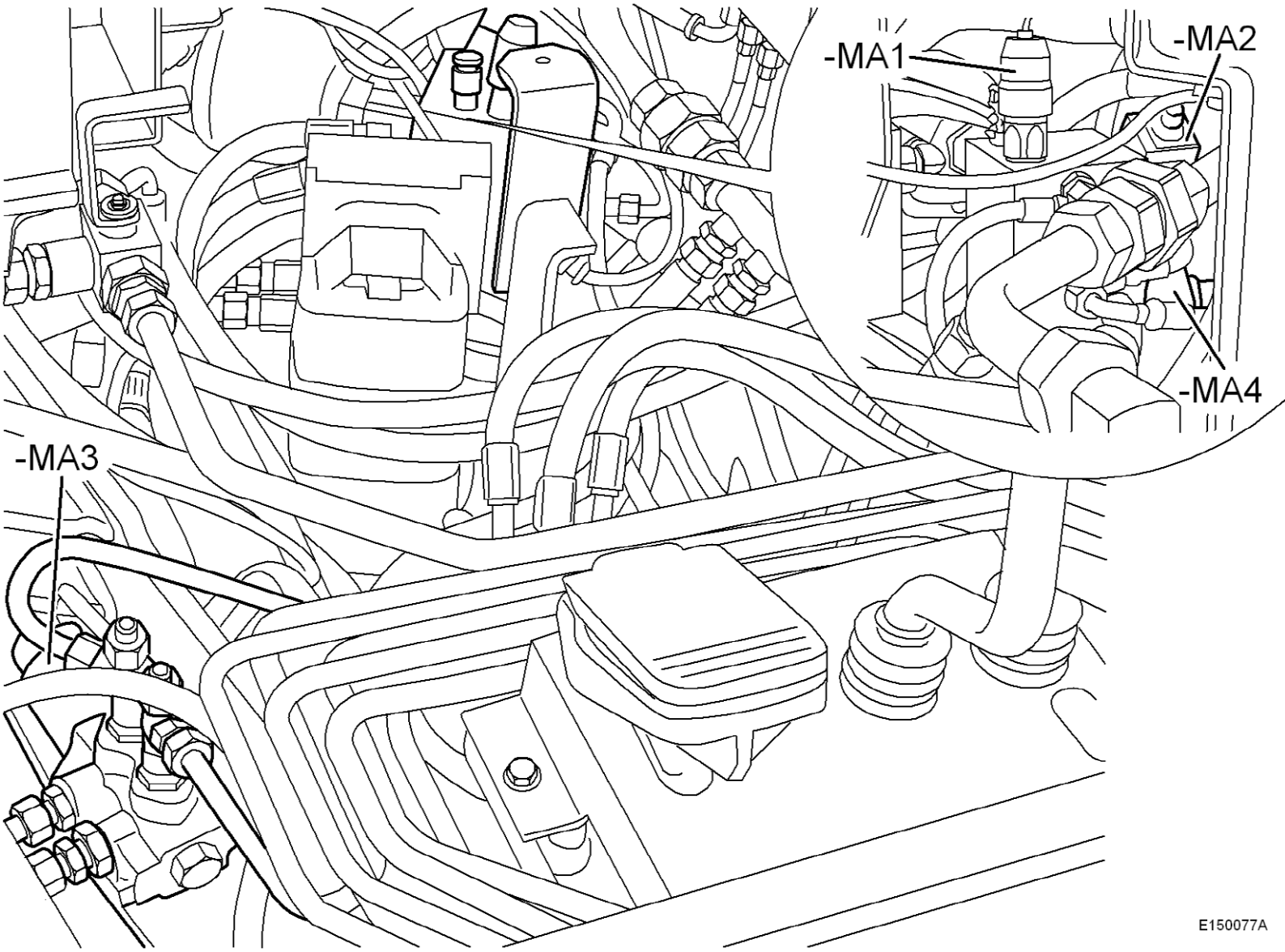


Figure 1

- **MA1** Safety solenoid valve, hydraulics
- **MA2** 2-speeds solenoid valve
- **MA3** Solenoid valve, slewing/offsetting
- **MA4** Solenoid valve, variable track

The solenoid valves are located in the driver"s cab under the floor plate.


-MA1
-MA2
-MA4
-MA3
E150077A

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Electrical components (machine side)**	Function Group : **380**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Electrical components (machine side)

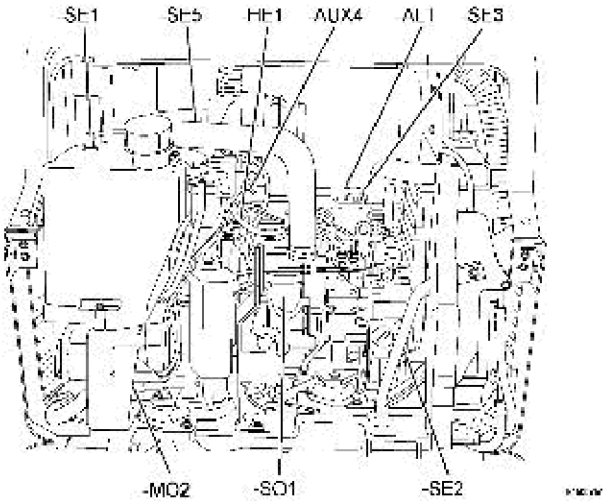


Figure 1

- **-ALT** Generator
- **-AUX4** Socket
- **-HE1** Glow plugs
- **-MO2** Fuel pump
- **-SE1** Transducer Fuel
- **-SE2** Transducer Engine oil pressure
- **-SE3** Transducer Coolant
- **-SE5** Transducer Air filter
- **-SO1** Magnet Engine shut down

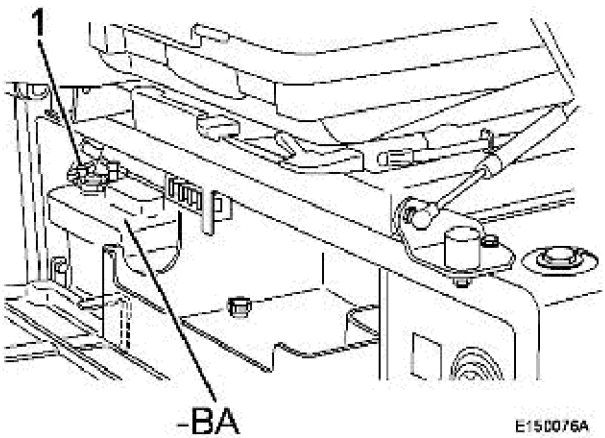
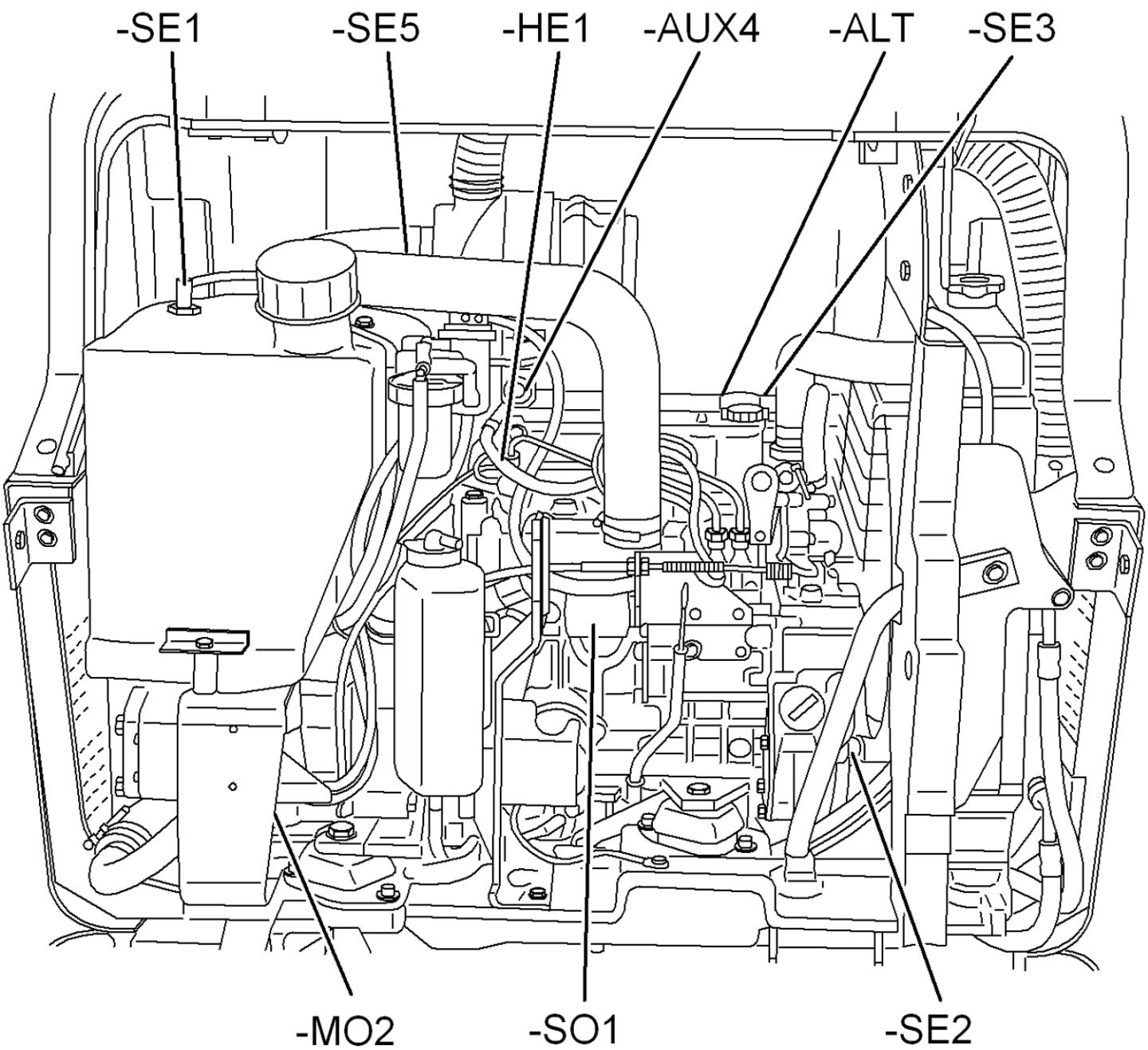
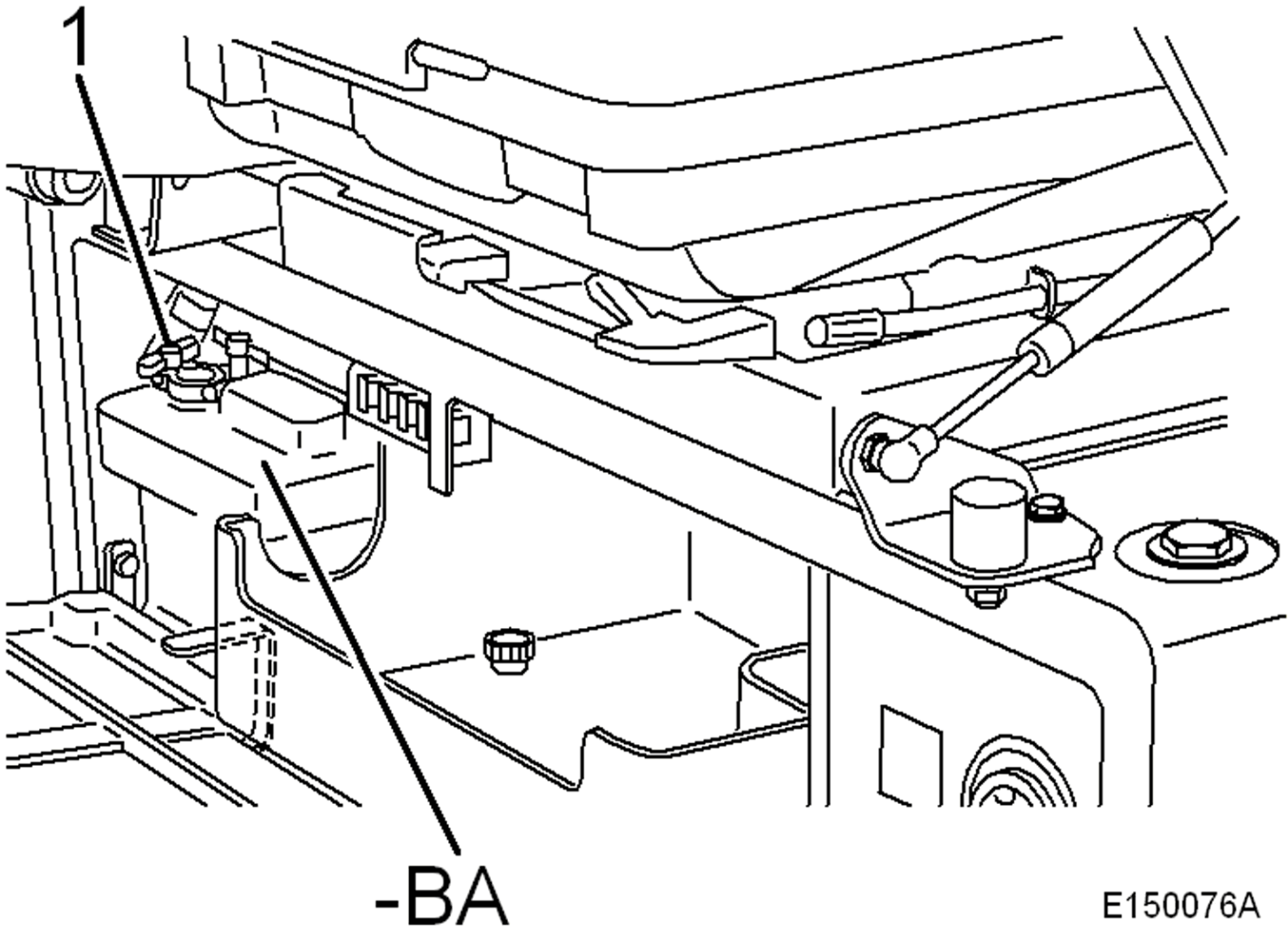


Figure 2

- **1** Battery disconnect terminal (screw clamp)
- **-BA** Battery



E150075A


1
-BA
E150076A

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Electrical components (machine side)**	Function Group : **386**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Electrical components (machine side)

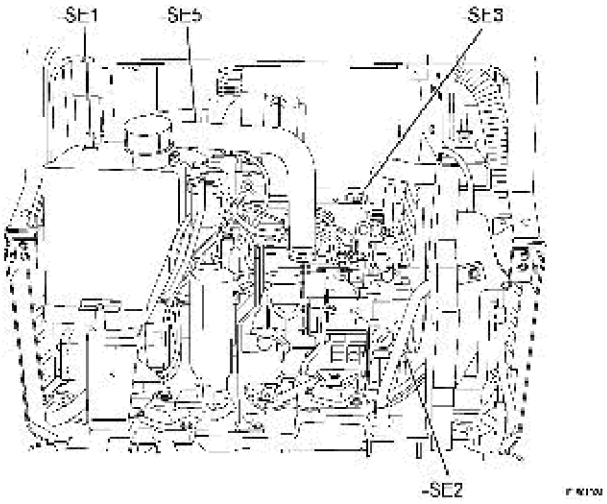


Figure 1

- **SE1** Sensor, fuel tank
- **SE2** Engine oil pressure sensor
- **SE3** Coolant sensor
- **SE5** Sensor for air filter

Fuses

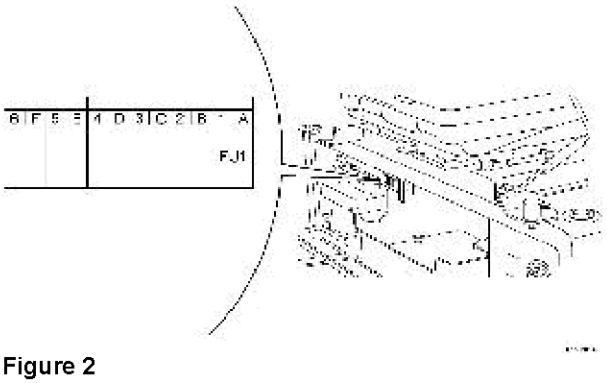


Figure 2

- **FU1/5 A** Fuse for engine, dashboard, immobilizer

Sensor, control/warning system

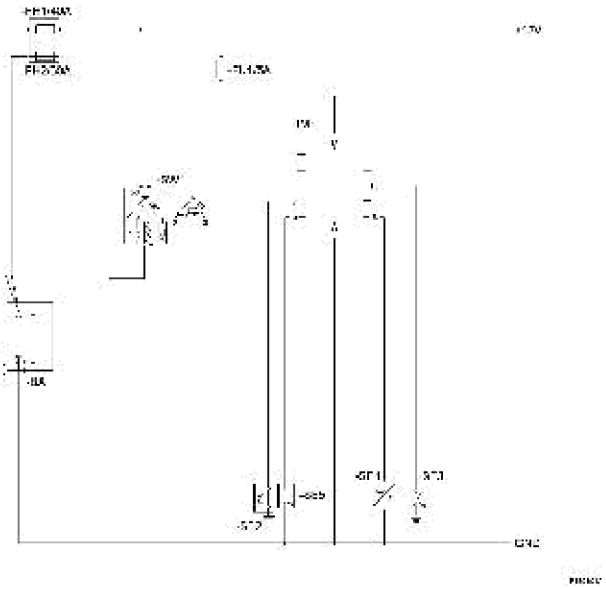


Figure 3

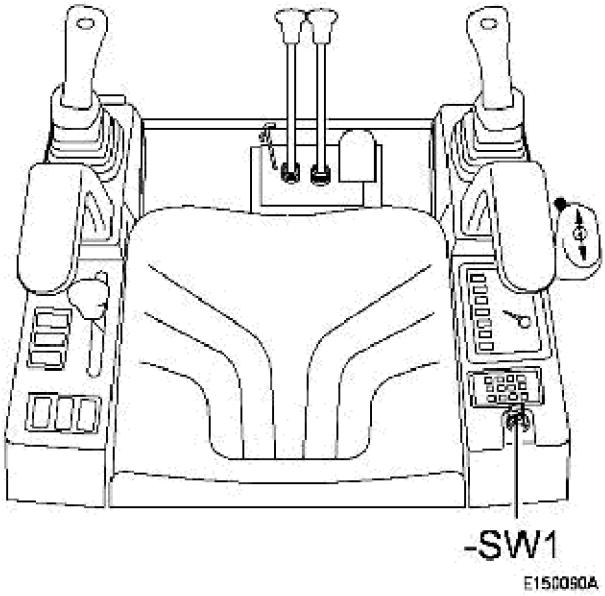
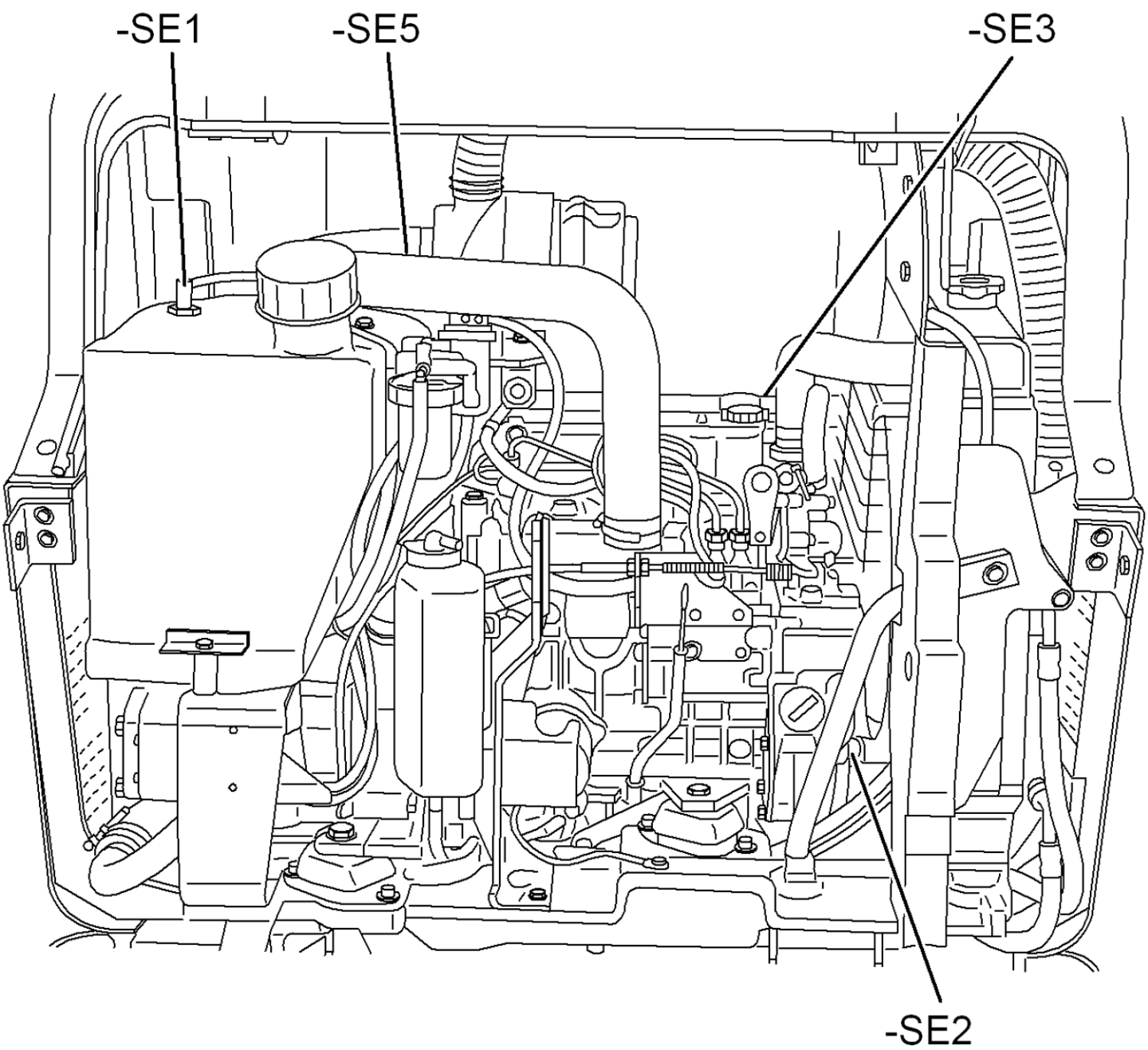


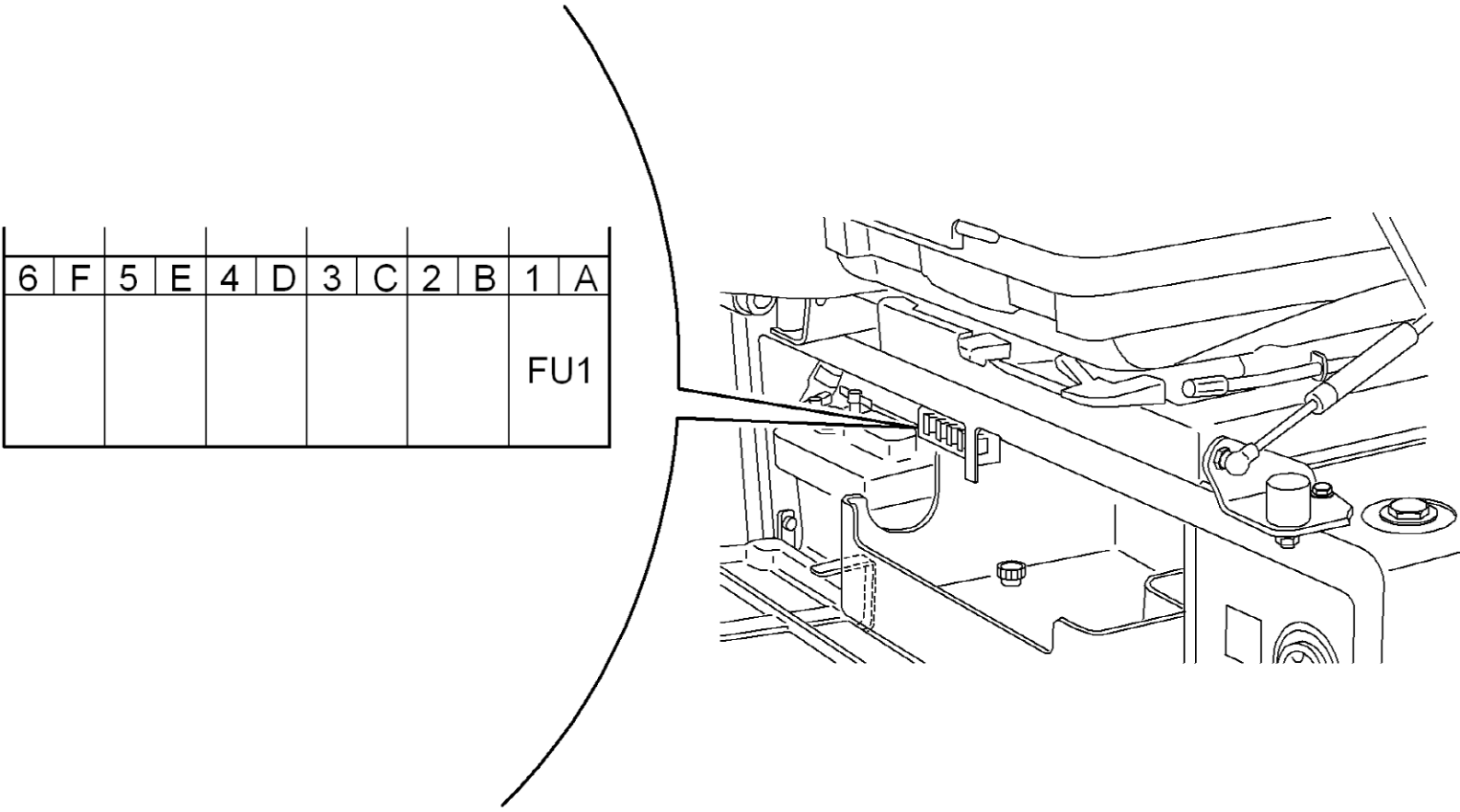
Figure 4

- SW1 Ignition switch

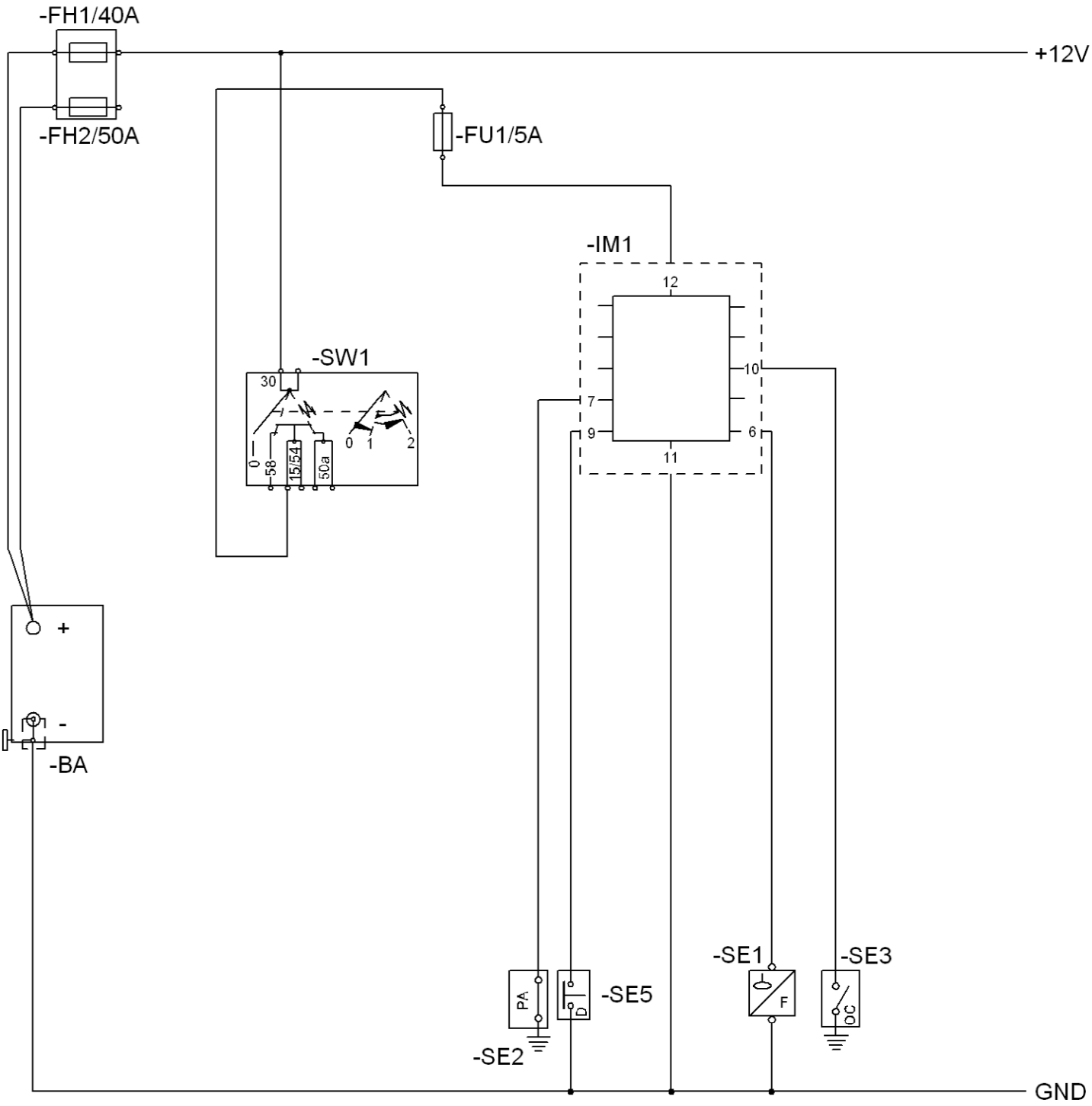
Sensor, control/warning system



E150102A



E150083A


-FH1/40A
+12V
-FH2/50A
-FU1/5A
-IM1
12
10
7
9
6
11
-SW1
30
0
58
15/54
50a
0
1
2
+
-
-BA
-SE1
-SE3
-SE5
-SE2
PA
D
F
DC
GND

E150101A

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Dashboard**	Function Group : **387**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Dashboard

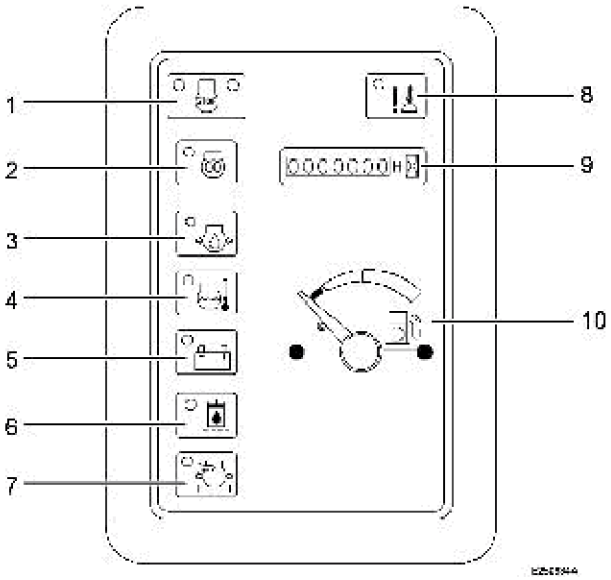


Figure 1

1 Engine OFF
2 Preheating
3 Engine oil pressure
4 Coolant temperature
5 Battery charge condition gauge
6 Oil filter, hydraulics (N.C.)
7 Air filter
8 Warning, overload boom (option) (N.C.)
9 Operating hour meter
10 Tank filling level gauge

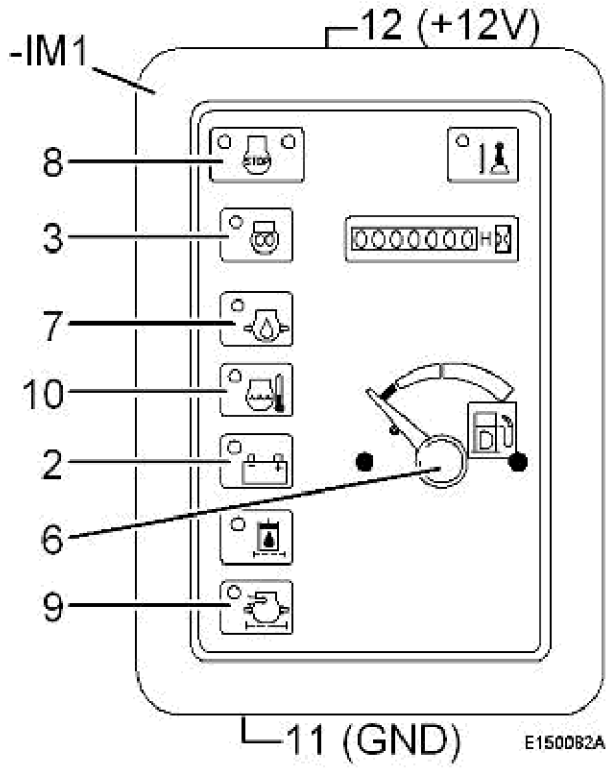


Figure 2

- IM1 Dashboard

Connection assignment for dashboard (- IM1)

1 N.C.
2 Battery charge condition gauge
3 Preheating
6 Tank filling level gauge
7 Engine oil pressure
8 Engine OFF
9 Air filter
10 Coolant temperature

Fuses

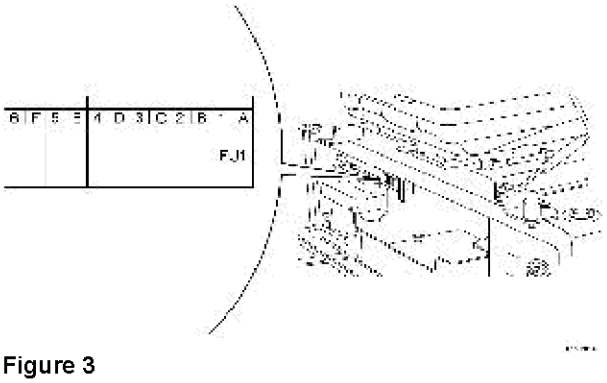


Figure 3

- FU1/5A Engine, dashboard, immobilizer

Dashboard

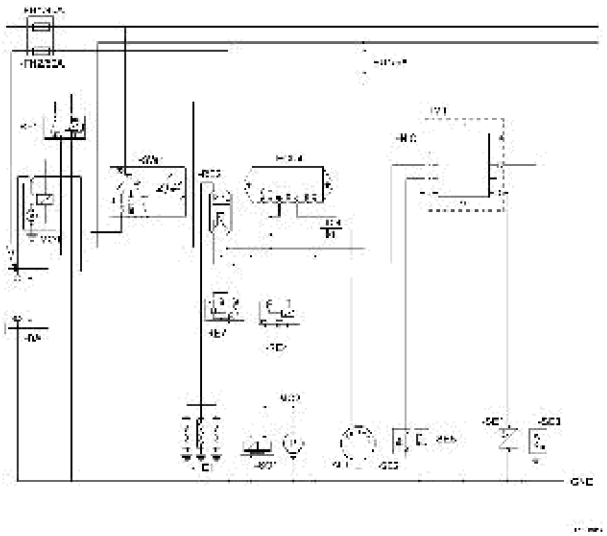
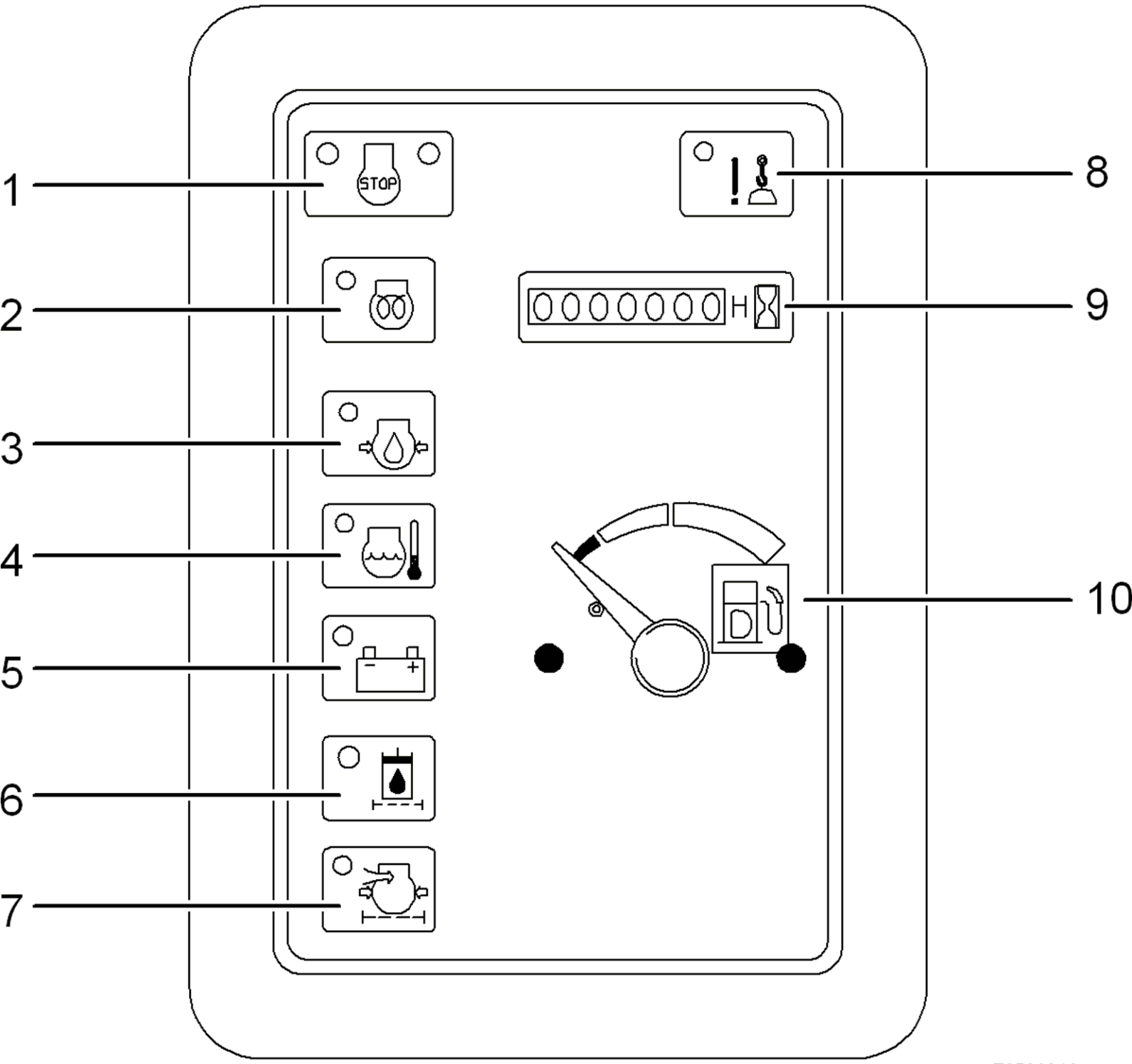
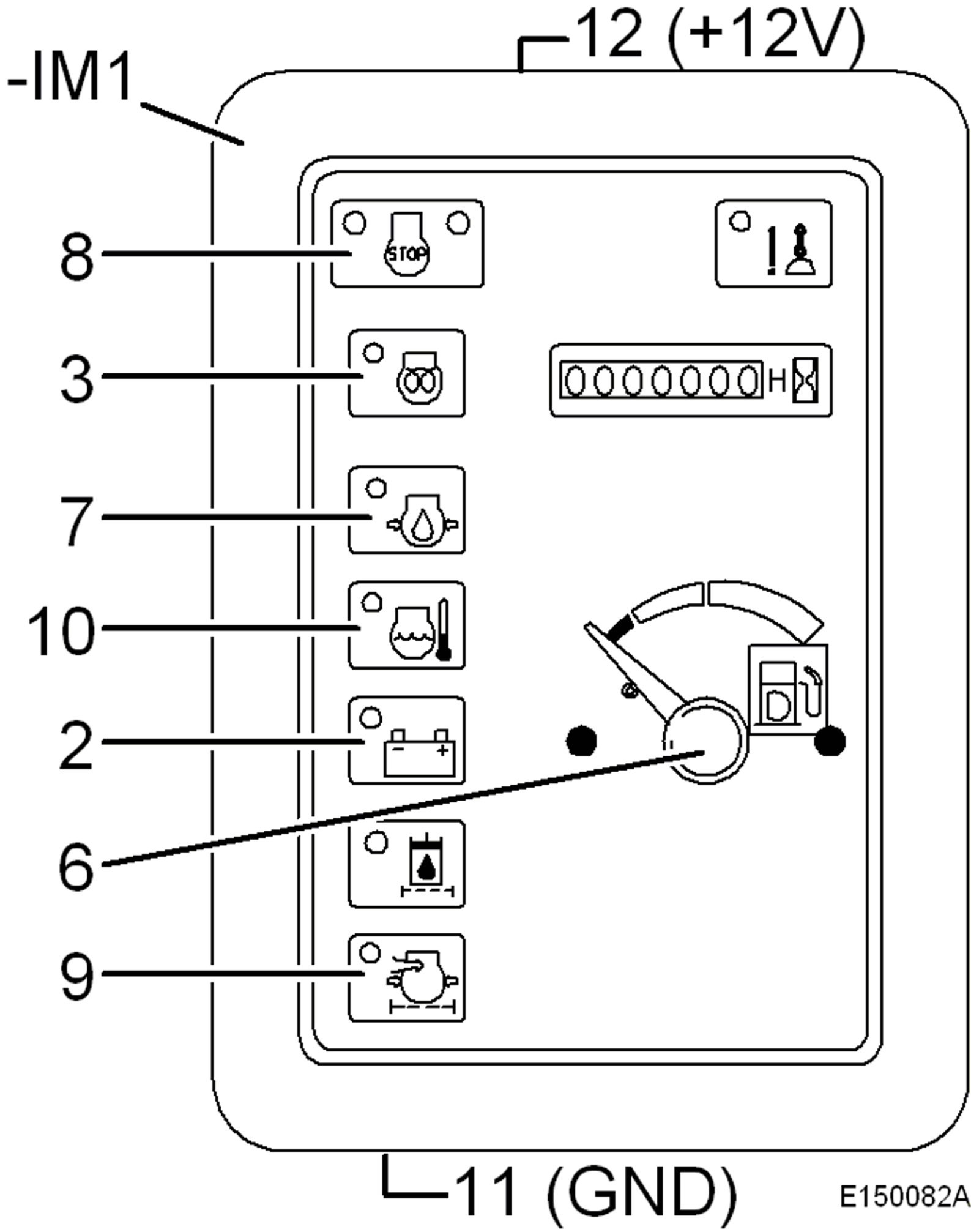
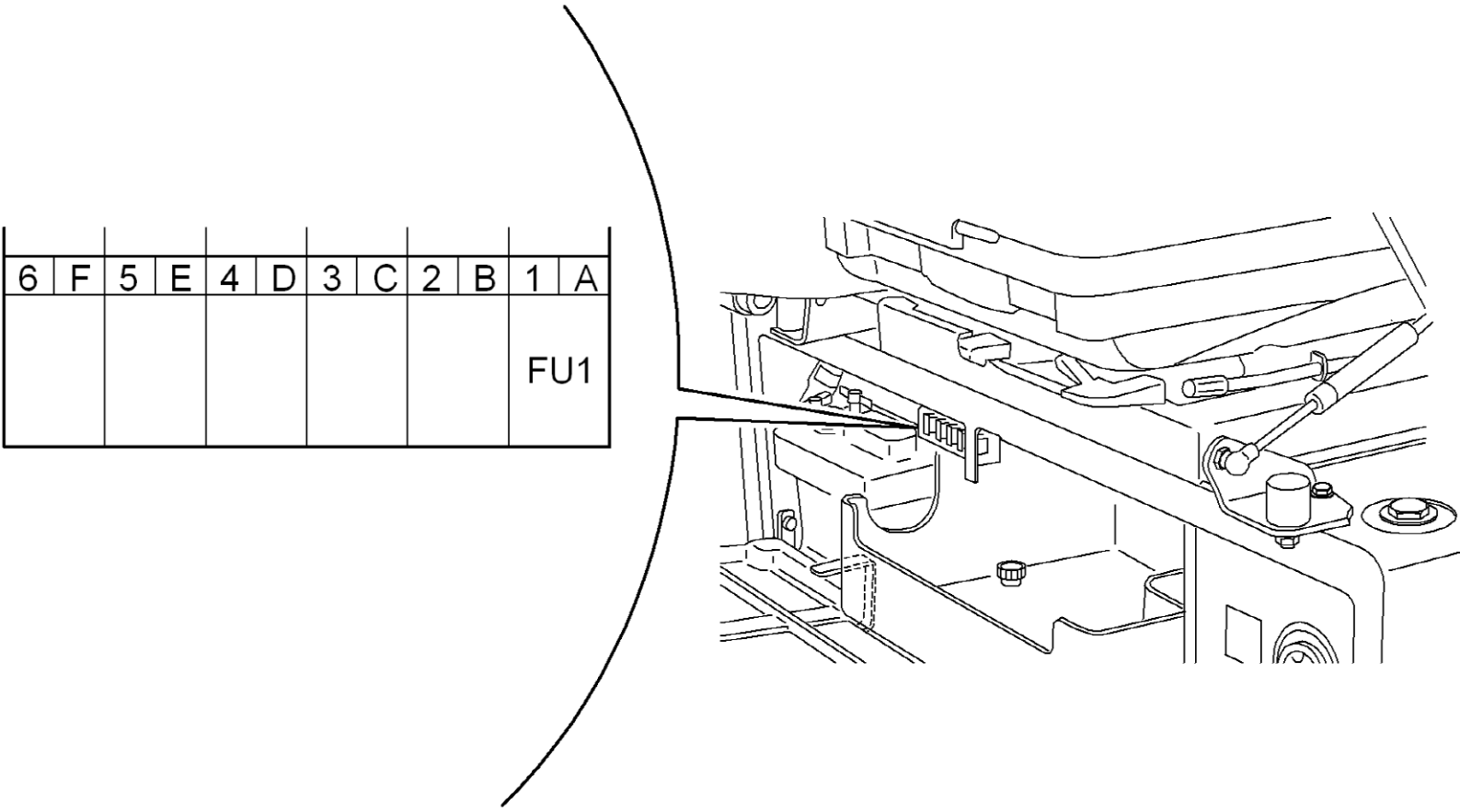


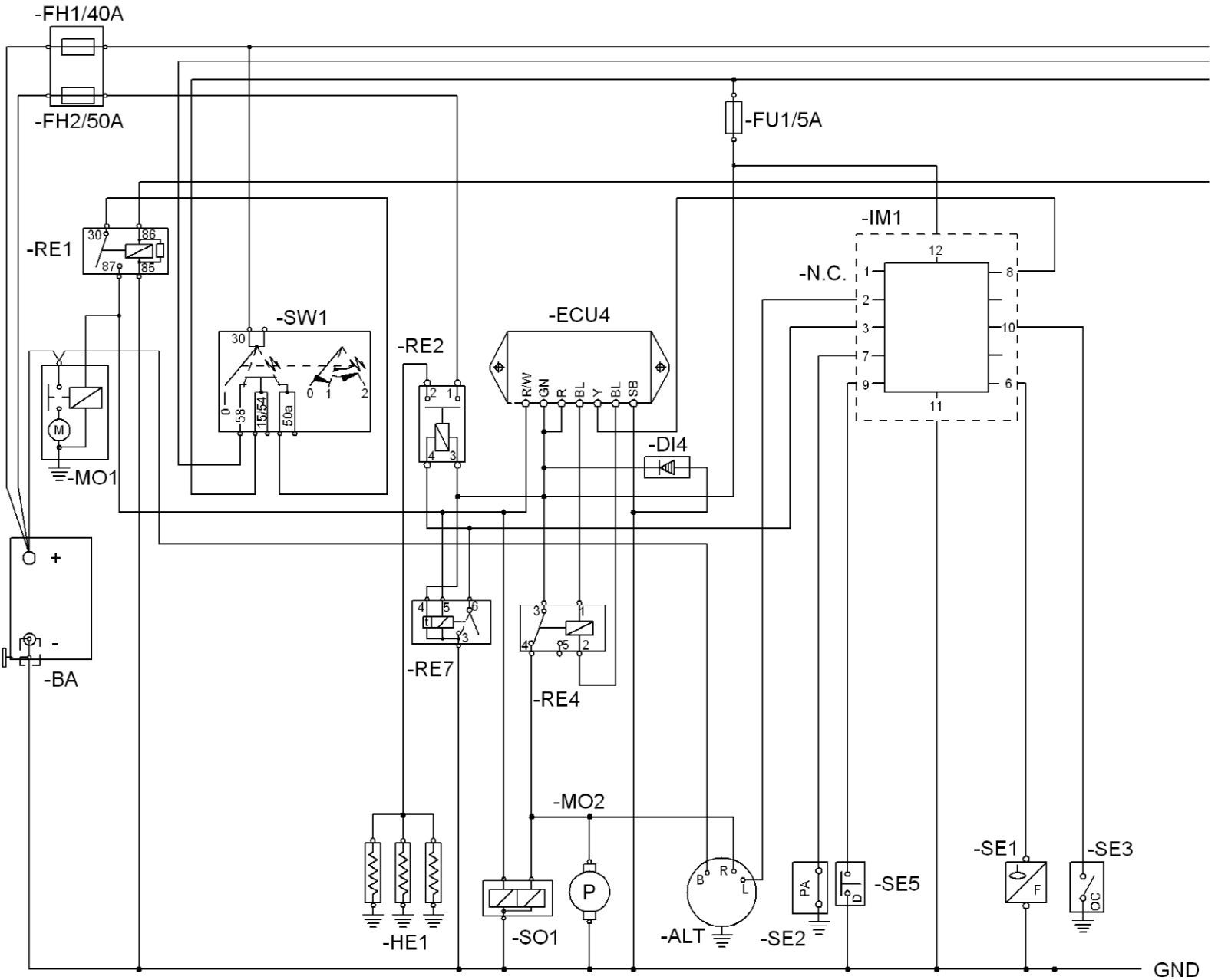
Figure 4


STOP
H
D
1
2
3
4
5
6
7
8
9
10
E250684A


12 (+12V)
-IM1
8
3
7
10
2
6
9
STOP
H
11 (GND)
E150082A



E150083A


-FH1/40A
-FH2/50A
-FU1/5A
-RE1
-SW1
-RE2
-ECU4
-IM1
-N.C.
-MO1
-DI4
-BA
-RE7
-RE4
-MO2
-HE1
-SO1
-ALT
-SE2
-SE5
-SE1
-SE3
GND
R/W
GN
R
BL
Y
BL
SB

E150081A

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **General notes to be observe when working on power transmission assemblies**	Function Group : **400**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

General notes to be observe when working on power transmission assemblies

All work to be performed should be executed with greatest care and conscientiousness!

The safety regulations must be observed and strictly applied!

Any regulations of the responsible liability association must be followed.

WARNING!

Before starting work on power transmission components the machine must be parked on level ground of sufficient load bearing capacity, secured against rolling away and the engine is to be shut down.
The complete system must be relieved from any pressure and the battery must be disconnected.
If running of the engine and a connected battery is required for certain test procedures, special precautions must be taken to rule out dangers for persons.

Caution!
When removing and installing parts to be replaced or repaired strict cleanliness is the most important prerequisite.

Make sure that no dirt and other contaminating substances can enter into the system.

- Clean fittings, filler caps and their immediate surrounding area so that no dirt can fall in.
- Before disconnecting any hoses, pipes or similar shut down the engine and relieve the pressure in the system.
- Before starting repair work close all ports and openings with clean plugs or caps and do not forget to remove plugs and caps before installation.
- Use only lint-free cloths to wipe out and clean hydraulic components.
- When filling up the hydraulic oil tank the oil must generally be passed through the filter, because even new oil from closed oil drums does not fulfilled the requirements demanded from a clean hydraulic oil.
- When assembling hydraulic parts grease must **not** be used as a sliding agent, use hydraulic oil instead.
- If metal chips and abrasion residuals are found in the hydraulic oil tank all hydraulic circuits must be thoroughly flushed and cleaned.

Repairs must generally be carried out with **genuine spare parts**.

Before disassembling marks all parts as a measure to help during later reassembly.

Generally use new seals when reassembling. Self-locking nuts must generally be replaced.

Perform all repair work only by using suitable tools and perform adjustments generally with the help of specified measuring equipment.

When installing new components the adjustments must be generally checked, i.e. diesel engine and new components must be adapted to each other.

- Check pressures and rotational speeds.
- Check fittings and flanges for leaks.

- Watch the oil level in the hydraulic oil tank, if necessary top up hydraulic oil.

Caution!
Use only hydraulic oil as specified in the table of fuels and lubricants in the operating instructions.

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Working principle of the travel system**	Function Group : **400**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Working principle of the travel system

EC15B XT / EC20B XT

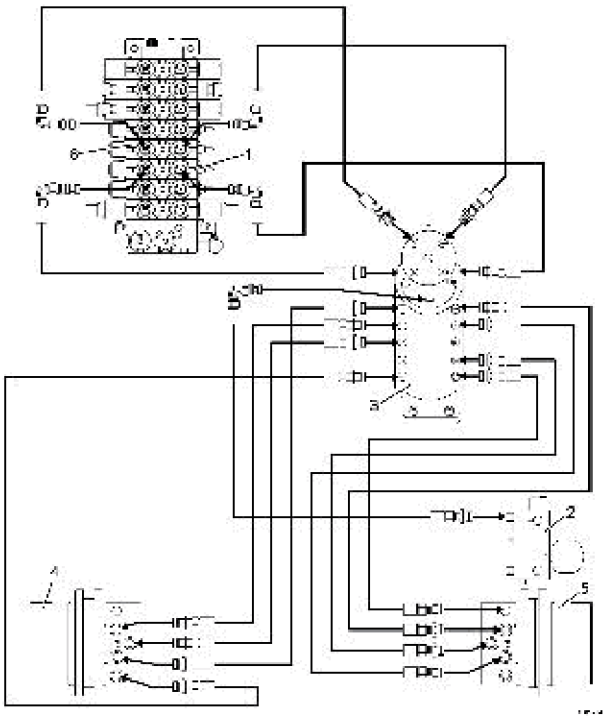


Figure 1

1. Control block element: Left hand travel control.
2. Power unit (servo controls)
3. Rotary oil distributor.
4. Travel gear motor, right hand side.
5. Travel gear motor, left hand side.
6. Control block element: Right hand travel control.

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Working principle of the travel system**	Function Group : **400**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Working principle of the travel system

EC15B XTV / EC20B XTV

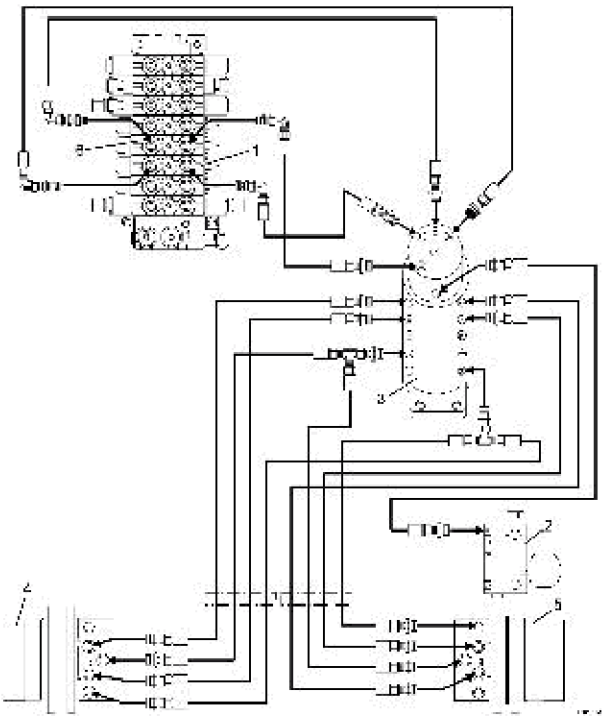
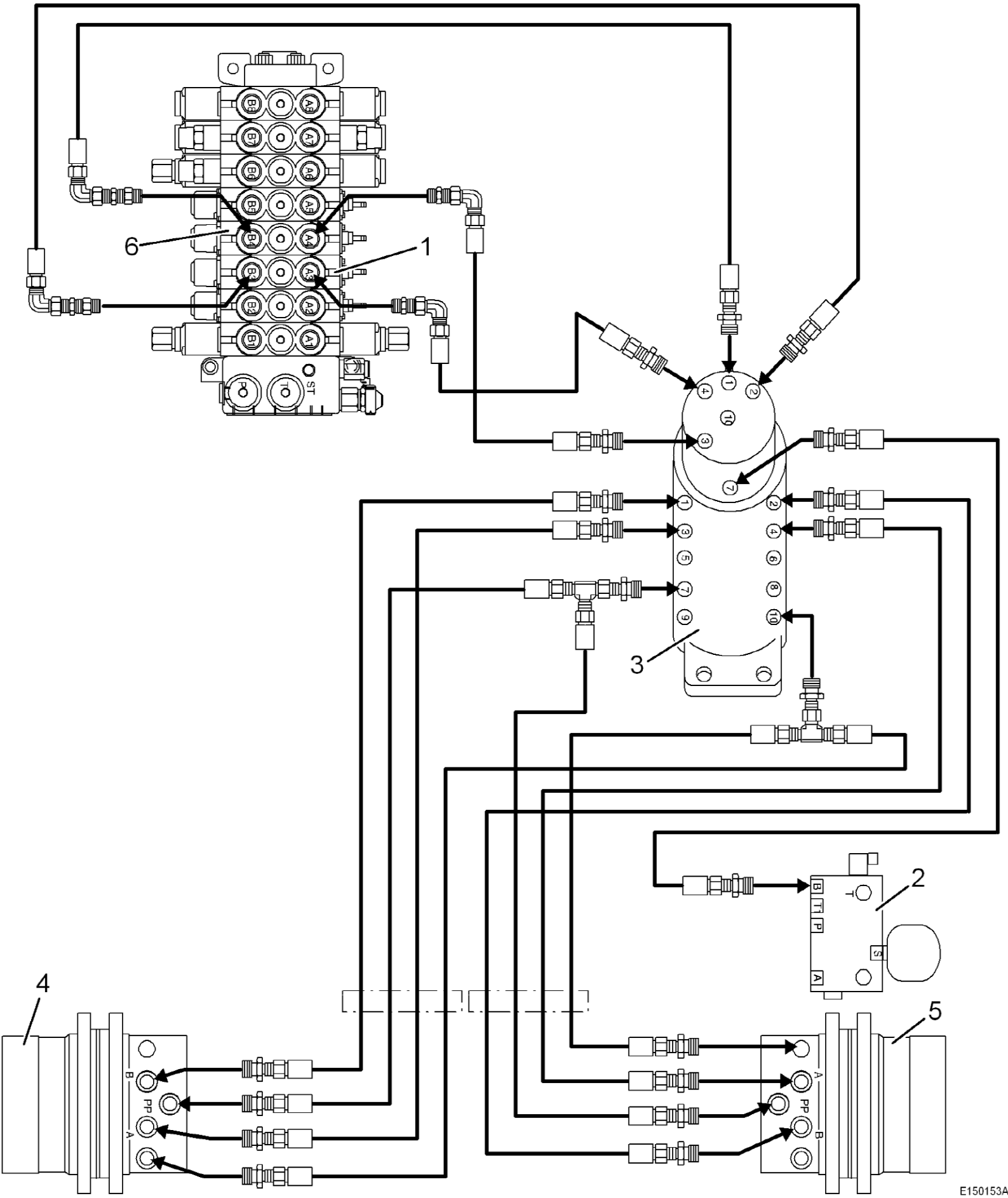


Figure 1

1. Control block element: Left hand travel control.
2. Power unit (servo controls)
3. Rotary oil distributor.
4. Travel gear motor, right hand side.
5. Travel gear motor, left hand side.
6. Control block element: Right hand travel control.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VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Technical data**	Function Group : **440**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Technical data

Volvo standard tightening torques

The tightening torques in the following tables apply for screw connections of the corresponding strength class. If not specified differently, the tables are to be considered as general instructions for the tightening of screw connections.

NOTE **For flange bolts of type U6FS the values must be increased by 10%. Screws and nuts must be clean and oiled.**

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Strength class 8.8 Metric coarse and fine threads**	Function Group : **440**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Strength class 8.8 Metric coarse and fine threads

Thread	Nm
M6	10 ± 2
M8	24 ± 5
M10	48 ± 10
M12	85 ± 18
M14	140 ± 25
M16	220 ± 45
M20	430 ± 85
M24	740 ± 150

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Strength class 10.9 Metric coarse and fine threads**	Function Group : **440**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Strength class 10.9 Metric coarse and fine threads

Thread	Nm
M6	12 ± 2
M8	30 ± 5
M10	60 ± 10
M12	105 ± 20
M14	175 ± 30
M16	275 ± 45
M20	540 ± 90
M24	805 ± 160

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **UNC-threads, coarse pitch**	Function Group : **440**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

UNC-threads, coarse pitch

Thread	Nm
1/4""	9 ± 2
5/16""	18 ± 4
3/8""	33 ± 8
7/16""	54 ± 14
1/2""	80 ± 20
9/16""	120 ± 30
5/8""	170 ± 40
3/4""	300 ± 70
7/8""	485 ± 115
1""	725 ± 175

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Plugs with tapered thread**	Function Group : **440**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Plugs with tapered thread

Size	For aluminium alloys Nm	For ferrous metals
NPTF 1/16	6,4 ± 1	10 ± 2
PT 1/8	10 ± 2	18 ± 3
PT 1/8 NPTF 1/4	10 ± 2	39 ± 5
PT 3/8	-	64 ± 10

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Mechanical transmission – track gearbox**	Function Group : **440**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Mechanical transmission – track gearbox

Tightening torque	Nm
Plug on cover	46…51
Plug on cover	12…13

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Hydraulic motor 1 – travel system**	Function Group : **440**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Hydraulic motor 1 – travel system

Tightening torque	Nm
Plug - spool	46...51
Plug control element	12...23
Socket head cap screw - housing	51...65

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Gear motor for slewing**	Function Group : **440**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Gear motor for slewing

Tightening torque	Nm
Socket head cap screw - housing	85 ± 18

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Fuels, lubricants and filling capacities (litres)**	Function Group : **440**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Fuels, lubricants and filling capacities (litres)

Only fuels and lubricants complying with the listed specifications may be used.

Lubrication chart, unit: Litres

Tank	Fluid	Ambient temperature	EC15B/EC20B
		-22 -4 14 32 50 68 86 104 122 °F -30 -20 -10 0 10 20 30 40 50 °C	Filling capacity
Hydraulic oil tank	Hydraulic oil	ISO-VG 46 * ISO-VG 46 ISO-VG 68	23 l
Track drive	Gear oil	* *SAE 90 and API GL4 or GL5 SAE 140 and API GL4 SAE 80W-90 nd API GL4 or GL5	0.33 l
Chain gear, right		SAE 85W-140 and API GL4 (with limited-slip additive)	0.33 l
Live ring	Grease	* MULTI-PURPOSE #2	-

NOTE

*: ex works
SAE: Society of Automotive Engineers
ISO: International Standardization Organization
API: American Petroleum Institute

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **General**	Function Group : **440**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

General

General notes to be observe when working on power transmission assemblies

WARNING! **Precautions against possible dangers of accident, injury or danger to life.**

NOTE **Special notes to improve operating, inspection and adjustment procedures as well as service work.**

- trained personnel
- specified tools and testing equipment, such as test stand, flaw tester, special tools
- genuine spare parts

All work to be performed should be executed with greatest care and conscientiousness!

The safety regulations must be observed and strictly applied!

Any regulations of the responsible liability association must be followed.

WARNING!

Before starting work on power transmission components the machine must be parked on level ground of sufficient load bearing capacity, secured against rolling away and the engine is to be shut down.
The complete system must be relieved from any pressure and the battery must be disconnected.
If running of the engine and a connected battery is required for certain test procedures, special precautions must be taken to rule out dangers for persons.
The most important prerequisite is strict cleanliness when removing and installing parts to be replaced or repaired.

Make sure that no dirt and other contaminating substances can enter into the system.

- Clean fittings, filler caps and their immediate surrounding area so that no dirt can fall in.
- Before disconnecting any hoses, pipes or similar shut down the engine and relieve the pressure in the system.
- Before starting repair work close all ports and openings with clean plugs or caps and do not forget to remove these parts before installation.
- Use only lint-free cloths to wipe out and clean hydraulic components.
- When filling up the hydraulic oil tank the oil must generally be passed through the filter, because even new oil from closed oil drums does not fulfilled the requirements demanded from a clean hydraulic oil.
- When assembling hydraulic parts grease must **not** be used as a sliding agent, use hydraulic oil instead.
- If metal chips and abrasion residuals are found in the hydraulic oil tank all hydraulic circuits must be thoroughly flushed and cleaned.

Repairs must generally be carried out with **genuine spare parts**.

Before disassembling marks all parts as a measure to help during later reassembly.

Generally use new seals when reassembling. Self-locking nuts must generally be replaced.

Perform all repair work only by using suitable tools and perform adjustments generally with the help of specified measuring equipment.

When installing new components the adjustments must be generally checked, i.e. diesel engine and new components must be adapted to each other.

- Check pressures and rotational speeds.
- Check fittings and flanges for leaks.
- Watch the oil level in the hydraulic oil tank, if necessary top up hydraulic oil.

NOTE **The wheel motors contain parts that have been pressed in. These parts can normally not be disassembled and should not be removed with force.**

WARNING! **Use only oil as specified in the table of fuels and lubricants in the operating instructions.**

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Design of travel motor**	Function Group : **441**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Design of travel motor

The hydraulic motor in this machine is an axial piston motor.

The shock valves protect both motor and circuit against pressure peaks by maintaining the start-up pressure/relief pressure of the hydraulic motor at a constant level.

The swash plate can be adjusted to two fixed positions: high rotary speed/low torque (high travel speed) or low rotary speed/high torque (low travel speed), in compliance with the travel speed switch and the way valve.

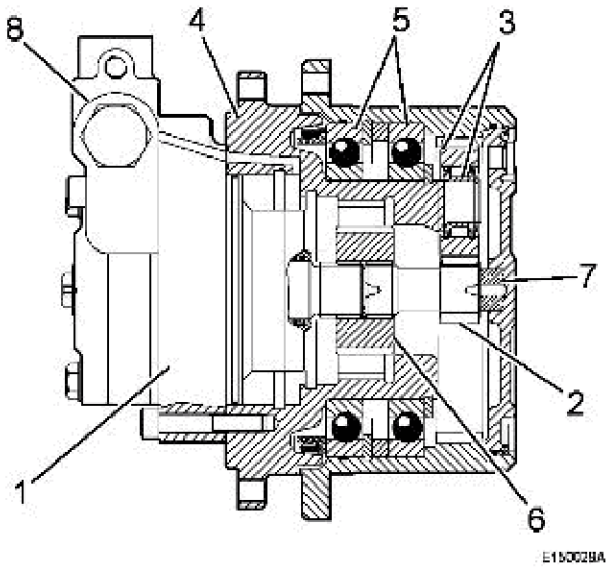
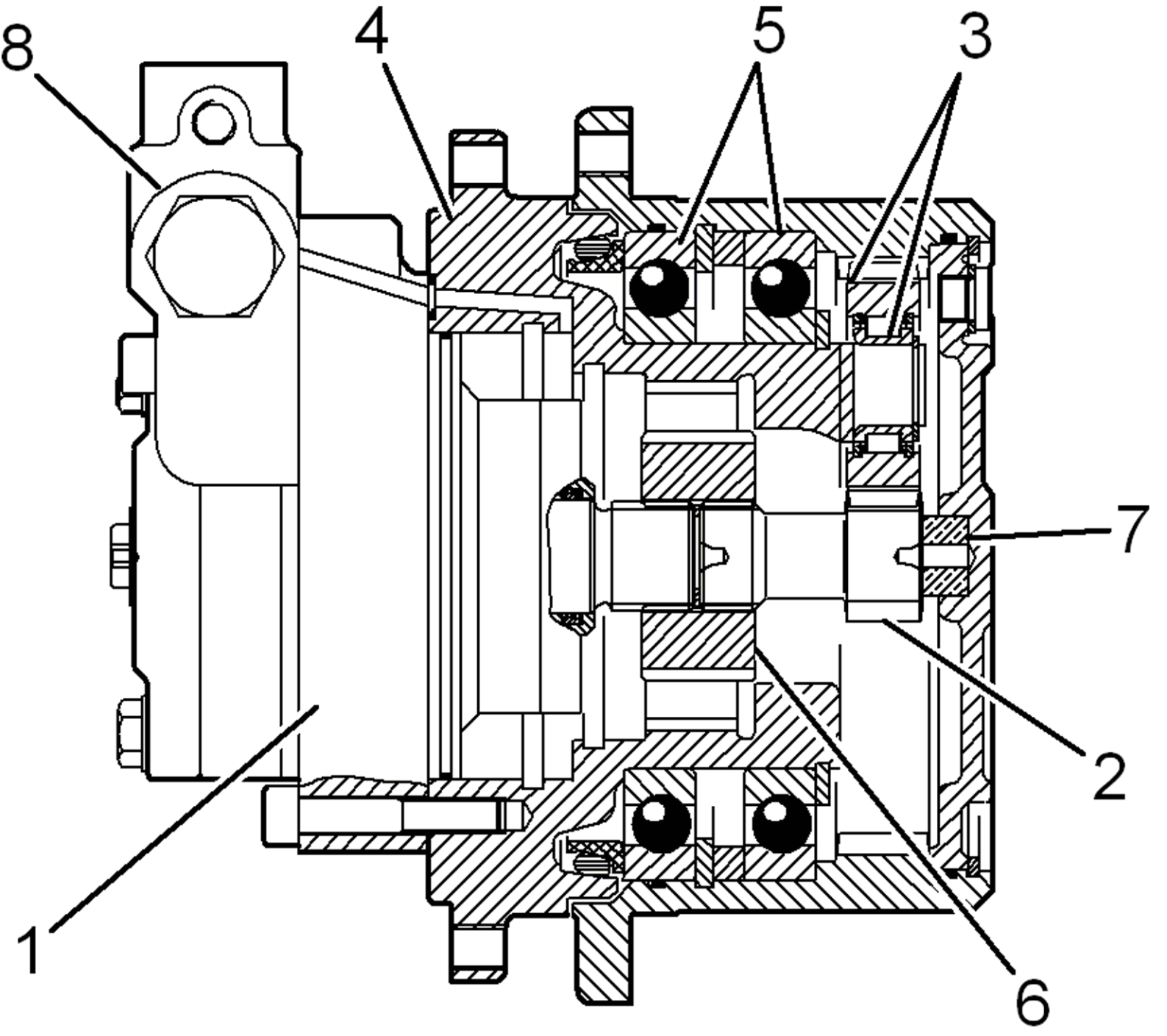


Figure 1

1	Travel motor	5	Ball bearing
2	Pinion	6	Reduction gear
3	Planetary gear	7	Friction disc
4	Hub	8	Balancing valve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VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **High speed solenoid valve**	Function Group : **441**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

High speed solenoid valve

Function
When the selector switch (6) is in OFF-position and the solenoid (4) is not excited, spool (3) will close the passage to port B and the hydraulic valves for low / high travel motor speed are not supplied with auxiliary / pilot pressure. The travel motors are thereby set to LOW SPEED.
When the selector switch (6) is in ON-position (or the selector switch for high speed (8) on the dozer blade control lever is pressed), the solenoid (4) is excited, spool (3) opens the passage to port B and the hydraulic valves for high / low travel motor speed are supplied with auxiliary / pilot pressure. The travel motors are thereby set to HIGH SPEED.

Solenoid dead – low travel speed
B = depressurized

Solenoid live – high travel speed
B = 32 bar

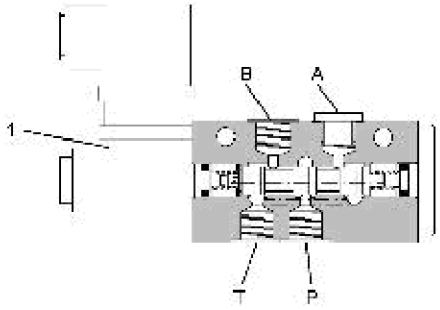


Figure 1

1. Solenoid valve
   A port for control lever
   B port, travel motor
   P Pump
   T tank

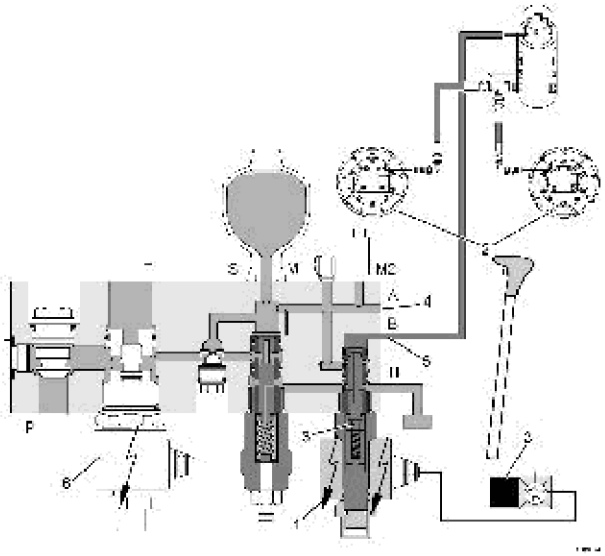
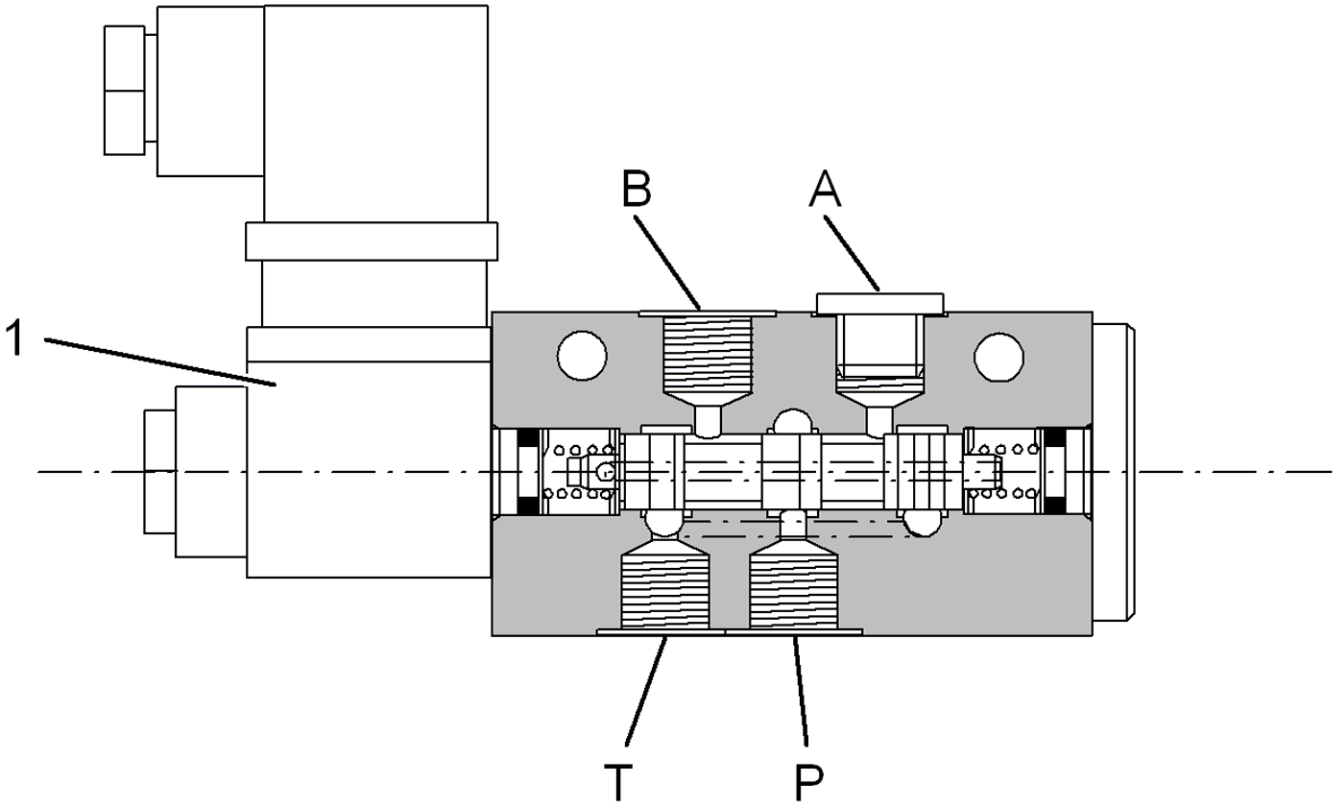


Figure 2

1 High speed solenoid valve
2 Hydraulic travel motors
3 Selector switch for high speed
4 Port from control lever (A)
5 Port to travel motor (B)
6 Pressure relief valve



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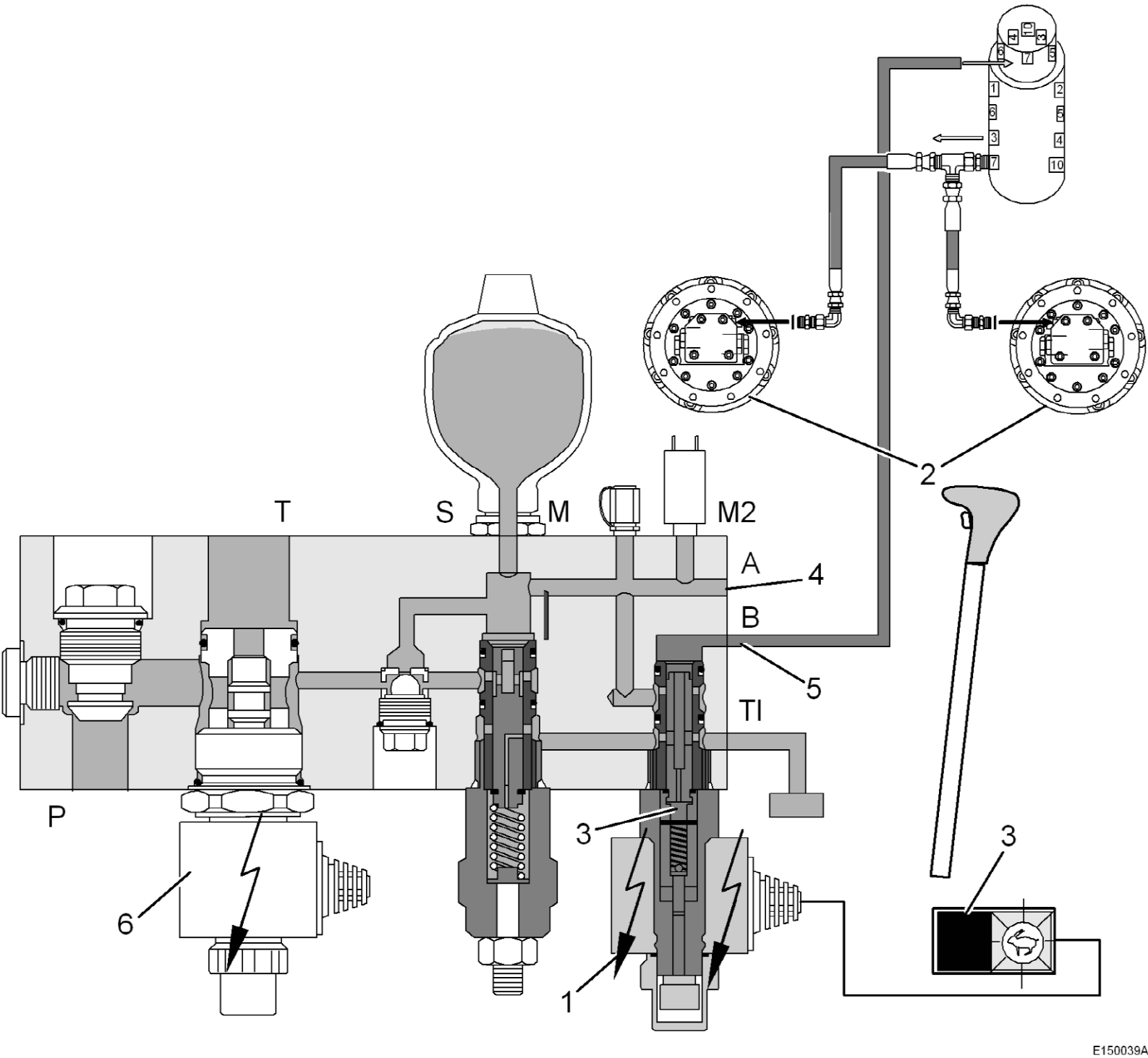
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VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Brake valve (counter balance valve)**	Function Group : **441**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Brake valve (counter balance valve)

Brake valve, neutral position

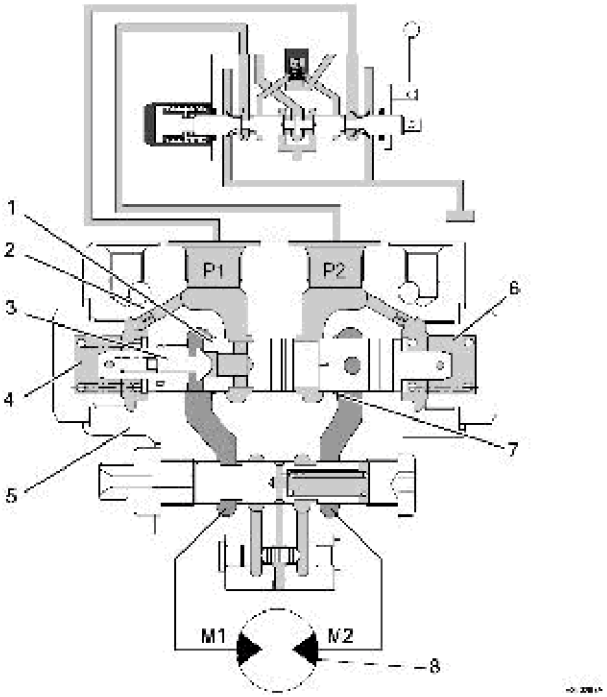


Figure 1

1 Valve spool
2 Bore
3 Check valve
4 Chamber
5 Housing
6 Spring
7 Bore
8 Axial piston motor

The counter balance valve See figure stops the axial piston motor (8). When the valve spool (1) is in neutral position no pressure is applied to ports P1 and P2 and ports M1 and M2 are closed by the valve spool (1) and the check valve (3), so that the motor cannot rotate.

The machine is braked.

Brake valve, actuated

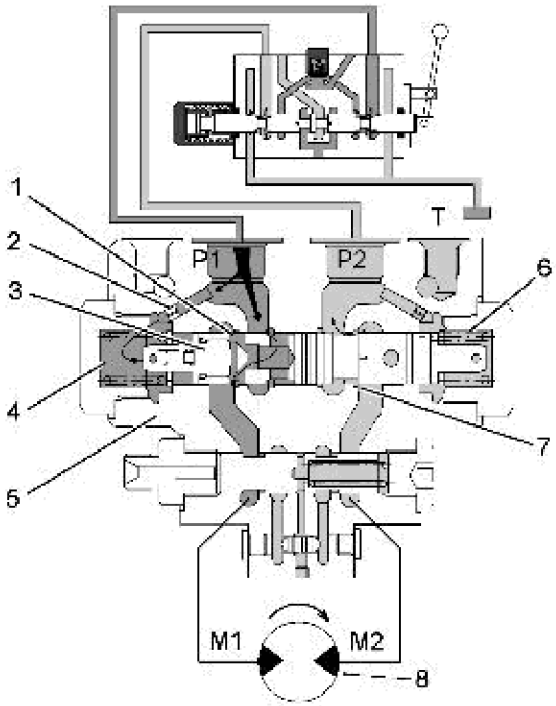


Figure 2

1 Valve spool	5 Housing
2 Bore	6 Spring
3 Check valve	7 Bore
4 Chamber	8 Axial piston motor

If hydraulic oil flows out of port P1, part of this oil will open the check valve (3) and flow to port M1 at the inlet of the travel motor.

All other hydraulic oil flows through the restrictor bore (2) into chamber (4) and overcomes the force of spring (6), so that the valve spool (1) slides to the right.

The hydraulic oil flowing back to the travel motor can thereby enter through port M1 and flow back through the motor housing (5) and the passage (7) of the valve spool (1) to port M2 to drive the travel motor.

If the hydraulic oil comes from port M1 the action of each of the components mentioned above and therefore the sense of rotation of the travel motor is reversed in relation to the condition described above.

If the hydraulic oil flow through port M1 is subsequently interrupted, the valve spool (1), that has been moved to the right, will try to return to the left with the assistance of spring (6).

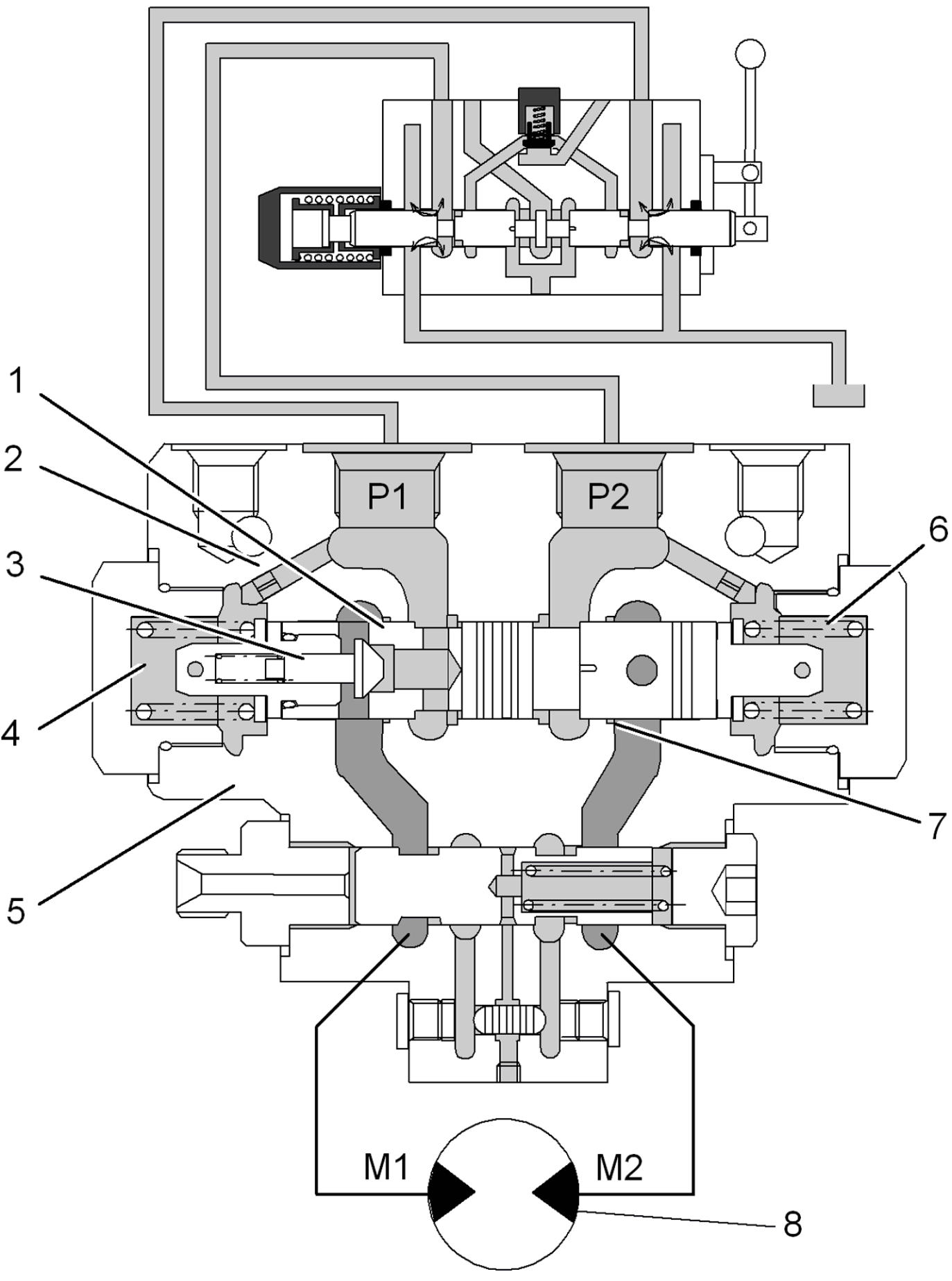
Just before the oil in chamber (4) flows out of port P1 through the restrictor (2) the speed of the valve spool (1) returning to the left side is controlled by the restrictor (2).

The travel motor tries to continue its rotation, even after the hydraulic oil flow in the area of port P1 has been interrupted.

Spool (1) limits the return flow in order to stop rotation of the mtotor.

This brakes the travel motor hydraulically.

The machine is steered by sensitive actuation of the travel motors.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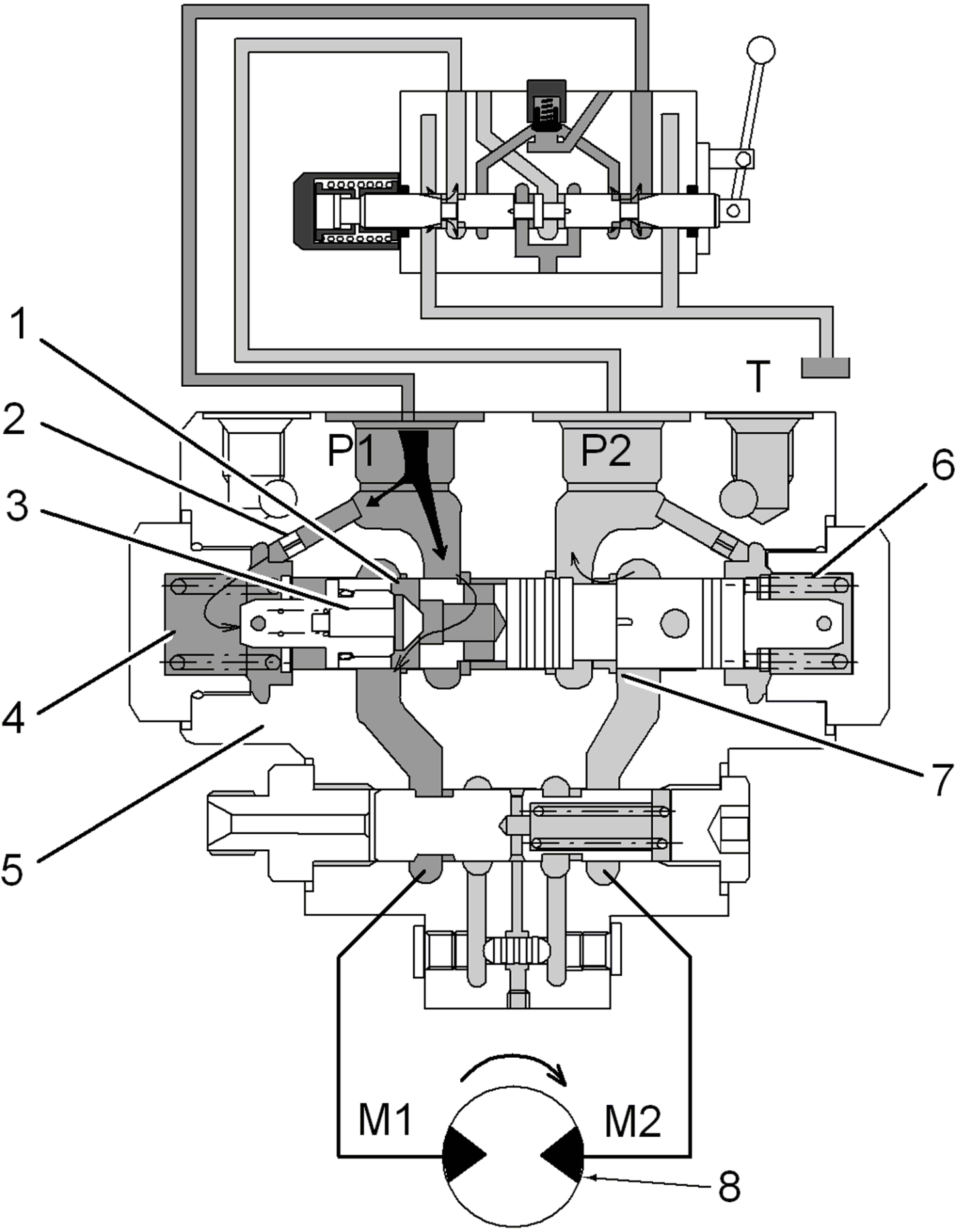

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VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Disassembling the travel motor**	Function Group : **441**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Disassembling the travel motor

Op nbr 4311

Lifting sling 1.5 m

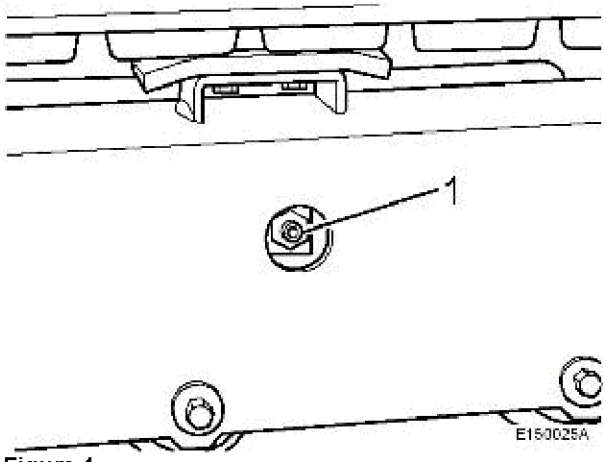

Figure 1

1. Grease nipple

WARNING!

The grease in the track adjustment cylinder is under high pressure. Do not remove the nipple or the valve unit to remove the grease.
Never loosen the valve for more than 2 revolutions as otherwise the grease will be thrown out.
Do not stand near the guiding sprocket, because the track tensioning device may drop down.

- Lift up the track, unscrew valve (1) and let all grease run out, until the track is completely relieved.
- Removal of rubber or steel track, see chapter 7.

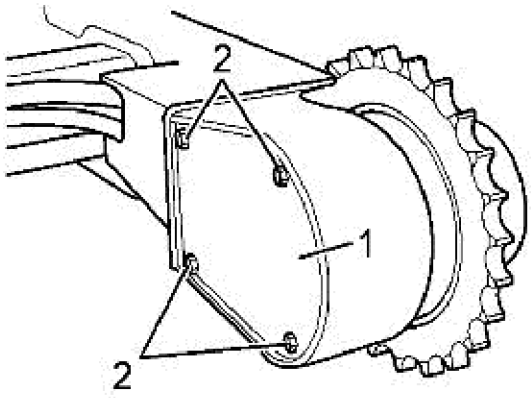

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Figure 2
Remove the cover

1. Cover
2. Screws

- Unscrew screws (2) from cover (1) of the travel motor and take the cover off.

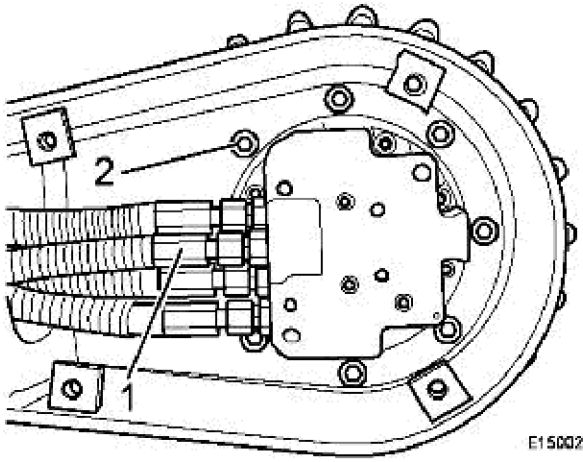

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Figure 3
Removing hydraulic hoses and screws

1. Hydraulic hoses
2. Screws

- Mark and disconnect hydraulic hoses (1) from the travel motor. Close hose ends and ports to prevent oil from seeping out and dirt from entering.
- Unscrew the travel motor fastening screws (2) from the lower frame.

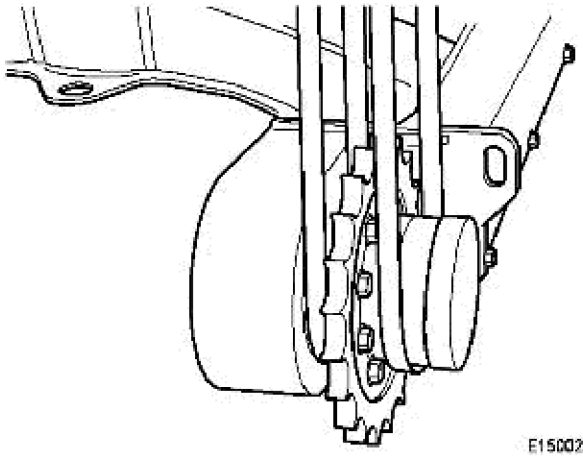

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Figure 4
Disassembling the travel motor

- Place a lifting sling at both sides of the sprocket around the travel motor and tension it. Remove the travel motor as a complete unit.

NOTE **Lift the gear as near to the track drive as possible to keep the balance.**

NOTE **Position marks on lower frame and travel motor will be of help during later assembly.**

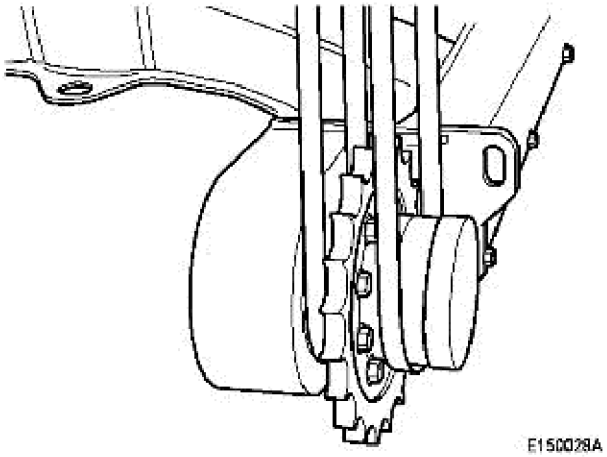


Figure 5
Installing the travel motor

Installing the travel motor

Op nbr 4311

Lifting sling 1.5 m

NOTE **Thoroughly examine the contact faces on lower frame and gear for burrs, dirt and rust flakes.**

- Place a lifting sling at both sides of the sprocket around the travel motor.
  Lift the motor up and mount it to the lower frame.

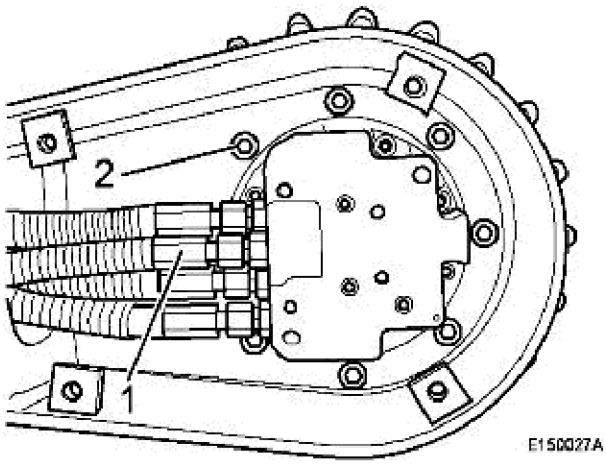


Figure 6
Installing hydraulic hoses and screws

1. Hydraulic hoses
2. Screws

- Slightly cover the fastening screws (2) with Loctite 277 and tighten with 60 ±10 Nm.

- Connect the marked hydraulic hoses to the travel motor.
- Fasten cover (See figure/1) for the travel motor.

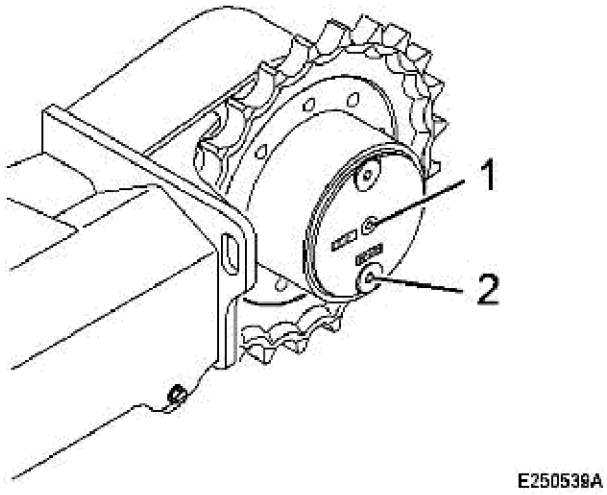


Figure 7
Checking the oil level

1. Filler opening
2. Oil drain plug

- Check the oil level in the travel motor. If necessary change or replenish the oil.

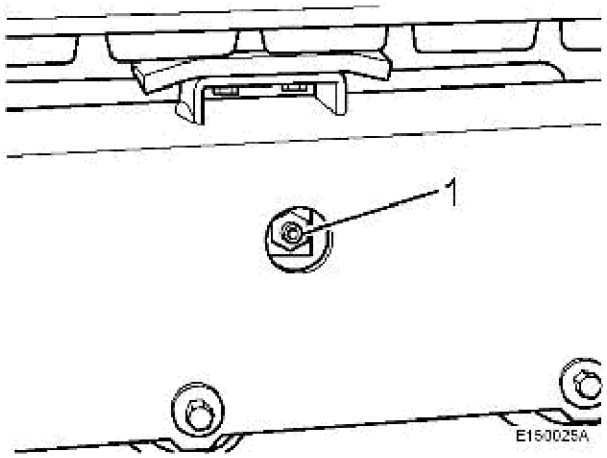


Figure 8

1. Grease nipple

- Install the rubber track and close the valve unit (1).
  Assembly of rubber or steel track, see chapter 7.
- Connect the grease gun and operate, until the specified track tension is reached.

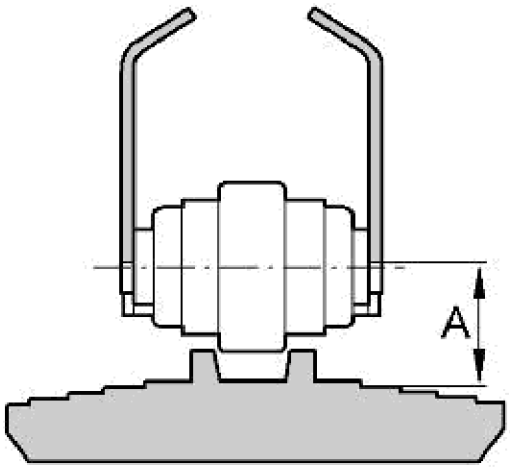


Figure 9
Sagging of track

- The track is correctly tensioned when a sagging (A) of 140...150 mm (steel tracks) or 100...105 mm (rubber tracks) is reached, see chapter 7.

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Travel gear**	Function Group : **441**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Travel gear

Schematic

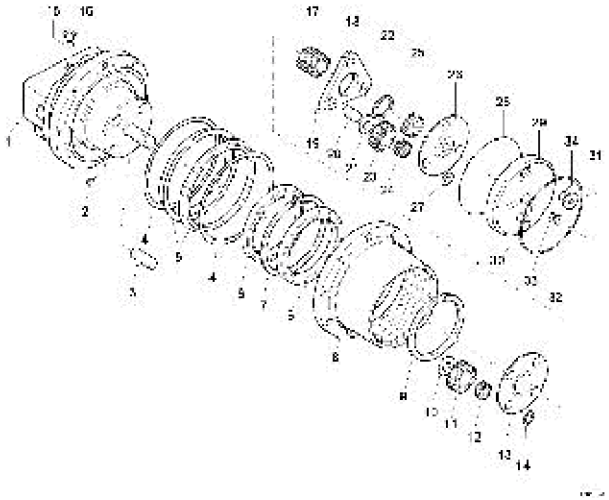
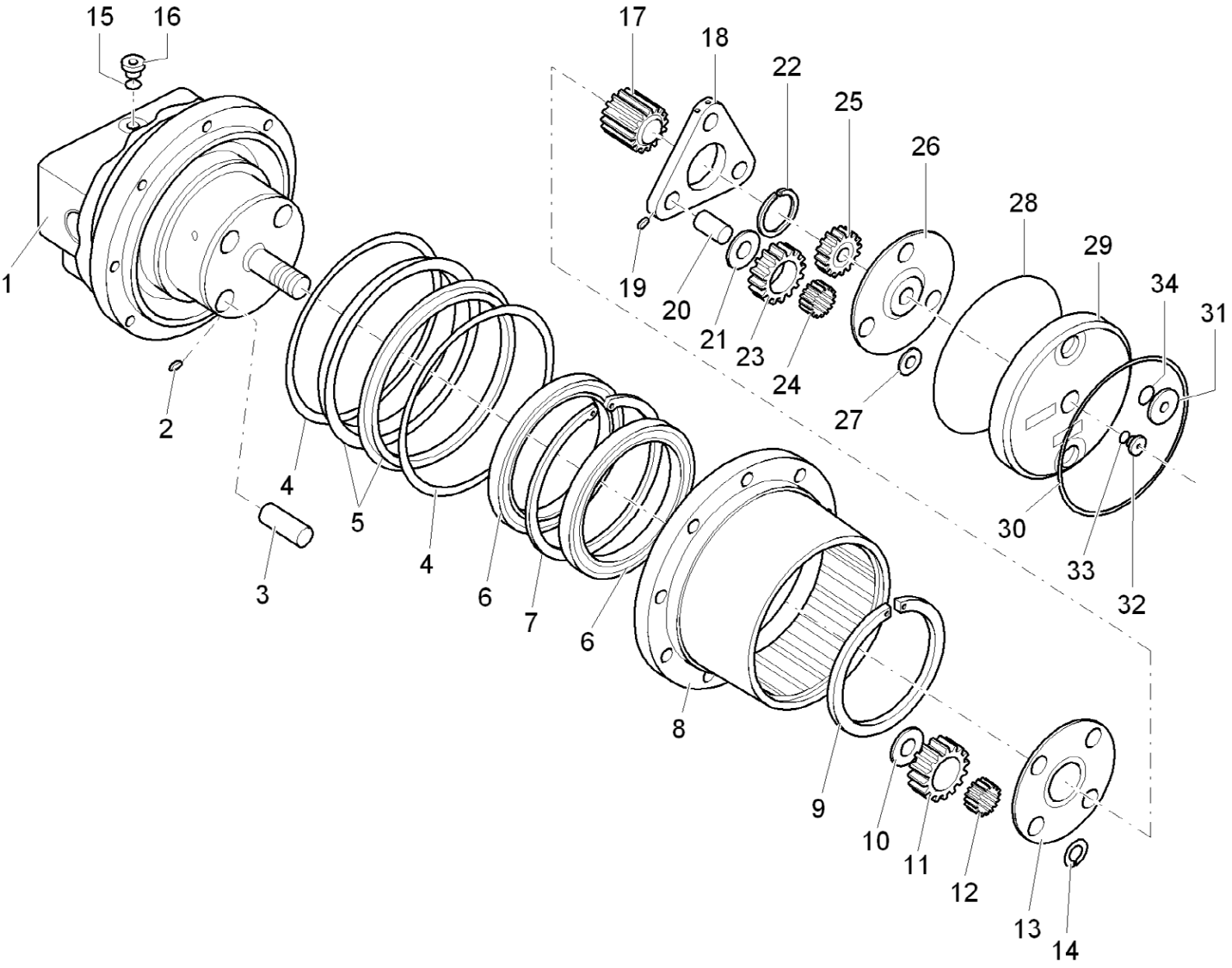


Figure 1

1 Hydraulic motor	11 Pinion	21 Pressure disc	31 Plug
2 Rollpin	12 Needles	22 Circlip	32 Plug
3 Pin	13 Washer	23 Pinion	33 O-ring
4 O-ring	14 Circlip	24 Needles	34 O-ring
5 Washer	15 O-ring	25 Pinion	
6 Ball bearing	16 Plug	26 Washer	
7 Circlip	17 Pinion	27 Circlip	
8 Housing	18 Planet carrier	28 O-ring	
9 Circlip	19 Pin	29 Cover	
10 Pressure disc	20 Pin	30 Circlip	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VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Dismantling the travel gear**	Function Group : **441**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Dismantling the travel gear

Disassembly

Op nbr

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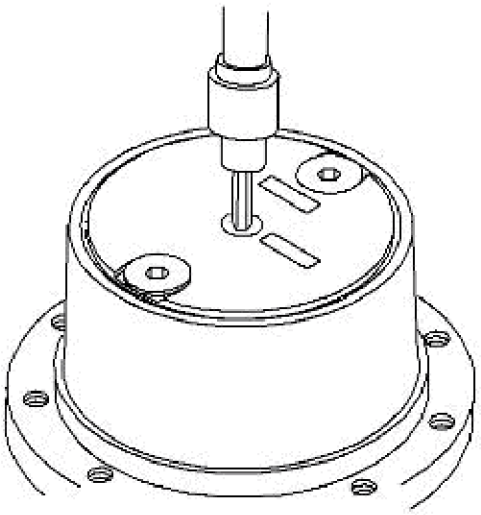

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Figure 1

Cover

- Unscrew the plug (See figure/32) with O-ring (See figure/33) from the cover.

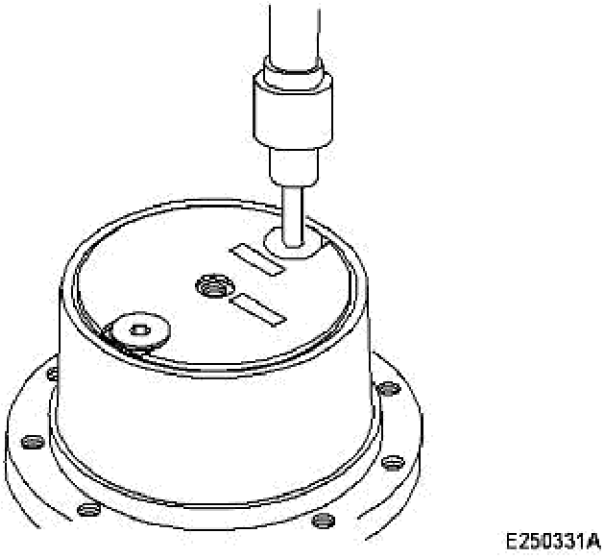


Figure 2

- Unscrew the plug (See figure/31) with O-ring (See figure/34) from the cover.

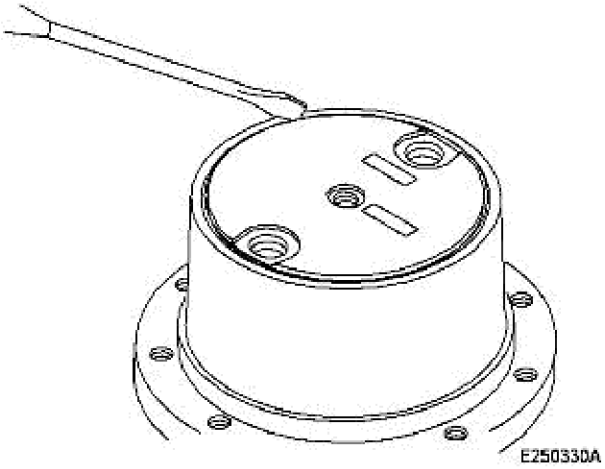


Figure 3

- Remove the circlip (See figure/30) from the cover.

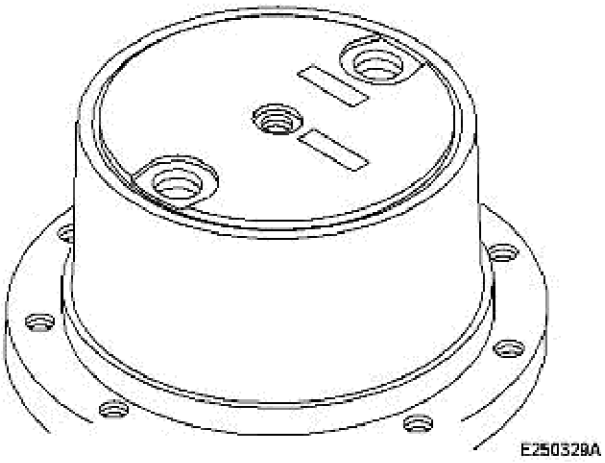
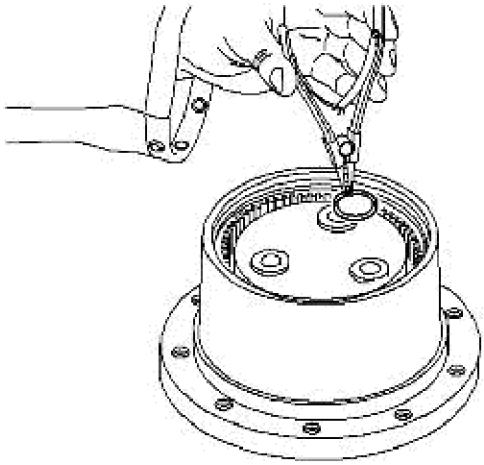


Figure 4

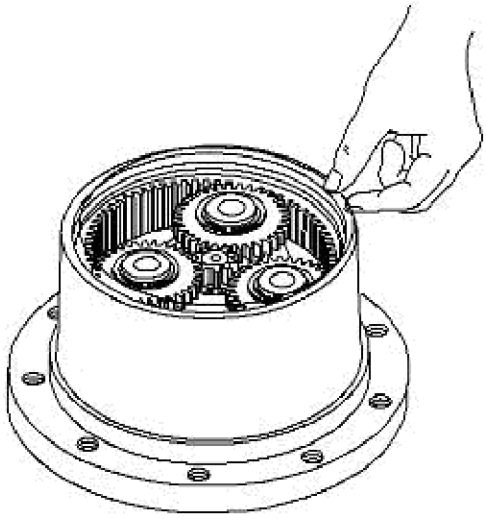
- Remove the cover from the housing.



E150184A

Figure 5

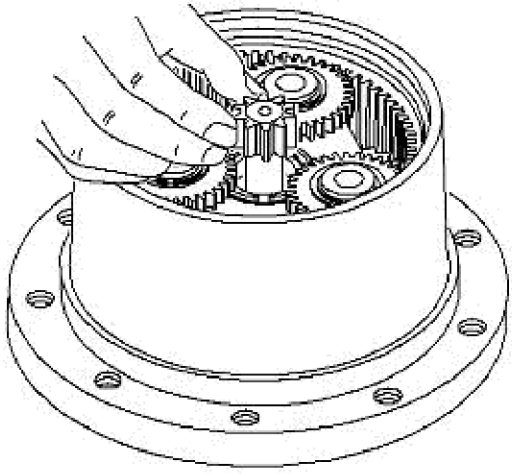
- Unclip the circlip (See figure/27).
- Take off disc (See figure/26).



E250326A

Figure 6

- Take the O-ring (See figure/28) off the housing.

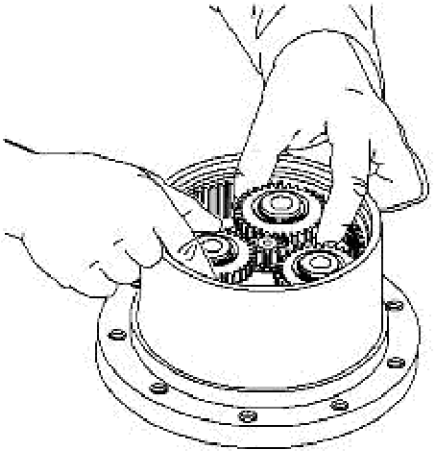


E250325A

Figure 7

Satellite

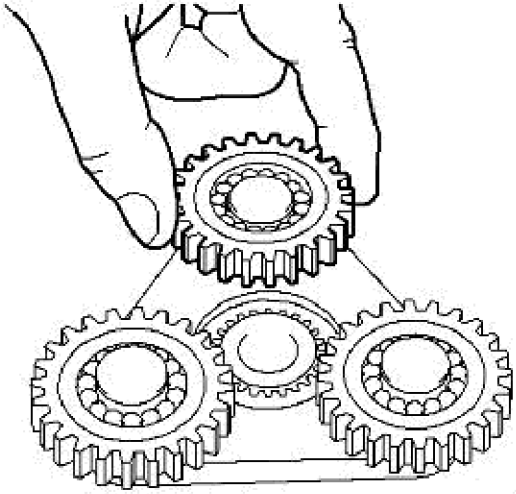
- Remove pinion (See figure/25).



E150185A

Figure 8

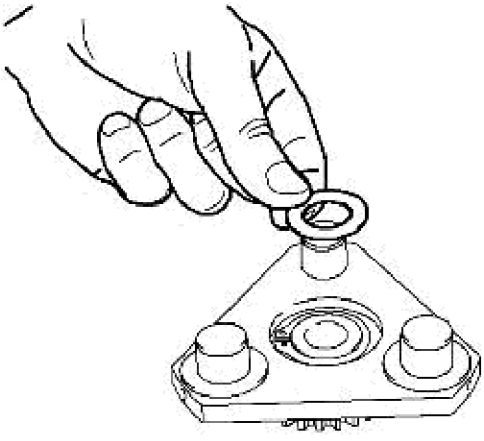
- Take planet carrier (See figure/18) out of the housing.



E150186A

Figure 9

- Take off pinion (See figure/23) with needles (See figure/24).



E150187A

Figure 10

- Remove the pressure disc (See figure/21).

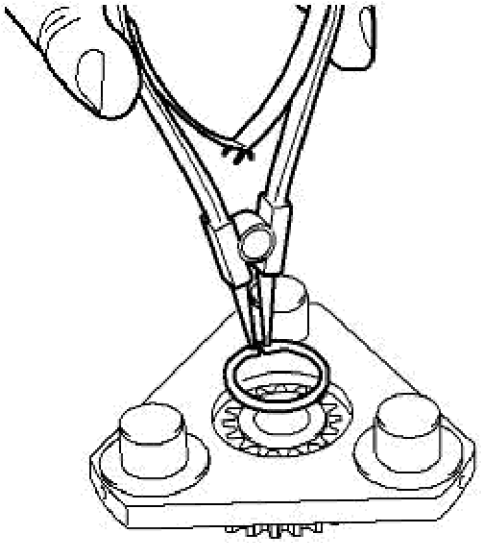

E150188A

Figure 11

- Unclip the circlip (See figure/22).

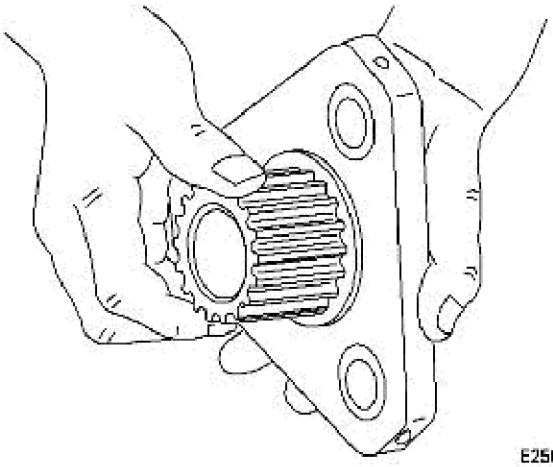

E250317A

Figure 12

- Take pinion (See figure/17) of planet carrier (See figure/18).

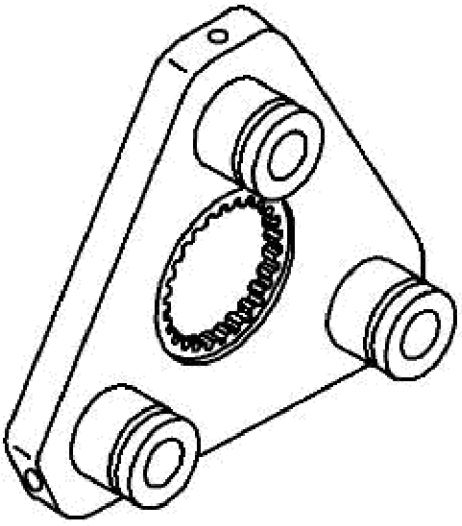

E250316A

Figure 13

- Check planet carrier (See figure/18) for damage and wear, replace if necessary.

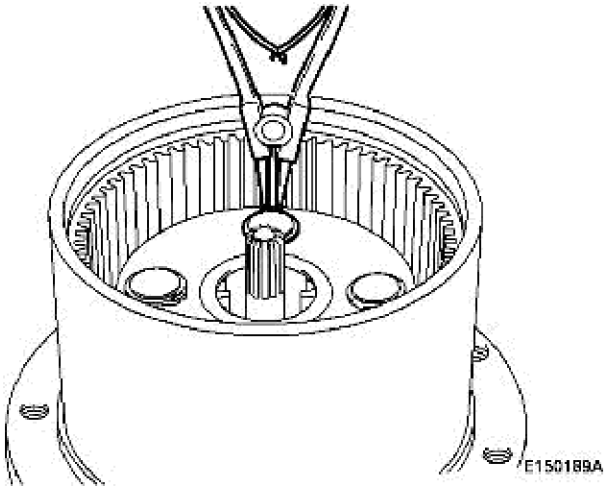


Figure 14

Drive gear

- Remove the circlip (See figure/14) and take off disc (See figure/13).

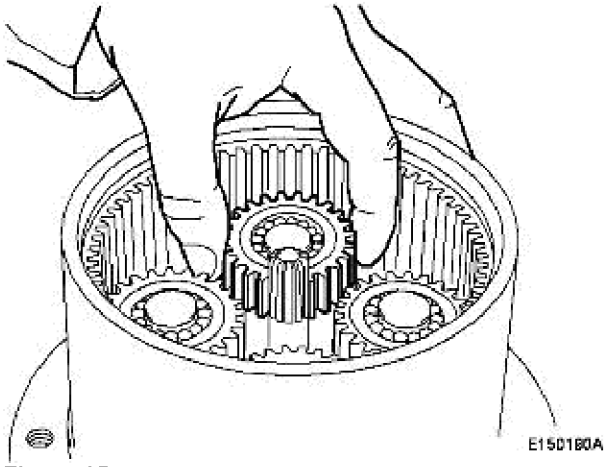


Figure 15

- Take off pinion (See figure/11) with needles (See figure/12).

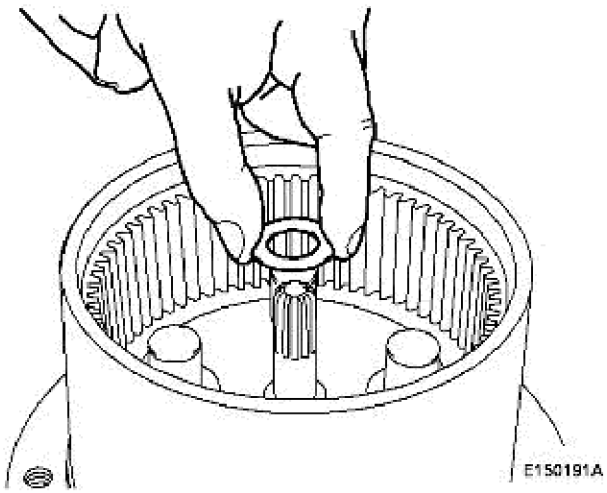


Figure 16

- Remove thrust washers (See figure/10).

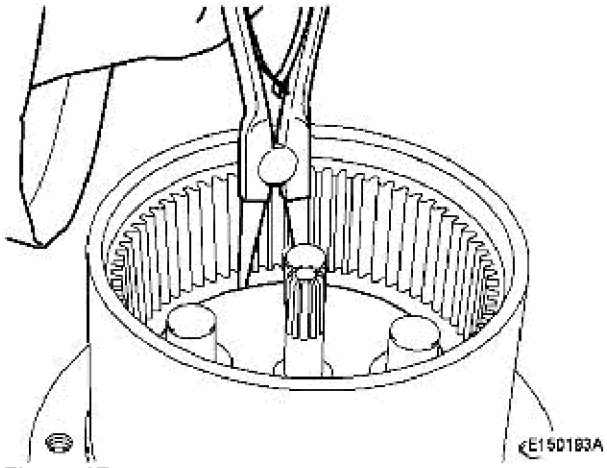


Figure 17

Housing

- Unclip circlip (See figure/9) and take housing (See figure/8) off the motor.

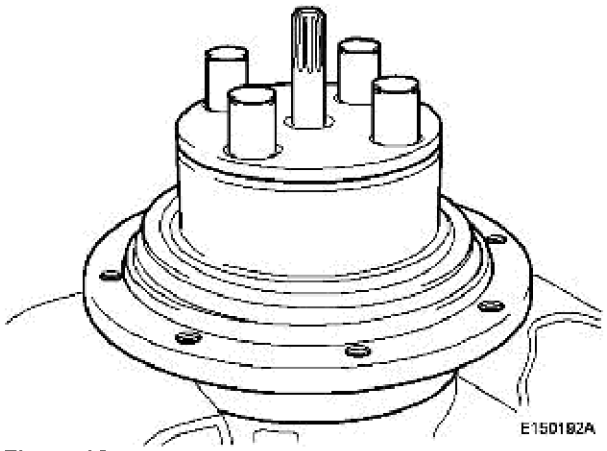


Figure 18

Seal carrier

- Take the loose washer (See figure/5) with the O-ring (See figure/4) off the motor.

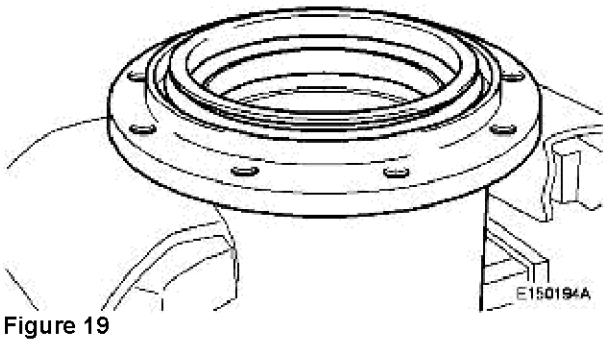


Figure 19

Loose seal

- Take the loose washer (See figure/5) with the O-ring (See figure/4) off the housing.

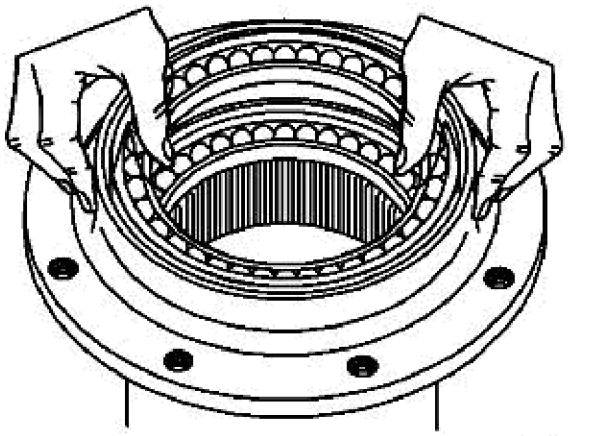


Figure 20

Ball bearing

- Remove the bearing (See figure/6).

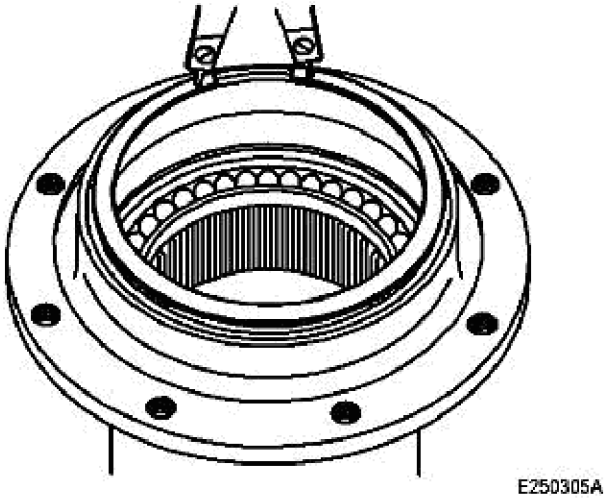


Figure 21

- Unclip the circlip (See figure/7).

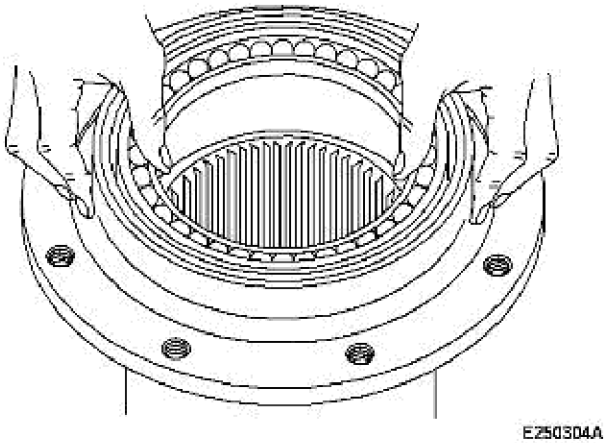


Figure 22

- Remove the bearing (See figure/6) from the housing.

Assembling the travel gear

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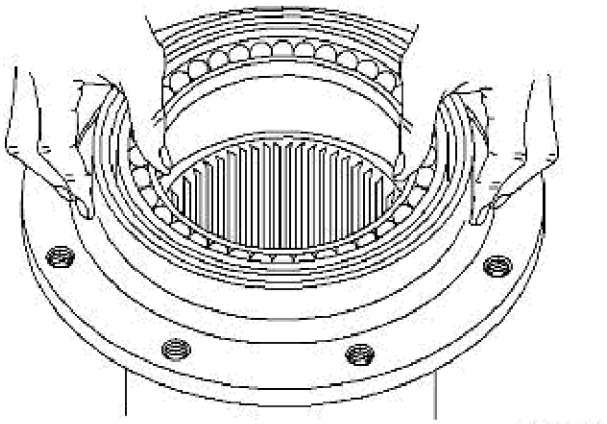


Figure 23

Ball bearing

- Press bearing (See figure/6) onto housing (See figure/8).

NOTE **Observe the direction of the roller bearings.**

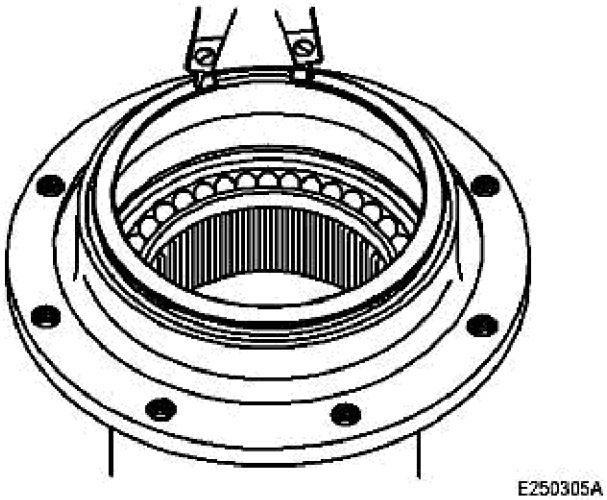


Figure 24

- Assemble circlip (See figure/7).

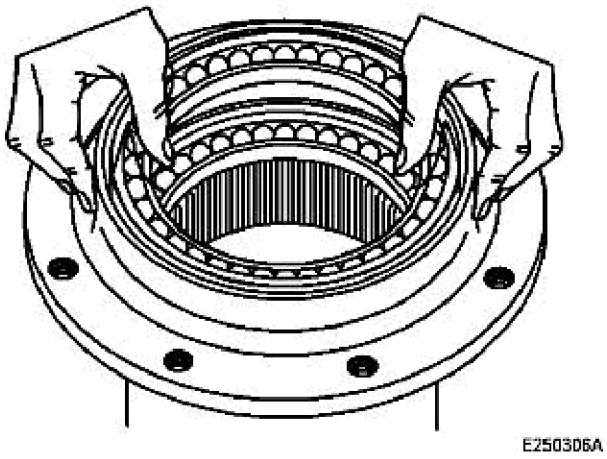


Figure 25

- Press on the second roller bearing (See figure/6).

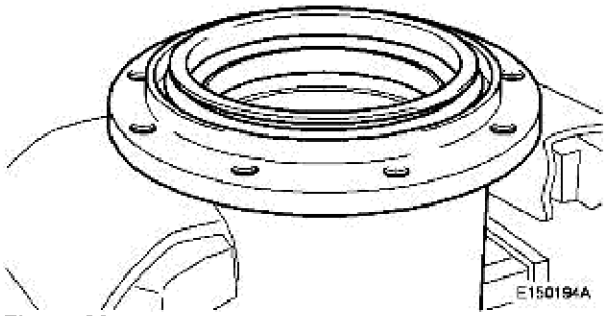


Figure 26

Loose seal

- Attach the loose washer (See figure/5) with the O-ring (See figure/4) to the housing.

NOTE **Apply some grease to the O-ring to facilitate the assembly process. Then wipe off the grease from the surface of the seat.**

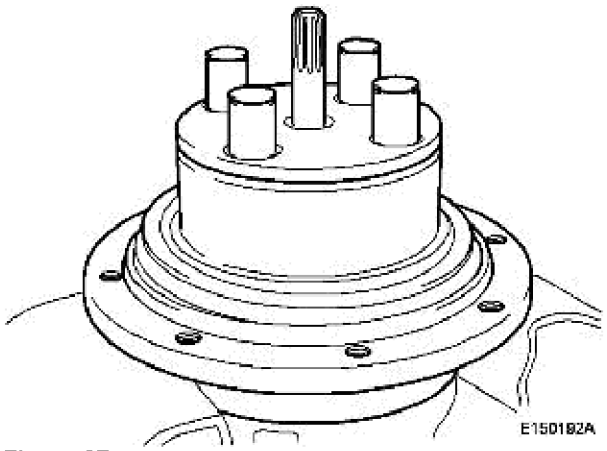


Figure 27

Seal carrier

- Attach the loose washer (See figure/5) with the O-ring (See figure/4) to the housing.

NOTE **Apply some grease to the O-ring to facilitate the assembly process. Then wipe off the grease from the surface of the seat.**

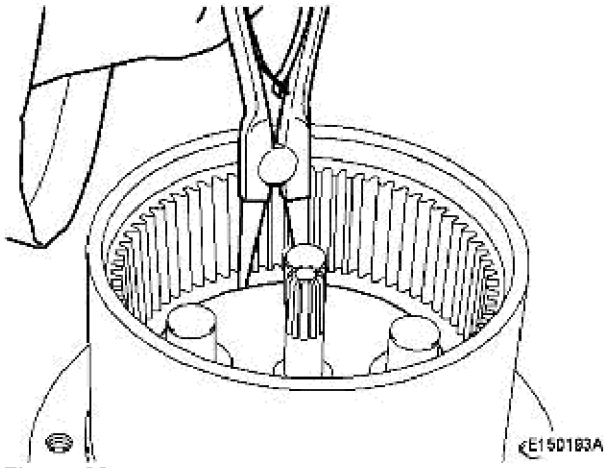


Figure 28

Housing

- Attach the housing to the motor and fasten it with the circlip (See figure/9).

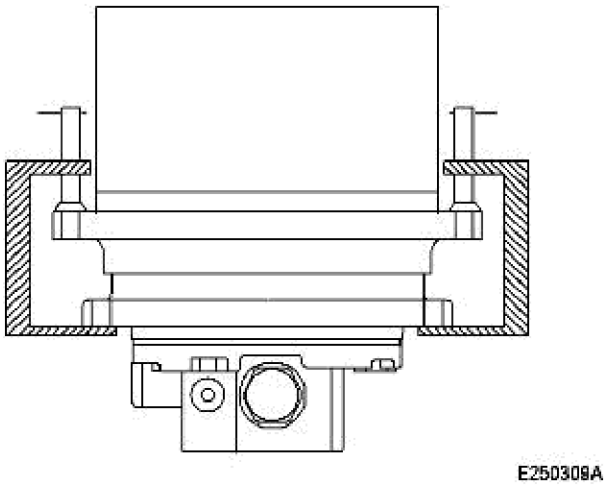


Figure 29

NOTE **Pull the flanges of reduction gear and motor together using C-clamps or a hydraulic press (see See figure).**

A circlip (one thickness) can be used to adjust the pre-load of the roller bearings.

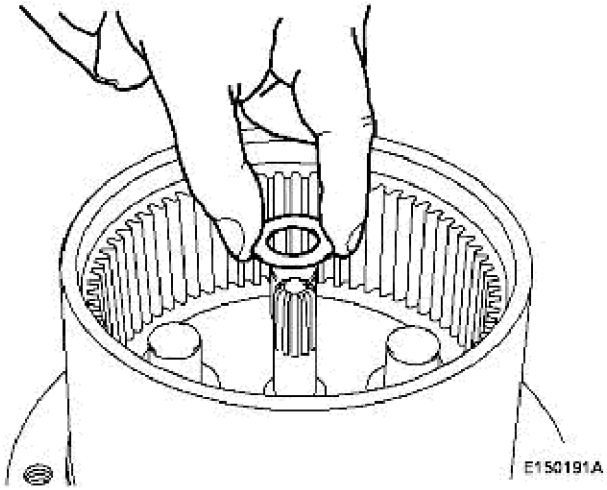


Figure 30

- Assemble thrust washers (See figure/10).

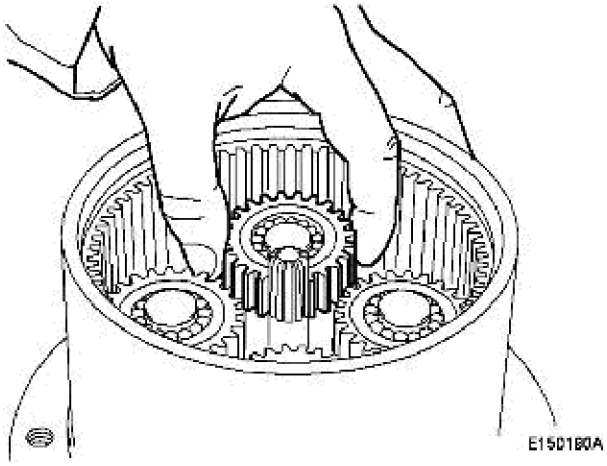


Figure 31

- Assemble pinion (See figure/11) with needles (See figure/12).

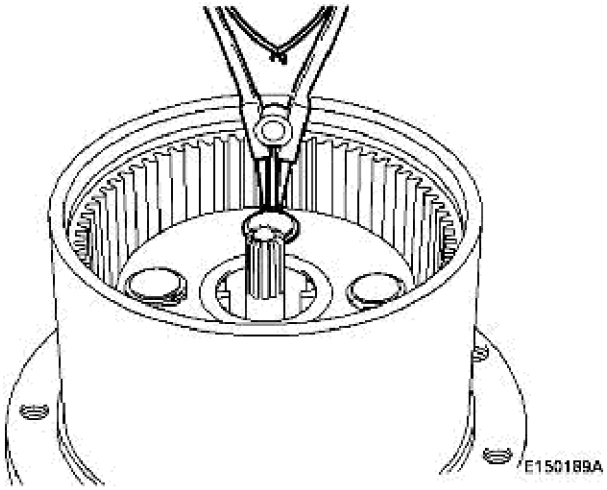


Figure 32

- Attach disc (See figure/13) and fasten with circlips (See figure/14).

NOTE **Do not open the circlip too wide. Replace circlips if their tension is not correct.**

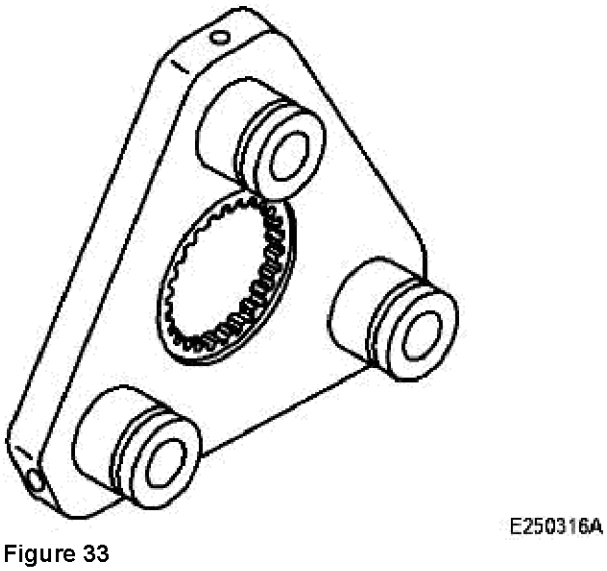


Figure 33

Satellite

- Press bolts (See figure/20) and spring pins (See figure/19) onto planet carrier (See figure/18).

NOTE **The parts cannot be disassembled.**

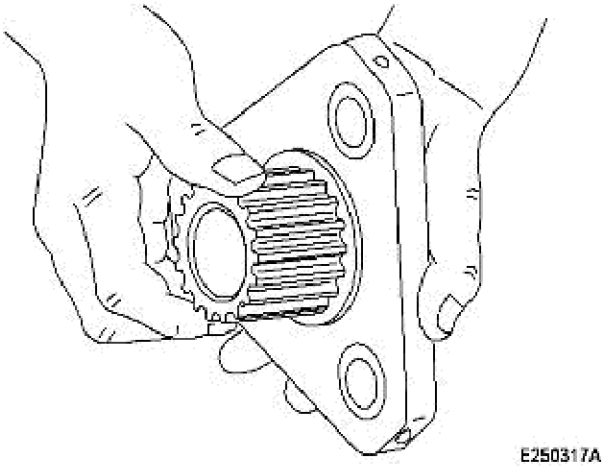


Figure 34

- Assemble pinion (See figure/17) to the planet carrier.

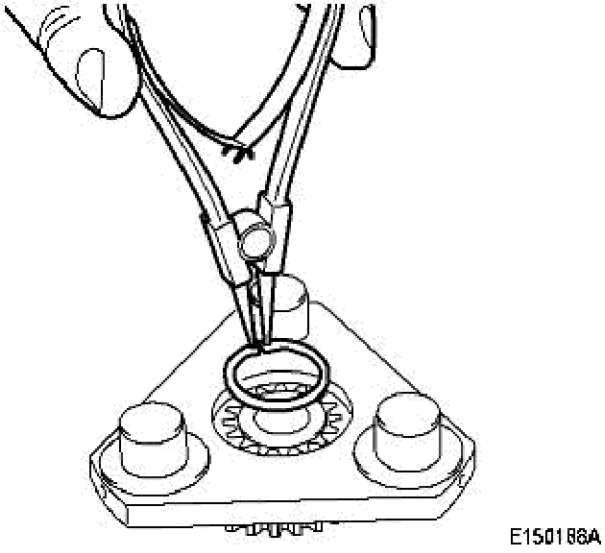
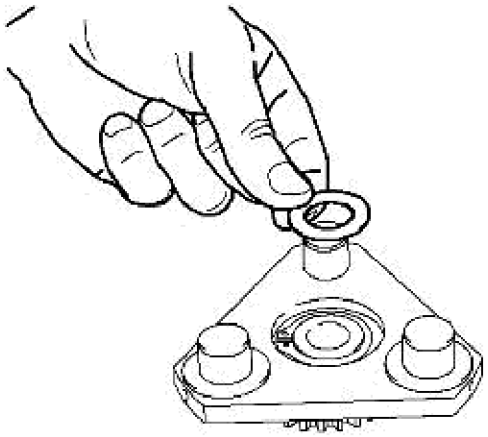


Figure 35

- Assemble circlip (See figure/22).

NOTE **When assembling the circlip make sure that the rim points up.**

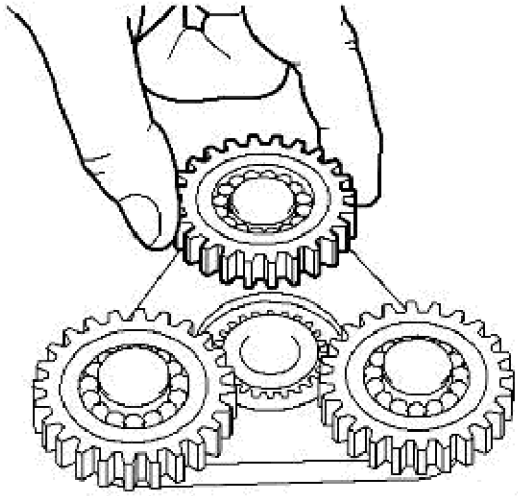
Do not open the circlip too wide. Replace circlips if their tension is not correct.



E150187A

Figure 36

- Install thrust washers (See figure/21).



E150188A

Figure 37

- Assemble pinion (See figure/21) with needles (See figure/24).

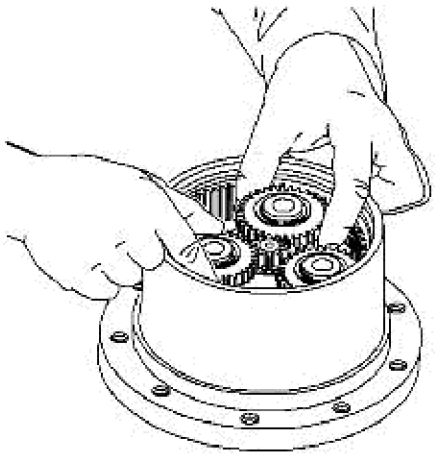


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Figure 38

- Insert planet carrier (See figure/18) with pinion into the housing.

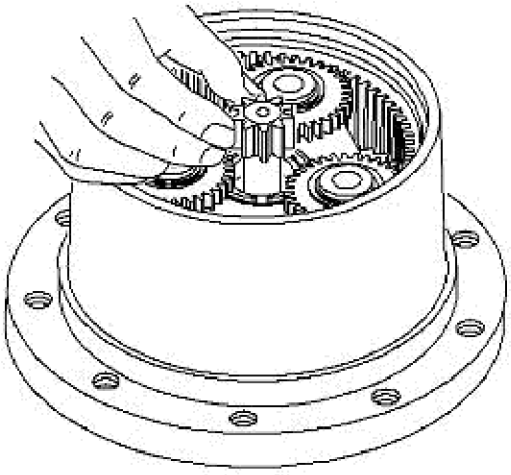

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Figure 39

- Install pinion (See figure/25).

NOTE **The pinion fits only in one position.**

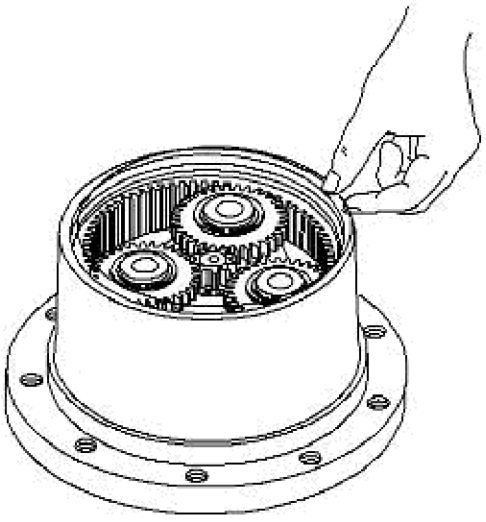

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Figure 40

Cover

- Attach the O-ring (See figure/28) to the housing.

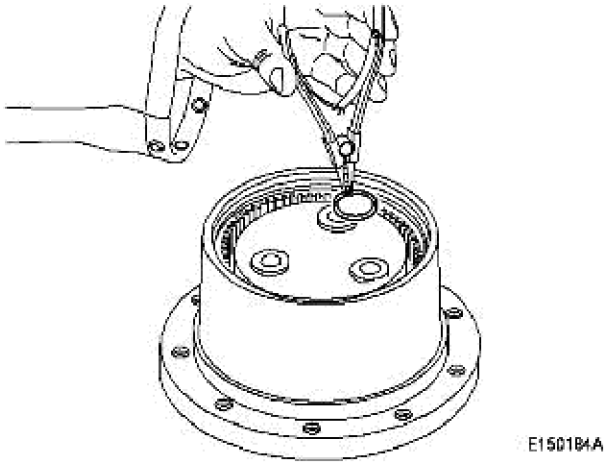

Figure 41

- Attach disc (See figure/26) and fasten with circlips (See figure/27).

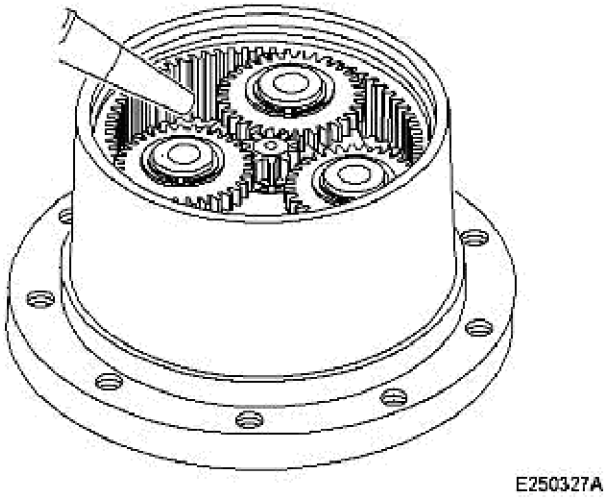

Figure 42

- Fill the housing with 600 cm^3 of lubricant.

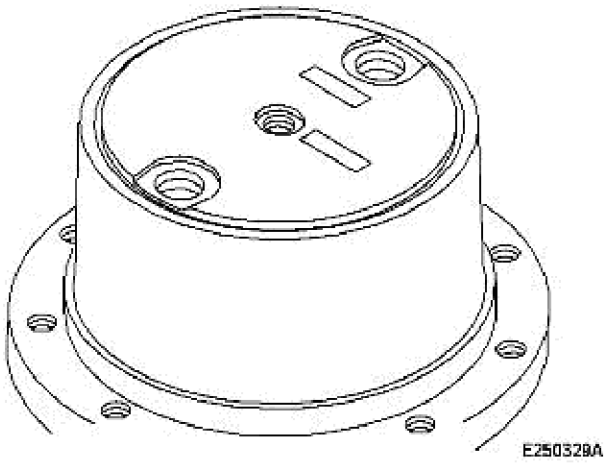

Figure 43

- Insert the cover into the housing.

NOTE **Cover the O-ring with grease and insert the cover horizontally to avoid damaging the O-ring.**
The vertical tapped bore must be in line with the notches on the housing.

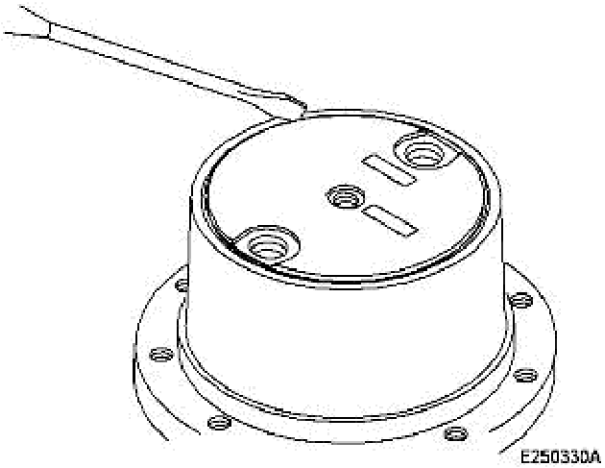

Figure 44

- Place the circlip (See figure/30) into the groove in the housing to locate the cover.

NOTE **Place a flat screwdriver at the end of the circlip and knock in circumferential direction.**

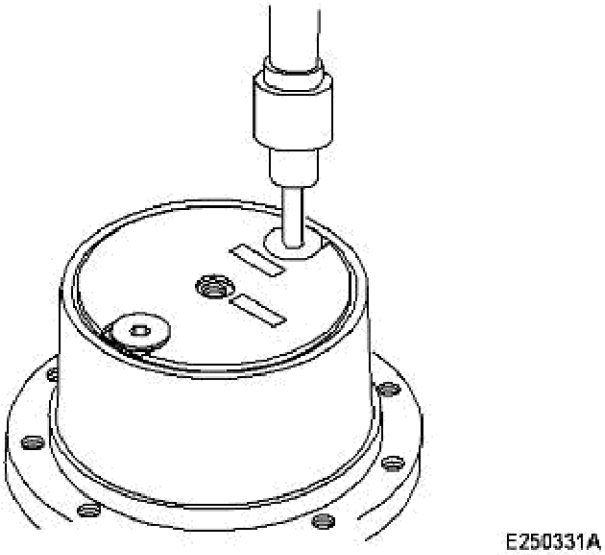

Figure 45

- Insert plugs (See figure/31) with O-ring (See figure/34) into the cover and tighten to 46….51 Nm.
Dimension of hexagon: 8 mm

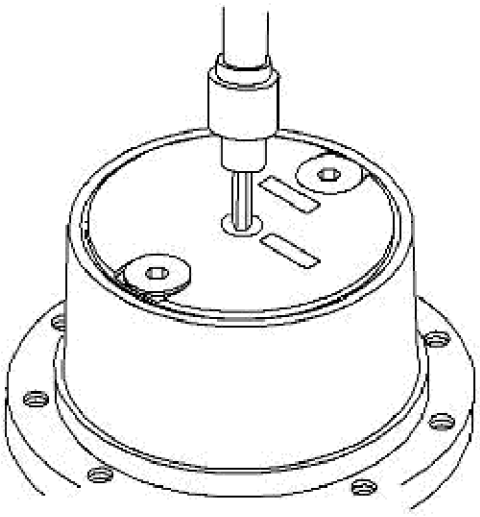

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Figure 46

- Insert plug (See figure/31) with O-ring (See figure/33) into the cover and tighten to 12....13 Nm.

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Hydraulic motor 1, travel gear**	Function Group : **441**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Hydraulic motor 1, travel gear

Schematic

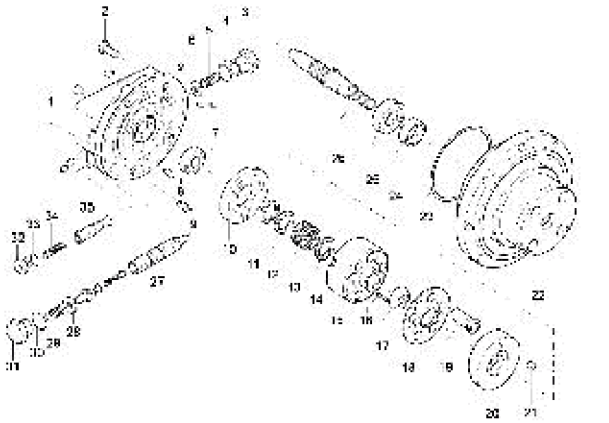
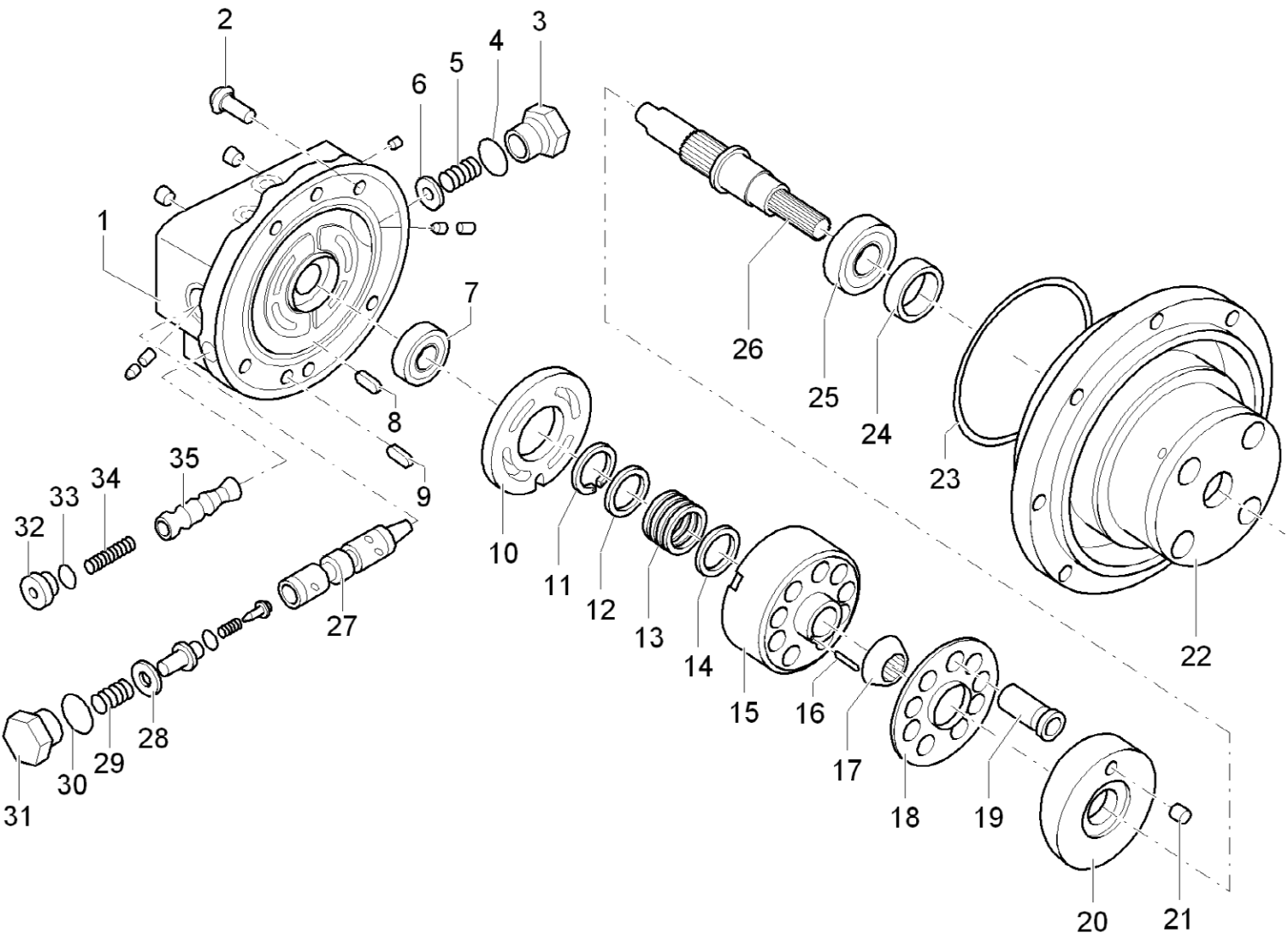


Figure 1

1 Housing 1	11 Circlip	21 Pin	31 Plug
2 Screw	12 Retainer	22 Housing 2	32 Plug
3 Plug	13 Spring	23 O-ring	33 O-ring
4 O-ring	14 Retainer	24 Oil scraper ring	34 Spring
5 Spring	15 Cylinder block	25 Roller bearing	35 Spool
6 Ring	16 Pin	26 Pinion	
7 Roller bearing	17 Spherical cap	27 Spool element	
8 Roll pin	18 Retaining plate	28 Ring	
9 Pin	19 Piston with slipper pad	29 Spring	
10 Valve plate	20 Swash plate	30 O-ring	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E150195A

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Disassembling the hydraulic motor**	Function Group : **441**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Disassembling the hydraulic motor

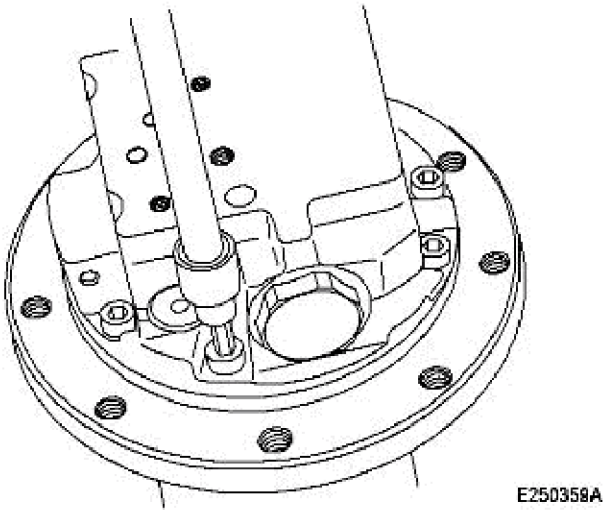

Figure 1

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Housing 1 and housing 2 of the hydraulic motor

- Unscrew the socket head cap screws (See figure/2).

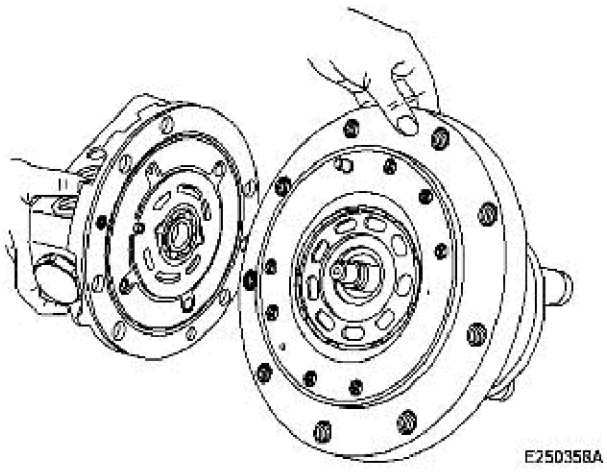

Figure 2

- Separate housing 1 from housing 2.

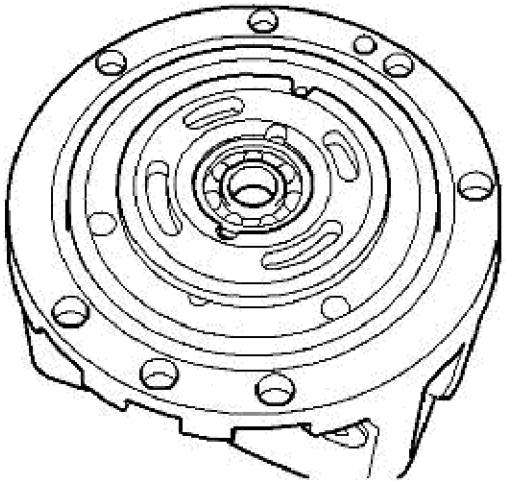

Figure 3

Valve plate

- Remove valve plate (See figure/10) from the housing.

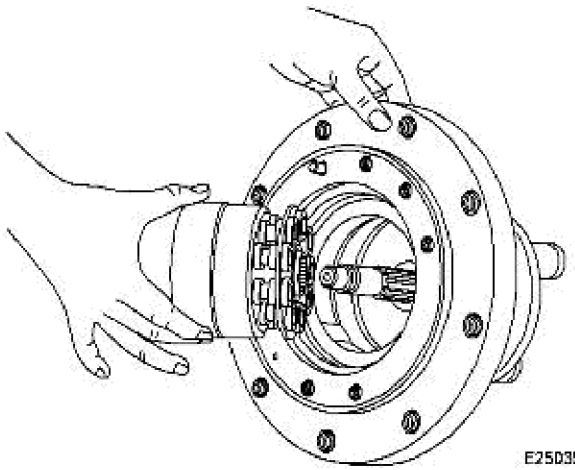

Figure 4

Cylinder block

- Take the cylinder block out of housing 2 (See figure/22).

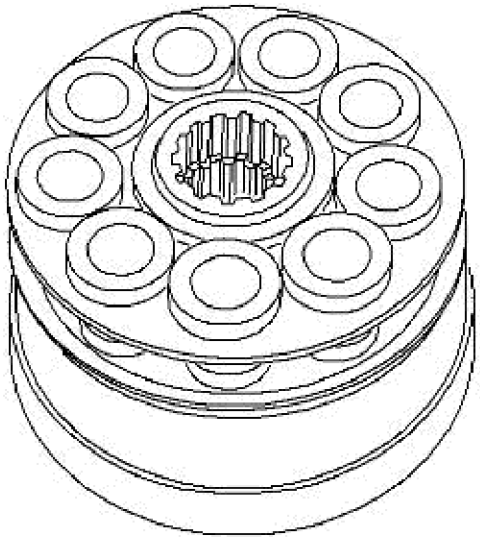

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Figure 5

- Separate slipper pad (See figure/19) from the retaining plate.

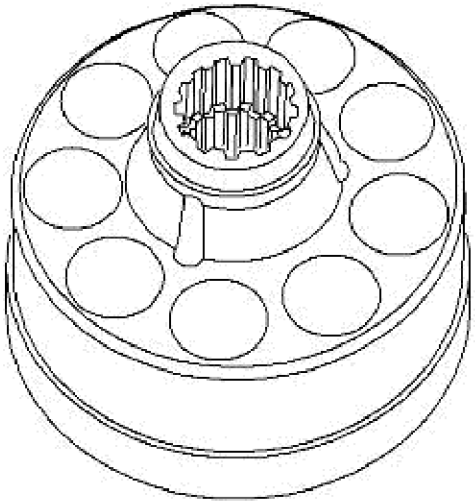

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Figure 6

- Remove the spherical bush (See figure/17).

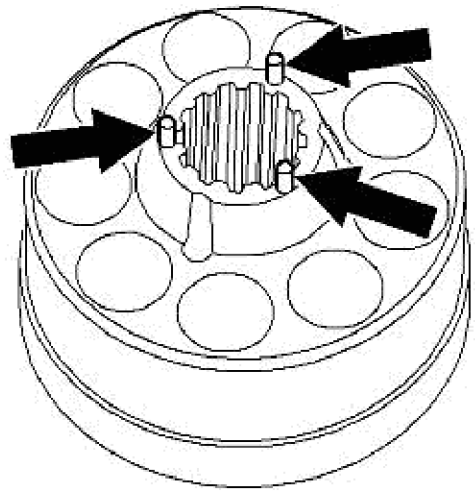

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Figure 7

- Pull the three pins (See figure/16) out of cylinder block (See figure/15).

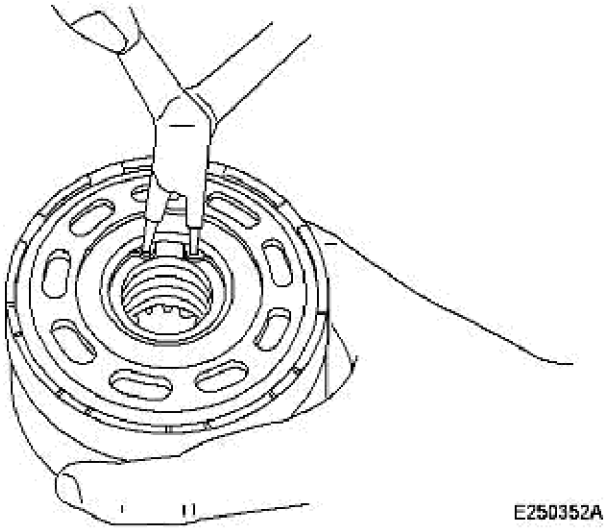

Figure 8

- Unclip the circlip (See figure/11).

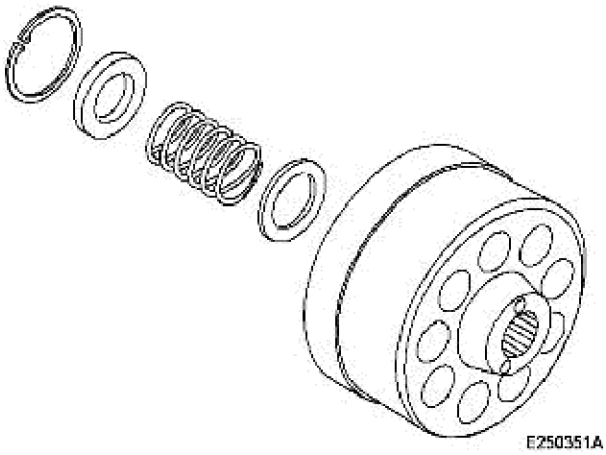

Figure 9

- Take retainers (See figure/12 and 14) and spring (See figure/13) out of cylinder block (See figure/15).

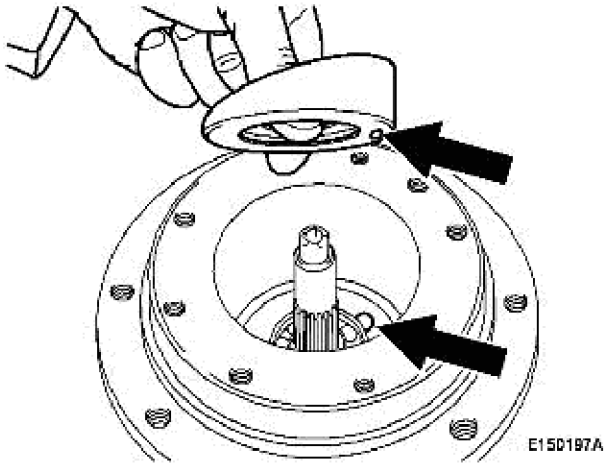

Figure 10

Swash plate

- Take swash plate (See figure/20) out of housing 2 (See figure/22).

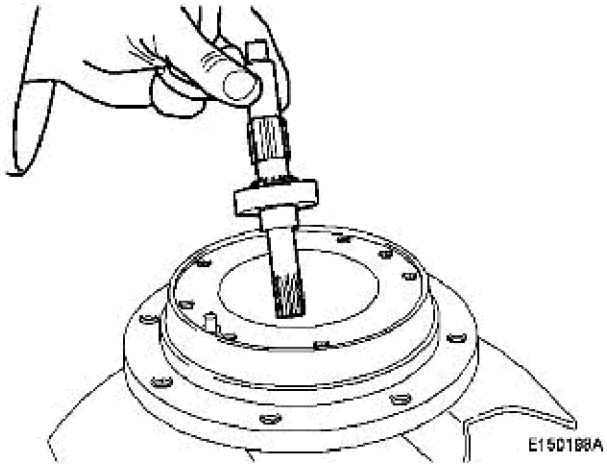

Figure 11

Shaft

- Take pinion (See figure/26) out of housing 2.

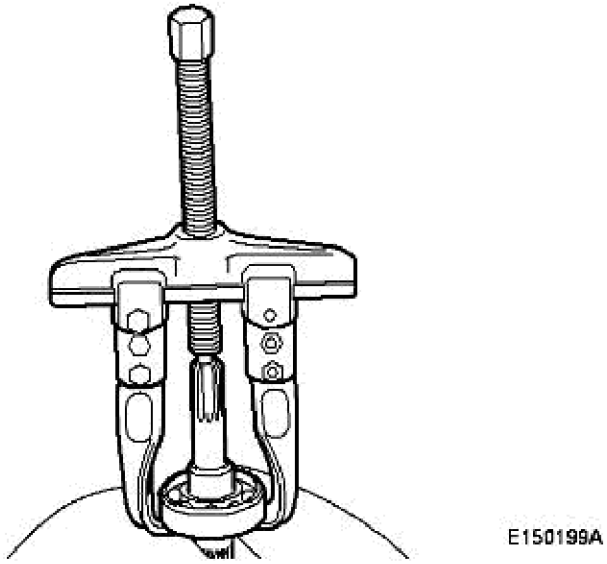

Figure 12

- Pull roller bearing (See figure/25) off pinion (See figure/26).

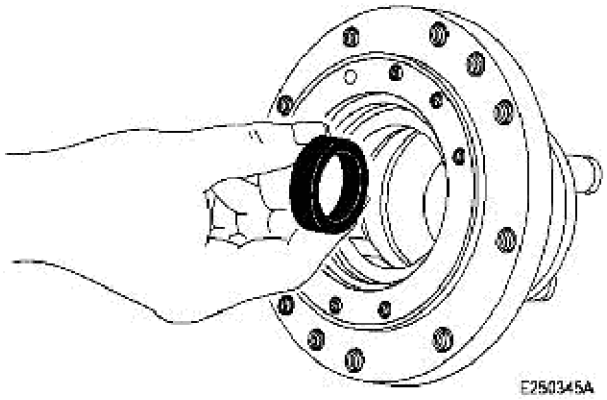

Figure 13

Seal

- Remove oil scraper ring (See figure/24) from housing 2 (See figure/22).

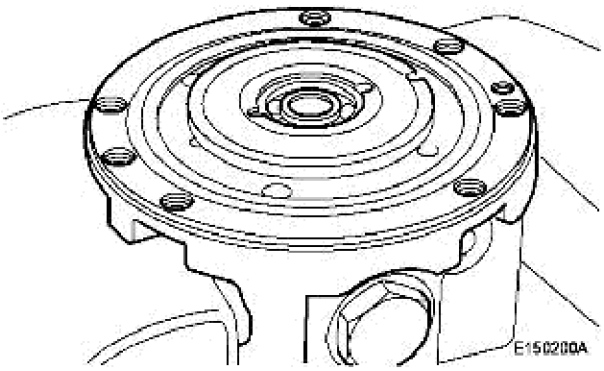

Figure 14

- Take valve plate (See figure/10) and O-ring (See figure/23) out of housing (See figure/1).

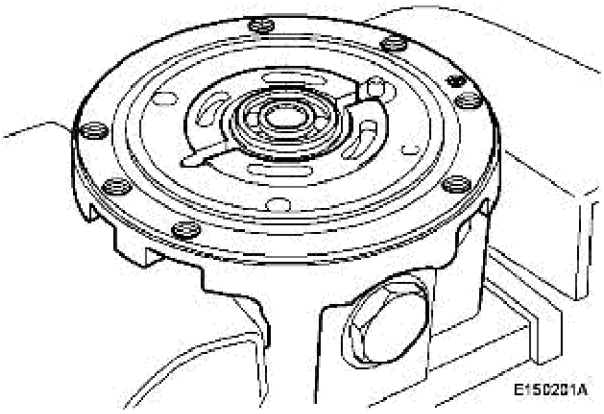

Figure 15

- Remove roller bearing (See figure/7) and roll pin (See figure/8) from housing 1 (See figure/1).

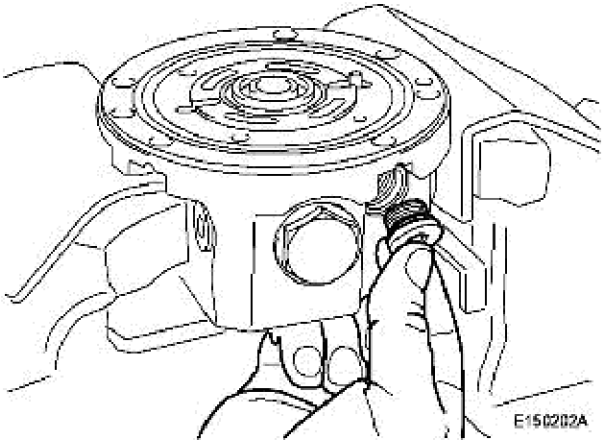

Figure 16

High speed valve spool

- Unscrew plug (See figure/32) with O-ring (See figure/33) from the housing.

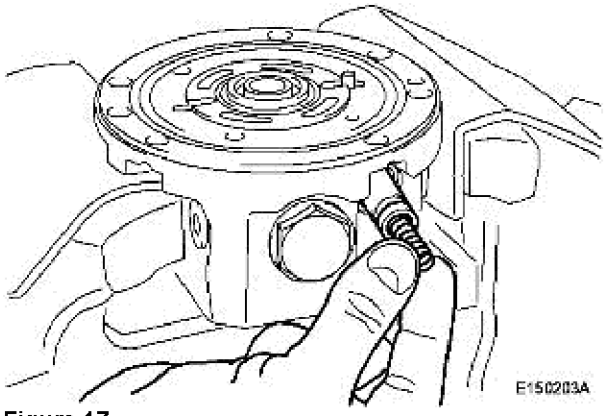

Figure 17

- Remove spring (See figure/34) from housing 1 (See figure/1).

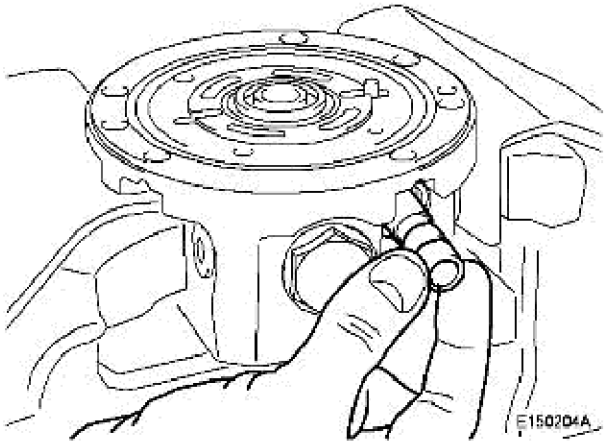

Figure 18

- Remove spool (See figure/35) from housing 1 (See figure/1).

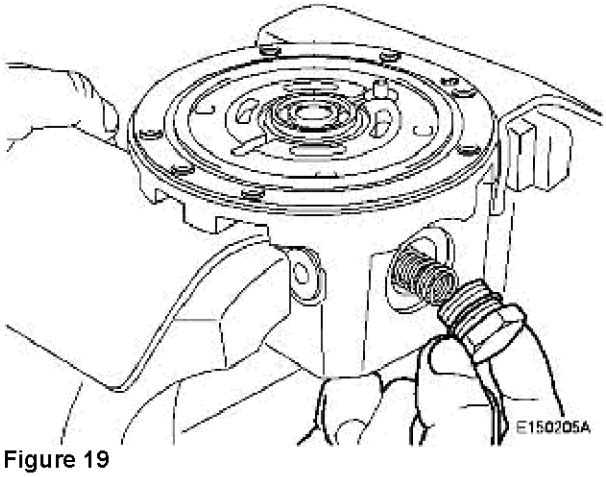

Figure 19

Balancing valve

- Unscrew plug (See figure/31) with O-ring (See figure/30) from housing 1 (See figure/1).

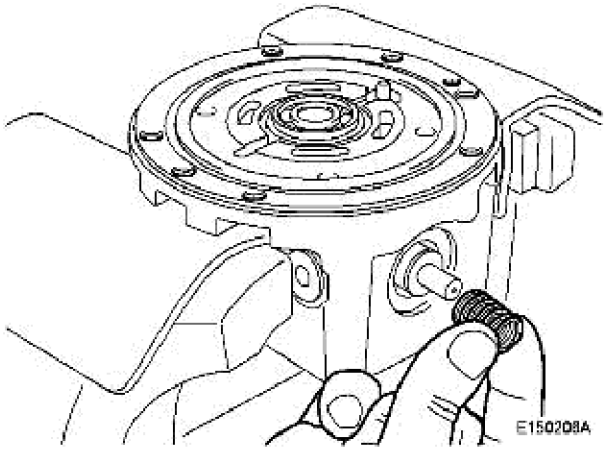

Figure 20

- Remove spring (See figure/29).

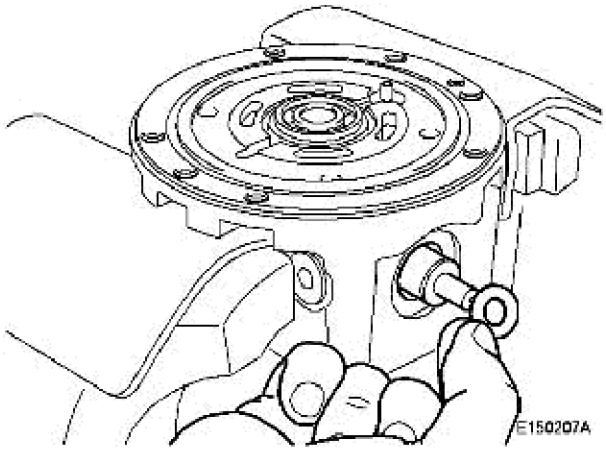

Figure 21

- Take ring (See figure/28) off the spool element.

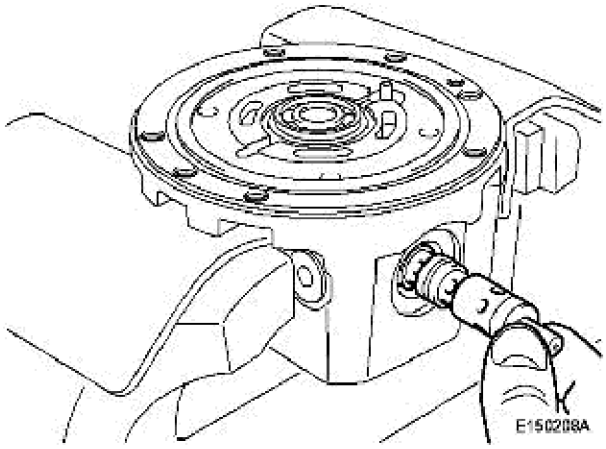

Figure 22

- Take spool unit (See figure/27) out of housing 1 (See figure/1).

Assembling the hydraulic motor

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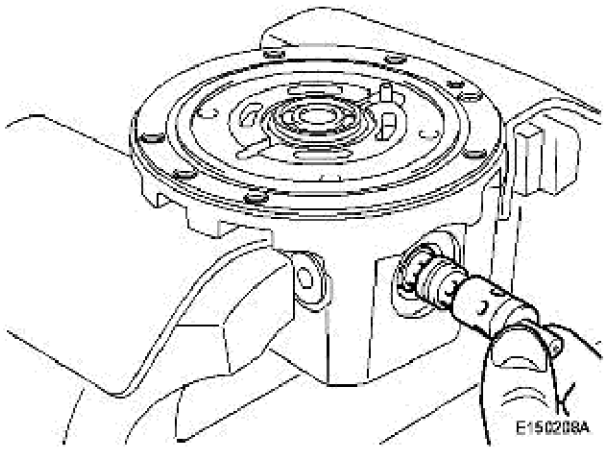

Figure 23

Balancing valve

- Insert spool unit A (See figure) into the housing (See figure/1).

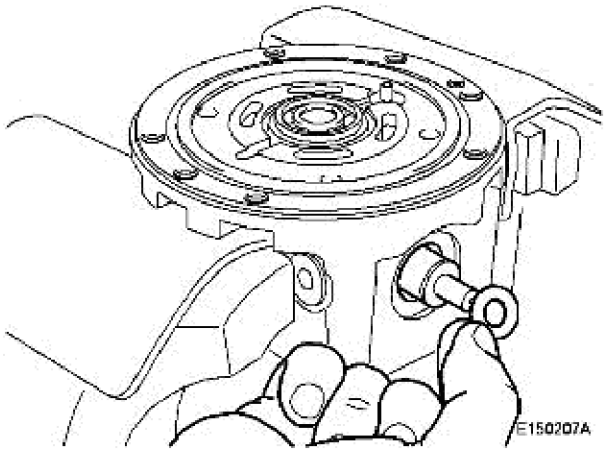

Figure 24

- Insert ring (See figure/28).

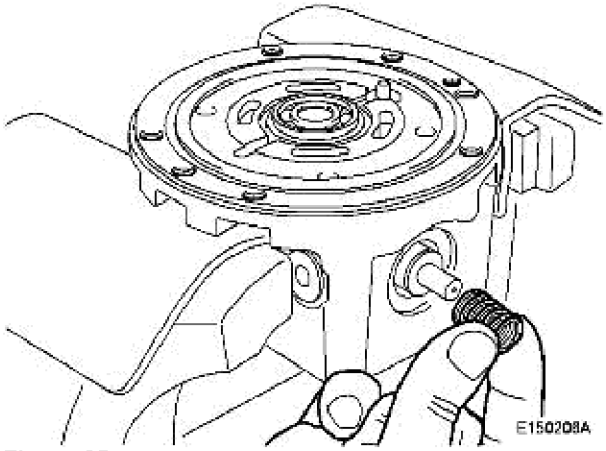

Figure 25

- Insert spring (See figure/29) into the housing.

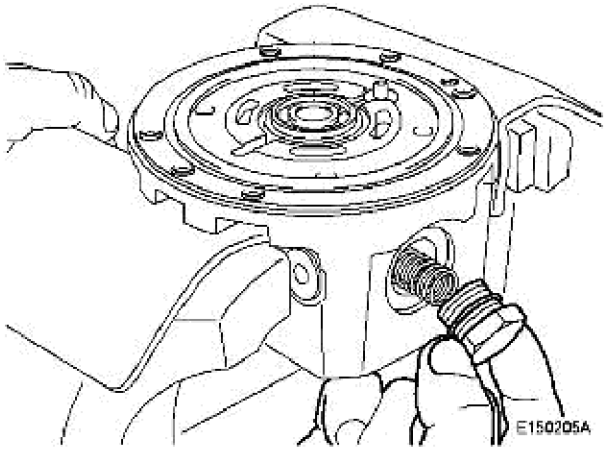

Figure 26

NOTE **Dimension of hexagon: 27 mm**

- Turn plug (See figure/31) in with O-ring (See figure/30) and tighten with 245 Nm.

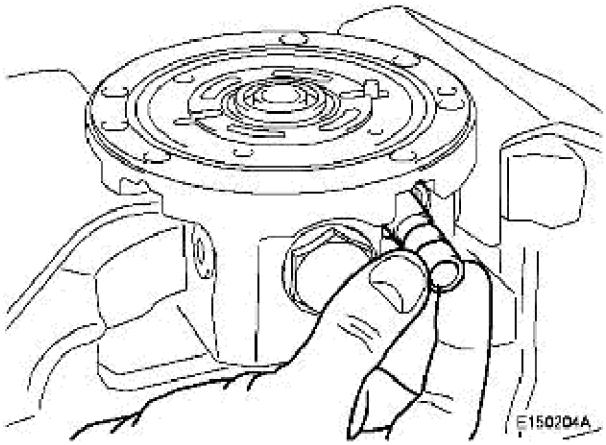

Figure 27

High speed valve spool

- Insert spool (See figure/35) into the housing.

NOTE **Observe the direction of the spool.**

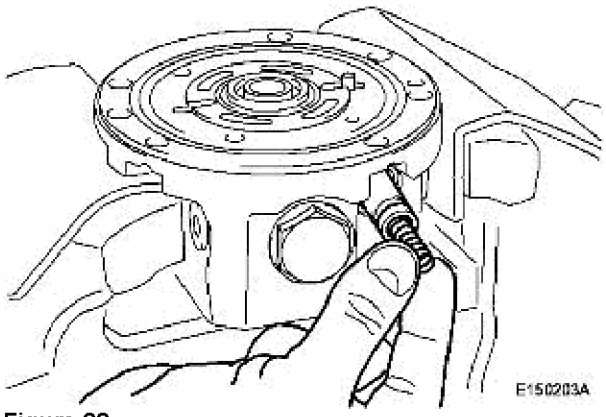

Figure 28

- Remove spring (See figure/34).

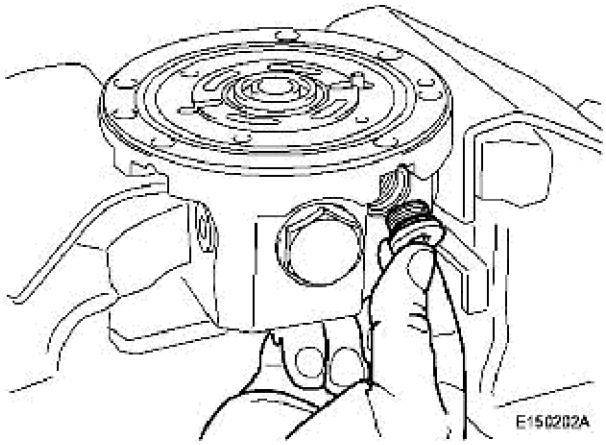

Figure 29

- Turn plug (See figure/32) in with O-ring (See figure/33) and tighten with 51 Nm.

NOTE **Dimension of hexagon: 8 mm**

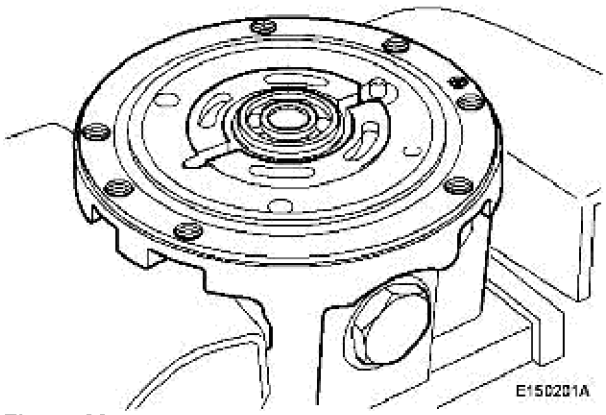

Figure 30

Housing 1

- Insert roller bearing (See figure/7) and roll pin (See figure/8) into housing 1.

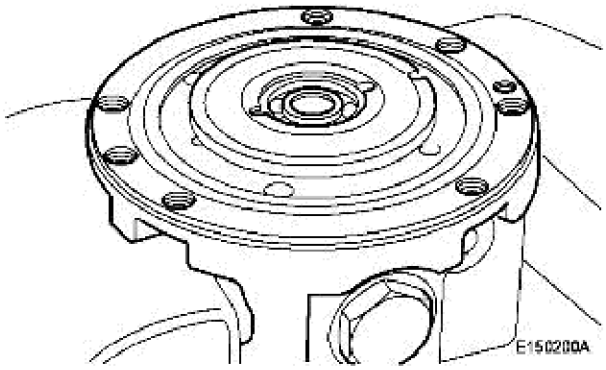

Figure 31

- Assemble O-ring (See figure/23) to the housing.
- Install valve plate (See figure/10).

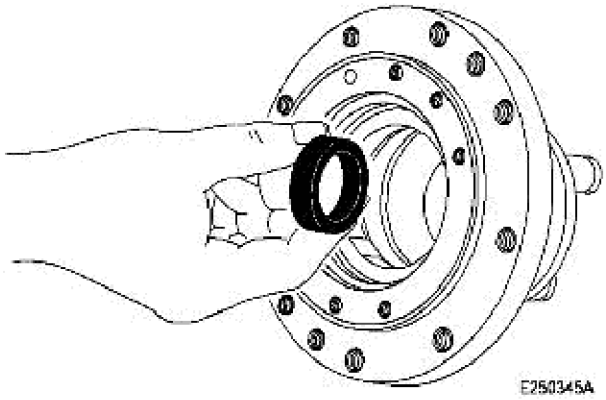

Figure 32

Seal

- Press oil seal (See figure/24) into housing 2 (See figure/22).

NOTE	**Cover the entire circumference of the oil seal with grease. Observe the installation direction of the oil seal and do not cock the seal. The sign "TOP" must point up.**

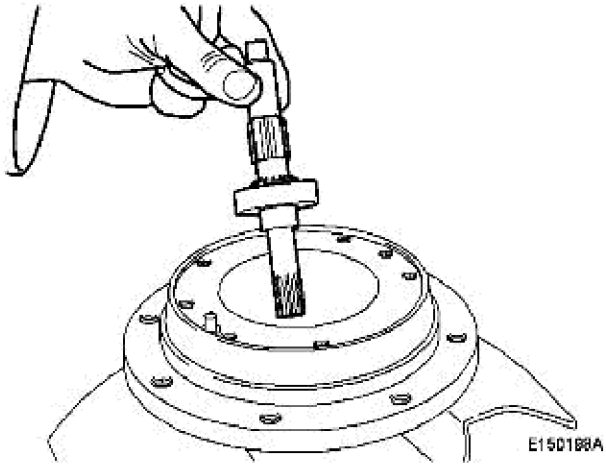

Figure 33

Shaft

- Press roller bearing (See figure/25) onto pinion (See figure/26).
- Insert pinion (See figure/26) into housing 2 (See figure/22).

NOTE	**Make sure the oil seal is not damaged by the shaft.**

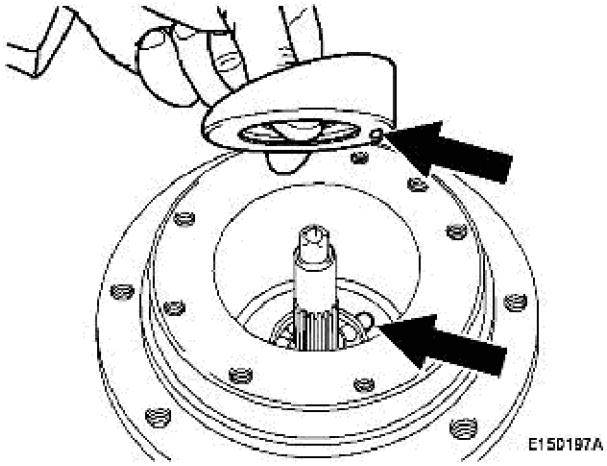

Figure 34

Swash plate

- Insert swash plate (See figure/20) into housing 2 (See figure/22).

NOTE **Apply some oil to the working side of the swash plate and ensure correct fit of the swash plate (See figure/arrows).**

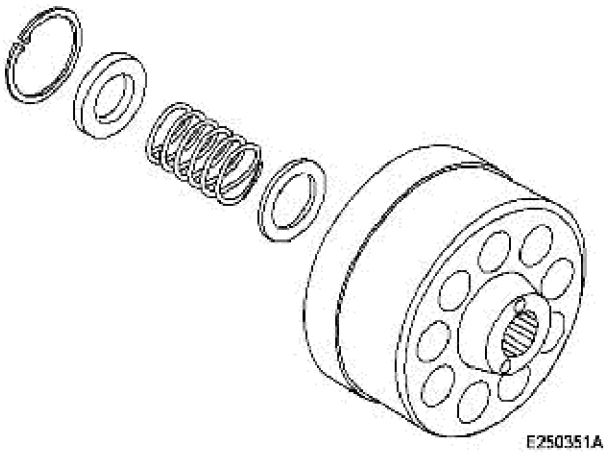

Figure 35

Cylinder block

- Assemble retainer (See figure/14), spring C (See figure/13) and retainer (See figure/12) in this sequence in the cylinder block (See figure/15) and secure with circlip (See figure/11).

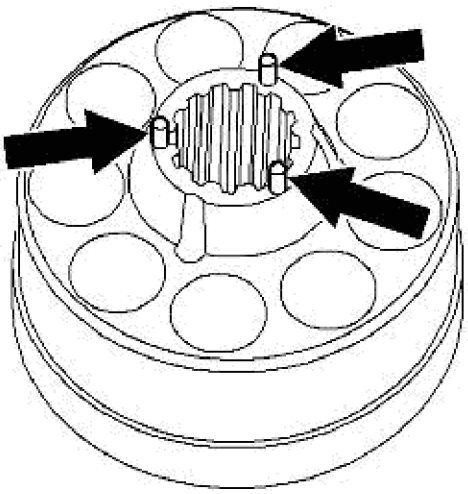

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Figure 36

- Insert three pins (See figure/16) into the cylinder block (See figure/15).

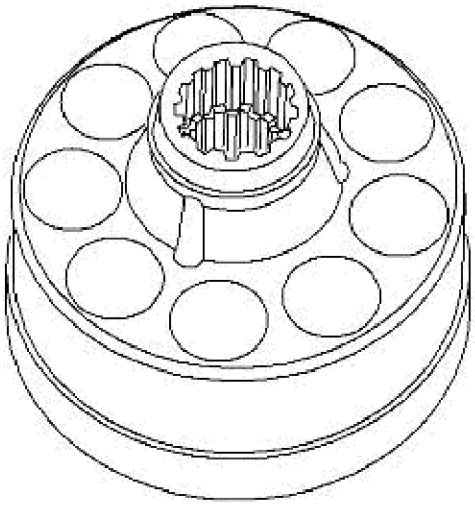

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Figure 37

- Assemble spherical bush (See figure/17).

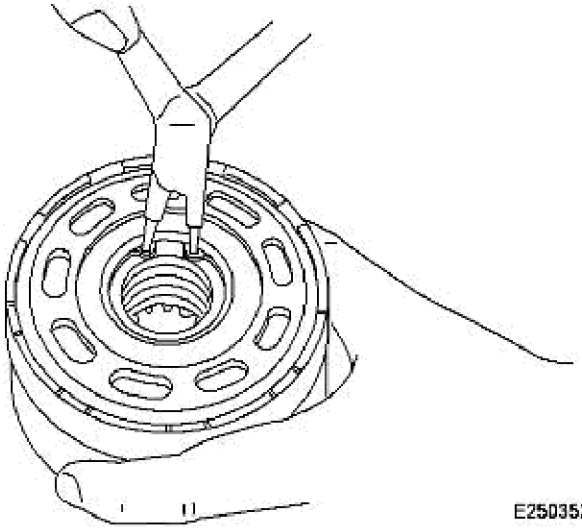

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Figure 38

- Assemble circlip (See figure/11).

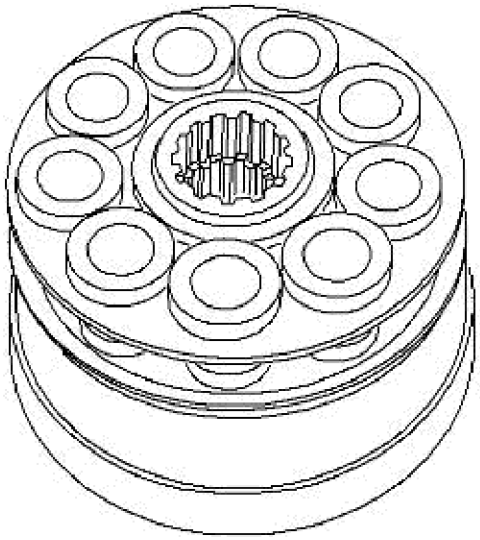

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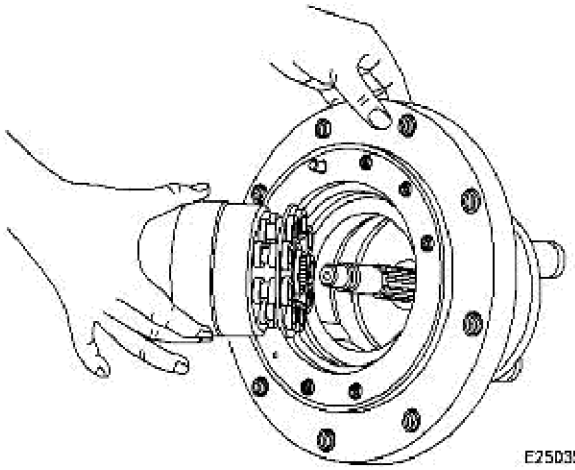
Figure 39

- Assemble retaining plate (See figure/18), which holds the piston unit consisting of pistons and slipper pads (See figure/19), and the cylinder block to a cylinder unit.



E250356A

Figure 40

- Insert cylinder block (See figure/15) into housing 2 (See figure/22), so that the slipper pads contact the swash plate.
- Fill the housing with 200 cm^3 of oil.

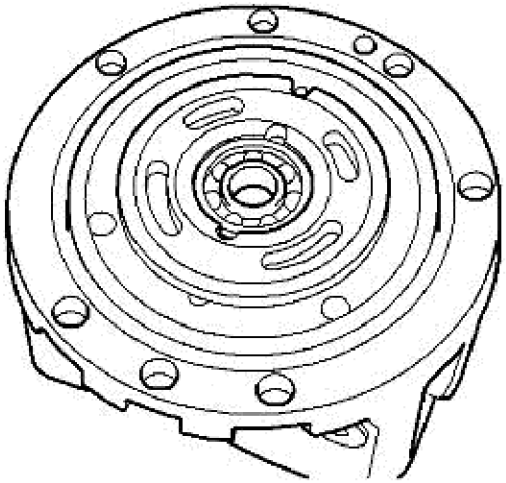


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Figure 41

Valve plate

- Assemble the valve plate (See figure/10) to the housing.

NOTE
The copper surface of the valve plate must point up.
Cover the copper surface with oil.
If necessary cover the steel face of the valve plate with grease.

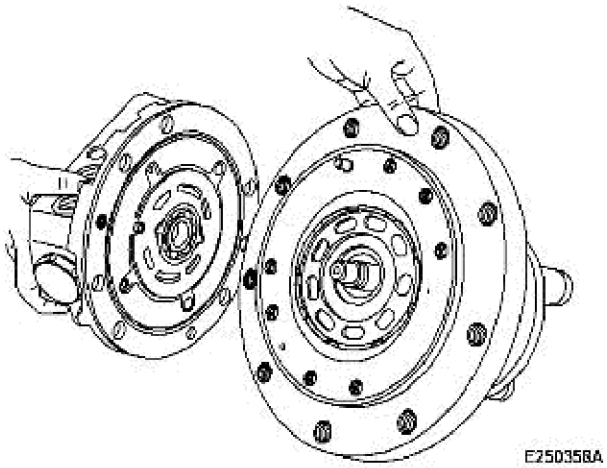

Figure 42

Housing 1 and housing 2 of the hydraulic motor

- Attach housing 1 to housing 2, bolt both housings together with socket head cap screws (See figure/2) and tighten to 65 Nm.

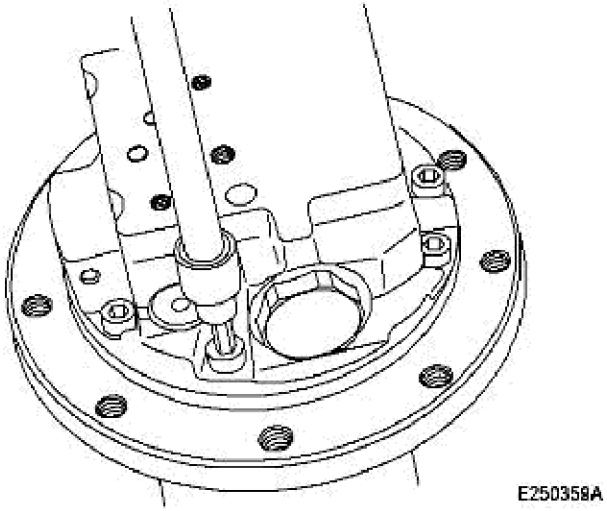

Figure 43

NOTE
Dimension of hexagon: 8 mm
If the motor is to be clamped in a vice, protect the motor with aluminium jaws or a similar device against damage.

VOLVO
Construction Equipment

PROSIS Service Information

Document Title : **Removing the gear motor**	Function Group : **441**	Information Type : **Service Information**	Print Date : **19/10/2011**
Profile : **CEX, EC15B XTV (Volvo) [GB]**			

Removing the gear motor

Op nbr 4312

Vacuum pump

WARNING! **Before starting work make sure that the working attachment is not resting on the ground, so that slewing of the superstructure is possible.**

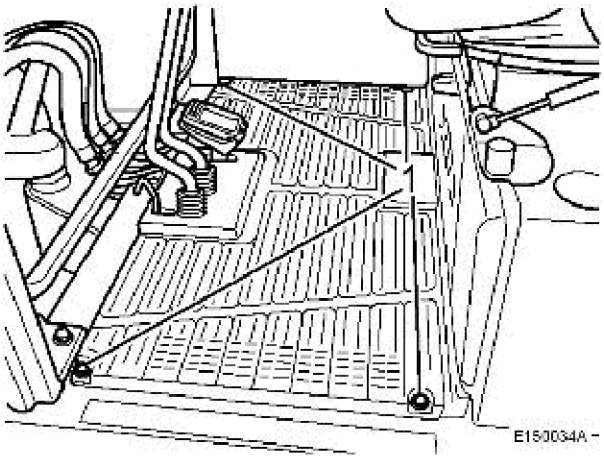

Figure 1

- Unscrew all screws (1) from floor plate and remove the floor plate.

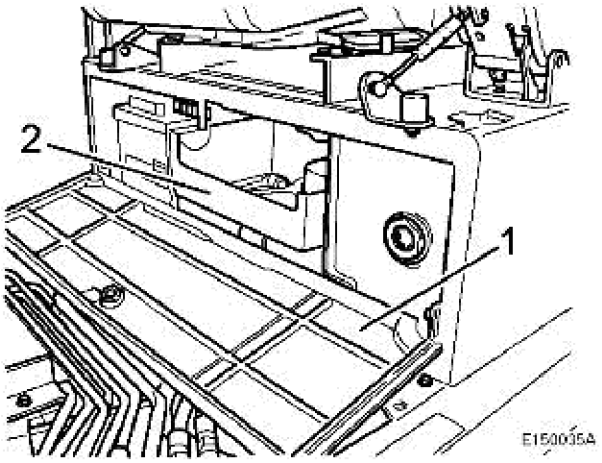

Figure 2

- Remove flap (1).
- Unscrew the screw and remove the tool box (2).

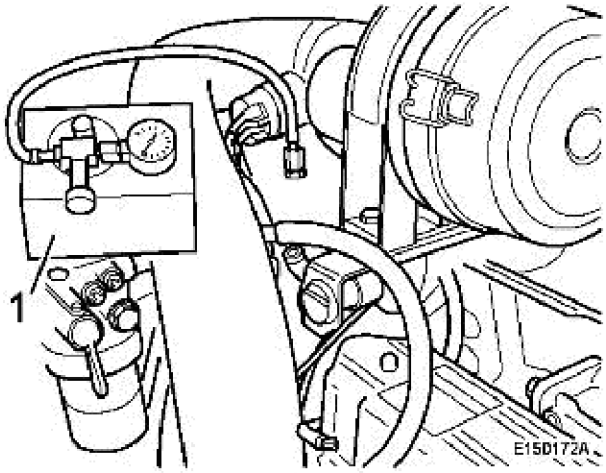

Figure 3

- Remove the breather and install vacuum pump (1).

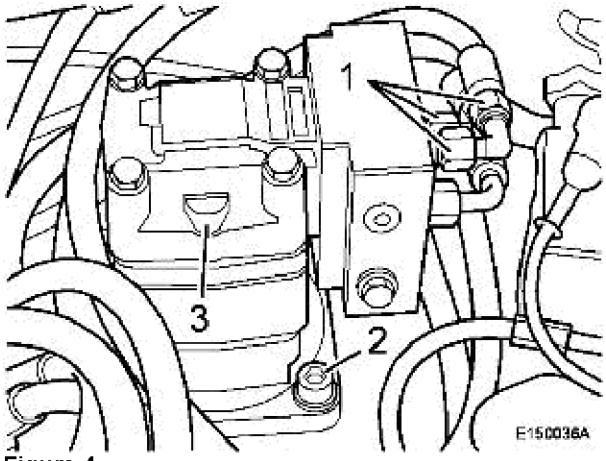

Figure 4

- Mark hydraulic lines (1), unscrew and close with plugs.