CONTENTS:

Schematic circuit diagram

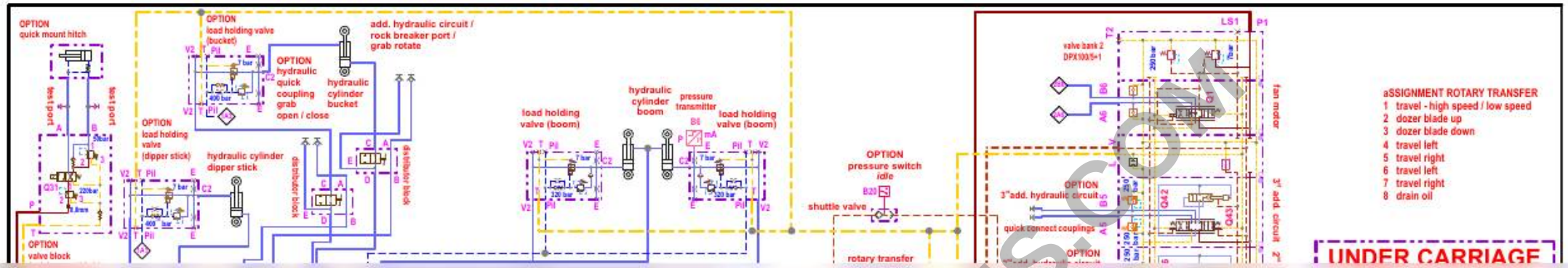
Sheet 10 Power supply, Starting System, Pre-heating
Sheet 11 Diesel Engine Control, Hand Throttle, Rotational speed sensor
Sheet 12 Diesel Engine Control, sensors Diesel engine
Sheet 13 Diesel Engine Control, Injectors, Throttle Flap
Sheet 14 Diesel Engine Control, CAN-Komunication, Exhaust Gas Recirculation, sensors Aftertreatment
Sheet 15 Diesel Engine Control, Aftertreatment sensors
Sheet 16 Diesel Engine Control, Aftertreatment AdBlue system
Sheet 17 Diesel Engine Control, Aftertreatment AdBlue system heating
Sheet 18 Display, Control CAN-Komunication, CAN-Diagnostic, Warning buzzer, Rear view camera
Sheet 19 control unit, Power supply
Sheet 20 control unit, Power supply
Sheet 21 Keypad, fan regulation, Pressure switch Drive
Sheet 22 Driving Fast / Slow, Working hydraulics, stabilization Machine
Sheet 23 Right joystick, Left joystick, Horn
Sheet 24 Attachment Rotation, Quick-attach system, Boom absorption
Sheet 25 Spoon Shifting, Changeover ISO/SAE, ECO-Mode, Auto-idling system
Sheet 26 Load Warning, Hydraulic oil level, Fuel Level
Sheet 27 Flashing beacon, Working headlights
Sheet 28 Wash Wipe, Driver's cab Socket, Interior light, Radio
Sheet 29 heating, Air conditioning
Sheet 30 Additional heating, Central Lubrication, Filling pump
Sheet 31 Comfort Seat, Heating mirrors Telematics Connector plug
Sheet 32 Spare

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c					Designed	04.04.14	Grimm				Location
b					Checked	22.09.16	Grimm				
a								Type TC125 SCRT	Origin Project	Drawing number	Sheet 2
Rev. Index	Revision	Revision No.	Name	Date	Approved			M.-Nr.: 0100-		6304540002	No. 54 Sh.

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Renewing the crankshaft sealing ring (flywheel side)

Standard tools

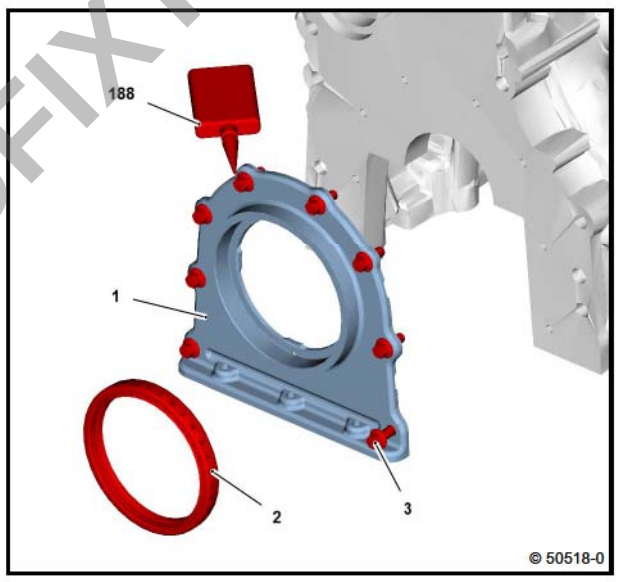
Special tools:

– Pricker	01899103
– Assembly lever	01899110
– Assembly tool	02992214

– Self-tapping screw
– Washer

Removing the crankshaft sealing ring

1 Gasket housing
2 Shaft sealing ring
3 Hexagon head screw
188 Packing compound

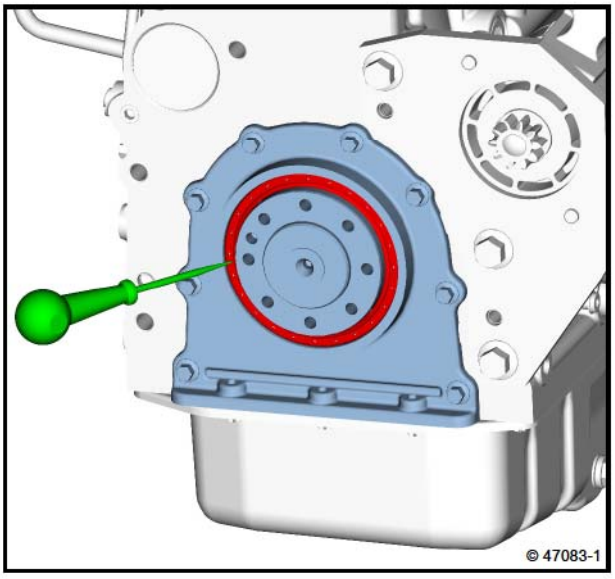


- Remove flywheel.

  Module 05

- Make a hole of approximately 3 mm in the crankshaft sealing ring with a pricker.

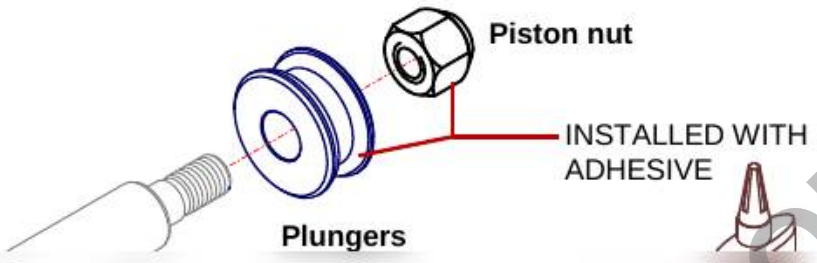
Attention!
Do not damage the gasket housing and crankshaft!



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1.500.01 Tightening torques for pistons or piston nuts



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Code	SPN	FMI	Blink code	Fehlerbescheibung	Error Identification
8	132	1	2-2-6	Der Luftmassenmesswert AFS_dm ist größer als AFS_PhysRng.Min_C. Physikalische Bereichsüberprüfung für Luftmassensensor.	The air mass flow AFS_dm is greater than or equal to AFS_PhysRng.Min_C. Physical range check is low for air mass flow sensor.
9	172	2	2-2-6	Ansaugluftemperatursensor unplausibles Signal	Air inlet filter temperature, plausibility error

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Grip Options - Joystick

Functional description: Grip option - Joystick on right hand side

Pin assignment –S23:X1#2

Deutsch DT04 8PA



Item	Description	Function

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07.65.60 Diesel engine control unit structural diagram

HMI = **H**uman **M**achine **I**nterface
= Display (combo-tool)



Right armrest



Diagnostics interface
Diesel engine

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Faults and corrective measures

Faults	Causes	Measures
Engine does not start up or starts up with difficulty	Not disconnected (if possible)	Check coupling
	Fuel tank empty	Tanks
	Fuel suction pipe blocked	Check
	Starting limit temperature not reached	Check
	Cold starting device	Check/replace
	Wrong SAE viscosity class of the engine lubricating oil	Change lubricating oil
	Fuel quality does not comply with operating manual	Change the fuel
	Battery defective or not charged	Check battery
	Cable connections to the starter loose or oxidised	Check cable connections
	Starter defective or pinion doesn't mesh	Check starter
	Air filter soiled/turbocharger defective	Check/replace
	Air in fuel system	Vent the fuel system
	Compression pressure too low	Checking the compression pressure
	Exhaust gas backpressure too high	Check
	High pressure pipe leaking	Check/replace
	High-pressure pump defective	Check/replace
Engines starts up, but runs irregularly or misfires	Exhaust gas backpressure too high	Check
	Compression pressure too low	Checking the compression pressure
	Cold starting device	Check/replace
	Air in fuel system	Vent
	Fuel filter contaminated	Clean
	Fuel quality does not comply with operating manual	Change the fuel
	Injector defective	Change
	High pressure pipe leaking	Check/replace
	Engine cable harness defective	Check/replace

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02.67.32 Technical data

ENGINE Tier 4 final

Engine type	Dimension	Description
Make:		Deutz
Type:		TCD 3.6 L4f
Method of operation		Four-stroke diesel engine
Charge		Exhaust turbocharger with charge air cooling

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08.67.21 Measurement protocol

Description	Desired value		Measurement tolerance	Remark
VALVE BANK-1	***Pressures in bar***			
SX 14 max. **LS pressure relief valve**	350		+ 10	At full throttle and oil temperature of at least 60° C
Secondary pressures	***out***	***in***		
Articulated boom (TPA)	370	370	+ 10	*Hydraulic Cylinder*
Intermediate boom (TPA)	150	370	+ 10	*Hydraulic Cylinder*

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Assignment of the DEUTZ maintenance and service schedules to the maintenance intervals

Routine maintenance work plan TD/TCD 3.6 L4			
Stage	**Activity**	**To be performed by:**	**Maintenance interval every ..... operating hours (oh)**
E10	Initial commissioning	Authorised qualified personnel	When commissioning new or overhauled engines
E20	Daily inspection	Operator	1x daily or every 10 oh in continuous operation

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09.67.11 Keypad operation



1 Function button with symbol for function
2 LED (status indicator)
3 Number block (numeric input - *E.g. for immobilizer PIN code*)
4 ENTER (confirm - *save* program)
5 Dot 'period' (delete number entry - *delete entered numbers*)

1	Working headlamps forwards	2	Working headlamps Rear (optional)	3	Flashing beacon (optional)
4	Windscreen wipe	5	Washer wiper	6	Automatic heating and air-conditioning *)
7	Heater fan *)	8	Increase inside cab temperature *)	9	Lower inside cab temperature *)
	Working hydraulics activation	0	Fast movement		Overload warning activation *)

The machine is operated primarily via the keypad.
Depending on the function, the corresponding button must be operated once or several times.

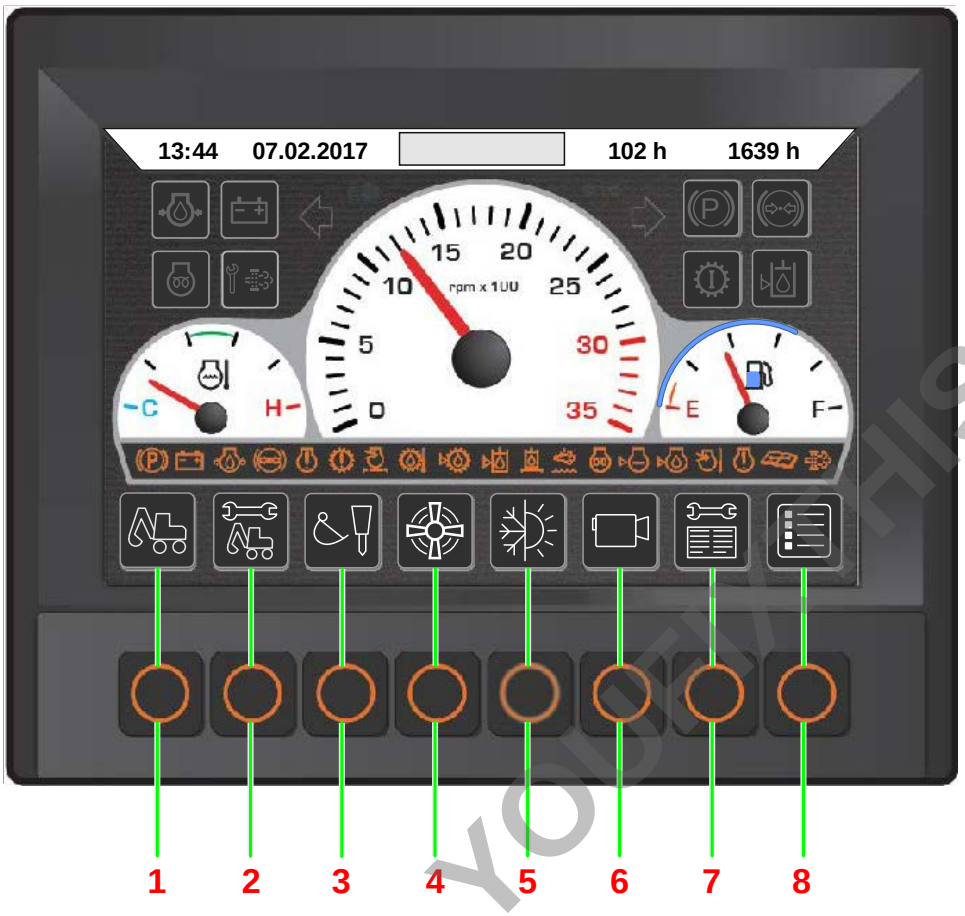
*) The corresponding screen is displayed when these functions are operated.

(Description: See also operating instructions).

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Instructions for using the combo-tool (display)

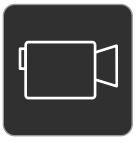
Main menu



Display
Main view

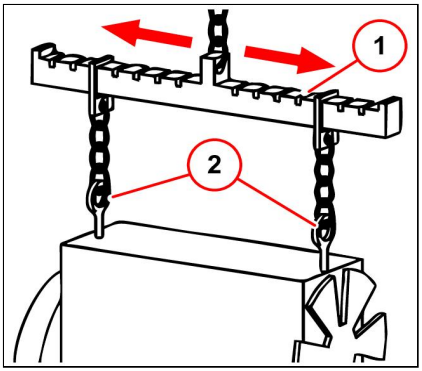
Submenu icons

Item	Symbol	Designation
1		Submenu Machine functions
3		Submenu Machine calibration
5		Submenu Air-conditioning control
7		Submenu, diagnosis

Item	Symbol	Designation
2		Submenu Machine options
4		Submenu, fan control
6		Submenu, rear view camera
8		Submenu Display basic settings

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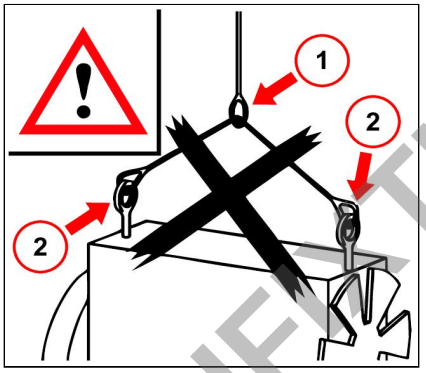
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Suspension equipment

The transport devices mounted on this engine are adapted to the engine weight. If the engine is transported with add-on components, the transport devices must be designed accordingly.

- Only use the correct suspension equipment for engine transportation.
- The suspension device (1) must be adjustable for the engine's centre of gravity.
- Following transport/before commissioning the engine: Remove the transport equipment (2).



Mortal danger!
The engine may tip or crash down if suspended incorrectly.

- The fastening attachment cannot be fixed securely above the centre of gravity (1).
- The fastening attachment can slip, the engine swings backwards and forwards (1).
- Too short a fastening attachment causes bending torques in the transport device (2) and can damage it.

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1.200.01. Safety and accident prevention

1 Introductory remarks

Read the operating instructions thoroughly and follow the notes on safe operation before starting up the earth-moving machine.

National safety regulations - e.g. the Accident Prevention Regulations, "Earth-Moving Machinery" (VBG 40) and "Vehicles" (VBG 12) in the Federal Republic of Germany - must also be complied with when operating the earth-moving machine.

In addition to the operating instructions, legal regulations governing road safety and accident prevention measures must also be observed. Such requirements could also apply with respect to the handling of hazardous goods or the wearing of personal safety gear, for example.

Furthermore, safety requirements governing work in particular locations (tunnels, adits, quarries, pontoons, contaminated areas, etc.) must likewise be observed.

2 Intended use

The earth-moving machine with standard bucket equipment is intended solely for work which is suitable for the function of the machine and its work attachments.

Such work involves loosening, taking up, transporting and dumping soil, rock, or other materials as well as loading these materials on trucks, conveyor belts, or other means of transport, when the transport of the material is normally done by positioning the earth-moving machine.

The assembly of special work attachments – such as multi-purpose bucket, side-dump bucket, broom, fork lift attachment, etc. – makes corresponding applications possible.
Any usage above and beyond that specified here – e.g. the transport of persons or the usage of the lift equipment as a work platform – is regarded as improper use. The supplier cannot be held responsible for any damage resulting from improper use. The risk is borne by the user alone.

Strict compliance with the operating and maintenance instructions and the performance of maintenance work, as well as adherence to the maintenance intervals is also part of intended use.

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1.100.01. Introduction / user notice

The individual assemblies of the manufacturer machine program and the functions of and adjustments to the installed units are described in this service manual.

The hydraulics and electrics diagrams and sectional representations combined with the operating instructions and spare parts list should make maintenance and repair work easier.

Descriptions of work procedures and assembly steps were consciously omitted, because big repairs are generally performed by qualified and experienced workshop personnel, who are masters at this routine work.

Safety and cleanliness at the workstation is the highest priority when performing repairs. Using tools in perfect condition and generally replacing sealing components during each repair should be a matter of course.

Provided no special values are specified, screw connections are to be fastened with the usual tightening torques.

This service manual has been issued by the customer service department with the aim of jointly improving the servicing of manufacturer machines. The service messages we send out for information can serve as a supplement.

We keep this manual up to date with continuous additions.

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The division of the main groups can be seen in the table of contents.

The accident prevention regulations of the responsible employer's liability insurance association are to be strictly observed.

Attentiveness when performing repairs is the best way of preventing accidents.
We therefore recommend studying the relevant instructions concerning the intended repair in detail.

Maintenance and repair work on machines in the field may only begin once the work equipment has been placed on the ground, the engine is turned off, the machine is secured against rolling away, and the hydraulic system has been relieved of pressure.

If repair work is performed by qualified personnel in the workshop, the relevant accident prevention regulations apply here too.

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Instruments/symbols	Designation	Possible displays	Measure
	Horn	With acoustic signal	See fault table 67
	SCR function lamp	Continuous light flashes (0.5 Hz) flashes (1 Hz) flashes (2Hz)	Check AdBlue® filling level Check SCR system
	Ash lamp	Continuous light	The ash lamp indicates, that loading of the diesel particle filter with incombustible residues has reached a critical level and must be replaced. 40
	Regeneration lamp	Continuous light flashes (0.5 Hz) flashes (3 Hz)	Initiate standstill regeneration 40
	Engine warning lamp	Continuous light Flashing	Initiate standstill regeneration in combination with the DPF function lamp 40

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Job card	Activity	Maintenance group
W 20-90-47	Supply pump (Fuel)	Fuel supply pump
W 21-04-01	Removing and installing the rail	Fuel pipes
W 21-05-05	Removing and installing the fuel line (injector, rail, high-pressure pump)	Fuel pipes
W 22-01-01	Removing and install the charge air line	Charge air line
W 22-90-35	Intake nozzle (exhaust turbocharger)	Air intake pipe
W 22-90-54	Charge air manifold	Charge air line
W 37-03-01	Removing and installing the coolant pump	Coolant pump
W 37-90-06	Drive components	Coolant pump
W 37-90-13	V-rib belt pulley	Coolant pump
W 38-01-01	Removing and installing the thermostat	Thermostat housing
W 38-01-02	Checking the thermostat (in the removed state)	Thermostat housing
W 38-90-32	Line	Coolant pipes
W 38-90-32	Line	Coolant pipes
W 39-90-52	Pressure fan	Fan
W 39-90-52	Suction fan	Fan
W 39-90-67	Adapter	Fan bearing
W 41-01-01	Removing and installing the exhaust line	Exhaust pipe
W 41-05-01	Removing and installing the flutter valve	Exhaust gas recirculation
W 41-05-02	Removing and installing the cooler	Exhaust gas recirculation
W 41-05-03	Removing and installing the exhaust gas return valve	Exhaust gas recirculation
W 41-05-05	Removing and installing the exhaust gas return pipe	Exhaust gas recirculation
W 41-05-10	Removing and installing the Venturi tube	Exhaust gas recirculation
W 41-06-01	Removing and installing the temperature sensor	Exhaust gas recirculation
W 41-06-02	Removing and installing the pressure transmitter	Exhaust gas recirculation
W 41-90-04	Screw plug (Thermostat housing, exhaust gas circulation, coolant line)	Exhaust gas recirculation
W 41-90-04	Connection (Crankcase housing, exhaust gas circulation, coolant line)	Exhaust gas recirculation
W 41-90-09	Holder	Exhaust gas recirculation
W 41-90-09	Holder	Exhaust gas recirculation
W 41-90-10	Holder	Exhaust pipe
W 41-90-21	Compensator structure (Exhaust line)	Exhaust pipe
W 41-90-32	Line (Thermostat housing, exhaust gas circulation, coolant line)	Exhaust gas recirculation
W 41-90-32	Line (Crankcase housing, exhaust gas circulation, coolant line)	Exhaust gas recirculation

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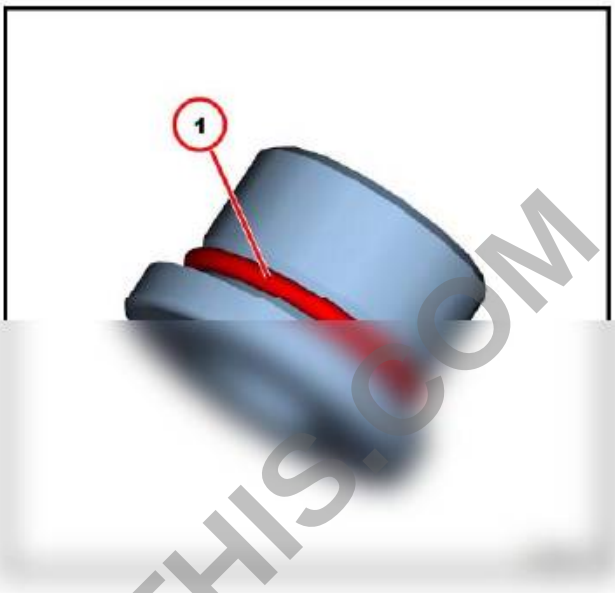
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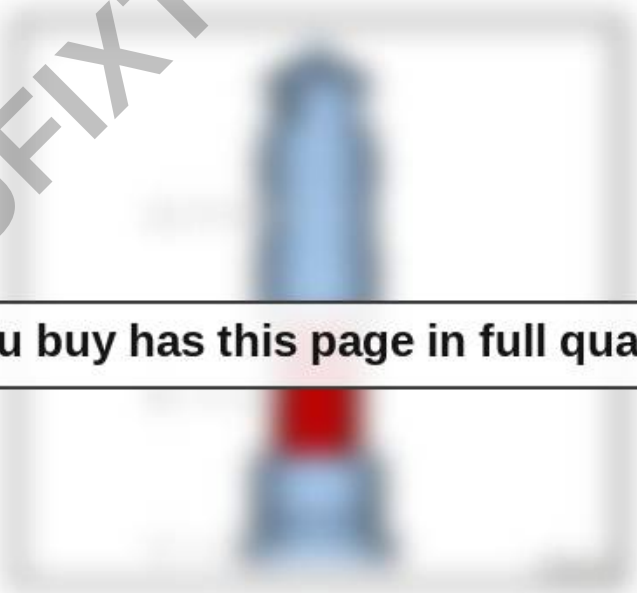
Installing the control valve

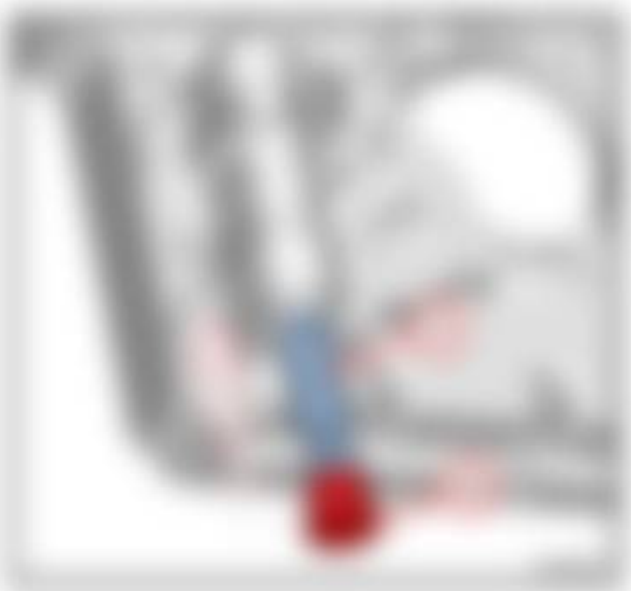
- Clean sealing surfaces.
- Coat new round sealing ring slightly with mounting compound.

Attention!
Do not twist or overtighten the O-ring.
Do not damage the O-ring!

Use a suitable assembly aid.







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Technical Data

Tightening specifications

ID no.	Name	Screw type	Notes / Remark	Value
A38 001	Thermostat housing on cylinder head			30 Nm

For the tightening procedure according to torque using a torque wrench, a maximum variation of the tightening torque of +/- 10% is permissible.

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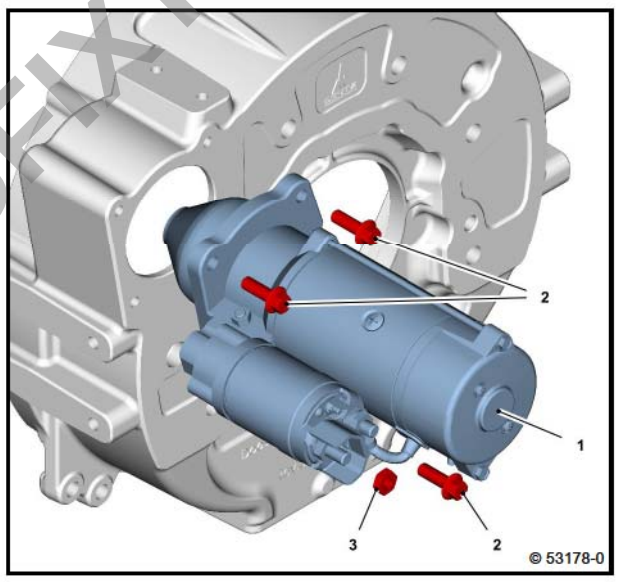
Removing and installing the starter

Standard tools

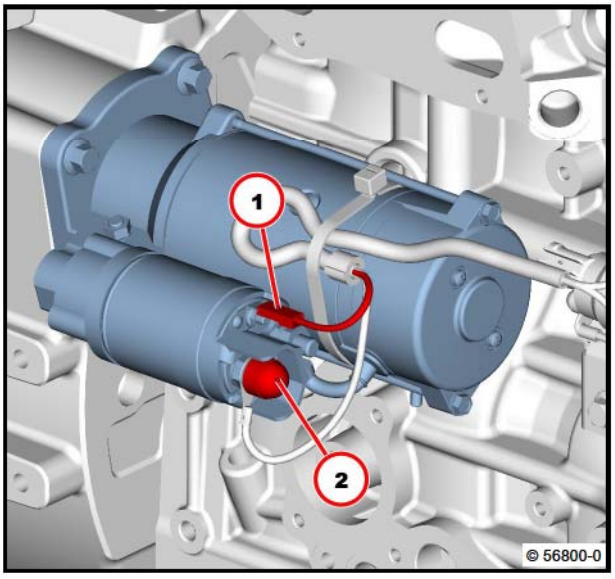
– Safety information / User information

Removing the starter

1 Starter
2 Hexagon head screw
3 Nut



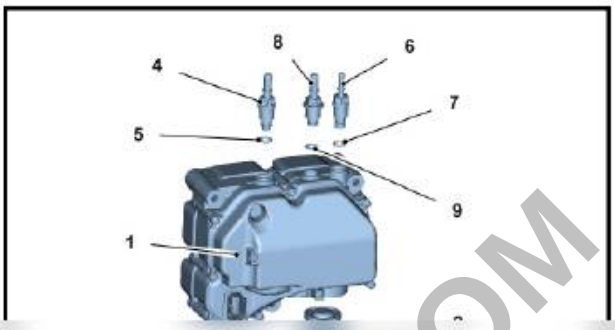
- Disconnect the battery's negative terminal.
- Pull out cable plug (1).
- Remove protective cap°(2).



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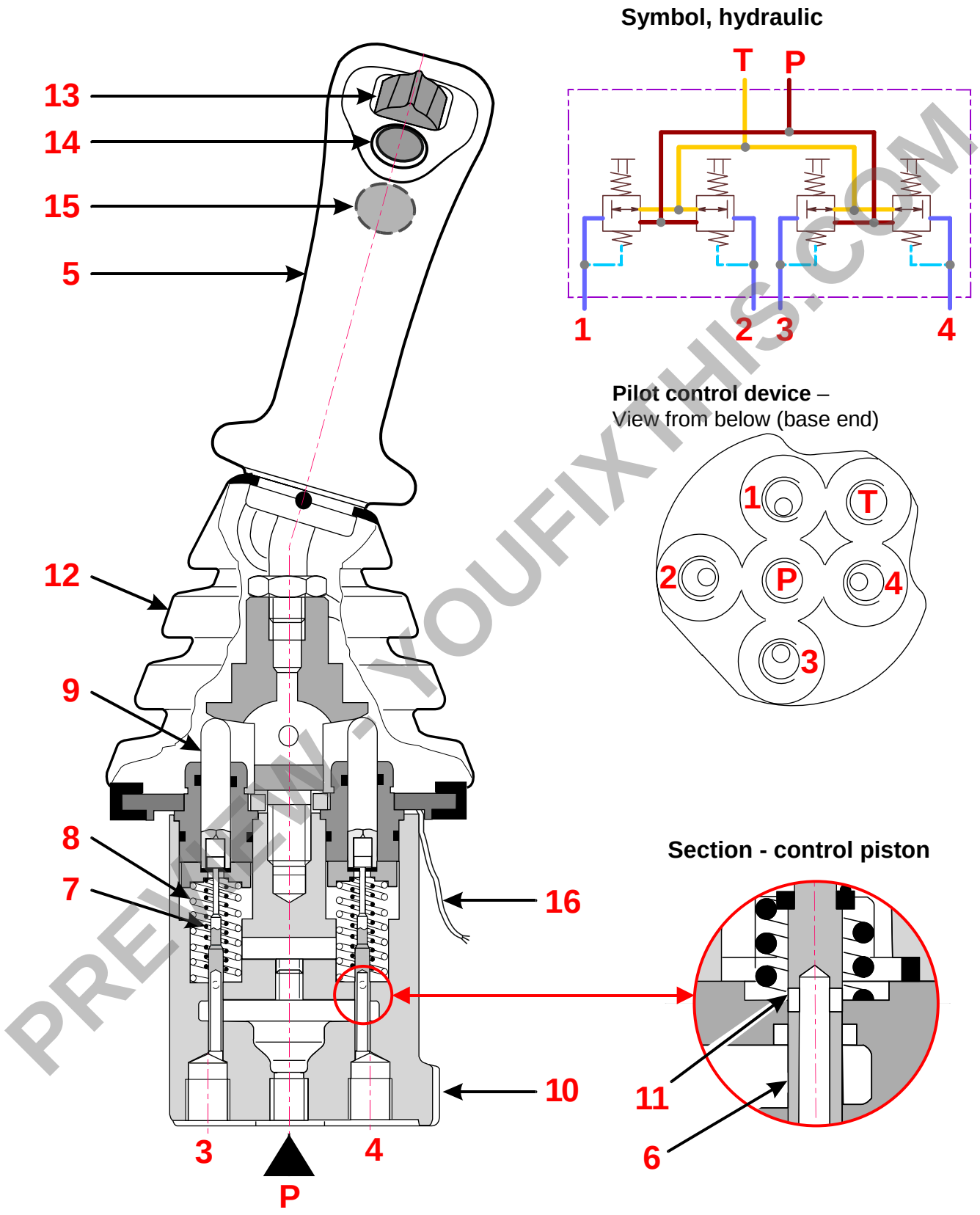
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1	Supply pump	
2	Main filter	
	Filter cartridge	
3	Filter cover	
4	Nozzle	4 – 4,5 Nm
5	O-ring	
6	Nozzle	4 – 4,5 Nm
7	O-ring	



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06.65.31 Pilot control device 4TH5 with handle options



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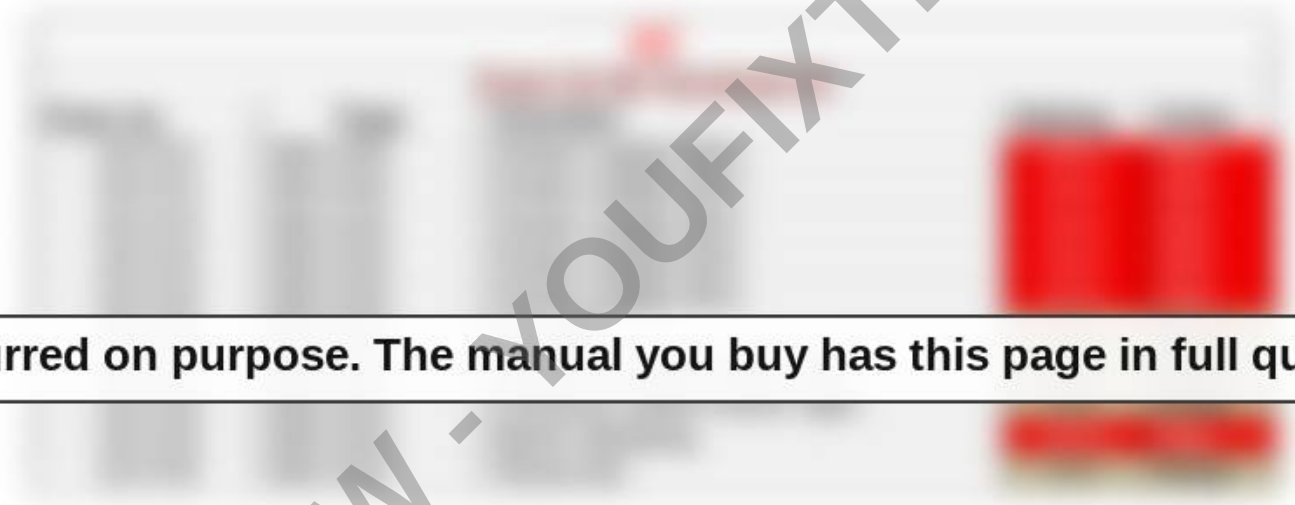
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Fuse assignment

Fuse assignment diagram

A2				
Fuse 1-10 Terminal 15				
Fuse no.	**Type**	**Function**	**Rating**	**Color**
-A2-F1	Mini fuse	Fuel pump relay	5 A	Beige
-A2-F2	Mini fuse	Immobilizer	5 A	Beige
-A2-F3	Mini fuse	Power supply diagnostic plug	5 A	Beige







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Taper coupling (DKO)

Function

- Block stop as over-tightening protection
- Metal sealing to the taper
- Chambered soft-sealing element

Before assembly



After assembly



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