

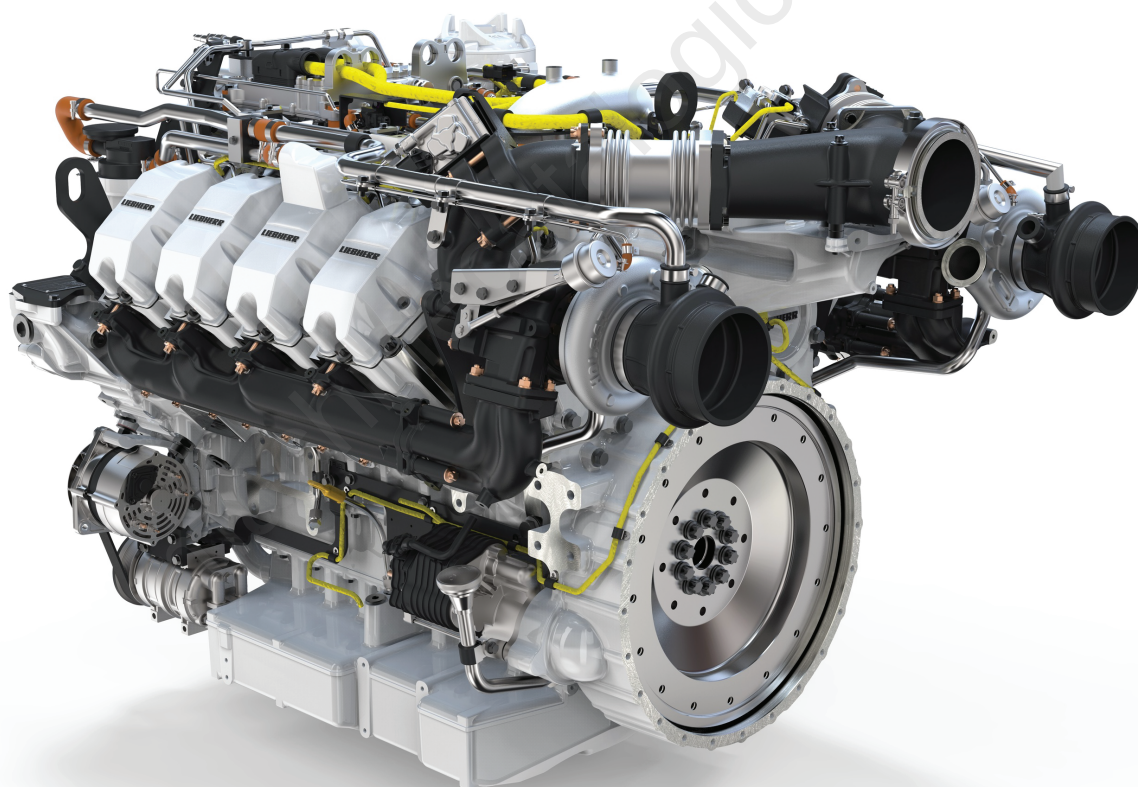
Operator's manual

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Diesel engine

D9508 A7-05

From serial number 2019140001



Technical description

- 8 Charge air pipe
- 9 Coolant pump

- 17 Oil pan

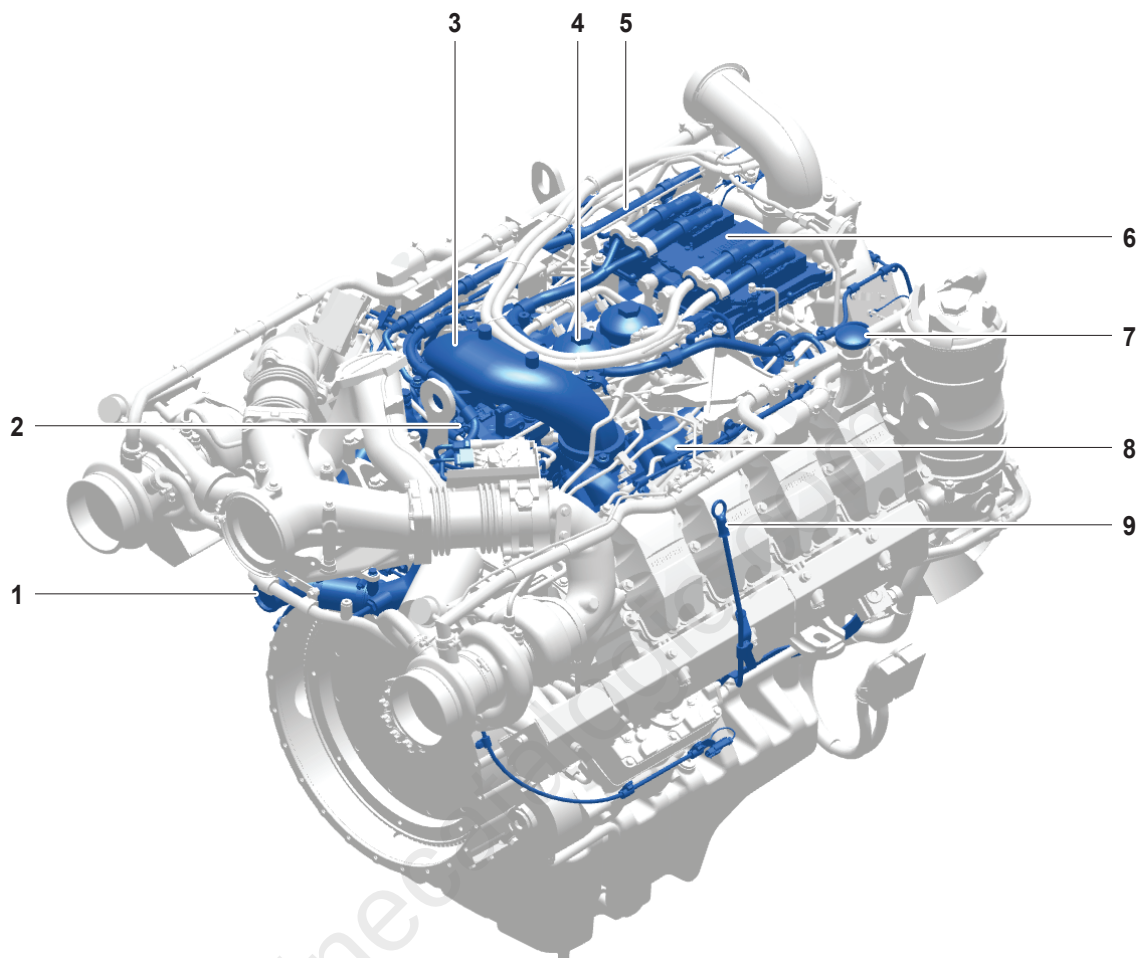


Fig. 2: Overview of flywheel side

- | | | | |
|---|-------------------------|---|---------------------|
| 1 | Coolant outlet | 6 | Engine control unit |
| 2 | Fuel high pressure pump | 7 | Oil filler cap |
| 3 | Connection line | 8 | Air intake pipe |
| 4 | Fuel fine filter | 9 | Oil dipstick |
| 5 | Cable harness | | |

- The employment of personnel who do not satisfy the target audience requirements.
- Alterations and conversions of the diesel engine that have been carried out without the consent of Liebherr.
- Operating and auxiliary materials that have not been approved by Liebherr.
- The use of non- Liebherr spare parts that have not been officially approved by Liebherr, including the resulting consequential damages.
- Circumvention of and non-compliance with the safety regulations
- Failure to observe international and national regulations on occupational health and safety
- Failure to observe international and national regulations on environmental protection
- Unauthorized modifications to the diesel engine
- Manipulation to the injection system and control system
- Emergency operation with limited safety function is deemed improper use. The manufacturer is not liable for damages due to improper use.

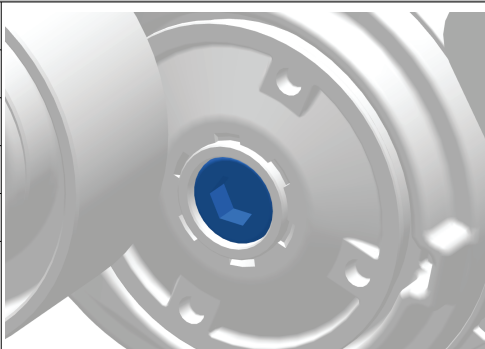
EU type approval expires for:

- Manipulation to the diesel engine
- Manipulation to the injection system and control system
- Manipulation to the exhaust aftertreatment system

The actual scope of delivery of the engine can differ from the relevant information in these instructions due to situational adaptations to customer requirements.

2.5 General safety instructions

- Fulfill the requirements of the target groups for the work.
- In order to guarantee help in the event of an accident:
 - A second person is present
 - Ensure that the emergency situation will be detected and help will take place.
- Ensure that the personnel is familiar with the operator's manual before installation work.
- Only allow the following personnel to work on the gas engine under the constant supervision of an experienced person.
 - Personnel to be trained
 - Personnel to be taught
 - Personnel to be instructed
 - Personnel in apprenticeships
- Check the safety and hazard-conscious work of the personnel under the following conditions:
 - Observe the accident prevention regulations.
 - Observe the generally recognized safety and occupational health rules.
 - Observe the operator's manual.
- Make sure that the personnel wears the prescribed work clothing. (For more information see: [2.7 Personal protective equipment, page 40.](#))
- Do not wear the following:
 - Rings
 - Wristwatches
 - Neckties
 - Scarves
 - Open jackets
 - Loose-fitting clothing
- Make sure that the following equipment is available for the assembly, clean, complete and undamaged:
 - Basic tool kit
 - Required devices
 - Required special tools
- Replace damaged tools.
- Keep the workplace clean and orderly.

Tightening instruction for M10x75 10.9 FLZN cylinder screw		
Lubricant	-	
Locking agent	LOCTITE 243	
Part contact surfaces	-	
Screws	not reusable	
Stage	Tightening torque	
1.	47 ± 5 Nm	

Tab. 23: Tightening instruction 12418349_100

- ▶ Tighten cylinder screw **2** according to the tightening instruction.
- ▶ Install new V-ribbed belt **1**.
- ▶ Attach a spanner (SW13) to the tension pulley external hex SW13 **3**.
- ▶ Swivel back the tension pulley **4** counterclockwise against the spring force to the limit stop.
- ▶ Place tension pulley **4** over tension pulley **2**.
- ▶ Turn tension pulley **4** back carefully.
 - ▷ The V-ribbed belt **1** is tensioned.

5.3.5 Checking the engine mount

- ▶ For procedure to check the engine mount, see documentation from the device manufacturer.

Cleaning

- ▶ Clean cylinder head sealing surface **3**.



Note

Components must be free of grease.

- ▶ Clean cylinder head cover **10** sealing surface.

If the cylinder head cover seal **4** is being reused:

- ▶ Clean cylinder head cover seal **4**.

Removing the locking part

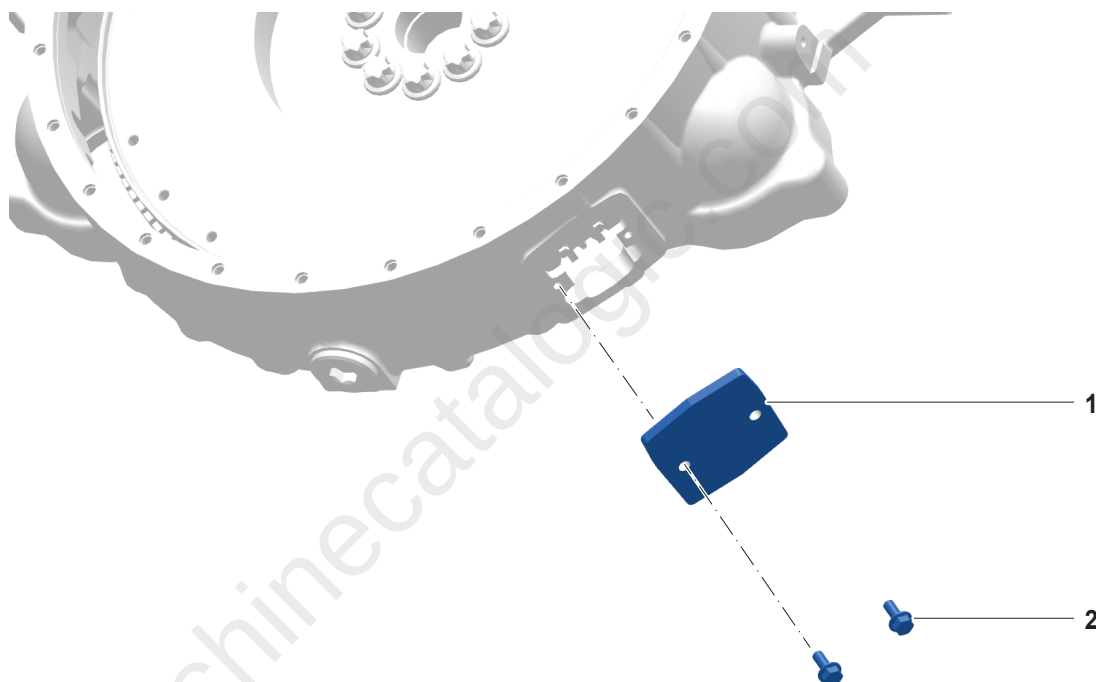


Fig. 121: Removing the locking part

1 Locking part

2 External hex bolt (2x)

- ▶ Unscrew external hex bolt **2**.

- ▶ Remove locking part **1**.



1 Fuel venting pipe



1 Injection pipes

2 Rail

- ▶ Check components for damage.
- ▶ Check components for proper fastening.

Malfunction / error	Cause	Remedy
Engine turns off inadvertently.	Leak or too low pressure in the fuel low pressure circuit	▶ Perform leak test (visual inspection). ▶ Have checked by Liebherr customer service.
Engine turns off inadvertently.	Fault of the electronics	▶ Contact Liebherr customer service.
Engine turns off inadvertently.	Fuel supply not ensured	▶ Check fuel system.
Power reduction of the engine	Fuel system defective	▶ Perform visual inspection. ▶ Replace filter.
Power reduction of the engine	Charging pressure too low	▶ Check clamps, seals, hoses and air filter.
Power reduction of the engine	Charge air temperature too high	▶ Check charge air cooler, fan and ambient temperature.
Power reduction of the engine	Coolant temperature too high	▶ Check cooler for contamination. ▶ Check fan. ▶ Check thermostat. ▶ Check coolant level.
Power reduction of the engine	Fuel temperature too high	▶ Contact Liebherr customer service.
Power reduction of the engine	Oxygen content of the air too low since application > 1800 m above sea level	No defect, engine power automatically reduced.
Power reduction of the engine	Injectors stick or do not spray.	▶ Contact Liebherr customer service.
Power reduction of the engine	Engine compression too low	▶ Contact Liebherr customer service.
Power reduction of the engine	Fault of the electronics	▶ Read error memory of the engine control unit.
Power reduction of the engine	Exhaust aftertreatment system clogged	▶ Contact Liebherr customer service.
Power reduction of the engine	For engines without hydraulic tappets: Valve clearance not set correctly. For engines with hydraulic tappets: Hydraulic tappet defective.	▶ For engines without hydraulic tappets: Check valve clearance. If necessary, set valve clearance. For engines with hydraulic tappets: Contact Liebherr customer service.
Power reduction of the engine	Too little reducing agent in reducing agent tank	▶ Fill up reducing agent.
Insufficient engine brake power	Engine brake flap without function	▶ Check engine brake flap for function and damage. ▶ Contact Liebherr customer service.
Insufficient engine brake power	Fault of the electronics	▶ Contact Liebherr customer service.

Full Version Available

Liebherr D 9508 Engine Operator Manual

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Book No: 12985712 · File Pages: 481 · File Count: 4 · File Language: English