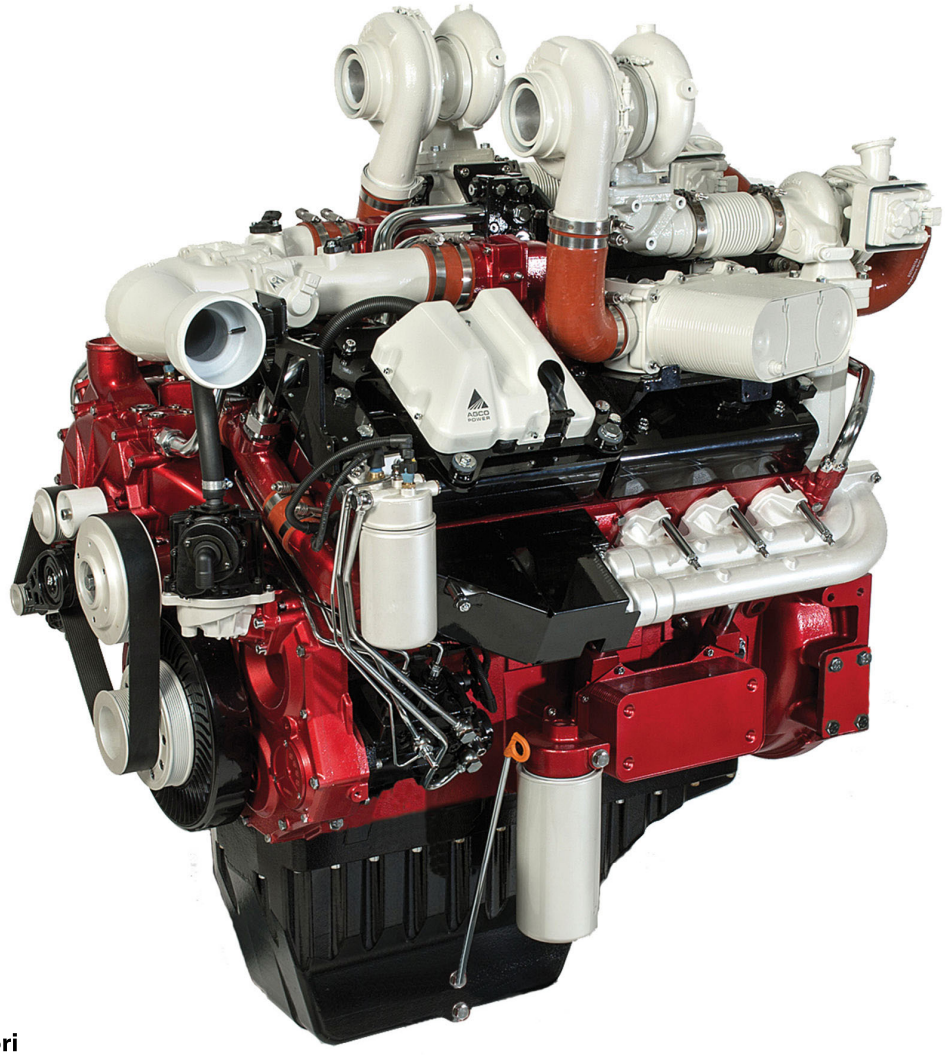
Operator's Manual

5th Generation 168 AWF Engine
AGCO POWER



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Original Operator's Manual

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1.3.4 Cooling system

Engine type	168
Number of thermostats	2
Opening temperature	79 ° C and 82 ° C
Coolant quality requirements	See information for coolant quality requirements

1.3.5 Electrical system

System	Voltage
Electrical system	12 V
SCR system	12 V

1.3.6 SCR system technical data

Principal data	
SCR system	Bosch DENOXTRONIC 2.2+ (12 kg / h)
Minimum operating temperature	-40 °C
Maximum DEF temperature	70 °C

Dosing system	
Reagent fluid type	DIN70070/ISO22241 certified DEF (Diesel Exhaust Fluid), e.g. AdBlue
DEF consumption	Approximately 6-8% of fuel consumption[1]
Pre-filters	100 µ
Main filter	10 µ

[1] DEF consumption may be higher, depending on the application and load profile of the engine.

2.4 Starting the engine in cold conditions

Before starting the procedure

DANGER: Never use starting aerosol to start the engine! The intake air heater causes an explosion in the intake manifold.

This can result in serious damage to the engine and personal injuries.

Use of starting aerosol invalidates the engine warranty.

See starting instructions of the machine. See also actions before winter.

Engine is equipped with an electric pre / post heater of the intake air. The post heating operates automatically.

The DEF tank and pipes are heated so the SCR system works also at low temperatures. If DEF freezes, it is defrosted when the engine is started. The congealing point of DEF is -11°C.

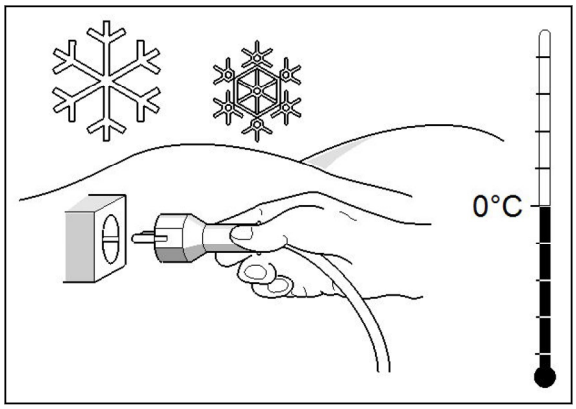

Fig. 2

1. Make sure that the battery is sufficiently charged.
2. Release the engine of all extra load (move the gear to neutral position, depress the clutch pedal, do not turn the steering wheel etc.).
3. Keep the gas pedal on idling position.
4. Wait the time when the preheating light is on and start the engine.
5. If the engine doesn't start during ten seconds, stop the starting and heat again. (The preheating of intake air doesn't work during the starting.)
6. When the engine starts, you can support it with the starter until the engine runs complete.
7. Watch the oil pressure.
8. Do not race the cold engine because the lubrication is not sufficient while the oil is cold.

2.4.1 Warming up the engine

Since the engine wear is greatest when the engine is running cold, warm up the engine quickly with a light load for a couple of minutes after starting.

When the engine temperature is below 50°C:

- Engine must not be loaded heavily
- Rotation speed exceeding 1700 rpm must be avoided

Procedure

1. Before removing the oil filter clean the surroundings of it.
2. Use the loop tool to remove the used oil filter.
3. Lubricate slightly the rubber gasket of the new oil filter with clean motor oil and clean the sealing faces.
4. Rotate the new oil filter carefully until the gasket touches the opposite surface.
5. Tighten the oil filter one (1) full round. Use an appropriate tool for tightening if necessary.
6. Wipe off any oil run onto the chassis.
7. Do a check for the quantity of oil in the engine.
8. If it is necessary, add oil.
9. Start the engine. Do not race.
10. Make sure that no oil is leaking from the oil filter.
11. Take the used oil filter to a proper disposal point.

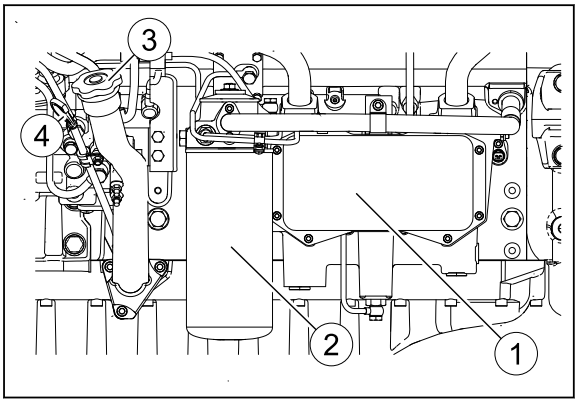

Fig. 5

(1) Oil cooler
(2) Oil filter
(3) Oil filler plug
(4) Oil dipstick

3.5.4 Update the engine software

Engine software updates bring new features to the engine controller that improve the performance of the engine, update diagnostic features and help to protect the engine and its emission components over the engine lifetime.

Procedure

1. Use the EDT and examine, if new software is available for the machine.
2. Update the engine software, if possible.

4. Troubleshooting