



3.24 Exhaust gas after-treatment

Goal: Lowering emissions

Harmful constituents in the exhaust gas (such as carbon monoxide, unburnt hydrocarbons, diesel particulate, nitrogen oxides etc.) are reduced/converted in catalysers or collected in special filters to prevent them escaping into the environment.

For that purpose, HAMM uses the following components:

- Diesel oxidation catalyst (DOC)
- Diesel particulate filter (DPF)
- SCR catalytic converter (SCR = selective catalytic reduction)

Diesel oxidation catalyst (DOC)

The diesel oxidation catalyst has a catalytic surface, which oxidises the carbon monoxide and unburnt hydrocarbons. In addition, it oxidises nitrogen monoxide, turning it into nitrogen dioxide.

In normal operation, these oxides are burnt at a high exhaust gas temperature.

Diesel particulate filter (DPF)

The sealed diesel particulate filter collects all the diesel particulates. At a sufficiently high exhaust gas temperature, they are burnt with the nitrogen dioxide. This enables the diesel particulate filter to be continuously and automatically regenerated during operation.

Ash deposits, e.g. from lube oil residues or metal abrasion, cannot be removed from the diesel particulate filter by thermal regeneration. Therefore, the diesel particulate filter has to be replaced at certain intervals.

Malfunctions in the exhaust gas after-treatment system

If there is a fault in the exhaust gas after-treatment system, warning and indicator lights appear on the control panel. Error codes are displayed on the info display/system info.

3.24.01 Initiating standstill regeneration

If the temperatures required for automatic cleaning of the exhaust gas are not reached during operation, the elements for the exhaust gas after-treatment must be cleaned with the standstill regeneration function. For this purpose, the machine must be brought to a safe place. It is only possible to start standstill regeneration when the standstill regeneration switch flashes.

⚠ WARNING

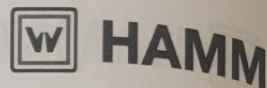
High exhaust temperature, increased exhaust emission!

Serious injuries as a result of burning or poisoning by exhaust gases during the park regeneration.

- Keep a safe distance away from the flow of exhaust gas.
- Perform park regeneration only in the open air or in well ventilated rooms.

Operation

Exhaust gas after-treatment



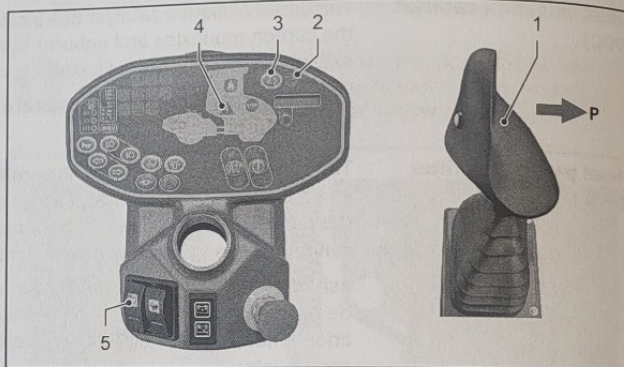
NOTICE

High gas temperature!

Property damage by fire during the parked regeneration of the diesel particulate filter.

- During park regeneration, prevent hot exhaust gases or the end of the exhaust pipe from igniting objects in the vicinity (e.g. do not perform the regeneration under trees or on dry grass).
- Initiate park regeneration only in a safe place: firm, non-combustible surface.

Initiating standstill regeneration



Prerequisites:

- Machine is at standstill,
 - Diesel engine is running,
 - Operating temperature has been reached,
 - The switch [3] flashes.
- Push the driving lever [1] right until it is in position P.
- Set the engine speed [5] to idling (MIN).
- Press the switch [3].
- ✓ The engine speed is automatically increased.
 - ✓ Standstill regeneration starts.
 - ✓ The engine speed is automatically decreased once standstill regeneration is successfully completed.



No work functions may be activated during standstill regeneration (duration approx. 30 minutes). Only turn off the diesel engine once standstill regeneration is successfully completed.

Standstill regeneration must only be cancelled in cases of emergency.

Cancelling standstill regeneration

- Push the driving lever [1] left out of position P and into position 0.

The switch [3] flashes if standstill regeneration has been cancelled. Standstill regeneration must be initiated again as soon as possible.



3.24.02 Urgency of regeneration

Stage 1: Regeneration required

- ✓ The switch [3] flashes.

The diesel particulate filter cannot be regenerated at low operating temperatures.

- ▶ Raise the machine's operating temperature by increasing the engine load (e.g. by increasing the engine speed to the maximum, switching on the vibration)

If independent regeneration is not possible, parked regeneration must be carried out in a safe location as soon as possible.

Stage 2: Carry out parked regeneration immediately

- ✓ The switch [3] flashes.
- ✓ The indicator light [2] flashes yellow.
- ✓ The speed and output of the diesel engine are reduced.

The machine is locked for normal operation to prevent damage to the diesel engine and the exhaust gas system.

- ▶ Drive the machine out of the danger area.
- ▶ Carry out parked regeneration.

Stage 3: Regeneration by service personnel required

- ✓ The switch [3] flashes.
- ✓ The indicator light [2] lights up yellow.
- ✓ The warning light [4] lights up.
- ✓ The speed and output of the diesel engine are reduced.

The machine is locked for normal operation to prevent damage to the diesel engine and the exhaust gas system.

- ▶ Move the machine out of the danger area and park it in a safe location.
- ▶ Contact customer service.

Stage 4: Replace the diesel particulate filter

- ✓ The indicator light [2] lights up red.

If the level of ash in the diesel particulate filter has reached its maximum value, the filter must be replaced. This work may only be carried out by trained personnel.

- ▶ Move the machine out of the danger area and park it in a safe location.
- ▶ Contact customer service.