

Diesel Particulate Filter

12.07 -

Operating Instructions



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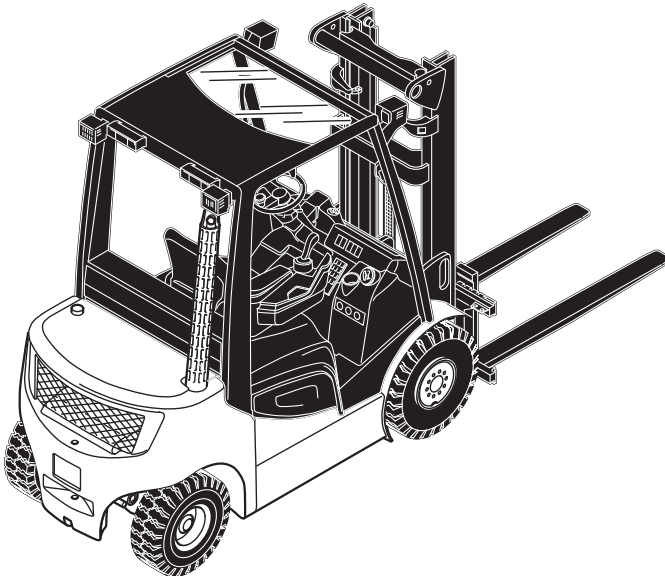
DFG 316-320

08.10

DFG 316s-320s

DFG 425-435

DFG 425s-435s



Foreword

The present ORIGINAL OPERATING INSTRUCTIONS are designed to provide sufficient instruction for the safe operation of the industrial truck. The information is provided clearly and concisely. The chapters are arranged by letter. Each chapter starts with page 1. The page identification consists of a chapter letter and a page number.

For example: Page B 2 is the second page in chapter B.

The operating instructions detail different truck models. When operating and servicing the truck, make sure that the instructions apply to your truck model.

Safety instructions and important explanations are indicated by the following graphics:



Used before safety instructions which must be observed to avoid danger to personnel.



Used before notices which must be observed to avoid material damage.



Used before notices and explanations.



Used to indicate standard equipment.



Used to indicate optional equipment.

Our trucks are subject to ongoing development. Jungheinrich reserves the right to alter the design, equipment and technical features of the truck. No guarantee of particular features of the truck should therefore be inferred from the present operating instructions.

Copyright

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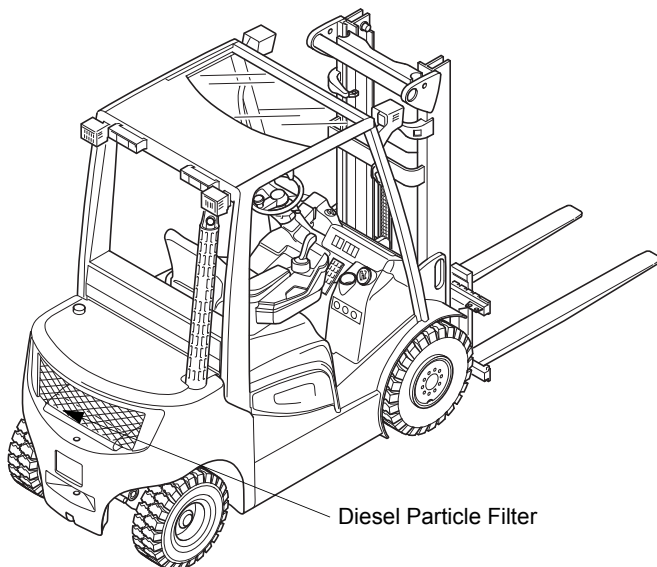
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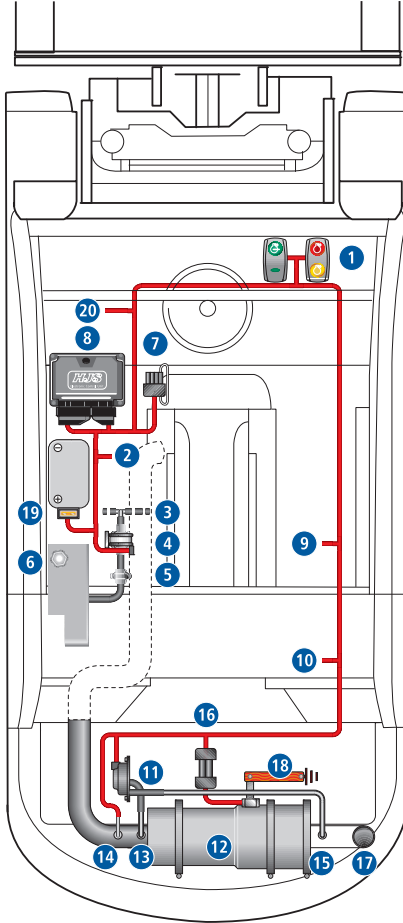
Diesel Particle Filter



The filter system must only be used for the exhaust gas filtering of diesel engines. The manufacturer shall accept no liability if the product is not used in the manner intended. The User's Manual of the vehicle, the general accident prevention regulations and all other generally recognised rules pertaining to safety and industrial health are to be complied with at all times.

All maintenance and repair work must be performed by expert personnel of the manufacturer.

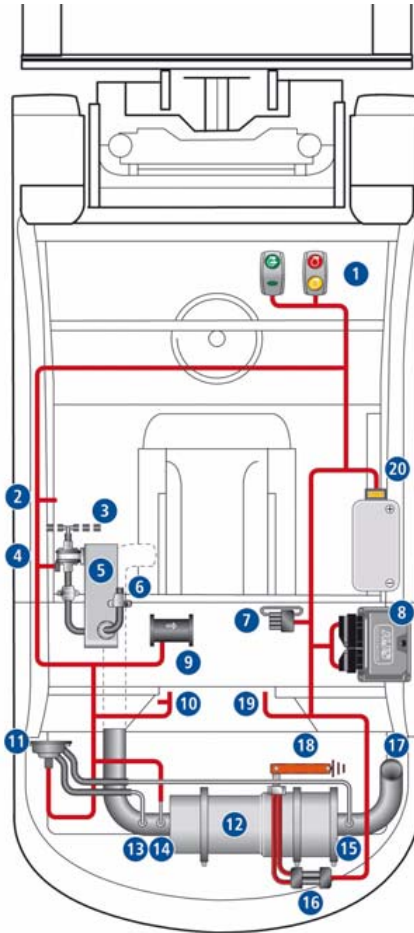
1 Overview DFG 316-320



- Wire harness
- Hose line
- Metal line

1	Indicators and switches for regeneration suppression
2	Reservoir indicator connection as per wiring diagram
3	Diesel return line to fuel tank
4	Metering pump
5	Additive tank with additive filter
6	Additive tank ventilation/discharge
7	Diagnostic connector
8	HJS-ECU
9	Air mass sensor
10	Connection as per wiring diagram (term. 15/30)
11	Differential pressure sensor
12	Diesel Particle Filter
13	Pressure measurement point before filter
14	Temperature gauge
15	Pressure measurement point after filter
16	Heating power supply
17	Exhaust outlet pipe
18	Earth strap
19	100 amp fuse
20	Connection as per wiring diagram (term. 31)

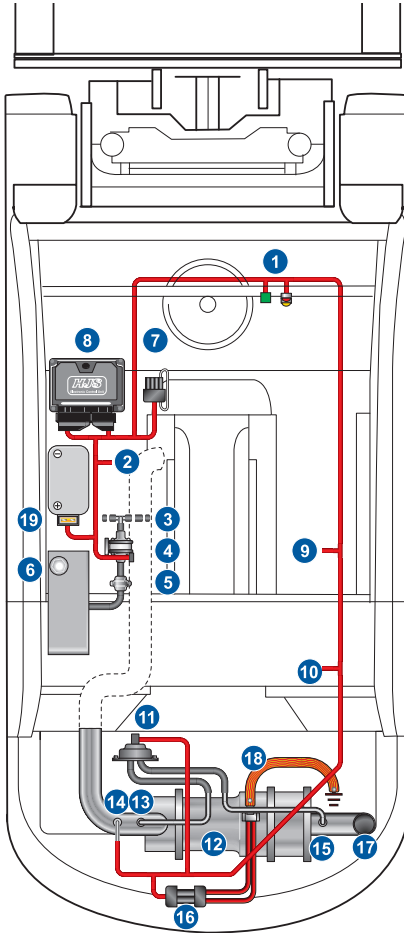
2 Overview DFG 316s-320s



— Wire harness
— Hose line
— Metal line

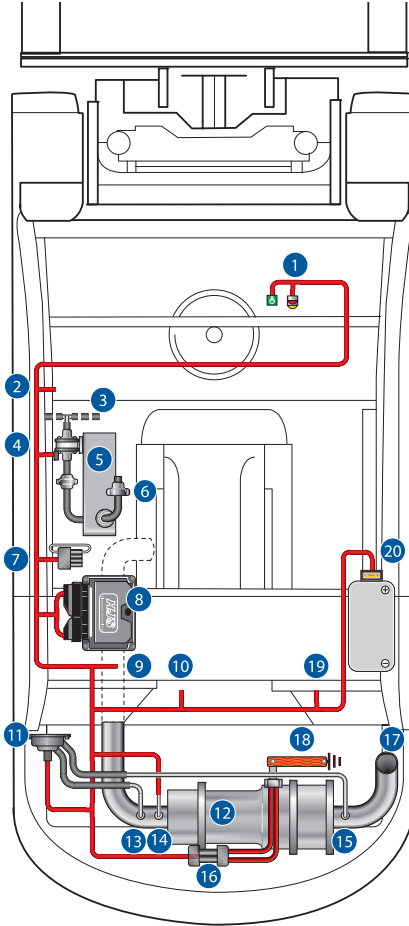
1	Indicators and switches for regeneration suppression
2	Reservoir indicator connection as per wiring diagram
3	Diesel return line to fuel tank
4	Metering pump
5	Additive tank with additive filter
6	Additive tank ventilation/discharge
7	Diagnostic connector
8	HJS-ECU
9	Air mass sensor
10	CAN and terminal 15 connected, in accordance with wiring diagram
11	Differential pressure sensor
12	Diesel Particle Filter
13	Pressure measurement point before filter
14	Temperature gauge
15	Pressure measurement point after filter
16	Heating power supply
17	Exhaust outlet pipe
18	Earth strap
19	Connection as per wiring diagram (term. 30/31)
20	100 amp fuse

3 Overview DFG 425-435



1	Indicators and switches for regeneration suppression
2	Reservoir indicator connection as per wiring diagram
3	Diesel return line to fuel tank
4	Metering pump
5	Additive tank with additive filter
6	Additive tank ventilation/discharge
7	Diagnostic connector
8	HJS-ECU
9	Air mass sensor
10	Connection as per wiring diagram (term. 15/31)
11	Differential pressure sensor
12	Diesel Particle Filter
13	Pressure measurement point before filter
14	Temperature gauge
15	Pressure measurement point after filter
16	Heating power supply
17	Exhaust outlet pipe
18	Earth strap
19	100 amp fuse

4 Overview DFG 425s-435s



— Wire harness
 Hose line
 Metal line

1	Indicators and switches for regeneration suppression
2	Reservoir indicator connection as per wiring diagram
3	Diesel return line to fuel tank
4	Metering pump
5	Additive tank with additive filter
6	Additive tank ventilation/discharge
7	Diagnostic connector
8	HJS-ECU
9	AGR connection as per wiring diagram
10	CAN and terminal 30 connected, in accordance with wiring diagram
11	Differential pressure sensor
12	Diesel Particle Filter
13	Pressure measurement point before filter
14	Temperature gauge
15	Pressure measurement point after filter
16	Heating power supply
17	Exhaust outlet pipe
18	Earth strap
19	Connection as per wiring diagram (term. 30/31)
20	100 amp fuse

5 Functional description

The filter system consists of a diesel particle filter using sintered metal technology and a fully automatic regeneration unit. The latter is able to burn off the soot trapped by the filter without intervention by the driver and to do so under any engine operating conditions. Once an adequate quantity of soot has built up in the filter, the electronic control unit automatically triggers regeneration. To ensure combustion of the soot is complete, with as good as no residue, and conducted in very short time, an additive that lowers the ignition temperature and increases the burn-off speed of the soot is added to the diesel by the automatic dosing system.

When the truck starts up after fuelling, the system automatically detects the amount of fuel added and meters the corresponding amount of additive into the fuel return line. A slightly clicking noise can be heard from the metering pump.

The following points must be observed:



As a self-test, the two indicator lamps are illuminated for approx. 10 seconds when the ignition is switched on. If one or both of these indicator lamps does not light up during this test, there is a fault in the system. Contact expert personnel of the manufacturer.



If one indicator lamp is defective, the other lamp flashes continuously. The meaning of these indicator lamps is described in detail on the following page.



Regeneration must be conducted outdoors!



However, if the truck is located indoors (warehouse etc.) at the time of the automatic regeneration, there is a regeneration suppression option.

5.1 Regeneration suppression:



Approx. 5 minutes before automatic regeneration starts the button (picture) begins to flash. During this time the operator can leave the indoor area in the truck. If this proves impossible, the operator can press the button; this activates a 20 minute regeneration suppression which gives the operator more time to vacate the truck from the indoor area.



This process can only be repeated once. The third time the flashing light cannot be suppressed by pressing the button. After approx. 5 minutes the system regenerates fully automatically to protect itself.

5.2 Meaning of the indicator lamps and relevant actions

The filter system must only be operated on by the manufacturer's specialist service engineers.

Start phase - Both indicator lamps lit constantly approx. 10 sec.:



Filter system check

If neither of the indicator lamps lights up during this test, there is a fault in the system. Contact expert personnel of the manufacturer.



Yellow indicator lamp flashing:

Conduct regeneration cycle

If the truck is permanently used for short journeys the filter system may not fully regenerate. In this case, regeneration must be conducted as follows: leave the stationary industrial truck running at governed (maximum no-load) speed for 10 minutes so that the system performs regeneration. If the indicator lamp does not go out after repeating regeneration once, contact expert personnel of the manufacturer.



Yellow indicator lamp lit constantly:

Automatic regeneration during operation

When automatic regeneration is being performed, the vehicle must not be switched off. Normal vehicle operation should be continued until the yellow indicator lamp goes out.



Regeneration must be conducted outdoors!

Red indicator lamp flashing:

Serious fault -> **The system may be damaged.** Contact expert personnel of the manufacturer!



A serious fault has arisen or the system has become damaged.



Red indicator lamp lit constantly:

Fault - Contact expert personnel of the manufacturer!



An error has occurred or the filter system has broken down. Contact expert personnel of the manufacturer.



6 Safety instructions

- To ensure safe operation the filter system must only be operated in accordance with the operator manual.
- The legal and safety regulations of relevance to operation must be observed at all times when using the system. The same applies to the use of accessories.
- The filter system must only be serviced or assembled by the manufacturer's specialist service engineers.



The filter housing of the filter system is heated during operation and can burn if touched. The hot filter housing poses a fire or ignition hazard. The vehicle must always be parked in a location that ensures the diesel particulate filter does not come into contact with easily inflammable materials (e.g. dry grass).



The additive used is detrimental to human health and is subject to special directions that are listed in detail in the next section entitled "Consumables".



Operating the diesel particulate filter in conjunction with the Jungheinrich ISM or other access systems.



If an access system is used which causes the truck to shut down automatically when the driver leaves the truck, note the following:



Set the automatic shutdown delay interval to at least 10 minutes to avoid cancelling a regeneration operation that has already started (continual yellow indicator lamp). If the interval is set shorter, the driver must remain on the truck while regeneration continues until the yellow indicator lamp goes out.

6.1 Consumables



Follow special instructions / consult safety data sheet

Identification	
R 40	Irreversible damage possible.
R 51	Poisonous for water organisms.
R 53	May have long-term harmful effect in water.
R 65	Harmful to health: can cause lung damage if swallowed.
R 66	Repeated contact can cause brittle cracked skin.
R 67	Vapours can cause drowsiness and numbness.
S 36	Wear safety clothing during work.
S 37	Wear appropriate safety gloves.
S 60	This substance and/or its container must be disposed of as hazardous material.
S 61	Do not release into the environment.



Seek medical advice immediately and show packaging or label.

Identification	
S 62	Do not induce vomiting if swallowed.

7 Maintenance / Care / Repair

Any work performed on the filter system, service and repairs must only be carried out by the manufacturer's specialist service engineers. Use only spare parts and materials approved by the manufacturer.

To ensure the long useful life of the filter system always follow the hints and actions listed for error messages.