Service instructions

for heating engineers

Vitoflame 200
Oil pressure jet burner (type VEK)
- up to 40 kW with oil pre-heater
- from 50 kW without oil pre-heater

for Vitola 100, Vitola 111, Vitola 200 and Vitola 222

See: Applicability, page 2.

VITOFLAME 200

Vitoflame 200 oil burner mounted on a Vitola 200

5692 437 GB 9/2001

File in: Service folder

Safety instructions

⚠ *Please follow these safety instructions closely to avoid the risk of injury to individuals and damage to property.*

Work on the equipment
The installation, initial start-up, commissioning, maintenance and repairs must only be carried out by a competent person (heating engineer/service contractors) (see EN 50 110, part 1, and VDE 1000, part 10) (GB: British Standards and I.E.E. regulations).

Before working on the equipment/heating system, isolate the system from the mains electricity supply, e.g. by removing a separate mains fuse or by means of a mains electrical isolator, and safeguard against unauthorised re-connection.

Disconnection must be carried out by means of an isolating device which simultaneously isolates all non-earthed conductors with at least 3 mm contact separation.

Work requiring the control unit to be opened must not subject internal components to electrostatic discharges.

Repair work
This is not permitted on components with safety functions.
Use only original Viessmann spare parts or equivalent parts approved by Viessmann.

Initial start-up
This must be performed by the installer or a designated commissioning engineer; all readings must be recorded in a commissioning/service report.

Instructing the system user
The system builder must hand the operating instructions to the system user and instruct him/her in its functions and controls.

This indicates a reference to other instructions which must be observed.

Applicability

Applicable to burners from serial no.:

7143148 k 00000 kkk,
7143149 k 00000 kkk,
7143150 k 00000 kkk,
7143151 k 00000 kkk,
7143152 k 00000 kkk,
7143153 k 00000 kkk,
7143154 k 00000 kkk,
7143155 k 00000 kkk

Operating and service documents

1. Complete and detach the customer registration card:

- Hand the system user section to the user for safekeeping.
- Keep the part designated for the heating engineer.

2. File all parts lists, operating and service instructions in the folder and hand this over to the system user.

Contents

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Initial start-up steps

Maintenance steps

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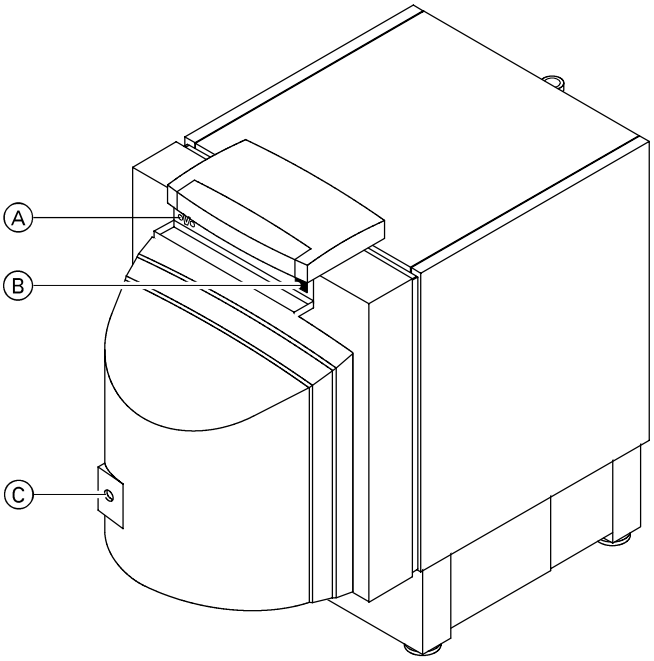
Implementation

To obtain the optimum combustion values, it is essential to adjust the burner with the boiler heated to operating temperature.

Check the CO content, CO_2 content, flue gas temperature, room temperature and chimney draught after at least 2 minutes operation and at 60 °C boiler water temperature with fitted burner hood.

Remove the burner hood before commencing maintenance work.

Initial start-up | **1. System start-up**



Service instructions boiler control unit

Please note:
Vitoflame 200 oil burners feature very good combustion values which are achieved without the use of fuel oil additives to improve combustion. We do not therefore recommend the use of such combustion improvers.

1. Check that the blast tube attachment or the combustion chamber liner (for Vitola 200, 40 to 63 kW) is installed.

2. Check the heating system pressure and the oil level in the tank.

3. Open the shut-off valves in the oil supply line, on the oil tank and on the filter.

4. Fill the oil suction line and filter with fuel oil, using a manual oil suction pump **before** switching on the burner.

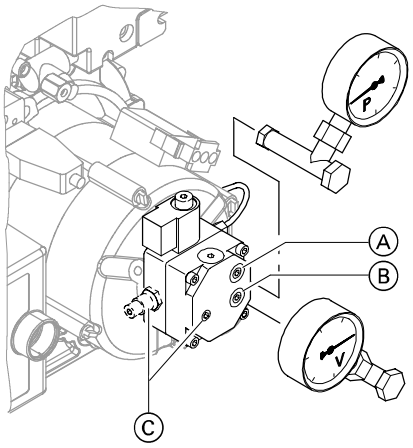
5. Switch on the mains electrical isolator (outside the boiler room).

6. Switch on the system On/Off switch B on the control unit.
If the fault indicator lamp A on the control unit lights up, press the reset button C on the burner.

Implementation (Cont.)

Initial start-up | **Maintenance** | **2. Oil pressure adjustment and vacuum check**

Please note:
The oil pressure is preset at the factory. Re-adjust the oil pressure if necessary.



Danfoss oil pump, type BFP 21

1. Isolate the mains electricity supply and take measures to prevent re-connection.

2. Unscrew plug "P" A from the oil pump.

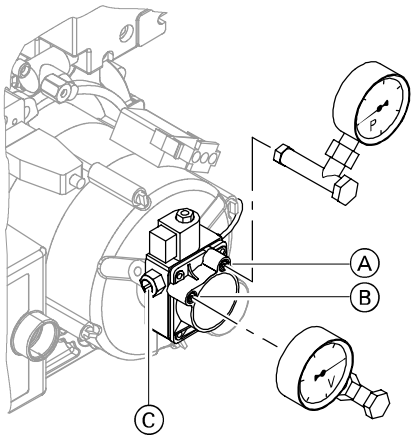
3. Unscrew plug "V" B from the oil pump.

4. Insert a pressure gauge (range 0-25 bar) and a vacuum gauge (range 0-1 bar); seal the gauges only with copper / aluminium gaskets or O-rings.

→ ***Please note:***
Do not use tape to seal these joints.

5. Start up the burner.

→ *The solenoid valve opens.*



Suntec oil pump, type AL 35

6. Read off the oil and vacuum pressures of the pump on the relevant gauges (the vacuum should be max. 0.35 bar given a head of 3 m between the oil pump and the bottom of the tank).

→ *Where the vacuum measures higher than 0.35 bar, check the filter for cleanliness or the pipe run.*

7. If necessary, set the oil pressure on the oil pump pressure setting screw C (for Danfoss pumps: depending on the model either on the front or the side).
Turning clockwise → pressure increases
Turning anti-clockwise → pressure decreases.

→ ***Please note:***
For approximate values for burner settings, see page 22.

8. Check the emission values after checking the oil pressure.

9. Isolate the mains electricity supply and take measures to prevent re-connection.

10. Remove the pressure and vacuum gauges.

11. Insert plugs "P" A and "V" B .

→ ***Please note:***
Check the plug seal rings for possible damage and replace, if necessary.

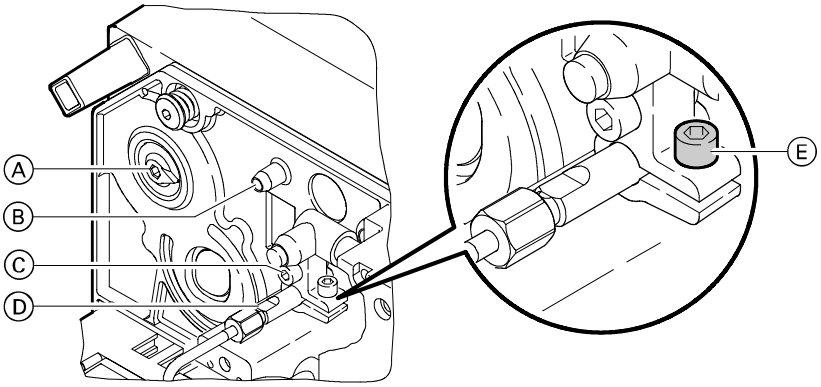
12. Start up the burner and check the plugs for leaks.

Implementation (Cont.)

Initial start-up | **Maintenance** | **3. Air volume fine adjustment**

Please note:
The oil pressure is preset at the factory. Re-adjust the air volume if necessary.

Starting up the burner requires fine adjustment.



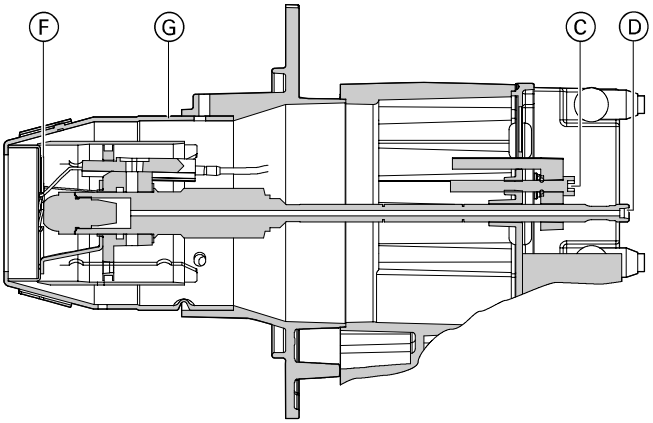
1. Modify the sensor plate position inside the blast tube; to do this, turn the nozzle assembly setting screw C :
- Clockwise → greater cross section → more air,
- anti-clockwise → smaller cross section → less air.

Please note:
For approximate values for burner settings, see page 22.

2. Check the static burner pressure at the test nipple B .

3. Check the emission values by measurement.

Please note:
*Do **not** slacken the terminal screw E , otherwise the zero point of the nozzle assembly will be altered.*



A Air damper
B Test nipple
C Nozzle assembly setting screw
D Adjustable nozzle assembly
E Terminal screw
F Sensor plate
G Blast tube

Implementation (Cont.)

Initial start-up | Maintenance

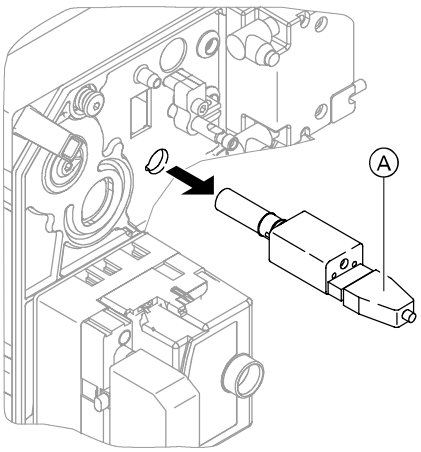
4. Burner check

Record all test values in the order of the maintenance report on the penultimate page of this manual.

→ ***Please note:***
The flue-gas pipe must be sealed on the boiler connection. Infiltrating air leads to false measurements.

Maintenance

5. Flame monitor check



B Flame monitor

Please note:
The flicker detector is preset at the factory to setting 4.

Safety check	Response
Burner start with darkened flame monitor.	Fault shut-down at the end of the safety period.
Burner start with flame monitor lit from an outside source.	Fault shut-down not later than after 40 sec.
Burner operation with simulated flame interruption: cover the flame monitor during operation and leave in this condition.	Restart followed by fault shut-down at the end of the safety period.

Maintenance

6. System shut-down

1. Isolate the mains electricity supply and take measures to prevent re-connection.

2. Pull the plug-connector ƒA from the burner.

3. Close the oil supply line (oil filter valve).

Maintenance

7. Checking the electrical connections

Check the plug-connections and the cable bushes for tight fit.

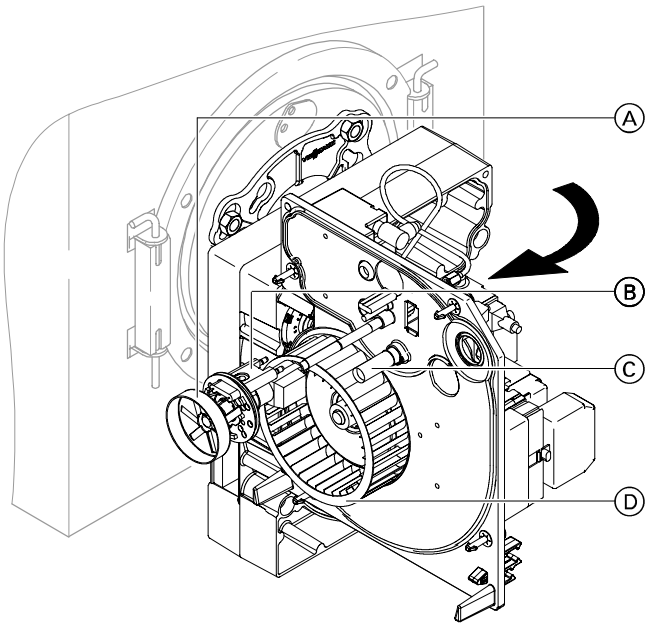
Implementation (Cont.)

Maintenance 8. Cleaning the burner

1. Set the burner to maintenance.

2. Clean the housing and the blast tube, the sensor plate A , the ignition electrodes B , the flame monitor C and the fan D .

Cleaning the combustion chamber and hot gas flues, see boiler service instructions.



Maintenance 9. Checking the blast tube fixings

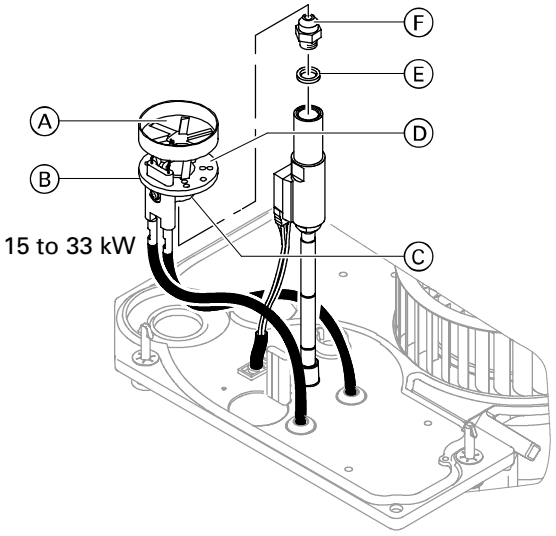
See maintenance item 8.

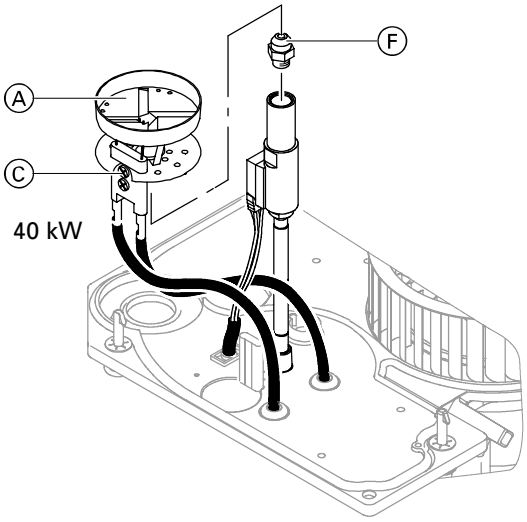
Maintenance 10. Checking the impeller fixings

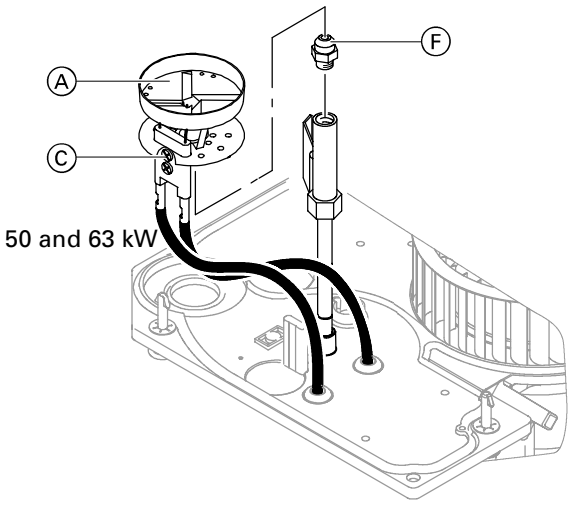
See maintenance item 8.

Implementation (Cont.)

Maintenance 11. Nozzle replacement







1. Plug the burner chassis with nozzle assembly pointing upwards onto the burner housing.

Please note:
This avoids air bubbles being created when replacing nozzles.

2. Release fixing screw C by two full turns.

3. Remove sensor plate A from the nozzle assembly.

4. Unscrew nozzle F (whilst holding the nozzle assembly).

5. Insert the replacement nozzle (whilst holding the nozzle assembly).

Please note:
For make and type of nozzle, see approximate values for burner settings, page 22.

6. Only for 15 to 33 kW:
Check seal ring B on deflector D of the sensor plate and apply instrument grease; replace the seal ring if necessary.

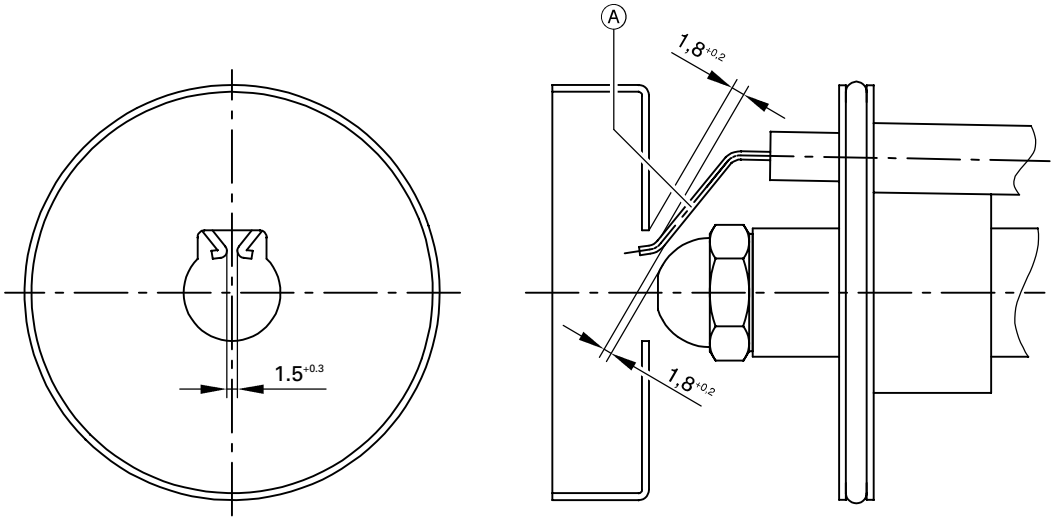
7. Push sensor plate A onto the nozzle assembly up to the end-stop of the oil pre-heater and re-tighten fixing screw C .

Please note:
Only for 15 to 33 kW:
Also fit the spacer E behind the sensor plate.

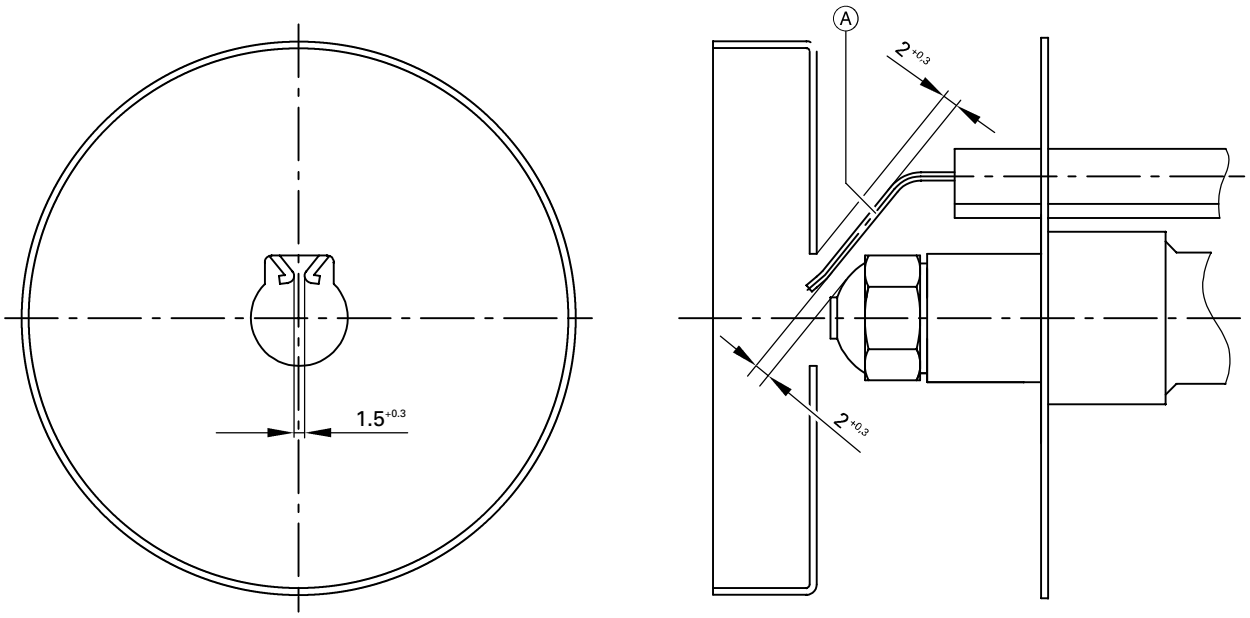
Implementation (Cont.)

Maintenance **12. Checking and adjusting the ignition electrodes**

Check ignition electrodes A for wear, cleanliness and dimensions (see fig.) and replace if necessary.



15 to 33 kW

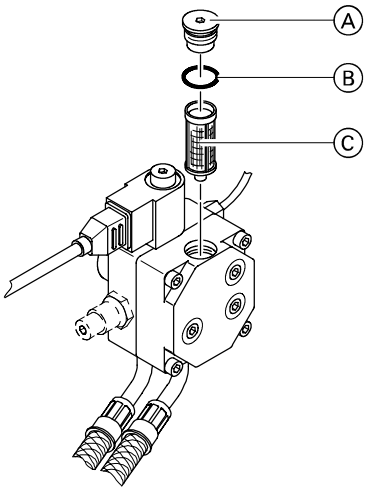


40 to 63 kW

Maintenance **13. Install the burner on the burner housing**

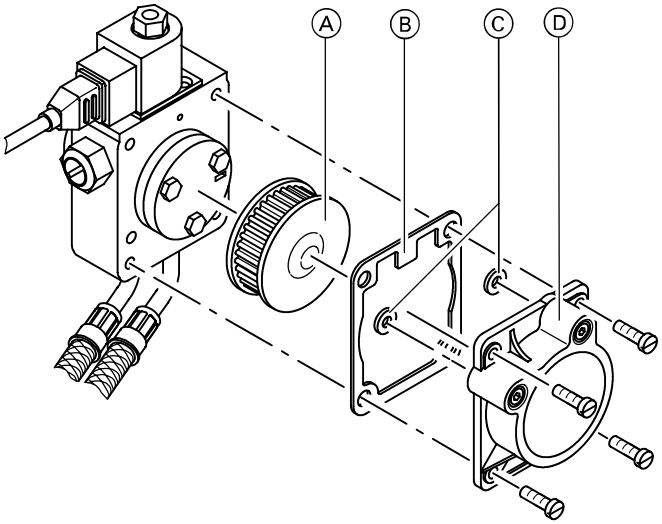
Implementation (Cont.)

Maintenance 14. Cleaning or, if necessary, replacing the oil pump filter



Danfoss oil pump type BFP 21

1. Unscrew filter plug A from the pump cover with a 4 mm Allen key.
2. Remove the plug A with cartridge filter C .
3. Carefully separate filter C from plug A using a screwdriver.
4. Change O-ring B on plug A .
5. Push the new filter onto plug A .
6. Insert the plug and filter into the oil pump.



Suntec oil pump, type AL 35

1. Unscrew the four screws from the pump housing and remove the cover.
2. Depending on the level of contamination, clean oil pump filter A with clean fuel oil or replace the filter.
3. During re-assembly, replace flat gasket B of cover D and plug O-rings C with new parts.

Maintenance 15. Replacing the pre-filter elements

Check the O-ring sealing the filter cup for possible damage and replace, if necessary.

Implementation (Cont.)

Maintenance

16. System start-up

1. Open the oil filter valve.

2. Switch on the mains electrical isolator (outside the boiler room).

3. Switch on the system On/Off switch on the control unit.

Maintenance

17. Checking the oil pipes and connections for leaks

The presence of air bubbles in the pre-filter is a sign of a leak in the suction line. Check oil pipes and connections on the oil tanks. Leaks will cause the fuel oil to continue to be injected (run-on) and produce soot deposits on the sensor plate.

Maintenance

18. Re-checking the burner values

Record all test values in the order of the maintenance report on the penultimate page of this manual.

→ ***Please note:***
The flue-gas pipe must be sealed at the boiler connection. Infiltrating air leads to false measurements.

Burner control unit

You may use the following burner control units with this burner:

Burner control unit LOA 14.171B2V

- For operating sequence, see p. 25.
- Sensor current:
  – min. requirement 50 μA
  – max. permissible without flame 5.5 μA
- Undervoltage
  When the mains voltage falls below 165 V~, the burner will be prevented from starting or the oil flow will be interrupted; simultaneously the system will be initiating a fault shut-down.
- Fault setting
  A lamp in the reset button also indicates the fault shut-down of the burner control unit.

Burner control unit LMO 14.113A2

- For operating sequence see page 25.
- Sensor current:
  – min. requirement 40 μA
  – max. permissible without flame 5.5 μA
- Undervoltage
  If the mains voltage falls below 165 V~, the burner control unit initiates a safety shut-down.
  The system re-starts when the mains voltage rises again above approx. 175 V~.
- Controlled intermittened operation
  After a maximum of 24 hours non-stop operation, the burner control unit implements an automatic safety shut-down with subsequent re-start.
- Control sequence in case of faults
  The fuel valve outputs and the ignition system are immediately shut down (< 1 sec.) if the system shuts down because of faults.

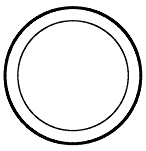
Cause	Response
After mains power failure.	Re-start
After falling below the undervoltage level.	Re-start
In case of premature, faulty flame signal during the pre-flush time t1.	Fault shut-down at the end of the pre-flush time t1.
In case of premature, faulty flame signal during the oil pre-heat time t0.	Starting will be inhibited after a fault shut-down of a maximum of 40 sec.
If the burner does not light within the safety limit t2.	Fault shut-down at the end of the safety period t2.
If the flame fails during operation.	Max. 3 start repeats, then fault shut-down.
No heating or oil pre-heater enabling within 10 min.	Fault shut-down.

- Fault shut-down
  After a fault shut-down, the burner control unit remains locked out (non-modifiable fault shut-down) and the red lamp lights up.
  This state also remains after a mains power supply failure.
- Resetting the burner control unit
  The system can be reset immediately after a fault shut-down.
  Hold down the reset button for approx. 1 sec. (< 3 sec.).
- Firing sequence
  If the flame fails within the safety period, the system re-ignites up to the end of the max. safety period. This allows several firing attempts within the safety period, see program sequence on page 25.
- Repeat limitation
  Up to a max. of three re-ignition attempts can be made if the flame has failed. The fourth flame failure during operation triggers a fault shut-down. The repeat count always starts with every controlled switch-on (through temperature or pressure regulators, thermostat or pressure limiters or high limit safety cut-outs).

Burner control unit (Cont.)

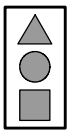
Burner control unit LMO 14.113A2 (Cont.)

■ Operation



ET

The reset button ET is the central control element for resetting and for activating and deactivating the diagnostic system.



red
yellow
green

LED

The multi-coloured LED is the central display element for the visual diagnosis as well as the interface diagnosis.

Both elements (ET and LED) are located under the clear cover of the reset button.

Two diagnostic options are available:

1. Visual diagnosis
Operational display or fault cause diagnosis

2. The interface diagnosis
This will not be described here.

During normal operation, the various conditions are indicated by colour code, acc. to the colour code table below.
By pressing the reset button > 3 sec. you can also activate the interface diagnosis. If you accidentally activated the interface diagnosis, which can be recognised by the weakly flickering red signal lamp, you can deactivate this option by pressing the reset button again.
The correct adjustment timing will be indicated by a yellow lamp impulse.

■ Operational display

Colour code table

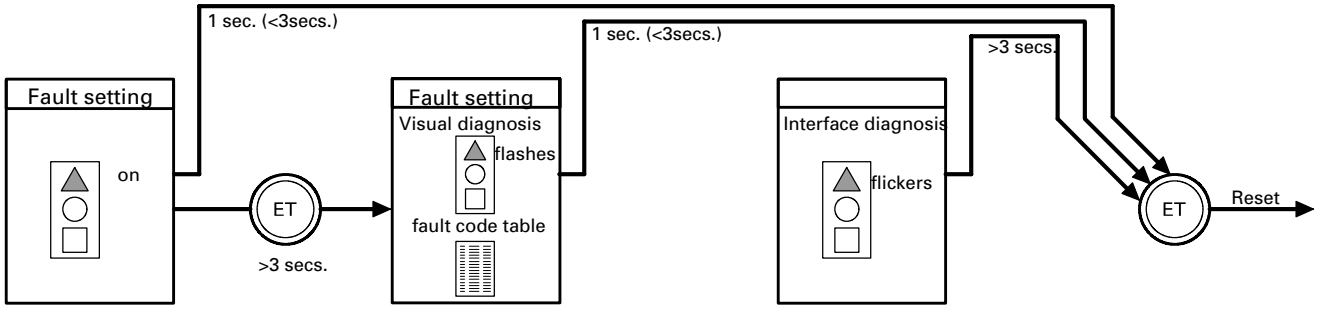
Condition	Colour code	Colour
Oil pre-heater active, oil pre-heat time t0	\ \ \ \ \ \ \ \ \ \	yellow
Ignition phase, ignition activated	\ 0 \ 0 \ 0 \ 0 \ 0 \ 0 \	yellow off
Operation, flame OK	□ □ □ □ □ □ □ □ □ □ □ □	green
Operation, poor flame	□ 0 □ 0 □ 0 □ 0 □ 0 □	green off
Undervoltage	\ ♦ \ ♦ \ ♦ \ ♦ \ ♦ \	yellow red
Fault, alarm	♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦	red
Fault code output, see fault code table on page 16	♦ 0 ♦ 0 ♦ 0 ♦ 0 ♦ 0	red off
External light before burner start	□ ♦ □ ♦ □ ♦ □ ♦ □ ♦ □	green red
Interface diagnosis	♦♦♦♦♦♦♦♦♦♦♦♦	red flickering light

Legend:
0 off
\ yellow
□ green
♦ red

Burner control unit (Cont.)

Burner control unit LMO 14.113A2 (Cont.)

■ Fault cause diagnosis
The red signal lamp stays on permanently after a fault shut-down. In this condition, you can activate the visual fault cause diagnosis acc. to the fault code table by pressing the reset button > 3 secs.
The fault cause diagnosis is activated as follows:



Fault code table	
Flash code	**Possible cause**
2 × flashing ●●	The flame is not established at the end of the safety period – fuel valves faulty or contaminated – flame monitor faulty or contaminated – solenoid valve faulty – oil pump faulty (no oil pressure) – Motor faulty – plug-in coupler faulty – nozzle faulty – poor burner setting, no fuel – ignition equipment faulty
3 × flashing ●●●	N/A
4 × flashing ●●●●	External light during the pre-purge phase.
5 × flashing ●●●●●	N/A
6 × flashing ●●●●●●	N/A
7 × flashing ●●●●●●●	Flame fails too often during operation (re-start limit after the 3rd control demand) – fuel valves faulty or contaminated – flame monitor faulty or contaminated – poor oil supply – poor burner setting
8 × flashing ●●●●●●●●	Time monitor oil pre-heater (not enabled after 10 min.)
9 × flashing ●●●●●●●●●	N/A
10 × flashing ●●●●●●●●●●	Faulty electrical contact, wires L1 and N interchanged or faulty burner control unit.

Burner control unit (Cont.)

Burner control unit LMO 14.113A2 (Cont.)

During the fault cause diagnosis, all control outputs are at zero volt.
- The burner remains switched off.
- The fault signal at terminal 10 is switched on.

You exit the fault cause diagnosis and re-start the burner by pressing reset. Hold down the reset button for approx. 1 sec. (< 3 secs.).

Procedure overview

1. Establish fault/ascertain system behaviour.

2. Look for the corresponding fault cause in the diagnosis tables.

3. Establish the action required from the table.

4. Correct the fault.

Diagnosis

Fault/behaviour of the system	Cause of fault	Check
Burner does not start (without fault display), fault lamp does not illuminate.	No voltage.	Check fuse or connector aBÖ in the control unit or plug-in terminal block, electrical connections, setting of heating system On/Off switch on the control unit and the mains electrical isolator.
	High limit safety cut-out activated.	Press the reset button on the boiler control unit.
Burner does not start up (with fault display).	Motor faulty.	Replace the motor.
	Coupling between motor and oil pump faulty.	Replace the coupling.
	Oil pump seized or stiff.	Clean or, if necessary, replace oil pump.
Burner starts up, but no flame is formed.	Ignition electrodes poorly adjusted.	Adjust correctly (see page 11).
	Ignition electrodes damp and contaminated.	Clean the ignition electrode block.
	Ignition electrode insulation cracked.	Replace the ignition electrode block.
	Ignition transformer faulty.	Replace the ignition transformer.
	Ignition cable faulty.	Replace the ignition cable.
	Pump does not feed oil.	Install pressure and vacuum gauges on the pump and check the pressure build-up (see the following paragraph).
Pump does not feed oil.	Shut-off valves closed at the filter or in the oil pipe.	Open the valves.
	Filter blocked.	Clean the filter (pre-filter and pump filter).
	Coupling between motor and pump faulty.	Replace the coupling.
	Leak in the suction line or filter cup.	Tighten the connections. Check oil pipes for leaks and seal if necessary.
	Oil flow and return hoses interchanged.	Connect correctly acc. to the instructions on the pump.
	Vacuum in suction line too high (higher than 0.35 bar).	Check cross-section of oil pipes. Replace the filter. Check the external oil valve.
	External oil valve faulty.	Check and, if necessary, replace the external oil valve.
Burner starts up, but no oil is injected.	Solenoid coil faulty.	Replace the solenoid coil.
	Oil pump faulty.	Replace the oil pump.
	Nozzle blocked.	Replace the nozzle.
	Flame monitor faulty.	Replace the flame monitor.

Diagnosis (Cont.)

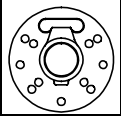
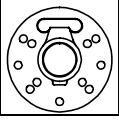
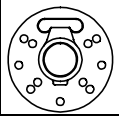
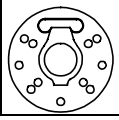
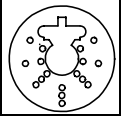
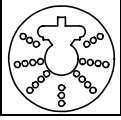
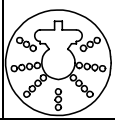
Fault/behaviour of the system	Cause of fault	Check
Burner starts up and flame is formed, but the burner cuts out after the safety time expires.	Flame monitor contaminated.	Clean the flame monitor.
	Flame monitor receives insufficient light.	Clean the sensor plate.
	Flame monitor faulty.	Replace the flame monitor.
	Burner control unit faulty.	Replace the burner control unit.
	Blast tube beginning to coke up.	Clean the blast tube.
Flame extinguishes during operation.	Air in the suction line.	Seal the line and filter.
	Nozzle faulty.	Replace the nozzle.
	Burner incorrectly adjusted.	Re-instate factory pre-set values (see page 22).
	Sensor plate contaminated.	Clean the sensor plate.
Ignition switches on during operation.	Flame monitor contaminated.	Clean the flame monitor.
	Sensor plate contaminated.	Clean the sensor plate.
	Nozzle contaminated.	Replace the nozzle.
Flame pulsates.	Fan pressure too high.	Check the fan pressure at the test nipple on top of the fan housing (U-shaped pressure gauge). Set the air damper or the nozzle assembly so that the lower value of the static burner pressure (see the "approximate values for burner settings", page 22) is not exceeded.
	Oil consumption too high.	Correctly adjust the oil pressure (see page 22).
Burner sooty.	Too little or too much air.	Correct the setting. Check and clean the impeller. Check the ventilation of the boiler room.
	Insufficient flue pressure.	Check stack and flue gas baffles.
	Nozzle faulty.	Replace the nozzle or install the correct nozzle (see page 22).
	Blast tube attachment or combustion chamber liner missing or faulty.	Fit or replace the blast tube attachment or combustion chamber liner.
CO_2 content too low.	Incorrect setting.	Check setting (see page 22).
	Infiltrating air.	Seal flue gas pipe at boiler connection. Tighten the fixing screws on the combustion chamber cover and the flue gas cover.
Flue gas temperature too high.	Oil consumption too high.	Match the oil flow to the rated output of the boiler.
	Boiler contaminated.	Clean boiler and correct burner settings.

Specification

Rated output	kW	15	18	22	27	33	40	50	63
Type of burner		VEKI-1	VEKI-1	VEKI-1	VEKI-1	VEKI-1	VEKI-2	VEKII-1	VEKII-2
Type test no. acc. to DIN EN 267		5G971/2001S						5G972/2001S	
Voltage	V	230							
Frequency	Hz	50							
Motor speed	rpm	2800							
Version		single stage							
Oil pump output	litres/hr.	45							
Connections Oil hose flow and return (included in the delivery).	R (female thread)	**e**							

Approximate values for burner settings

Please note:
Check whether the service instructions are valid for the boiler concerned (see: Applicability, page 2 and serial no. on the burner type plate).

Rated output	kW	15	18	22	27	33	40	50	63
Oil burner nozzle									
Make **Fluidics**[*1]	Type	60°HF/ 70°HF	60°HF/ 70°HF	60°HF	60°HF/ 45°HF	—	45°SF	60°S	80°H
	Gph	0.4	0.5	0.6	0.75	—	1.0	1.1	1.5
Danfoss	Type	—	—	—	—	45°H/ 45°S	—	—	—
	Gph	—	—	—	—	0.85	—	—	—
Oil pressure approx.[*2]	bar	9.0	9.0	9.0	8.5	9.0	10.0	11.5	10.5
Oil flow rate	kg/hr.	1.4	1.7	2.0	2.5	3.0	3.7	4.6	5.8
	litres/hr.	1.6	2.0	2.4	2.9	3.6	4.3	5.4	6.8
Air damper setting Air damper position (see page 7)		7.5	8.0	8.5	10.0	13.5	16.5	17.0	25.0
Nozzle assembly setting Setting screw position (see page 7)	mm	3.0	3.0	5.0	8.0	10.0	8.0	10.0	14.0
Static burner pressure[*3] Test nipple location (see page 7)	mbar	3.2 - 3.6	3.2 - 3.6	3.2 - 3.6	3.0 - 3.3	2.5 - 3.0	2.5 - 3.0	3.2 - 3.7	2.5 - 3.0
Aluminium deflector of sensor plate Number of plugs remaining in the deflector		5 	0 	0 	0 	0 	0 	0 	0 

*[*1]The requirements laid down for the certificate of environmental excellence were verified only with the nozzles shown.*
*[*2]Due to nozzle tolerances and varying oil characteristics, the oil pressure may vary from that indicated by the values shown.*
*[*3]To check the burner settings.*

Platzhalter Bauteilübersicht

Platzhalter

Platzhalter Stromlaufplan

Platzhalter

Platzhalter Einzelteilliste

Platzhalter

Platzhalter

Platzhalter

			Initial start-up Date: By:	**Maintenance/ Service** Date: By:	**Maintenance/ Service** Date: By:	**Maintenance/ Service** Date: By:	**Maintenance/ Service** Date: By:	**Maintenance/ Service** Date: By:
Oil pressure	actual	*bar*						
	set	*bar*						
Vacuum	actual	*bar*						
	after maintenance	*bar*						
Soot indicator	actual							
	set							
Carbon dioxide content CO_2	actual	*% by vol*						
	set	*% by vol*						
Oxygen content O_2	actual	*% by vol*						
	set	*% by vol*						
Flue gas temperature (gross)	actual	*°C*						
	set	*°C*						
Flue gas loss	actual	*%*						
	set	*%*						
Draught (at the boiler)	actual	*hPa (1hPa=1 mbar)*						
	set	*hPa (1hPa=1 mbar)*						
Nozzle assembly setting	actual	*mm*						
	set	*mm*						
Air damper setting	actual	*mm*						
	set	*mm*						

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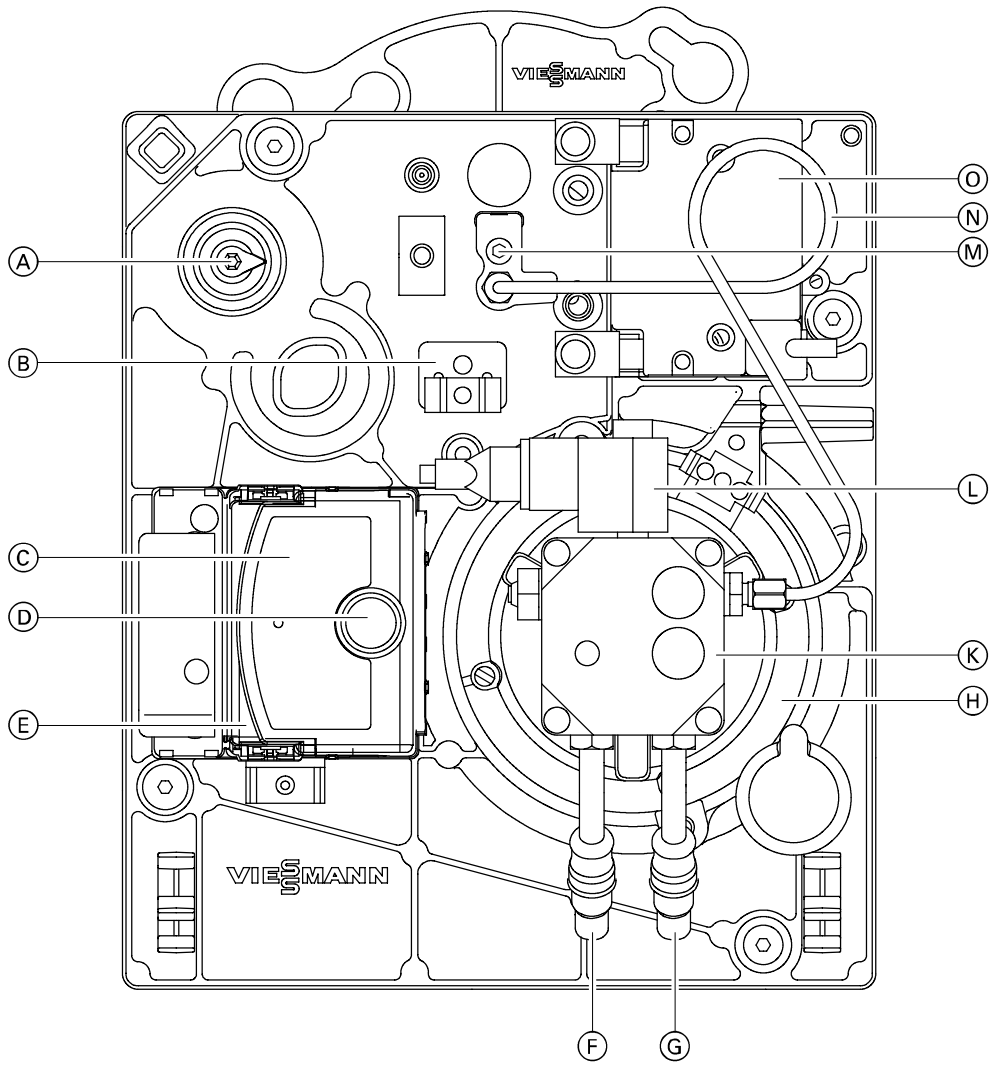
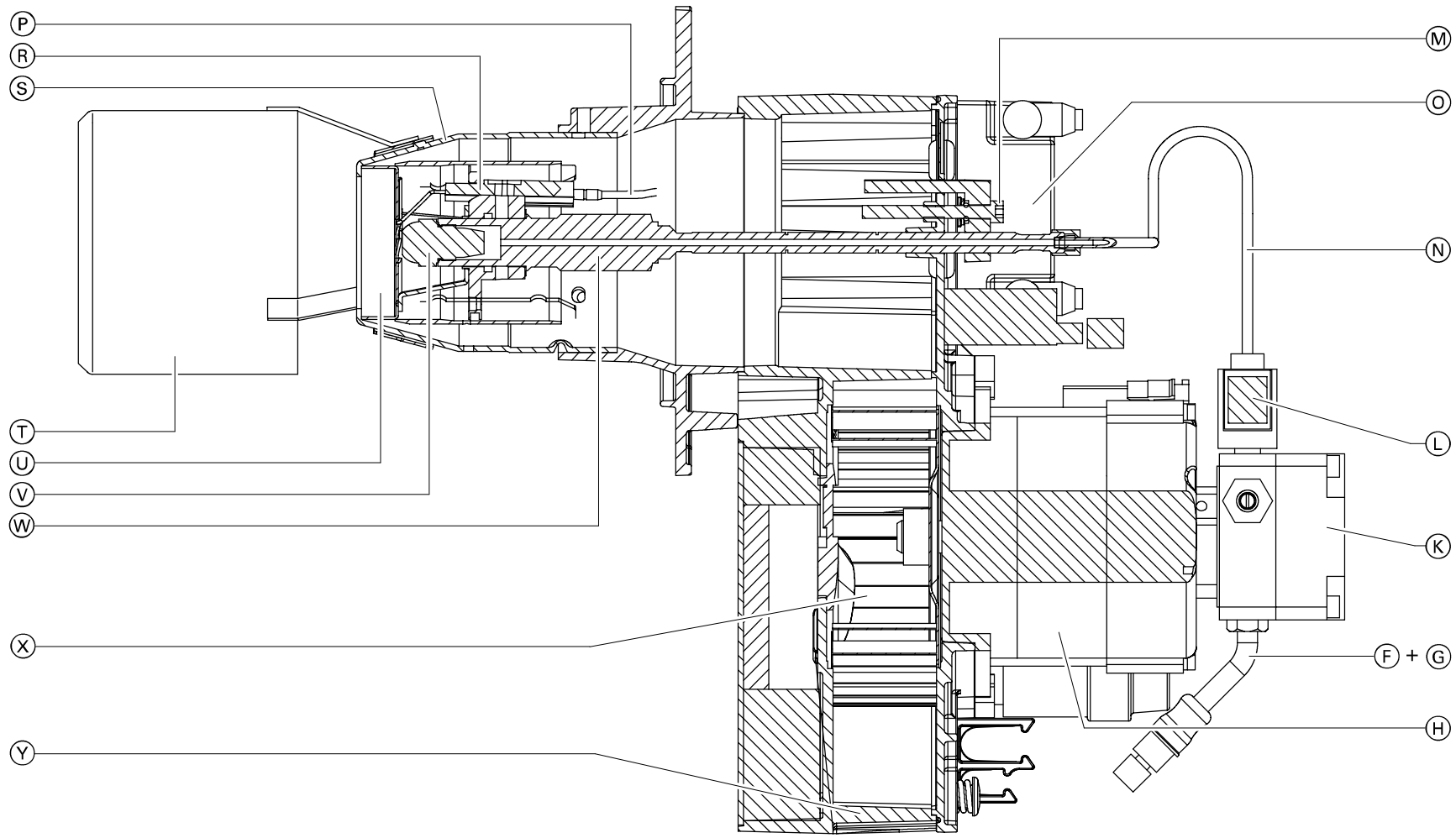
5692 437 GB Subject to technical modifications.

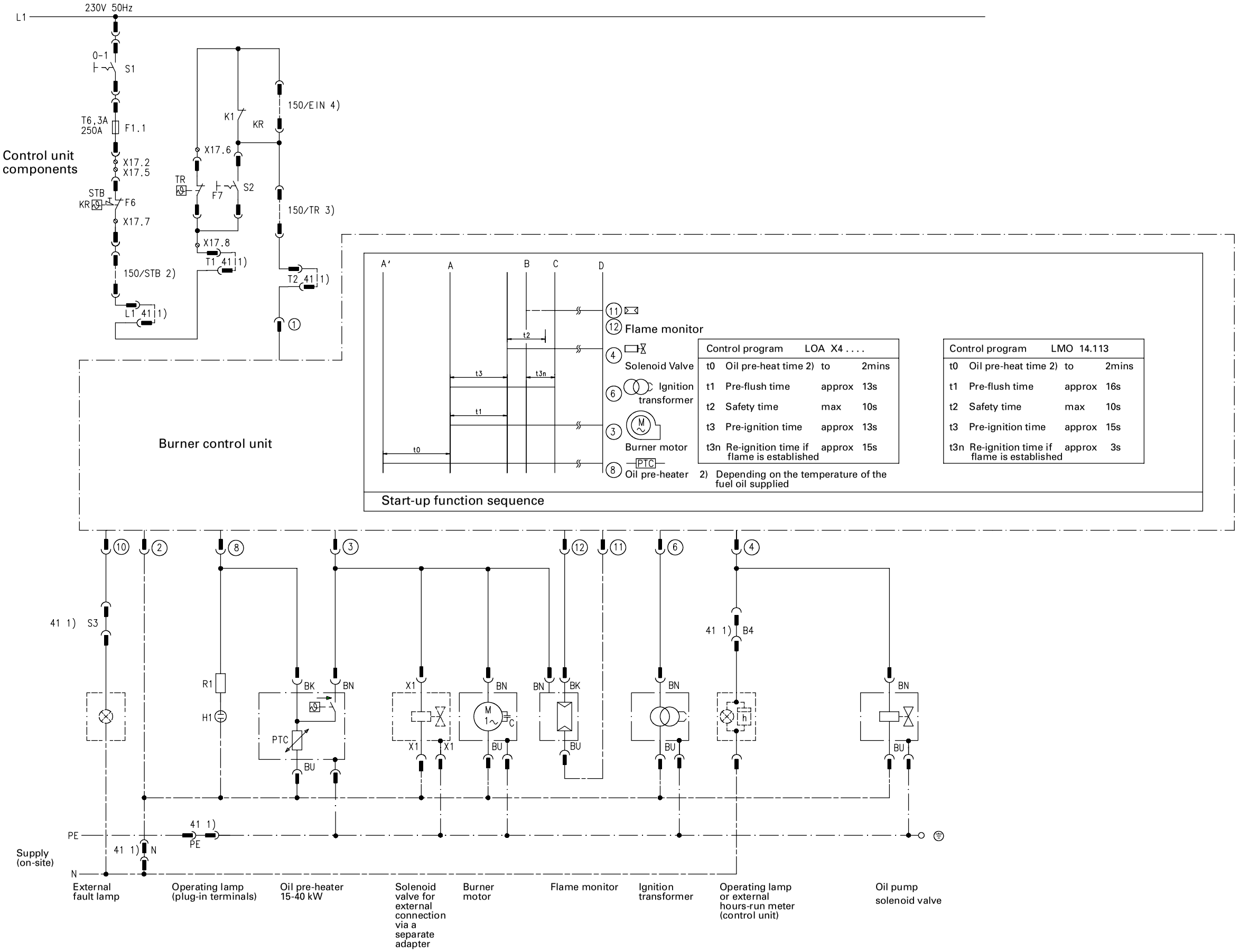
Component overview





A Air regulating valve
B Flame monitor (flicker detector)
C Burner control unit
D Reset button
E Connection panel
F Return pipe
G Suction pipe
H Fan motor
K Oil pump
L Solenoid valve
M Nozzle assembly setscrew
N Oil pipe
O Ignition transformer
P Ignition cable
R Ignition electrode
S Blast tube
T Blast tube attachment
U Sensor plate
V Oil burner nozzle
W Nozzle assembly with oil pre-heater
X Impeller
Y Burner housing

Wiring diagram



Legend

A'	Start of oil pre-heat time
A	Start-up
B	Timing of flame being established
C	Operating position
D	Controlled shut-down

fA	Burner plug on the control unit
F1.1	Fuse in the control unit
F6	High limit safety cut-out
F7	Thermostat
S1	Mains electrical switch
S2	Test button
K1	Burner relay
1 - qW	Plug-in terminals on the oil burner control unit

Colour coding conforming to DIN/IEC 757

BK	black
BN	brown
BU	blue
RD	red

[1] Connection of assembly modules and accessories via system plug-in connector fA (e.g. KNL, extension cable, etc.).
[2] Connection of external safety equipment via system plug-in connector aBÖ.
[3] Connection of external control off-switch via system plug-in connector aBÖ.
[4] Connection for external burner ON.

Please note:
This wiring diagram only applies in conjunction with Viessmann products.

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Parts list

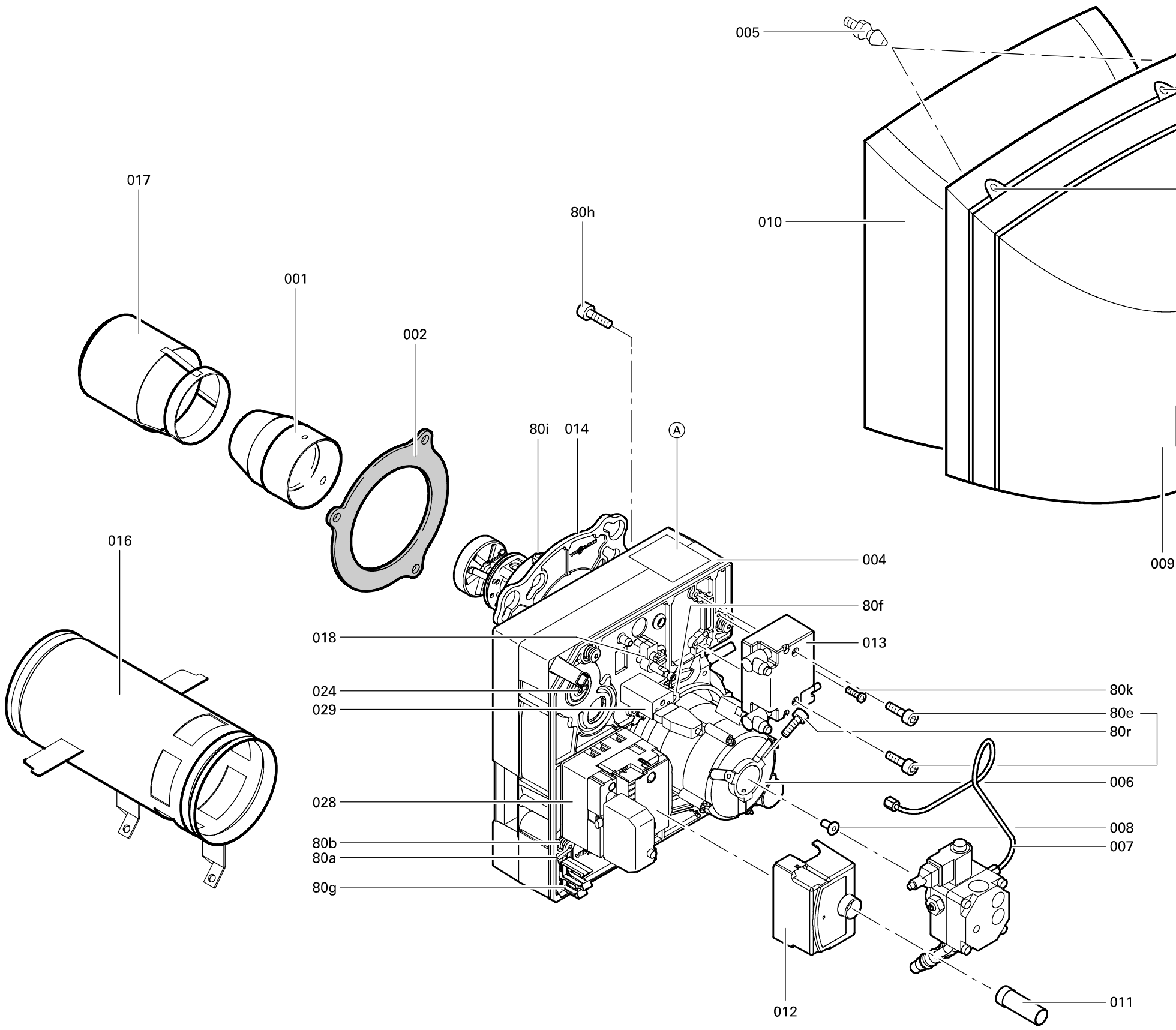
When ordering spare parts:
Quote the type and serial no. (see type plate) and the item no. of the required part (as per parts list).
You can obtain common parts from your local supplier.

Parts
001 Blast tube
002 Sealing plate ∅ 182 × 30 × 3
004 Burner housing
005 Profile stud
006 Fan motor
007 Oil pipe
009 Burner hood
010 Insulation mat with adhesive
011 Suppressor extension
012 Oil burner control unit
013 Electronic ignition
014 Burner flange
018 Setting: nozzle assembly
024 Air damper
028 Burner control unit plug-in base
029 Flame monitor
049 Burner hood latches

080 Small parts comprising:
80a Locking spigot Allen head 4 mm
80b Plug spigot compression spring
80c Plug spigot lockwasher
80d Cheese-head screw M 5 × 10
80e Cheese-head screw M 5 × 45 thread length 30 mm
80f Cheese-head screw M 6 × 20
80g Cable clamp
80h Cheese-head screw M 6 × 30
80i Headless screw M 6 × 10
80k Machine screw A M 4 × 10-H
80l Spring washer A 5
80m O ring 19 - 2.5 VIOR
80o Straight connector
80p Gasket A 10 × 14 × 1.5
80r Cheese-head screw M 5 × 12
80s Spacer

A Type plate

Wear parts
008 Plug-in coupler
016 Combustion chamber liner 40-63 kW
017 Blast tube attachment 15-33 kW



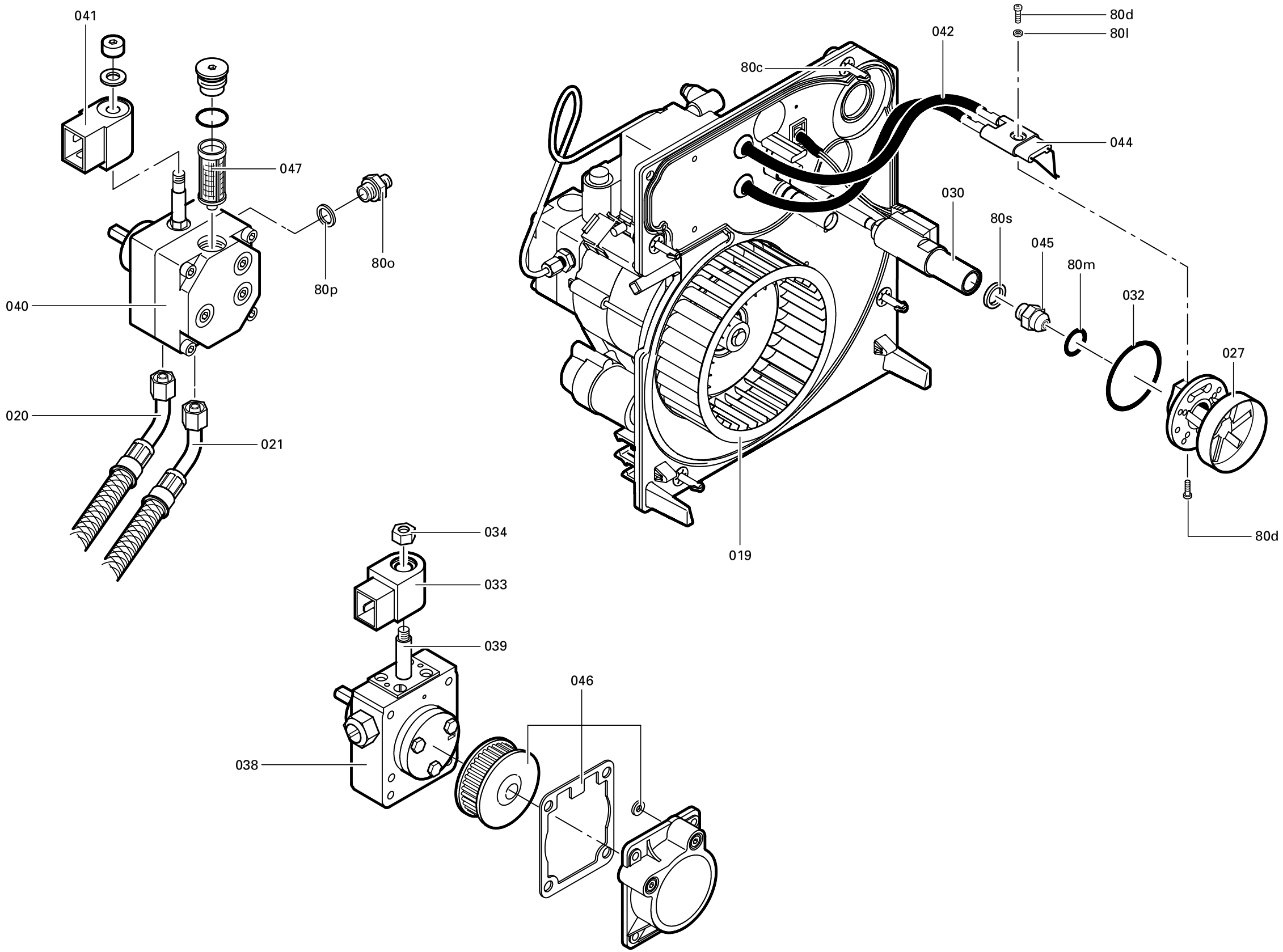
Parts list (Cont.)

Parts
019 Impeller
020 Oil hose - flow
021 Oil hose - return
027 Sensor plate
030 Nozzle assembly with oil pre-heater
032 O-ring 54 × 3
033 Solenoid valve coil for Suntec oil pump
034 Solenoid valve nut for Suntec oil pump
038 Suntec oil pump
039 Solenoid valve core for Suntec oil pump
040 Danfoss oil pump
041 Solenoid valve coil for Danfoss oil pump
042 Ignition cables (set)

080 Small parts comprising:
80a Locking spigot Allen head 4 mm
80b Plug spigot compression spring
80c Plug spigot lockwasher
80d Cheese-head screw M 5 × 10
80e Cheese-head screw M 5 × 45 thread length 30 mm
80f Cheese-head screw M 6 × 20
80g Cable clamp
80h Cheese-head screw M 6 × 30
80i Headless screw M 6 × 10
80k Machine screw A M 4 × 10-H
80l Spring washer A 5
80m O ring 19 - 2.5 VIOR
80o Straight connector
80p Gasket A 10 × 14 × 1.5
80r Cheese-head screw M 5 × 12
80s Spacer

Wear parts
044 Ignition electrode block
045 Nozzle
046 Spare parts set for Suntec oil pump
047 Cartridge filter for Danfoss oil pump

Parts (not shown)
071 Installation instructions
072 Service instructions
079 Burner pack



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