

Installation instructions

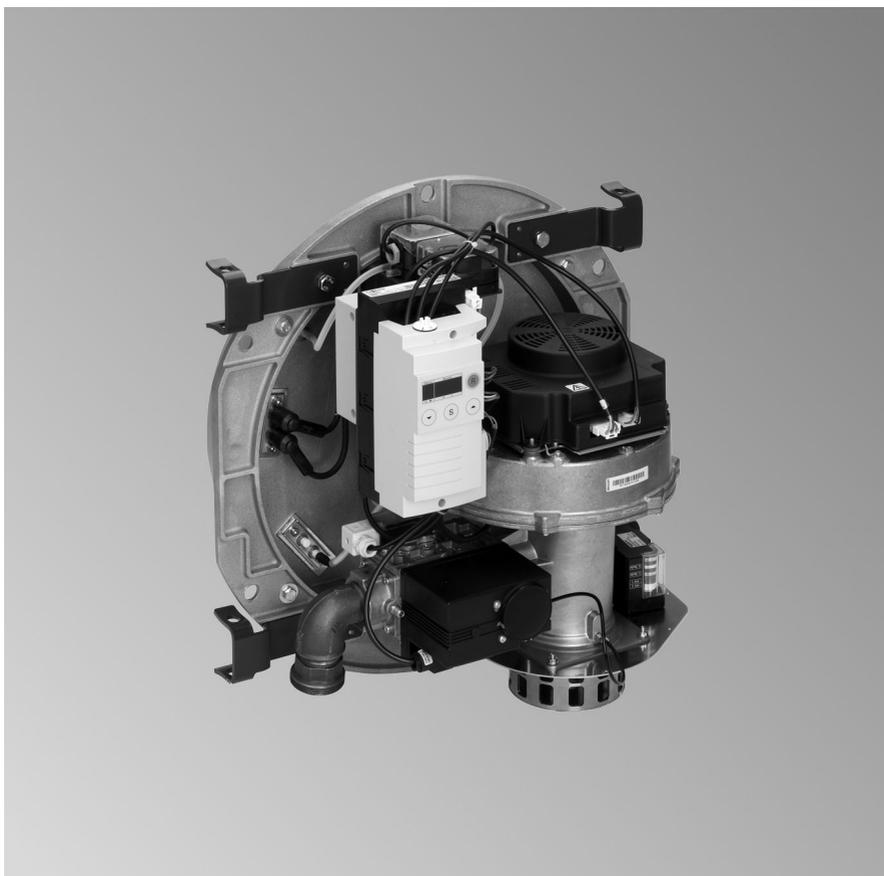
for contractors

VIESSMANN

Replacing burner components

For the MatriX radiant burner, type VM III,
natural gas E and LL
and the Vitocrossal 300, type CT3B
Rated heating output 187 to 314 kW

Replacing burner components



Safety instructions



Please follow these safety instructions closely to prevent accidents and material losses.

Safety instructions explained



Danger

This symbol warns against the risk of injury.

Note

Details identified by the word "Note" contain additional information.



Please note

This symbol warns against the risk of material losses and environmental pollution.

Target group

These instructions are exclusively intended for qualified contractors.

- Work on gas installations may only be carried out by a registered gas fitter.
- Work on electrical equipment may only be carried out by a qualified electrician.

Regulations to be observed

- National installation regulations
- Statutory regulations for the prevention of accidents
- Statutory regulations for environmental protection
- Codes of practice of the relevant trade associations
- All current safety regulations as defined by DIN, EN, DVGW, TRGI, TRF, VDE and all locally applicable standards
 - Ⓐ ÖNORM, EN, ÖVGW G K directives, ÖVGW-TRF and ÖVE
 - ⒸH SEV, SUVA, SVGW, SVTI, SWKI, VKF and EKAS guideline 1942: LPG, part 2

Safety instructions (cont.)

Working on the system

- Isolate the system from the power supply (e.g. by removing the separate fuse or by means of a mains isolator) and check that it is no longer 'live'.
- Safeguard the system against reconnection.
- Where gas is used as the fuel, close the main gas shut-off valve and safeguard it against unintentional reopening.

Index

Information

Disposal of packaging.....	5
Symbols.....	6

Installation sequence

Preparing to replace components.....	7
Burner control unit VUC 310.....	9
Coding card on burner control unit VUC 310.....	11
Display and programming unit of burner control unit VUC 310.....	12
Gas train	13
Air pressure switch.....	15
Ignition unit.....	17
Ignition cables.....	17
Ignition electrode block.....	18
Ionisation electrode block.....	19
Fan.....	21
Rotary damper and servomotor.....	23
Burner gauze assembly.....	25
Thermal insulation block.....	29
Boiler door.....	31
Further assembly and commissioning.....	33

Disposal of packaging

Please dispose of packaging waste in line with statutory regulations.

DE: Use the disposal system organised by Viessmann.

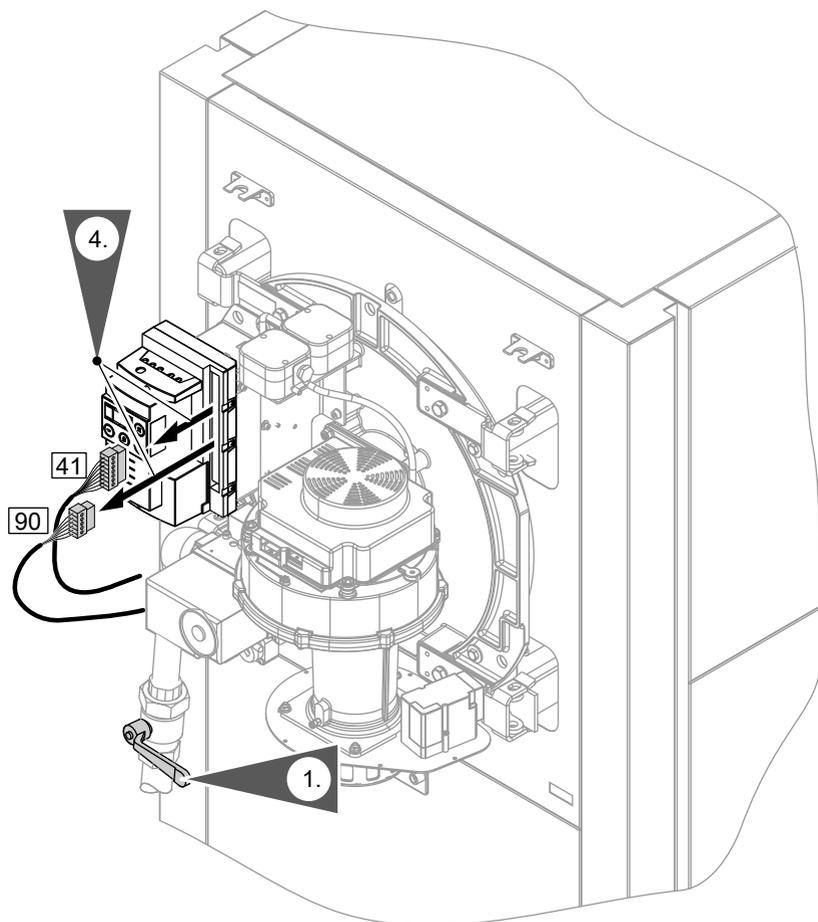
AT: Use the ARA statutory disposal system (Altstoff Recycling Austria AG, licence number 5766).

CH: Packaging waste is disposed of by the HVAC contractor.

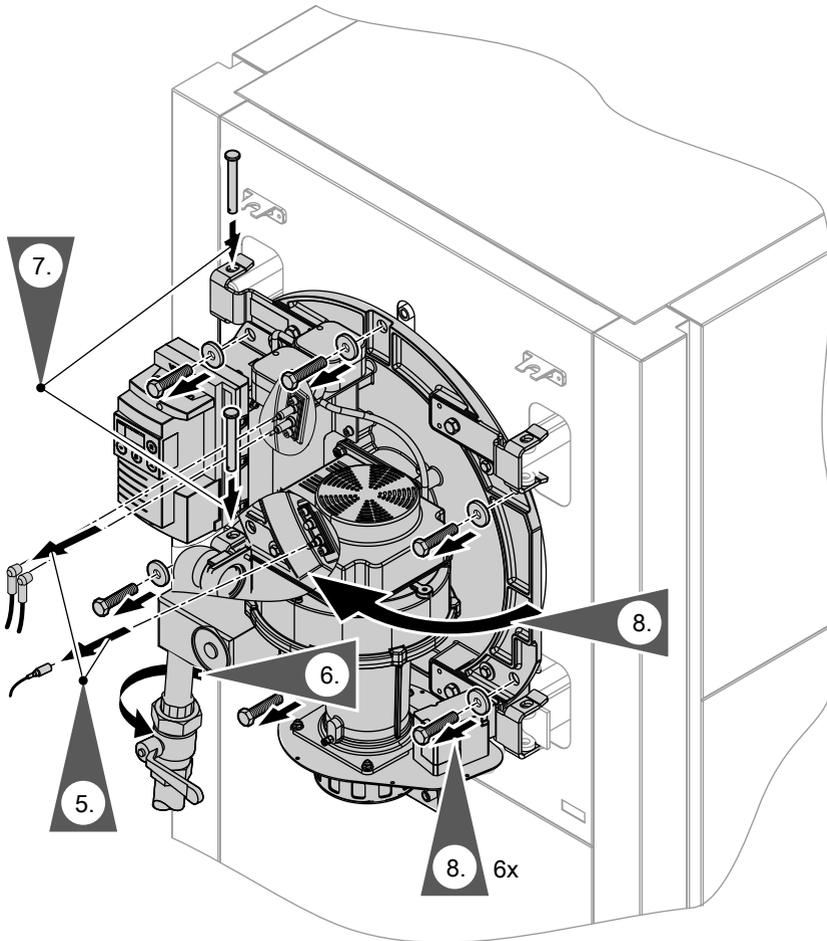
Symbols

Symbol	Meaning
	Reference to other document containing further information
	Step in a diagram: The numbers correspond to the order in which the steps are carried out.
	Warning of material losses and environmental pollution
	Live electrical area
	Pay particular attention.
	<ul style="list-style-type: none"> ■ Component must audibly click into place. or ■ Acoustic signal
	<ul style="list-style-type: none"> ■ Fit new component. or ■ In conjunction with a tool: Clean the surface.
	Dispose of component correctly.
	Dispose of component at a suitable collection point. Do not dispose of component in domestic waste.

Preparing to replace components



Preparing to replace components (cont.)

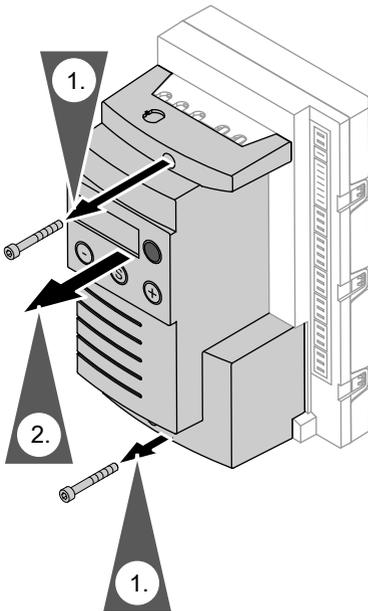


1. Close the gas shut-off valve.
2. Switch OFF the mains isolator (outside the installation room).
3. Remove the burner hood.
4. Disconnect plugs **41** and **90** from the burner control unit.
5. Disconnect the plugs from the electrodes.
6. Undo the gas fitting.
7. Insert the hinge pins.

Preparing to replace components (cont.)

8. Only if the burner gauze assembly, ignition electrodes or ionisation electrode are faulty:
Undo six M 12 screws. Open the boiler door.

Burner control unit VUC 310



1. Undo 2 fixing screws.

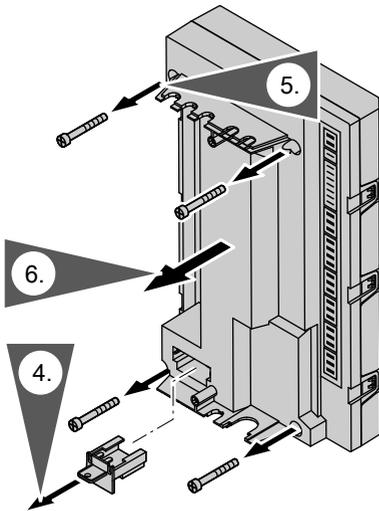
Note

Torque when installing: 1 Nm.

2. Lift up the display and programming unit. Unplug the connecting cable plug to the burner control unit.
Remove the display and programming unit.
3. Remove all connecting cables from the burner control unit.

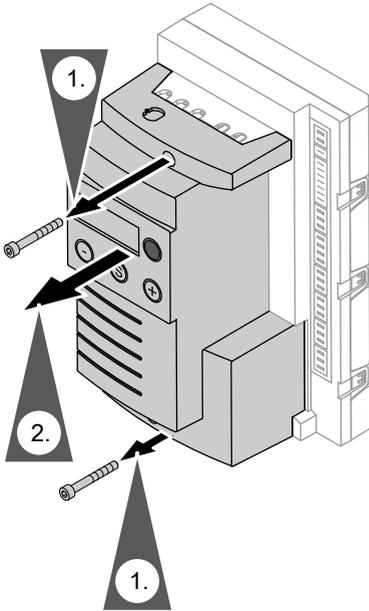


Burner control unit VUC 310 (cont.)



4. Remove the coding card from the burner control unit.
5. Undo 4 fixing screws on the burner control unit.
6. Remove the burner control unit.
7. Install the new burner control unit in reverse order.
8. For further steps, see page 34.

Coding card on burner control unit VUC 310

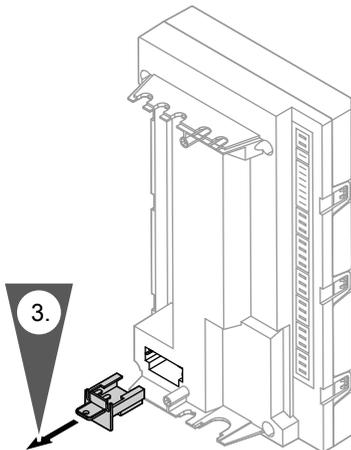


1. Undo 2 fixing screws.

Note

Torque when installing: 1 Nm.

2. Lift up the display and programming unit. Unplug the connecting cable plug to the burner control unit.
Remove the display and programming unit.



3. Remove the coding card from the burner control unit.
4. Insert new coding card.
5. For further steps, see page 34.

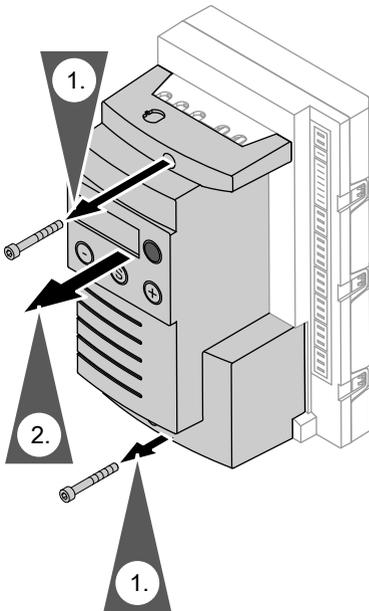
Note

If fault code "F b7" is displayed, check the coding card.



MatriX radiant burner service instructions

Display and programming unit of burner control unit VUC 310



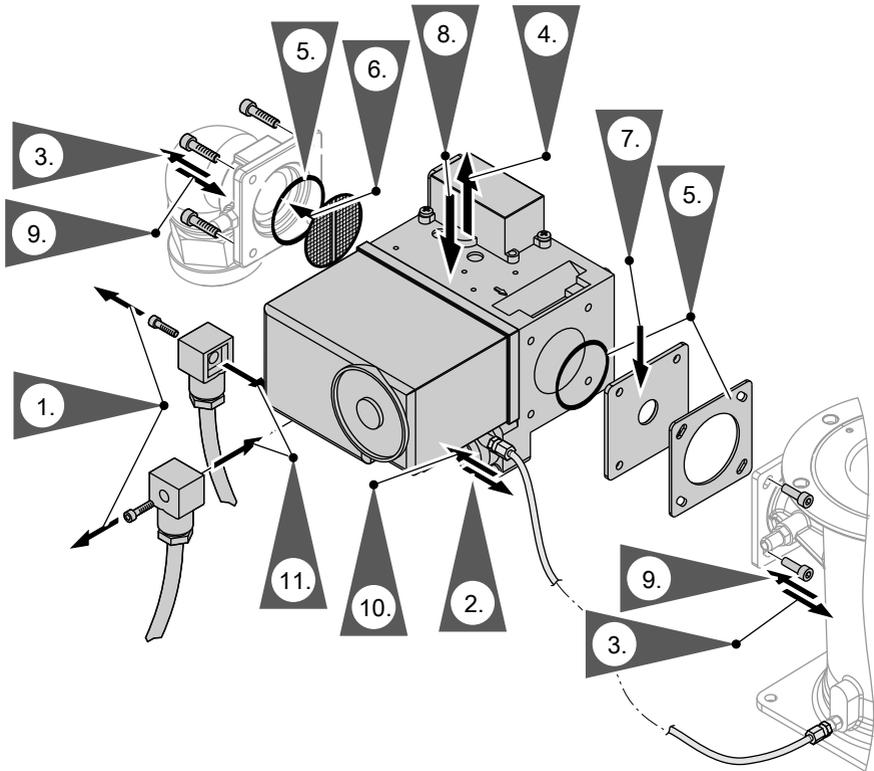
1. Undo 2 fixing screws.

Note

Torque when installing: 1 Nm.

2. Lift up the display and programming unit. Unplug the connecting cable plug to the burner control unit.
Remove the display and programming unit.
3. Install new display and programming unit in reverse order.
4. For further steps, see page 34.

Gas train



1. Undo two screws and pull the plugs from the gas train.
2. Pull the compensation line from the gas train.
3. Remove the screws.
4. Remove the gas train between the connection flanges on the Venturi pipe and the gas supply pipe.
5. Replace the gaskets on the inlet and outlet sides.
6. Place the filter insert between the inlet flange and the gas train.
7. Only for natural gas E:
Place the restrictor between the gas train and the gasket.
8. Position the gas train between the connection flanges on the Venturi pipe and the gas supply pipe (observe the direction of installation).

Gas train (cont.)

9. Secure the gas train using screws without creating any stress (torque 1.5 Nm).
10. Connect the compensation line to the gas train.
11. Push the plugs onto the gas train and secure with the two screws. Torque 1.5 Nm.
12. For further steps, see page 34.



Danger

Escaping gas leads to a risk of explosion.

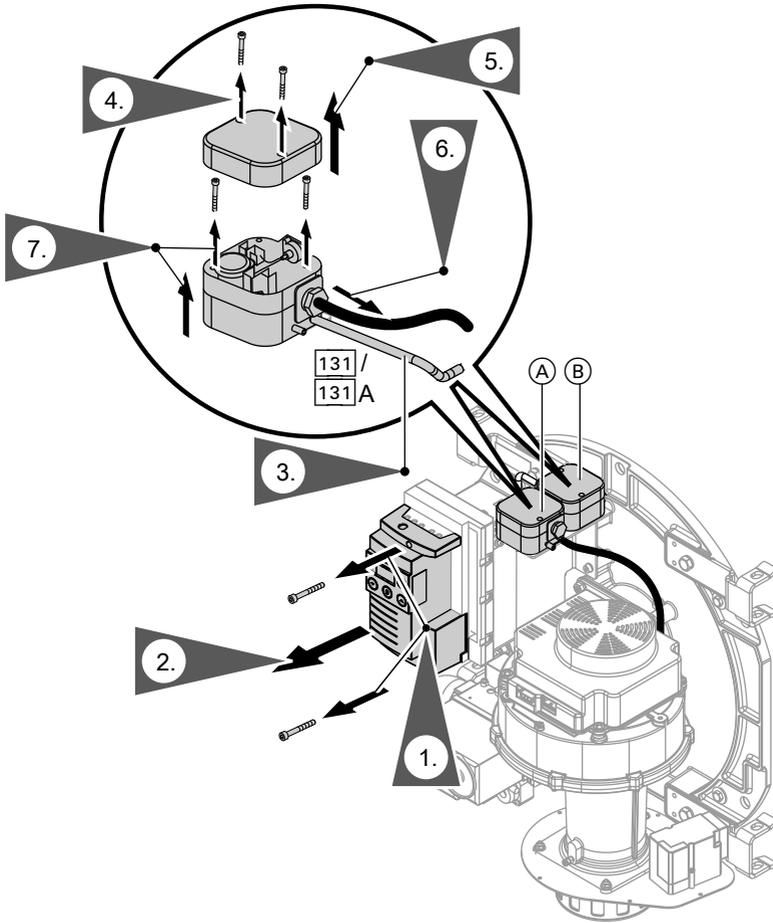
Check all fittings for gas tightness.



Please note

The use of leak detection spray can result in incorrect functions. Leak detection spray must not come into contact with electrical contacts.

Air pressure switch



(A) Air pressure switch, fan (LDW1, connection hose on connector marked "-")

(B) Air pressure switch, combustion chamber (LDW2, connection hose on connector marked "+")

1. Undo 2 fixing screws.

2. Remove the display and programming unit from the burner control unit.

Note

Torque when installing: 1 Nm.

Air pressure switch (cont.)

3. Pull plug **131** (LDW1) and plug **131A** (LDW2) from the plug-in strip on the burner control unit.

4. Undo the fixing screws on the air pressure switch.

Note

Torque when installing: 1 Nm.

5. Remove the air pressure switch cover.

6. Pull the connection hose from the connector.

7. Undo the base fixing screws and remove the base.

8. Install new air pressure switch in reverse order.

Note

Attach the connection hose to the corresponding connector.

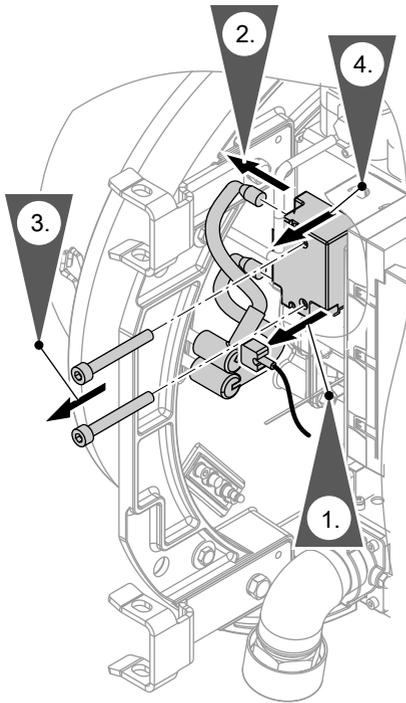
9. For further steps, see page 34.

Note

Set the new air pressure switch to exactly the same value as that of the replaced air pressure switch.

Air pressure switch settings	
LDW1	1.2 mbar (0.12 kPa) ↑
LDW2	5 mbar (0.5 kPa) ↑

Ignition unit



1. Disconnect the connecting cable from the ignition unit.
2. Pull the ignition cables from the ignition unit.
3. Undo the ignition unit fixing screws.

Note

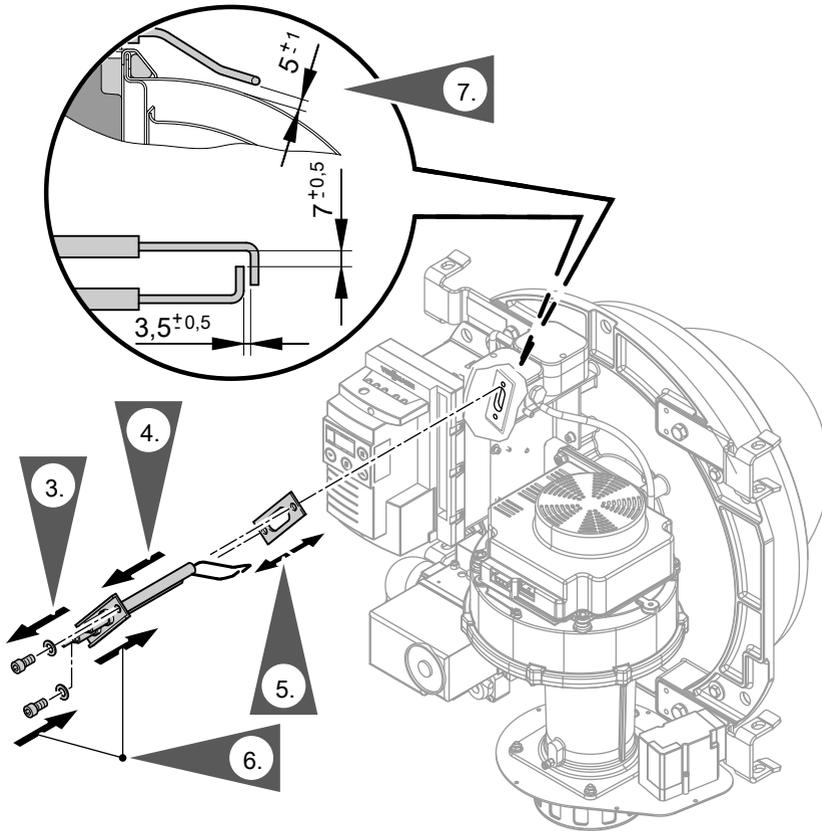
Torque when installing: 1.5 Nm.

4. Remove the ignition unit.
5. Install new ignition unit in reverse order.
6. For further steps, see page 34.

Ignition cables

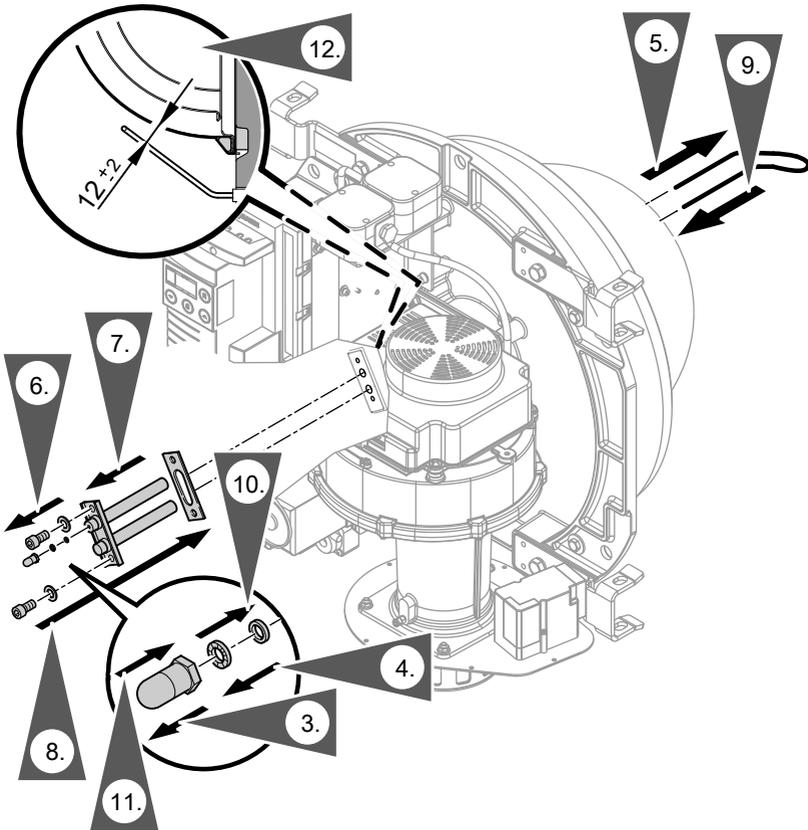
1. Pull the ignition cables from the ignition unit.
2. Pull the ignition plugs from the ignition electrodes.
3. Install new ignition cables in reverse order.
4. For further steps, see page 34.

Ignition electrode block



1. Undo six M 12 screws and open the boiler door.
2. Pull the ignition plugs from the ignition electrodes.
3. Undo 2 screws on the retainer.
4. Remove the electrode block.
5. Replace the gasket.
6. Secure the new electrode block (torque 4 Nm).
7. Check the adjustment dimensions of the electrodes and correct if required.
8. Push the ignition plugs onto the ignition electrodes.
9. For further steps, see page 34.

Ionisation electrode block

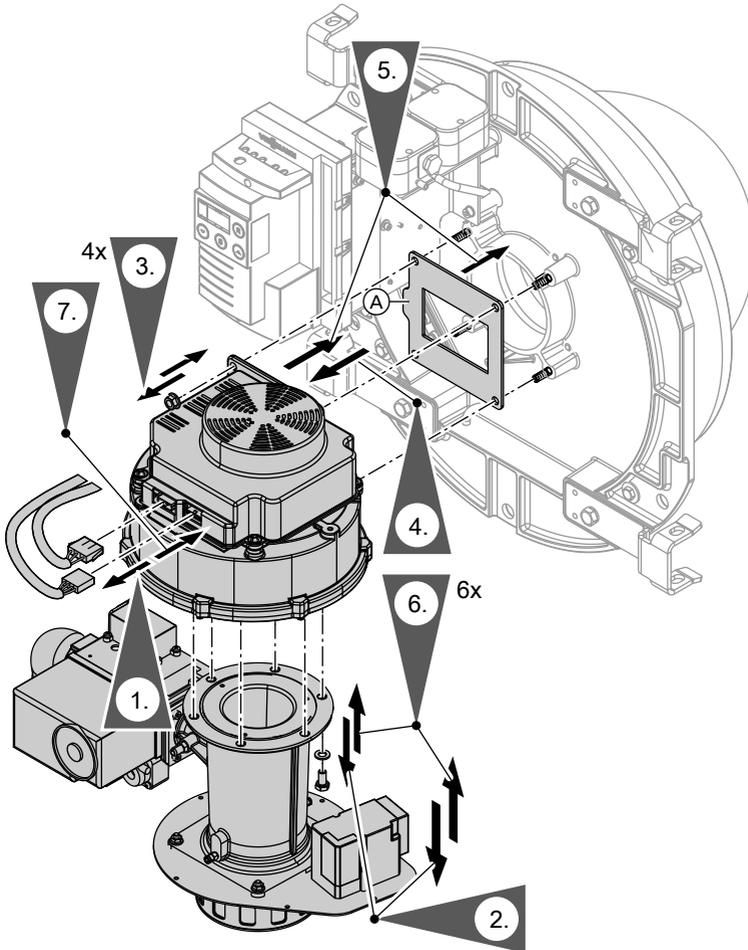


1. Undo six M 12 screws and open the boiler door.
2. Pull the connection plug from the ionisation electrode.
3. Undo the connector.
4. Remove the serrated lock washer and the O-ring.
5. Remove the electrode by pulling it forward.
6. Remove 2 screws.
7. Remove the electrode ceramic block.
8. Fit new electrode ceramic block with new gasket. Secure 2 screws with 4 Nm torque.
9. Insert the electrode into the ceramic block.

Ionisation electrode block (cont.)

- 10.** Position the O-Ring and the serrated lock washer.
- 11.** Fit the connector.
- 12.** Check the adjustment dimensions of the electrode and correct if required.
- 13.** Push the connection plug onto the ionisation electrode.
- 14.** For further steps, see page 34.

Fan



1. Disconnect both plugs from the fan.
2. Remove 6 screws from the Venturi pipe. Remove the Venturi pipe with fitted gas train.
3. Undo the hexagon nuts from the 4 studs.
4. Remove the fan, noting how the gasket is positioned.

Fan (cont.)

5. Fit new fan with gasket.

Note

The test connector screw on the fan must be closed.

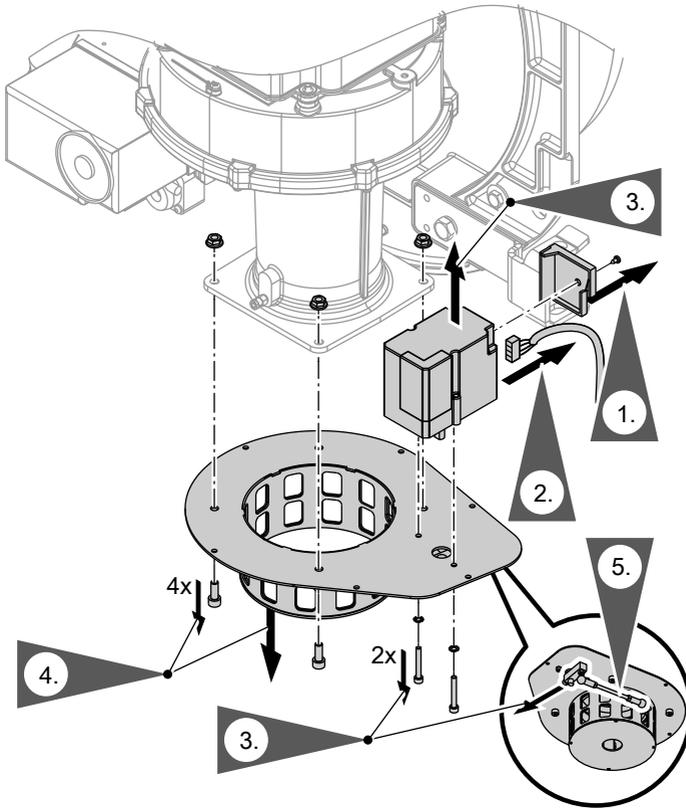
Check for tightness.

Note

Install the gasket with the tab pointing to the right.

6. Fit the Venturi pipe with fitted gas train to the fan using 6 screws (torque 6 Nm).
7. Connect both plugs to the fan.
8. For further steps, see page 34.

Rotary damper and servomotor



1. Undo the screw in the cover of the servomotor. Remove the cover.
2. Pull the plug from the servomotor.
3. Undo the screw on the axis of the servomotor. Undo 2 fixing screws from the servomotor. Torque when installing: 4 Nm. Remove the servomotor.
4. Undo 4 screws in the rotary damper mounting plate (torque when installing: 1.5 Nm) and remove the rotary damper with the mounting plate.
5. Release the articulated rod on the rotary damper with an open-ended spanner (SW 7).

Rotary damper and servomotor (cont.)

6. Install new rotary damper, air pressure switch and servomotor in reverse order.
7. For further steps, see page 34.



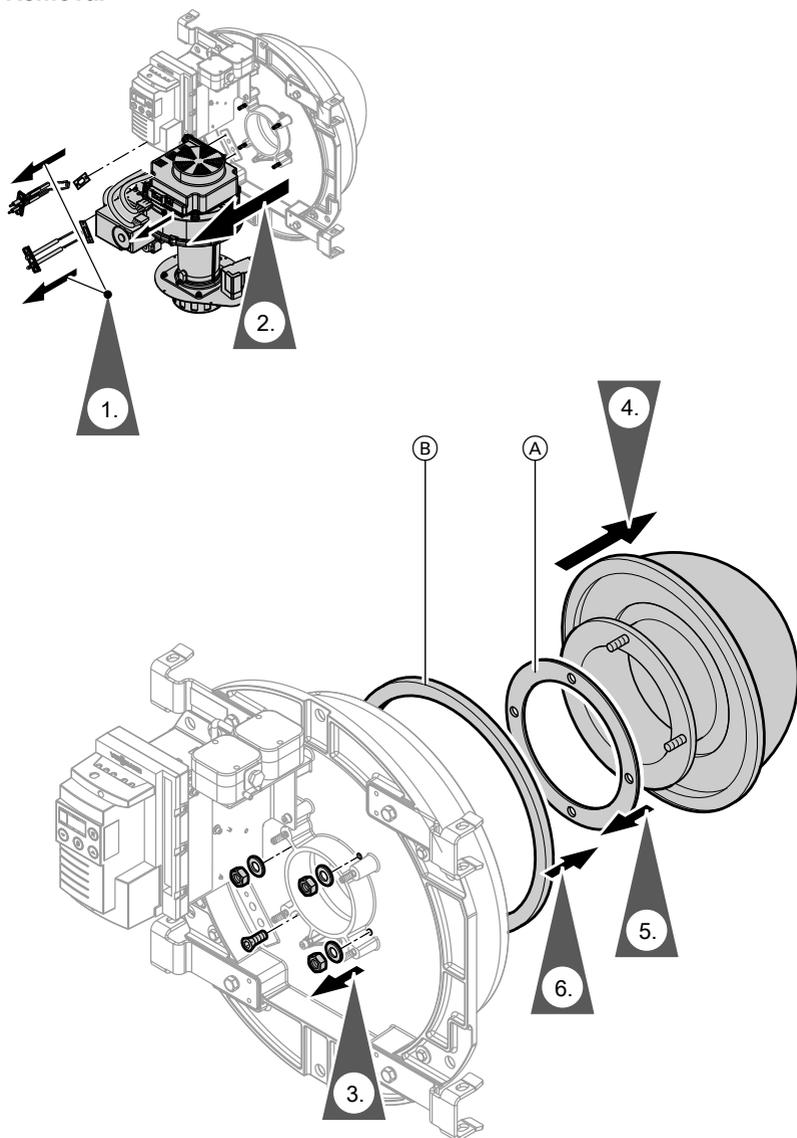
Please note

An incompletely opened rotary damper can cause malfunctions or indicate incorrect adjustment of the servomotor.

Therefore, the rotary damper must be fully open when the burner is off and during operation. If necessary, adjust it via the articulated rod.

Burner gauze assembly

Removal



Burner gauze assembly (cont.)

1. Remove the ignition electrode block and ionisation electrode block (see pages 18 and 19).
2. Remove the fan with Venturi pipe (see page 21).
3. Undo three M 8 hexagon nuts and the M 8 hexagon socket counter-sunk head screw in the boiler door.
4. Carefully remove the burner gauze assembly.
5. Remove gasket (A). Clean the sealing faces.
6. Remove packing cord (B) from the thermal insulation block.



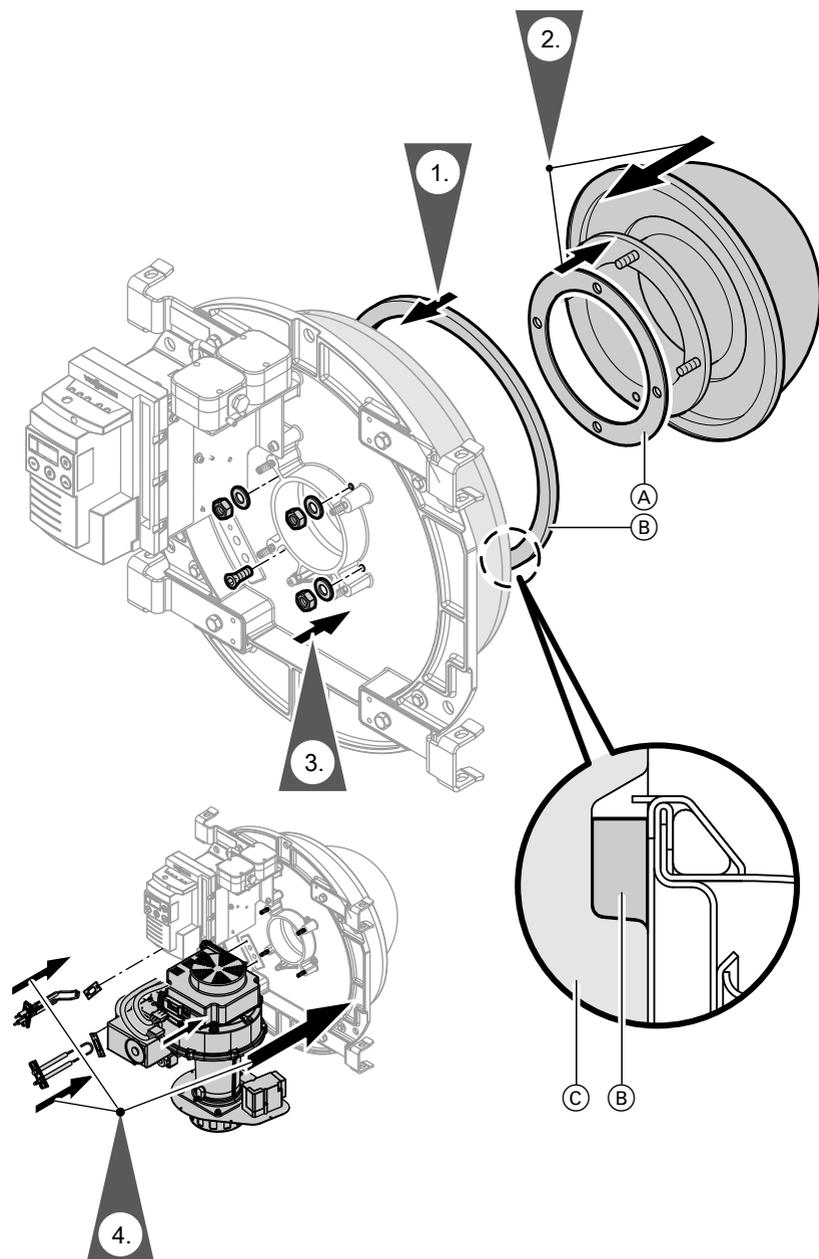
Please note

Burner malfunction due to damaged burner gauze assembly.

Take care not to drop the burner gauze assembly as this could damage it. Hold onto the burner gauze assembly when undoing the screws.

Burner gauze assembly (cont.)

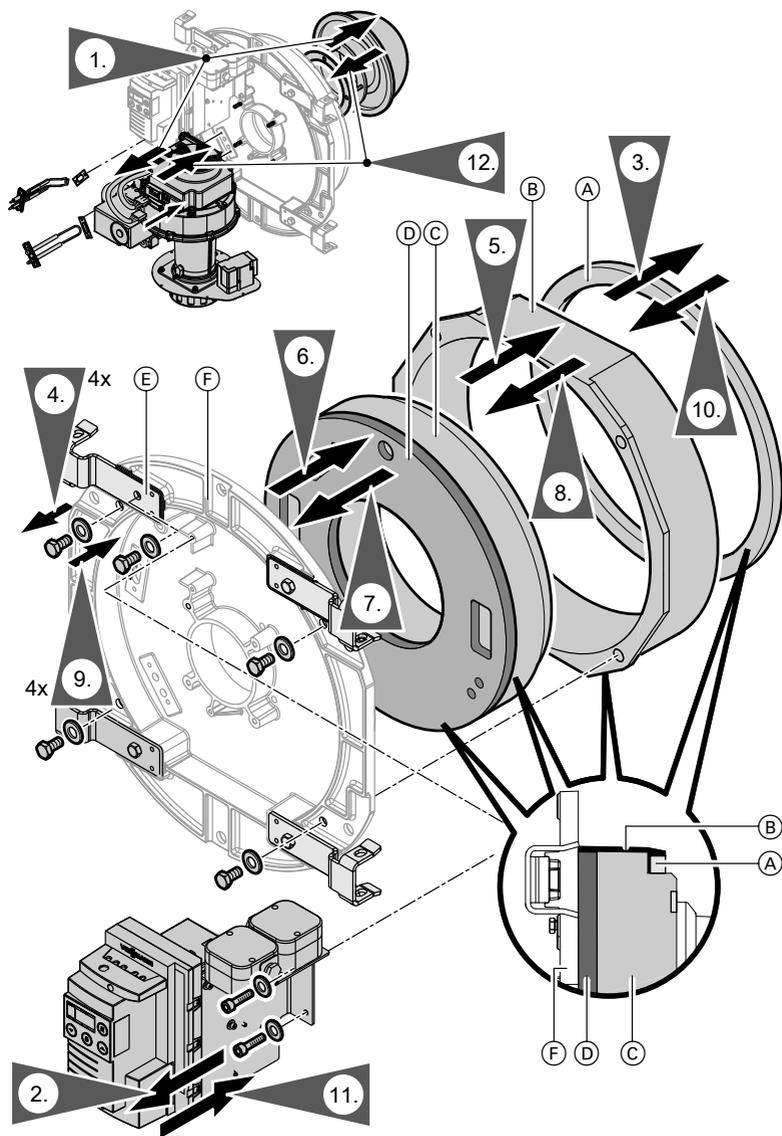
Installation



Burner gauze assembly (cont.)

1. Lay packing cord (B) along the inside edge of the groove in thermal insulation block (C).
2. Push the burner gauze assembly with new gasket (A) onto the boiler door (welded nut at bottom). Observe the correct position of packing cord (B).
Secure the packing cord with adhesive tape if required. The wrapped joint of the packing cord must not be in the vicinity of a crimp location (recesses in the thermal protection ring of the burner gauze assembly).
3. Secure the burner gauze assembly with three M 8 hexagon nuts and the M 8 hexagon socket counter-sunk head screw (torque approx. 10 Nm).
4. Install the ignition electrode block and ionisation electrode block (see pages 18 and 19). Torque 4 Nm.
5. For further steps, see page 34.

Thermal insulation block



Thermal insulation block (cont.)

1. Remove the ignition electrode block, ionisation electrode block, fan with Venturi pipe and burner gauze assembly. See pages 18 to 21, 25 and 26.
2. Undo 2 screws in the mounting plate of the burner control unit. Remove the mounting plate with burner control unit, air pressure switch and ignition unit.
3. Remove packing cord (A).
4. Undo 4 hexagon screws from the fixing of sealing frame (B).

Note

If the sealing frame cannot be released, remove the hexagon screw of a door hinge, remove door hinge (E) and refit the hexagon screw (without washer).

Tighten carefully to force sealing frame (B) from boiler door (F).

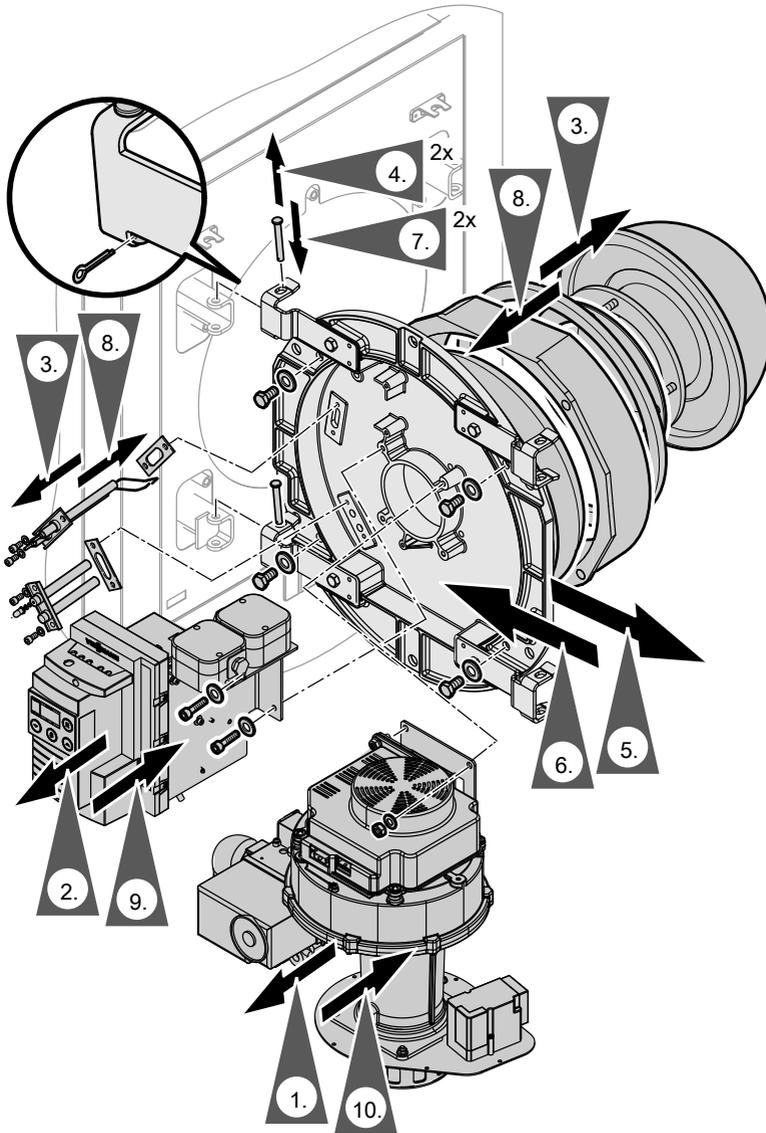
If necessary, completely remove the boiler door and repeat the procedure on all door hinges.

5. Release sealing frame (B) with thermal insulation block (C) and remove.
6. Push thermal insulation block (C) and thermal insulation mat (D) from sealing frame (B).
7. Insert new thermal insulation block (C) and new thermal insulation mat (D) into sealing frame (B). Note the position of the opening.
8. Insert sealing frame (B) with the sealant supplied.
9. Secure sealing frame (B) with 4 hexagon screws (torque 10 Nm).
10. Affix new packing cord (A) in the groove between the boiler door and thermal insulation block (C). Adhesive is provided.
11. Fit the mounting plate with burner control unit, air pressure switch and ignition unit. Torque 4 Nm.
12. Install the burner gauze assembly, ionisation electrode block, fan with Venturi pipe and ignition electrode block. See pages 18 to 21, 27 and 28.
13. For further steps, see page 34.

Note

Hold onto thermal insulation block (C).

Boiler door



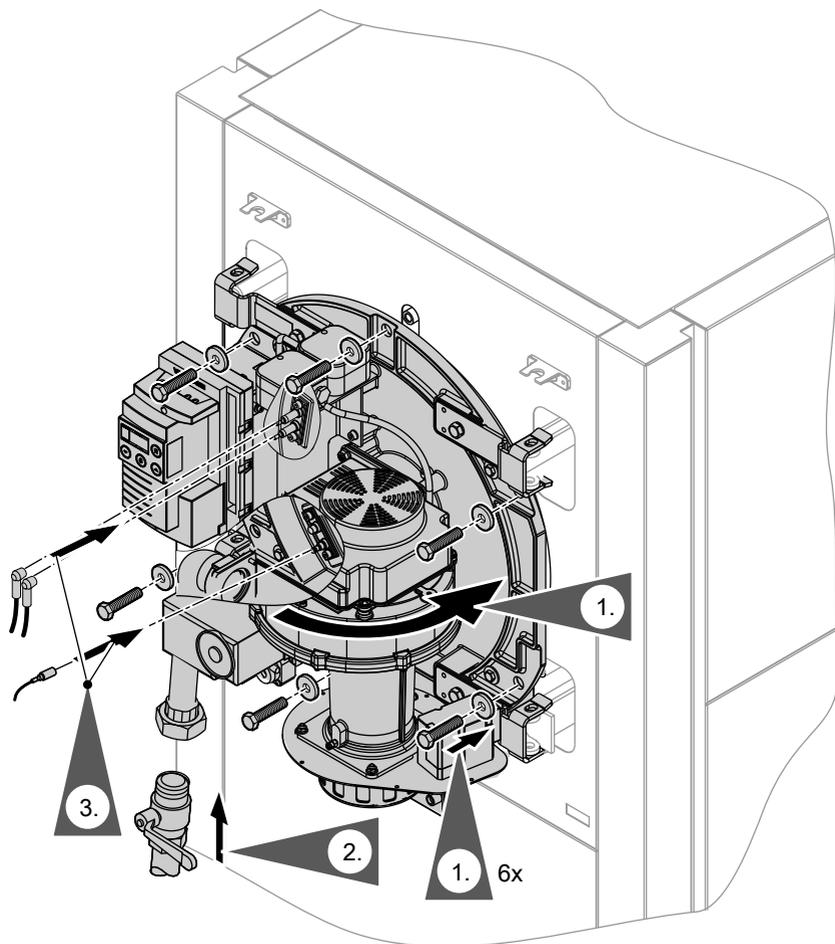
1. Remove the fan with Venturi pipe and gas train. See page 21.



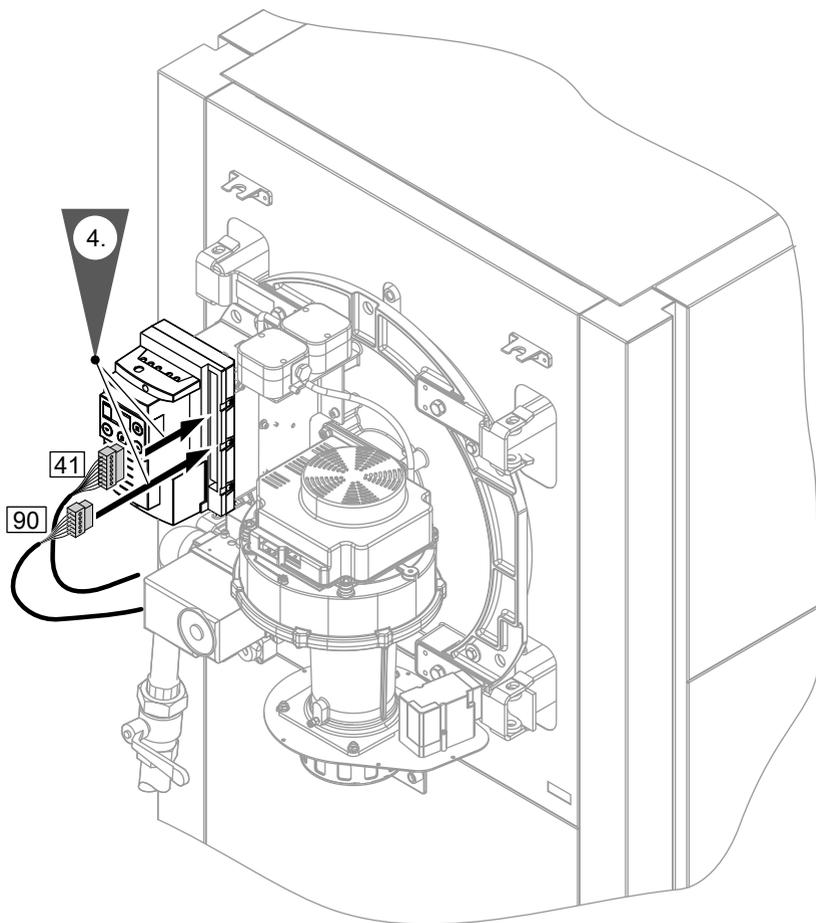
Boiler door (cont.)

2. Remove the mounting plate with burner control unit, air pressure switch and ignition unit (see page 30).
3. Remove the ignition electrode block, ionisation electrode block, burner gauze assembly and thermal insulation block. See pages 18 to 19, 25, 26, 29 and 30.
4. Remove the split pins. Pull out the hinge pins.
5. Remove the boiler door.
6. Position new boiler door.
7. Insert the hinge pins and secure with split pins.
8. Fit the thermal insulation block, burner gauze assembly, ignition electrode block and ionisation electrode block. See pages 18, 19, 27 to 30.
9. Secure the retaining bracket with the burner control unit, the air pressure switch and the ignition unit with screws (torque 4 Nm).
10. Fit the fan with the Venturi pipe and gas train.
11. For further steps, see page 34.

Further assembly and commissioning



Further assembly and commissioning (cont.)



1. If the boiler door is still open, close it with six M 12 screws. Tighten screws diagonally, torque 30 Nm.

Information regarding the door lock

Before commissioning, check that the boiler door is seated correctly and has no leaks.

2. Fit the gas connection line.



Danger

Escaping gas leads to a risk of explosion.
Check all fittings for gas tightness.

Further assembly and commissioning (cont.)



Please note

The use of leak detection spray can result in incorrect functions.

Leak detection spray must not come into contact with electrical contacts.

3. Push on the electrode plugs.
4. Connect burner cables with plugs **41** and **90** to the burner control unit. Secure strain relief fittings.

5. Start the burner. Carry out a function test.



Burner service instructions

6. Fit the burner hood.



Viessmann Werke GmbH & Co. KG
D-35107 Allendorf
Telephone: +49 6452 70-0
Fax: +49 6452 70-2780
www.viessmann.com

Viessmann Limited
Hortonwood 30, Telford
Shropshire, TF1 7YP, GB
Telephone: +44 1952 675000
Fax: +44 1952 675040
E-mail: info-uk@viessmann.com

5618 860 GB Subject to technical modifications.