



Maintenance instructions

Oil condensing boiler

COB Boiler for heating

COB-TS / COB-CS Boiler with stratification cylinder



Index	Page
1. Safety instructions	3
2. Component summary	4
3. List of required parts	5
4. Maintenance procedure	6-10
5. Overview of the steps to be taken and maintenance report	11-12

Easy maintenance



The following symbols are used in conjunction with these important instructions concerning personal safety, as well as operational reliability.



"Safety instructions" are instructions with which you must comply exactly to prevent risk or injury to individuals and damage to the unit.



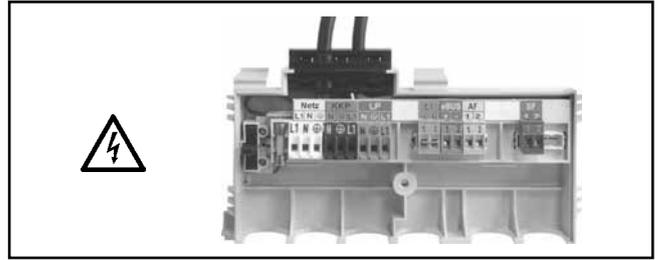
Danger through 'live' electrical components!
NB: Switch OFF the ON/OFF switch before removing the casing.

Never touch electrical components or contacts when the ON/OFF switch is in the ON position! This results in a risk of electrocution that may lead to injury or death.

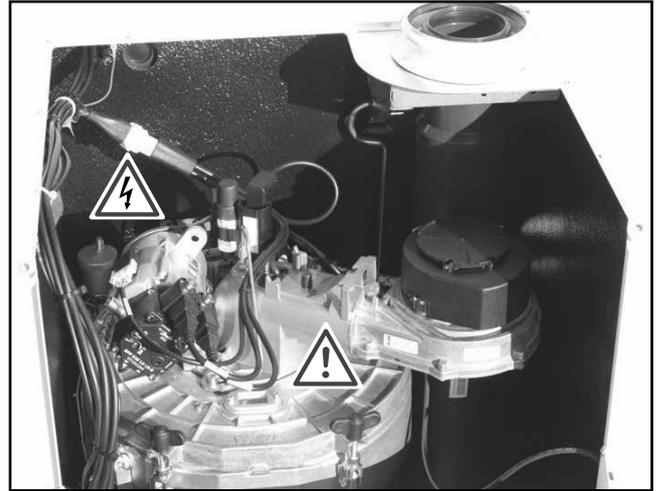
The main supply terminals are 'live' even when the ON/OFF switch is in the OFF position.

NB

This indicates technical instructions which you must observe to prevent damage and malfunctions.



Terminal box: Danger from electrical voltage



Central connector, heat exchanger.

Risk of electrocution, risk of burning through hot components; leave the appliance to cool down for approx. half an hour or use suitable gloves.

General notes



Maintenance work must only be carried out by a qualified heating contractor.

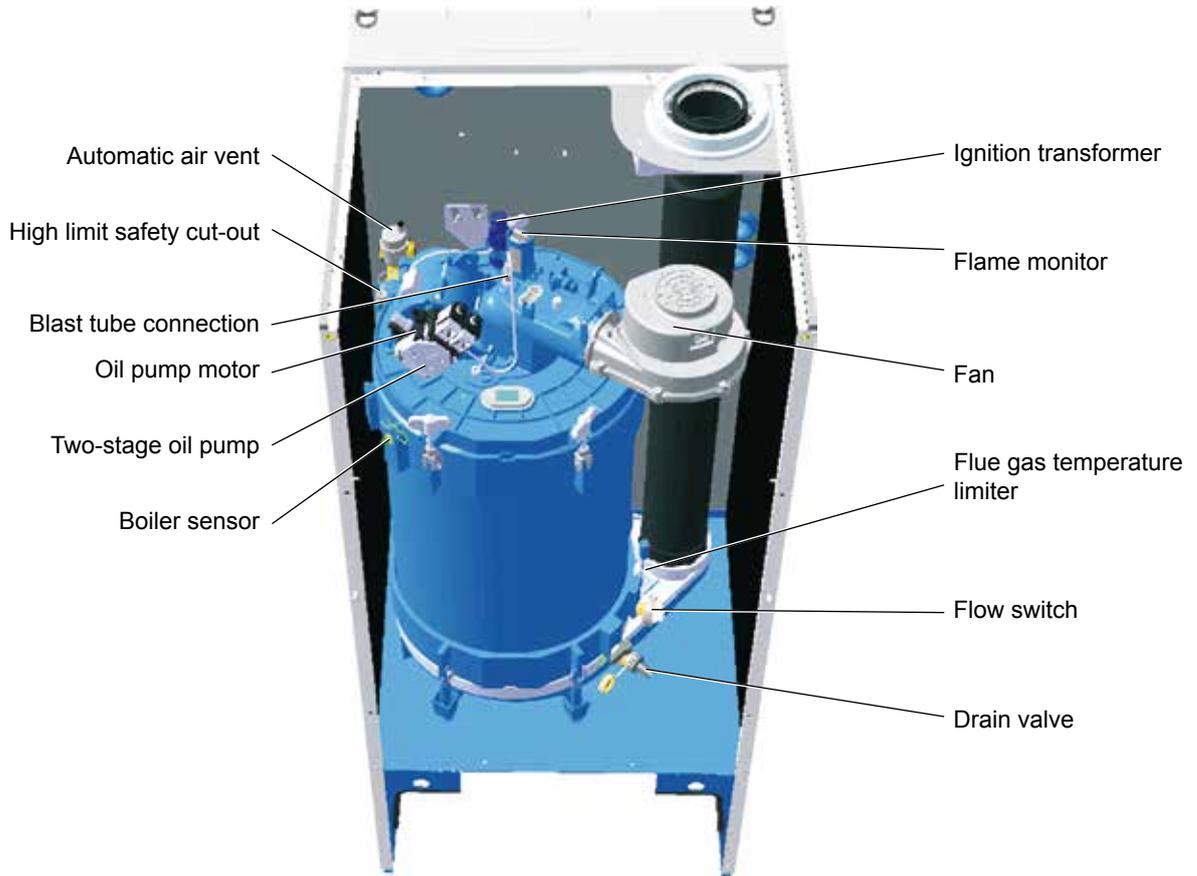
Annual maintenance and the exclusive use of original Wolf spare parts are essential preconditions for trouble-free operation and a long service life.

We therefore recommend you arrange a maintenance contract with a local heating contractor.

NB

The use of old fuel oil with a sulphur content > 1000 mg/kg fuel oil may lead to a need for more cleaning, and therefore shorter maintenance intervals.

2. Component summary

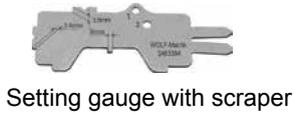


Burner in the maintenance position



Maintenance tools included in the COB standard delivery

Standard delivery up to 12/2009

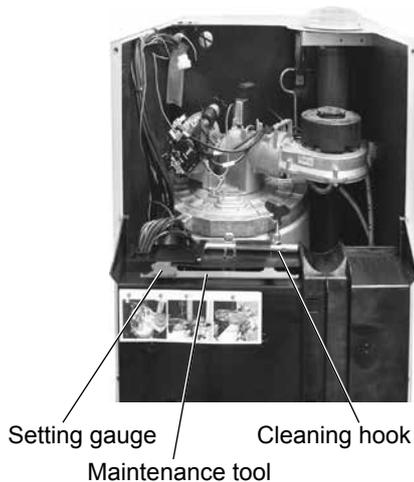


Standard delivery from 01/2010



The maintenance instructions supplied with the appliance must be observed when carrying out maintenance.

Maintenance requires the following:



Pos.	Description	Part no.
1	COB maintenance tools Cleaning brush Maintenance tool Cleaning hook (from 01.2010) Setting gauge (from 01.2010)	Standard delivery 24 83 520 24 83 394 24 83 916 24 83 879
2	COB-15 maintenance set Oil nozzle Danfoss 0,30/80°S	89 06 615 89 06 588
2	COB-20 maintenance set Oil nozzle Danfoss 0,40/80°S LE	89 05 809 89 05 812
2	COB-29 maintenance set Oil nozzle Danfoss 0,55/80°S LE	89 05 872 89 05 839
2	COB-40 maintenance set Oil nozzle Danfoss 0,55/80°S LE Oil nozzle Danfoss 0,65/80°S LE	89 06 625 89 05 839 89 06 619
2.1	Also included in all maintenance sets Combustion chamber lid seal ring Silicone grease Oil filter replacement cartridge 40µm Siku Flat gasket for flame tube/flame tube adaptor with four oval head screws M 4x10 Seal ring for flame tube/flame tube adaptor (87 x 2.5mm) Flame light tube end piece Cable grommet	89 05 729 86 02 264 24 82 496 89 06 731 89 06 617 28 00 707 39 10 171
3	Replacement granulate for neutralisation COB-15/20/29	24 83 972
3	Replacement granulate for neutralisation COB-40	24 83 974
4	Measuring instrument for BimSch test	-
5	Screwdriver	-
6	2x SW 16 open-ended spanners	-
7	Allen key 4 mm	-
8	Allen key 6 mm	-

We recommend you have the following as part of your service kit:

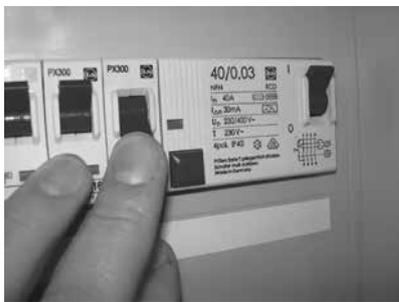
Item	Description	Part no.
1	Gasket for flue DN 100	86 12 016
2	Ignition electrodes	24 83 647
3	Seal ring for oil/air connection	89 05 738
4	Boiler sensor	27 41 058
6	Ignition cable	24 83 310

4. Maintenance procedure



ON/OFF switch

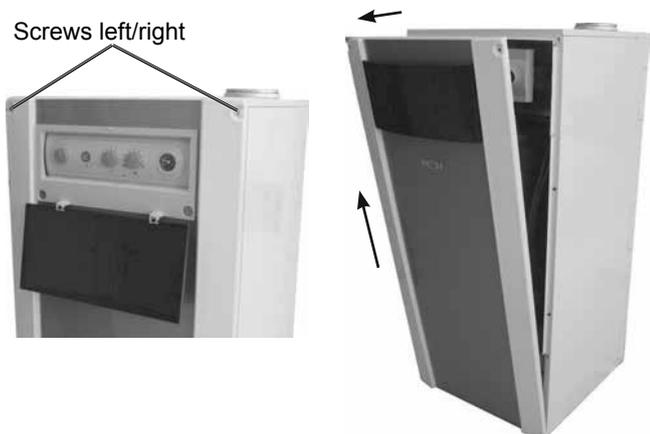
1. Set program selector (l.h. rotary selector) to "Standby" on the BM programming module.
2. Pivot the control unit lid down and switch off the oil condensing boiler at the ON/OFF switch.



The mains terminals are 'live' even when the ON/OFF switch has been switched OFF.

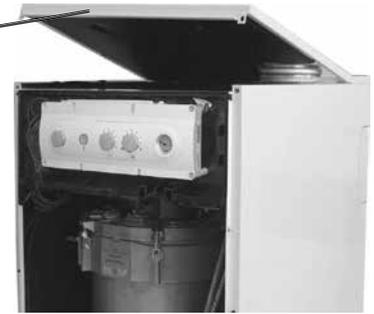
3. Disconnect the system from the power supply.

Screws left/right



4. Undo the screws on the left/right and unhook the front casing by pulling it forwards and lifting it upwards.

5. Pull the upper casing lid forwards and lift off.



6. Pivot the control unit downwards.



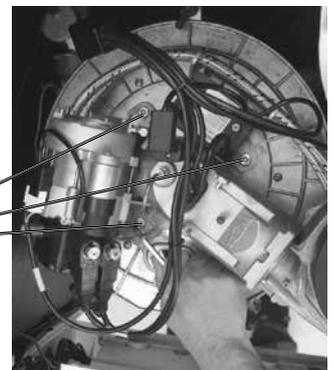
Danger of burning

Before any maintenance work, leave the appliance to cool down for half an hour or use suitable gloves.

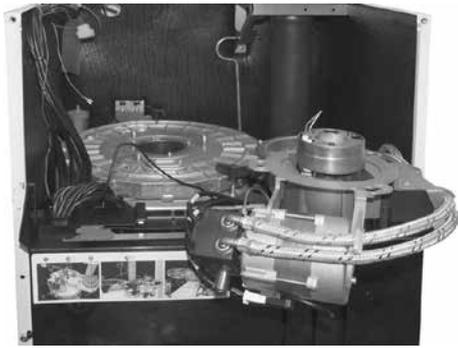
7. Unplug the central connector.



Allen screws

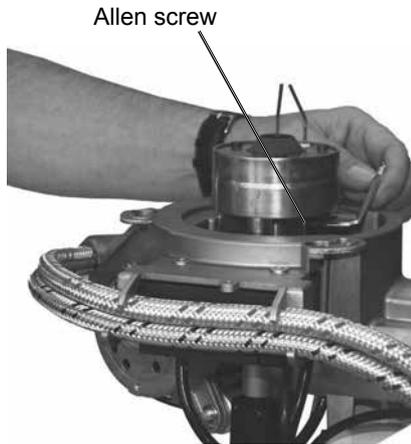


8. Loosen the three 6 mm Allen screws on the burner flange (do not unscrew them completely).
9. Rotate the burner unit approx. 1 cm to the right (clockwise).

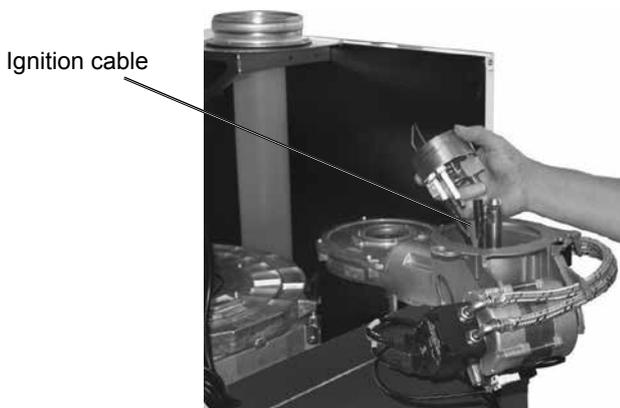


Risk of burning through hot components

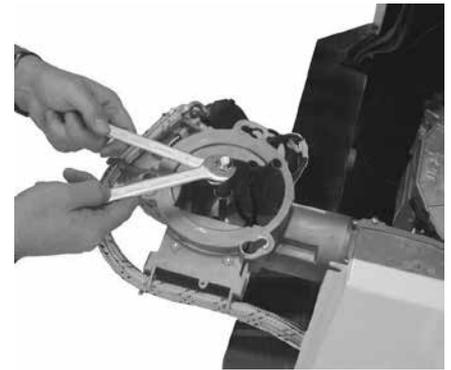
10. Lift the burner unit upwards out of the combustion chamber lid and hang in place in the maintenance position, as shown in the figure.



11. Undo the 4 mm Allen screw on the mixer head and remove the mixer head.



12. Pull the ignition cable away from the ignition electrode and place the mixer head to one side.



13. Nozzle change with SW 16 open-ended spanner.

When attaching or detaching the nozzle, counter the torque with a second SW16 open-ended spanner.

Note: Always use a Wolf original spare parts nozzle (see page 5)

Mixer head versions:



Standard



Pipe

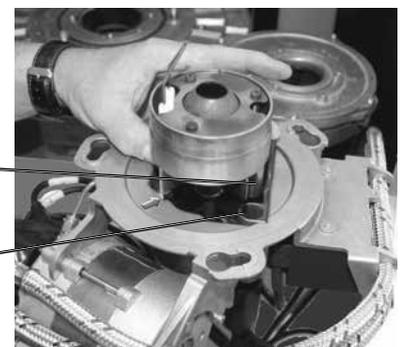
Boiler	Mixer head versions	Oil nozzle	Part no.
COB-15	Standard	Danfoss 0,30/80°S	89 06 588
COB-20	Standard	Danfoss 0,40/80°S LE	89 05 812
COB-29	Standard	Danfoss 0,55/80°S LE	89 05 839
COB-40	Standard	Danfoss 0,65/80°S LE	89 06 619
	Pipe	Danfoss 0,55/80°S LE	89 05 839

14. Clean or replace the flame light tube end piece on the mixer head

NB Never remove or dismantle the mixer head; this applies particularly to the brass washer.

Flame light tube end piece, mixer head

Sight tube, flame monitor

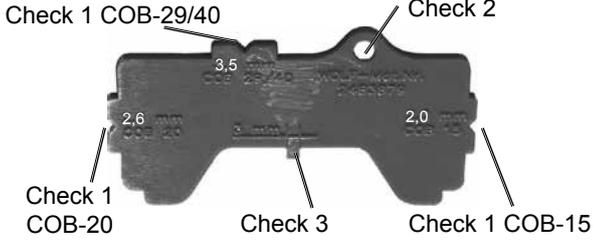


15. Plug in the ignition cable

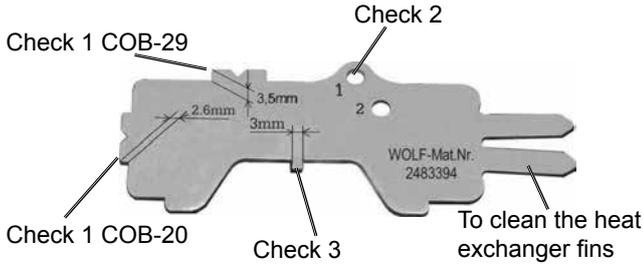
Insert the mixer head until it reaches the end-stop. The flame light tube end piece of the mixer head must be aligned with the flame monitor sight tube.

Secure again using a 4 mm Allen screw

Setting gauge (standard delivery COB from 01/2010)



Setting gauge (standard delivery COB up to 12/2009)



Carry out the following checks with the maintenance tool:



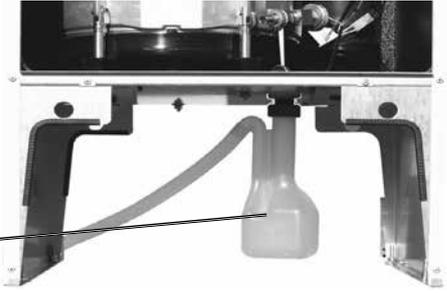
16. Check 1: **mixer head inserted up to the end-stop?**
 Check distance between nozzle and mixer head using the setting gauge (COB15 : 2.0mm, COB20 : 2.6mm, COB29/40 : 3.5mm).



17. Check 2: **position of the ignition electrodes OK?**
 The electrode tips must point towards upper hole 1 of the setting gauge.

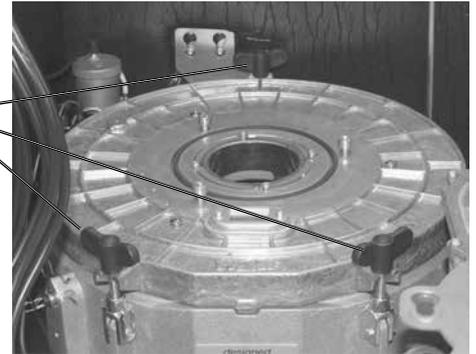


18. Check 3: **spacing of ignition electrodes OK?**
 The electrode spacing must be 3mm.
 Replace ignition electrode if necessary.



Siphon

19. Before cleaning the heat exchanger, remove the siphon. A collecting vessel can then be placed under the now open condensate drain connection (siphon connection).



Wing screws

20. Undo the wing screws on the combustion chamber lid.



21. Lift off the combustion chamber lid and place to one side.



Maintenance tool



22. Hook the maintenance tool into the combustion chamber and pull out the chamber.



23. Rotate the maintenance tool 90°, hook into the lifting eye of the displacement device and pull out.

NB

Soak displacement device in water if stuck. After around two minutes, the displacement device can then be removed from the heat exchanger using the maintenance tool. Never use force (e.g. a hammer) to loosen the displacement device, as this may damage it.



24. Remove cleaning brush from the back panel. Brush dry, easily removable deposits into the condensate pan. Use a vacuum cleaner to remove the loosened dirt from the condensate pan. Alternatively, flush the dirt with water into the collecting vessel through the siphon aperture.



25. Soak stubborn encrusted deposits in water for at least 2 min.
Unscrew the brush head from the handle and replace with the cleaning hook. Then scrape off deposits with the cleaning hook.
Swap the cleaning attachments back again and hook the cleaning brush into the back panel.

NB

Chemical cleaning agents can corrode the heat exchanger and are not permissible.

Clean the condensate pan:

26. Use a vacuum cleaner to remove dirt from the condensate pan or flush with water through the siphon aperture in the collecting vessel.

27. Clean, refill and refit the siphon.

Note:



When installing an empty siphon, flue gas may escape and start problems may occur, in which case proper measurement of CO₂ would not be guaranteed.

28. Flush the neutralisation and condensate pump (if installed) with water.

29. Top up neutralisation granulate.

30. Replace the neutralising system's activated charcoal.

31. Reattach connecting lines.

32. Replace oil filter insert.

Please note that only filter cartridges with 25 - 40 µm are permissible.

Assembly

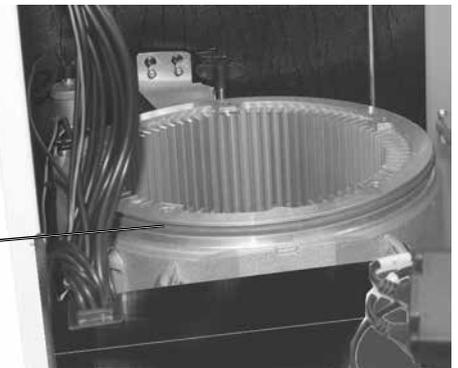
Assembly is carried out in reverse order, observing the following instructions:

33. Use the maintenance tool to slide the cleaned displacement device back into the heat exchanger.

NB

Never let the displacement device drop into the heat exchanger, as this could damage the displacement device.

Seal ring,
combustion
chamber lid



34. Replace combustion chamber lid seal ring.

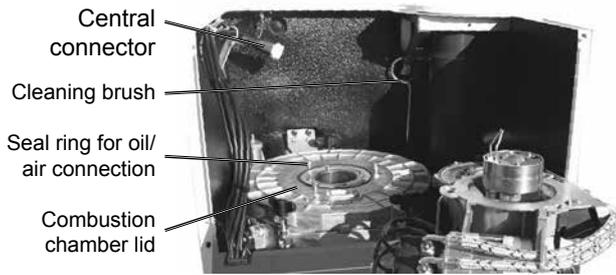
35. Before refitting the combustion chamber lid, lubricate the seal ring on the combustion chamber lid with silicone grease.

Note:

If the flame tube or flame tube adaptor was also removed while maintenance was being carried out, replace the seal ring or gasket.

COB up to 12/2009: Gasket

COB from 01/2010: Seal ring: 87 x 2.5mm



- 36. Refit combustion chamber lid and secure with three wing screws.
- 37. Check oil/air connection seal ring for damage and replace if necessary.
- 38. Take the burner unit out of the maintenance position and, with the mixing appliance at the front, slide it carefully into the combustion chamber, making sure you check on the position of the oil/air connection seal ring.
- 39. Rotate the burner unit approx. 1 cm to the left and secure with three 6 mm Allen screws.
- 40. Plug in central connector.
- 41. Flip up the control unit.
- 42. Replace the upper casing lid.
- 43. Hook in the front casing at the bottom and secure with the screws at the top (left and right).

Before restarting:

- 44. Check the system pressure, and top up heating water if required.
- 45. When you notice a loss of water, check the expansion vessel inlet pressure and increase it, if required, to 0.75 bar. The heating circuit must be at zero pressure. Fill the system.

Restart / flue gas test

- 46. Reset the MCB.
- 47. Switch on the oil condensing boiler at the ON/OFF switch.
- 48. To test flue gas emissions, set the temperature selector to emissions test mode.

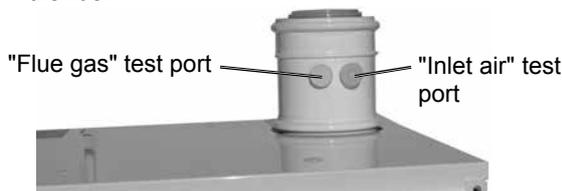


Emissions test mode position

- 49 Carry out an inlet air test.



If the CO₂ > 0.2%, check that there are no leaks in the flue:



50. Flue gas test

Carry out the test in emissions test mode and enter the values in maintenance report.

Re-adjust the CO₂ content, if required (BM - parameters, boiler HG00, pipe length adjustment) (see installation instructions).

Boiler	Oil nozzle	Pump pressure	
		Stage 1	Stage 2
COB-15	Danfoss 0,30/80°S	5,0 ± 1,0 bar	12,0 ± 2,5 bar
COB-20	Danfoss 0,40/80°S LE	8,5 ± 1,0 bar	16,8 ± 2,5 bar
COB-29	Danfoss 0,55/80°S LE	8,5 ± 1,0 bar	16,8 ± 2,5 bar
COB-40	Danfoss 0,65/80°S LE	9,8 ± 1,0 bar	18,0 ± 2,5 bar
	Danfoss 0,55/80°S LE	11,0 ± 1,0 bar	23,5 ± 2,5 bar

CO ₂ set value, boiler closed stage 1 and stage 2
CO ₂ max. 13,5 ± 0,3%
O ₂ min. 2,7 %

- 51. Check control accessories.

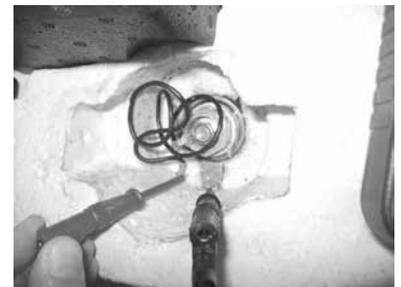


The display must show BUS connection

Checking the protective anode on the TS / CS stratification cylinder



Protective anode at the front top of the cylinder



- 52. Pull the cable away from the lug.
- 53. Test the current between the lug and the cable. The current must be > 0.3 mA. (Test only works when the cylinder has been filled.)
- 54. If the current is < 0.3 mA, check the anode and replace it if necessary. (Protective anode, insulated, CS part no. 24 83 629). Release the cylinder pressure before replacing the anode. Switch off the DHW circulation pump, shut off the DHW and turn on a tap inside the house.
- 55. Reaffix the cable to the lug.

5. Overview of the steps to be taken and maintenance report

Item	Step	Report item					
	Date						
1	Set the program selector to "Standby" on the BM programming module.						
2	Pivot the control unit lid down and switch off the oil condensing boiler at the ON/OFF switch.						
3	Disconnect the system from the power supply.						
4	Undo the screws on the left/right and unhook the front casing by lifting it upwards.						
5	Pull the upper casing lid forwards and lift off.						
6	Pivot the control unit downwards.						
7	Unplug the central connector.						
8	Loosen the three 6 mm Allen screws on the burner flange (do not unscrew them completely).						
9	Rotate the burner unit approx. 1 cm to the right.						
10	Lift the burner unit upwards out of the combustion chamber lid and hang in place in the maintenance position.						
11	Undo the 4 mm Allen screw on the mixer head and remove the mixer head.						
12	Pull the ignition cable away from the ignition electrodes and place the mixer head to one side.						
13	Nozzle change with SW 16 open-ended spanner - counter the torque with second spanner.						
14	Clean the mixer head; do not dismantle.						
15	Push ignition cable onto ignition electrodes. Insert the mixer head until it reaches the end-stop.						
16	Checking with the setting gauge: mixer head inserted up to the end-stop.						
17	Checking with the setting gauge: position of the ignition electrode OK.						
18	Checking with the setting gauge: ignition electrode spacing OK.						
19	Remove and empty the siphon. Place collecting vessel underneath the siphon connection.						
20	Undo the three wing screws on the combustion chamber lid.						
21	Lift off the combustion chamber lid and place to one side.						
22	Hook the maintenance tool into the combustion chamber at the top and pull out the chamber.						
23	Rotate the maintenance tool 90°, hook into the lifting eye of the displacement device and pull out.						
24	Take the cleaning brush off the back wall and clean the heat exchanger.						
25	Scrape off stubborn deposits with the cleaning hook.						
26	Use a vacuum cleaner to remove dirt from the condensate pan or flush with water.						
27	Clean, refill and refit the siphon.						
28	Flush the neutralisation and condensate pump (if installed) with water.						
29	Top up neutralisation granulate.						
30	Replace the neutralising system's activated charcoal.						
31	Reattach connecting lines.						
32	Replace oil filter insert.						
33	Position displacement device at the bottom and the combustion chamber on top using the maintenance tool.						
34	Replace combustion chamber lid seal ring.						
35	Lubricate the seal ring on the combustion chamber lid with silicone grease.						
36	Refit the combustion chamber lid and secure with wing screws.						
37	Check oil/air connection gasket for damage and replace if necessary.						
38	Take the burner unit out of the maintenance position and slide it into the combustion chamber.						
39	Rotate the burner unit approx. 1 cm to the left and secure with three screws.						
40	Plug in central connector.						



5. Overview of the steps to be taken and maintenance report

Item	Step	Report item
41	Flip up the control unit.	
42	Replace the upper casing lid.	
43	Hook in the front casing at the bottom and secure with two screws at the top.	
44	Check the system pressure, and top up heating water if required.	
45	When you notice a loss of water, check the expansion vessel inlet pressure.	
	Test run	
46	Reset the MCB.	
47	Switch on the oil condensing boiler at the ON/OFF switch.	
48	To test flue gas emissions, set the temperature selector to emissions test mode or, in the case of the BM programming module, set the program selector switch to emissions test mode.	
49	Carry out an inlet air test. If the CO ₂ > 0.2%, check that there are no leaks in the flue.	
50	Carry out flue gas testing in emissions test mode.	
	Inlet air temperature	
	Flue gas temperature stage 1	
	Carbon dioxide content (CO ₂) stage 1	
	Flue gas temperature stage 2	
	Carbon dioxide content (CO ₂) stage 2	
	Flue gas loss	
51	Check control accessories.	
	Check the protective anode on the CS stratification cylinder (if installed).	
52	Pull the cable away from the lug.	
53	Test the current between the lug at the protective anode and the cable. (> 0.3 mA) (Testing only works when the cylinder has been filled.)	
54	If the current is < 0.3 mA, check the anode, and replace if necessary.	
55	Reaffix the cable to the lug.	

Confirm maintenance (company stamp, signature)

Confirm maintenance (company stamp, signature)

Date: _____

Date: _____

Confirm maintenance (company stamp, signature)

Confirm maintenance (company stamp, signature)

Date: _____

Date: _____

Confirm maintenance (company stamp, signature)

Confirm maintenance (company stamp, signature)

Date: _____

Date: _____