

## Installation instructions

Condensing-Heat exchanger

for  
LogoCondens LC 54 -131  
LogoCondens LC 164 - 196

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# Regarding this instruction manual

## 1. Regarding this instruction manual

Please read the instructions thoroughly before any modifications are made.

### 1.1 Contents of these instructions

Contents of this manual is the installation of the Condensing-heat exchanger for boilers of series LogoCondens L 50 - L 180.

### 1.2 Used symbols



**Danger!** Danger exists for body and life in case it is not observed.



**Danger of electric shock!** In case it is not observed, danger from electricity exists for body and life!



**Caution!** If warning is not observed, danger exists for environment and the device.



**Note/tip:** Here, you can find background information and useful tips.



Reference to additional information in other documents.

### 1.3 For whom is this manual intended?

This installation manual is intended for the heating specialist, who installs the accessory.

# Safety

## 2. Safety



**Danger!** Observe the following safety information! Otherwise you are endangering yourself and others.

### 2.1 Usage according to purpose

The Condensing heat exchanger is used to improve the efficiency of low-temperature boilers of the serie LogoBloc L 50-180 C. The condensing heat exchanger is combined with the low-temperature boiler LogoBloc L 50-180 to a oil or gas condensing unit LogoCondens LC 54-196.

### 2.2 General safety instructions



**Danger of electric shock!** All electrical work in connection with the installation must only be carried out by a trained electrician!



**Caution!** A danger of significant damages to property exists during installation of accessory. Therefore, accessories must only be installed by specialist companies and commissioned by specialists of the installing company!

Used accessories must comply with the technical rules and have been approved in connection with these accessories by the manufacturer.



Only original spare parts must be used.

Unauthorised conversions and modifications of accessories are not permitted, as this can endanger persons and lead to damage of the accessories. In case of not observing this, the approval of the accessories becomes void.

2.3 Conformity declaration



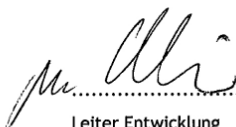
**Konformitätserklärung des Herstellers**  
*Declaration of Conformity*

<b>Produkt</b> <i>Product</i>	Gas-Niedertemperaturkessel / Öl-Brennwertkessel
<b>Handelsbezeichnung</b> <i>Trade Mark</i>	LogoCondens
<b>Produkt-ID Nummer</b> <i>Product ID Number</i>	CE-0085 AT 0283
<b>Typ, Ausführung</b> <i>Type, Model</i>	LC 54, LC 76, LC 98, LC 131, LC 164, LC 196
<b>EU-Richtlinien</b> <i>EU Directives</i>	2009/142/EG, 92/42/EWG, 2006/95/EG, 2004/108/EG
<b>Normen</b> <i>Standards</i>	DIN EN 60335-1 (VDE 0700-1):2007-02; EN 60335-1:2002+A11+A1+A12+Corr.+A2:2006 DIN EN 60335-1/A13 (VDE 0700-1/A13):2009-05; EN 60335-1/A13:2008 DIN EN 60335-2-102 (VDE 0700 Teil 102):2007-04; EN 60335-2-102:2006 DIN EN 62233 (VDE 0700-366):2008-11; EN 62233:2008 DIN EN 62233 Ber.1(VDE 0700-366 Ber.1):2009-04; EN 62233 Ber.1:2008 DIN EN 55014-2 (VDE 0875 Teil 14-1):2007-06; EN 55014-1:2006 DIN EN 61000-3-2 (VDE 0838-2):2006-10; EN 61000-3-2:2006 DIN EN 61000-3-3 (VDE 0838-3):2009-06; EN 61000-3-3:2008 DIN EN 55014-2 (VDE 0875 Teil 14-2):2009-06; EN 55014-2:1997+A1:2001+A2:2008 Anforderungen der Kategorie II/Requirements of category II DIN EN 303-1, DIN EN 303-3, DIN EN 15034, DIN EN 656
<b>EG Baumusterprüfung</b> <i>EC-Type Examination</i>	DVGW Deutsche Vereinigung des Gas- und Wasserfaches e.V. 53123 Bonn Notified Body 0085
<b>Überwachungsverfahren</b> <i>Surveillance Procedure</i>	Jährliches Überwachungsaudit DVGW Deutsche Vereinigung des Gas- und Wasserfaches e.V. 53123 Bonn

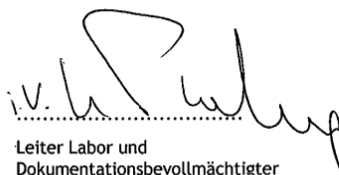
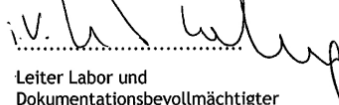
**Wir erklären hiermit als Hersteller:**

Die entsprechend gekennzeichneten Produkte erfüllen die Anforderungen der aufgeführten Richtlinien und Normen. Sie stimmen mit dem geprüften Baumuster überein, beinhalten jedoch keine Zusicherung von Eigenschaften. Die Herstellung unterliegt dem genannten Überwachungsverfahren.  
Das bezeichnete Produkt ist ausschließlich zum Einbau in Warmwasserheizanlagen bestimmt. Der Anlagenhersteller hat sicherzustellen, dass die geltenden Vorschriften für den Einbau und Betrieb des Kessels eingehalten werden.

**AUGUST BRÖTJE GmbH**

  
Leiter Entwicklung

Rastede, 10.06.11

  
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# Technical Data

## 3. Technical Data

### 3.1 Fullview LogoCondens

Fig. 1: Condensing-Heat exchanger with LogoBloc L 90 C/L 120 C

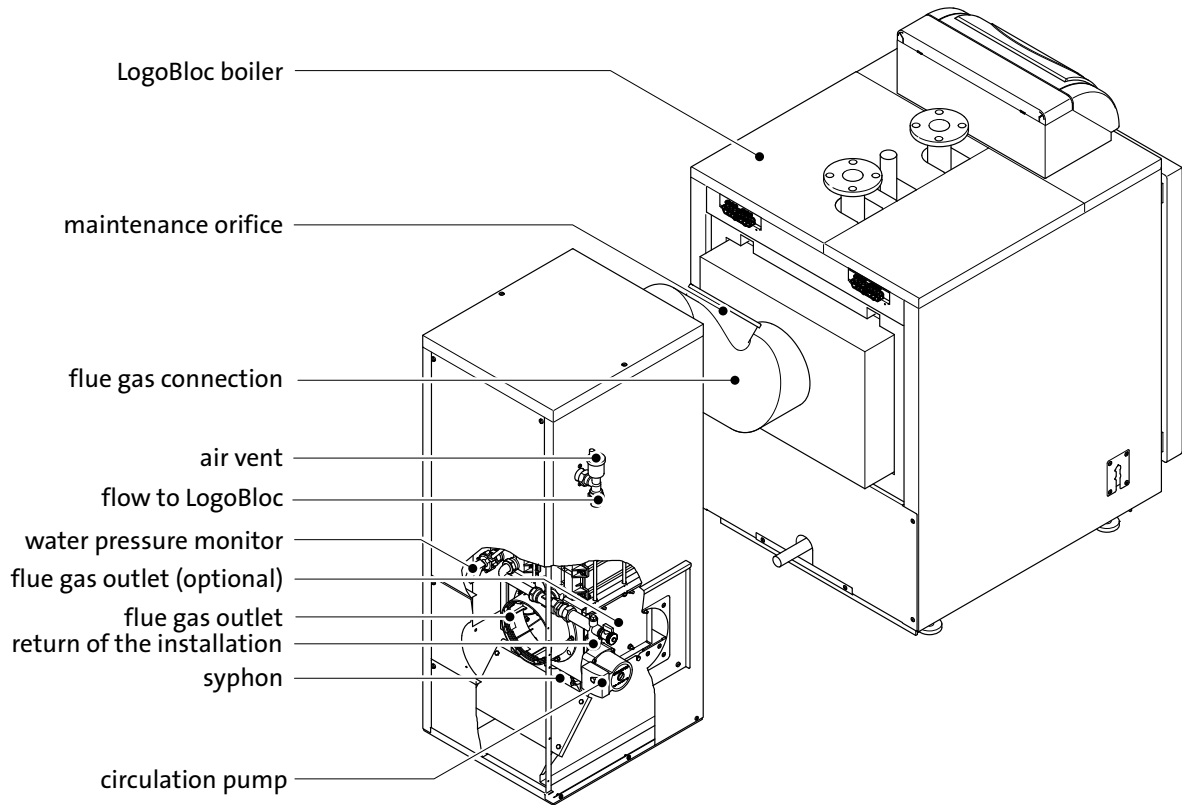
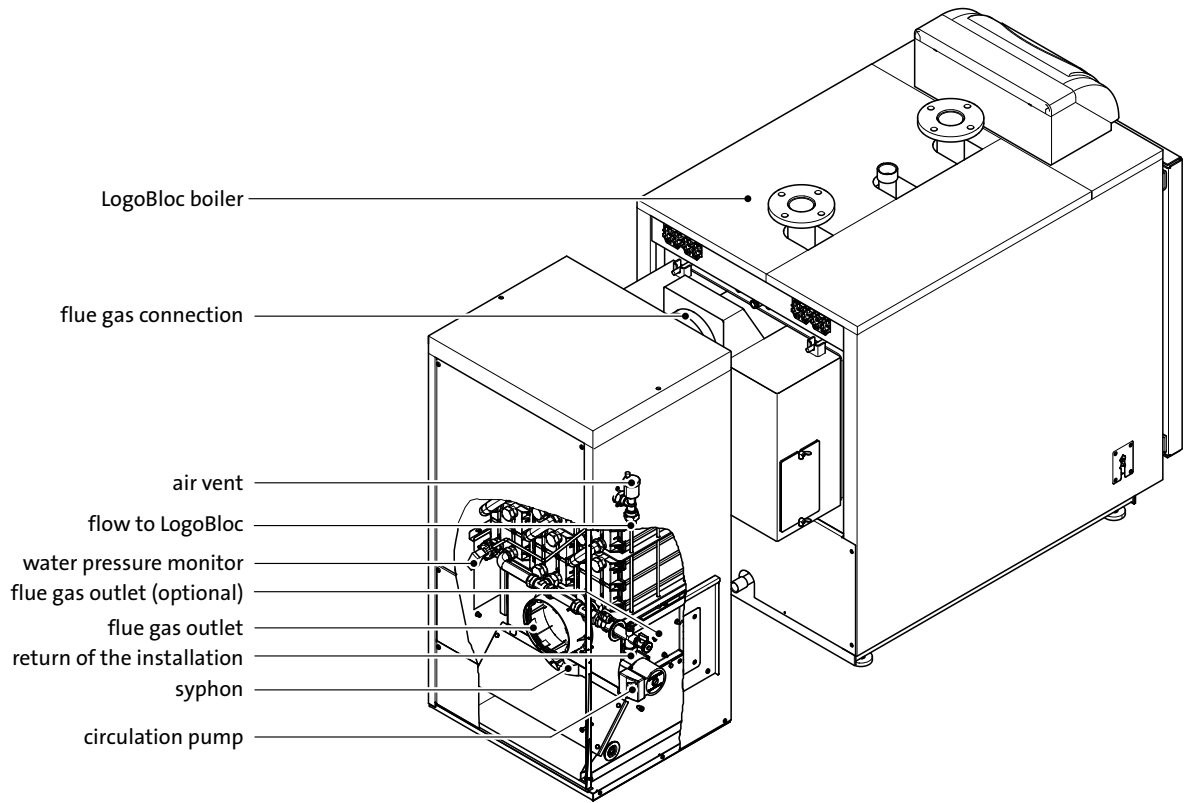


Fig. 2: Condensing-Heat exchanger with LogoBloc L 150 C/L 180 C



# Technical Data

## 3.2 Dimensions and connections

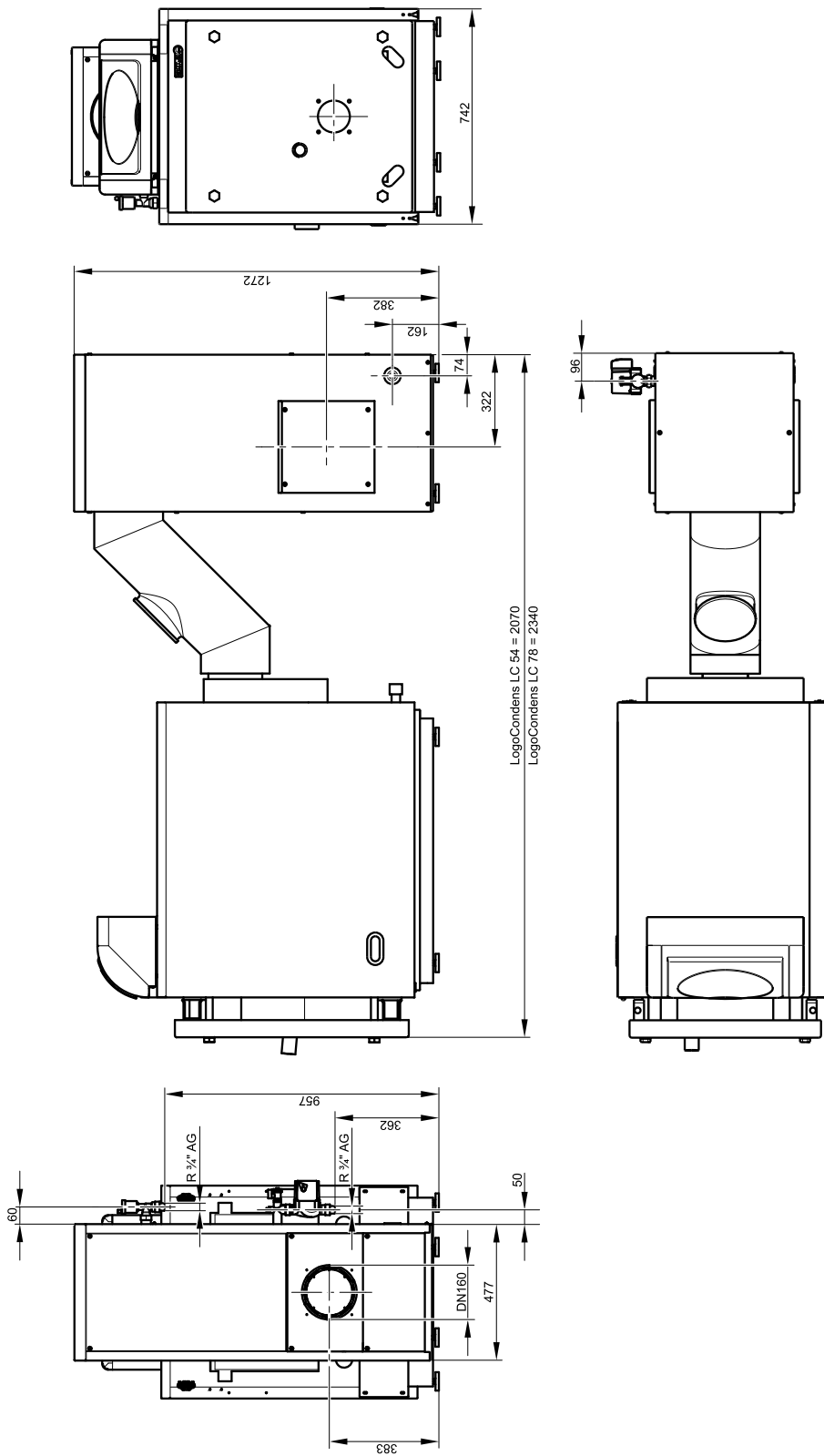
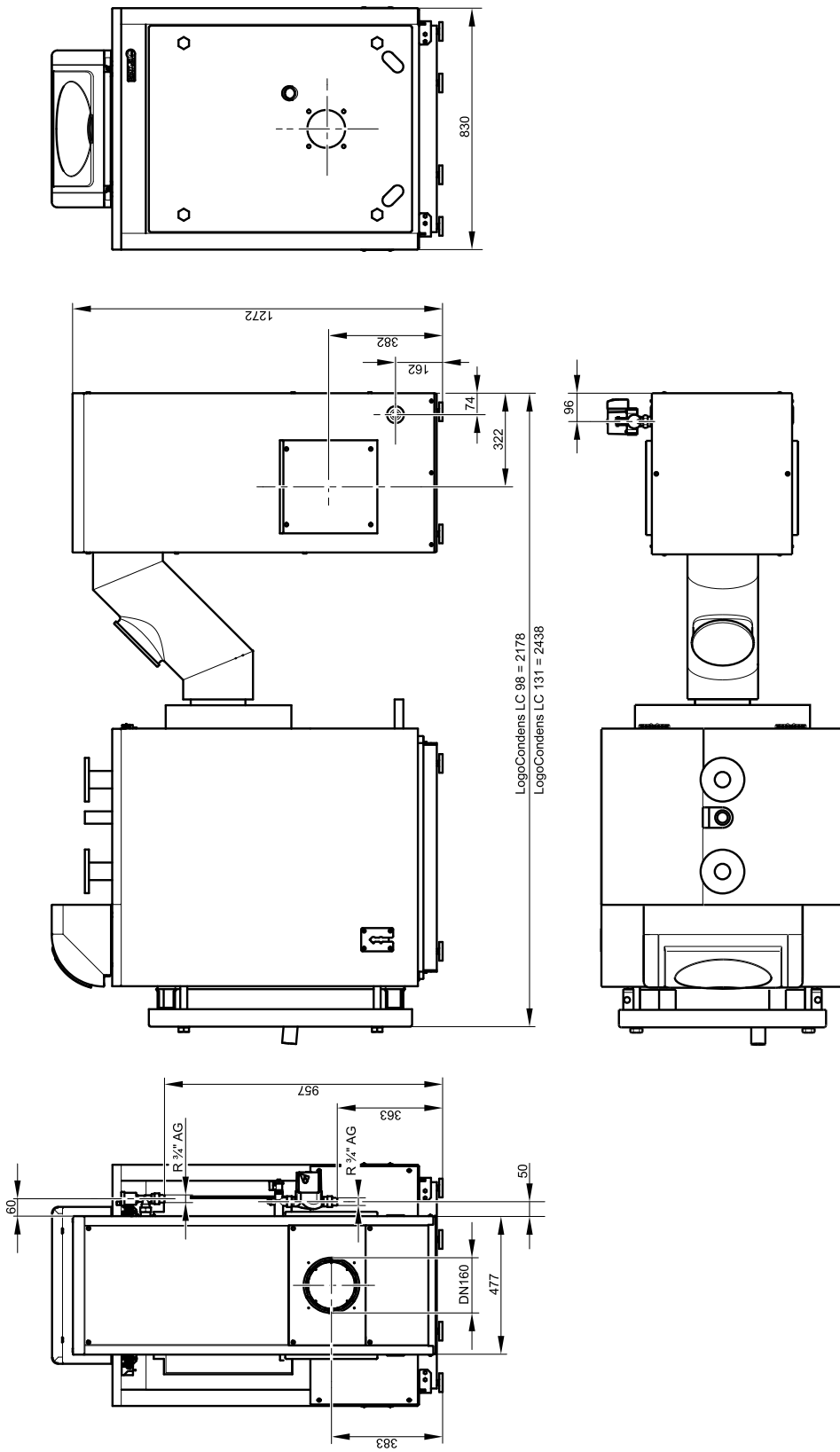


Fig. 3: Dimensions and connections LogoCondens LC 54/LC 76

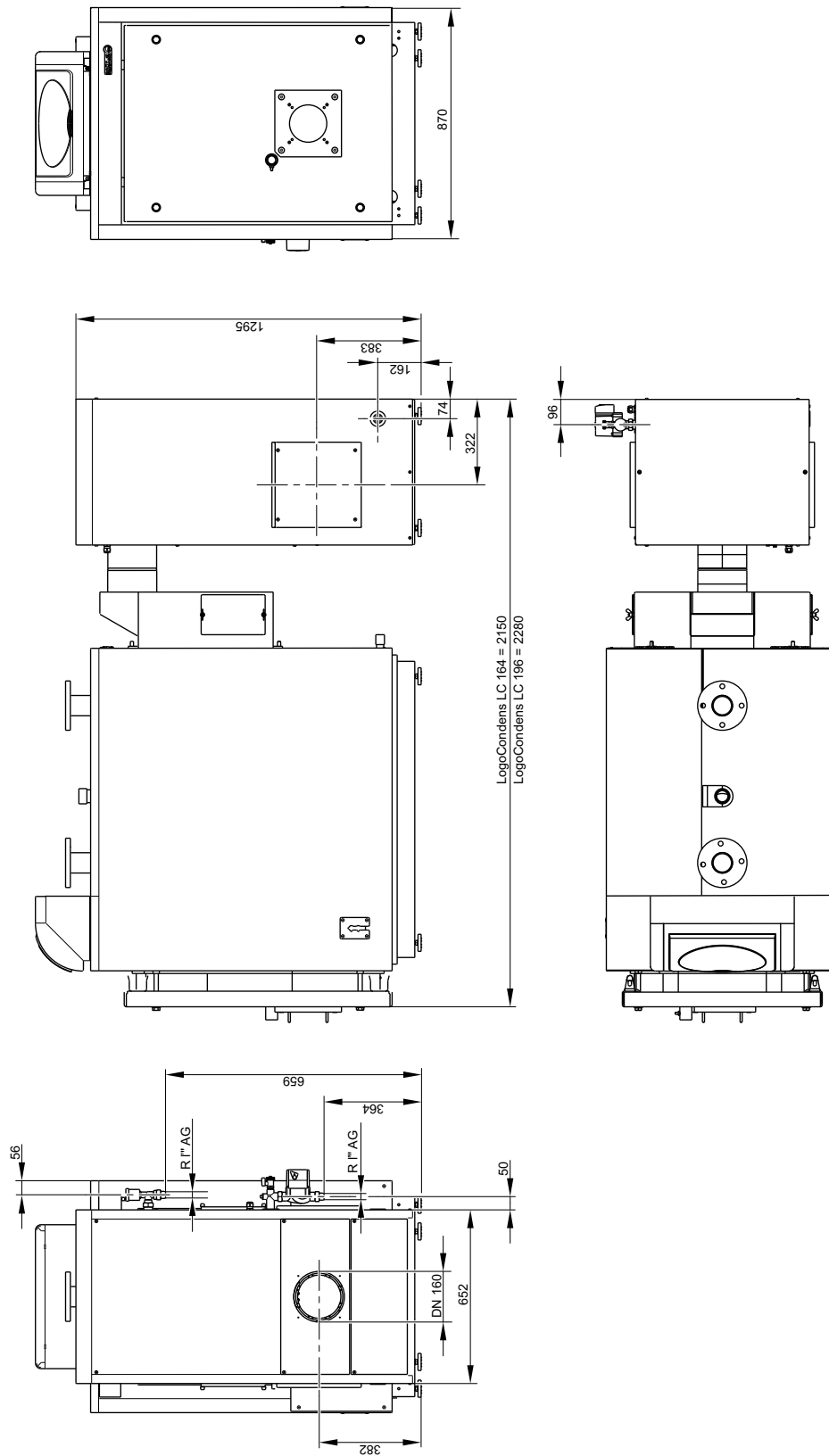


Fig. 4: Overview and connections LogoCondens LC 98/LC 131



# Technical Data

Fig. 5: Overview and connections LogoCondens LC 164/LC 196



## 3.3 Technical Data oil-/gas condensing boiler LogoCondens

Model		LC 54	LC 76	LC 98	LC 131	LC 164	LC 196	
Nominal load	kW	54,2	76,1	98,0	130,9	163,6	196,0	
Nominal power at 50/30 °C	kW	-	-	-	-	-	-	
Fuel oil fired	kW	55,9	77,9	99,4	131,9	164,7	196,5	
Gas-fired	kW	-	-	-	-	-	-	
Nominal power at 80/60 °C								
Fuel oil fired	kW	52,5	73,6	94,4	125,8	158,1	189,3	
Gas-fired	kW	52,4	73,5	94,3	125,7	158,0	189,1	
Nominal Efficiency at 40/30 °C								
Fuel oil fired	%	103,0	103,0	102,5	102,5	102,7	102,6	
Gas-fired	%	-	-	-	-	-	-	
Nominal Efficiency at 75/60 °C								
Fuel oil fired	%	101,5	101,5	101,0	101,0	101,5	101,2	
Gas-fired <sup>1) **</sup>	%	101,0	101,0	100,8	100,8	101,0	100,9	
Amount of condensed water at 50/30 °C								
Fuel oil fired	l/h	3.7	4.5	4.9	5.6	6.6	7.1	
pH value								
Fuel oil standard (ca.)		3	3	3	3	3	3	
Fuel oil sulphurless (ca.)		4	4	4	4	4	4	
Natural gas (ca.)		5	5	5	5	5	5	
Data for design of the chimney to DIN EN 13384								
Delivery pressure at exhaust gas outlet	mbar	0.2	0.2	0,3	0,3	0,5	0.6	
Exhaust gas mass flow								
Fuel oil fired	Part load <sup>2)</sup> (1st level)	kg/s	-	0,022	0,028	0,037	0,048	0,057
	Full load	kg/s	0,023	0,032	0,041	0,055	0,072	0,086
Gas-fired	Part load* (1st level)	kg/s	-	0,023	0,029	0,038	0,048	0,057
	Full load	kg/s	0,023	0,033	0,042	0,055	0,072	0,086
CO <sub>2</sub> -content at								
Fuel oil fired	Part load* (1st level)	Vol.-%	-	12.5	12,6	12,9	12.5	12.5
	Full load	Vol.-%	12.8	13,0	13.	13.2	12.5	12.5
Gas-fired	Part load* (1st level)	Vol.-%	-	9,5	9.6	9.8	9.6	9.6
	Full load	Vol.-%	9.8	9.9	10.0	10.1	9.6	9.6
Flue gas temperatures								
	Part load* (1st level)	°C	-	62	71	73	66	70
	Full load	°C	62	64	77	81	71	76

# Technical Data

Model		LC 54	LC 76	LC 98	LC 131	LC 164	LC 196
EnEV-values							
Standby losses $q_{B,70}$	%	1,12	0,94	0,78	0,61	0,56	0,49
Efficiency $\eta_{100}$	%	96,8	96,7	96,3	96,1	96,6	96,6
Efficiency $\eta_{100}$	%	99,2	100,9	100,2	97,8	101,0	100,9
Demand on auxiliary energy $P_{HE, 100}$	W	5					
Demand on auxiliary energy $P_{HE, 30}$	W	5					
Hydraulic resistance							
at $\Delta T = 10\text{ K}$	mbar	15	31	21	37	20	30
at $\Delta T = 20\text{ K}$	mbar	4	7	5	9	5	7
Flue gas resistance	mbar	0,27	0,44	0,63	0,83	0,81	1,19
Maximum operating pressure	bar	4					
Max. permissible operating temperature (safety temperature) <sup>3)</sup>	°C	110					
Max. achievable operating temperature	°C	90					
Voltage/Frequency	V/Hz	230/50					
Total water capacity	l	140	196	213	279	296	332
Weight							
Boiler	kg	306	348	426	503	563	620
Heat exchanger	kg	89				156	
Total weight	kg	395	437	515	592	719	776
Flue spigot size- $\emptyset$	mm	160					

\* Part load = 65 % of the nominal load

\*\* Values are lower than at oil fired operation due to restricted conditions

## 3.4 Wiring Diagram

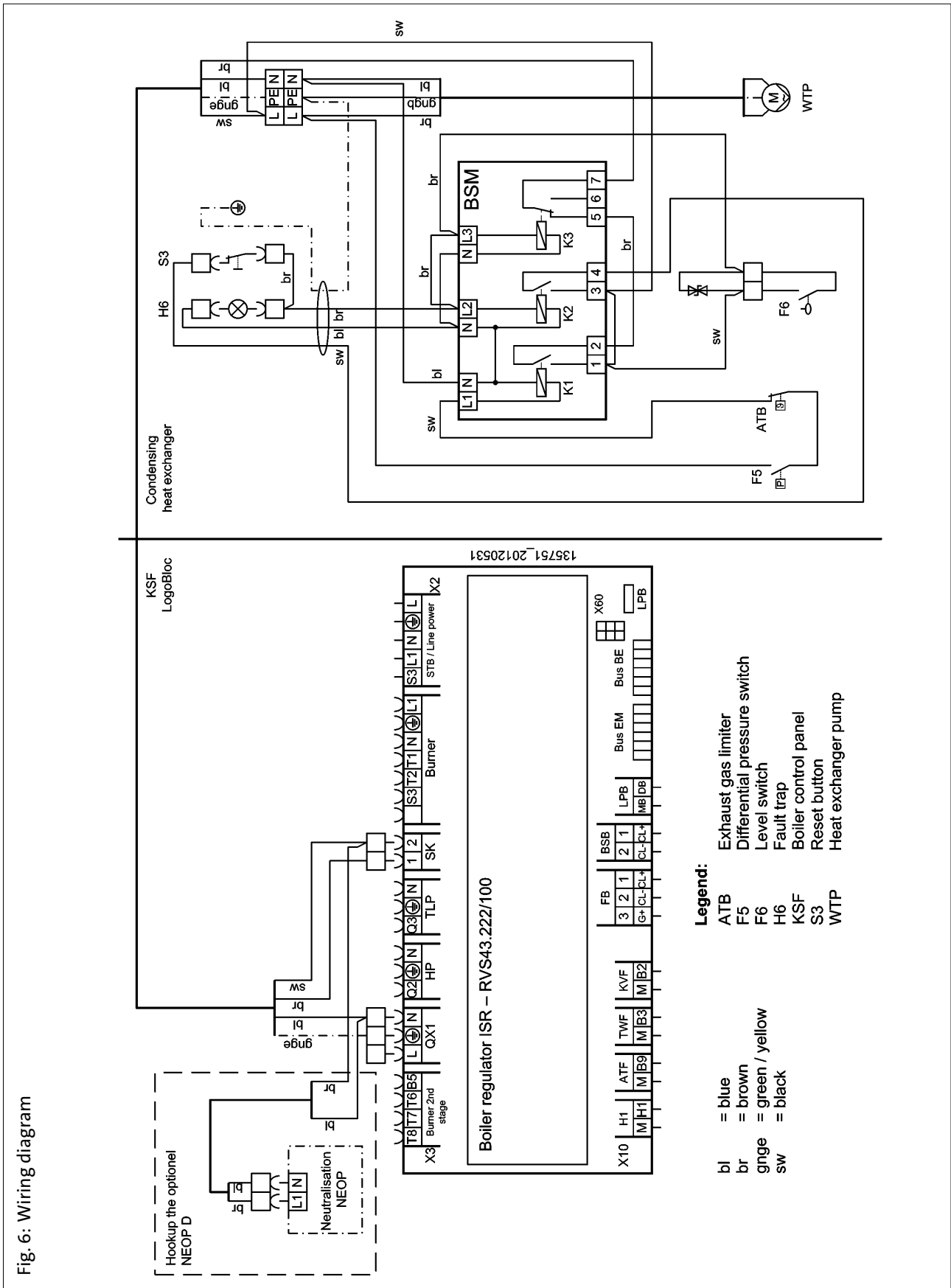


Fig. 6: Wiring diagram

# Before installation

## 4. Before installation

### 4.1 Neutralization of the condensed water.



#### Neutralising facility

If a neutralisation of the condensate is required due to local legislation, we recommend to apply the neutralisation unit NEOP D. Information regarding the installation of the neutralisation unit NEOP D is found in the manual of NEOP D.

Tab. 1: Neutralisation depending on output of the boiler according to ATV-DVWK-A 251

Heat output	Neutralization of heating systems			Reduction
	Gas	Heating oil	Heating oil sulfurless	
< 25 kW	no <sup>1), 2)</sup>	yes	no <sup>1), 2)</sup>	Neutralization is required, <sup>1)</sup> if there is a sewage treatment plant in the individual building
25 kW to 200 kW	no <sup>1), 2), 3)</sup>	yes	no <sup>1), 2), 3)</sup>	<sup>2)</sup> Buildings and premises which do not fulfil the material requirements of sewage pipes according to section 5.3 of ATV-DVWK-A 251
> 200 kW	yes	yes	yes	<sup>3)</sup> Buildings and premises which do not fulfil the requirements of mixing according to section 4.1.1 of ATV-DVWK-A 251

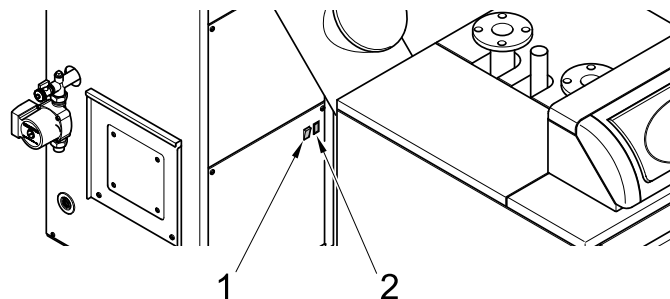
#### Charcoal-prefilter

A charcoal-prefilter is available, if there is a local requirement for the treatment of carbonhydrogen.

### 4.2 Function of the float switch

The float switch is installed in the condensate collection tray and is used for monitoring the level of condensate. When the float switch triggers, the safety chain is interrupted and the burner is switched off.

Fig. 7: Lamp indicators and unlocking switch



The switch off is displayed by the illumination of the red lamp indicator (2). To unlock, the unlocking switch (1) next to the lamp indicator must be pushed.

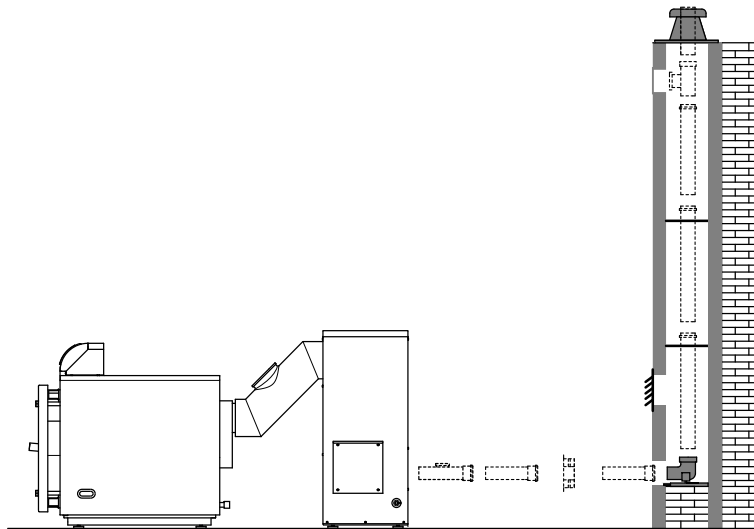
## 4.3 Exhaust gas system

- For LogoCondens LC 54 - LC131 two exhaust systems are available:
- Basic kit exhaust gas system SAS 160 - Exhaust gas pipe in the duct
  - Basic kit exhaust gas system SAS 160 - vertical roof duct

### Exhaust gas system SAS 160 - Exhaust gas pipe in the duct

Maximum overall flue length incl. 3 bends 87° = 25 m

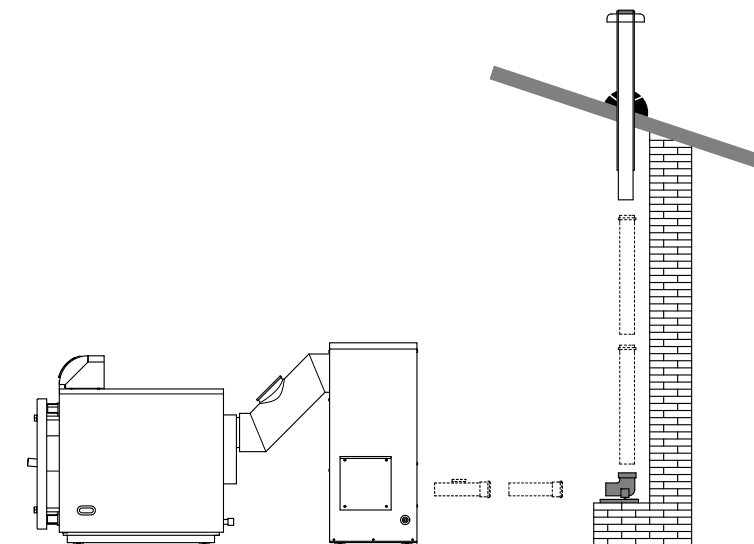
Fig. 8: Exhaust gas system SAS 160 - Exhaust gas pipe in the duct (example: LogoCondens LC 54/LC 78)



### Basic kit exhaust gas system SAS 160 - vertical roof duct

Maximum overall flue length incl. 3 bends 87° = 25 m

Fig. 9: Exhaust gas system SAS 160 - vertical roof duct (example: LogoCondens LC 54/LC 78)



*Information for the installation of the flue gas system provided, is included in there.*

# Before installation

## 4.4 Application examples

### Application example 1: Operation with fuel oil

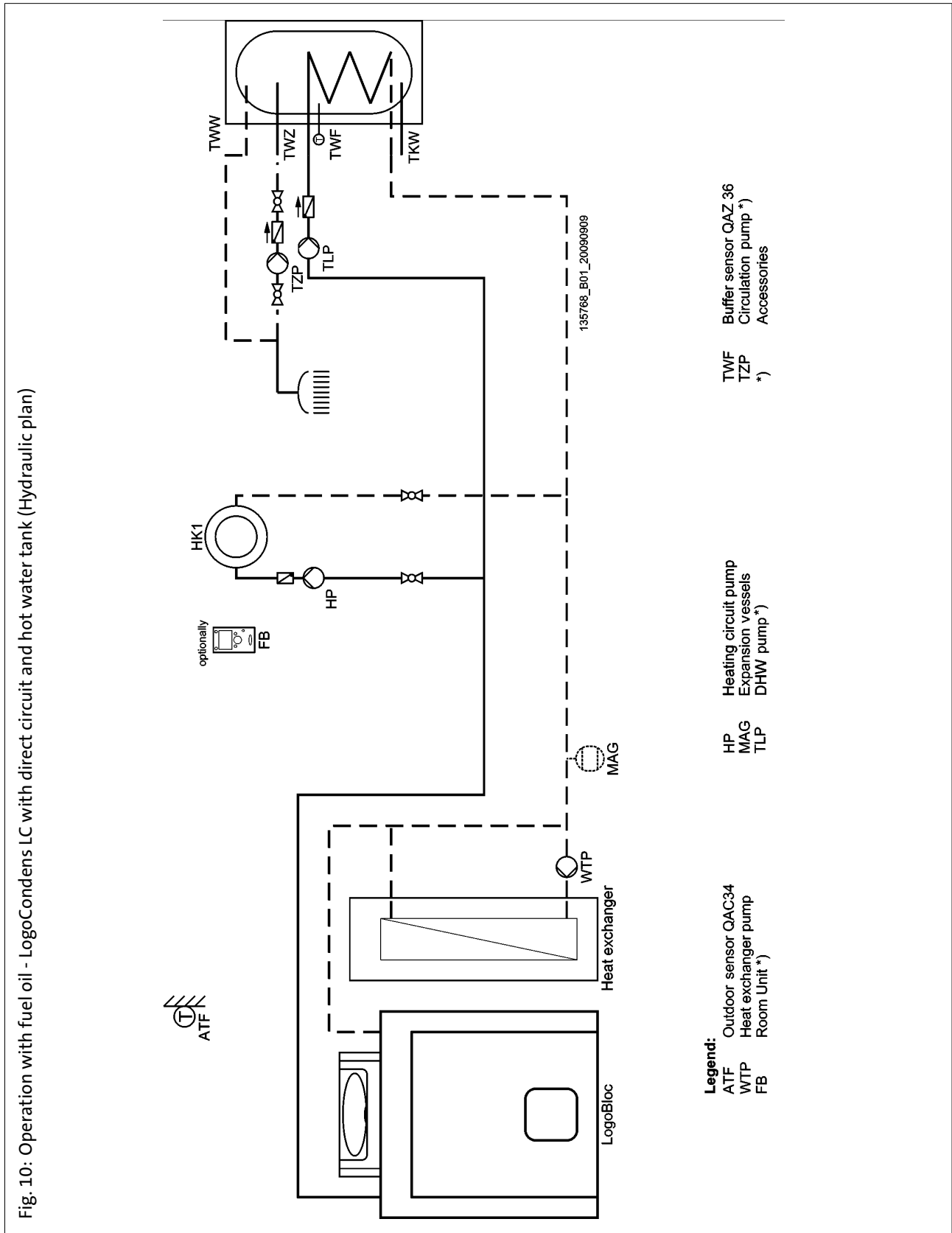
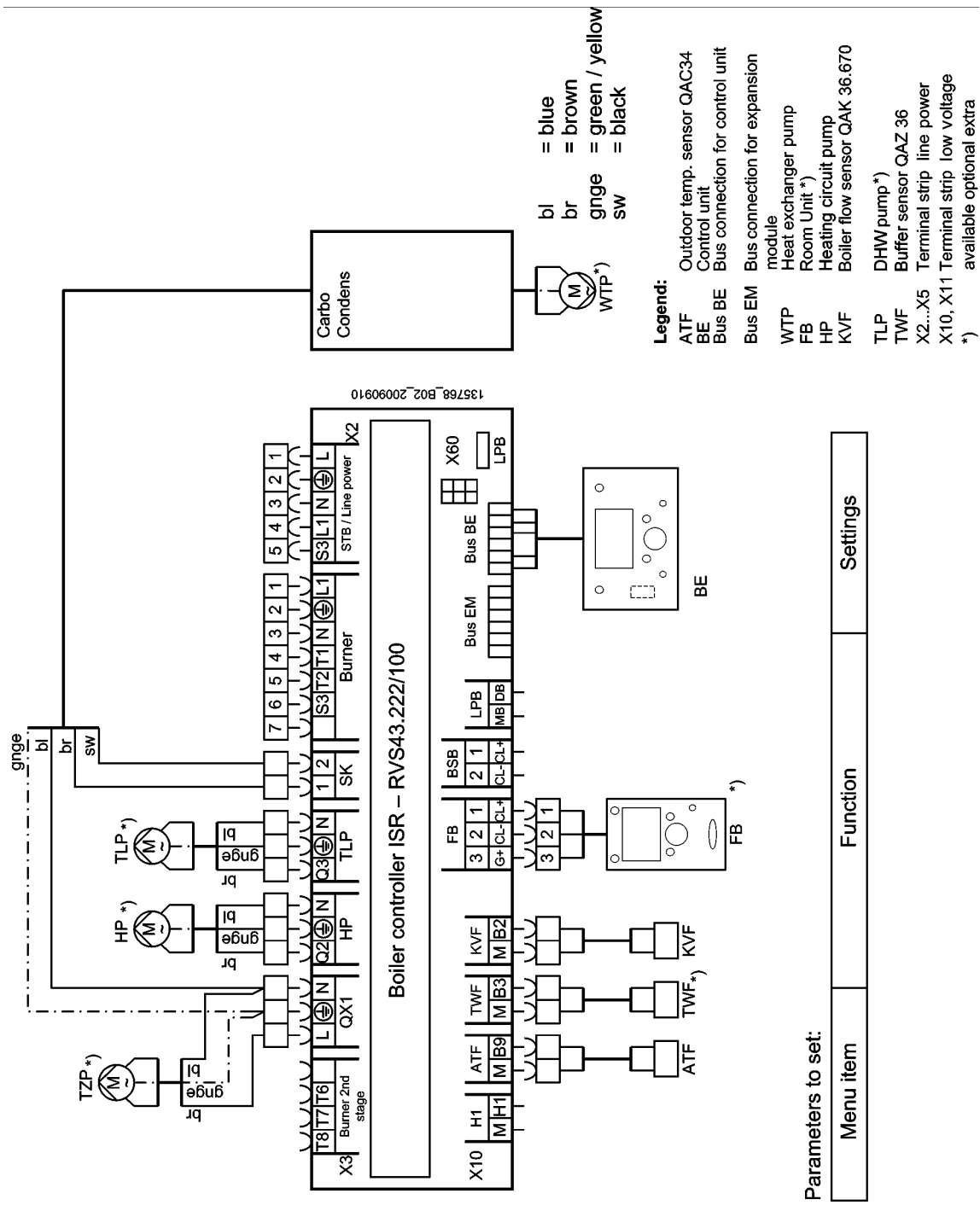




Fig. 11: Operation with fuel oil - LogoCondens LC with direct circuit and hot water tank (elect. wiring)



Parameters to set:

Menu item	Function	Settings
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# Before installation

## Application example 2: Operation with gas:

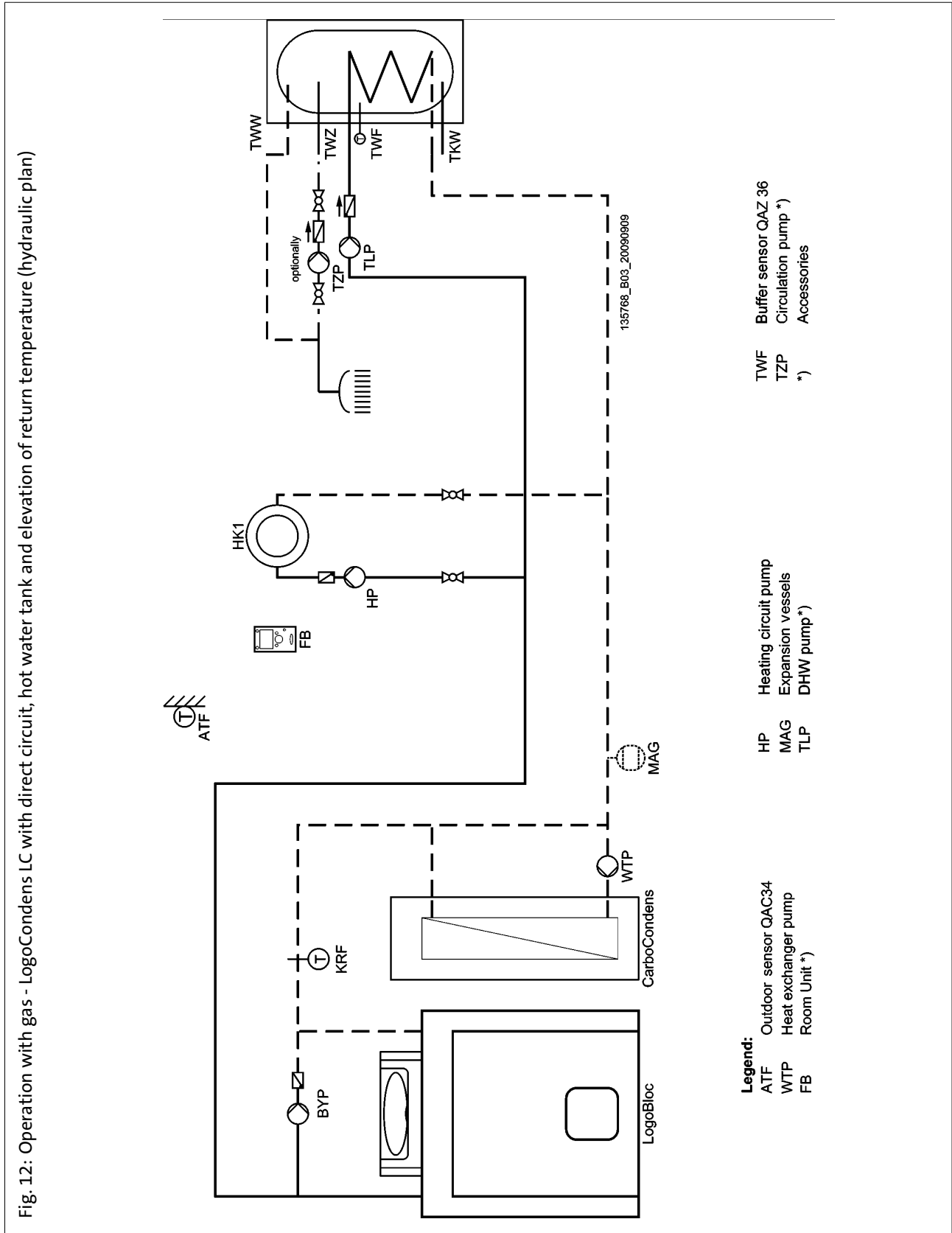
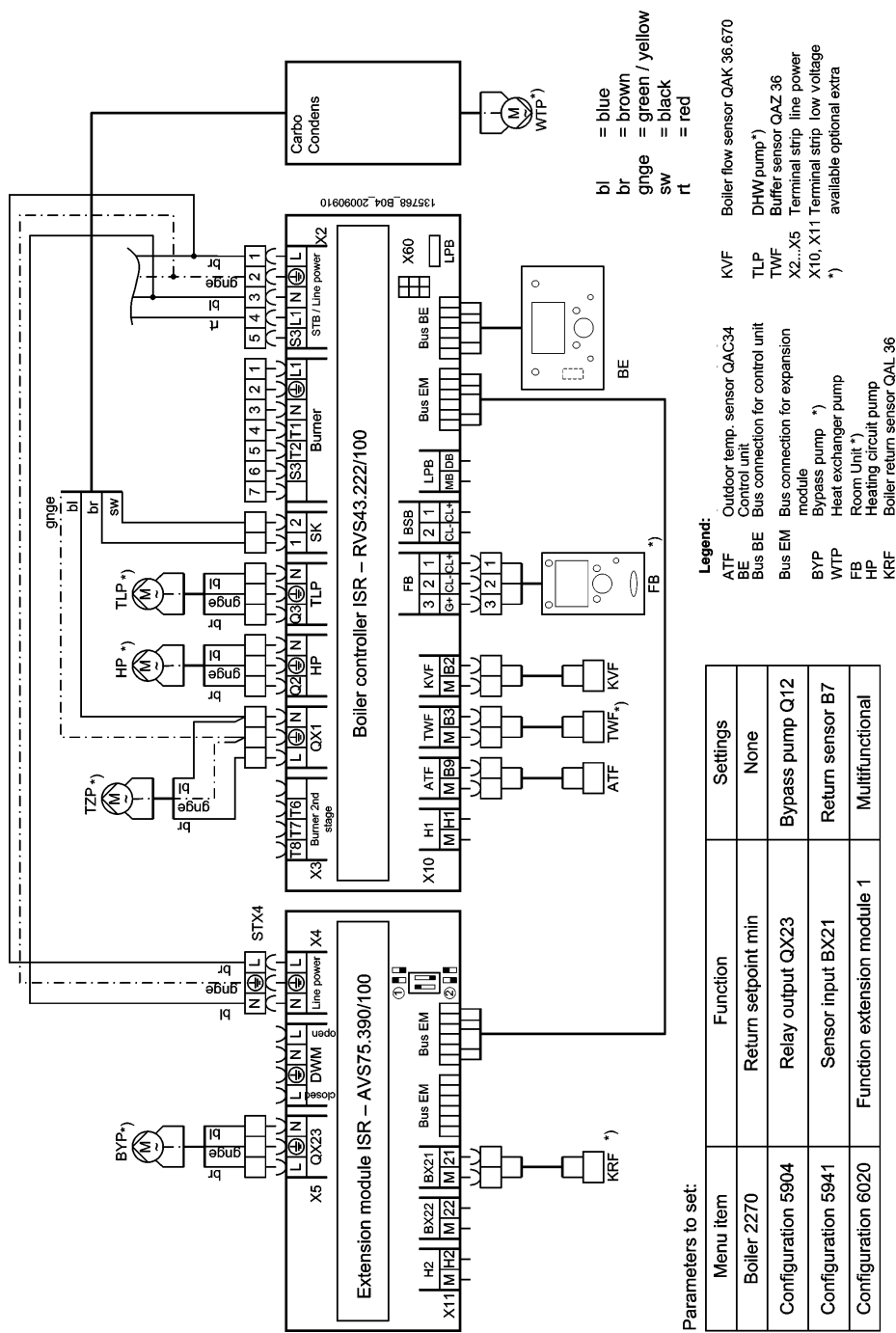


Fig. 13: Operation with gas - LogoCondens LC with direct circuit, hot water tank and elevation of return temperature (elect. wiring)



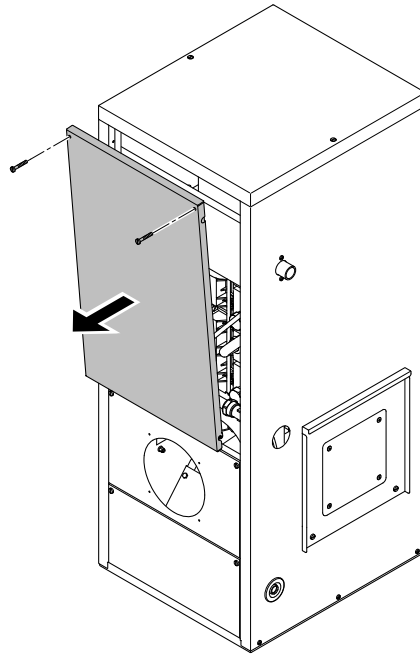
**Caution!** Gas-fired boilers need an elevation of the return temperature, e.g. through a shunt pump in order to protect the boiler (see hydraulic plan)!

# Assembly

## 5. Assembly

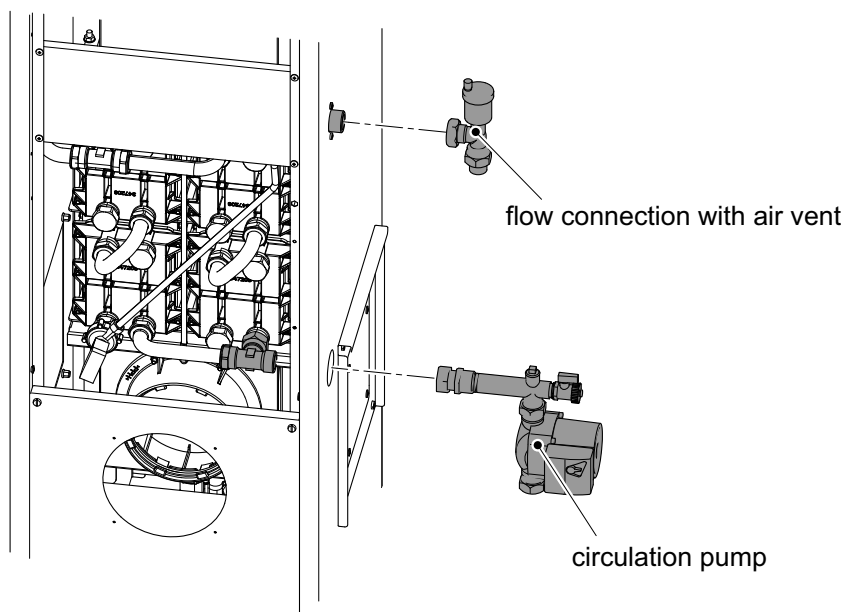
### 5.1 Installation of pump and flow

Fig. 14: Removing the rear wall



1. Loosen the screws and remove the rear wall

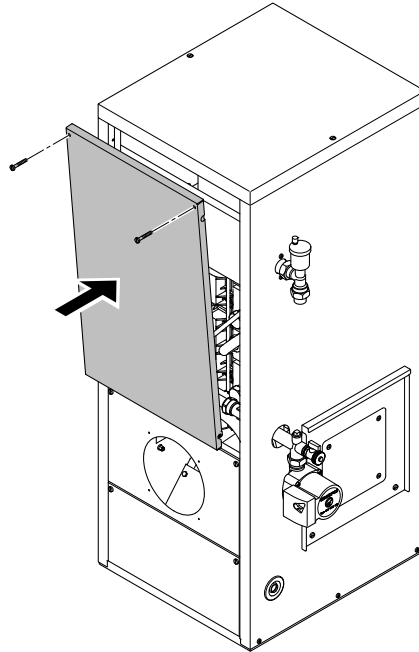
Fig. 15: Connect the flue gas connection piece to the condensing heat exchanger.



2. Flow connection with automatic air vent accordingly *Fig. 15*

3. Mount the circulation pump by pushing it through the casing of the condensing heat exchanger *Fig. 15*

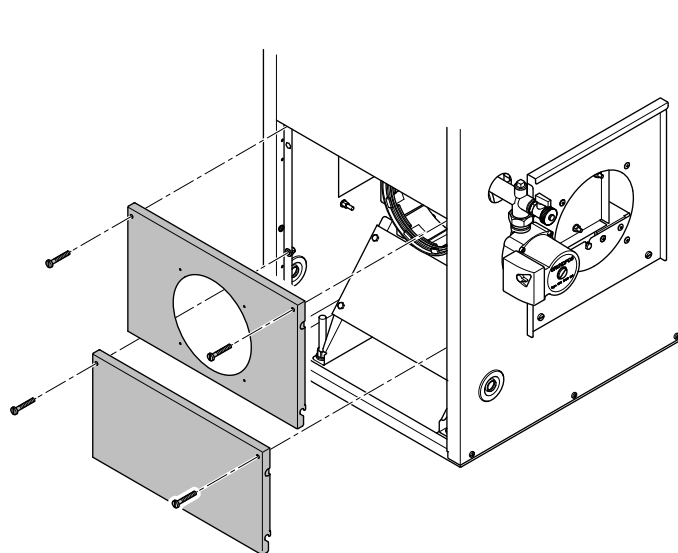
Fig. 16: Fasten the rear wall



4. Hang-up the rear and fix with screws.

## 5.2 Installation of siphon

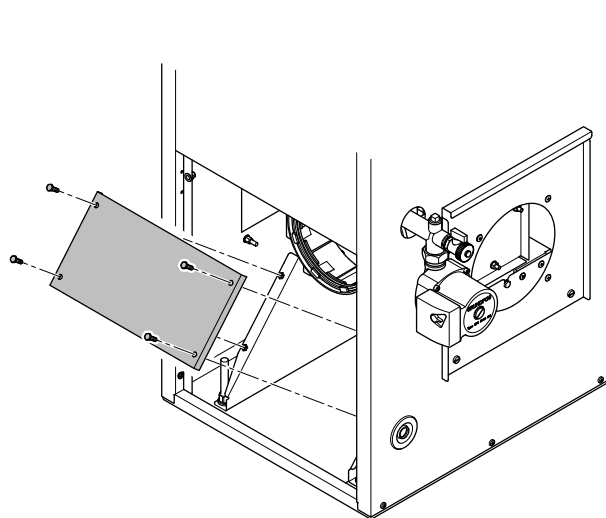
Fig. 17: Removing the lower casing cover



1. Loosen the screws and remove the lower casing cover according to *Fig. 17*

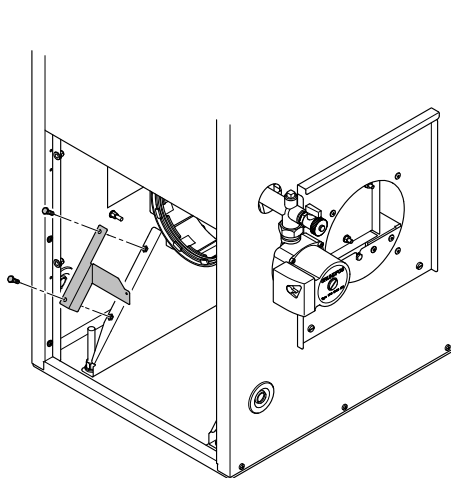
# Assembly

Fig. 18: Removing the transport securing plate



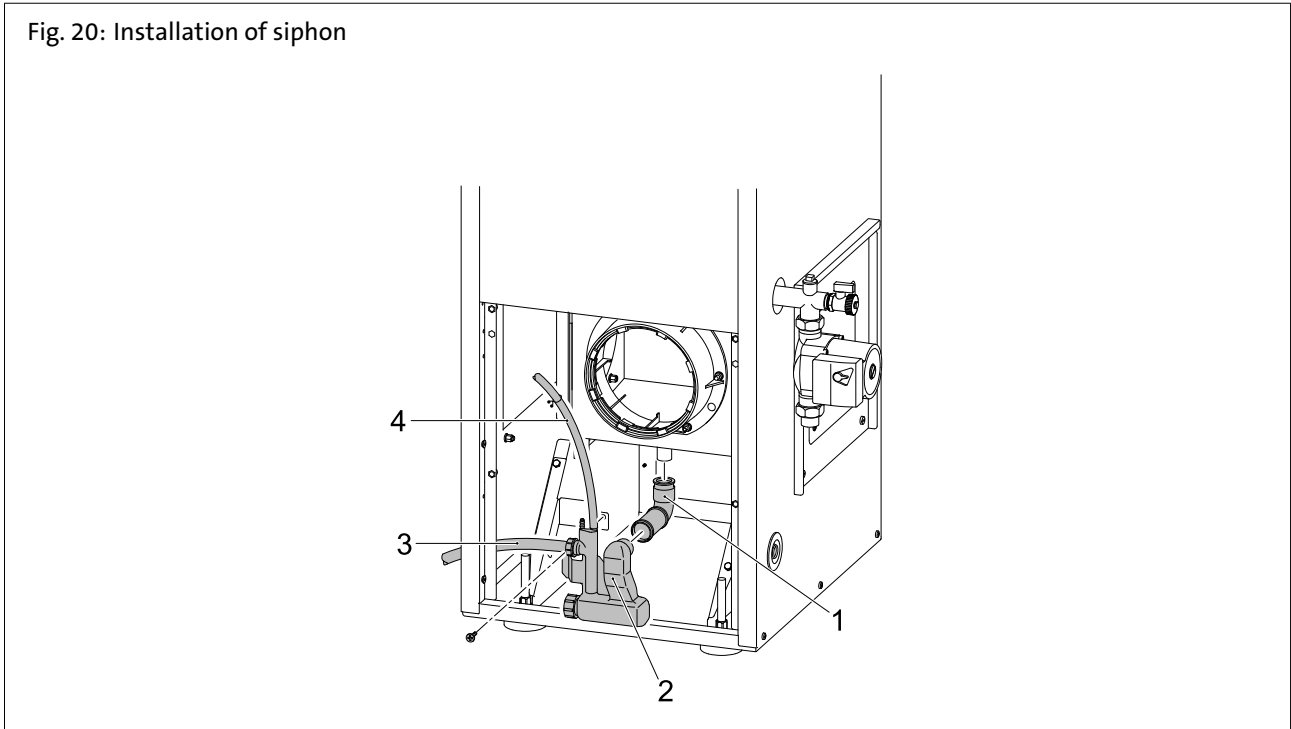
2. Remove the transport securing plate according to *Fig. 18*

Fig. 19: Installing the siphon holder



3. Install the siphon holder according to *Fig. 19* with two retaining screws of the previously removed transport securing plate

Fig. 20: Installation of siphon



4. Connect the double socket with siphon angle and rubber collar (1) to the siphon connection of the condensate collection tray
5. Guide the condensate hose (3) through the opening in the side wall to the outside, connect the siphon (2) to the double socket (1) and fasten with the enclosed screw to the siphon holder
6. Attach the ventilation hose (4) with the cable clamp
7. Install the lower casing cover and fasten with screws

# Assembly

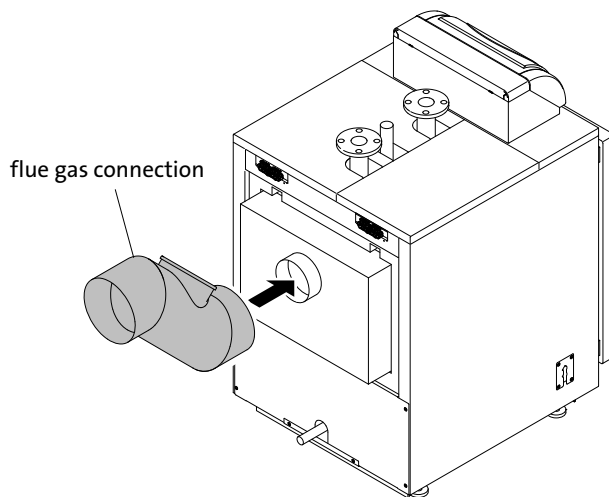
## 5.3 Installation of the Condensing-heat exchanger

### LogoCondens LC 54 - LC 131



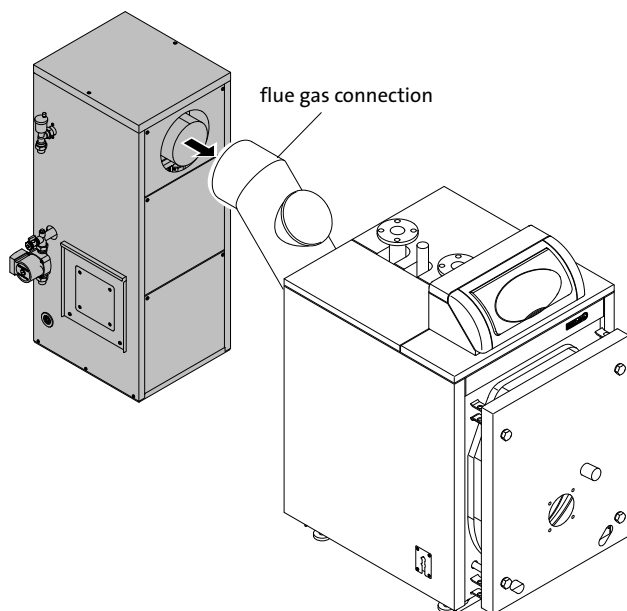
Note: For illustration, we have the following example of L 90/l 120. The installation of the heat exchanger to LogoBloc 50 & 70 is the same.

Fig. 21: Installation of flue gas connection piece (example: LogoBloc L 90 C/L 120 C)



1. Connect the flue gas connection piece to the LogoBloc flue outlet.

Fig. 22: Connect the flue gas connection piece to the condensing heat exchanger.



2. Push-on the condensing heat exchanger to the flue connection piece and connect the two at the flue inlet of the heat exchanger.
3. Assembly of the flue system
4. Conduct electrical and hydraulic installation





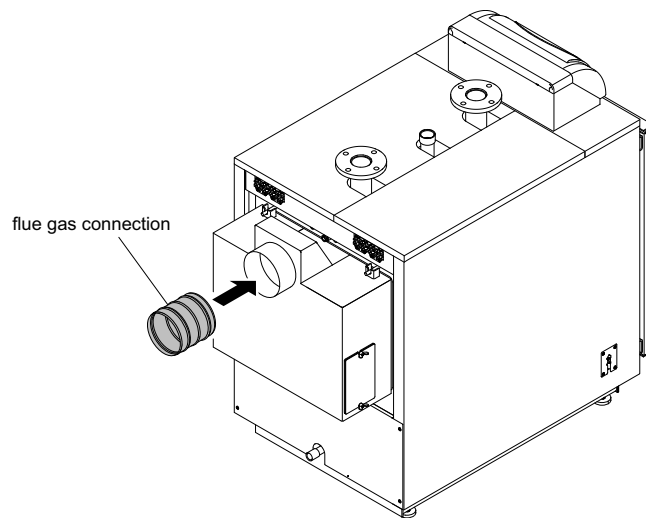
**Risk to life from escaping flue gas!** Before commissioning the boiler check all flue gas pipes for leaks!



Note: Informationen for electrical and hydraulic installation is available in the section *installation* and in the operation and maintenance manual.

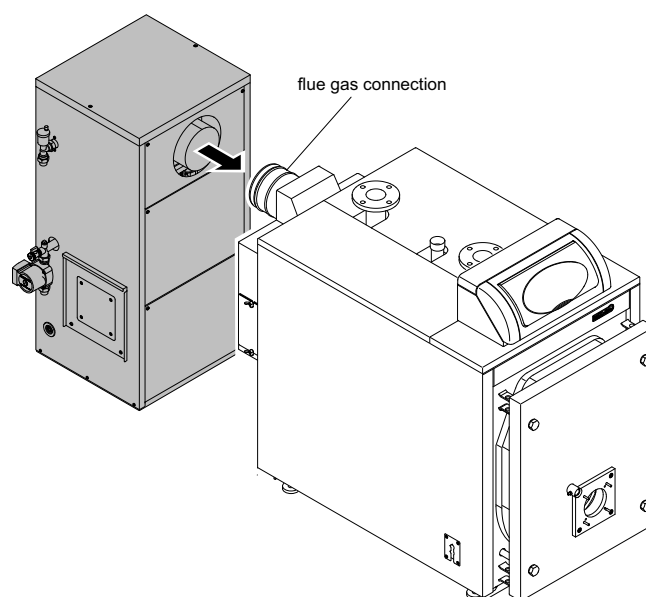
## LogoCondens LC 164 - LC 196

Fig. 23: Connect the flue gas connection piece to the LogoBloc



1. Connect the flue gas connection piece up to the half to the LogoBloc flue outlet

Fig. 24: Connect the flue gas connection piece to the condensing heat exchanger.



# Assembly

2. Push-on the condensing heat exchanger to the flue connection piece and connect the two at the flue inlet of the heat exchanger..
3. Assembly of the flue system
4. Conduct electrical and hydraulic installation



**Risk to life from escaping flue gas!** Before commissioning the boiler check all flue gas pipes for leaks!



Note: Informationen for electrical and hydraulic installation is available in the section *installation* and in the operation and maintenance manual.

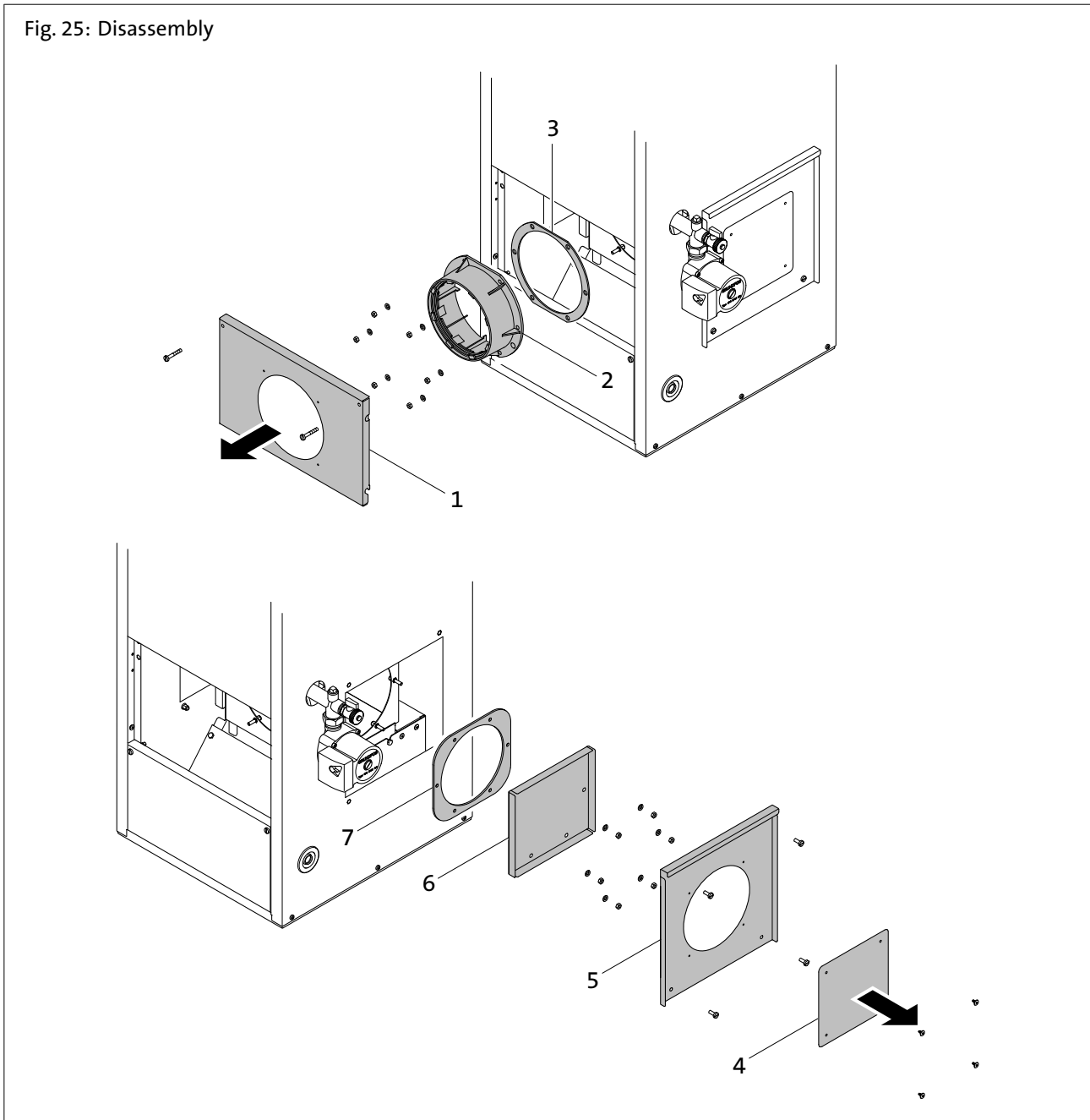
## 5.4 Conversion of exhaust gas connection-nozzles

According to the site requirements, the flue outlet can be fitted either to the rear or the sides. .

The following drawings illustrate the installation.

### Disassembly

Fig. 25: Disassembly

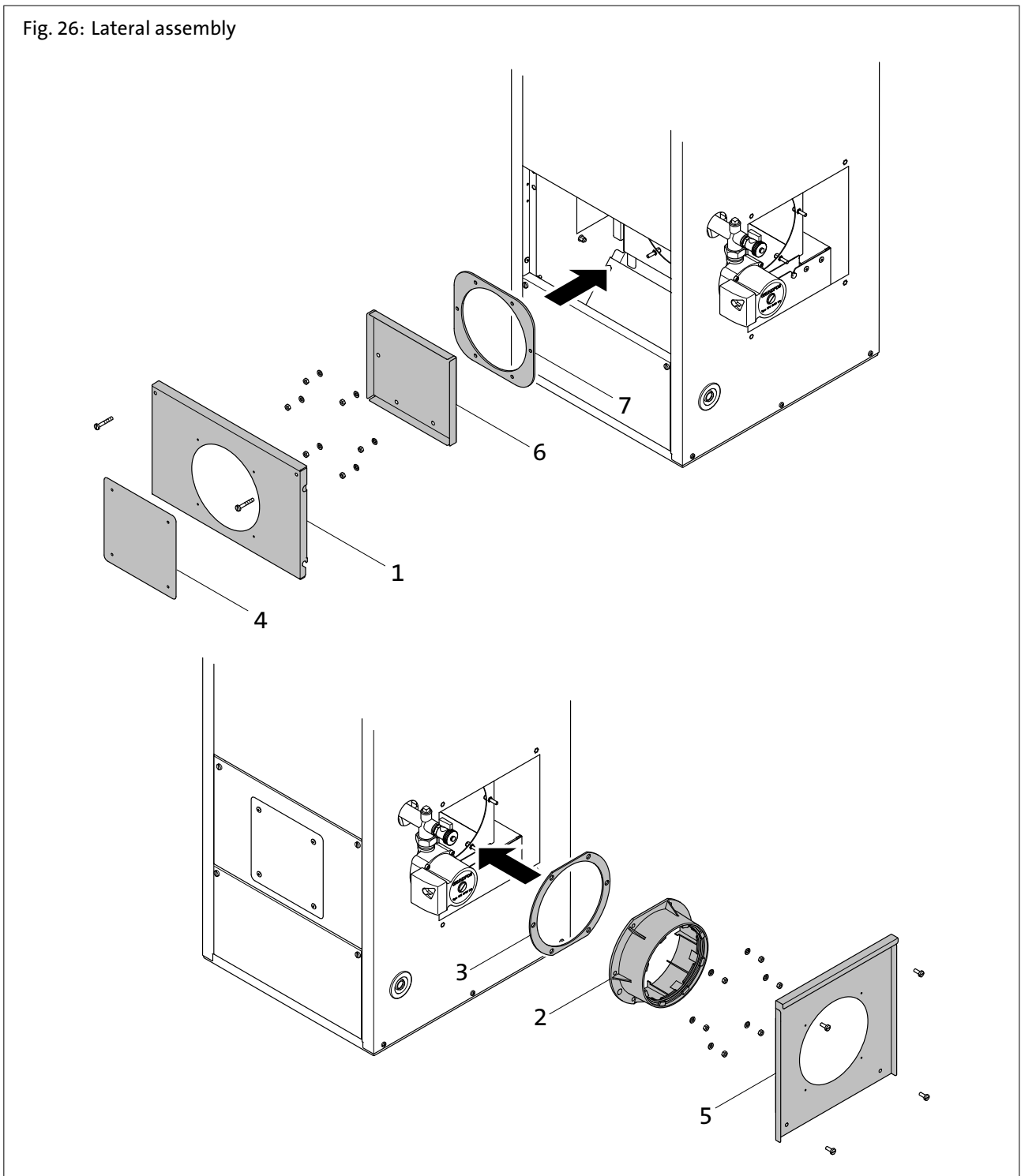


1. Disassemble the cover (1) ) of the rear of the condensing heat exchanger
2. Disassemble flue outlet (2) and gasket (3)
3. Remove the blanking plate (4) and side cover (5)
4. Remove inspection cover (6) with gasket (7) of the side cover

# Assembly

## Lateral assembly

Fig. 26: Lateral assembly



1. Install gasket (7) and inspection cover (6) at the flue outlet of the rear
2. Fix the cover (1) at the rear
3. Fix the blanking plate (4) at the cover
4. Integrate the flue outlet (2) with gasket (3) at the lateral flue outlet
5. Fix the cover (5) at the side cover of the condensing heat exchanger

## 5.5 Before assembly of the exhaust gas pipe



**Danger due to escaping flue gas!** In order to avoid any escape of the flue gas through the condensate drain, fill-in some water into the condensate siphon or neutralisation device before commissioning.

Before installing the flue gas pipe into the flue gas spigot, fill-in about 1 liters of water into the lower flue gas manifold.



Note: The condensate siphon and the float switch in the condensate collection tray must be checked annually for contamination and cleaned if necessary. In addition, the function of the float switch must be checked during service.

## 5.6 Stick the type plate

There are included type plates. Select the appropriate plate and stick onto the condensing boiler.

# Installation

## 6. Installation

### 6.1 Electrical installation general



**Danger of electric shock!** All electrical work in connection with the installation must only be carried out by a trained electrician! Before doing the installation make sure the boiler is isolated!

Mains voltage: 1/N/PE  
AC 230 V, 50 Hz

In Germany, the VDE and local regulations and in all other countries, the pertinent regulations should be followed during installation.



Notes: All cables should be within the casing of the boiler and should be fixed with the ties and the strain relief fixings. Fix the cables with the strain relief fixings at the rear of the floor standing boiler.

### 6.2 Electrical connection Condensing-Heat exchanger

Condensing heat exchanger connected according to wiring diagram (see Fig. 6):

- Connect the 4-core cable to the central board of the LogoBloc and connect it to the outputs QX1 and SK.
- Connect the pump WTP with correct polarity to the previously described cable.



Note: For maximum condensing efficiency, the pump should be set at the correct speed for the output of the unit.

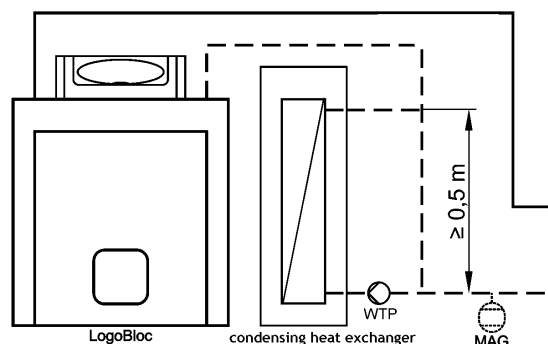
### 6.3 Hydraulic connection Condensing-Heat exchanger

Condensing heat exchanger connected according to hydraulic plan



**Caution!** The minimum distance between inlet and outlet should not be less than 0.5 m (see Fig. 27)!

Fig. 27: Distance between inlet and outlet.



**Caution!** In order to protect the low-temperature boiler LogoBloc, a shunt pump is required to raise the return temperature. (see application example 1: *Operation with gas* in the section *Application examples*)!



Note: The accessories for the hydraulic connection are not included

# Maintenance

## 7. Maintenance



**Danger of electric shock!** Before removing parts of the cover, the device has to be deenergised.

Work under voltage (removed cover) must only be carried out by an electrician!

### 7.1 General maintenance

The condensate siphon and the float switch in the condensate collection tray must be checked annually for contamination and cleaned if necessary. In addition, the function of the float switch must be checked during service. During service make sure that the red marking on the screw joint of the float switch is always up.

### 7.2 Function check of the float switch

- Remove exhaust connection cover for access to the float switch
- Fix float switch in the "Off" position (Fasten the float in the top position with a cable tie or rubber band)
- Switch on the boiler and trigger a heat request (e.g., by activating the chimney sweep function)  
If the float switch is functioning correctly the red indicator lamp on the calorific value heat exchanger and the burner must not start to operate.
- Release the fixation of the float  
If the float switch is functioning correctly the red indicator lamp remains active and the burner remains out of operation.
- Replace the exhaust connection cover



The exhaust connection cover must always be mounted so that the float switch is in the lower half of the cover.

- Press the reset button on the condensing heat exchanger  
If the float switch is functioning correctly the red indicator lamp goes off and the burner starts operating.



**Risk to life from escaping flue gas!** If the burner starts up with an open exhaust connection cover, the exhaust gas escapes! Switch off the boiler immediately and check the wiring of the circuit board!



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