C 330 / C 630





Installation, User and Service Manual

High-efficiency floor-standing boiler



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1 Safety

1.1 General safety instructions

For the installer:



Danger

If you smell gas:

- 1. Do not use naked flames, do not smoke and do not operate electrical contacts or switches (doorbell, lighting, motor, lift etc).
- 2. Shut off the gas supply.
- 3. Open the windows.
- 4. Trace possible leaks and seal them off immediately.
- 5. If the leak is upstream of the gas meter, notify the gas company.



Danger

If you smell flue gases:

- 1. Switch the boiler off.
- 2. Open the windows.
- 3. Trace possible leaks and seal them off immediately.



Caution

After maintenance or repair work, check the entire heating installation to ensure that there are no leaks.

For the end user:

Danger

If you smell gas:

- 1. Do not use naked flames, do not smoke and do not operate electrical contacts or switches (doorbell, lighting, motor, lift etc).
- 2. Shut off the gas supply.
- 3. Open the windows.
- 4. Evacuate the property.
- 5. Contact a qualified installer.



Danger

If you smell flue gases:

- 1. Switch the boiler off.
- 2. Open the windows.
- 3. Evacuate the property.
- 4. Contact a qualified installer.



Warning

Do not touch the flue gas pipes. Depending on the boiler settings, the temperature of the flue gas pipes can rise to over 60°C.



Warning

Do not touch radiators for long periods. Depending on the boiler settings, the temperature of the radiators can rise to over 60°C.



Warning

Be careful when using the domestic hot water. Depending on the boiler settings, the temperature of domestic hot water can rise to over 65°C.



Warning

The use of the boiler and the installation by you as the end-user must be limited to the operations described in this manual. All other actions may only be undertaken by a qualified fitter/engineer.



Warning

The condensation drain must not be changed or sealed. If a condensate neutralisation system is used, the system must be cleaned regularly in accordance with the instructions provided by the manufacturer.



Caution

Ensure that the boiler is regularly serviced. Contact a qualified installer or arrange a maintenance contract for the servicing of the boiler.



Caution

Only genuine spare parts may be used.



Important

Regularly check for the presence of water and pressure in the heating installation.

1.2 Recommendations



Danger

This appliance can be used by children aged eight and above and people with a physical, sensory or mental disability, or with a lack of experience and knowledge, provided they are supervised and instructed in how to use the appliance in a safe manner and understand the associated dangers. Children must not be allowed to play with the appliance. Cleaning and user maintenance should not be carried out by children without adult supervision.



Warning

Installation and maintenance of the boiler must be carried out by a qualified installer in accordance with local and national regulations.



Warning

The installation and maintenance of the boiler must be undertaken by a qualified installer in accordance with the information in the supplied manual, doing otherwise may result in dangerous situations and/or bodily injury.



Warning

Removal and disposal of the boiler must be carried out by a qualified installer in accordance with local and national regulations.



Warning

If the mains lead is damaged, it must be replaced by the original manufacturer, the manufacturer's dealer or another suitably skilled person to prevent hazardous situations from arising.



Warning

Always disconnect the mains supply and close the main gas tap when working on the boiler.



Warning

Check the entire system for leaks after maintenance and servicing work.

Danger

For safety reasons, we recommend fitting smoke and CO alarms at suitable places in your home.

Λ

Caution

- Make sure the boiler can be reached at all times.
- The boiler must be installed in a frost-free area.
- If the power cord is permanently connected, you must always install a main bipolar switch with an opening gap of at least 3 mm (EN 60335-1).
- Drain the boiler and central heating system if you are not going to use your home for a long time and there is a chance of frost.
- The frost protection does not work if the boiler is out of operation.
- The boiler protection only protects the boiler, not the system.
- Check the water pressure in the system regularly. If the water pressure is lower than 0.8 bar, the system must be topped up (recommended water pressure between 1.5 and 2 bar).
- i Important

Keep this document near to the boiler.

i Important

Only remove the casing for maintenance and repair operations. Refit all panels when maintenance work and servicing are complete.

i Important

Instruction and warning labels must never be removed or covered and must be clearly legible throughout the entire service life of the boiler. Damaged or illegible instructions and warning stickers must be replaced immediately.

i Important

Modifications to the boiler require the written approval of **De Dietrich**.

1.3 Liabilities

1.3.1 Manufacturer's liability

Our products are manufactured in compliance with the requirements of the various Directives applicable. They are therefore delivered with the CE marking and any

documents necessary. In the interests of the quality of our products, we strive constantly to improve them. We therefore reserve the right to modify the specifications given in this document.

Our liability as manufacturer may not be invoked in the following cases:

- Failure to abide by the instructions on installing and maintaining the appliance.
- Failure to abide by the instructions on using the appliance.
- Faulty or insufficient maintenance of the appliance.

1.3.2 Installer's liability

The installer is responsible for the installation and initial commissioning of the appliance. The installer must observe the following instructions:

- Read and follow the instructions given in the manuals provided with the appliance.
- Install the appliance in compliance with prevailing legislation and standards.
- Carry out initial commissioning and any checks necessary.
- Explain the installation to the user.
- If maintenance is necessary, warn the user of the obligation to check the appliance and keep it in good working order.
- Give all the instruction manuals to the user.

1.3.3 User's liability

To guarantee optimum operation of the system, you must abide by the following instructions:

- Read and follow the instructions given in the manuals provided with the appliance.
- Call on a qualified professional to carry out installation and initial commissioning.
- Get your installer to explain your installation to you.
- Have the required inspections and maintenance carried out by a qualified installer.
- Keep the instruction manuals in good condition close to the appliance.

2 About this manual

2.1 Additional documentation

The boiler can be fitted with various control panels. The selected control panel is supplied with its corresponding manual.

2.2 Symbols used

2.2.1 Symbols used in the manual

This manual uses various danger levels to draw attention to special instructions. We do this to improve user safety, to prevent problems and to guarantee correct operation of the appliance.



Danger

Risk of dangerous situations that may result in serious personal injury.



Danger of electric shock

Risk of electric shock.



Warning

Risk of dangerous situations that may result in minor personal injury.



Caution

Risk of material damage.



Important

Please note: important information.



See

Reference to other manuals or pages in this manual.

3 Technical specifications

3.1 Homologations

3.1.1 Certifications

Tab.1 Certifications

CE identification number	PIN 0063CL3613					
Class NOx ⁽¹⁾	6					
Type of flue gas connection	B ₂₃ , B _{23P} ⁽²⁾					
	C ₃₃ , C ₅₃ , C ₆₃ , C ₉₃					
(1) EN 15502-1						
(2) When installing a boiler with connection type B ₂₃ , B _{23P} , the IP rating of the						
boiler is lowered to IP20.						

3.1.2 Unit categories

Tab.2 Unit categories

Category	* *	Connection pressure (mbar)
I _{2H}	G20 (H gas)	20

3.1.3 Directives

In addition to the legal requirements and guidelines, the supplementary guidelines in this manual must also be followed.

Supplements or subsequent regulations and guidelines that are valid at the time of installation shall apply to all regulations and guidelines specified in this manual.

3.1.4 Factory test

Before leaving the factory, each boiler is optimally set and tested for:

- · Electrical safety.
- Adjustment of (O₂).
- Water tightness.
- Gas tightness.
- · Parameter setting.

3.2 Technical data

3.2.1 C 330 ECO technical data

Tab.3 General

C 330 ECO			280	350	430	500	570	650
Number of sections			5	6	7	8	9	10
Nominal output (Pn) (80/60 °C)	min max ⁽¹⁾	kW	51 261	65 327	79 395	92 461	106 530	119 601
Nominal output (Pn) (50/30 °C)	max ⁽¹⁾	kW	279	350	425	497	574	651
Nominal load (Qnh) (Hi)	min max ⁽¹⁾	kW	54 266	68 333	82 402	95 469	109 539	122 610

C 330 ECO			280	350	430	500	570	650
Nominal load (Qnh) (Hs)	min max ⁽¹⁾	kW	60 295	75 369	96 445	105 520	121 598	135 677
Full load central heating efficiency (Hi) (80/60 °C) (92/42/EEC)		%	98.0	98.1	98.2	98.3	98.4	98.5
Full load central heating efficiency (Hi) (50/30 °C) (EN15502)		%	104.8	105.2	105.6	106.0	106.4	106.8
Central heating efficiency under part load (Hi) (Return temperature 60 °C)		%	94.7	95.3	95.8	96.3	96.8	97.3
Annual efficiency G20 (DIN 4702, Part 8)		%	109.6	109.5	109.4	109.3	109.2	109.1
Part load central heating efficiency (92/42 EEC) (Return temperature 30 °C)		%	109.2	109.0	108.8	108.6	108.3	108.1
(1) Factory setting	•		•	•		•	•	

Tab.4 Gas and flue gas data

C 330 ECO			280	350	430	500	570	650
Gas inlet pressure G20 (H gas)	min	mbar	17	17	17	17	17	17
	max		30	30	100	100	100	30
Gas inlet pressure G25 (L gas)	min	mbar	17	17	17	17	17	17
	max		30	30	100	100	100	30
Gas consumption G20 (H gas)	min	m ³ /h	5.7	7.2	8.7	10.1	11.5	12.9
	max		28.1	35.2	42.5	49.6	57.0	64.6
Gas consumption G25 (L gas)	min	m ³ /h	6.6	8.4	10.1	11.7	13.4	15.0
	max		32.7	41.0	49.5	57.7	66.3	75.1
NOx annual emissions G20 EN15502	O ₂ = 0%	ppm	28.9	31.7	30.6	28.9	30.6	27
NOx annual emissions G20 EN15502	Hi	mg/kWh	51.0	56.0	54.0	51.0	54.0	47.6
NOx annual emissions G20 EN15502	H _s	mg/kWh	46.0	50.0	49.0	46.0	49.0	43.0
Flue gas mass flow rate	min	kg/h	91	114	138	160	183	205
	max		448	560	676	789	907	1026
Flue gas temperature	min	°C	30	30	30	30	30	30
	max		80	80	80	80	80	80
Maximum counter pressure for flue gas outlet		Pa	130	120	130	150	150	150
Chimney losses	80/60 °C	%	2.3	2.3	2.3	2.3	2.3	2.3
Stoppage loss (EN15502) (Including heat exchanger insulation kit)	$(\Delta T = 30K)^{(1)}$	W %	464 0.17	479 0.14	493 0.12	508 0.11	522 0.10	537 0.09
Number of stars (92/42/EEC)			4	4	4	4	4	4
(1) ΔT = (boiler temperature – ambier	nt temperature).	I .	1					

Tab.5 Central heating circuit data

rabio contrar moating on care date	-							
C 330 ECO			280	350	430	500	570	650
Water content		I	49	60	71	82	93	104
Water operating pressure	min	bar	0.8	0.8	0.8	0.8	0.8	0.8
Water operating pressure (PMS)	max	bar	7	7	7	7	7	7
Water temperature	max	°C	110	110	110	110	110	110
Operating temperature	max	°C	90	90	90	90	90	90
Water resistance (ΔT=20K)		mbar	113	110	120	110	125	130
Water resistance (ΔT=11K)		mbar	374	364	397	364	413	435
Minimum flow		m ³ /h	3.4	4.2	5.1	5.9	6.8	7.8

Tab.6 Electrical data

C 330 ECO			280	350	430	500	570	650
Supply voltage		V~/Hz	230/50	230/50	230/50	230/50	230/50	230/50
Power consumption – full load	max	W	279	334	426	543	763	723
Power consumption – part load	min	W	46	46	58	61	62	55
Power consumption – standby	min	W	6	6	6	6	6	7
Electrical protection index ⁽¹⁾		IP	X1B	X1B	X1B	X1B	X1B	X1B
Fuse – main fuse F2		(A)	10	10	10	10	10	10
Fuse – PCB F1		(A)	2	2	2	2	2	2
(1) For a room-sealed system.	'	'				<u>'</u>		

Tab.7 Other data

C 330 ECO			280	350	430	500	570	650
Total weight (empty)		kg	364	398	433	495	531	568
Average acoustic level (1) at a distance of 1 metre from the boiler		dB(A)	56	56	56	56	56	56
Ambient temperature	max	°C	40	40	40	40	40	40
(1) For a sealed installation		•					•	

Tab.8 Technical parameters

C 330 ECO			280	350	430	500	570	650
Condensing boiler			Yes	Yes	Yes	-	-	-
Low-temperature boiler ⁽¹⁾			No	No	No	-	-	-
B1 boiler			No	No	No	-	-	-
Cogeneration space heater			No	No	No	-	-	-
Combination heater			No	No	No	-	-	-
Rated heat output	Prated	kW	261	327	395	-	-	-
Useful heat output at nominal heat output and high temperature operation ⁽²⁾	P_4	kW	261	327	395	-	-	-
Useful heat output at 30% of rated heat output and low temperature regime ⁽¹⁾	P ₁	kW	87.6	109.5	132.0	-	-	-
Seasonal space heating energy efficiency	η_s	%	-	-	-	-	-	-
Useful efficiency at rated heat output and high temperature regime ⁽²⁾	η_4	%	88.2	88.3	88.4	-	-	-
Useful efficiency at 30% of rated heat output and low temperature regime ⁽¹⁾	η_1	%	98.6	98.6	98.5	-	-	-
Auxiliary electricity consumption								
Full load	elmax	kW	0.279	0.334	0.426	-	-	-
Part load	elmin	kW	0.060	0.060	0.080	-	-	-
Standby mode	P_{SB}	kW	0.006	0.006	0.006	-	-	-
Other items								
Standby heat loss	P _{stby}	kW	-	-	-	-	-	-
Ignition burner power consumption	P _{ign}	kW	-	-	-	-	-	-
Annual energy consumption	Q_{HE}	kWh GJ	-	-	-	-	-	-

C 330 ECO			280	350	430	500	570	650
Sound power level, indoors	L _{WA}	dB	69	69	73	-	-	-
Emissions of nitrogen oxides	NO _X	mg/kWh	46	50	49	-	-	-

⁽¹⁾ Low temperature means 30 °C for condensing boilers, 37 °C for low temperature boilers and 50 °C (at heater inlet) for other heating appliances.

See

Refer to the back cover for contact details.

3.2.2 C 630 ECO technical data

Tab.9 General

C 630 ECO			560	700	860	1000	1140	1300
Number of sections			2x5	2x6	2x7	2x8	2x9	2x10
Nominal output (Pn) (80/60 °C)	min max ⁽¹⁾	kW	69 522	87 654	123 790	122 922	148 1060	158 1202
Nominal output (Pn) (50/30 °C)	max ⁽¹⁾	kW	558	700	850	994	1148	1303
Nominal load (Qnh) (Hi)	min max ⁽¹⁾	kW	72 532	91 666	128 804	127 938	153 1078	162 1220
Nominal load (Qnh) (Hs)	min max ⁽¹⁾	kW	80 590	101 738	142 890	141 1040	170 1196	180 1354
Full load central heating efficiency (Hi) (80/60 °C) (92/42/EEC)		%	98.0	98.1	98.2	98.3	98.4	98.5
Full load central heating efficiency (Hi) (50/30 °C) (EN15502)		%	104.8	105.2	105.6	106.0	106.4	106.8
Central heating efficiency under part load (Hi) (Return temperature 60 °C)		%	94.7	95.3	95.8	96.3	96.8	97.3
Annual efficiency G20 (DIN 4702, Part 8)		%	109.6	109.5	109.4	109.3	109.2	109.1
Part load central heating efficiency (92/42 EEC) (Return temperature 30 °C)		%	109.2	109.0	108.8	108.6	108.3	108.1

Tab.10 Gas and flue gas data

C 630 ECO			560	700	860	1000	1140	1300
Gas inlet pressure G20 (H gas)	min	mbar	17	17	17	17	17	17
	max		30	30	100	100	100	30
Gas inlet pressure G25 (L gas)	min	mbar	17	17	17	17	17	17
	max		30	30	100	100	100	30
Gas consumption G20 (H gas)	min	m ³ /h	7.6	9.6	13.5	13.4	16.2	17.2
	max		56.2	70.4	85.0	99.2	114.0	129.2
Gas consumption G25 (L gas)	min	m ³ /h	8.9	11.2	15.8	15.6	18.8	19.9
	max		65.4	82.0	99.0	115.4	132.6	150.2
NOx annual emissions G20	O ₂ = 0%	ppm	28.9	31.7	30.6	28.9	30.6	27
EN15502								
NOx annual emissions G20	H _i	mg/kWh	51.0	56.0	54.0	51.0	54.0	47.6
EN15502								
NOx annual emissions G20	H _s	mg/kWh	45.9	50.5	48.6	45.9	48.6	42.9
EN15502								
Flue gas mass flow rate	min	kg/h	182	228	276	320	366	410
	max		896	1120	1352	1578	1814	2052

⁽²⁾ High temperature operation means 60 °C return temperature at heater inlet and 80 °C feed temperature at heater outlet.

C 630 ECO			560	700	860	1000	1140	1300
Flue gas temperature	min	°C	30	30	30	30	30	30
	max		80	80	80	80	80	80
Maximum counter pressure for flue gas outlet		Pa	130	120	130	130	130	150
Chimney losses	80/60 °C	%	2.3	2.3	2.3	2.3	2.3	2.3
Stoppage loss (EN15502) (Including heat exchanger insulation kit)	$(\Delta T = 30K)^{(1)}$	W %	928 0.17	958 0.14	986 0.12	1016 0.11	1044 0.10	1074 0.09
(1) ΔT = (boiler temperature – ambient temperature).								

Tab.11 Central heating circuit data

C 630 ECO			560	700	860	1000	1140	1300
Water content	(per unit)	I	49	60	71	82	93	104
Water operating pressure	min	bar	0.8	0.8	0.8	0.8	0.8	0.8
Water operating pressure (PMS)	max	bar	7	7	7	7	7	7
Water temperature	max	°C	110	110	110	110	110	110
Operating temperature	max	°C	90	90	90	90	90	90
Water resistance (ΔT=20K)	(per unit)	mbar	113	110	120	110	125	130
Water resistance (ΔT=11K)	(per unit)	mbar	374	364	397	364	413	435
Minimum flow	(per unit)	m ³ /h	3.4	4.2	5.1	5.9	6.8	7.8

Tab.12 Electrical data

			1	1	1	1	1	1
C 630 ECO			560	700	860	1000	1140	1300
Supply voltage		V~/Hz	230/50	230/50	230/50	230/50	230/50	230/50
Power consumption – full load	max	W	558	668	852	1086	1526	1446
Power consumption – part load	min	W	92	92	116	122	124	110
Power consumption – standby	min	W	12	12	12	12	12	14
Electrical protection index ⁽¹⁾		IP	X1B	X1B	X1B	X1B	X1B	X1B
Fuse – main fuse F2		(A)	10	10	10	10	10	10
Fuse – PCB F1		(A)	2	2	2	2	2	2
(1) For a room-sealed system.								

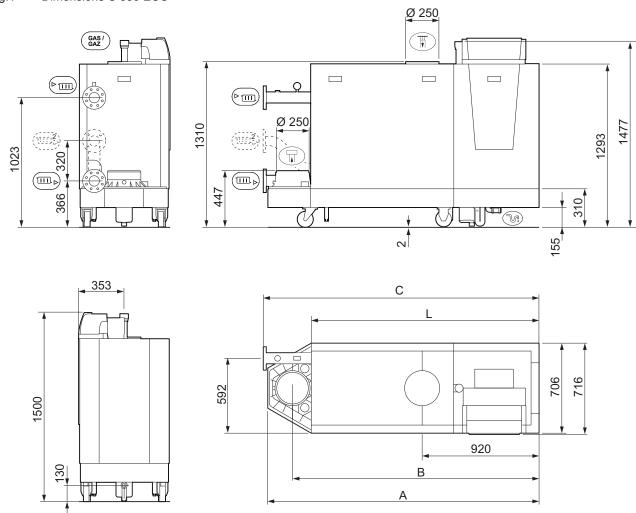
Tab.13 Other data

C 630 ECO			560	700	860	1000	1140	1300
Total weight (empty)		kg	707	771	837	957	1025	1095
Average acoustic level (1) at a distance of 1 metre from the boiler		dB(A)	58	58	58	58	58	58
Ambient temperature	max	°C	40	40	40	40	40	40
(1) For a sealed installation	•	•	•	•	•	•	•	•

3.3 Dimensions and connections

3.3.1 Boiler type C 330 ECO

Fig.1 Dimensions C 330 ECO

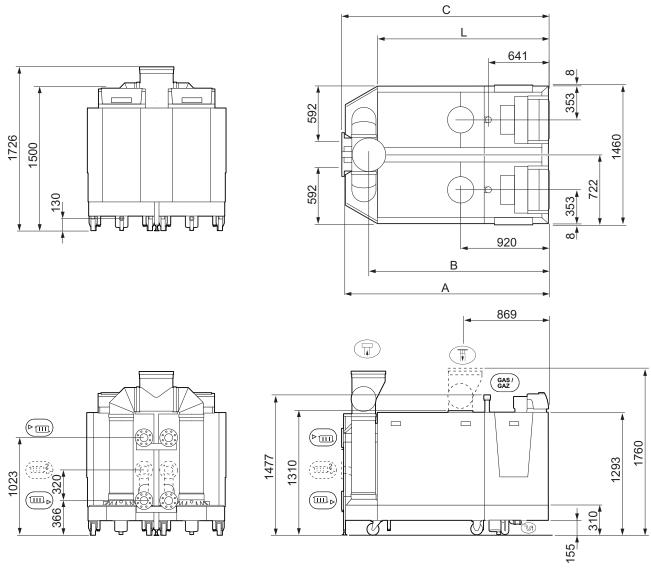


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	C 330 ECO	280	350	430	500	570	650
Α		1833 mm	1833 mm	1833 mm	2142 mm	2142 mm	2142 mm
В		1635 mm	1635 mm	1635 mm	1944 mm	1944 mm	1944 mm
С		1862 mm	1862 mm	1862 mm	2172 mm	2172 mm	2172 mm
L		1490 mm	1490 mm	1490 mm	1800 mm	1800 mm	1800 mm
• 111	Central heating circuit flow	Flange NW 80 (DIN 2576)					
	Central heating circuit return	Flange NW 80 (DIN 2576)					
GAS/ GAZ	Gas connection	G2"	G2"	G2"	G2"	G2"	G2"
V:	Condensation outlet	Ø 32 mm (in- ternal)					
Tip Tip	Flue gas outlet	Ø 250 mm					
莆	Air supply	Ø 250 mm					
111 ²	Second return (optional)	Flange NW 65 (DIN 2576)					

3.3.2 Boiler type C 630 ECO

Fig.2 DimensionsC 630 ECO



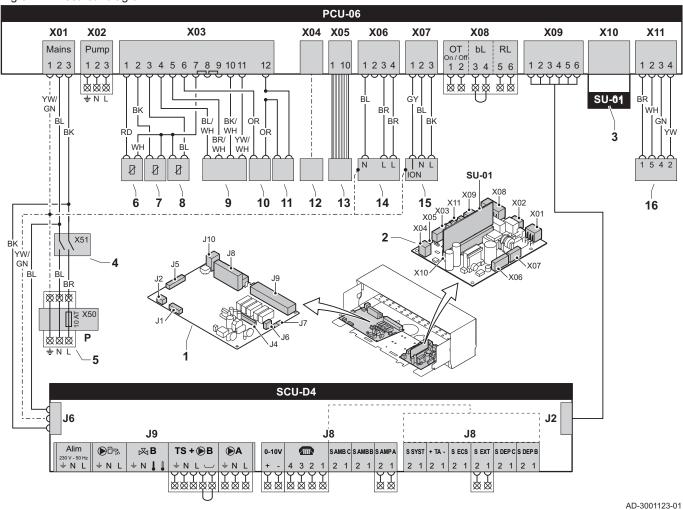
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	C 630 ECO	560	700	860	1000	1140	1300
Α		1833 mm	1833 mm	1833 mm	2142 mm	2142 mm	2142 mm
В		1582 mm	1582 mm	1582 mm	1892 mm	1892 mm	1892 mm
С		1862 mm	1862 mm	1862 mm	2172 mm	2172 mm	2172 mm
L		1490 mm	1490 mm	1490 mm	1800 mm	1800 mm	1800 mm
> 111	Central heating circuit flow	Flange NW 80 (DIN 2576)					
□ ▶	Central heating circuit return	Flange NW 80 (DIN 2576)					
GAS/ GAZ	Gas connection	G2"	G2"	G2"	G2"	G2"	G2"
₹	Condensation outlet	Ø 32 mm (internal)	Ø 32 mm (in- ternal)	Ø 32 mm (internal)			
T _I	Flue gas outlet	Ø 350 mm					

	C 630 ECO	560	700	860	1000	1140	1300
買	Air supply	Ø 250 mm					
	Air supply manifold	Ø 350 mm					
Ⅲ ₽	Second return (optional)	Flange NW					
		65 (DIN					
		2576)	2576)	2576)	2576)	2576)	2576)

3.4 Electrical diagram

Fig.3 Electrical diagram



- 1 Extended PCB (SCU-D4)
- 2 Standard PCB (PCU-06)
- 3 Safety PCB (SU-01)4 On/Off switch (AU)
- 5 Power supply (P)
- o Fi
- 6 Flow sensor (Fs)
- 7 Heat exchanger temperature sensor (HEs)
- 8 Return temperature sensor (RTs)

- 9 Parameter storage (PSU)
- 10 High limit switch (HLs)
- 11 Air pressure differential switch (PS)
- 12 Computer connection (PC)
- 13 Control panel (HMI)
- **14** Gas valve unit (GB)
- 15 Ignition transformer (IT)
- **16** Fan (FAN)

4 Description of the product

4.1 General description

The C 330 ECO / C 630 ECO is a freestanding gas boiler with the following characteristics:

- · High-efficiency heating.
- · Heat exchanger made of cast aluminium sections.
- · Limited emissions of polluted substances.
- · Has transport wheels as standard.
- Left- or right-hand version of the water and flue gas side connections possible.
- Separable for assembly in boiler room.
- DIEMATIC iSystem or IniControl control panel.
- The C 630 ECO comprises a left-hand and a right-hand module. These are combined on the flue gas side (optionally on the air side) and also in terms of their casing.

The following boiler types are available:

C 330 ECO 280	279 kW output
C 330 ECO 350	350 kW output
C 330 ECO 430	425 kW output
C 330 ECO 500	497 kW output
C 330 ECO 570	574 kW output
C 330 ECO 650	651 kW output
C 630 ECO 560	558 kW output
C 630 ECO 700	700 kW output
C 630 ECO 860	850 kW output
C 630 ECO 1000	994 kW output
C 630 ECO 1140	1148 kW output
C 630 ECO 1300	1303 kW output

4.2 Operating principle

4.2.1 Regulating the water temperature

The boiler is fitted with an electronic temperature control with a flow and return temperature sensor. The flow temperature can be adjusted between 20°C and 90°C. The boiler modulates back when the set flow temperature is reached. The switch-off temperature is the set flow temperature + 5°C.

4.2.2 Protection against shortage of water

The boiler is fitted with protection against a shortage of water that is based on temperature differences (difference in temperature between flow and return). From $\Delta T = 25 \text{K}$ (factory setting) the boiler reduces its output by modulating to remain in operation as long as possible. At $\Delta T \geq 25 \text{K}$, the boiler goes into part load. At $\Delta T > 25 + 5 \text{K}$, the boiler goes into a normal control stop (blocking).

4.2.3 Maximum protection

The maximum temperature protection shuts the boiler down in the event that an excessively high water temperature (110 °C) is reached. Once the cause of the fault has been remedied, the boiler can be unlocked by pressing the **RESET** button for 2 seconds.

4.2.4 Air pressure differential switch

Before a start and when the boiler is in operation, the air pressure differential switch **PS** measures the difference in pressure between the measuring points on the back of the heat exchanger p^+ and the air box p^- .

If the pressure difference is greater than 6 mbar, then the boiler will lock out. Once the cause of the fault has been remedied, the boiler can be unlocked by pressing the **RESET** button for 2 seconds.

4.2.5 Circulating pump

The boiler does not have a built-in pump. A circulating pump can be installed on the connector of the standard control PCB. This can be an on/off pump or a modulating pump (with 0 - 10 V control).

The pump settings can be changed.



See

Manual for the control panel.



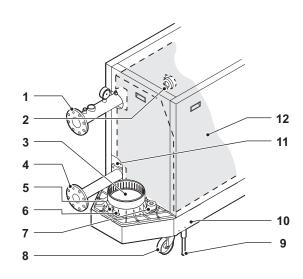
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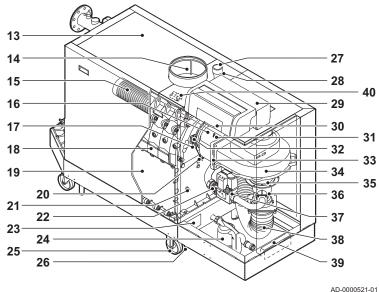
Analogue output (Ctrl), page 44

4.3 Main components

4.3.1 Main components C 330 ECO

Fig.4 C 330 ECO



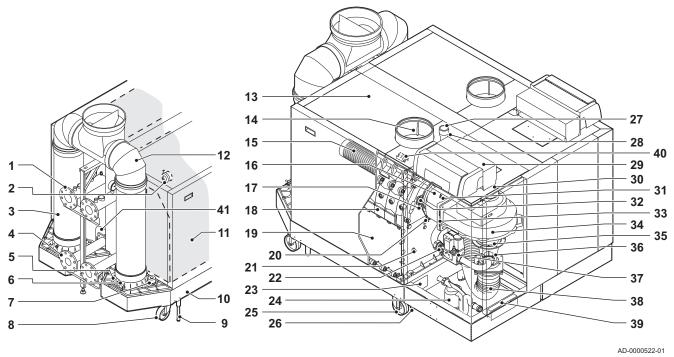


- I Flow connection
- 2 Air pressure differential switch
- 3 Flue gas outlet
- 4 Return connection
- 5 Flue gas measuring point
- 6 Flue gas thermostat (if present)
- 7 Condensate collector sealant cap
- 8 Pivoting castor
- 9 Adjustment bolt
- 10 Frame
- 11 Second return connection
- 12 Heat exchanger insulation kit (if present)
- 13 Boiler casing
- 14 Air supply
- **15** Burner
- 16 Adapter
- 17 Ignition/ionisation electrode
- 18 Heat exchanger
- 19 Inspection trap
- 20 Temperature sensor for heat exchanger
- 21 Return temperature sensor

- 22 Gas filter
- 23 Data plate
- 24 Siphon
- 25 Transport wheels
- 26 Adjustment bolt
- 27 Gas connection
- 28 Gas pressure measuring point
- 29 Control panel
- 30 Installation option for weather-compensated boiler control
- 31 Pressure measurement point
- 32 Flame inspection window
- 33 Non-return valve
- **34** Fan
- 35 Extension piece
- 36 Venturi
- 37 Gas valve unit
- 38 Air supply hose
- 39 Document holder
- 40 Ignition transformer

4.3.2 Main components C 630 ECO

Fig.5 C 630 ECO



- 1 Flow connection
- 2 Air pressure differential switch
- 3 Flue gas outlet
- 4 Return connection
- 5 Flue gas measuring point
- 6 Flue gas thermostat (if present)
- 7 Condensate collector sealant cap
- 8 Pivoting castor
- 9 Adjustment bolt
- 10 Frame
- 11 Heat exchanger insulation kit (if present)
- 12 Flue gas collector
- 13 Boiler casing
- 14 Air supply
- 15 Burner
- 16 Adapter
- 17 Ignition/ionisation electrode
- 18 Heat exchanger
- 19 Inspection trap
- 20 Temperature sensor for heat exchanger
- 21 Return temperature sensor

- 22 Gas filter
- 23 Data plate
- 24 Siphon
- 25 Transport wheels
- 26 Adjustment bolt
- 27 Gas connection
- 28 Gas pressure measuring point
- 29 Control panel
- 30 Installation option for weather-compensated boiler control
- 31 Pressure measurement point
- 32 Flame inspection window
- 33 Non-return valve
- **34** Fan
- 35 Extension piece
- 36 Venturi
- 37 Gas valve unit
- 38 Air supply hose
- 39 Document holder
- 40 Ignition transformer
- 41 Second return connection

4.4 Control panel description

The boiler is supplied with a DIEMATIC iSystem or IniControl control panel. The control panel is mounted in the boiler.



See

- · Assembly instructions for the control panel.
- Manual for the control panel.



| Important

For operation of the C 630 ECO boiler: each module has its own control panel.

4.5 Standard delivery

The delivery includes:

- The boiler
- · Complete siphon
- Filling and drain valve
- Gas filter
- Documentation
- · Water quality instructions

Please fit these components in the order described in this manual.



Important

This manual only deals with the standard scope of supply. For the installation or mounting of any accessories delivered with the boiler, refer to the corresponding mounting instructions.

4.6 Accessories and options

Various accessories can be obtained for the boiler.



Important

Contact us for more information.

5 Before installation

5.1 Installation regulations

Λ

Warning

The boiler must be installed by a qualified installer in accordance with local and national regulations.

5.2 Choice of the location

Fig. 6 Position of data plate

5.2.1 Data plate

The identification plate is located behind the boiler casing on the frame, near the syphon connection. The data plate provides important information on the boiler specifications such as the model and the device category.

5.2.2 Installing the boiler C 330 ECO

- Use the guidelines and the required installation space as a basis for determining the correct place to install the boiler.
- When determining the correct installation area, take account of the permitted position of the flue gas outlet and/or air supply outlet.
- Ensure that there is sufficient space around the boiler for good access and ease of maintenance.
- A technical clearance of at least 80 cm is required at the front (service side) of the boiler. However, we recommend that the clearance is at least 100 cm. Above the boiler, we recommend a clearance of at least 40 cm (when using an air inlet filter, the clearance must be at least 65 cm). A minimum of 30 cm is required on the side of the flue gas outlet, and a minimum of 30 cm is also required on the other side (or 80 cm, if this is operating side).

Λ

Danger

It is forbidden to store, even temporarily, combustible products and substances in or near the boiler.

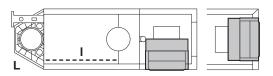


Caution

- The boiler must be installed in a frost-free area.
- An earthed electrical connection must be available close to the boiler
- A connection to the drain must be present for the condensate drain close to the boiler.
- L Left-hand version
- R Right-hand version
- I Inspection trap (service side)

The service side with the inspection trap on the heat exchanger is considered to be the front of the boiler. The boiler is available in both a 'left-hand' and 'right-hand' version. This means that the hydraulic connections and the flue gas discharge are situated on either the left or the right-hand side of the boiler. The control panel is on the front as standard, but can easily be rotated so that it is on the short side.

Fig.7 Left-hand and right-hand versions



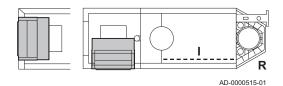
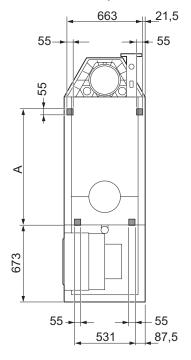


Fig.8 Position of the adjustment bolts



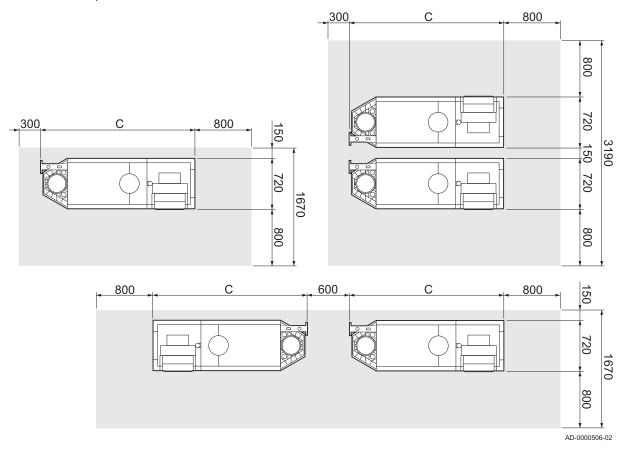
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The adjustment bolts must be used to make the boiler level and to raise the wheels off the floor. Turn the adjustment bolts outwards as soon as the boiler is placed in the correct position. The figure shows the support surface of the boiler (this is the position of the adjustment bolts).

Tab.14 Dimensions A (mm)

C 330 ECO	A (mm)
280	723
350	723
430	723
500	1032
570	1032
650	1032

Fig.9 Clearance required



For the dimensions of C:



5.2.3 Installing the boiler C 630 ECO

- Use the guidelines and the required installation space as a basis for determining the correct place to install the boiler.
- When determining the correct installation area, take account of the permitted position of the flue gas outlet and/or air supply outlet.
- Ensure that there is sufficient space around the boiler for good access and ease of maintenance.
- A technical clearance of at least 80 cm is required at the front (service side) of the boiler. However, we recommend that the clearance is at least 100 cm. Above the boiler, we recommend a clearance of at least 40 cm (when using an air inlet filter, the clearance must be at least 65 cm). A minimum of 30 cm is required on the side of the flue gas outlet, and a minimum of 30 cm is also required on the other side (or 80 cm, if this is operating side).

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Danger

It is forbidden to store, even temporarily, combustible products and substances in or near the boiler.



Caution

- The boiler must be installed in a frost-free area.
- An earthed electrical connection must be available close to the hoiler
- A connection to the drain must be present for the condensate drain close to the boiler.

The boiler is not available with a choice between 'left-hand' and 'right-hand' versions. The control panel is on the front as standard, but can easily be rotated so that it is on the short side.



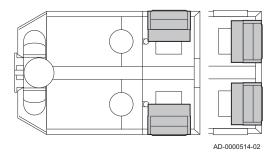
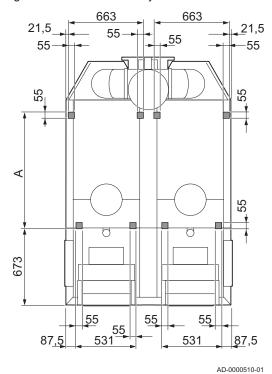


Fig.11 Position of the adjustment bolts

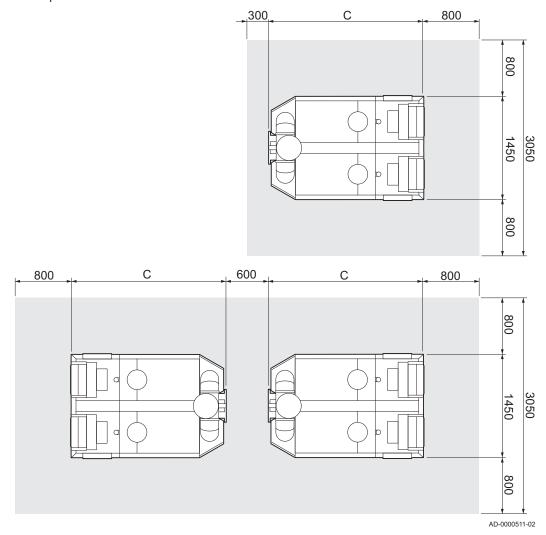


The adjustment bolts must be used to make the boiler level and to raise the wheels off the floor. Turn the adjustment bolts outwards as soon as the boiler is placed in the correct position. The figure shows the support surface of the boiler (this is the position of the adjustment bolts).

Tab.15 Dimensions A (mm)

C 630 ECO	A (mm)
560	723
700	723
860	723
1000	1032
1140	1032
1300	1032

Fig.12 Clearance required



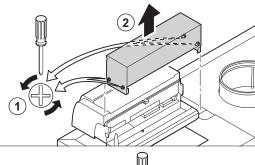
For the dimensions of C:

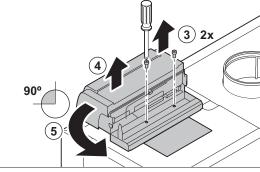


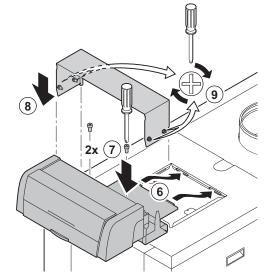
5.2.4 Rotating the control panel

The control panel is on the front as standard, but can easily be rotated so that it is on the short side.

Fig.13 Rotating the control panel





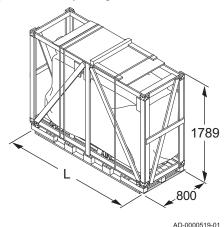


1. Unscrew the 4 lateral retaining screws in the control panel.

- 2. Remove the protective cover.
- 3. Unscrew the 2 bottom plate screws.
- 4. Lift up the control panel with the bottom plate.
- Turn the control panel and the bottom plate into position on the short side.
- 6. Slide the lips of the bottom plate into the appropriate slots.
- 7. Tighten the 2 bottom plate screws.
- 8. Replace the protective cover.
- 9. Tighten the 4 lateral retaining screws again.

5.3 Transport

Fig.14 Boiler package



Tab.16 Boiler package dimensions

C 330 ECO	L (mm)
280	1920
350	1920
430	1920
500	2230
570	2230
650	2230



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Important

For work on the C 630 ECO boilers: The features and instructions described apply to each boiler module.

The boiler is supplied fully assembled on a pallet. See the diagram and table for the dimensions. The base of the package is a pallet 80 cm wide. This means that it can be transported with a pallet truck or using four-wheel transport boards. Without the packaging, the boiler is 720 mm wide,

(without casing 700 mm), meaning that it will fit through all standard doorways. The boiler has wheels so that, once the packaging has been removed, it can easily be moved around.

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Caution

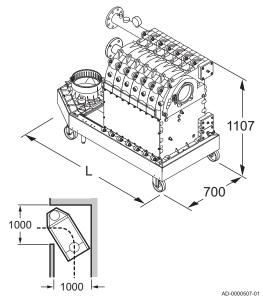
The wheels are designed for transport purposes only and not for use when the boiler is in its final position.

If required for internal transport, the boiler can be dismantled into smaller parts for transport. The boiler can be stripped of:

- Casing panels
- Gas/air components
- The frame section on the control panel side

See drawing and table for the dimensions and weight of the largest remaining transport element (frame element with heat exchanger and water connections).

Fig.15 Transport element



Tab.17 Boiler dimensions and weight

C 330 ECO	L (mm)	Weight (kg)
280	1160	249
350	1160	283
430	1160	317
500	1469	356
570	1469	390
650	1469	424



See

Refer to the installation manual supplied for information on how to install the boiler parts.

6 Installation

6.1 General

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Warning

The boiler must be installed by a qualified installer in accordance with local and national regulations.

6.2 Hydraulic connections

6.2.1 Rinsing the system

Installation must be carried out in accordance with the prevailing regulations, codes of practice and the recommendations in this manual.

Before a new boiler can be connected to an existing or new system, the entire system must be thoroughly cleaned and flushed. This step is absolutely crucial. The flushing helps to remove residue from the installation process (weld slag, fixing products etc.) and accumulations of dirt (silt, mud etc.)



Important

- Flush the system with a volume of water equivalent to at least three times the volume of the system.
- Flush the DHW pipes with at least 20 times the volume of the pipes.

6.2.2 Connecting the heating circuit



Important

For C 630 ECO: the properties described and the instructions apply to each boiler module.

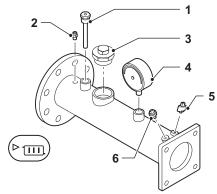
- 2. Fit the outlet pipe for CH water to the CH flow ▶□□.
- 4. Connect a safety valve to the boiler's flow connection.
- 5. Connect the pump to the boiler's return connection.

Always connect the boiler in a way that will guarantee the water flow through the unit during operation. When the boiler is used in a system with two return pipes, the return pipe must be used as a cold return. The second return pipe (if connected) is then used as a hot return. Contact us for more information.

The flow pipe is fitted with the following components:

- Immersion tube for a temperature sensor for an external control (½").
- 2 Air vent (1/4").
- 3 Safety valve connection (1½").
- 4 Pressure gauge (1/2").
- 5 Flow sensor (M6).
- 6 High-limit thermostat (M4).

Fig.16 Flow pipe



Caution

If using synthetic pipes, follow the manufacturer's (connection) instructions.

6.2.3 Connecting the condensate discharge pipe



Important

For C 630 ECO: the properties described and the instructions apply to each boiler module.

1. Fit a plastic drain pipe of Ø 32 mm or larger to the siphon, terminating in the drain.



Caution

- Use only plastic material for the discharge pipe due to the acidity (pH 2 to 5) of the condensate.
- Do not make a fixed connection in order to prevent an overpressure in the siphon.
- 2. Fit a stench-trap or siphon in the drain pipe.



Caution

- Never seal the condensate drain.
- The drain pipe must slope down at least 5 10 mm per metre, the maximum horizontal length is 5 metres.
- Condensed water must not be discharged into a gutter.

6.3 Gas connection



Important

For C 630 ECO: the properties described and the instructions apply to each boiler module.



Warning

- Before starting work on the gas pipes, turn off the main gas tap.
- Before installing, check that the gas meter has sufficient capacity. Take into account the consumption of all appliances.
- Notify the local energy company if the gas meter has insufficient capacity.
- 1. Remove the dust cap on the gas connection GAS/
- 2. Fit the gas supply pipe to the gas supply GAZ.
- 3. Also fit a gas isolation valve in this pipe, near the boiler.



Caution

- Remove dirt and dust from the gas pipe.
- Always perform welding work at a sufficient distance from the boiler.
- The boiler is fitted with a gas filter as standard.

6.4 Air supply/flue gas connections

The boiler is suitable for the following types of flue gas connections:



See

Certifications, page 11.

Follow applicable local guidelines when connecting the flue gas discharge and air supply pipes to the boiler. The diameters of the pipes must be defined in accordance with the standards in force in your country. The total resistance of the flue gas outlet and air inlet must not exceed the maximum acceptable resistance.

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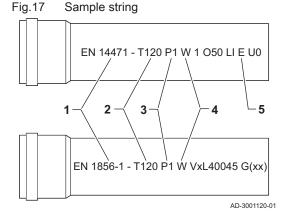
Important

- With room-sealed operation, make sure the dirt trap in the boiler air supply remains accessible. For example, fit a T piece with an inspection trap in the air supply pipe directly above the boiler.
- With a flue gas connection of two or more C 330 ECO boilers, certain fan speeds need to be changed. Change the values of relevant parameters for each boiler in the flue gas connection. Set them to the values as specified in the parameter table for the C 630 ECO boiler.

6.4.1 Material

Use the string on the flue gas outlet material to check whether it is suitable for use on this appliance.

- 1 EN 14471 of EN 1856–1: The material is CE approved according to this standard. For plastic this is EN 14471, For aluminium and stainless steel this is EN 1856-1.
- 2 T120: The material has temperature class T120. A higher number is also allowed, but not lower.
- 3 P1: The material falls into pressure class P1. H1 is also allowed.
- 4 W: The material is suitable for draining condensation water (W='wet'). D is not allowed (D='dry').
- **5 E**: The material falls into fire resistance class E. Class A to D are also allowed, F is not allowed. Only applicable to plastic.





Warning

- The coupling and connection methods may vary depending on the manufacturer. It is not permitted to combine pipes, coupling and connection methods from different manufacturers. This also applies to roof feed-throughs and common channels.
- The materials used must comply with the prevailing regulations and standards.

Tab.18 Overview of material properties

Version	Flue gas outlet		Air supply	
	Material	Material properties	Material	Material properties
Single-wall, rigid	Plastic ⁽¹⁾ Stainless steel ⁽²⁾ Thick-walled, aluminium ⁽²⁾	With CE marking Temperature class T120 or higher Condensate class W (wet) Pressure class P1 or H1 Fire resistance class E or better ⁽³⁾	Plastic Stainless steel Aluminium	With CE marking Pressure class P1 or H1 Fire resistance class E or better ⁽³⁾

- (2) according to EN 1856
- (3) according to EN 13501-1

6.4.2 Dimensions of flue gas outlet pipe

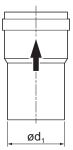
d₁ External dimensions of flue gas outlet pipe

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Warning

The pipes connected to the flue gas adapter must satisfy the following dimension requirements.

Fig.18 Dimensions of open connection



Tab.19 Dimensions of pipe

	d ₁ (min-max)
250 mm	249 - 251 mm
350 mm	349 - 351 mm

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6.4.3 Length of the air and flue gas pipes

The maximum length of the flue gas outlet and air supply channel vary depending on the appliance type; consult the relevant chapter for the correct lengths.



Important

- When using bends, the maximum chimney length (L) must be shortened according to the reduction table.
- For adaptation to another diameter use approved transitions

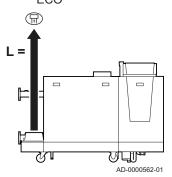
■ Room-ventilated model (B₂₃, B_{23P})

With a room-ventilated version, the air supply opening stays open; only the flue gas outlet opening is connected. This will ensure that the boiler obtains the necessary combustion air directly from the installation area.



Caution

- The air supply opening must stay open.
- The installation area must be equipped with the necessary air supply openings. These openings must not be obstructed or shut off.
- If the boiler, in room-ventilated operation, has been set up in a (very) dusty room, use the air supply filter (accessory).
- Use of the air inlet filter is compulsory when the boiler is exposed to building dust.
- Fig.19 Room-ventilated version C 330 ECO



L Length of the flue gas outlet channel to roof feed-through $\overline{\mbox{\sc h}}$ Flue gas outlet

Tab.20 Maximum length for open design

. ab. = b				
C 330 ECO	Maximum length L (in metres) ⁽¹⁾			
C 330 ECO	Ø 150 mm	Ø 180 mm	Ø 200 mm	Ø 250 mm
280	20	50	50	50
350	11	30	50	50
430	8	22	39	50
500	7	18	32	50
570	5	13	24	50
650	5	12	21	50
(1) Calculated with rigid tube and discharge without cover ("free" opening)				

Fig.20 Room-ventilated version C 630

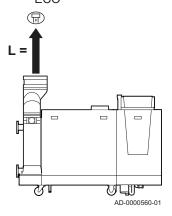


Fig.21 Room-sealed version C 330 ECO

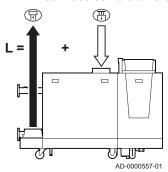
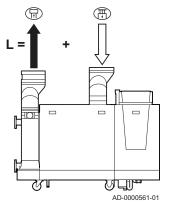


Fig.22 Room-sealed version C 630 ECO



L Length of the flue gas outlet channel to roof feed-through Flue gas outlet

Tab.21 Maximum length for open design

C 630 ECO	L (in metres) ⁽¹⁾		
C 030 ECO	Ø 250 mm	Ø 300 mm	Ø 350 mm
560	50	50	50
700	31	50	50
860	20	50	50
1000	11	39	50
1140	5	26	50
1300	3	19	50
(1) Calculated with rigid tube and discharge without cover ("free" opening)			

■ Room-sealed model (C₃₃, C₆₃, C₉₃)

With a room-sealed version, both the flue gas outlet and the air supply openings are connected (in parallel).

- L Combined length of the flue gas outlet and air supply channel to the roof feed-through
- ☐ Flue gas outlet
- T Air supply

Tab.22 Maximum length for room-sealed operation

C 330 ECO	Maximum length L (in metres) ⁽¹⁾		
C 330 ECO	Ø 200 mm	Ø 250 mm	Ø 300 mm
280	42	50	50
350	21	50	50
430	13	50	50
500	10	50	50
570	5	34	50
650	4	30	50
(1) Calculated with rigid tube and discharge without cover ("free" opening)			

- L Combined length of the flue gas outlet and air supply channel to the roof feed-through
- ☐ Flue gas outlet
- T Air supply

Tab.23 Maximum length for room-sealed operation

C 630 ECO	Maximum length L (in metres) ⁽¹⁾		
C 630 ECO	Ø 300 mm	Ø 350 mm	Ø 400 mm
560	50	50	50
700	43	50	50
860	26	50	50
1000	13	35	50
1140	5	16	24
1300	<u> </u>	10	12
(1) Calculated with rigid tube and parallel 350 mm top conduit			

■ Connection in different pressure areas (C₅₃)

Combustion air supply and flue gas discharge are possible in different pressure areas and semi-CLV systems, with the exception of the coastal area. The maximum permitted height difference between the combustion air supply and the flue gas outlet is 36 m.

Fig.23 Various pressure zones C 330 ECO

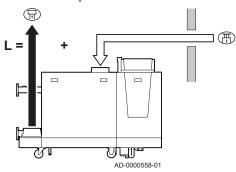
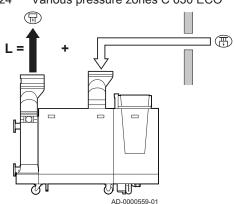


Fig.24 Various pressure zones C 630 ECO



- L Total length of the flue gas outlet and air supply duct
- ☐ Connecting the flue gas outlet
- The Connecting the air supply

Tab.24 Maximum length in the various pressure zones

C 330 ECO	Maximum length L (in metres) ⁽¹⁾		
C 330 LCC	Ø 250 mm		
280	50		
350	50		
430	50		
500	50		
570	49		
650	40		
(1) Calculated with rigid tube and 90° bend and discharge without cover ("free"			

- L Total length of the flue gas outlet and air supply duct
- ☐ Connecting the flue gas outlet
- 晋 Connecting the air supply

Tab.25 Maximum length in the various pressure zones

C 630 ECO	Maximum length L (in metres) ⁽¹⁾		
C 030 ECO	Ø 350 mm	Ø 400 mm	
560	50	50	
700	50	50	
860	50	50	
1000	33	50	
1140	_	22	
1300	_	_	

Calculated with rigid tube and 90° bend and discharge without cover ("free" opening)

Reduction table

Tab.26 Pipe reduction for each element used

Diameter	Pipe reduction (in metres)	
	45° bend	90° bend
150 mm	1.2	2.1
180 mm	1.4	2.5
200 mm	1.6	2.8
250 mm	2.0	3.5
300 mm	2.4	4.2
350 mm	2.8	4.9
400 mm	3.2	5.6

6.4.4 Additional guidelines

Installation

 For installing the flue gas outlet and air supply materials, refer to the instructions of the manufacturer of the relevant material. After installation, check at least all flue gas outlet and air supply parts for tightness.

Warning

If the flue gas outlet and air supply materials are not installed in accordance with the instructions (e.g. not leak-proof, not correctly bracketed), this can result in dangerous situations and/or physical injury.

 Make sure that the flue gas outlet pipe towards the boiler has a sufficient gradient (at least 50 mm per metre) and that there is a sufficient condensate collector and discharge (at least 1 m before the outlet of the boiler). The bends used must be larger than 90° to guarantee the gradient and a good seal on the lip rings.

Condensation

- Direct connection of the flue gas outlet to structural ducts is not permitted because of condensation.
- If condensate from a plastic or stainless steel pipe section can flow back to an aluminium part in the flue gas outlet, this condensate must be discharged via a collector before it reaches the aluminium.



Important

Contact us for more information.

6.4.5 Connecting the flue gas outlet

The boiler is equipped with a mechanical flue gas non-return valve as standard. This prevents flue gases from flowing back into the boiler when it is not in operation (cascade settings for example).

Proceed as follows to connect the flue gas outlet:

- 1. Fit the flue gas outlet pipe to the boiler.
- Fit the subsequent flue gas outlet pipes in accordance with the manufacturer's instructions.



Caution

- The pipes must be flue gas-tight and corrosion-resistant.
- The materials used must comply with the prevailing regulations and standards.
- The flue gas outlet pipe must be smooth and deburred.
- Connect the pipes so that they are stress-free.
- The pipes must not rest on the boiler or flue gas adapter.
- Fit the horizontal parts sloping down towards the boiler, with a slope of 50 mm per metre.
- Maximum bracket spacing for vertical pipes is 2 m.
- Maximum tilt of vertical pipes is 20 mm per meter.
- Use a bracket at each connection for horizontal pipes.

6.4.6 Air supply connection

- 1. Fit the air supply pipe to the boiler.
- Fit the subsequent air supply pipes in accordance with the manufacturer's instructions.

Caution

- The pipes must be flue gas-tight and corrosion-resistant.
- The air supply pipe must be smooth and deburred.
- · Connect the pipes so that they are stress-free.
- Maximum bracket spacing for vertical pipes is 2 m.
- Maximum tilt of vertical pipes is 20 mm per meter.
- The pipes must not rest on the boiler or air supply adapter.
- Fit the horizontal parts sloping down towards the air supply outlet
- Use a bracket at each connection for horizontal pipes.

6.5 Electrical connections

6.5.1 General



Important

For connections for the C 630 ECO boiler: the properties described and the instructions apply to each boiler module.

6.5.2 Recommendations



Warning

- Electrical connections must always be made with the power supply disconnected and only by qualified installers.
- The boiler is completely pre-wired. Never change the internal connections of the control panel.
- Always connect the boiler to a well-earthed installation.

Establish the electrical connections in accordance with:

- The instructions of the current standards.
- The instructions of the wiring diagrams supplied with the boiler.
- The recommendations in this manual.
- Separate the sensor cables from the 230 V cables



Caution

 Outside the central heating boiler: Use 2 cables spaced at least 10 cm apart.

6.5.3 Control unit

The table gives important connection values for the control unit.

Tab.27 Connection values for control unit

Supply voltage	230 VAC/50 Hz
Main fuse value F2 (230 VAC)	10 AT
Fuse value F1 (230 VAC)	2 AT
Fan	230 VAC

Danger of electric shock

The following components of the boiler are connected to a 230 V power supply:

- (Electrical connection of) circulation pump on connector
- · (Electrical connection of) combined gas valve unit
- (Electrical connection of) fan
- The majority of components in the control unit
- Ignition transformer
- (Connection of) supply cable



Caution

Observe the polarities shown on the terminals: live (L), neutral (N) and earth $\,\,\div\,\,$

The boiler has phase detection. The boiler is completely pre-wired. The boiler is suitable for a 230 VAC/50 Hz supply with live/neutral/earth. Other connection values are only acceptable if an isolating transformer is installed. Connect the wires of the mains lead to the correct terminal block. This can be found on the left underneath the **MAINS** connector. (The mains lead is not supplied).

- **1** Fuse (F1)
- 2 Pre-wired in the boiler (PW)
- 3 Main fuse (F2)
- 4 Three-wired mains lead (M)



Caution

- Always order a replacement mains lead from De Dietrich. The power supply cable should only be replaced by De Dietrich, or by an installer certified by De Dietrich.
- In the case of a fixed connection of the mains lead, you must always install a main bipolar switch with a contact gap of at least 3 mm.

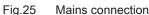


Important

The boiler has a unique boiler code. This, together with other data, including the boiler type, counter readings, etc. is stored in what is known as a **PSU** that belongs with the boiler. If the control unit is replaced, the counter readings remain stored in it.

The boiler has several control, protection and regulation connection options. The heat output of the boiler can be controlled as follows:

- Modulating control: the output varies between the minimum and maximum value on the basis of the value defined by the controller.
- Analogue control: where the heat output or the temperature is controlled by a 0-10 V signal.
 (Standard with DIEMATIC iSystem – only available in combination with
- the control PCB **SCU-05** or **IF-01** with IniControl.)
- On/off control: where the heat output modulates between the minimum and maximum value on the basis of the flow temperature set in the boiler.



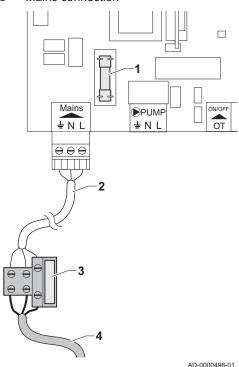
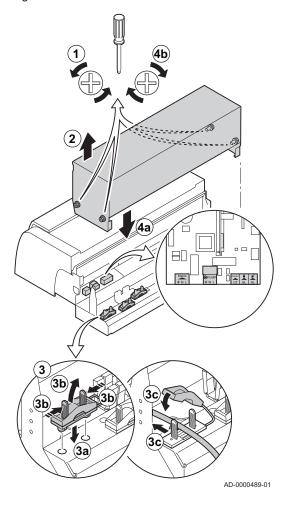


Fig.26 Access to the connectors



6.5.4 Access to the connectors

The **SU** protection PCB, which protects the boiler, is connected to the standard **PCU-06** PCB. Various thermostats and regulators can be connected to the standard PCB.

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Important

A clearance of 20 cm is required above the control panel to allow the front cover to open fully. Bear this in mind when installing cable ducts.

- 1. Unscrew the 4 lateral retaining screws in the control panel.
- 2. Remove the protective cover.
 - ⇒ The detachable screw connectors are now accessible.
- Secure the cable(s) using the traction clips (the traction clips are supplied loose).
- Screw the strain relief clamps securely into position and close the control panel.

6.5.5 Connection options for the standard PCB

Connecting the on/off thermostat

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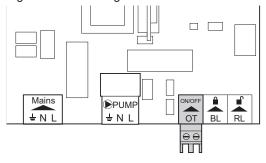
] Important

This function is only available with the IniControl control panel.

The boiler is suitable for connection to a 2-wire on/off thermostat.

- 1. Install the thermostat in a reference room.
- 2. Connect the two-wire cable of the thermostat to the **On/Off OT** terminals of the connector. It does not matter which wire is connected to which cable clamp.

Fig.27 Connecting the on/off thermostat



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Fig.29

₽ΝL

Fig.30

Connecting the modulating thermostat

i Important

This function is only available with the IniControl control panel

The boiler is fitted with an **OpenTherm** connection as standard. As a result, modulating **OpenTherm** thermostats can be connected without any further adjustments.

- In the case of a room thermostat: install the thermostat in a reference room.
- 2. Connect the two-wire cable of the thermostat to the **On/Off OT** terminals of the connector. It does not matter which wire is connected to which cable clamp.

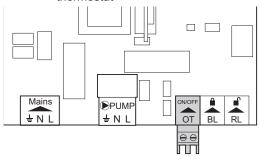
Fig.28 Connecting the modulating thermostat

Blocking input

▶PUMF

≟ N L

Release input



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Blocking input

The boiler has a blocking input (normally closed contact). If this contact is opened, the boiler will be blocked or locked out. This input can be used for example in combination with the flue gas thermostat (if present). This input relates to the **BL** terminals of the connector.



Warning

Only suitable for potential-free contacts.



Important

First remove the bridge if this input is used.

A parameter setting can be used to change the function of the input.

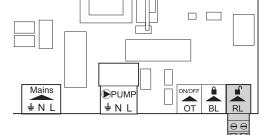


See

Manual for the control panel.

Release input

The boiler has a release input (normally open contact). If this contact is closed when there is a heat demand, the burner will be blocked after a waiting time. This input can be used, for example, in combination with the limit switches on flue gas dampers, hydraulic shutter valves, etc. This input relates to the **RL** terminals of the connector.



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Warning

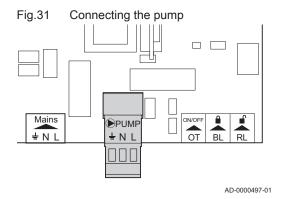
Only suitable for potential-free contacts.

A parameter setting can be used to change the input waiting time.



See

Manual for the control panel.



Connecting the circulating pump

The boiler is supplied without a pump. An external CH pump may be connected:

- Connect an external CH pump to the Pump terminals of the connector.
 - ⇒ Maximum power consumption may be 300 VA.

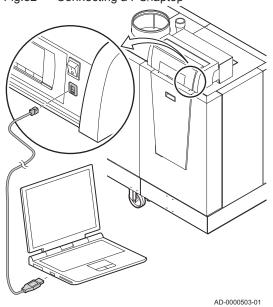
For more information about controlling a modulating pump:



See

Connection options for the SCU-S05 control PCB, page 43

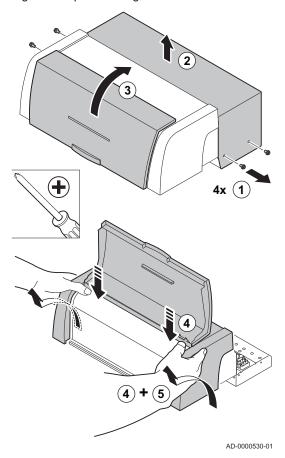
Fig.32 Connecting a PC/laptop



■ Connecting a PC/laptop

A PC or laptop can be connected to the **RS232** input using a USB cable. Using the **Recom** PC/laptop service software, you can enter, change and read out various boiler settings.

Fig.33 Open housing for PCBs



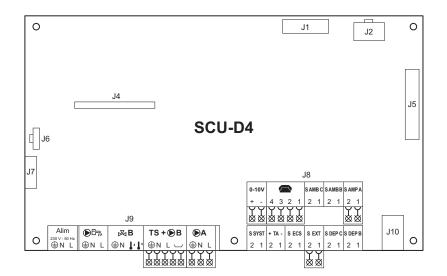
6.5.6 PCBs

The PCBs are positioned in the PCB housing behind the control panel.

- 1. Unscrew the 4 lateral retaining screws in the control panel.
- 2. Remove the protective cover.
- 3. Open the front cover.
- 4. Use both thumbs to press the top of the control panel downwards a little.
- 5. While maintaining some of the pressure you are applying to the top of the control panel, use both hands to tip the casing forwards and upwards.

■ Connection options for the SCU-D4 control PCB

Fig.34 SCU-D4 control PCB



AD-4000058-01

See Manual for the control panel.

Connection options for the SCU-S05 control PCB

The extended SCU-S05 control PCB is available as an accessory.

Important

On removing this PCB, the boiler will display an error code. To prevent this error, an auto-detect must be carried out after removing this PCB.



Not applicable.

Manual for the control panel.

Connecting the flue damper (FgV)

Fig.35 SCU-S05 control PCB

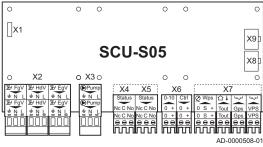
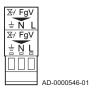
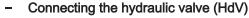


Fig.36 FqV connection





In a cascade configuration, a hydraulic valve prevents heat loss in the system when the boiler is not running.

- 1. Connect the hydraulic valve to the **HdV** terminals of terminal strip.
- 2. Change the hydraulic valve running time with a parameter setting.



See

Manual for the control panel.

Fig.37 Connecting the HdV



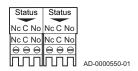
Fig.38 EqV connection







Fig.40 Status of connections



Connecting the external gas valve (EgV)

DIEMATIC iSystem: This function is available as standard.

IniControl: If there is a heat demand, an alternating voltage of 230 VAC, 1 A (maximum) becomes available at the EgV terminals of the connector to control an external gas valve.

Connecting a shunt pump

If required, a shunt pump may also be installed on the Pump terminals of the connector. Only an on/off pump can be controlled. The maximum power consumption is 300 VA. The pump is activated for certain blockages.



See

Manual for the control panel.

Operation signal and error signal (status)

DIEMATIC iSystem: Connect to the A.Tel output of the boiler.

IniControl: The choice of an alarm or operation signal can be set on connectors X4 or X5 using a parameter setting.



See

Manual for the control panel.

7600532 - v.11 - 13122018 43 Fig.41



Ctrl connection

Fig.42 Wilo pump

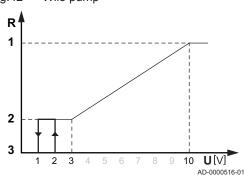
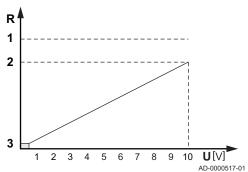


Fig.43 Grundfos pump



- If the boiler is operating, the operation signal can be switched via a potential-free contact (maximum 230 VAC, 1 A) on the No and C terminals of the connector.
- If the boiler is locked out, the alarm signal can be transmitted via a potential-free contact (maximum 230 VAC, 1 A) on the Nc and C terminals of the connector.

Analogue output (Ctrl)

An outgoing 0 - 10 V signal can be used either to report the supplied heat output or the supplied temperature.

An outgoing 0 - 10 V signal can be used to adjust the speed of the system pump (possible only if the pump is suitable for this).

The function of the analogue output can be changed with a parameter setting.

Manual for the control panel.

Control of the 0-10 V Wilo system pump

- Maximum pump speed
- Minimum pump speed
- The pump is off
- Pump speed
- Output signal (V)

Tab.28 Output signal

Output signal (V)	Description	
<1	Pump off	
1 - 2	Hysteresis	
2 - 3	Pump on (minimum pump speed	
3 - 10	Pump modulating (linear)	

Control of the 0-10 V Grundfos system pump

- Maximum pump speed
- Nominal set-point
- Minimum pump speed
- R Pump speed
- Output signal (V)

Tab.29 Output signal

Output signal (V)	Description
< 0.5	Pump on (minimum pump speed
> 0.5	Pump modulating (linear)

Control of the PWM system pump

In this case, the 0 - 10 V signal controls the system pump linearly.

Tab.30 Message about the supplied temperature

Output signal (V)	Output signal (V) Temperature in (°C) Description	
0.5	-	Lock out
1 - 10	10 - 100	Supplied temperature

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Tab.31 Message about the supplied heat output

Output signal (V)	Heat output (%)	Description
0	0	Boiler off
0.5	-	Lock out
2.0 - 10 ⁽¹⁾ 20 - 100 Supplied heat output		
(1) Dependent on the minimum modulation depth (set speeds, standard 20%)		

- Analogue input (0 - 10 V)

A choice can be made with this control between control based on temperature or heat output. If this input is used for 0-10 V control, the OT communication from the boiler is ignored.

 DIEMATIC iSystem: Connect to the ING.0–10V input of the boiler. For settings:



See

Manual for the control panel.

IniControl: Connect the input signal to terminals 0–10 of the connector.

The function of the analogue input can be changed with a parameter setting.



See

Manual for the control panel.

Tab.32 Temperature-based control (°C)

Jumper 2 Input signal (V) Temperature °C		Description	
	0–1.5	0–15	Boiler off
	1.5–1.8	15–18	Hysteresis
	1.8–10	18–100	Desired temperature

The 0–10 V signal controls the boiler supply temperature. This control modulates on the basis of flow temperature. The output varies between the minimum and maximum value on the basis of the flow temperature set point calculated by the controller.

Tab.33 Control based on heat output

Jumper 2	Input signal (V)	Heat output (%)	Description
	0-2.0(1)	0–20	Boiler off
%	2.0-2.2(1)	20–22	Hysteresis
	2.0-10(1)	20–100	Required output
(1) Dependent on the minimum modulation depth (set speeds, standard 20%)			

The 0–10 V signal controls the boiler output. This control modulates on the basis of the heat output. The minimum output is linked to the boiler's modulation depth. The output varies between the minimum and maximum value on the basis of the value defined by the controller.

Connecting the hydraulic pressure sensor (Wps)

The hydraulic pressure sensor registers the water pressure and can shut the boiler down when the minimum water pressure is reached. To activate this blocking option, a minimum pressure must be set.



See

Manual for the control panel.

Fig.44 0 - 10 V connection



Fig.45 Wps connection



Fig.46

Tout

AD-0000554-01

- Connect the water pressure sensor to the Wps terminals of the terminal strip.
 - ⇒ 0 = Earth or neutral of the power supply
 - S = Signal or output from the sensor
 - + = Supply voltage

Connecting an outside sensor

DIEMATIC iSystem: The outside sensor must be connected to the **S.EXT** input.

IniControl: An outside sensor can be connected to the **Tout** terminals of the connector. In the event of an on/off thermostat, the boiler will regulate the temperature using the set point of the internal heating curve (**F**).

1. Connect the two-wire cable to the **Tout** terminals of the connector.

i

Important

An **OpenTherm** controller can also use this outside sensor. In that case, the desired internal heating curve must be set on the controller.

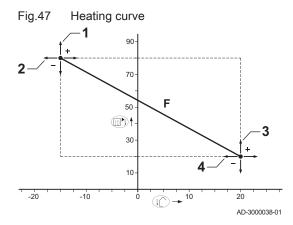
- 1 Flow temperature setting (T_{set})
- 2 Heating curve set point (minimum outside temperature)
- 3 Heating curve set point (flow temperature)
- **4** Heating curve set point (maximum outside temperature)
- F Heating curve

If an outside temperature sensor is connected, it is possible to adapt the internal heating curve. Various parameter settings can be used to change the internal heating curve.



See

Manual for the control panel.



Connecting an outside sensor

Fig.48 Gps connection



Connecting the minimum gas pressure switch (Gps)

The minimum gas pressure switch blocks the boiler if the gas inlet pressure drops too low. Check the setting for the **Gps** minimum gas pressure switch (see table below).

Tab.34 Setting the minimum gas pressure switch

C 330 ECO	Minimum value (mbar)
280	14
350	13
430	10
500	10
570	10
650	10

- Connect the minimum gas pressure switch to the Gps terminals of the connector
- 2. Set the presence of the gas pressure switch using a parameter setting.



See

Manual for the control panel.

Fig.49 VPS connection



Connecting the gas leakage control (VPS)

The gas leakage control checks and controls the safety valves on the gas valve unit. The test takes place before the boiler starts up. In the event of a leak in the gas valve unit, the boiler will lock out. The pressure switch must be set at 50% of the supply pressure (see table below).

Tab.35 Setting the gas pressure switch

C 330 ECO	Gas inlet pressure (max.) (mbar)	Vps setting (max.) (mbar)
280	30	15
350	30	15
430	100	40
500	100	40
570	100	40
650	30	15

- Connect the gas leakage control to the VPS terminals of the terminal strip.
- 2. Set the presence of the gas leakage control using a parameter setting.



See

Manual for the control panel.

6.6 Filling the installation

6.6.1 Water treatment

In many cases, the boiler and central heating system can be filled with normal tap water and water treatment will not be necessary.



Warning

Do not add chemical products to the central heating water without first consulting a water treatment professional. For example: antifreeze agent, water softeners, pH-increasing or -lowering agents, chemical additives and/or inhibitors. Such agents can cause faults in the boiler and damage to the heat exchanger.

For optimum functioning of the boiler, the water in the installation must comply with following characteristics:

Tab.36 Total installed heat output (kW)

		≤ 70	70-200	200-550	> 550
Degree of acidity (untreated water)	рН	7-9	7-9	7-9	7-9
Degree of acidity (treated water)	рН	7-8.5	7-8.5	7-8.5	7-8.5
Conductivity at 25°C	μS/cm	≤ 800	≤ 800	≤ 800	≤ 800
Chlorides	mg/l	≤ 150	≤ 150	≤ 150	≤ 150
Other components	mg/l	< 1	< 1	< 1	< 1
Total hardness of the water ⁽¹⁾	°f	1-35	1-20	1-15	1-5
	°dH	0.5-20.0	0.5-11.2	0.5-8.4	0.5-2.8
	mmol/l	0.1-3.5	0.1-2.0	0.1-1.5	0.1-0.5

⁽¹⁾ For installations that are heated at constant high temperatures with a total installed heat output up to 200 kW, maximum total water hardness of 8.4°dH (1.5 mmol/l, 15°f) applies and for above 200 kW a maximum total water hardness of 2.8°dH (0.5 mmol/l, 5°f) applies

Important

If water treatment is necessary, De Dietrich recommends the following manufacturers:

- Cillit
- Climalife
- Fernox
- Permo
- Sentinel

6.6.2 Filling the siphon

 Fill the siphon with water up to the mark using the condensate collector.



Danger

The siphon must always be sufficiently filled with water. This prevents flue gases from entering the room.



Warning

Put the sealing cap back on the condensate collector.

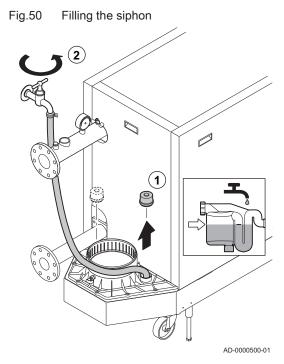
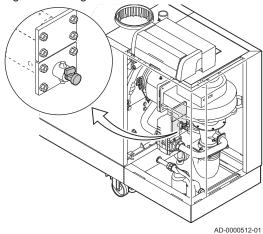


Fig.51 Filling the installation



6.6.3 Filling the installation

- 1. Disconnect the boiler from the power supply.
- 2. Fill the central heating system with clean tap water.



Important

The recommended water pressure is between 1.5 bar and 2 bar.

- 3. Check the water-side connections for tightness.
- 4. Power up the boiler.



Important

- DIEMATIC iSystem: If the water pressure is below 0.8 bar, the bar symbol will flash (only if a hydraulic pressure sensor is connected). If the water pressure is too low, top up the central heating system.
- IniControl: Check the water pressure that is shown on the display (only if a hydraulic pressure sensor is connected). If the water pressure is lower than 0.8 bar, top up the central heating system.
- A filling and drain valve (½") is fitted on the front section as standard.

7 Commissioning

Fig.52

7.1 Checklist before commissioning

Gas inlet pressure measuring point

Λ

Warning

Do not put the boiler into operation if the type of gas supplied does not conform to the approved gas types.

- 1. Check that the gas type supplied matches the data shown on the boiler's data plate.
- 2. Check the gas circuit.
- 3. Check the hydraulic circuit.
- 4. Check the water pressure in the central heating system.
- Check the electrical connections of the thermostat and the other external connections.
- 6. Check the other connections.
- 7. Test the boiler at full load. Check the setting of the gas/air ratio and correct it, if necessary.
- 8. Test the boiler at part load. Check the setting of the gas/air ratio and correct it, if necessary.
- 9. Final activities.

7.1.1 Gas circuit



Warning

Ensure that the boiler is disconnected from the power supply.

- 1. Open the main gas tap.
- 2. Open the boiler gas tap.
- 3. Remove the casings on the inspection side.
- 4. Check the gas inlet pressure at measuring point C on the gas pipe.



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Warning

The pressure must be the same as the one shown on the data plate.

- 5. Check the tightness of the gas pipe, including the gas taps.
- 6. Vent the gas supply pipe by unscrewing measuring point C.
- 7. Tighten the measuring point again when the pipe has been fully vented.

7.1.2 Hydraulic circuit

- 1. Check the water pressure in the central heating system.
 - ⇒ If necessary, top up the central heating system.
- 2. Check the siphon; it should be fully filled with clean water.
- 3. Check the water-side connections for tightness.

7.1.3 Connections for the air and flue gas pipes

1. Check the flue gas outlet and air supply connections for tightness.

7.1.4 Electrical connections

1. Check the electrical connections.

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7.2 Commissioning procedure

<u>/!</u>

Warning

- Initial commissioning must be done by a qualified professional.
- If adapting to another type of gas the boiler must be adjusted before switching it on.

See

Adaptation to a different gas type, page 0

- 1. Open the main gas tap.
- 2. Open the boiler gas tap.
- 3. Switch the power on with the boiler's on/off switch.
- 4. Set the components (thermostats, control) so that heat is demanded.
 - ⇒ The start-up program will start and cannot be interrupted. During the start-up cycle, all segments of the display are shown briefly.

Error during start-up procedure:

In the event of a fault, a message with the corresponding code is displayed.

The meaning of the error codes can be found in the error table.



See

Manual for the control panel.

7.3 Gas settings

Fig.53

7.3.1 Checking/setting the combustion



Important

Checking and/or setting the boiler C 630 ECO: the properties described and the instructions apply to each boiler module. Make sure that the other boiler module is out of operation during this check and/or setting.

- 1. Unscrew the cap from the flue gas measuring point.
- 2. Insert the probe for the flue gas analyser into the measurement opening.



Morning

During measurement, seal the opening around the sensor fully.

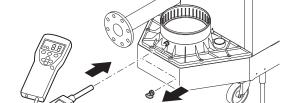


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Important

The flue gas analyser must have a minimum accuracy of $\pm 0.25\%$ O₂.

3. Measure the percentage of ${\rm O}_2$ in the flue gases. Take measurements at full load and at part load.



Flue gas measuring point

Fig.54 Setting to full load

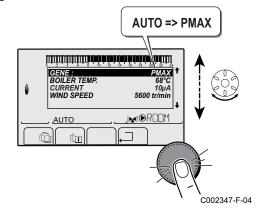


■ Performing the full load test (IniControl)

- 1. Press the two H keys at the same time.
 - ⇒ The H∃ symbol appears on the display. The boiler is now set to full load.

Fig.55 AUTO AUTO MW-C002271-02

Fig.56



Performing the full load test (DIEMATIC iSystem)

- 1. From the start page, press the 🌡 key.
 - ⇒ The EMISSION MESURMENTS menu appears on the display.
- 2. Turn the rotary button until PMAX is displayed.
- 3. Confirm the selection.
 - ⇒ The boiler is now set to full load.

■ Checking/setting values for O₂ at full load

- 1. Measure the percentage of O₂ in the flue gases.
- 2. Compare the measured value with the checking values in the table.

Tab.37 Checking/setting values O₂ at full load for G20 (H gas)

Values at full load for G20 (H gas)	O ₂ (%) ⁽¹⁾
C 330 ECO	4.3 - 4.8(1)
C 630 ECO	4.3 - 4.8(1)
(1) Nominal value	

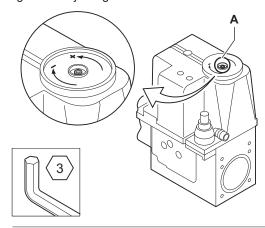


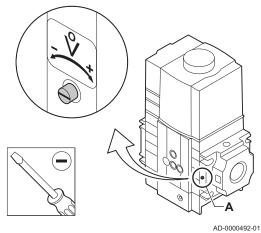
Caution

The O_2 values at full load must be lower than the O_2 values at low load.

3. If the measured value is outside of the values given in the table, correct the gas/air ratio.

Fig.57 Adjusting screw A





4. Using the adjusting screw A, set the percentage of O₂ for the gas type being used to the nominal value. This should always be inside the highest and lowest setting limit. The direction in which the adjusting screw must be turned to increase or decrease the gas flow is indicated on the gas valve unit.

Important

The 5- to 9-section boilers are supplied with a different gas valve unit from the 10-section boiler. See drawing for the position of adjusting screw **A** for full load.

5. Check the flame through the inspection window.

Importan

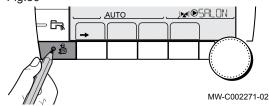
The flame must not blow off.

Fig.58 Setting to low load



- Performing the low load test (IniControl)
 - Press the key several times until appears on the display.
 The boiler is now set to low load.

Fig.59 1. From the start page, pres

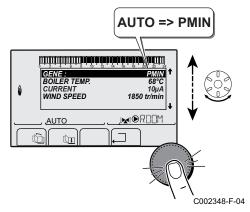


From the start page, press the key.
 ⇒ The EMISSION MESURMENTS menu appears on the display.

Performing the low load test (DIEMATIC iSystem)

2. Turn the rotary button until **PMIN** is displayed.

Fig.60



- 3. Confirm the selection.
 - ⇒ The boiler is now set to low load.

■ Checking/setting values for O₂ at low load

- 1. Measure the percentage of O_2 in the flue gases.
- 2. Compare the measured value with the checking values in the table.

Tab.38 Checking and setting values for O₂ at low load for G20 (H gas)

Values at low load for G20 (H gas)	O ₂ (%) ⁽¹⁾
C 330 ECO	4.8(1) - 5.4
C 630 ECO	4.8(1) - 5.4
(1) Nominal value	·

Λ

Caution

The O_2 values at low load must be higher than the O_2 values at full load.

- 3. If the measured value is outside of the values given in the table, correct the gas/air ratio.
- 4. Using the adjusting screw B, set the percentage of O₂ for the gas type being used to the nominal value. This should always be inside the highest and lowest setting limit. The direction in which the adjusting screw must be turned to increase or decrease the gas flow is indicated on the gas valve unit.



Important

The 5- to 9-section boilers are supplied with a different gas valve unit from the 10-section boiler. See drawing for the position of adjusting screw **B** for full load.

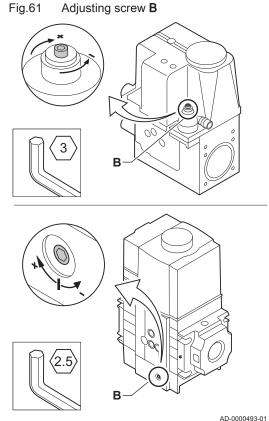
5. Check the flame through the inspection window.



Important

The flame must not blow off.

- Repeat the full load test and the low load test as often as necessary until the correct values are obtained.
- 7. Set the boiler back to the normal operating status.



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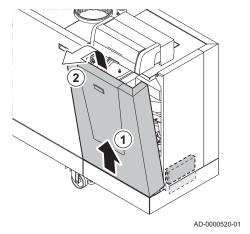
7.4 Final instructions

- 1. Remove the measuring equipment.
- 2. Screw the cap on to the flue gas measuring point.
- 3. Seal the gas valve unit.
- 4. If installed: check the setting of the **Gps** minimum gas pressure switch. The pressure switch must be set at 10 mbar.
- If installed: check the setting of the minimum gas pressure switch for Vps gas leakage control. The pressure switch must be set at 50% of the supply pressure (maximum 40 bar).
- 6. Reattach the casing to the inspection side.
- Briefly press the RESET key to return the boiler to the normal operating status.
- 8. Heat the CH system up to approximately 70 °C.
- 9. Switch the boiler off.
- 10. Vent the central heating system after approx. 10 minutes.
- 11. Turn on the boiler.
- 12. Check the water pressure. If necessary, top up the central heating system.
- 13. Fill in the following data on the sticker included, and attach it next to the data plate on the appliance.
 - The gas type;
 - The gas supply pressure;
 - If set to overpressure application, fill in the type;
 - The parameters modified for the changes mentioned above.
- 14. Inform the user of the maintenance to be performed.

Fig.62 Example filled-in sticker

Adjusted for / Réglée pour / Parameters / Paramètres / Ingesteld op / Eingestellt auf Parameter / Parametri / / Regolato per / Ajustado Parámetros / Παράμετροι / para / Ρυθμισμένο για / Parametry / Параметры / Nastawiony na / настроен Parametrii / Параметри / для / Reglat pentru / Parametreler / Paraméterek настроен за / ayarlanmıştır / / Parametrit / Parametere / Nastavlien za / beállítva/ : تامل عمل ا Parametre : Nastaveno pro / Asetettu kaasulle / Justert for/ DP003 - 3300 : ل طبض /indstillet til GP007 - 3300 Gas 620 **20** mbar GP008 - 2150 GP009 -C_{(12)3(X)} AD-3001124-01

Fig.63 Position of the documentation folder



- 15. Hand over all manuals to the user. A documentation folder can be found in the frame of the boiler. Use it to store all boiler manuals together with other documents relating to the installation
- 16. Confirm the commissioning with a signature and a company stamp.
 - ⇒ The boiler is now ready for operation.

For more information, see

Connecting the gas leakage control (VPS), page 47

8 Operation

8.1 Use of the control panel

i

Important

For operation of the C 630 ECO boiler: each module has its own control panel



See

For more detailed information: Manual for the control panel

This includes information about changing and reading parameters, the meaning of error codes and deleting the error memory.

8.2 Start-up

Start the boiler up as follows:

- 1. Open the boiler gas valve.
- 2. Switch the power on with the boiler's on/off switch.
- 3. The start-up program will start and cannot be interrupted. During the start-up cycle, all segments of the display are shown briefly.
- 4. IniControl: Check the water pressure that is shown on the display (only if a hydraulic pressure sensor is connected). If the water pressure is lower than 0.8 bar, top up the central heating system.
- 5. **DIEMATIC iSystem**: If the water pressure is below 0.8 bar, the bar symbol will flash (only if a hydraulic pressure sensor is connected). If the water pressure is too low, top up the central heating system.

8.3 Shutdown

DIEMATIC iSystem: Do not disconnect the boiler from the power supply. If the central heating system is not used for a long period, we recommend activating the **HOLIDAYS** mode.



See

Manual for the control panel.

IniControl: If the central heating is not due to be used for a long period of time, it is recommended that the boiler be disconnected from the power supply.

- 1. Turn the on/off switch to the off position.
- 2. Switch off the boiler's electrical connection.
- 3. Shut off the gas supply.
- 4. Keep the area frost-free.



Caution

In the event of low temperatures, we recommend that the installation continues to operate at a lower temperature. This will prevent freezing.

8.4 Frost protection

IniControl: Set the temperature control low, for example to 10 °C.

IniControl: If there is no heat demand, the boiler will only switch on to protect itself against frost.

If the temperature of the central heating water in the boiler drops too low, the built-in boiler protection system is activated. This system works as follows:

- If the water temperature is lower than 7 °C, the heating pump switches
- If the water temperature is lower than 4 °C, the boiler switches on.

• If the water temperature is higher than 10°C, the boiler shuts down and the circulation pump continues to run for a short time.

To prevent the system and radiators freezing in frost-sensitive areas (e.g. a garage), a frost thermostat or outside sensor can be connected to the boiler.



Caution

- · The frost protection does not work if the boiler is out of
- IniControl: The boiler protection only protects the boiler, not the
- DIEMATIC iSystem: The boiler protection only protects the boiler, not the system. To protect the installation, set the appliance to HOLIDAYS mode.

DIEMATIC iSystem: The **HOLIDAYS** mode protects:

- The installation if the outside temperature drops below 3 °C (default setting).
- The room temperature if a remote control is connected and the room temperature is lower than 6 °C (default setting).
- The domestic hot water boiler if the boiler temperature is lower than 4 °C (the water is heated to 10 °C).

To configure the **HOLIDAYS** mode:



Manual for the control panel.

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9 Settings

9.1 Changing the parameters

The boiler's control unit is set for the most common central heating systems. These settings will ensure that virtually every central heating system operates effectively. The user or the installer can optimise the parameters as required.



See

Manual for the control panel.



Caution

Changing the factory settings may adversely affect the operation of the boiler.

9.2 Displaying the measured values

The control unit continually registers various values from the boiler and the connected sensors. These values can be read on the control panel of the boiler.



See

Manual for the control panel.

10 Maintenance

10.1 General

The cast aluminium/silicon heat exchanger forms the heart of the boiler. When combined with the special geometric shape, the flue gas pollution remains limited. Nevertheless, we recommend cleaning the flue gas side of the heat exchanger thoroughly during the annual inspection and service.

Boilers must be inspected at least once a year or every 3000 operating hours.



Caution

- Maintenance operations must be completed by a qualified installer.
- During inspection or maintenance work, always replace all gaskets of the disassembled parts.
- Replace defective or worn parts with original spare parts.



Important

Adjust the frequency of inspection and service to the conditions of use. This applies especially to boilers in constant use (for specific processes).



Important

For work on the C 630 ECO boiler: The features and instructions described apply to each boiler module.

10.2 Standard inspection and maintenance operations



Warning

Always wear safety goggles and a dust mask during cleaning work (involving compressed air).

For a service, always perform the following standard inspection and maintenance operations.



Caution

- Check whether all gaskets have been positioned properly (absolutely flat in the appropriate groove means they are gas tight).
- During the inspection and maintenance operations, water (drops, splashes) must never come into contact with the electrical parts.

10.2.1 Preparation

Preparation prior to commencing inspection and maintenance activities:

1. First heat the boiler on high for about 5 minutes (return temperature 65°C) to dry the heat exchanger on the flue gas side.

10.2.2 Checking the water pressure

- 1. **IniControl**: Check the water pressure that is shown on the display (only if a hydraulic pressure sensor is connected).
- DIEMATIC iSystem: If the water pressure is below 0.8 bar, the bar symbol will flash (only if a hydraulic pressure sensor is connected).
- 3. If necessary, top up the central heating system.



For more information, see

Filling the installation, page 48

10.2.3 Checking the ionisation current

- 1. Check the ionisation current at full load and at low load.
 - ⇒ The value is stable after 1 minute.
- 2. Clean or replace the ionisation and ignition electrode if the value is lower than 3 μA .

10.2.4 Checking the water quality

- Fill a clean bottle with some water from the system/boiler from the filling/drain valve.
- 2. Check the quality of this water sample or have it checked.

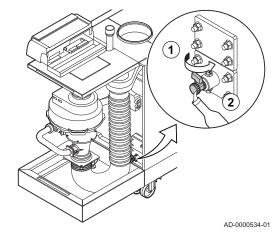


Warning

More information regarding water quality requirements is available in our **Water quality instructions**. This manual forms part of the set of documents supplied with the boiler. Always adhere to the instructions in the aforementioned document.

Fig.64 Filling/drain valve

Fig.65



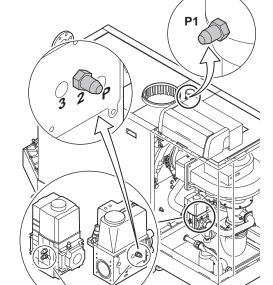
10.2.5 Checking the flue gas outlet/air supply connections

 Check the flue gas outlet and air supply connections for condition and tightness.

10.2.6 Checking the gas filter

The gas valve unit on the boiler is fitted with a gas filter as standard. Check this for soiling.

- 1. Set the boiler to full load.
- Measure the gas inlet pressure via the measuring point P1 on the gas nine
 - ⇒ This gas inlet pressure should be at least 17 mbar.
- 3. Check the gas inlet pressure at measuring point 2 on the gas valve
- 4. Compare the measured values with the checking values in the table.



Gas valve unit measuring points

Tab.39 Minimum gas inlet pressure values at gas valve unit measuring point 2

C 330 ECO	Minimum value (mbar)
280	14
350	13
430	10
500	10
570	10
650	10

If the measured value is lower than the control value, clean or replace the gas filter.

10.2.7 Checking the combustion

Combustion is checked by measuring the $\ensuremath{\text{O}}_2$ percentage in the flue gas outlet duct.

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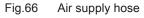


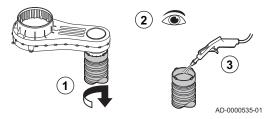
For more information, see

Checking/setting the combustion, page 50

10.2.8 Check the air supply hose

- Disconnect the hose on the air box side by loosening the bayonet fitting.
- 2. Check the hose for damage and pollution.
- 3. Remove the pollution from the hose with a cloth or soft brush.
- 4. Replace the hose if it is faulty and/or leaking.





10.2.9 Checking the dirt trap

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Important

- With room-sealed operation, disconnect the air supply pipe above the boiler to access the dirt trap.
- In room ventilated operation with an air supply filter, remove the filter to access the dirt trap.
- 1. Check the dirt trap on the air supply side for soiling.
- 2. First remove coarse soiling and clean the trap with a vacuum cleaner or a cloth.

Fig.67 Dirt trap

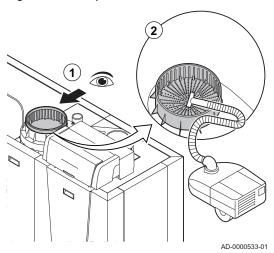
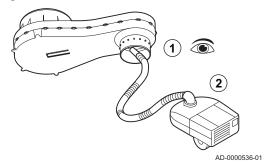


Fig.68 Air box



10.2.10 Checking the air box

- 1. Check the air box for soiling.
- Clean the dirty air box using a vacuum cleaner. Do this from the connection opening for the air supply hose.



Important

If the air box is dirty, the following components must also be dismantled and blown clean:

- · Non-return valve
- Venturi
- Fan

10.2.11 Checking the PS air pressure differential switch

■ Checking the air pressure differential switch + side

- 1. Switch off the boiler.
- 2. Disconnect the silicon hose on the + side (P1) of the air pressure differential switch.
- 3. Take a large plastic syringe and connect a T piece with a hose connected to the mouth.
- 4. Connect the + side of the air pressure differential switch to one end of the T piece with a hose.
- 5. On the other end of the T piece, connect the + side of a pressure gauge.
- 6. Turn on the boiler
- 7. Push the syringe in very slowly until the boiler goes into failure mode.

 ⇒ Code L 12VE 12.
- 8. Make a note of the pressure indicated by the pressure gauge at that point.
 - ⇒ A switch pressure of between 5.5 and 6.5 mbar is fine. A lower or higher switch pressure indicates a problem with the air pressure differential switch.

Fig.69 + side of the air pressure differential switch

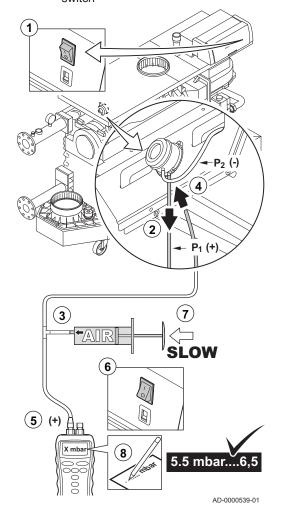
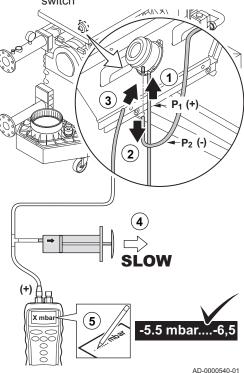


Fig.70 – side of the air pressure differential switch

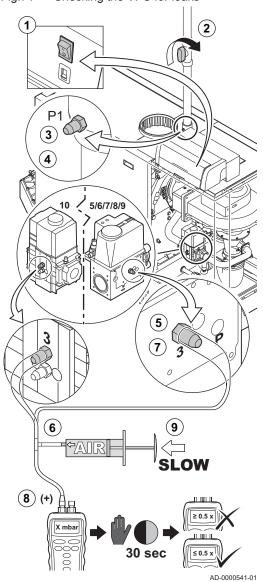


■ Checking the air pressure differential switch – side

- Attach silicon hose on the + side (P1) of the air pressure differential switch.
- 2. Disconnect the silicon hose on the side (**P2**) of the air pressure differential switch.
- 3. Connect the side of the air pressure differential switch to one end of the T piece with a hose.
- 4. Pull out the syringe until the boiler goes into failure mode.
 - ⇒ Code L 12/E 12.
- 5. Make a note of the pressure indicated by the pressure gauge at that point
 - ⇒ A switch pressure of between 5.5 and 6.5 mbar is fine. A lower or higher switch pressure indicates a problem with the air pressure differential switch.
- 6. Remove any soiling from all connection points for hoses and the air pressure differential switch.
- Check the condition and tightness of the hoses of the air pressure differential switch.
 - ⇒ Replace the hoses if necessary.

10.2.12 Checking the VPS gas leakage control

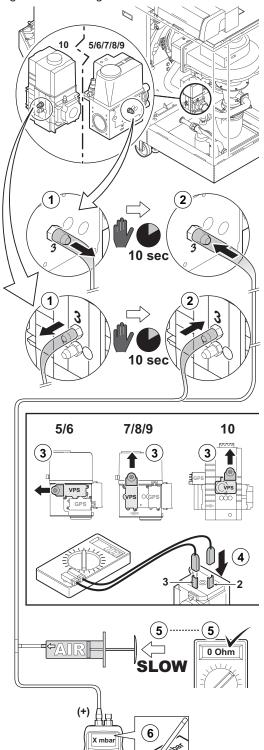
Fig.71 Checking the VPS for leaks



■ Checking the VPS for leaks

- 1. Switch off the boiler.
- 2. Close the boiler gas tap.
- 3. Remove the pressure from the gas pipe by unscrewing the screw in measuring point **P1**.
- 4. As soon as the gas pipe is pressure-free, re-tighten the screw.
- 5. Open the screw at measuring point **3** on the gas valve unit (on the other side of the **VPS** pressure switch).
- 6. Take a large plastic syringe and connect a T piece with a hose connected to the mouth.
- 7. Connect one end of the T piece to measuring point 3 of the gas valve unit.
- 8. Connect the other end of the T piece to a pressure gauge.
- Push the syringe in very slowly until the pressure gauge indicates the minimum inlet gas pressure value.
- 10. Check the measured pressure for about 30 seconds. If pressure decreases by more than half, this indicates a gas leak.
- 11. Replace the gas valve unit or the **VPS** if necessary.

Fig.72 Checking the VPS switch value



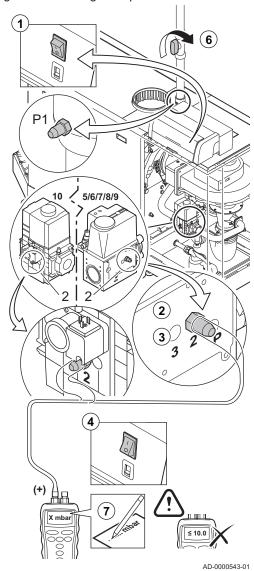
■ Checking the VPS switch value

- 1. Remove the pressure from the gas valve unit; first remove the hose that is attached to measuring point 3 of the gas valve unit (on the other side of the **VPS** pressure switch).
- 2. Wait approximately 10 seconds and reconnect the disconnected hose to measuring point *3 of the gas valve unit.
- 3. Remove the connecting plug from the **VPS** gas leakage control.
- 4. Connect an ohmmeter to terminals 2 and 3 of the VPS.
- 5. Push the syringe in very slowly until the ohmmeter indicates 0 Ohm.
- 6. Make a note of the pressure indicated by the pressure gauge at that point. If the measured pressure differs by more than 2 mbar from the **VPS** set-up value, set the pressure switch to the correct value or replace it.

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Fig.73 Checking the Gps



10.2.13 Checking the Gps minimum gas pressure switch

- 1. Switch off the boiler.
- 2. Open the screw in measuring point 2 of the gas valve unit.
- 3. Connect a pressure gauge to measuring point **2** of the gas valve unit.
- 4. Turn on the boiler.
- 5. Set the boiler to low load.
- 6. Close the boiler gas valve very slowly until the boiler goes into blocking mode.
 - ⇒ Code B 15 BL.GAS PRESS/57;9.
- 7. Make a note of the pressure indicated by the pressure gauge at that point. Compare the measured values with the checking values in the table. If the measured pressure is lower, set the gas pressure switch to the correct value or replace it.

Tab.40 Minimum gas pressure switch value

C 330 ECO	Minimum value (mbar)
280	14
350	13
430	10
500	10
570	10
650	10

10.3 Specific maintenance work

Perform the specific maintenance work if this proves to be necessary following the standard inspection and maintenance work. To conduct the specific maintenance work:

10.3.1 General



Danger

- Disconnect the boiler's electricity supply.
- Shut off the gas supply.



Caution

During inspection or maintenance work, always replace all gaskets of the disassembled parts.

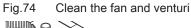
10.3.2 Clean the fan and venturi

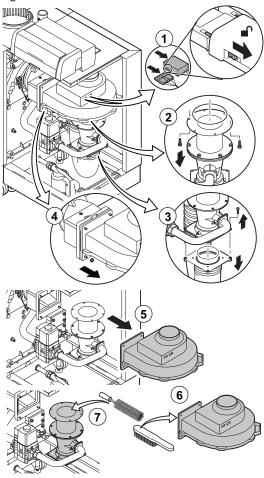
- 1. Remove the electrical connections from the fan. Push the safety slides on both sides of the power plug right to the back (using a small screwdriver, for example).
- 2. Unscrew the bolts from the extension piece under the fan. ⇒ Support the gas valve unit, using a block of wood, for example.
- 3. Disconnect the air supply hose from the venturi.
- 4. Unscrew the nuts on the fan output.
- 5. Disconnect the fan from the adaptor.
- 6. Clean the fan with a soft plastic brush.
- 7. Clean the venturi with a soft plastic brush.
- 8. Reassemble the unit in reverse order.



Important

Reconnect the fan's electrical connection.

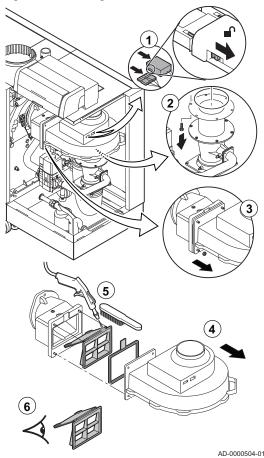




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Fig.75 Checking the non-return valve



10.3.3 Cleaning and inspecting the non-return valve

- 1. Remove the electrical connections from the fan. Push the safety slides on both sides of the power plug right to the back (using a small screwdriver, for example).
- 2. Unscrew the bolts from the extension piece under the fan.

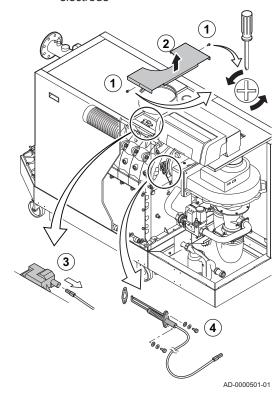
 ⇒ Support the gas valve unit, using a block of wood, for example.
- 3. Unscrew the nuts on the fan output.
- 4. Disconnect the fan adaptor.
- Inspect the non-return valve and replace it if faulty or seriously damaged.
- If the non-return valve does not need to be replaced, clean it with a soft plastic brush or compressed air.
- 7. Reassemble the unit in reverse order.

Λ

Caution

Reconnect the fan's electrical connection.

Fig.76 Replacing the ionisation/ignition electrode



10.3.4 Replacing the ionisation/ignition electrode

The ionisation/ignition electrode must be replaced if:

- The ionisation current is < 3 μA.
- The electrode is damaged or worn.
- The specific maintenance activities are carried out.
- 1. Unscrew the 2 screws on the middle top casing.
- 2. Remove the middle top casing.
- 3. Remove the plug of the electrode from the ignition transformer.



Important

The ignition cable is fixed to the electrode and therefore may not be removed.

4. Unscrew the 2 screws on the electrode and pull these forwards.



Caution

Do not fit the new electrode until the burner has been cleaned and refitted. This will prevent damage occurring.

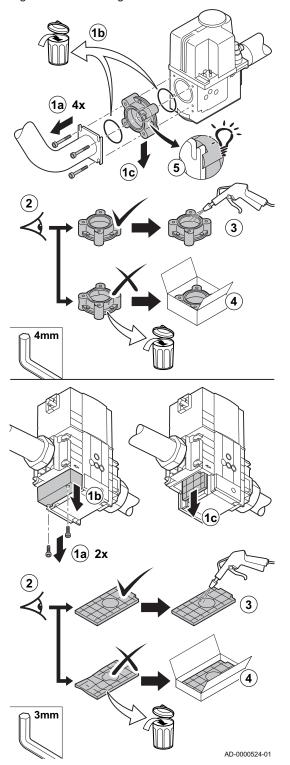
- 5. Remove the entire component.
- 6. Fit the new ionisation/ignition electrode.
- 7. Reassemble the unit in reverse order.



For more information, see

Cleaning the burner, page 69

Fig.77 Clean the gas filter



10.3.5 Clean the gas filter

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Important

The 5- to 9-section boilers are supplied with a different gas valve unit from the 10-section boiler.

- 1. Remove the gas filter.
- 2. Carry out a visual check.
- 3. Clean the gas filter without the use of liquids (shake it or carefully blow it clean).
- 4. Replace the gas filter if necessary.
- 5. Reassemble the unit in reverse order.



Caution

In this gas valve unit, the gas filter holder has a positioning ridge. Position this at the top left during assembly.

Fig. 78 Cleaning the burner 2 3 2-5 bar min. 1cm AD-0000499-02

10.3.6 Cleaning the burner

- 1. Unscrew the bolts from the adaptor and remove the adaptor.
- 2. Lift the burner out of the heat exchanger.
- 3. Check the burner and, if necessary, clean without touching it (e.g. with compressed air between 2 and 5 bars: maintain a minimum distance of 1 cm from the surface of the burner).

Λ

Caution

Never clean the burner's surface with a brush or similar item.

- 4. Carefully hoover the dirt from the inside of the burner.
- 5. Inspect the burner end cap.
- 6. Replace the burner or the burner end cap if faulty or seriously damaged.



Caution

Do not refit the burner until the burner area, heat exchanger, condensate collector and siphon have been cleaned.

10.3.7 Cleaning the burner area

- 1. Visually inspect the burner area.
- 2. Remove any visible soiling with a vacuum cleaner.

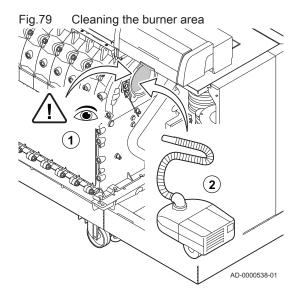
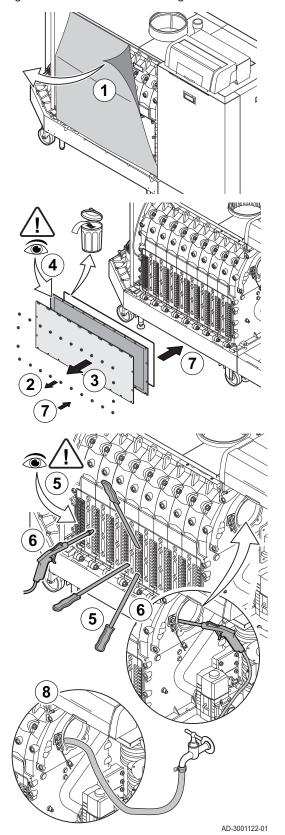


Fig.80 Clean the heat exchanger



10.3.8 Cleaning the heat exchanger

- 1. Remove the insulation set from the heat exchanger (locally).
- 2. Unscrew the nuts from the inspection hatch on the heat exchanger.
- Take the inspection trap off the heat exchanger and remove the insulation cloth.
 - The insulation cloth may stick to the heat exchanger. Avoid damaging or tearing the insulation cloth. Remove the silicon insulation cord.
- Inspect the insulation cloth and replace if it is faulty or seriously damaged.
- Clean the areas between the pins of the heat exchanger using the special cleaning tool or cleaning knife (accessory). Always work from the bottom to the top. Move the cleaning knife between the pins horizontally and diagonally.

$\lceil \mathbf{i} \rceil$

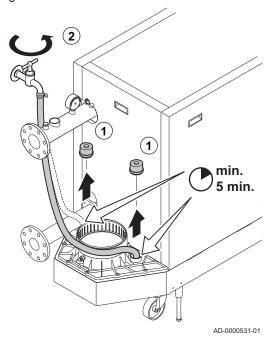
Important

A range of cleaning knives are available for the various boilers. Always use the cleaning knife specially designed for this boiler. This knife is 560 mm long.

- 6. Use compressed air to blow the cleaned parts through in turn. Do this from the service side and from the burner area.
- 7. Fit the inspection trap with the silicon cord and the insulation cloth.
- 8. Use clean water to thoroughly rinse the heat exchanger from the burner area.

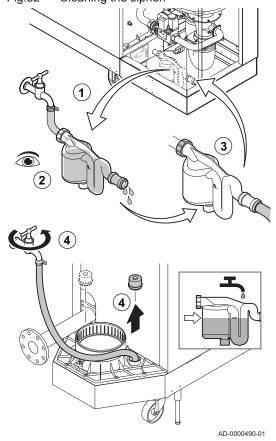
10.3.9 Clean the condensate collector

Fig.81 Clean the condensate collector



- 1. Loosen both the sealing caps on the condensate collector (in front of and behind the flue gas extraction connection).
- 2. Thoroughly clean the condensate collector with water. Rinse each side of the condensate collector for at least 5 minutes with the largest possible water flow.
- 3. Refit both sealing caps on the condensate collector.

Fig.82 Cleaning the siphon



10.3.10 Clean the siphon

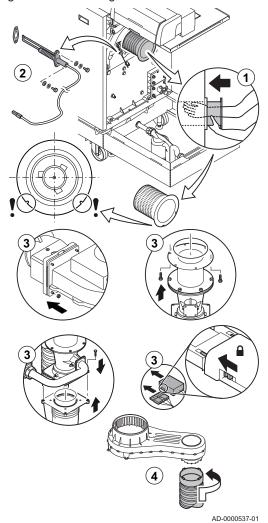
- 1. Remove the siphon.
- 2. Clean the siphon with water.
- 3. Put the siphon back in place.
- 4. Fill the siphon with water up to the mark via the condensate collector.



Danger

The siphon must always be sufficiently filled with water. This prevents flue gases from entering the room.

Fig.83 Remounting the burner



10.3.11 Remounting the burner

1. Fit the burner.

i Important

The burner has 2 holes at the front. Position these on the 2 support pins at the burner opening.

- 2. Fit the new ionisation/ignition electrode.
- 3. Fit the venturi and the fan.



Reconnect the fan's electrical connection.

4. Fit the air supply hose.

10.3.12 Reassembling the boiler

1. Fit all removed parts in the reverse order.



Caution

During inspection and maintenance operations, always replace all gaskets on the parts removed.

- 2. Carefully open the water tap.
- 3. Fill the installation with water.
- 4. Vent the installation.
- 5. Top up with more water if necessary.
- 6. Check the tightness of the gas and water connections.
- 7. Put the boiler back into operation.

10.3.13 Putting the boiler back into operation

- 1. Open the main gas tap
- 2. Check the gas circuit.
- 3. Check the water pressure.
- 4. Check that there are no leaks on the hydraulic connections.
- 5. Check the flue gas outlet and the air supply.
- 6. Check the electricity supply.
- 7. Check the electrical connections.
- 8. Switch the power on with the boiler's on/off switch.
- Check the gas inlet pressure at the measuring point P2 on the gas valve unit.

- 10. Check the ionisation current.
- 11. Check the combustion.
- 12. Check that gas connections between the gas valve unit and the venturi are sealed.
- 13. Vent the air from the CH system.

11 Troubleshooting

11.1 Error codes



Important

Operating the C 630 ECO boiler: the properties described and the instructions apply to each boiler module.

When a failure is signalled, the boiler stops or becomes locked. In the event of an error, a corresponding code is displayed. The meaning of the error codes can be found in the error table.



See

Manual for the control panel.



Important

The error code is needed to find the cause of the error quickly and correctly and for any support from De Dietrich.

12 Disposal

12.1 Removal/recycling



Important

Removal and disposal of the boiler must be carried out by a qualified person in accordance with local and national regulations.

To remove the boiler, proceed as follows:

- 1. Switch off the boiler's electrical connection.
- 2. Shut off the gas supply.
- 3. Shut off the water supply.
- 4. Drain the system.
- 5. Remove the siphon.
- 6. Remove the air supply/flue gas outlet pipes.7. Disconnect all pipes on the boiler.
- 8. Remove the boiler.

13 Spare parts

13.1 General

Only replace defective or worn boiler parts with original parts or recommended parts.



Important
When ordering a part, you must state the part number that appears in the list beside the position number of the required part.

Fig.84 Casing C 330 ECO 280 - 350 - 430 - 500 - 570 - 650

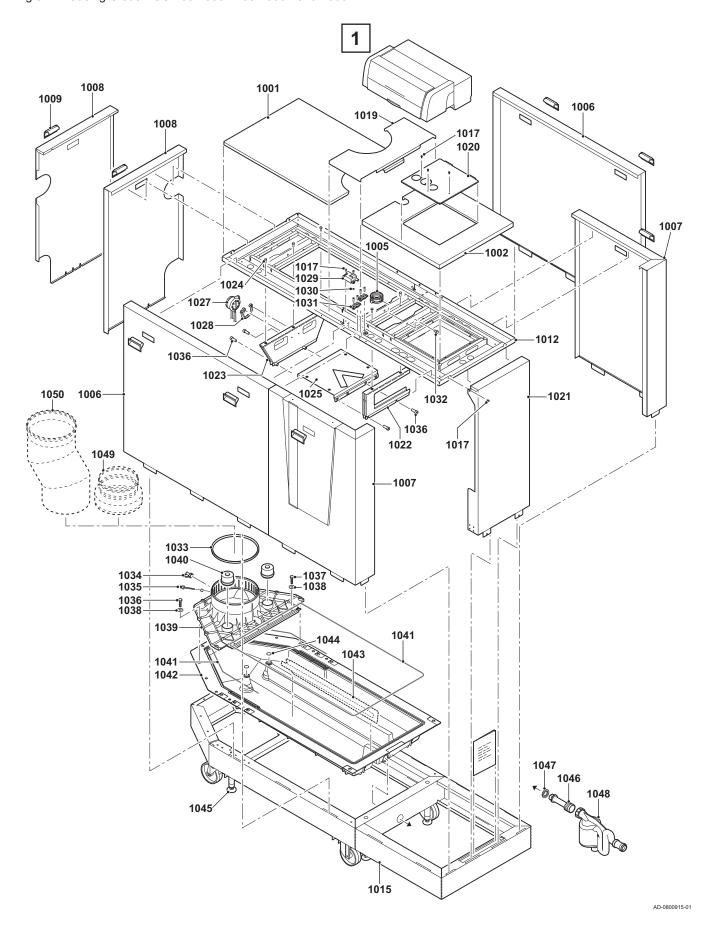
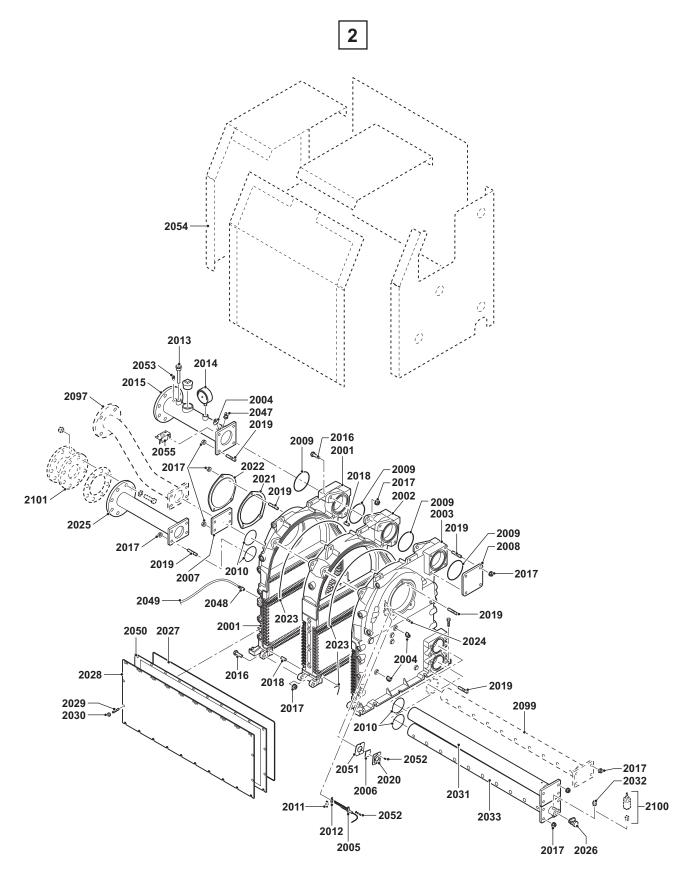


Fig.85 Heat exchanger and burner C 330 ECO 280 - 350 - 430 - 500 - 570 - 650



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Fig.86 Fan C 330 ECO 280 - 350 - 430 - 500 - 570 - 650

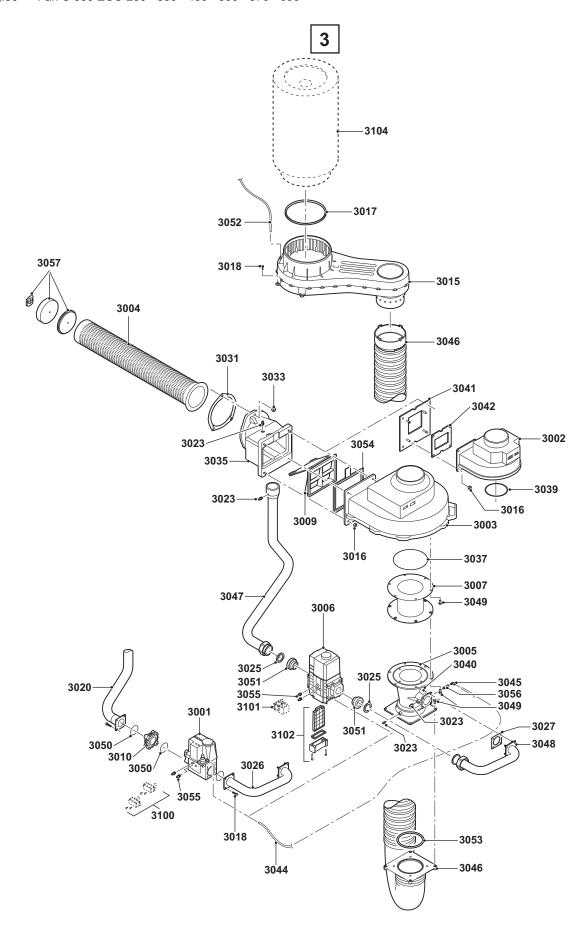


Fig.87 Control panel DIEMATIC iSystem voor C 330 ECO 280 - 350 - 430 - 500 - 570 - 650

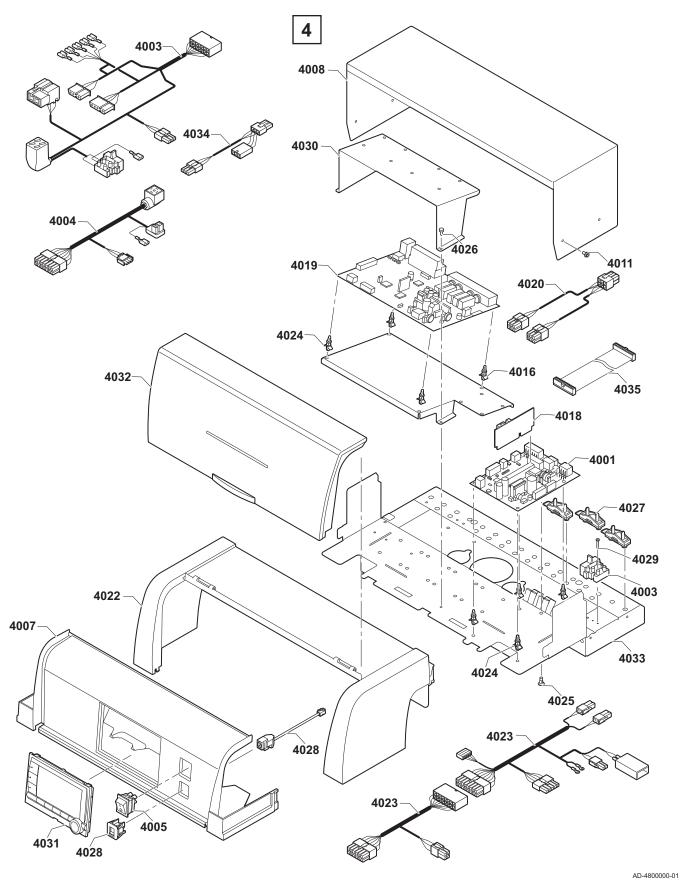
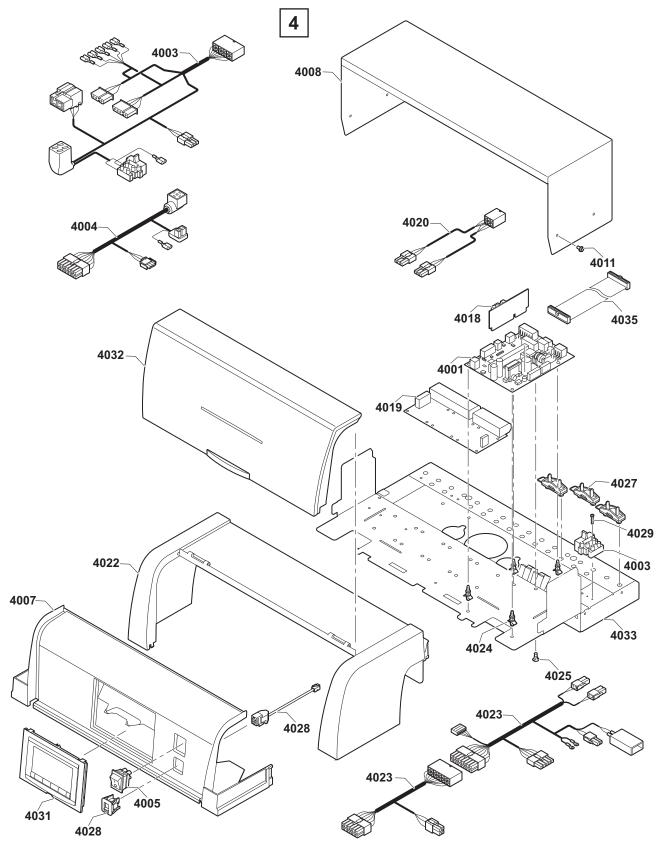
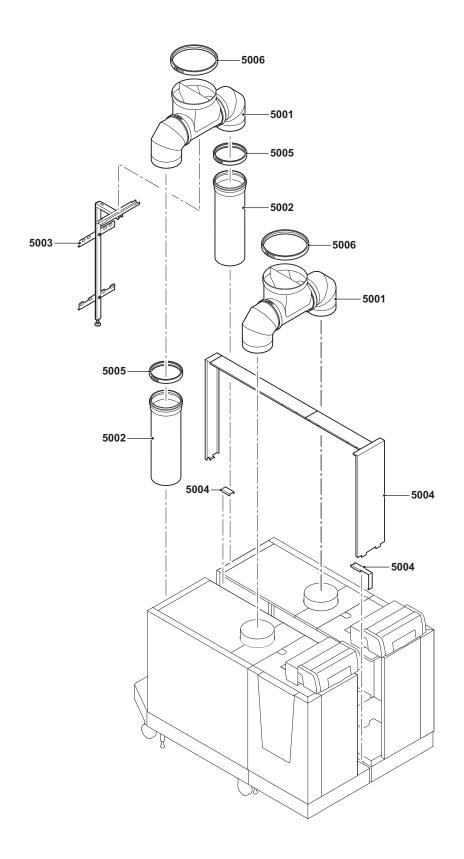


Fig.88 Control panel IniControl voor C 330 ECO 280 - 350 - 430 - 500 - 570 - 650



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Fig.89 C 630 ECO 560 - 700 - 860 - 1000 - 1140 - 1300



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13.3 Parts list

Tab.41 Casing C 330 ECO

Markers	Code no.	Description	280	350	430	500	570	650
1001	S103108	Top casing, 5/6/7 sections	х	х	х			
1001	S103109	Top casing, 8/9/10 sections				х	х	Х
1002	S103111	Top casing front (Large)	х	х	х	х	х	Х
1005	S103242	Bracket 44-49 M8	х	х	х	х	х	Х
1006	S103104	Side casing, 5/6/7 sections (Right Angle)	х	х	х			
1006	S103102	Side casing, 5/6/7 sections (Left Angle)	х	х	х			
1006	S103103	Side casing, 8/9/10 sections (Left Angle)				х	х	Х
1006	S103101	Side casing, 8/9/10 sections (Right Angle)				х	х	Х
1007	S103098	Side casing, right-hand version	х	х	х	х	х	Х
1007	S103097	Side casing, right-hand version, with logo	х	х	х	х	х	Х
1007	S103099	Side casing, left-hand version	х	х	х	х	х	Х
1007	S103096	Side casing, left-hand version, with logo	х	х	х	х	х	Х
1008	S103106	Back casing, right-hand version	х	х	х	х	х	Х
1008	S103107	Back casing, left-hand version	х	х	х	х	х	Х
1009	S100419	Casing handle	х	х	х	х	х	Х
1012	S103152	Frame top, 5/6/7 sections	х	Х	Х			
1012	S103153	Frame top, 8/9/10 sections				х	х	Х
1015	S103145	Frame, 8/9/10 sections				х	х	Х
1015	S103144	Frame, 5/6/7 sections	х	х	х			
1017	S14254	Plate screw 4.2 x 9.5 mm (20 pieces)	х	х	х	х	х	Х
1019	S103110	Top casing, middle	х	х	х	х	х	Х
1020	S103112	Top casing, front (Small)	х	х	х	х	х	Х
1021	S103105	Front casing, instrument panel side	х	х	х	х	х	Х
1022	S103154	Bracket support for frame, front	х	х	х	х	х	Х
1023	S103155	Bracket support for frame, back	х	х	х	х	х	Х
1024	S100570	M5 Bolt x 20 mm (10 pieces)	х	х	х	х	х	Х
1025	S103156	Bracket, air box	х	х	х	х	х	Х
1027	S103246	Pressure differential switch	х	х	х	х	х	Х
1028	S103247	Pressure differential switch securing ring (5 pieces)	x	х	x	x	х	х
1029	S103251	Ignition transformer	х	х	х	х	х	Х
1030	S21473	Locking washer A 4.3 mm (10 pieces)	х	х	х	х	х	Х
1031	S103315	Cable retainer (10 pieces)	х	х	х	х	х	Х
1032	S103248	M8 Bolt x 10 mm (5 pieces)	х	х	х	х	х	Х
1033	S103140	Gasket seal Ø 250 mm (2 pieces)	х	х	х	х	х	Х
1034	S103244	Protective plug for the flue gas outlet measuring point (2 pieces)	x	х	х	х	х	х
1035	S62288	Grommet for flue gas outlet pipe	х	х	х	х	х	Х
1035	S103023	Flue gas thermostat	х	х	х	х	х	Х
1036	S103250	M8 Bolt x 35 mm (10 pieces)	х	х	х	х	х	Х
1037	S103260	M8 Bolt x 20 mm (10 pieces)	х	х	х	х	х	Х
1038	S103249	Washer Ø 8.4 mm (10 pieces)	х	х	х	х	х	Х
1039	S103139	Flue gas adapter, 7 + 10 sections			х			Х
1039	S103137	Flue gas adapter, 5 + 8 sections	х			Х		
1039	S103138	Flue gas adapter, 6 + 9 sections		Х			Х	
1040	S103141	Sealing cap (2 pieces)	х	Х	Х	х	Х	Х
1041	S101372	Silicon seal, red, Ø 10 mm (5 metres)	х	Х	Х	Х	Х	Х
1042	S103136	Condensate collector, 8/9/10 sections				Х	Х	Х
1042	S103135	Condensate collector, 5/6/7 sections	х	х	х			

Markers	Code no.	Description	280	350	430	500	570	650
1043	S103302	Condensate collector strip, 6 sections	х	х	х	х	х	х
1044	S62713	O-ring diameter 20 x 2.5 mm (10 pieces)	х	х	х	х	х	х
1045	S103243	Levelling foot (2 pieces)	х	х	х	х	х	х
1046	S103143	Siphon connection	х	х	х	х	х	х
1047	S103261	Gasket seal 45 x 34 x 3 mm (10 pieces)	х	х	х	х	х	х
1048	S103142	Complete siphon	х	х	х	х	х	х
1049	S103179	Air supply/flue gas adapter diameter 250-200 mm (accessory)	х	х	х	х	х	х
1049	7600367	Clamping ring + gasket diameter 200 mm	х	х	х	х	х	х
1050	S103178	Air supply/flue gas adapter, diameter 250 mm	х	х	х	х	х	х
1050	7600368	Clamping ring + gasket seal Ø 250 mm	х	х	х	х	х	х

Tab.42 Heat exchanger and burner C 330 ECO

Markers	Code no.	Description	280	350	430	500	570	650
2001	S103166	Front section	х	х	х	х	х	х
2002	S103168	Intermediate section	х	х	х	х	х	х
2003	S103167	Rear section	х	х	х	х	х	х
2004	S101003	Temperature sensor NTC (2 pieces)	х	х	х	х	х	х
2005	S103262	Ignition/ionisation electrode	х	х	х	х	х	х
2006	S45004	Flame inspection window 32 x 32 x 3 mm, including gasket	х	х	х	х	х	х
2007	S100430	Blank flange, return	х	х	х	х	х	х
2008	S100431	Blank flange, flow	х	х	х	х	х	х
2009	S103263	O-ring diameter 107 mm (4 pieces)	х	х	х	х	х	х
2010	S103264	O-ring diameter 82 mm (8 pieces)	х	х	х	х	х	х
2011	S103265	Cover plate for electric ignition	х	х	х	х	х	х
2012	S62105	Sealing plate for ignition electrode (10 pieces)	х	х	х	х	х	х
2013	S42649	Immersion tube, ½"	х	х	х	х	х	х
2014	S103291	0-10 bar pressure gauge	х	х	х	х	х	х
2015	S103030	Flow pipe, 5 + 8 sections	х			х		
2015	S103031	Flow pipe, 6 + 9 sections		х			х	
2015	S103032	Flow pipe, 7 + 10 sections			х			х
2016	183	M12 bolt x 40 mm	х	х	х	х	х	х
2017	S103283	Nut flange M12 (10 pieces)	х	х	х	х	х	х
2018	62346	Dowel pin, diameter 12 x 20 mm	х	х	х	х	х	х
2019	57727	Stud M12 x 35 mm	х	х	х	х	х	х
2020	S54822	Flame inspection window holder	х	х	х	х	х	х
2021	S103266	Sealing plate for burner (2 pieces)	х	х	х	х	х	х
2022	S57785	Cover plate for burner hole	х	х	х	х	х	х
2023	S100643	Silicone gasket RTV 106	х	х	х	х	х	х
2024	S103267	Burner dowel pin (10 pieces)	х	х	х	х	х	х
2025	S103033	Return pipe, 5 + 8 sections	х			х		
2025	S103034	Return pipe, 6 + 9 sections		х			х	
2025	S103035	Return pipe, 7 + 10 sections			х			х
2026	S103304	Filling and drain valve, 1"	х	х	х	х	х	х
2027	S101368	Silicon seal, red, Ø 7 mm (5 metres)	х	х	х	х	х	х
2028	S57720	Heat exchanger access plate, 5 sections	х					
2028	S57721	Heat exchanger access plate, 6 sections		Х				
2028	S57722	Heat exchanger access plate, 7 sections			Х			
2028	S57723	Heat exchanger access plate, 8 sections				х		
2028	S57724	Heat exchanger access plate, 9 sections					Х	
2028	S103148	Heat exchanger access plate, 10 sections						х

Markers	Code no.	Description	280	350	430	500	570	650
2029	S100549	Stud M8 (25 pieces)	х	х	х	х	х	х
2030	S100556	Nut M8 (25 pieces)	х	х	х	х	х	х
2031	S57738	Return water blind pipe, 5 sections	х					
2031	S57739	Return water blind pipe, 6 sections		х				
2031	S57740	Return water blind pipe, 7 sections			х			
2031	S57741	Return water blind pipe, 8 sections				х		
2031	S57742	Return water blind pipe, 9 sections					х	
2031	S103036	Return water blind pipe, 10 sections						х
2032	S100532	Plug, %"	х	х	х	х	х	х
2033	S103269	Return water distribution pipe, 5 sections	х					
2033	S103270	Return water distribution pipe, 6 sections		х				
2033	S103271	Return water distribution pipe, 7 sections			х			
2033	S103272	Return water distribution pipe, 8 sections				х		
2033	S103273	Return water distribution pipe, 9 sections					х	
2033	S103038	Return water distribution pipe, 10 sections						х
2047	S103268	Temperature sensor HI	х	х	х	х	х	х
2048	S103188	Nipple including silicon hose 8 x 2 mm	х	х	х	х	х	х
2049	S103274	Silicone hose 4/8, 1300 mm	х	х	х	х	х	х
2050	S100668	Insulation for heat exchanger front plate, 5 sections	х					
2050	S100669	Insulation for heat exchanger front plate, 6 sections		х				
2050	S100670	Insulation for heat exchanger front plate, 7 sections			х			
2050	S100671	Insulation for heat exchanger front plate, 8 sections				х		
2050	S100672	Insulation for heat exchanger front plate, 9 sections					х	
2050	S103149	Insulation for heat exchanger front plate, 10 sections						х
2051	S35458	Gasket for flame inspection window (5 pieces)	х	х	х	х	х	х
2052	S48950	Screw M4 x 10 mm DIN 7985 (50 pieces)	х	х	х	х	х	х
2053	S41601	Air vent, 1/8"	х	х	х	х	х	х
2054	S101806	Heat exchanger insulation set, 5 sections	х					
2054	S101807	Heat exchanger insulation set, 6 sections		х				
2054	S103307	Heat exchanger insulation set, 7 sections			х			
2054	S103308	Heat exchanger insulation set, 8 sections				х		
2054	S103309	Heat exchanger insulation set, 9 sections					х	
2054	S103310	Heat exchanger insulation set, 10 sections						х
2055	7600397	Holding frame	Х	Х	х	х	х	х
2097	S103039	Second return pipe, 5 + 8 sections	х			х		
2097	S103040	Second return pipe, 6 + 9 sections		х			х	
2097	S103041	Second return pipe, 7 + 10 sections			х			х
2099	S57743	Second return water pipe, 5 sections	х					
2099	S57744	Second return water pipe, 6 sections		Х				
2099	S57745	Second return water pipe, 7 sections			Х			
2099	S57746	Second return water pipe, 8 sections				Х		
2099	S57747	Second return water pipe, 9 sections					Х	
2099	S103037	Second return water pipe, 10 sections						х
2100	S101784	Hydraulic pressure sensor	х	Х	Х	Х	Х	х
2101	S101775	Circulating pump adapter	X	х	х	х	х	х

Tab.43 Fan C 330 ECO

	an C 330 ECO	Description	000	050	400	F00	F70	050
Markers	Code no.	Description	280	350	430	500	570	650
3001	S103275	Gas valve unit, 5 sectionsVR425	X					
3001	S103276	Gas valve unit, 6 sectionsVR432		Х				
3001	S103277	Gas valve unit, 7/8/9 sectionsVR434			Х	Х	Х	
3002	S57770	Fan 5/6 sectionsG1G170	Х	Х				
3003	S103150	Fan 7/8/9/10 sectionsG3G250			х	х	х	Х
3004	S100347	Burner, 5 sections	Х					
3004	S103077	Burner, 6 sections		х				
3004	S100329	Burner, 7 sections			х			
3004	S100330	Burner, 8 sections				х		
3004	S100331	Burner, 9 sections					X	
3004	S103078	Burner, 10 sections						Х
3005	S57791	Venturi assembly, 5 sections	х					
3005	S57792	Venturi assembly, 6 sections		х				
3005	S57793	Venturi assembly, 7/8/9 sections			х	х	х	
3005	S103079	Venturi assembly, 10 sections						Х
3006	S103151	Gas valve unit, 10 sections						х
3007	S103073	Venturi - fan connecting piece, 7/8/9/10 sections			х	х	х	Х
3007	S103072	Venturi - fan connecting piece, 5/6 sections	х	х				
3009	S103071	Non-return valve	х	х	х	х	х	Х
3010	S103074	Gas filter, 10 sectionsHFVR	Х	х	х	х	х	Х
3015	S103075	Air box, 5/6/7/8/9/10 sections	X	х	х	х	х	Х
3016	S44483	Nut M8 (10 pieces)	×	х	x	×	x	Х
3017	S103140	Gasket seal Ø 250 mm (2 pieces)	X	х	х	x	х	Х
3018	S100570	Bolt M5 x 20 mm (10 pieces)	X	х	х	х	х	Х
3020	S103042	Gas supply pipe, 5/6/7/8/9 sections, left	X	х	x	x	х	
3020	S103043	Gas supply pipe, 5/6/7/8/9 sections, left	X	х	х	х	x	
3023	S103279	Pressure measuring nipple, 1/8"	X	x	Х	x	x	Х
3025	S103280	Gasket seal 56 x 42 x 2 mm (5 pieces)	X	Х	Х	X	X	Х
3026	S103047	Gas supply pipe, 5 + 6 sections, bottom right	X	X				
3026	S103048	Gas supply pipe, 7/8/9 sections, bottom left	 		Х	Х	Х	
3026	\$103049	Gas supply pipe, 7/8/9 sections, bottom right			X	X	X	
3026	S103046	Gas supply pipe, 5 + 6 sections, bottom left	×	Х				
3027	S103281	Venturi gasket (2 pieces)	X	X	Х	Х	Х	х
3031	S103266	Sealing plate for burner (2 pieces)	X	X	X	X	X	X
3033	S103283	Nut flange M12 (10 pieces)	X	X	X	X	X	X
3035	S103070	Mixing adaptor	X	X	X	X	X	X
3037	S103070	O-ring diameter 180 x 3.5 mm (5 pieces)	X	X	X	X	X	X
3039	S103285	O-ring diameter 111 x 4 mm (2 pieces)	X	X			X	X
3040	S46687	Nut flange M5 (10 pieces)	+		X	X		
3040	S103286	Fan assembly plate	X	X	X	X	X	X
3041	S59650	Fan sealing plate	X	X	X	X	X	X
3044		Hose diameter 6 mm (1 metre)	X	X	X	X	X	X
	S103288	· · · ·	X	X	X	X	X	X
3045	S103289	Elbow coupling M5 x 6 mm (5 pieces)	X	X	X	X	X	X
3046	S103076	Flexible hose, complete	X	Х	Х	Х	Х	Х
3047	S103044	Gas supply pipe, 10 sections, left						X
3047	S103045	Gas supply pipe, 10 sections, right						Х
3048	S103051	Gas supply pipe, 10 sections, bottom right	1					Х
3048	S103050	Gas supply pipe, 10 sections, bottom left						Х
3049	S59141	Bolt M5 x 18 mm (15 pieces)	X	Х				
3049	S15524	Bolt M8 x 16 mm (10 pieces)			Х	Х	Х	x

Markers	Code no.	Description	280	350	430	500	570	650
3050	S100619	O-ring diameter 52.39 x 3.53 mm (5 pieces)	х	х	х	х	х	х
3051	S103290	Reduction nipple 2" x 1½" (2 pieces)	х	х	х	х	х	х
3052	S47170	Silicone hose Ø 4/8, 1000 mm	х	х	х	х	х	х
3053	S103287	O-ring Ø 130 x 3.5 mm (2 pieces)	х	х	х	х	х	х
3054	S103330	Flue damper gasket (5 pieces)	х	х	х	х	х	х
3055	S103356	Measuring nipple ⅓" (2 pieces)	х	х	х	х	х	х
3056	S103357	Adapter 1/8"- M5 (2 pieces)	х	х	х	х	х	х
3057	S100490	Insulation burner repair kit	х	х	х	х	х	х
3100	S103305	Gas leakage control VPS	х	х	х	х	х	
3100	S103306	Minimum gas pressure switch GPS	х	х	х	х	х	
3101	S101805	Minimum gas pressure switch GPS						х
3101	S101724	Gas leakage control VPS						х
3102	S103292	Gas filter, 10 sections						х
3104	59212	Air inlet filter Ø 325 mm	х	х	х	х	х	х

Tab.44 Control panel C 330 ECO

Markers	Code no.	Description	280	350	430	500	570	650
4001	S43561	Fuse 2 AT (10 pieces)	х	х	х	х	х	х
4001	S103053	Control board PCU-06	х	х	х	х	х	х
4003	S103235	Wiring harness 230V-1	х	х	х	х	х	х
4004	S103236	Wiring harness 230V-2	х	х	х	х	х	х
4005	S103232	On/Off switch	х	х	х	х	х	х
4007	S103067	Front panel	х	х	х	х	х	х
4008	S103068	Control panel back cover	х	х	х	х	х	х
4011	S100612	Plate screw 4.2 x 8 mm (20 pieces)	х	х	х	х	х	х
4016	S103065	Support DIEMATIC iSystem	х	х	х	х	х	х
4018	S103300	SU-01 PCB	Х	х	х	х	х	х
4019	S103055	Extension PCB SCU-S05 (IniControl)	Х	х	х	х	х	х
4019	S103056	Extension PCB (DIEMATIC iSystem)	Х	х	х	х	х	х
4020	S103301	BUS Cable (IniControl)	Х	х	х	х	х	х
4020	7600363	BUS Cable (DIEMATIC iSystem)	Х	х	х	х	х	х
4022	S103063	Front panel	Х	х	х	х	х	х
4023	S103240	Cable tree 24V-1	Х	х	х	х	х	х
4023	S103241	Wiring harness 24V-2	Х	х	х	х	х	х
4024	S103069	Snapper spacer (10 pieces)	Х	х	х	х	х	х
4025	S100583	Spacer cap	Х	х	х	х	х	х
4026	S14254	Plate screw 4.2 x 0.5 mm (DIEMATIC iSystem)	Х	х	х	х	х	х
4027	S103315	Cable retainer (10 pieces)	Х	х	х	х	х	х
4028	S103233	Cable RS232	Х	х	х	х	х	х
4029	S103299	Screw 2.9 x 19mm (10 pieces.)	Х	х	х	х	х	х
4030	S103239	Bracket SCU (DIEMATIC iSystem)	Х	х	х	х	х	х
4031	S101249	Display PCB (DIEMATIC iSystem)	х	х	х	х	х	х
4031	3000236 02	Display PCB (IniControl)	х	х	х	х	х	х
4032	S103061	Instrument panel lid	Х	х	х	х	х	х
4033	S103234	Mounting plate for control panel	х	х	х	х	х	х
4034	S101681	Cable SCU -230 (DIEMATIC iSystem)V	х	х	х	х	х	х
4035	S103353	Ribbon cable (DIEMATIC iSystem)	х	Х	Х	х	х	х
4035	S103353	Ribbon cable (IniControl)	х	х	х	х	х	х
	S103251	Ignition transformer	х	Х	Х	х	х	х
	S103298	PSU-01 PCB	х	х	х	х	х	х

Tab.45 PartsC 630 ECO

Markers	Code no.	Description	560	700	860	1000	1140	1300
5001	S103128	r supply manifold		х	х	х	х	х
5002	S103119	Flue gas outlet pipe Ø 250 mm/L = 890 mm	х	х	х	х	х	х
5003	S103318	Flue gas support	х	х	х	х	х	х
5004	S103313	Casing set, 5-7 sections	х	х	х			
5004	S103314	Casing set, 8-10 sections				х	х	х
5005	7600368	Clamping ring + gasket seal Ø 250 mm	х	х	х	х	х	х
5006	7600369	Clamping ring + gasket seal Ø 350 mm	х	х	х	х	х	х

14 Appendix

14.1 ErP information

14.1.1 Product fiche

Tab.46 Product fiche

De Dietrich - C 330 ECO		280	350	430	500	570	650
Seasonal space heating energy efficiency class		-	-	-	-	-	-
Rated heat output (Prated or Psup)	kW	261	327	395	-	-	-
Seasonal space heating energy efficiency	%	-	-	-	-	-	-
Annual energy consumption	GJ	-	-	-	-	-	-
Sound power level L _{WA} indoors	dB	72	72	72	-	-	-



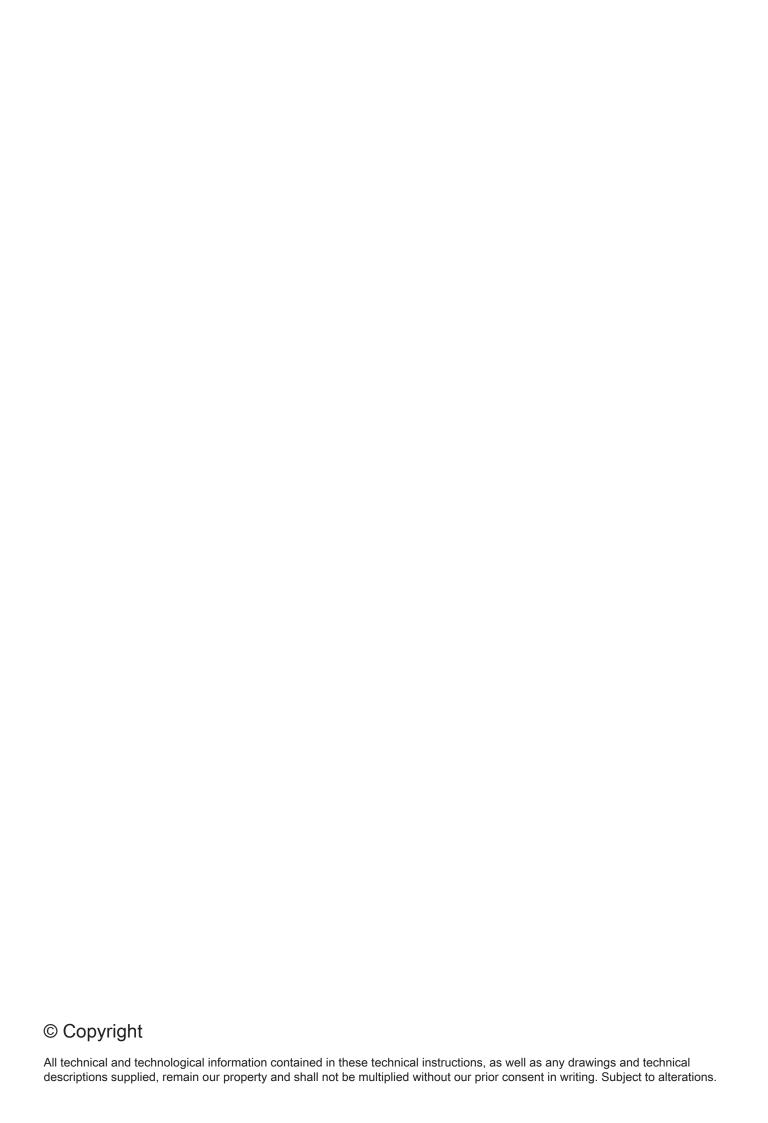
See

For specific precautions in relation to assembly, installation and maintenance: Safety, page $5\,$

14.2 EC declaration of conformity

The unit complies with the standard type described in the EC declaration of conformity. It has been manufactured and commissioned in accordance with European directives.

The original declaration of conformity is available from the manufacturer.



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