

1 Gas setting values (LPG)

Display percentage %	Heat Output [kW]	Heat Input [kW]	Gas flow rate [l/min]
100	24,0	24,6	16,3
95	23,9	23,4	15,5
90	21,7	22,1	14,7
85	20,5	20,9	13,9
80	19,2	19,7	13,0
75	18,0	18,5	12,2
70	16,8	17,2	11,4
65	15,6	16,0	10,6
60	14,4	14,8	9,8
55	13,2	13,5	9,0
50	12,0	12,3	8,2
45	10,8	11,1	7,3
40	9,6	9,8	6,5
35	8,4	8,6	5,7
30	7,2	7,4	4,9
25	6,0	6,2	4,1
22	5,2	5,4	3,6

Table 1 GR1000 W 24 C (LPG)

Display percentage %	Heat Output [kW]	Heat Input [kW]	Gas flow rate [l/min]
82	24,0	24,6	16,3
80	23,5	24,0	15,9
75	22,0	22,5	14,9
70	20,5	21,0	13,9
65	19,1	19,5	12,9
60	17,6	18,0	11,9
55	16,1	16,5	10,9
50	14,6	15,0	10,0
45	13,2	13,5	9,0
40	11,7	12,0	8,0
35	10,2	10,5	7,0
30	8,7	9,0	6,0
25	7,3	7,5	5,0
22	6,4	6,6	4,4

Table 2 GR1000 W 30 C (LPG)

Gas Supply (LPG):

Liquid Petroleum Gas (LPG):

Discharge rates for copper tube with 2.5mbar differential pressure between the ends for LPG.

Tubing length (m)	Discharge rates for LPG (m ³ /hr) with straight horizontal copper tube					
	Outside diameter					
	15mm		22mm		28mm	
	kW	m ³ /hr	kW	m ³ /hr	kW	m ³ /hr
3	38.4	1.49	207	8.01	412	15.92
6	26.1	1.01	135	5.21	230	8.86
9	20.5	0.79	108	4.19	215	8.33
12	17.9	0.70	94	3.62	187	7.25
15	15.5	0.60	82	3.20	168	6.51
18	13.5	0.53	74	2.86	145	5.61
21	12.9	0.50	67	2.58	135	5.24
24	12.0	0.47	61	2.58	126	4,87

Table 2 Liquid Petroleum Gas (LPG)



Liquid Petroleum Gas (LPG):

- ▶ When using this table to estimate the gas flow rate in pipework of a known length, the effective length will be increased by 0.6m for each 90° elbow or tee used and by 0.3m for each 45° bend or straight coupler used.

2 Checking gas inlet pressure

Measuring the inlet pressure

- ▶ Switch off the appliance and close the gas isolator.
- ▶ Unscrew the screw on the test nipple for the gas supply pressure and connect a pressure gauge.

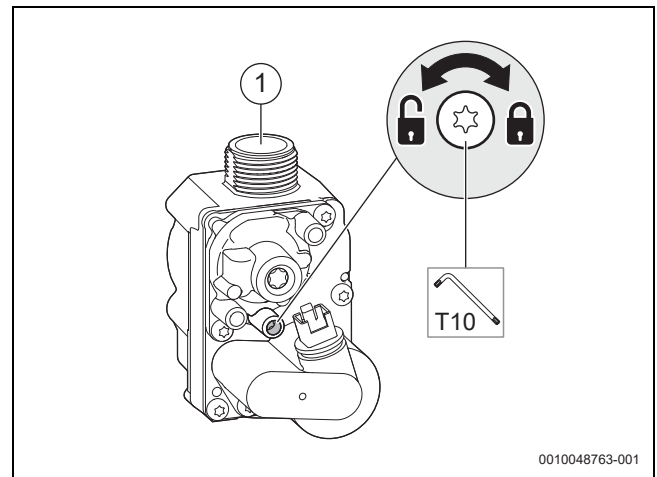


Fig. 1 Checking the gas supply pressure

[1] Gas valve

- ▶ Open the gas isolator and switch on the appliance.
- ▶ Ensure that there is heat transfer by opening the radiator valves and any zone valves fitted. A hot water tap can also be opened for additional heat transfer.
- ▶ Set the appliance running at maximum output in chimney sweep mode
- ▶ Check the required gas supply pressure according to following section "Gas pressure within the system".



Commissioning must not take place outside of the permissible pressure range.

- ▶ Identify the cause and rectify the fault.
- ▶ If this is not possible: isolate the device on the gas side and notify the gas supplier.
- ▶ Exit the chimney sweep mode.
- ▶ Switch off the device, close the gas isolator, remove the pressure gauge and tighten the screw.
- ▶ Refit the casing.

Gas pressure within the system



The appliance must be running at maximum output rate when performing the gas rate check,

If you lost the gas settings:

- ▶ Turn the minimum adjustment screw to the right (clockwise) till the end (means completely open).
- ▶ Turn the minimum adjustment screw 5-6 complete turns to the left (counter-clockwise). The minimum adjustment screw comes to working range.
- ▶ Check offset pressure for fine tuning.



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- ▶ Running a hot water tap does not guarantee the appliance will operate at maximum output throughout the test.

Refer to the figures below for Natural Gas/LPG gas pressures.

The pressure drop from the natural gas meter to the gas valve inlet test point must not be more than the values stated in table 3.

If the pressure drops are greater than shown in table 3, then this would indicate a problem with the pipe work or connections within the system.

NOTICE

Do not continue commissioning until the correct gas pressure is achieved with the appliance running at maximum output.

Gas pressure within the system



The appliance must be running at maximum output rate when performing the gas rate check,



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- ▶ Running a hot water tap does not guarantee the boiler will operate at maximum output throughout the test.

Refer to the figures below for Natural Gas and LPG gas pressures.

The pressure drop from the natural gas meter or LPG storage tank to the gas valve inlet test point must not be more than the values stated in table .

If the pressure drops are greater than shown in table , then this would indicate a problem with the pipe work or connections within the system.

NOTICE

Do not continue commissioning until the correct gas pressure is achieved.

Gas Supply Pressure Drop

Description	Gas Type	
	Natural Gas	LPG
NG Meter/LPG Supply pressure from the final stage regulator outlet [A] (mbar range)	18.5 - 23	32 - 45
Final stage regulator when fitted after the ECV or meter [A1] (mbar) ¹⁾	-	32 - 45
Permitted pressure drop [A & A1] (mbar) ²⁾	-	0.5
Primary meter outlet or ECV outlet when the ECV is fitted after the final stage regulator [A & A1] (mbar) ²⁾	-	31.5 - 44.5
Across pipework permitted pressure drop [B] (mbar)	1	2
Appliance inlet [C] (mbar range)	17.5 - 22	30 - 43 ¹⁾ 29.5 - 42.5 ²⁾
Across appliance permitted pressure drop [D] (mbar)	1.5	1.5
Gas valve inlet test point [E] (mbar range)	16 - 20.5	28 - 41 ¹⁾ 28.5 - 41.5 ²⁾

1) When no primary meter is installed, and the final stage regulator is installed after the ECV, The pressure at the outlet of the final stage regulator shall be between 32 – 45 mbar.

2) When a primary meter is installed or when no primary meter is installed and the ECV is fitted after the final stage regulator, you are permitted a 0.5 mbar pressure drop to the meter outlet or to the outlet of the ECV.

Table 3 Allowed mbar pressure drop

Gas supply pressure drop - Natural Gas

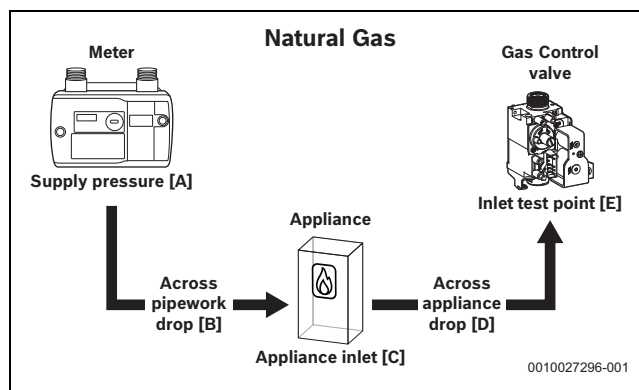


Fig. 2 Natural Gas pressures

Gas supply pressure drop - LPG

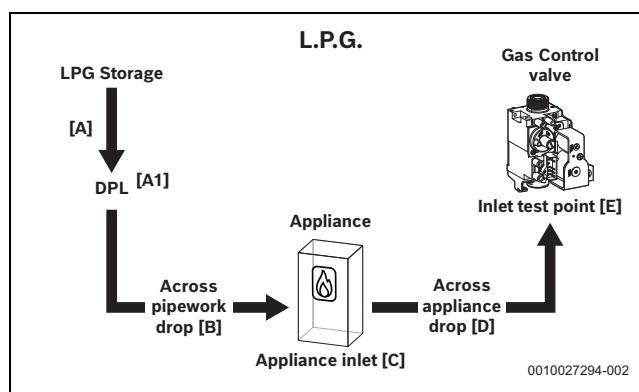


Fig. 3 L.P.G. pressures

[DPL] The design pressure loss between the outlet of the primary meter installation or where no meter is installed the outlet of the ECV or the outlet of the final stage regulator when fitted after the ECV and the point to be connected on any appliance inlet shall not exceed 2 mbar at design installation flow rate.

Gas valve resistance value can be measured via blue socket. The reference value is: 116 Ohm from blue sockets.

Appliance combustion contents settings

CO ₂ Reading	O ₂ Reading [%]	CO Reading
Natural Gas - Maximum rated Output¹⁾		
Between 8.6 and 10.5 %	5.6 - 2.2	<250ppm
Natural Gas - Minimum rated Output		
A minimum of 0.2 lower than the maximum reading taken but above 8.1 %.	<6.1	<250ppm

1) Measured 10 minutes after firing the appliance

Table 4 CO₂ settings

CO ₂ Reading	O ₂ Reading [%]	CO Reading
LPG - Maximum rated Output¹⁾		
Between 9.8 and 10.6%	6.0 - 4.8	<250ppm
LPG - Minimum rated Output		
A minimum of 0.2 lower than the maximum reading taken but above 9.3%	<6.8	<250ppm

1) Measured 10 minutes after firing the appliance

Table 5 CO₂ settings

Technical data table

Description	Unit	24kW		30kW	
		NG	LPG	NG	LPG
Gas flow maximum rate - 10 minutes from lighting					
Gas inlet pressure (nominal) ¹⁾	mbar	20.0	37.0	20.0	37.0
Natural gas ²⁾	m ³ /h	2.47	1.0	3.02	1.2
Central Heating (CH)					
Maximum rated heat input (net) (Q _{max})	kW	24.6		24.6	
Maximum rated heat output 40/30 °C	kW	26.5		26.5	
Maximum rated heat output 50/30 °C (P _{cond, max})	kW	26.3		26.3	
Maximum rated heat output 80/60 °C (P _{max})	kW	24.0		24.0	
Minimum rated heat input (net) (Q _{min})	kW	5.4		6.6	
Minimum rated heat output 40/30 °C	kW	5.8		7.1	
Minimum rated heat output 50/30 °C (P _{cond, min})	kW	5.75	5.8	7.05	7.1
Minimum rated heat output 80/60 °C (P _{min})	kW	5.2		6.4	
Maximum flow temperature	°C	84		84	
Maximum flow temperature possible	°C	82		82	
Maximum permissible operating pressure (PMS)	bar	3.0		3.0	
Available pump head at 20 °C system temperature rise	m	2		2	
Domestic Hot Water (DHW)					
Minimum heat input	kW	5.4		6.6	
Maximum rated heat input (net) (Q _n W)	kW	24.6		30	
Maximum rated heat output (P _n W)	kW	24.0		29.5	
Maximum mains inlet pressure (standing pressure PMW)	bar	10		10	
Minimum mains inlet pressure (working) for max. flow	bar	1.5		1.5	
Minimum mains inlet pressure (working) for operation	bar	0.3		0.3	
Minimum required flow to activate DHW demand	l/min	2.5		2.5	
DHW temperature range	°C	35 - 60		35 - 60	
Maximum cold water inlet temperature	°C	23		23	
Maximum DHW flow rate – 35 °C rise ± 15 % ³⁾	l/min	9.8		12.2	
Maximum DHW flow rate – 40 °C rise ± 15 %	l/min	8.5		10.7	
Flue					
Flue gas temperature max. load DHW demand	°C	76		80	
Flue gas temperature 80/60 °C, rated/min. load	°C	76/61		76/63	80/63
Flue gas temperature 40/30 °C, rated/min. load	°C	45/38		46/38	
CO ₂ level at max. rated heat output (after 10 minutes)	%	9.0	10.2	9.0	10.2
CO ₂ level at min. rated heat output (after 10 minutes)	%	8.5	9.7	8.5	9.7
NOx Class	–	6		6	
NOx rating (EN 15502-1)	mg/kWh	43	42	41	39
Condensate					
Maximum condensate rate	l/h	3		3	
pH value, approx.	–	3.15	2.12	3.15	2.12
Electrical					
Electrical power supply voltage	a.c. V	230		230	
Frequency	Hz	50		50	
Maximum power consumption (running)	W	112		125	
Maximum power consumption (stand-by)	W	3		3	
Energy efficiency index (EEI) heating pump	–	≤ 0.2		≤ 0.2	
General data					
Expansion vessel capacity	l	6		6	
Expansion vessel pre-charge pressure	bar	0.75		0.75	
Appliance protection rating	IP	X4D		X4D	
Permissible ambient temperature short-term/long-term	°C	0 - 50/40		0 - 50/40	
Total package weight	kg	31,5		31,5	
Total appliance weight (excluding packaging)	kg	27.7		27.7	
Lift weight (without front panel)	kg	26		26	
SEDBUK 2009/12	%	–		–	

1) For minimum and maximum permissible pressure refer to "Gas pressure within the system", section.

2) The Gas Rate provided assumes the accepted NG averaged calorific value of 34.9 MJ/m³ net.

3) Appliances are fitted with a flow regulator set to achieve a 35°C temperature rise. A 40°C temperature rise is possible at lower flow rates.

Table 6 Technical data











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