

GAS CHANGE

1 PREMISE

1.1 QR CODE



1.2 AVAILABLE LANGUAGES

This document is originally written in Italian and English. Any other languages are translations of this document. For versions of this document in other languages, see Robur website.

1.3 USE

Next-R series gas unit heaters.

1.4 KEY TO SYMBOLS



DANGER



WARNING



NOTE



PROCEDURE



REFERENCE (to other document)

2 WARNINGS



For correct installation, please refer to the manual included in the appliance and to these assembly instructions.



Please read the warnings and operating instructions contained in these instructions carefully as they provide important information regarding safe installation, use and maintenance. Keep this sheet carefully for further reference. The manufacturer cannot be held responsible for any damage caused by improper, erroneous or unreasonable use.



Installer's qualifications

Installation must exclusively be performed by a qualified firm and by skilled personnel, with specific knowledge on heating, electrical systems and gas appliances, in compliance with the laws in force in the Country of installation.

The design, installation, operation and maintenance of the systems shall be carried out in compliance with cur-

rent applicable regulations, depending on the Country and location, and in accordance with the manufacturer's instructions. In particular, regulations regarding the following shall be complied with:

- ▶ Gas systems and equipment.
- ▶ Electrical systems and equipment.
- ▶ Heating systems.
- ▶ Environmental protection and combustion products exhaust.
- ▶ Fire safety and prevention.
- ▶ Any other applicable law, standard and regulation.



Any contractual or extra-contractual liability of the manufacturer for any damage caused by incorrect installation and/or improper use and/or failure to comply with regulations and with the manufacturer's directions/instructions shall be disclaimed.



This operation must be carried out in total safety. Before starting intercept the gas and disconnect the power supply.

3 GAS CHANGEOVER



The operations described must only be carried out by an authorised service centre.



After the gas changeover, check the combustion parameters as described in Paragraph 5 p. 5.



The following instructions apply to both the conversion from natural gas (G20) to any other gas and vice versa.



Check that the gas supply line is suitable for the new fuel type used to supply the unit.

The following Table 3.1 p. 2 shows the nozzle diameter and code for the different gas unit heater models, depending on the gas type.

Table 3.1 Nozzle data

				R15	R20	R30	R40	R50	R60	R80
Installation data										
Nozzle	Diameter (Ø)	G20	mm	5,80	6,00	7,80	8,80	9,30	10,40	9,60
	Code	G20	-	202	209	203	205	204	219	251
	Diameter (Ø)	G25	mm	5,80	6,00	7,80	8,80	9,30	11,60	
	Code	G25	-	202	209	203	205	204	220	
	Diameter (Ø)	G25.1	mm	6,65	6,80	9,50	12,30	- (1)	12,20	
	Code	G25.1	-	210	216	211	218	- (1)	223	
	Diameter (Ø)	G25.3	mm	5,80	6,00	7,80	8,80	9,30	11,40	
	Code	G25.3	-	202	209	203	205	204	221	
	Diameter (Ø)	G27	mm	6,65	6,80	9,50	12,30	- (1)	12,20	
	Code	G27	-	210	216	211	218	- (1)	223	
	Diameter (Ø)	G2.350	mm	6,65	6,80	9,50	12,30	- (1)	14,10	- (2)
	Code	G2.350	-	210	216	211	218	- (1)	222	- (2)
	Diameter (Ø)	G30	mm	3,85	4,20	5,10	5,60	5,75	7,60	
	Code	G30	-	214	215	212	217	213	225	
	Diameter (Ø)	G31	mm	3,85	4,20	5,10	5,60	5,75	8,10	
	Code	G31	-	214	215	212	217	213	224	
	Diameter (Ø)	LPG	mm	3,85	4,20	5,10	5,60	5,75	7,80	
	Code	LPG	-	214	215	212	217	213	241	

(1) Operation with this type of gas does not require the use of the nozzle.
 (2) The gas unit heater cannot operate with this type of gas.

3.1 R15/R20/R30/R40/R50



How to change gas (Figure 3.1 p. 3)

1. Cut off electric power and gas supply.
2. Unscrew the hexagonal seal that connects the gas pipe (A) to the nozzle holder fitting. Take care not to lose or damage the internal gasket (B) nor the o-ring (D).
3. Move the gas pipe and pull out the nozzle (C), using a screwdriver if necessary.
4. Remove the gasket (B) and o-ring (D) from the old nozzle and mount it on the new nozzle.
5. Insert the new nozzle into its seat, checking the concordance with Table 3.1 p. 2. For the R50 gas unit

heater only, and only when fed with G25.1, G27 and G2.350 gas, the existing nozzle must be removed.

6. Reassemble the gas pipe, checking that the round gasket in the seal is well positioned. Close the seal applying a torque of 62±2 Nm.
7. Adjust the appliance for the new gas type, adjusting the burner pressure as described in Paragraph 5.1 p. 5.
8. Replace the sticker indicating the gas type on the appliance with the sticker for the new gas type.



For the R15 model, in case of changeover from any type of gas to LPG, G30 or G31, and vice versa, it is necessary to replace also the component shown in Figure 3.2 p. 3 with the one supplied with the gas change kit, indicated by the letter A.

Figure 3.1 Gas changeover for gas unit heater

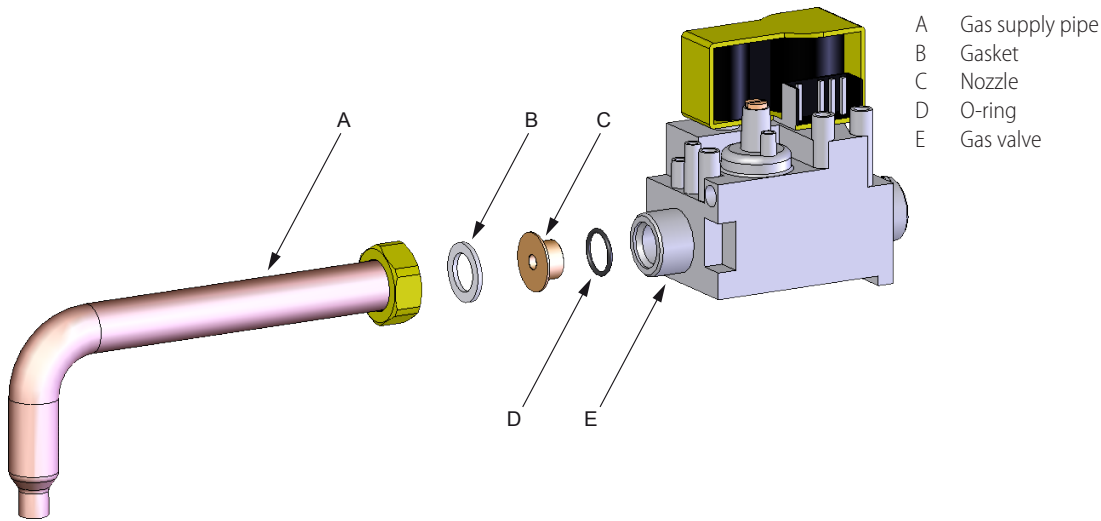
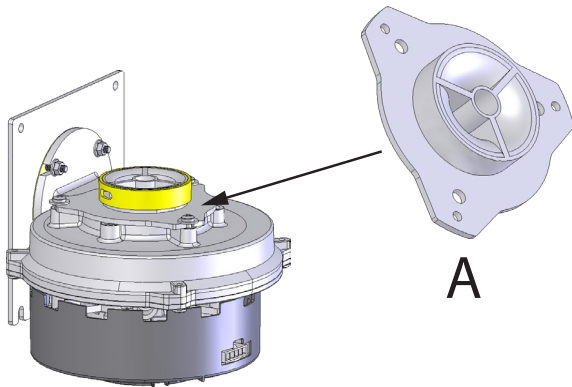


Figure 3.2 R15 Venturi replacement



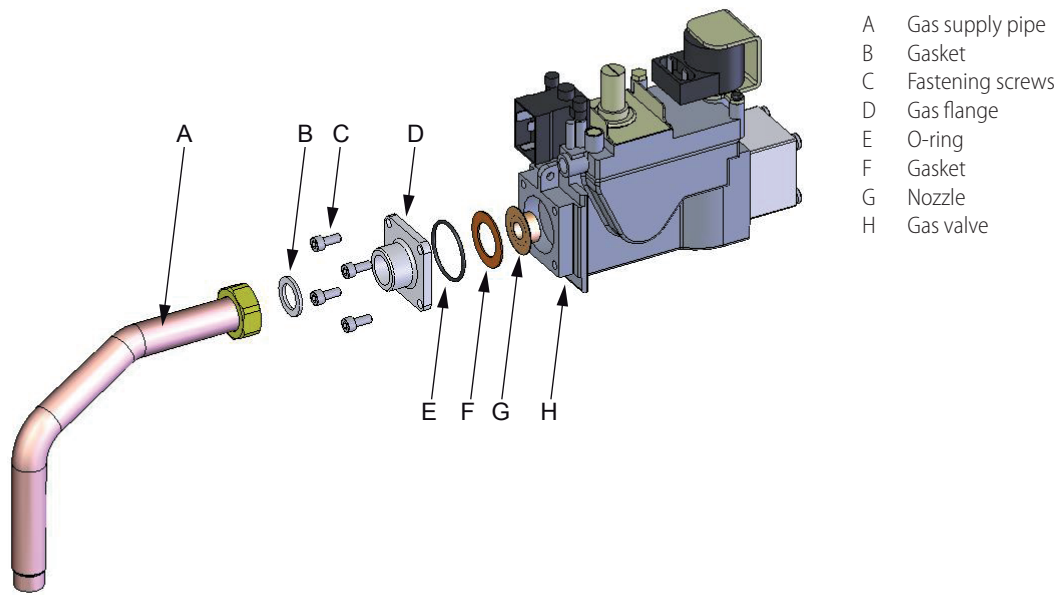
- A Replace the Venturi by installing the one supplied with the gas change kit:
- Black plastic Venturi for gas change to G30/G31/LPG
 - Aluminium Venturi with yellow air diaphragm for gas change to G20/G25/G25.1/G25.3/G27/G2.350

3.2 R60/R80

How to change gas (Figure 3.3 p. 4)

1. Cut off electric power and gas supply.
2. Remove the gas pipe (A) and remove the gasket (B).
3. Unscrew the four fixing screws (C) of the gas flange (D) and remove it without losing or damaging the o-ring (E).
4. Remove the gasket (F), taking care not to damage or lose it.
5. Replace the nozzle (G), checking the concordance with Table 3.1 p. 2, and reinstall the gasket (F).
6. Fit the gas flange (D) using the four fixing screws (C) and fit the gas pipe (A), replacing the gasket (B).
7. Replace the sticker indicating the gas type on the appliance with the sticker for the new gas type.
8. Adjust the appliance for the new gas type, adjusting the burner pressure as described in Paragraph 5.2 p. 7.

Figure 3.3 Gas changeover for gas unit heater



4 SUPPLY GAS PRESSURE

This appliance is equipped for a maximum gas supply pressure of 50 mbar. ± 15%.

The appliance's gas supply pressure, both static and dynamic, must comply with Table 4.1 p. 4, with tolerance

Non compliant gas pressure may damage the appliance and be hazardous.

Table 4.1 Network gas pressure of Next-R series gas unit heaters

Product category	Country of destination	Gas supply pressure [mbar]							
		G20	G25	G25.1	G25.3	G2.350	G27	G30	G31
I ₂ H3B/P	AL, BG, CH, CY, CZ, DK, EE, FI, GR, HR, IT, LT, LV, MK, NO, RO, SE, SI, SK, TR	20						30	30
	AT, CH	20						50	50
I ₂ H3P	AL, BG, CH, CZ, ES, GB, GR, HR, IE, IT, LT, LV, MK, PT, SI, SK, TR	20							37
	RO	20							30
	AT	20							50
I ₂ ELL3B/P	DE	20	20					50	50
I ₂ ESi3P	FR	20	25						37
I ₂ Er3P		20	25						37
I ₂ H3B/P	HU	25						30	30
I ₂ HS3B/P		25		25				30	30
I ₂ E3P	LU	20							50
I ₂ L3B/P	NL		25					30	30
I ₂ L3P			25						37
I ₂ EK3B/P		20			25			30	30
I ₂ EK3P		20			25				30
I ₂ E3B/P		20						37	37
I ₂ E		20							
I ₂ ELwLs3B/P	PL	20				13	20	37	37
I ₂ ELwLs3P		20				13	20		37
I ₂ E(R)	BE	20	25						
I ₂ E(S)		20	25						
I ₃ P									37

The appliance gas supply pressure, both static and dynamic, must comply with the values in the Table, with a tolerance of ± 15%.

I _{3P}	IS								30
I _{2H}	LV	20							
I _{3B/P}	MT							30	30
I _{3B}								30	

The appliance gas supply pressure, both static and dynamic, must comply with the values in the Table, with a tolerance of ± 15%.

5 COMBUSTION PARAMETERS CHECK



Paragraph reserved exclusively to TACs.



The gas unit heater is supplied with the gas valve already calibrated with respect to the fuel indicated on the sticker next to the gas connection. Therefore, during the commissioning, only the CO₂ value must be checked and, only if the check is not successful, or after a gas changeover, the complete check procedure must be carried out.



The CO₂ value should be checked with the thermoformed door closed, while the gas valve should be adjusted with the thermoformed door open.



After each setting of the CO₂ value or change of power level, check the burner, which should not show any reddened areas.



Check that the static and dynamic supply gas pressure values, with the gas unit heater running at maximum power, correspond to what is shown in Table 4.1 p. 4 (with low supply gas pressure values the CO₂ value will also be at minimum values).



If the control systems are designed so that the gas unit heater activation request depends on the room temperature, the gas unit heater may not start because the room temperature is already at requested setpoint. In this case, set the forcing for manual activation on the control system, or close contact Z9 (Z91-Z92 terminals) manually.



Remember to set contact 27 (L-C terminals) back in its original position or stop manual forcing of the power level after the conclusion of checking operations.



If it has been set, remember to disable the forcing for manual activation on the control system, or manual close of contact Z9 (Z91-Z92

terminals).

5.1 R15/R20/R30/R40/R50



The simple check of CO₂ values corresponds to steps 8 to 13 of the procedure below, after turning on the unit. If the check is not successful, the complete procedure must be carried out.



Figure 5.1 p. 6

1. If the appliance is running, switch it off with the applicable control system.
 2. Open the thermoformed door.
 3. Remove the cap over the offset adjustment screw (C) of the gas valve.
 4. Screw in completely the throttle adjustment screw (D).
 5. Screw in completely the offset adjustment screw (C).
 6. Unscrew the throttle adjustment screw (D) as indicated in the following Tables, depending on the model and the gas type used.
 7. Unscrew the offset adjustment screw (C) as indicated in the following Tables, depending on the model and the gas type used.
 8. Open contact 27 (L-C terminals), or act on the power level control device to force gas unit heater operation at minimum power.
 9. Switch on the gas unit heater using the provided control device.
 10. After about 2 minutes from the burner ignition, the combustion control at minimum power can be carried out.
 11. Ensure that the CO₂ value corresponds to the value indicated in the "Minimal heat input" column of the following Tables, according to the model and the gas type used. Otherwise, set CO₂ percentage value using the offset adjustment screw.
 12. Close contact 27 (L-C terminals), or act on the power level control device to force gas unit heater operation at maximum power.
 13. Ensure that the CO₂ value corresponds to the value indicated in the "Nominal heat input" column of the following Tables, according to the model and the gas type used.
- If the check is successful:**
14. Set contact 27 (L-C terminals) back in its original position or stop manual forcing of the power level.
 15. Screw the cap back over the offset adjustment screw

(C) of the gas valve.

16. Close the thermoformed door.

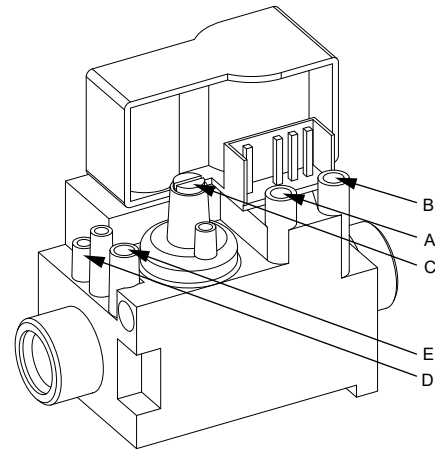
If the check is not successful:

17. Repeat steps 8 to 11 to reactivate the minimum power operation; verify once again and, if necessary, correct the CO₂ value in these conditions by actuating the offset adjustment screw.

18. Repeat steps 12 and 13 to reactivate the maximum power operation; verify once again and, if necessary, correct the CO₂ value in these conditions by actuating the throttle adjustment screw.

19. Repeat steps 14 to 16 to complete the procedure.

Figure 5.1 Gas valve



- A Offset pressure intake
- B Gas mains pressure intake
- C Offset adjustment screw
- D Throttle adjustment screw
- E Throttle pressure intake

Table 5.1 R15 gas valve setting table

Gas	Gas network pressure	Screw pre-adjustment		CO ₂ percentage in flue gases	
		Throttle	Offset	Minimal heat input	Nominal heat input
Type	mbar	turns ↻	turns ↻	%	%
G20	See Table 4.1 p. 4	-10 ½	-3 ¾	8,8	9,0
G25		full open	-3	8,6	9,2
G25.1		-10 ½	-3 ¾	10,2	10,7
G25.3		full open	-3 ¾	8,6	9,2
G27		-12	-3 ¾	9,0	9,5
G2.350		full open	-3 ¾	8,6	9,1
G30		-7	-3 ¾	9,9	10,3
G31		full open	-3 ¾	10,0	10,5
LPG		-9	-3 ¾	9,9	10,5



A tolerance of ±0,3% is applied to all values of CO₂ percentage in fumes.

Table 5.2 R20 gas valve setting table

Gas	Gas network pressure	Screw pre-adjustment		CO ₂ percentage in flue gases	
		Throttle	Offset	Minimal heat input	Nominal heat input
Type	mbar	turns ↻	turns ↻	%	%
G20	See Table 4.1 p. 4	-3 ¾	-3 ¾	8,6	9,2
G25		full open	-3 ¾	8,7	9,3
G25.1		-5 ¼	-3 ¾	10,6	11,1
G25.3		-7 ½	-3 ¾	8,5	9,1
G27		-5 ½	-3 ¾	9,1	9,6
G2.350		full open	-3 ¾	8,8	9,3
G30		-2 ¼	-3 ¾	9,9	10,3
G31		full open	-3 ¾	10,5	11,0
LPG		-2 ¾	-3 ¾	10,3	10,7



A tolerance of ±0,3% is applied to all values of CO₂ percentage in fumes.

Table 5.3 R30 gas valve setting table

Gas	Gas network pressure	Screw pre-adjustment		CO ₂ percentage in flue gases	
		Throttle	Offset	Minimal heat input	Nominal heat input
Type	mbar	turns 	turns 	%	%
G20	See Table 4.1 p. 4	-6 1/2	-3 3/4	8,2	8,5
G25		full open	-3 3/4	8,5	9,0
G25.1		-13 1/2	-3 3/4	9,6	10,1
G25.3		-21	-3 3/4	8,5	9,0
G27		-6 3/4	-3 3/4	8,5	9,0
G2.350		full open	-3 1/2	8,5	9,0
G30		-8	-3 3/4	9,5	11,0
G31		full open	-3	9,1	9,5
LPG		-14	-3 1/2	9,0	9,6



A tolerance of ±0,3% is applied to all values of CO₂ percentage in fumes.

Table 5.4 R40 gas valve setting table

Gas	Gas network pressure	Screw pre-adjustment		CO ₂ percentage in flue gases	
		Throttle	Offset	Minimal heat input	Nominal heat input
Type	mbar	turns 	turns 	%	%
G20	See Table 4.1 p. 4	-5	-3 3/4	8,6	9,2
G25		full open	-3 1/4	8,5	9,0
G25.1		-8 1/4	-3 3/4	9,6	10,2
G25.3		-12	-4	8,5	9,0
G27		-8 1/2	-3 3/4	8,6	9,1
G2.350		full open	-3 3/4	8,5	9,0
G30		-8	-3 3/4	9,5	10,0
G31		full open	-3	9,6	10,1
LPG		-10 1/4	-4	9,5	10,1

A tolerance of ±0,3% is applied to all values of CO₂ percentage in fumes.

Table 5.5 R50 gas valve setting table

Gas	Gas network pressure	Screw pre-adjustment		CO ₂ percentage in flue gases	
		Throttle	Offset	Minimal heat input	Nominal heat input
Type	mbar	turns 	turns 	%	%
G20	See Table 4.1 p. 4	-14	-3 3/4	8,6	9,0
G25		full open	-3 3/4	8,5	9,0
G25.1		-16 3/4	-3 3/4	10,0	10,5
G25.3		full open	-3 3/4	8,6	9,2
G27		-16	-3 3/4	8,6	9,0
G2.350		full open	-3 3/4	8,6	9,1
G30		-4 1/2	-3 3/4	9,9	10,5
G31		full open	-3 3/4	9,5	10,0
LPG		-14 1/4	-3 3/4	9,7	10,3

A tolerance of ±0,3% is applied to all values of CO₂ percentage in fumes.

5.2 R60/R80



The simple check of CO₂ values corresponds to steps 6 to 12 of the procedure below, after turning on the appliance. If the check is not successful, the complete procedure must be carried out.



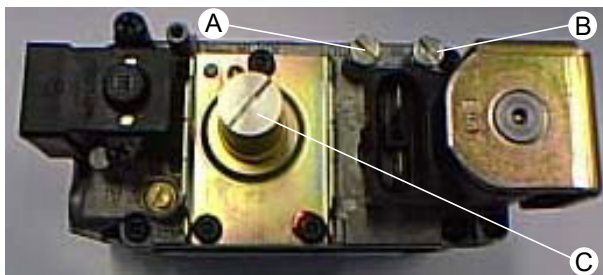
Figure 5.2 p. 8

1. If the appliance is running, switch it off with the applicable control system.
2. Open the thermoformed door.
3. Remove the cap over the offset adjustment screw (C) of the gas valve.
4. Screw in completely the offset adjustment screw (C).
5. Unscrew the offset adjustment screw (C) as indicated in the following Tables, depending on the model and the gas type used.
6. Open contact 27 (L-C terminals), or act on the power level control device to force gas unit heater operation at minimum power.
7. Switch on the gas unit heater using the provided control device.
8. After about 2 minutes from the burner ignition, the combustion control at minimum power can be carried out.
9. Ensure that the CO₂ value corresponds to the value indicated in the "Minimal heat input" column of the following Tables, according to the model and the gas

type used. Otherwise, set CO₂ percentage value using the offset adjustment screw.

10. Close contact 27 (L-C terminals), or act on the power level control device to force gas unit heater operation at maximum power.
 11. After about 2 minutes, the combustion control at maximum power can be carried out.
 12. Ensure that the CO₂ value corresponds to the value indicated in the "Nominal heat input" column of the following Tables, according to the model and the gas type used.
- If the check is successful:**
13. Set contact 27 (L-C terminals) back in its original position or stop manual forcing of the power level.
 14. Screw the cap back over the offset adjustment screw (C) of the gas valve.
 15. Close the thermoformed door.
- If the check is not successful:**
16. Repeat steps 6 to 9 to reactivate the minimum power operation; verify once again and, if necessary, correct the CO₂ value in these conditions by actuating the offset adjustment screw.
 17. Repeat steps 13 to 15 to complete the procedure.

Figure 5.2 Gas valve



- A Offset pressure intake
- B Gas mains pressure intake
- C Offset adjustment screw

Table 5.7 R80 gas valve setting table

Gas	Gas network pressure	Screw pre-adjustment	CO ₂ percentage in flue gases	
		Offset	Minimal heat input	Nominal heat input
Type	mbar	turns ↻	%	%
G20	See Table 4.1 p. 4	-6 ¼	8,0	8,3
G25		-6 ¼	8,7	9,2
G25.1		-6 ¼	10,5	10,9
G25.3		-6 ¼	8,9	9,3
G27		-6 ¼	8,8	9,2
G2.350 (1)		- (1)	- (1)	- (1)
G30		-6 ¼	10,2	10,5
G31		-6 ¼	9,9	10,2
LPG		-6 ¼	9,7	10,1

¹ The gas unit heater cannot operate with this type of gas. A tolerance of ±0,3% is applied to all values of CO₂ percentage in fumes.

Table 5.6 R60 gas valve setting table

Gas	Gas network pressure	Screw pre-adjustment	CO ₂ percentage in flue gases	
		Offset	Minimal heat input	Nominal heat input
Type	mbar	turns ↻	%	%
G20	See Table 4.1 p. 4	-6 ¼	8,9	9,4
G25		-6 ¼	8,7	9,0
G25.1		-6 ¼	10,5	10,9
G25.3		-6 ¼	8,8	9,2
G27		-6 ¼	9,2	9,4
G2.350		-6 ¼	9,1	9,4
G30		-6 ¼	10,4	10,6
G31		-6 ¼	10,1	10,4
LPG		-6 ¼	9,8	10,2

A tolerance of ±0,3% is applied to all values of CO₂ percentage in fumes.