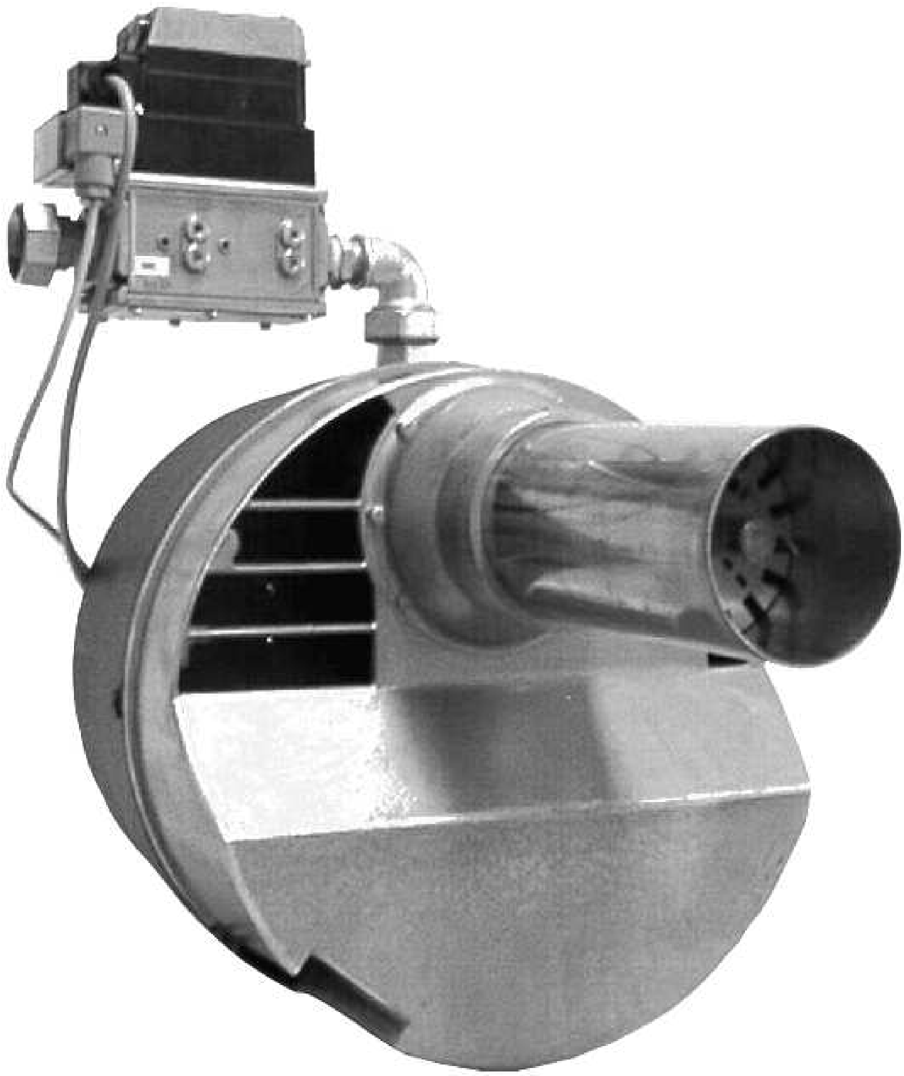
Technical Information • Installation Instructions

RG20 / RG30

Issued August 2019
Right reserved to effect technical changes in the interest of product improvement !

Gas



GB

E.04.99 • G. 08.08.19

Overview

General information / safety information

The installation of a gas-fired system must conform to extensive regulations and requirements. It is therefore the duty of the installer to be familiar with all applicable regulations and requirements. Installation, start-up and maintenance must be performed with utmost care.

The burner must not be operated in rooms with high levels of air humidity (laundry rooms), dust or corrosive vapours. The boiler room must be ventilated accordingly with ventilation air.

The GIERSCH RG20 / RG30 Series gas burners are suitable for burning natural gas or liquefied petroleum gas and comply with the European standard DIN EN 676.

Caution !
Improper installation, adjustment, modification, operation or maintenance may result in physical injury or damage to property/equipment.
Read the instructions prior to use.
This product must be installed in conformity with the valid regulations (e. g. DIN-VDE, DIN-DVGW).

The design and degree of protection of the burner make it suitable for operation in enclosed rooms.

Checking scope of delivery and connection data

Before installing the GIERSCH gas burner, please check that all items included in the scope of delivery are present.

Scope of delivery:
Burner, sliding flange and gasket, 4 retaining screws, separate operating instructions, technical information, one 7-pin and one 4-pin connector (for -Z and -M only).
Compact gas unit and gaskets (for KEV only: additionally blue hoses for furnace and air pressure connections, see Overview, Page 12).

The gas pipe must be designed to conform to the flow rate and the available gas flow pressure and routed with the lowest pressure loss over the shortest distance to the burner. The loss of gas pressure via the compact unit and the burner and the resistance on the fuel gas side of the heat generator must be less than the connection flow pressure.

Caution !
Observe throughflow direction of compact unit.

Operating instructions

The operating instructions together with this technical information leaflet must be displayed in a clearly visible position in the boiler room. It is essential to write the address of the nearest customer service centre in the operating instructions.

Instruction of operating personnel

Faults are often caused by operator error. The operating personnel must be properly instructed in how the burner works. In the event of recurring faults, Customer Service should be notified.

Maintenance and customer service

The complete system should be checked once a year for correct functioning and leaks by a representative of the manufacturer or other suitably qualified person.

We accept no liability for consequential damage in cases of incorrect installation or repair, the fitting of non-genuine parts or where the equipment has been used for purposes for which it was not intended.

E. 04.99• G.08.08.19

Key for code designation

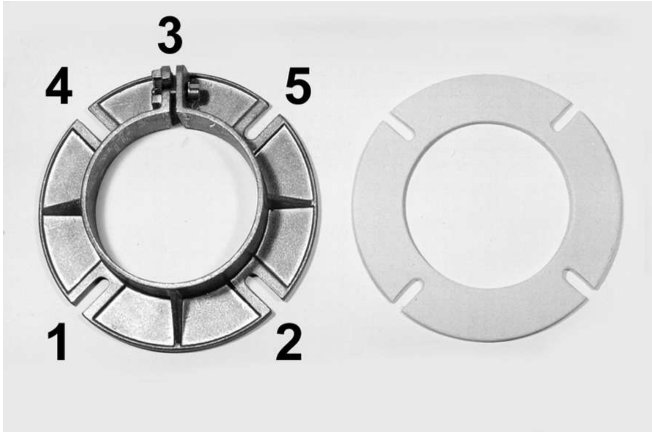
RG 20-Z(M)-L-N(F)

- N(F): Natural gas LL+E ="-N" or LPG ="-F"
- L: air damper
- Z(M): 2 stage (modulating)
- 20: burner type
- RG: burner series

Technical specifications

Technical data	Burner type: RG20-N (-F)	RG20-L -N(-F)	RG20-Z -L-N(-F)	RG20 -M-L-N	RG30-N (-F)	RG30-Z -L-N(-F)	RG30 -M-L-N(-F)
Min. burner output in kW	40				105		
Max. burner output in kW	120				260		
Gas type	for natural gas LL + E = “-N” / LPG 3B/P = “-F”						
Method of operation	1-stage		2-stage sliding	modulating	1-stage	2-stage sliding	modulating
Voltage	1 / N / PE ~50 Hz - 230 V						
Max. current consumption Max. start / operation	1.48A/0.75A	1.35A/0.72A			3 A/1.4 A	3.1 A/1.5 A	
Electric motor power (at 2850 rpm^{-1}) in kW	0.14				0.25		
Flame failure controller	Ionisation electrode						
Control box	LME11		LME22		LME11	LME22	
Weight in kg	26		29		38	40	
Noise emission in db(A)	≤ 72				≤ 75		

Installation



Installing flange and burner

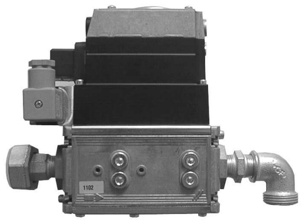
When installing the sliding flange, only tighten screws 1 and 2 otherwise it will not be possible to secure the burner pipe with screw 3. Slide in the burner, adjust to furnace depth and tighten the screws in the following sequence: 3, 4, 5, raising the housing in the process.

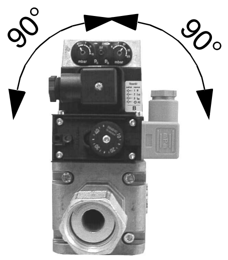
Important: Secure the sliding flange so that the clamping screw 3 is positioned at the top.

Checking electrode setting

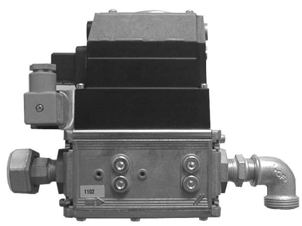
- Move the burner into the service position as described on Page 27.
- Check the setting of the ignition and ionisation electrodes (see Page 27).

Installation positions for KE...D,Z





Installation position for KE...V



Installing gas assembly

- Remove plastic protective plug.
- Install unions including accompanying seals.
- Observe installation position.
- Check connecting point of gas assembly with noncorrosive foaming agent for leaks and vent gas pipe.
- When venting gas, discharge safely to atmosphere with a hose.

Comply with DVGW-TRGI 1986/96 Section 7, TRF 1988, DIN 4756 and local regulations.

If proportional pressure control RG20/30(-Z-)-M-L with KEV:
Fit the furnace pressure meter tube to the boiler door with the gradient towards the boiler (if required).

Lay the control lines to the KEV to the corresponding ports P_L and P_F. Use the blue PU hoses supplied.

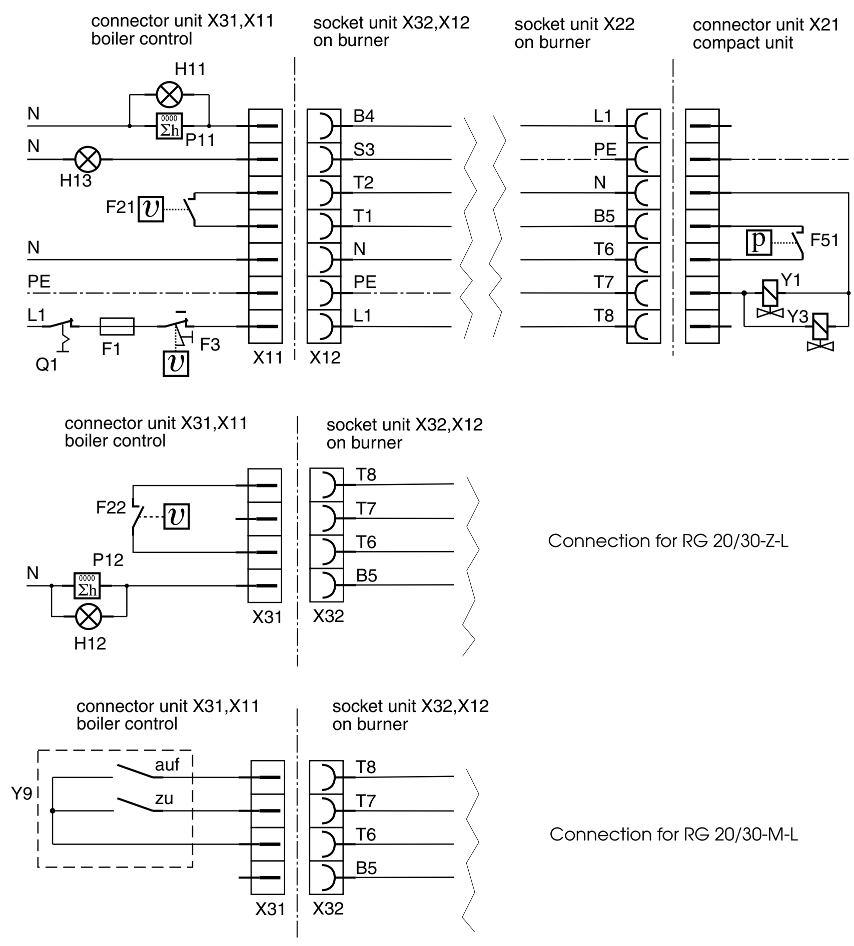
- Lay the control line so that no condensate can flow into the KE.
- Connect hose to furnace pressure meter tube with port P_F (if required).
- Connect hose to port P_L with measuring nipple for air pressure on burner base plate.
  If this connection is not made, the magnetic valves will not open.

E. 04.99• G.08.08.19

Establishing electrical connections

- Disconnect system from power supply. Main switch “OFF”.
- Check polarity of all connectors.
- Wire connector unit in accordance with connection diagram. Lay flexible control line so that boiler door can still be swivelled.
- Attach cube connector connected to 7-pin black-green connector X21 to gas pressure monitor connector A (grey) and to solenoid valves B1 (black), and secure with screw.
- Attach 7-pin black-green connector to compact gas unit (X21 & X22).
- Attach 4-pin connector unit for power control (X31) to black-green socket unit on burner (X32).
- Check correct pinout according to connection diagram, if connector unit X11 and X31 wired.
- Attach 7-pin connector unit for boiler control (X11) to black-brown socket unit on burner (X12).
- Supply lead to 7-pin connector unit X11 must be protected with a min. 6.3 A slow-blowing or max. 10 A quick-blowing fuse.

Connection diagram



Key:

F1	External fuse
F21, F22	Ext. temp. controller, 1st/2nd stages
F3	Ext. safety thermal cutout
F51	Gas pressure monitor
Q1	Main heating switch
H11,H12	Ext. pilot lamp
H13	Ext. fault signal lamp
L1	Phase
PE	Earth conductor
P11,P12	Time meter
Y1,Y2	Solenoid valve
Y3	Safety solenoid valve
Y9	External controller

E.04.99 • G. 08.08.19

Function

Control unit LME

Testing the control unit for proper functioning

Danger of fatal injury from electric shocks!

Disconnect electrical cable from power supply before carrying out any work on live parts! Troubleshooting may only be carried out by authorised and trained personnel! Unlocking may only be carried out by an authorised specialist.

After startup and after maintenance of the burner, the following controls to perform.

Burner startup with broken lines to the flame detector:

- Disconnect the cable to the flame monitor and restart the burner.
  At the end of the safety time the controller makes a lockout
- Reestablish the connection.

Burner operation with simulated loss of flame:

- Pull the compact unit the square plug from the gas pressure switch and jumper the contacts in the connector.
- Start the burner.
- Connect operation are the ball valve.
  After loss of flame, the controller makes a lockout.
- Remove the jumper in the connector and insert it back to the gas pressure switch of the compact unit.

Burner operation with simulated air pressure loss:

- Pull are the operation from the air hose to the "+" input of the air pressure switch.
  The controller makes a lockout.
- Insert the air hose back onto the air pressure switch

Safety and switching functions

In the event of a flame failure during operation, the fuel supply is immediately switched off and the control box goes into fault mode. A restart takes place in all cases following a mains power failure. A fault is triggered immediately if there is flame detection during pre-ventilation. The position of the air pressure monitor is continuously checked. There can be no start-up if it is not in its neutral position. A fault is triggered if the working contact fails to close during pre-ventilation, or reopens. In the event of a lack of air during operation, the air pressure monitor contact opens and the valves close immediately. The device goes into fault mode.

Operational status indication

Color code table for multicolor signal lamp (LED)		
Status	**Colore code**	**Color**
Waiting time «tw», other waiting states	○................................	OFF
Oil preheater on	●................................	Yellow
Ignition phase, ignition controlled	○●○●○●○●○●	Flashing yellow
Operation, flame o.k.	■................................	Green
Operation, flame not o.k.	○■○■○■○■○■	Flashing green
Extraneous light on burner startup	■▲■▲■▲■▲■▲	Green-red
Undervoltage	●▲●▲●▲●▲●	Yellow-red
Fault, alarm	▲.....................................	Red
Error code output (refer to «Error code table»)	○▲○▲○▲○▲○▲○	Flashing red
Interface diagnostics	▲▲▲▲▲▲▲▲▲▲▲▲	Red flicker light

Legend:

- .... Steady on
- ○ OFF
- ▲ Red
- ● Yellow
- ■ Green

E.04.99 • G. 08.08.19

Diagnostics of the cause of fault

After lockout, the red signal lamp will remain steady on. In that condition, visual diagnostics of the cause of fault according to the error code table can be activated by pressing the lockout reset button for more than 3 seconds. Pressing the lockout reset button again for at least 3 seconds, interface diagnostics will be activated. Interface diagnostics works only if the lockout reset button extension AGK20… is not fitted. If, by accident, interface diagnostics has been activated, in which case the slightly red light of the signal lamp flickers, it can be deactivated by pressing again the lockout reset button for at least 3 seconds. The instant of switching over is indicated by a yellow light pulse.

Error code table

Red blink code of signal lamp (LED)	Alarm at term. 10	Possible cause
2 x blinks	ON	No establishment of flame at the end of safety time - Faulty or soiled fuel valves - Faulty or soiled flame detector - Poor adjustment of burner, no fuel - Faulty ignition equipment
3 x blinks	ON	Air pressure switch faulty - Loss of air pressure signal after specified time - Air pressure switch welded in normal position
4 x blinks	ON	Extraneous light when burner is started up
5 x blinks	ON	Air pressure switch time supervision - Air pressure switch welded in working position - Error with valve proving (only in conjunction with LDU11...)
6 x blinks	ON	Free
7 x blinks	ON	Too many losses of flame during operation (limitation of repetitions) - Faulty or soiled fuel valves - Faulty or soiled flame detector - Poor adjustment of burner
8 x blinks	ON	Free
9 x blinks	ON	Free
10 x blinks	OFF	Wiring error or internal error, output contacts, other faults
14 x blinks	ON	CPI contact not closed

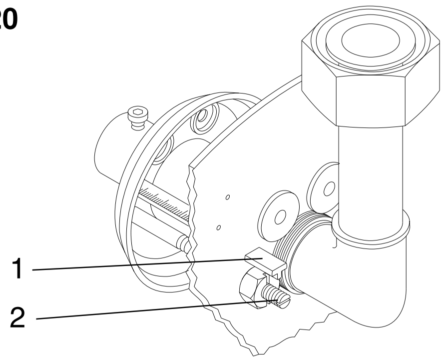
During the time the cause of fault is diagnosed, the control outputs are deactivated

- Burner remains shut down
- External fault indication remains deactivated
- Fault status signal (alarm) at terminal 10, according to the error code table

The diagnostics of the cause of fault is quit and the burner switched on again by resetting the burner control. Press the lockout reset button for about 1 second (<3 seconds).

E. 04.99• G.08.08.19

RG 20

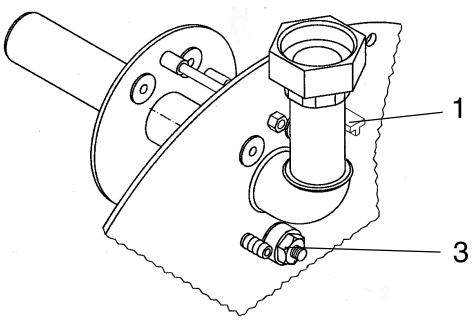


Air flow setting, dimension “A”

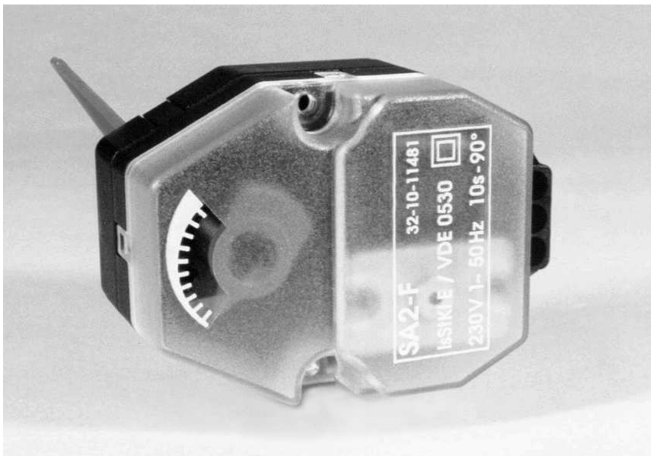
1 Dimension “A”
2 Adjusting screw for air restrictor (RG20)
3 Adjusting screw for air restrictor (RG30)

RG20:
Turn screw (2) anticlockwise: **increase air “+”**
Turn screw (2) clockwise: **reduce air “-”**

RG 30



RG30:
Turn nut clockwise (3): **increase air “+”**
Turn nut (3) anticlockwise: **reduce air “-”**



Air flap positioning motor

Cooling of furnace avoided during burner standstill.

SA2-F [for RG20-L-N(-F) only]:
Position “OPEN” - “CLOSED” of electric-motor-driven unit indicated at display lever. When servicing/retrofitting, refer to wiring diagram.

!

Do not turn red positioning lever by hand as mechanism is destructible.

STA:
The servomotor STA 13 B0 is for the purpose of air flap adjustment on burners with a 2-stage or modulating mode of operation. Adjustment is via limit switch cams on the positioning drive roller.
After each normal shutdown, the positioning motor moves into the air seal (ST0).

The cam positions for adapting the burner to the required min. output/1st stage are given in the preadjustment table.

Refer to adjustment tables on Pages 13.

To do so:

Remove cover from air flap positioning motor. Alter the cam positions via the adjusting screws with a standard screwdriver.
The switching cams can be readjusted when the burner is adjusted.

Higher number = increase air

Lower number = reduce air

Adjustments to ST1 and ST2 do not become effective until a brief switchover between 1st/2nd stage (or triggering of Up/Down on output controller) has taken place.
Adjust cam ST1/min. no greater than ST2/max.

After having readjusted the burner, refasten the servomotor hood and set the switch on the lower part of the control unit to the position 2nd stage.

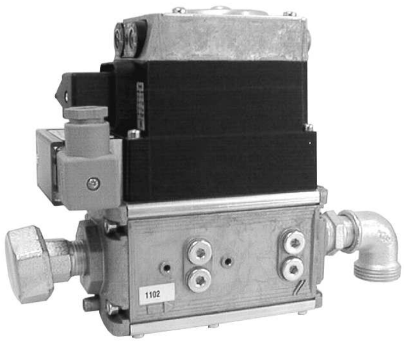
Cam position (preset ex-works)

	ST2	ST0	ST1
RG 20-Z-L	15°	0°	5
RG 20-M-L	15°	0°	2°
RG 30-Z-L	40°	10°	30°
RG 30-M-L	40°	10°	25°

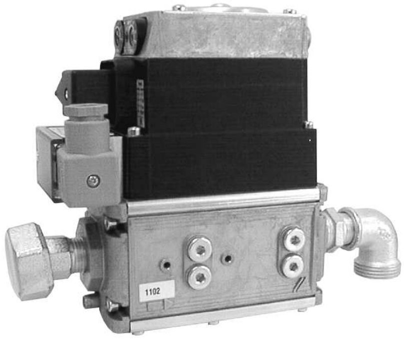
E. 04.99• G.08.08.19

Compact gas units

The compact gas units for GIERSCH gas burners are preassembled and checked for leaks.



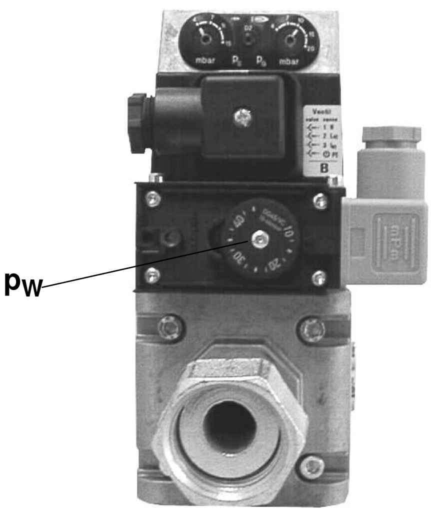
Version KE:
1-stage precision pressure regulator with high control quality and adjustable starting gas pressure.



Version KEV:
Exact pneumatic mixture control for optimum energy utilisation and combustion.

Technical data of compact gas unit

Gas types:	Natural gas, propane and butane, acc. to EN 437/EN 88
Inlet pressure:	max. 100 mbar / 360 mbar (KE CG10 max. 50 mbar) min. 18 mbar
Ambient temperature:	-15 °C to +60 °C
Connecting flanges:	The connecting flanges are secured with 4 screws. The flanges can be turned through 90° or 180° in each case. Pressure measuring points in inlet and in outlet.
Filter:	plastic gauze



Gas pressure monitor

The gas pressure monitor serves to monitor the gas inlet pressure. The burner is shut down if the gas inlet pressure drops below the set minimum value (preset at factory to 12 mbar). The burner starts up automatically when the minimum pressure is exceeded.

This setting should be retained.

E.04.99 • G. 08.08.19

Start-up

The values given in the tables are only setting values for start-up. The system settings required in each case must be redefined if values such as boiler output, calorific value and altitude deviate. **A correction is required in any case.**

Adjustment tables RG20(-L)

Burner output [kW]	Boiler output at η = 92% [kW]	**Natural gas LL: $H_{i,n}$ = 9.3 [kWh/m³]** Gas nozzle pressure [mbar]	Gas flow [m³/h]	Air flow dimension "A" [mm]
40	37	1.9	4.6	11
43	40	2.2	5.0	12
54	50	3.3	6.2	15
65	60	4.7	7.5	17
76	70	6.4	8.7	20
87	80	8.2	9.9	22
98	90	10.4	11.2	25
109	100	12.6	12.4	29
120	110	15.2	13.7	46

Burner output [kW]	Boiler output at η = 92% [kW]	**Natural gas E: $H_{i,n}$ = 10.4 [kWh/m³]** Gas nozzle pressure [mbar]	Gas flow [m³/h]	Air flow dimension "A" [mm]
40	37	1.5	4.1	11
43	40	1.7	4.4	12
54	50	2.6	5.6	15
65	60	3.7	6.7	17
76	70	5.0	7.8	20
87	80	6.5	8.9	22
98	90	8.2	10.0	25
109	100	9.9	11.1	29
120	110	11.9	12.2	46

Burner output [kW]	Boiler output at η = 92% [kW]	**LPG 3B/P: $H_{i,n}$ = 25.8 [kWh/m³]** Gas nozzle pressure [mbar]	Gas flow [m³/h]	Air flow dimension "A" [mm]
40	37	3.0	1.6	11
50	46	4.2	2.0	14
56	51	5.8	2.3	15
64	59	7.1	2.6	17
72	66	9.2	2.9	19
80	74	11.5	3.3	21
90	83	14.2	3.7	23
101	93	18.3	4.1	26
111	102	21.3	4.5	30
120	110	25.3	4.9	46

E. 04.99• G.08.08.19

During start-up of the burner, observe the boiler manufacturer's min. and max. heat output values.

Adjustment tables RG20-Z(-M)-L

Burner output		Boiler output at η = 92%	Air flap		Natural gas LL: $H_{i,n}$ = 9.3 [kWh/m3]						Air flow dimension "A"
Stage 2	Stage 1	(Stage 2) High load	ST2	ST1	Gas nozzle pressure Stage 2	Stage1	Gas flow Stage 2	Stage 1	Compact gas unit V	N	
[kW]	[kW]	[kW]	[°]	[°]	[mbar]	[mbar]	[m^3/h]	[m^3/h]	V	N	[mm]
62	43	57	10	2	4.2	2.0	7.1	4.9	2.1	0	46.0
71	47	65	15	5	5.5	2.4	8.1	5.4	2.1	0	46.0
85	58	78	25	10	7.9	4.3	9.7	6.6	2.1	0	46.0
102	72	94	40	15	11.3	5.5	11.7	8.2	2.1	0	46.0
113	79	104	65	20	13.9	6.8	12.9	9.0	2.1	0	46.0

Burner output		Boiler output at η = 92%	Air flap		Natural gas E: $H_{i,n}$ = 10.4 [kWh/m^3]						Air flow dimension "A"
Stage 2	Stage 1	(Stage 2) High load	ST2	ST1	Gas nozzle pressure Stage 2	Stage1	Gas flow Stage 2	Stage 1	Compact gas unit V	N	
[kW]	[kW]	[kW]	[°]	[°]	[mbar]	[mbar]	[m^3/h]	[m^3/h]	V	N	[mm]
62	43	57	10	2	3.2	1.5	6.3	4.4	1.8	0	46.0
71	47	65	15	5	4.2	1.8	7.3	4.8	1.8	0	46.0
85	58	78	25	10	6.0	3.2	8.7	5.9	1.8	0	46.0
102	72	94	40	15	8.6	4.2	10.4	7.4	1.8	0	46.0
113	79	104	65	20	10.6	5.2	11.6	8.1	1.8	0	46.0

Burner output		Boiler output at η = 92%	Air flap		LPG 3B/P: $H_{i,n}$ = 25.8 [kWh/m^3]						Air flow dimension "A"
Stage 2	Stage 1	(Stage 2) High load	ST2	ST1	Gas nozzle pressure Stage 2	Stage1	Gas flow Stage 2	Stage 1	Compact gas unit V	N	
[kW]	[kW]	[kW]	[°]	[°]	[mbar]	[mbar]	[m^3/h]	[m^3/h]	V	N	[mm]
75	59	69	10	2	11	6.5	3.1	2.5	5.0	0	46.0
91	59	84	20	2	16	6.5	3.8	2.5	5.0	0	46.0
101	59	93	30	2	20	6.5	4.2	2.5	5.0	0	46.0
110	75	101	40	10	23.5	11	4.6	3.1	5.0	0	46.0
120	75	110	65	10	28.5	11	5.0	3.1	5.0	0	46.0

E.04.99 • G. 08.08.19

Adjustment tables RG30

Burner output [kW]	Boiler output at η = 92% [kW]	Natural gas LL: $H_{i,n}$ = 9.3 [kWh/m³] Gas nozzle pressure [mbar]	Gas flow [m³/h]	Air flow dimension "A" [mm]
105	97	3.0	12.0	17.0
111	102	3.3	12.7	18.0
133	123	4.7	15.2	19.0
150	138	5.9	17.2	21.0
167	154	7.1	19.1	22.0
194	179	9.0	22.2	24.0
222	204	11.7	25.4	30.0
260	239	16	29.7	40.0

Burner output [kW]	Boiler output at η = 92% [kW]	Natural gas E: $H_{i,n}$ = 10.4 [kWh/m³] Gas nozzle pressure [mbar]	Gas flow [m³/h]	Air flow dimension "A" [mm]
105	97	2.2	10.7	17.0
111	102	2.6	11.3	18.0
133	123	3.7	13.6	19.0
150	138	4.6	15.3	21.0
167	154	5.6	17.1	22.0
194	179	7.1	19.8	24.0
222	204	9.2	22.7	30.0
260	239	12.5	26.6	40.0

Burner output [kW]	Boiler output at η = 92% [kW]	LPG 3B/P: $H_{i,n}$ = 25.8 [kWh/m³] Gas nozzle pressure [mbar]	Gas flow [m³/h]	Air flow dimension "A" [mm]
105	97	5.8	4.3	17.0
111	102	6.8	4.5	18.0
133	123	7.9	5.3	19.0
150	138	9.5	6.0	21.0
167	154	13.5	6.7	22.0
194	179	18.6	7.8	24.0
222	204	24.7	9.1	30.0
260	239	30.8	10.5	40.0

E. 04.99• G.08.08.19

During start-up of the burner, observe the boiler manufacturer's min. and max. heat output values.

Adjustment tables RG30-Z(-M)-L

Burner output		Boiler output at η = 92%	Air flap		**Natural gas LL: $H_{i,n}$ = 9.3 [kWh/m³]**						Air flow dimen-sion "A"
Stage 2	Stage 1	(Stage 2) High load	ST2	ST1	Gas nozzle pressure Stage 2	Stage 1	Gas throughput Stage 2	Stage 1	Compact gas unit V	N	
[kW]	[kW]	[kW]	[°]	[°]	[mbar]	[mbar]	[m³/h]	[m³/h]	V	N	[mm]
112	105	103	30	25	3.4	2.7	12.8	12.1	2.5	0.5	50.0
138	110	127	40	30	5.0	3.1	15.8	12.6	2.5	0.5	50.0
165	120	152	50	35	7.1	3.7	18.9	13.7	2.5	0.5	50.0
180	120	166	60	35	7.9	3.7	20.6	13.7	2.5	0.5	50.0
203	120	187	80	35	9.5	3.7	23.3	13.7	2.5	0.5	50.0
222	120	204	100	35	11.6	3.7	25.4	13.7	2.5	0.5	50.0
236	120	217	115	35	13.4	3.7	27.0	13.7	2.5	0.5	50.0

Burner output		Boiler output at η = 92%	Air flap		**Natural gas E: $H_{i,n}$ = 10.4 [kWh/m³]**						Air flow dimen-sion "A"
Stage 2	Stage 1	(Stage 2) High load	ST2	ST1	Gas nozzle pressure Stage 2	Stage 1	Gas flow Stage 2	Stage 1	Compact gas unit V	N	
[kW]	[kW]	[kW]	[°]	[°]	[mbar]	[mbar]	[m³/h]	[m³/h]	V	N	[mm]
112	105	103	30	25	2.7	2.1	11.5	10.8	2.1	0.5	50.0
138	110	127	40	30	4.0	2.4	14.1	11.2	2.1	0.5	50.0
165	120	152	50	35	5.7	2.9	16.9	12.2	2.1	0.5	50.0
180	120	166	60	35	6.3	2.9	18.5	12.2	2.1	0.5	50.0
203	120	187	80	35	7.5	2.9	20.8	12.2	2.1	0.5	50.0
222	120	204	100	35	9.2	2.9	22.7	12.2	2.1	0.5	50.0
236	120	217	115	35	10.7	2.9	24.1	12.2	2.1	0.5	50.0

Burner output		Boiler output at η = 92%	Air flap		**LPG 3B/P: $H_{i,n}$ = 25.8 [kWh/m³]**						Air flow dimension "A"
Stage 2	Stage 1	(Stage 2) High load	ST2	ST1	Gas nozzle pressure Stage 2	Stage1	Gas throughput Stage 2	Stage 1	Compact gas unit V	N	
[kW]	[kW]	[kW]	[°]	[°]	[mbar]	[mbar]	[m³/h]	[m³/h]	V	N	[mm]
111	107	102	30	25	6.8	5.5	4.5	4.3	4.8	0.5	50.0
133	109	122	38	30	7.9	6.0	5.3	4.4	4.8	0.5	50.0
167	120	154	50	35	13.5	7.4	6.7	4.9	4.8	0.5	50.0
176	120	162	58	35	15.0	7.4	7.1	4.9	4.8	0.5	50.0
194	120	178	75	35	18.6	7.4	7.8	4.9	4.8	0.5	50.0
222	120	204	100	35	24.7	7.4	9.1	4.9	4.8	0.5	50.0
236	120	217	115	35	27.5	7.4	9.7	4.9	4.8	0.5	50.0

Adjustment tables RG30-Z-L-170 kW

Burner output		Boiler output at η = 92%	Air flap		**Natural gas LL: $H_{i,n}$ = 9,3 [kWh/m^3]**				Air flow dimension "A"
Stage 2 [kW]	Stage 1 [kW]	(Stage 2) High load [kW]	ST2 [°]	ST1 [°]	Gas nozzle presure Stage 2 [mbar]	Stage1 [mbar]	Gas throughput Stage 2 [m^3/h]	Stage 1 [m^3/h]	[mm]
108	80	97	62	40	6,6	3,6	12,0	8,9	18
130	80	117	62	40	9,5	3,6	14,4	8,9	19
154	80	138,6	62	40	12,6	3,6	17,1	8,9	20
170	80	153	62	40	15,2	3,6	18,8	8,9	21,5

Burner output		Boiler output at η = 92%	Air flap		**Natural gas E: $H_{i,n}$ = 10,4 [kWh/m^3]**				Air flow dimension "A"
Stage 2 [kW]	Stage1 [kW]	(Stage 2) High load [kW]	ST2 [°]	ST1 [°]	Gas nozzle presure Stage 2 [mbar]	Stage1 [mbar]	Gas throughput Stage 2 [m^3/h]	Stage 1 [m^3/h]	[mm]
108	80	97	62	40	5,2	2,8	10,7	7,9	18
130	80	117	62	40	7,7	2,8	12,9	7,9	19
154	80	138,6	62	40	9,9	2,8	15,3	7,9	20
170	80	153	62	40	11,9	2,8	16,9	7,9	21,5

Adjusting gas burner and boiler

The burner can be put into operation once the installation and assembly work has been completed.

- Measure inlet pressure with U-pipe pressure gauge at measuring point "A".
  max. 100 mbar
  min. 18 mbar (flow pressure) with RG20/30...-N
  min. 35 mbar (flow pressure) with RG20/30...-F
- Burner and gas assembly are preset at factory to low output. This enables a soft burner start-up.
- Adjusting the burner to the desired nominal output is described on the following pages.

For this:

- Check gas working pressure with U-pipe pressure gauge at measuring point "B" outlet pressure.

Caution !
If the pressure difference is greater than 100 mbar, use an external pulse line !

- Adjust gas pressure and air flow dimension "A" according to adjustment tables, PP. 13.
- Check exhaust gas values here without fail (CO, CO_2 or O_2).

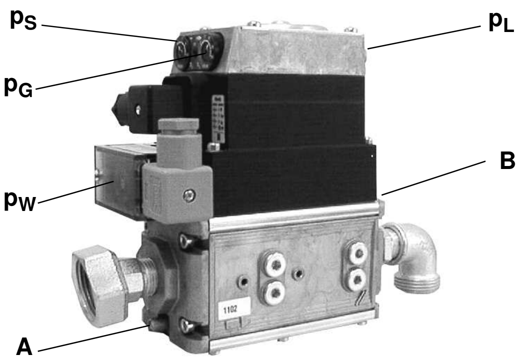
Exhaust gas values	Natural gas LL+E	LPG propane 3B/P
O_2 content	3.5-5.0%	
CO_2 content	9-10%	11-12%

- Depending on the system, the setting values must be corrected.
- After completion of adjustment, check the setting data.
- Check the gas pressure monitor after start-up. To do so, slowly close the ball valve on the gas meter further away (not the ball valve right in front of the KE). The burner must switch off, but not go over to fault.

Single-stage gas burner with KE compact units

Burner type RG 20(-L)-N/(-F), RG 30-N/(-F)

Installation of compact unit	
Installation position, vertical line:	as desired
Installation position, horizontal line:	tilted up to max. 90° to left or right, not over head
Minimum distance to walling:	20 mm



Gas supply pressure measuring point **A** (P_{inlet})

Gas nozzle pressure measuring point **B** (P_{outlet})

$\mathbf{p_S}$ = starting gas pressure

$\mathbf{p_G}$ = main gas pressure

$\mathbf{p_W}$ = pressure, gas pressure monitor

$\mathbf{p_L}$ = Sealing plug starting gas pressure $\mathbf{p_S}$ setting

Dimension “A” = air flow setting (see Fig. P.8)

Presetting:

Locate relevant line of adjustment table according to boiler output and adopt setting values.

- Adjust dimension **"A"** according to specifications of adjustment table.

Gas nozzle pressure ≤ 5 mbar:
- $\mathbf{P_G}$: adjust main gas pressure on min.
- $\mathbf{P_s}$: adjust starting gas pressure according to the spec-fications of the adjustment tables.

Gas nozzle pressure > 5 mbar:
- $\mathbf{P_G}$:adjust main gas pressure according to the specifications of the adjustment tables.

$\mathbf{P_s}$: starting gas pressure to approx. 40-60% of main gas pressure, min. 4 mbar.

Precision setting:

- At measuring point **B** measure gas nozzle pressure.

Gas nozzle pressure ≤ 5mbar:
- Start burner; if there is no flame formation, check adjustment.
- After approx. 10 sec. correct starting gas pressure ps according to adjustment table.

Air setting dimension “A”	Exhaust gas values	
Reduce if:	CO_2 too low	O_2 too high
Increase if:	CO_2 too high	O_2 too low

Gas nozzle pressure > 5mbar:

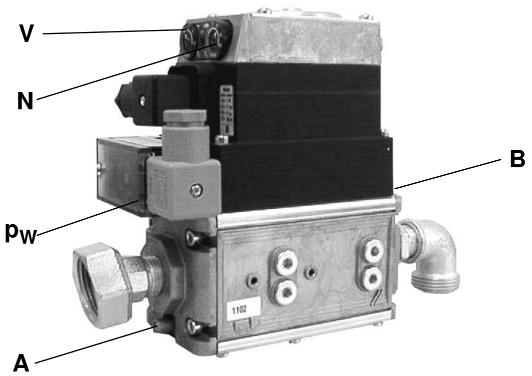
- Start burner, if there is no flame formation, check adjustment. If necessary adjust starting gas pressure $\mathbf{P_s}$ higher (attention: always adjust $\mathbf{P_s} \leq \mathbf{P_G}$)
- After approx. 10 sec re-adjust main gas pressure $\mathbf{P_G}$ according to adjustment table.
- Then adapt dimension **"A"** air flow setting (see table). Secure air setting with lock nut.
- Perform an exhaust gas analysis, paying special atten tion to eh CO emission.
- Seal off all measuring points.

E.04.99 • G. 08.08.19

Modulating or 2-stage sliding gas burner with KEV compact unit (gas/air ratio pressure regulator)

Burner type RG 20(-Z)-M-L-N(-F), RG 30(-Z)-M-L-N

Installation of compact unit	
Installation position	only in horizontal line, not tilted
Minimum distance to walling	20 mm



Gas supply pressure measuring point **A** (P_{inlet})

Nozzle pressure measuring point **B** (P_{outlet})

N = zero point (gas nozzle pressure adjustment at min. output)

V = nozzle pressure/air pressure ratio in the burner pipe (gas nozzle pressure setting at max. capacity)

$\mathbf{p_W}$ = pressure, gas pressure monitor

Presetting:

Locate relevant line of adjustment table according to boiler output and adopt setting values.

- Air volume setting with air flap position as per adjustment table.
- Check setting of dimension “A”.

Burner start:

- Start gas burner at low load - if burner does not go into operation, turn at **N** a little in “**+**” direction and repeat start.

Precision setting:

Adjust max. output:

- Measure gas nozzle pressure at **B**.
- Set burner gradually to high load 2nd stage and correct exhaust gas analysis via “V”.
  To do so, set the output controller to max. output (contact from “T6” to “T8” in socket unit X32).
- Move air flap until max. position is reached (see adjustment table).
- With RG20/30-Z-L, in addition set switch 1st/2nd stage to 2nd stage.

Setting “V” KEV	Exh. gas analysis values	
Change in “+” direction if:	CO_2 too low	O_2 too high
Change in “-” direction if:	CO_2 too high	O_2 too low

- Correct exhaust gas values at “V” (see table).

E. 04.99• G.08.08.19

Adapt nozzle pressure max. output at max. air flap position ST2	Max. output
Increase position ST2 if:	Output/nozzle pressure too low
Reduce max. output if:	Output/nozzle pressure too high

- Set the nozzle pressure by adjusting the air flap (see table item ST2/max.).

Adapt nozzle pressure min. output	Min. output
Increase ST1/min. output if:	Output/nozzle pressure too low
Reduce ST1/min. output if:	Output/nozzle pressure too high

Set min. output 1st stage:

- Set burner to low load 1st stage and correct exhaust gas values via “N”.
  For RG20/30-M-L:
  Set output controller to min. output (contact from “T6” to “T7” in socket unit X32).
  for RG20/30-Z-L:
  Set 1st/2nd stage switch to 1st stage.
- Adjust nozzle pressure by adjusting cam ST1/min. according to table.

Setting “N” KEV	Exh. gas analysis values	
Change in “+” direction if:	CO_2 too low	O_2 too high
Change in “-” direction if:	CO_2 too high	O_2 too low

- Correct exhaust gas values at “N” (see table).
- In order for the positioning drive to approach the newly adjusted cam position, the output controller must be set for a few seconds to max. output requirement (contact from “T6” to “T8”).
  The positioning drive starts to move.

- Reset output controller to min. output requirement (contact from “T6” to “T7”).
  The positioning drive moves to the newly adjusted min. position.
  On the 2-stage sliding version set the switch 1st/2nd stage briefly to 2nd stage and then reset to 1st stage.
- Correct exhaust gas values at “N”.
- If necessary, repeat adjustment procedure of cam position ST1/min. output as described above until desired nozzle pressure is achieved.
- As the adjustments “V” and “N” mutually influence each other, the burner must be run up and down several times between max. and min. heat requirement of the 1st/2nd stage output controller.
- For max. output correct 2nd stage exhaust gas emission by adjusting “V” and for min. output correct 1st stage by adjusting “N”.
- Start the burner and if the burner does not start, alter “N” in direction “+” and start burner again. Check exhaust gas emission and, if necessary, alter 1st stage min./start output.
- Close the measuring connection pieces “A” and “B” - Do **not** close the possibly non-used connection p_F.

Caution !
Flow plate pressure differential pL - furnace pressure pF must be at least 0.3 mbar.
To avoid any oscillation of the controller the pressure difference ($P_{inlet\ pressure}$ - $P_{output\ pressure}$) should be kept as small as possible at maximum output.

E.04.99 • G. 08.08.19

Calculation principle for gas burner adjustment

The values given in the tables are setting values for start-up.
The necessary system adjustment must be newly determined in each case.

General:
The calorofic value ($H_{i,n}$) of fuel gasses is usually given for normal atmospheric conditions (0°C, 1013 mbar).

Natural gas type E $H_{i,n}$ = 10.4 kWh/m^3
Natural gas type LL $H_{i,n}$ = 9.3 kWh/m^3
Gas counters measure the volume of gas in the operational state.

Specifying throughput:
To allow correct setting of the heat generator load, the gas throughput must be determined in advance.

Example:

Height above sea level	230 m
Atmospheric pressure B (according to table)	989 mbar
Gas pressure P_G at counter	20 mbar
Gas temperature ϑ_G	16°C
Boiler rating Q_n	100 kW
Efficiency η_K (assumed)	92%
Calorific value $H_{i,n}$	10.4 kWh/m^3

Gas flow in standard state (V_n)

$$V_n = \frac{Q_n}{\eta_k \times H_{i,n}} = \frac{100kW}{0,92 \times 10,4\frac{kWh}{m^3}} = 10,5\frac{m^3}{h}$$

Gas flow in operating state (V_B)

$$V_B = \frac{V_n}{f} = \frac{10,5\frac{m^3}{h}}{0,94} = 11,2\frac{m^3}{h}$$

Conversion factor (f)

$$f = \frac{B + P_G}{1013} \times \frac{273}{273 + \vartheta_G}$$

Annual average air pressure

Mean geodesic height of supplied region ASL [m]	from		1	51	101	151	201	251	301	351	401	451	501	551	601	651	701
	to	0	50	100	150	200	250	300	350	400	450	500	550	600	650	700	750
Annual average of air pressure	(mbar)	1016	1013	1007	1001	995	989	983	977	971	965	959	953	947	942	936	930

Key:
Q_n = boiler rating [kW]
η_K = efficiency [%]
$H_{i,n}$ = lower standard calorific value [kWh/m^3]
f = conversion factor
B = barometric pressure [mbar]
p_G = gas pressure at gas counter [mbar]
ϑ_G = gas temperature at gas counter [°C]

E. 04.99• G.08.08.19

Flow measurement

Determining flow duration at gas meter.

Calculated flow duration in seconds t_{spec} for a flow volume of 200 litres (corresponding to 0.2 m^3) for the example given above is:

$V_B = 11.2\ m^3/h$

$$t_{soll} = \frac{0,2m^3 \times 3600\frac{s}{h}}{V_B\left[\frac{m^3}{h}\right]} = \frac{720m^3\frac{s}{h}}{V_B\left[\frac{m^3}{h}\right]} = \frac{720m^3\frac{s}{h}}{11,2\frac{m^3}{h}} = 64s$$

Gas flow setting

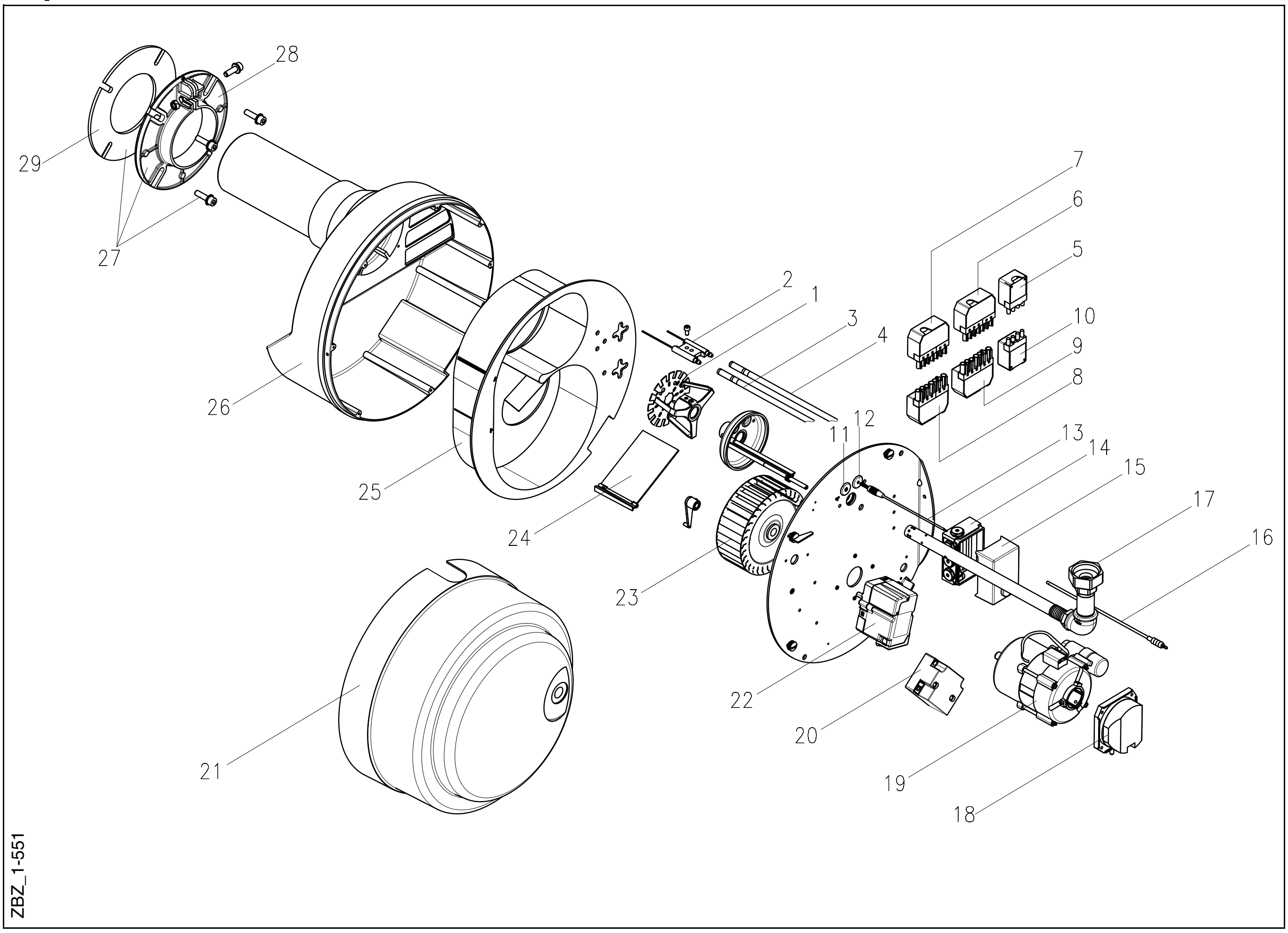
Measured flow duration in seconds [s]	Measures
Greater than calculated flow duration t_{spec}	Increase gas flow
Less than calculated flow duration t_{spec}	Reduce gas flow
Equal to calculated flow duration t_{spec}	Gas flow achieved

gas flow in [m^3 / h]																				
flow volume in litres / flow duration in seconds	60	80	**100**	150	**200**	250	**300**	350	**400**	450	**500**	550	**600**	650	**700**	750	**800**	850	**900**	950	**1000**
60	3,6	4,8	6,0	9,0	12,0	15,0	18,0	21,0	24,0	27,0	30,0										
70	3,1	4,1	5,1	7,7	10,3	12,9	15,4	18,0	20,6	23,1	25,7	28,3	30,9								
80	2,7	3,6	4,5	6,8	9,0	11,3	13,5	15,8	18,0	20,3	22,5	24,8	27,0	29,3							
90	2,4	3,2	4,0	6,0	8,0	10,0	12,0	14,0	16,0	18,0	20,0	22,0	24,0	26,0	28,0	30,0					
100	2,2	2,9	3,6	5,4	7,2	9,0	10,8	12,6	14,4	16,2	18,0	19,8	21,6	23,4	25,2	27,0	28,8	30,6			
110	2,0	2,6	3,3	4,9	6,5	8,2	9,8	11,5	13,1	14,7	16,4	18,0	19,6	21,3	22,9	24,5	26,2	27,8	29,5		
120	1,8	2,4	3,0	4,5	6,0	7,5	9,0	10,5	12,0	13,5	15,0	16,5	18,0	19,5	21,0	22,5	24,0	25,5	27,0	28,5	30,0
130	1,7	2,2	2,8	4,2	5,5	6,9	8,3	9,7	11,1	12,5	13,8	15,2	16,6	18,0	19,4	20,8	22,2	23,5	24,9	26,3	27,7
140	1,5	2,1	2,6	3,9	5,1	6,4	7,7	9,0	10,3	11,6	12,9	14,1	15,4	16,7	18,0	19,3	20,6	21,9	23,1	24,4	25,7
150		1,9	2,4	3,6	4,8	6,0	7,2	8,4	9,6	10,8	12,0	13,2	14,4	15,6	16,8	18,0	19,2	20,4	21,6	22,8	24,0
160		1,8	2,3	3,4	4,5	5,6	6,8	7,9	9,0	10,1	11,3	12,4	13,5	14,6	15,8	16,9	18,0	19,1	20,3	21,4	22,5
170		1,7	2,1	3,2	4,2	5,3	6,4	7,4	8,5	9,5	10,6	11,6	12,7	13,8	14,8	15,9	16,9	18,0	19,1	20,1	21,2
180		1,6	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0	13,0	14,0	15,0	16,0	17,0	18,0	19,0	20,0
190			1,9	2,8	3,8	4,7	5,7	6,6	7,6	8,5	9,5	10,4	11,4	12,3	13,3	14,2	15,2	16,1	17,1	18,0	18,9
200			1,8	2,7	3,6	4,5	5,4	6,3	7,2	8,1	9,0	9,9	10,8	11,7	12,6	13,5	14,4	15,3	16,2	17,1	18,0
210			1,7	2,6	3,4	4,3	5,1	6,0	6,9	7,7	8,6	9,4	10,3	11,1	12,0	12,9	13,7	14,6	15,4	16,3	17,1
220			1,6	2,5	3,3	4,1	4,9	5,7	6,5	7,4	8,2	9,0	9,8	10,6	11,5	12,3	13,1	13,9	14,7	15,5	16,4
230				2,3	3,1	3,9	4,7	5,5	6,3	7,0	7,8	8,6	9,4	10,2	11,0	11,7	12,5	13,3	14,1	14,9	15,7
240					3,0	3,8	4,5	5,3	6,0	6,8	7,5	8,3	9,0	9,8	10,5	11,3	12,0	12,8	13,5	14,3	15,0

E.04.99 • G. 08.08.19

Design

Exploded view RG20

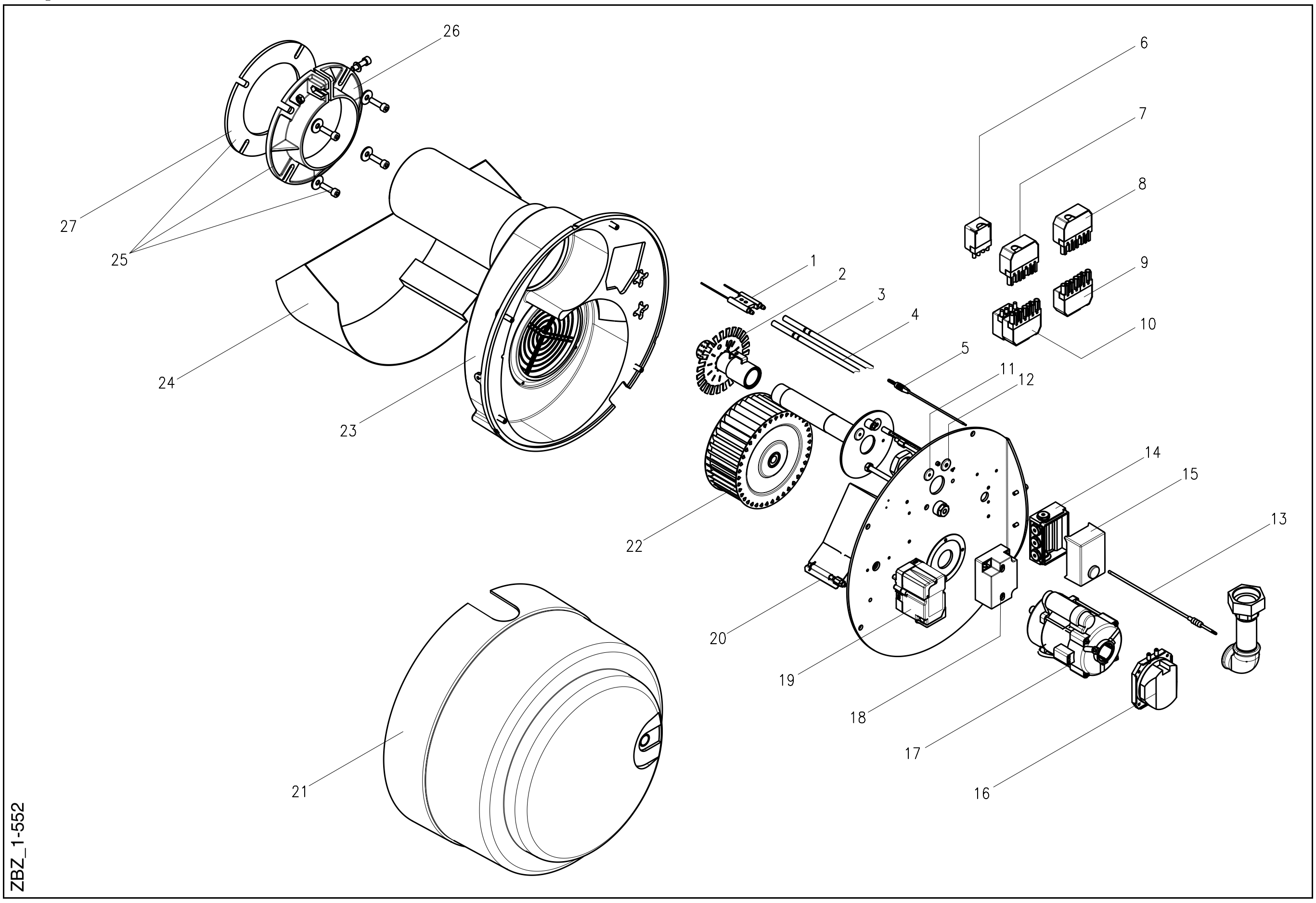


Parts list RG20

Seq. No.	Designation	PU	Order No.
1	Flow plate with combination electrode	1	34-90-10582
2	Combination electrode	5	37-50-20644
3	Ignitioncable with connector, black for -Z	10	47-50-20113
3,4,11	Replacement set Ignition,- and Ionisation cable	1	47-90-28001
3,4,11	Replacement set Ignition,- and Ionisation cable, extension 100 mm	1	47-90-28002
5	Connector unit, 4-pin, green	5	37-50-11143
6	Connector unit, 7-pin, black/brown	5	37-50-11015
7	Connecting cable CG for -M, -Z	1	47-90-21021
8	Socket unit, 7-pin, green with cable, 480mm lg.	5	44-50-10897
9	Socket unit, 7-pin, black/brown, with cable	5	37-50-20731
10	Socket unit, 4-pin, green, with cable for -Z	5	47-50-11840
10	Socket unit, 4-pin, green, with cable for -M	1	47-50-22791
11	Cable gland G4 for ignition cable	20	37-50-11971
12	Cable gland G6 for ionisation cable	20	47-50-10890
14	Lower section, control box	1	47-90-29467
15	Control unit LME11	1	47-90-29190
15	Control unit LME22	1	47-90-28741
16	Meter tube	1	42-90-23254
17	Gas nozzle without flow plate for -N	1	34-90-23240
17	Gas nozzle with pressure measuring nipple for -N, extension 100 mm	1	47-90-24218
17	Gas nozzle with pressure measuring nipple for -N, extension 200 mm	1	47-90-26515
17	Gas nozzle for -F	1	34-90-23244
17	Gas nozzle with pressure measuring nipple for -F, extension 100 mm	1	47-90-24624
18	Air pressure monitor	1	47-90-25290
19	Motor 230 V / 50 Hz 140 W	1	47-90-25531
20	Elektr. Ignition transformer mod. 26/35	1	47-90-24469
21	Burner cover	1	34-90-10141
22	Actuating drive STA 13 B0	1	47-90-22472
23	Fan wheel dia. 146 x 62 mm	1	32-90-10139
24	Air valve for -L	1	32-50-11595
24	Air valve for -M, -Z	1	32-90-10176
25	Plastic housing insert	1	32-90-11744
26	Housing with burner pipe	1	44-90-11518
26	Housing with burner pipe , extension 100 mm	1	32-90-24280
26	Housing with burner pipe , extension 200 mm	1	47-90-26514
27	Montage set kpl.	1	34-90-10586
29	Flange gasket	5	37-50-10137
-	Follower relay 0-10 min. adjustable	1	31-90-50418
-	Relay holder CR-PH	1	47-90-27453
-	Relay CR-P230AC2	1	47-90-25199
-	Connection cable STA 13B0	1	47-90-22444
-	Tightness control TC	1	34-20-40626
-	Compact unit CG10	1	49-90-21758
-	Compact unit CG15	1	49-90-22589
-	Compact unit CG15 with TC	1	47-90-22728
-	Compact unit CG15 V	1	47-90-22735
-	Compact unit CG15 V with TC	1	47-90-22729
-	Compact unit CG20	1	47-90-22600
-	Compact unit CG20 V	1	47-90-22736
-	Compact unit CG20 with TC	1	47-90-22738
-	Compact unit CG20 V with	1	44-90-22533
-	Seal for gas union R½	10	37-50-20108
-	Gasket for gas union R¾	10	37-50-20109
-	Ball valve ½	1	34-20-40601
-	Ball valve ¾	1	34-20-40602
-	Filter elements for KEV 3/4“ und 1“	1	59-90-50290
-	Attachment screw for burner cover	1	47-90-28030

E.04.99 • G. 08.08.19

Exploded view RG30

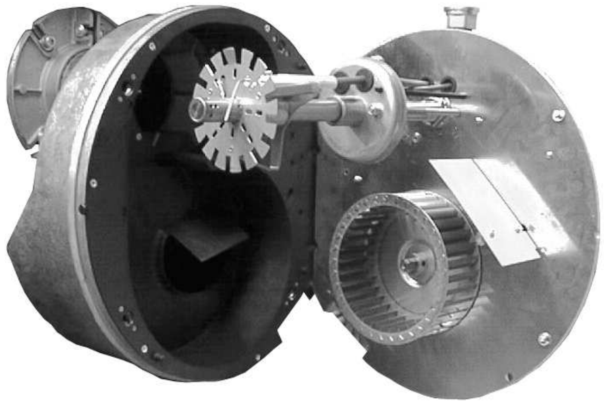


Parts list RG30

Seq. No.	Designation	PU	Order No.
1	Combination electrode	5	37-50-20644
2	Gas nozzle for -N with flow plate	1	34-90-10558
2	Gas nozzle for -N - 170 kW with flow plate	1	44-90-20184
2	Gas nozzle for -N with flow plate, extension 100 mm	1	44-90-23022
2	Gas nozzle for -F with flow plate	1	34-90-10557
3,4,5	Replacement set Ignition,- and Ionisation cable	1	47-90-28004
3,4,5	Replacement set Ignition,- and Ionisation cable, extension 100 mm	1	47-90-28003
6	Connector unit, 4-pin, green	5	37-50-11143
7	Connector unit, 7-pin, black/brown	5	37-50-11015
8	Connecting cable CG for -Z	1	47-90-20978
8	Connecting cable CG for -M	1	47-90-21021
9	Socket unit, 7-pin, green, with cable, 480 mm lg.	5	44-50-10897
10	Socket unit, 11-pin, with cable for -Z	1	37-90-11144
11	Cable gland G4 for ignition cable	20	37-50-11971
12	Cable gland G6 for ionisation cable	20	47-50-10890
13	Meter tube for -Z, -M	1	43-90-21500
14	Lower section, control box	1	47-90-29467
15	Control unit LME11	1	47-90-29190
15	Control unit LME22	1	47-90-28741
16	Air pressure monitor	1	47-90-25290
17	Motor 230 V / 50 Hz 250 W	1	33-90-10335
18	Elektr. Ignition transformer mod. 26/35	1	47-90-24469
19	Actuating drive STA 13 B0	1	47-90-22472
20	Air flap	1	43-90-23298
21	Burner cover	1	34-90-10148
22	Fan ø 180x62 mm for RG30-Z-L-F	1	47-90-21703
23	Housing with burner pipe	1	34-90-10587
23	Housing with burner pipe, extension 100 mm	1	47-90-26319
23	Housing with burner pipe, extension 200 mm	1	47-90-26326
23	Housing RG 30.3 with burner pipe for RG 30-Z-L-F	1	43-90-22973
23	Housing RG with burner pipe for RG 30-Z-L-F, extension 100 mm	1	43-90-22973-01
24	Intake silencer	1	33-90-12009
25	Montage set kpl.	1	33-90-11010
27	Flange gasket	5	33-50-10191
-	Extension NR	1	44-90-23022
-	Connection cable STA 13B0	1	47-90-22444
-	Tightness control TC	1	34-20-40626
-	Compact unit CG20	1	47-90-22600
-	Compact unit CG20 with TC	1	47-90-22738
-	Compact unit CG20 V	1	47-90-22736
-	Compact unit CG20 V with TC	1	44-90-22533
-	Compact unit CG25 with TC	1	47-90-22730
-	Compact unit CG25 V with TC	1	47-90-22587
-	Compact unit CG30 with TC	1	47-90-22905
-	Compact unit CG30 V with TC	1	47-90-22551
-	Ball valve ¾	1	34-20-40602
-	Ball valve 1	1	34-20-40603
-	Ball valve 1½	1	34-20-40604
-	Gasket for gas union R¾	10	37-50-20109
-	Seal for gas union R1	10	37-50-20110
-	Seal for gas union R1½	10	37-50-20111
-	Filter elements for KEZ and KEV 3/4“ und 1“	1	59-90-50290
	Filter mat for KEZand KEV 1 1/2“	1	59-90-51212

E.04.99 • G. 08.08.19

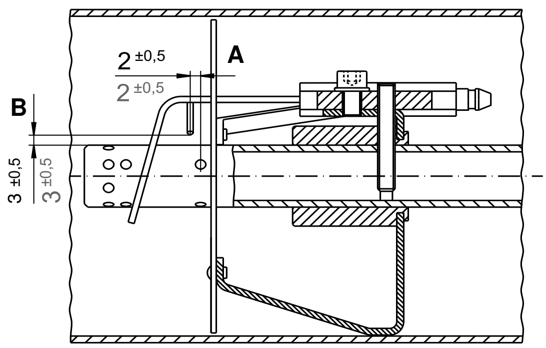
Service instructions/dimensions

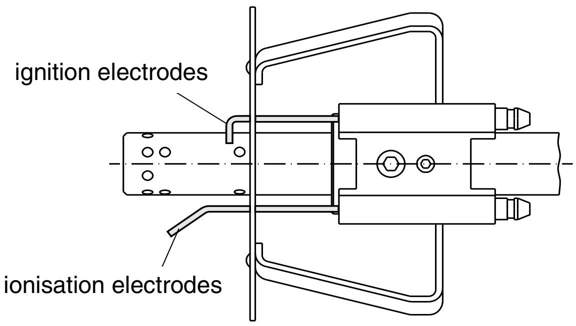


Service position

Risk of injury by fan wheel during activation in service position.

- Release quick-release locks and detach base plate.
- Suspend base plate with retaining buttons in cross recesses of housing.





Reference dimensions, ignition and ionisation electrodes

The ignition electrodes are preset at the factory. The dimensions are specified for checking purposes.

Dimension in mm	RG 20	RG 30
A	$2^{\pm 0.5}$	$2^{\pm 0.5}$
B	$3^{\pm 0.5}$	$3^{\pm 0.5}$

E. 04.99• G.08.08.19

Measuring ionisation current

The ionisation current must be measured during burner start-up and maintenance or after a fault indication in the control box.

Measurement of ionisation current shortly after burner start during:

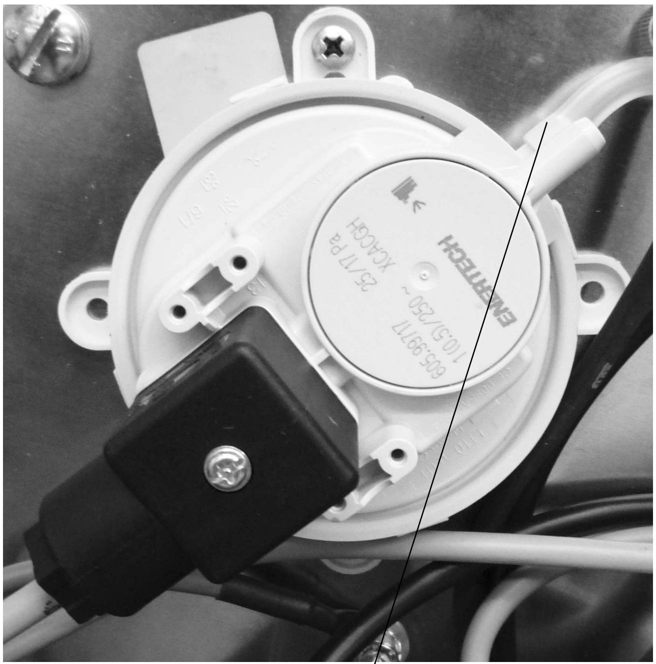
- Maintenance
- Start-up
- Fault indication.

The ionisation current can also be read out as a percentage via SatroPen.

To do so:

- Open plug connection between cable to control box and cable from ionisation electrode.
- Connect ammeter in series. Measuring range 0...200 µA DC.

I > 2 µA	- OK
I < 2 µA	- Unsafe operation !
	- Clean burner pipe
	- Bend ionisation rod in flame area
	- If necessary, replace combination electrode
	- If necessary, reverse polarity on ignition transformer (induction current)
	- Eliminate moisture and deposits.

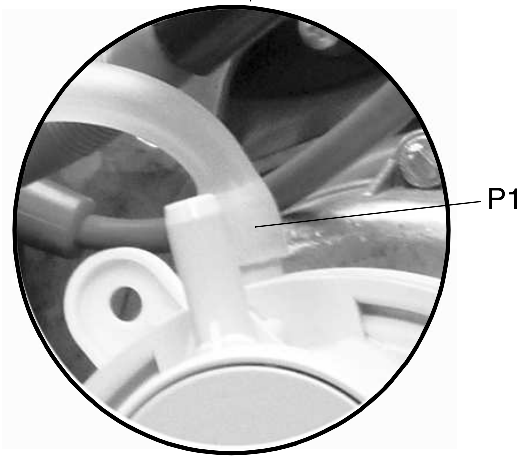


Servicing air pressure monitor

- Detach silicone connecting hose and clean, check switching function.
- Replace air pressure monitor if switching function is no longer O.K.

To do so:

- Switch burner voltage-free and disconnect (7-pin connector X11).
- Unscrew cover.
- Disconnect electrical connectors.
- Release retaining screws on motor.
- Reassemble in reverse order.



"P1" indicates the pressure measuring connection for the silicone tube!

Declaration of conformity

Enertech GmbH, Postfach 3063, 58662 Hemer
0 23 72/965-0 0 23 72/6 1240 info@giersch.de www.giersch.de

Declaration of Conformity for Gas Burners

We, Enertech GmbH, Adjutantenkamp 18 in D-58675 Hemer declare under our responsibility that

gas burner type **RG...**

is conform with the regulations of these directives

MD2006/42/EG
EMC2014/30/EU
GAD 2016/426/EU
LVD2014/35/EU
RoHS 2011/65/EU
DIN EN 676

and is marked with:

CE

CE-0085

Hemer, 16.01.2018

ppa. ppa. D. Wendel

Wendel
Sales director

i.V. R. Rebbe

Rebbe
Technical management

Art.-Nr. 89-10--80875 Druck-Nr. 4/2017

Geschäftsführer
Dr. Josef Wrobel

Amtsgericht Iserlohn
HRB 8776
Ust-IdNr.
DE 815685219

Hausanschrift
Adjutantenkamp 18
58675 Hemer

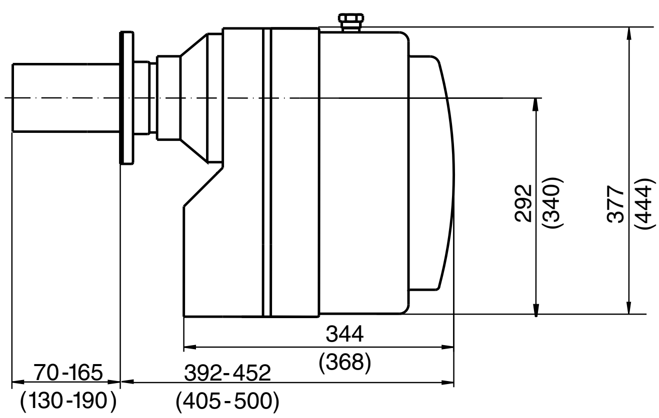
Lieferanschrift
An der Iserkuhle 27
58675 Hemer

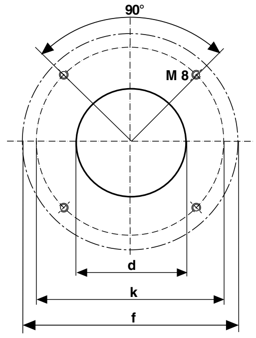
Bankverbindung
ENERTECH GmbH
IBAN: DE04 2032 0500 4989 1886 07
BIC: DABADEHHXXX

E.04.99 • G. 08.08.19

Burner overall dimensions / boiler connection dimensions (RG30 dimensions in brackets)

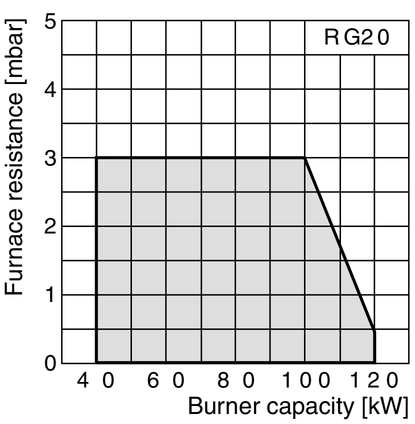
All dimensions in mm

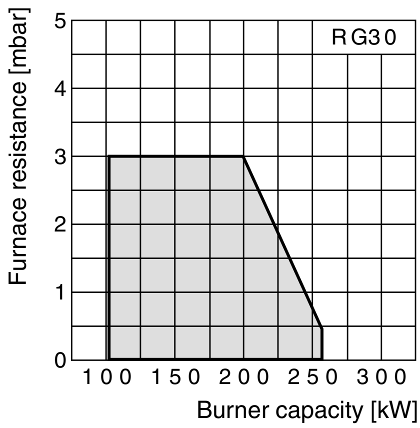




	RG 20	RG 30
Pipe outside dia. d	102	130
Hole circle dia. k	170(140-180)	170-200
Outside dia. f	194	220

Working ranges





DVGW-tested working ranges to DIN EN 676.

Enertech GmbH • Brenner und Heizsysteme
Adjutantenkamp 18 • D-58675 Hemer • Telephone 02372/965-0 • Fax 02372/61240
E-mail: info@giersch.de • Internet: http://www.giersch.de

08-2019 • Art.-Nr. 70-22-58311-GB • Printed in Germany • Enertech GmbH