GIERSCH

Technical Information • Installation Instructions

GG10-Z-(-M)-LN

Gas

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CE

GB

Contents

E.04.99 • G. 08.04.24

Overview

General information

Installation of a gas-fired heating system must be performed in accordance with the applicable regulations and guidelines. 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 GG10-LN series of gas burners are suitable for burning natural gas or liquefied petroleum
gas in accordance with DIN EN 437 and comply with the European Standard DIN EN 676.

Scope of delivery and connection data

Before installing the gas burner, please check the scope of delivery.

Scope of delivery:
Burner, sliding flange and gasket, 4 retaining screws, separate operating instructions,
technical information, one 7-pin connector, gas ramp and gasket.

Gas installation and commissioning are subject to the applicable national regulations, e.g. in Germany the Technical Regulations of the DVGW (DVGW-TRGI).

The following must be observed for Switzerland: SVGW Gas Provisions G1, G3: Gas installation
EKAS Form. 1942: Liquefied gas regulation, Part 2 Regulations of cantonal authorities (e. g. fire department regulations).

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 gas ramp 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 the through-flow direction of the gas ramp.

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 enter 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.

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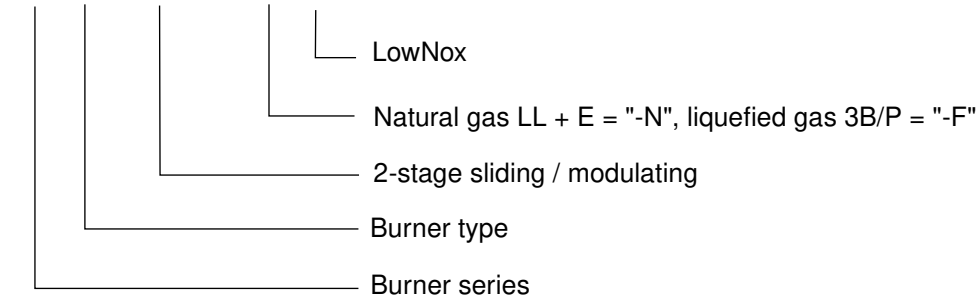
Key for code designation

GG10/2-Z(-M)-N-LN



Technical specifications

	Burner type	
Technische Daten	**GG10/1-Z(-M)-LN**	**GG10/2-Z(-M)-LN**
Burner output	12 - 60 kW	25 - 90 kW
Gas type	Natural gas LL + E= "N", liquid gas 3B/P = "F"	
Gas inlet pressure with MB VEF 407 ½“	20 mbar	
Method of operation	2-stage sliding / modulating	
Voltage	1 / N / PE ~ 50 Hz / 230 V	
Max. power consumption at start / during operation	1,9 A / 0,8 A	
Electric motor power	90 W	
Ignition transformer	35 mA; 8 kV eff.	
Control box	LME22	
Weight in kg	8 kg	
Noise emission in db(A)	≤ 59 dB(A)	
Gas burner class	5	
NOx limit	≤ 56 mg/kWh	

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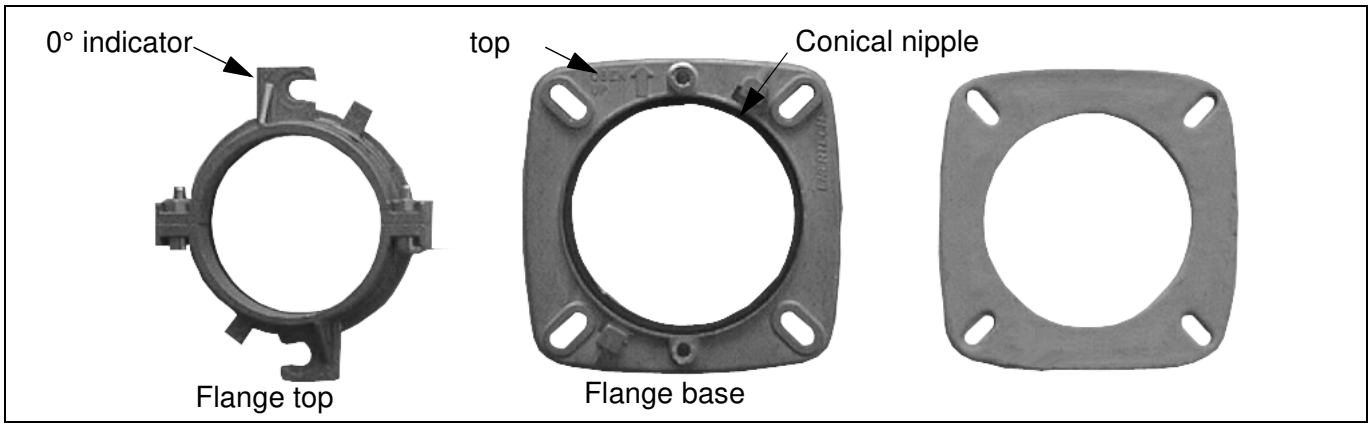
Installation

Mounting the flange and burner

1. Mount the flange base and gasket onto the boiler:
   - Observe "top" mounting position,
   - Tighten M8 screws including U-washer,
   - The upper flange part (half shells) must be fitted to the burner tube in advance and the clamping screws must be attached.

During the assembly procedure, ensure that the 0° display on the flange top aligns with the "top" display on the flange base.

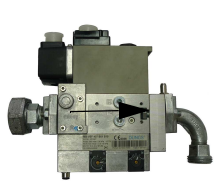
2. Installing the burner:
   - To mount the burner, engage the burner housing **in the retaining lugs by rotating it clockwise.**
   - Tighten the clamping screw. Make sure that the conical nipple is inserted in the lower part of the flange correctly.



Mounting the gas ramp!

Installing the gas ramp	
Installation position for vertical line	as desired
Installation position for horizontal line	tilted up to max. 90° to left or right, not overhead
Minimum distance to masonry	20 mm

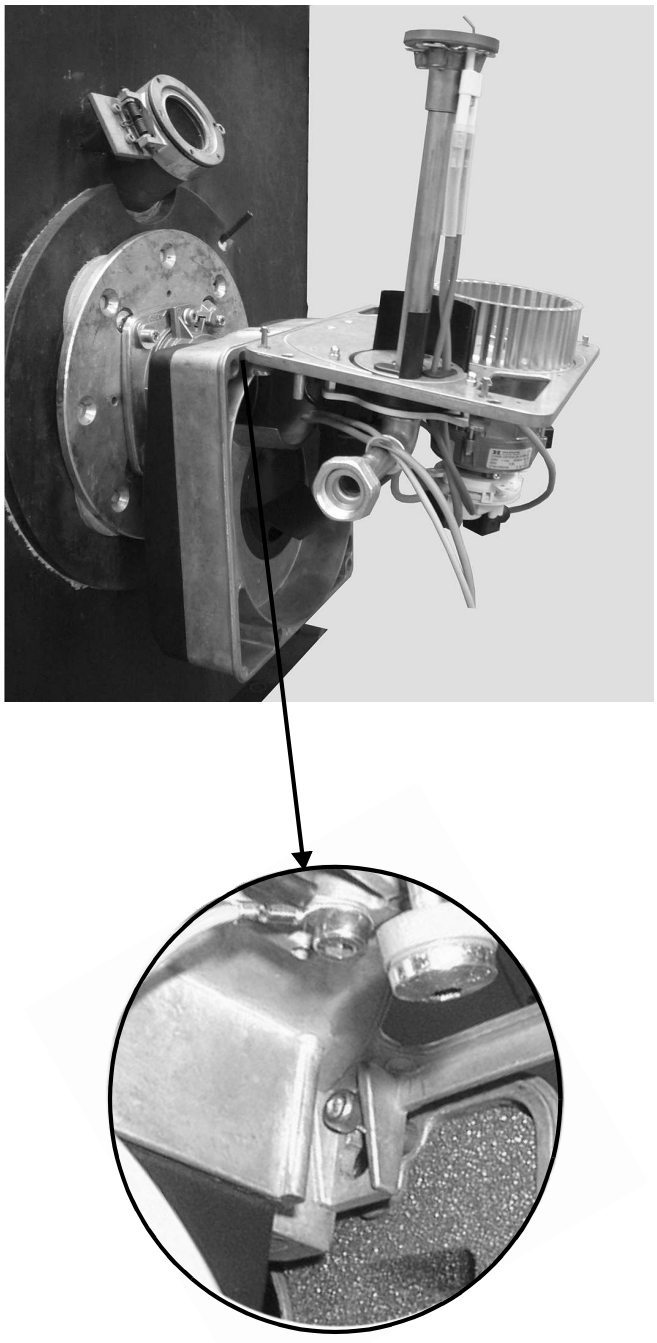
Mounting position MB-...



- Remove plastic protective plug.
- Mount the screw connections with enclosed seals.
- Observe the installation position.
- Check connecting point of gas ramp with non-corrosive foaming agent for leaks and vent the gas pipe.
- When venting, use a hose to discharge the gas safely to the atmosphere.

The gas supply line and gas assembly must not exert tensile, compression or torsional forces on the burner, since this can otherwise adversely affect operational safety.

In Germany, observe DVGW-TRGI 1986/96 Section 7, TRF 1988, DIN 4756 and local regulations



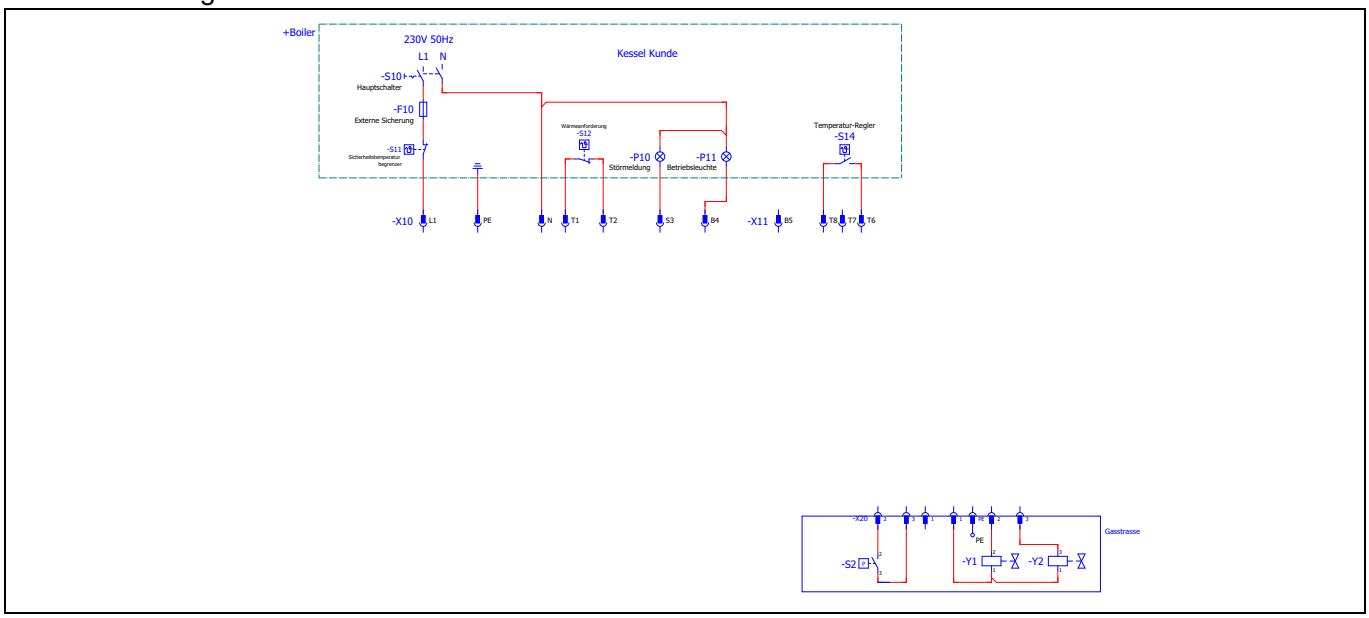
Service position

Risk of injury by fan impeller on activation in service position.
Release quick-release locks (4 x) and detach base plate.Place the keyhole openings in the base plate onto the socket head cap screws of the housing and lock them into place.

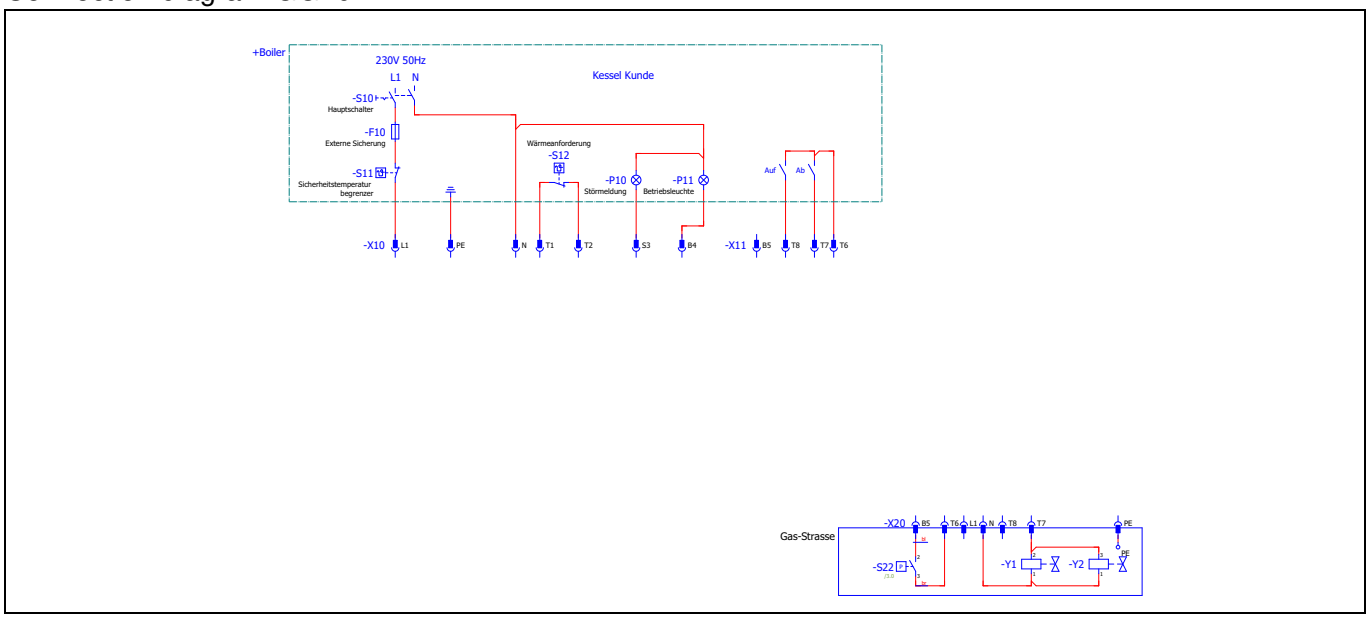
Connect to power supply

- Deenergise the system. Main switch "OFF".
- Check the polarity of all connectors.
- Connect the plug unit as indicated in the connection diagram. Lay the flexible control line so that the boiler door remains swivellable.
- Insert the coded cube connectors to the gas pressure monitor and to the solenoid valves and use a screw to fasten.
- If plug X11 is wired as shown the terminal diagram, check that the pins are correctly assigned..
- Connect the 7-pin plug of the boiler controller (X11) to the black-brown socket on the burner (X12).
- The power cord of the 7-pin connecting plug X11 must be fused with a slow-acting fuse rated for max. 6.3 A or a quick-acting fuse rated for max. 10 A.

Connection diagram GG10-Z-L-LN



Connection diagram GG10-M-L-LN



Function

Function test of control box

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! (Remote) Unlocking may only be carried out by an authorised specialist.

Carry out the following checks after commissioning and maintenance of the burner.

Function test

1. safety shutdown 1

- **Action**
  - disconnect the flame sensor cable
  - start the burner
- **Result**
  - The burner goes to fault after three repetitions

After a successful test, reconnect the flame sensor cable.

2. safety shutdown 2 (flame arrestor)

- **Action**
  - start the burner
  - wait until the burner is in operation
  - close the gas supply using the ball valve
- **Result**
  - the burner is switched off (gas pressure switch is connected upstream of the control unit)

After a successful test, open the ball valve again.

3. safety shutdown 3 (lack of air)

- **Action**
  - start the burner
  - wait until the burner is in operation
  - disconnect the air hose at the "+" input of the air pressure switch
- **Result**
  - the burner then goes into fault mode

After a successful test, reconnect the air hose to the air pressure switch.

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Safety and switching functions

If, at the end of the safety time, no flame forms, or there is a loss of flame during operation, a maximum of three repetitions can be carried out for each control circuit; otherwise a failure shut-down is performed.
If a flame signal is given during the pre-ventilation phase, a failure shut-down will occur immediately.
The position of the air pressure monitor is continuously checked. There can be no start-up if it is not in its neutral position. If the NO contact does not close or reopens during the pre-ventilation phase, a failure shut-down will occur. The air pressure monitor contact and the valves close if the air flow
is insufficient during operation. The device goes into failure mode.

Display during commissioning

Color code table for multi-color signal lamp		
Status	**Color code**	**Color**
Waiting time (tw), other Waiting states	○.....	OFF
Air pressure switch waiting phase, Pre-ventilaton	●.....	Yellow
Ignition phase, ignition controlled	○●○●○●○●○●	Yellow flashing
Operation, flame OK	■.....	Green
Operation, flame poor	○■○■○■○■○■	Green flashing
External light on burner start	■▲■▲■▲■▲■▲	Green-red
Undervoltage	●▲●▲●▲●▲●	Yellow-red
Fault, alarm	▲.....	Red
Fault code output, see fault code table	○▲○▲○▲○▲○▲○	Red flashing
Interface diagnostics	▲▲▲▲▲▲▲▲▲▲▲▲	Red flickering light

Key:

..... Permanent
○ OFF
▲ Red
● Yellow
■ Green

Troubleshooting diagnostics
After failure shutdown, the red signal lamp lights up permanently. In this state, the visual troubleshooting diagnostics can be activated according to the fault code table by actuating the unlocking key **> 3 seconds**. Actuate the unlocking key again for >3 seconds to activate the interface diagnostics. The interface diagnostics operates only when the unlocking key adapter AGK20… is not attached. If the interface diagnostics is activated unintentionally (indicated by a weak flickering of the signal lamp in red), it can be switched off again by actuatiing the unlocking key >3 seconds. The correct moment for switchover is signaled by a yellow light pulse.

Fault code table

Flashing code "red" of the fault signal lamp (LED)	Alarm at terminal 10	Possible causes
Flashes 2 x	On	No flame forms at the end of the safety time (TSA) - Defective or soiled fuel valves - Defective or soiled flame sensor - Poor burner setting, no fuel - Defective defekte ingnition device
Flashes 3 x	On	Error air pressure monitor (LP) - Air pressure failure after specified time (t10) - Air pressure switch (LP) welded in idle position
Flashes 4 x	On	External light on burner start
Flashes 5 x	On	Time monitoring air pressure monitor (LP) - Air pressure monitor (LP) welded in working position - Fault during seal check (only in connection with leak check (LDU11..)
Flashes 6 x	On	Free
Flashes 7 x	On	Too frequent loss of flame during operation (repetition limit) - Defective or soiled fuel valves - Defective or soiled flame sensor - Defective burner setting
Flashes 8 x	On	Free
Flashes 9 x	On	Free
Flashes 10 x	Off	Wiring fault or internal error, output contacts, other fault
Flashes 14 x	On	CPI contact not closed

The control outputs are deenergised during troubleshooting diagnostics.
- The burner remains switched off,
- The entrnal fault display remains deenergised
- Fault signal alarm (AL) at terminal 10 according to fault code table.

Unlock to exit the troubleshooting diagnostics and switch the burner on again.
Press the unlocking key approx. **1 s (< 3 s)**.

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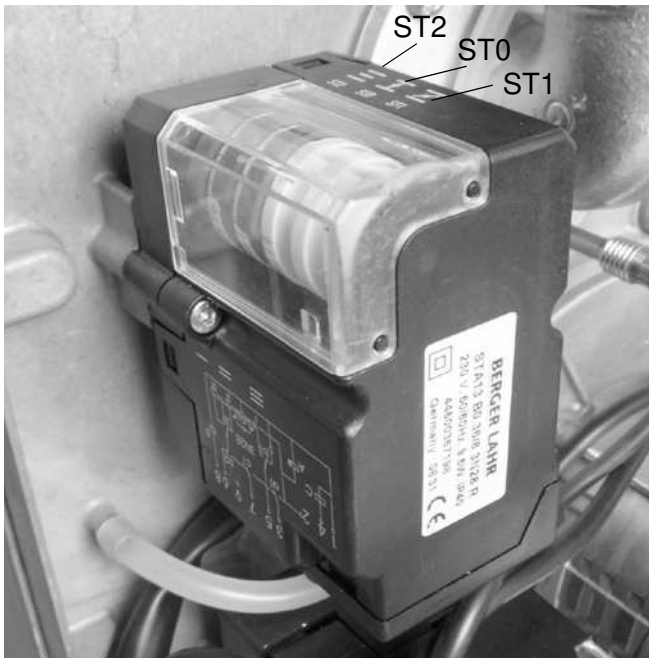
Air damper actuator STA



The STA 13 B0 servomotor is used to adjust air dampers on burners with 2-stage or modulating operation. The setting is made via limit switch cams on the actuator roller.

The servomotor moves to the air shut-off position (ST0) after each control switch-off.

To do this:

Remove the cover from the air flap actuator. Change the cam positions on the adjusting screws using a standard screwdriver.
The switching cams can be readjusted when adjusting the burner.

The cam positions for adjusting the burner to the required minimum/maximum output can be found in the presetting table.

see settings table page 17 ff.

To do this:

Remove the cover from the air flap actuator. Change the cam positions on the adjusting screws using a standard screwdriver.
The switching cams can be readjusted when adjusting the burner.

larger number = more air

smaller number = less air

ST1 and ST2 settings only become effective after a short switchover between 1st and 2nd stage or activation up/down on the power controller.
Do not set cam ST1/min. larger than ST2/max.

After adjusting the burner, refasten the servomotor cover and set the switch on the connection socket to the 2nd stage position.

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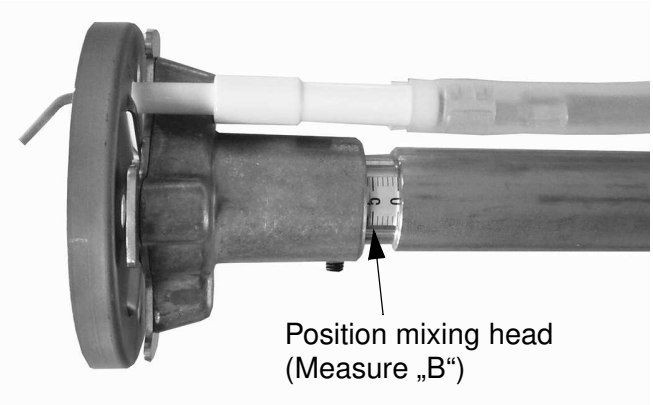
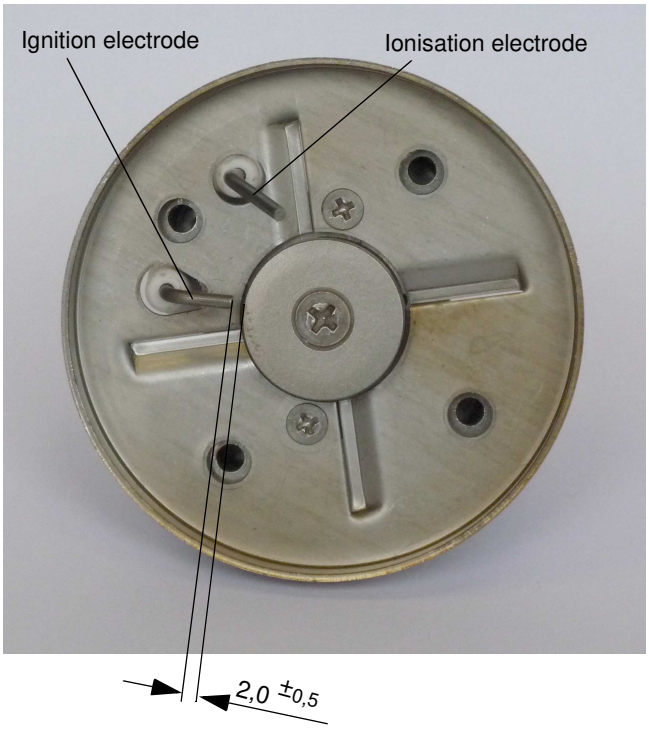
Start-up

Once the installation and assembly work has been completed, the burner can be put into operation.



Adjusting the mixing head

The position of the mixing head is set depending on the power according to the setting table on page 17 ff.



Adjusting the ignition electrode

The electrode is set at the factory. The specified dimension is for checking purposes.

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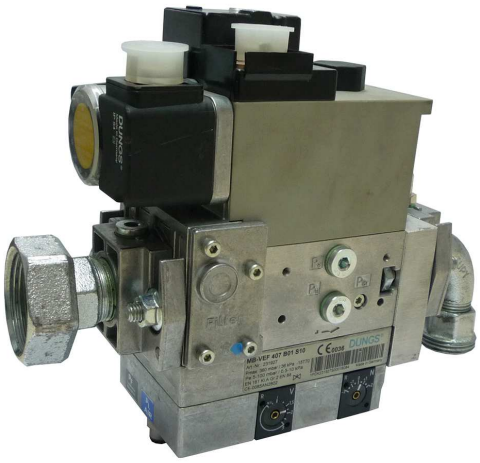
Setting the gas ramp MB VEF 407

The gas ramp for the gas burner is pre-assembled and tested for leaks.

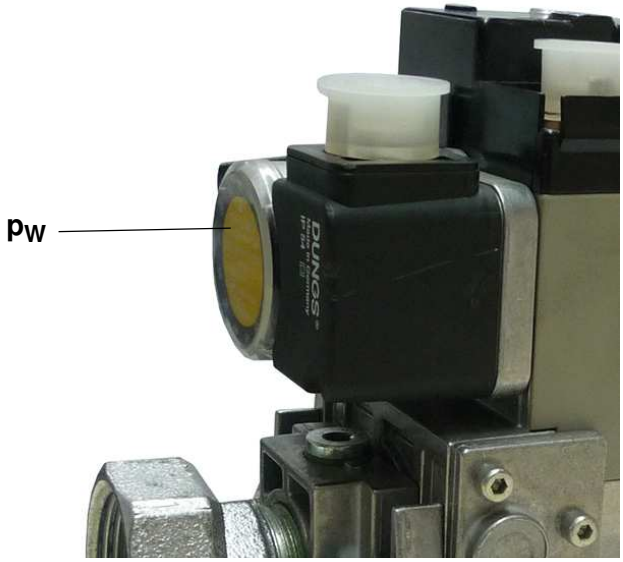


MB version:
Precise pneumatic mixture control for optimum energy utilisation and combustion.

Technical data of the gas ramp

Gas types:	Gas type family 1, 2 and 3, according to DIN EN 437/EN 2003-09
Inlett pressure:	p_E : 15 to < 360 mbar
Perm. outlet pressure:	$p_G \geq 0,4$ to < 100 mbar
Ambient temperature:	-15°C to +70°C
Connecting flanges:	The connection flanges are fastened with 2 screws. Pressure measuring point in the outlet.
Filters:	Plastic screen mesh

Gas pressure switch



The gas pressure switch is used to monitor the gas inlet pressure. If the pressure falls below the set minimum gas inlet pressure (preset at the factory to 12 mbar), the burner is switched off. The burner starts automatically when the minimum pressure is exceeded.

Adjusting gas burner and boiler

Once the installation and assembly work has been completed, the burner can be put into operation.

- Measure the inlet pressure with a U-tube manometer on the "pE" measuring connection.
  max. 360 mbar (static pressure) for MB407
  min. 20 mbar (flow pressure) for -N
  min. 35 mbar (flow pressure) for -F
  The burner with gas ramp is preset to low output at the factory. This ensures a safe initial burner start.
- Adjust the burner to the desired nominal output in accordance with the setting tables.

For this purpose:
- Check the nozzle pressure with a U-tube pressure gauge on measuring nozzle "B" (pG).
- Set the gas pressures and the air volume dimension "A" according to the setting table.
- It is essential to check the exhaust gas values (CO, CO_2 or O_2).

Exhaust gas values	Natural LL+E	LPG propane 3B/P
O_2-Content	3,5-5,0%	
CO_2-Content	9-10%	10,5-11,5%

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, close ball valve slowly; burner must shut down but not go into fault mode.

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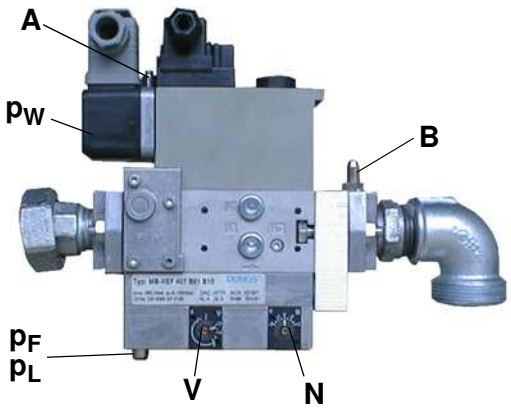
Gasburner with gas ramp MB...



Gas supply pressure measuring nozzle **A** (P_E)

Nozzle pressure measuring connection **B** (P_G)

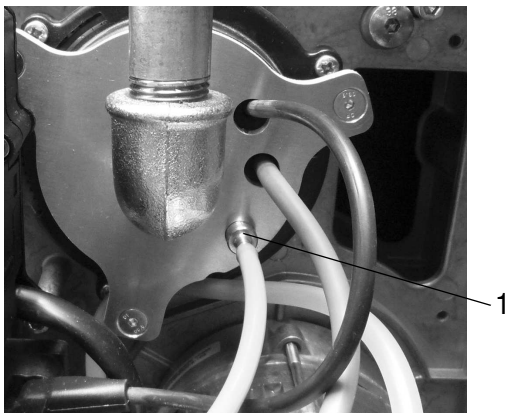
N = zero point (gas nozzle pressure setting at min. output)

V = Nozzle pressure to air pressure ratio in the burner tube burner tube (gas nozzle pressure setting at max. output)

$\mathbf{p_F}$ = combustion chamber pressure

$\mathbf{p_L}$ = Stowage disc pressure

$\mathbf{p_w}$ = Gas pressure monitor



Connect the blue hose to the "AIR" connection (pL) on the compact unit and the air pressure connection on the measuring nipple (1). The blue hose serves as the control line for the gas ramp and must be laid in a free curve without kinks.

Start the burner.

1. setting the excess air in Max. Output - and Min. output

Set the air flap positions ST2 for max. Output and ST1 for Min. Output according to the setting tables (see page 17).

In Max. Output, set the excess air with the "large flame" / "V" adjustment screw on the gas pressure regulator. The CO_2 value in the flue gas should be 9 - 10% for natural gas and 11 - 12% for liquid gas.

Set the excess air in min. output with the "small flame" / "N" adjustment screw on the gas pressure regulator. The CO_2 value in the flue gas should be 9 - 10% for natural gas and 11 - 12% for liquid gas.
The min. output setting influences the max. output setting. Output setting.

In Max. Power, check the excess air and correct if necessary with the "large flame" / "V" adjustment screw on the gas pressure regulator.

2. setting the power in Max. output - and Min. output

Max. Check max. output by checking the gas quantity on the gas meter or comparing the nozzle pressure with the values in the setting tables. The output can be increased by opening the air flap (increasing ST2) and decreased by closing the air flap (decreasing ST2). The excess air does not change with this setting.

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Check the minimum output by checking the gas quantity on the gas meter or comparing the nozzle pressure with the values in the setting tables. The output can be increased by opening the air flap (increasing ST1) and decreased by closing the air flap (decreasing ST1). The excess air does not change with this setting.

Burner start:

- Start the gas burner at min. output - if the burner does not start, turn the adjusting screw N slightly in the "+" direction and repeat the start.

Setting large flame/„V“	**Exhaust gas analysis values**	
in the direction of "+" change if:	CO_2 too low	O_2 too high
in the direction of "-" change if:	CO_2 too hogh	O_2 too low

Nozzle pressure Max. Output Adapt	**Max. output**
ST2/Max. power increase if:	Power/nozzle pressure too low
ST2/Max. power reduce if:	Power/nozzle pressure too high

Nozzle pressure Min. Output Adapt	**Min. output**
ST1/min. output enlarge if:	Power/nozzle pressure too low
ST1/min. output reduce if:	Power/nozzle pressure too high

Setting small flame/„N“	**Exhaust gas analysis values**	
in the direction of "+" change if:	CO_2 too low	O_2 too high
in the direction of "-" change if:	CO_2 too high	O_2 too low

Attention !
Differential exchange disc pressure p_L - combustion chamber pressure p_F must be at least 0.3 mbar.

Adjustment tables

The values given in the tables are only guide values for commissioning. The required system settings must be redetermined in the event of deviating data such as boiler output, calorific value and altitude.
In any case, readjustment is necessary depending on the system.
A combustion check must be carried out during initial commissioning and after each adjustment.

GG10/1-Z(-M)-N-LN

GG10/1-Z(-M)-N-LN								**Natural gas LL: $H_{i,n}$ = 9,3 [kWh/m³]**			
Burner output [kW]		Boiler output η= 93% [kW]		Position Air flap [°]		Position Mixing head [mm]	Position Inlet nozzle [°]	Gas nozzle pressure p_G [mbar]		Gas thoughput V_G [m³/h]	
2-stage	1-stage	2-stage	1-stage	2-stage	1-stage			2-stage	1-stage	2-stage	1-stage
25	12	23	11	50	10	5	1	3,9	1	2,8	1,4
35	12	33	11	90	10	5	1	9,4	1	3,9	1,4
45	12	42	11	150	10	5	1	13,4	1	5,1	1,4
50	35	47	33	110	70	0	2	13,5	6,9	5,6	3,9
60	35	56	33	160	70	0	2	17	6,9	6,8	3,9

GG10/1-Z(-M)-N-LN								**Natural gas E: $H_{i,n}$ = 10,4 [kWh/m³]**			
Burner output [kW]		Boiler output η= 93% [kW]		Position Air flap [°]		Position Mixing head [mm]	Position Inlet nozzle [°]	Gas nozzle pressure p_G [mbar]		Gas thoughput V_G [m³/h]	
2-stage	1-stage	2-stage	1-stage	2-stage	1-stage			2-stage	1-stage	2-stage	1-stage
25	12	23	11	50	10	5	1	3,5	0,8	2,5	1,2
35	12	33	11	90	10	5	1	7,8	0,8	3,5	1,2
45	12	42	11	150	10	5	1	11,0	0,8	4,5	1,2
50	35	47	33	110	70	0	2	10,4	5,3	5,0	3,5
60	35	56	33	160	70	0	2	13,1	5,3	6,0	3,5

GG10/1-Z(-M)-N-LN								**LPG $H_{i,n}$ = 25,89 [kWh/m³]**			
Burner output [kW]		Boiler output η= 93% [kW]		Position Air flap [°]		Position Mixing head [mm]	Position Inlet nozzle [°]	Gas nozzle pressure p_G [mbar]		Gas thoughput V_G [m³/h]	
2-stage	1-stage	2-stage	1-stage	2-stage	1-stage			2-stage	1-stage	2-stage	1-stage
25	16	23	15	50	10	5	1	2,5	1,0	1,0	0,6
35	16	33	15	90	10	5	1	3,8	1,0	1,4	0,6
45	16	42	15	150	10	5	1	4,8	1,0	1,8	0,6
50	35	47	33	110	70	0	2	6,0	3,8	2,0	1,4
60	35	56	33	160	70	0	2	10,0	3,8	2,4	1,4

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GG10/2-Z(-M)-N-LN

GG10/2-Z(-M)-N-LN									Natural gas LL: $H_{i,n}$ = 9,3 [kWh/m^3]			
Burner output [kW] 2-stage	1-stage	Boiler output η= 92% [kW] 2-stage	1-stage	Stellmotor [°] ST2	ST1	ST0	LRH [°] (ST0) 0	Position Inlet nozzle Measure „B“ [mm]	Gas nozzle pressure p_G [mbar] 2-stage	1-stage	Gas thoughput V_G [m^3/h] 2. Stufe	1.Stufe
69	27	63	25	45	1	0	23	5	10,2	1,7	7,8	3,0
72	32	66	29	132	15	0	23	5	11,7	2,7	8,1	3,6
82*	**50**	**75**	**46**	**140**	**20**	**0**	**37**	**0**	**12,3**	**4,8**	**9,2**	**5,6**
90	50	83	46	160	20	0	37	0	12,6	4,8	10,2	5,6

GG10/2-Z(-M)-N-LN									Natural gas E: $H_{i,n}$ = 10,4 [kWh/m^3]			
Burner output [kW] 2-stage	1-stage	Boiler output η= 92% [kW] 2-stage	1-stage	Stellmotor [°] ST2	ST1	ST0	LRH [°] (ST0) 0	Position Inlet nozzle Measure „B“ [mm]	Gas nozzle pressure p_G [mbar] 2-stage	1-stage	Gas thoughput V_G [m^3/h] 2. Stufe	1.Stufe
69	27	63	25	45	1	0	23	5	7,8	1,3	6,9	2,7
72	32	66	29	132	15	0	23	5	9,0	2,1	7,2	3,2
82*	**50**	**75**	**46**	**140**	**20**	**0**	**37**	**0**	**9,4**	**3,7**	**7,9**	**5,0**
90	50	83	46	160	20	0	37	0	9,7	3,7	8,6	5,0

GG10/2-Z(-M)-F-LN									LPG $H_{i,n}$ = 25,89 [kWh/m^3]			
Burner output [kW] 2-stage	1-stage	Boiler output η= 92% [kW] 2-stage	1-stage	Stellmotor [°] ST2	ST1	ST0	LRH [°] (ST0) 0	Position Inlet nozzle Measure „B“ [mm]	Gas nozzle pressure p_G [mbar] 2-stage	1-stage	Gas thoughput V_G [m^3/h] 2. Stufe	1.Stufe
69	25	63	23	45	1	0	23	0	7,4	1,5	2,6	0,9
72	35	66	32	132	15	0	23	0	11,7	2,9	2,8	1,4
82*	**50**	**75**	**46**	**140**	**20**	**0**	**37**	**0**	**10,0**	**6,8**	**3,2**	**2,0**
90	50	83	46	160	20	0	37	0	11,0	6,8	3,4	2,0

* Factory setting

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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 calorific value ($H_{i,n}$) of fuel gases is generally specified for the normal state (0°C, 1013 mbar).

Natural gas E $H_{i,n}$ = 10.4 kWh/m^3
Natural gas LL $H_{i,n}$ = 9.3 kWh/m^3
Liquefied gas PB Hi,n = 25.89 kWh/m^3
Gas meters measure the volume of gas in the operational state.

Gas flow determination:
To allow the heat generator load to be adjusted correctly, the gas flow rate 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 meter	20 mbar
Gas temperature ϑ_G	16°C
Boiler rating Q_n	30 kW
Efficiency η_K (assumed)	92%
Calorific value $H_{i,n}$	10.4 kWh/m^3

Gas flow in standard state (V_n)1

$$V_n = \frac{Q_n}{\eta_k \times H_{i,n}} = \frac{30kW}{0,92 \times 10,4 \frac{kWh}{m^3}} = 3,1 \frac{m^3}{h}$$

Gas flow in operating state (V_B)

$$V_B = \frac{V_n}{f} = \frac{3,1 \frac{m^3}{h}}{0,94} = 3,3 \frac{m^3}{h}$$

Conversion factor (f)

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

Annual average air pressure

Average geodetic altitude of the supply region above sea level [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

Legend:
Q_n = boiler output [kW]
η_K = efficienc [%]
$H_{i,n}$ = lower standard calorific value [kWh/m^3]
f = conversion factor
B = atmospheric pressure [mbar]
p_G = gas pressure at gas meter [mbar]
ϑ_G = gas temperature at gas meter [°C]

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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 = 3.3 m^3/h

$$t_{soll} = \frac{0,2m^3 \times 3600\frac{s}{h}}{V_B\left[\frac{m^3}{h}\right]} = \frac{720m^3\frac{s}{h}}{V_B\left[\frac{m^3}{h}\right]} = \frac{720m^3\frac{s}{h}}{3,3\frac{m^3}{h}} = 218s$$

Gas flow setting

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

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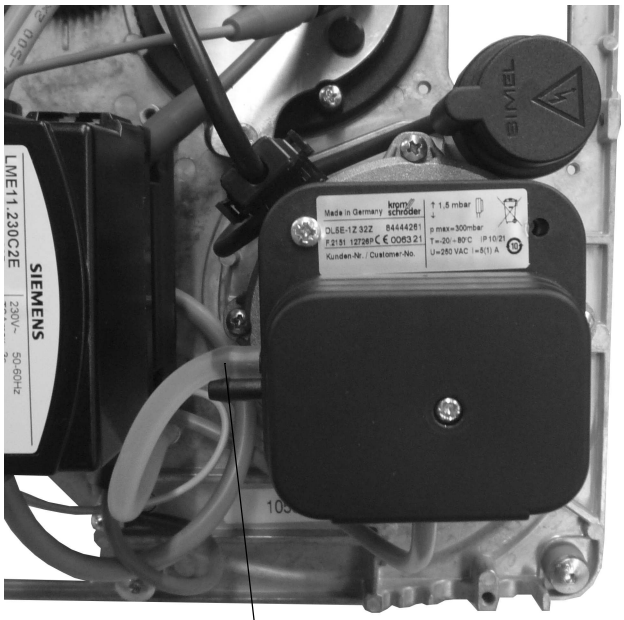
Service instructions/dimensions

Flame control using ionisation electrode

If an AC current is applied between the burner and the ionisation rod, a DC current flows due to the rectifying effect of the flame. This ionisation current forms the flame signal and is amplified and passed to control box. A flame cannot be faked because the rectifying effect no longer works if there is a short-circuit between the sensor electrode and the burner.

Measuring the ionisation current

During commissioning and maintenance of the burner or after a fault message from the control unit, the measure ionization current. To do this, the plug connection in the ionization cable is disconnected and a measuring device for current measurement is connected in series. Measuring range 0...200 µA DC. The measurement must be carried out directly after the post-ignition time during the safety time! The ionization current must be at least 5 µA. Values below 5 µA lead to unsafe operation (fault lamp flashes green) or directly to a fault. In this case, the inside of the ionizing bar and the burner tube must be cleaned. Bend the ionizing bar if necessary. If the ionizing bar is defective, replace the electrode. Possibly reverse the polarity of the ignition transformer. Check cable for moisture and dry if necessary.

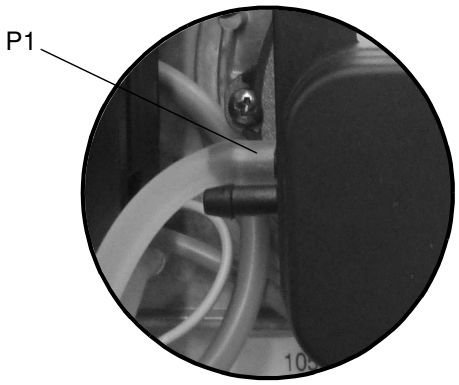


Servicing the air pressure monitor

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

To do so:

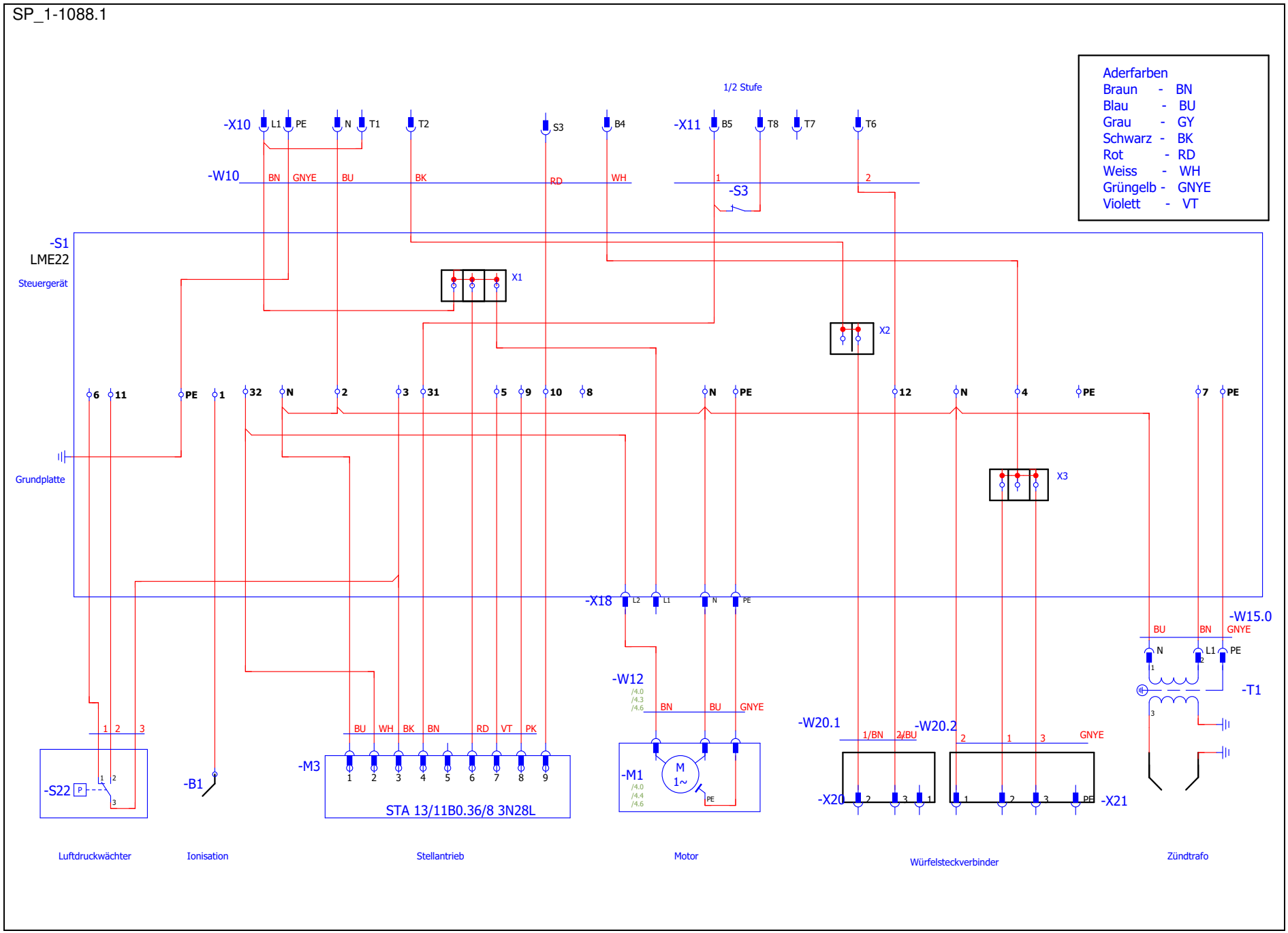
- Switch off the burner voltage
  Disconnect (7-oin connector X11).
- Unscrew the cover.
- Disconnect the electrical connectors.
- Release the retaining screws on motor.
- Reassemble in the reverse order..



"P1" marks the pressure measuring connection for the silicone hose!

Wiring diagram

GG10-Z-LN



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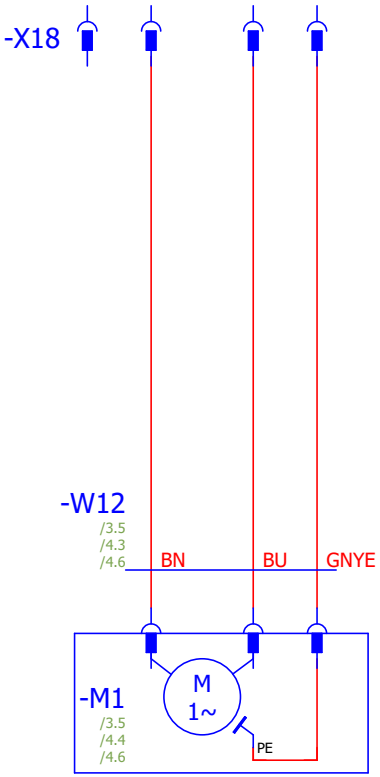
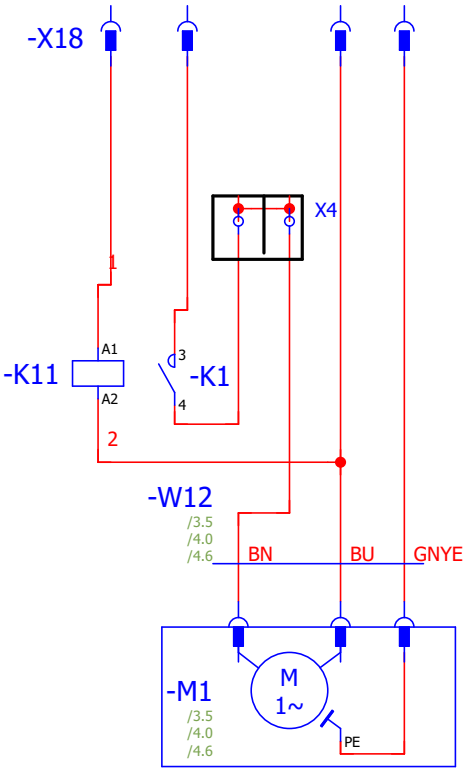
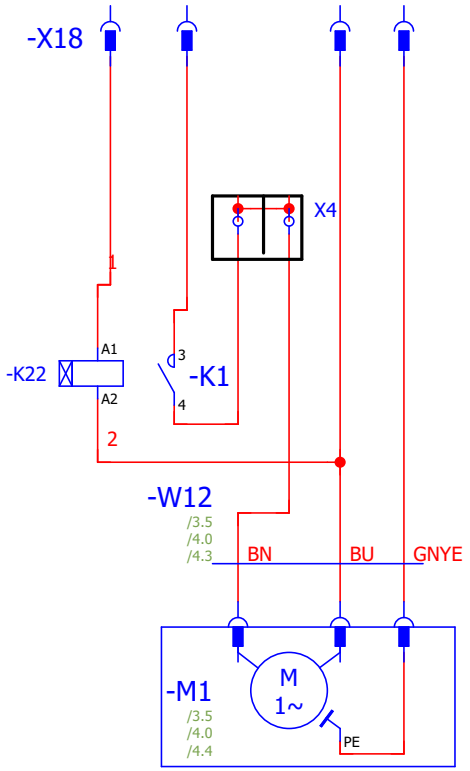
Dauerbelüftung

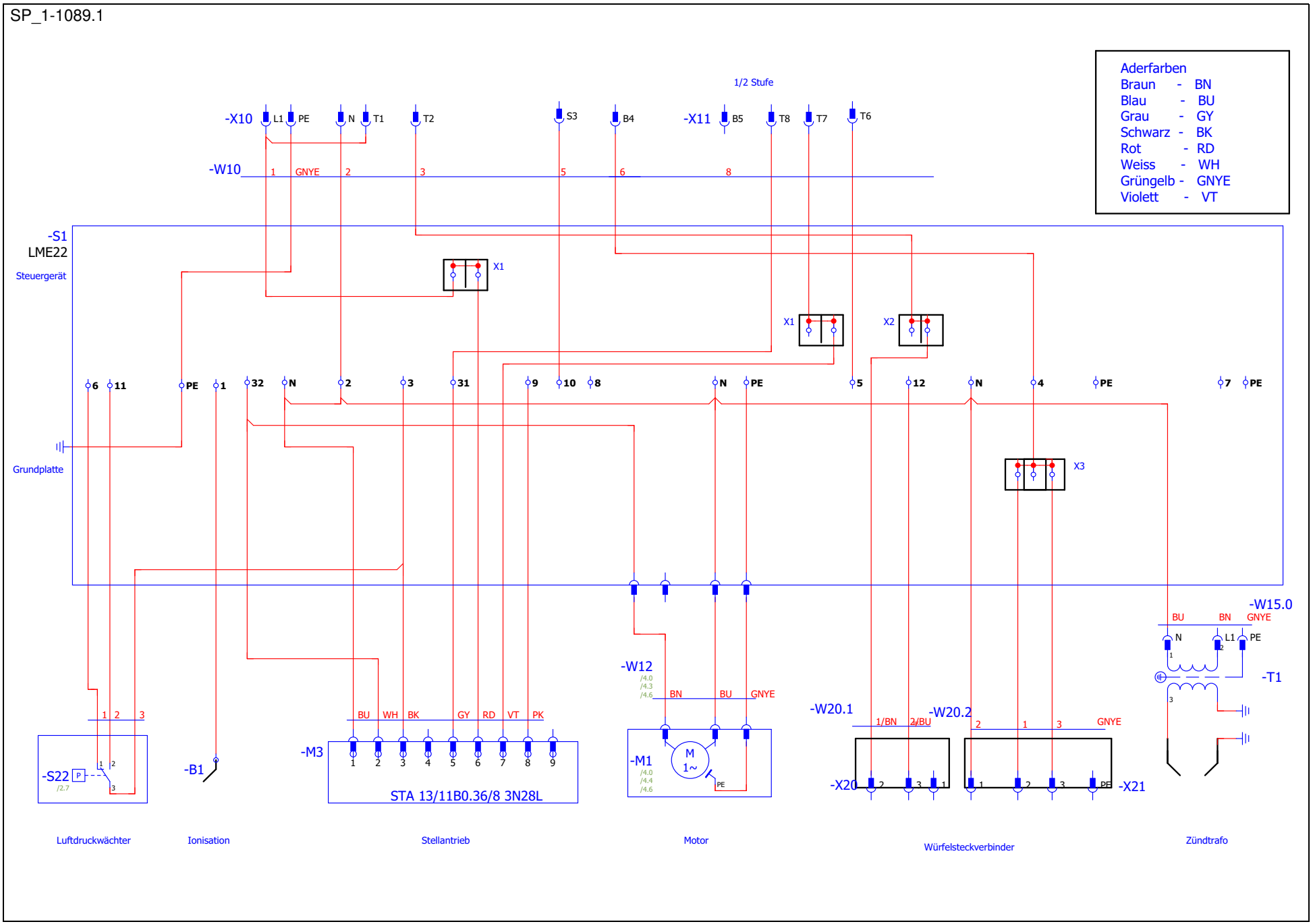


Motorrelais ab 180W



Nachlaufrelais

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Aderfarben
Braun - BN
Blau - BU
Grau - GY
Schwarz - BK
Rot - RD
Weiss - WH
Grüngelb - GNYE
Violett - VT
1/2 Stufe
-X10
L1
PE
N
T1
T2
S3
B4
-X11
B5
T8
T7
T6
-W10
1
GNYE
2
3
5
6
8
-S1
LME22
Steuergerät
X1
X2
X3
Grundplatte
6
11
PE
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32
N
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3
31
9
10
8
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PE
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12
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PE
7
PE
-W15.0
BU
BN
GNYE
N
L1
PE
-T1
-W12
/4.0
/4.3
/4.6
BN
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-W20.1
-W20.2
1/BN
2/BU
GNYE
-X20
-X21
-S22
/2.7
-B1
-M3
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-M1
/4.0
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/4.6
M
1~
PE
Luftdruckwächter
Ionisation
Stellantrieb
Motor
Würfelsteckverbinder
Zündtrafo

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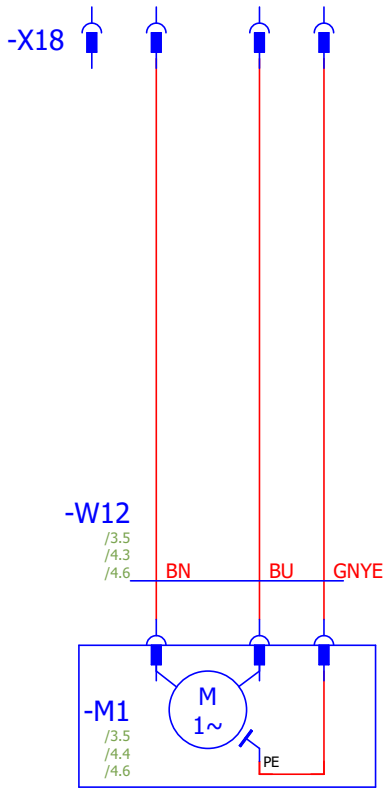
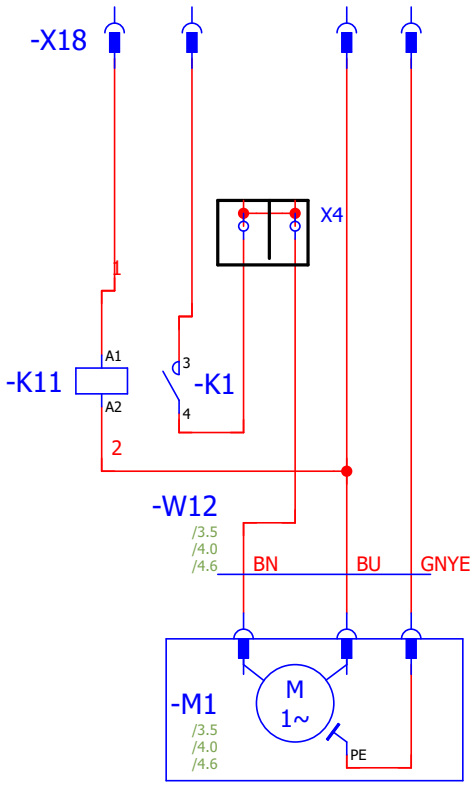
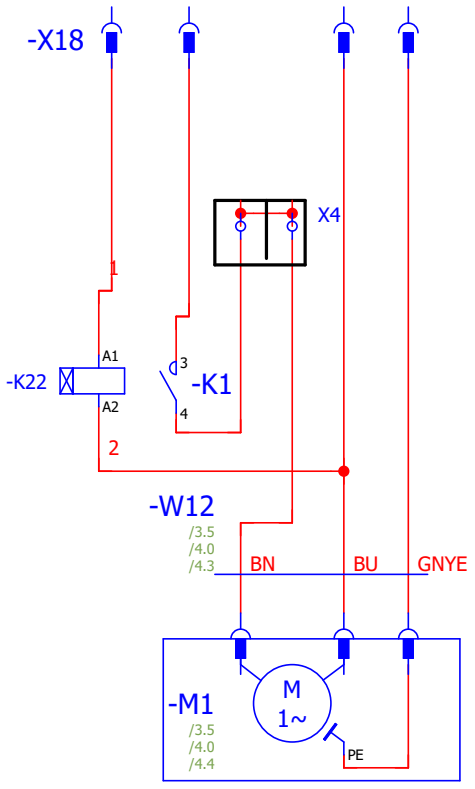
Dauerbelüftung



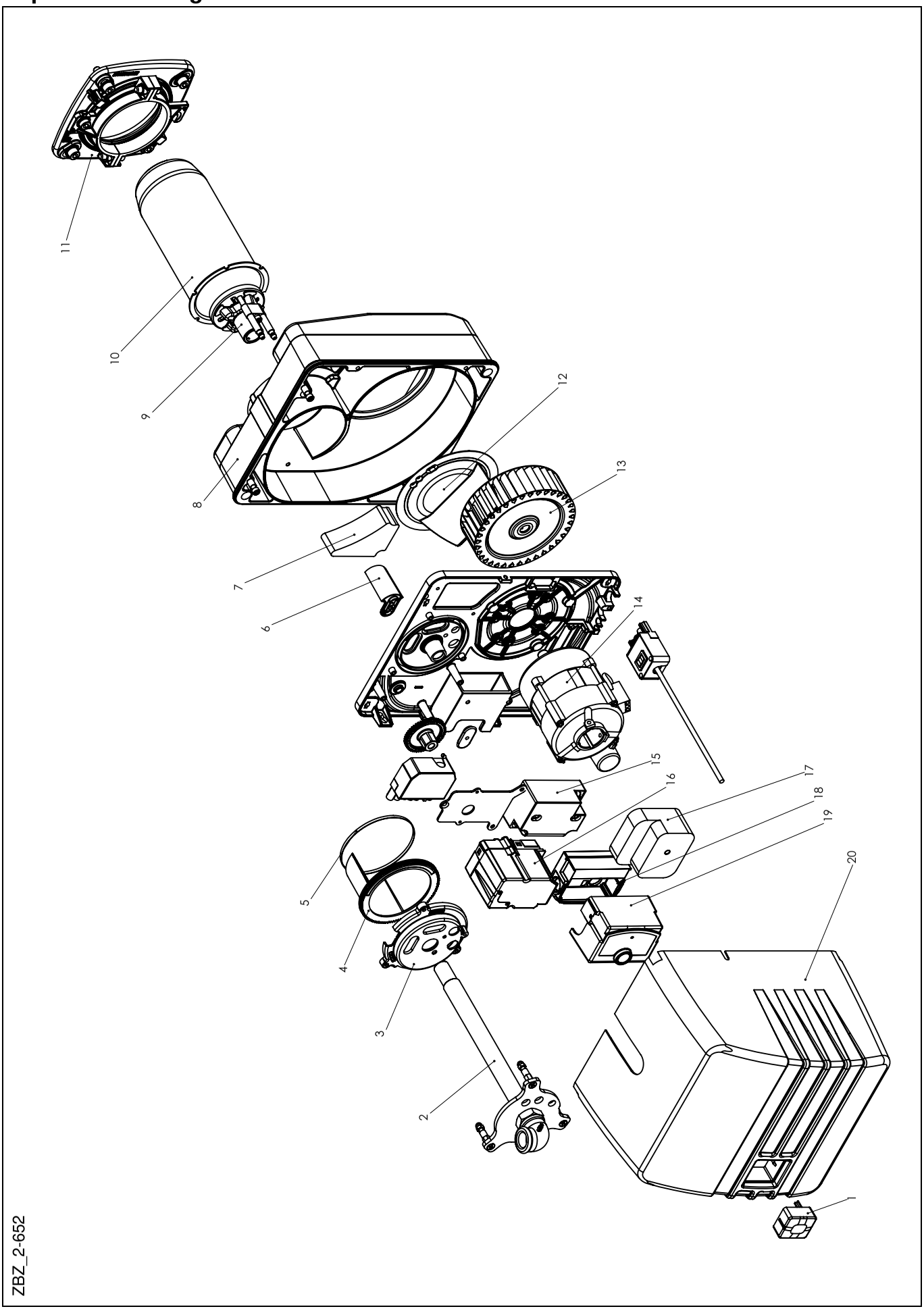
Motorrelais ab 180W



Nachlaufrelais



Exploded drawing



Spare parts list

Seq. No.	Designation	VE	Order no.
1	Interference-suppression button, short	1	47-90-21767
2	Adapter plate with gas connection, complete	1	47-90-29045
3	Spring lid with foeam rubber seal GG10	1	47-90-29049
4	Air regulatig sleeve with scale	1	47-90-21777
5	Guide ring	1	47-90-26918
6	Airflow rectifier	1	47-90-22489
7	Filler insulation	1	47-90-22105
8	Housing, complete with suction silencer	1	47-90-21770
9	Gas mixer head GG10/1-N-LN, complete, with baffle plate and electrode	1	47-90-25313
9	Gas mixer head GG10/1-F-LN, complete, with baffle plate and electrode	1	47-90-25315
9	Gas mixer head GG10/2-N-LN, complete, with baffle plate and electrode	1	47-90-25314
9	Gas mixer head GG10/2-F-LN, complete, with baffle plate and electrode	1	47-90-25316
10	Burner tube GG10/1-LN	1	47-90-24757
10	Burner tube GG10/2-LN	1	47-90-24758
11	Assembly kit Enertech flange 90 mm	1	47-90-25269
12	Inlet nozzle item 1	1	47-90-21774-01
12	Inlet nozzle item 2	1	47-90-21774-02
13	Ventilator wheel Ø133 x 52	1	47-90-21729
14	Motor 90 W	1	31-90-11582
15	Ignition transformer Fida Mod. 26/35 with primary cable 460 mm lg as replacement	1	47-90-25267
16	Actuator STA	1	47-90-29179
17	Air pressure monitor DL5E1 32Z 1,5 mbar		47-90-29266
18	Control unit base GG10 LME11	1	37-90-11310-01
19	Control unit LME22	1	47-90-28741
20	Burner cover kpl.	1	47-90-21765
-	Combination electrode GG10 bent	1	47-90-25296
-	Ignition and ionisation cable set complete for GG10-LN	1	47-90-27328
-	Replacement set of cable glands	1	47-90-30029
-	Spare set of quick-release fasteners	1	47-90-29352
-	Gas ramp MB-VEF 407 1/2“	1	47-90-28955
-	Replacement set of quick release fasteners G, GL10 / GB / GL20 / GG20	1	47-90-29352
-	Combustion chamber pressure measuring tube for KEV (CG and MBC)	1	47-90-30200

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Declaration of conformity for the forced-air gas burner

GIERSCH
Wärme für die Zukunft.
Giersch GmbH | Adjutantenkamp 18 | 58675 Hemer
0 23 72/965-0 0 23 72/6 1240 info@giersch.de www.giersch.de

Declaration of Conformity for Gas Burners

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

gas burner type **GG10/…**

is conform with the regulations of these directives

MD2006/42/EG
EMV2014/30/EG
GAD 2016/426/EG
MCP2015/2193/EU
RoHS 2011/65/EU
DIN EN 676

and is marked with:

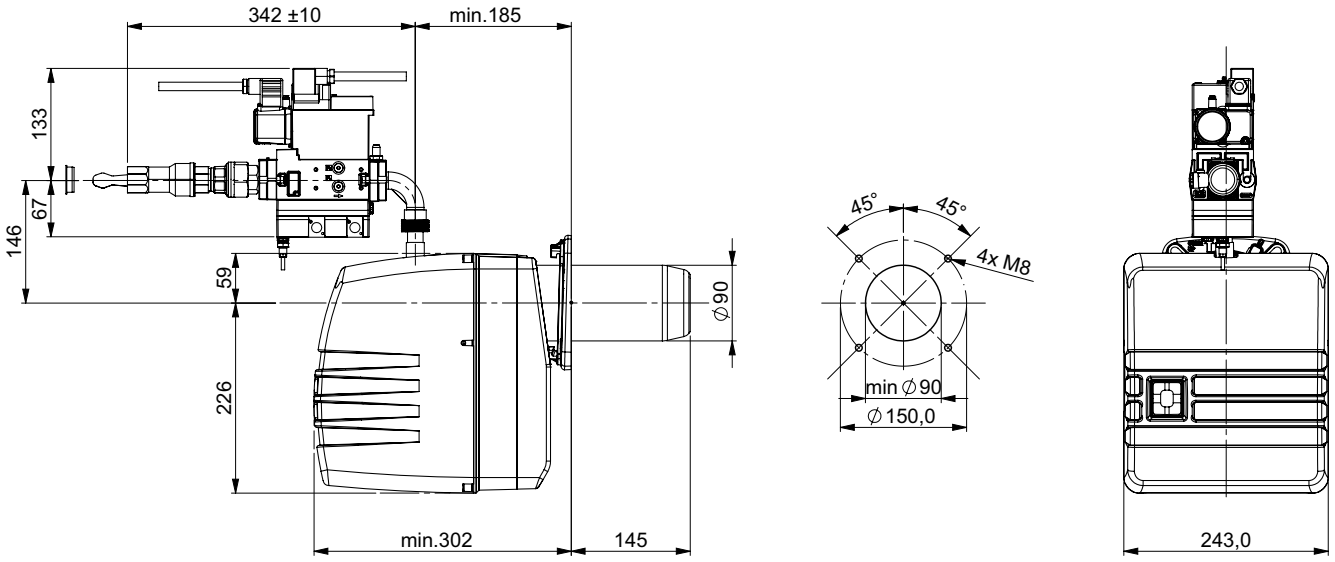
CE

CE-0085

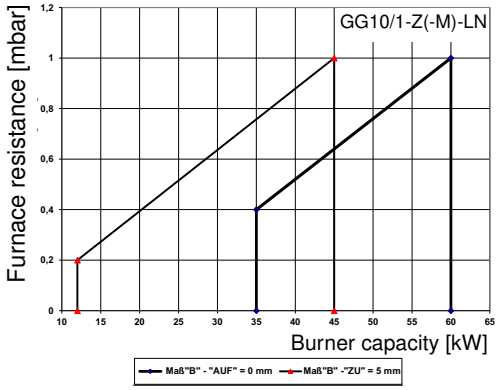
Hemer, 12.01.2024

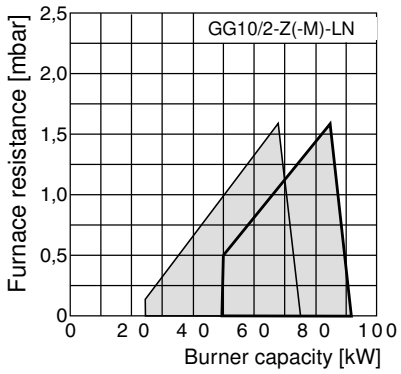
Dr. Josef Becker
Managing Director

Burner dimensions / **boiler connecting dimensions** (all dimensions are in mm))



Working ranges





— Mixer unit "close"
— Mixer unit "open"

Working ranges acc. to DIN EN 676. The working ranges are referred to 15°C and 1013 mbar.

Giersch GmbH • Brenner und Heizsysteme
Adjutantenkamp 18 • D-58675 Hemer •
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