GIERSCH

Brenner und Heizsysteme

Technical Information • Installation Instructions

GL10

Issued in April 2013
Subject to tech. modifications
to improve the product!

Oil

CE

GB

Contents

1. Safety instructions

Please observe the technical regulations as well as the building authorities and legal stipulations when setting-up and operating the system.

The installation, oil and exhaust gas connection, initial commissioning, power connection as well as maintenance and servicing must only be carried out by a specialist.

The VDE and ÖVE regulations and the specifications of the responsible energy supply company must be taken into account when preparing the electrical connections.

Work may only be carried out on equipment by a specialist in accordance with the valid VDE and ÖVE regulations.

2. Maintenance

The system must be serviced regularly in accordance with §9 of the Heating Installations Ordinance, in order to ensure a reliable and safe functioning of the device.

One maintenance must be carried out annually. We recommend that you draw up a maintenance contract with an approved specialist company.

3. Declaration of conformity

We affirm that the Giersch GL10 fan-assisted oil burner fulfils the basic requirements of the following directives:

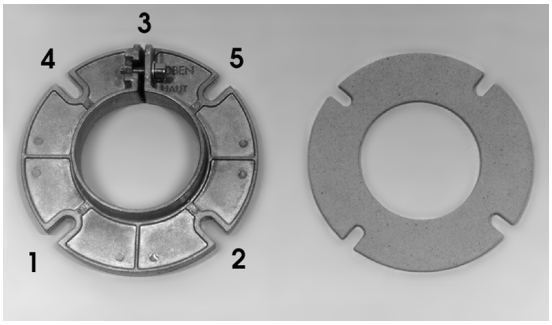
- "Electromagnetic Compatibility" according to Directive 2004/108/EEC
- "Machinery Directive" as per directive 2006/42/EG in conjunction with DIN EN 60204-1
- "Efficiency Directive" according to Directive 2006/42/EWG in conjunction with EN 267/Ed.10.91

G. 10.04.13

4. Technical specifications

	GL10.1-V-L	GL10.1-L	GL10.2-V-L	GL10.2-L
Burner output in kg/h in kW	 1.30 - 3.40 15.5 - 40.3	 1.51 - 3.40 18.0 - 40.3	 2.10 - 5.65 25.0 - 67.0	 2.95 - 5.65 35.0 - 67.0
Recommended boiler output in kW (92%)	14.2 - 37.0	16.5 - 37.0	22.5 - 62.0	22.5 - 62.0
Voltage	1 / N /PE ~ 50 Hz / 230 V			
Power consumption in W (max.) Start / operation	305 / 214	230 / 132	330 / 240	240 / 150
Weight in kg (approx.)	11			
Noise emission in dB (A)	58	58	59	59

5. Installing flange and burner

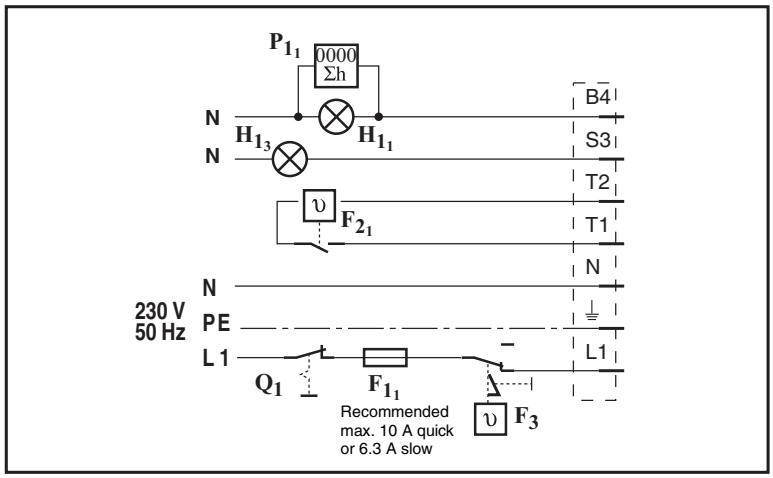


- Install the sliding flange and seal loosely on the boiler door.
- Insert the burner.
- Follow the tightening sequence of the screws.
- Lift the burner when tightening the screws.

The immersion depth of the burner pipe to
the respective burner chamber is optimally set via the sliding flange.

6. Establishing the electrical connection of the boiler controller

The electrical connection must be made in the enclosed male connector i.a.w. the wiring diagram taking into consideration local regulations. The supply line must be protected with a 6.3 A slow 10 A quick fuse and for convenience be laid as a flexible cable. If the male connector has already been wired, carry out a control of the connections i.a.w. the accompanying wiring diagram.

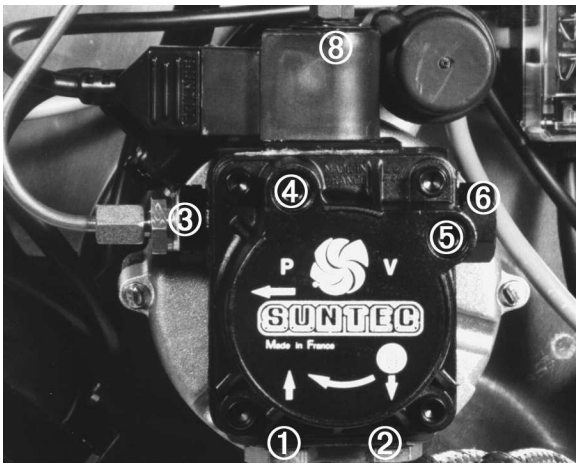


7. Oil pump

The pump pressure can be set for the respective output (see Adjustment table, page 14).
For this:

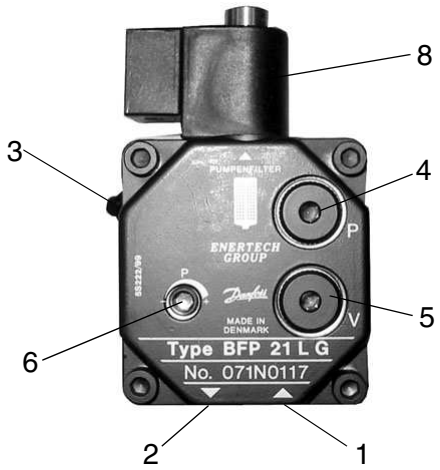
- unscrew sealing plug 4
- screw in the manometer and set the pump pressure via the adjusting screw 6.

The pump pressures specified in the adjustment table are only reference values and can, if necessary, be deviated from i.a.w. the system conditions.
Caution: The full pump pressure at the manometer is only available to the "Suntec AS47" oil pump after the oil supply release!



Suntec:

1 = Feed
2 = Return
3 = Pressure pipe connection
4 = Pressure gauge connection
5 = Vacuum gauge connection
6 = Pressure setting
8 = Solenoid valve



Danfoss:

- unscrew pressure gauge connection 4
- screw in manometer and set pump pressure with pressure setting 6 i.a.w. the adjustment table.

1 = Feed
2 = Return
3 = Pressure pipe connection
4 = Pressure gauge connection
5 = Vacuum gauge connection
6 = Pressure setting
8 = Solenoid valve

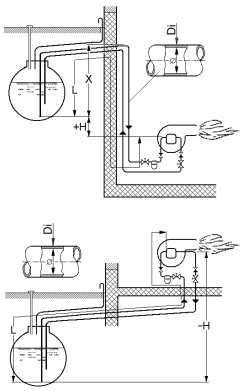
8. Oil connection

The tables apply to heating oil EL 4.8 cSt and the internal diameter of the oil lines specified in the table. 4 brackets, 1 valve and 1 non-return valve were included for resistance with the suction line length. To prevent possible oil vapours, the dimension X should not exceed a length of 4 m.

- Connect oil pump to the oil line with the enclosed metal hoses.
- The pump should be connected with a feed and return line (twin-pipe system).
- With elevated tanks, the pump can be converted to a single-pipe system.

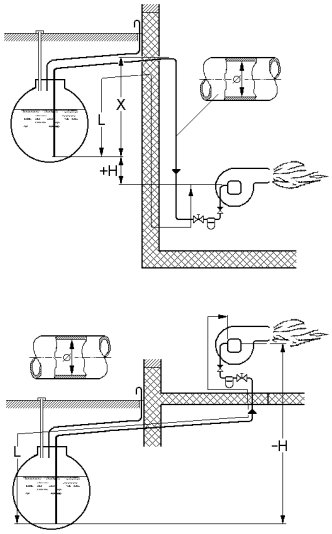
Assumptions: kinem. viscosity 6 mm^2/s at 20°C, T_{oil} = 10°C
Additional resistances: 4 x 90° elbows, 1 non-return valve, 1 stop valve

Twin-pipe system

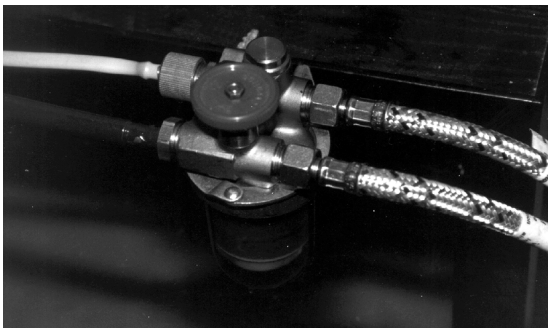


Pump	Di [mm]	H [m]								
		4	3	2	1	0	-1	-2	-3	-4
Suntec or Danfoss	**6**	21	18	16	13	11	8	5	-	-
	8	67	58	50	42	34	25	17	9	-
	10	100	100	100	100	82	62	42	21	-

Single-pipe system



Oil through-put [kg/h]	Di [mm]	H [m]								
		4	3	2	1	0	-1	-2	-3	-4
up to 2.5	**4**	77	68	58	49	40	31	22	13	-
	6	100	100	100	100	100	100	87	64	18
	8	100	100	100	100	100	100	100	100	56
2.5-5.0	**4**	39	34	29	25	20	16	11	6	-
	6	100	100	100	100	100	79	56	32	9
	8	100	100	100	100	100	100	100	65	28
5.0-10.0	**4**	19	17	15	12	10	8	-	-	-
	6	98	86	74	63	51	39	28	16	4
	8	100	100	100	100	100	100	88	51	14
10.0-23.0	**6**	42	37	32	27	22	17	12	7	-
	8	100	100	100	85	69	54	38	22	6



For pure single-pipe operation, unscrew the seal with the underlying diverter plug 8 and only rescrew the seal. Close the return opening 4 with a seal and metal plug. We recommend that you use a heating oil filter with return inlet when changing over to a single-pipe system. This leaves the pump operating in twin-pipe mode. Install the feed and return burner hoses to the filter. Open the oil tap on the filter. Start up the system.

9. Service position

- Release the quick release fasteners
- Remove the base plate from the housing
- Attach the base plate with the clips to the two upper screws (Service position).

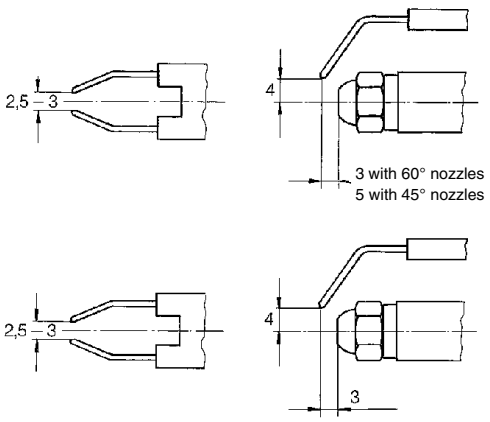
During assembly, insert the base plate into the housing and secure with the quick release fasteners.

Caution! Ensure the base plate is correctly seated in the housing.

10.Replacing the nozzle

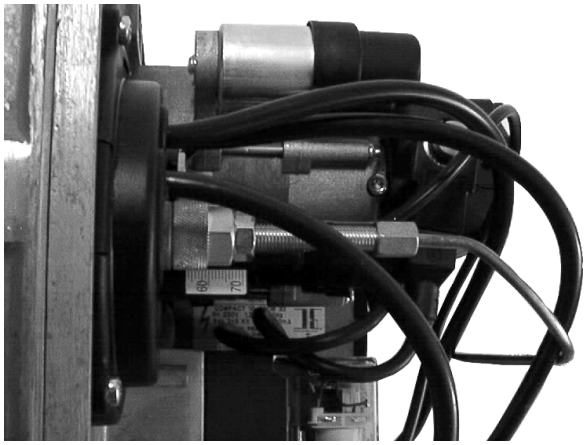
- Attach the base plate in the Service position.
- Release ignition cable from the ignition electrode.
- Release accumulator plate and withdraw upwards.
- Release oil nozzle (spanner SW16), in doing so ensure the nozzle holder is secured against turning via spanner SW 16.
- Replace oil nozzle.

11.Setting the ignition electrodes



The electrodes are factory-set. The specified measurements serve for checking purposes.

12. Setting the air volume measure "A"



Measure "A"

Measure "A" **(see adjustment table, page 15)** serves as an orientation guide for setting the burner. Measure "A" describes the position of the nozzle holder with accumulator plate in the burner pipe taper.

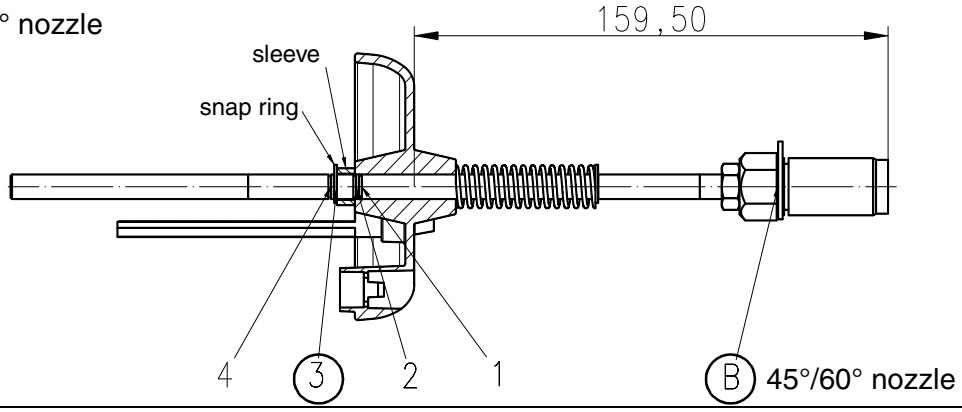
Example: Turn adjusting nut clockwise
Air throughput increases, the CO_2 content in the exhaust gas decreases. The correct setting of measure "A" is checked by measuring the CO_2 at the measuring point in the exhaust gas pipe.

13.Position snap ring / nozzle tube

Nozzle tube GL10.1, snap ring for throttle position 3 **with** sleeve

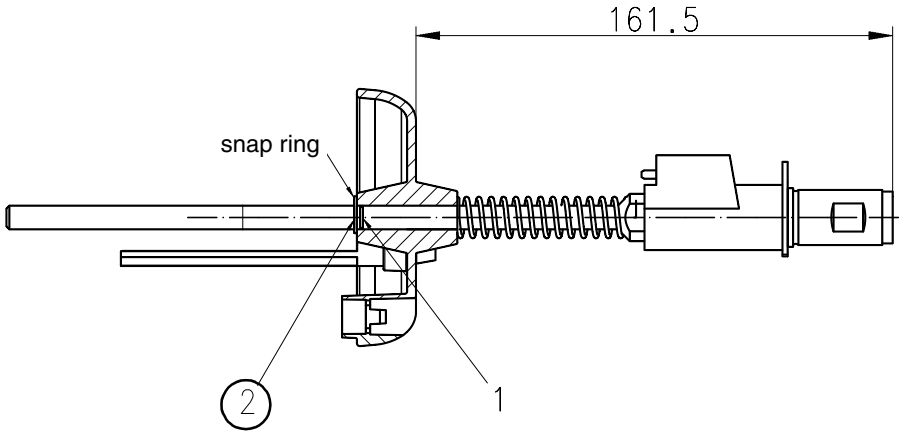
B = 2. slot 45°/60° nozzle

1 = 1. slot
2 = 2. slot
3 = 3. slot
4 = 4. slot



Nozzle tube GL10.1-V, snap ring for throttle position 2 without sleeve

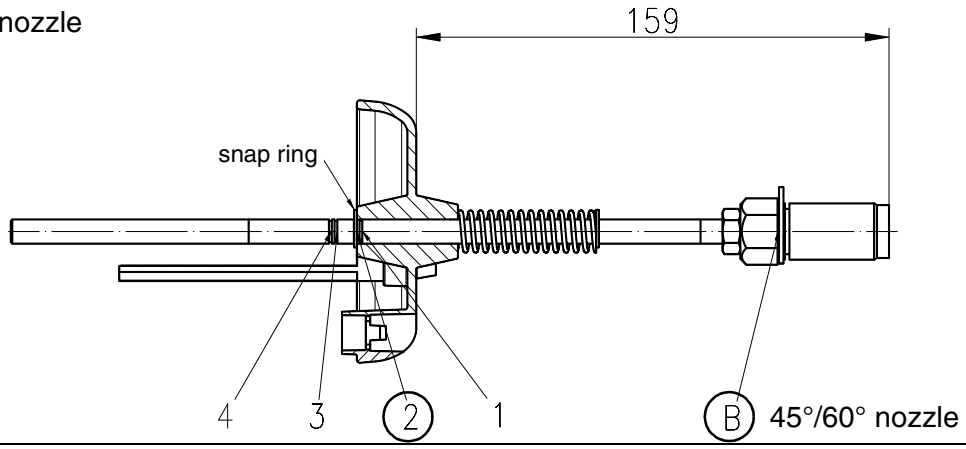
1 = 1. slot
2 = 2. slot
3 = 3. slot
4 = 4. slot



Nozzle tube GL10.2, snap ring for throttle position 2 without sleeve

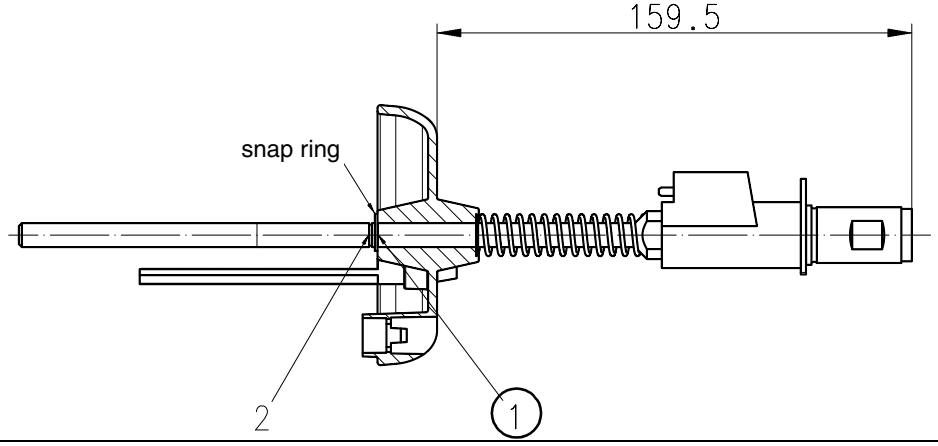
B = 2. slot 45°/60° nozzle

1 = 1. slot
2 = 2. slot
3 = 3. slot
4 = 4. slot



Nozzle tube GL10.2-V, snap ring for throttle position 1 without sleeve

1 = 1. slot
2 = 2. slot
3 = 3. slot
4 = 4. slot



14.Functional control of flame monitoring control box

The following checks must be carried out after the commissioning and maintenance of the burner:

1. Warm restart with covered flame failure controller:
   The control box must indicate a fault once the safety time has elapsed.
2. Burner start-up with externally lit flame failure controller, for example fluorescence lamps, lighters, bulbs (daylight is not sufficient!):
   Due to the flame simulation, the control box must indicate a fault during the pre-aeration time.
3. Normal start-up -Dim the flame failure controller if the burner is in operation during the post-ignition time:(e.g. pull out and cover the flame failure controller!)
   TF 830/LOA 24:Ignition must switch on, the machine indicates a fault once the safety time has elapsed.
   DKW 972/976: The fuel feed must immediately be interrupted and a post-aeration initiated for 60 sec. A new start must then be carried out, the automatic firing device must indi cate a fault at the end of the safety time.

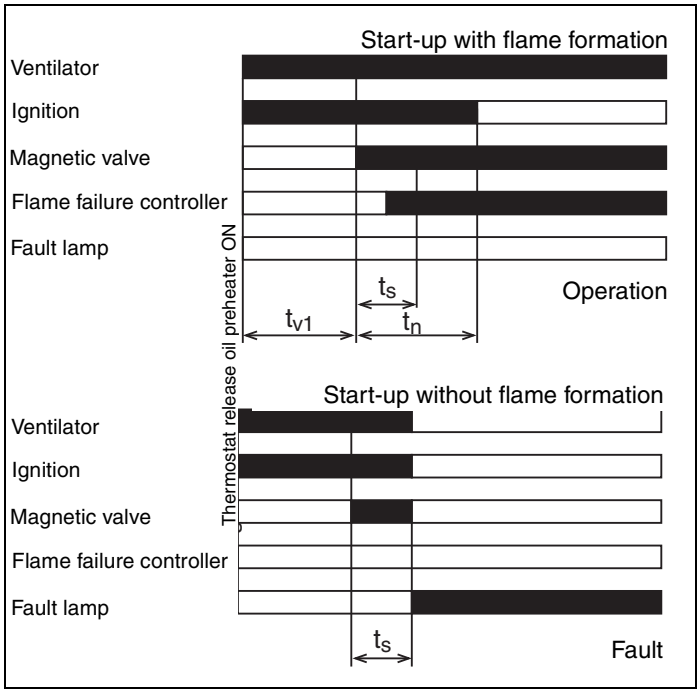
Safety and switching functions

In the event of a flame failure during operation, the fuel feed immediately switches off and the machine attempts to start-up with pre-aeration and post-ignition. If no flame is generated, the machine indicates a fault after the safety time has elapsed. In either case, a restart always takes place after a power failure. In the event of flame simulation during the pre-aeration time, the control box indicates a fault after the safety time has elapsed.

The control box must only be inserted or removed when the main switch is at "OFF" and the 7-pole connector is disconnected, as 230 V are supplied to the lower part of the control box.Flame simulation must not be permitted on the photoresistor or on the flame failure controller (e.g. via an inspection glass or glowing chamotte). Only then is a fault-free functioning of the system guaranteed.

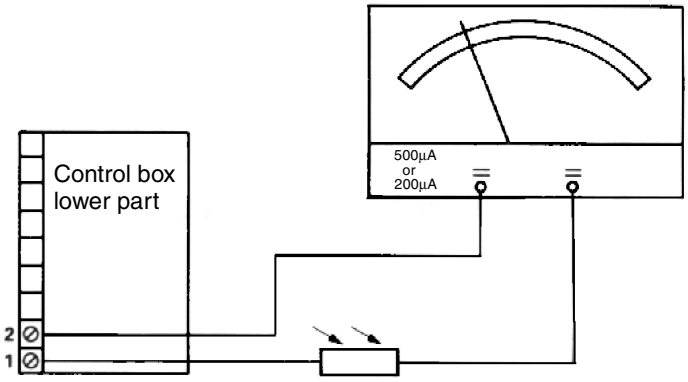
Satronic:	TF 830	DKW 972/976	LOA 24 171B27
t_{v1} = pre-ignition time + pre-aeration	12 sec.	20 sec.	13 sec.
t_s = safety time	10 sec.	5 sec.	10 sec.
t_n = post-ignition time	20 sec.	7 sec.	15 sec.
Post-aeration after a flame failure	none	60 sec.	none
Waiting time after a fault shutdown	90 sec.	none	50 sec.
Photoresistor (flame failure controller)	MZ 770		QRB 1
min. photocurrent [µA]	24	70	70

TF 830 and DKW 972/976 and LOA 24



Photocurrent (MZ 770) measurement

Replace the measuring connector of the measuring instrument in the event of a negative deflexion!



Flame failure controller

Setting the measuring instrument to ampere measurement for DC current, measuring range up to approx. 200 µA!

Useful measuring accessories

Digital measuring instrument Item no. 59-20-50263
Measuring cable pair for photocurrent Item. no. 59-20-50408

14.Oil preheating unit (only GL10.1/.2-V)

The oil preheating unit is connected upstream in the program sequence of the burner and remains in operation until the oil burner is switched off by the control thermostat.
The thermostats built-in to the preheater are responsible for the cold start locking mechanism, which only releases current to the control box after heating.
The electrical preheater is integrated into the nozzle holder and has a controlled heat output. This is adjusted to the respective heat requirement via a PTC resistor.

15.Oil control (Option)

Measuring range: 1 to 40 l/h
Operating temperature: 0-60°C
Permissible pressure: < 25 bar
Measurement accuracy: ± 2.5%

This multifunctional device gives information on the oil consumption, the number of burner start-ups, the burner operating hours etc. and, in addition, warns when the oil throughput falls below the set reference value (e.g. clogged nozzle). Via the early detection and elimination of the fault, an inefficient and environmentally damaging burner operation can be prevented. During operation ensure that the flow rate, pressure and temperature lie within the permissible limits.

A specific Oil control maintenance is usually unnecessary. The dirt trap, which is connected upstream (in the pump or oil filter), must be cleaned during the annual burner inspection!

Caution: the display is deleted 1 day after a power failure, (e.g. switched phase). All values are, however, saved and can be called up again after reconnection to the mains. Set and reset functions are not possible during a power failure.

Operating mode of the mode button

A short press of the mode button calls up the individual displays in ongoing sequence. The respective mode is displayed via a function symbol and / or the respective unit by releasing the button.

The following functions can be displayed:

Function	Display
Present consumption	0000.00 l/h
Oil volume (can be reset)	◊ 0000.00 l/h
Oil volume (total)	✳ 000000 l
Total operating hours	000000 l
Number of burner start-ups	000000 h
Reduced throughput (see Service function)	Service

Resetting the oil volume meter

The oil volume meter can be reset in ◊, mode:

=> *Keep button pressed for at least 10 sec.*

Press button, after 5 sec the displayed value flashes for 5 sec. The (old) value reappears in the display, now release, it appears as 0 in the display.

Defining the reference value of the present consumption

Defining the reference value of the present consumption is carried out in the present consumption mode/function:

=> *Keep button pressed for at least 30 sec, however, at the longest for 32 sec.*

Press button, after 25 sec the displayed present consumption flashes for 5 sec. Release button as soon as the flashing stops. The service symbol and present consumption flash for 5 sec as confirmation of the new defined reference value.
When the burner output is modified (nozzle replacement, pump pressure is modified etc.) the reference value must be redefined as shown above. The old reference value is thereby overwritten.

Service function

If the oil flow rate decreases by more than 10% (e.g. due to a slow clogged nozzle, preheater etc.), the service symbol appears on the display equipment.

The prerequisite for this service function is the prior input of the reference value (see determining the reference value of the present consumption) during correct burner operation.

Deactivating the service function

Proceed as for defining the reference value of the present consumption, except keep the button pressed for longer than 32 sec. In doing so the reference value and service symbol are deleted:

=> *Keep button pressed for at least 32 sec.*

After release, the service symbol and the zero value flash for 5 sec in the display as confirmation.

16.Calibration of the boiler-burner

A precise calibration is necessary for a burning that is low in emissions and energy saving. For this purpose, a burner is assigned to the boiler in accordance with the work ranges and taking into account the combustion chamber resistance. The immersion depth of the burner pipe to the respective burner chamber is set via the sliding flange.

17.Flue connection

The prerequisite for a faultless functioning of the firing system is a correctly dimensioned flue. Dimensioning is carried out in accordance with DIN 4705 taking into consideration DIN 18160 and taking as a basis the boiler and burner output. The flues shall be provided in accordance with DIN 18160
part 1, group 1 for sliding operating modes. The exhaust gas mass flow of the overall nominal heat capacity must be used for the calculation. The effective flue height is reckoned from the exhaust gas inlet in the flue. In addition, we refer to the planning regulations of the individual federal states. The flue design is to be selected in such a way that the risk of condensation or a cold internal flue wall is reduced to a minimum.

We recommend that you install a tension limiter in order to precisely regulate and stabilise the flue.

This results in the following:

1. tension deviations are balanced
2. dampness in the flue is excluded to a large degree
3. downtime losses are reduced

IMPORTANT!
Overdimensioned flue sections or unsuitable flues for LT operating modes are very often specified when redeveloping existing systems. We recommend an appraisal of the flue system by the responsible chimney sweep for the district before installing the boiler system, so that a suitable redevelopment measure can also be devised, in good time, for the flue.

18.Exhaust gas thermometer

The heating system should be equipped with an exhaust gas thermometer for monitoring the exhaust gas temperature. The higher the exhaust gas temperature, the higher the exhaust gas loss. Rising exhaust gas temperatures point to increasing deposits, which reduce the firing efficiency. In the event of an increasing exhaust gas temperature, have the heating system cleaned and readjusted by a specialist.

Legend for the circuit diagram:

B_1 Flame failure controller
E_1 Preheater
F_1,F_{11} ext. fusing (recommended max. 10 AF or 6.3 AT)
F_{21} ext. temp. controller
F_3 ext. safety temp.limiter
H_{11} ext. operating lamp
H_{13} ext. fault message lamp
H_{14} Control lamp oil preheater
M_1 Burner motor
P_{11} ext. time meter
P_{21} Burner time meter (option)
Q_1 Main heating switch
S_1 Satronic TF830 or LOA 24 automatic firing control device
for fan-assisted air heater DKW 972 f. GL10.1/.2-L
for air heater with DKW 976 f. GL10.1/.2-V-L
S_2,S_9 Oil control (Option)
T_1,T_3 Ignition transformer

X_{11} Boiler controller male connector
X_{12} Burner female connector
Y_6 Oil solenoid valve
⏚ PE=ground wire

bl = blue
br = brown
ge = yellow
gr = grey
grü = green
sw = black
ro = red
ws = white

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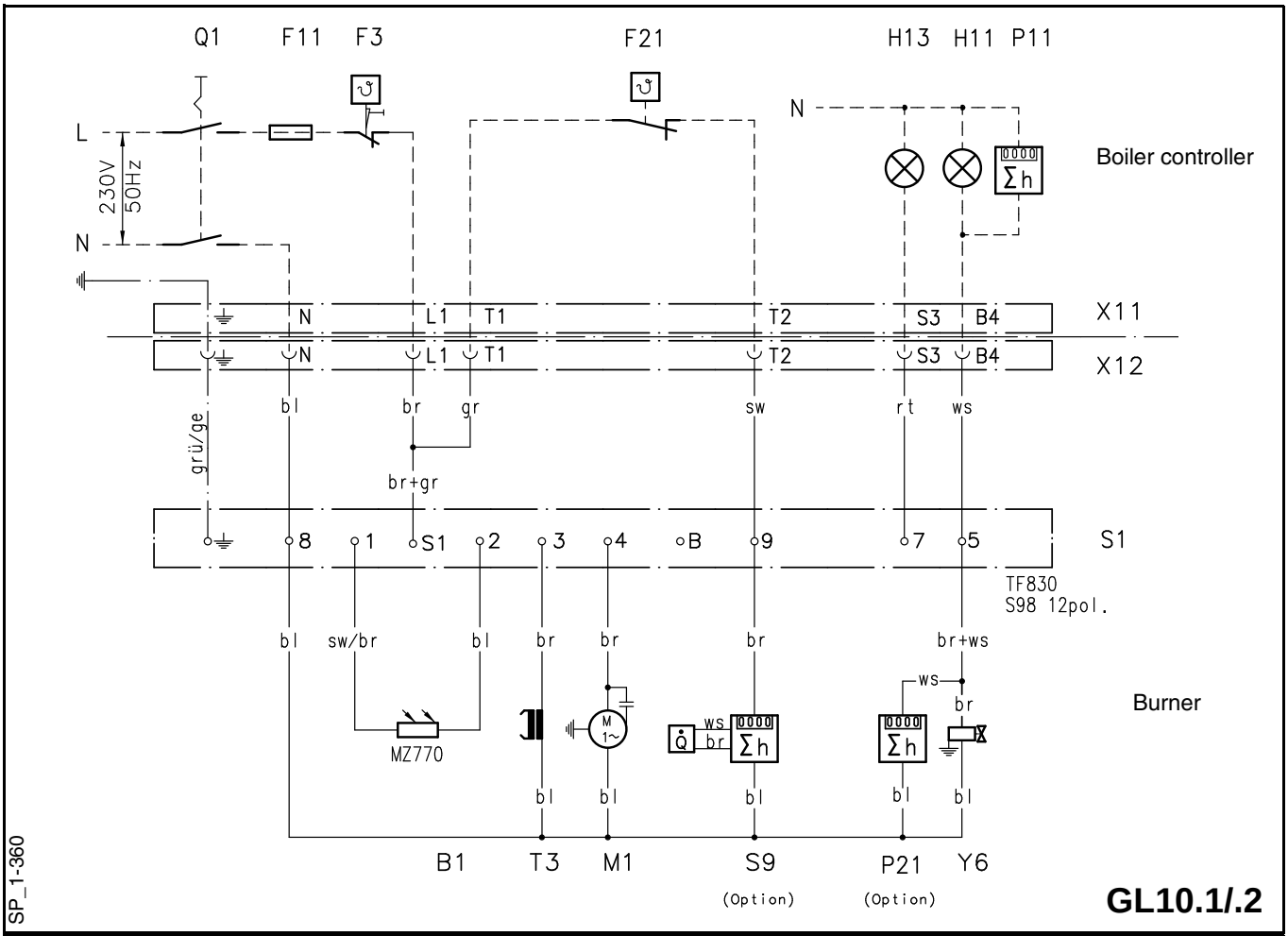
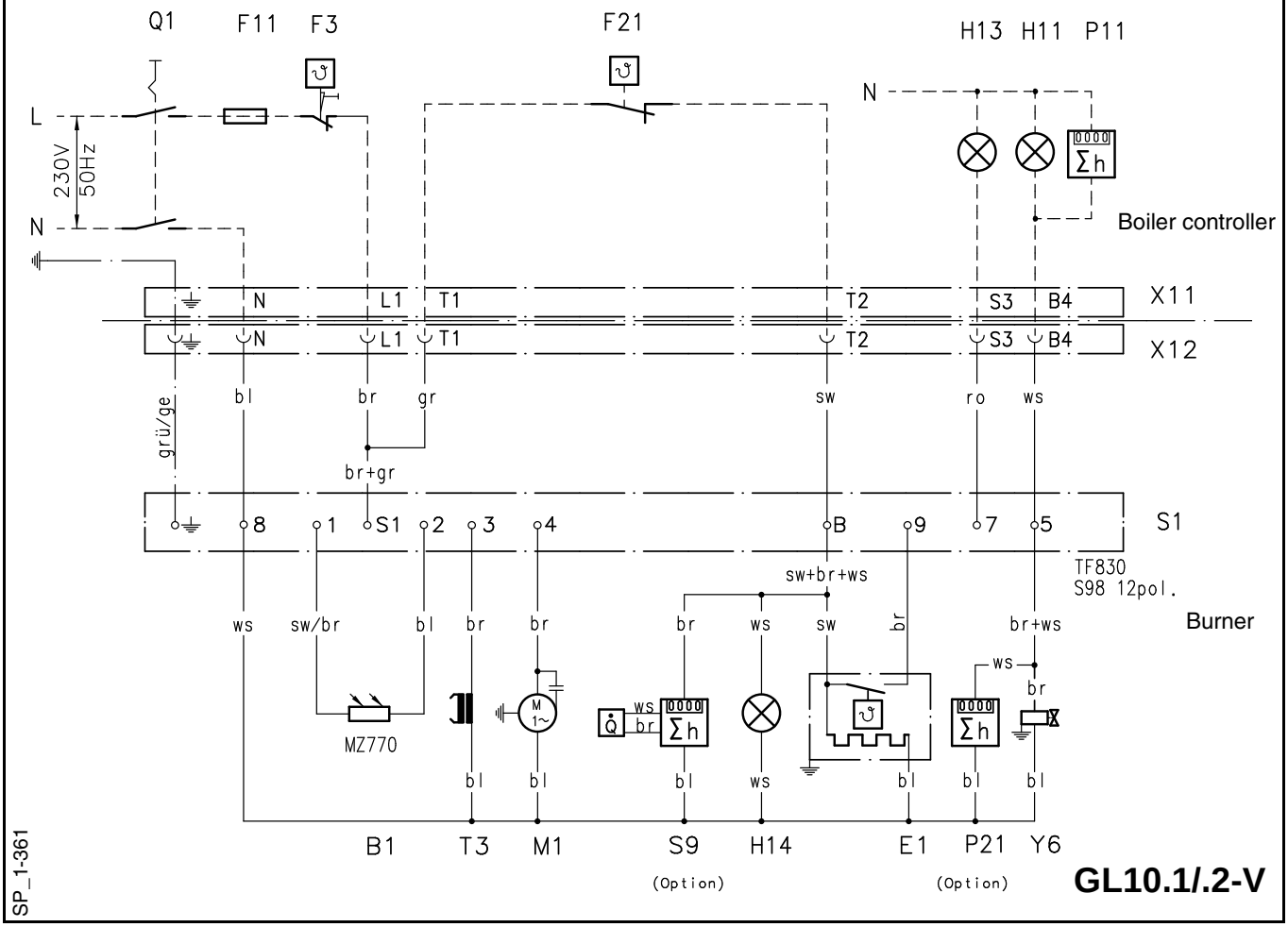
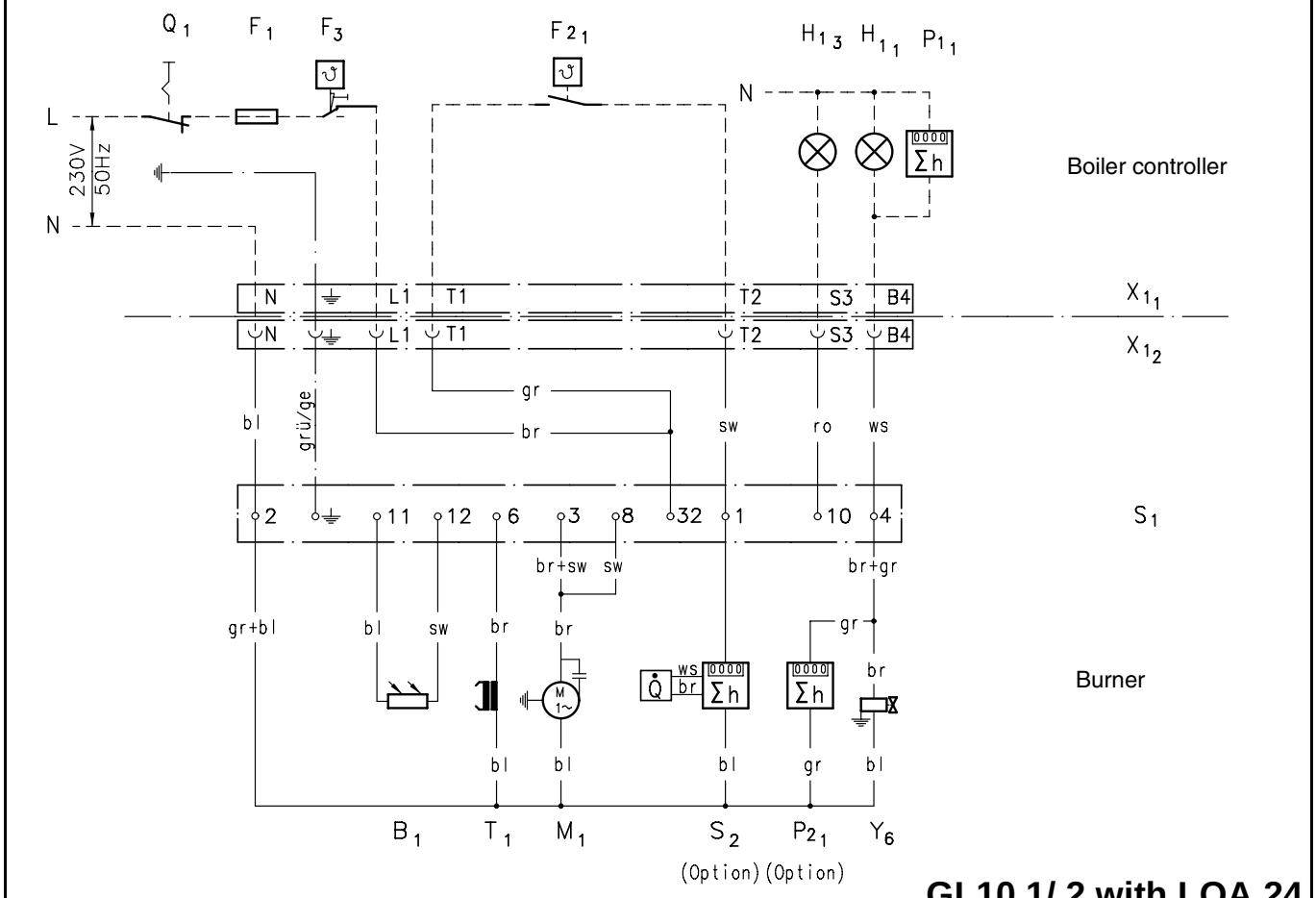
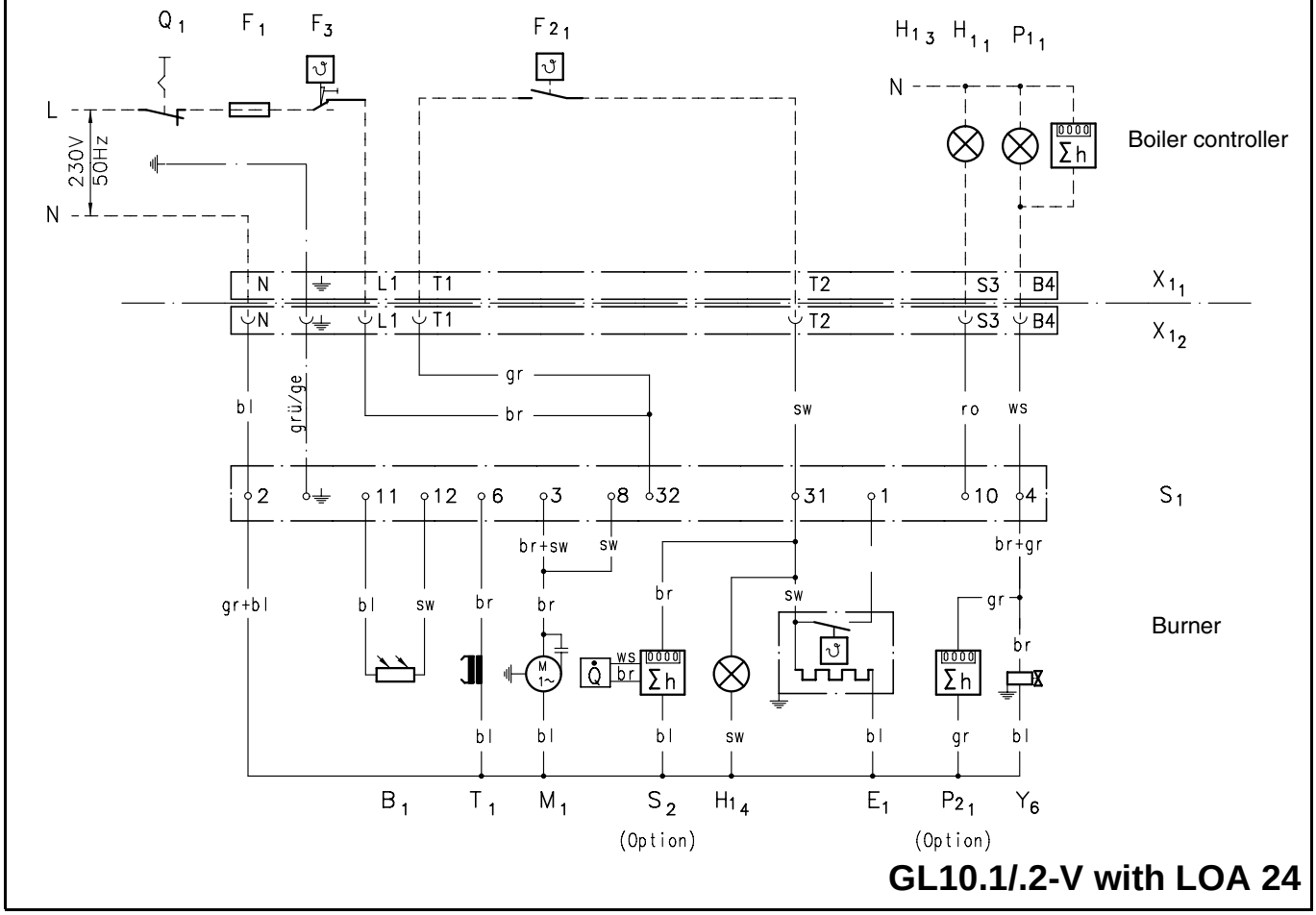
19.Circuit diagram







GL10.1/.2 with LOA 24



GL10.1/.2-V with LOA 24

20.Troubleshooting

Identification	Cause	Remedy
Burner motor is not running	Fuse faulty Safety thermostat locked Setting of controller temperature exceeded Controller faulty Motor faulty Oil preheater: heating or release thermostat faulty Motor–pump coupling faulty	Replace Unlock Try to restart i.a.w. temperature decrease Replace Replace Replace Replace
Burner does (not) start and indicates a faulty after the safety time has elapsed	a) with flame formation: Flame failure controller contaminated, faulty, not correctly inserted or not correctly set Controller faulty b) without flame formation: no ignition Burner not receiving any oil: Valves, oil line closed Oil tank empty Filter contaminated Oil line leaky Pump faulty Foot valve leaky Nozzle contaminated or faulty Solenoid valve faulty Filter in solenoid valve clogged Flame simulation Motor–pump coupling faulty Oil preheater clogged	 Clean, replace, correctly insert Replace Ignition electrode and setting, Check ignition transformer and cable Open Refill oil Clean Seal Replace Seal Replace nozzle Replace Clean filter and replace solenoid valve see under functional control "control box" Replace Replace
Flame extinguished during operation	Oil reservoir worn Nozzle filter clogged Oil filter or oil feed lines contaminated Air inlets Solenoid valve faulty	Refill oil Replace nozzle Clean filter and lines Check suction line and firings Replace
Mixing device heavily oiled or has heavy coke crust	Incorrect setting Incorrect nozzle size Combustion air flow incorrect Central heating room insufficiently ventilated	Correct setting dimensions Replace Readjust burner Ensure aeration inlets are sufficiently large
Burner runs intermittently	Oil throughput too great	Install a control box with flying restart circuit

21. Adjustment table

The measure "A" refers to a height of 300m above sea level as well as a room temperature of approx. 20°C and a practically orientated furnace pressure with an exhaust gas CO_2 content of approximately 12.5%.
The pump pressure is set via the pressure adjusting screw according to the required burner output.

The values specified in the tables are only reference inputs for commissioning. The respective required system setting must be redetermined in the event of deviating data such as boiler output, calorific value and elevation.
In any case, a system readjustment is necessary!

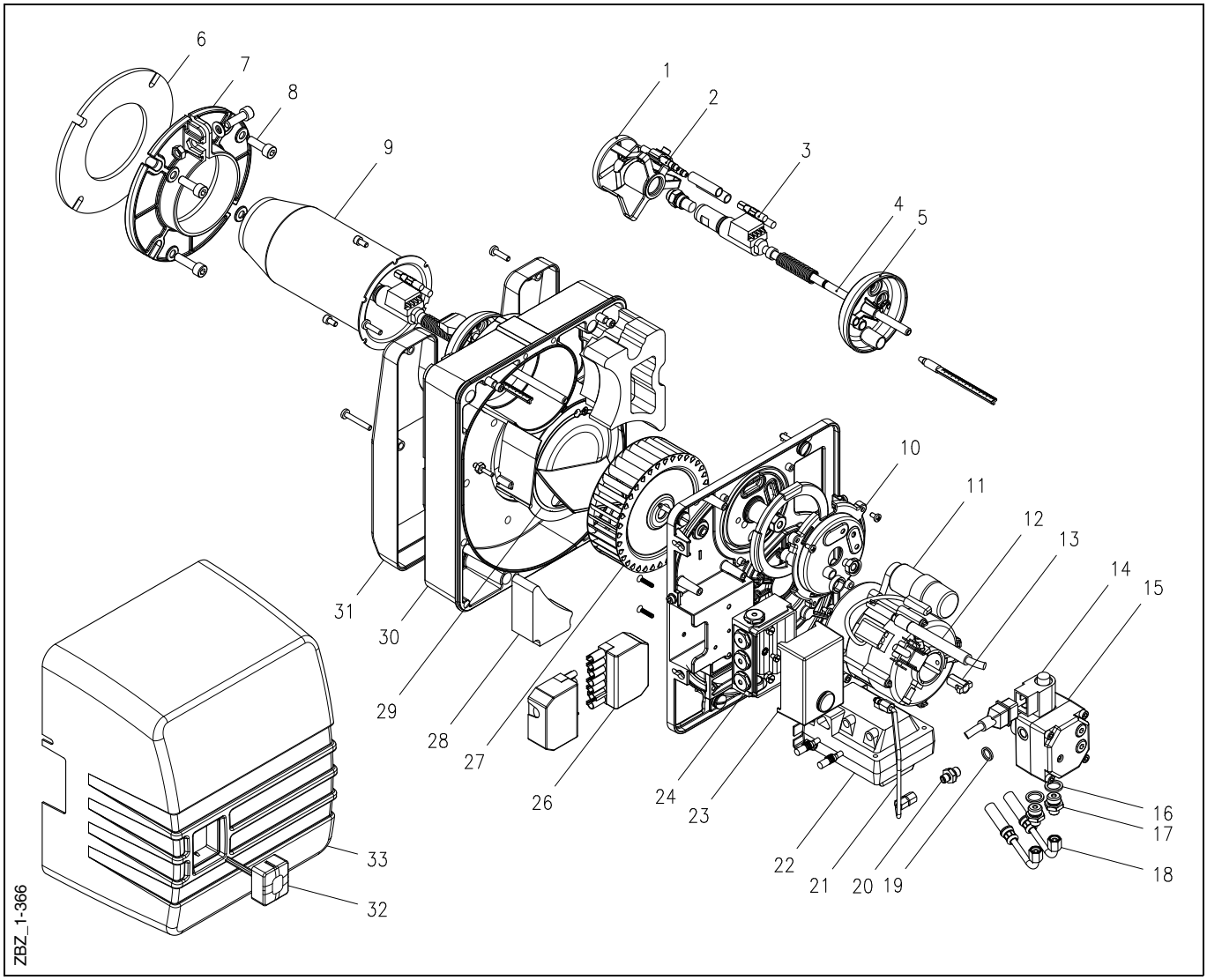
	Burner output	Boiler output at approx. 92%	Oil throughput	Nozzle size	Spray angle characteristics	Oil pump pressure	Air setting measure "A" approx.	Insulating material filter down left
	[kW]	**[kW]**	**[kg/h]**	**[USgal/h]**	**[°-S]**	**[bar]**	**[mm]**	
GL10.1-V	16.0	14.5	1.35	0.40	60°	12.0	5.0	yes
	17.5	16.0	1.48	0.40	60°	14.5	6.0	yes
	19.5	17.5	1.60	0.45	60°	11.5	6.5	yes
	21.0	19.5	1.77	0.45	60°	13.5	7.0	yes
	22.5	20.5	1.90	0.50	60°	12.5	7.5	yes
	24.0	22.0	2.02	0.50	60°	14.0	8.0	yes
	25.5	23.5	2.15	0.55	60°	12.5	8.5	yes
	27.0	25.0	2.28	0.55	60°	14.0	9.5	yes
	29.0	27.0	2.45	0.60	60°	12.5	10.0	yes
	31.0	28.5	2.61	0.60	60°	14.5	11.0	yes
	32.5	30.0	2.74	0.65	60°	13.0	11.5	yes
	33.5	31.0	2.82	0.65	60°	14.0	12.0	yes
	36.0	33.0	3.04	0.75	60°	11.5	13.0	yes
	37.5	34.5	3.16	0.75	60°	12.5	14.0	yes
	40.0	36.5	3.37	0.75	60°	14.0	15.0	yes
GL10.1	18.0	16.5	1.52	0.40	60°	11.0	6.0	yes
	19.5	18.0	1.64	0.40	60°	13.0	6.5	yes
	21.0	19.5	1.77	0.45	60°	11.5	7.5	yes
	22.5	20.0	1.90	0.45	60°	13.0	8.0	yes
	24.0	22.0	2.02	0.50	60°	12.5	8.5	yes
	25.5	23.5	2.15	0.50	60°	14.0	9.0	yes
	27.0	25.0	2.28	0.55	60°	12.0	9.5	yes
	29.0	27.0	2.45	0.55	60°	14.0	10.5	yes
	31.0	28.5	2.61	0.60	60°	12.5	11.0	yes
	32.5	30.0	2.74	0.60	60°	14.0	11.5	yes
	34.0	31.5	2.87	0.65	60°	12.0	12.0	yes
	36.0	33.0	3.04	0.65	60°	13.0	13.0	yes
	37.5	34.5	3.16	0.75	60°	10.5	13.5	yes
	40.0	36.5	3.37	0.75	60°	12.0	15.0	yes

	Burner output	Boiler output at approx. 92%	Oil throughput	Nozzle size	Spray angle characteristics	Oil pump pressure	Air setting measure "A" approx.	Insulating material filter down left
	[kW]	**[kW]**	**[kg/h]**	**[USgal/h]**	**[°-S]**	**[bar]**	**[mm]**	
GL10.2-V	25.0	23.0	2.11	0.55	60°	12.0	5.5	yes
	27.0	25.0	2.28	0.55	60°	13.5	6.0	yes
	29.0	27.0	2.45	0.60	60°	12.5	6.5	yes
	31.0	28.5	2.61	0.60	60°	14.0	7.0	yes
	33.0	30.5	2.78	0.65	60°	13.0	7.5	yes
	34.0	31.5	2.95	0.65	60°	14.5	8.0	yes
	37.0	34.0	3.12	0.75	45°	13.0	8.5	yes
	39.0	36.0	3.29	0.75	45°	14.5	9.0	yes
	41.0	37.5	3.46	0.85	45°	12.0	9.5	yes
	43.0	39.5	3.63	0.85	45°	13.0	10.5	yes
	45.0	41.5	3.79	1.00	45°	11.5	11.0	yes
	47.0	43.0	3.96	1.00	45°	12.5	12.0	yes
	49.0	45.0	4.13	1.10	45°	10.5	12,5	yes
	53.0	49.0	4.47	1.10	45°	12.5	14.0	no
	55.0	50.6	4.64	1.10	45°	13.0	15.0	no
	57.0	52.5	4.81	1.25	45°	12.5	16.0	no
	59.0	54.3	4.97	1.25	45°	13.5	17.5	no
	61.0	56.0	5.14	1.35	45°	11.5	18.0	no
	65.0	60.0	5.48	1.35	45°	13.5	21.0	no
GL10.2	35.0	32.0	2.95	0.65	45°	12.5	8.0	yes
	37.0	34.0	3.12	0.75	45°	11.0	8.5	yes
	39.0	36.0	3.29	0.75	45°	12.0	9.0	yes
	41.0	37.5	3.46	0.85	45°	11.0	10.0	yes
	43.0	39.5	3.63	0.85	45°	12.0	10.5	yes
	45.0	41.5	3.79	1.00	45°	10.0	11.0	yes
	47.0	43.0	3.96	1.00	45°	11.5	12.0	yes
	49.0	45.0	4.13	1.00	45°	12.0	13.5	yes
	53.0	49.0	4.47	1.10	45°	11.0	14.0	no
	55.0	50.6	4.64	1.10	45°	12.0	15.0	no
	57.0	52.5	4.81	1.25	45°	10.5	16.0	no
	59.0	54.3	4.97	1.25	45°	12.0	17.5	no
	61.0	56.0	5.14	1.35	45°	10.0	18.0	no
	65.0	60.0	5.48	1.35	45°	12.0	21.0	no

Caution!

From nozzle size 1.10 you have to delete the insulating material filter (1) down left (see picture).

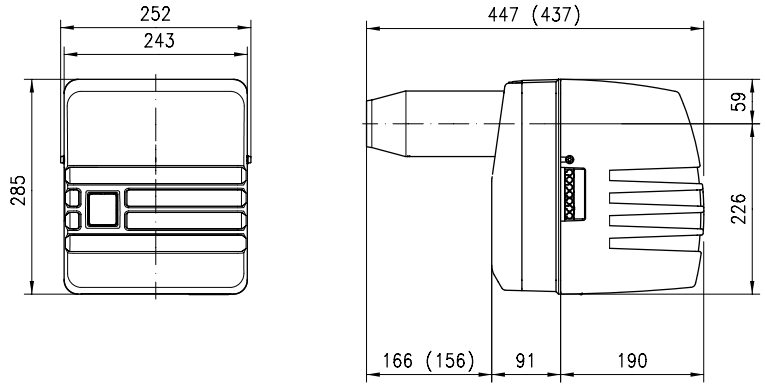
22.Exploded diagram and spare parts list



Position	Designation	VE	Item no.
1	Accumulator plate with retainer and twin electrode	1	47-90-24819
2	Twin electrode	1	31-90-11411
3	Ignition cable 450 mm long	10	47-90-24835
4	Nozzle holder cpl.for GL 10.1 **(Snap ring for throttle position 3 with sleeve)**	1	47-90-24789-01
4	Nozzle holder cpl. with oil preheater and cable (for GL10.1-V) **(Snap ring for throttle position 2 without sleeve)**	1	47-90-27975-03
4	Nozzle holder cpl.for GL 10.2 **(Snap ring for throttle position 2 without sleeve)**	1	47-90-24789-02
4	Nozzle holder cpl. with oil preheater and cable (for GL10.2-V) **(Snap ring for throttle position 1 without sleeve)**	1	47-90-24502-02
5	Air throttle	1	47-90-24478
6	Flange seal	5	31-50-10104
7	Assembly kit cpl. for replacement (Pos. 6, 7, 8)	1	31-90-11421
9	Burner pipe 195 mm lg.	1	47-90-12552
10	Spring cover	1	47-90-24821
11	Motor 230 V / 50 Hz 90 W	1	31-90-11582
12	MZ770 Satronic flame failure controller	1	47-90-24863
13	Motor coupling	1	37-90-11586
14	Solenoid valve	1	57-90-10919
15	Danfoss BFP 21LG pump with connectors	1	47-90-22504
16	Seal 13 x 18 x 2	50	37-50-11293
17	Hose stem NW4 R 1/4	10	47-50-20862
18	Oil hose NW4 1200 mm lg.	2	47-50-10802
19	Seal 10 x 14 x 2	50	37-50-10788
20	Pressure pipe nipple R1/8	5	37-50-20200
21	Pressure pipe for Danfoss pump - nozzle holder	1	47-90-22064
22	Ignition transformer cpl. for replacement	1	47-90-24831
23	TF 830 Satronic control box	1	37-90-10936
24	Satronic control box lower part	1	47-90-24820
26	Female connector, 7-pole black-brown with cable	1	47-90-22072
27	Impeller ø133x42	1	31-90-11477
28	Insulating material filter	1	47-90-22105
28	Intake channel insulation insert	1	47-90-22161
29	Feed nozzle for GL10.1 **(Position 0)**	1	47-90-22528
29	Feed nozzle for GL10.2 **(Position 1)**	1	47-90-21774
30	Housing with intake silencer	1	47-90-21770
31	Intake damper cpl.	1	47-90-21768
32	Interference-suppression button, short	5	47-50-21767
33	Burner cover	1	47-90-21765

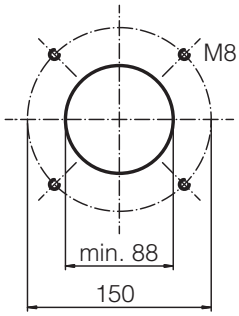
VE = packaging unit 1, 5, 10, 20, 50 items

23.Burner dimensions / boiler connection dimensions

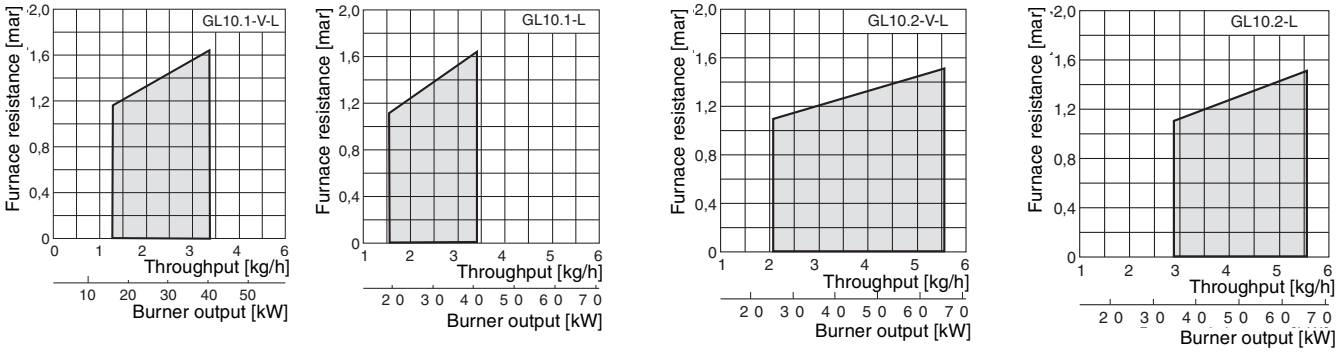


Boiler connection dimensions

All dimensions in mm



24.Work ranges



Work ranges i.a.w. DIN EN 267.
The work ranges refer to a height of approx. 200m above sea level and a room temperature of 20°C.

GIERSCH

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