

HANSA

oil burner

Operating instructions

HS 18 1/2 (Z)

Productivity area: 100,0 - 240,0 kW

Design number 5G 340/99

European-norm EN 267

CE-number

Operating instructions for HS 18.1/2 (Z) oil burner

Our burners are quality products. With an expert assembly, adjustment and maintenance, the burner will work reliably and economically for many years.

Before assembling the burner, the following steps have to be carried out:

- Check whether the heat generator is impermeable on its smoke gas side. Especially older boiler sometimes have to be sealed with a boiler sealing compound.
- In case the heat generator has already been used it should be cleaned thoroughly.
- Fireclay units have to be fitted in professionally.
- The oil pipes must be absolutely impermeable and are to be laid professionally.
- Older heating oil filters have to be cleaned or otherwise the filter pad changed.

Assembly:

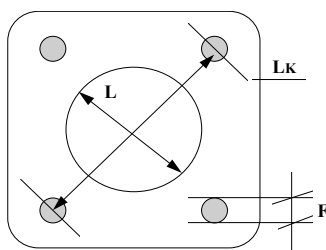
- Attach the fixing flange and the seal by means of the delivered M8 screws to the boiler. The sliding flange has to be fitted so that the assembler can read the word „OBEN“ easily.
- Put the burner into the clamp flange and adjust it in accordance to the firebox depth.. After loosening the 4 stopper screws hang the burner in assembly position and withdraw the hold-up disk..
- Now the adequate nozzle (see table) is screwed in and the hold-up disc with its electrode is attached again. Take care to maintain the exact distance between the nozzle and the hold-up disc. After assembling the oil pipes and the electric connection, the burner is operational.
- Older heating oil filters have to be cleaned or otherwise the filter pad changed.

Picture 1: flange seal

LK = 115-205 mm

L = 91 mm

F = 8.5 mm



Picture 1

Elektric connection of boiler and burner

the electric connection between boiler and burner is carried out by means of a 7-pole Euro-plug. The boiler is equipped with a corresponding 7-pole plug which is put into the connecting socket on the burner. The completion of the electric installations has to meet the legal prescriptions and regulations for heating systems.

Connection of the oil pipes

Take the enclosed oil pipes out, connect them with the oil pump and the oil filter taking into account the correct flow direction and tighten them in order to avoid the pump from drawing air.

Synchronisation of burner, boiler and chimney

Do pay attention to an exact synchronisation of burner, boiler and chimney in order to guarantee an economical operation. A professional assessment for the dimensioning of the chimney and the additional air installations can be given by chimney sweepers or radiator constructors. You should also take care that possibly infiltrated air should not be drawn in as e.g. by the boiler doors or wrong assembled flanges. This infiltrated air can be distort the result of the CO₂ measurement. An attempt to obtain better CO₂ values could lead to a reduction of air quantity in the burner. Thus, an optimal adjustment of the burner is far more difficult to carry out and energy consumption is increased. Moreover if there is infiltrated air, the flame receives too much cold air impeding an economic heat utilisation and increasing the temperature of the combustion gas. In order to avoid this, we recommend the incorporation of a draw regulator. This draw regulator does not only provide steady draft conditions, but also avoids the chimney creosoting, especially in the case of older installations.

Combustion air thermometer

To obtain a continuous combustion air temperature we recommend the incorporation of a combustion air thermometer or the acquisition of a thermometer available at specialised dealers. The most adequate point for the measurement is the chimney sweeper's control bore in the combustion gas pipe. An increase of the combustion air temperature over 30°C, indicates coating of the inside of the boiler, provoking an uneconomical operation of the heating installation. It is therefore advisable to carry out a control of the burner adjustment and if necessary to clean the boiler.

Setting in operation

After the professional assembly of the oil burner, the pre-ventilation and pre-ignition start. After opening the magnetic valve the flame ignites. The flame watcher (photo-resistance) controls the program and stops it in case of faults. When the burner switches off, the economy valve closes, preventing the firebox from cooling down. The air quantity can be modified by means of the air adjustment screw or by displacing the penstock with the hold-up disc. The required adjustment can be taken from the mark on the burner. The best values (CO₂ up to 12,5%) are achieved when the hold-up disc is put into the most restricted position (the least external air) for each performance. The air adjustment screw is then adjusted to reach a soot image of 0.1. All the works are carried out with a key (Inbus SW 4).

Counter of operating hours

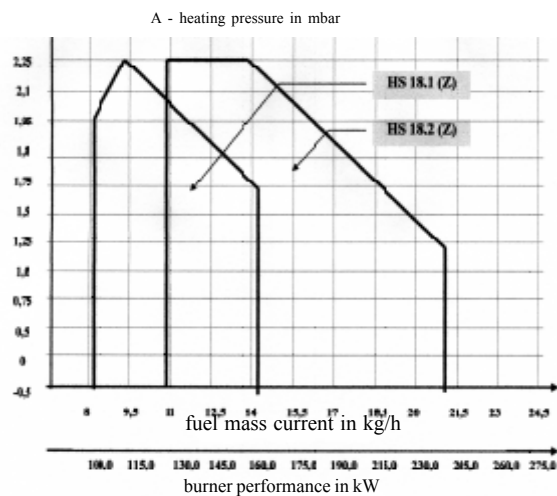
We recommend the installation of a counter of operating hours in order to control the oil consumption.

Determination of the correct nozzle size

The nozzle values are approximate and have to be adjusted corresponding to the combustion gas temperature. You should use conic nozzles with a spray angle of 45° or 60°. The position of the pressing slide depends on the boiler resistance. If the boiler resistance is high, the slide can be opened more; if the resistance is low, it has to be closed more.

Type	Performance kW	Measur. X X	Nozzle size US/gall.	Pump pressure bar (1st step)	Pump pressure bar (2nd step)	Distance nozzle- hold-up disc mm	Servomotor in degree °	Spray cone in degree °
HS 18.1	98,3 - 102	2-2,5	2,00	10-11	-	6 - 8	-	60 °
HS 18.1	106 - 110	2 - 2,5	2,25	10-12	-	6 - 8	-	60 °
HS 18.1	118 - 130	2,5 - 3	2,50	10-12	-	6 - 8	-	60 °
HS 18.1	130 - 142	3 - 3,5	2,75	10-12	-	6 - 8	-	60 °
HS 18.1	141 - 155	3,5 - 4	3,00	10-12	-	6 - 8	-	60 °
HS 18.2	163 - 180	4 - 4	3,50	10-12	-	6 - 8	-	60 °
HS 18.2	188 - 206	3,5 - 4	4,00	10-12	-	6 - 8	-	60 °
HS 18.2	212 - 230	2,5 - 3	4,50	10-12	-	6 - 8	-	60 °
HS 18.2	240 - 260	0 - 2	5,00	10-12	-	6 - 8	-	60 °
HS 18.1 Z	90 / 116	2,5 / 2,5	1,75	12	20	6 - 8	15 / 50	60 °
HS 18.1 Z	102 / 133	3 / 3	2,00	12	20	6 - 8	15 / 60	60 °
HS 18.1 Z	116 / 150	4 / 4	2,25	12	20	6 - 8	15 / 60	60 °
HS 18.1 Z	130 / 166	4,5 / 4,5	2,50	12	20	6 - 8	15 / 60	60 °
HS 18.2 Z	116 / 134	5 / 5	2,25	12	20	6 - 8	15 / 30	60 °
HS 18.2 Z	130 / 150	5 / 5	2,5	12	20	6 - 8	20 / 50	60 °
HS 18.2 Z	142 / 163	5 / 5	2,75	12	16	6 - 8	25 / 60	60 °
HS 18.2 Z	155 / 180	4,5 / 4,5	3,0	12	16	6 - 8	25 / 60	60 °
HS 18.2 Z	180 / 210	4 / 4	3,5	12	16	6 - 8	25 / 60	60 °
HS 18.2 Z	206 / 240	2 / 2	4,0	12	16	6 - 8	25 / 60	60 °

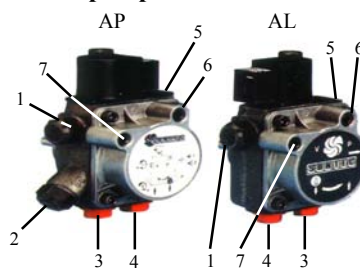
Area of Operation



Explanation of symbols:

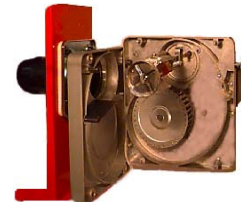
- 1= pressure adjustment step1
- 2= pressure adjustment step2
- 3= aspiration pipe
- 4= return line
- 5= pressure outlet
- 6= pressure measure connection
- 7= aspiration measure

oil pumps

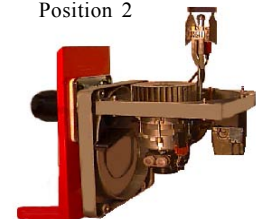


Assembly positions

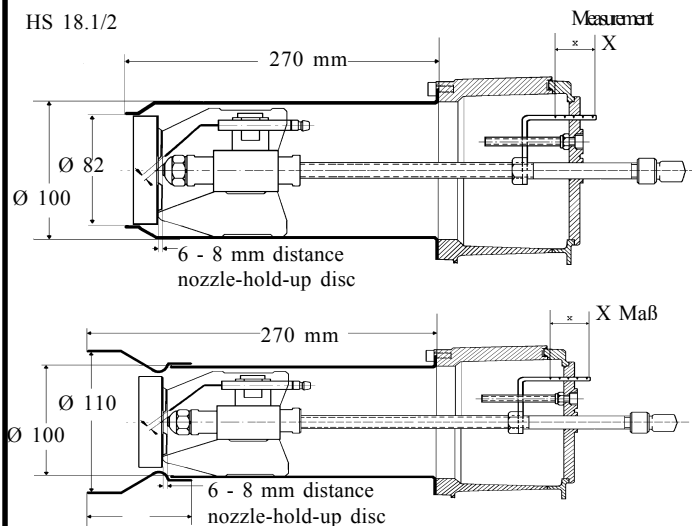
Position 1



Position 2



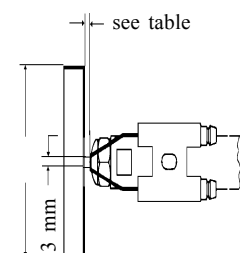
HS 18.1/2



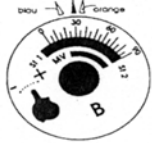
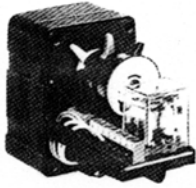
Hold-up discs

HS 18.1 (Z)
6-slots,
core hole
22,0mm
diameter
Ø 80,0 mm

HS 18.2 (Z)
13-slots
core hole
24,0 mm
diameter
Ø 90,0 mm



SERVOMOTOR LKS 120



The scale attached to the back part of the camshaft is originally adjusted in a way, that a camshaft hand lever in alignment with its 0-point would close the air valve of the oil burner. The blue camshaft hand lever determines the air valve opening on the Is' step and should be adjusted according to the blue area of the scale, that -is- between 0' and 30°. The orange camshaft hand lever determines the air valve opening on the Is' step and should be adjusted between 30° and 75°!!! The black camshaft hand lever determines the connection point of the second magnetic valve (throttle valve) and should be adjusted approximately 5° before the position of the orange camshaft hand lever. Example for a two-step-operation: Blue camshaft hand lever 20° = 56 kW performance Orange camshaft hand lever 35° = 65 kW performance Black camshaft hand lever 35° = opening of the second magnetic valve, after the servomotor has turned 30° regarding the zero position.

Local EVU- and VDE-prescriptions have to be taken into account.

Performance during operation:
HVS 8.1 (A) approx. 360 W
HVS 8.2 (Z) approx. 360 W

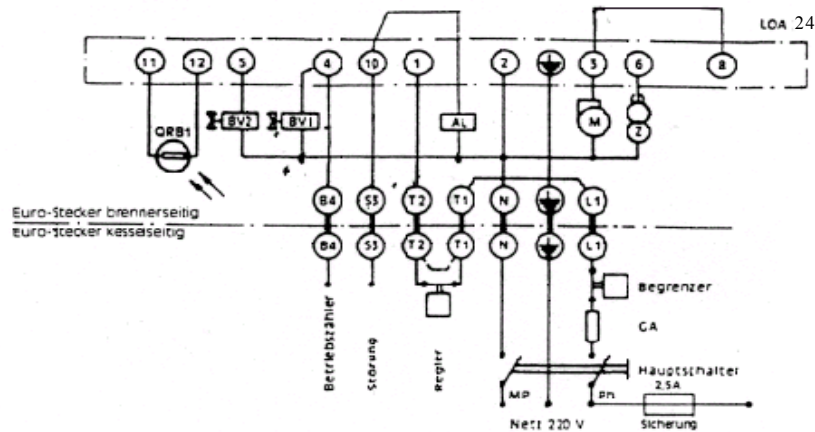
AL alarm installation
L1 phase 230 V
M burner engine
Z = ignition transformer
BV1 magnetic valve step one
BV2 magnetic valve step two

QRB 1 = photo resistance
S3 interference connection
B4 counter of operating hours
T1 + T2 =boiler thermostat
N = earth wire
() earthing connection

electric connection

diagramm

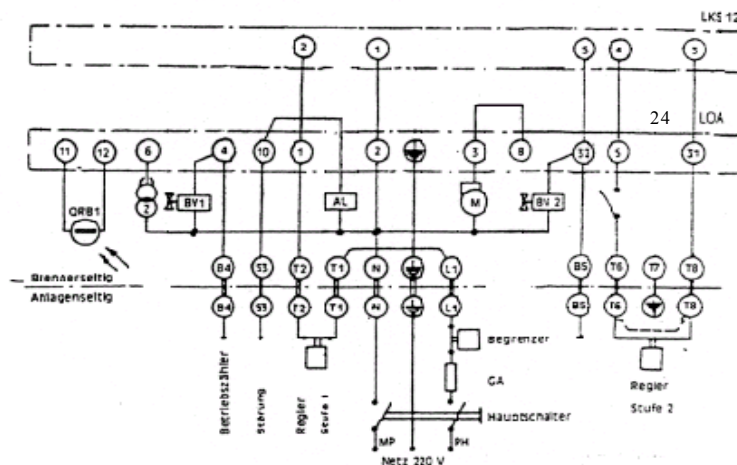
HS 18.1-2



electric connection

diagramm

HS 18.1-2 Z



Guarantee:

The types HS 18.1/2 (Z) are trade mark fabricates with first class additional parts. They have to be professionally installed and assembled. The guarantee is valid for a term of 12 months after the setting in operation, with a maximum of 15 months after the dispatch date. In case of non compliance with the aforementioned conditions, faulty handling or wrong connection, the guarantee expires.

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