

OPERATION INSTRUCTION

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1. Control operation

1.1. Operation modes

B01	Program calling 0 Control is OFF	Operation mode 1	Oper +/- Nav ⇔⇔
B02	Program calling 1 Manual operation	Operation mode 2	Oper +/- Nav ⇔⇔
B03	Program calling 2 Supply tank Æ boiler oper.	Operation mode 3	Oper +/- Nav ⇔⇔
B04	Program calling 3 Time operation	Operation mode 4	Oper +/- Nav ⇔⇔
B05	Program calling 4 Automatic	Operation mode 5	Oper +/- Nav ⇔⇔



or



Program selection by means of keys + or -

1.1.1. Program calling 0 - Control is OFF

B01	Program calling 0 Control is OFF	Operation mode 1
-----	---	------------------

Control of the heating system is off. No material feeding. Blowers and all motors are stopped.

1.1.2 Program calling 1 Æ Manual operation

B02	Program calling 1 Manual operation	Operation mode 2
-----	---	------------------

This operation mode functions as "Control is OFF". The only difference is that there is a possibility of manual fuel feeding and the blowers are active.

Fuel material feeding



In order to start the manual fuel material feeding, press 3 times the key ↔ 3 - main scheme.



Pressing key **F1 - START** the feeding of material may start. When releasing the key, the material feeding stops automatically.



Pressing key **F2** the reverse rotation of the worm screw for 2 seconds.

B06 Manual operation
F1 forw. F2 backw.

F1 Forward min. 5 sec.
F2 Backward rotation of worm screw limited for 2 sec.
F2 . press if more backwards required.

Oper **F1/F2**
Nav ↔↔

Ash discharge



In order to start the ash discharging, press 4 times the key ↔ - main scheme.



Pressing key **F1 ON** starts the ash discharging. When releasing the key, the ash discharging continues still for 10 minutes and then stops automatically.



Pressing key **F2 OFF** you can stop the ash discharging at any time.

B08 Man. oper. Ash discharge
F1 ON F2 OFF

Manual operation of the ash discharging
Upon pressing **F1** the ash discharging continues for 10 minutes and then stops automatically.

Oper **F1/F2**
Nav ↔↔

1.1.3. Program calling 2 - Tank-boiler operation

B03 **Program calling 2
Tank-boiler operation** Operation mode 3

The controlling system provides more possibilities of boiler or supply tank feeding:

- Boiler feeding with boiler sensor F1 (one sensor version)
- Boiler feeding with boiler sensors F3 or F4 (two sensors version)
- Tank feeding with tank sensors F5 or F6 (one sensor version)
- Tank feeding with tank sensors F5 and F6 (two sensors version)

Feeding version

M15 **Boiler-rated : 075 C
actual-O : 000 actual U : 000** Seen only when sensor **1** is connected Oper +/-
Actual O=upper sensor (always warmer sensor) **E**
Nav ⇔

M16 **Boiler temp. hysteresis
020 degrees** Seen only when sensor **1** is connected Oper +/-
Switch on temp. =rated temp. . hysteresis Nav ⇔

Input rated value e.g. 75°C (Boiler rated temperature = 85°C)
Input hysteresis e.g. 20°C

The feeding shall start at 55°C and stop at 75°C.

Two sensors version

The software program considers the warmer sensor always the upper one. Should the set point temperature minus hysteresis on the upper sensor be lower, a demand follows, upon which the feeding starts. When the set point temperature of the lower sensor is achieved, the feeding is stopped.

M17 **Tank rated : 075 C
Act.-O : 000 Act._U : 000** Seen only when sensor **2** is connected Oper +/-
Actual O=upper sensor (always warmer sensor) **E**
Nav ⇔

M18 **Hysteresis tank temp.
025 degrees** Seen only when sensor **2** is connected Oper +/-
Switch on temp. =rated temp. . hysteresis Nav ⇔

Input rated value e.g. 75°C
Input hysteresis e.g. 25°C

The feeding shall start at 55°C and stop at 75°C indicated by lower sensor.

There is no any boiler precedent connection. Upon an inquiry, the feeding process starts in any case. The feeding pump may be controlled either within **one feeder or two feeder** versions. The indications of the rated temperatures data are seen only if at least one sensor is connected with the module 1A2 (Menu: F1 Customer).

The boiler feeding pump is active at the heating boiler temperature higher than 60 °C or equal.

Because of safety, the boiler feeding pump is switched on (in every operation modes) when the heating boiler actual temperature exceeds 93 °C. The tank feeding pump starts when the heating boiler **actual temperature** is higher than 60 °C or equal.

Because of safety, the tank feeding pump is switched on (in every operation mode) when the **heating boiler rated temperature** exceeds by more than 10 °C.

Feeding in automatic operation

The feeding is running **always** upon inquiry. If there is parameter configuration `ssolar device present%` set up to 1, the boiler and tank are fed only in the set up time channel.

Feeding in time operation

The feeding is running when a command is given in one of the time channels. The channel ending does not stop feeding.

Feeding in boiler operation

Feeding is possible only in one of the two time channels. When the heating boiler is operated only in connection with the tank, the time channels may be switched on 0:0 23:59 o'clock. In case of a demand presented, the heating process starts and a complete feeding is performed. .

In order to achieve an optimum feeding, the heating boiler rated temperature increases by **+ 10 °C** to feed rated temperature automatically upon inquiry.

Example:

Boiler- rated temperature	= 75°C
Heating boiler rated temperature	= Boiler-rated temperature +10°C = 85°C

Heating pump



NOTICE

Applicable only for equipment without heating circuit regulation.

The control system is equipped by a connection facility for heating and boiler pump.

In the operation modes **Time and Automatic operation**, the heating pump starts to run when the heating boiler temperature exceeds 60°C.

In the operation mode **Boiler-Tank operation**, the heating pump is started every day for one minute in order to prevent its staking root%

1.1.4. Program calling 3 Æ Time operation

B04 **Program calling 3
Time operation** Operation mode 4

Time operation is a time-restricted automatic operation. The heating is active in time periods specified by channels signation 1 and 2%.

Set up - example:

A10	Time channel 1 ON 05 H. 30 MIN	(Summer operation) Set hour Switch on automatic ignition 1	Oper +/- E Nav ⇄⇄
A11	Time channel 1 OFF 07 H 00 MIN	(Summer operation) Set hour Switch off automatic ignition 1	Oper +/- E Nav ⇄⇄
A12	Time channel 2 ON 18 H. 00 MIN	See A10 Deactivate: on 00 H. 00 MIN set up	Oper +/- E Nav ⇄⇄
A13	Time channel 2 OFF 19 H. 00 MIN	See A11 Deactivate: on 00 H. 00 MIN set up	Oper +/- E Nav ⇄⇄

That means that the heating is active from 5 o'clock to 6.30 and from 18 o'clock to 20.30. At the time set up, the ignition is automatically activated and the heating boiler is warmed to the set point temperature. Upon the set up period extinction, the heating stops again.

Channel deactivation

The channel may be deactivated while the same time is set up at switch . on and switch . off points.

A12	Time channel 2 ON 00 H. 00 MIN	See A10 Deactivate: on 00 H. 00 MIN set up	Oper +/- E Nav ⇄⇄
A13	Time channel 2 OFF 00 H. 00 MIN	See A11 Deactivate: on 00 H. 00 MIN set up	Oper +/- E Nav ⇄⇄

See also **Operation Æ Week days program**

1.1.5. Program calling 4 Æ Automatic operation

B05	Program calling 4 Automatic	Operation mode 5	Oper +/– Nav ⇔⇔
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Night drop

There is a continuous heating process. Within the set up time period for the night drop of energy output the heating boiler temperature drops to the set point night temperature.

A06	Night drop 1 ON 22 H. 00 MIN	Set up hour by ENTER for changing H/MIN Start night drop 1	Oper +/– E Nav ⇔⇔
-----	---	--	--------------------------------

A07	Night drop 1 OFF 05 H. 00 MIN	Set up hour End night drop 1	Oper +/– E Nav ⇔⇔
-----	--	---------------------------------	--------------------------------

and

A01	Rated heat boiler temp. Day: 075 degr.	Set up required heat boiler temperature For output regulation . normal operation	Oper +/– Nav ⇔⇔
-----	---	---	--------------------

A02	Rated heat boiler temp. Night 075 degr.	Set up required heat boiler temperature For output regulation . night drop operation	Oper +/– Nav ⇔⇔
-----	--	---	--------------------

Night drop deactivation

The night drop mode may be deactivated, while the on and off switching points are set up on the same time, or when the rated temperature for day is used as rated temperature also for night.

A06	Night drop 1 ON 22 H. 00 MIN	Set up hour by ENTER for changing H/MIN Start night drop 1	Oper +/– E Nav ⇔⇔
-----	---	--	--------------------------------

A07	Night drop 1 OFF 22 H. 00 MIN	Set up hour End night drop 1	Oper +/– E Nav ⇔⇔
-----	--	---------------------------------	--------------------------------

und

A01	Rated heat boiler temp. Day: 075 degr.	Set up required heat boiler temperature For output regulation . normal operation	Oper +/– Nav ⇔⇔
-----	---	---	--------------------

A02	Rated heat boiler temp. Night 075 degr.	Set up required heat boiler temperature For output regulation . night drop operation	Oper +/– Nav ⇔⇔
-----	--	---	--------------------

INFO

All the facilities with heating circuit regulation have the heating times or temperatures controlled by the heating circuit regulation device. See the Operation instruction to the heating circuit control.

2. Switching the facility on and off.

2.1. Switch on the facility



Before switching on the facility, assure that no person may be endangered by the equipment!

Release the main switch before switching on.

Then select the required operation mode on the Control panel.

08:10:11 Boiler 72 C
Control is OFF



Next

Incl. amount 0050 %
02- portion 12,9 %



next

Program calling 0
Control is OFF



next, press more time ... until

Program calling 4
Automatic operation



confirm

08:10:11 Boiler 62 C
Automatic operation



press more times... until coming back to the main scheme

2.2. Switch off the facility



NOTICE

It is forbidden to put the facility to the out of operation status by means of the MAIN SWITCH except possible menacing of a person safety.

Switch off the heating facility exclusively by a Program calling 0=Control is OFF.

08:10:11 Boiler 72 C
Automatic operation



next

Fed quantity 0050 %
02- portion 12,9 %



next (skip)

Program calling 0
Control is OFF



confirm

08:10:11 Boiler 62 C
Control is OFF



back to the main screen

In situations menacing the safety of the operational personnel or facility itself, the equipment may be switched off by turning the main switch to the position sOFF% out of operation. Otherwise, use the main switch only when the facility is scold%as the manipulation with main switch put also the safety equipment out of activity.



WARNING

The motor coverings and conduits may be live even if switched off.



Do not touch the specified equipment parts when they are live! The device becomes out off voltage only if the main . master switch is off!

3. Manual feeding

The Gilles heating boiler with a burner for wood chips is designed so that it may be fed even manually using pieces of wood, without any adjustment or rebuilding. The manual feeding is enabled in the "Manual" operation mode as well as in the automatic operation modes "Boiler operation" and "Automatic operation".



NOTICE

Generally, when using the mode of manual feeding, pay attention to assure that the current fuel quantity corresponds to the current heat taking of! An excessive quantity of fuel in the heating boiler may result in the boiler overheating and activation of the safety thermostat (at low heat consumption, closed stirrer, stirrer regulation upon environment conditions, room temperature control...).

3.1. Manual feeding within manual operation

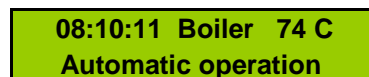
In this operation mode there is no ignition and feeding of fuel by means of discharge conveying systems. The heating boiler is active as long as the flue gas temperature is higher than the set up ignition temperature!

Controlling of:

- primary, secondary and exhaust blowers,
- heat pump
- boiler feeding pump (only when relevant pumps are attached to the boiler field.)

Procedure:

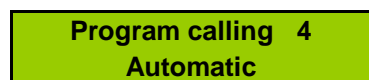
Control in "Manual operation "



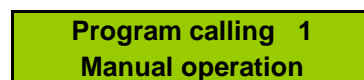
Indication
Nav ⇔



Press key ⇔ on the main image twice in order to enter the program selection.



or



- Feed in pieces of wood and fire it up.
- Press any key on the operating panel.
- The blower runs for 10 minutes . maximum set up number of revolutions.
- When within these 10 minutes the flue gas temperature exceeds the ignition temperature, the heating control starts. Otherwise the blower stops after 10 minutes.
- By means of pressing a key the 10 minutes period may be started again. The boiler feeding and the heating pump control are functioning like in a normal automatic operation mode. There is no regulation of the blower number of revolutions; the blower runs at maximum set up number of revolutions.

- The blower stops upon achievement of the set point temperature.
- Should the flue gas temperature drop under the set up ignition temperature, the heating control is switched off. Blower and pumps are stopped as well.



ATTENTION:

NOTICE

When adding the wood pieces and the blower just stopped (while the flue gas temperature dropped under the ignition temperature), any key on the operation panel should be again pressed.

The blower starts again for 10 minutes and kindles the flame, so the added piece of wood will be duly burnt.

INFO

Tip:

Put the fuel pieces into the burning chamber before starting the process.

When the facility is switched on in the operation mode "Automatic operation", the automatic ignition follows and no manual ignition is necessary.

Wait until the ignition process is completed and the wood pieces are well burnt. Then switch on the heating again in manual operation mode.

3.2. Manual feeding in automatic operation mode

In the automatic operation modes (automatic and time operation) the ignition is automatic and wood chips are fed by a hinged sweep arm collector.

The pieces of wood may be put into the heating boiler at any time. The control system is able to identify the surplus fuel by means of Lambda-probe and reduces the conveyed fuel amount until the wood pieces are burnt. Then the feeding is adjusted to the current consumption again.



ATTENTION:

NOTICE

As soon as the Lambda control system identifies the input of wood pieces, the blower performance is increased to the maximum number of rotations after 2 minutes.



DANGER

When putting the pieces of wood to the heating chamber, pay attention to the fact that the flames may escape from the furnace..

Open the outer door, wait ca **10 seconds** and only then open the burner room door carefully.

4. Troubleshooting

4.1. Errors & failures / Remedies

4.1.1. Failure occurrence

The control system is checking up all the parts and heating condition continuously. As soon as the control system recognizes a failure, the automatic operation mode is switched on the position **OFF**.

On the operational panel a message occurs automatically in the second line noticing the type of failure. The key CLR is flashing.

F01

08:10:11 Boiler 74 C
Ignition is out of order

Second line: failure

Indication
Nav CLR

Upon remedy of the failure, pres CLR- key in order to confirm it.



CLR-key serves for confirmation of failures and is accessible only in the main image%

Even the failure causes were removed, the controlling system will start in the pre-set operation mode again only upon the failure confirmation.

The indication may be changed without the preceding failure confirmation.

4.1.2 Possible set-up errors and their remedy

The following failures cannot be recognised by means of a direct control device and that is why they do not occur as the indication of control system.

You encounter the output setting up by control.

Unreal valued of the Lambda-probe

Explanation:

e.g. at nominal output . indication of 20,9 % O₂
or at
set point temperature achieved%some minutes later the value is
under 15 % O₂

Possible sources

- cable break
- bad clamp sheath
- leakage of the screw connections on the flue gases ducts,
- dirty lambda-probe
- lambda-probe defected
-

Troubleshooting:

- replace cables
- connect cables according to scheme
- tighten the lambda-probe or seal it by a teflon tape
- take off the lambda-probe and clean the fuel tube opening
- replace lambda-probe

Combustion room is overfilled

Explanation: Unburned material was transported to ash removal

- Possible sources
- fuel material is too wet . over 40 %
 - too much material quantity set up
 - primary air at max. and min. output set up too low
 - ash stirrer out of functioning
 - dirty blower
 - dirty air openings in burner
 -
- Troubleshooting:
- use fuel material under 40 % of water content
 - lower the % set up of feeding auger
 - higher amount of primary air is required
 - clean the upper and lower grates in the combustion chamber, or remove pieces of stones or metals.
 - clean the blower by air pressure, or tweezers
 - clean the burner or open the air chamber and clean them by vacuum cleaner when they are cold

Set point temperature is not achieved by more than 5 °C

Explanation:

- Possible sources
- rated value of O₂ is set up too high
 - contaminated fuel material (glue, plastic materials, sand, wet wood chips > 40 %)
 - rated flue gas temperature at maximum output is set up on too low value; this value is giving for the output regulation a limit value that if exceeded, cause the smaller amount of fed fuel
 - lack of fuel
 - the taken over heat amount is higher than the boiler's nominal output
 - wet fuel
 - material amount % conveyor is set up too low
 -
- Troubleshooting:
- this value may be changed only upon password entering
 - use another fuel material
 - this value may be changed only upon password entering . recommend range to be set up: 180° to 260°
 - cover the discharge system in storeroom again by fuel
 - take over lower amounts of heat
 - material moisture - max. 40 %
 - higher material and primary air volumes are required

In the cinder space there is permanently low glow lever

Explanation: In the cinder space there is permanently low glow lever

- Possible sources
- too dry fuel material and primary air set up too high
- Troubleshooting:
- lower the primary air adjustment, the glow will be crated at 100 % amount of fed fuel

Lambda-control cannot achieve the nominal value and hamper the material feeding

Explanation: Lambda-operation cannot reach the set point temperature and thus it is blocking the material supply.

Possible sources

- too wet fuel
- max. primary and secondary air performance is too low (higher number of blower rotation is required)
- max. efficiency of the performance of intake ventilator is too low

Troubleshooting:

- max. 40 % material moisture
- set up higher value for primary air
- set up higher max. intake ventilator adjustment

Heating boiler goes over the nominal temperature permanently

Explanation: Heating boiler goes over the nominal temperature permanently

Possible sources

- heat consumption is lower than 20 % of the heating boiler nominal value
- flue gas set point temperature for minimum performance is set up too high, this value specifies a limit value for the efficiency regulation, and if this value is lower, the supplied amount of fuel increases.
- too low temperature for partial loading

Troubleshooting:

- assure higher heat consumption
- this value may be changed only upon password entering . recommend range to be set up: 100° to 140°
- increase the temperature for partial loading by 5 °C to 10 °C

Heating boiler goes over the nominal temperature often

Explanation: Heating boiler goes over the nominal temperature often

Possible sources

- heat consumption is lower than 20 % of the heating boiler nominal value
- too much pieces of wood were supplied into the boiler
- flue gas set point temperature for minimum performance is set up too high
- impact heat consumption drop
- activation of the night drop
- temperature difference for partial loading is set up too low

Troubleshooting:

- increase the heat consumption
- reduce the flue gas set point temperature for minimum performance
- increase the temperature for partial loading by 5 °C to 10 °C

Info:

Temperature difference for partial loading:

Should the boiler current temperature be near the set point boiler temperature by less than the specified temperature difference is, the efficiency regulation decreased the amount of supplied fuel.

Example:

rated . set point boiler temperature = 80 °C

temperature difference for partial loading = 3°C

- starting by 77 °C the efficiency is reduced in linear manner

temperature difference for partial loading = 3°C

- starting by 75 °C the efficiency is reduced in linear manner

The higher the temperature difference is, the safer the overshoot over the set point temperature may be restrained, but also the distance from the set point temperature may remain greater.

Recommended set up value:

Temperature difference at partial loading = 4 °C

4.1.3. General failures

Faulty time indication

Explanation:

Faulty time indication

Possible sources

In case of disappearing of time, the possible source may be wrong battery or the current source was interrupted for more than 10 hours.

Troubleshooting:

The control system is equipped with a correct clock supplied by lithium battery even if the main switch is OFF.

Service life of this battery is ca. 10 years.

INFO

During a ca. 10 hours current blackout, the time data remain saved. If the current supply is interrupted for more than 10 hours, the time data disappear and must be programmed again.



NOTICE

Only trained serviceman from the Gilles company or its authorised contracting partner are entitled for battery replacement.

F01 No external resetting

**08:10:11 Boiler 74 C
No external resetting**

No external resetting.

Indication
Nav **CLR**

Possible sources

This is not an error message. This message appears on when there is no boiler circuit control command.

Troubleshooting:

Examine the set up heating times, inner nominal temperatures and the operation mode set up on the heating circuit control.

F02 Low flue gas temperature

**08:10:11 Boiler 74 C
Low flue gas temp.**

The flue gas temperature does not reach the ignition temperature, or had dropped hereunder. Indication
Nav **CLR**

This is not an error message. It is just the indication of the current status of the heating system. Wait about 5 minutes, then the indication should disappear or a message **Ignition out of order** appears.

Possible sources

The flame went out may be due to lack of fuel.

Troubleshooting:

- Store room may be empty - lack of fuel!
- If the store room contains enough wood chips and despite of it the fuel is not supplied to the furnace, there is a possibility of an over bridging.
- Do not try to remove this defect and contact the GILLES service department!

F03 Safety thermostat active

**08:10:11 Boiler 74 C
Safety thermostat active**

Activation of the safety thermostat

Indication
Nav **CLR**

Possible sources

- The set up maximum boiler temperature increased and the activated the safety thermostat.
- Damaged safety thermostat.
- Bad connection of the safety thermostat cable.
- Cable is broken.
- Bad connection of the cable in switch box.

Troubleshooting:

- Assure a greater heat taking of e.g. boiler supply or increasing of the set up inner temperature.
- Only after heating boiler cooling, remove the cover lid from the safety thermostat and press the coloured activation button.
- Then confirm the command by pressing the CLR- key on the control panel.

F04 Ignition is out of order

08:10:11 Boiler 74 C
Ignition is out of order

Ignition is out of order.

Indication
Nav **CLR**

The fuel is not ignited, the flue gas temperature does not reach the set point temperature even after the second ignition attempt.

Possible sources

- Not enough fuel in the burning area.
- Ignition device failed or it is not switched on.
- Setting up are incorrect (interval, period, temperatures).
- The flue gas sensor is not right installed in the flue duct or it is extremely dirty.
- Lack of fuel material in store room.
- Over bridging in the store room.

Troubleshooting:

- Refill the store room again so that wood chips cover the transport system, and then ignite the fuel manually.
- Upon confirming the error (press CLR-key), the ignition fan will start again. Nevertheless, in order to prevent the boiler overfilling due to more ineffectual ignitions, (e.g. in case of too wet fuel material) no further ignition insertions are carried out.
- Switch on the manual operation mode, press key F1 to start the manual supply and hold it until the wood chips start to fall from the conveyor to burner.
- Then end the manual feeding and select the existing mode of operation.
- The ignition must be carried out either in the manual operation mode or the control system must be once switched off and then again switched on.
- In order to perform a renewed complete ignition process, the main switch must be switched off for ca. 10 seconds and then switched on again.
- Should be enough of material in the store room and despite of it the fuel is not ignited automatically, the ignition device is defective.
- Contact the GILLES service department!

Info:

You may set on fire a small amount of fuel manually in the manual operation mode and then switch it on to automatic operation, when the flame is sufficient. Thus the wood chips ignite the burning case and activate the automatic wood chips feeding again.

4.1.4. Electricity break down / Remedies

In case error messages described in this chapter, the facility is immediately switched off and a corresponding failure message appears on display.

Should the break down take more than 10 minutes, the summary failure output is switched on.

Summary failure output:

It switches on when any of the following failure occurs. Various message devices may be connected to this type of switch, e.g. signal lamp.

Should not be a failure removed within 10 minutes, a lamp starts to flash.



DANGER

Open the switch box only when the main switch is off and secured!

F05 Flue gas temp. sensor defect

08:10:11 Boiler 74 C
Flue gas tem.sensor def.

Flue gas temperature sensor defective.

Indication
Nav **CLR**

Possible sources

- Flue gas sensor in the flue gas duct is defective.
- Cable break on the temperature sensor.
- Temperature sensor defective.
- Bad connection of the temperature sensor (plug X10)

F06 HSKA-Temp.sensor def

08:10:11 Boiler 74 C
Boiler temp. sensor def

Boiler temperature sensor defective.

Indication
Nav **CLR**

Possible sources

- Cable break on the temperature sensor.
- Temperature sensor defective, -> recover!
- Bad connection.

F07 Cover switch - discharge

08:10:11 Boiler 74 C
Cover switch - discharge

Cover on the discharge auger is opened.

Indication
Nav **CLR**

Possible sources

- Too much fuel material on the auger.
- Defect or slacked cover.
- Cable breaking.

Upon resolving these possible causes it is not necessary to press CLR-key.

F08 Combustion chamber open

**08:10:11 Boiler 74 C
Combustion chamber open**

Combustion chamber opened.

Indication
Nav **CLR**

Possible sources

- Combustion chamber door opened.
- Door switch defect or slacked.
- Cable breaking.

Upon resolving these possible causes it is not necessary to press CLR-key.

F09 Motor failure - feeding

**08:10:11 Boiler 74 C
Motor failure - feeding**

Motor failure . feeding worm screw 1K6

Indication
Nav **CLR**

Possible sources

- Thermorelais defective.
- Feeding motor defective.

Troubleshooting:

- Confirm the thermorelais 1F6 by pressing the reset button.
- Press CLR-key on control panel.

If the failure is persisting, then:

- replace thermorelais,
- let examine the feeding motor, or replace it.

F10 Auger motor defect

**08:10:11 Boiler 74 C
Auger motor defect**

Auger motor defect 1K7

Indication
Nav **CLR**

Possible sources

- Termorelais defective.
- Conveying auger motor defective.

Troubleshooting:

- Press reset button in order to confirm thermorelais 1F7
- Press CLR-key on control panel.

If the failure is persisting , then:

- replace thermorelais,
- let examine the auger motor, or replace it.

F11 Motor failure, silo discharge

08:10:11 Boiler 74 C
Motor failure, silo discharge

Motor failure, silo discharge 1K5

Indication
Nav **CLR**

Possible sources

- Termorelais defective.
- Silo discharging motor defective.

Troubleshooting:

- Press reset button in order to confirm thermorelais 1F5
- Press CLR-key on control panel.

If the failure is persisting , then:

- replace thermorelais,
- let examine the silo discharging motor, or replace it.

F12 Motor failure Ę ash removal

08:10:11 Boiler 74 C
Motor failure Ę ash removal

Motor failure . ash removal 1K3

Indication
Nav **CLR**

Possible sources

- Termorelais defective.
- Ash discharging motor defective.

Troubleshooting:

- Press reset button in order to confirm thermorelais 1F3
- Press CLR-key on control panel.

If the failure is persisting, then:

- replace thermorelais,
- let examine the ash discharging motor, or replace it.

F13 Motor failure Ę heat exchanger cleaning

08:10:11 Boiler 74 C
Motor failure, heat ex. clean

Motor failure . heat exchanger cleaning 1K30

Indication
Nav **CLR**

Possible sources

- Termorelais defective.
- Heat exchanger cleaning motor defective.

Troubleshooting:

- Press reset button in order to confirm thermorelais 1F30
- Press CLR-key on control panel.

If the failure is persisting, then:

- replace thermorelais,
- Let examine heat exchanger cleaning motor, or replace it.

F14 Cell wheel blocked

08:10:11 Boiler 74 C
Cell wheel blocked

Cell wheel is blocked.

Indication
Nav **CLR**

Possible sources

- Too coarse material, or metal pieces in the cell wheel.
- Initiator bad connected or defective.
- Cable break.

Troubleshooting:

- Remove coarse material out of the cell wheel.
 - Check up the initiator distance.
- Never touch the cell wheel by hand! Use only some tool!



WARNING

Any works on the cell wheel may be carried out only when the main switch is off and secured!

F15 Fuel store temp. sensor defective

08:10:11 Boiler 74 C
Fuel store temp. sensor
def.

Fuel store temperature sensor defective. (Monitoring of the temperature in store room.)

Indication
Nav **CLR**

Possible sources

- Fuel store inner sensor is damaged.
- Cable break.
- Defective connection.

Troubleshooting:

- Let examine the sensor, or replace it.
- Replace the cable.
- Let examine the connection.

F16 Fuel store temp. too high

08:10:11 Boiler 74 C
Fuel store temp. too high

The bunker inner sensor indicates the temperature over 70 °C . TRVB TÜB.

Indication
Nav **CLR**

Possible sources

- Back burning in the discharging auger.

Troubleshooting:

- Use a hand fire extinguisher HLE -see TRVB



DANGER

When message on the back burning occurs in the discharging auger, an immediate alarm the fire service!

4.2. List of the error messages

F01	08:10:11 Boiler 74 C No external resetting	No external resetting.	Indication Nav CLR
F02	08:10:11 Boiler 74 C Flue gas temp. cold	Flue gas temperature is low.	Indication Nav CLR
F03	08:10:11 Boiler 74 C Safety thermostat active	Activated safety thermostat.	Indication Nav CLR
F04	08:10:11 Boiler 74 C Ignition is out of order	Ignition is out of order.	Indication Nav CLR
F05	08:10:11 Boiler 74 C Flue gas tem.sensor def.	Flue gas temperature sensor is defective.	Indication Nav CLR
F06	08:10:11 Boiler 74 C Boiler temp. sensor def.	Boiler temperature sensor is defective.	Indication Nav CLR
F07	08:10:11 Boiler 74 C Cover switch - discharge	Cover on the discharge auger is opened.	Indication Nav CLR
F08	08:10:11 Boiler 74 C Combustion chamber open	Combustion chamber door is opened.	Indication Nav CLR
F09	08:10:11 Boiler 74 C Motor failure - feeding	Motor failure . feeding auger 1K6	Indication Nav CLR
F10	08:10:11 Boiler 74 C Worm screw motor defect	Auger motor defect 1K7	Indication Nav CLR
F11	08:10:11 Boiler 74 C Motor failure, silo discharge	Motor failure, silo discharge 1 F2 and 1F5.	Indication Nav CLR
F12	08:10:11 Boiler 74 C Motor failure Ë ash removal	Motor failure . ash removal 1K3	Indication Nav CLR
F13	08:10:11 Boiler 74 C Motor failure, heat ex. clean	Motor failure . heat exchanger cleaning 1K30	Indication Nav CLR
F14	08:10:11 Boiler 74 C Star wheel feeder blocked	Cell wheel is blocked.	Indication Nav CLR
F15	08:10:11 Boiler 74 C Bunker temp. sensor def.	Fuel store temperature sensor defective. (Monitoring of the temperature in store room.)	Indication Nav CLR
F16	08:10:11 Boiler 74 C Bunker temp. too high	The fuel store inner sensor indicates the temperature over 70 °C . TRVB TÜB.	Indication Nav CLR

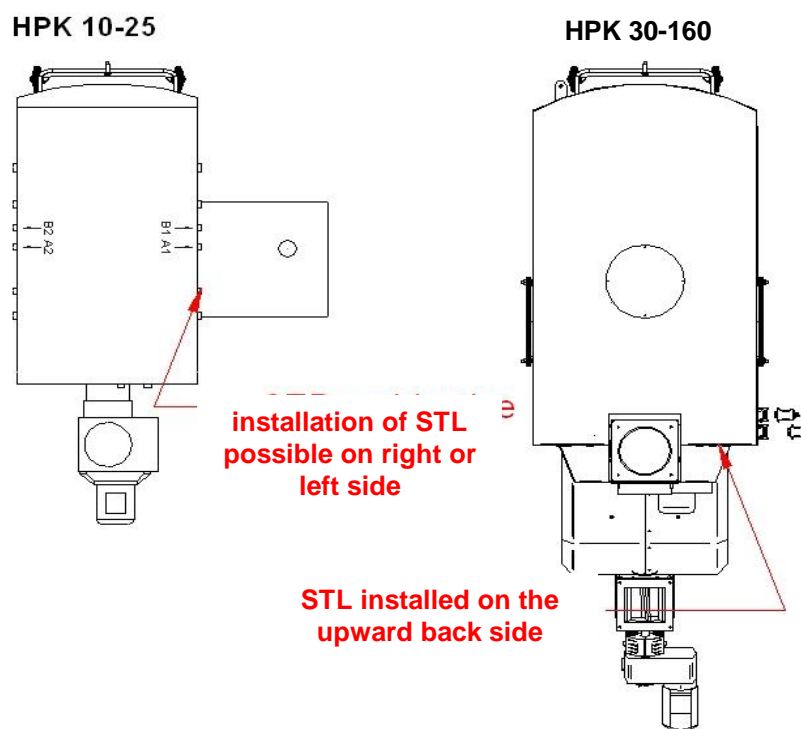
4.3. Frequent failures of the heating boiler

4.3.1. Automatic switch off by safety temperature limiter (STL)

STL is an additional safety device installed for the boiler overheating prevention. Safety temperature limiter switches off the facility as soon as the heating boiler temperature rises to 100° C. That means, the fuel supply is disconnected and the blowers switched off.

Should a STL indicate a message, it must be manually unlocked, as soon as the boiler temperature drops under 70 °C. Then the boiler may be started again. For this purpose the screw shutter applied in a socket mounted on the boiler's back side must be removed, followed by pressing a reset button. Finally the shutter is screwed on again.

The failure message must be confirmed on the operational part of the heating boiler control system.



4.3.2. Safety heat exchanger for thermic outlet security

In case of the equipment overheating over ca. 95 °C the thermic valve regulates the outlet into the cold water inlet supplying a flow of cold water into the safety heat exchanger until the boiler temperature drops at the required level (set point temperature).

The hot vented boiler water must be deflected in a manner fully safe for the user.



The user is legally bound to let test the safety heat exchange device performance by a specialist once a year.

Thermic outlet security

Press test button . water must flow into the outlet funnel. Upon releasing, it must be again well sealed. If the outlet flow is only insignificant, the thermic outlet securing or security battery is coated with calcic layer that must be removed (e.g. by pumping the diluted formic acid in it). If this procedure is not sufficient, the sealing and valve seating must be thoroughly cleaned.

Safety valve

The safety valves are provided with a test button . this must be pressed. If the valve function is correct, the water gets out. Upon release of the test button the valve must be again sealed without any leakage.

4.3.3. Thermic outlet security device indicated a message

Test all the pumps, whether they are running when necessary, manual switching on. Check up the heating boiler temperature and set up a lower temperature value, if necessary.

4.3.4. Power failure

Upon the power supply renewal, the facility performance shall continue automatically. The latest set up program starts from its beginning; it means that the automatic operation will start by ignition.

4.3.5. Insufficient cleaning

Should the cleaning be neglected, there is a danger that performance problems arise, the combustion is bad, i.e. the heating efficiency is lower and costs higher. Only a well cleaned heating boiler may assure its higher efficiency. When ash is not regularly disposed, the flue gases duct becomes choked . resulting in a worse combustion process.

5. Maintenance

5.1. General

Regular cleaning of the facility extends its service life. In addition, it is one of the prerequisites of a perfect operation of equipment. That is why a regular cleaning is inevitable.

The operation failures caused by an insufficient or inadequate maintenance may result in high repair costs and long downtimes of the facility. In these cases there is no guarantee claim. Therefore, a regular maintenance is unavoidable.



NOTICE

GILLES company does not take over liabilities for any injuries suffered by person and material damages caused by improper, careless or inadequate maintenance, repair or servicing works, as well as for any such damages caused by persons not belonging to the service staff of the GILLES company, or its authorised representatives.

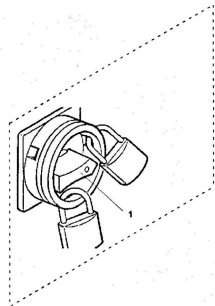
All the equipment parts were so designed that there is a guarantee of their performance requiring fast no maintenance. Any safety and protective parts if removed during an eventual maintenance must be immediately installed on their place, and their proper functioning must be checked up.

Only original spare parts may be used for replacing of some machine parts. The disassembled parts must be kept for later use, or sent for their possible repair to the GILLES company centre.

5.1. Requirement on personnel

Personnel dealing with maintenance repair or service works must be well familiar with the machine and respective documentation.

Only corresponding specialists are entitled to carry out maintenance, repair and service works, and disassemble machine or equipment parts



5.2. Safety

Please pay attention to the safety notices in chapter 2 - SAFETY.

Regular cleaning and maintenance preserve and assure safety of the operation service and problem loss performance of your GILLES wood chips heating facility.

Switch off the facility no later than 2 hours before starting your cleaning or maintenance works!

Before service and repair works, the facility must be switched off by turning the main switch on the control panel to the position OFF. Assure the main switch against its unintentional switching on by a locking device!

5.3. Heating facility examination and maintenance

The facility is designed so that requires practically no maintenance.

The owner / user of a wood heating system must observe local rules, law and ordinances governing the operation of these heating systems!

In Austria sTechnical directives on fire prevention . TRVB H 118 apply, issued by the federal fire union, as well as other regional rules, ordinances and regulations.

The user is obliged to operate the heating system in accordance with the operation mode prescribed by the manufacturer. No deviation from these rules is allowable.

Technical safety equipment (e.g. burn back cell wheel) must be tested when starting the heating season and after any failure, in order to make certain of its perfect performance (Annex 2).

The automatic wood heating facilities of the energy performance of 150 kW and lower must be maintained regularly every 3 years and after any failure (facility installer).

In case of a failure on any of the safety equipment, the automatic operation of the heating facility is blocked.

Any leakages on the supply channels or feeding conveyors must be remedied immediately.

It is necessary to check up the level of the fuel material in store room regularly. The store room must be fulfilled in time, in order to assure such a permanent quantity of fuel that duly covers the conveying parts of discharging system.

The storage of inflammable materials in the fuel store is forbidden.

During the heating season or working period, the operator must carry out regular week visual examination and month inspections of the facility way of operation and performance. In accordance with TRVB H 118, any examinations, cleanings. as well as any finding must be recorded in the Inspection book



WARNING

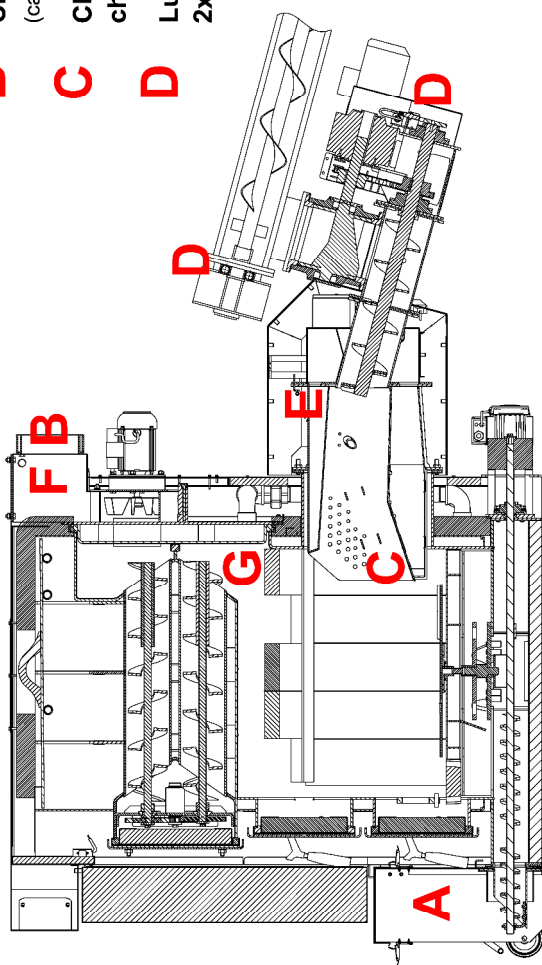
Any service and cleaning works may be carried out only when the main switch is OFF !

5.4. Maintenance plan

SERVICING AND MAINTENANCE PLAN GILLES HPK-RA 15 - 1C W (Wood chip)



Before carrying out service or maintenance work disconnect and isolate power supply.



A Empty ash box (when 2/3 full)

B Clean flue, flue connection and draught fan (caution, take care not to damage exhaust gas probe) 2x annually

C Clean combustion tray and combustion chamber, 2x annually

D Lubricate flange bearings and chains, 2x annually

E Clean ignition air tube, 2x annually

F Air bleed screw (check system pressure)

G Remove ash from above combustion chamber (and each time the ash box is emptied).

- Detailed servicing information can be found in the Assembly Guide and Operator's Manual.
- The system must be switched off 2 hours before the storage room is refilled.
- Do not overfill when using logs or solid wood for emergency operation (up to 10 kg = 40 kW) and ensure that the heat generated is dispersed through the heating system.
- Should you require remote maintenance, the modem for this must be connected to an analogue phone line.
- Foreign bodies (nails, stones, slag etc.) should be removed weekly from the combustion chamber.

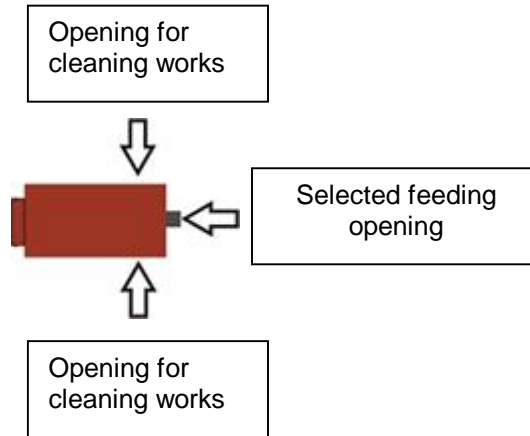
When filling fuel store, to protect sweep collector from damage, first fill to 0.5M depth only, then run collection system manually until collector arms are fully retracted. Now fill store up to 1M depth and run for a further 10 seconds before filling rest of store / container.

Arrange an appointment with our Customer Service Department for servicing and maintenance work to be carried out.



You may make these works yourself. Nevertheless, there is a possibility to agree a term with our customer service and order the service works. These services are paid and thus there is not guarantee for their provision.

You may also request your qualified chimneyer that can take over these service works from your shoulders as well!



NOTICE

In addition, the examinations according to the rules of TRVB 118 Annex 2 are performed and recorded. The control book annexed.

6. Disposal of machine

To the end of its servicing lifetime the machine shall be professionally disassembled and disposed in accordance with the national rules. During the machine liquidation, please observe the following remarks:

- ~ recycle the metal parts,
- ~ recycle the synthetical materials,
- ~ dispose the electrical and electrical parts as special waste materials.

Recommendation: Contact some company . specialist in the field of materials disposal.



7. Customer service / spare parts

7.1. Customer service

For any maintenance, repair or service works do not hesitate to contact professionals of GILLES company. These works require special skills and knowledge not described in this service manual.

Should a special case arise, you have to exchange some parts yourselves, pay attention to all the safety rules.

Contacts to our customer services:

Monday to Friday: Service division of the GILLES GmbH	 +43 / 7612 / 737 60-0
Weekends and days off: Hotline-Service number	 +43 / 664 / 133 93 23

GILLES Energie- und Umwelttechnik GmbH & Co KG
 Koaserbauer Str. 16
 A-4810 Gmunden
 Tel. +43 - 7612 - 737600
 Fax +43 - 7612 - 73760-17
www.gilles.at
office@gilles.at

Or contact our authorised representative partner:
See Part 1 Ę General Ę Service partners

7.2. Spare parts

You will get original spare parts at:

GILLES Energie- und Umwelttechnik GmbH & Co KG
 Koaserbauer Str. 16
 A-4810 Gmunden
 Tel. +43 - 7612 - 737600
 Fax +43 - 7612 - 73760-17
www.gilles.at
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or by our authorised representative partner
See Part 1 Ę General Ę Service partners

8. GUARANTEE

8.1. Guarantee provisions

In principle, our sGeneral sales and delivery terms and conditions%are in force. These terms shall be given to the customer's disposal no later than on the contract conclusion.

The warranty provisions and guarantee regulations are specified in Part 2 . Safety, as well as in the delivered guarantee lists.

Any warranty a guarantee claims related with the personal or material damages are excluded, if at least one of the following points occurs:

- Installation and operations instruction are not observed,
- putting into operation and repair carried out by non authorised companies,
- improper installation, putting into operation, insufficient operation handling and servicing,
- absence of the documentation on putting the machine into operation and its service examinations,
- machine operation using defect safety equipment or equipment installed in inadequate manner, or using non-functional safety and protective equipment,
- neglecting of the remarks on transportation, instillation, putting into operation and maintenance of the machine,
- unwarranted changes of the machine (e.g. replacement of an engine by another . more efficient, changing of parts, etc.),
- insufficient examinations of parts being subject to wear and tear,
- unsound repairs,
- damages caused by influence of foreign materials, or %orce majeure+(water, fire, etc.),
- lack of energy or water,
- absence of a device disconnecting the backward running.

In case of any technical questions, do not hesitate to contact us on this address:

GILLES Energie- und Umwelttechnik GmbH & Co KG
 Koaserbauer Str. 16
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 Fax +43 - 7612 - 73760-17
www.gilles.at
office@gilles.at

8.2. Resale of machine

In case of resale, the owner of the machine shall be bound to deliver the operation instructions to the buyer. In addition, the seller must inform the buyer about his obligation to study the operation instruction thoroughly and understand it, before putting the machine into operation.

Please inform us of the buyer's address without any delay in case you have resold the machine, in order to explain possible amendments in safety measures.