

GUARDIAN FIRE TESTING LABORATORIES, INC.

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July 16, 2021

EJ-7-16-21-Z

Jovgen Sopka
President, Sopka Inc.
4181 Plymouth Road
Cleveland, Ohio 44109

Re: Engineering Judgement regarding installation of a IKL Livnica-Guca heat system to the Guliver cook stove without compromising the fire safety of the cook stove

Dear Mr. Sopka:

Scope: The installation of a supplemental IKL Livnica-Guca water coil heat system to the Guliver cook stove will not negatively affect the safe operation of the cook stove.

Guardian's data review included the following documentation:

1. The IKL Livnica-Guca supplemental installation manual detailing the procedure for adding the supplemental water coil (pages 6 to 10 and 14) as an optional heating source to the Guliver cook stove.

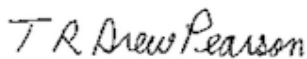
Determination of the IKL Livnica-Guca water coil to the Guliver cook stove.

Based on the data review of the documentation, it has been determined the IKL Livnica-Guca water coil heat system will maintain the safe operation of the Guliver North cook stove. Installation of the water coil must be installed by the manufacturer or by a licensed professional. The licensed professional must follow the manufacturer's installation instructions and must follow local codes.

Therefore, installation of the water coil heat system by the manufacturer or a licensed professional onto the Guliver cook stove will not compromise the fire safety of the cook stove and will NOT void the testing that passed UL1482 and ULC-S627 test standards.

If there are any questions pertaining to the referenced installation instructions, please phone 716-877-2760, Guardian's test laboratory phone number.

Sincerely,



T. R. Drew Pearson
Fire Test Engineer

Guardian Credentials:

Per ASTM E2536, clause 1.4, “Uncertainty” is not applicable to pass/fail or indices test results. The results reported are qualitative rather than quantitative.

Guardian is accredited and meets the requirements of ISO/IEC 17025-2017 as verified by ANAB (ANSI National Accreditation Board). Refer to certificate and the scope of accreditation, AT-1247.

Guardian is accredited as a Third-Party Inspection Agency per ISO 17020 through ANAB, Certificate Number AI-1548.

N.B.: ANAB is a signatory member of the International Laboratory Accreditation Cooperation’s (ILAC) Mutual Recognition Arrangement (MRA) and the Asian Pacific Laboratory Accreditation Cooperation’s (APLAC) MRA. ANAB’s accreditation of Guardian ensures global recognition for the Guardian mark.

Guardian is accredited as a Product Certification Body (Product Listing & Labeling) per ISO 17065 by ANAB, Accreditation ID# 1028. ANAB is a signatory member of the International Accreditation Forum’s Mutual Lateral Arrangement (MLA).

Accreditations by ANAB ensures global recognition of the Guardian mark.

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Picture 3

Connect the boiler to install central heating

Thermo Gulliver has a boiler with heat exchanger tube made of quality boiler steel. Connections for the water are pipes of 1", made from the same material.

The product is intended for heating of residential premises, and food preparation.

For water supply and drainage into the system of storey (central) heating is provided with the connections on the boiler - 1". Storey stove can be installed into indoor or outdoor central heating system, as shown in pictures 4, 5 and 6. For a closed system there two modes of binding, depending on the position of the pump.

An integral part of the installation for thermal discharge valve that serves as termofuse from possible overheating. It is recommended valve for heat discharge Caleffi 544 1/2 shown in Picture 3.

Thermal discharge valve with a double effect, brilliantly solves the security problems in heating installations which as a source of heat use furnace, solid fuel stoves and fireplaces. It is a device which has a valve for the heat discharge and drain valve for filling that act simultaneously on command of remote sensors. A device that is connected to the outlet and the power supply (battery charger) when achieve the critical temperature, creates a circulation of cold water in the boiler until the temperature drops below the value at which reacts sensitive element. At that point, at the same time is closing of outlet

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and charge. This device works this way in case of damage the sensitive element.

Note: Thermal fuse is not part of the product and not included with the product. The guarantee storey stove applies only with built-in thermal fuse.

Both ways of installation of closed central heating system is placed closed expansion vessel. Volume of this vessel is determined by the capacity of the boiler where the true ratio is 1kW: 1L. Volume expansion vessel is defined as

$$V = 0.07 \times V_{\text{water}} [l],$$

Where V is the volume of water of water in system.

When installation in an open central heating system expansion vessel must have overflow pipe as shown in Picture 6.

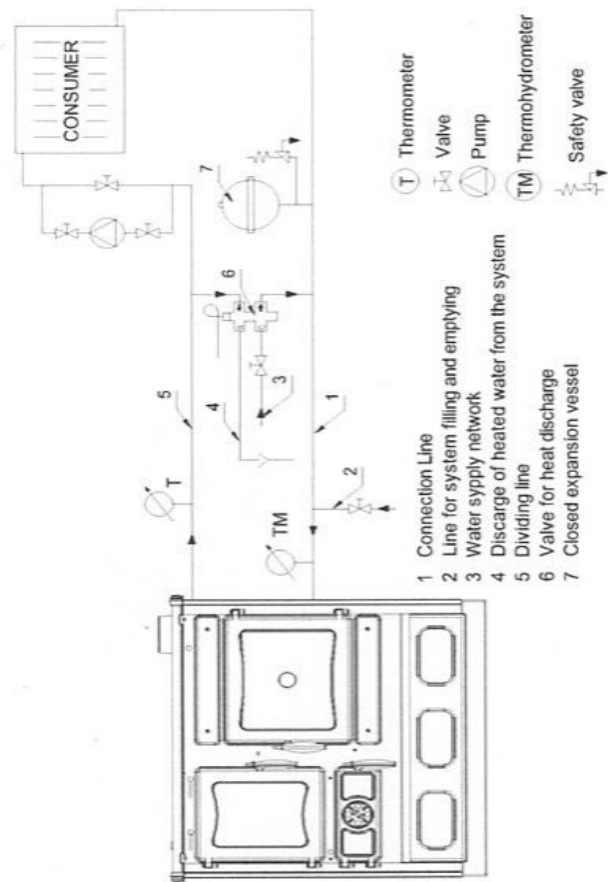
Open expansion vessel is placed vertically above the highest radiator.

Note: The installation and commissioning of the entire system should be entrusted only technician who ensures proper operation of the entire heating system. In the case of poorly designed systems and possible flaws in the execution of works by that person, which in turn can cause malfunction of the stove, full material responsibility bears the person who made the installation of heating, not a manufacturer, or dealer or vendor of stoves.

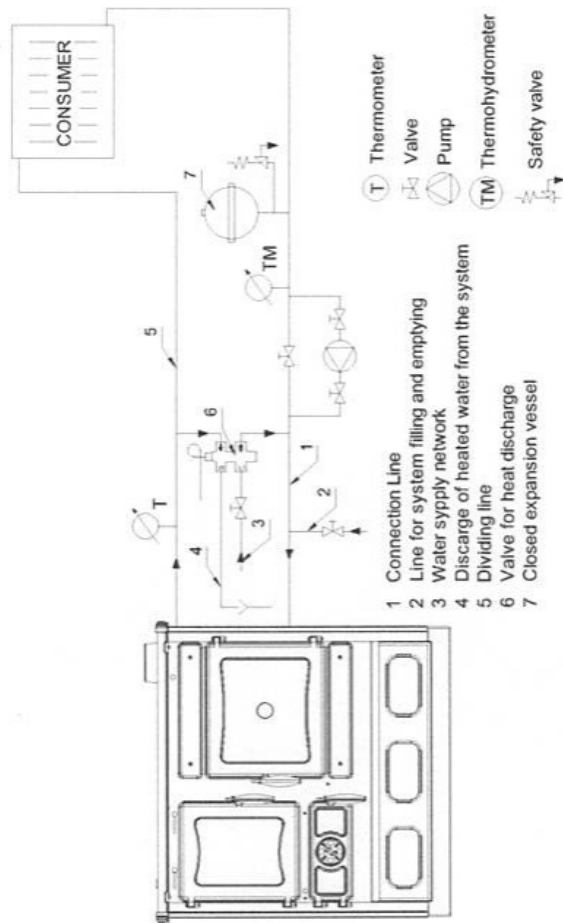
IMPORTANT

- All connections must be securely fastened and sealed. Prior to commissioning, a complete installation shall be tested with water pressure of 2.5 bar.
- When installing the safety valve, pay attention to the direct connection to water supply and sanitation, and also that the valves (faucets) must always be open.
- If using a reinforced hose to connect to the sewer, it must be away from the back of the stove because of the high temperature

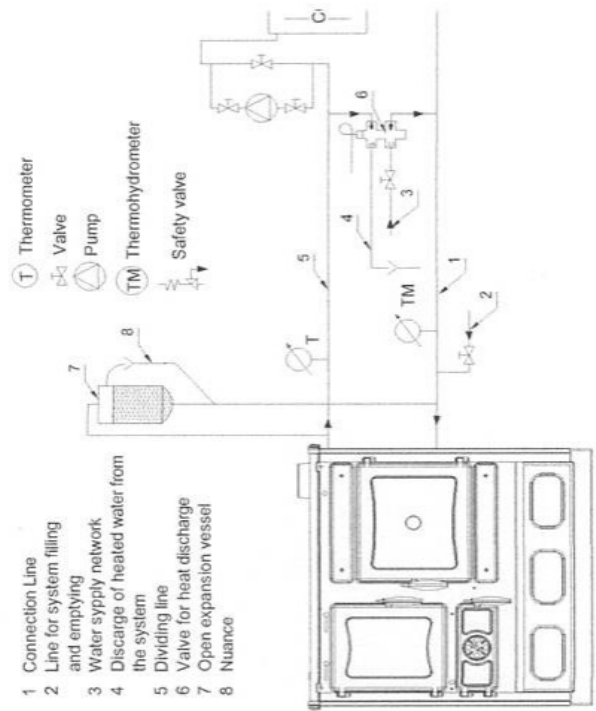
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Picture 4, Scheme of closed system



Picture 5, Scheme of closed system



Picture 6, Scheme of open system

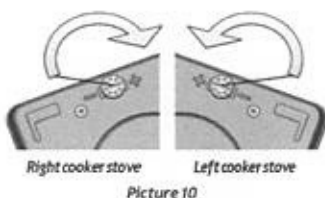
Regulation of the draft



Picture 9

Combustion rate and thus the amount of heat which gives the stove, depends on the amount of combustion air that is brought into the space below grill. Regulation of the amount of air is achieved automatically through the controller of draft Rathgeber placed on the back of the stove (Picture 9), or manually, by turning of the button on the stove frame connected with the draft regulator (Picture 1 position 28).

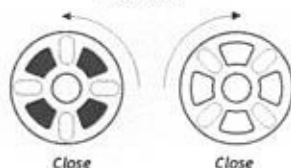
Button turns with extra accessories and has two extreme positions:



Picture 10

1. Turning to the final position in the direction shown in picture. 10. gives a maximum draft;

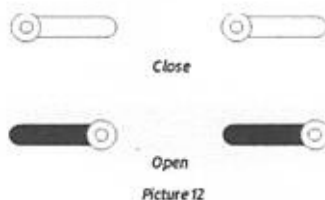
2. Turning to the end position opposite of the direction shown in picture. 10, gives a minimum draft;



Picture 11

Primary air regulator (position. 20) is set in the closed position and it should be kept in this position at all times of work of the stove. When closed, the regulator prevents air intake from the front side below the grille, which automatically regulates the intensity of burning by draft regulator, located on the back side of the stove. If for some reason burning is difficult, due to weather conditions or high humidity fuels (wood, coal), the controller of the primary air can open (Picture. 11).

NOTE: If the primary air regulator is open, the air flow is steady, so that can lead to the overheat the water in the system.



Picture 12

Regulation of the secondary air

The secondary air regulator should be put in the position closed during ignition and held in that position until you establish the operation heating regime. After that, put the regulator into the position opened and hold it in that position during the stove is in operation. The secondary air is used to clean