



Metalna industrija Vranje
Radnička br: 1

SOLID FUEL FLOOR HEATING STOVE

**ALFA 70 ET, ALFA 70 EF,
ALFA 90 HET, ALFA 90 HEF**



INSTALLATION AND MAINTENANCE MANUAL

DATA:

TYPE	ALFA 70ET	ALFA 90HET
Nominal heat output(KW) -for chopped wood/for brown coal briquette	12,05	14,39
Radiant heat output (KW) -for chopped wood/for brown coal briquette	5	6,41
Heat output to water (KW) -for chopped wood/for brown coal briquette	7,5	7,98
Waste gas temperature (°C) -for chopped wood/for brown coal briquette	259/237	223,5/195,5
CO content (O ₂ =13%) -for chopped wood/for brown coal briquette	0,43 / 0,22	0,30 / 0,22
Efficiency:	69/70,6	78,49/77,6
Required chimney draught (Pa)	10	12
Maximum operating pressure (bar)	2.5	2.5
Maximum operating temperature (°C)	90	90
Cook-stove dimensions W xDxH	700x600x850	900x600x850
Oven dimensions W xDxH	330x440x260	460x440x260
Diameter of chimney pot (mm)	120	120
Height from floor to the axis of chimney pot (mm)	690-lateral 430-rear	690-lateral 430-rear
Boiler volume (l)	5.5	5.5
Mass of the product	130	160
Heating volume	120-unisolated 150 isolated	120-unisolated 150 isolated

PURPOSE

Permanent burning solid fuel floor heating stove is used for heating the apartments and individual houses. It is mainly installed as a floor heating stove, but it can also be installed for central heating.

Special characteristics of these ranges-stoves is incorporated pipe snake (copper pipe) which, when connected to thermal valve (Figures 3 and 3a, Item 13) serves as thermal safety device in case of possible overheating the stove – furnace.

Installation of thermal valve in closed central heating system is **COMPULSORY**.

In open central heating system, installation of thermal valve is not compulsory. In order to ensure satisfactory operation of the stove, the user must observe all the requirements from this manual.

Thermal valve is not delivered with stove
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Figure 2

- 1) Firebox door
- 2) Cook-stove lid
- 3) Ash pan door
- 4) Oven door
- 5) Protective cover of cleaning opening
- 6) Fuel drawer
- 7) Flue gas connector

Contents:

1.	MOUNTING TO THE CHIMNEY.....	1
2.	INSTALLATION OF THE STOVE IN WATER HEATING SYSTEM	1
2.1.	OPEN SYSTEM INSTALLATION DIAGRAM.....	1
2.2.	CLOSED SYSTEM INSTALLATION DIAGRAM.....	2
3.	PUTTING INTO OPERATION AND FIRING	2
3.1.	USE OF GRATE IN UPPER POSITION.....	3
3.2.	AUTOMATIC REGULATION	3
3.2.1.	SECONDARY AIR.....	4
3.2.2.	HEATING FLAP	4
4.	FIRE DOOR HANDLE	4
5.	CLEANING AND MAINTENANCE	5
6.	PRESERVING THE STOVE	5

1. MOUNTING TO THE CHIMNEY

Unpack the cook-stove, examine it and familiarize with cook-stove parts and accessories, especially paying attention to the following:

- Door should be properly sealed, as well as lid on heating plate, so as to prevent uncontrolled inlet of air into the cook-stove.
- Power controller, with the use of control button (Figure 5, Item 1), should correctly open and close controller flap.
- Chimney connector should be properly sealed with asbestos band, during moving sideways or backwards, depending on the position in relation to the chimney.

The cook-stove achieves its nominal heating value if the draught in chimney is 10 or 12 Pa, depending on the stove type.

We recommend the following chimney sizes to achieve this draught:

COOK-STOVE DESIGNATION	CHIMNEY HEIGHT			
	6	7	8	9
	DIMENSIONS OF LIGHT AREA			
ALFA 70E	140X140	Ø120	Ø120	Ø120
ALFA 90HE	140X140	140X140	Ø120	Ø120

SPECIAL NOTES

- 1) Connector should be fitted to the chimney in rising manner;
- 2) Chimney pot, flue pipes and chimney must not get narrowed;
- 3) All the joints, as well as the chimney, must be properly sealed, without soot and dirt in flue ways

Proper chimney and fulfillment of other requirements enable seamless functioning of the cook-stove.

Cook-stove can be installed in kitchen block or some other suitable place, thereby taking care that the stove is positioned on incombustible support. If the support is parquet, special sheet metal plate shall be positioned on top of it in order to prevent damage of fire due to careless use.

2. INSTALLATION OF THE STOVE IN WATER HEATING SYSTEM

Stove is primarily intended for floor heating with hot water, but can also be installed as a central heating system according to the regulations for this case in compliance with JUS.M.E7.201 and JUS.M.E7.202. For water supply and discharge from the floor (central) heating system, a connection is planned on the boiler, with R1 diameter, and for cooling water supply, with diameter R ½ (thermal valve connection). In the following paragraphs, installation diagram of the stove will be given in floor heating system.

IMPORTANT!

Stove installation shall be carried out by an expert according to the appropriate design. Stove is constructed so as to enable connection to closed or open heating system. All the connections must be properly sealed and tightened. Before putting into operation, the whole installation should be tested with water under pressure of 2.4 bars.

2.1. OPEN SYSTEM INSTALLATION DIAGRAM

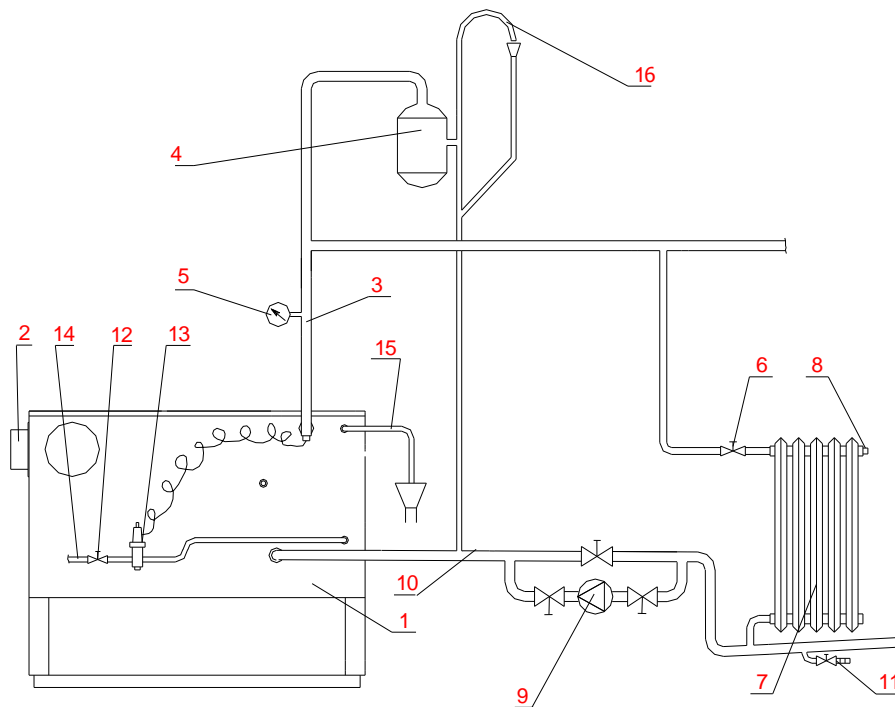


Figure 3

- 1) Boiler
- 2) Flue gas connector

- 3) Distribution line
- 4) Open expansion vessel
- 5) Exhaust pipe
- 6) Radiator valve
- 7) Radiator
- 8) Air vent valve
- 9) Circulation pump
- 10) Return flow
- 11) Charge and discharge cock
- 12) Control valve
- 13) Thermal valve
- 14) Connection line for water supply system
- 15) Hot water discharge
- 16) Pressure gauge

2.2. CLOSED SYSTEM INSTALLATION DIAGRAM

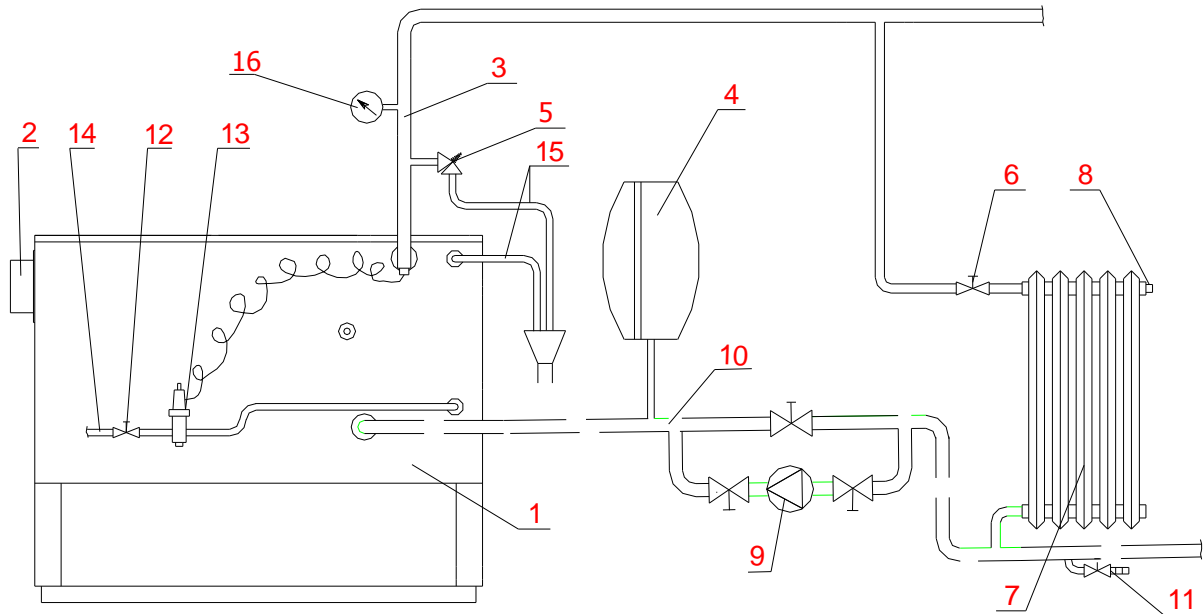


Figure 3a

- 1) Boiler
- 2) Flue gas connector
- 3) Distribution line
- 4) Expansion vessel
- 5) Safety valve
- 6) Radiator valve
- 7) Radiator
- 8) Air vent valve
- 9) Circulation pump
- 10) Return flow
- 11) Charge and discharge cock
- 12) Control valve
- 13) Thermal valve
- 14) Connection line for water supply system
- 15) Hot water discharge
- 16) Pressure gauge

3. PUTTING INTO OPERATION AND FIRING

Before lighting and firing, the whole system of floor (central) heating should be filled with water and properly air vented, while the stove has to be properly connected to the chimney.

When the system is cold, power controller flap located at the rear of the stove should be opened. Butterfly for kindling, located on the plate, should be set in position "0". Later on, when the stove is satisfactorily fired, controller flap will be placed in appropriate position depending on chimney draft and desired heating output, while the kindling butterfly on the plate should be placed in "Z" position.

The stove is fired like all permanent combustion solid fuel stoves. On the grate, paper and finely chopped wood are placed and kindled. When all this is satisfactorily fired, the stove shall be charged with wood or coal, and after half an hour power control should be set at appropriate temperature. Stove charged in such a manner will burn from 1 to 6 hours, depending on

burning intensity in the stove and temperature controller setting. It is not recommendable to put organic waste (plastic bags, bones and like) into the stove because in such case the tar is accumulated on flue way walls which can cause fire. .

After each charging, it is recommended to leave the stove burning for at least half an hour at highest power because in the beginning all evaporable fuel ingredients will be burnt, which is the main cause of condensate formation in the stove.

3.1. USE OF GRATE IN UPPER POSITION

For cooking, baking and heating in transitional periods, upper grate position is used (Figure 4, Item 1) so as to enable the flame to directly reach the plate and thus save expenses of cooking, baking and heating.

Stove will be delivered with grate located in lower position. To move the grate from lower to upper position, you shall do the following:

- Remove the pin (Figure 4, Item 4) which links air supply sheet metal with grate support (Figure 4, Item 2);
- Pull out air supply sheet metal (Figure 4, Item 3) from firebox compartment;
- Push the grate completely backwards and lift the grate upwards through the ash compartment and pull it out from its location. Then lift and pull out the grate support (Figure 4, Item 2);
- Shaking arm is positioned in corresponding slot on the front, and the grate is slightly lifted upwards through ash compartment so that grate tooth fits into the opening on the shaking arm;
- Placing the grate in upper position is carried out in reverse order



Figure 4

- 1) Grate
- 2) Grate support
- 3) Air supply sheet metal
- 4) Pin

3.2. AUTOMATIC REGULATION

Stove heating output is adjusted with output controller which automatically adjusts the moving of controller flap away, depending on the adjustment of control button (Figure 5, Item 1) and the height of water temperature.

Controller button has several positions designated on the stove frame, as follows:

Position of controller button	0	3	4	5	7	9
Water temperature in the stove	Closed controller	30	40	50	70	90

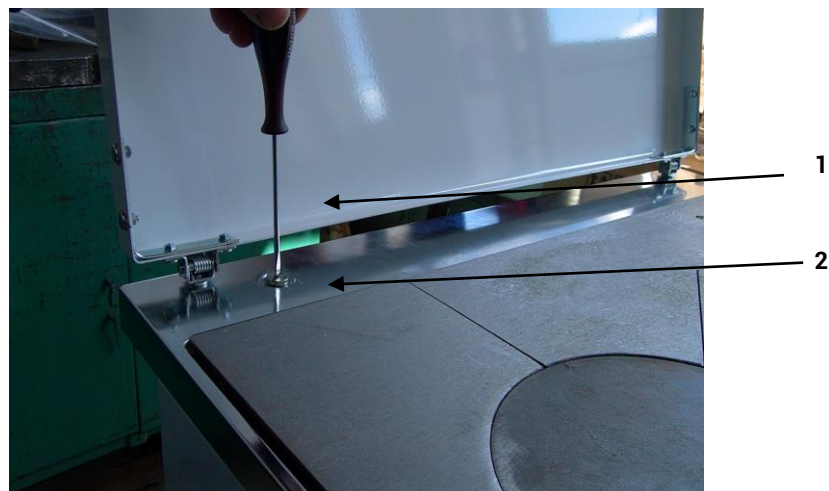


Figure 5

1. Controller button
2. Special key or screwdriver

Air cover (flap) in the output controller system completely controls combustion air supply if other openings are closed.

3.2.1. SECONDARY AIR

Secondary air control is shown in Figure 6. Secondary air is adjusted with rod on the inner side of firebox door. On the inner side of firebox door there is a clear designation 0 – 1. If the rod is moved in the direction of 0, secondary air volume is decreased, while it is increased in the direction 1.

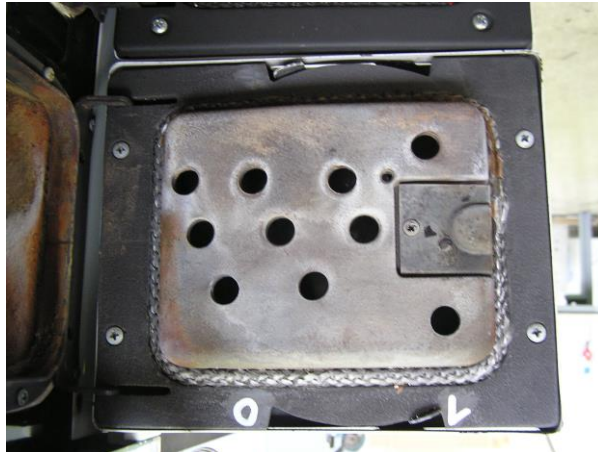


Figure 6

3.2.2. HEATING FLAP

Heating flap is moved when button (Figure 7) located above the oven door is actuated. When this button is not pressed heating flap is open. When the button is not pressed, heating flap is closed. This button is used to shorten the ways of flue gases during firing. Heating flap should be opened only in the stage of lighting the stove. When the stove is satisfactorily fired, after 15 – 20 minutes, the heating flap should be closed. If the flap is not closed, baking in the stove is hindered, water heating in the boiler is weaker and fuel consumption increases.



Figure 7

COOKING, BAKING AND FRYING

During heating season, the stove is primarily used for heating. For that purpose, the grate is placed in lower position. For quicker baking, cooking and frying, wood should be fired.

Kindling butterfly must be closed and heating output control opened. Upon completed baking, cooking and frying, heating output control has to be set in desired position.

4. FIRE DOOR HANDLE

In case that firebox door handle gets too hot, door closing and opening is only possible with a special key from the existing accessories (Figure 8).



Figure 8

5. CLEANING AND MAINTENANCE

Each time before the stove is charged with fuel, stove grate must be cleaned with a spade through ember holder. Ash pan shall be emptied once a day and larger residues (slag) shall be removed by opening the ash pan ember holder door. All stove surfaces being in contact with flue gases shall be regularly maintained and cleaned with a cleaning spade and brush. Clean heating surfaces guarantee economy operation of the stove. Cleaning of the stove is recommended once a month or more often if needed.

Enameled surfaces of the stove and stove frame shall be cleaned with wet cloth with the use of fine detergents. Stove plate shall be periodically cleaned with fine sandpaper, and in case of longer pause, coated with vegetable oil. Any kind of waste shall not be thrown into the stove out of firing period.

It is forbidden to cool the stove with artificial draught and wet the firebox with water.

CLEANING OPENING

Behind the protective cover of cleaning opening, there is a cover (Figure 9). It is fixed on the stove front with one butterfly screw and must be removed in order to clean the stove. Before it is again fixed with screws, sealing braid located at the cover should be checked for good sealing and, if needed, replaced.



Figure 9

6. PRESERVING THE STOVE

Upon completion of firing period, the stove should be cleaned from ashes and soot. Water shall be discharged only if some repair is needed to be carried out on the facility. If the facility is not used in heating season, facility should be filled with a certain quantity of some anti-freezing liquid or water should be discharged from the facility in order to prevent freezing.

HOT WATER PREPARATION

In the stove type "KVŠ-90E", add-in water boiler is incorporated which is used for hot water preparation. gal regulations.