Manual and Installation book of boiler

ULTIMA II 8-24 kW

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1) Advantages of ULTIMA II

- ✓ Wide range of power: 8- 24kW
- ✓ Down combustion provides burning wood up to 6-9 hours
- ✓ Low emission pollution
- ✓ Iron cast grill
- ✓ Small and compact dimensions
- ✓ Big revisions doors provide easy cleaning.
- ✓ Efficiency >80%
- ✓ Possibility Pellets burner connection or fan with electronic controller (to support false chimney's under pressure
- ✓ Very reliable quality/price proportion.

2) Short description

Ultima boilers are intended for users who seek cheap and multi-purpose source of heat. Owing to the construction of the boiler with an upper combustion chamber, the device can use hard coal, wood and an admixture of coke.
The effective heating area is between 80 and 300 m^2 depending on the boiler power. The compact size and the ease of obtaining the desired temperature are the reasons why Ultima can serve as both primary and secondary source of heat. Mechanical grate regulator allows for control of the boiler temperature with no need for electricity. The boiler has a 25-year history of manufacture. Ultima boilers enjoy popularity on Hungarian, Lithuanian, Latvian and Romanian markets.

3) Technical data

Type	*Unit*	*Ultima 8*	*Ultima 16*	*Ultima 24*
Number of cast iron section	[pcs]	***Steel boiler***	***Steel boiler***	***Steel boiler***
Fuel		wood / coal		
Nominal output - wood / coal	[kW]	8kW / 10kW	16kW / 20kW	24kW / 30kW
Max. Test Pressure	bar	5		
Max. working pressure	bar	2		
Max. Water supply temp.	ºC	90	90	90
Min. Water return temp.	ºC	50	50	50
Fuel consumption - wood / coal	[kg/hod]			
Efficiency - wood / coal	[%]	80 / 81	80 / 81	80 / 81
Min. required chimney draught	[Pa]	15	20	20-25
Recommended Height of the chimney	m	8	8	8
Recommended chimney's Intersection	cm^2	400	400	400
Dimensions of filling hole - w x h	[mm]	230 x 190	290 x 215	340 x 215
Volume of combustion chamber	m^3	0,03	0,06	0,07
Volume of HW in system	[l]	55	65	75
Chimney diameter	[mm]	160	160	160
Weight	[kg]	120	190	220
Water inlet / outlet	"	R 1½"	R 1½"	R 1½"
Water release (drain)	"	R ½"	R ½"	R ½"
Max. Cooling loop's cold water pressure	bar	2		

3.1) Structure of the boiler:

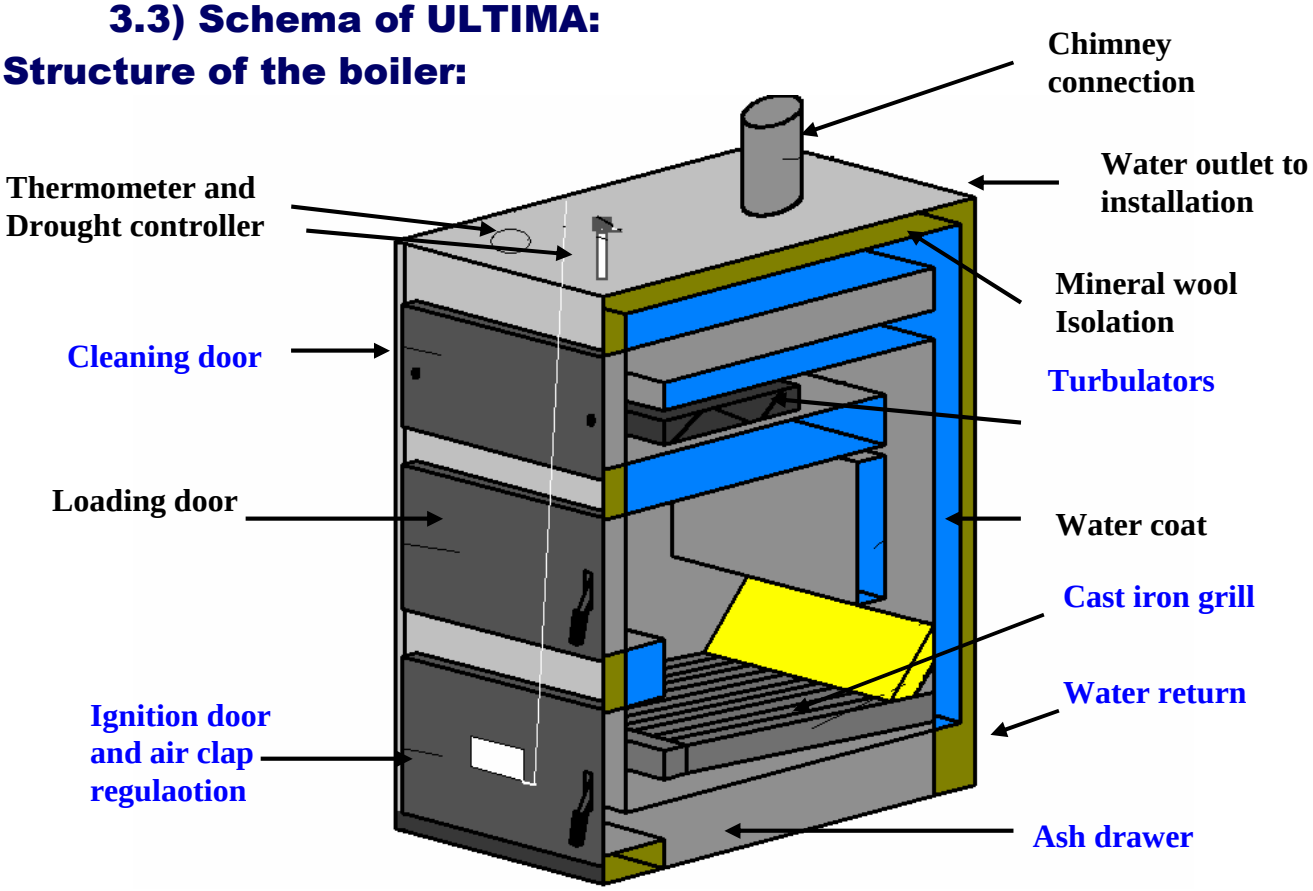
Ultima is typical solid fuel boiler with down cobustion system. Two-pass heat exchanger is made from special steel.
Ultima is delivered with isolation, thermometer and Thermo-regulator.

3.2) Accessories:

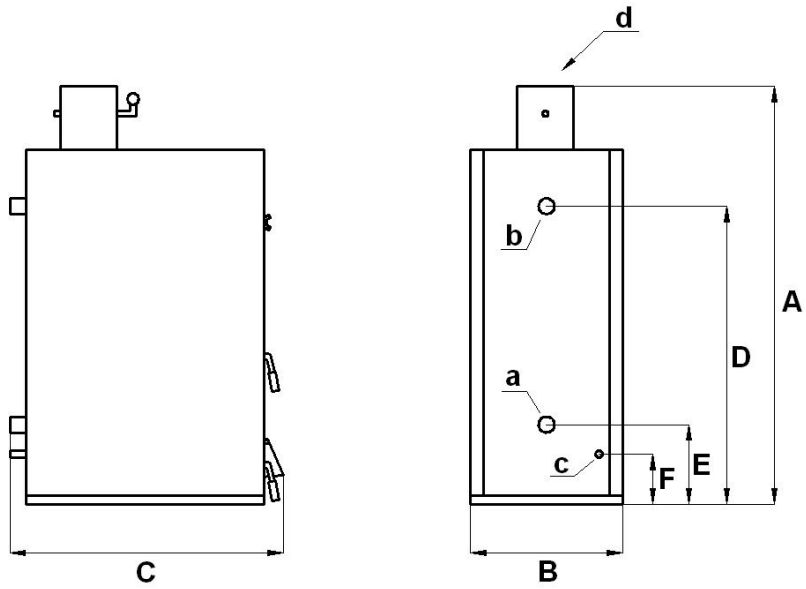
- ✓ Three way mixing valve
- ✓ Accumulation tank
- ✓ Cooling Loop (safety spiral) and thermical opening valve 95ºC

3.3) Schema of ULTIMA:

Structure of the boiler:

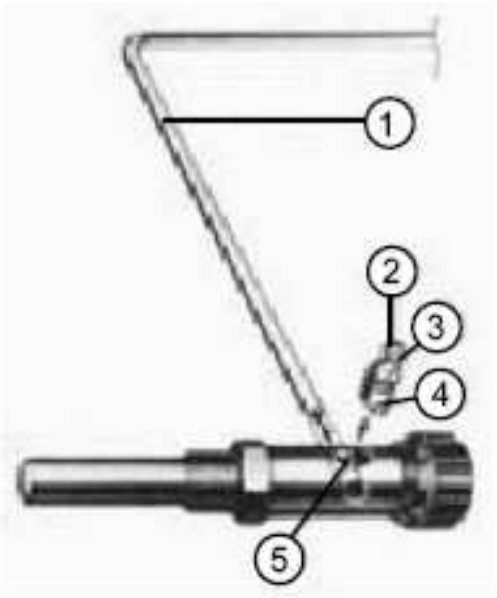


3.4) Dimensions of Ultima II

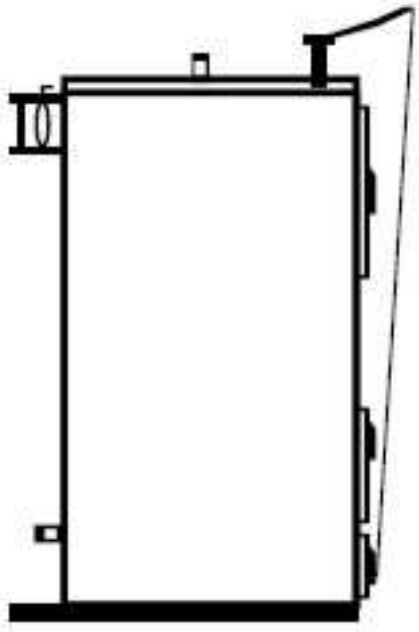


Model	8	16	24
A	900	1140	1140
B	440	455	640
C	630	715	715
D	720	905	905
E	145	145	180
F	105	105	140
a	1 1/2"	11/2"	1 1/2"
b	1 1/2"	1 1/2"	1 1/2"
c	1/2"	1/2"	1/2"
d	140	160	160

3.5) Mechanical regulation:



1) lever stick
2) hexagonal screw
3) articulated element
4) groove
5) slot



4) Fuel

- ✓ pit-coal type 31 and 32 assortment nut O I and O II
- ✓ pea coal Gk
- ✓ coal-fines MI
- ✓ substitutionaly wood (humidity up to 20%)

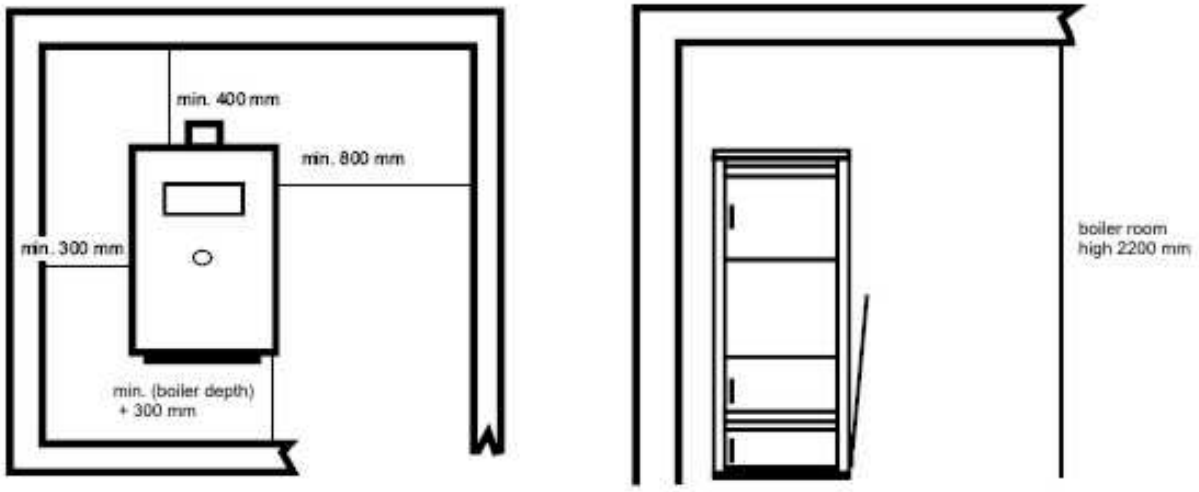
5) System

5.1) Standards

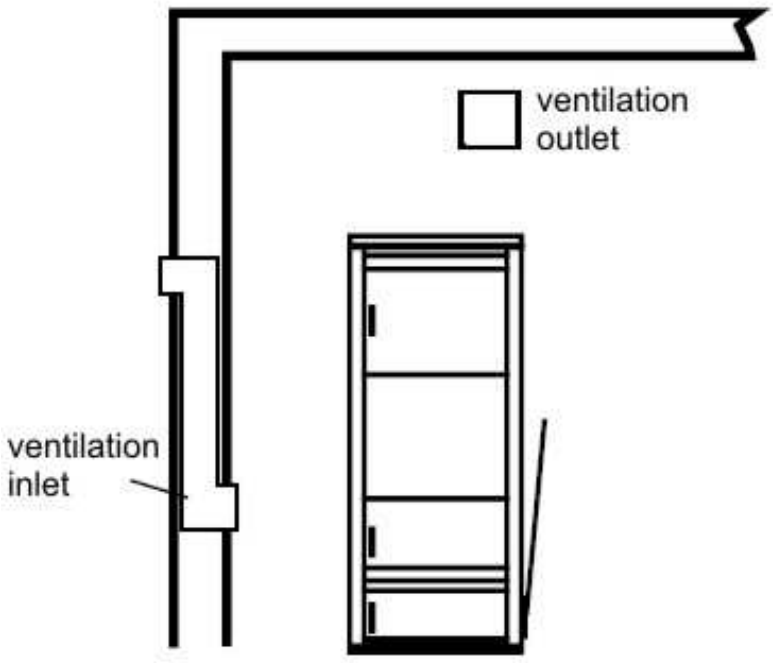
- Heating System – during installation and operation of the boiler it is very important to keep safe distance from the inflammable materials. The boiler is allowed to work only in open type heating systems!
- Chimney – It must be done with respect to current norms and regulations. Due boiler gasses temperature 90-100 C it is obligatory to put the INOX or other material tubes into the chimney. Required chimney draught is 0,1 – 0,2 mbar. Installation according to ADJ does entail some testing of the chimney, which may be carried out by a sweep
- Important sources of guidance installers: 98/37/EEG; 89/336/EEG; 73/23/EEG; EN 55014-1, 1993 /A1, 1997; EN 55014-1; EN 55014-2 C1 1998; EN 61000-3-2; EN 61000-4-2, -3-4-5-6-11, Level2; EN 50165; EN 50165 C1; EN 60335-1; EN 303-5; EN 12809; EN 13394

5.2) Localization of the boiler:

- Placing on flammable foundation.
- place the boiler on non-flammable and thermal insulating pad which should protrude not less than 20 mm outside boiler's dimensions;
- If the boiler is located in the basement it is required to place it on a base raised not lower than 50 mm over floor's level. The boiler and the fuel hopper must stand vertically and can be leveled using the regulating screw in fuel hopper's leg.
- 1 000 mm of free space must be left in front of the boiler.
- Minimal distance between back wall of the boiler and boiler room's wall is 400 mm.
- Minimum distance between free side of the boiler and boiler room's wall is 100 mm.
- The (230V/50Hz) electric socket should be easy to access.



5.3) Ventilation:



Accordantly with regulations each boiler room has to have the ventilation inlet and outlet in aim of assurance of correct boilers work and users safety. Lack of ventilation inlet or it's stocking is the most frequent cause of incorrect work of boiler (the fumidity, condense water, impossibility of higher temperature obtainment).

Ventilation outlet has instead in task of offtake from room used air and harmful gases. In boiler room with chimney with natural draught it is not it allowed to use mechanical ventilation.

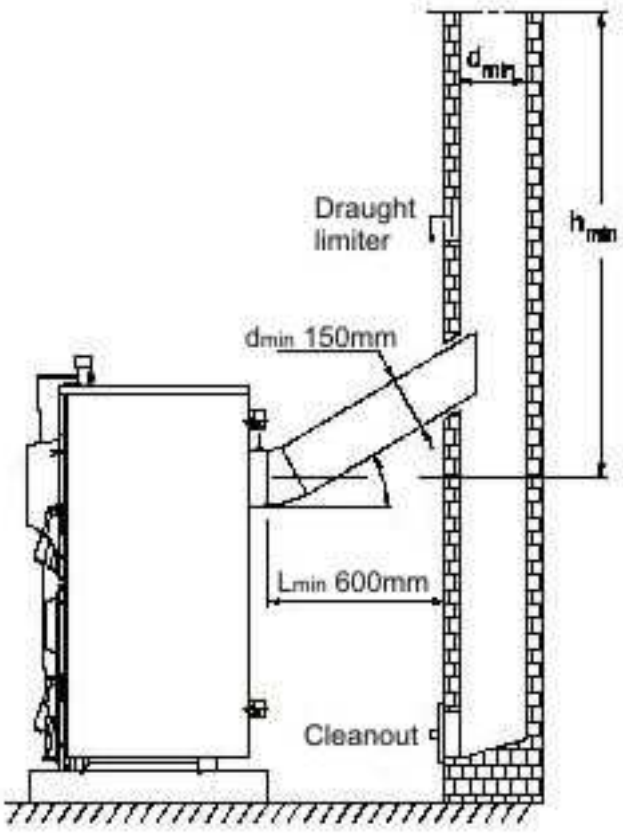
5.3.1) Ventilation inlet

- The channel of ventilation inlet should have dimension of 50 % area of chimney intersection, no fewer than 20 x 20 cm
- Channel should be 1m over floor
- In ventilation hole or in channel should be installed device to control of air flow, however such to forbid decrease of intersection more than to 1/5
- Ventilation duct should be made from incombustible material

5.3.2) Ventilation outlet

- Channel should be made of brick and min. intersection of it should be 25% of chimney intersection however not smaller than 14 x 14 cm
- Inlets can not have any closing it intersection devices
- Spout should be under ceiling of room, led out on roof at least 1,5 m
- Ventilation duct should be made from incombustible material

5.4) Chimney connection:

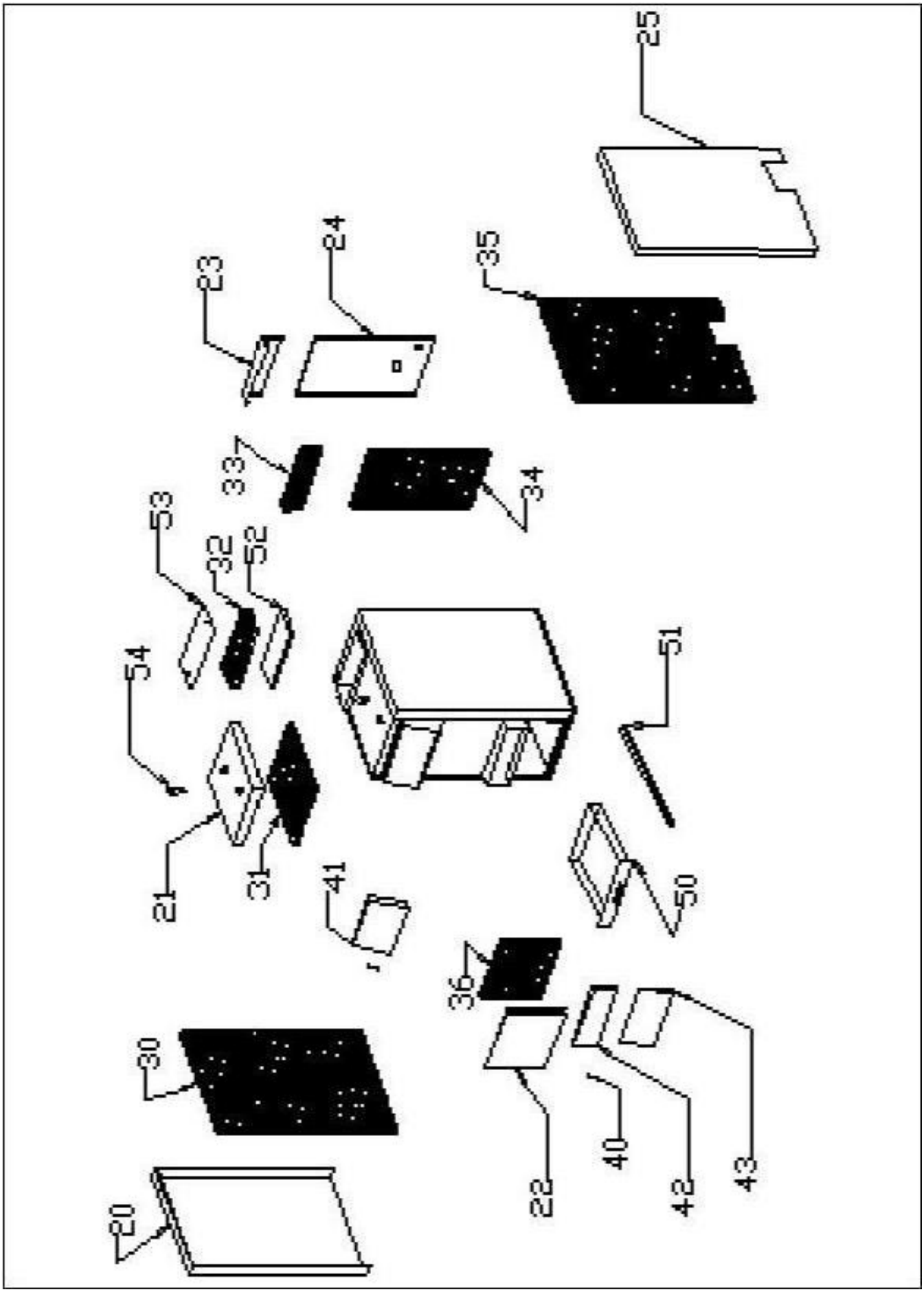


- Flues should be made in accordance with current regulations.
- To reduce the resistances of flow of flue gases the connection with chimney should be led in straight line and possible change of direction should be made with gentle arcs.
- Boilers can be assembled into flues from brick with aligned internal welds
- Combustion duct should begin from floor line
- About 30cm. over floor should be to situated cleanout with tight lock
- Intersection should be

approximate to square with regard on smaller resistances of flue gases flow

- The minimum intersection of chimney amounts 20 x 20 cm
- The dams of brick between duct and wall should not be smaller than 12 cm
- Chimney should be led out over roof
- The location of chimney outlet depends from the degree of roof droop and stages of the flammability. The roof with angle of droop to 12º - the chimneys should stand over roof ridge 0.6m, roof with angle of droop over 12º - the chimneys should stand over roof ridge in case of easily flammable coverings 0,6m however in case of incombustible or difficultly flammable covering, the outlet can occur 0,3m over roof ridge.
- Assembly of draught regulator is recommended, which in case of too big underpressure in chimney opens and suck in the air from the boiler room and does not pull it through boiler causing the temperature uncontrolled rise. Interrupter this should be set on required value in dependence from power of boiler

6) Parts



No.	Part name	Symbol (at Ultima 18kW example)
20	left part of insulation	UL.18kW.I.L.
21	upper part of insulation	UL.18kW.I.G.
22	front part of insulation	UL.18kW.I.P.
23	back part of insulation	UL.18kW.I.T.
24	back lower part of insulation	UL.18kW.I.T.D.
25	right part of insulation	UL.18kW.I.P.
30	wool left side	UL.18kW.W.B.L
31	wool upper	UL.18kW.W.G.
32	wool to brick	UL.18kW.W.C
33	wool back upper	UL.18.kW.W.T.G
34	wool back lower	UL.18.kW.W.T.D.
35	wool right side	UL.18.Kw.W.B.P.
36	wool front	UL.18kW.W.P.
40	door handle	UL.18.kW.K
41	upper doors	UL.18kW.D.G.
42	lower doors	UL.18kW.D.D.
43	ash doors	UL.18kW.D.P.
50	ash drawer	UL.18kW.Sz.P.
51	grill	UL.18kW.R.
52	ceramics	UL.18.kW.Sz.
53	upper cleanout	UL.18.kW.W.G.
54	thermoregulator	UL.18.kW.T.
55	bottom cleanout	UL.18.kW.W.D.

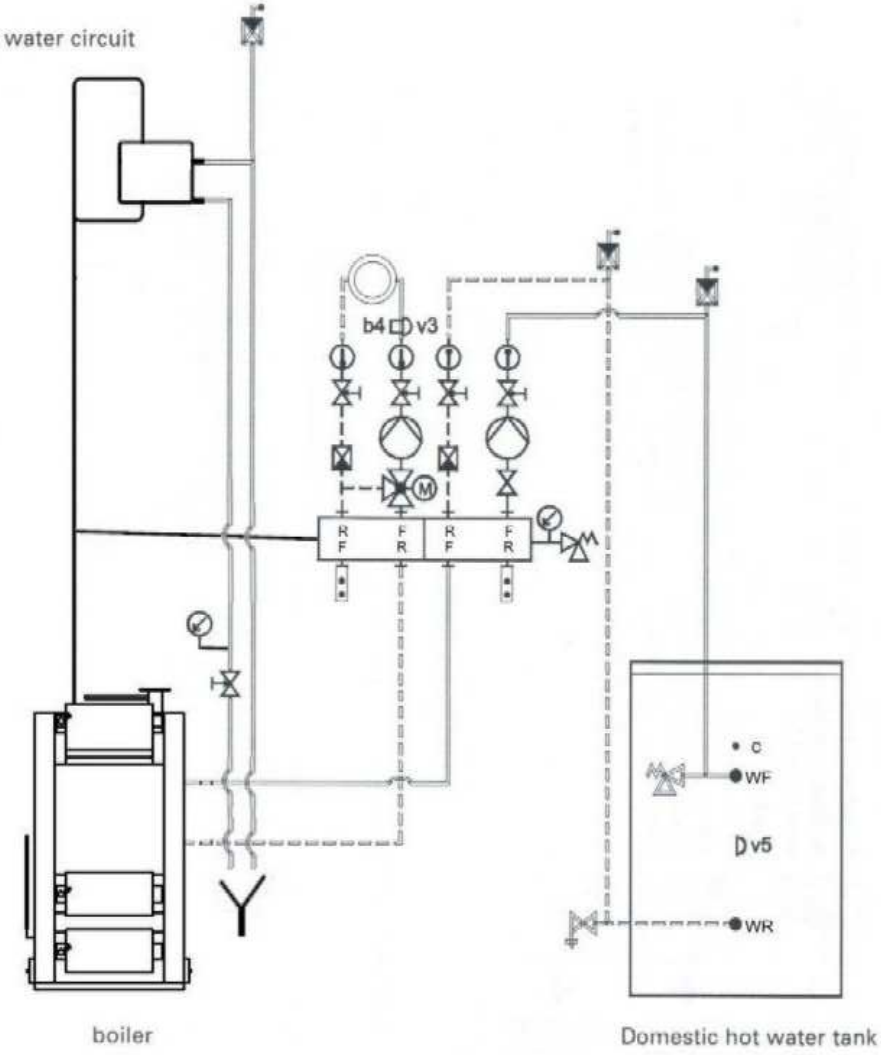
7) Boiler installation systems:

➢ Open system

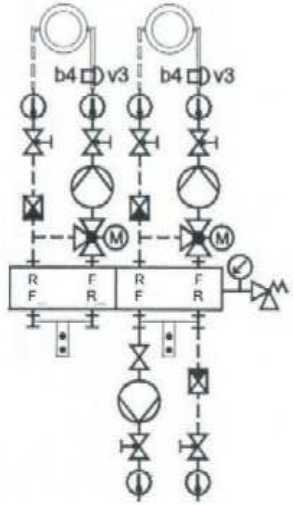
The b bottom of the safety tank must be placed:

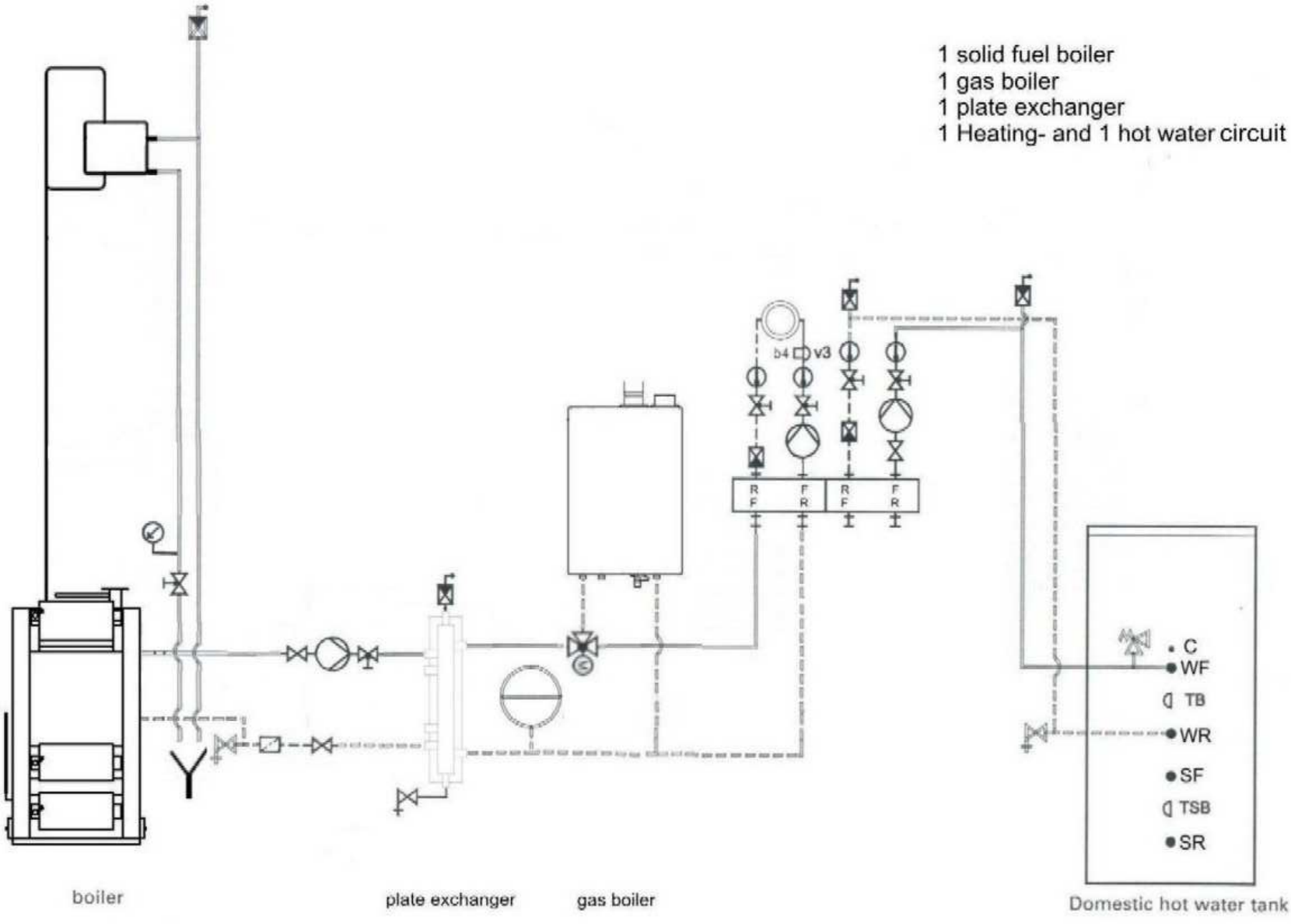
- In natural circulation systems or with pump on heating water H ≥ 0.3 [m] over the highest point of the system.
- In systems with pump installed on return water: H ≤ 0.7Hp [m]

1 boiler
1 heating and 1 hot water circuit



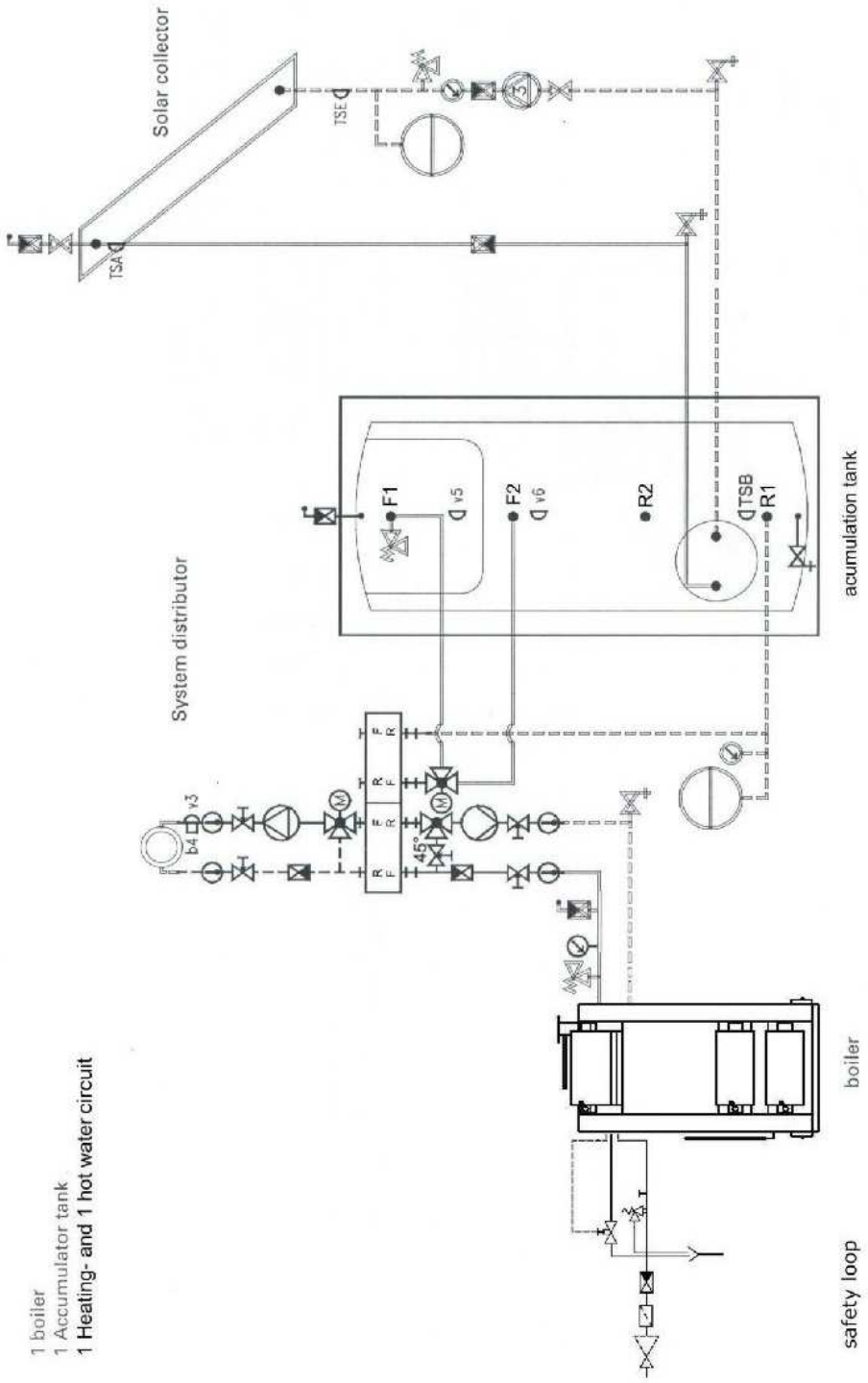
1 boiler
2 heating and 1 hot water circuit



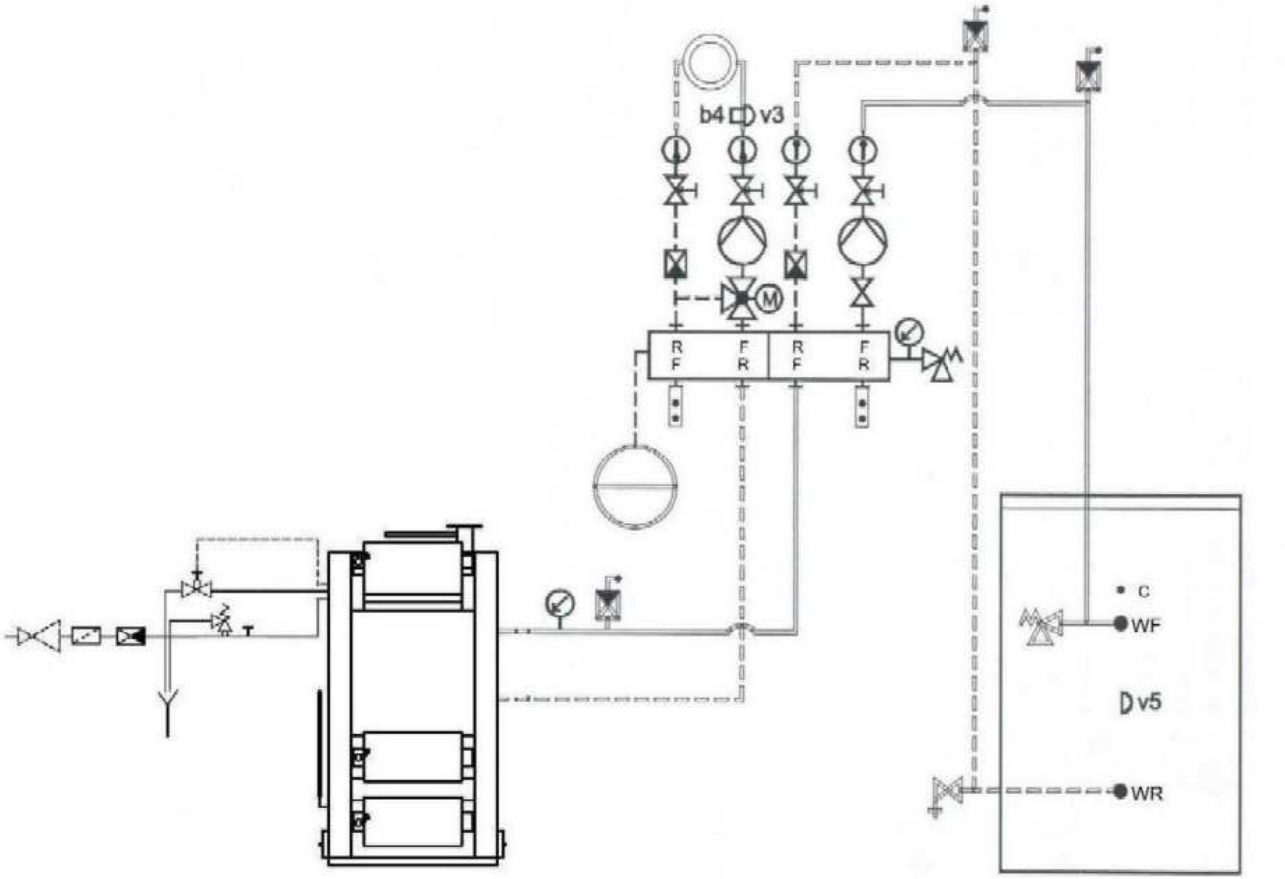

1 solid fuel boiler
1 gas boiler
1 plate exchanger
1 Heating- and 1 hot water circuit
b4
v3
R F
F R
R F
F R
C
WF
TB
WR
SF
TSB
SR
boiler
plate exchanger
gas boiler
Domestic hot water tank

➢ Closed systems

Warning! – To collect boiler in closed system it is important to build in the boiler cooling loop and then make a right connection:



1 boiler
1 heating and 1 hot water circuit

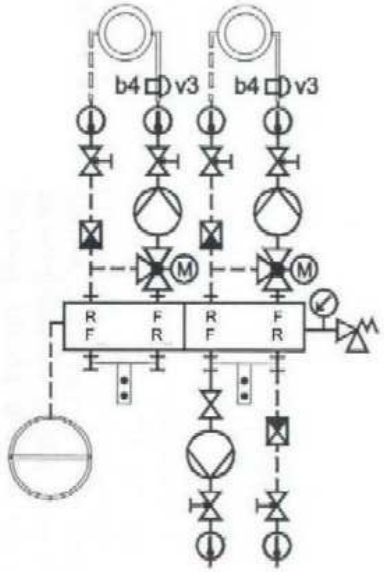


safety loop

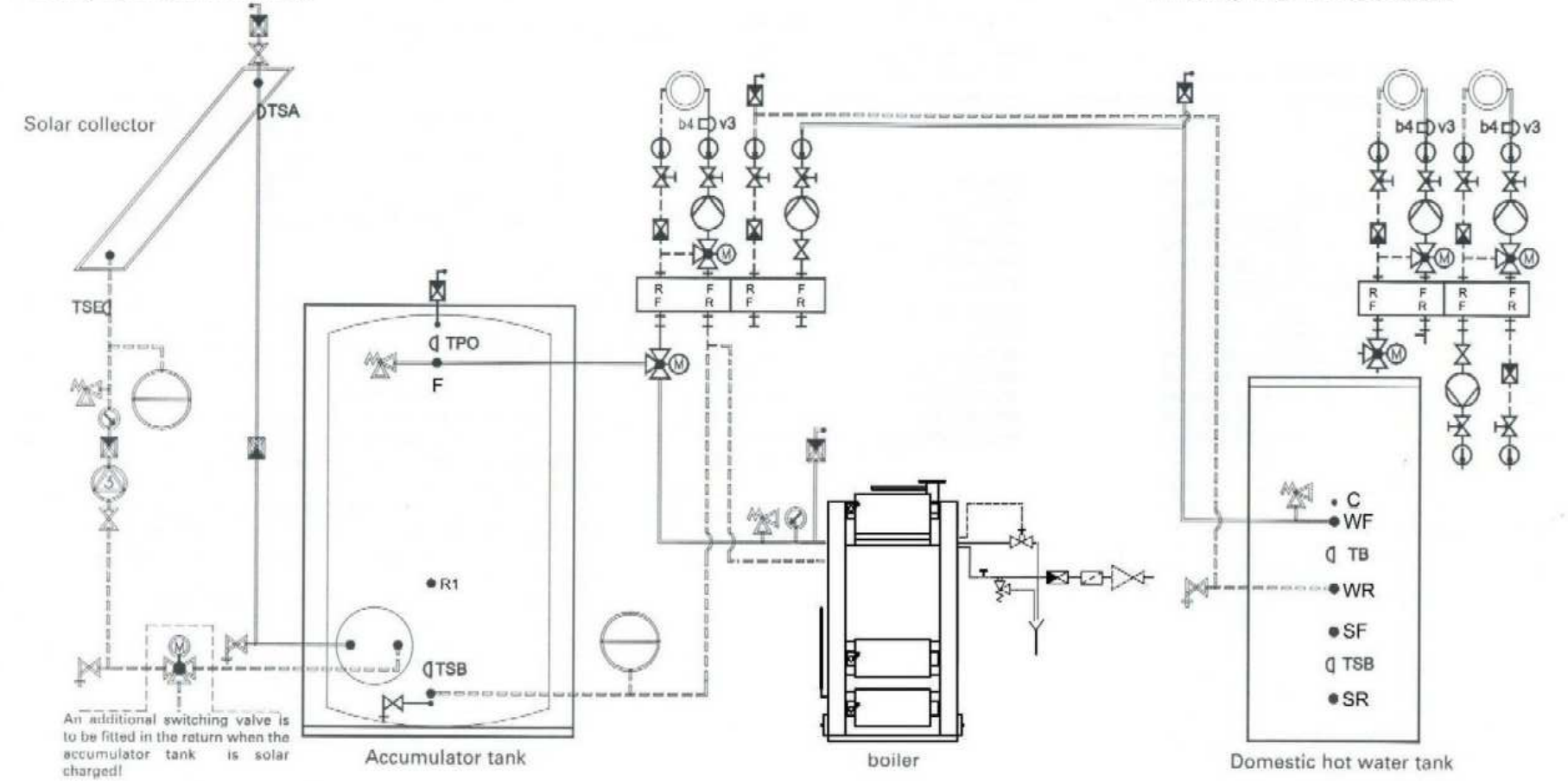
boiler

Domestic hot water tank

1 boiler
2 heating and 1 hot water circuit



1 boiler
1 Accumulator tank
1 Heating- and 1 hot water circuit



1 boiler
1 Accumulator tank
2 Heating- and1 hot water circuit

Installation/Commissioning Certificate

Customer Name _____

Customer Address _____

_____

_____

Installation Address _____

(if Different) _____

_____

_____

Boiler Model_____ Serial Number_____

Burner Model_____ Serial Number_____

Date of Installation_____

Chimney Draught (cold) without fan	
Chimney Draught (cold) with fan	
Chimney draught (hot) without fan	
Flue Gas Temperature (Celcius)	
CO2 Content (%)	
Temperature Outside (Celcuis)	

Commissioning Engineer _____(PRINT NAME)

Customer Signature: _____ Date: _____

Engineer Signature: _____ Date: _____

CUSTOMER COPY

Installation/Commissioning Certificate

Customer Name _____

Customer Address _____

_____

_____

Installation Address _____

(if Different) _____

_____

_____

Boiler Model_____ Serial Number_____

Burner Model_____ Serial Number_____

Date of Installation_____

Chimney Draught (cold) without fan	
Chimney Draught (cold) with fan	
Chimney draught (hot) without fan	
Flue Gas Temperature (Celcius)	
CO2 Content (%)	
Temperature Outside (Celcuis)	

Commissioning Engineer _____(PRINT NAME)

Customer Signature: _____ Date: _____

Engineer Signature: _____ Date: _____

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PRODUCT WARRANTY

It is certified that the boiler has been inspected and tested for leaks under the pressure of 0.2 MPa by the producer and deemed suitable for operation.

Provided the terms of transport, assembly, operation and maintenance of the boiler, contained in the service manual are observed, the producer grants to the purchaser a guarantee for failure-free operation of the device for 24 months from the date of purchase, however no longer than 36 months from the production date,

The liability of the producer under this guarantee is limited to defects arising from causes inherent in the product – i.e. physical defects in the device. Any malfunctions or failures in the boiler's operation resulting from inappropriate quality of the fuel used, or from assembly, choice of device or chimney non-compliant with service manual and applicable standards, or inappropriate chimney draught shall not be covered by this guarantee.

The following boiler's components: varnish coat, cast iron elements and movable elements shall be covered with a 12-month producer's guarantee. The guarantee does not cover operating components such as sealant, gaskets, and chamotte bricks.

The boiler steelwork to include combustion chamber is covered by a 12-year guarantee.

Boiler's burner, automatics and electrical fittings shall be covered with a 24-month guarantee.

Electric connection to the boiler executed by a person without appropriate certification; unauthorised modification in the boiler's construction, failure to conduct annual maintenance, lack of compulsory inspections or annotations on collection by service staff, or failure to settle the amounts due for the boiler's repairs attributable to the customer's fault shall void the guarantee.

Damage to the control system arising from over voltage of the electrical system shall not be subject to guarantee.

Rights under guarantee shall be exercised exclusively upon the seller's sending to the producer of a correctly filled in boiler's operation malfunction card and a copy of the device card. Should the device card be lost, the user shall be responsible for reproducing the card and filling it with appropriate contents.

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BOILER MALFUNCTION APPLICATION FORM

Boiler info:

Application date:	
Type, serial No:	
Purchase date:	
Purchase place:	

User info:

Name, Surname	
Address:	
Phone No:	
Serviceman data:	

Malfunction/Failure Data

Please describe boiler malfunction symptoms:

Please answer several questions below to help us determine the reason of boiler malfunction/failure.
Attention: According to warranty conditions only properly completed form together with a copy of document of purchase is a basis for starting complaint procedure

Form should be completed by boiler authorized serviceman or seller

Mark appropriate box

Boiler installed in heating system:

open type ☐ closed type ☐

Ventilation inlet and outlet in boiler room:

inlet and outlet ☐ none or one of them ☐

Chimney dimensions:

height:
up to 6 m ☐
7-8 m ☐
longer than 8 m ☐
other.....

intersection in cm
smaler than 14x14 ☐
20x20 ☐
bigger than 20x20 ☐
other..... ....

Chimney heating-up during boiler first start up:

yes ☐ no ☐

I hereby declare, I am familiar with warranty conditions on which basis I submit this malfunction and agree to process my personal data during all complaint procedure

.....
Serviceman/Seller signature

.....
Customer signature