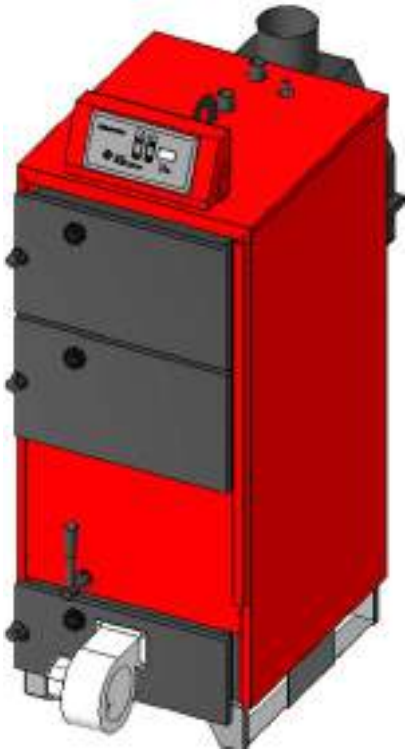
MAKTEK®

INSTALLATION & OPERATION AND MAINTAINENCE MANUAL FOR MKK SERIES SOLID FUEL BOILER

18 MKK - 25 MKK - 40 MKK - 60 MKK - 80 MKK-100 MKK 125 MKK- 150 MKK - 200 MKK - 300 MKK - 400 MKK



CE

TS EN ISO 9001:2015

kk 06
rev. no:0
06.11.19

Please keep
Please read

CONTENT

1.GENERAL WARNING BEFORE OPERATING THE UNIT

- Check the area where the boiler will be installed complies with the technical requirements for installations of waste gas and electrical.

- For the safety and safe use of the electrical installation, make sure that the installation has a true insulated ground and that no phase interferes with the ground.

- Your solid fuel boiler is guaranteed for 2 (two) years against material and manufacturing defects provided that the principles, warnings and standards specified in the operating manual are followed. The manufacturer is not responsible for any malfunctions or damages against explanations in user guide due to misuse or improper use that may occure.

- Do not use boilers other than the intended use. Our boilers are designed to supply hot water (max. 90°C) to the heating system.

- The supply of fresh air must be ensured in the area where the device is installed. It is strictly forbidden to install boilers in enclosed areas where people live.

- Do not operate boilers without water. Water should not be drained from the installation except for the danger of frost and repair. Antifreeze can be added to the installation water at a rate of 15 percent (15%) to prevent frost.

- Return and flow water temperature difference should not be more than 20°C while the boiler is operating.

- Water containing high amount of lime is not suitable for boiler and plumbing. In such cases, a water softening device should be used. The failures, that may occur as a result of narrowing or clogging of the water passages due to lime, exclude boiler's warranty.

- Every year before the heating season, the soot in the boiler, flue connection pipes and boiler flue must be checked and cleaned.

- Water should never be taken from the boiler for use.

2. FEATURES OF THE BOILER

MAKTEK solid fuel boilers are produced to provide comfortable heating and domestic hot water for residental areas, work places and offices.

• It is easy to use with digital control panel. Boiler outer covers are designed to be easily removed. Ease of installation and service is provided.

• Wide loading and unloading covers allow fuel filling, ignition and ash removal operations conveniently.

• Three pass smoke pipe design allows easy circulation of smoke inside the boiler providing good chimney draught given that a suitable chimney section is selected.

• High boiler efficiency due to three pass parallel smoke pipe design and high heat transfer surface.

• Adjustable fan speed and digital thermostat provides homogeneous air distribution into the boiler and reaches the desired temperature quickly. Provides stable and complete combustion.

• With the help of modulating fan speed, the boiler switches to natural combustion when it reaches half regime. In this way, chimney temperature decreases and contributes to increase in efficiency.

• The pump cable extends out of the body, ready for connection.

• The grill is designed to be movable and open, has a long life and is easy to disassemble.

• With the ash disposal mechanism, the ash is removed from the grill to the large volume ash container effortlessly and dust-free with the use of the ash removal handle.

• The clap in front of the fan closes the air inlet at a rate of 90% when the boiler reaches the desired regime, keeping the combustion and temperature under control.

• If the boiler exceeds the maximum temperature (90°C), the electrical energy is cut off by the limit thermostat which is connected to all electrical circuits.

• Excellent heat insulation is provided against the heat losses that may occur in the boiler body. Thanks to the cast iron grill, heat descending to the lower part is absorbed.

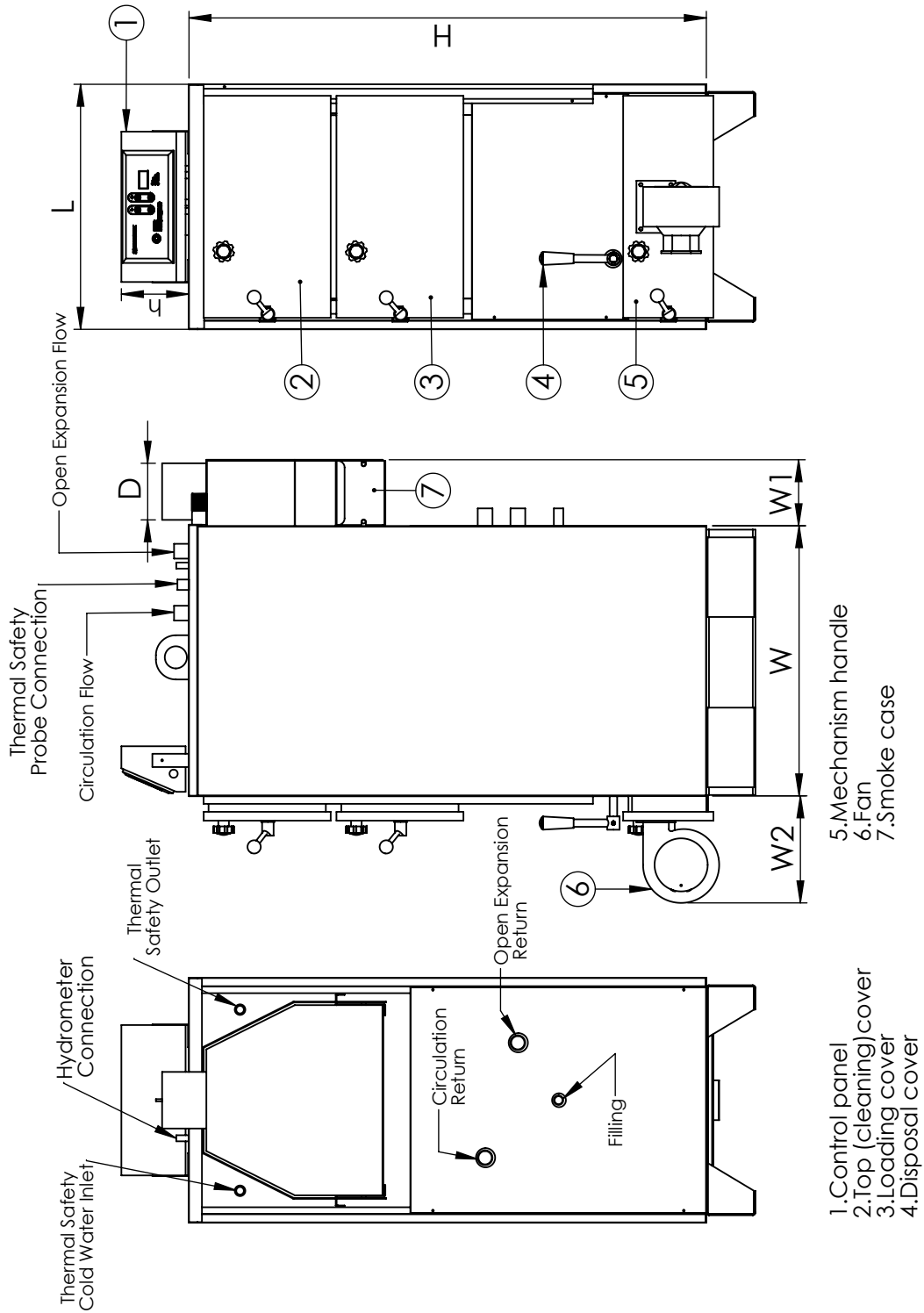
• Convenient and easily accesable interior boiler design enables cleaning of the smoke pipes, burning chamber and smoke case.

• Special sheet metal is used in burning chamber and boiler body enabling high durability and long life.

• Our boilers are designed to be used at 3 bars working pressure. Each boiler is tested with 5 bars pressure using hydrostatic pressure test and produced in conformity with CE standarts.

Note: The economic life of the device determined by the T.C Ministry of Customs and Trade is 15 years. After this time, it is recommended to replace the device with a new one.

3. SECTIONS OF THE BOILER



1.Control Panel: All adjustments for boiler operation can be done on control panel. All failure information can be seen on control panel screen with error codes. The features of the control panel is explained on 6th section of this manual.

2.Cleaning Cover: Enables easy cleaning of smoke pipes and interior surfaces of the boiler. This cover must never be opened during operation. During periodic cleaning this lid is opened to enable cleaning of the smoke pipes with boiler brush and rake supplied with the boiler.

3.Loading cover: Large cover enables easy fuel loading into the boiler.

4.Mechanism handle: The moving grill is operated with this handle. All ash and burnt fuel accumulated on the grill falls to ash tray. The ash is then removed from the ash drawer.

5. Disosal cover: This is the cover that enables easy reach and disposal of the ash accumulateed in the ash tray.

6.Fan: Air necessary for burning is supplied with the fan into the burning chamber. The air is fed inside the boiler below the grills and ensures efficient burining. The fan speed can be adjusted from the control panel to obtain an optimal burining when the boiler reaches regime.

7.Smoke case: The part where the smoke is passed to the chimney. The ash accumulated in the smoke pipes are pushed to the smoke case with the help of the metal brush. The smoke case is then cleaned using the cleaning lid on the smoke case. The smoke case can be dismounted for periodic cleaning or during transport of the boiler.

4. INSTALLATION

It is advised that the installation of the boiler is done by a specialist. Improper installations may cause breakdown and damages where the manufacturer cannot be held responsible.

For safety, proper grounding must be done for electricty installation. It is forbidden to make changes or additions to the original design. Any modified boiler is out of scope of guarantee.

ATTENTION! Please do not install the boiler to closed areas of human presence. The boiler must be installed in a seperate locaiton from a residental area with adequate ventilation.

The location of the boiler mounted must have adequate air ducts to avoid the accumulation of poisonous gases in a closed location and to supply fresh air required for efficient burning.

The boiler must be installed in a secure, insulated location, unaffected by weather conditions. This will protect the boiler and the system from frost and also reduce heat losses while increasing the efficiency.

A minimum 10 cm high brick statue to be prepared at the base of the installation site is a necessity for protecting the boiler from water flood and rusting of the sheet material.

The boiler must be installed leaving 75cm gap from each side in order to enable further maintenance and cleaning of the boiler. The installation connections are from the back of the boiler so the placement of the boiler should enable a person to reach the back of the boiler from both sides easily.

Chimney connection must be made with rigit pipes with maximum 2 elbows. Please refer to diagram in section 4.8 for porper chimney connection.

Chimney connection must be done in such a way that it can be easily demounted and will not allow gas leak.

4.1 INSTALLATION AND FILLING WATER TO THE SYSTEM

- MAKTEK MKB boilers can either be installed in an open or closed expansion system. Make sure to follow the instructions for closed and open expansion systems given in this manual.

- We suggest the mounting of the pump on return line in order to protect from over heating.

- All connections and valve positions must be checked after the installation of the boiler is complete.

- Fillng water to the system or discharging must be done while the boiler is not not working and cold.

- Make sure to fill water to the system until water comes out of warning pipe for open system connections. For closed systems, check the water pressure of the system from the manometer and fill upto 1.5 bar.

- Make sure to close the valves when the filling is complete.

- Please purge air in the system where necessary. Avoid any installation that might block air in the system, if any doubt, please use automatic purger.

4.2 OPEN EXPANSION VESSEL SYSTEMS

- Please connect open expansion tanks according to standarts.

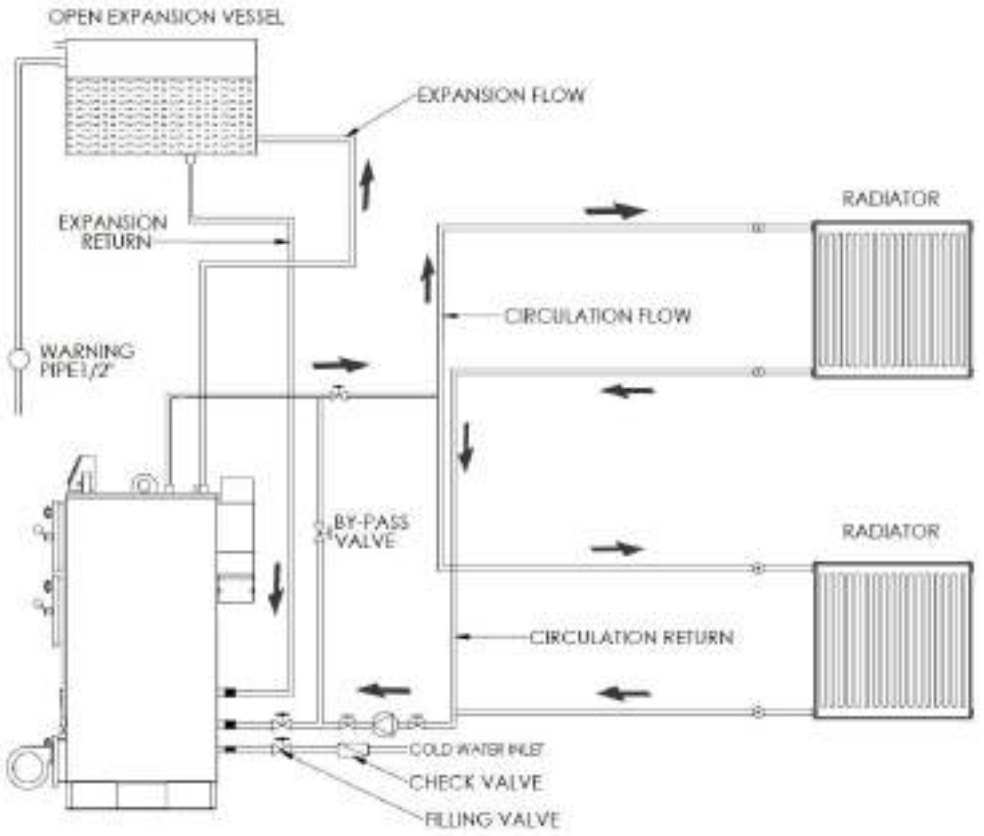
- No valve or similar materials must be installed on safety return or flow line of the open expansion tank.

- In order to increase safety for sutiations such as pump malfunction or electricity shortage, a by pass line must be secured between the boiler circulation inlet and outlet pipes as show in installation schema. The valve on by pass line should be kept closed during normal operation . If there is an electricity cut and a risk of overheating appears, the valve must be opened and the circulation of hot water must be provided by natural circulation. The diameter of the pipe to be used at by pass line should be the same diameter size with the pipe used in installation at minimum.

- As an extra security measure, an infinite power source may be used for electricty cut.

- Please mount 3 bar security valve on the boiler for safety against over pressure in open expansion systems.

4.3 BOILER INSTALLATION SCHEMA FOR OPEN EXPANSION VESSEL



TYPE	CAPACITY	EXPANSION TANK
18 MKK	18.000 kcal/h	45 lt
25 MKK	25.000 kcal/h	60 lt
40 MKK	40.000 kcal/h	100 lt
60 MKK	60.000 kcal/h	150 lt
80 MKK	80.000 kcal/h	200 lt
100 MKK	100.000 kcal/h	250 lt
125 MKK	125.000 kcal/h	315 lt
150 MKK	150.000 kcal/h	375 lt
200 MKK	200.000 kcal/h	500 lt
300 MKK	300.000 kcal/h	750 lt
400 MKK	400.000 kcal/h	1000 lt

4.4 CLOSED EXPANSION VESSEL SYSTEMS

In order to use the boiler in a closed expansion vessel system, an automatic thermal safety valve **MUST** be installed on the boiler. Please make the installation of hte thermal safety valve according to the below diagram.

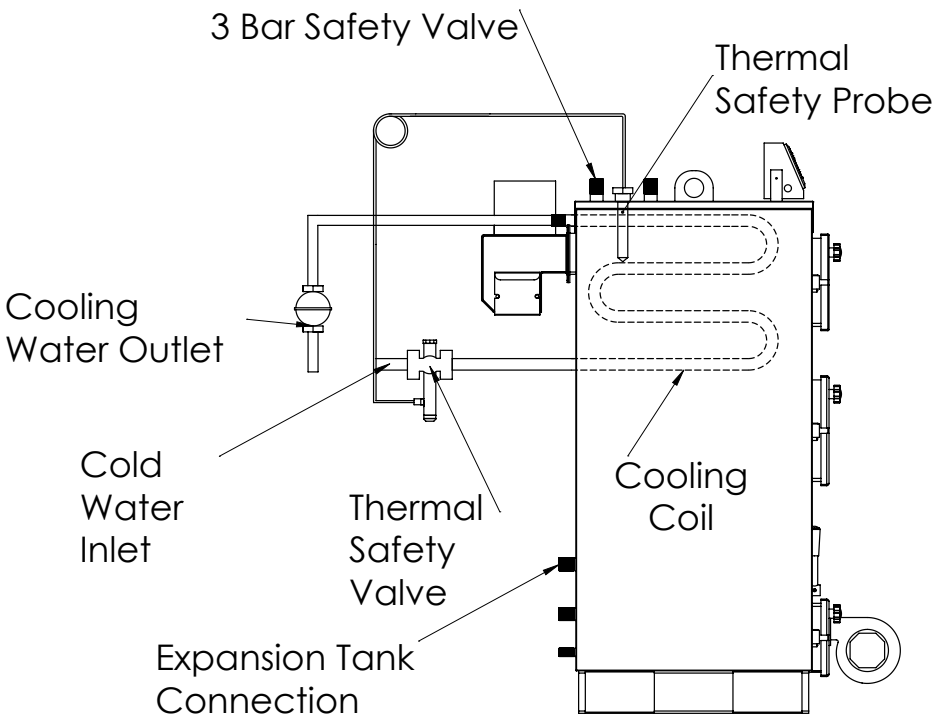
There should be no valves on cold water inlet and cooling water outlet lines.

Make sure that the cooling water outlet is connected to a suitable drainage and the outlet is not clogged.

For closed circuit operation; make sure to mount an 3bar safety valve on the open expension flow connection and a closed expansion tank on the open expansion return connenction.

In order to remove the air trapped inside the boiler, an air vent MUST be mounted on the installation high point.

4.5 THERMAL SAFETY VALVE CONNECTION DIAGRAM



4.6 AIR CONNECTION

The area where the boiler is installed must always be suppplied with fresh air by using a window or a duct. In order for a boiler to burn safely and efficiently, fresh air is required. Otherwise once the burning starts, the oxygen level will drop causing the burning to be inefficient. In turn, this will result in formation of soot in the boiler and chimney and will require frequent cleaning.

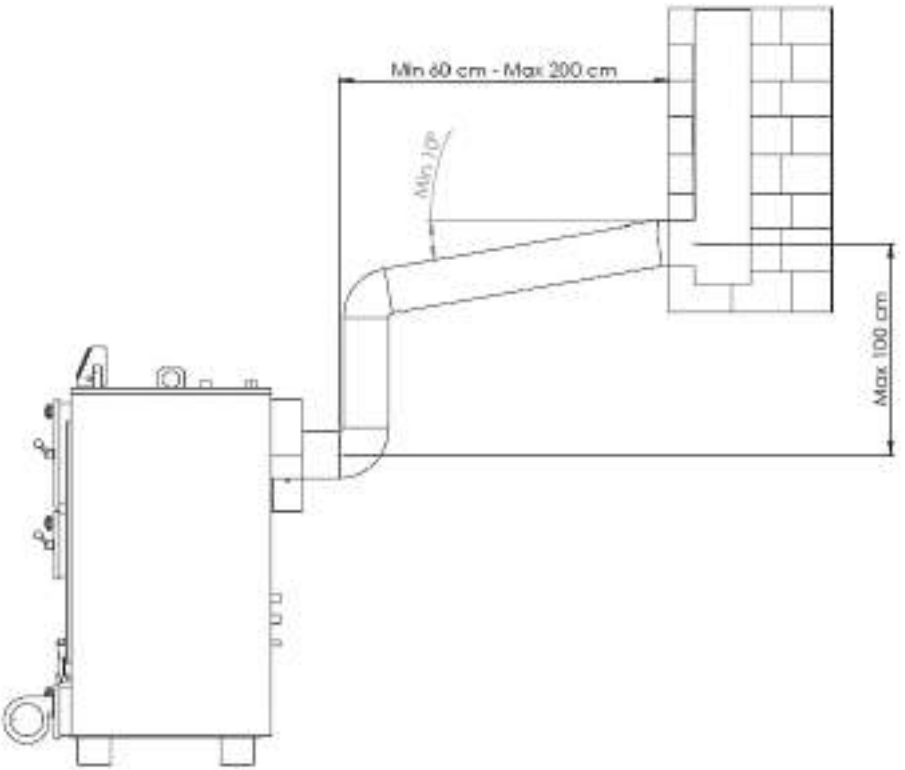
4.7 CHIMNEY

The chimney that will be connected to the boiler must be seperate. The chimney must be connected to provide minimum draught. A boiler without chimney connection should not be operated.
Chimney connection pipe and pipe systematic should be installed and checked by authorized people only. May we remind you that the biggest factor in boiler efficiency is chimney design and draught.
Proper chimney connection pipe should not smaller than the boilers chimney outlet diameter, vertical length must not be shorter than 60 cm and longer than 2 meters and pipe must be connected to the chimney with minimum 10 degree of angle.
We suggest not to use enamel stove pipes as it creates tar in chimney connection pipe and in chimney system.
In case of an elbow use in chimney connection, the elbows must be round with a wide angle. Maximum 2 elbows are allowed.
Chimney connection must be installed to allow demounting from the boiler and avoid gas leakage.
Chimney connection pipe must not be extended to the outside and must be connected to a pipe.
The contact of chimney connection pipe with flammable material must be avoided.
Chimney connection pipe must not be pushed inside the boiler's chimney outlet.
The direction of the pipe should not be changed, should there is a need ,it must be positioned by 60 degrees.
The chimney must be leak proof and air transfer from inside and outside must be avoided.
No other boiler or device must be connected to same chimney. This would decrease chimney draught and decrease boiler efficiency.
Parallel chimneys should have no inter-connection.
There should be no sectional narrowings in any place of the chimney.

Main walls of the building should never be used as chimney wall element. The chimney must be inside the building, if the chimney must pass from outside, proper isolation is required on the chimney.
The chimney must be frequently cleaned in order to avoid tar, soot and clogs. Please avoid foreign objects, cement or surface paint to get inside or run down the chimney, as these will increase the risk of narrow chimney section and will result in decrease on chimney draught.

NOTE: In order to determine the pipe diameter to be used in chimney connection,please use pipe outlet dimension on technical specification table You can find the dimension of the boiler on technical specification table

4.5 CHIMNEY CONNECTION DIAGRAM



4.6 SPECIFICATION OF THE FUEL TO BE USED

Maktek MKK Boilers are designed to be used with both coal and wood. For care free use, please use fuel specified as below.

Coal: We recommend dust free, dry and with high heating value (6500kcal/kg-7500 kcal/h), low sulphur dioxide coal. Linyit coal with low calorie, and high amount of ash and dust will fill the smoke pipes of the boiler in short time, causing a dramatic decrease on capacity and efficiency of the boiler. Please pay special attention to specification of fuel.

Wood: We recommend dried, fully seasoned chopped wood logs with less then %20 moisture content. You can see the below table for the wood log sizes for each boiler model.

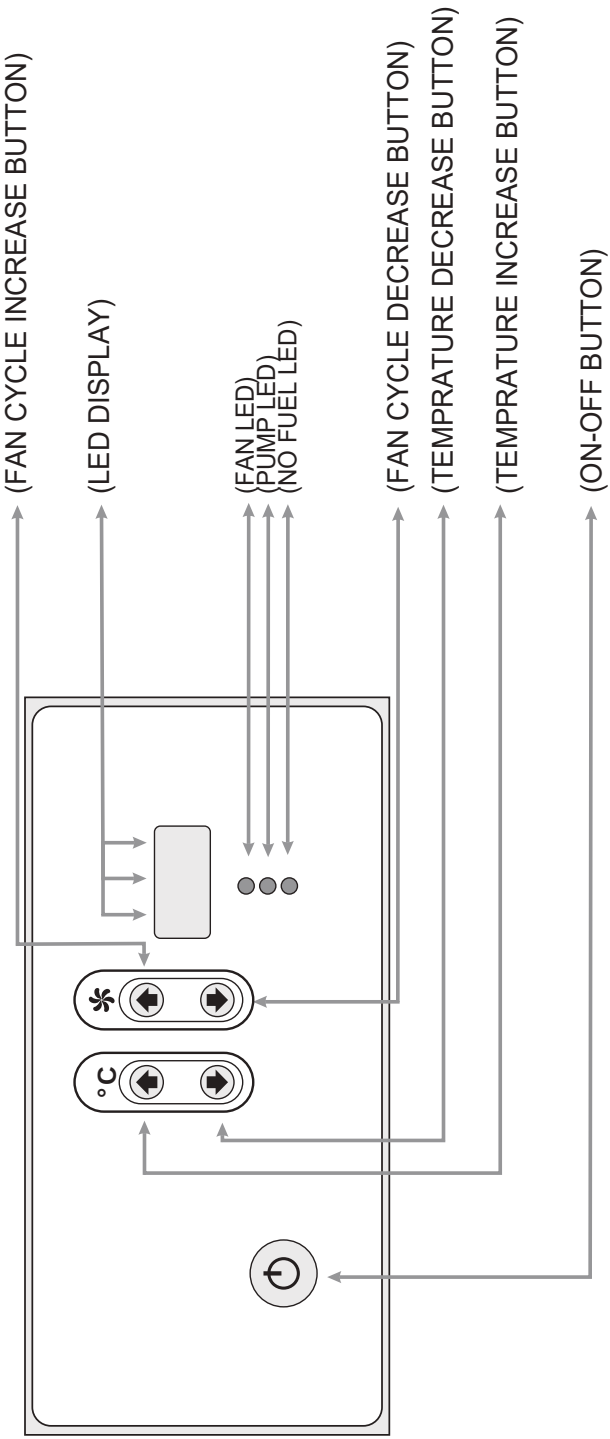
BOILER MODEL	MAXIMUM WOOD LOG LENGTH
18 MKK	45 cm
25 MKK	45 cm
40 MKK	45 cm
60 MKK	45 cm
80 MKK	45 cm
100 MKK	45 cm
125 MKK	85 cm
150 MKK	105 cm
200 MKK	130 cm
300 MKK	110 cm
400 MKK	150 cm

Note: Boiler capacities given in the below technical table are calculated according to coal fuel with 6500kcal/h calorific value. Bear in mind the calorific value of the fuel used will affet the capacity of the boiler directly. Heating capacities with wood fuel are also given in the below technical table.

TECHINICAL SPECS						
Boiler Type	18 MKK	25 MKK	40 MKK	60 MKK	80 MKK	100 MKK
Capacity (kcal/h)	18000	25000	40000	60000	80000	100000
Heating Power (kW)	21	29	46	69	93	116
Capacity For Wood (KCAL/H)	12600	17500	28000	42000	56000	70000
Heating Power Wood (KW)	14,7	20,3	32,6	48,8	65	81,4
Weight (kg)	232	256	290	345	400	500
Working Pressure (bar)	3	3	3	3	3	3
Test Pressure (bar)	4,5	4,5	4,5	4,5	4,5	4,5
H (mm)	1130	1280	1375	1510	1620	1780
h (mm)	155	155	155	155	155	155
L (mm)	570	570	570	660	660	800
W (mm)	670	670	825	825	825	950
W1 (mm)	180	180	250	250	250	250
W2 (mm)	250	250	250	250	250	250
ØD Chimney Connection (mm)	130	130	160	160	160	180
Circulation Flow and Return (inch)	1"	1"	1 1/4"	1 1/2"	1 1/2"	2"
Safety Flow	1"	1"	1"	1 1/4"	1 1/4"	1 1/4"
Safety Return	1"	1"	1"	1 1/4"	1 1/4"	1 1/4"
Thermal Safety Water Inlet-Outlet (inch)	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Thermal Safety Probe Connection (inch)	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Filling-Draining (inch)	1/2"	1/2"	1/2"	1/2"	1/2"	1/2"
Boiler Adjustment Range (Min – Max) (°C)	35/90	35/90	35/90	35/90	35/90	35/90
Boiler Water Volume (lt)	32	46	81	117	174	187
Open Expansion Vessel Capacity (lt)	40	50	75	100	200	250
Voltage/Frequency (V / Hz)	230/50	230/50	230/50	230/50	230/50	230/50
Power (W)	160	160	188	95	95	95
Electric Isolation Level (IP)	14A	14A	14A	14A	14A	14A

TECHINICAL SPECS					
Boiler Type	125 MKK	150 MKK	200 MKK	300 MKK	400 MKK
Capacity (kcal/h)	125000	150000	200000	300000	400000
Heating Power (kW)	146	174	232	348	465
Capacity For Wood (KCAL/H)	87500	105000	140000	210000	280000
Heating Power Wood (kW)	102	122	162,8	243,6	325,5
Weight (kg)	700	800	1050	1850	2208
Working Pressure (bar)	3	3	3	3	3
Test Pressure (bar)	4,5	4,5	4,5	4,5	4,5
H (mm)	1792	1795	1795	1625	1625
h (mm)	155	155	155	155	155
L (mm)	800	800	800	1540	1540
W (mm)	1154	1215	1620	1750	2130
W1 (mm)	290	250	290	220	220
W2 (mm)	250	310	310	310	310
ØD Chimney Connection (mm)	220	240	240	350	350
Circulation Flow and Return (inch)	DN65	DN65	DN65	DN100	DN100
Safety Flow	1 1/2"	1 1/2"	1 1/2"	1 1/2"	2"
Safety Return	1 1/4"	1 1/4"	1 1/4"	1 1/4"	1 1/2"
Thermal Safety Water Inlet-Outlet (inch)	3/4"	3/4"	3/4"	3/4"	3/4"
Thermal Safety Probe Connection (inch)	1/2"	1/2"	1/2"	1/2"	1/2"
Filling-Draining (inch)	1/2"	1/2"	1/2"	3/4"	3/4"
Boiler Adjustment Range (Min – Max) (°C)	35/90	35/90	35/90	35/90	35/90
Boiler Water Volume (lt)	187	360	586	1200	1600
Open Expansion Vessel Capacity (lt)	315	400	500	600	800
Voltage/Frequency (V / Hz)	230/50	230/50	230/50	230/50	230/50
Power (W)	95	225	225	605	605
Electric Isolation Level (IP)	14A	14A	14A	14A	14A

6. CONTROL PANEL



On/Off Button	System is turned on or off. For both modes, please press the button for 2 second.
Temprature Increase Button	Increases boiler temprature. Please set value between 45-90 °C.
Temprature Decrease Button	Decreases boiler temprature. Please set value between 45-90 °C.
Fan Cycle Increase Button	Increases fan speed (from 1 to 5)
Fan Cycle Decrease Button	Decreases fan speed (from 1 to 5)
Fan led	Indicates that the fan is functioning properly.
Pump led	Indicates that the pump is functioning properly .
Led Display (7 part)	Shows measured temprature during operation or shows set temprature during setting.
No Fuel Led	Indicates that fuel is finished.

FAILURE CODES

H1: No fuel
H2: Temperature sensor is not functioning
H3 : Boiler water temprature is extremely high

7. FIRST OPERATION OF THE BOILER AND USING

ATTENTION! Please make sure that the boiler and system is filled with water, boiler inlet-outlet valves are open, energy supply to boiler panel is 220V and proper ground connection is made.
Please fill water to the system until water comes out of warning pipe. (For open expansion vessel systems) or fill water until the hydrometer pressure reading reaches 1.5bar. (for closed expansion systems) Please check if there is any leakage in the system.
Purge out all air from the system and add some water for decreased pressure.
Please mark the value on hydrometer after air purge. This marking will be a warning data in case of loss in water.
Before burning the boiler, make sure that all valves that are supposed to be open, especialy boiler inlet-outlet valves are open.Next, please check if the circulation pump is properly functioning and pumping the water in the right direction.
For places with low chimney draught, fan must be cancelled and boiler should not be operated until the problem is fixed.
Air draught of the chimney must be high. A simple way to detect this is to cover the entrance of the chimney with a newspaper and see if the paper sticks to the chimnet duct. If the paper sticks, the draught of the chimney is suitable for the boiler.

7.1 FIRST OPERATION

High quality,with high heating value, dust free,small particle coal or dried, fully seasoned chopped wood logs with less then %20 moisture content must be used as fuel in Maktek Solid Fuel Boilers. The fuel to be used in the boiler is very important as it will effect boiler efficiency, ash quantity and burning quality.
The boilers burning chamber is capable of meeting a days coal demand(1/2days for wood). The boiler must be ignited with full fuel in the burining chamber. Avoid adding coal/wood to the burning chamber until the fuel inside is completely ignited. Otherwise, these additions will increase smoke formation and will cause the boiler and the pipes to get dirty much quicker. However, if necessary fuel addition during ignition must be as low as possible.

Please load fuel from the front to the back after making sure that the moving grill handle and gril is in closed position.

To ignite the fuel in the chamber, please add small wood pieces on the coal/ wood and burn the fuel from the top with diesel. Please close the boiler doors and turn on the main switch of the boiler. The boiler will gradually burn since the air is supplied through the fan. Do not open the boiler doors when the burning is still going on. In case of a necessity, the doors might be opened after stopping the fan. During first operatinon, we suggest to set the temprature of control thermostat to a high degree (70°C). You may set the thermostat to desired temperature after full ignition is complete.
When the boiler reaches to 40°C, the circulation pump will start operation. This will avoid unnecesary electricity consumption and damages as a result of instant heating.
In case of a frost risk below 0°C, the system should continue to function to prevent freezing of the installation, otherwise the system water must be drained.
The fan will continue to function until the boiler water temperature reaches to set value on control thermostat. At this value, the fan will stop and the circulation pump continues to function. In this case, you can see the boiler water temperture from the control panel. You can monitor and adjust desired temperature value by using the buttons on the control panel.
When the fan speed setting is changed, fan speed set value appears on the screen.Then the display shows boiler water temperature again.
The boiler temperature will continue to decrease when the fuel inside the boiler is finished. Even if the control thermostat is set to high temperature, the pump will stop after the system water temperature drops down to 35°C. When temperature drops down to 25°C, fan will stop running and system shuts down. In this case please add fuel and press ON/OFF button for 2 seconds ,close the system and then press again for 2 seconds to turn on the boiler.

NOTE: During long term use, please move the mechanism handle slightly to the right and left to shake the fuel and supply air to unburned fuel.

7.2 WARNINGS FOR USE

ATTENTION ! Do not use the boiler without water. Please check water level each time before burning from hydrometer.

ATTENTION ! Do not close boiler return-flow valves and circulation pump when there is burning coal inside the boiler.

ATTENTION ! Do not open fuel feeding door frequently. In case there is a need, shut down the fan and keep minimum 50 cm away from the boiler while opening the fuel feeding door.

ATTENTION ! If you will not use the boiler during winter, please drain the water or add anti-freeze. In case of a frost, the boiler and the pump might get damaged.

ATTENTION ! For open expansion vessel boiler connections without the thermal safety valve in the installation, In case of an electricty shortage and when the circulation pump is not functioning, the boiler water can reach to a boiling degree, since heat transfer will not be done. In this case:

1.Please completely close the air clap on the fan's draught opening

2.Open the by pass valves between return and flow system

3.Do not open the boiler doors

4.Do not flood any cold water to the boiler

5.Do not spray cold water on burning coal in order to put it down.

ATTENTION ! If the boiler temprature cannot be controlled after doing the above, please push the grill and lower the coal to ash tray in order to take it out of the boiler.

ATTENTION ! Do not flood water to the boiler when the boiler temprature is high! This will damage the boiler body and will cause leakage.

ATTENTION ! In closed expansion systems, make sure that the thermal safety valve is connected and working properly before operating the boiler. Test the thermal safety valve operation by heating the thermokupl from he outside.

8. CLEANING AND MAINTAINENCE

In order to use your boiler safely for a long period of time, please pay attention to below mentioned rules of cleaning and maintainence. The cleaning is intended to be done every 15 days if the fuel is appropriate. Inapropriate coal or wood will require more frequent cleaning and will cause inefficient burning.

-Your boiler must be cleaned when there is no burning fuel left inside and when the boiler is cold.

-Please disconnect electricity before cleaning the boiler.

-Please allow the accumulated burned ash to fall down to cleaning shelf by moving grill handle located at the front of your boiler to right and left. The soot accumulated on the grill must also be cleaned. Next, please remove` the ash tray and clean it.

-Every 15 days, clean smoke pipes and boiler surface with boiler brush, by opening the boiler cleaning door.

-After the cleaning of boiler smoke pipes are over, remove the cleaning lid at the back smoke case and clean inside of the smoke case. Make sure to close the cleaning lid properly afterwards.

-Close the cleaning lid and` turn off moving grill in order to restart the boiler.

-Chimney connection and chimney must be cleaned after the boiler is cleaned

-The soot formed inside the boiler, acts as insulation on pipes and boiler surface, prevents heat transfer to system water and decreases boiler efficiency

-Uncleaned boiler and chimney soot weakens draught and causes inefficient burning.

9. SUGGESTIONS FOR ECONOMIC USE

-In order to properly air the residence, please open the windows for short period of time while the radiator valves are closed.

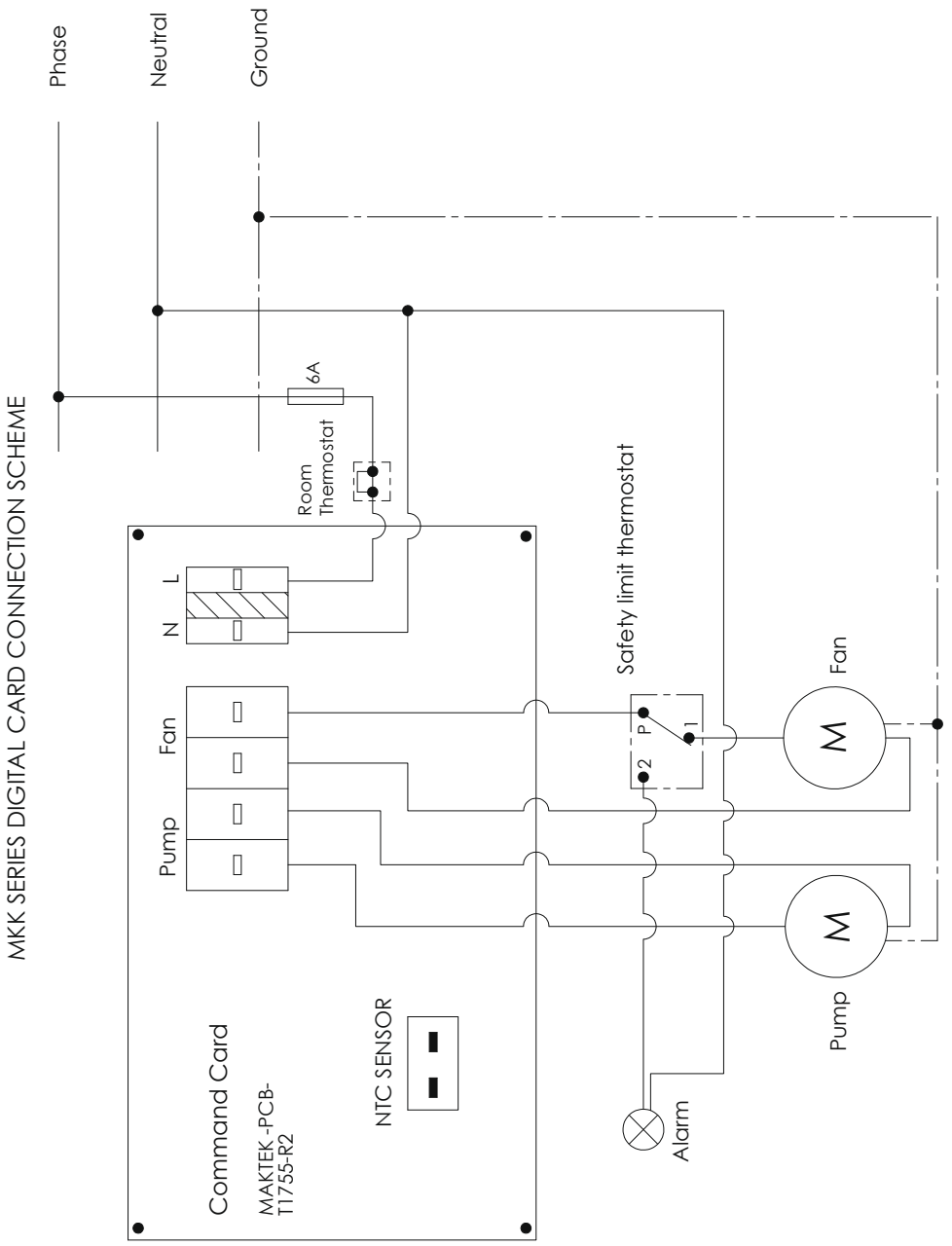
-Pay attention not to heat up too much: room temprature must be kept at 20°C . Each 1°C less makes a 6% economy on heating costs. We recommend using a room thermostat for efficient use of the boiler.

-During night time, close the shutters to increase insulation.

-Do not cover your radiators with objects.

-Consume hot water considerably. You will consume less water and energy during shower in comparison to taking a bath. (For boilers with DHW supply)

10. ELECTRIC SCHEMA



11. TROUBLE SHOOTING

PROBLEM	REASON	SOLUTION
The boiler does not reach to set temprature while operating	- Low quality coal/wood - Soot is accumulated on smoke pipes	- Change the fuel - Clean the soot from the boiler
The boiler does not reach to set temprature while operating and fuel consumption is too high	- Low quality coal/wood - There is an over draught in the chimney	- Change the fuel - Decrease chimney draught
There is smoke leakage when the boiler is on sleep mode	- Soot is accumulated around smoke pipes	Clean the soot from the boiler
When the boiler reaches set value, the temprature does not become stable, continues to increas	- Thermostat is broken - There is an over draught in the chimney	- Thermostat must be replaced - Decrease draught by reinforcement
The fan does not stop when it reaches to thermostat value	- Thermostat is broken	- Thermostat must be replaced
There is tar and soot inside the boiler and chimney	- Low quality fuel - The burning is done with low temprature. Burning air is not sufficient - Chimney draught is not sufficient	- Change the fuel - Increase set boiler temprature - Increase fresh air for the boiler - Increase chimney draught
The boiler reached to set temprature but the house is still cold	- Problem in installation system	- Check pipe isolation, building isolation and radiator quantity
The grill handle does not move	- Coal or a hard particle is stuck in between the grill	- Check the moving grill
The boiler burns too hard and stops for too long	- Low quality fuel - There is soot between flame pipes - Burning air is insufficient	- Change the fuel - Clean the boiler - Supply fresh air to chimney draught fan and surroundings

12. CARRYING AND TRANSPORT

A) PLACING THE BOILER ON VEHICLE

*The boiler must be placed on a vehicle with the help of a crane or forklift.

*Gates of the vehicle must be opened prior to loading.

*Connect the crane hook to the boilers carry anchor.

*Make sure that hook is safely secured..

*Slowly lift the boiler maximum 30-40cm up from the ground.

*Avoid sudden movement while the boiler is carried with the crane.

*Move the boiler next to vehicle to be loaded.

*Lift the boiler 30-40cm higher than the vehicle body and and place it down on vehicle body slowly.

*Remove the hook from the boiler.

ATTENTION : Boiler must be carried in vertical position, with the help of a crane connected to the carry anchor or by a forlkift.
When the boiler is lifted with crane, all personnel must keep away from the moving direction of the boiler. Make sure there is no one underneath the boiler during transport. Boiler must be carried with its accessories installed on it.

B) CARRYING BOILER ON VEHICLE

When the boiler is carried with vehicle, it must be tied to vehicle strictly, supporting material which would prevent slipping or moving of the boiler, should be placed around hte boiler. Boiler should not be carried together with fragile goods. Top of the vehicle must be covered with canvas after placing boiler. Driver must keep away from the sudden moves that would cause danger.

C) UNLOADING THE BOILER TO THE PLACE OF USE

Boiler should not be placed in residental places, must be placed in a seperate boiler room.
When unloading the boiler to boiler room, crane must be used again, points that stated in Caluse A, must be considered.
If the place of use is not appropriate for crane entrance, boiler must be unload in a proper place and carry with rollers to the place intended.

Seller:
10013 Street. No. 14 A.O.S.B. Çiğli - IZMIR / TURKEY
Customer care: sales@maktek.com.tr
Customer Hot Line: +902323280365
www.maktek.com.tr

MAKTEK®