



# WOOD PELLET FIRING CENTRAL HEATING BOILER USER MANUAL



**ÜNLÜSOY**

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This booklet covers the following models:

**ÜKY/YP**

130-160-180-200-250-300-350-400-450-500-600

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## INTRODUCTION

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Thank you for choosing ÜNMAK ÜKYP/YP series central system, pellet fuel central system central heating boiler. ÜNMAK UKYP/YP series boilers are designed to burn wood pellets.

Please read the user manual carefully before installing and operating your product and keep it for the duration of the product's use. Do not touch or interfere with any part of the product other than the places allowed in the user

manual.

The installation, maintenance and service of the boiler requires an expert technical team.

This user manual and regulations should be taken into consideration for the installation of the boiler, the selection of the appropriate place for the installation, the installation of the boiler water installation and the design of the chimney.

These boilers are only used for heating installations, they are not suitable for direct domestic water heating. However, it can produce domestic hot water with the help of a boiler or heat exchanger. The energy required for the domestic water will be taken from the boiler energy.

ÜKYP/YP heating boilers convert the chemical energy of the pellet into heat energy by combustion and load it onto the water, which is the heating fluid. Excessive fuel accumulation in the combustion chamber by entering more numbers than necessary for the feeding setting in the combustion pot will cause energy loss and it will take longer for the fuel to burn.

Combustion circuit is performed by fan, feeding screw and system pump control are performed by the electronic control panel supplied with the boiler.

UKYP/YP heating boilers can only burn pellet fuels. Since the powdered fuels will fly in the combustion chamber with the system fan, there will be no efficient combustion. Since powdered fuel will collect more moisture, it will even cause auger blockage in the feed auger. Depending on the calorific values of the fuels, the heat transferred from the boiler to the water may exceed the declared values.



***Your user manual should be read carefully and it should be kept for the life of the boiler along with the accompanying warranty certificate.***

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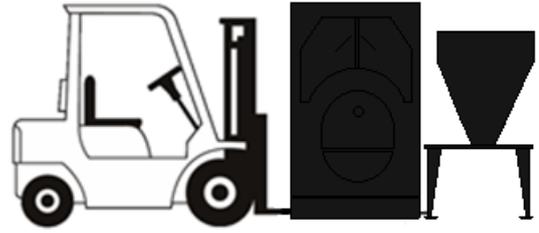
## METHOD OF SHIPPING, HANDLING AND TRANSPORTING

ÜNMAK UKYP/YP series boilers are manufactured from thick sheet metal. Boilers are packed in one piece.

1. Boiler Group: The boiler is shipped with its insulation and outer jacket. Bunkers and engines are sent to the boiler as coupled.
2. Accessories: Control panel, user manual with warranty and boiler accessories (scrape, cleaning brush) are included in the package of the boiler.

### Safe transport of the product

UKYP/YP group boilers are heavy products, so care should be taken when moving the boiler to the place where it will be installed. Therefore, the equipment to be used to lift and transport the product should be of sufficient capacity.



In order not to damage the boiler outer sheets and the boiler during transportation; While carrying the boiler with the help of a crane or hoist by passing a carrying rope through the forklift stands on its chassis, care should be taken that the carrying rope does not damage the painted thin sheets of the boiler and the reducer-fan group under the bunker.

It is convenient to lift the boiler from the forklift stands or the carrying ring on the boiler. The boiler standing on the ground should be lifted directly without pulling with a crane. When transporting in cold weather, the boiler should not be lifted suddenly in case the rope freezes from the cold.



It is convenient to lift from the forklift stands or the carrying ring on the boiler. If the connecting ropes are to be passed under the boiler while lifting by crane, preventive measures should be taken against crushing the top of the boiler by the ropes. The boiler standing on the ground should be lifted directly without pulling with a crane. When transporting in cold weather, the boiler should not be lifted suddenly in case the rope freezes from the cold.



***Care should be taken not to damage the reducer and fan under the bunker during transportation.***



***When removing the packaging around the boiler, hard and sharp objects should not be used in order not to damage the painted boiler sheets under the package.***

## SELECTION OF INSTALLATION SITE

The place where the boiler is installed must have sufficient free space for the installation, combustion and maintenance of the boiler. For service needs, the gear unit and the group to which the shaft is connected should be far enough from the wall that it can be easily removed. For this, the dimensions in the paragraph titled "Assembly site dimensions" should be applied.

In addition, there must be sufficient fresh air circulation for efficient combustion, the chimney design must meet the required draft values for the model used, and the construction criteria given in the manual must comply with the relevant regulations. The boiler should never be installed in open spaces, balconies, living areas (kitchen, living room, bathroom, bedroom), places where explosive and easily flammable materials are present.

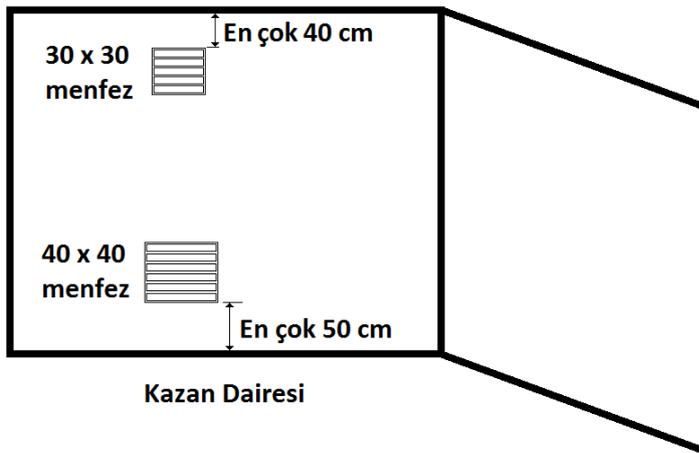
The boiler room door must not open directly to the escape staircase or general use stairs, and must be opened to a security hall. Boiler rooms with a thermal capacity between 50 kW and 100 kW must have at least one door, and boiler rooms with a floor area of over 100 m<sup>2</sup> must have at least 2 exit doors. Exit doors should be placed in opposite directions of each other as much as possible, they should be fire resistant for at least 90 minutes, smoke-proof and self-closing.

At least one of the doors must open directly to the outside and outside of the building. If it is possible to open a door directly to the outside of the building from the boiler room, this is the most suitable solution. The boiler room door must not open directly to the escape staircase or general use stairs, and must necessarily open to a common hall or corridor.

It is recommended to have a threshold of at least 10 cm high on the doors opening from the boiler room into the building. If it is possible to illuminate the boiler room naturally, care should be taken that the lighting openings do not coincide with the other windows of the building. If artificial lighting is used, a system that does not dazzle but illuminates the flat should be installed. The main switch and panels of the boiler room should be placed around the entrance door and should be of leakproof type. Fire extinguishers should be available in boiler rooms.

One of the purposes of placing the boiler on a concrete base in the boiler room is to prevent the fan from absorbing dust from the ground. Ventilation can be done naturally or by force. It should be ensured that the mouth of the fresh air intake chimney is at ground level, and the mouth of the exhaust air intake chimney is at ceiling level.

There should be at least 1 6 kg multi-purpose dry chemical powder fire extinguisher in the boiler room.



If natural gas or liquid fuel boilers are also used in the same boiler room, a tearing surface must be designed.

The established place must have vents that are directly connected to the outdoor environment and allow the entry of fresh air. One of the vents should be located at most 40 cm below the ceiling of the boiler room, and the other at the most 50 cm above the floor. These vents must be kept open at all times. The lower vent should be at

least 40 x 40 cm and the upper vent at least 30 x 30 cm. Pets should not be fed in the heating area (boiler room), and food and beverage that may be affected by smoke and soot should not be stored.

All electrical and water installations must be carried out by authorized installers, in accordance with all applicable legal and technical rules and approved by the relevant legal institutions.

The fuels to be burned in the boiler should be kept at a distance of at least 800 mm from the boiler. It is recommended to store fuels in a separate place.

Boilers should be installed on a concrete plinth 10 cm high from the floor in order to be protected from water moisture and solid fuel ash dust. The concrete base prevents the fan from absorbing fuel or ash dust on the ground.

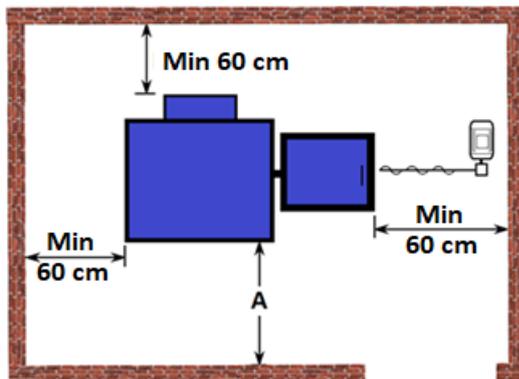
Laying the assembly area with tiles and tile stones facilitates cleaning.



***It is inconvenient to keep flammable, combustible and easily flammable materials in the boiler room.***

#### **Installation site dimensions:**

The boiler room should be in dimensions to provide the minimum dimensions given in the picture below around the boiler. While the boiler is being placed, it is necessary to leave sufficient distance so that fuel can be added to the bunker easily, the reducer and shaft under the bunker can be easily removed, and the service can operate comfortably.



Dimension A: 60 cm more than the opening of the boiler door;

Dimension B: It should be chosen considering the shaft removal distance.

If the above measurements are followed, the minimum given in the regulations 8 m<sup>3</sup> volume requirement is met.



***There should be no faulty or doubtful electrical lines in the boiler room.***



***The 230 V electrical connection from the control panel must be connected to the mains via a W automat.***

## SAFETY WARNINGS



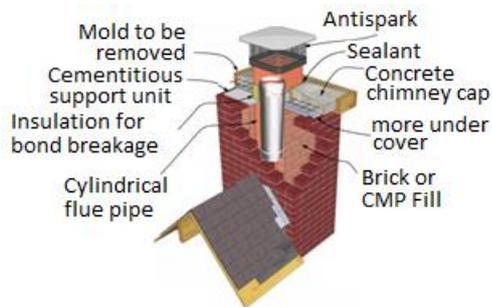
***The electrical installation of this product must be carried out by authorized personnel in accordance with the descriptions given in this manual and applicable local or national regulations.***



***THIS PRODUCT MUST BE CONNECTED TO ELECTRICITY BY GROUND LINE!***

The boiler must be connected to a flue that complies with the specifications specified in the user manual and relevant regulations. The chimney must provide the traction value required by the connected boiler. The boiler must not be operated without a flue connection and there must be sufficient traction for combustion. The boiler should never be operated in chimneys where sufficient traction is not provided. Any incorrect electrical installation in the place where the boiler is installed must be removed.

In case of boiler replacement in boiler rooms, the old boiler should be removed or its connection with the chimney should be cut off, the cut place should be sealed and insulated. Under no circumstances should more than one boiler be connected to the same chimney. Cylindrical chimney can be passed through the chimney in the figure.



Smoke chimneys should not be placed on the outer wall of the building unless there is a technical necessity. The wall thickness of the chimney walls should not be less than the thickness of one brick. Perforated bricks and briquettes should never be used in chimney construction.

It should be plastered from the inside and outside and a cylindrical pipe should be inserted into the rectangular chimney.

It should be ensured that fresh air enters the area where the boiler is installed. In this regard, the dimensions specified in the guide should be taken as reference. The boiler should never be installed in living quarters or in a place directly connected to such a place. In order to reduce the risk of scaling and corrosion in old and new installations, the instructions given in the relevant section of this manual should be applied by the installer who installed the boiler. In particular, if the boiler is connected to an old installation, it is necessary to completely clean the waste inside the installation before installation.

It is necessary to wash and clean the installation several times.

Overloading of fuel to the boiler should be avoided, and the suitability of the feeding – standby settings given in the user manual should also be checked. These settings, which express the working and stopping times of the reducer, are related to the chimney characteristics of the boiler (draft difference, etc.), ambient conditions, thermal comfort requirement of the space, insulation of the space, etc. varies depending on many parameters. If the settings given in the catalog are required to operate at a lower power than the one given in order for the boiler to operate at maximum power, the settings are; combustion should be observed. Adjusting the settings to prevent unburned pellets from falling down from the burner will be appropriate in terms of both boiler efficiency and economy.

Since the fuel particles burning and flying in the boiler and the fuel ashes will easily go outside through the open door, the covers of the boiler should never be opened while the fan is running. While the boiler is burning, the lids should not be opened and manual loading should not be done on the burner or inside the boiler.



***Electricity should never be disconnected while the boiler is operating.***

For any reason, cold water should not be added directly to the overheated boiler for cooling purposes. This can cause noise in the installation, excessively high thermal stresses in the boiler and thus permanent damage. The water in the installation should not be drained unless it is for maintenance purposes or there is a risk of freezing. The system design should ensure that the ratio between the installation water flow rate and the boiler capacity and the 20°C difference between the boiler inlet and outlet water temperatures are not exceeded. In order to minimize the completion of the water lost in the installation, the water level should be checked regularly and the leaks in the system should be eliminated. Because excessive water additions to the system will cause lime accumulation on the water side of the boiler, which will cause local overheating and this will damage the boiler. The boiler does not burn directly, it must be installed on a smooth surface. It is recommended that the base on which the boiler will be installed should be at least 10 cm high and wider than the outermost dimensions of the boiler. Thanks to the pedestal, the boiler will be protected from water that may accumulate on the floor, and the fan will be prevented from absorbing dust from the ground.



***It must be added to the bunker before the fuel runs out.***



***Bunker sieve should not be removed while loading fuel, bunker cover should be closed after loading.***



***Adding fresh water to the installation should be done when the system is cold.***

## ELECTRICAL INSTALLATION INSTRUCTIONS

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ÜNMAK ÜKYP/YP series boilers are fed with 230 Volt mains voltage. A regulator should be used where the mains voltage is less than or greater than ten percent.

The control panel must be connected to a wall panel with suitable grounding equipment, the distance between the boiler panel and this wall panel should not exceed 50 cm.

For each boiler room, a separate grounding installation should be made from the column installation.

Grounding installation:

- a) 0.5 m<sup>2</sup>, 2 mm. thick copper plate,
- b) 0.5 m<sup>2</sup>, 3 mm. thick galvanized sheet (hot dipped) or
- c) It should be done with solid copper rod electrodes.

Copper rod electrodes must be at least 1.5 m tall with a diameter of  $\varnothing$ 16 mm or a length of at least 1.25 m with a diameter of  $\varnothing$  20 mm, and the grounding resistance of the rod electrodes must remain below the limits of 20 Q. (Neutral-Ground voltage  $\leq$ 3V)

In all three cases, copper electrodes or plates should be connected to the natural gas installation by soldering or welding using at least 16 mm<sup>2</sup> stranded copper cable and conductive shoe. Copper electrodes or plates should be placed in the ground completely, the conductor remaining on the ground must be connected to the pipe casing and the boiler room main table.



***THIS PRODUCT MUST BE CONNECTED TO A SAFE GROUND LINE!***



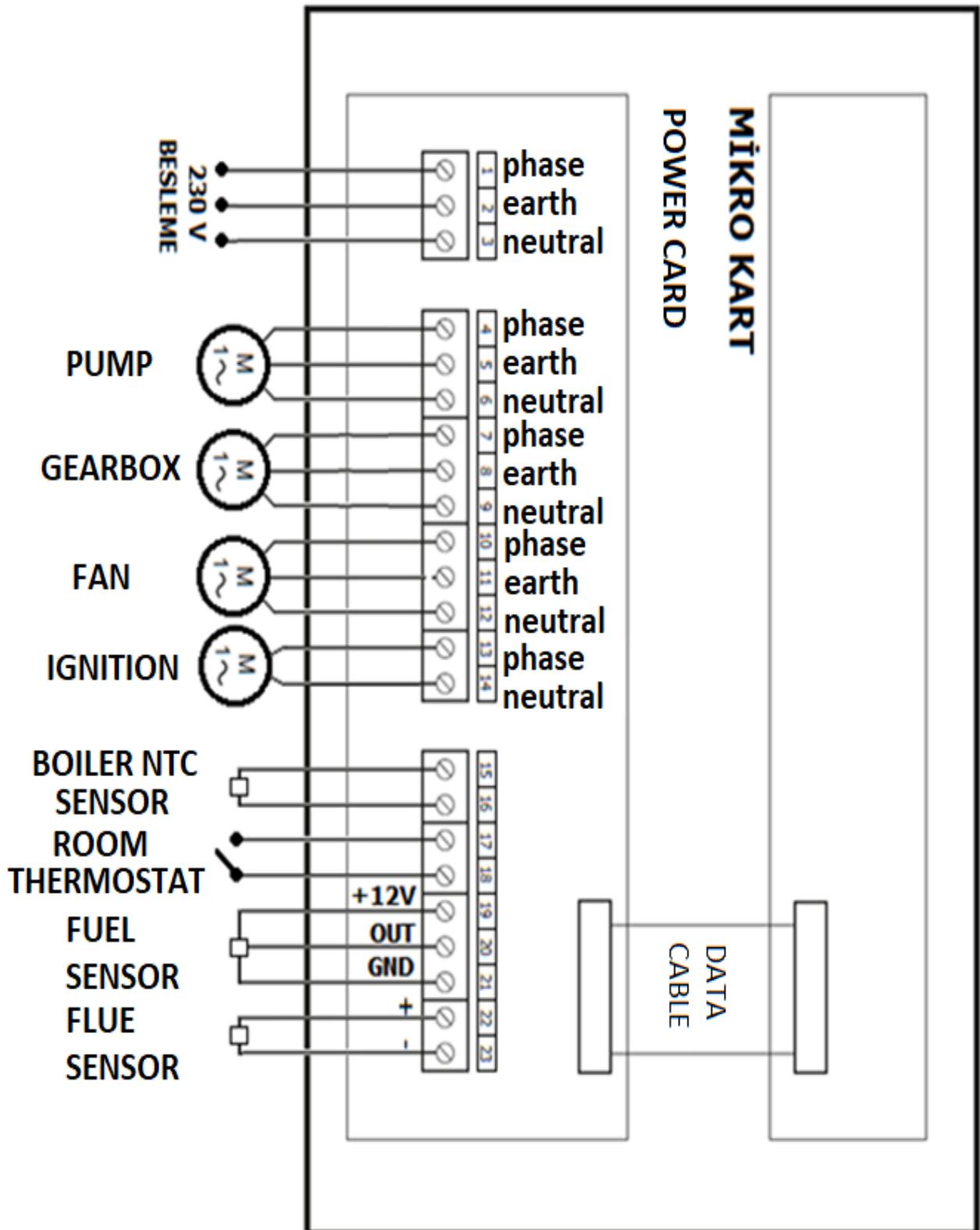
***Have your electrical connection made by ÜNMAK Authorized Services.***



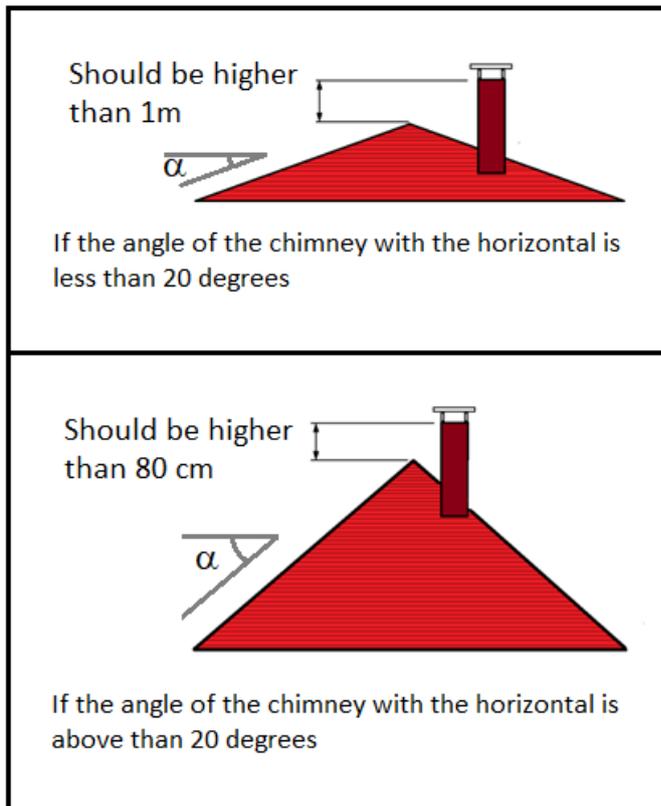
***The boiler must not be installed in closed and living spaces.***



Electrical Wiring Diagram



**INFORMATION ABOUT COMBUSTION**



In order to ensure correct combustion, as a general rule, the air supplied to the fuel should be at a certain rate. So the fan speed should be adjusted well. The air required for a given amount of fuel should not be too much. If the amount of air, which varies depending on the fuel type, is less than necessary, carbon monoxide is formed, the energy produced decreases, the combustion starts, the combustion efficiency decreases, if the amount of air is more than necessary, the carbon monoxide decreases, while the air that does not enter the combustion is heated in the furnace and thrown out of the chimney, the combustion deteriorates, the combustion efficiency is falling.

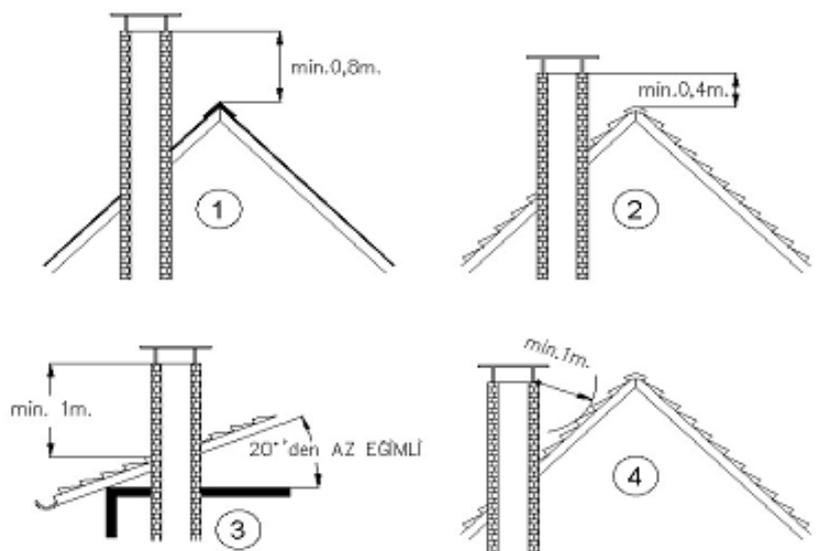
If the flue gas temperature is above the accepted values, excess energy will be thrown into the atmosphere from the chimney. The material, construction and

connection of the chimneys are important in terms of high combustion efficiency, low heating cost and protecting the environment.

In order for the combustion to be good, the chimney must also be good. Firebrick and stainless steel chimneys are recommended as materials, with a smooth surface resistant to high temperatures. Horizontal smoke ducts should be connected to the chimney with a rising slope of at least 5% and its length should never exceed 1/4 of the chimney height. The chimney height should be well determined and the chimney rising from the building should rise at least 80 cm above the ridge. Unless mandatory, chimney sections should be circular.

Perforated bricks should never be used on chimney walls. The most ideal is to be built with fire bricks.

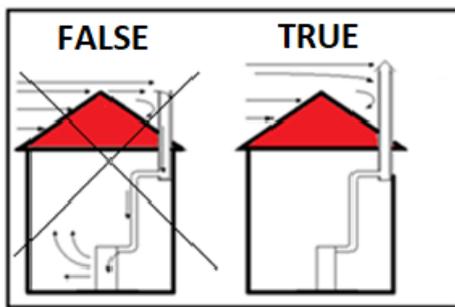
ÜNMAK boilers should be connected to an independent chimney that can provide at least the desired minimum draft. Minimum traction is usually min. It should be measured with a manometer as 20 Pa. The part of the waste gas line between the boiler and the chimney must be insulated with glass wool. Flue gas pipe and chimney must be made of steel sheet or material



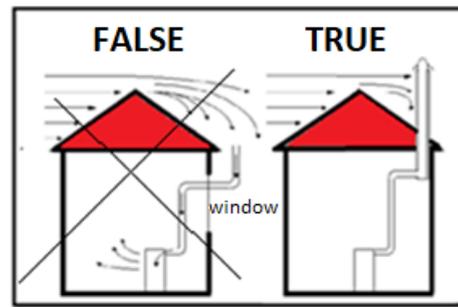
resistant to around 400°C. In order to obtain a better combustion and efficiency, all connections on the flue gas pipe must be sealed. The waste gas pipe should be connected to the chimney in the shortest way within the dimensions given in the diagram below. Horizontal connections and equipment such as elbows that reduce traction should be avoided.

A single vertical steel pipe should not be used as a chimney, the chimney should have both an inner and an outer surface. The outer surface can be steel or brick braided. For the inner surface of the chimney, corrosion resistant stainless steel can be preferred. In order to prevent condensation, thermal insulation should be applied to the gap between the inner and outer surfaces of the chimney. At the lowest level of the chimney, there should be a cleaning cover made of all kinds of sealed steel. The length of the flue gas pipe between the chimney and the boiler should not exceed one quarter of the chimney height.

The size of the flue pipe and chimney must be larger than the waste gas outlet (smokehouse) dimensions of the boiler. The boiler chimney installed should be at least 1 meter above the highest point of the roof of the space, on flat roofs, and at least 0.4 meters on tiled roofs.



Chimney without flue cap and with flue cap



Wrongly installed flue and correctly installed flue and flue cap



***Nutshells, pellets, etc. When using wood-derived fuels, such as wood-derived fuels, the fan air should not be opened too much.***

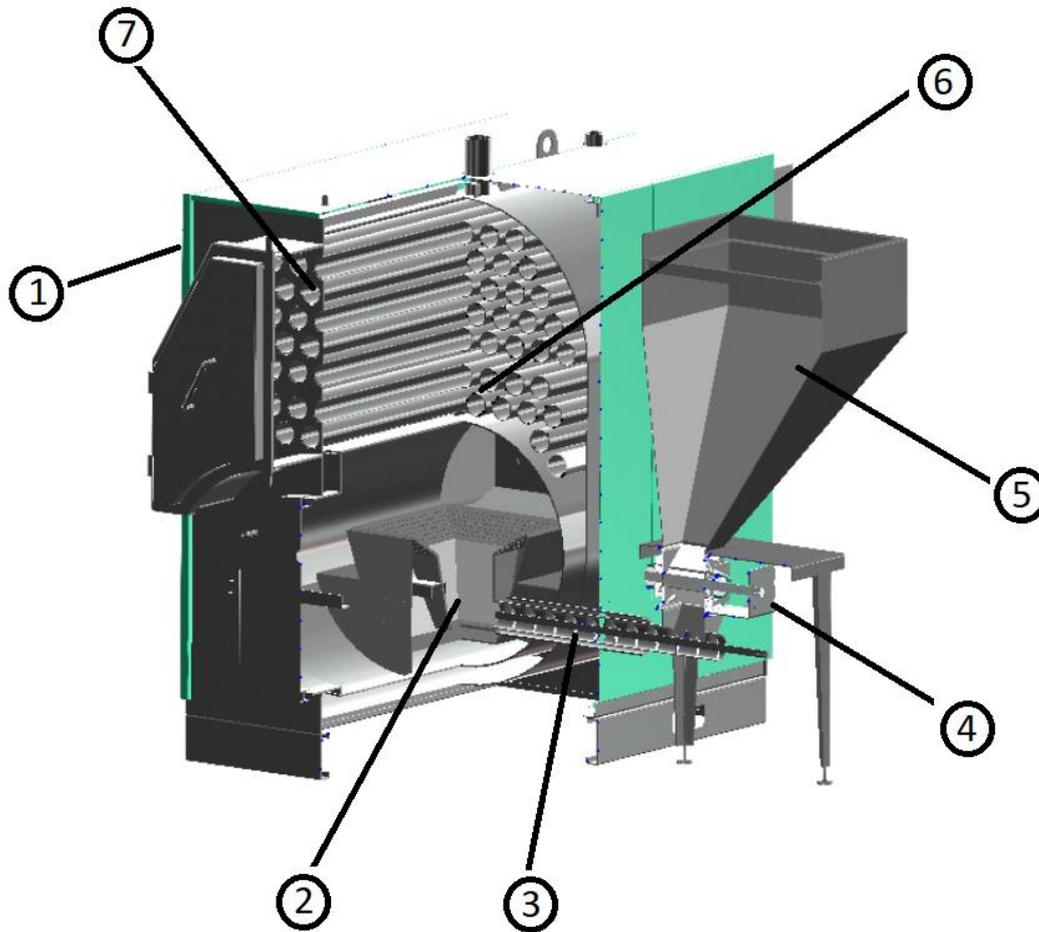


***Excess air causes high flue temperature and high flue temperature causes loss of combustion efficiency.***



***It would be appropriate to take a sample of the fuel you will use in the boiler in bulk, and if it is suitable for combustion, take the remaining amount. Take care that the sample you will take is not wet or humid and is pine pellets.***

**BOILER FEATURES**



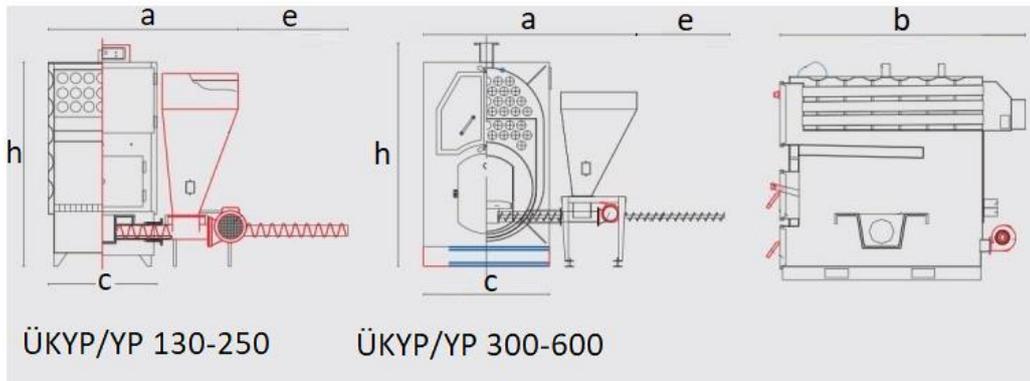
- |                         |                            |
|-------------------------|----------------------------|
| 1. Control panel        | 5. Fuel reservoir (Hopper) |
| 2. Combustion pot       | 6. Second pass smoke pipes |
| 3. Fuel feeding auger   | 7. Third pass smoke pipes  |
| 4. Fuel dosing (rotary) |                            |

1. Control Panel: It is the electronic box that controls the boiler. It controls when the reducer, motor, fan, pump will stop and work. The temperature values read while controlling are effective.
2. Combustion Pot: It is the place where the fuel mixes with the air and returns to the flame. Fuel comes from inside the double-walled structure and air comes from outside. Ignition takes place from the ignition resistor next to the holes in the air chamber.
3. Fuel Feeding Auger: It provides the transmission of the fuel to the combustion pot.
4. Fuel Dosing Unit (Rotary): It allows a certain amount of fuel to fall on the auger. Another and main task is to provide air tightness between the combustion pot and the bunker and to ensure safety.
5. Fuel Reservoir (Hopper): It is the reservoir where the fuel is stored. The capacity it can take may vary depending on the fuel size.



Rotary

6. Second Pass Smoke Pipes: It is the smoke path that allows the flame formed in the combustion pot to enter the back of the boiler after licking the inferno and hit the front cover.
7. Third pass smoke pipes: It is the channel through which the hot smoke leaving the boiler passes.



MODEL-SERIES	ÜKYP/YP	130	160	180	200	250	300	350	400	450	500	600
FUEL TYPE		WOOD PELLET										
POWER	kW	130	160	180	200	250	300	350	400	450	500	600
	kcal/h	111.800	137.600	154.800	172.000	215.000	258.000	301.000	344.000	387.000	430.000	516.000
FIRE POT DIMENSIONS	mm	Ø480					600x600					
FUEL CAPACITY	kg	200					280					330
WATER VOLUME	lt	320	400	480	560	640	890	925	1240	1195	1505	1570
BOILER WEIGHT	kg	805	920	1080	1155	1300	1755	1900	2130	2200	2505	2750
NECESSARY DRAFT	mbar	0,30-0,35	0,35-0,45		0,35-0,50		0,40-0,50			0,50-0,60		
TEMP. CONTROL RANGE	°C	40-80										
INSTALLATION RETURN TEMP.	°C	40										
MAX. OPERATING PRESSURE	bar	3										
TEST PRESSURE	bar	5										
DIMENSIONS	TOTAL WIDTH (a)	1460		1560		1660	1940	1990	2200			
	DEPTH (b)	1615	1815		1915		2280	2400		2750		
	BODY WITH (c)	760		860		960	1130	1180	1390			
	FLUE CONN. HEIGHT (d)	1615	1815		1915		1465	1600	1665		1675	
	AUGER DISASSEMBLY	1100					1200		1300			
	TOTAL HEIGHT	1640			2000		2055	2095		2125		
FLUE CONNECTION DIAMETER	mm	220				300			350			
MIN-MAX FLUE TEMPERATURE	°C	230-250										
BOILER FLOW/RETURN	R"	2"			2 ½"		DN80	DN100		DN125		
SAFETY FLOW/RETURN	R"	1 ½"					2"					
FILLING DISCHARGING	R"	3/4"										
ELECTRICAL CONNECTION	V/Hz	230V-50Hz					400V-50Hz					

## RULES FOR HEATING INSTALLATION

### Recirculation pump:

A pumped system with a pump of sufficient capacity is recommended. The capacity of the required pump is determined by taking into account the resistances that occur in the installation. To determine the correct position of the pump in the system, the wiring diagrams given in the manual should be referenced. The pump stage should be adjusted by taking into account the resistances in the installation.

In addition to the schematic installation connection

shown in high-capacity boiler installations, a system with a backup pump should be made. By-pass line must be connected directly to the auxiliary pump line, like the primary pump. Boiler inlet and outlet lines must be connected with collectors. In order to prevent the system from making air, in open expansion installations, the head of the pump must be less than the height of the expansion.

In the installation of the circulation pump, the fact that the electrical connections do not come down will eliminate the problem of possible water penetration into the pump. In order to prevent the pump shaft from pressing on the body or outer cover during operation, vertical mounting of the shaft should be avoided.

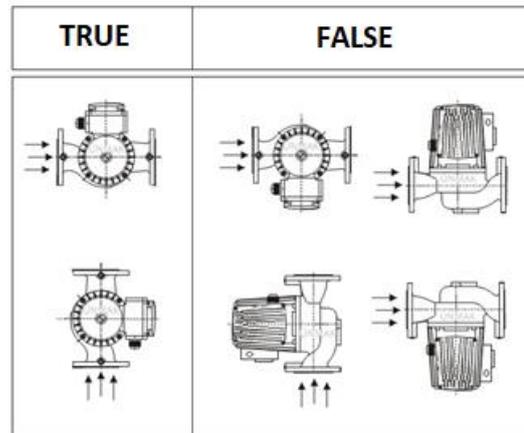
### Expansion tank:

In hot water heating systems, when water is heated from 10°C to 90°C, its volume increases by 3.55% of its initial volume. "Expansion tanks" are used to take this expansion depending on the temperature in the water. Expansion tanks also fulfill the safety of the system, that is, the pressure not to rise, and the necessary water support to the system. Expansion tanks are divided into two:

#### ***Systems with closed expansion tanks:***

Closed expansion tanks are manufactured with air and nitrogen pressure before they are attached to the system. However, it is still necessary to check before assembly. The pressure in the expansion tank is the pressure of the system. When the expansion tank heating circuit is active, the water volume that expands with the heating of the water is collected in the expansion tank. Then, when the temperature drops, this water returns to the installation and balances the pressure of the installation. Compared to open systems; Since there is no piping process up to the top of the radiator, crushing and pouring will not be done, there will be no heat loss since there will be no open container to the outside environment, there will be no corrosive part of the system since there is no open point to the air, and there will be no water loss due to evaporation as the system is closed.

In closed expansion tanks, the decrease of water in the system can be observed with a manometer. Manometer is a pressure gauge. When the water in the boiler is cold, it should show 1-1.5 bar pressure. As the boiler water heats up, the pressure will increase.



**Boilers to be installed with closed expansion tank must be installed with appropriate safety valve and automatic air vent.**

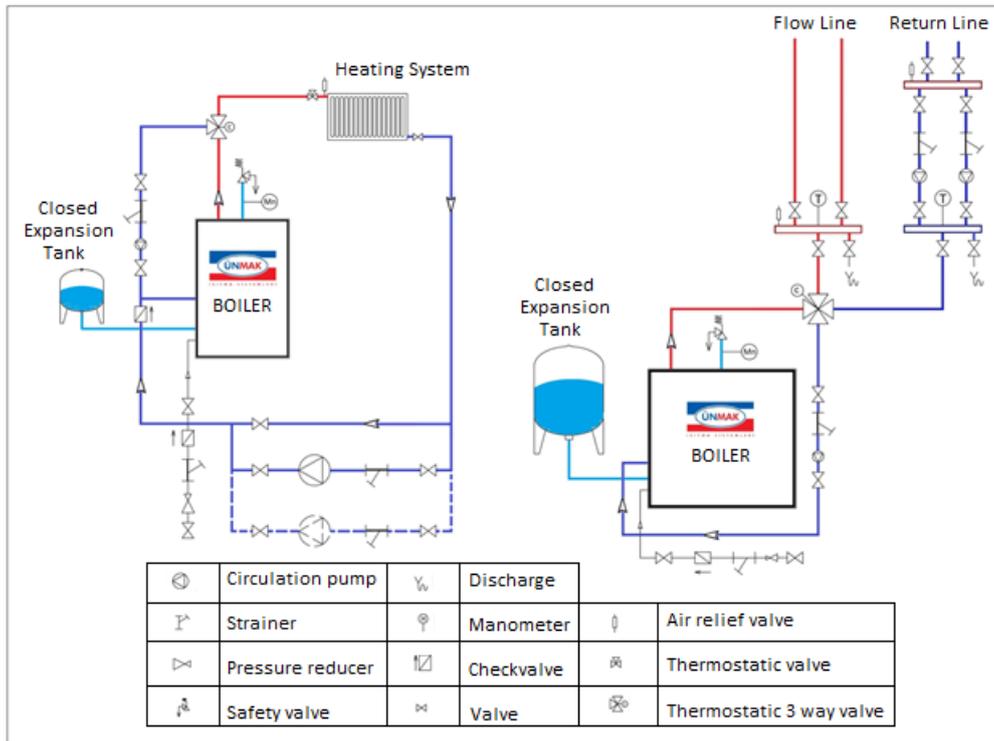
Safety valve must be used in closed expansion tank heating systems. The required safety valve capacities in ÜNMAK solid fuel, automatic loading (stoker) boilers are given in the table below. It is beneficial to equip the system with a double and appropriate safety valve against the risks of calcification.

The minimum closed expansion tank volumes and safety valve connection diameters that should be according to the boiler capacities are given. The volumes of the expansion tank vary according to the boiler capacities and the number of floors applied.

The floor numbers given in the table are accepted as the boiler and expansion tank in the basement.

BOILER POWER (kW)	SAFETY VALVE DIAMETER (inch)	NUMBER OF FLOOR											
		1	2	3	4	5	6	7	8	9	10	11	12
130	3/4"	80	80	80	100	100	150	150	150	200	300	500	750
160	3/4"	80	80	80	100	100	150	150	150	200	300	500	750
180	1"	80	100	100	150	150	150	200	200	300	300	500	1000
200	1 1/4"	150	150	150	200	200	300	500	750	1500			
250	1"	150	150	150	150	200	200	300	300	500	500	750	1500
300	1 1/4"	150	200	200	300	300	500	500	1000	2000			
350	1 1/4"	200	200	200	300	300	300	500	500	500	750	1000	2000
400	1 1/4"	200	300	300	300	300	500	500	500	750	750	1000	2000
450	1 1/4"	300	300	300	300	500	500	500	500	750	1000	1500	2000
500	1 1/2"	300	300	300	500	500	500	500	750	750	1000	1500	3000
600	1 1/2"	300	300	500	500	500	500	750	750	1000	1000	1500	3000

**Installation diagram with closed expansion tank**



**Systems with open expansion tanks:**

It is placed on the top of the system, that is, on the roof, and works open to the atmosphere with a level difference. An expansion tank is placed at a point slightly higher than the highest point of the distribution system to collect the expanding water volume. The water that expands in the boiler is stored in the expansion tank through the flow safety pipe. When the water in the installation cools down, the decreasing water of the installation is completed by the expansion tank through the return safety pipe. Since the expansion tank also opens the system to the atmosphere, it ensures the safety of the system by preventing the pressure in the heating installation from rising above the atmospheric pressure. The air in the system is evacuated by opening the vent pipes to the atmosphere from the expansion tank. It is recommended to use separate expansion tanks for each boiler in the installation according to their capacities. That is, it is not correct to connect two boilers to a single expansion tank. There are flow and return safety pipes for each boiler and expansion tank. Valves, check valves etc. on these safety pipes. No fittings should be installed. Safety pipes must reach the closest point of the boiler inlet and outlet from the shortest vertical path. Movement from the horizontal path is permissible only at the level of the expansion vessel and at a minimum length.

ÜNMAK solid fuel boilers should be connected to an installation with an open expansion tank in accordance with the installation diagram shown below. The circulation pump can be connected on the flow or return line. In case the pump is in the boiler return; The open expansion tank must be higher than the head of the pump.

**Warning about water level:**

After the system is first flooded, the minimum water level should be marked on the hydrometer. The water level should be checked daily, and when it falls below the minimum value, water should be added to the installation.

Open expansion tank volumes that should be according to Ünmak boiler capacities are given in the table below:

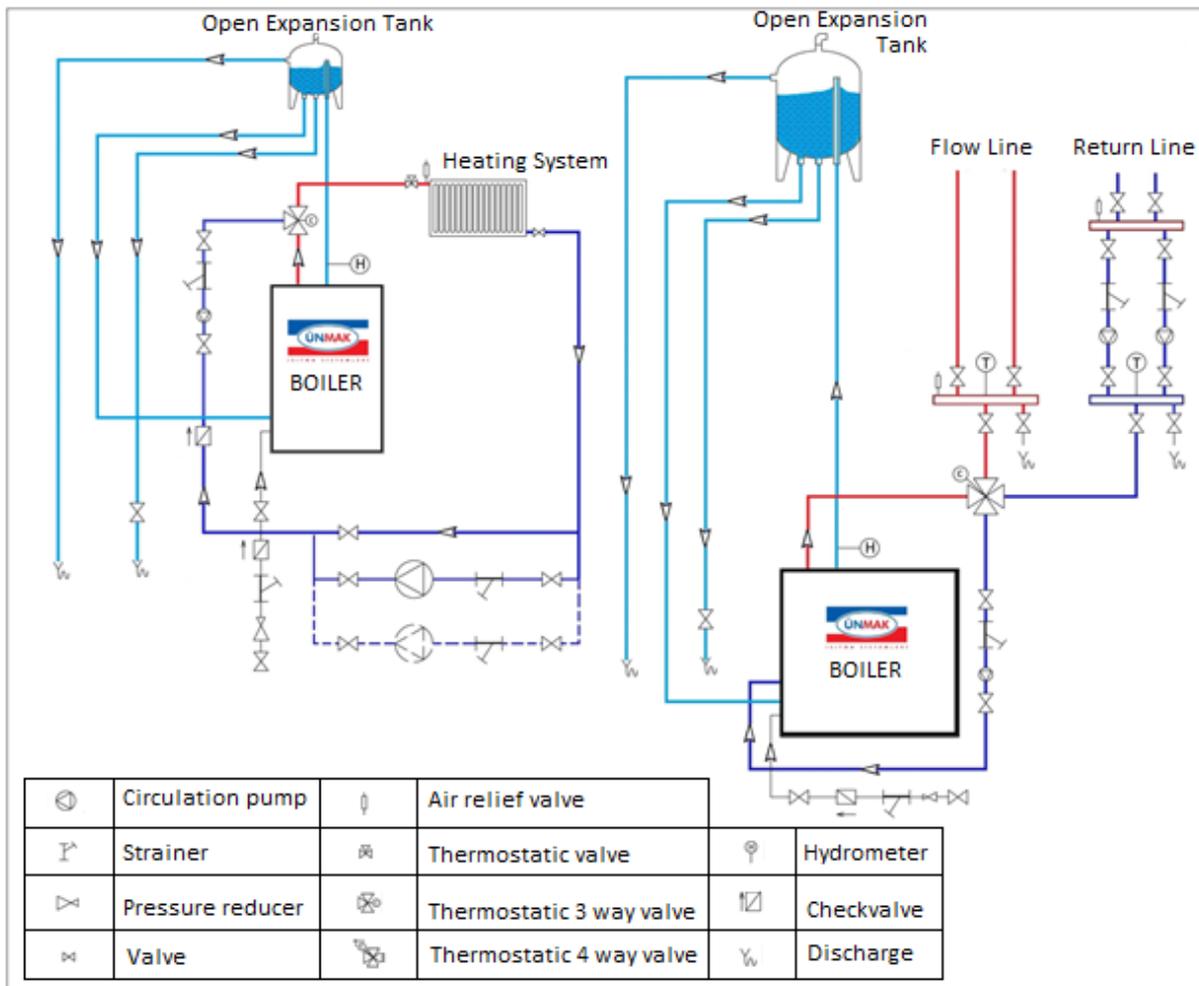
*Open expansion tanks have been selected assuming that there is a panel radiator in the system.*

BOILER POWER (kW)	OPEN EXP. TANK VOLUME (lt)
130	210
160	210
180	210
200	300
250	300
300	500
350	500
400	500
450	750
500	750
600	750

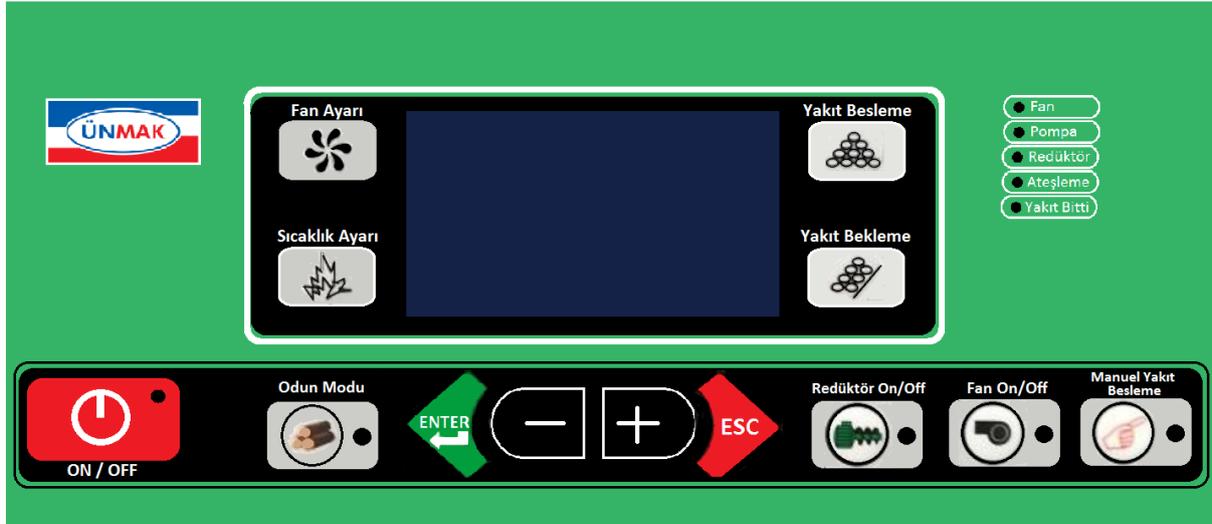


**Adding fresh water to the installation should only be done when the installation is cold.**

*Installation diagram with open expansion tank*

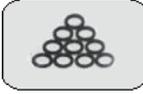


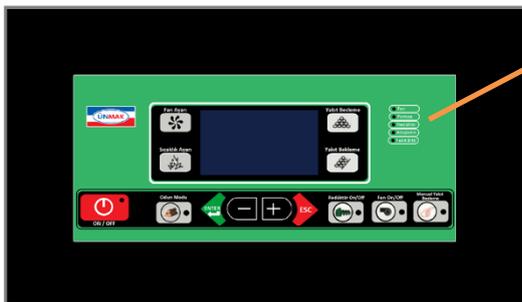
## CONTROL PANEL AND USER INTERFACE



### Buttons and Descriptions

ON/OFF button		Used to turn the control panel on and off.
(+) (-) button		It is used to enter a new value to the device. It is used to increase or decrease the "Fan Adjustment", "Temperature Adjustment", "Fuel Supply", "Fuel Standby" values.
ENTER		It is used to store the adjusted values and to enter the submenus within the menu.
ESC		It is used to exit the menu or submenu.
Fan Adjustment		Used to determine the fan speed

Sıcaklık Ayarı		It allows the boiler water temperature to stop when it reaches the set value.
Fuel Supply		It is used to determine the time the fuel goes into the burner.
Fuel Standby		It is used to determine the waiting time after the fueling time.
Gearbox On/Off		The gearbox motor (fuel loading motor) of the boiler is activated and deactivated with this button.
Fan On/Off		The fan of the boiler is activated and deactivated with this button.
Manual Fuel Supply		It is used to manually (manually) load fuel into the boiler. Fueling continues as long as the button is pressed.
Wood Mode		This function should not be operated in ÜKYP/YP model boilers. In this function, the gearbox does not work, only the fan blows.



- Fan
- Pump
- Gearbox
- Ignition
- No fuel

There are four information and one warning lamps on the control panel. Warning lights come on when fan, pump, reducer and ignition work. When the fuel runs out, the

warning lamp lights up to warn.

## START-UP

The following steps should be followed for the boiler initial start-up:

Check if there is a visible defect in the installation. If there is a problem, correct the problems by getting information from the "Information on Usage Errors" page.

Observe from the hydrometer whether the water is decreasing in the installation. If it is missing, add water when the boiler is cold.



Hidrometre

Check whether there is a visible defect in the electrical line of the boiler. If there is a problem, correct the problems by getting information from the "Information on Usage Errors" page.

### To burn pellets with automatic feeding:

Fill the hopper with fuel and close the lid tightly.

Open the control panel by pressing  the button of the device for 2 second. When it is turned on, values will appear next to the Supply, Set Temperature, Standby variables on the blue graphic screen.

**CHECKUP** is not seen because the  **Gearbox On/Off** and  **Fan On/Off** buttons are not pressed, and the boiler is operating.

Belli bir süre **Redüktör On/Off** ve **Fan On/Off** butonlarına basılmazsa, önce ateşleme ve besleme yapıp, daha sonra ateşlemeye devam edecektir.

Sıcaklıkların yükselmediğini hissedip, ya "Ateşleme Sistemi Arızalı" ya da "Yakıt Bitti" ikazı verecektir.

If the  **Gearbox On/Off** and  **Fan On/Off** buttons are not pressed for a certain period of time, it will first fire and feed, and then continue to fire. It will feel that the temperatures are not rising and will give a warning either "**Ignition System Malfunction**" or "**Out of Fuel**".

Press the  **Gearbox On/Off** and  **Fan On/Off** buttons. The reducer and fan will be activated and the boiler will work to fulfill its heating functions.

Kazan suyu sıcaklığını ilk çalıştırmada 60°C ayarlamakta fayda vardır. Bunun için önce panelden **Sıcaklık Ayarı** butonuna basınız. Ekranda SICAKLIK SET yazısı belirecektir. Ayarlamak isediğiniz sıcaklık derecesine gelinceye kadar butonlarına basılı tutabilirsiniz.

It is useful to adjust the boiler water temperature to 60°C at the first start-up.

For this, first press the  **Temperature Setting** button on the panel.

-	26°
Besleme : 5 sn.	028 sn
Set Isı : 40°	
Bekleme : 00.50	
CHECKUP	B: 27°

-	26°
Besleme : 5 sn.	004 sn
Set Isı : 40°	BESLE
Bekleme : 00.50	
ATES.BESLEME	B: 27°

-	26°
Besleme : 5 sn.	050 sn
Set Isı : 40°	BEKLE
Bekleme : 00.50	
ATESLEME	B: 27°

-	26°
Besleme : 5 sn.	004 sn
Set Isı : 40°	BESLE
Bekleme : 00.50	
ATES.BESLEME	B: 27°

-	26°
Besleme : 5 sn.	050 sn
Set Isı : 40°	BEKLE
Bekleme : 00.50	
ATESLEME	B: 27°

-=	29°
Besleme : 5 sn.	050 sn
Set Isı : 40°	BEKLE
Bekleme : 00.50	
ISITMA	B: 55°

ISI AYARI  
ISI : 60°C

<p>TEMPERATURE SET will appear on the screen. You can press and hold the   buttons until you reach the temperature you want to set.</p> <p>When it reaches the desired level, you can memorize it by pressing the <b>ENTER</b> button.</p>	
<p>Press the  <b>Fan Setting</b> button of the panel. A rectangle will appear around the line in the upper left corner.</p> <p>When you press the  button once, it increases the fan level once more and as in the second figure,</p> <p>As soon as you press the  <b>ENTER</b> button, the fan setting you have set will be memorized and the image on the screen will be as in the third figure. The fan speed will remain at Level 1 during ignition.</p>	
<p>kazan kapasitesine ve yakıt tipine göre olması gereken ayarları bulunuz.</p> <p>In the  <b>"Fuel supply - Feeding Settings"</b> section of your manual, find the settings that should be according to the boiler capacity and fuel type.</p> <p>Press the  <b>Fuel Feed</b> button to adjust the amount of fuel to be given into the boiler. After setting the required feed setting from the buttons, press the  <b>ENTER</b> button to memorize it. Press the  <b>Fuel Standby</b> button for standby setting. After setting the required standby setting from the   buttons, press the  <b>ENTER</b> button to memorize it.</p>	
<p>If it is desired to increase extra energy during combustion, the auger is fueled by pressing the  <b>Manual fuel feeding</b> button. As long as this button is pressed, it supplies fuel, when the finger is pulled, it cuts off the supply.</p>	
<p>Pressing the  <b>ON/OFF</b> button will be sufficient to turn off the boiler. As long as the power is not disconnected (power failure, unplugging the boiler), the pump will continue to run until the temperature drops.</p>	

### To light by hand feeding:

<p>Large pieces of fuel to be burned in the boiler are placed inside the boiler.</p>	
<p>Open the control panel by pressing  the button of the device for 2 second.</p> <p>By pressing the  <b>Wood Mode</b> button, the boiler is fed manually.</p> <p>In wood mode;</p>	

<p> <b>Gearbox On/Off</b> and  <b>Manual Fuel Feed</b>,  <b>Fuel Feed</b> and  <b>Fuel Wait</b> will not work.</p> <p>The boiler does not operate because the  <b>Gearbox On/Off</b> and  <b>Fan On/Off</b> buttons are not pressed in the adjacent display.</p>	
<p>It is useful to adjust the boiler water temperature to 60°C at the first start-up. For this, first press the  <b>Temperature Setting</b> button on the panel. <b>TEMPERATURE SET</b> will appear on the screen. You can press and hold   the buttons until you reach the temperature you want to set.</p> <p>When it reaches the desired level, you can memorize it by pressing the  <b>ENTER</b> button.</p>	
<p>Press the  <b>Fan Setting</b> button of the panel. A rectangle will appear around the line in the upper left corner.</p> <p> When you press the button once, it increases the fan level once more and as in the second figure,</p> <p>As soon as you press the  <b>ENTER</b> button, the fan setting you have set will be memorized and the image on the screen will be as in the third figure.</p>	
<p>Ignite the auxiliary materials you put in the boiler.</p> <p>Then close the boiler covers tightly and press the  <b>Fan On/Off</b> button on the panel. The Fan lamp on the top right of the control panel will turn on and the boiler will continue to heat.</p>	
<p>Pressing the  <b>ON/OFF</b> button will be sufficient to turn off the boiler. As long as the power is not disconnected (power failure, unplugging the boiler), the pump will continue to run until the temperature drops.</p>	



**Increasing the fan speed more than necessary will cause some heat to be discharged from the chimney. Air given suddenly and in large quantities during combustion will cause sticking in the slags.**



**Boiler covers and hopper cover should not be left open during combustion.**



**In the first start-up, the ignition may fail because the flue temperature will heat up late and the fuel loading auger is empty. Let it ignite again by turning it off and on.**

## FUEL FEEDING-STANDBY SETTINGS

The table below can be used for the feeding and waiting settings to be used when operating with automatic feeding, which can be adjusted from the control panel of ÜNMAK UKYP/YP series boilers.

ÜKYP/YP	FEED TIME (SEC)	STAND-BY TIME (SEC)	ÜKYP/YP	FEED TIME (SEC)	STAND-BY TIME (SEC)
130	3	10	300	4	3
160	4	10	350	6	3
180	4	9	400	10	3
200	4	7	450	18	3
250	4	5	500	60	3
			600	60	0



*The values given in the table according to capacities will vary according to values such as the degree of insulation in the environment heated by the boiler, chimney draft, thermal comfort demand of the space, fuel diameter, lower heating value.*

Properties of water suitable for filling the boiler installation

Parameter	Unit	Boiler Feed Water	Boiler Filling Water
Appearance	-	Clean, clear, free of solids and stable foam	
conductivity at 25 °C	µS/cm	<1500	
pH at 25 °C	-	>0,7	From 9,0 to 11,5
Total hardness (Ca+Mg)	mmol/l	<0,05	
Iron concentration	mg/l	<0,2	
Compound alkaline value	mmol/l	-	<5
Diesel/oil concentration	mg/l	<1	-

## MAINTENANCE AND BOILER CLEANING

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In order for your system to operate efficiently, regular maintenance by expert teams is required according to the manufacturer's instructions.

### Regular checks:

- The water level should always be checked. The hydrometer (water level indicator) should be marked after the first filling of the system. If the water level has fallen below the static pressure or the system setting, water must be added to the system (when the boiler is cold). In order to protect the system and the boiler from corrosion, the water to be fed to the system should be softened according to the local settings.
- It should be checked whether the front doors are closed well, and if necessary, the cover wicks should be changed.
- It should be checked whether there is gas leakage from the flue connection. If there is a leak, it should be repaired.
- Boiler heating surfaces should be checked. The formation of soot varies according to the type of fuel used and the amount of combustion air. If it is understood that the leaving water temperature cannot rise to the values that it usually is under normal conditions, it means that the boiler surfaces are soaked, the heat transfer surfaces of the boiler should be cleaned.
- It should be checked whether the fan is working properly. An improperly balanced, well-balanced fan makes periodic noises. If there is fuel dust or ashes collected between the fins of the fan, it is necessary to clean it by blowing it without disturbing the fin structure of the fan or by holding a dryer.

### Cleaning the boiler:

It should be done when the boiler is cold. Before cleaning the boiler, the pump and the electrical devices connected to the system must be turned off.

To clean the boiler:

- The intervals between the water jackets should be cleaned one by one. This cleaning should be done frequently as the ashes and soot remaining on the water jackets will prevent heat conduction.
- The pitching that occurs on the walls of the boiler will form a layer and will prevent the energy released in the boiler from passing into the water, thus causing a decrease in efficiency. In order to prevent this situation, all heating surfaces of the boiler should be cleaned with the help of a squeegee at regular intervals or as needed.
- The ashes that may remain on the water grill should be pushed down and the ashes accumulated inside the cleaning door located in front of the burner should be cleaned periodically or when necessary.
- By opening the cleaning cover of the burner, the ashes accumulated in it can be cleaned periodically.
- The control panel should be protected from dust, moisture and water. The terminals behind the panel must remain dust-free.
- Boiler outer hood plates can be cleaned as needed.

### Care:

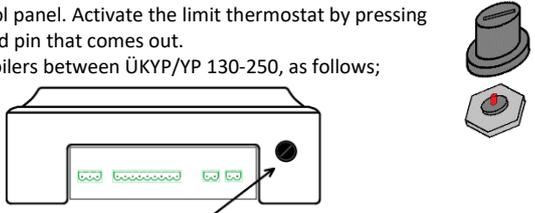
Contracted service of the system before each working season; We strongly recommend that you call our authorized service to check the boiler, installation, electrical connections, chimney. Never carry out maintenance work without the help of an expert.

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## INFORMATION ON USAGE ERRORS

PROBLEM	CAUSE	REMEDY
Insufficient heating	<ul style="list-style-type: none"> <li>Boiler heat transfer surfaces may be covered with soot and soot.</li> <li>The fuel used may be of poor quality</li> <li>The pump may not be running</li> <li>Insulation may be insufficient</li> <li>Feeding – Standby settings may be incorrect, underfeeding manually</li> </ul>	<ul style="list-style-type: none"> <li>Clean it with the help of a rake. (the boiler must not burn)</li> <li>Change your fuel and try to get some before refueling.</li> <li>Call for service, make sure the plug of the control panel is plugged into the power.</li> <li>Increase the heat insulation of the place where the boiler is installed</li> <li>Enter the correct settings on the Feed - Standby settings page. Or correct the settings by observing the flame. Add some more fuel if hand fed</li> </ul>
Not good combustion	<ul style="list-style-type: none"> <li>Combustion air may be low</li> <li>Chimney draft may be low</li> </ul>	<ul style="list-style-type: none"> <li>Make sure that the fan is working, make sure that its flap is not closed.</li> <li>Check that there are no holes or cracks anywhere in the chimney. If it's still not enough, consult your chimney.</li> <li>Insulate your chimney.</li> </ul>
Smoke from hopper	<ul style="list-style-type: none"> <li>The wick on the bunker cover does not press well on the surface or aging</li> <li>Lack of chimney traction</li> </ul>	<ul style="list-style-type: none"> <li>Ensure that the wick in the lid is fully pressed to the surface, renew if necessary.</li> <li>Check that there are no holes or cracks anywhere in the chimney. If it's still not enough, consult your chimney. Insulate your chimney.</li> </ul>
Seeing of tar in smoke pipes	<ul style="list-style-type: none"> <li>Continuous low temperature operation of the boiler</li> <li>Burning of plastic-derived fuels in the boiler</li> <li>Chimney not heated</li> </ul>	<ul style="list-style-type: none"> <li>Increase the temperature setting from the control panel</li> <li>Never throw plastic-derived waste into the boiler or fuel tank (bunker).</li> <li>Check that there are no holes or cracks anywhere in the chimney. If it's still not enough, consult your chimney. Insulate your chimney.</li> </ul>
Excessive fuel consumption	<ul style="list-style-type: none"> <li>Poor quality fuel</li> <li>High chimney draft</li> <li>Excess air</li> <li>Insufficient space isolation</li> <li>Feed – Standby settings may be incorrect</li> <li>Door may be left open during manual feeding.</li> </ul>	<ul style="list-style-type: none"> <li>Change your fuel</li> <li>Check that there are no holes or cracks anywhere in the chimney. Close the flue flap. If it's still not enough, consult your chimney.</li> <li>Decrease the fan speed.</li> <li>Increase the heat insulation of the place where the boiler is installed</li> <li>Enter the correct settings on the Feed - Standby settings page. Or correct the settings by observing the flame.</li> <li>Tightly close the covers after manual feeding.</li> <li>Check the cover seals.</li> </ul>
Flue gas leakage from boiler front covers	<ul style="list-style-type: none"> <li>Worn cover seals</li> <li>Deformation of the lids</li> </ul>	<ul style="list-style-type: none"> <li>Change the wicks.</li> <li>Make sure that the burning does not rest on the caps. Get help from authorized services for deformed covers.</li> </ul>
Failure of the boiler to reach the set temperature	<ul style="list-style-type: none"> <li>The temperature sensor tip may have come out of its socket.</li> <li>The control panel may not be receiving power.</li> <li>The lid may be left open</li> </ul>	<ul style="list-style-type: none"> <li>Replace the temperature sensor end of the control panel board by lifting the top cover of the boiler. Pour heat transfer oil into the housing.</li> <li>Plug in the control panel to power. If it still doesn't work, call for service.</li> <li>Close the lids</li> </ul>
Heating of the expansion tank	<ul style="list-style-type: none"> <li>Expansion tank under the influence of the pump</li> </ul>	<ul style="list-style-type: none"> <li>Raise the expansion tank higher</li> <li>Decrease the pump speed.</li> <li>Call service</li> </ul>

PROBLEM	CAUSE	REMEDY
Partial heating of radiators	<ul style="list-style-type: none"> <li>Air in the radiator</li> </ul>	<ul style="list-style-type: none"> <li>Take air from the radiator vents. Make sure that the pipe of the line to the expansion tank is always up.</li> </ul>
Extinguishing of combustion	<ul style="list-style-type: none"> <li>Giving air at a very high flow rate by the fan without complete ignition</li> <li>No air coming from below during manual feeding</li> <li>Very high fuel supply</li> </ul>	<ul style="list-style-type: none"> <li>Decrease the fan air setting.</li> <li>Send the remaining fuel above the burner's air holes towards the center of the burner.</li> <li>Decrease the fuel supply setting from the fuel supply setting.</li> </ul>
Loud sound of water coming from inside the boiler	<ul style="list-style-type: none"> <li>Remaining air inside the boiler after the first filling</li> </ul>	<ul style="list-style-type: none"> <li>See the first run section.</li> </ul>
The boiler water temperature rises too high and the boiler stops	<ul style="list-style-type: none"> <li>Switch off the limit thermostat</li> </ul>	<ul style="list-style-type: none"> <li>Unscrew the black plastic cover on the back of the control panel. Activate the limit thermostat by pressing the red pin that comes out.</li> <li>For boilers between ÜKYP/YP 130-250, as follows;</li> </ul>  <p style="text-align: center;"><b>Limit Termostat</b></p> <p style="text-align: center;">It is inside the control panel in boilers between 300-600..</p>
Fuel exhaustion warning on the panel	<ul style="list-style-type: none"> <li>Running out of fuel in the hopper</li> <li>Probe dislocation</li> <li>The probe does not feel</li> <li>The boiler water temperature drops too low after reaching the set temperature.</li> </ul>	<ul style="list-style-type: none"> <li>If using automatic, add fuel to the bunker, if using mechanical feeding, manually load fuel Insert the probe into its socket</li> <li>Replace probe or call for service</li> <li>Replace probe or call for service</li> <li>Add fuel to the bunker if using automatic, manually load fuel if using mechanical feeding</li> </ul>



***Do not open the boiler covers and the bunker cover in case of power cuts, do not add water to the boiler.***



***In power cuts; close the flue flap, if any. If there is a pump by-pass line, activate the line. Don't forget to restore your settings when the electricity comes back.***

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