ÜNLÜSOY YAPI MALZEMELERİ SANAYİ VE TİCARET LİMİTED ŞİRKETİ, İZMİR/TURKEY

ÜGS SERIES LIQUID &GAS FIRED CENTRAL HEATING BOILERS

ÜGS Two Pass Circulation

ÜNMAK - ÜGS

TWO PASS CIRCULATION BOILER TECHNOLOGY FOR FORCED DRAUGHT BOILERS

INTRODUCTION

First of all, we would like to thank you for choosing ÜNMAK brand. You may find, INSTALLATION AND USAGE of the BOILER and MAINTENANCE in this book. To use your device efficiently and economically, please use this booklet carefully.

We do not touch any parts of your device or take outside the procedures in this guideline, even if you are operating, setting or caring.

Your installation should be done by authorized service providers. Our Authorized Dealers and Services will provide you with the necessary information about the use and maintenance of your device after you replace your device and after you have received and operated your connection. You can ask the undecided topics again. Our specialists will be happy to answer your questions.

WARNING

The boiler rules must be properly installed and operated only in well-ventilated and non-freezing, enclosed spaces outside the living areas. The heating system must be designed, installed, commissioned and maintained by a professional, trained professional staff (by the Unmak Authorized Service) in accordance with this manual and in accordance with the local regulations and applicable standards, regulations, or where they are missing or incomplete, to EEC directives and European norms (EN).

If the boiler is installed and used outside the operating conditions stated in this booklet, fire, explosion or the like may result in accidents that may result in loss of property or life.

The boiler is designed only for the use of hot water (under boiling temperature). The system must comply with the operating temperature and pressure boiler label and the values specified in this booklet. Boilers should only be used in this booklet and on the gas or liquid fuels specified on the boilerplate.

This is a B23 device, so the boiler must be connected to a boiler which has adequate pulling in accordance with the rules and the flue gas in the boiler room should not escape. During the run-time of the boiler, a pump in the appropriate values is required to circulate continuously. Filling and feeding water should be in accordance with the specifications given in this booklet. The use of non-calcareous, clean and corrosion-free water is essential to economic operation and the length of the life of the system. Never turn off the boiler room ventilation for safe and efficient use. For good combustion there is a constant need for fresh air. It is also necessary that the gases, which come out of the combustion and leak from the fuel to the atmosphere, can be continuously discharged.

Install the boilers on a base at least 15 cm above the floor, parallel to the side, with sufficient strength, not flammable. The boilers should not be installed or operated in environments where flammable gases and materials are present. In order to prevent the boiler from being damaged, the mixing of the combustion air with heavy dust or halogen hydrocarbons (solvents, spray gases, adhesives, etc.) should be prevented. The humidity of the boiler room should not be high.

Liquid or gas burners have automatic ignition and many additional safety controls. Do not attempt manual operation by burning the burners manually or disabling the controls of the system. All control

devices must be kept running at the stated limits. In the event of any malfunction, do not operate the system and contact your authorized service.

The boiler room should not be used for other purposes and should not have an open connection to the living spaces. The connecting door must be airtight, fire resistant and self-closing.

If the boiler temperature exceeds 90 ° C, do not give cold water to the system for rapid cooling. This can cause the win to crack. Before adding the feed water, allow the boiler to cool naturally to 40 ° C. If any part of the boiler is inundated, do not operate it. Contact your authorized service center immediately.

Do not touch the flame sweeping glass, the chimney, and the smoke blanket sections. these areas can be very hot and cause serious injuries. It is advisable to install an emergency stop switch at an appropriate location outside the boiler room. This switch must be able to stop the combustion process or the fuel supply.

OPERATING CONDITIONS

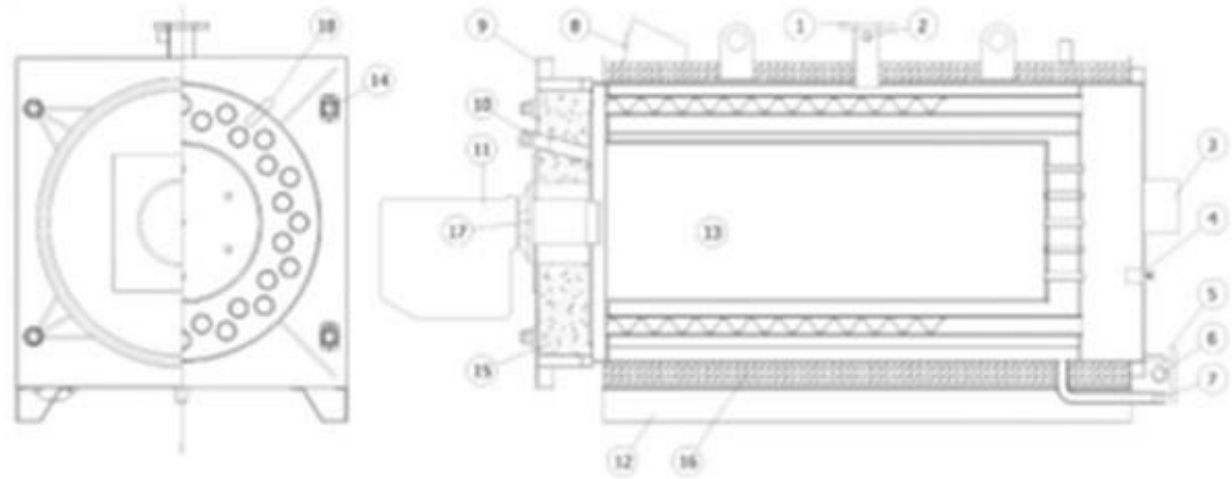
ÜGS type boilers are designed to produce hot water. They should be installed in a hot water heating system suitable for boiler performance. Standard operating temperature is maximum 70-90ºC. Standard operating pressure, UGS series are classified as 3-4-5 and 6 bar for boilers. These boilers are not suitable for use as a direct water heater. In the case of potable or clean hot water, a suitable closed-circuit heat exchanger should be installed in the system.

These boilers are suitable for working with liquid and gaseous fuels. Ask your authorized dealers about the fuels you can use. If you want to change the fuel received in the first operation, contact your authorized service center.

Both open and closed expansion systems can be used in the run. ÜGS boilers 2. There are turbulators to increase heat transfer to the water in the transition pipes. Never remove these turbulators, cause loss of efficiency and damage the boiler. This is not a condensate-type boiler, so be careful not to have long-term coagulation. These boilers are suitable for working with liquid and gaseous fuels. Ask your authorized dealers about the fuels you can use. If you want to change the fuel received in the first operation, contact your authorized service center.

MAIN SECTIONS of BOILER

1 Hot water outlet
2 Safety exit
3 Chimneys
4 Explosion-proof cover
5 Hot water return
6 Safety return
7 Filling and discharge
8 Boiler front cover
9 Observation hole
10 Gas / Liquid fuel burner
11 Control panel
12 Boiler stands
13 Combustion chamber
14 Two-way hinges
15 Combustion chamber cover insulation
16 Boiler insulation
17 Gas / Liquid fuel burner fitting
18 Thermostat nozzle



MODEL-SERIES	ÜGS		60	80	100	125	150	175	200	250	300	350	400	450	500	600
POWER		kW	70	93	116	145	174	204	233	291	349	407	465	523	582	698
		kcal/h	60.000	80.000	100.000	125.000	150.000	175.000	200.000	250.000	300.000	350.000	400.000	450.000	500.000	600.000
EFFICIENCY		%	90 - 94													
FLUE GAS TEMP.	FULL LOAD	°C	189	189	192	189	189	189	190	190	190	190	190	188	186	187
	PART LOAD	°C	129	129	132	129	129	129	130	130	130	130	130	138	126	127
GAS SIDE RESISTANCE		mbar	0,6	0,7	1	1,1	0,9	1,1	1,5	1,6	1,4	2	2,2	2,2	2,1	2,8
COMBUSTION CHAMBER DIAMETER		mm	310	400	400	400	450	450	500	550	550	630	630	630	670	700
COMBUSTION CHAMBER LENGTH		mm	600	700	700	950	950	950	1100	1100	1300	1300	1300	1400	1400	1400
COMBUSTION CHAMBER VOLUME		Lt	45,3	88,0	88,0	119,4	151,1	151,1	216,0	261,3	308,9	405,2	405,2	436,4	493,6	538,8
MAX. OPERATING PRESSURE		bar	4 - 5 - 6 - 8													
TEST PRESSURE		bar	6 - 7,5 - 9 - 12													
OPERATING TEMPERATURE		°C	55 -90													
WEIGHT		kg	310	395	420	490	545	570	655	725	805	1100	1180	1330	1450	1530
WATER CONTENT		Lt	71	132	118	156	163	150	200	205	251	468	495	549	600	638
DIMENSIONS	WIDTH	mm	670	800	800	800	850	850	900	950	950	1140	1170	1190	1250	1290
	DEPTH	mm	1080	1200	1200	1470	1470	1470	1650	1700	1950	1950	1950	2070	2070	2270
	FLUE CONNECTION HEIGTH	mm	570	645	645	645	670	670	710	720	720	810	830	840	870	940
	HEIGTH	mm	945	1080	1080	1080	1130	1130	1180	1230	1230	1415	1445	1465	1525	1565
FLUE CONNECTION DIAMETER		mm	150	150	200	200	200	200	200	200	250	300	300	300	350	400
BOILER INLET/RETURN		R"	DN40	DN40	DN40	DN50	DN65	DN65	DN65	DN65	DN65	DN80	DN80	DN100	DN100	DN100
SAFETY INLET		R"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ½"	2"	2"	2"
SAFETY RETURN		R"	1"	1"	1"	1"	1"	1"	1"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ¼"	1 ½"
FILLING&DISCHARGE		R"	½"	½"	½"	½"	½"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"	¾"

MODEL-SERIES	ÜGS		700	800	900	1000	1100	1250	1350	1500	1600	1750	2000	2500	3000
POWER		kW	814	930	1047	1163	1279	1454	1570	1745	1861	2035	2326	2908	3489
		kcal/h	700.000	800.000	900.000	1.000.000	1.100.000	1.250.000	1.350.000	1.500.000	1.600.000	1.750.000	2.000.000	2.500.000	3.000.000
EFFICIENCY		%													
FLUE GAS TEMP.	FULL LOAD	°C	187	186	191	189	188	189	191	192	188	189	189	191	192
	PART LOAD	°C	126	131	129	129	138	132	129	129	138	129	129	129	129
GAS SIDE RESISTANCE		mbar	2,6	2,8	2,9	3	3	3,1	3,2	3,6	4	4,2	4,7	5,1	5,5
COMBUSTION CHAMBER DIAMETER		mm	740	830	830	850	835	830	835	830	890	890	1050	1050	1050
COMBUSTION CHAMBER LENGTH		mm	1500	1600	1650	1650	1650	1650	2200	2200	2200	2200	2200	2700	3400
COMBUSTION CHAMBER VOLUME		Lt	645,1	865,7	892,8	936,3	903,5	892,8	1.204,7	1.190,3	1.368,7	1.368,7	1.905,0	2.337,9	2.944,1
MAX. OPERATING PRESSURE		bar	4 - 5 - 6 - 8												
TEST PRESSURE		bar	6 - 7,5 - 9 - 12												
OPERATING TEMPERATURE		°C	55 -90												
WEIGHT		kg	1915	2220	2380	2605	2775	2845	3270	3365	3360	3705	4200	4750	5560
WATER CONTENT		Lt	710	943	1142	1146	1145	1097	1526	1463	2134	2103	1997	2345	2910
DIMENSIONS	WIDTH	mm	1330	1450	1520	1560	1560	1560	1560	1560	1720	1720	1840	1840	1840
	DEPTH	mm	2380	2380	2380	2380	2380	2380	2890	2890	2890	2890	2890	3445	4150
	FLUE CONNECTION HEIGTH	mm	980	1050	1085	1115	1125	1125	1125	1125	1235	1235	1350	1350	1350
	HEIGTH	mm	1605	1725	1800	1830	1835	1835	1835	1835	1995	1995	2105	2105	2105
FLUE CONNECTION DIAMETER		mm	400	450	450	450	450	450	450	450	450	450	450	450	450
BOILER INLET/RETURN		R"	DN100	DN125	DN125	DN125	DN125	DN125	DN150	DN150	DN150	DN150	DN200	DN200	DN200
SAFETY INLET		R"	2"	2 ½"	2 ½"	2 ½"	2 ½"	2 ½"	3"	3"	3"	3"	3"	4"	4"
SAFETY RETURN		R"	1 ½"	1 ½"	1 ½"	2"	2"	2"	2"	2"	2"	2"	2"	3"	3"
FILLING&DISCHARGE		R"	¾"	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"

INSTALLATION INSTRUCTIONS

Projecting, installation and commissioning of the heating system must be carried out in accordance with the applicable standards, regulations and warning in this booklet. Local standards should be referred to the EEC directives and European norms (EN) when there are no regulations or where the regulations are inadequate.

• Checking and operating the entire system should be done by authorized service personnel.

• The boiler should be installed only in a closed area, except for the living areas, which are well ventilated and free from frost. Lower and upper ventilation systems must comply with local regulations.

• Boilers must only be burned with EN 676 (gas fired) or EN 267 (liquid fuels) certified burners in order to operate in accordance with the Boiler Efficiency Requirement Directive (92/42 / EC) and the Gas Burner Directive (90/396 / EC).

• This is a B23 type, so the boiler must be connected to a boiler which has adequate traction in accordance with the rules and the flue gas should not escape in the boiler room.

• All equipment and control system of the heating system must be able to provide the specified heating loads according to the external climatic conditions and the desired internal temperature. It should be able to protect the heating system against frost and moisture when normal operating conditions (comfort temperature level) are not required.

• The heating system control and safety system equipment must comply with the applicable TS standards and, where insufficient, EN 12828 and the warnings in this manual should be considered.

• The heating system must have at least one circulation pump in accordance with the system requirements and this pump should be kept on as long as the burner is running.

• An effective installation circuit must be installed to protect the win- dow from flue-gas condensation. With a system such as a condensation by pass pump and a 3-way valve system, the boiler water temperature should be kept above the kandenance value.

• The first filling and then the feed water must be in accordance with the specifications given in this manual. The use of water in the right specifications is essential for the long life and economical operation of the system. Excessively charged (soft) water causes corrosion, excessively hard limestone, water should be used at correct values.

• Mount the boilers on a floor at least 15 cm above the floor, parallel to the floor, with sufficient strength not flammable.

• Boilers must not be installed and operated in the presence of flammable gases and materials. In order to prevent the boiler from being damaged, the mixing of the combustion air with heavy dust or halogen hydrocarbons (solvents, spray gases, adhesives, etc.) should be prevented. The humidity of the boiler room should not be high.

• The boiler room should not be used for other purposes and should not have an open connection to the living spaces. The connecting door must be airtight, fire resistant and self-closing.

• It is advisable to install an emergency stop switch at an appropriate location outside the boiler room. This switch must be able to stop the combustion process and the fuel supply. There is a benefit if you specify it with a name tag.

• Additional measures should be taken if the Eger system is to be operated with heavy gas fuels (such as LPG) from the air and the boiler is below ground level. The fuel that can be seized in the boiler room must be automatically ejected in a safe area outside the boiler (ventilation) with an ex-proof mechanical system, and the fuel line must be automatically cut when the fuel leaking reaches a certain level.

• All electrical connections must be made according to current standards and according to the diagrams given in this manual. Please pay particular attention to the grounding of all electrical equipment in the boiler room. Never use fuel or water pipes as ground connection.

• Boiler chimney connections must be made in accordance with the standards. The boiler position should be chosen such that the distance between the chimney and the number of elbows is minimum. Chimney ducts should never be directed downwards, avoiding steep elbow turns. Thermal insulation of smoke ducts and busses must be made.

• There should be no manual closing systems (such as valves) between the boiler and the safety and control systems. Only a valve that is locked to the connection of the closed expansion tank can be installed for maintenance and pre-pressure checks. The accidental closure of this valve should definitely be avoided.

• After installation of the heating system, the connections (water, fuel, flue gas lines, electricity) of all system equipment should be checked for faults.

• There is a condensate outlet in the UGC boilers. This outlet must be connected to a suitable duct with a siphon to prevent liquid gas escape. The condensate discharge must comply with the applicable regulations.

• The weight of the flue gas ducts should not be transported to the boiler flue gas connection point and flanged or leak-tight fittings should be used for easy maintenance.

• All weight of large and heavy burners should not be transported to the boiler front door, the burner must be transported to a suitable support with weight adjustable.

• Size of burner connection screws; burner flange, gasket and adapter plate thicknesses.

• If the gap between the burner barrel and the boiler door refractory is more than 10 mm, fill it firmly with ceramic fiber material resistant to 1200 ° C. It will be easier to divide the material into 3 pieces longitudinally and fill it.

• Responsibility for the installation and commissioning of the heating system in accordance with the current standards and regulations of the control and safety system is the unit which receives the system project, installation and operation. At the time of the installation of this booklet, minimum information was provided as a preliminary reference in accordance with the current standards.

SECURITY SYSTEMS

Safety measures must be taken in the heating system against the maximum operating temperature and maximum operating pressure. Safety precautions must be made depending on the type and power supply of the heating system and on the control of the heat transfer system (eg automatic control or manual operation).

Obtaining the required minimum safety precautions, correct selection, mounting and adjustment of safety and operating devices; projectors, installers and operators.

CENTRAL HEATING SYSTEMS

During the first hours of operation of central heating systems, check that all radiators are being heated at an even rate.

If the top of a radiator is at a lower temperature than the bottom then it should be vented by releasing air through the venting screw at the top of the radiator. Ask your installer to show you how this is done. Repeated venting will reduce the quantity of water in the system and this must be replenished for safe and satisfactory operation of the appliance.

When excessive venting or water leaks are found in the system you must contact a service engineer to inspect the installation and rectify any fault.

Only use additives compatible with the appliance and the system. Use of incompatible additives can cause damage and will invalidate the appliance guarantee.

BOILER LOCATION

This boiler is only suitable for installing internally within a property at a suitable location onto a fixed rigid non-combustible surface at least the same size as the boiler weight.

The boiler is not suitable for external installation unless a suitable enclosure is provided.

SAFETY PRECAUTIONS

- Caltech boilers are delivered in separate crates. Check that the appliance is complete and undamaged as soon as you receive it. Report any discrepancies or damage to your dealer who sold it.

- This Caltech boiler must be installed by a legally qualified installer in respect with codes of practice and legal regulations of local authority. On completion of the installation, the installer must issue the owner with a declaration of conformity confirming that the installation has been completed to the highest standards in compliance with the instructions provided by the manufacturer in this instruction manual, and that it conforms to all applicable laws and standards.

- This boiler must only be used for the purpose specified by the manufacturer and for which it is designed. Manufacturer declines all responsibility, contractual or other, for

damage to property or injury to persons or animals caused by improper installation, adjustment, maintenance or use.

- If you notice any water leaking from the boiler, immediately disconnect it from the mains electricity supply, shut off the water supply, and notify Technical Assistance Service or a qualified technician.

- Periodically check that operating pressure in the heating circuit is over 1 bar but below the maximum limit specified for the appliance. If this is not the case, contact Technical AssistanceService or a professionally qualified technician. If the boiler is not going to be used for an extendedperiod of time, contact Technical Assistance Service or a qualified technician to have the following minimum preparation carried out:
    - Switch the appliance OFF at the control panel and mains power switches
    - Close the gas cock and heating water cock
    - Drain the central heating circuit if there is any risk of freezing.

- The boiler must be serviced at least once a year.

GENERAL SAFETY INFORMATION

The operation of any appliance that uses electrical power demands that a number of fundamental safety precautionsbe respected. In particular:

- Do not allow children or infirm persons to operatethe boiler unsupervised.

- Do not operate any electrical devices or equipment,including switches or domestic appliances,etc., if you can smell gas or fumes. If you detectany suspicious smells:
    - Ventilate the room by opening all doors and windows.
    - Close the gas shut-off cock
    - Report the fault immediately to Technical Assistance Service or a professionally qualified technician.

- Do not touch the boiler while barefoot or wet.

- Never clean or service the boiler without firstdisconnecting it from the mains electricity supplyby turning the main power switch and the controlpanel switch OFF.

- Do not tamper with or adjust the safety or controldevices without prior authorisation and instructionsfrom the boiler’s manufacturer.

- Never pull, disconnect, or twist the electricalcables coming from the boiler even if it is disconnectedfrom the mains electricity supply.

- Do no obstruct or restrict the vents in the roomwhere the appliance is installed. Adequate ventilationis essential for correct combustion.

- Do not expose the boiler to the elements. It is notdesigned for outdoor use.

- Do not switch the boiler off if outdoor temperaturedrops below ZERO (risk of freezing)

- Do not leave flammable substances in the roomwhere the boiler is installed, even inside propercontainers

- Do not dispose of packaging material into theenvironment, or leave it within the reach of children,since it can become a potential hazard.Dispose of packaging material should be in compliance withapplicable legislation.

HANDLING THE PRODUCT

Caltech is a heavy product, and care should be taken when carrying the boiler to the room where it is going to be installed. The total weight of each boiler is indicated in Technical data section. Carrying equipments of product must be of enough capacity to support that weight.

COMMISSIONING

Assembly control and initial commissioning should be done by Ünmak Authorized Services and the required documents should be recorded. Otherwise, the manufacturer and / or vendor will not accept any liability and the product will be deemed out of warranty.

Check the following before you start to operate;

• The installation, operating, use, maintenance and repair booklets of the heating system equipment are located in the boiler room.

• Compatibility of system requirements and equipments with the values stated on the boiler label. Fuel type and pressure, boiler - burner capacity, electrical energy values, filling water characteristics, existence and adequacy of expansion system, operating pressure and temperature are selected according to system requirements ... etc.

• The availability and adequacy of boiler room ventilation. The ventilation is not blocking any obstacles.

• The adequacy and correct installation of the flue gas ducts and boiler are made.

• Ensure the presence of all system controls and safety equipment, have the correct characteristics and are installed correctly, and all of them are operating within the desired range of values.

• Fuel type, the burner capacity is correctly selected according to the boiler and heating system requirements.

• It is known that the turbulators in the 2 passages in the boiler are present as an integral number and are placed correctly.

• The boiler is not a forgotten foreign material in the combustion chamber.

• The boiler front cover, rear cover, burner eyelet, sight glass sealings are intact and are correctly mounted.

• The gap between the burner barrel and the flap refractory is isolated and the fit of the burner connection bolts.

• If the burner is heavy, check to make sure that the carrier is built, the boiler smoke outlet, and the chimney ducts are not burdened.

• In the installation criteria, the warnings specified in this booklet and the applicable standards and regulations are taken into consideration

Before the boiler is first commissioned, all heating system components (water and fuel side) must be cleaned from foreign materials and the system must be bluffed several times. Make sure that there are no foreign objects left.

In systems with closed expansion before filling the system with water, check the closed expansion front and make sure that it fits the system requirements.

Bring all the valves required for filling to the open position.

Check the properties of the filling water to suit the stated values.

Make filling very slow. The filling speed must be suitable for the capacity of the system's air ejection elements, otherwise air can become trapped at many points in the system.

In open systems, we fill the water up to the pre-calculated pressure value in closed systems up to the appropriate water level (until the water comes from the messenger pipe).

If the system has a low water level safety system, check the function and set values without fully filling the system according to the selected low water level control system.

Take the air from all possible points of the system.

Check that the circulation pump is running and that it is working in the right direction and that the water circulates.

Remove air from the system again. If water level / pressure falls, feed water again.

In open expansion systems, mark the lower level of the water level indicator and inform the user about the minimum water level.

For closed expansion systems, mark the water pressure upper and lower limit values and provide information to the user.

In closed expansion systems, if the water pressure relief valves are not factory pre-calibrated and not certified, gradually increase the system pressure and adjust the pressure safety valve and other pressure control elements to the pre-calculated values.

Make sure that all pressure safety systems operate at the required values.

Check that all elements in the heating system are not leaking water. Check the existence, correctness and presets of all other control and safety elements in the system.

Before commissioning the burner, check the fuel specifications (pressure, temperature, and temperature) and check for leaks in the fuel lines and vent the fuel line.

Make the burner presets.

Make sure that all the control and safety elements in the heating system are properly pre-calibrated before the burner is started, as the entire heating system is filled with water, from the valve positions, the water and fuel sides are fully vented.

Start the burner, adjust the capacity and burning settings. For two-stage and proportional burners, the lowest combustion setting should not be lower than 60% of the boiler capacity.

Check the flue gas values with the analyzer and check that the flue emissions are in compliance with the applicable restrictions. (Such as CO, NOx, soot, CO2 or O2, flue gas temperature) should be controlled.

Starting Up

Standard control panel;

Set the main burner switch to the on position (if present and in the closed position).

Set the control panel switch to the open position.

Bring the boiler thermostats to the desired level. (If 2nd stage thermostat is installed, set it to 7 ° C below first stage thermostat).

Start the circulation pump.

The burner will switch on after completing the standard automatic control functions.

If the burner is not switched on and the fault lamp on the burner is on, press and reset. If you have tried 3 times and still do not come in, call your authorized service center. (After each intake, visually inspect the boiler front and back cover areas and check that the combustion gases are not leaking out of the chimney connections).

Stopping

Standard control panel;

a) If there is a 2nd stage thermostat in your control panel, set the 2nd stage thermostat to minimum (if the thermostat is operating normally, the burner will immediately go into 1st stage operation, which is a practical way of controlling the 2nd stage thermostat).

If the control panel is a single stage, start with "b".

b) Set the boiler thermostat to a minimum (if the boiler thermostat is operating normally, the burner will stop immediately, this is a practical way of controlling the boiler thermostat).

Turn the burner control main switch to the off position.

Set the main fuel valve to the off position.

When shutting off for a long time: you can stop the circulation pump, but take into account that the water in motion is more difficult to freeze. Be sure to shut off the system for a long time during the winter period and ensure that the heating system and other parts are protected against freezing.

If another type of control panel is available, please refer to the relevant manual.

MAINTENANCE INSTRUCTIONS

Do not interfere with any part of the heating system while the system is in operation.

Before starting maintenance, servicing, cleaning, please stop the burner, close the fuel valves, switch off the system's power supply from the mains switch and wait until all parts of the boiler have cooled down.

Natural gas is a clean energy source, does not cause excessive floods and sinks, but in order to extend the life of the system and increase its efficiency, please call your authorized service at least once every combustion season or year to:

• Cleaning the boiler heat transfer surfaces

• Control of combustion parameters, burner settings

• Safety and control of control devices

• Control of proper flue withdrawal and chimney cleaning if necessary.

• Leakage control on water, fuel, and flue gas lines.

• Cleaning filters on gas lines, water lines.

If the system is operating with liquid fuel, the boiler heat transfer surfaces must be at least once a month

(The cleaning frequency depends on the operating characteristics and the combustion parameters, such as a bad combustion setting, poor fuel consumption, shortage of factors such as inadequate

chimney intake, etc.). The 1-2 mm thickness of the heat transfer surfaces will cause the system efficiency to drop excessively, so keep the boiler heat transfer surfaces clean.

Cleaning of heat surfaces;

• Stop the burner.

• Stop the circulation pump.

• Switch off the main power supply.

• Shut off the fuel line, disconnect the battery when necessary.

• Wait for the boiler to cool (at least 2 hours).

• Open the front door of the boiler. First, remove the clamping parts on the opening side of the boiler cover, then loosen the clamping parts on the hinge until at least 10-15 mm away from the cover.

• Make sure that the boiler front cover refractor and the turbulators cool down.

• Remove the turbulators.

• Clean the combustion chamber and 2nd pass pipes with a pipe brush.

• Open the cleaning cap on the back cover and clean the spillages on the fume hood.

• Check the front cover refractor.

• Check the front and rear cover combustion gas seals.

• Reinstall and tighten the cleaning cap on the back cover, paying attention to the seal.

• Replace the turbulators. There must be a turbulator in all the complete pipelines.

• Close the front cover. Visually inspect the cover gas insulation seal and refractory.

• If disassembled, reinstall the fuel line.

• Open the fuel line.

• Check for fuel leaks in the enclosed area (Do not use fire unless absolutely necessary)

• Switch on the main power supply.

• You can get the system back into operation (if the fuel line is disconnected, the burner may not switch on the first 1-2 tests and will switch on when the fuel line air is drained). Call your authorized service center at least once a year to check the combustion parameters, safety and control devices. When the burner goes out, please check the following before calling the authorized service.

• Does the boiler and burner control panels have the necessary energy supply?

• Is the fuel valve open?

• Are the main energy switches on the boiler and burner control panel open?

• Is the boiler water temperature below the temperature set by the boiler thermostat?

• Is fuel available within the limits? (Min. Gas pressure or fuel oil level in the fuel tank)

• Is the system water level or pressure normal?

• Did you manually reset the limit temperature stop thermostat?

• Please do not change the setting of any security devices.

• You can refer to the burner guide for additional checks.

• Reset the burner fault button up to 3 times and call your specialist garage if the ignition is still not present.

For closed expansion systems operating with a membrane expansion tank, the tank gas pressure must be checked regularly by an authorized service. If the pre-fill gas pressure is lower than the limit, the system pressure will rise abnormally and this may cause an explosion.

If fuel, flue gas or water leaks in any part of the heating system, stop the system immediately and contact your authorized service or responsible authorities.

If any of the flue gas leaks has been destroyed and flue gas leaking, close the burner and call your authorized service agent for repair or replacement.

Periodically analyze the feed water to avoid sediment (such as limestone) and corrosion. Sediments, such as limestone, cause system damage in the short run and permanent damage to the long run. Periodically check your safety and control devices.

Wet rotor pumps that stand up for long periods of time (summer period) may have a problem of rust-out locking. Run the wet-rotor pump in the system for 5 minutes once a month to prevent lock-up.

The frequent need for feed water and frequent dropping of system water pressure / level is indication of water leakage in the heating system. It has to be removed immediately.

Never empty the system water if it is not necessary. Wear in empty systems is much faster. It means adding new unwanted substances and oxygen to the new water filling system. All these reasons shorten the life of the win and cause loss of efficiency.

The water level and / or pressure of the system should be checked at least once a month. After the first installation, more frequent checks may be required as the system stabilizes.

The burner must be checked regularly. Take into account the maintenance periods written in the burner manual.

It is advisable to install a split-liquid oil in which the thermostat's sensing element is located. Check the oil level at least once a year and add oil in case of a decrease. The liquid oil to be introduced allows the temperature sensors to react more quickly and accurately.

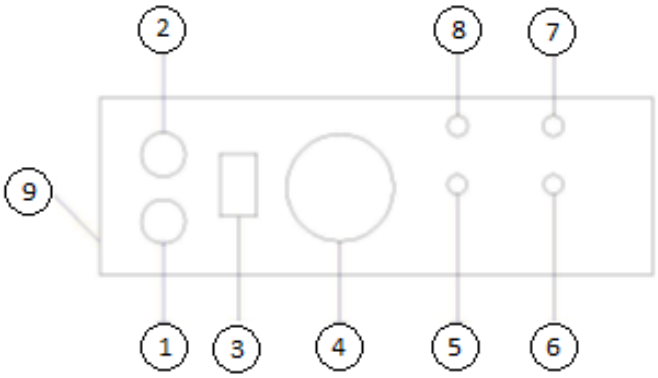
The chimney should be cleaned periodically according to local regulations.

If the system is to be shut down for a long time in winter, necessary measures must be taken against freezing

Fuel and water filters should be cleaned periodically according to system requirements.

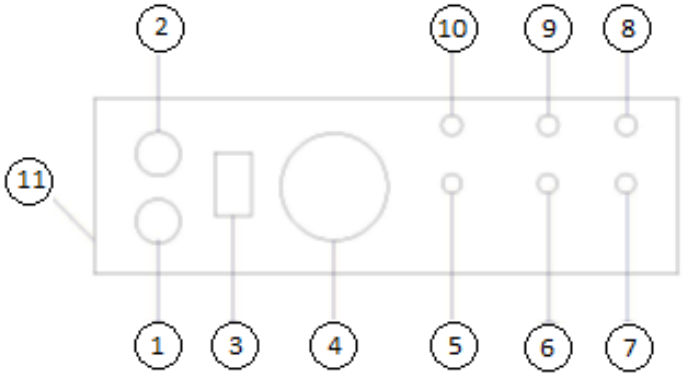
KAZAN KUMANDA PANELLERİ

SINGLE STAGE CONTROL PANEL



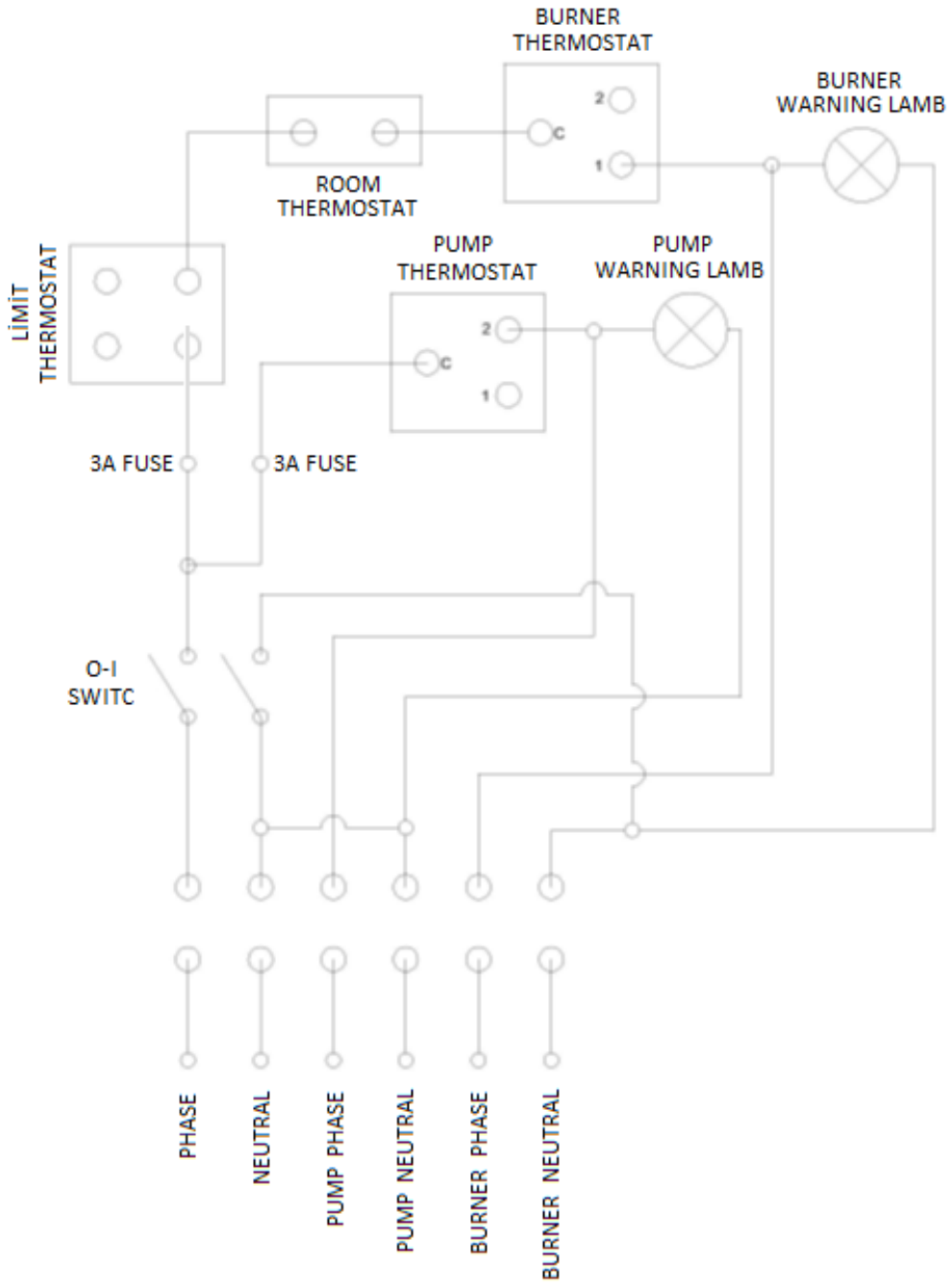
1. Control panel fuse (6A)
2. Pump fuse (6A)
3. Main control switch
4. Boiler temperature gauge (0-120°C)
5. First stage thermostat
6. Pump thermostat
7. Signal lamb for pump
8. Signal lamb for first stage thermostat
9. Safety thermostat (100 °C)

DOUBLE STAGE CONTROL PANEL

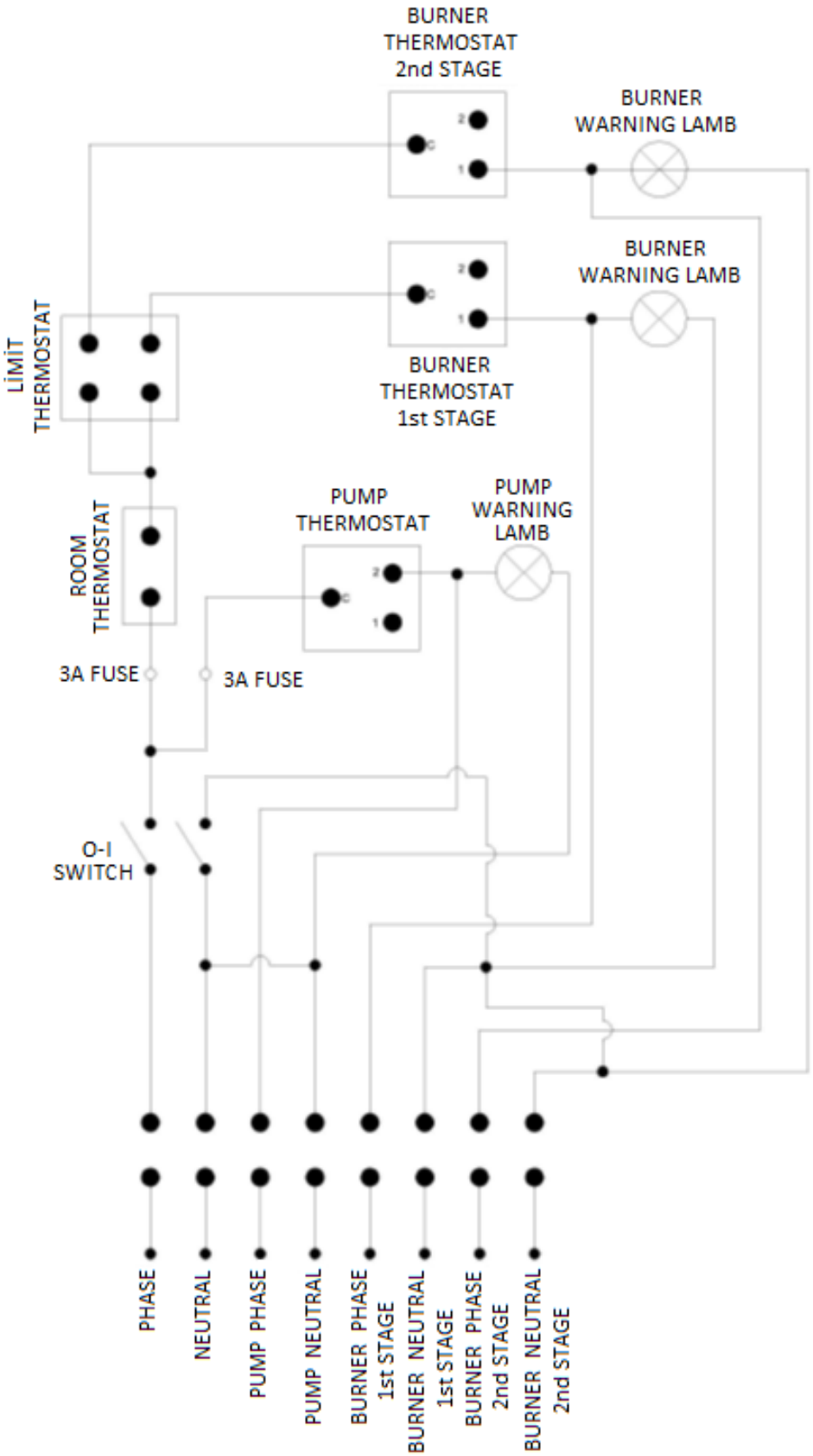


1. Control panel fuse (6A)
2. Pump fuse (6A)
3. Main control switch
4. Boiler temperature gauge (0-120°C)
5. First stage thermostat
6. Pump thermostat
7. Second stage thermostat
8. Signal lamb for second stage thermostat
9. Signal lamb for pump
10. Signal lamb for first stage thermostat
11. Safety limit thermostat (100°C)

ELECTRICAL CONNECTION SCHEM OF
ÜNMAK ÜGS TYPE BOILERS
FOR OPERATING SINGLE STAGE BURNER



ELECTRICAL CONNECTION SCHEM OF
ÜNMAK ÜGS TYPE BOILERS
FOR OPERATING TWO STAGE BURNER



PROBLEM, CAUSE, SOLUTION

PROBLEM	CAUSE	SOLUTION
Inadequate warming	• Pump may not be working • Isolation failure • Fuel passage may be less than desired.	• Call for service, make sure the control panel's plug is plugged in. • Increase the heat insulation of the room where the boiler is installed • Call the burner service and change the fuel setting
Excess fuel consumption	• The burner may be out of order • Insufficient space insulation	• Call the burner service • Increase the heat insulation of the room where the boiler is installed
Smoke gas leakage from the boiler front doors	• Wear of cover wicks	• Change wicks.
The boiler cannot reach the set temperature	• The temperature may have come out of the sensor housing • Brush setting may be required	• Replace the temperature sensor end of the control panel card by lifting the boiler top cover. Pour heat transfer oil into the housing. • Call the burner service.
Heating of open expansion tank	• Expansion tank pump effect	• Increase the expansion tank further or reduce the cycle of the pump.
Partial heating of the radiators	• Air in the radiator	• Remove air from the radiator purgers. Make sure that the pipeline to the expansion tank is always upwards. • Make sure that the automatic purge plug is not tight in closed expansion systems.

ÜNLÜSOY YAPI MALZEMELERİ SAN. TİC. LTD. ŞTİ.

Address: Pancar Organize Sanayi Bölgesi, 10. Cadde, No:2
Pancar, Torbalı – İZMİR/TURKEY
Tel: +90 444 35 32, www.unmak.com, info@unmak.com