TERMODİNAMİK®

HEATING SYSTEMS

EKY SERIES SOLID FUEL HOT WATER BOILER WITH MANUAL LOADING

INSTALLATION AND USAGE MANUAL

EKY 25-100

EKY 125-250

EKY 125-1000

TD Group
TERMODİNAMİK ŞİRKETLER GRUBU

Digital and mechanical control panel...

FOREWORD

Dear Customer;

First of all, thank you for choosing our product. We hope you will get complete satisfaction from DEK Series Electric Combi Boiler.
We would like you to use your device with maximum efficiency, therefore please read this instruction book carefully before you start using the product and save it to refer to in the future.
This manual will help you to operate your device safely and efficiently. For this reason you should pay attention to these:

- *Please read this instruction book carefully before you install and operate the product.*
- *Follow the instructions and the rules on safe usage.*
- *The instruction book may apply to other models as well; the differences between the models are clearly described inside.*

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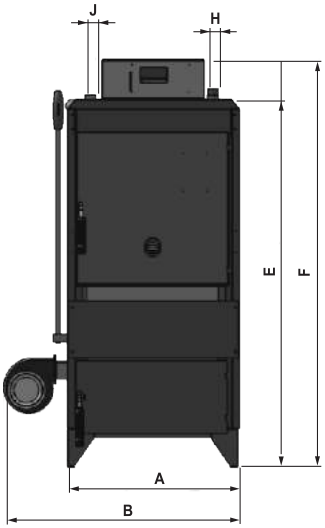
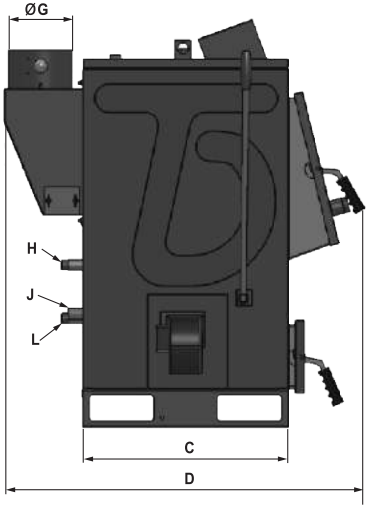
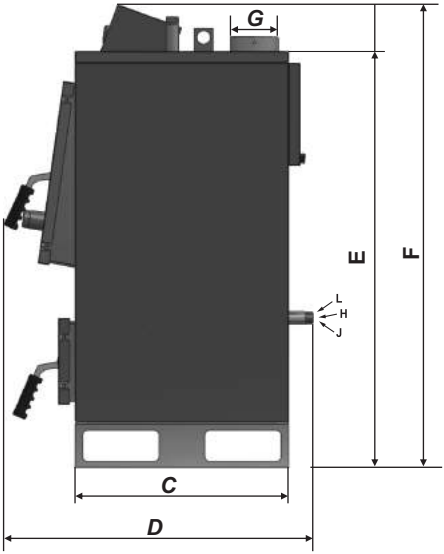
EKY 17-100 TECHNICAL SPECIFICATIONS







EKY 17 SIDE VIEW

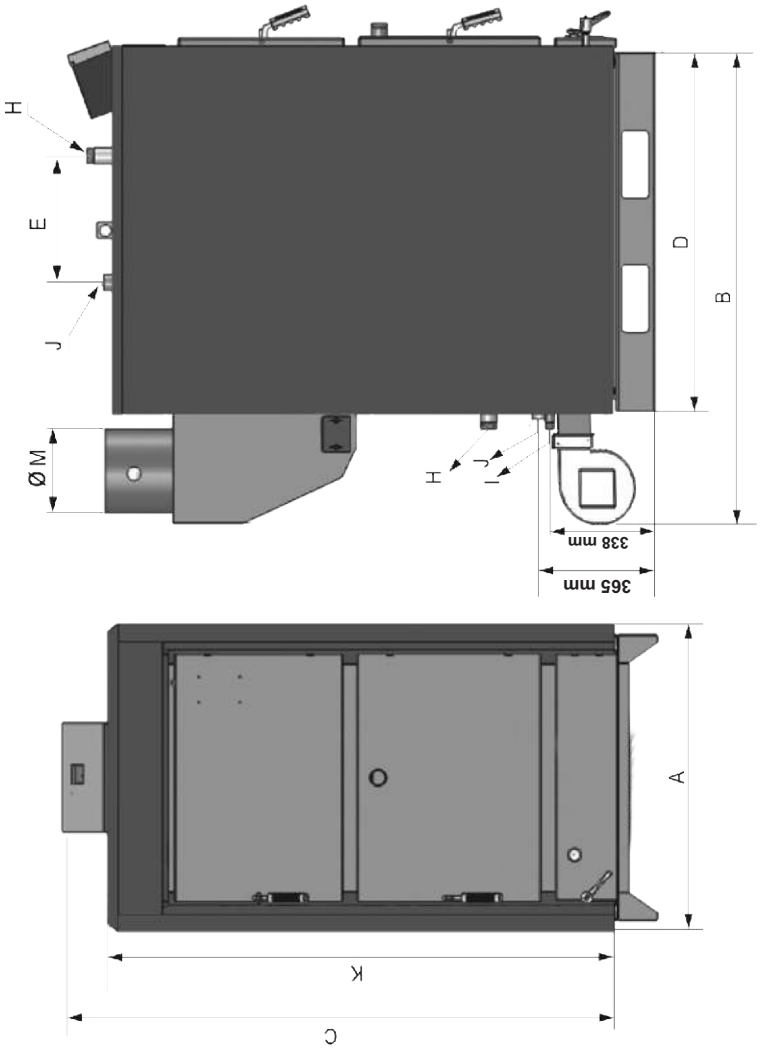
EKY 17-100 TECHNICAL SPECIFICATIONS

Model	Capacity (Coal) Kw	Water Volume (L)	Operating Pressure (bar)	Test Pressure (bar)	Weight kg
EKY 17	20	49	3	4.5	183
EKY 25	29	61	3	4.5	255
EKY 40	46	85	3	4.5	300
EKY 60	70	108	3	4.5	420
EKY 80	93	120	3	4.5	450
EKY 100	116	125	3	4.5	470

Model	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G Flue Diameter (mm)	H (Boiler Input-Output)	L (Boiler Filling-Discharge)	J (Safety Input-Output)	Fuel Loading Lid Dimensions (mm)
EKY 17	520	750	560	820	1100	1225	130	Rl "	Rl 1/2"	Rl 3/4"	190x390
EKY 25	520	750	635	1080	1120	1245	200	Rl "	Rl 1/2"	Rl 3/4"	190x390
EKY 40	520	750	835	1280	1135	1260	200	Rl "	Rl 1/2"	Rl "	190x390
EKY 60	590	840	985	1500	1235	1360	200	Rl 1/4"	Rl 1/2"	Rl "	255x465
EKY 80	590	840	1060	1580	1235	1360	200	Rl 1/2"	Rl 3/4"	Rl 1/4"	255x465
EKY 100	590	840	1060	1580	1235	1360	200	Rl 1/2"	Rl 3/4"	Rl 1/4"	255x465

We are reserved the right to make changes in dimensions and appearance.

EKY 125 - 250 TECHNICAL SPECIFICATIONS



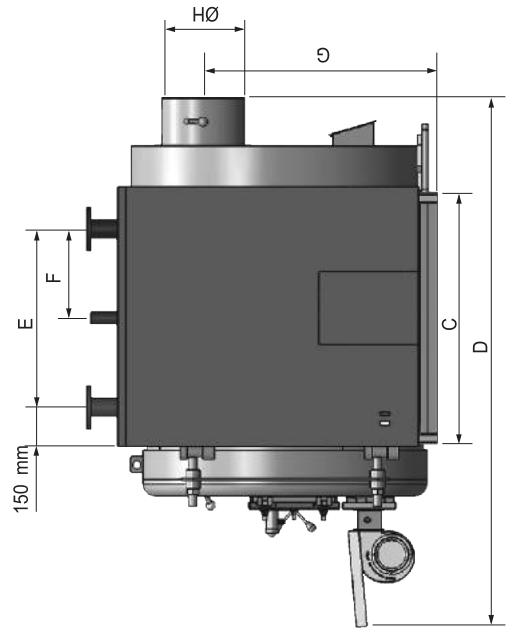
EKY 125 - 250 TECHNICAL SPECIFICATIONS

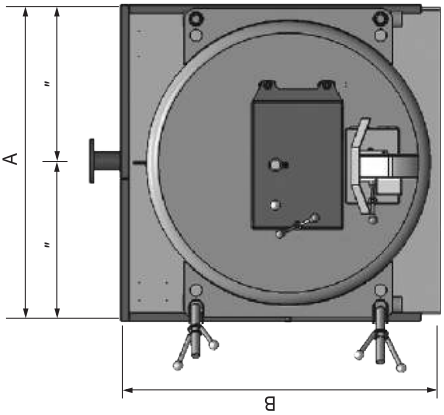
Model	Capacity (Coal) Kw	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	K (mm)	L (Boiler Filling Discharge)	ØM(mm) Flue Diameter
EKY 125	145	790	1520	1650	1060	370	1520	R 3/4″	250
EKY 150	174	790	1680	1650	1220	520	1520	R 3/4″	250
EKY 175	203	790	1680	1735	1220	520	1605	R 3/4″	250
EKY 200	232	790	1840	1735	1380	680	1605	R 3/4″	250
EKY 250	291	942	1980	1760	1570	700	1630	R 3/4″	250

Model	H (Boiler Input-Output)	J (Safety Input-Output)	Operating Pressure (bar)	Test Pressure (bar)	Water Volume (L)	Weight (kg)
EKY 125	R1 1/2″	R 1 1/4″	3	4.5	236	930
EKY 150	R1 1/2″	R 1 1/4″	3	4.5	246	950
EKY 175	R 2″	R 1 1/4″	3	4.5	256	1000
EKY 200	R 2″	R 1 1/4″	3	4.5	290	1050
EKY 250	R 2 1/2″	R 1 1/4″	3	4.5	518	1290

We are reserved the right to make changes in dimensions and appearance.

EKY 125 - 500 (3 BAR) TECHNICAL SPECIFICATIONS





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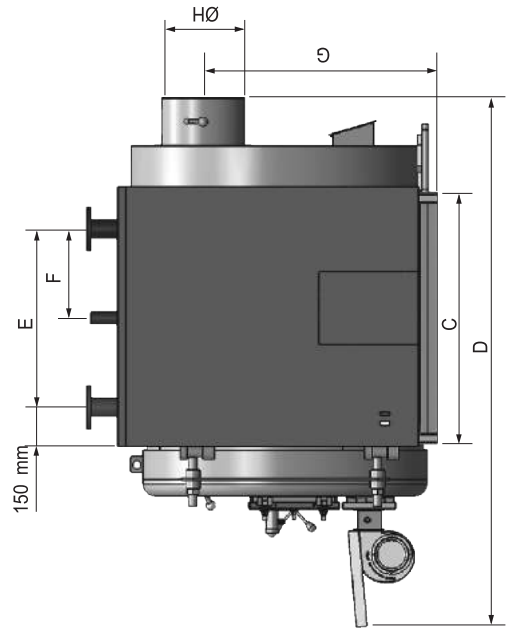
EKY 125 - 500 (3 BAR) TECHNICAL SPECIFICATIONS CHART

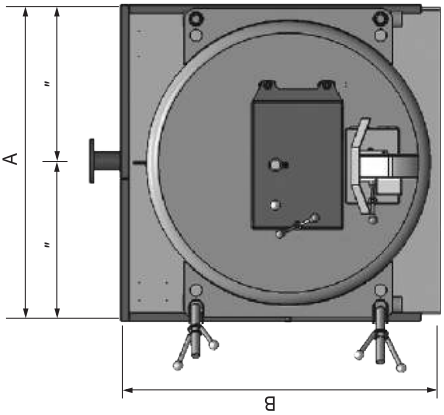
Model	Capacity (Coal) Kw	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)
EKY 125	145	1340	1350	1065	2240	756	378	1010	350
EKY 150	174	1340	1350	1195	2370	886	443	1010	350
EKY 175	203	1340	1350	1315	2490	1006	503	1010	350
EKY 200	232	1340	1350	1495	2670	1186	593	1010	350
EKY 250	290	1640	1550	1400	2585	1088	544	1081	400
EKY 300	349	1640	1550	1690	2875	1378	689	1081	400
EKY 350	407	1840	1810	1706	2891	1394	697	1222	500
EKY 400	465	1840	1810	1826	3011	1514	757	1222	500
EKY 450	523	1840	1810	1996	3181	1684	842	1222	500
EKY 500	581	1840	1810	2272	3457	1960	980	1222	500

Model	CH Input-Output Ø	Boiler Expansion Tank Output Ø	Boiler Discharge Ø	Operating Pressure (bar)	Test Pressure (bar)	Weight (kg)
EKY 125	2 1/2″	1 1/2″	3/4″	3	4.5	1220
EKY 150	2 1/2″	1 1/2″	3/4″	3	4.5	1420
EKY 175	2 1/2″	1 1/2″	3/4″	3	4.5	1530
EKY 200	2 1/2″	1 1/2″	3/4″	3	4.5	1660
EKY 250	3″	1 1/2″	3/4″	3	4.5	2120
EKY 300	3″	1 1/2″	3/4″	3	4.5	2470
EKY 350	3″	1 1/2″	3/4″	3	4.5	3150
EKY 400	4″	2″	3/4″	3	4.5	3430
EKY 450	4″	2″	3/4″	3	4.5	3950
EKY 500	4″	2″	3/4″	3	4.5	4220

We are reserved the right to make changes in dimensions and appearance.

EKY 125 - 1000 (5 BAR) TECHNICAL SPECIFICATIONS CHART





EKY 125 - 1000 (5 BAR) TECHNICAL SPECIFICATIONS CHART

Model	Capacity (Coal) Kw	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	CH Input-Output Ø	Boiler Expansion Tank Output Ø	Boiler Discharge Ø	Operating Pressure (bar)	Test Pressure (bar)	Weight (kg)
EKY 125	145	1340	1350	1067	2242	756	378	1010	350	2 1/2"	1 1/2"	3/4"	5	7.5	1280
EKY 150	174	1340	1350	1200	2375	886	443	1010	350	2 1/2"	1 1/2"	3/4"	5	7.5	1560
EKY 175	203	1340	1350	1320	2495	1006	503	1010	350	2 1/2"	1 1/2"	3/4"	5	7.5	1665
EKY 200	232	1340	1350	1500	2675	1186	593	1010	350	2 1/2"	1 1/2"	3/4"	5	7.5	1805
EKY 250	290	1640	1550	1405	2590	1088	544	1081	400	3"	1 1/2"	3/4"	5	7.5	2250
EKY 300	349	1640	1550	1695	2880	1378	689	1081	400	3"	1 1/2"	3/4"	5	7.5	2610
EKY 350	407	1840	1810	1720	2905	1394	697	1222	500	3"	1 1/2"	3/4"	5	7.5	3555
EKY 400	465	1840	1810	1840	3025	1514	757	1222	500	4"	2"	3/4"	5	7.5	3850
EKY 450	523	1840	1810	2010	3195	1684	842	1222	500	4"	2"	3/4"	5	7.5	4390
EKY 500	581	1840	1810	2285	3470	1960	980	1222	500	4"	2"	3/4"	5	7.5	4695
EKY 550	639	1840	1810	2385	3570	2060	1030	1222	500	4"	2"	3/4"	5	7.5	4885
EKY 600	697	1840	1810	2555	3740	2230	1115	1222	500	4"	1 1/2"	3/4"	5	7.5	5230
EKY 650	755	2040	2035	2330	3515	2002	1001	1365	600	5"	1 1/2"	3/4"	5	7.5	5945
EKY 700	813	2040	2035	2450	3665	2152	1076	1365	600	5"	1 1/2"	3/4"	5	7.5	5275
EKY 750	872	2040	2035	2620	3835	2322	1161	1365	600	5"	3"	3/4"	5	7.5	5510
EKY 800	930	2040	2035	2740	3955	2442	1221	1365	600	5"	3"	3/4"	5	7.5	5460
EKY 900	1046	2390	2285	2450	3665	2152	1076	1770	600	5"	3"	3/4"	5	7.5	6295
EKY 1000	1162	2390	2285	2840	4055	2542	1271	1770	600	5"	3"	3/4"	5	7.5	6320

We are reserved the right to make changes in dimensions and appearance.

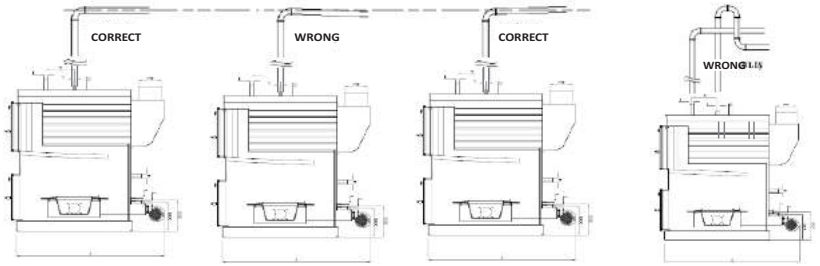
APPLIANCE INFORMATION

EKY series boilers are designed to burn different types of fuels such as wood, walnut coal, quince coal and low-calorie brown coal in ranging capacities. As it is known, the shaft gasses which occur as a result of burning wood and coal, and condensation of water vapors shall take place. Make sure not to operate the boiler below 45°C. In case of operation below 45°C, the temperature of the shaft will be low and this will cause the shaft draft to be insufficient and result in condensation. Therefore, the life span of the boiler shall be shorter due to corrosion in short time. The circulation pump in EKY Model boilers stops operating when the boiler water temperature decreases below 32°C. This is designed to prevent the substantial decrease in the boiler output water temperature and acid drop (sulfuric acid) resulting from condensation by means of cooling the firebox.

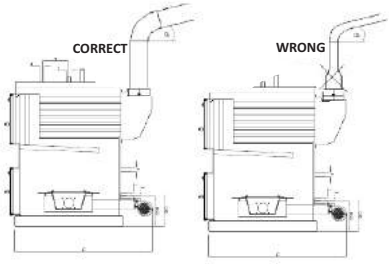
The fan allowing for burning air stops operating when the boiler water temperature falls under 28°C and the "fuel out" light on the panel indicator is on. This is designed to prevent the fan from cooling more the shaft gasses in case the boiler fuel decreases. When the shaft gas cools down, condensation occurs in the shaft. Such condensed water contains acid.

ASSEMBLY INSTRUCTIONS

- The boiler should be leveled and installed at least at a distance of 20 cm from ground in boiler rooms on a durable surface.
- The boiler room should be regularly ventilated according to regulations and rule.
- When assembling EKY series boilers, it is required to use open expansion tank. The expansion tank should be located at the top of the installation and the safety pipes should be connected to the inputs and outputs of the boiler in the shortest route possible. There should never be any flow control units (valve, check valve, etc.) over the safety pipes. Make sure that the open expansion tank is always full. The expansion tank volumes suitable for each boiler are given in the table (at the page 11).
- The pump should be installed in such way to avoid boiler and expansion tank flow and return pipes should not create an air pocket. On points where there is possibility for air to be accumulated, air tubes or vent systems shall be provided to purge the air.



- In order to provide for the safety of the boiler and the assembly in case of power outages, the installation should have a by-pass line.
- Make sure to use a suitable check valve for all solid-fuel boilers and the pressure of the check valve should be equal to the maximum operating pressure of the boiler. On boilers operating with 3 bar working pressure 3-bar safety valves should be used. (For cylindrical boilers (25-100) and prismatic (125 and 250) boilers operating with 3-bar).
- In regions prone to risk of freezing, expansion tank and insulation should be used.
- The diameter of the shaft should not be smaller than the output diameter of the boiler shaft and the instructions on the shaft assembly specified in this manual should be followed.
- During the installation of the appliance, make sure to leave some space around the appliance depending on the properties of the appliance enough for the technical service to handle the appliance.
- Make sure the location where the appliance and the waste gas disposal line are situated is not a living space.
- In order to minimize the heat loss, the installation pipes should be heat-insulated.
- When selecting mono-phase pump, connect the power cable with an open end sticking out of the panel on the boiler into the electric terminal of the pump. If 3-phase pump is being used, get a separate panel for the pump.
- Connectors and valves should be placed on inlet and outlet lines.
- Expansion tank flow and return pipes should be installed with continuous upward inclination from the boiler to the tank without any downward bending.



- The boiler should be connected to the chimney of the building without narrowing the diameter at the flue outlet and through pipes having minimum the same or larger diameter at the flue outlet and through pipes having minimum the same or larger diameter as the boiler flue outlet.

For installation of the boiler warning points indicated in the user manual must be taken into consideration. The supplier will not take any responsibility for wrong installation of the boiler and chimney.

EXPANSION TANK VOLUMES SUITABLE FOR BOILER CAPACITIES

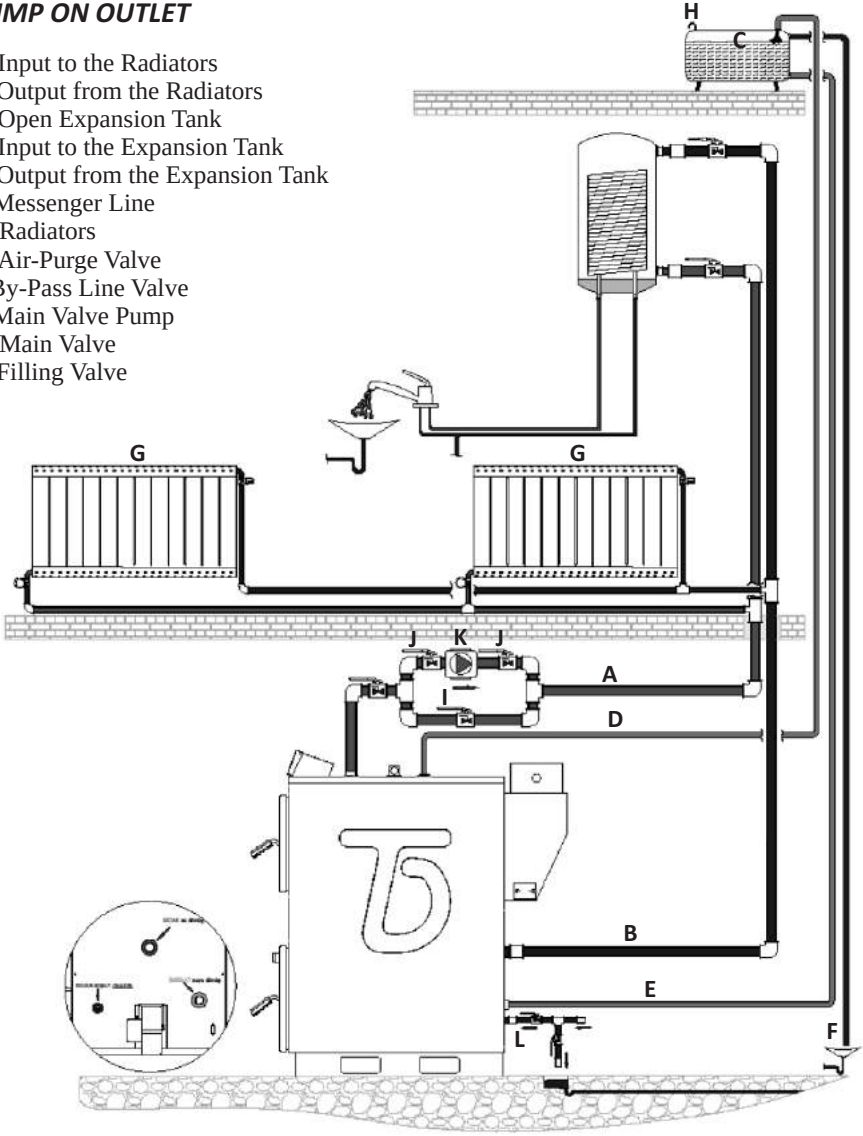
Boiler Capacity (Kcal/h)	If Cast Sectional Heating Radiators are used	If Panel Radiators are used
17.000	45 L	26 L
25.000	65 L	42 L
40.000	100 L	67 L
60.000	150 L	100 L
80.000	200 L	135 L
100.000	250 L	167 L
120.000	292 L	200 L
150.000	333 L	250 L
175.000	417 L	292 L
200.000	500 L	333 L
250.000	625 L	417 L
300.000	750 L	500 L
350.000	857 L	583 L
400.000	1000 L	667 L
450.000	1125 L	750 L
500.000	1250 L	833 L
550.000	1375 L	917 L
600.000	1500 L	1000 L
650.000	1625 L	1083 L
700.000	1750 L	1167 L
750.000	1875 L	1250 L
800.000	2000 L	1333 L
900.000	2250 L	1500 L
1.000.000	2500 L	1667 L

The values given above are intended for nominal conditions. The contractor company shall perform the precise evaluation and calculations depending on the location and operation conditions of the boiler.

EKY 25-100, EKY 125-250 INSTALLATION CHART

PUMP ON OUTLET

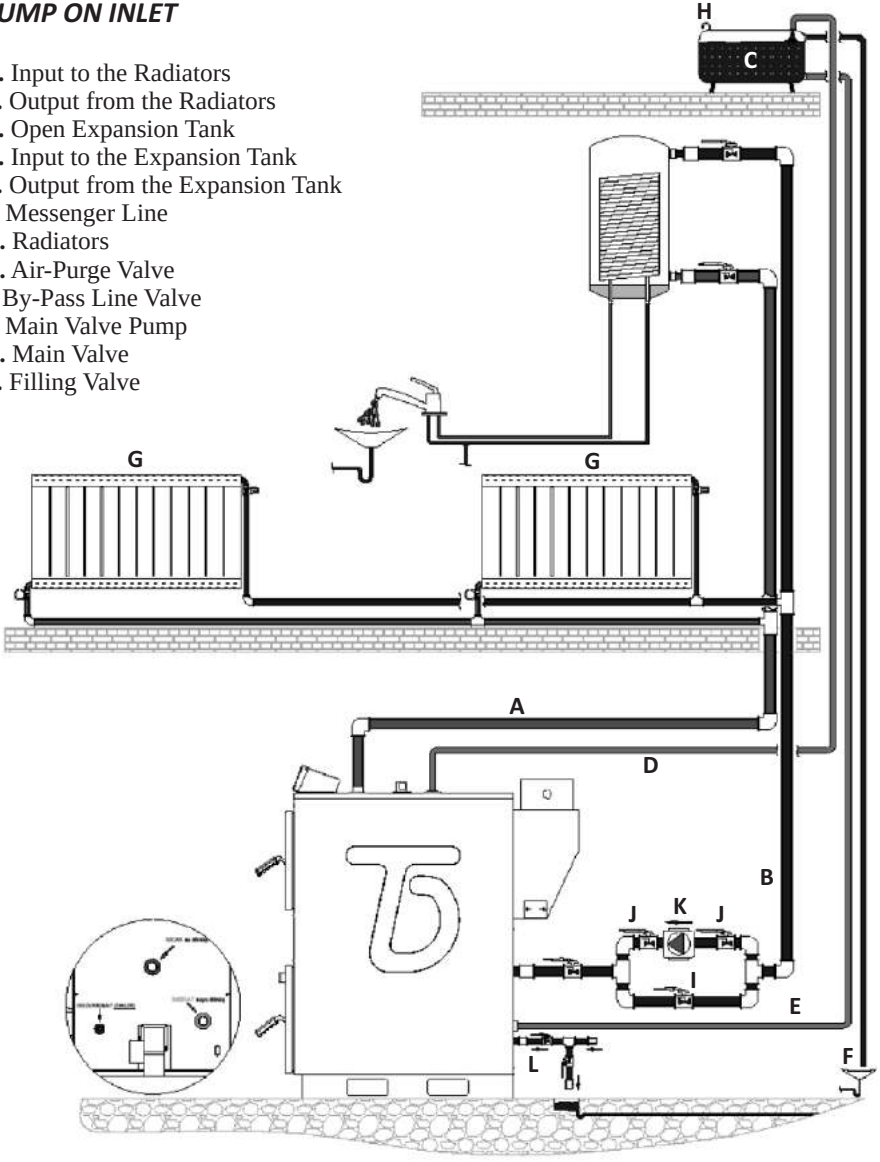
A. Input to the Radiators
B. Output from the Radiators
C. Open Expansion Tank
D. Input to the Expansion Tank
E. Output from the Expansion Tank
F. Messenger Line
G. Radiators
H. Air-Purge Valve
I. By-Pass Line Valve
J. Main Valve Pump
K. Main Valve
L. Filling Valve



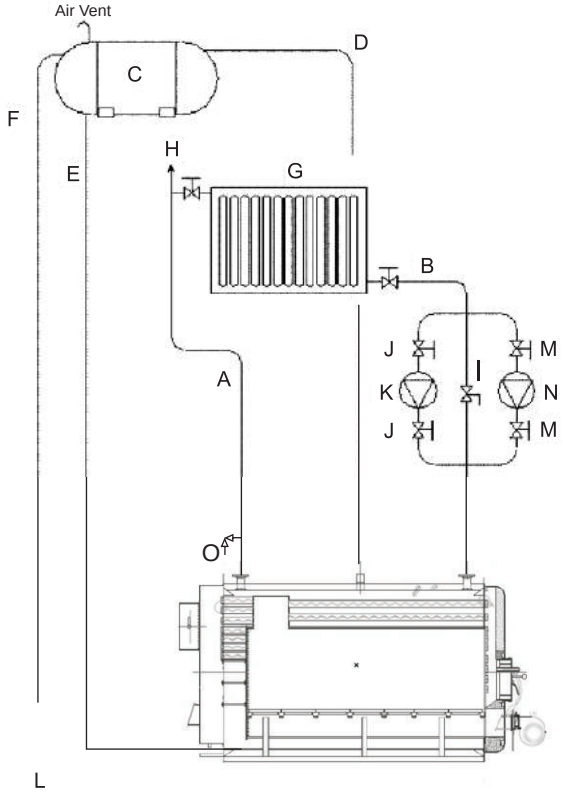
EKY 25-100, EKY 125-250 INSTALLATION CHART

PUMP ON INLET

A. Input to the Radiators
B. Output from the Radiators
C. Open Expansion Tank
D. Input to the Expansion Tank
E. Output from the Expansion Tank
F. Messenger Line
G. Radiators
H. Air-Purge Valve
I. By-Pass Line Valve
J. Main Valve Pump
K. Main Valve
L. Filling Valve



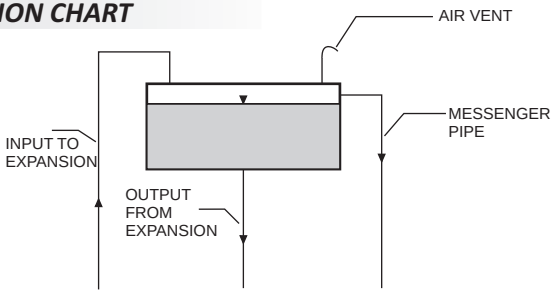
EKY 125-1000 INSTALLATION CHART
(EXCEPT FOR PRISMATIC 125-250 SERIES)



A	TO RADIATORS
B	FROM RADIATORS
C	OPEN EXPANSION TANK
D	EXPANSION LINE
E	FROM EXPANSION TANK
F	MESSENGER LINE
G	RADIATORS
H	AIR PURGE VALVE

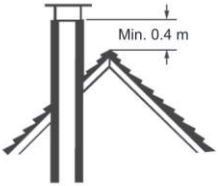
I	BY-PASS LINE VALVE
J	MAIN PUMP VALVE
K	MAIN PUMP
L	FILLING VALVE
M	SECONDARY PUMP VALVE
N	SECONDARY PUMP
O	SAFETY VALVE

EKY 17-1000 EXPANSION CONNECTION CHART

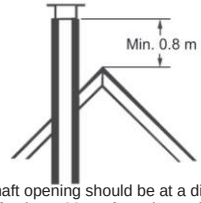


- These are containers open to atmosphere and they should be installed a distance from the top of the pipe system for hot water systems or at a distance from the radiator level at the top.
- For the manual feeding boiler, do not use open expansion.
- In places where the weather is very cold or there is risk of freezing, the expansion tank, expansion input and output pipes should be insulated.
- The input pipes connecting to the expansion tank should be assembled without turning downwards and should steadily level up when going from the boiler to the expansion tank.
- A hydrometer should be installed to the assembly in order to control the water level of the system.
- Make sure not to install units like valves, filters, check valve, etc. over the safety pipes between the expansion tank and the boiler.
- When water comes out of the messenger pipe, it means that the expansion tank is full and the boiler has reached a specific pressure level. This should be checked at times when water is pumped to the boiler from the main water supply.

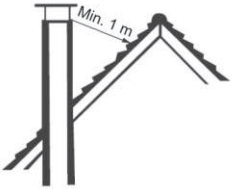
POSTURE OF THE SHAFT ON THE ROOF



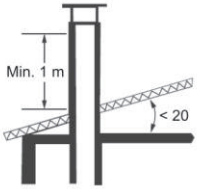
The shaft opening should be at a distance from the roof ridge for slant tiled roofs.



The shaft opening should be at a distance from of at least 80 cm from the roof ridge for slant roofs.



The shaft opening at a distance from the roof ridge (only tiled roofs).

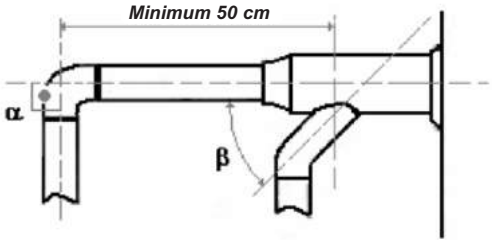


Roofs with little slant.

COMMON CHIMNEY

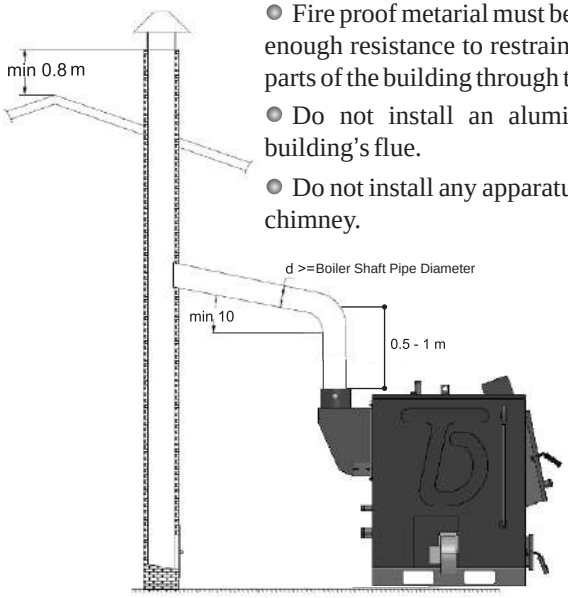
Connecting two solid fuel boilers to the same chimney is not recommended. Where this is not achievable and if calculations based to chimney cross section and height also allow using of other solid fuel boilers, then it is possible to connect multiple boilers into a common flue system. In such cases the configuration indicated in the figure should be considered.

Another point to be observed is that, the angle of the flue connection with horizontal axis of the second boiler to be connected should be less than the first one. The second boiler's flue connection to main flue connection should be in "swept connection" as shown in the picture.



Keep easily flammable materials away from boiler flue connections and hot areas, which may occur around the boiler.

- Shaft is one of the most important units of the system. When the shaft is not high-quality, the burning is not sufficient and no efficiency is obtained. And this results in smoking and soot.
- Fire proof metarial must be used for flue pipe and chimney should have enough resistance to restrain the fire outside the chimney into the other parts of the building through the chimney for certain time.
- Do not install an aluminium folding pipe between boiler's and building's flue.
- Do not install any apparatus such as windrose/weathercock at outlet of chimney.



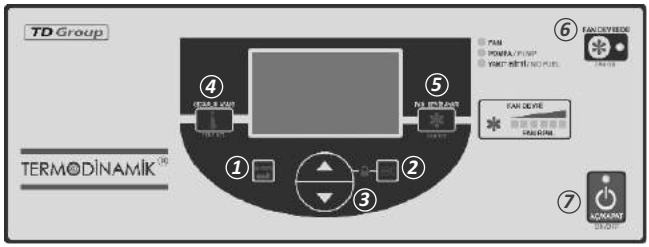
- Shaft pipes should be connected to the shaft in a way having the same diameter with the boiler shaft output as much as possible.
- In order to intensify the shaft draft, do not install shaft extractor hoods, fans, etc. to the output of the shaft.
- Make sure not to use bendy pipes at the distance where the pipes shall be installed to the shaft from the shaft output of the boiler.

- If the shaft is made of iron sheet material, insulate the surrounding of the shaft and prevent the heat loss.
- The shaft should not have a sectional narrowness at any spot.
- Make sure not to install another appliance or more than one boiler to the same shaft.
- The boiler should not be installed to the shaft at a reverse angle preventing draught (see page 16).
- The shaft should be periodically cleaned not allowing for the formation of tarry soot inside which makes it impossible to clean the shaft.
- The flue pipe (chimney) mustn'tbe mounted with level which prevent the drought of it.
- End of the chimney must be 40 cm higher than tip of the roof.
- Chimney should be well insulated and heat losses should be reduced. When the chimney cools down the draught also decreases and in the cooled chimney the formed acids combined with the effect of condensation can lead corrosion on the inner surfaces of the chimney or down inside the boiler, therefore chimneys should also be insulated.

ELECTRICAL CONNECTION

The electrical connections should be performed by the technical service. The connections should be performed as shown in the pages 22, 24 and 25. In case of damages resulting from different connection or the arbitrary change of the thermostats, the manufacturer cannot be held liable.

EKY DIGITAL CONTROL PANEL



KEYS

1.ENTER

Used for confirming the values entered in the appliance.

2.ESC

Used for canceling the operation of the new value entered in the appliance and returning to the previous value in the memory.

3.UP/DOWN KEYS

Used to enter new values in the appliance.

4.TEMPERATURE SETTINGS

Used for setting the boiler temperature setting.

5.FAN SET

The fan set is changed using this button.

6.FAN ON

Used to switch the fan on or off.

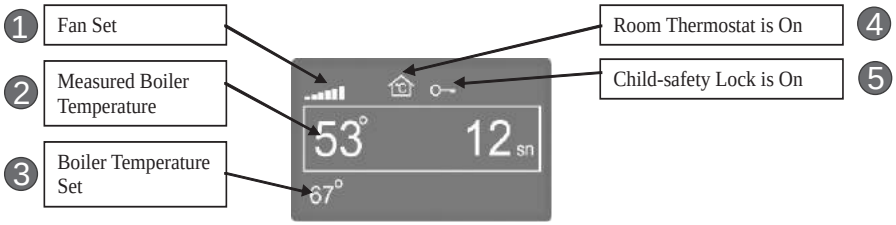
7.ON/OFF

Used to turn on-off the appliance.

INDICATORS AND SCREENS

APPLIANCE SCREEN

The set values of the appliance and operating information are displayed on this screen.



FAN INDICATOR

It shows the fan speed levels. The speed level increases from left to right in 6 ranges.

INDICATOR LED LIGHTS

FAN	*Fan is on,*
POMPA / PUMP	*Pump is on,*
YAKIT BİTTİ / NO FUEL	*There is no fuel*

are shown with these led lights. No fuel warning is also signaled on the screen of the appliance.

TURNING THE APPLIANCE ON / OFF

Press ON/OFF 

button to turn on the appliance. The screen lights will turn on and values shall be displayed on the screen.

Press ON/OFF 

button to turn off the appliance. The screen lights will turn off and values shall disappear from the screen.

When the appliance is off, the engines shall be turned off too. Only the pump engine shall continue operating until the boiler cools down if the boiler temperature is higher than 32°C. the pump shall automatically turn off after the boiler cools down. Therefore, the main power supply should not be cut off.

4. ENTERING SET VALUES

To enter the temperature set values, press the TEMPERATURE SET 

button. The boiler temperature value set shall be active on the screen. Enter the desired value by using UP/DOWN arrow  keys . Confirm the value you have entered with ENTER 

key. If you want to cancel the new value and turn back to the previous value, press the 

button and cancel the new value.

To enter the fan set values, press the FAN SET button. The fan speed set shall be active on the screen. Set the desired value by using UP/DOWN arrow keys  . Confirm the value you have entered with ENTER 

key. If you want to cancel the new value and turn back to the previous value, press the 

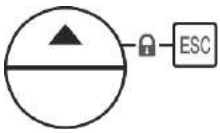
button and cancel the new value

5. OPERATION OF THE BOILER

After entering the set values, press the FAN ON 

button to turn on the boiler. The “led” light near the button shall turn on and the fan shall be active. You can turn off the boiler by means of pressing this button again.

6. CHILD SAFETY LOCK



You can activate the child safety lock by pressing the UP and ESC keys at the same time for 2 seconds. When the child safety lock is active, all keys are deactivated. In order to reactivate the keys, press UP and ESC keys at the same time for 2 seconds.

7. ERROR CODES AND SOLUTIONS

OVERHEAT: If the temperature of the boiler is above 95°C, this error occurs; the appliance stops operating and gives out a signal. This error may result from a malfunction in the heat sensor. There can be a problem in the pump engine.

PROBE ERROR: In case the heat sensor of the boiler malfunctions, this error occurs and the appliance stops operating. This error can result from a malfunction in the heat sensor.

NO FUEL: When the boiler cools down not being able to keep the temperature steady after it is heated, the appliance gives out this error and is stops working. This error can result from a malfunction in the heat sensor. The appliance might have run out of fuel. The fan may have stopped blowing air.

ROOM THERMOSTAT: When the room thermostat is on, this warning shall appear on the screen.

LIMIT THERMOSTAT ERROR – RESET THE LIMIT THERMOSTAT: There is a limit thermostat located on the back lid of the appliance box. This thermostat starts working when the boiler is overheated (generally 95°C is selected) and deactivates the fan and the reducer. At the same time, it activates the Pump engine.

In this condition, which is expressed as the "thermostat blew", LIMIT THERMOSTAT ERROR – RESET THE LIMIT THERMOSTAT error is displayed on the screen.

The boiler needs to cool down for the solution of the limit thermostat problem. When the temperature of the boiler decreases under 95C (+/-10 degrees), the limit thermostat recovers from the error yet its contact do not change their positions. In order for the contacts to change their positions, turn the lid of the limit thermostat and open it. Press the red button you see when you open the lid. This way, you reset the limit thermostat.

The appliance is reset via ON/OFF button. This way, the error is removed from the screen.

8. RESTORE THE FACTORY SETTINGS

In order to restore the factory settings of the appliance parameters;

- Press the ENTER button and supply the appliance with power.
- You will be required to enter a password. Enter the password as "30". Confirm with ENTER.
- The appliance will require confirmation as "YES / NO". Select "YES" with up and down arrow keys and then confirm with ENTER.
- The Appliance Parameter settings shall be restored to the factory settings.

The Factory Settings are as follows;

1. Language Selection : Turkish:0
2.Fan Mode*:* DIMMER :0
3.Pump Opening Temperature*:* 37 degrees
4.Pump Closing Temperature*:* 32 degrees
5.Air Relay Pre-temperature *:* 60 degrees
6.Limit Thermostat Error: **YES**

9. LAST ERRORS LIST

The appliance can store the last 20 errors in its memory. This information is important for the technical services. The service may get informed on the problems of the boiler.

In order to display the last errors list;

- Cut off the power of the appliance.
- Supply the appliance with power by means of pressing on the ENTER key.
- You will be required to enter a password. Enter the password as "250". Confirm with ENTER.
- You can see the last errors on the screen. The error on top with nr. 1 is the last error which has occurred. You can see the previous errors by means of using the up and down arrow keys.

After the appliance stores 20 errors in its memory, it adds new errors on top of the list and the previous errors are deleted beginning from the oldest one. This way, the latest 20 errors are kept in the memory of the appliance.

In order to reset the error list;

- Press the ENTER key while on the error list display screen.
- "RESET THE ERROR LIST" "YES / NO" options shall be displayed on the screen. Use the up and down arrow keys to select "YES" and press ENTER.

10. TOTAL OPERATION TIMES

The appliance always stores the period of operation of the PUMP and FAN engines on the boiler in its memory. Additionally, if the PUMP is on and the temperature is 45 degrees or more, the HEATING time is continuously recorded in the memory. Thus, you can understand since how long the appliance has been operating.

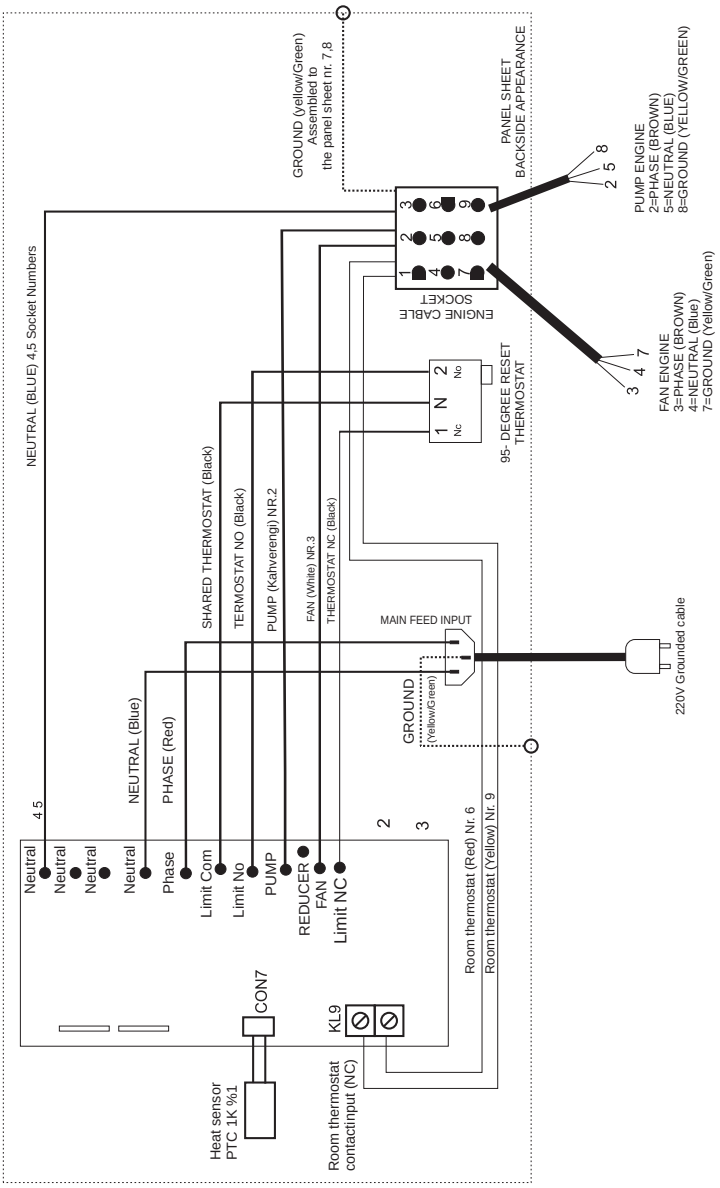
In order to display the total operation times;

- Cut off the power of the appliance.
- Supply the appliance with power by means of pressing on the ENTER key.
- You will be required to enter a password. Enter the password as "245". Confirm with ENTER.
- You can display the total operation times by using the up and down arrow keys.
- The PUMP, FAN and HEATING counters shall be displayed on the screen, respectively.

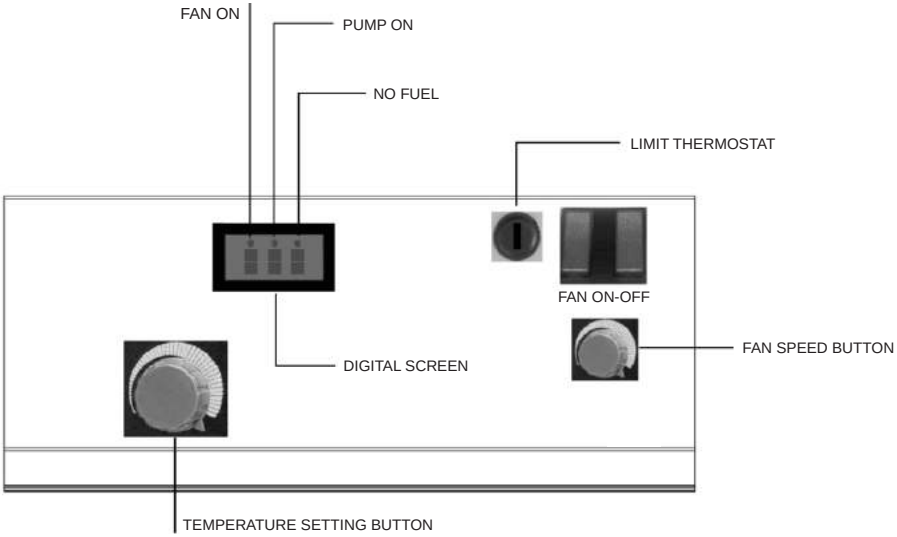
You may reset any total operating time. For this;

- Press ENTER while on the total operating time screen you want to reset.
- For instance, "RESET THE PUMP COUNTERS" "YES / NO" question shall be displayed on the screen.
- Use the up and down arrow keys to select "YES" and press ENTER.

EKY DIGITAL PANEL ELECTRICAL CONNECTION CHART



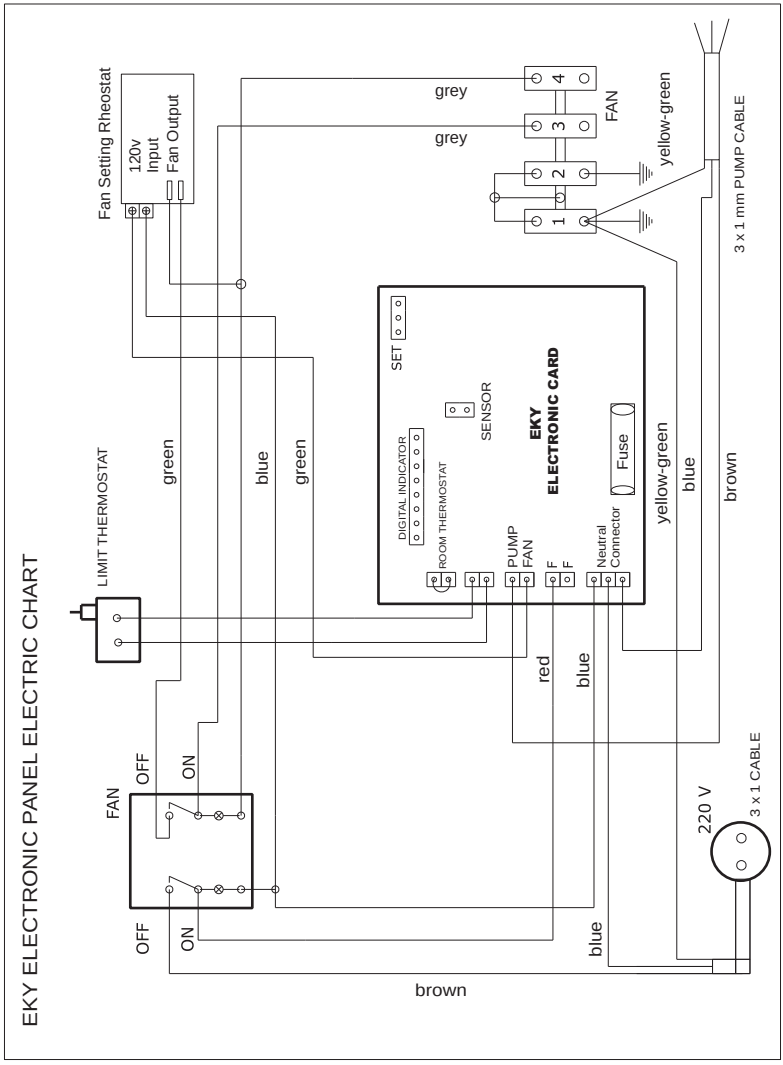
MECHANICAL CONTROL PANEL:



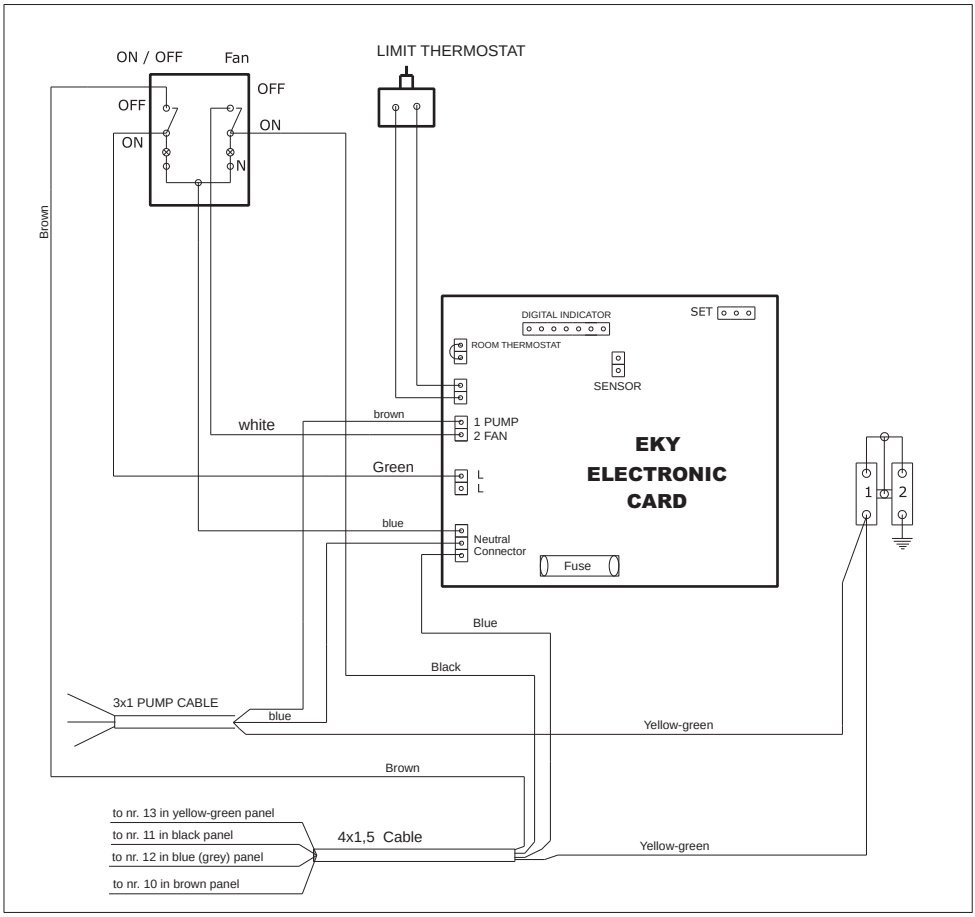
FOR EKY MECHANICAL CONTROL PANEL:

ON/OFF switch: The switch which turns on and off the power supplied to the panel.
FAN switch: The switch which turns on and off the power supplied to the FAN SPEED SETTING button.
FAN setting: The key which sets the fan air sent to the boiler for stronger burning. When turned clockwise, the fan speed and the amount of air increase**.**
TEMPERATURE setting: The thermostat setting key. When turned left and right, you can see the current thermostat value on the DIGITAL INDICATOR. The appliance shall display the boiler water temperature after a while when the button is steady.
DIGITAL INDICATOR: Shows the boiler water temperature and the thermostat degree set in figures. There are three small lights in the indicator: Fan, Circulation Pump and Fuel Out.
FAN: Shows that the fan is active and it operates.
CIRCULATION PUMP: Shows that the circulation pump is active and it operates.
FUEL OUT: When the temperature of the water in the boiler falls under 28°C, the appliance gives out NO FUEL warning.
Reset: In case the setting thermostat does not work, when the temperature of the water in the boiler reaches 95°C, the limit thermostat is activated. This thermostat is called security thermostat as well. In case of the foregoing condition, remove the hexagon screw cap on the RESET button and press the red button in the middle. Only this way the boiler shall operate again.

EKY MECHANICAL PANEL ELECTRICAL CONNECTION CHART (EKY 125-250)



EKY MECHANICAL PANEL ELECTRICAL CONNECTION CHART EKY 250-1000)



USE OF THE BOILER:

1. Fully open the shaft valve before operating the boiler.

2. Make sure that the system is full of water and the air in the system is removed before operation. The system should be slowly supplied with water to prevent air formation in the system.

3. The system should be supplied with water until water comes out of the messenger pipe for the systems with open expansion tank.

4. After the system is filled with water, the system should be removed from air and it should be inspected for any possible leakages.

5. In the systems with open expansion tank, the base pressure level on the hydrometer should be marked.

6. The user of the boiler should be informed on the boiler settings, operation of the boiler and what to do in case of emergencies.

7. Place the fuel on the sieves as shown in the burning instructions which is provided with the boiler. Place igniting materials such as pieces of wood, firewood, etc. on the fuel to light it manually and close the feeding lid. Leave the lower lid open and do not turn the fan on until the coal catches fire. After it catches fire, close the lower lid and turn on the fan at low speed. In the first operation, a thick smoking may be experienced. In this case, turn down the fan air rate from the setting button on the panel in order to prevent soot.

8. The circulation pumps should be checked whether they operate or not. The circulation pump shall not automatically start working until the temperature reaches 37°C. This parameter is set this way in order to prevent the water vapor from condensing and damaging the boiler by means of heating the boiler as soon as possible.

9. The boiler water temperature may fall down since the pump shall be reactivated. You may observe the activation of the pump and the fan looking at the red (led) lights on the digital indicator.

10. After the normal burning starts in the boiler and the system is activated, the fan continues operating until the system water temperature reaches the desired value.

If you turn on the temperature set button on the mechanical control panel or press the temperature set button on the digital panel, you can set the temperature as desired on the digital screen where the boiler water temperature is displayed**.**

11. Do not open the feeding lid when the fan is operating.

12. Note that the quality of the fuel you shall use shall directly affect the efficiency of the boiler, quality of the burning, amount of ashes and cleaning periods and the amount of bunt coal. Therefore, we recommend you to buy some amount of sample fuel to check the performance of the coal before purchasing large amounts.

13. The lever located near the boiler, which allows for the movement of the sieve, allows for the ashes accumulated on the sieve to fall down. Thus, the contact of the air with fuel is minimized and the burning quality increases (for EKY 17-100 Prismatic boilers).

14. Do not use high-calorie brown coals in the boiler. This may cause the sieves to melt and damage the firebox sheet.

15. For the boiler to have a long life span and for its durability, the water used should have the nominal hardness.

16. Do not operate the boiler without water and regularly control the level of water.

17. When the boiler is operating, do not touch the hot spots with bare hands (smoke box, front lid and interior parts of the boiler). Use protective equipments.

18. Do not open the covers of the smoke box when the boiler is operating.

19. Perform the periodical cleanings. Such cleanings shall allow you to obtain efficient and proper burning from your boiler.

20. If you observe an abnormal condition regarding the boiler, take the necessary precautions immediately and contact our authorized services.

You should contact Termodinamik Company for appliance fuel conversion. You should be informed by the Company on the conditions of conversion and the procedure to be followed.


Boiler must be operated according to the operation instructions.


Open expansion tank must be used for EKY boilers.


Hydrometer must be installed to an easly visible location.


The Company cannot be held liable if the boiler consumes too much fuel in case the boiler is not used according to the user and maintenance manual provided with the boiler or the desired comfort temperature is not reached, of heat loss due to the heated area and of low calorific value of the fuel that is being used.


Inside of the boiler any petrolium metarials (such as styrofoam, nylon, cloth etc...) which will cause pitch, should not be burned.


Gas tightness of the chimney must be ensured.


Smooth surfaces should be used as far as possible in order to reduce friction on the inside surfaces of the chimney.

BOILER FEEDING WATER PROPERTIES

In order to prevent calcification of water inside of the boiler and pipes, not so hard water should be used. (The water used in system must be over FS 25 which is international standarts for water hardness.)

Parameter	Unit	Boiler Feeding Water	Boiler Filling Water
Appearance	–	Clean, clear. There are solid materials and stabile foam in it.	
Conductibility at 25°C iletkenlik	µS/cm	< 1500	
pH value at 25°C	–	> 7,0	From 9,0 115[a]
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	–
Organic particles	–	See the footnote[b]	

TS EN 12953-10 Boilers: Properties of boiler and feeding water as per the Feeding and Boiler Water Quality

a *If there are units made of materials other than steel found in the heating system (copper pipes, aluminum radiators, etc.), they may require lower pH values and conductivity. However, the protection of the boiler is primary in the system and the abovementioned values should be followed.*

b *Organic materials are generally formed by several compounds. It is hard to specify before the effects of such compounds and their each component on the boiler. Organic compounds may decompose and may form carbonic acid and other acidic compounds ad these may cause corrosion and punctures in the boiler. This may cause the formation of materials such as limestone and foaming which should be experienced at the minimum level.*

- It should be considered that waters with high level of hardness shall cause calcification. The malfunctions and low performance due to calcification are not covered in the warranty.
- The problems resulting from the use of the appliance for the purposes not intended for use (industrial use, etc.) are not covered by the warranty.
- The appliance is not covered by the warranty if types of water other than potable water are used in the boiler (artesian water, waste water, etc.).

POWER OUTAGES

Since the circulation pump shall not operate in power outages, the temperature of the boiler water shall increase to some extent. With the boilers having good shaft draft, the temperature of the water in the boiler may reach the boiling point. Therefore, you should perform the following in order in case of power outages:

- Fully close the shaft valve.
- Tighten the knurled screw in front of the fan in order to prevent air from passing through the fan flaps.
- Turn on the by-pass line valve, if there is.
- Do not open the lid covers of the boiler.
- Do not drain the water in the boiler.
- Make sure the valves are closed.
- After the power is back on, do not forget to set the boiler to its previous condition.

If possible, use uninterrupted power supply (Ups) to prevent the circulation pump from stopping operation in case of power outages.

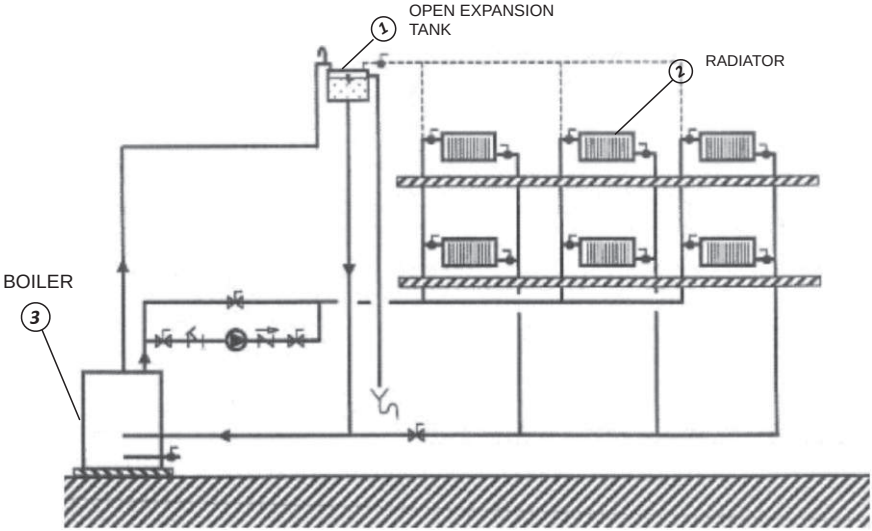
CLEANING AND MAINTENANCE

In order to obtain efficient burning from the boiler and allow the boiler operate efficiently, the ashes accumulated on the sieves should be periodically let down by means of moving the ashes with the help of sieve discharge lever before adding fuel to the boiler for prismatic boilers.

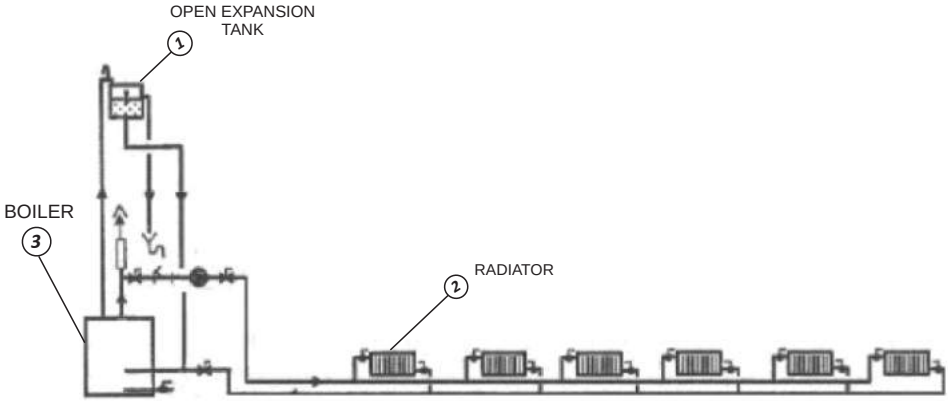
When the flames become glowing in the cylindrical boilers, the fuel should be added to the boiler after the ashes among the glows are let down with the help of fire rake. This way, the ashes preventing the burning air shall be removed from the sieve.
For a more efficient burning, regularly clean the ash sieve. Also;

- Check the water level in the boiler before each operation.
- The boiler should be operated as per the burning instructions and the flame in the burning chamber should be controlled and full burning should be provided.
- Smoke pipes, the turbulators inside the smoke pipes and the smoke box where the boiler is connected to the shaft should be cleaned at least once a week.
- Clean the shaft at least 3 times in a season.
- Clean the ashes accumulating in the shaft daily. You may want to perform the cleaning two times a day depending on the quality of the coal used (ash rate).
- Make sure that dust and burning coals do not fall onto the electrical equipments of the boiler and the fan.
- Do not clean the boiler when it is operating.
- You are recommended to get your boiler maintained and controlled (paid) by the TERMODÝNAMÝK AUTHORIZED SERVICE before the winter.

RADIATOR INSTALLATION CHART FOR MULTIPLE-STORY BUILDINGS



ROOM HEATER INSTALLATION CHART



MALFUNCTIONS AND TROUBLESHOOTING

PROBLEM	REASON	SOLUTION
Inefficient burning in the burning chamber.	- Inefficient shaft draught - Low-calorie non-quality fuel - Improper fan settings	- Get your shaft controlled and have it cleaned every year. - Use high-quality and dry fuel.
No fuel light is on.	- No fuel in the burning chamber.	- Add fuel and turn off the thermostat and turn it on again.
Digital screen is not working. The on-off button light of panel is on.	- The fuse might have blown.	- Replace the fuse. If the problem is not removed, contact the authorized service.
Fan is not working.	- The boiler water temperature might have reached the thermostat degree selected. - The boiler may have run out of fuel. - The limit thermostat might have increased. - The power cable of the fan may be loosened.	- The boiler shall start operating after the temperature falls 4°C from the thermostat degree selected. - Add some fuel. - Reset the limit thermostat. - Check the electrical connection.
Circulation pump is not working.	- The system water temperature may be under 37°C. - The capacitor of the circulation pump may be broken. - The circulation pump may be blocked. - The electronic card may be broken.	- Wait for the temperature to increase. - Contact the technical service.

İMALATÇI VEYA İTHALATÇI FİRMA BİLGİLERİ
Manufacturer and Importer Company Info

İMALATÇI *(Importer)*

ÜNVANI *(Name)*	:	**TERMODİNAMİK MAK. SAN. TİC. A.Ş.**
ADRESİ *(Address)*	:	Atatürk Mah. 80 Sk. No:10 Ulucak-Kemalpaşa-İZMİR
TELEFON *(Telephone)*	:	(232) 877 12 12
FAKS *(Fax)*	:	(232) 877 08 67
FİRMA YETKİLİSİNİN *Company Representative's* İMZASI ve KAŞESİ *Signature and Seal*	:	TERMODİNAMİK MAKİNA SANAYİ ve TİCARET A.Ş. Atatürk Mah. 80 Sok. No:10 Ulucak / Tel: 877 07 75 - 76 Fax: 877 08 67 Kemalpaşa Kemalpaşa V.D. 840 001 3921 İZMİR
MALIN *Product's*		
CİNSİ *(Type)*	:	KALORİFER KAZANI *(HEATING BOILER)*
MARKASI *(Brand)*	:	TERMODİNAMİK
MODELİ *(Model)*	:	**EKY**
BANDROL ve SERİ NO	:	
TESLİM TARİHİ ve YERİ	:	
AZAMİ TAMİR SÜRESİ *Maximum Repair Period*	:	
GARANTİ SÜRESİ *Warranty Term*	:	

SATICI FİRMANIN

ÜNVANI	:	
ADRESİ	:	
TELEFON ve FAKSI	:	
FATURA TARİH ve NO	:	
TARİH-İMZA-KAŞE	:	

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HEATING SYSTEMS

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