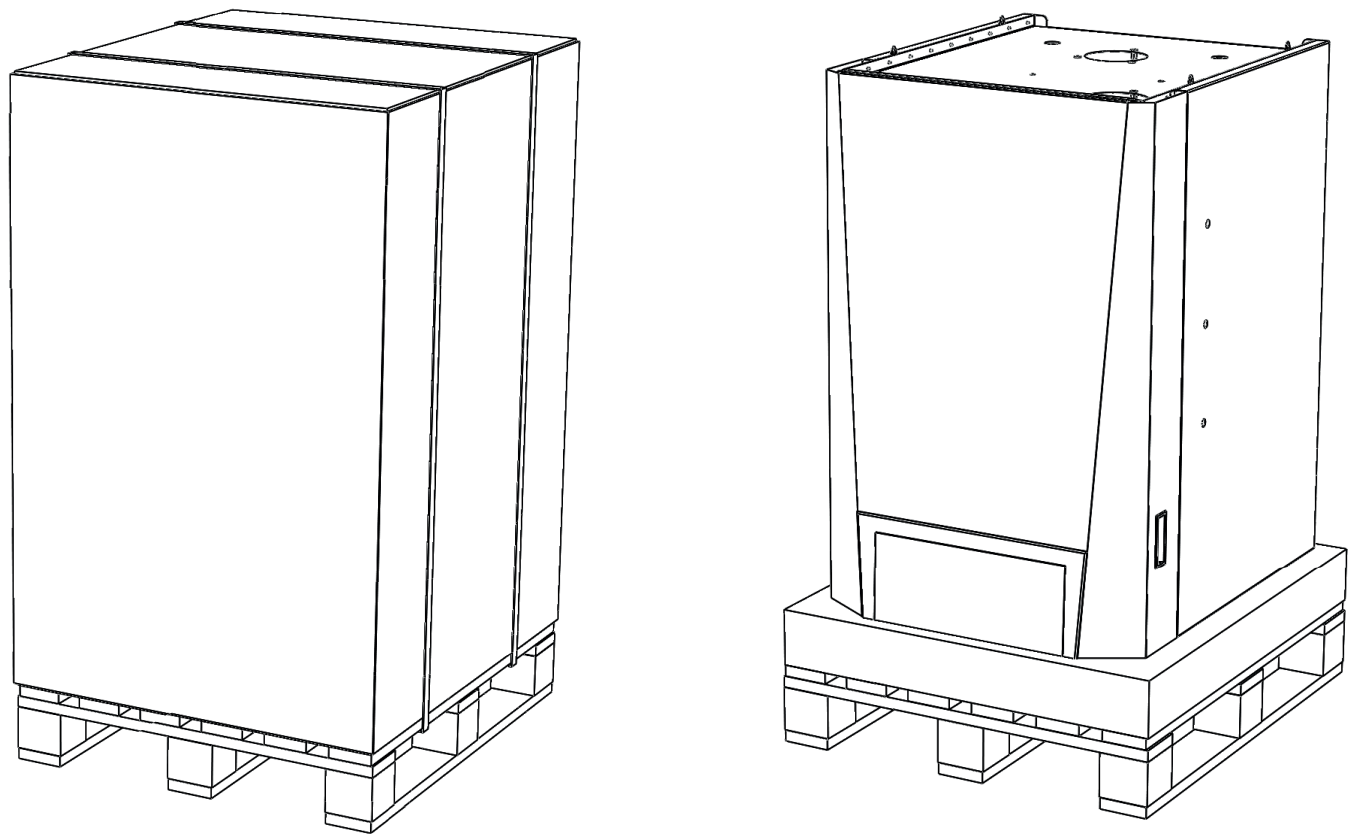


# Product Technical Data Brochure

Gas Fired Wall Mounted Condensing Equipment

## X-130 AND X-150 Series

*(Image 3)*



## PREFACE

Dear Customer,

First of all, thank you for choosing **GRON** brand and quality. In this guide, technical specifications of our stainless heat exchanger equipment are provided.

**GRON** company is not only an equipment manufacturer, but also is counted among a few heat exchanger producers in the world. This heat exchanger is the combustion chamber and most important part of the equipment. This product has been invented and patented in the name of our company as an outcome of 3-year R&D studies. Therefore, preferring **GRON** product does not only mean purchasing a heating device, but also ensuring long-term durability and safe comfort thanks to its unique heat exchanger design.


Maximum security conditions have been taken into consideration in the design process of our equipment, which are produced by using the most advanced technological methods.

Furthermore, contrary to many firms, each equipment produced by **GRON** company is subjected to safety tests, as well as productivity and emission tests via laboratory devices before their packaging. Thereby, economy and environmental sensitivity are also attached importance in addition to the maximum safety.

Please read this guide carefully to ensure sustainability of long-term reliable comfort offered by our firm. In case you encounter any item not included in the guide or do not understand any item, please contact our authorized service or firm. We will be glad to help you.

Please keep this guide near the product. We hope you to enjoy the **GRON** product!

Regards,

**GRON**  
Hasan Hüseyin ERASLAN  




## Product Information

# CONTENTS

<b>1. Product Information.....</b>	<b>3</b>
1.1 Product Declaration of Conformity.....	3
1.2 Equipment Definition.....	4
1.3 Labels and Symbols on the Equipment.....	5
1.4 Equipment Package Size and Content.....	6
1.5 Equipment Dimensions and Connection Dimensions.....	7
1.6 Equipment's Technical Data.....	8
1.7 Main Components of the Equipment.....	10
1.8 Equipment Flue Connection Types and Flue Accessories....	11
1.9 Equipment Water Pressure Loss Graph.....	11
1.10 Control Accessories for the Equipment's Cascade System.....	12

## 1.1 Product Declaration of Conformity

**GRON**, declares that all products are made of high quality and comply with the following standards.

EN 15502-1:2012+A1:2015- Gas Fired Central Heating Equipment  
EN 15502-2-1:2013- Gas Fired Central Heating Equipment

This equipment complies with the CE related European directive.  
It is certified by the accredited laboratories.

## 1.2. Equipment Definition

### Equipment Definition and Why Stainless Heat Exchanger?

X-120 and X-150 series gas-fired wall-mounted condensing equipment is designed in such a way that it can be used in single or cascade form within the central heating systems. Stainless heat exchanger should be preferred if long-term use of the condensing equipment is desired while obtaining heat saving at the same time. Therefore, stainless heat exchanger is designed for the X series products. While the flue gas is above 200 degrees in the traditional equipment, it is kept under 60 degrees within the X series equipment as an outcome of which water vapor is condensed and absorbed by the heat within the water. By this way, high efficiency is obtained.

### Pre-mix Burner Technology

More environmentalist and efficient burning is achieved within a wider modulation range thanks to the premix burner used in this equipment. Wider modulation prevents deterioration of emission and efficiency rates of the equipment when it is operated at different times with different powers. This equipment provides up to 35% energy saving when compared to the traditional natural gas fired equipment. Furthermore, creation of some environmentally hazardous gases (up to 80% CO and NOx) is prevented by means of the aforementioned energy saving.

### Easy Use with Smart Brain and LCD Screen

Besides, equipment is furnished with microprocessor control systems. Thereby, the system offers efficient burning by operating under different powers as per the heating need and ensures easy use and trouble shooting. While the LCD screen allows to choose different burning settings, the equipment can be controlled remotely by means of the room thermostats. Moreover, many systems similar to the solar heating system and pool heating system are integrated to the control system used.

While these series products can operate alone, they can also be used in the heating systems of wide areas such as mass housing, school, hospital as it allows operation of many equipment together in the form of cascade. Number of cascade equipment is determined according to the total power required. Cascade system allows interoperability up to 15 equipment.

### Accurate and Practical Installation Equipment

Within the scope of single and cascade installations, assembly pedestal and hydraulic installation equipment set designed by our firm and sold optionally are provided. Equipment can be installed easily in a specific order by means of this set. This assembly pedestal and hydraulic installation makes cascade assembly easy, and prevents inaccurate pedestal and hydraulic installation.

### Easy Maintenance and Service Possibility

Furthermore, design of the equipment allows easy access to inside of the heat exchanger and other structural elements from front side of the equipment in case service is needed. By this way, maintenance and service easiness and saving is achieved.



### 1.3. Labels and Symbols on the Equipment



Labels on this page are applicable to the GRN X 150 product. They may show differences in other models. Please check technical data page (Page 8) for data of different models.

#### Information Label

#### Warning Label

### WARNINGS !!!

- Assembly and commissioning should be made by the authorized GRON service.
- Please read "Technical Data Brochure" and "Product Installation Guide" before starting assembly of the boiler
- Please read "Commissioning and Usage Guide" before commissioning the boiler.
- The boiler should be installed in a separate location complying with the air-conditioning regulation and far from accommodation spaces.



# GRON

Model : GRN X 150  
Type : Condensing Boiler

Efficiency Class : 5  
Standarts : EN 15502  
Year of Manufacturing : 2020  
NOx Class : 6  
Power Supply : 230 V / 50 Hz  
Electrical Power Consumed : 313W  
Energy Consumption : A  
IP Class : X4D  
Max. Operating Pressure(PMS) : 6 Bar  
Max. Operating Temperature : 85°C  
Flue Installation Types : B23

Nominal Heat Input Qn : 139 kW  
Qn Max. (kW) : 149 kW  
Qn Min. (kW) : 21 kW

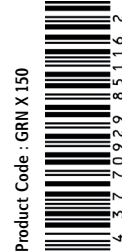
Nominal Output Power(80/60°C) : 143 kW  
Pn Max. (kW) : 146 kW  
Pn Min. (kW) : 20 kW

Nominal Output Power (50/30°C) : 100 kW  
Pn Max. (kW) : 100 kW  
Pn Min. (kW) : 100 kW

Gas Pressure : G20 / 20 mBar  
Gas Category : I2H



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🌐 www.gron.com.tr



#### Packaging Label

# GRON

Product Model : GRN X 150  
Capacity : 150 kW  
Gas Type : G20 / 20 mBar  
Gas Category : I2H

Product Code : GRN X 150



Serial Number : 1234567890

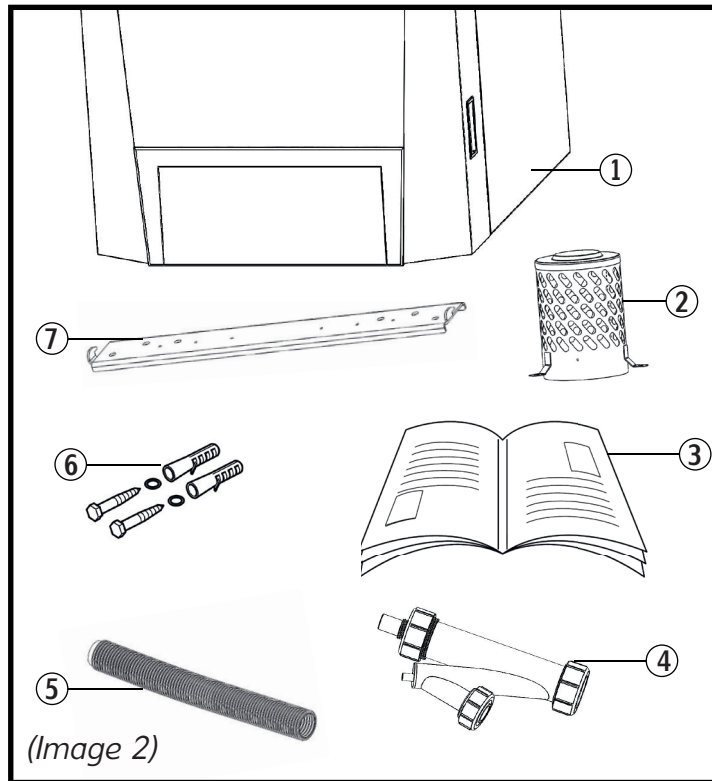


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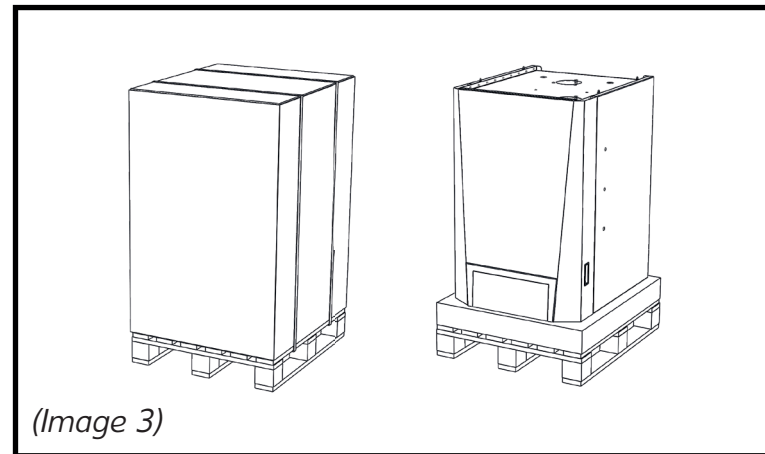


## 1.4. Equipment Package Size and Content

Following parts are available within the equipment's package.



- [1] Condensing Equipment
- [2] Air Suction Flue
- [3] Technical Documentation
- [4] Siphon
- [5] Condensate Hose
- [6] Suspension Screws
- [7] Suspension Sheet



Packaging materials are fully recyclable. Furthermore, due to the fact that the materials used can be dangerous in terms of living creatures, do not leave them at easily accessible locations after opening the package.



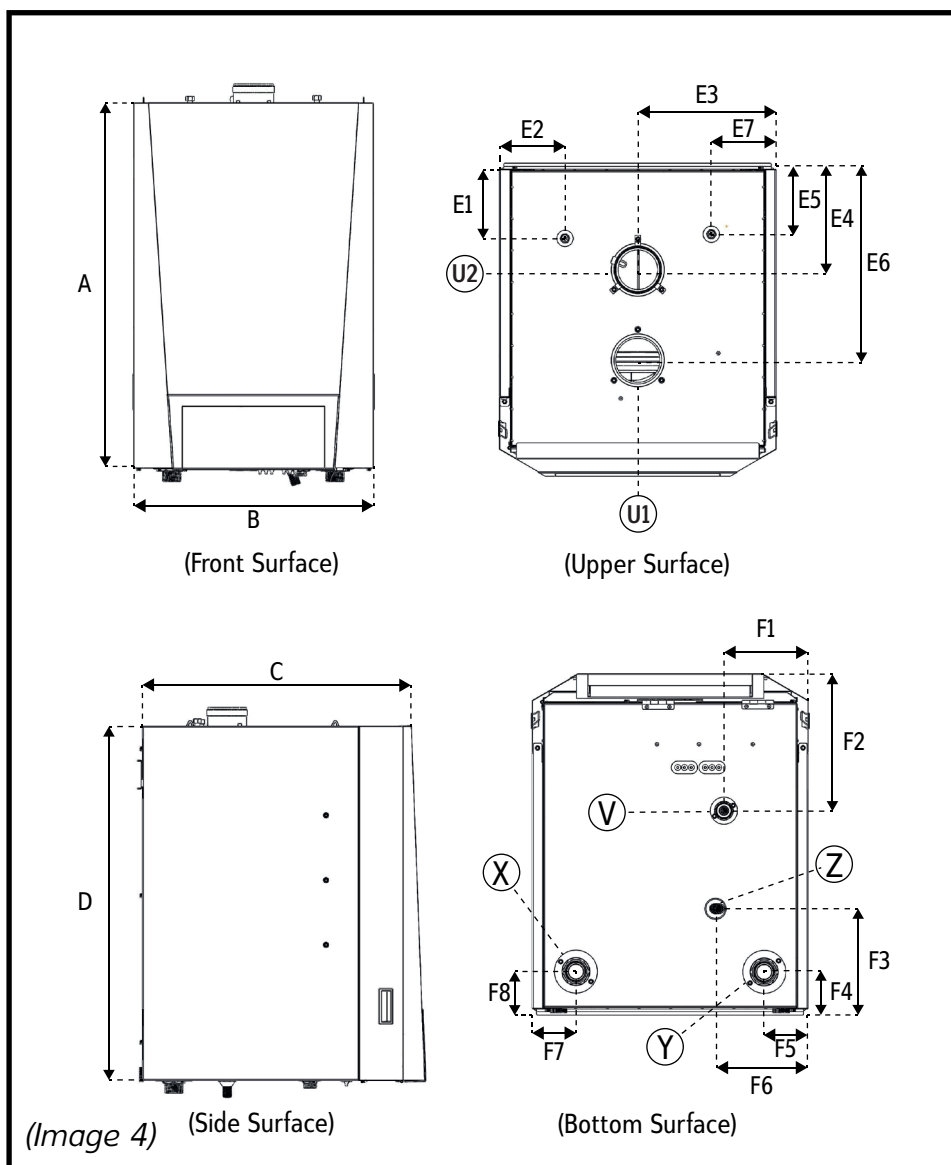
	X 130	X 150
<b>Net Weight (kg)</b>	<b>105</b>	<b>120</b>
<b>Gross Weight (kg)</b>	<b>125</b>	<b>140</b>



	X 130	X 150
<b>Equipment Dimensions (Width x Length x Height cm)</b>	<b>61x67x93</b>	<b>61x74x93</b>
<b>Package Dimensions (Width x Length x Height cm)</b>	<b>70x80x125</b>	<b>70x80x125</b>



## 1.5. Equipment Dimensions and Connection Dimensions



### Product Dimensions (mm)

	X-150	X-130
A	930	930
B	610	610
C	745	670
D	930	930
E1	154	154
E2	143	143
E3	305	305
E4	222	222
E5	144	144
E6	81	81
E7	144	144

F1	187	187
F2	302	302
F3	220	220
F4	83	83
F5	97	97
F6	205	205
F7	97	97
F8	83	83

### Product Connection Dimensions

	X-150	X-130
X	G 1 1/2	G 1 1/4
V	G 1	G 1
Y	G 1 1/2	G 1 1/4
Z	G 1	G 1

U1	100 mm	100 mm
U2	100 mm	100 mm

## 1.6. Equipment's Technical Data

Technical Table	UNIT	X 130	X 150
Gas Line			
Gas Type (Natural Gas G20) Heat Load (10.56 kWh\m3)		G20	G20
Gas Supply Pressure	mbar	20	
Gas Consumption at Maximum Power	m3/h	12,698	14,815
Gas Consumption at Minimum Power	m3/h	2,222	2,540
Premix System		PNEUMATIC	
Modulation Rate		1/5,8	
Heat Exchanger Material		STAINLESS STEEL	
Efficiency			
(80/60°C) Efficiency at Maximum Heat Power	%	96,4	96,2
(50/30°C) Efficiency at Maximum Heat Power	%	105,8	106,2
Partial Efficiency (36/30°C)	%	107,1	107,3
Seasonal Heating Energy Efficiency (given in GCV)	%	92 (Class A)	
Radiator Circuit			
Maximum Heat Load (Qn)	kW	120	140
Minimum Heat Load (Qn)	kW	21	24
Maximum Heat Power (Pn) (80/60°C)	kW	112,4	134,7
Minimum Heat Power (Pn) (80/60°C)	kW	20,6	22,9
Maximum Heat Power (Pn) (50/30°C)	kW	127,3	148,7
Minimum Heat Power (Pn) (50/30°C)	kW	22,4	25,7
Temperature Setting Range (Min-Max)[High Temperature Circuit]	°C	25-85	
Temperature Setting Range (Min-Max)[Low Temperature Circuit]	°C	25-47	
Operating Pressure (Minimum-Maximum)	bar	0,8-6	



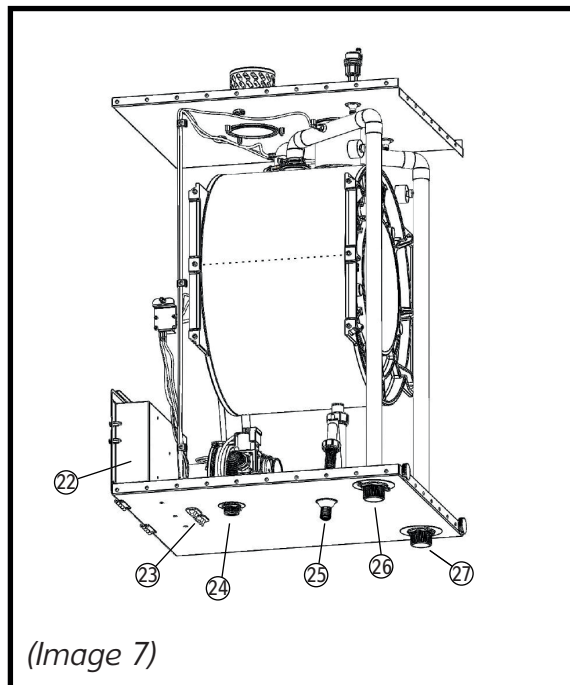
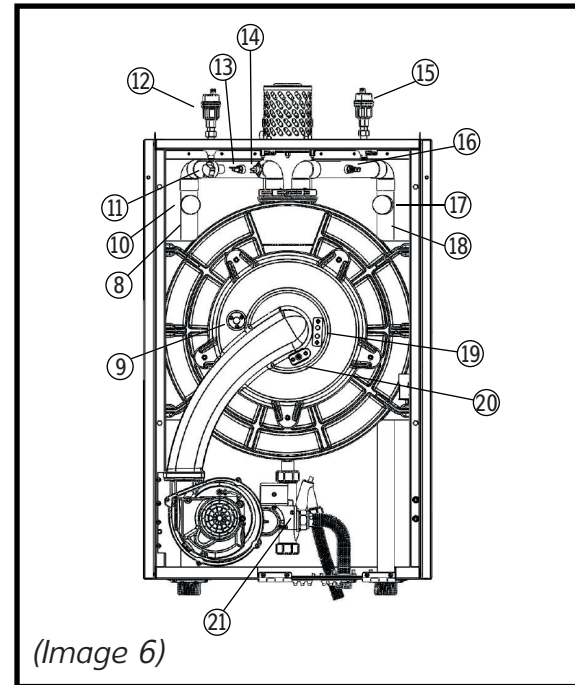
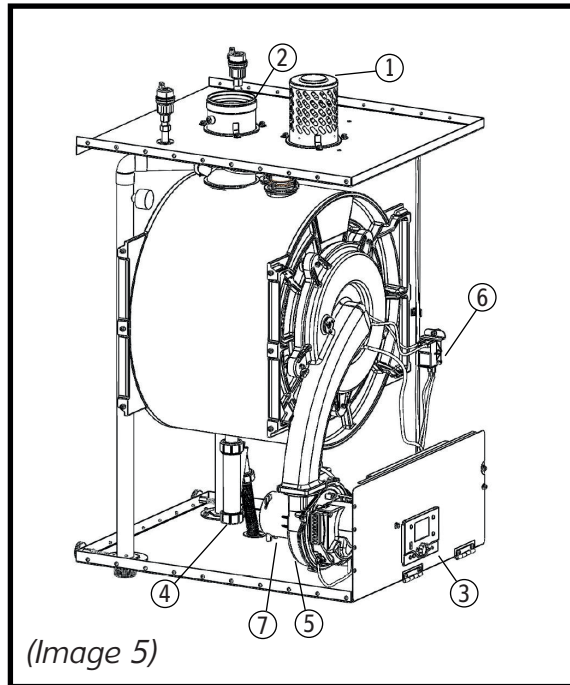


Technical Table	UNIT	X 130	X 150
<b>Electric Circuit</b>			
Electricity Supply	V AC - 50 Hz	230 V +%10-%15	
Electricity Consumption (Min./Max.)	Watt	29 / 120	30 / 128
<b>Waste Gas Circuit</b>			
Waste Gas Temperature (Min. /Max.) (80/60°C)	°C	66,4 / 81,2	52,5 / 67,8
Waste Gas Temperature (Min. /Max.) (50/30°C)	°C	31,2 / 47,3	31,2 / 50,2
NOx	Class	6	
NOx Weight	mg/kWh	55	28
Waste Gas Mass Flow (60/80°C - Qn) Nominal/Min.	g/s	56,14 / 10,33	64,26 / 11,23
<b>General</b>			
Equipment's Dimensions (Height x Width x Depth)	cm	61x67x93	61x74x93
Package Dimensions (Height x Width x Depth)	cm	70x80x125	70x80x125
Net Weight	kg	105	120
Gross Weight	kg	125	140
Sound Level	dB (A)	62,1	62,1
Type		B 23	
Category		I2H	



All information provided in the brochure is based on the test results. Data is subject to change without any prior notification.

## 1.7 Main Components of the Equipment



- |                            |                              |
|----------------------------|------------------------------|
| [1] Fresh Air Suction Flue | [13][16] Temperature Sensor  |
| [2] Waste Gas Flue         | [14] Limit Thermostat        |
| [3] Control Panel          | [18] Cold Water Pipe         |
| [4] Siphon                 | [19] Firing Electrode        |
| [5] Fan                    | [20] Ionization Electrode    |
| [6] Transformer            | [21] Gas Valve               |
| [7] Venturi                | [22] Electronic Card Slot    |
| [8] Hot Water Pipe         | [23] Equipment Cable Outlets |
| [9] Sight Glass            | [24] Natural Gas Inlet       |
| [10],[17] Manometer        | [25] Siphon Outlet           |
| [11] Pressure Sensor       | [26] Cold Water Inlet        |
| [12],[15] Air Relief Cock  | [27] Hot Water Outlet        |



## 1.8 Main Components of the Equipment

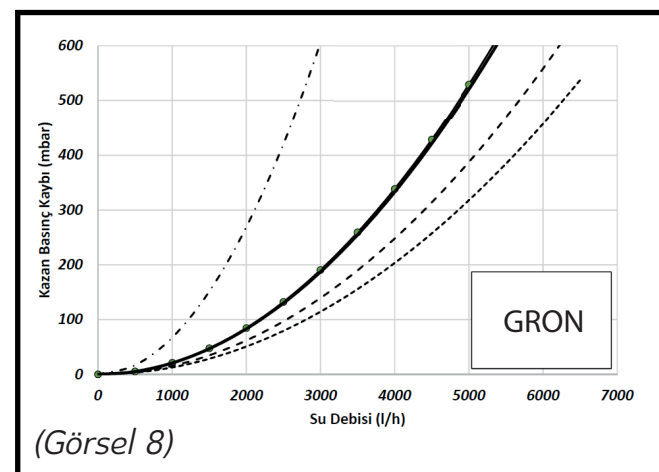
Product Code	Product Name	Explanation
GRN X 5007	Ø100/150 Horizontal Flue Set	Maximum Flue Distances Lmax= 18m ( X 130 ) Lmax= 15m ( X 150 )
GRN X 5042	Ø100/150 Horizontal Flue L=500 mm	Can be used with Horizontal Flue Set and Vertical Flue Set
GRN X 5043	Ø100/150 Horizontal Flue L=1000 mm	Can be used with Horizontal Flue Set and Vertical Flue Set
GRN X 5040	BOB 100.100 Flue Valve	In case more than one boiler is used with the cascade system, this is the accessory required to be installed to the flue outlet of each boiler.
GRN X 5068	BOB 100.100 Flue Valve	In case more than one boiler is used with the cascade system, this is the agonic valve accessory required to be installed to the flue outlet of each boiler. Boiler connection and collector connection is Ø100 mm.
GRN X 5044	Ø100/150 Bend 90°	Ø100/150 Bend 90° Ø100 mm.
GRN X 5041	Ø100/150 Vertical Flue Set	Maximum Flue Distances Lmax= 18m ( X 130 ) Lmax= 15m ( X 150 )



Equipment's flue connection types are available at "Product Installation Guide".

## 1.9 Equipment Water Pressure Loss Graph

Each equipment should have its own circulation pump. This circulation pump should comply with the technical specifications of the equipment. As specified performance cannot be achieved with the low-quality pumps, it is not possible to obtain desired flow rate within the equipment. As a result, inner surface of the heat exchanger overheats and is required to operate under high temperature. This situation facilitates scaling and causes permanent damages on the equipment's heat exchanger. Therefore, correct pump is of significant importance in terms of long-term healthy operation of the equipment.



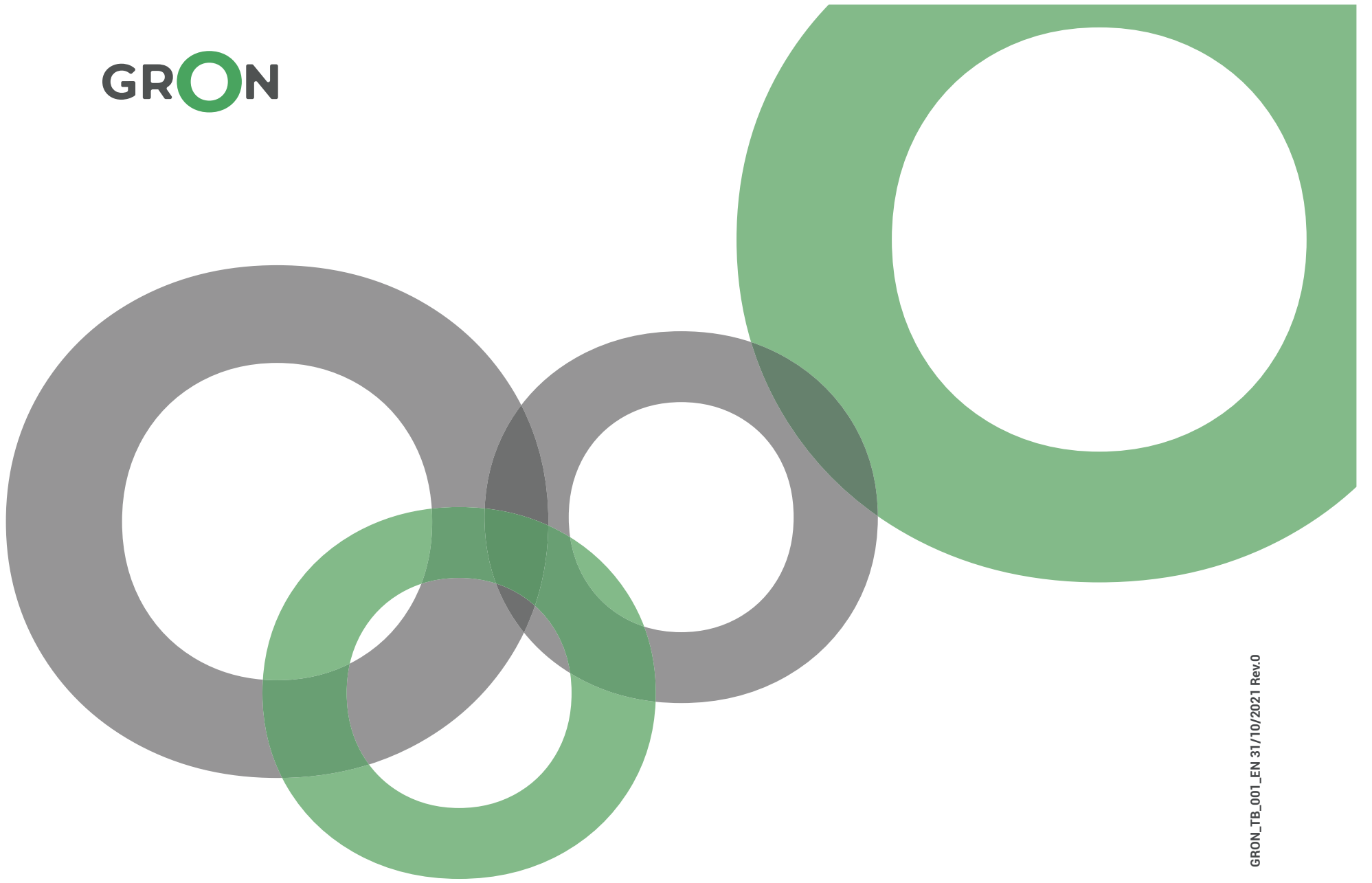
## 1.10. Control Accessories for the Equipment's Cascade System

Accessory Code	Accessory Name	Explanation	
GRN X 7001	WDHS-01 Outside Air Sensor	Sensor enabling regulation of the boiler according to the outside air temperature.	
GRN X 7045	RC 21.11 Timer Room Thermostat	Thermostat allowing weekly / daily programming for the heater and boiler circuit or the unit that can only be used as program timer.	
GRN X 7049	QAZ 36 Immersion Boiler / Hydraulic Separator Sensor	This is the immersion sensor to be used for measurement of Boiler and Hydraulic Separator temperature and for notification of this data to the boiler.	
GRN X 7050	QAD 36 Surface Type System Delivery Sensor	Shackle type sensor to provide connection from hydraulic separator outlet to the top of the pipe. It is used to measure delivery water temperature within the second zone of double-zone systems	
GRN X 7053	MST80 Adjustable Surface Thermostat	Pipe clamp type adjustable thermostat for the heating region zone	
GRN X 7047	MLC 30 Multiple Zone Module	The unit controlling Low Temperature / Floor Heating Zone (mixing valve circuit).	
GRN X 7005	RVS-AVS Cascade Panel Set	This set comprises of RVS 43 Boiler Control Device and AVS 37 Screen Module as well as AVS 82.490 RVS Connection Cable-40 cm for connection of the first two items for the management of cascade and zone.	
GRN X 7056	OCI 365 OpenTherm Module	In case RVS unit is used for boilers, communication unit for each boiler	



Accessory Code	Accessory Name	Explanation	
GRN X 7057	AVS 37 Screen Module	If RVS unit is used, 1 unit should be purchased. RVS unit control screen	
GRN X 7076	AVS 82.490 RVS-AVS Connection Cable 40cm	If RVS unit is used, this is the cable with a length of 40cm required to be purchased to ensure connection to AVS37.294 Screen Module or connection between AVS 75.390 Zone Duplication modules.	
GRN X 7058	AVS 82.491 RVS-AVS Connection Cable 100cm	If RVS unit is used, this is the cable with a length of 100cm required to be purchased to ensure connection to AVS37.294 Screen Module or connection between AVS 75.390 Zone Duplication modules.	
GRN X 7071	QAC 34 Outside Air Sensor	If RVS unit is used, 1 unit should be purchased. This is the sensor required to be connected to the RVS unit.	
GRN X 7072	QAA 55 Room Thermostat	Small-screen Room Thermostat allowing selection of Economic or Comfort Mode and adjustment of temperature	
GRN X 7073	QAA 74 Wide-Screen Room Thermostat	Wide- and illuminated-screen Room Thermostat allowing selection of Economic or Comfort Mode and adjustment of temperature	
GRN X 7074	AVS 75 Zone Duplication Module	Zone Duplication Module (Module for additional zone with 3 relay outlets)	
GRN X 7077	OZW672.01-Web Server 1LPB device	OZW672.01 web server connected to the RVS-43 Boiler Control Device allows remote control and monitoring of the heating center via web and smart phone app.	

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