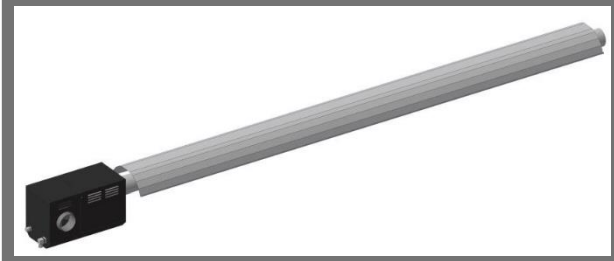
hosseven
ISI VE YALITIM SAN. VE TIC. A.Ş.



TUBE RADIANT HEATER

USER AND INSTALLATION GUIDE

DN:251017.00

Thank you for choosing our company; Our products are a great heating solution with high quality manufacturing and modern design, developed with the highest technology aiming to live the feeling of heat that a device gives you completely safely.

Hoşseven Isı & Yalıtım San. Tic. A.Ş.

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1- TARGETED USE

Radiant heaters with pleasant pipes; They can be used by mounting in L (flat) or U shape. Factories, workshops, warehouses and hangars, gymnasiums etc. in the heating of large volume indoor closed semi-open spaces. economic solution in places. A ventilation grill is needed to provide sufficient oxygen to the device when used in small volume enclosed spaces.

2- SECURITY ISSUES

Only the manufacturer, an approved installation or service company is authorized to work on this heater, following local standards. This heater must be installed and serviced only by the manufacturer or trained personnel who understand all the qualified and valid codes.

This device is known for use in accordance with current connection and installation regulations and only in adequately ventilated rooms. Installation and operating instructions should be read and understood before installation, operation and service.

Before installation, it is necessary to check the compatibility of local gas distribution, gas type, gas pressure and device settings.

3- INSTALLATION INFORMATION

3.1 L (straight) and U type tubular radiants

Hosseven pipe radiant heaters are produced according to EN 1020. Each device is subjected to a function test before leaving the factory and has been adjusted to the relevant gas type beforehand. When installing and using tubular radiant heaters, it is necessary to comply with local regulations and guidelines.

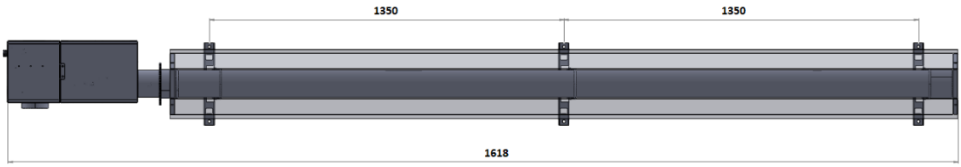

Figure 3.1. 1 L (straight) tubular radiant

Figure 1 and Figure 2 show the connections and fittings of L (straight) and U type tube radiants. These parts required for installation should come out of the box. These; burner, radiant pipe, reflector, suspension bracket, reflector plate, inner hanger, U pipe and “s” hanger hook. Chimney connection apparatus is sent assembled on the last pipe. In addition, the heat retardant turbulator, which should be in the last pipe, is sent assembled inside the last pipe.

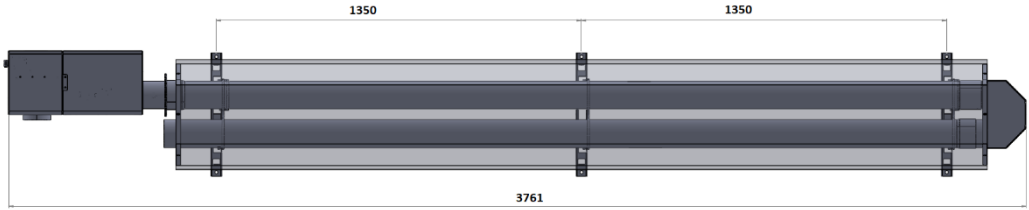

Figure 3.1.2 U type tubular radiant

L TYPE TUBE RADIANT					
Model	HBR 22	HBR 30	HBR 38	HBR 50	HBR 58
	6L	9L	12L	15L	18L
Power [kW]	22	30	38	50	58
Total lenght [m]	6,6	9,6	12,6	15,6	18,6
Reflector Width [mm]	264				
Reflector Height [mm]	129				
Total weight net [kg]	51,7	70	88,4	106,7	124,9
min. mounting height [m]	3,5	3,8	4,3	5	6
Fuel	NG / LPG				
Gas Consumption NG [m^3/h]	2,31	3,15	3,99	5,25	6,10
Gas Consumption LPG [kg^3/h]	1,84	2,5	3,17	4,17	4,84
Max heating area [m^3]	378	516	653	860	997
Gas inlet pressure [mbar]	20				
Gas connection	1/2 " Dişli				
Electrical connection	230 V 50 Hz				
Radiant tube	Diameter 102 mm wall thickness 2 mm pipe				
Reflector	Wall thickness 0,70 mm galvanized sheet				
Burning	Auto burn / Double step / Remote control				
Nox Sınıfı	4				
Minimum Distance to Flammable Materials [m]					
Overhead	0,15	0,15	0,18	0,18	0,18
Bottom	1,5	1,6	1,6	1,8	2
Side	0,8	0,8	1	1	1,2

U TYPE TUBE RADIANT			
Model	HBR 22	HBR 38	HBR 58
	3 U	6 U	9 U
Power [kW]	22	38	58
Total lenght [m]	3,9	6,9	9,9
Reflector Width [mm]	407		
Reflector Height [mm]	159		
Total weight net [kg]	52,6	89,9	127,2
min. mounting height [m]	3,5	4,3	6
Fuel	NG / LPG		
Gas Consumption NG [m^3/h]	2,31	3,99	6,10
Gas Consumption LPG [kg^3/h]	1,84	3,17	4,84
Max heating area [m^3]	378	653	997
Gas inlet pressure [mbar]	20		
Gas connection	1/2 " Dişli		
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Burning	Auto burn / Double step / Remote control		
Nox Sınıfı	4		
Minimum Distance to Flammable Materials [m]			
Overhead	0,15	0,18	0,18
Bottom	1,5	1,6	2
Side	0,8	1	1,2

3.2 Pipe connections

Since the pipes will be sent as demounted, their connections must be made. One end of the pipes is wider. While making connections, this wide end is passed over the normal width end of the other pipe. During this bonding, putty is applied for sealing between the pipes. This paste is available inside the burner box. After making connections with putty, it

should be screwed in 3 places (120 degrees between them). These connection screws are also available in the burner box.

The way of connection with putty and screws is shown below.

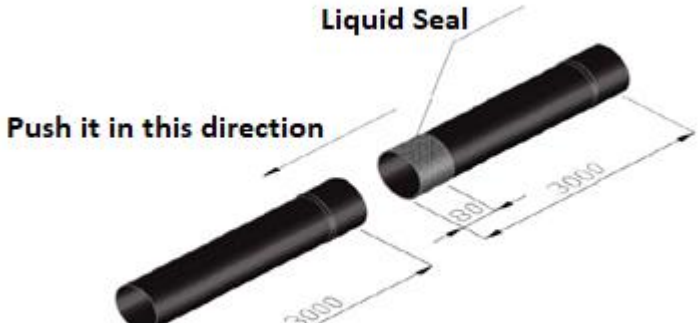


Figure 3.2.1 Connection with liquid seal

Putty is applied all over the part of the pipe that will enter the other pipe. It is connected by pushing in the direction shown in Figure 3.

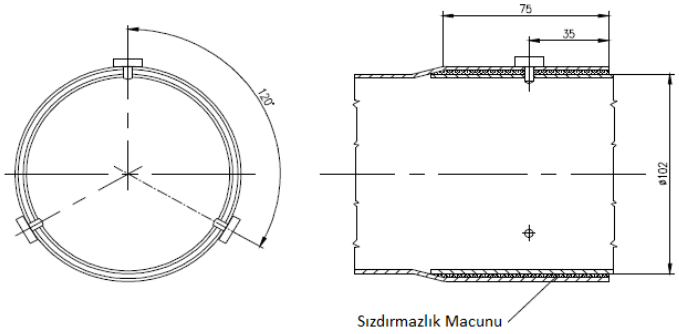


Figure 3.2.2 Screw connection

The pipe connected with the putty is screwed from 3 places as shown in the figure above. When making screw connections, be careful not to tighten the screw directly upside down.

3.3 Burner and burner first pipe connection

The burner was hung separately from the must. L parts are taken out of the box for hanging the burner. As you choose, the main purpose of the burner is for its form. It is screwed in place with M5 screws that come in L part box and the burner is hung from there.

The first pipe connection with the burner is made with a flange, unlike other pipes. The flange in the pipe above the burner and in the first pipe is screwed together. In order for the pipes to hold each other, about 5 cm of pipes are intertwined. In this way, pipes can be easily flanged and flanged.

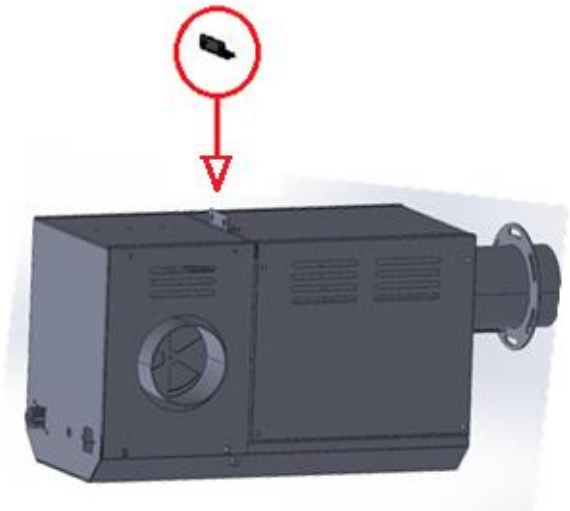


Figure 3.3.1 Burner Hanger L part

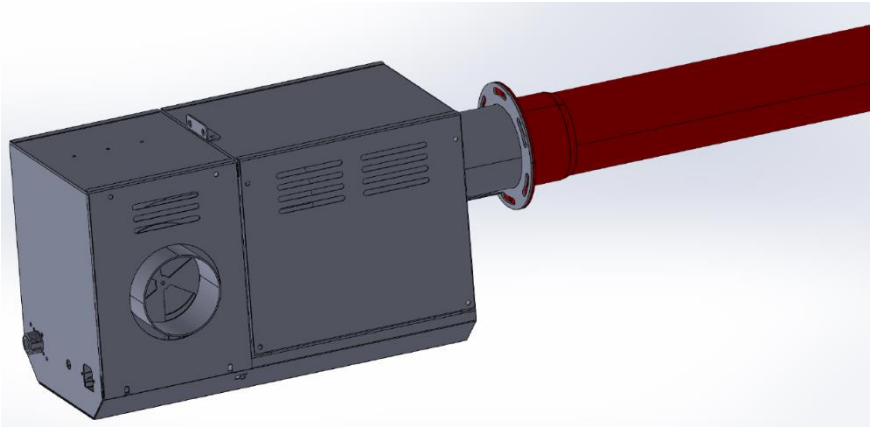


Figure 3.3.2 Burner and first pipe connection

3.4 The last pipe

It is the pipe that will be installed last. There is a connection apparatus for chimney connection at the end of the pipe. Chimney connection is made here and waste gas is discharged. The chimney connection apparatus located at the end of the pipe can come with or without mounting on the pipe. If it came unassembled, install the flue connection apparatus to the end of the pipe you set as the last pipe.

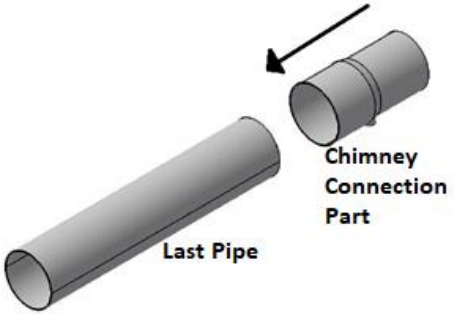
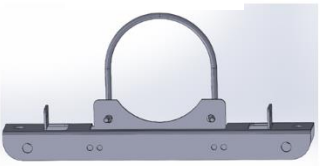


Figure 3.4.1 End pipe and chimney connection apparatus

3.5 Hangers

Suspension apparatuses differ according to L (flat) and U forms. Shown below.

L (düz) tip



U tip

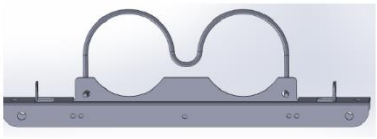
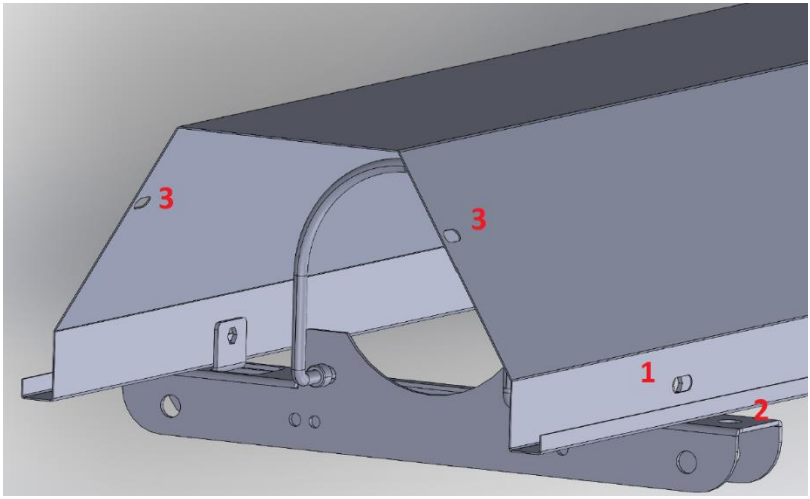


Fİgure 3.5.1 Hangers

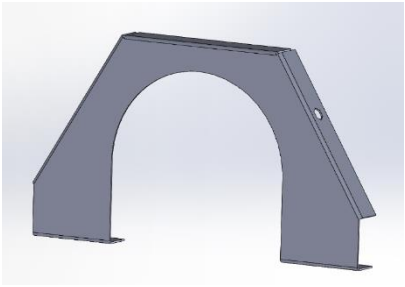
L (flat) type hanging apparatus; It is used in L (straight) type pipe radiant installation. The wire on the suspension apparatus passes to the pipe. Screw welding is done at the ends of the wire piece. The wire is attached to the hanger apparatus through its holes and tightened with a nut. The lower part of the reflector is tightened with screws from the right and left parts. Screws of the reflector to be screwed are riveted. Thus, the reflector should be attached to the suspension apparatus. 3 pieces (initially, in the middle, at the end) are attached to the first pipe. One pipe is attached to each subsequent pipe.

U-type hanging apparatus; U type tubular radiant installation is also used. Its assembly is the same as L apparatus. It is mounted to install 2 pipes side by side. 3 pieces (initially, in the middle, at the end) should be attached to the

first pipe part. Each subsequent pair of groups is attached to the pipes one by one.



In the image above, the number 1 connection shows the connector connection with the hanging apparatus. The connection is made with a chain or a steel wire from the point 2 to the place where the product will be hung. Connection part 3 is attached to the ends of the first and last reflectors of the product. This closure is shown on the side.



3.6 U connection

Tubular radiants are installed in two types as L or U type upon request. U connection apparatus is as shown below. As shown in the figure, it is screwed between the pipes by applying a liquid seal (3 places). When installing the pipes to the U connection, make sure that the burner fan side and the flue outlet do not interfere.

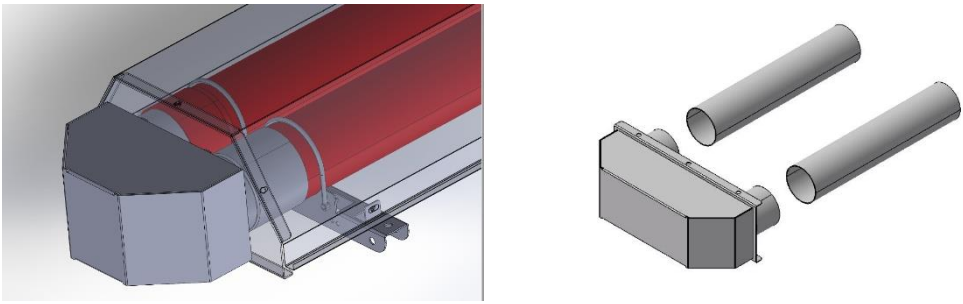
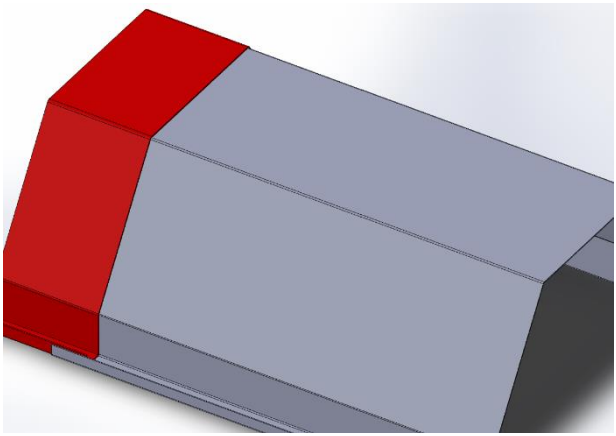


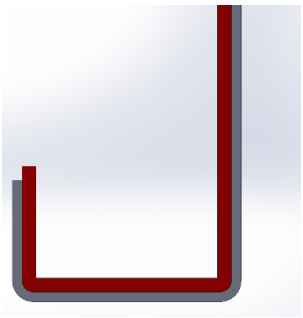
Figure 3.6.1 U connection

3.7 Reflector connections

The connection of the reflectors to the suspension apparatus is specified in the suspension apparatus section. It is 3 meters tall with the reflectors on each pipe. While the reflectors are mounted on each other, they are passed on to the small atria on the side of the reflector. It is recommended not to use screws during assembly. Otherwise, strain can be observed in the reflectors due to the expansion that will occur. Closing parts to be used in

the first and last pipe are tightened directly to the reflector. In addition, while the U apparatus is attached, the U part is fixed to the reflector.





4- GAS CONNECTION

Gas connection is made using flexible gas flexi. It is necessary to manually close the connection of the device to the main gas line by using a ball valve on the other end of the Flexin.

Make sure that the connection we get from the main gas line is made in such a way that it does not send any dirt or water droplets to the gas valve of the device. Below are the correct and incorrect of these connection types.

The pipeline leading to the gas valve should be such that it does not allow the water deposits that may form in the system to go to the valve.

$P_{işletme}$: 20 mbar P_{max}: 60 mbar

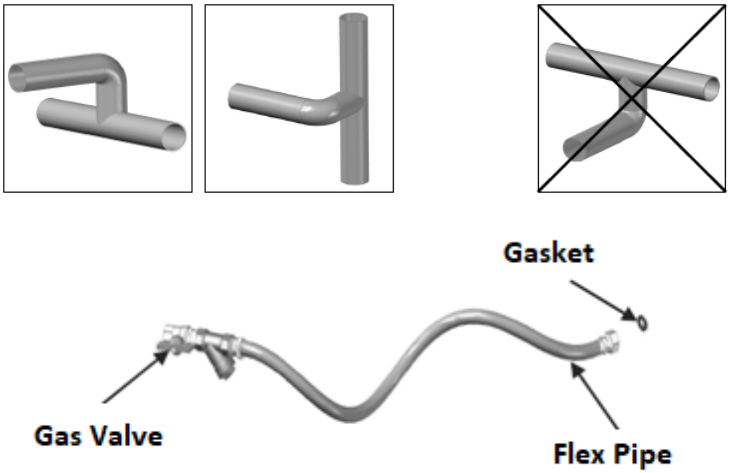


Figure 4 Gas connection

The parts to be used in the gas connection are shown in the figure above.

- The flex connection should not be bent hard so that it is under tension when connected to the device.
- After the Flex connection is made, the joints must be checked for leaks.
- It should be checked that the gas reaches the valve.
- Check that there is no air in the gas installation.

5- ELECTRICAL CONNECTION

Hosseven pipe radiant devices work with 220/240 V 50 Hz electrical connection. Each tubular radiant device must be connected to a 220/240 V (2 -3 ampere) V automata. In devices without control (manual), turning the device on and off is done with this V automat.

It is sent with a male socket that you can connect the electricity on the device. You can use your device by making the electrical connection to this part. There is a 2.5 amp glass fuse on the electrical female socket.

6- DEVICE FEATURES

• The clean air fan required for combustion is on the pressure side
• Compact ignition and flame-controlled safe operation
• Easy service opportunity with removable burner head
• Heat and corrosion resistant steel radiant pipes coated with aluminized High aluminum reflectors
• Horizontal and angled mounting form
• Controlled double step control
• On / off operation by connecting directly to the automata

6.1 Impact Area

The heating area of the above mounted radiant heater is shown in the figure below. As shown in the figure, it is as effective as the "S" area.

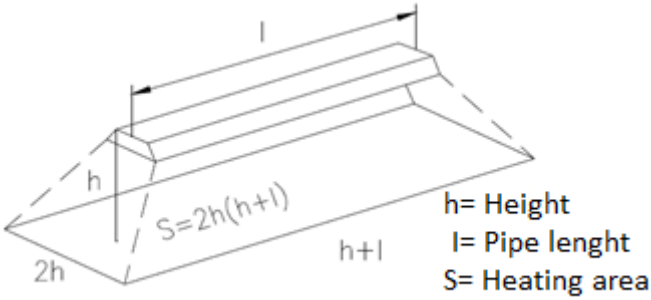


Figure 5 Impact area

6.2 Distance distances

There are safe hanging distances that we should pay attention to when hanging tubular radiant devices.

Safe stopping distances to combustible materials;

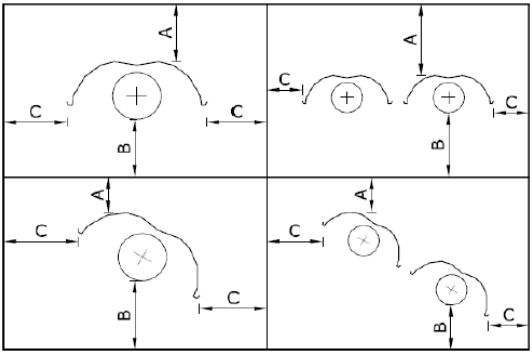


Figure 6.2.1 Distance to flammable materials

Power (kw)	Safety Place (m)		
	A	B	C
12	0,12	1,1	0,3
22	0,15	1,5	0,8
30	0,15	1,6	0,8
38	0,18	1,6	1
50	0,18	1,8	1
58	0,18	2	1,2

Figure 6 Distance to flammable materials

Minimum hanging heights;

Type	Position	Power (kw), Yükseklik (m)										
		10	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**
"U"	**Horizontal**	2,1	2,2	2,4	2,6	2,9	3,4	4,9	5,2	5,4	5,7	5,9
type	**30 °**	2	2,1	2,3	2,7	2,7	3,1	4,3	4,6	4,8	5	5,3
"L"	**Horizontal**	2,2	2,3	2,4	2,6	2,8	3,3	4,7	5	5,2	5,4	5,6
type	**30 °**	2,1	2,4	2,4	2,5	2,6	3	4,1	4,3	4,5	4,7	4,9

Table 6.2.3 Height distances

6.3 Slope degree

In order to prevent water from flowing into the burner, we need to mount it downwards at an angle of 1 ° min.

Figure 6.3 Curved hanging

6.4 Angled hanging case

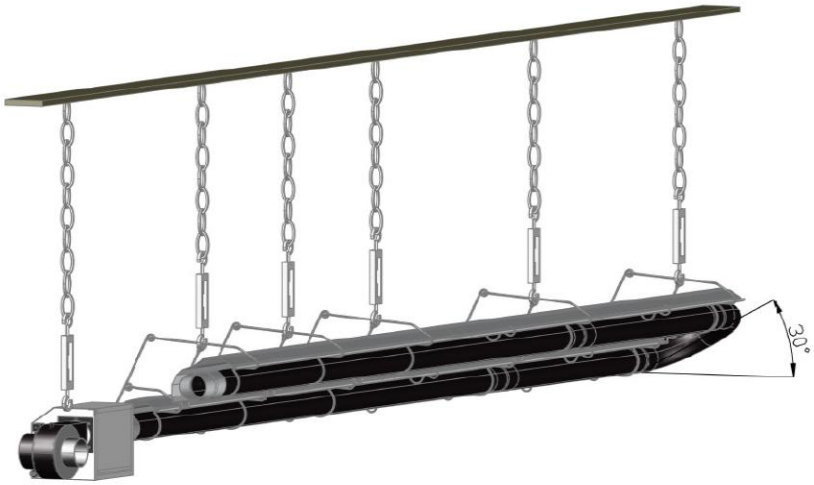


Figure 6.4 Angled hanging of tubular radiant

When hanging tubular radiant devices, it can also be hung at an angle if desired. There are hanging places in the hanging apparatus for hanging at an angle. Angular is hung from these places if desired. The angle to be hung must be hung so as not to exceed 30 degrees.

6.5 Hanging status

When the tubular radiant devices are suspended with the chain, the distance between the ceiling and the ceiling should be 400 mm. It is stated in the figure below.

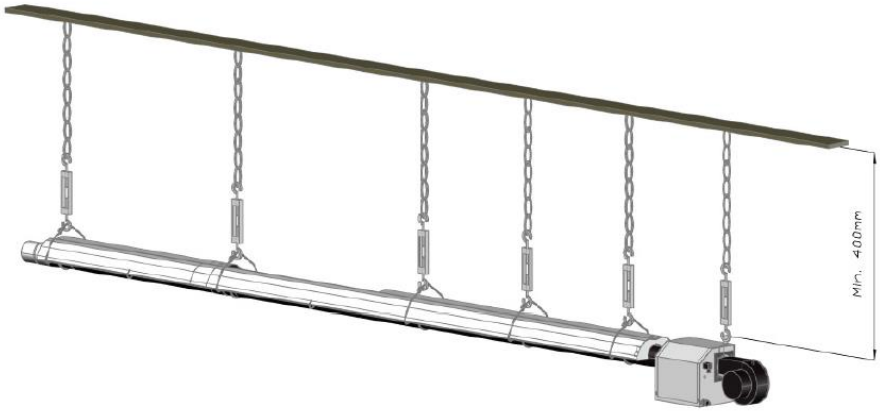


Figure 6.5.1 How to hang the tubular radiant

While the pipe radiant devices are hung, the first pipe is hung from 3 places (at the beginning, in the middle, at the end) with a hanging device. One pipe holder is attached to each pipe that follows. (inner hanging apparatus is attached to each pipe after the first pipe.)

The burner must also have a connection from one place. Hanging types are given below.

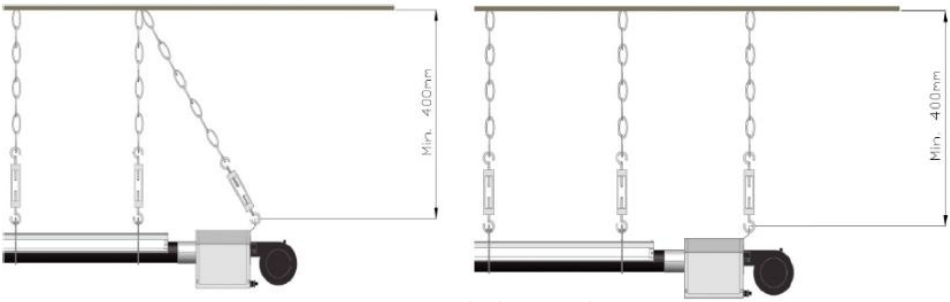


Figure 6.5.2 How the burner is hung

6.6 Combustion air from outside

It is possible to get the required air for burning from outside. You can connect the fresh air connection of the fan in the pressure section directly

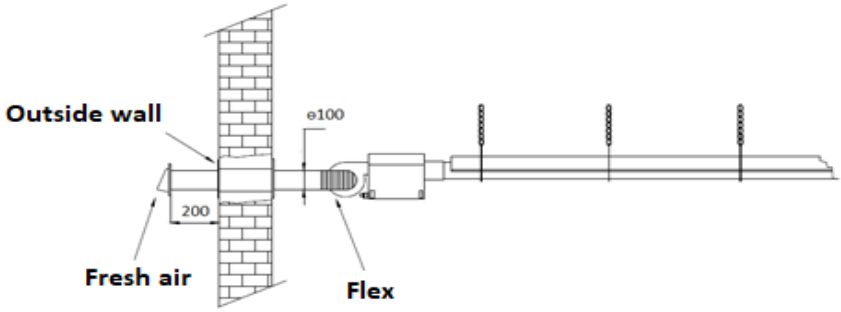


Figure 6.67 Externally Fresh air

to the fan. A protection should be provided to prevent rain and other solid assets from entering the fresh air inlet.

6.7 Chimney connection

If the devices are installed in closed places, waste gas must be exported through a flue system. You can also share the chimney system with other tubular radiant devices.

Protection is required to prevent any objects and water from entering the chimney outlets. Chimney pipes must be at least 100 mm. Some examples of flue connections are shown below.

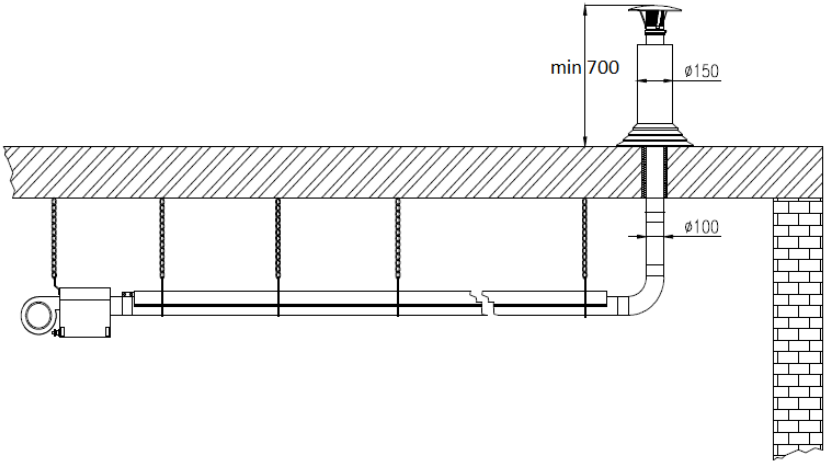


Figure 6.7.1 Examples of flue connection

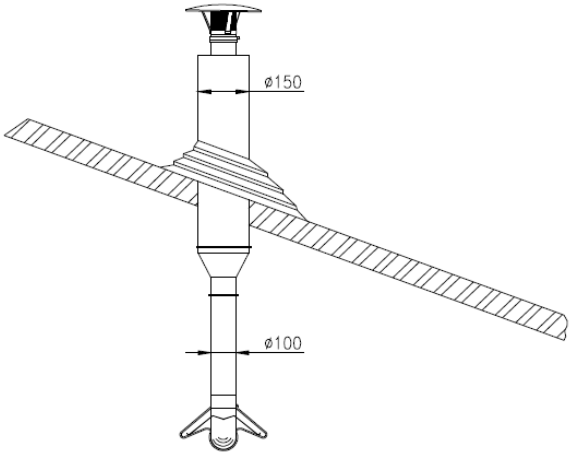


Figure 6.7.2 Chimney connection examples

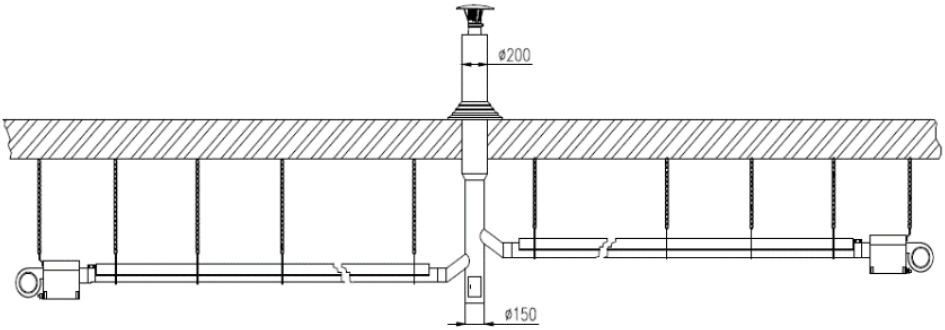


Figure 6.7.3 Chimney connection examples

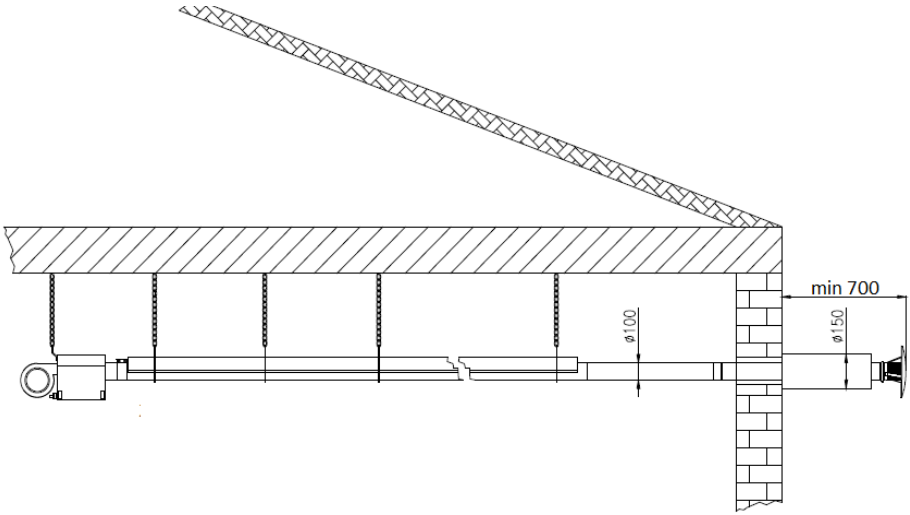


Figure 6.7.4 Chimney connection examples

6.8 Turn 0n / off

Tubular radians are used remotely or manually depending on the hanging situation.

1- In low places; In cases of hanging in low places such as cafes, restaurants, opening and closing is provided by remote control.

2- In high places; It is provided with V-vending machine (shunt) manually in cases of hanging in places such as factories and sports halls.

7- MAINTENANCE

There are maintenance that the user and service personnel should do for the device. The device used in particular should be inspected and inspected before the new season.

We can control it in two ways before running it before the new season.

1- Let the appliance run for a few minutes. Close the gas valve. The burner will stop working. After waiting for 6-8 seconds, open the valve again. The device will continue to operate.

2- Let the appliance run for a few minutes. Then, close the chimney of the device and the air inlet of the fan. Then the prostate will turn to “off” position. The control card will close the solenoid valve and the error light will be on.

After bringing the device back to its original working position, continue using the device.

All electrical and gas connections of the device must be closed before all maintenance is carried out. Maintenance should be done according to the rules mentioned in this manual.

User maintenance;

- Cleaning of dust and other particles that will form on the outer surface of the pipes.

-Sealing of the joints of the pipes. It is understood from the color of the leaking pipes.

-Reflectors cleaning

-Checking apparatus control (locations and robustness)Servis elemanlarını yapacağı bakımlar;

Gas pressure controls of injector and gas regulator

Procedure control

-Electrical connections and grounding control

-Fan control

8- GAS CONSUMPTIONS AND TECHNICAL TABLE

In the table below, there are gas consumption to power (kw) value.

Power (kw)	Naturalgas (m^3/h)	LPG (kg/h)	Nozzle diameter(mm)	Nozzle pressure (mbar)	
				max	min
12	1,26	1,00	3,3	8,6	6
22	2,31	1,84	4,4	8,6	6
30	3,15	2,50	5,3	8,6	6
38	3,99	3,17	6,3	8,6	6
50	5,25	4,17	7,9	8,6	6
58	6,10	4,84	8,5	8,6	6

9- TROUBLESHOOTING

Case		Possible Causes	Answers
In case of flames	**Burner and fan**		
Spark plug does not ignite		* Electrodes can be dirty * Electrodes may have been disconnected from the control board * Distance between electrodes may be too long. * Control card may be defective.	* Clean the electrode tips * Check the cable connections of the electrodes. * Check the distance between the electrodes * Reinsert the control card
	Fan not working	* Electricity may not be coming * Insurance may have blown * Prosestat may not be working * Control card may not be working * Fan may not be working	* Check that the device is powered * Install a new one. If it beats again, try to find the place that can cause high current. * Check the process * Check the control card. * Check the fan.

Spark plug ignites	Device does not switch to normal combustion after spark plug ignition	* Gas valve may be closed * There may be air in gas pipes * Injector pressure may be low * The air required for combustion may not be suitable. * Solenoid valve may not be working * Prosestat may not be working * Electrical connections may be faulty	* Open the gas valve * Clean the air * Check inlet and injector pressures * See the air duct of the fan * Replace the solenoid valve * Change the process * See electrical connections
	The device catches fire and goes out soon	* Phase and neutral connections may be wrong * Injector pressure may not be correct * The air required for combustion may not be suitable. * Prosestat may be shutting down the system	* Check the phase connections * Check inlet and injector pressures * See the air duct of the fan * Check and clean the inside of the pipes and the chimney
	Burning has been achieved, but there is an imbalance, it works louder than normal	* The turbulator may not be inside the last pipe it should be.	* Check the turbulator

WARRANTY CERTIFICATE

Manufacturer or Importer Company:	Seller Company:
Title: HOŞSEVEN AŞ	Title:
Address: ANKARA YOLU 18.KM BURSA	Address:
Phone: 0224 384 11 10	Phone:
Fax: 0224 384 11 14	Fax:
e-mail: hosseven@hosseven.com.tr	email:
Authorized Signature:	Invoice Date and Number:
Firm's Stamp:	Delivery Date and Location:
	Authorized Signature:
	Firm's Stamp:

PRODUCT

Type: INFA-RED	Warranty Period: 2 Years
Markası: HOSSEVEN	Maximum Repair Time: 20 Days
Model:	Serial Number:

WARRANTY CONDITIONS

1) The warranty period starts from the date of delivery of the goods and is 2 years.
2) All of the goods, including all parts, are under warranty.
3) In case the product fails within the scope of the warranty, if the consumer complies with the conditions specified in the user manual, the device will be repaired free of charge by the Hosseven Authorized Services and the customer will not be charged under any name.
5) If the consumer uses his right to free repair;
- Malfunction again within the warranty period,
- exceeding the maximum time required for repair,
- In cases where its repair is not possible, it is determined by the authorized service station, seller, manufacturer or importer with a report;

The consumer may request the refund of the good, the discount of the defect in the rate of replacement or, if possible, the replacement of the good with the same shame. Hosseven evaluates this request. If appropriate, it meets the demand of the consumer. If this request is not fulfilled, Hoşseven Aş. It is responsible.
6) The repair time of the product is 20 working days. This period starts on the date of notification of the malfunction related to the goods to the authorized service station or the seller, and from the delivery date of the goods to the authorized service station outside the warranty period. If the malfunction cannot be remedied within 10 business days, HOŞSEVEN Aş .; Until the repair of the goods is completed, it has to allocate another product with similar features to the use of the consumer. In case the product fails within the warranty period, the time spent in repair is added to the warranty period.
7) Malfunctions resulting from the use of the goods contrary to the issues in the manual are out of warranty.
8) The consumer may apply to the Consumer Arbitration Committee or the Consumer Court in the place where the settlement is located or where the consumer transaction is made in case of disputes that may arise regarding the use of the rights arising from the warranty.
9) If this Warranty Certificate is not given by the seller, the consumer may apply to the General Directorate of Consumer Protection and Market Surveillance from the Ministry of Customs and Trade.