



Akhgar Tabesh
اخگر تابش

Industrial Halls

Local and Central
Radiant

Industrial Halls

www.akhgartabesh.com





In designing of large halls heating equipments, the hall height parameter should be considered. As you know, the warm air is lighter than cold air and based on the gravity, the cold-heavy air moves towards the floor and the warm-light air rises to the top of the hall (roof).

The common heating systems (convection-based) produces the warm air and injects that inside the hall while it will be trapped under the roof. Therefore, the use of industrial heaters and convection_based product to heat such halls, leads to wasting energy and property.

The industrial hall heating aims to providing the desired temperature to the people who work on the floor. Therefore, the heat should be concentrated on the floor of the hall.

Using the radiant heating systems is the best solution for heat transferring to the floor of the hall, because these systems emit the heat into the environment, using the infrared waves. These waves are propagated in the indoor and will be converted to heat after reaching the objects surface, people and the floor of the hall. In this heating method, there will no heat loss from the heating system to the floor.

The radiant heating systems are produced in two different types:

1- Local radiant heating system (AZAR)

2- Central radiant heating system (PARTO)

Both types can be applied based on the condition and hall application. The designer proposes the suitable heating system based on considering the geographic location, hall application, type of activity and indoor restrictions. To obtain the optimum efficiency of radiant heating systems, it is necessary to know their application prerequisites and requirements.



Prerequisites for using the local radiant heating system

1- Gas piping

Equal to the number of radiant heating systems, the gas piping should be performed from the main gas pipeline to the burner location, for each heating system.

2- Cabling

The electrical cabling should be carried out for each heating system independently from the electrical panel to the burner.

3- fume pipe performing

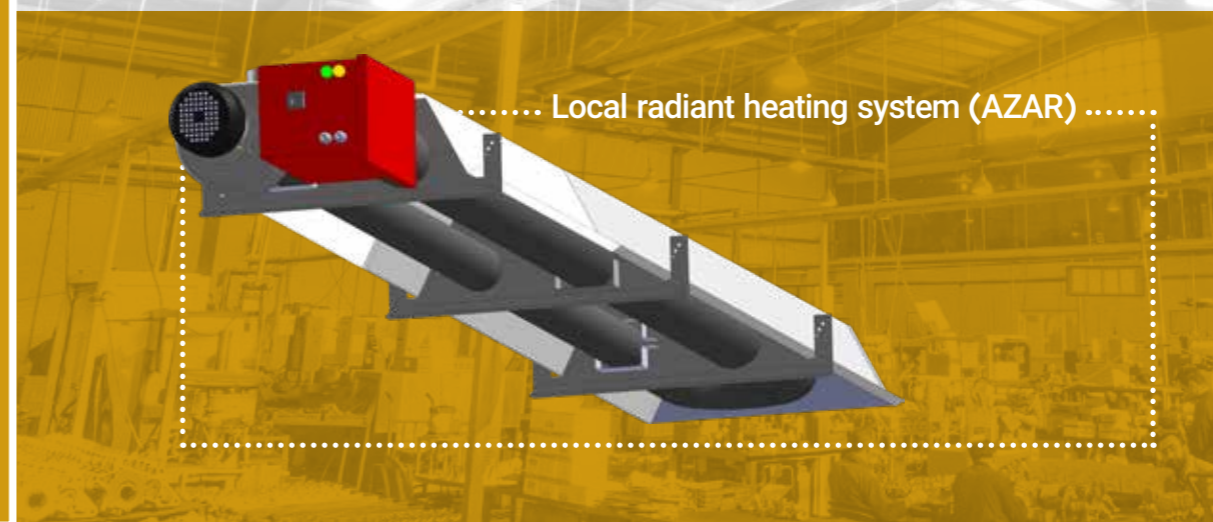
Equal to the number of radiant heating systems, the fume pipe should be installed from the burner to about one meter outside the hall. It directs the burner combustion gases out of the hall.

4- Access for repairing

The radiant heating systems usually are installed in the height of about 6 to 7 meters above the floor. The repairman has to be able to access the burner of the system due to repairing and periodic services. Therefore, the presence of an elevator (or a lift truck) inside the hall is very necessary.

5- Combustion location

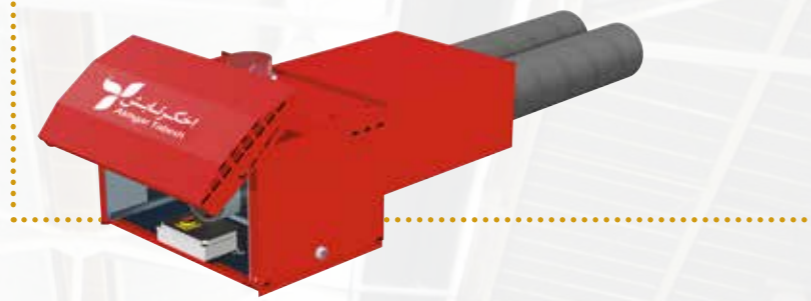
In local radiant heating systems, due to their burner installation location, the combustion process takes place inside the hall. As a result, the indoor environment provides its required air. This problem limits using of the local radiant heating systems in industrial halls.



..... Local radiant heating system (AZAR)



Central radiant heating system (PARTO)



Prerequisites for using the PARTO

1- Gas piping

Because of applying only one burner in the central system, a single gas pipe is connected to the burner from the main gas pipeline.

2- Cabling

Due to the applying only one burner in the central system, a single cable is connected to the burner from the main electrical panel.

3- fume pipe performing

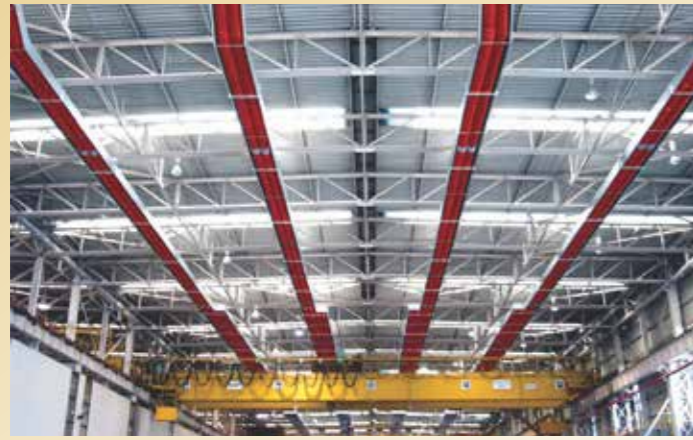
The burner of the central radiant heating system is usually installed outside the hall, and combustion fumes will be exhausted in the outdoor environment. In this case, there is no need to install a fume pipe.

4- Access for repairing

We should have access to the burner of the system (that is installed in the high height) due to repairing and periodic services. After installing the burner outside the hall, an access ladder is connected to the burner platform. Therefore, the repairman easily gets the access to the burner, and also there will no need to an elevator or a scaffolding.

5- Combustion location

In central radiant heating systems, the burner is installed outside the hall. Thus, the combustion takes place outside the hall and the outdoor environment provides its air. Due to installation of the burner outside of the hall, there will no limits for various activities inside the hall.



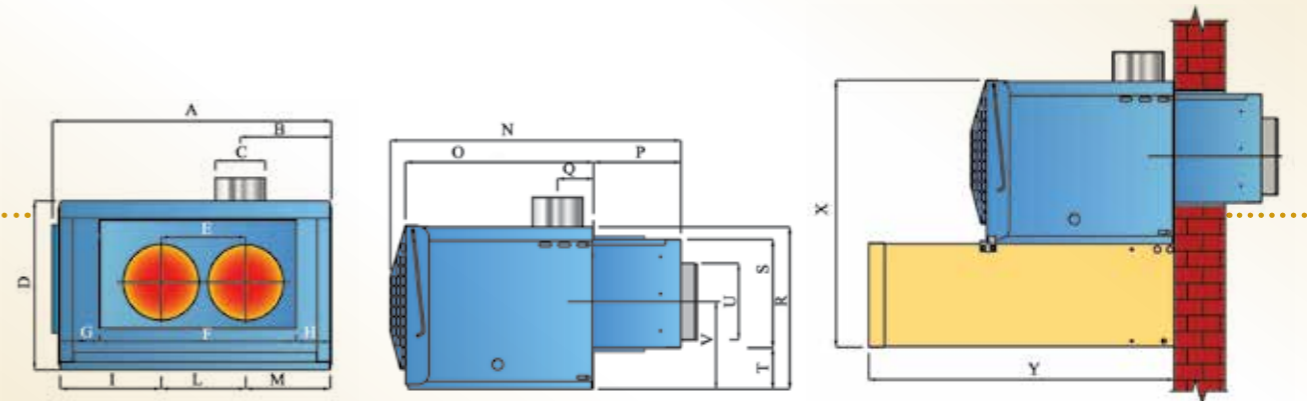
AKHGAR TABESH Industrial halls PROJECTS



The technical features of PARTO

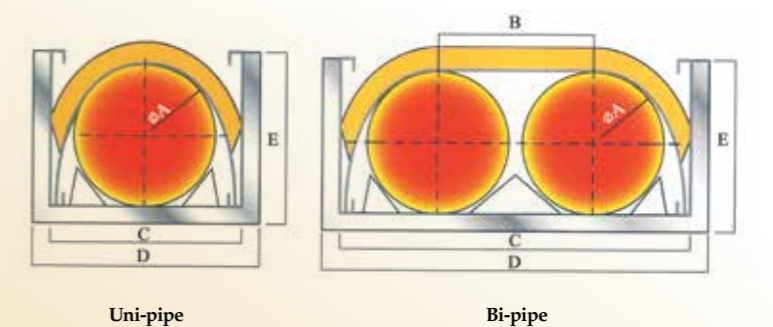
Dim.	Dimension(mm)		Dim.	Dimension(mm)	
	Pipe Ø 300 mm			Pipe Ø 300 mm	
A	1095		N	1142	
B	349		O	740	
C	200		P	343	
D	664		Q	142	
E	333		R	637	
F	774		S	426	
G	157		T	162	
H	134		U	300	
I	398		V	344	
L	333		X	1049	
M	333		Y	1202	

Characteristics			C100	C150	C200	C300
Thermal Power	kCal/hr		86000	129000	172000	258000
	kW		100	150	200	300
Combustion Efficiency		%	94			
Energy Consumption	Natural Gas	Nmc/h	10.5	15.8	21.16	31.75
	LPG	kg/h	7.77	11.65	15.54	23.31
Power Supply		V/Hz	380V 50 Hz			
Gas Connection		Inches	3/4	1	1	1
Weight		kg	90	230	240	260
Maximum Length		m	60	70	100	120
Minimum Length		m	50	60	70	100
fume pipe Diameter		mm	200			



The dimension of PARTO radiant band

Radiant Band	Radiant Band Dimension	
	Uni-pipe	Bi-pipe
A	300	300
B	-	335
C	512	850
D	580	918
E	374	374
Weight(kg/m)	9	18





AKHGAR TABESH Industrial halls PROJECTS

The technical features of AZAR

Characteristics		U3		U4		U6		U9		U12		
		22UT	35UT	22UT	35UT	40UT	45UT	50UT	55UT	60UT	65UT	
Thermal Power	kCal/h	19,000	30,000	19,000	30,000	35,000	39,000	43,000	47,000	51,000	56,000	
	kW	22	35	22	35	40	45	50	55	60	65	
Combustion Efficiency	%	88	88.2	88	88.2	89	90	91	91	91.7	91.7	
Energy Consumption	Natural Gas	m ³ /h	2.1	3.3	2.1	3.3	4	4.6	5.3	5.7	6.2	6.7
	LPG	kg/h	1.5	2.45	1.5	2.45	3	3.5	4	4.4	4.7	5
Power Supply	V/Hz	220/50										
Power Absorbed	W	100										
Gas Connection	inches	3/4										
Weight	kg	60		70		94		130		167		
Length	m	3.7		4.7		6.7		9.7		12.7		
Width	cm	60										
fume pipe Diameter	cm	12										



AKHGAR TABESH
Industrial halls
PROJECTS





Design, Production, Installation of Radiant Heating Systems



Akhgar Tabesh

Central office address: Unit 2, no. 37, Golbarg 2 St., Janbazan Blvd.,
Ariyafar Blvd., Marzdaran Blvd., Tehran • Zip code: 1464686565

Tel: (+9821) 44277905 •  +989010887997 - +989388929566

Factory: Saveh old road

Tel: +9821-40557039

www.akhgartabesh.com