

FIREBOX

Boiler

Processes and heating applications nowadays need to be powered by steam and hot water. The main technology for heat generation and energy process is the packaged fire tube boiler. The packaged fire tube boiler has proven to be highly efficient and cost effective in generating energy for process and heating applications. Efficient F.P.B three-pass designs are available from 100KW to 1200KW range. Our firebox boiler are equipped with a forced flat flame retention burner result in a high efficiency over 85. This boiler-burner combination gives reliable operation with minimum maintenance.



Scan this code To access the Pakman product selection application and select this product.



Scan this code to receive a 3D product file.



More info about this product.

Standard features

All unit and factory products are packaged with operating control, relief valves burner and fuel train. The simple installation makes it possible that only service connections to be placed. Flexible burner systems are available for firing natural gas & oil or combination. High density 2" mineral wool insulation assures lower radiant heat loss.

Efficiency

Conventional atmospheric burners operate with high excess air up to 300 causing the flame temperature to be decreased. Flame adiabatic temperature versus excess air amount is illustrated in fig. It is obvious that excess air has substantial effect on flame temperature and consequently on the rate of heat transfer and efficiency. Influence of excess air on thermal efficiency at different stack temperature is illustrated in fig. 2. Forced draft burners which are used in our boilers operate at lower excess air, about 10-30 percent.

This results in an acceptable efficiency about 84-85% with less operation cost. The initial cost of a boiler is the lowest portion of your boiler investment. Fuel costs and maintenance costs represent the largest portion of your boiler equipment investment. Some basic design differences can reveal variations in expected efficiency performance levels. Evaluating these design differences can provide insight into what efficiency value and resulting operating costs you can expect.

Product Capacity Calculation & Selection:

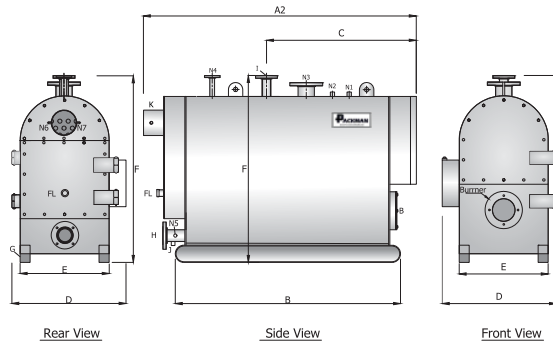
The hot water boiler selected based on type of building, load of heating, configuration and layout to arrangement boilers.

The better way to select the capacity of the boiler is the following steps:

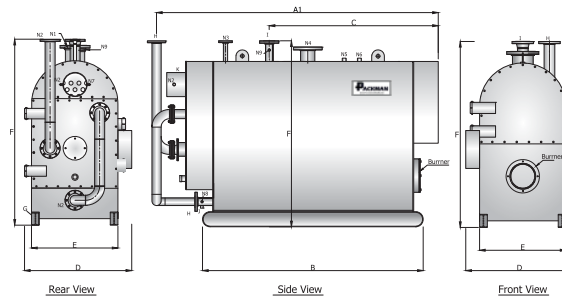
- 1- Calculate the maximum heat load based on your building type
- 2- Adding 20% to maximum load for coefficient of confidence
- 3- Consider the 85% average efficiency for Three Pass boiler
- 4- Determine the number of boiler you have: for 2 boiler you should normally select one boiler up to 75% full load and for 3 boiler you can select based on 50 % of full load for each boiler

Finally you can select the model from the following table.

100-400 KW



500-1200 KW



Model		PHWB FB-100	PHWB FB-150	PHWB FB-200	PHWB FB-250	PHWB FB-325	PHWB FB-400	PHWB FB-500	PHWB FB-600	PHWB FB-700	PHWB FB-800	PHWB FB-1000	PHWB FB-1200
LENGTHS	Capacity (KW)	100	150	200	250	325	400	500	600	700	800	1000	1200
Overall	A1	—	—	—	—	—	—	2700	2850	3000	3150	3600	3800
	A2	1540	1690	1890	1960	2160	2360	---	---	---	---	---	---
Skid	B	1220	1360	1570	1570	1750	1950	2050	2190	2350	2500	2800	3000
Boiler Head to Water Outlet	C	900	1050	1150	1120	1320	1470	1620	1730	1800	1900	2180	2360
WIDTHS													
Overall	D	750	750	750	1160	1160	1160	1420	1420	1420	1420	1500	1500
External Skid Width	E	620	620	620	760	760	760	920	920	920	920	1000	1000
HEIGHTS													
Water Outlet FLG. to Ground	F	1310	1310	1310	1590	1590	1590	1980	1980	1980	1980	2100	2100
Skid I-Beam Size (IPN)	G	120	120	120	120	120	120	140	140	140	140	160	160
CONNECTIONS													
Water Return	H	3"	3"	3"	3"	3"	3"	4"	4"	4"	4"	4"	4"
Water Outlet	I	2"	2"	3"	3"	3"	3"	4"	4"	4"	4"	4"	4"
Drain	J	1"	1"	1"	1"	1"	1"	1"	1"	1"	1"	1 ½"	1 ½"
Stack I.D.	K	6"	6"	1"	8"	8"	8"	10"	10"	10"	10"	10"	10"
MINIMUM BOILER ROOM CLEARANCES													
Front Clearance	--	1200	1320	1520	1570	1690	1970	2130	2300	2450	2600	3000	3200
Rear Clearance	--	700	700	700	800	800	800	1000	1000	1000	1000	1200	1200
Side Clearance	--	500	500	500	500	500	500	700	700	700	700	1000	1000
BOILER WEIGHT													
Shipping Weight (@ 10 bar)	--	890	950	1030	1420	1520	1620	2670	2790	3020	3150	3930	4140

● The measures and weights might be different from final product by less than 10%