



Vacuum Boiler

Applications

- Applicable to any building heating, hot water and industrial heating requirements
 - Providing heating to facilities with high safety requirement
 - Serving BROAD users whose heating demand is 60% greater than the cooling load
- Particularly suitable for users with temporary heating only requirements and a foreseeable future cooling demand

Function

Heating, hot water (simultaneously or dedicatedly)

Fuel

Natural gas, town gas, bio-gas, diesel (or industrial/food waste oil)



Features

- Operates under a vacuum (working pressure avoiding pressurized boiler problems. 200~707 mmHg).
 - Installation and operation do not require costly pressure vessel safety supervision.
 - Secondary heat exchanging hot water system with LiBr+H₂O as the medium. Scaling will never occur to the liquid side hence the heat exchanging efficiency will never decrease.
 - 100% automatic control and operator free with remote Internet monitoring.
 - BROAD vacuum boiler is just the high temperature generator (HTG) of BROAD direct fired chiller. Should the customer have cooling demand in the future, by connecting the boiler with a main shell of chiller (by 3 pipes) at anytime the system becomes a chiller / heater.
 - During the installation, requirements related with design and construction of piping, combustion and exhaust system follow the same requirements as BROAD direct fired absorption chiller.
- Lead time: 4~7 months

Supply list

Item	Remarks
Shell	Includes shell body, front/rear flue chamber, base and safety devices.
Heater	Produces heating and hot water
Thermostatic valve	1 piece, for thermostatic control of hot water
Enclosure	Encloses the shell and water heater for heat insulation
Burner	Includes a complete set of safety devices, filters and muffler, etc.
Vacuum pump	In separate package for shipment and field installed by BROAD.
Control cabinet	Includes PLC, low voltage parts and control software
Touch screen	For office control of the boiler, includes metal shell, DC power and standard 30m cables (with an optional length up to 5,000m). Packed separately for shipment.
Internet gateway	For remote monitoring through the Internet, mounted in the control cabinet.
Control interfaces for heating/hot water pumps, etc.	Provided in the control cabinet for on/off control and load adjustment of the external water system.



Performance data

Model	BG	16	20	24	32	40	52	60	68	80	100	120	140	160	200	240	320	400	
Heating capacity	kW	186	233	280	372	465	605	698	791	930	1163	1396	1628	1861	2326	2791	3722	4650	
Heating W. 65°C/57°C																			
Flow rate	m ³ /h	20	25	30	40	50	65	75	85	100	125	150	175	200	250	300	400	500	
Pressure drop	kPa	40	50	50	50	50	50	70	70	70	70	70	70	70	70	70	70	70	
Pipe size	DN	50	65	65	80	80	100	100	125	125	150	150	150	150	200	200	250	250	
Hot water 60°C/44°C																			
Flow rate	m ³ /h	10	12.5	15	20	25	32.5	37.5	42.5	50	62.5	75	87.5	100	125	150	200	/	
Pressure drop	kPa	60	70	70	70	70	70	80	80	80	80	80	80	80	80	80	80	80	/
Pipe size	DN	32	40	40	50	50	65	65	65	65	80	80	100	100	125	125	150	/	
Max. NG consumption	m ³ /h	20.1	25.1	30.1	40.2	50.2	65.3	75.5	85.5	101	126	151	176	201	251	302	402	503	
Power	kW	0.4	0.4	0.4	0.8	1.5	1.5	1.5	2.7	2.7	2.7	4.6	6.6	6.6	7.6	9.1	12.1	15.1	
Solution weight	t	0.25	0.3	0.35	0.5	0.6	0.7	0.8	0.9	1.1	1.3	1.7	1.9	2.4	2.6	3.3	4.0	4.8	
Unit ship. Wt (with LiBr solution)	t	1.6	1.9	2.4	2.6	2.8	3.9	4.1	4.8	5.3	5.9	6.9	7.3	9.2	10.5	11.4	13.7	16.0	
Operation weight.	t	1.8	2.1	2.7	2.9	3.2	4.3	4.6	5.3	5.9	6.5	7.6	8	10	11.3	12.3	14.6	17	
Dimension																			
Length	mm	2805	3235	3265	3575	3995	4045	4525	4550	4600	5100	5120	5120	5460	6210	6330	6380	7350	
Width	mm	975	975	1055	1105	1105	1160	1205	1300	1355	1420	1475	1520	1610	1705	1780	1925	2045	
Height	mm	1920	1920	1980	2000	2000	2000	2150	2200	2250	2380	2420	2420	2640	2640	2750	3000	3120	

General conditions

1. Natural gas consumption is calculated per low heating value: 10kWh/m³(8600kcal/m³). If heating value of other gases or diesel oil is available, please calculate accordingly.
2. Highest outlet water temperature: 95. Pressure limit: 0.8 MPa (except special order).
3. The heating or hot water capacity in the table refers to the capacity when these two functions are operated separately. The capacity distribution in simultaneous operation mode can be regulated freely within these ranges.
4. Gas pressure: 16~50 kPa (1,600~5,000 mmH₂O) except special order.
5. LiBr solution concentration: 40%.
6. Rated exhaust temperature: 145; exhaust residual pressure: 1~10 mmH₂O
7. Heating efficiency: 92.5%. If "nergy saver"(optional) is ordered, the efficiency can be 97%.

