

GAHP Line RTA Series

Gas Fired Absorption Heat Pump Modular Configurations

Heating

Heating with a unique gas fired high efficiency unit.

Robur GAHP-A is the first air-source water-ammonia absorption heat pump.

By using natural gas as the primary energy source it supplies hot water up to 140 °F.

The right choose for heating systems where the most efficient gas appliance available is desired. With a gas efficiency at rated conditions of 129%, this unit is suitable for raising

the average efficiency of traditional boiler heating systems. In moderate climate areas, operating with a Robur GAHP-A unit in conjunction with a standard heating unit will raise the average overall heating system efficiency up to approximately 112-122%. The GAHP-A unit offers a wide variety of convenient applications:

- high efficiency hot water heating systems for light commercial, industrial,

residential and multi-family buildings;

- any system where hot water, up to 140 °F, is required;

- any system that has continuous hot water demands or 24 hour industrial requirements.



Use Heating

Type Air to water

Heat transfer fluid Water

Heating capacity

From 247,000 to 617,500 Btu/h

Renewable energy percentage contributing to the total heat output 38

Heating efficiency 129%

Outlet water temperature 140 °F

Main applications High efficiency medium-low temperature hydronic heating systems: radiant panels, fan coils, swimming pools, industrial heating.

Main advantage Savings up to 40% in heating operational costs in comparison with the best gas boilers, due to the energy recovered from a renewable source (air).

Additional advantages

- **Single Phase Power.**
- This unit may be linked to lower performance boilers to **raise total system efficiency.**
- **High Efficiency** recovering part of the thermal energy from the outdoor air.
- The prevailing use of gas **reduces the need of electric power by approximately 87%** in comparison with electric compression units (4.5 electric kW for 617,500 Btu/h heating).
- **Complete flexibility for capacity control.** Robur units may be combined for greater heating capacity, modularity and redundancy.
- **Minimal Electrical Panel requirements.**
- For application requiring standby power, the **electric**

generator size and electric output will be lower.

- **No Comfort Reduction during Defrosting Cycles:** the unit supplies about 50% of the total heating capacity.
- **Remote management** and staging by Direct Digital Controller (DDC - Optional). One DDC can manage up to 16 Heat Pump modules on a common water loop.
- **High Reliability** due to few moving parts inside the unit.
- **Easy Maintenance,** similar to gas fired boilers.
- **No Use of Harmful Refrigerants.**
- **Outdoor Installation.** Save valuable indoor space usually required for a mechanical room.

Features

- **Patented absorption cycle.**
- **Air source evaporator** with single row aluminium fin coil.
- **Pre-mixed gas burner.** Stainless steel multiple gas type with ignitor and flame sensor device controlled by an electronic ignition control.
- **Microprocessor control.** Printed resin electronic circuit with LED display. Ensures optimum operation of the absorption cooling process while allowing easy access of unit data for preventative maintenance and diagnostics.
- **Optional Direct Digital Controller (DDC).** A single device to fully manage and control Robur units.
- **Built-in safety and control devices.**

PERFORMANCE RATINGS - HEATING ⁽¹⁾			RTA	RTA	RTA	RTA
			00-240	00-360	00-480	00-600
Heating capacity ⁽²⁾	Btu/h	247,000	370,500	494,000	617,500	
Gas input	Btu/h	191,000	286,500	382,000	477,500	
Ambient operating temperature	maximum	°F	113	113	113	
	minimum	°F	-20	-20	-20	
Hot water temperature	maximum outlet (to hydronic system)	°F	140	140	140	
	maximum inlet (to unit)	°F	122	122	122	
Hot water flow	nominal	GPM	27.2	40.8	54.4	
Internal pressure drop at nominal hot water flow		psig	4.3	4.3	4.3	

ELECTRICAL RATINGS ⁽³⁾

Required voltage, 60 Hz, single phase ⁽⁴⁾	V	208 - 230			
Operating consumption ⁽⁵⁾	kW	1.8	2.7	3.6	4.5

PHYSICAL DATA ⁽¹⁾

Operating weight	pounds	2,086	3,144	4,027	5,242
Hot water entering and leaving connections ⁽⁵⁾		FPT	1 1/2	1 1/2	2 2
Gas inlet connections		FPT	1	1	1
Dimensions	width	inches	49	49	49
	length	inches	102	153	204
	height	inches	53 1/4	53 1/4	53 1/4

⁽¹⁾ All illustrations and specifications contained herein are based on the latest information available at the time of publication.

⁽²⁾ Heating capacity at standard conditions of 44.6 °F ambient temperature. Hot water outlet temperature 122 °F, hot water inlet temperature 104 °F.

⁽³⁾ May vary by ± 10% as function of both power supply and electrical motor input tolerance.

⁽⁴⁾ Modular links are factory-wired for 208-230 volts operation.

⁽⁵⁾ Factory piped to accommodate nominal hot water flow rate. For greater flow rates contact Robur for custom pipe sizing.

Due to continuous product innovation and development, Robur reserves the right to change product specifications without prior notice.

Optional DDC

- One Robur DDC can control up to 16 units working on a common hydronic loop or up to 48 units on a common loop when connected to two additional Robur DDCs.
- Programmable time scheduling.
- Monitoring of inlet and outlet water temperatures.
- Sequence step control of multiple units (Staging).
- Equalizes run time of individual modules.
- Visual and audible alarm for each module.
- Constant display of the system operating parameters.
- Logging and displaying of fault events.
- General fault and burner lockout signal for remote connection.

