Simultaneous Heating and Cooling with the Gas Fired Absorption Heat Pump. Robur GAHP-W is the only water source heat pump operating on a gas fired water-ammonia absorption cycle, which combines the advantages of water heat recovery with the advantages of gas fired appliances. For indoor installation, it is designed for heating/cooling applications, with contemporary pond/pool water heat exchange. Thermal energy can also be recovered from industrial processes (waste waters). Natural gas/LPG fired, it supplies hot water up to 149 °F and chilled water down to 37.4 °F, providing simultaneous heating and cooling with renewable energy recovery from the water with heating efficiency up to 139%. Units may be piped into modular configurations to satisfy greater cooling and heating requirements.

GAHP Line W Series
Gas Fired Absorption Heat Pump
Heating and Cooling

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Use: Simultaneous production of hot and chilled water
Type: Water - water
Heat transfer fluid: Water
Heating capacity: 132,400 BTU/h
Cooling capacity: 54,600 BTU/h
Renewable energy percentage contributing to the total heat output: 25%
Heating efficiency: 139%
Cooling efficiency: 57%
Outlet water temperature:
cooling: 37.4 °F - heating: 149 °F
Main application: Simultaneous water heating and cooling
Main advantage: Two separate circuits, hot and chilled water, compose a complete heating and air conditioning system without any needs of additional energy sources.
Additional advantages:
- Single Phase Power.
- Modular Systems containing up to 5 modules are available preassembled from Robur.
- Remote management and staging by a Direct Digital Controller (DDC) is a popular option. One DDC can manage up to 16 Robur modules on a common hydronic loop.
- The prevailing use of gas reduces the need of electric power by approximately 92% in comparison with electric compression units.
- No need to increase electric power demand.
- For applications requiring standby power, the electric output requirements will be lower.
- High Reliability due to few moving parts inside the unit.
- Easy Maintenance, similar to gas fired boilers.
- No Water Consumption. No cooling tower and related water treatment and maintenance.
- No use of Harmful Refrigerants.
- Indoor Installation.

Features:
- Patented absorption cycle.
- Refrigerant circuit made of low carbon steel and completely sealed; externally coated with epoxy paint.
- Evaporator/Condenser-Absorber tube and shell tower geometry made of stainless steel.
- Refrigerant accumulator to optimize refrigerant volume inside the evaporator relative to operational conditions.
- Pre mixed gas burner. Stainless steel multiple gas type with ignition and flame sensor device controlled by an electronic flame control box.
- 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, comprised of water flow switch; sealed circuit safety valve and by-pass valve between high and low pressure side; generator high temperature limit switch with manual reset; antifreeze control system; redundant gas valve; microprocessor control with LED readout to assist with maintenance and service diagnostics; flue temperature limit switch with automatic reset to avoid overheating.

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### PERFORMANCE RATINGS - HEATING

<table>
<thead>
<tr>
<th></th>
<th>GAHP-W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating capacity **</td>
<td>BTU/h 132,400</td>
</tr>
<tr>
<td>Gas input BTU/h</td>
<td>95,500</td>
</tr>
<tr>
<td>Ambient operating temperature maximum °F</td>
<td>113</td>
</tr>
<tr>
<td>minimum °F</td>
<td>10.4</td>
</tr>
<tr>
<td>Hot water temperature maximum outlet (to hydronic system) °F</td>
<td>149</td>
</tr>
<tr>
<td>maximum inlet (to unit) °F</td>
<td>113</td>
</tr>
<tr>
<td>Water flow nominal GPM</td>
<td>14.5</td>
</tr>
<tr>
<td>Internal pressure drop at nominal water flow Feet of Head</td>
<td>12.7</td>
</tr>
<tr>
<td></td>
<td>psi g 5.5</td>
</tr>
</tbody>
</table>

### PERFORMANCE RATINGS - COOLING

<table>
<thead>
<tr>
<th></th>
<th>GAHP-W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooling capacity **</td>
<td>BTU/h 54,600</td>
</tr>
<tr>
<td>Gas input BTU/h</td>
<td>95,500</td>
</tr>
<tr>
<td>Chilled water temperature minimum outlet (to hydronic system) °F</td>
<td>37.4</td>
</tr>
<tr>
<td>maximum inlet (to unit) °F</td>
<td>113</td>
</tr>
<tr>
<td>Chilled water flow nominal GPM</td>
<td>12.3</td>
</tr>
<tr>
<td>Internal pressure drop at nominal water flow Feet of Head</td>
<td>12.7</td>
</tr>
<tr>
<td></td>
<td>psi g 5.51</td>
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</tbody>
</table>

### ELECTRICAL RATINGS

| Required voltage, 60 Hz, single phase | V 208-230 |
| Operating consumption - chiller + heaters | kW 0.4    |

### PHYSICAL DATA

| Operating weight | pounds | 630 |
| Dimensions       | inches |
| width            | 33 1/4 |
| length           | 25 3/4 |
| height           | 50 3/4 |

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

**GAHP-W standard test conditions: W50/W122.**

**Units are factory wired for 208-230 volts operation.**

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

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

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### GAHP-W Dimensions

- **Left side view**
- **Front view**

### GAHP-W Connection Panel

- A: Inlet chilled water Ø 1” FPT
- B: Inlet hot water Ø 1” FPT
- C: Outlet cold water Ø 1” FPT
- D: Outlet hot water Ø 1” FPT
- E: Gas pipe Ø 1/2” FPT

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