



caring for the environment

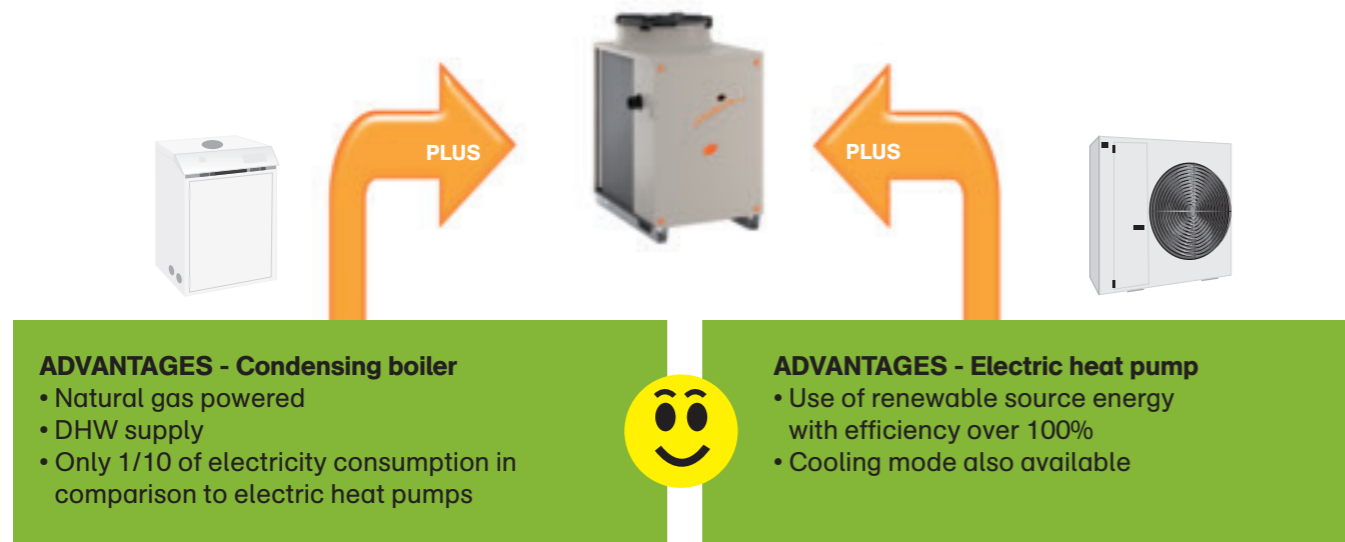


*The most efficient and easiest solution for heating with renewable energy*

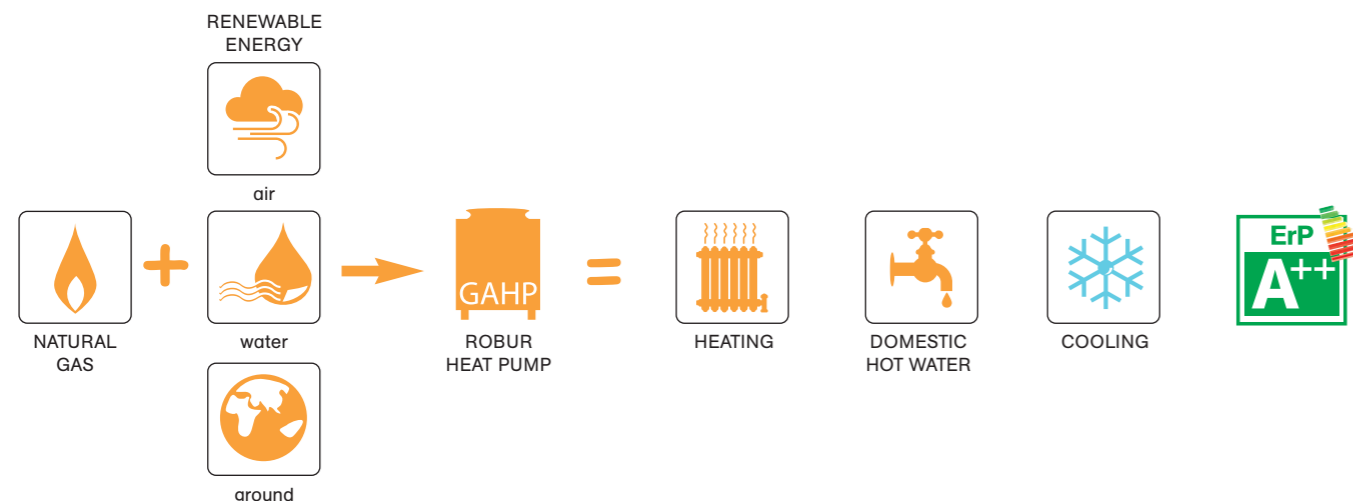
Absorption heat pumps and chillers  
powered by natural gas and renewable energy

## ABSORPTION HEAT PUMP POWERED BY NATURAL GAS AND RENEWABLE ENERGY (GAHP)

The perfect blend of the two most common heating technologies



Similarly to gas boilers, the gas absorption heat pump is a device able to supply high temperature hot water both for heating and for DHW production. Similarly to electric heat pumps, gas absorption heat pump is able to recover renewable energy in the form of heat from air, water and ground sources, thus achieving efficiency rates up to 170%. Unlike electric heat pumps, gas absorption heat pumps do not use harmful refrigerants, have a negligible electrical consumption and can also provide cold water for summer cooling (reversible version).



# 6 GOOD REASONS

For choosing GAHP - Gas Absorption Heat Pump powered by renewable energy

- 1 **EFFICIENCY**
- 2 **COST AND ENERGY SAVING**
- 3 **ENVIRONMENTALLY FRIENDLY**
- 4 **INCREASE IN PROPERTY VALUE**
- 5 **IDEAL INTEGRATION**
- 6 **ACKNOWLEDGEMENT OF THE TECHNOLOGY**



Cooling and simultaneous domestic hot water production for free up to 75 °C thanks to heat recovery.

## Absorption chiller-heater powered by natural gas with heat recovery

### GA ACF-HR

#### Advantages

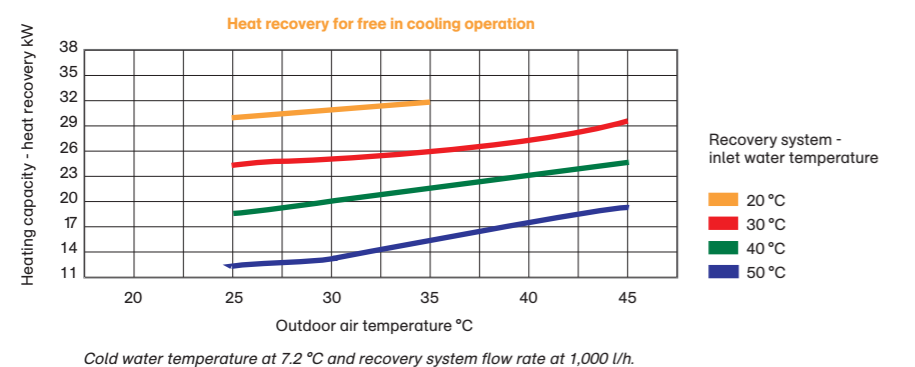
- For 1 kW of natural gas equivalent used, every unit adds 0.8 kW of renewable energy available 24-hours-a-day for domestic hot water production, with peak efficiency of 180%.
- Saving up to 86% of electric energy consumption compared with a traditional electrical system, thanks to the prevalent use of natural gas.

#### Applications

- It is eligible for national and local incentive programs all over Europe.
- Use of natural refrigerants not subject to normal constraints and phase-out (F-Gas Regulation exempt).
- Ideal for hotel, sport and wellness facilities.
- Ideal for post-heating circuits with air handling unit.
- Outdoor installation.

#### Versions

- Available in standard or low noise version.
- Available also in pre-assembled units for higher capacity, combined with Robur heat pumps and/or boilers (p. 28-34-45).



GA ACF HR

#### COOLING OPERATION MODE <sup>(1)</sup>

Working point A35/W7	G.U.E. (gas utilization efficiency)	%	72
	cooling capacity with heat recovery	kW	17.93
Nominal water flow rate (ΔT = 5.5 °C)		m <sup>3</sup> /h	2.77
Nominal water capacity pressure loss		kPa	29
Minimum outlet water temperature		°C	3
Inlet water temperature	max	°C	45
	min	°C	6
Ambient operating temperature	max	°C	45
	min	°C	0

#### HEAT RECOVERY SYSTEM CHARACTERISTICS

Heating capacity with heat recovery for free in cooling operation	kW	up to 32
Nominal water flow rate	l/h	up to 1,000
Hot water inlet temperature	max	°C
	min	°C

#### BURNER CHARACTERISTICS

Thermal input (actual)	kW	25.0
Gas consumption (actual)	natural gas G20 <sup>(2)</sup>	m <sup>3</sup> /h
	LPG G30/G31 <sup>(3)</sup>	kg/h

#### ELECTRICAL CHARACTERISTICS

Voltage		230 V – 50 Hz
Nominal electrical power <sup>(4)(5)</sup>	standard version	kW
	low noise version	kW

#### INSTALLATION DETAILS

Operational weight	standard version	kg
	low noise version	kg
Sound pressure Lp at 5 metres <sup>(6)</sup>	standard version	dB(A)
Free field, at the front, direction factor 2	low noise version	dB(A)
Connections	water	" F
	gas	" F
Electrical degree of protection		IP
Standard version size	width	mm
	depth	mm
	standard version height	mm
	low noise version height	mm

<sup>(1)</sup> As per calculation methods of EN12309.

<sup>(2)</sup> NCV 34.02 MJ/m<sup>3</sup> (9.45 kWh/m<sup>3</sup>) at 15 °C - 1013 mbar.

<sup>(3)</sup> NCV 46.34 MJ/kg (12.87 kWh/kg) at 15 °C - 1013 mbar.

<sup>(4)</sup> Data measured at +30 °C outdoor temperature.

<sup>(5)</sup> ± 10% depending on the power supply voltage and on the tolerance of the electrical motors power consumption.

<sup>(6)</sup> Lw sound power standard version dB(A) 79.6 and low noise version dB(A) 75.0. Sound power values measured according to EN ISO 9614.

**Note:** For multiple units, please contact the Robur sales network. For any further information about heat recovery systems, please see planning manual.

free DHW

overall efficiency

**180%**

electric energy consumption

**-86%**

**NO F-Gas**

Please also refer to planning manual. Pdf download under [www.robur.com](http://www.robur.com)

### Solutions for cooling and free DHW production



#### with chiller-heaters with heat recovery

Model	Units	Cooling capacity kW	Heating capacity with heat recovery up to <sup>(1)</sup> kW	Size w/d/h mm	Weight kg
RTCF HR	2 ACF HR	35.86	64.00	2,314/1,245/1,400	916
	3 ACF HR	53.79	96.00	3,610/1,245/1,400	1,373
	4 ACF HR	71.72	128.00	4,936/1,245/1,400	1,830
	5 ACF HR	89.65	160.00	6,490/1,245/1,400	2,297

• Data refer to standard version, 4 pipes version and without circulators. Available with or without circulators, in standard or low noise version. Please contact Robur Sales Network.

<sup>(1)</sup> For further information regarding heating capacity of the recovery system under different operating conditions, please refer to planning manual.

# ROBUR

wants to be a place of work:  
Driven by the Progress  
Moved by the Passion  
Trusted by the Humanity  
Led by the Justice  
Guaranteed by the Quality  
Inspired by the Beauty

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