

EUROPEAN HEAT PUMP SUMMIT

POWERED BY CHILLVENTA

SYMPOSIUM + EXPO
NUREMBERG, 20–21.10.2015

Industrial | Commercial | Residential
Heating & Cooling | Components & Equipment

hp-summit.de

NÜRNBERG / MESSE



boostHEAT

HEAT PUMP BOILER



> boostHEAT has developed a **new generation** of efficient and renewable heating, hot water and cooling systems for residential and commercial buildings

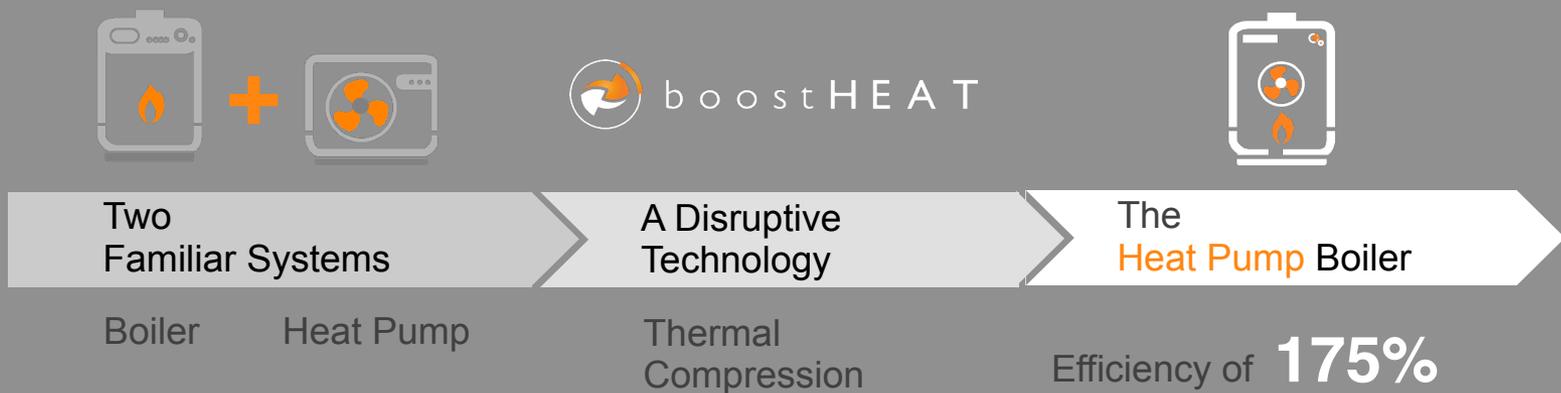


> THE INNOVATIVE HEAT PUMP BOILER

> boostHEAT has achieved the **FUSION** of the **boiler** and the **heat pump**, into **ONE** efficient and renewable heating system, thanks to our patented thermal compression technology

THE BOILER efficiently consumes natural gas

THE HEAT PUMP extracts heat from the air outside



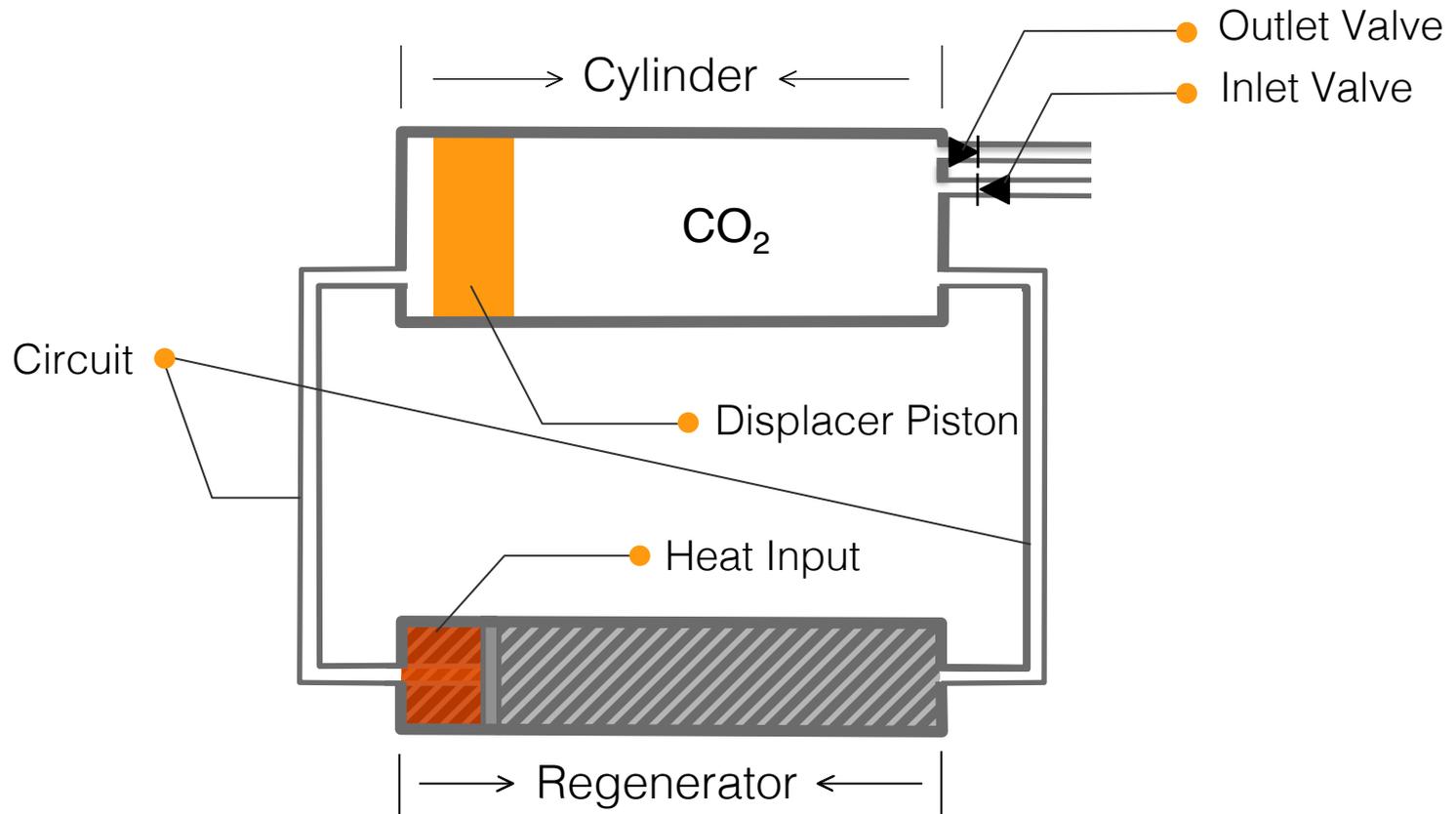
> boostHEAT THERMAL COMPRESSOR

THE HEART OF THE TECHNOLOGY is a new type of thermal compressor that uses the heat from the burner, instead of mechanical energy, to efficiently compress a natural refrigerant. The high temperature heat from the combustion of natural gas, with preheated combustion air, is used to compress carbon dioxide (CO₂).

> The boostHEAT natural gas fuelled thermal compressor activates an air-water heat pump using a CO₂ cycle.

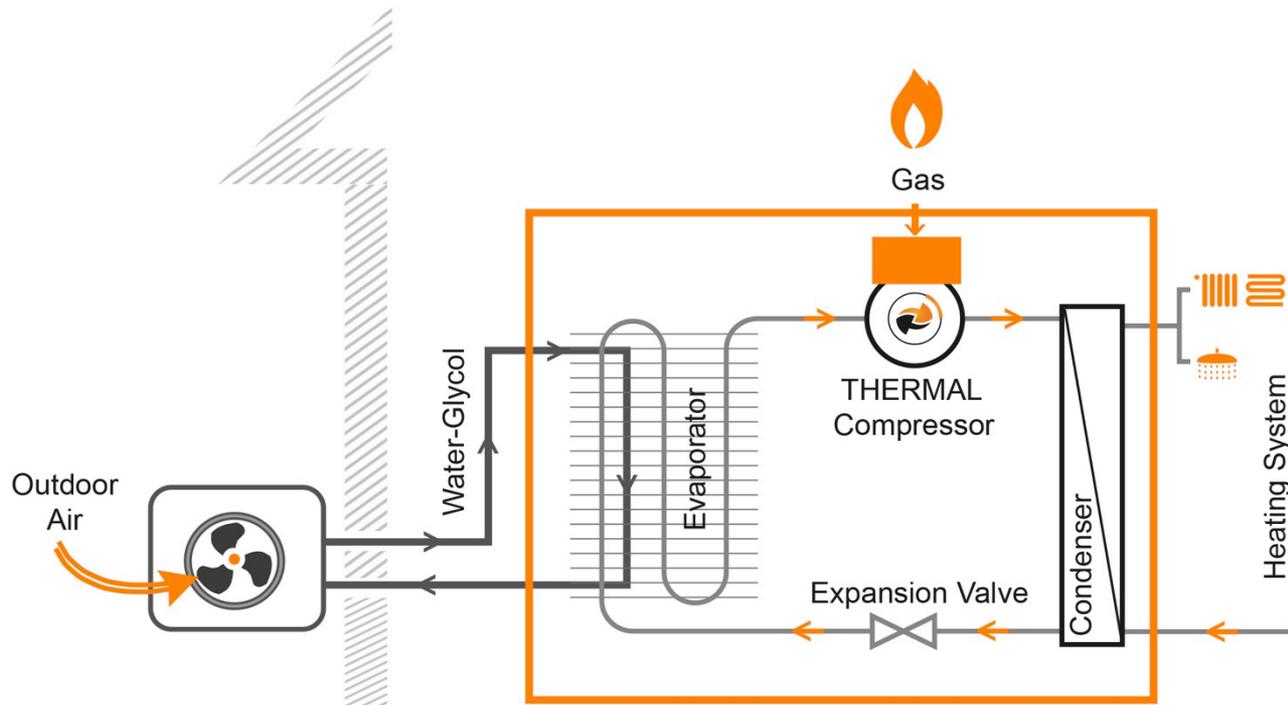
> The compressor activates a thermal compression cycle at a high temperature and without mechanical power transmission, with the pressure cycle being a result of the thermal cycle.

> boostHEAT THERMAL COMPRESSOR



> boostHEAT SYSTEM

The thermal compressor activates a “standard” thermodynamic cycle (condensation, expansion and evaporation) through an external unit that extracts renewable energy from the air outside.



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> HOME HEATING + DOMESTIC HOT WATER

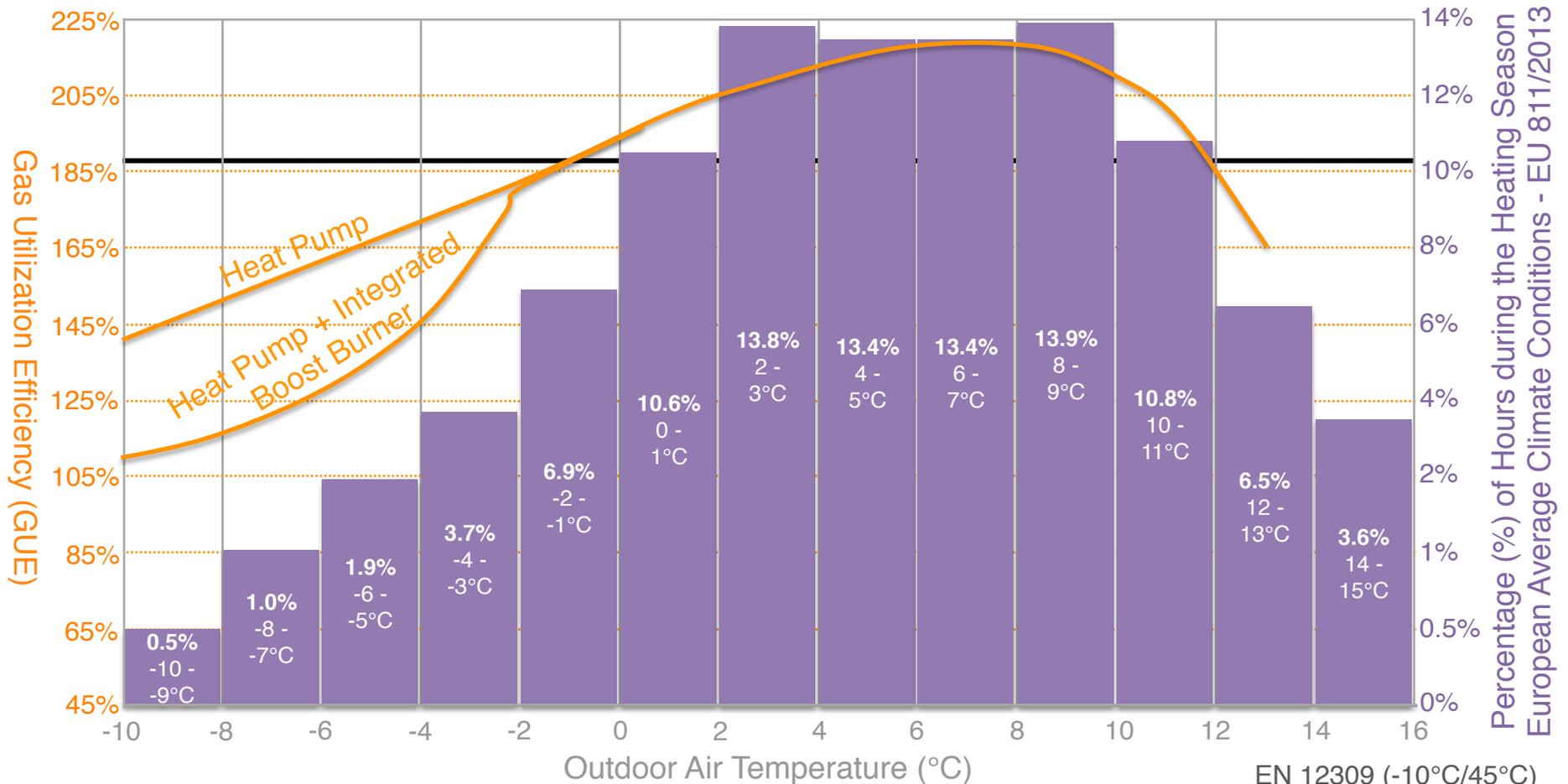
Heat Pump Boiler for the home

- > Fuelled by natural gas and renewable energy
- > Providing heating and domestic hot water
 - All from one unit – a Combination Boiler

Seasonal Efficiency for Heating and Hot Water Production (GUE - EN 12309)			Electric Heat Pump Equivalent COP
200%	35°C	Low Temperature Heating	5.00
188%	45°C	Medium Temperature Heating	4.70
175%	55°C	High Temperature Heating	4.37
165%	65°C	Very High Temperature Heating	4.12

> EFFICIENCY OF HEATING + HOT WATER PRODUCTION

188% SGUE for 45°C Medium Temp. Heating + Hot Water Production



EN 12309 (-10°C/45°C)
Expected values based on lab tests and modelling

> HOME HEATING + DOMESTIC HOT WATER

- > Next few months, trials by GrDF, Engie CRIGEN and British Gas
- > Product Launch in 2017
- > Heating and Hot Water Capacity Modulation to Meet Every Need
 - **Heat Pump Capacity** is sized to maximise system performance during the majority of the heating season and year-round domestic hot water production
 - An additional **Integrated Boost Burner Capacity** is available, if needed, for very cold days and/or periods of high domestic hot water consumption (operating at a condensing boiler efficiency)
- > No Minimum Operating Temperature
- > Pre-Charged Hermetically Sealed CO₂ System
 - No refrigeration technician needed for installation
- > 15 Year Maintenance-Free System Life

> HOME HEATING + DOMESTIC HOT WATER

Technology	Thermal Compression Air-Water CO ₂ Heat Pump
Heat Pump Capacity	4 kW at -10 °C Outdoor Air Temp.
Modulation	4 - 13 kW at 7 °C 4 - 18 kW at 15 °C
Capacity Modulation	20% - 100%
Integrated Boost Burner Capacity	4 - 20 kW
Modulation	Integrated boost burner to provide additional capacity if needed
Domestic Hot Water Supply Temperature	50 - 60+ °C Internal 75 - 85 °C hot water storage tank with adjustable mixing valve
Domestic Hot Water Specific Flow Rate	≥ 18 l/min (EN 13203) “XL” load capacity
Indoor Unit Dimensions	H 200 cm x W 60 cm x D 80 cm
Outdoor Unit Dimensions	H 116 cm x W 85 cm x D 50 cm







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