

TRIGENERATION



What is Trigeneration

Trigeneration refers to the simultaneous production of power, heat, and cooling. It is coupling of CHP unit and absorption unit that allows transformation of the heat from cogeneration into the cold.

Trigeneration Advantages

The advantage of trigeneration is mainly better utilization of CHP unit throughout the year. Owing to the gas fuelled operation (saving of power), the production of cold through trigeneration is cheaper, absorption cooling is highly reliable, low in noise, having a long service life.

Deployment Options

Trigeneration units can be operated wherever the produced cold can be utilized. It is mostly the air-conditioning for production areas, office or residential rooms; however, it can also include the production of technological cold. Trigeneration is frequently used, for example, to produce heat in winter months and cooling in summer. However, there is also the possibility to produce simultaneously all the three forms of energy at a time.

Connection Options for CHP Unit and Absorption Unit

Type A

- CHP unit with its own exhaust heat exchanger. CHP unit's thermal energy is utilized to heat water for heating or to produce cold in the absorption unit.
- **Advantage:** three-way electronically controlled valve allows continuous control of the output of heat intended for heating or cooling.

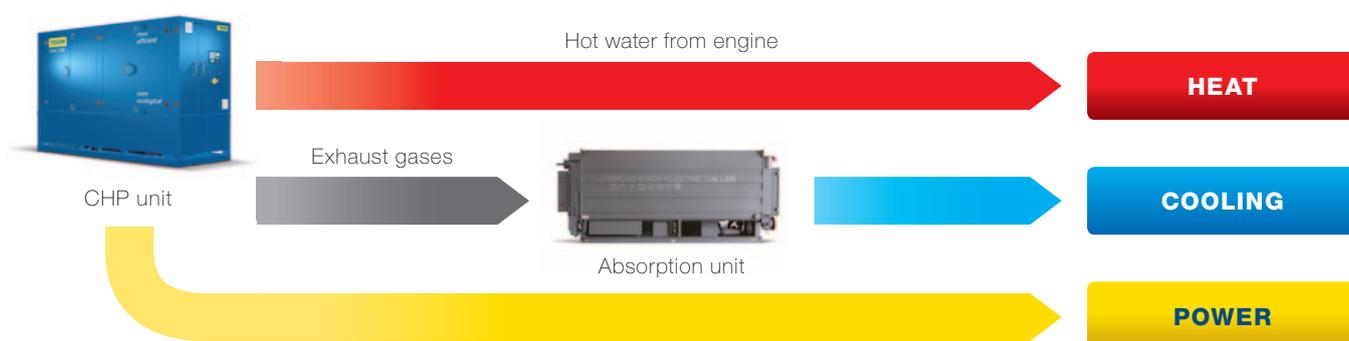
Type B

- CHP unit without its own exhaust heat exchanger. Exhaust gases are conveyed directly into the absorption unit wherein the exhaust heat exchanger is integrated.
- **Advantage:** absorption efficiency with utilized energy of exhaust gases is markedly higher than when the hot water energy is employed.

Trigeneration type A



Trigeneration type B



Overview of Produced Types

CHP unit type	Typ of trigeneration	Absorption unit type	Electric output (kW)	Heat power (kW)	Cooling power (kW)
Cento T200	A	BDH 117 - TGA 150	200	265*	196**
Cento T200	B	BE 16 - TGA 120	200	152	173
Quanto D600	A	BDH 42 - TGA 420	600	658*	487**
Quanto D600	B	BE 35 - TGA 240	600	384	402
Quanto D1200	A	BDH 74 - TGA 610	1200	1189*	856**
Quanto D1200	B	BE 54 - TGA 410	1200	746	631
Quanto D2000	A	BDH 122 - TGA 910	2000	1977*	1423**
Quanto D2000	B	BE 91 - TGA 610	2000	1236	1056

* with fully utilized heat power of the CHP unit for heating only (so called winter mode)

** with fully utilized heat power of the CHP unit for cooling only (so called summer mode)