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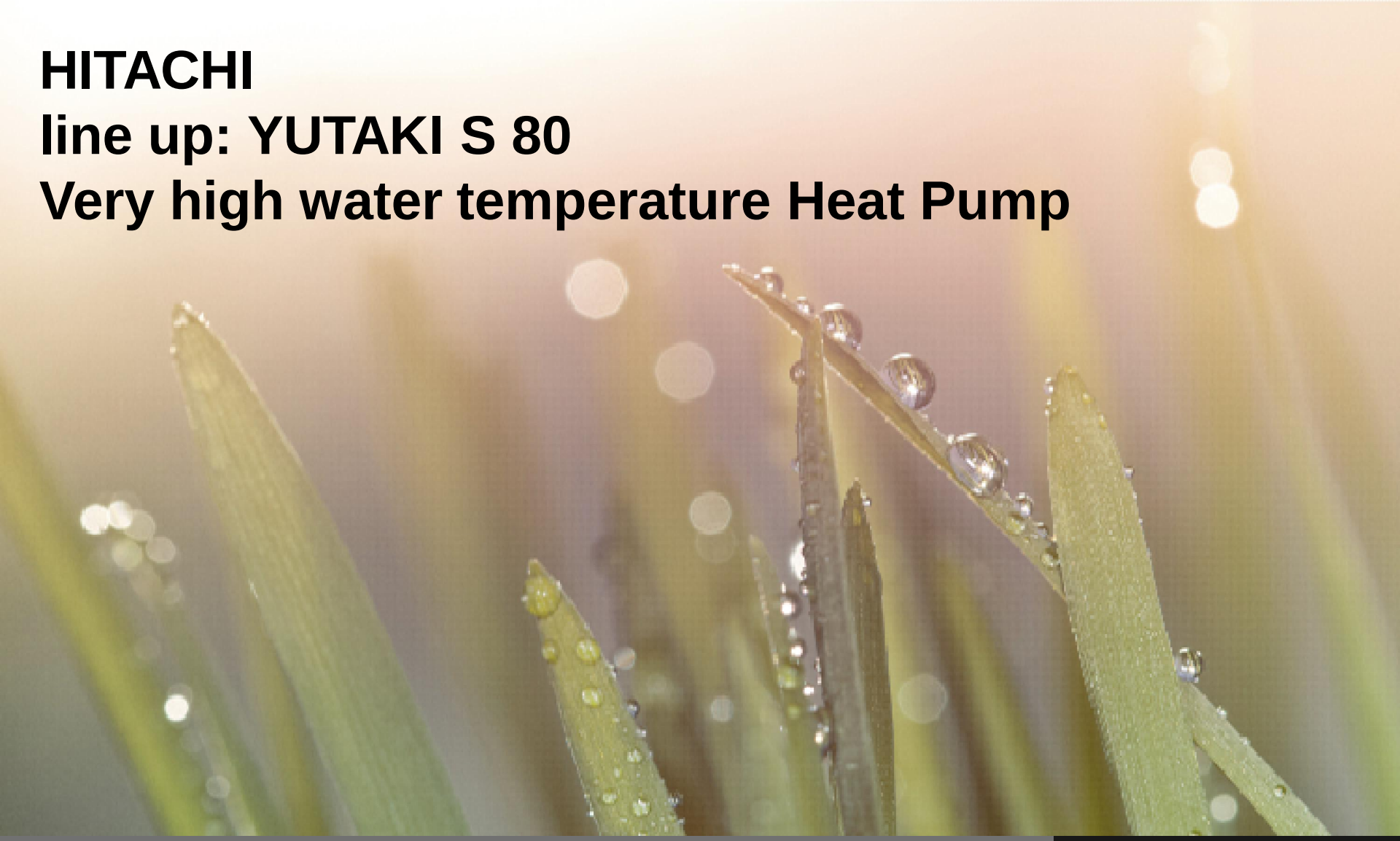
line up: YUTAKI S 80
Very high water temperature Heat Pump



Chauffage & Climatisation

100ème anniversaire
Les 100 ans du Groupe Hitachi

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YUTAKI S80

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- Introduction: Why a very High temperature heat pump
- 1) Yutaki S80
  - 1.1) System
  - 1.2) New indoor unit and tank unit
  - 1.3) Range and performances
- 2) Smart Cascade concept
- 3) Performances: Capacity and COP
- 4) Features and Benefits
  - 4.1) Inverter technology
  - 4.2) Premium system controller
  - 4.3) Room unit for end user
  - 4.4) Versatile system with large variety of control

Why a High temperature heat pump?

- Most of conventional heating installations in Europe use boiler and radiators.
- Existing radiators are designed to work with water between 60°C and 80°C.
- If working with lower water temperature, the capacity of the radiator will drop. Then it is necessary to increase number of radiators or the oversize the radiators

➔ Example with a radiator of 1kW capacity for 80°C water inlet:

Water temperature	Radiator capacity	Oversize ratio
80°C	1000W	-
71°C	833W	120%
65°C	698W	143%
55°C	528W	189%

➔ If using 55°C water temperature, it will be necessary to almost double the size of radiators.

For the refurbishment market, in case of boiler substitution, very high water supply might be necessary

Why a High temperature heat pump?

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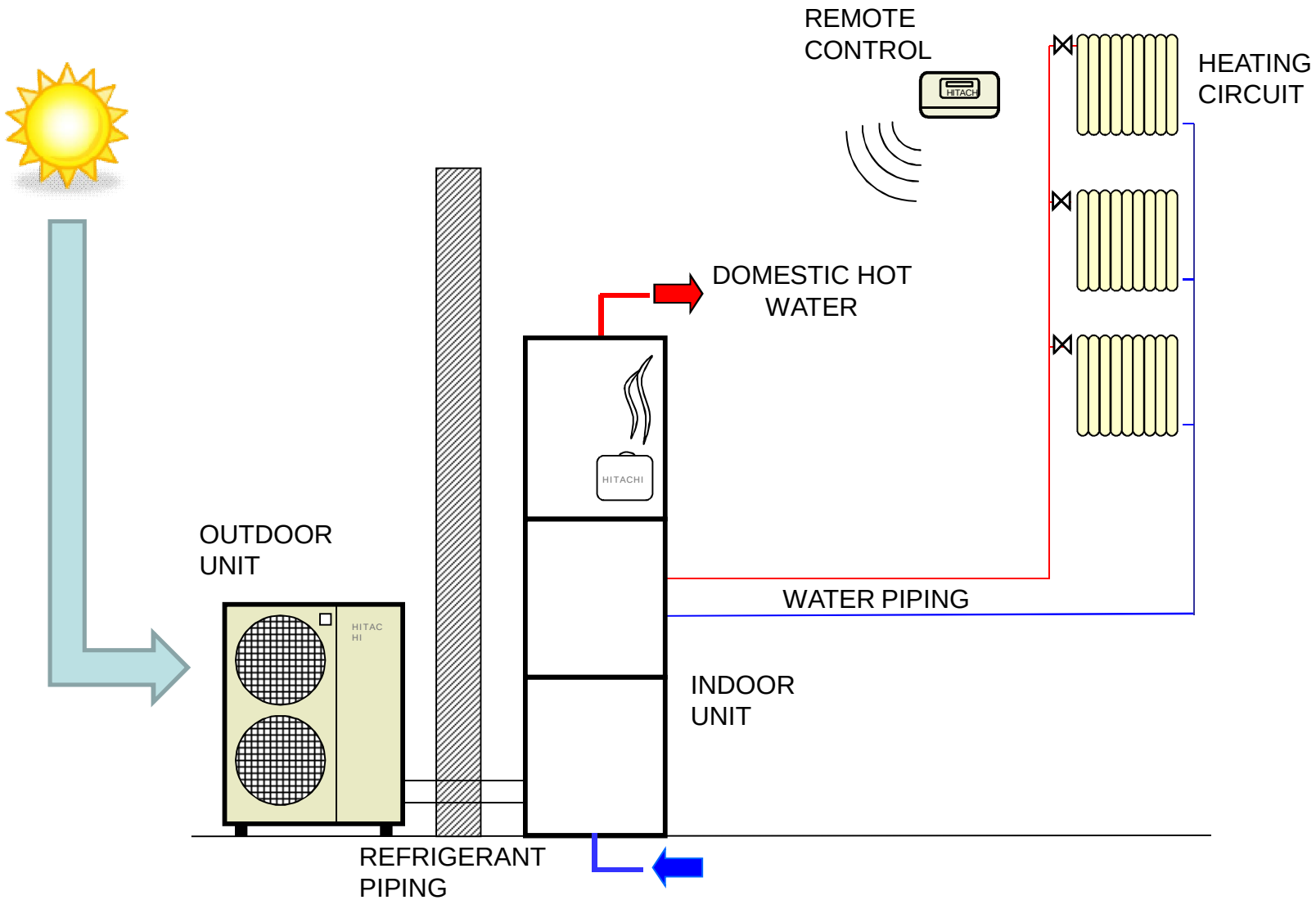
- In complement of Yutaki M, Yutaki S, and Yutampo, HITACHI introduce a new Air To Water heat Pump:

YUTAKI S 80

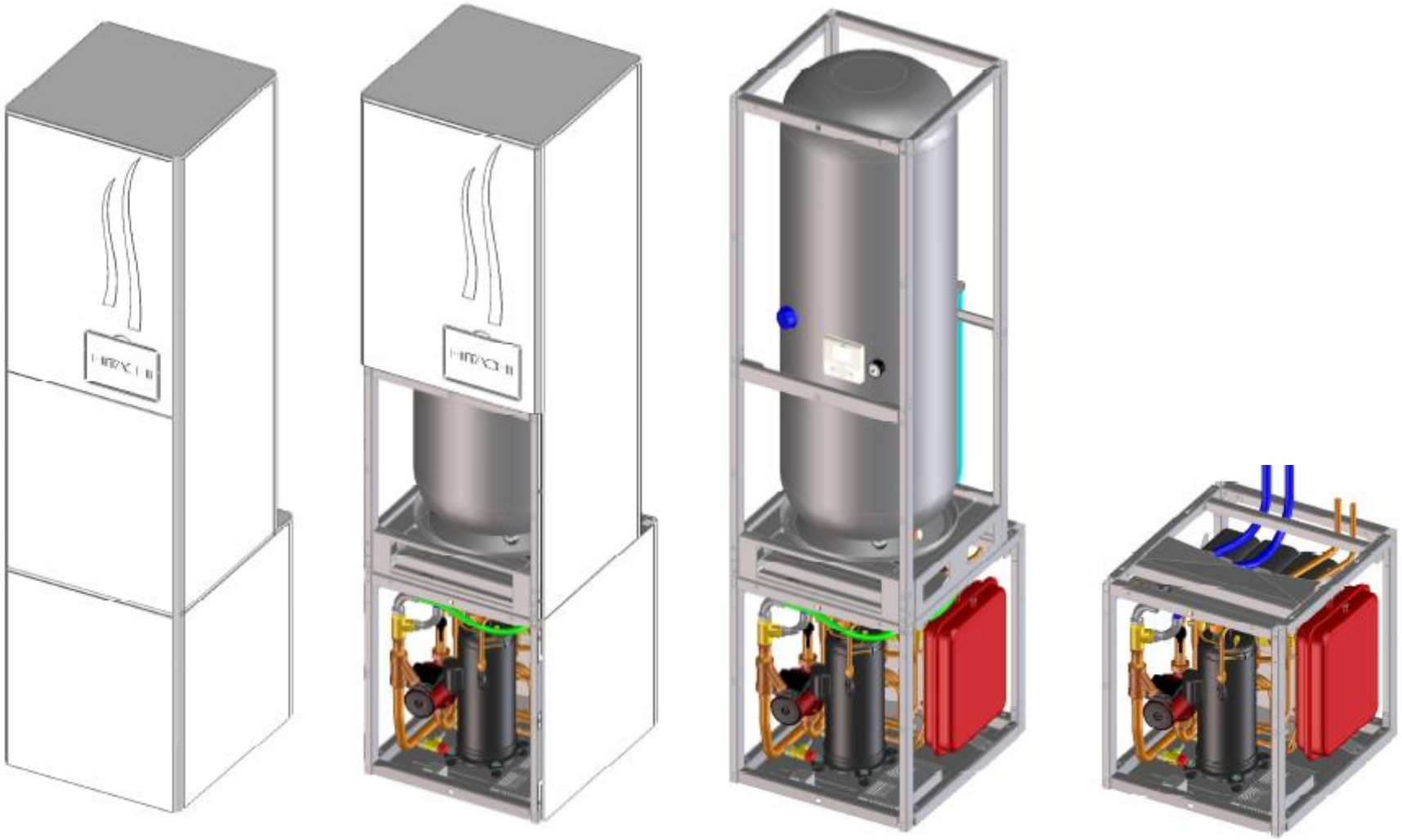
- ✓ Supply 80°C water temperature!
- ✓ For refurbishment market.
- ✓ For easy boiler substitution with any radiators installation.
- ✓ Combi type For Heating and Sanitary Hot Water.

1.1) The system

- YUTAKI S80 is a split type AIR to WATER heat pump.

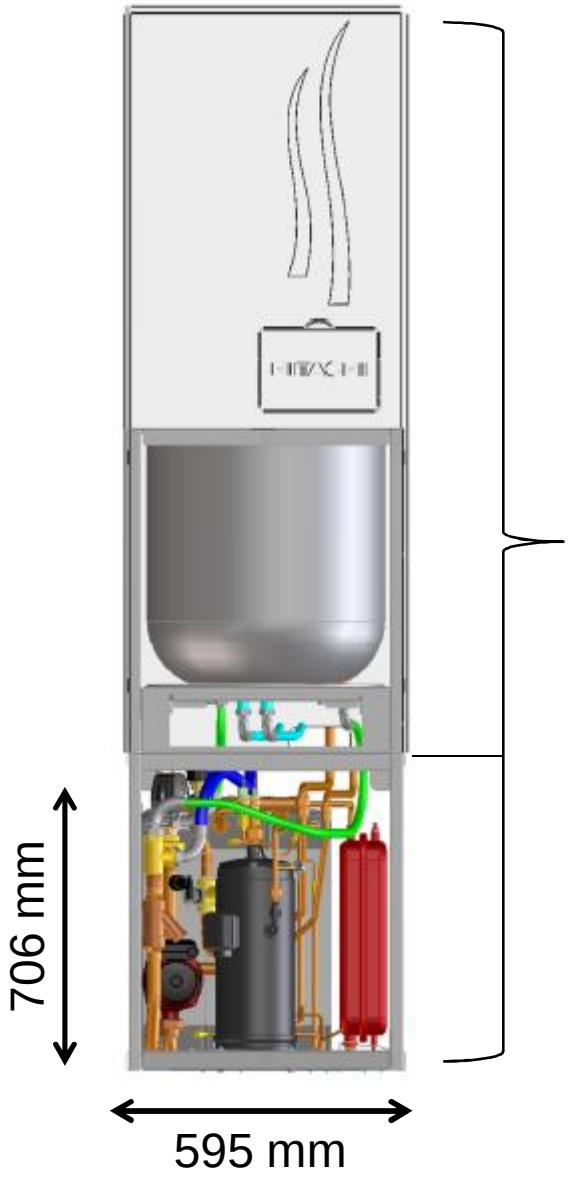


1.2) New indoor and tank units



INVERTER
INDOOR WATER
MODULE

1.2) New indoor and tank units



SPACE SAVING!
Width:595mmXdepth:695mm
Only!

2 SHW Tank units:

- DHWS260S-2.0H1E: 270 liters.

Height: 1940mm (total if integrated with IU: 2270mm)

- DHWS195S-2.0H1E: 195 liters

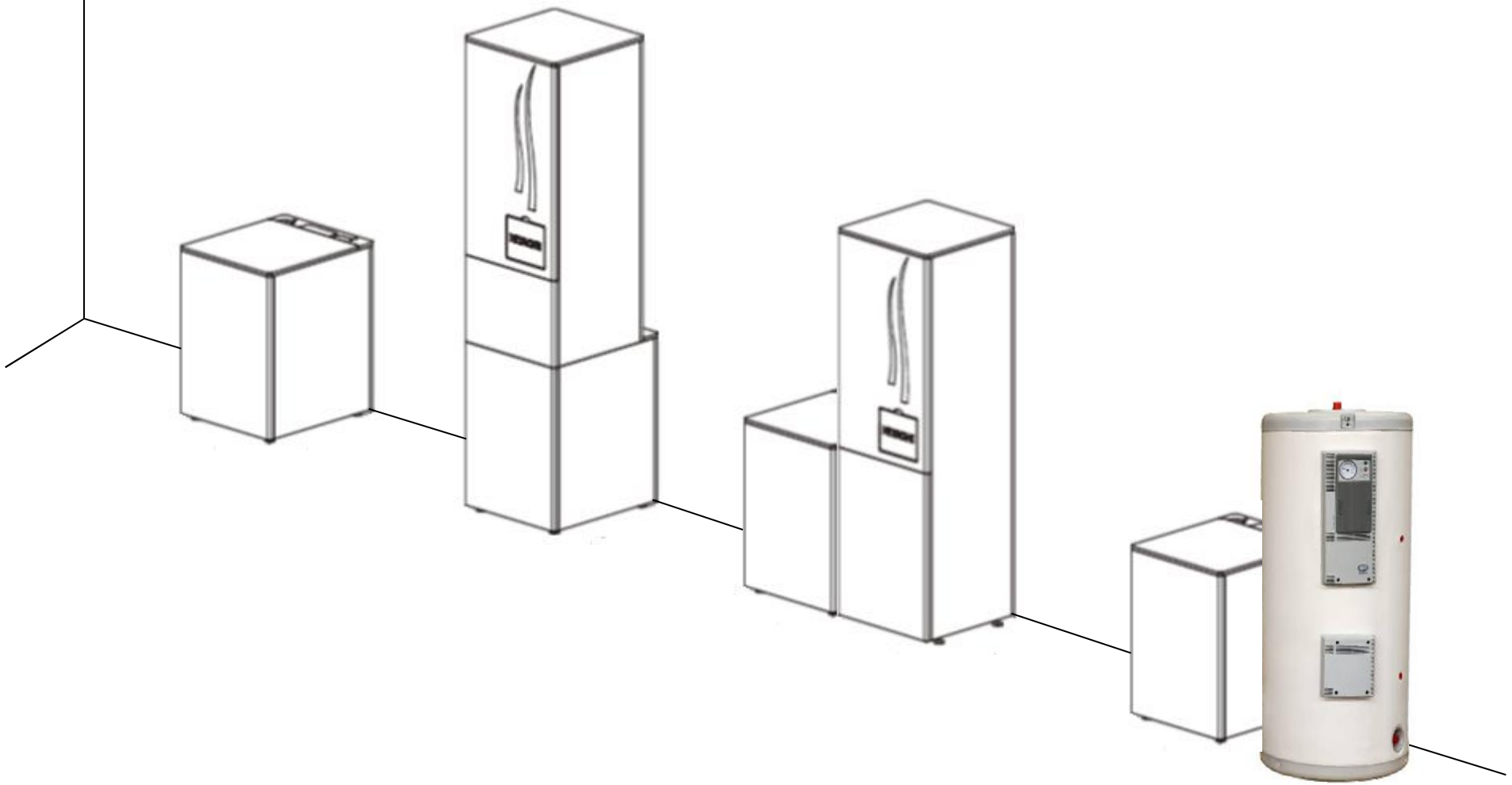
Height: 1272mm (total if integrated with IU: 1950mm)

6 Different indoor units:

- RWH-4.0~6.0FSVNFE: Single phase
- RWH-4.0~6.0FSNFE: Tri phase

1.2) New indoor and tank units

- Various installation possibilities



1.3) The range

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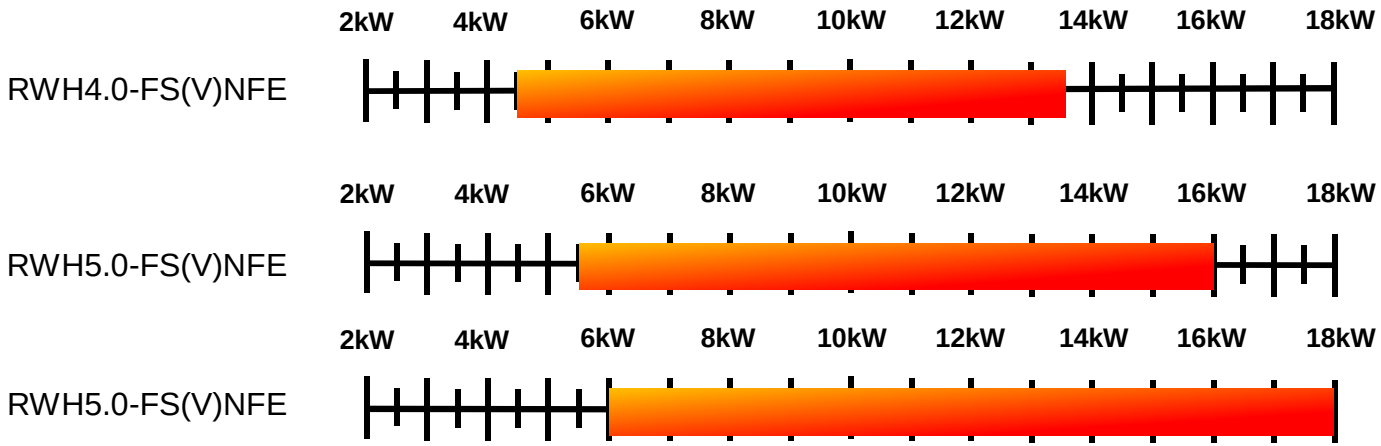
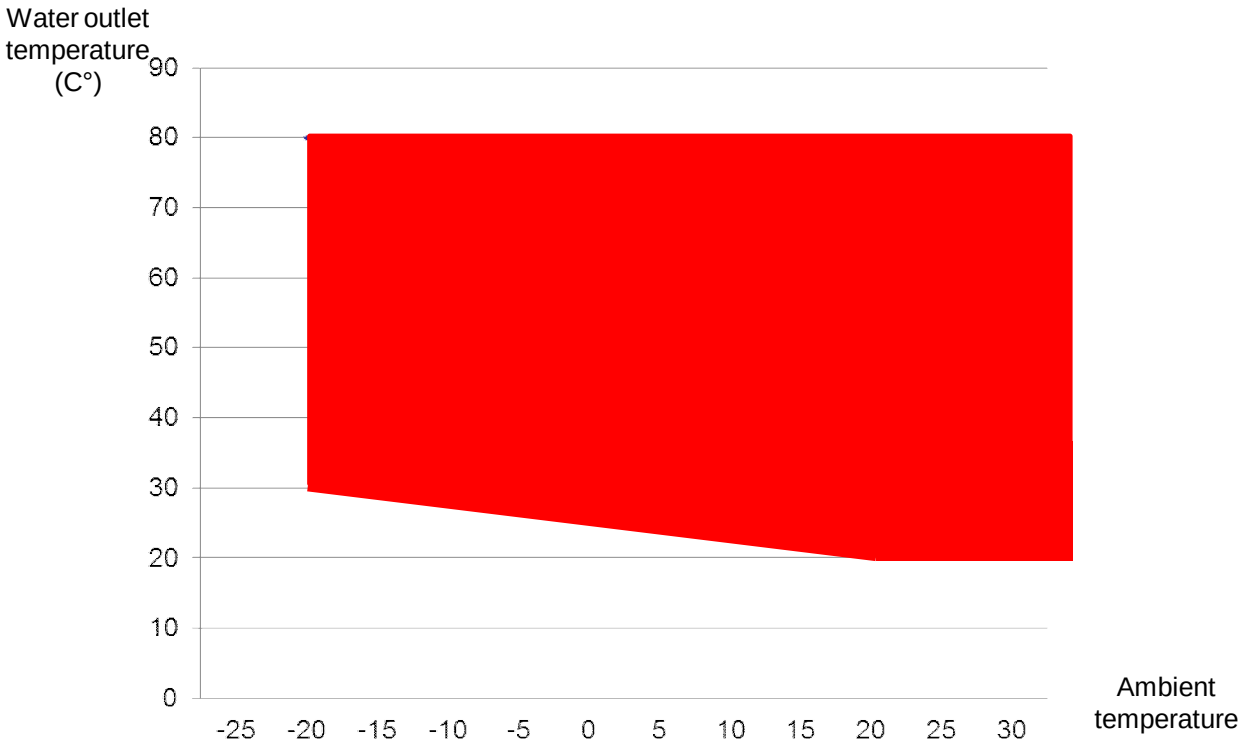
YUTAKI S 80

- ➔ 6 model
  - 4, 5 and 6 HP single phase
  - 4, 5 and 6 HP tri phase
- ➔ heating capacity range :
  - 4,5 to 18 kW (7°C / 65°C)



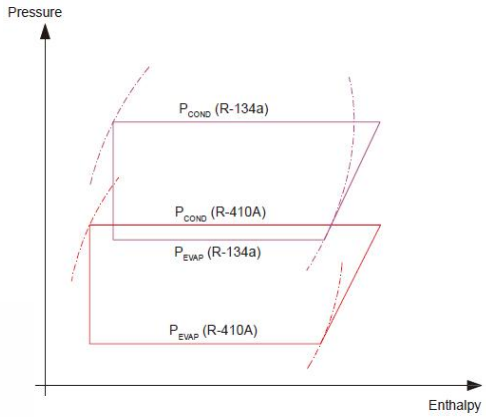
1.3) Working Range: outlet water temperature

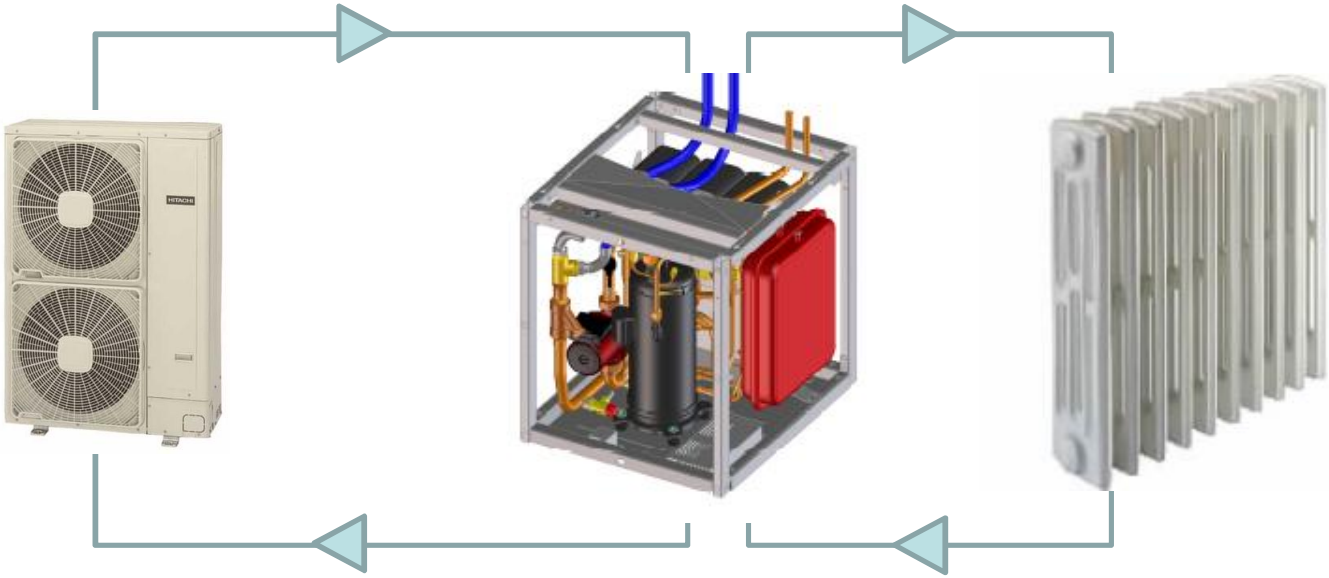
- Yutaki S80 can provide same water temperature range than a oil or gas boiler.



2) Smart Cascade concept

- With Yutaki S80 a cascade of 2 refrigerant cycle (R410a + R134a) is used to reach high water temperature.
  - R410a refrigerant cycle is low temperature.
  - R134a refrigerant cycle is high temperature.





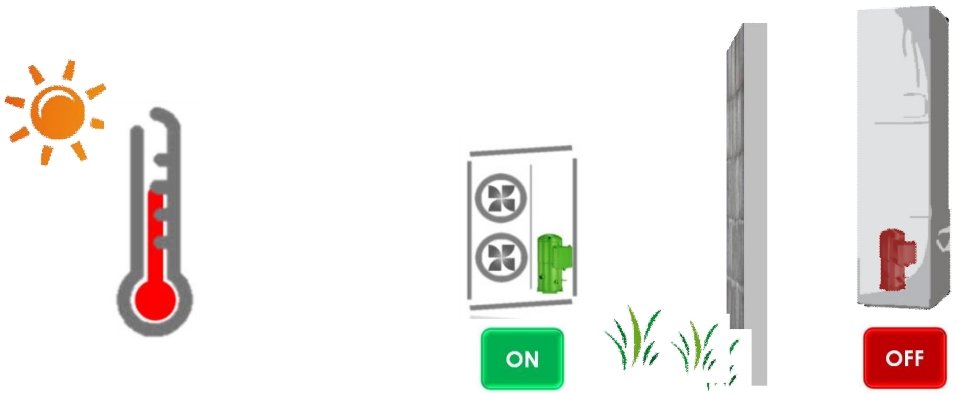
R410a outdoor unit

R134a Indoor unit

Water supply for radiators

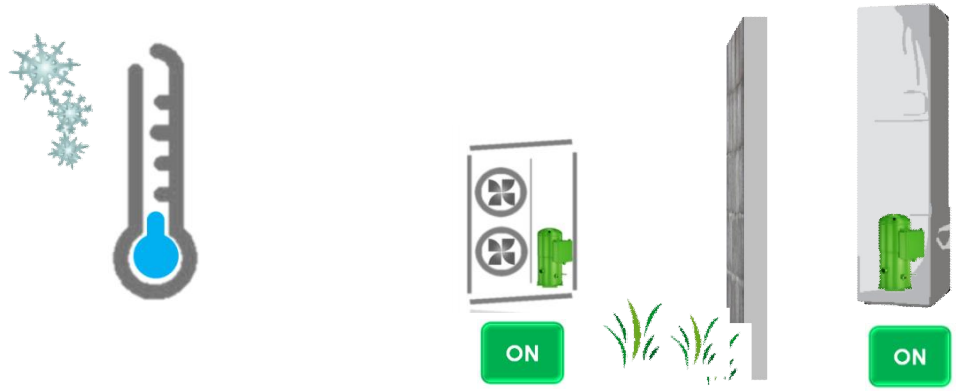
2) Smart Cascade concept

- In order to get high seasonal efficiency, smart cascade system will use 2 cycle (2 compressor) only when high or very high water temperature is necessary.



35°C

By moderate ambient temperature (Ex: 7°C) heat load is low and water is low temperature: Only R410a compressor is used. COP is very high.



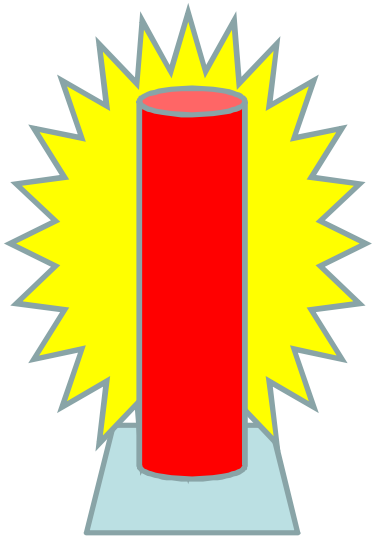
65°C

By cold ambient temperature (Ex: -7°C) heat load is high. Second compressor start: capacity and water temperature is very high (80°C by -20°C)

3) Performance: COP

- Smart Cascade allow to have high COP:

4,36



RWH-4.0FS(V)NVFE
+
RAS-4.0H(V)RNME-AF

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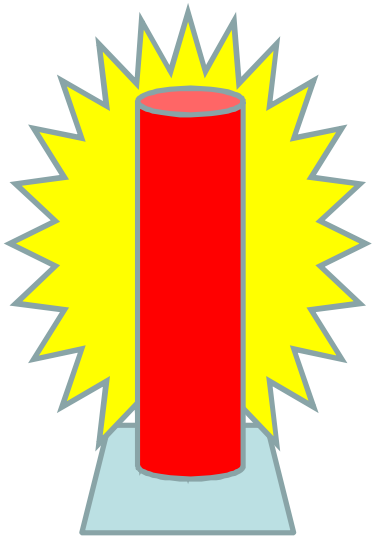

RWH-4.0FS(V)NVFE
+
RAS-4.0H(V)RNME-AF

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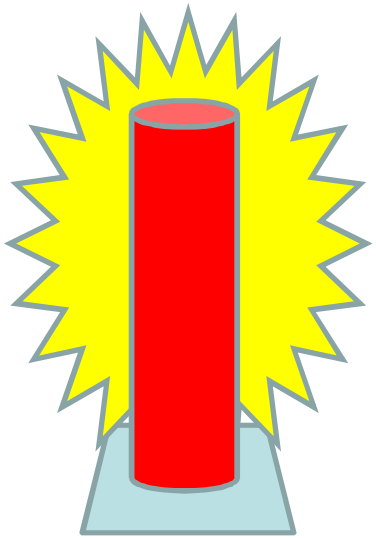
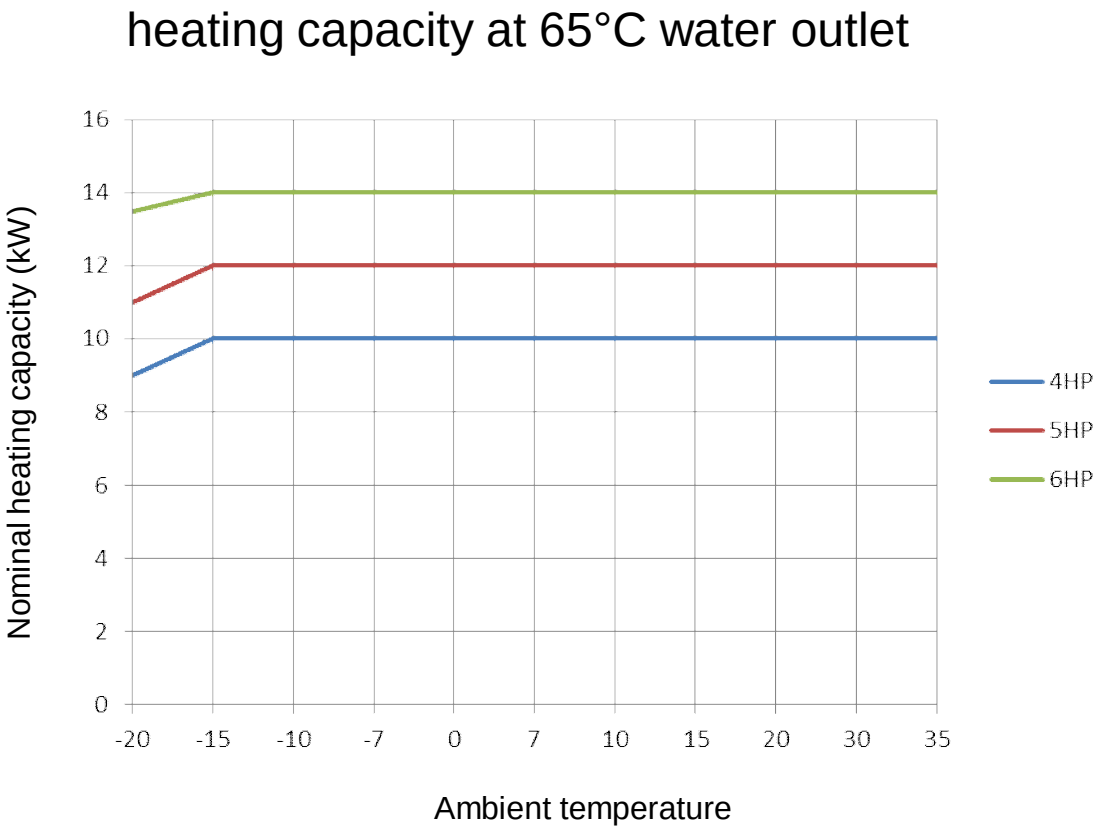


RWH-4.0FS(V)NVFE
+
RAS-4.0H(V)RNME-AF

Conditions : Further EN14511, including defrost and water pump consumption. A7°/W35°

3) Performance: Capacity

- Capacity by low temperature is stable, even for high water temperature -> Less use of back up heater or boiler



3) main point of performance

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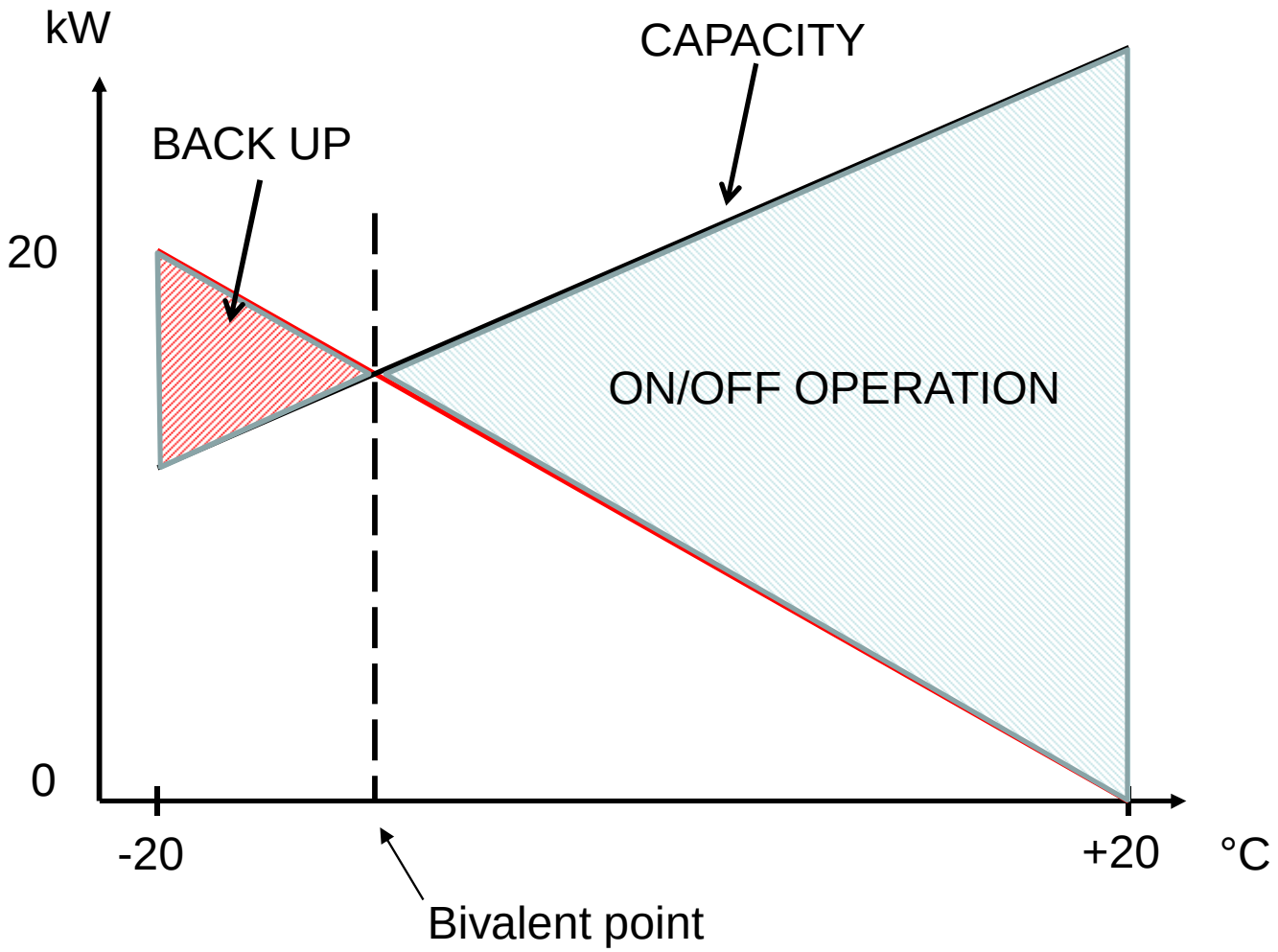
Conditions further EN14511		RAS-4H(V)RNME-AF	RAS-5H(V)RNME-AF	RAS-6H(V)RNME-AF
A7/W35	Heating capacity (Nom/Max)	10.0/13.5	12.0/16.0	14.0/17.8
	COP (Nom)	4.36	4.27	4.05
A7/W45	Heating capacity (Nom/Max)	10.0/13.5	12.0/16.0	14.0/18.0
	COP (Nom)	3,65	3,45	3,32
A7/W55	Heating capacity (Nom/Max)	10.0/13.5	12.0/16.0	14.0/18.0
	COP (Nom)	3,16	3,06	3,01
A7/W65	Heating capacity (Nom/Max)	10.0/13.5	12.0/16.0	14.0/18.0
	COP (Nom)	2,5	2,56	2,51
A-7/W35	Heating capacity (Nom/Max)	10.0/11.0	12.0/14.0	14.0/16.0
	COP (Nom)	2,42	2,4	2,35
A-7/W45	Heating capacity (Nom/Max)	10.0/11.0	12.0/14.0	14.0/16.0
	COP (Nom)	2,3	2,3	2,25
A-7/W55	Heating capacity (Nom/Max)	10.0/11.0	12.0/14.0	14.0/16.0
	COP (Nom)	2,15	2,15	2,10
A-7/W65	Heating capacity (Nom/Max)	10.0/11.0	12.0/14.0	14.0/16.0
	COP (Nom)	2.0	2.0	1.91

4) Additional Features and Benefits

- 4.1) Inverter technology
- 4.2) Premium system controller
- 4.3) Room unit for end user
- 4.4) Versatile system with large variety of control

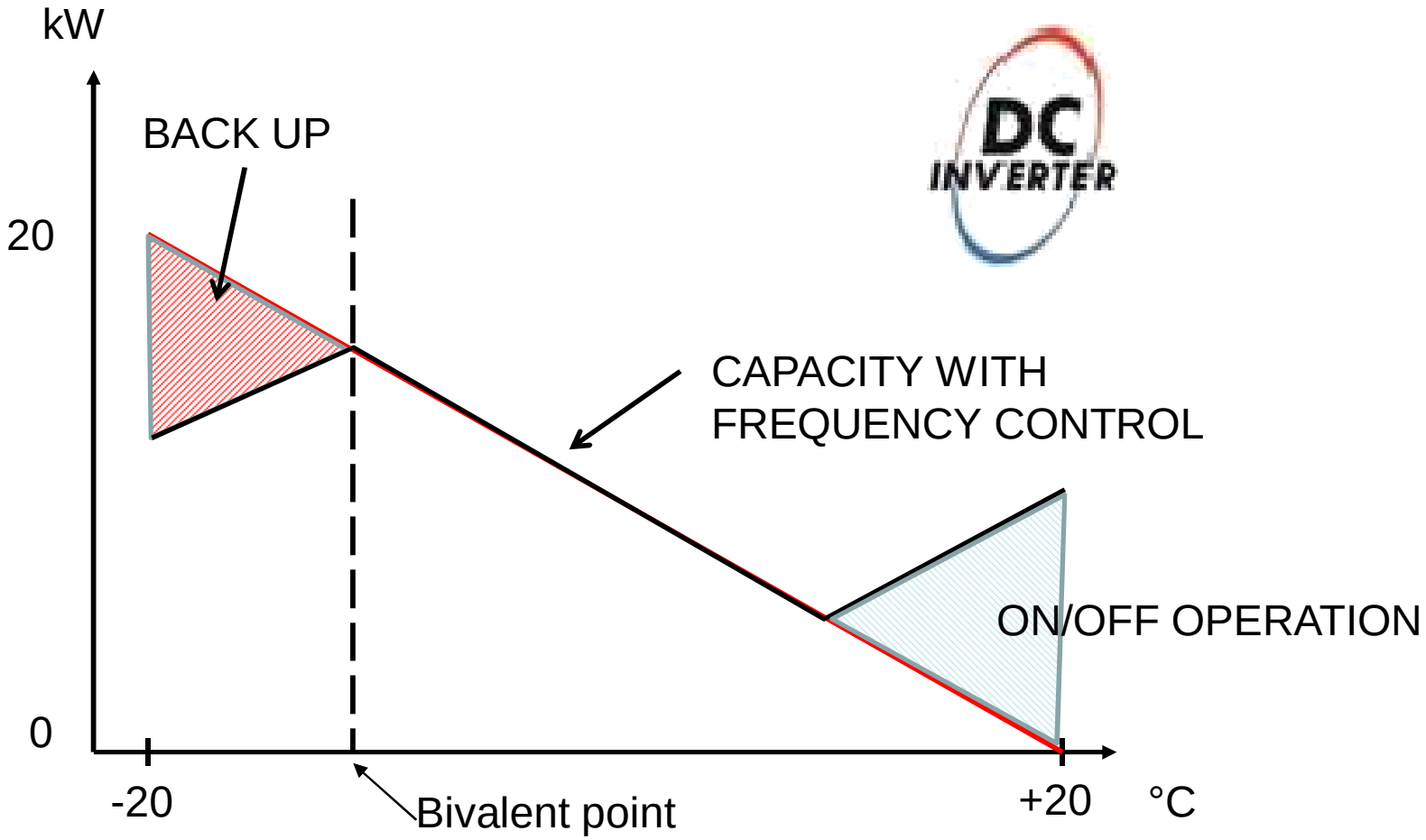
4.1) INVERTER technology

- The standard FIX SPEED compressor will lead to ON/OFF cycling during most of the operation.



4.1) INVERTER technology

- INVERTER Control of the 2 compressors improves energy efficiency and comfort by adjusting capacity of the heat pump to the real need of the building.



4.2) Premium system controller

- LCD matrix screen
- Intuitive use
- Ease setting and commissioning
- 10 languages
- Installer dedicated menu with password
- Default code historic

4.3) Room unit for end user

- Several operation modes
- Weekly schedule timer
- Dynamic text display on the LCD gives enhanced feedback to user and installer
- Backlight LCD for easier viewing in low light conditions
- Reliable RF communication by using 868 MHz band
- Include a sensor in order to have intelligent room compensation of set temperature.

4.4) Large variety of control

- All function and features includes in controller as a standards
  No need for additional PCB!

Exclusivity !

  - **Heating/SHW/Solar panel/Swimming pool**
  - Tariff input signal
  - History of alarm code for maintenance
  - Step control of Back up heater (3 step)
  - Anti legionella setting
  - Emergency mode
  - Screed drying function
  - Boiler combination
  - Energy saving mode for water pump
  - Weekly timer for heating and Sanitary hot water

YUTAKI S80

- Very High water temperature (80°C)
- 80°C down to -20°C
- Smart cascade for High seasonnal efficiency
- Inverter technology for both compressor
- Highest COP of the market
- Easy installation and maintenance
- Largest range of the market
- Premium control

COP
4,36

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