

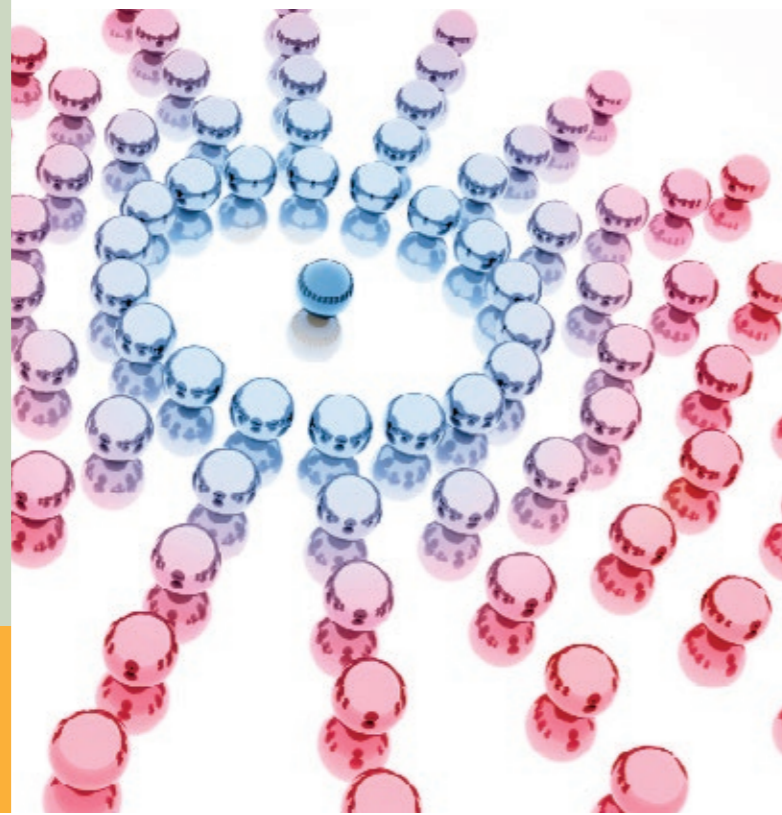
DFH : the cool way to get heat

Everywhere you need cooling you can have free heating, too. This are many possibilities for installation of **DFH** :

- Hotels
 - Restaurants
 - Commercial kitchens
 - Supermarket
 - ice cream shops
 - bakeries
 - butchers
 - fish shops
 - food processing
 - all cooling application with hot water necessities
- This are some possibilities for installation of DFH

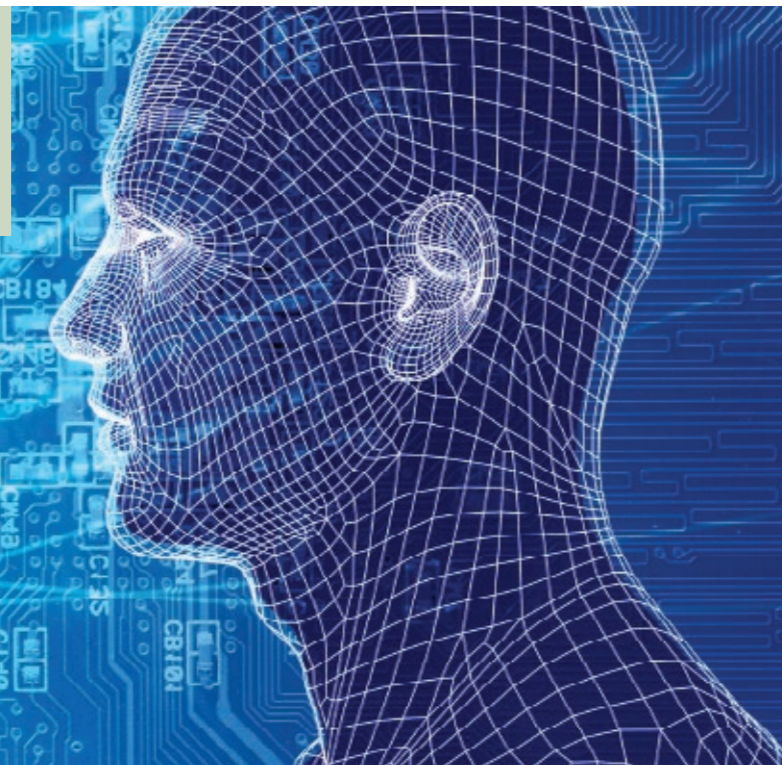
Look at you cost saving:

1 kW cooling capacity = 200 lt/day hot sanitary water (10-50 °C)
= 3400 kWh saved every year.



The key of DFH is it's intelligence

Thanks to it's electronic control **DFH** can be installed in every refrigeration system without interfere with his function. It's logic makes **DFH** independent, controlling it's components performance to obtain maximum efficiency, reducing risks of malfunctions.



Technical Data

Tank volume	Litres	300	500	750	1000	1000
Refrigerant flow mass (R404a - 22bar) at 30 kPa (3)	kg/sec	0,145	0,265	0,38	0,71	0,86
Refrigerant flow mass (R404a - 22bar) at 50 kPa (3)	kg/sec	0,19	0,345	0,495	0,93	1,12
Available capacity models EVO & BIT (2)(3)	kW	34	60	89	163	1,3
Available capacity models Easy e S(2)(3)	kW	9	16,3	23,4	43,9	52,8
Max allowed pressure refrigerant side	bar	30	30	30	30	30
Refrigerant connections	mm	22	22	28	42	42
Max hot sanitary water production with tank temperature 50 °C (10/45 °C)	kg/sec	0,35	0,52	0,6	0,85	1,1
Max hot sanitary water production with tank temperature 60 °C (10/45 °C)	kg/sec	0,6	0,93	1,1	1,55	1,95
Max allowed tank pressure	bar	6	6	6	6	6
Expansion vase volume	Litres	16	25	2x25	3x25	3x25
Supply		220/1/50	220/1/50	220/1/50	220/1/50	220/1/50

(1) Refrigerant temperature in/out 85/48 °C, pd 50 kPa
 (2) R404a - Cond.Temp. 45 °C
 (3) Performances with different refrigerants available on demand

Dimensions

	L	P	H	H1
350	820	1060	1800	100
500	900	1150	1900	100
750	1000	1500	2200	100
1000	1200	1600	2200	100

The product can be customized

DFI
 don't forget it

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As our Company is constantly involved in the continuous improvement of its production, aesthetic characteristics and dimensions, technical data, equipment and accessories can be subject to variation. For this reason the manufacturer reserves the right to make any changes without prior notice.



DFH
 don't forget heat

Variable set point
 recovery system



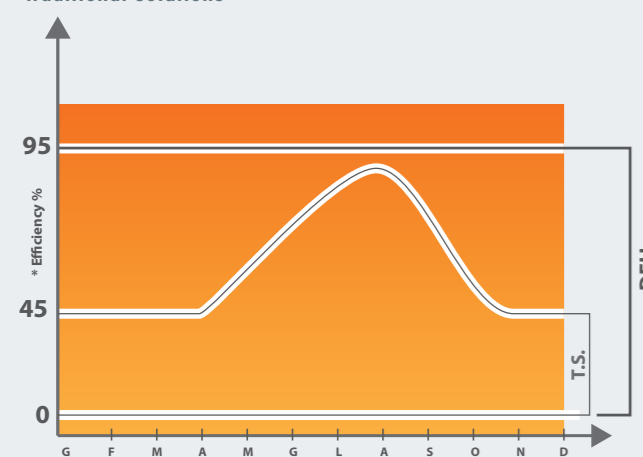
DFH the heat recovery system complete, efficient and easy to install

DFH is able to produce hot sanitary water and/or hot technical water using refrigerant de-superheating in every situation where refrigeration is available.

DFH is easy to install/retrofit in existing plants and in new plants because it is fully independent. When installed, DFH has the ability to understand the systems working conditions and adapt itself accordingly. Therefore always providing the maximum available heat recovery and avoiding any unwanted condensation of the refrigerant

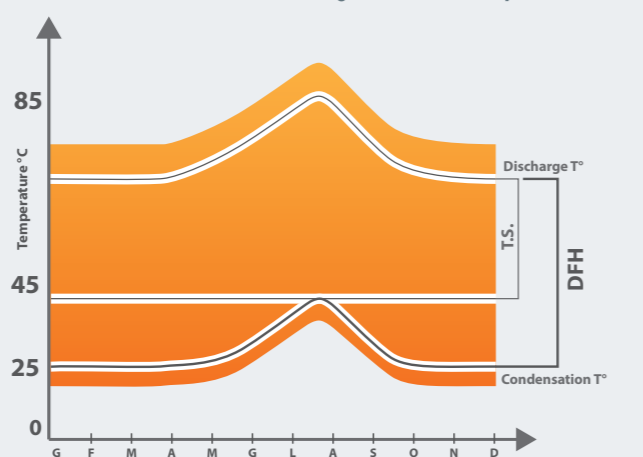
Performance graph

Efficiency comparison between The DFH and traditional solutions



* The efficiency is determined by the amount of energy recovered in relation to that available
T.S. = traditional solutions

Available Δt comparison for heat recovery in The DFH vs. traditional solutions in floating condensation systems



T.S. = traditional solutions

Benefits of DFH System



Efficiency

Due to the constant differential control the electronic board of the **DFH** allows you to obtain the maximum available heat recovery in any moment avoiding the condensation of the refrigerant **(even in floating condensation refrigeration system.)** The **DFH** reduces the condenser's heating load obtaining a lower condensation temperature and increased COP.



Security

The particular configuration of the **DFH** makes it independent from the refrigeration system control, therefore not affecting the cooling during a service or breakdown. On the DFH it's possible to install a remote management tool. The instantaneous hot sanitary water production prevents the growth of legionella bacteria.



Versatility

The **DFH** is available for most refrigerants and can be easy installed in new or existing plant because it isn't linked to the existing systems control.



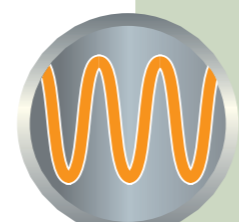
Easy to use

Once installed it's enough to just set the refrigerant fluid type. Hot sanitary water temperature can be regulated with a simple manual thermostatic valve.



Easy to install

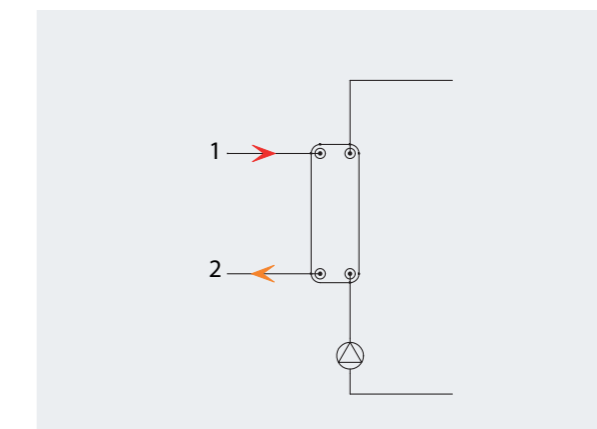
DFH is already assembled. It's enough to place it, connect it and it start to save energy. This ensure that there isn't any malfunction of refrigerant system because the water system is supervised by the controller to work accordingly.



Variable capacity

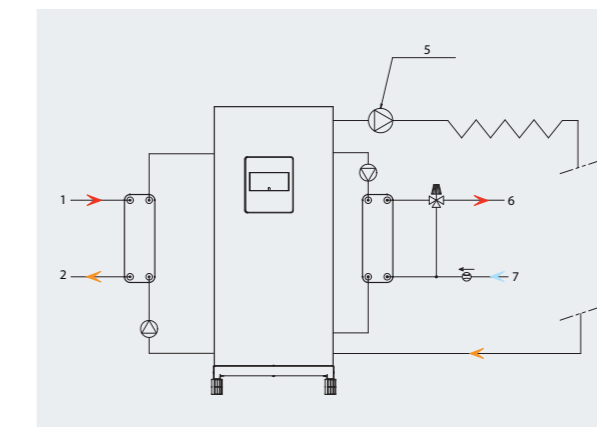
In the model **DFH EVO** and in the model **DFH Bit** the capacity of the recuperator can be total or limited. With the increasing of the heating demand **DFH** becomes the condenser of the refrigeration system saving 100% of the waste energy, else automatically his capacity is limited to the only superheating when necessities decrease.

Systems DFH



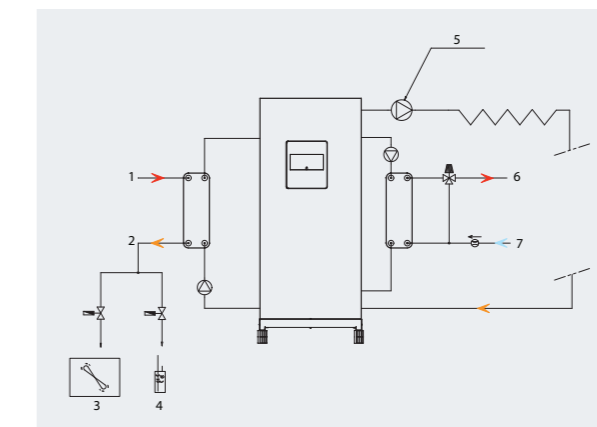
DFH EASY

It's the easiest way to recovery the superheating. It's composed by a brazed plate heat exchanger, a variable flow pumps and a thermostat. The system is suitable to produce hot raw water. It's possible to use double wall heat exchanger for hot sanitary water.



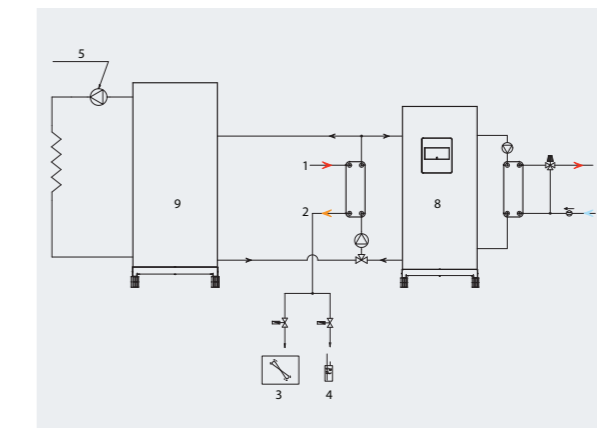
DFH S

It's the basic version equipped with variable set logic. On the same basement are installed the tank, the exchangers for desuperheating (around 20% of available heat) and for hot sanitary water production, the pumps, and the thermostatic mixer. The control panel, equipped with a software internally developed, allow to stock the recovered heat giving the maximum efficiency even with changements of the external conditions. **DFH S** is able to supply hot raw and hot sanitary water in the same moment, reducing the legionella risk.



DFH EVO

Compared with **DFH S** is equipped with two additional solenoid valves and it's able to send the refrigerant to the condenser or to the liquid receiver. It can choose, depending from the necessities, if recover 100% of the available heat or less



DFH BIT

More than performance of **DFH EVO** this version is able to stock energy in two different tanks, connected with a three way valve. In this way it's possible to have two different temperatures. One of the tank is used for instantaneous production of hot sanitary water, the other is used to be connected to an heat pump (not supplied) for the heating plant. This solution optimized the efficiency of the refrigeration circuit and of the heating plant

- 1 Ingresso refrigerante
- 2 Uscita refrigerante
- 3 Condensatore remoto
- 4 Ricevitore di liquido
- 5 Pompa di circolazione (non incluso)
- 6 Uscita acqua calda sanitaria
- 7 Ingresso acqua sanitaria
- 8 Alta temperatura
- 9 Bassa temperatura