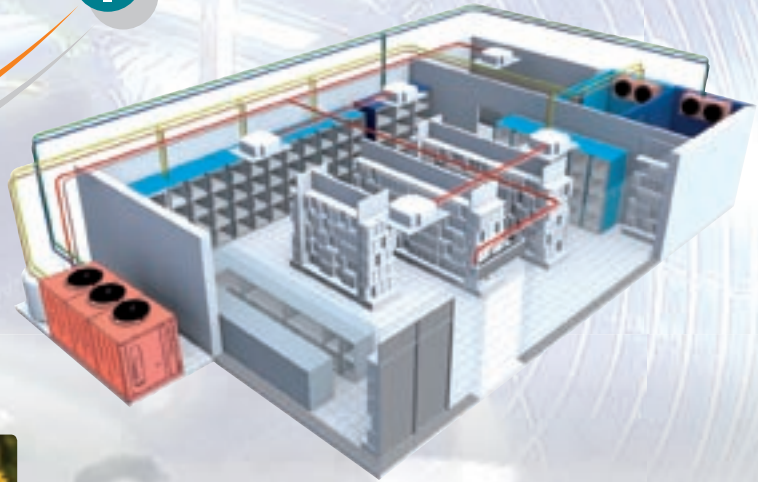


# 4Y



BEST COP



NATURAL GAS



LOW NOISE

**R 744**

**R134a**

CASCADE  
SYSTEM

**4Y**

PATENTED  
SYSTEM

REFRIGERATION  
(MEDIUM  
AND LOW  
TEMPERATURE)

AIR CONDITIONING  
(COOLING  
AND HEATING)

B R A N D S O L U T I O N S

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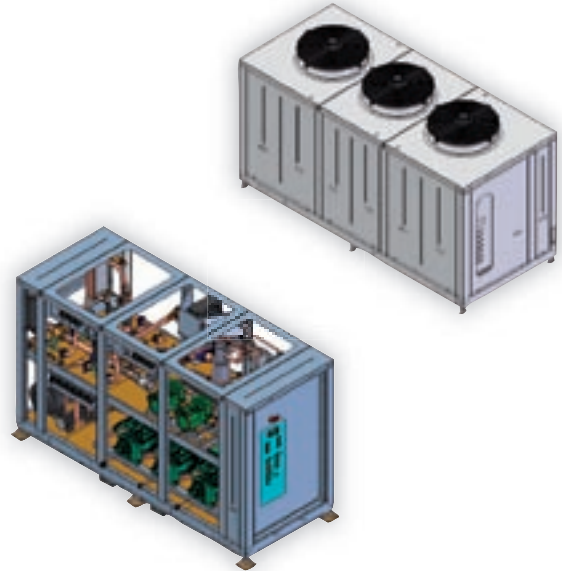
**CASCADE SYSTEM**

- ▶ ENERGY SAVING
- ▶ ALL-IN-ONE SYSTEM
- ▶ LOW NOISE
- ▶ NATURAL GAS R744  
LOW GWP REFRIGERANT (R134a)

4Y IS A COMPLETE AND COMPACT SYSTEM WHICH INCLUDES **REFRIGERATION** (MEDIUM AND LOW TEMPERATURE) AND **AIR CONDITIONING** (COOLING AND HEATING) IN A **ALL-IN-ONE** SOLUTION.

**MAIN ADVANTAGES**

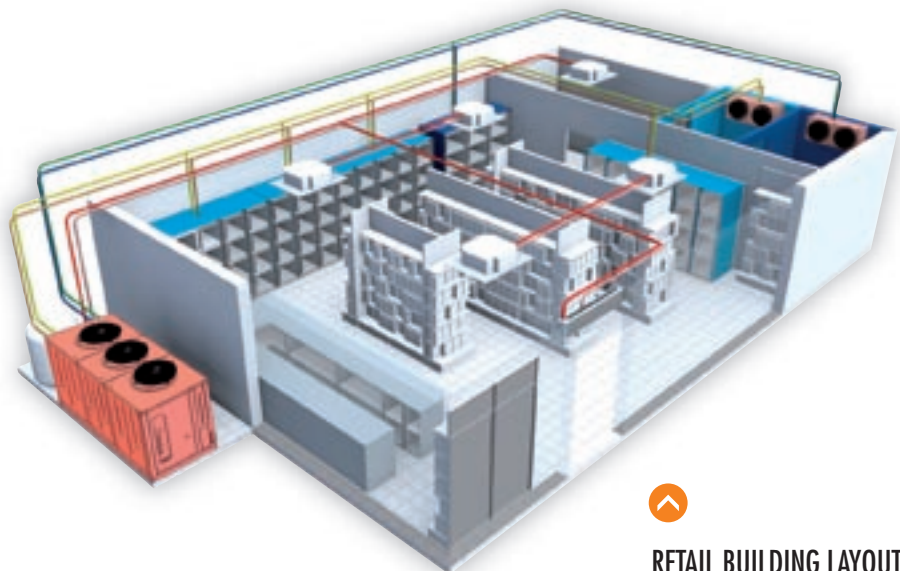
- ▶ ENERGY SAVING
- ▶ SPACE SAVING
- ▶ ALL-IN-ONE SOLUTION FOR ALL FOOD RETAIL NEEDS
- ▶ REFRIGERATION AND AIR CONDITIONING CAN OPERATE INDEPENDENTLY
- ▶ AVAILABLE SOLUTIONS:
  - R134a / R744 (CASCADE SYSTEM)
  - R134a / R404A (ALSO FOR OLD PLANT REPLACEMENTS)
  - BUILT-IN AND REMOTE CONDENSER
- ▶ AVAILABLE SIZES: ANY SIZES COULD BE DESIGNED UPON REQUEST



- THE 4Y SYSTEM IS DESIGNED WITH THE FINAL AIM OF **REDUCING ENERGY CONSUMPTION** FOR BOTH **REFRIGERATION** AND **AC** SO AS TO REDUCE AT THE MAXIMUM CO2 EMISSIONS.
- THE ENERGY CONSUMPTION IS HIGHLY REDUCED AS THE 4Y SYSTEM **RECOVER** THE PART OF THE **ENERGY** THAT OTHER SYSTEMS NORMALLY WASTE IN THE AMBIENT BY PROPERLY USING AND SIZE THE CONTROL OF THE COMPLETE SYSTEM.
- THE SYSTEM IS BUILT IN A SINGLE FRAME WHICH INCLUDES 2 CIRCUITS: 1 MULTICOMPRESSOR CIRCUIT DEDICATED TO THE POSITIVE TEMPERATURES OF BOTH REFRIGERATION AND AIR CONDITIONING AND 1 CIRCUIT FOR NEGATIVE REFRIGERATION TEMPERATURE. FOR EACH CIRCUIT THERE IS ONE COMPRESSOR CONTROLLED BY **INVERTER**.
- THE 4Y SYSTEM **FLEXIBILITY** SATISFY COMPLETELY THE MOST DIFFERENT NEEDS OF REFRIGERATION AND AIR CONDITIONING OF WINTER AND SUMMER SEASONS AS WELL.
- THE OVERALL ENCUMBRANCE IS SIGNIFICANTLY REDUCED COMPARING THE 4Y TO TRADITIONAL SYSTEMS.
- THE 4Y SYSTEM CAN BE DESIGNED FOR ANY CAPACITY NEEDED AS IT WOULD BE FOR INDEPENDENT TRADITIONAL SYSTEMS.

**4 MAIN SIZES IN SQUARE METERS**

- ▶ 4Y-150
- ▶ 4Y-600
- ▶ 4Y-1000
- ▶ 4Y-1500
- ▶ WITH BUILT-IN CONDENSER (4Y CC)
- ▶ WITH BUILT-IN CONDENSER (4Y SC)



▶  
**RETAIL BUILDING LAYOUT**

## 4 MAIN SIZES - DEVIDED BY 4 MODES

Surface [m <sup>2</sup> ]	Refrigeration capacity MT [kW]	Refrigeration capacity LT [kW]	AC Winter Heating [kW]	AC Summer Chilling [kW]
150	15	4	15	10
<b>600</b>	<b>30</b>	<b>10</b>	<b>50</b>	<b>40</b>
1000	60	15	90	60
1500	80	20	120	80



ANY OTHER SIZE CAN BE DEVELOPPED UPON REQUEST

## REMOTE CONDENSER RANGE

REFERENCE		[-]	REMOTE CONDENSER			
			4Y-150-SC	4Y-600-SC	4Y-1000-SC	4Y-1500-SC
Refrigerant	Ref MT and AC	[-]	R134a	<b>R134a</b>	R134a	R134a
	Ref LT	[-]	R744-CO2	<b>R744-CO2</b>	R744-CO2	R744-CO2
Compressors Ref MT and AC	Q.Ty	[nr]	3	<b>3</b>	3	4
	Model	[-]	SE	<b>SE</b>	SE	SE
	Motor	[HP]	10	<b>30</b>	50	50
Compressors LT	Q.Ty	[nr]	1	<b>2</b>	2	2
	Model	[-]	SE	<b>SE</b>	SE	SE
	Motor	[HP]	1	<b>2</b>	3	4
Condenser	Type	[-]	Remote EC fan motors	<b>Remote EC fan motors</b>	Remote EC fan motors	Remote EC fan motors
	Model	[-]	RRC026303SB	<b>RRC038004SB</b>	RRC068003SB	RRC088003SB
	No. of Fan Motors	[-]	2	<b>3</b>	6	8
	Diameter	[mm]	630	<b>800</b>	800	800
	Fan motors max speed	[rpm]	900	<b>900</b>	900	900

## CAPACITIES REMOTE CONDENSER RANGE

FEATURES		[-]	REMOTE CONDENSER RANGE			
			4Y-150-SC	4Y-600-SC	4Y-1000-SC	4Y-1500-SC
Refrigeration	Refrigerating capacity Te MT = -10°C *	[kW]	15.2	<b>27.6</b>	62.3	75.3
	Refrigerating capacity Te LT = -35°C **	[kW]	4.2	<b>10.8</b>	15.5	23.8
	COP REF MT-CLIMA summer***	[-]	2.28	<b>2.35</b>	2.25	2.25
	COP REF LT***	[-]	3.72	<b>3.55</b>	3.98	4.02
Air Conditioning	Max heat capacity with no cold need	[kW]	15.7	<b>41.5</b>	74.6	97.9
	Max heat capacity	[kW]	20.0	<b>80.0</b>	100.0	150.0
	Chill capacity	[kW]	10.0	<b>40.0</b>	60.0	80.0
	EER winter AC ****	[-]	1.20 - ∞	<b>1.21 - ∞</b>	1.20 - ∞	1.20 - ∞
	COP REF MT-summer AC ****	[-]	2.28	<b>2.35</b>	2.25	2.25
Electrical absorption Tcd = 50°C / TeMT = -10°C TeLT = -35°C	Absorbed power	[kW]	16.1	<b>43.2</b>	76.8	101.8
	Absorbed current	[A]	35.4	<b>94.6</b>	234.5	310.3

**MODES 1 AND 2**

4Y system can match all possible operational combination modes

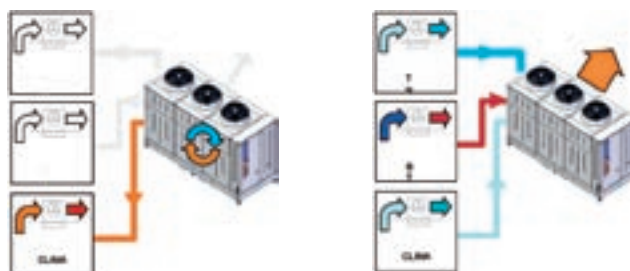


**MODE 1**  
REFRIGERATION: MT and LT run independently.

**MODE 2**  
REFRIGERATION: MT and LT run independently.  
AC: winter heating by refrigeration heat recovery (only useless heat is discharged externally).

**MODES 3 AND 4**

4Y system can match all possible operational combination modes



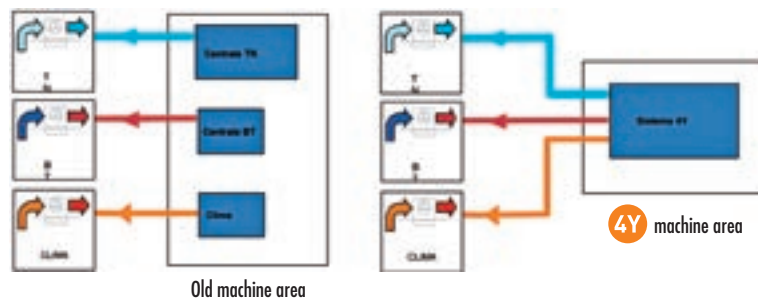
**MODE 3**  
AC: winter heating it is possible to have heating without refrigeration running this thanks to a special circuit design (PATENTED).

**MODE 4**  
REFRIGERATION: MT and /or LT independent to Any AC needs in summer chilling.

**INSTALLATION**

4Y system can cope with any possible combined needs in a store.

- The system can be designed according to the needed power both by Refrigeration and AC.
- The system is more compact in its footprint compared to traditional combined systems.
- Piping for installation is done like traditional systems.
- It is possible to install the 4Y system also in existing sites as traditional systems replacement.

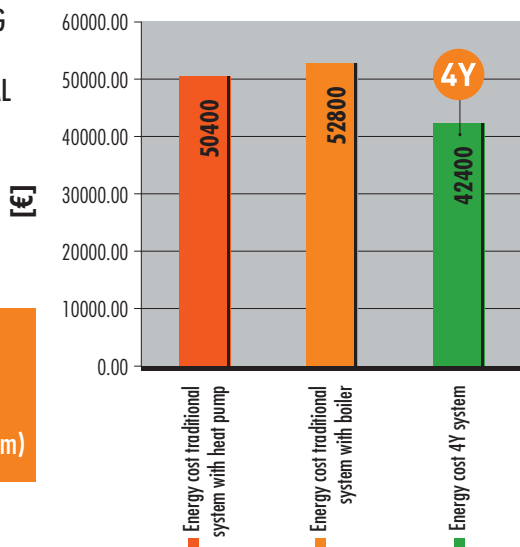


**MACHINE SITE REDUCED SPACE -40%**

**CASE STUDIES BELGIUM 2013**

**PERFORMANCES. ENERGY SAVING COMPARED TO TRADITIONAL SYSTEMS**

• MANAGEMENT COST - 1 JAN 2013 - 31 DEC 2013



**20% YEAR COST SAVING EURO 10,000 (SIZE 1000 sqm)**

• ENERGY CONSUMPTION - 1 JAN 2013 - 31 DEC 2013



**40% ENERGY SAVING IN ONE YEAR**

For further information, please contact our technical dept

Descriptions, technical data and pictures are to be considered as a guide and not binding. Rivacold reserves the right to change in whole or part, the specification detailed in this documentation without prior notice and, when necessary to achieve continuous productions, to use alternative manufactures of components for design accomplishment.