Twineco®

economically & ecologically

GOELDNER

INTRODUCTION

The pressure to reduce CO_2 emissions is increasing every year around the world, which is reflected in the stringent legislative conditions for the operation of existing refrigeration technologies and the introduction of new equipment on the market. Legislative steps such as EU Regulation 517/2014 are increasing operating costs for users and forcing them to consider what to do next. But it is not only legislation, but also the responsibility for what our children will inherit from us, that drives our company to develop and innovate our equipment so that we can already offer safe alternatives without impacting the environment.

Our equipment for its primary circuit uses 100% environmentally friendly natural refrigerants R717 and R723, which do not produce CO_2 emissions, and do not have impact on the ODP (natural climate phenomenon called the Pacific Decadal Oscillation – impact on the ozone layer) and with negligible impact on the GWP (Global Warming Potential – Greenhouse Effect). Their high volumetric cooling capacity allows the use of a minimum filling volume, which has a major impact on several indicators, such as significantly improved operating cost efficiency, reduction of the energy consumption of the system, a substantial increase in the safety of the equipment against possible damage to the environment or to the health of persons, ... The significantly lower purchase price of natural refrigerants compared to synthetic refrigerants also has a positive effect on the economics of operation.

The top of the range is Twineco®, which saves on operating energy consumption with its innovative efficient design, which is particularly important in times of rising prices, as is currently the case. Maximum efficiency is achieved using extremely low refrigerant charge volumes. The output of the unit is divided into several smaller cooling circuits, which allows easy control of the entire system's output and efficient coverage of the current power needs. Service is possible without downtime, a possible failure of one compressor will not cause an emergency state of the whole system. At the same time, 100% power backup is not required.

In addition, Twineco® makes it possible to use all the heat that is generated in the production of cold, which in the past was only considered as waste. Our systems allow it to be used, for example, for DHW preparation, space heating, ... thus more than doubling the efficiency of the cooling unit.

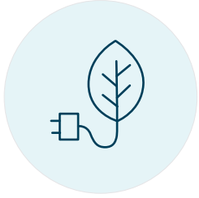
We provide 24-hour service, remote management, and unattended operation with intelligent control for the equipment.

The Goeldner compressors we use are innovative and precise, with attention to detail. The advantage is especially their comprehensiveness and the know-how of more than 60 years of experience in their production and development:

- all compressors are designed for maximum uptime,
- all compressors have sufficient oil volume for the highest safety of operation,
- all 4-cylinder compressors are equipped with an oil pump and oil differential sensor as standard,
- all compressors are freely available for inverter-controlled operation in the range of 20 to 60 (70) Hz,
- long service life is ensured by the eccentric shaft with ball bearings,
- compressors have extremely smooth operation th anks to a special balancing system,
- the 4-cylinder compressor models are ready for 50% power control,
- compressors can be approved for flammable or special refrigerants,
- the design of compressor mixture systems is made possible by the simplest oil-gas balancing,
- complete range of different open type compressors from 6 m^3/h to 95 m^3/h displacement for direct connection with 1450 rpm as well as for R717 and R723,
- specialties include the smallest open ammonia compressor on the market (6 m^3/h).

Cost reduction

Environmentally friendly natural refrigerants

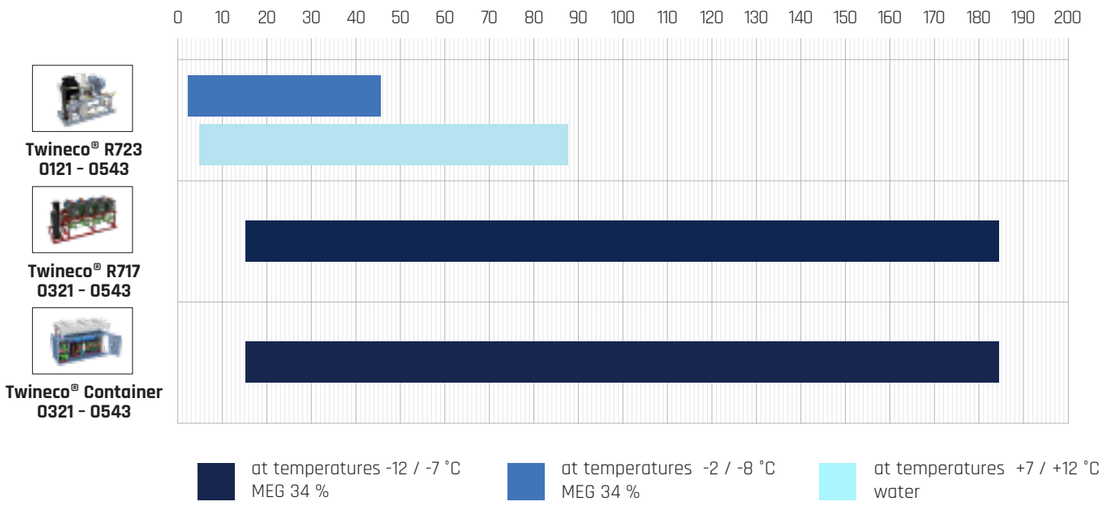


Saving energy

Waste heat use

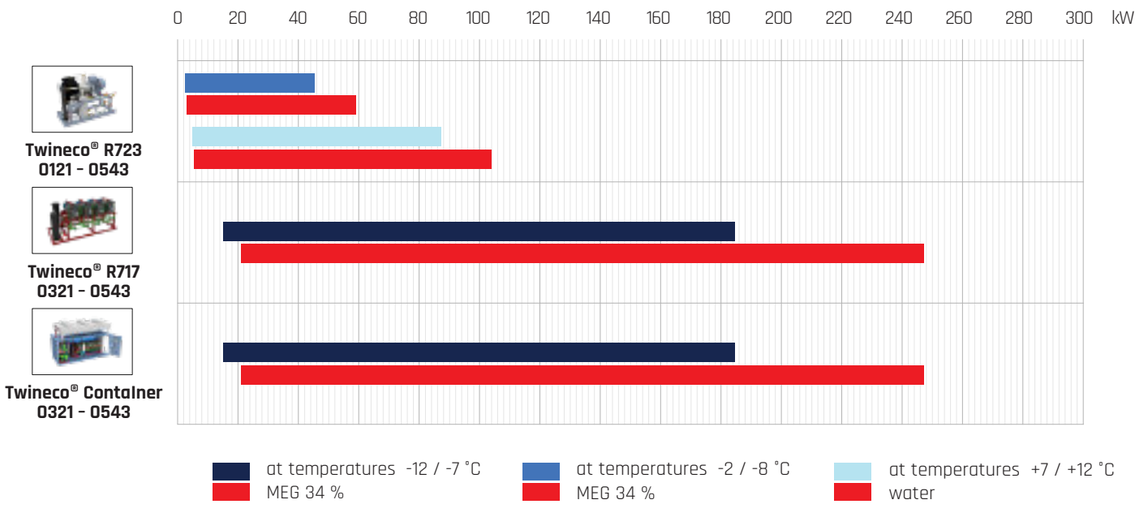
CHILLERS – COOLERS

- cooling and freezing with natural refrigerants R717 and R723
- cooling capacity 2.0 kW – 439 kW
- possibility to use condensing heat
- no CO_2 emissions



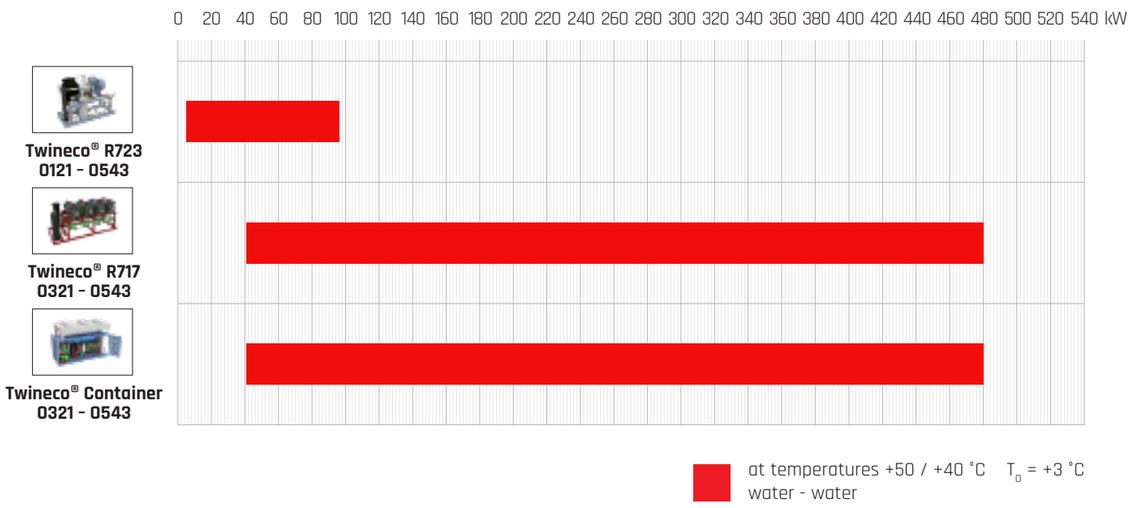
HYBRIDS

- cooling and heat generation with natural refrigerants R717 and R723
- cooling capacity 2.0 kW – 439 kW, condensing capacity 2.7 kW – 521 kW
- water – water, water – air
- possibility to use condensing heat
- no CO_2 emissions



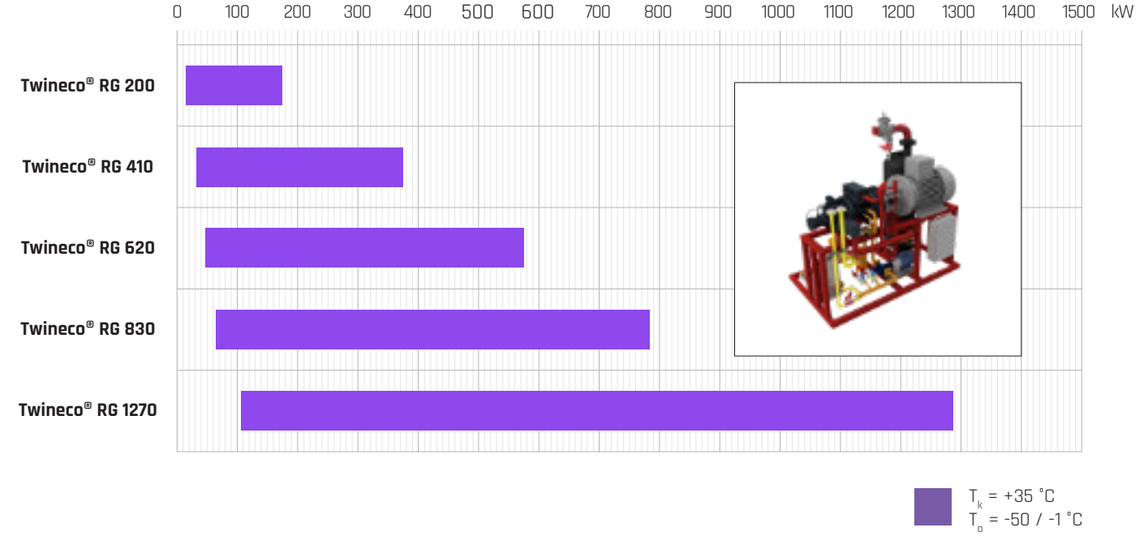
HEAT PUMPS

- the production of heat or cold from renewable natural resources independently of fossil fuels
- condensing power 5.1 kW – 480 kW
- possibility to use condensing heat
- no CO_2 emissions



SCREW REFRIGERATION UNITS

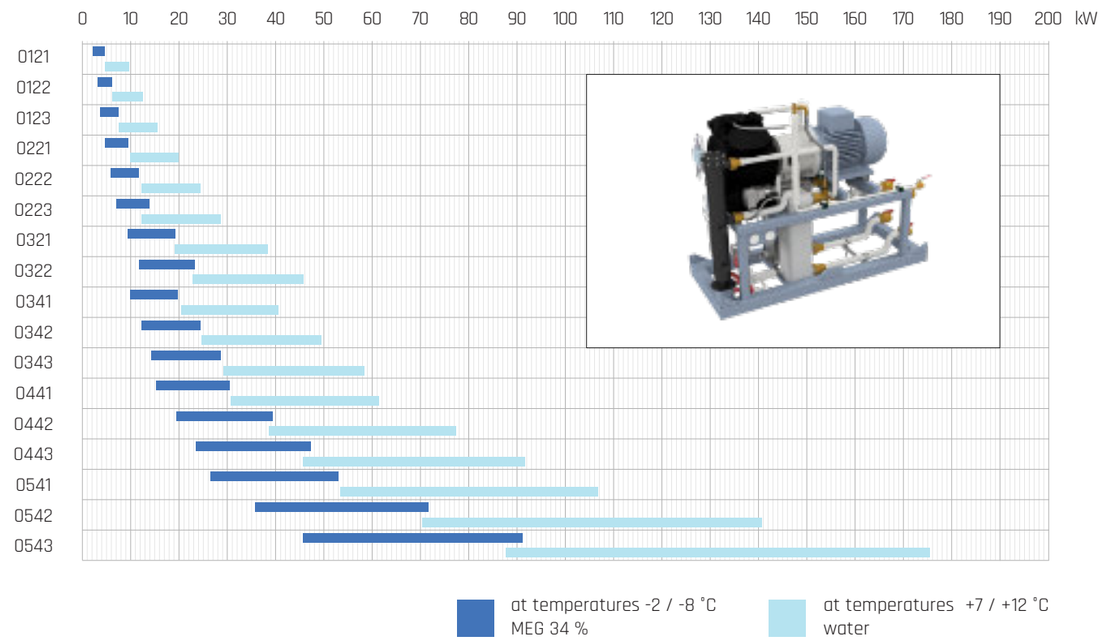
- cooling and freezing with natural refrigerants R717 and R723
- power 15 kW – 1.3 MW
- possibility to use condensing heat
- no CO_2 emissions

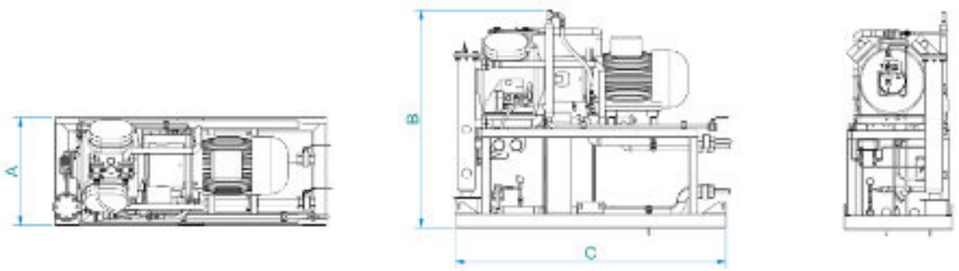


CHILLERS – COOLERS

- plug & play liquid cooling technology with wide applications for cooling and freezing
- various uses for food production, industrial production processes, retail warehouses, commercial premises, etc.

Performance Comparison for Twineco® Chillers R723

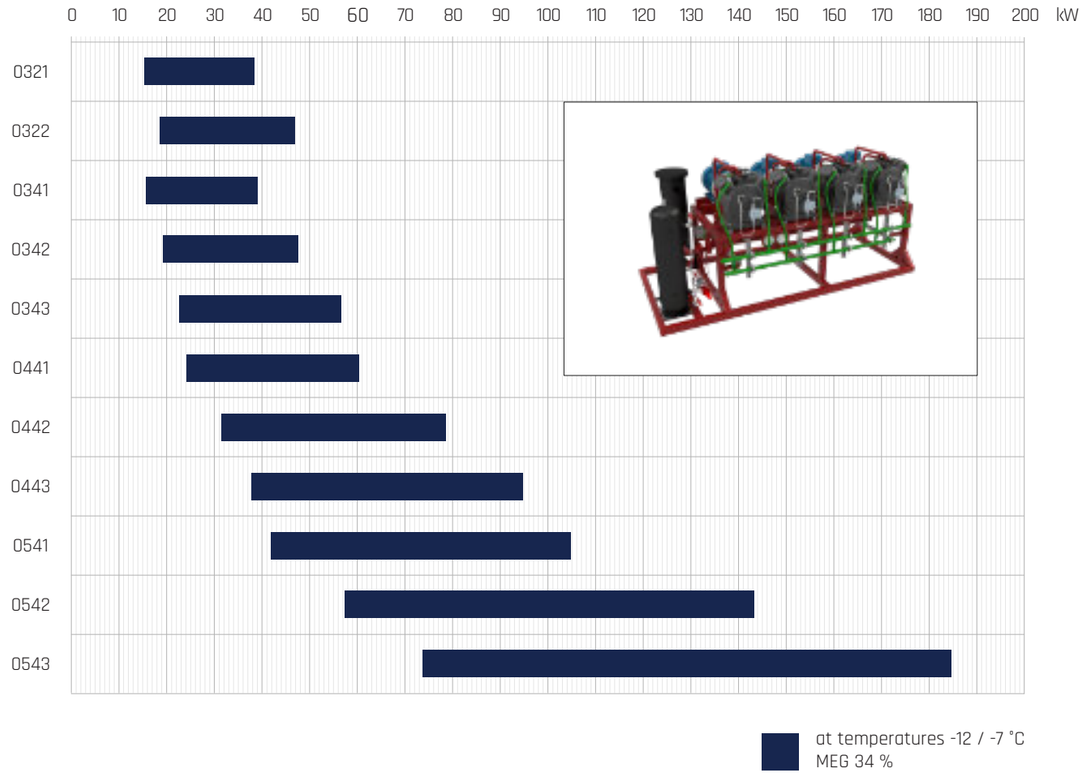


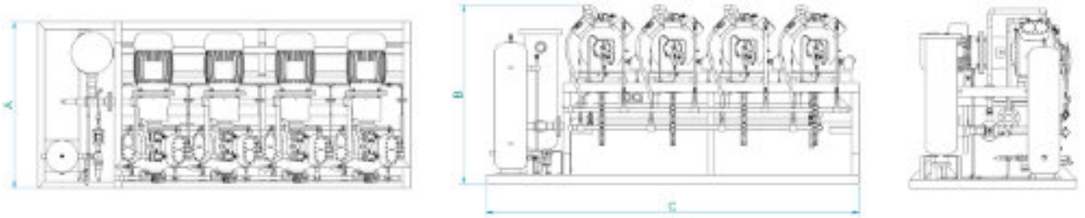


Twineco® Chillers R723

Compressor	Number of compressors	Dimensions (mm)			Weight [kg]
		Width A	Height B	Length C	
0121 - 0123 0221 - 0223	1	520	1 150	1 110	280
0321 - 0322 0341 - 0343	1	570	1 150	1 285	420
0441 - 0443 0541 - 0543	1	620	1 300	1 560	620

Performance Comparison for Twineco® Chillers R717

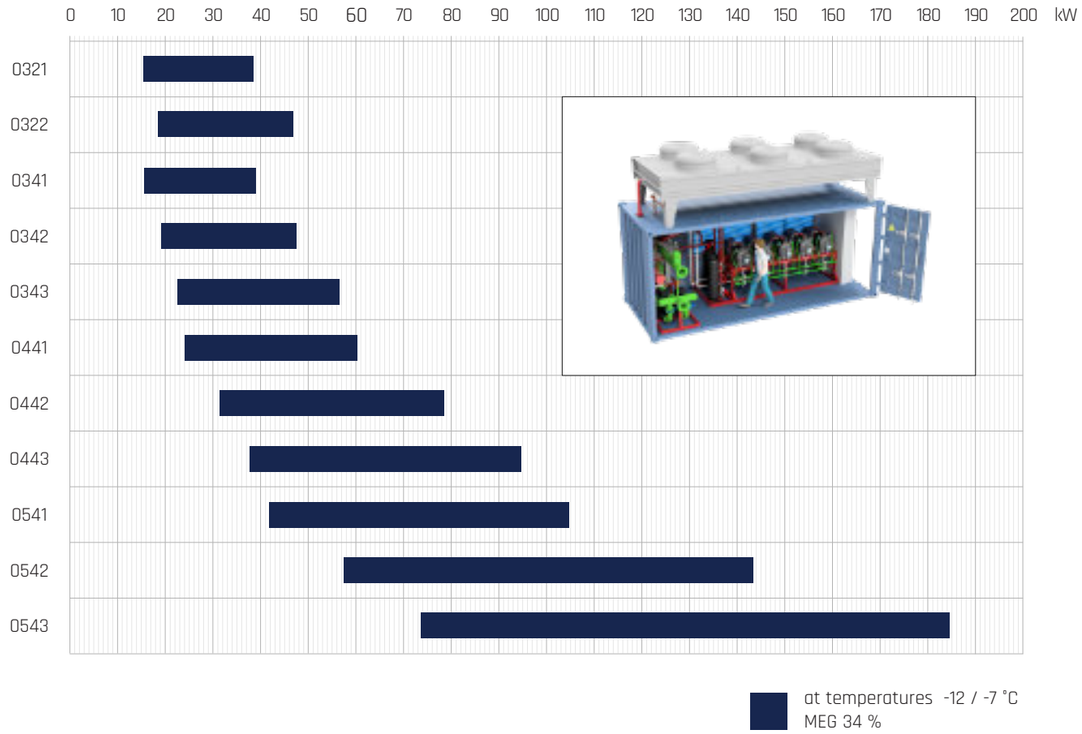


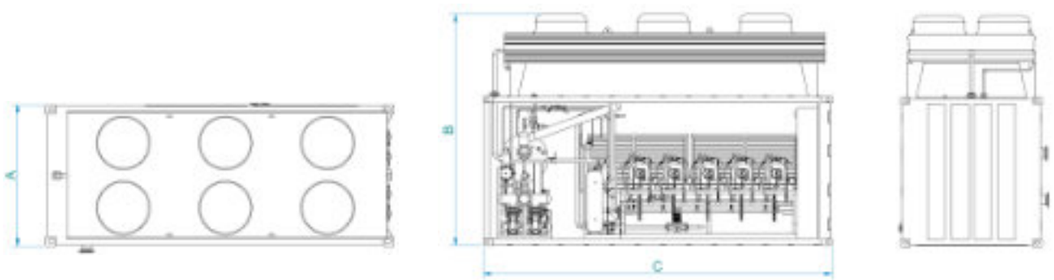


Twineco® Chillers R717

Compressor	Common dimensions		by number of compressors				by number of compressors			
	Width A (mm)	Height B (mm)	2	3	4	5	2	3	4	5
			Length C (mm)				Weight [kg]			
0121 - 0123 0221 - 0223	800	1 250	1 000	1 450	1 900	2 350	300	400	500	600
0321 - 0322 0341 - 0343	1 000	1 400	1 200	1 750	2 300	2 850	500	680	860	1 040
0441 - 0443 0541 - 0543	1 400	1 500	1 950	2 550	3 150	3 750	1 150	1 600	2 050	2 500

Performance Comparison for Twineco® R717 Container Chillers



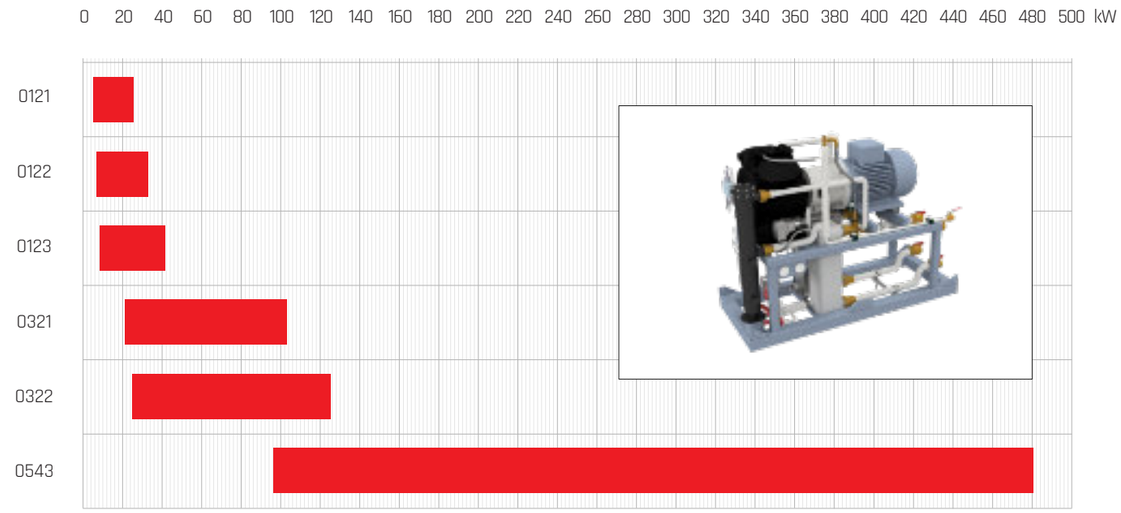


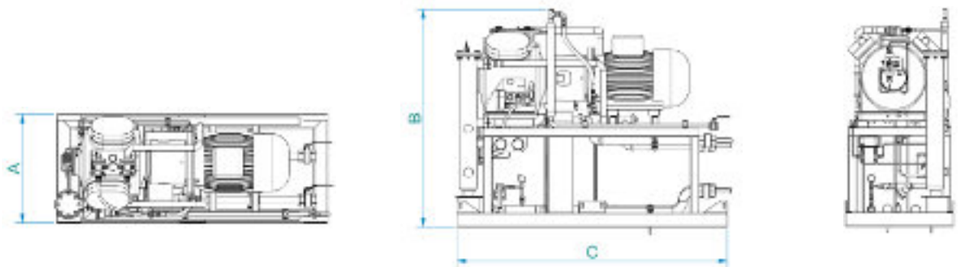
Twineco® R717 Container Chillers				
Container	External dimensions (mm)			Load capacity (kg)
	Width A	Height B	Length C	
1D	2 438	2 438	3 050	10 160
1CC	2 438	2 591	6 100	24 000
1AAA	2 438	2 896	12 200	30 480

HEAT PUMPS

- comprehensive heat solutions (heating, hot water, cooling) for industry, company production facilities, commercial buildings, hotels or logistics centres
- significant reduction of operating costs, high return on investment

Performance Comparison for Twineco® R723 Heat Pumps



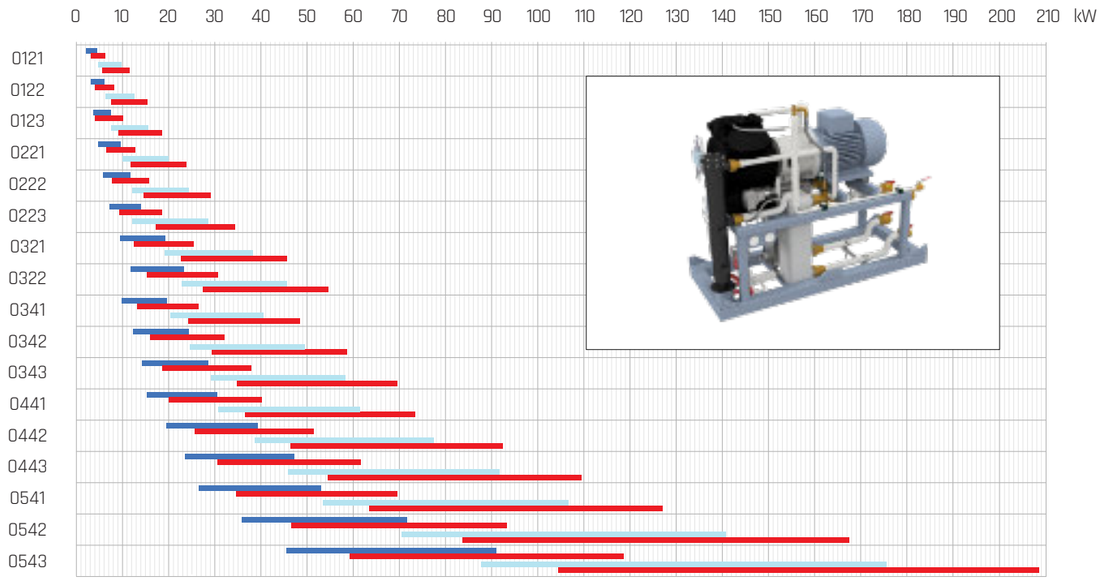


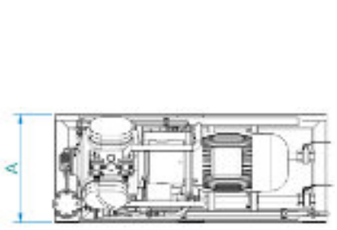
Twineco® R723 Heat Pumps					
Compressor	Number of compressors	Dimensions (mm)			Weight [kg]
		Width A	Height B	Length C	
0121 - 0123 0221 - 0223	1	520	1 150	1 110	280
0321 - 0322 0341 - 0343	1	570	1 150	1 285	420
0441 - 0443 0541 - 0543	1	620	1 300	1 560	620

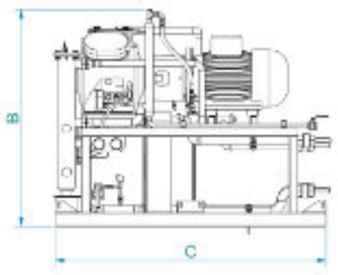
HYBRIDS

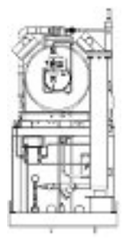
- simultaneous cooling and heat generation by one device using natural refrigerants R717 and R723
- ice rink operations, retail warehouses, swimming pools

Performance Comparison for Twineco® R723 Hybrids





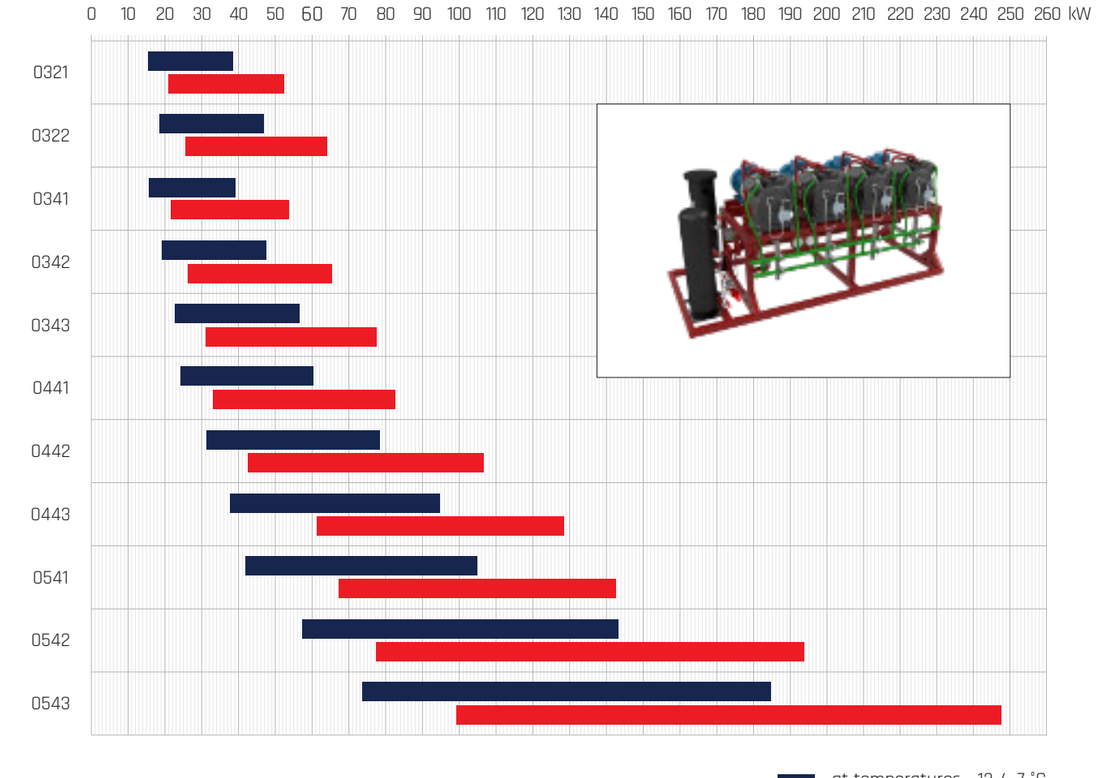


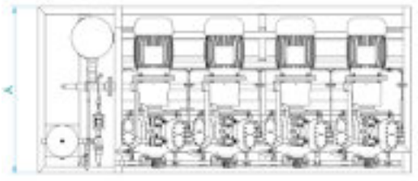


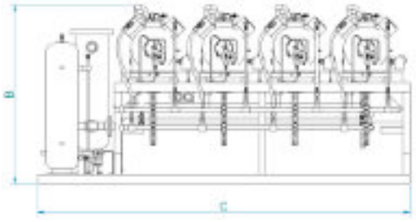
Hybridy Twineco® R723

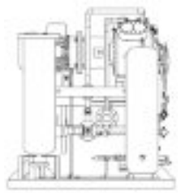
Compressor	Number of compressors	Dimensions (mm)			Weight [kg]
		Width A	Height B	Length C	
0121 - 0123 0221 - 0223	1	520	1 150	1 110	280
0321 - 0322 0341 - 0343	1	570	1 150	1 285	420
0441 - 0443 0541 - 0543	1	620	1 300	1 560	620

Performance Comparison for Twineco® R717 Hybrids





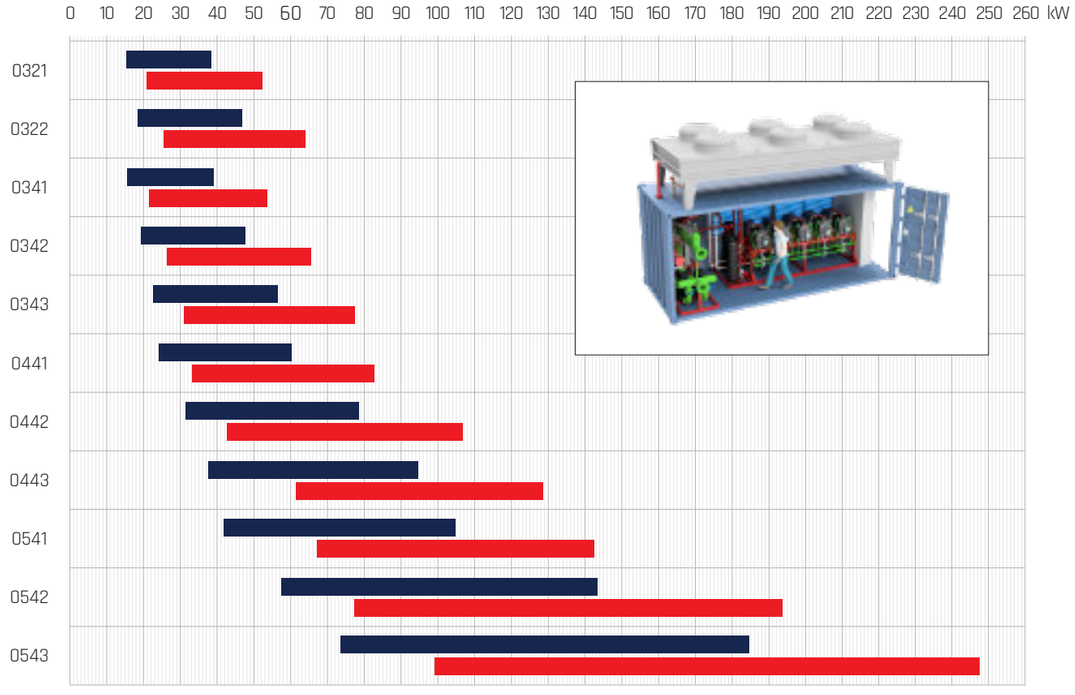




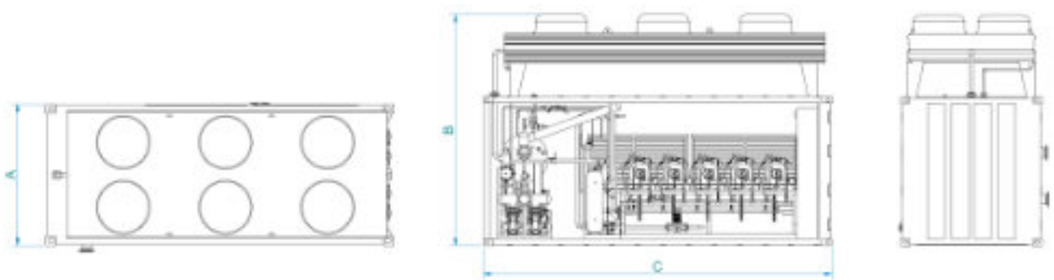
Twineco® R717 Hybrids

Compressor	Common dimensions		by number of compressors				by number of compressors			
	Width A (mm)	Height B (mm)	2	3	4	5	2	3	4	5
			Length C (mm)				Weight (kg)			
0121 - 0123 0221 - 0223	800	1 250	1 000	1 450	1 900	2 350	300	400	500	600
0321 - 0322 0341 - 0343	1 000	1 400	1 200	1 750	2 300	2 850	500	680	860	1 040
0441 - 0443 0541 - 0543	1 400	1 500	1 950	2 550	3 150	3 750	1 150	1 600	2 050	2 500

Performance Comparison for Twineco® R717 Container Hybrids



at temperatures -12 / -7 °C
MEG 34 %



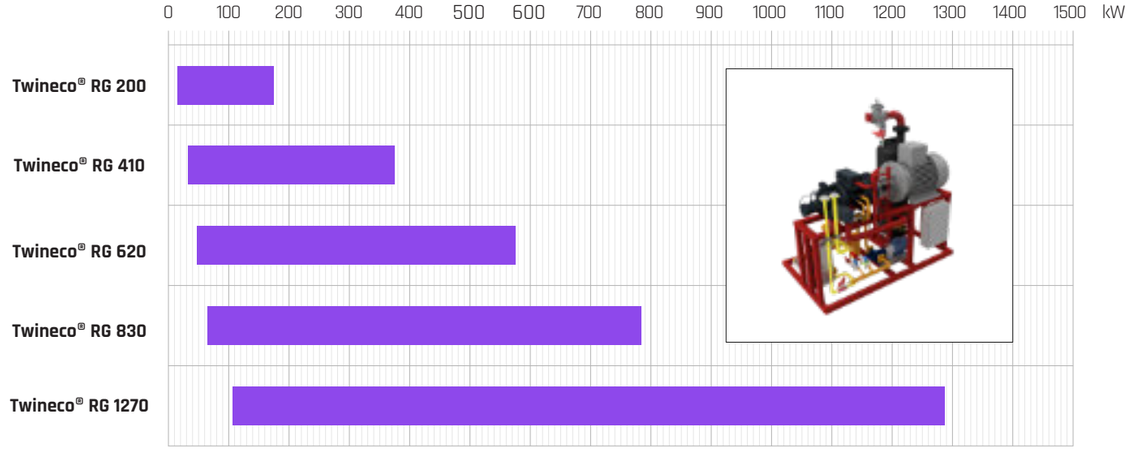
Twineco® Hybrids R717 Containe

Container	External dimensions (mm)			Load capacity (kg)
	Width A	Height B	Length C	
1D	2 438	2 438	3 050	10 160
1CC	2 438	2 591	6 100	24 000
1AAA	2 438	2 896	12 200	30 480

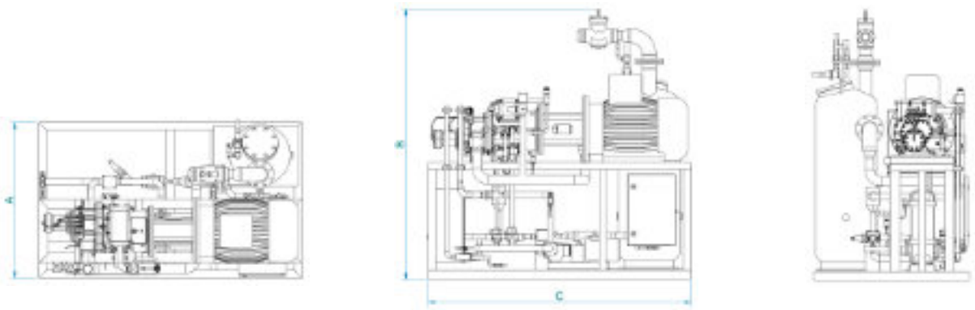
SCREW REFRIGERATION UNITS

- ✓ wide application especially for industry, food industry - shock freezing, cooling tunnels, cold storage and freezer warehouses
- ✓ large capacity cooling and freezing

Performance Comparison for Twineco® Screw Refrigeration Units



T_k = +35 °C
T_o = -50 / -1 °C



Screw Refrigeration Units

Unit	Dimensions (mm)			Weight [kg]
	Width A	Height B	Length C	
RG 200	900	1 800	2 200	1 100
RG 410	1 300	2 400	2 200	1 600
RG 620	1 300	2 400	2 500	2 500
RG 830	1 700	2 400	3 000	3 800
RG 1270	1 700	2 600	3 200	4 500

Ecological solutions
with economical operation

Twineco®
economically & ecologically

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www.twineco.sk | twineco@twineco.sk