



VITALIS

RoxstaTM

**Future-Proof R744 (CO₂)
Compressor Racks**



Capacities
up to 25 TR

Roxsta™ Cube Mini S

Many features in a compact design. Designed for discount stores, organic markets, or small retailers with a market size of up to 10,760 ft².

Capacities

(MT SST 23°F [-5°C] / LT SST -22°F [-30°C] / t_{GC} 100°F [38°C])

- **Medium temperature** 4–25 TR (15–90 kW)
1 IT / 2 MT transcritical CO₂ compressors
- **Low temperature** 0–5 TR (0–17 kW)
0–1 subcritical CO₂ compressors

Benefits

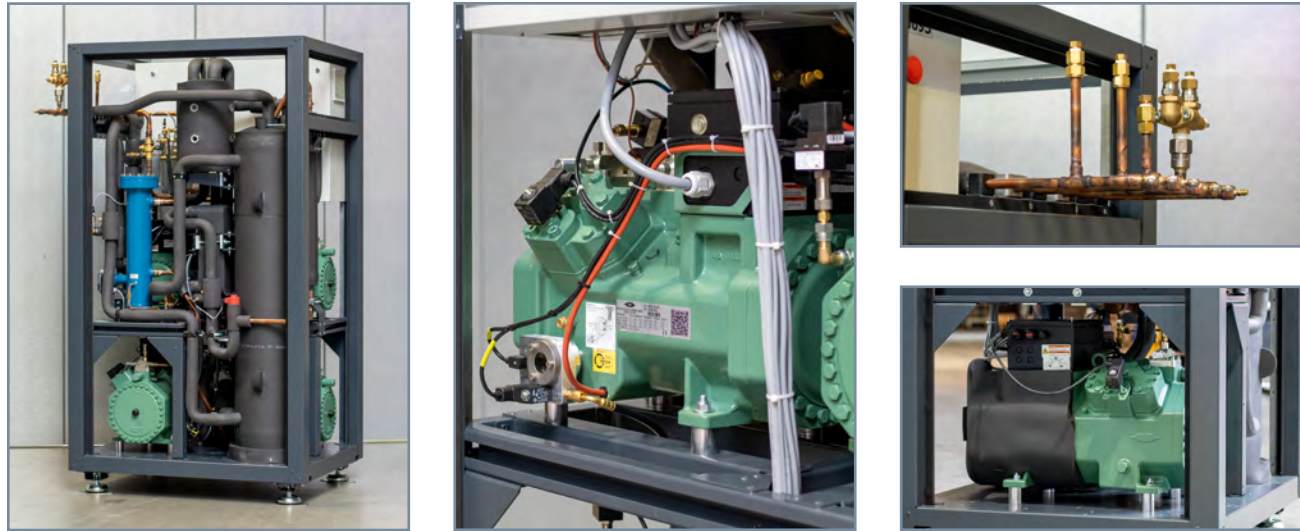
- Designed for Dorin 4-cylinder compressors or Bitzer 6-cylinder compressors
- Small footprint of 10.8 ft²
- Maximum operational reliability supported by Compressor Shield™ & R744 HoneyPot™
- High efficiency

Design pressure

- 435/870 psi (30/60 bar) suction line (LT)
- 653/870 psi (45/60 bar) suction line (MT)
- 1,160 psi (80 bar) suction available
- 870 psi (60 bar) medium pressure
- 1,740/1,885 psi (120/130 bar) high pressure

Model	Dimensions (inches)			Receiver (ft. ³ / litres)	Weight* (≈ lbs / kg)
	Length ¹	Depth	Height ¹		
2/0-1	43.3	34.6	78.3	3.2 / 92	2,646 / 1,200

¹ Pipe connections: Length plus 12.6 inches / Height plus 6 inches (easily detachable)
* Depending on the equipment, the weight can vary significantly



SCOPE OF DELIVERY

Installed as standard

- Trans- & subcritical compressors
- Capacity control for each MT lead compressor
- Active oil management
- Low-level indicators (liquid receiver, oil reservoir)
- Shut-off ball valve before and after HP & MP valve
- Suction filter with shut-off ball valve in the suction line—each MT/LT
- Liquid line set consisting of two shut-off ball valves, liquid filter, and sight glass
- Suction-side insulation
- Dual HP and MP valves
- Vibration-damping feet
- Safety valves for HP, MP, and suction side

Switchboard and control

- All switching devices necessary for fully automatic operation
- Ventilated switchboard
- Main switch
- Control transformers
- Independent power supply closes the HP and MP valves in case of a power failure
- Shared energy metering MT/LT (optional)
- Phased monitoring (optional)

Optional

- Soundproofing for indoor installation
- High-level indicator (liquid receiver)
- Gas cooler bypass
- Flash gas & suction gas heat exchanger (MT/LT)
- Suction accumulator (870 psi [60 bar], 2.5/5.3 ft.³ [70/150 litres])
- Standstill cooling (delivered separately, connections provided at the receiver)
- Weather/sound protection housing for outdoor installation
- PSV vent header

– Capacity control

- Lead compressor MT: Frequency converter or mechanical power control
- Additional compressor MT: Mechanical unloader (50/100)
- Lead compressor LT: Frequency converter

– Efficiency enhancer

- Parallel compressors (capacity-controlled)
- Ejector

– Heat recovery

- Up to 2 circuits, including 3-way motorized valve and insulation of the discharge line, oil separator, and plate heat exchanger
- Pump for heat recovery

Just 66 inches in height



Roxsta™ 4S

Capacities
up to 63 TR

R744 package in a compact design for supermarkets with challenging height restrictions.

Capacities

(MT SST 23°F [-5°C] / LT SST -22°F [-30°C] / t_{GC} 100°F [38°C])

- **Medium temperature** 22–63 TR (78–220 kW)
3 transcritical CO₂ compressors
- **Low temperature** 0–51 TR (0–180 kW)
0–2 subcritical CO₂ compressors

Benefits

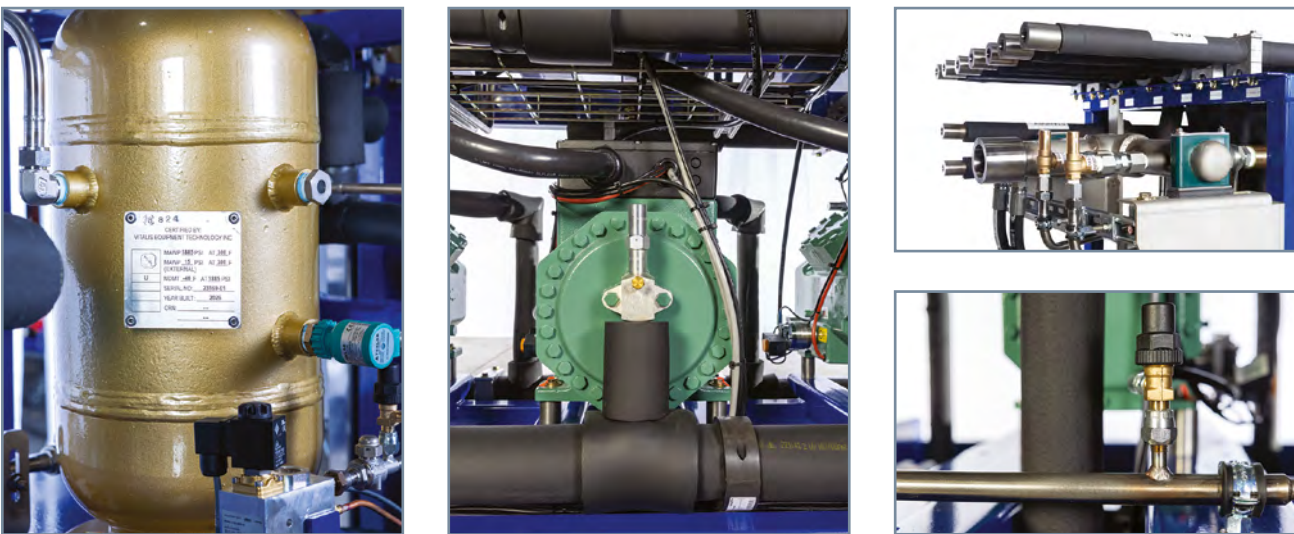
- Designed for Dorin 4-cylinder compressors or Bitzer 6-cylinder compressors
- Compact design / easy to install
- Fully piped and wired

Design pressure

- 435/870 psi (30/60 bar) suction line (LT)
- 653/870 psi (45/60 bar) suction line (MT)
- 1,160 psi (80 bar) suction available
- 653/870/1,160 psi (45/60/80 bar) medium pressure
- 1,740/1,885 psi (120/130 bar) high pressure

Model	Dimensions (inches)			Receiver (ft. ³ / litres)	Weight* (≈ lbs / kg)
	Length	Depth	Height		
3/0-2	184	38	66	8.5 / 240	5,600 / 2,540

* Depending on the equipment, the weight can vary significantly



SCOPE OF DELIVERY

Installed as standard

- Trans- & subcritical compressors
- Capacity control for each MT lead compressor
- Active oil management
- Low-level indicators (liquid receiver, oil reservoir)
- Shut-off ball valve before and after HP & MP valve
- Suction filter with shut-off ball valve in the suction line—each MT/LT
- Liquid line set consisting of two shut-off ball valves, liquid filter, and sight glass
- Suction-side insulation
- Dual HP and MP valves
- Vibration-damping feet
- Safety valves for HP, MP, and suction side

Switchboard and control

- All switching devices necessary for fully automatic operation
- Ventilated switchboard
- Main switch
- Control transformers
- Independent power supply closes the HP and MP valves in case of a power failure
- Shared energy metering MT/LT (optional)
- Phased monitoring (optional)

Optional

- High-level indicator (liquid receiver)
- Gas cooler bypass
- Flash gas & suction gas heat exchanger (MT/LT)
- Standstill cooling (delivered separately, connections provided at the receiver)
- Weather/sound protection housing for outdoor installation
- PSV vent header

– Capacity control

- Lead compressor MT: Frequency converter or mechanical power control
- Additional compressor MT: Mechanical unloader (50/100)
- Lead compressor LT: Frequency converter

– Efficiency enhancer

- Parallel compressors (capacity-controlled)
- Ejector

– Heat recovery

- Single circuit, including 3-way motorized valve and insulation of the discharge line, oil separator, and plate heat exchanger
- Pump for heat recovery



Roxsta™ G6

R744 package for high capacities. Designed for superstores and hypermarkets with a market size up to 107,640 ft².

Capacities

(MT SST 23°F [-5°C] / LT SST -22°F [-30°C] / t_{GC} 100°F [38°C])

- **Medium temperature** 59–180 TR (207–640 kW)
3-7 transcritical CO₂ compressors
0-2 IT compressors
- **Low temperature** 0–167 TR (0–590 kW)
0-6 subcritical CO₂ compressors

Model	Dimensions (inches)				Receiver (ft. ³ / litres)	Weight* (≈ lbs / kg)
	Rack + Switchboard	2nd Receiver	Depth	Height		
3/0-2	157.8 ¹	+45.3	53 or 63 ²	90.6	13.2 / 375	on request
4/0-3	183.5					
5/0-4	230.3 ²					
6/0-5	252 ²					
7/0-6	272.8 ²					

¹ Model 3/0-2 incl. parallel compression – mounted on frame 4/0-3

² Dimension listed, including 1,200A switchboard, can be reduced under 630A total power

* Depending on the equipment, the weight can vary significantly

Capacities
up to 180 TR

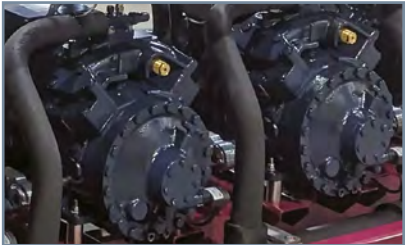
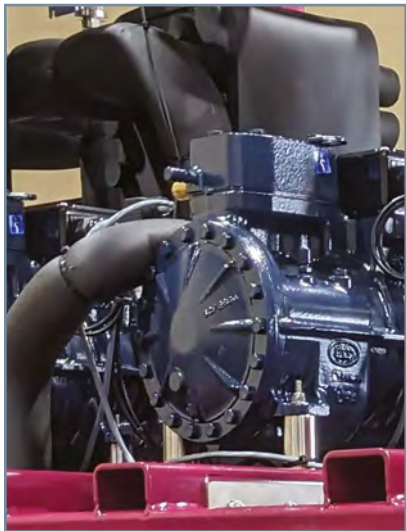
Benefits

- Designed for Dorin 4-cylinder compressors or Bitzer 6-cylinder compressors
- Compact design / easy to install
- Fully piped and wired

Design pressure

- 435/870 psi (30/60 bar) suction line (LT)
- 653/870 psi (45/60 bar) suction line (MT)
- 1,160 psi (80 bar) suction available
- 653/870/1,160 psi (45/60/80 bar) medium pressure
- 1,740/1,885 psi (120/130 bar) high pressure

Roxsta™ G6



SCOPE OF DELIVERY

Installed as standard

- Trans- & subcritical compressors
- Capacity control for each MT lead compressor
- Active oil management
- Low-level indicators (liquid receiver, oil reservoir)
- Shut-off ball valve before and after HP & MP valve
- Suction filter with shut-off ball valve in the suction line—each MT/LT
- Liquid line set consisting of two shut-off ball valves, liquid filter, and sight glass
- Suction-side insulation
- Dual HP and MP valves
- Vibration-damping feet
- Safety valves for HP, MP, and suction side

Switchboard and control

- All switching devices necessary for fully automatic operation
- Ventilated switchboard
- Main switch
- Control transformers
- Independent power supply closes the HP and MP valves in case of a power failure
- Shared energy metering MT/LT (optional)
- Phased monitoring (optional)

Optional

- High-level indicator (liquid receiver)
- Gas cooler bypass
- Flash gas & suction gas heat exchanger (MT/LT)
- Suction accumulator (870 psi [60 bar], 2.5/5.3 ft.³ [70/150 litres])
- Standstill cooling (delivered separately, connections provided at the receiver)
- Weather/sound protection housing for outdoor installation
- PSV vent header

– Capacity control

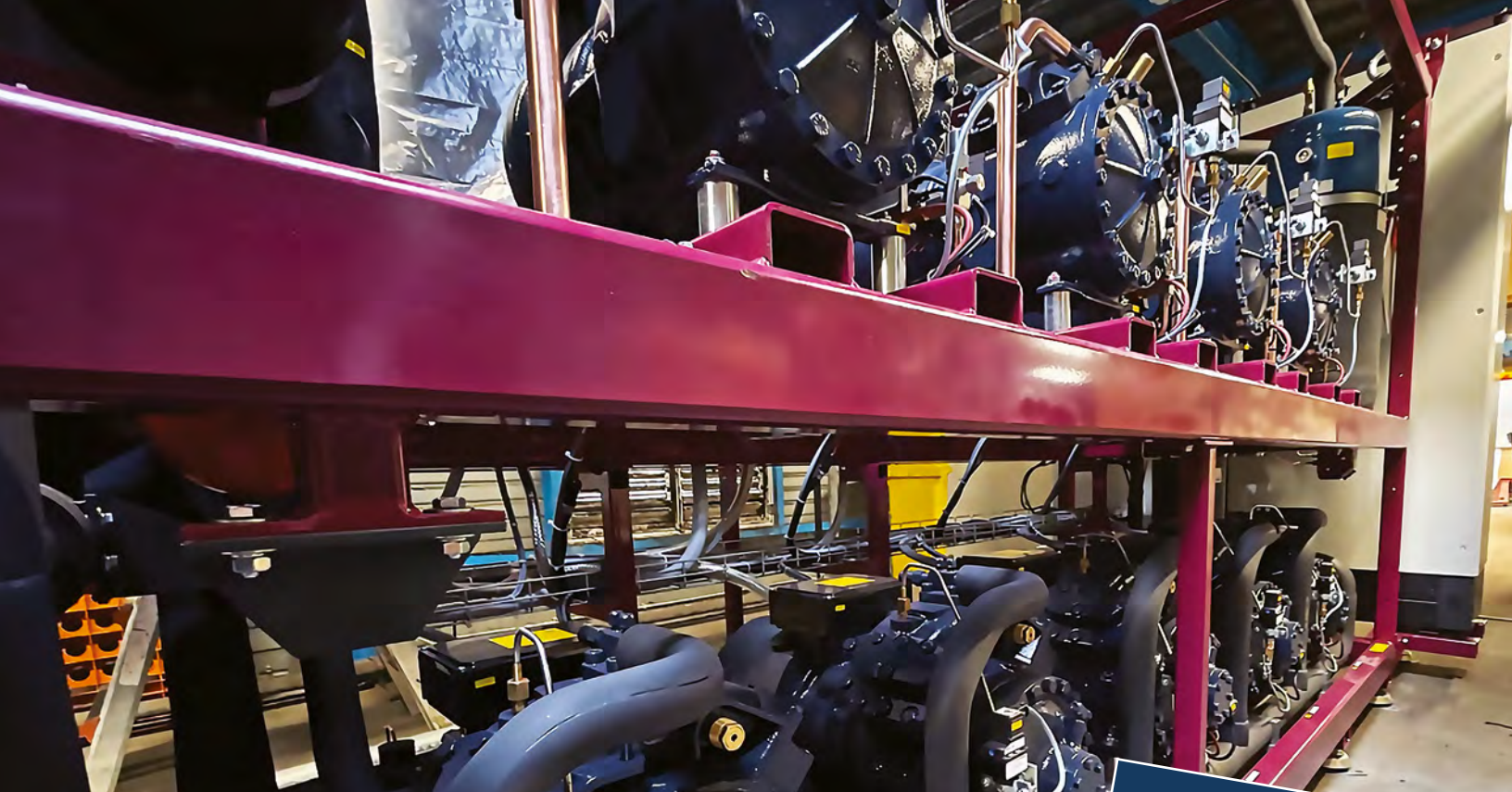
- Lead compressor MT: Frequency converter or mechanical power control
- Additional compressor MT: Mechanical unloader (50/100)
- Lead compressor LT: Frequency converter

– Efficiency enhancer

- Parallel compressors (capacity-controlled)
- Ejector

– Heat recovery

- Up to 2 circuits, including 3-way motorized valve and insulation of the discharge line, oil separator, and plate heat exchanger
- Pump for heat recovery



Capacities
up to 273 TR

Roxsta™ Industrial

R744 package for industrial applications such as supermarkets, logistics warehouses, or industrial and process cooling.

Capacities

(MT SST 23°F [-5°C] / LT SST -22°F [-30°C] / t_{GC} 100°F [38°C])

- **Medium temperature** 102–273 TR (360–960 kW)
4-10 transcritical CO₂ compressors
- **Low temperature** 0–168 TR (0–590 kW)
0-6 subcritical CO₂ compressors

Benefits

- Designed for Dorin 6-cylinder compressors
- Flexible
- Compact design / easy to install
- Fully piped and wired

Design pressure

- 435/870 psi (30/60 bar) suction line (LT)
- 653/870 psi (45/60 bar) suction line (MT)
- 1,160 psi (80 bar) suction available
- 653/870/1,160 psi (45/60/80 bar) medium pressure
- 1,740/1,885 psi (120/130 bar) high pressure

Model	Dimensions (inches) ¹			Total Receiver Volume ² (ft. ³ / litres)	Weight* Rack + Switchboard (≈ lbs / kg)
	Length Rack + Switchboard	Depth	Height		
4/0-3	386.2	84.6	112.2	74.2 / 2,100	44,624 / 20,241
5/0-4	431.9				49,128 / 22,284
6/0-5	459.4				53,213 / 24,137
7/0-6	on request				

¹ Dimensions may vary depending on the configuration
² Total volume based on 2 receivers
* Depending on the equipment, the weight can vary significantly



SCOPE OF DELIVERY

Installed as standard

- Trans- & subcritical compressors
- Capacity control for each MT lead compressor
- Active oil management
- Low-level indicators (liquid receiver, oil reservoir)
- Shut-off ball valve before and after HP & MP valve
- Suction filter with shut-off ball valve in the suction line—each MT/LT
- Liquid line set consisting of two shut-off ball valves, liquid filter, and sight glass
- Suction-side insulation
- Dual HP and MP valves
- Vibration-damping feet
- Safety valves for HP, MP, and suction side

Switchboard and control

- All switching devices necessary for fully automatic operation
- Ventilated switchboard
- Main switch
- Control transformers
- Independent power supply closes the HP and MP valves in case of a power failure
- Shared energy metering MT/LT (optional)
- Phased monitoring (optional)

Optional

- High-level indicator (liquid receiver)
- Gas cooler bypass
- Flash gas & suction gas heat exchanger (MT/LT)
- Suction accumulator (870 psi [60 bar], 2.5/5.3 ft.³ [70/150 litres])
- Standstill cooling (delivered separately, connections provided at the receiver)
- Weather/sound protection housing for outdoor installation
- PSV vent header

– Capacity control

- Lead compressor MT: Frequency converter or mechanical power control
- Additional compressor MT: Mechanical unloader (50/100)
- Lead compressor LT: Frequency converter

– Efficiency enhancer

- Parallel compressors (capacity-controlled)
- Ejector

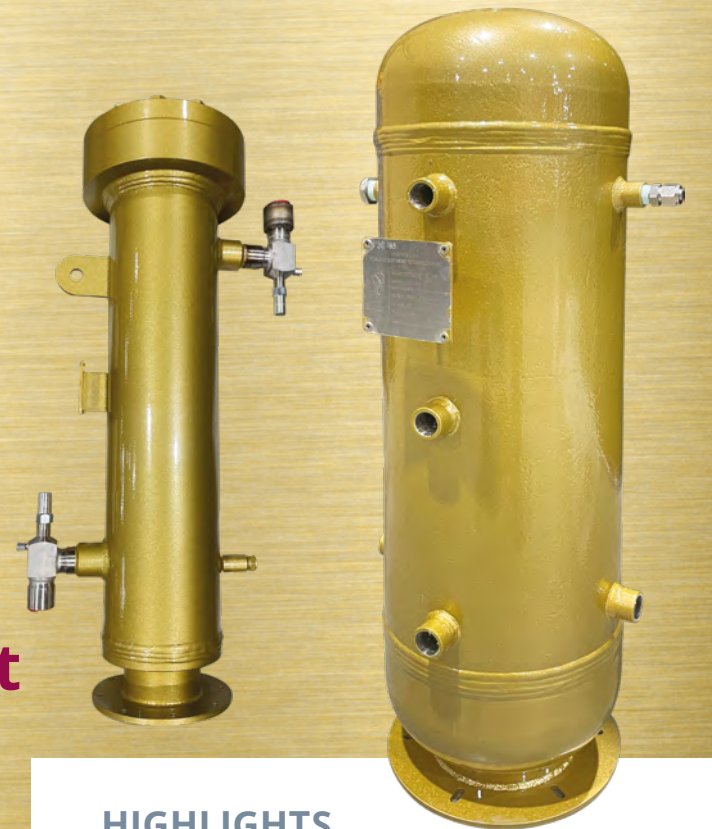
– Heat recovery

- Up to 2 circuits, including 3-way motorized valve and insulation of the discharge line, oil separator, and plate heat exchanger
- Pump for heat recovery



Authentic

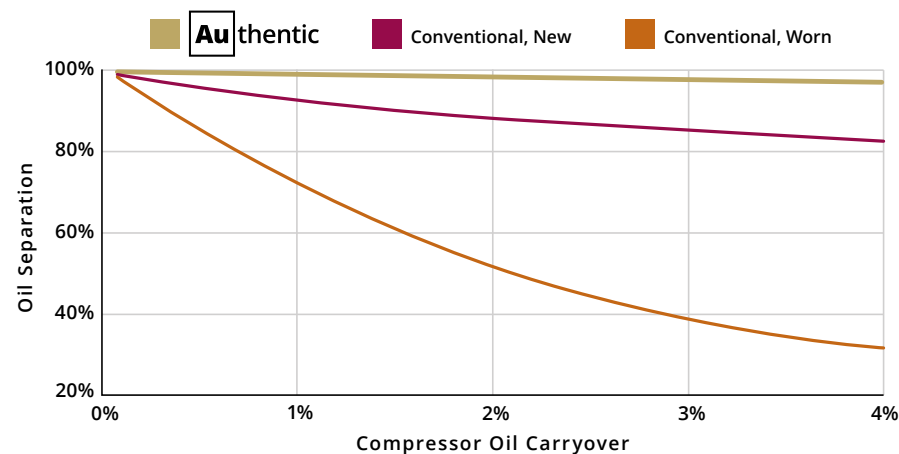
Premium Oil Management Vessels for R744 (CO₂) Refrigeration Systems



oil separators	oil reservoirs
liquid receivers	R744 Honeypot™

Vitalis AUthentic vessels are designed for a full range of R744 applications, from commercial refrigeration racks to large industrial installations, including refrigeration systems, heat pumps, and chillers.

Oil Separator Performance



HIGHLIGHTS

- High-efficiency oil separation
- Minimal oil migration into evaporators and field piping
- Robust multi-layer cartridge construction
- No fiber materials that could contaminate the system
- Improved evaporator performance and heat transfer
- Reduced compressor wear and improved lubrication conditions
- Minimal additional oil charge required during system commissioning
- Improved gas separation in storage vessels due to specially designed internals
- Suitable for commercial and industrial R744 systems
- Design pressures up to 140 bar (2,030 psi)
- Certified according to ASME, CRN, and PED



CRN



Compressor Shield™

Vitalis Compressor Shield technology optimizes the suction temperature of the medium-stage compressors in transcritical CO₂ booster packages. Furthermore, by controlling the oil temperature, we achieve improved lubrication and an extended lifespan of the compressors.

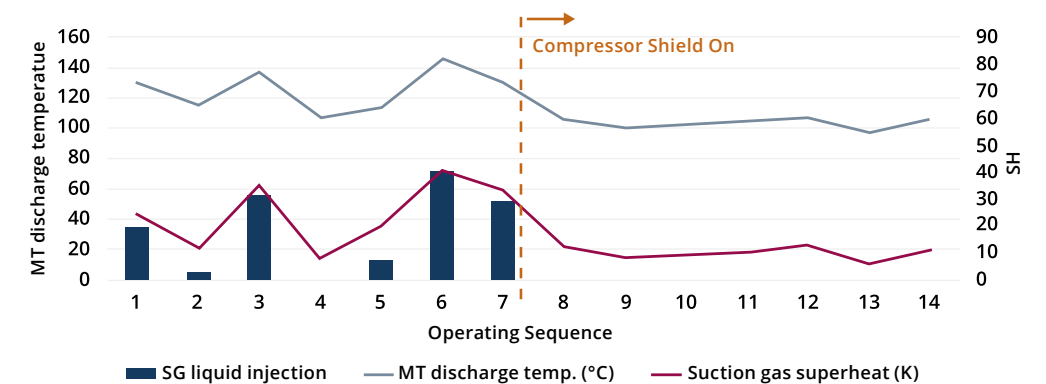
The advantages at a glance:

- Improvement of system stability
- Increase in operational safety
- Extended lifespan for reciprocating compressors (MT)
- Replacement of the air-cooled superheater for high-pressure gas (LT)

TECHNOLOGY

Functions

- Optimally conditioned suction gas at the inlet of the medium cooling compressor
- No additional temperature control effort required



Components

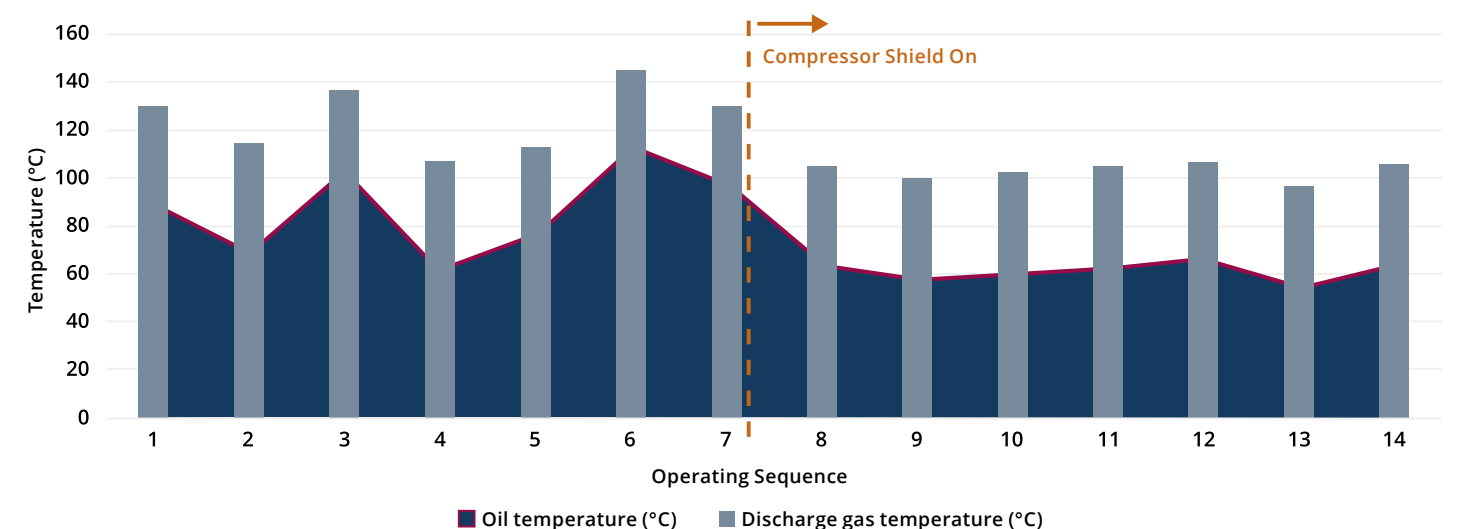
- Patent-pending heat exchanger configuration
- In combination with an intelligent control system



With Compressor Shield

Without Compressor Shield

ADVANTAGE



Part of the KKVB
Group of Companies



10,000+

**CO₂ cleantech solutions
deployed globally**



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