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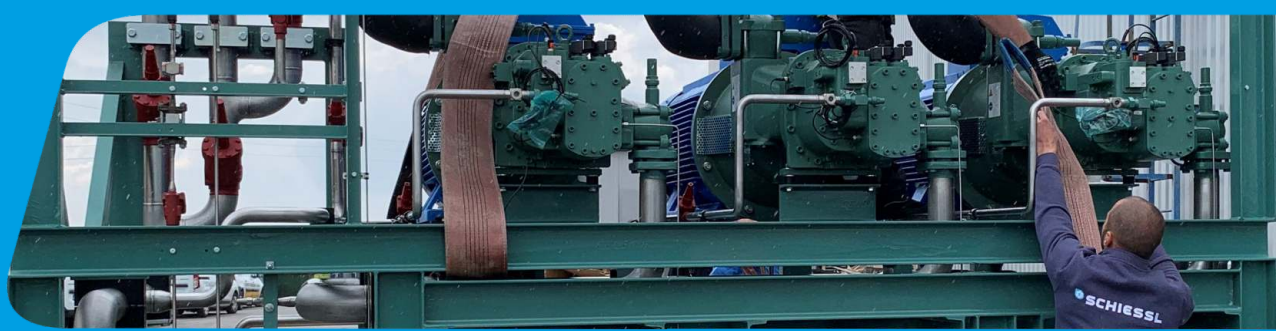
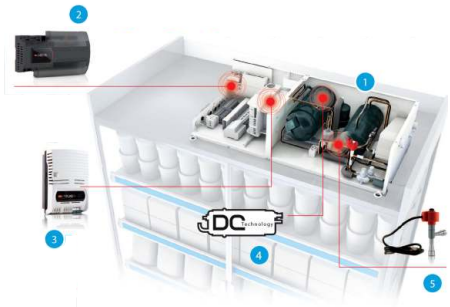


MULTICOMPRESSOR PACKS
CONDENSING UNITS
CUSTOM UNITS
CHILLERS

schiessl-kaelte.com

CONTENTS PAGE



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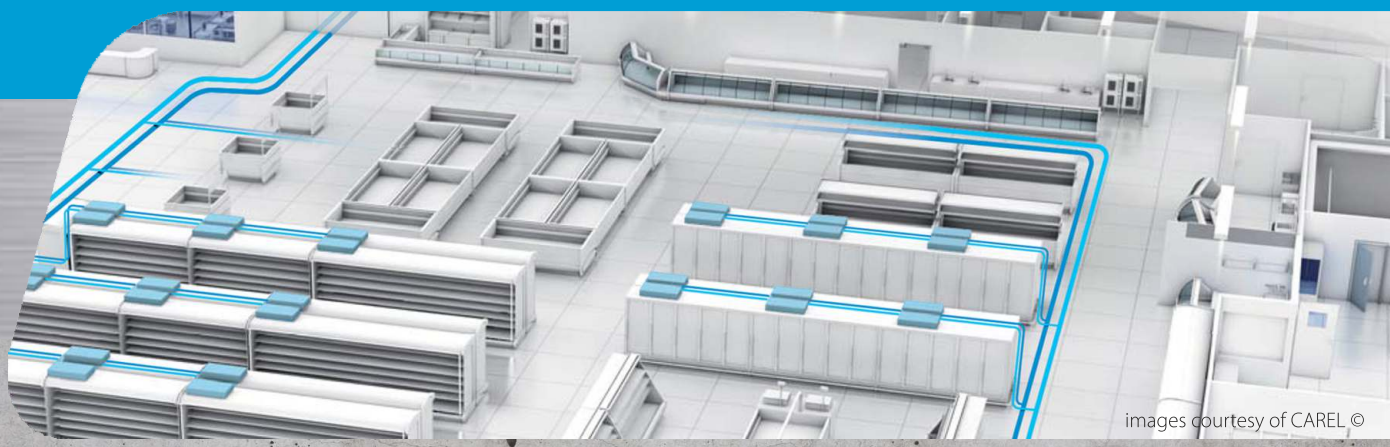


images courtesy of CAREL ©

SHS

Water loop refrigeration unit

DRIVEN BY CAREL Heos sistema

Realized projects

Walmart Mexico

4 Stores
200 Units
Installer Hussman

Stokrotka Poland

38 Stores
200 Units

Auchan France

1 Store
59 Units
Installer Engie Axima
Schowcases Epta

Auchan Spain

2019
1 Store
21 Units
Schowcases Koxka

Spar France

1 Store
22 Units

Intermarche France

1 Store
8 Units

Heos sistema

High efficiency

- Variable speed DC compressor and electronic expansion valve
- Wide range of modulation
- Maximum energy efficiency at part loads

Flexibility

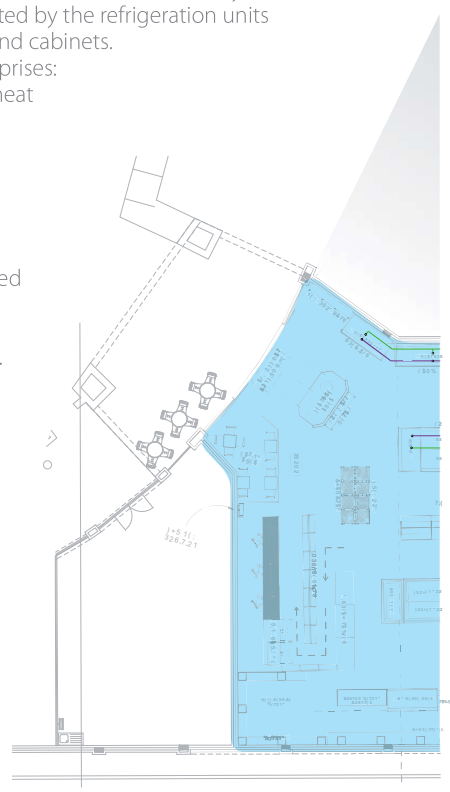
- Plug-in units that simplify changes to the layout
- Larger selling area

The water loop

The water loop is a closed water circuit that takes away the heat of condensation generated by the refrigeration units installed on the cold rooms and cabinets.
This system in particular comprises:

- a water circuit that carries heat away from the condensers to another place
- a dry cooler that transfers the heat outside.

All the heat produced by the refrigeration units is exchanged by the dry cooler, without differences in operation between summer and winter. This total free cooling is the solution that maximises energy saving.



Main components:

- PVC tubing
- Twin variable speed pumps
- Dry cooler
- Compensating valves and filters

HIGH EFFICIENCY PLUG-IN SHS UNITS

SCHIESSL

Water-cooled
Improved system stability
Improved efficiency of the refrigerant circuit
Increased COP
Simpler integration with the air-conditioning system
Greater flexibility
Less refrigerant leaks
Lower installation costs

Flexibility
The water loop significantly simplifies changes to the position of the showcases inside the supermarket.

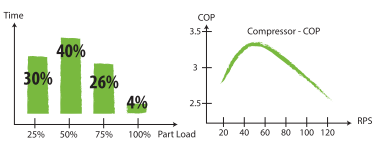
Simple installation
Being fully factory-tested, unit installation is greatly simplified, reducing store set-up times.

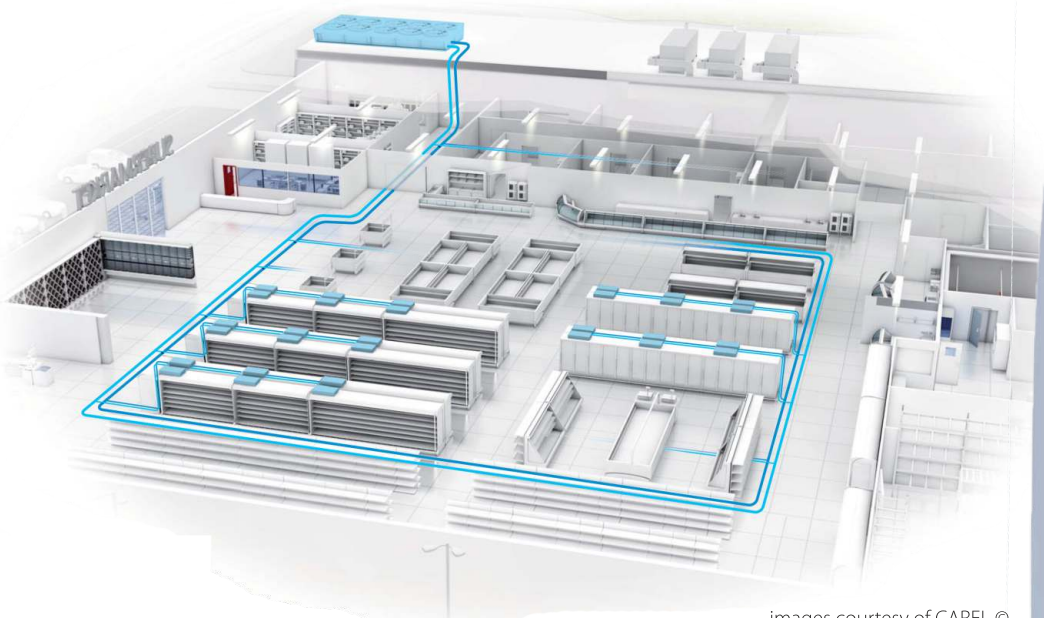
80% less refrigerant
Refrigerant charge is drastically reduced, being a closed circuit inside the showcase; the same applies to leakages.

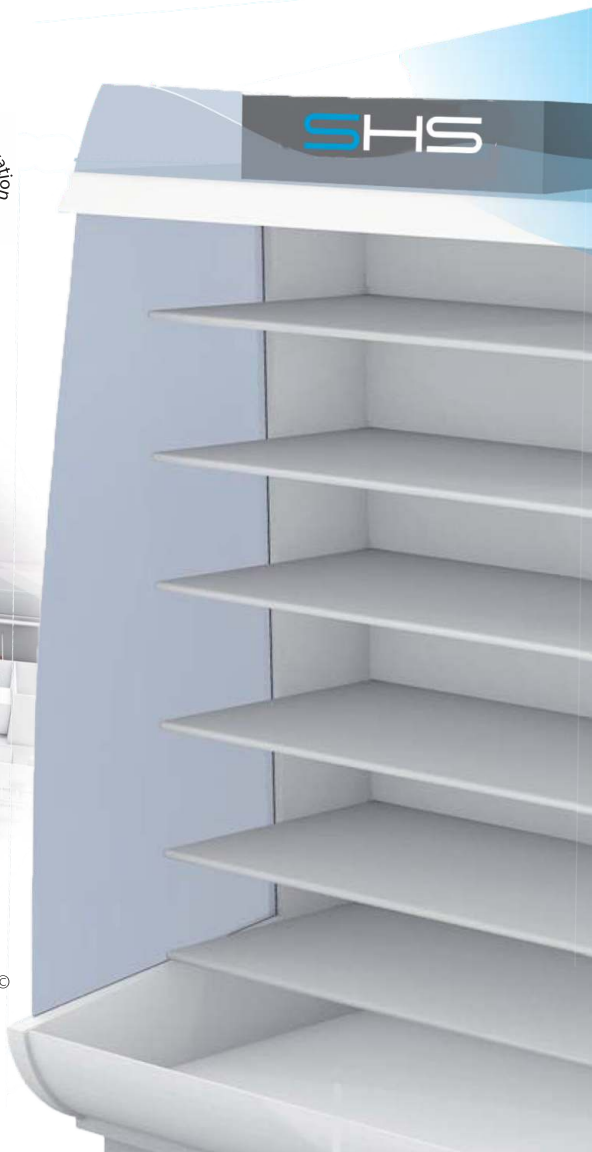
Up to 25% less energy consumption compared to a traditional solution.

BLDC Compressor with Power+
Considerable energy saving
Optimal operation at part loads, relating to demand
Less energy losses due to the BLDC motor
Increased efficiency
Wide range of modulation
Best operating conditions achieved
Greater stability and less starts/stops

Optimum food preservation
Maximum quality
Stabilised food temperature
Advanced algorithms that allow perfect synchronisation between the various components in the system







images courtesy of CAREL ©

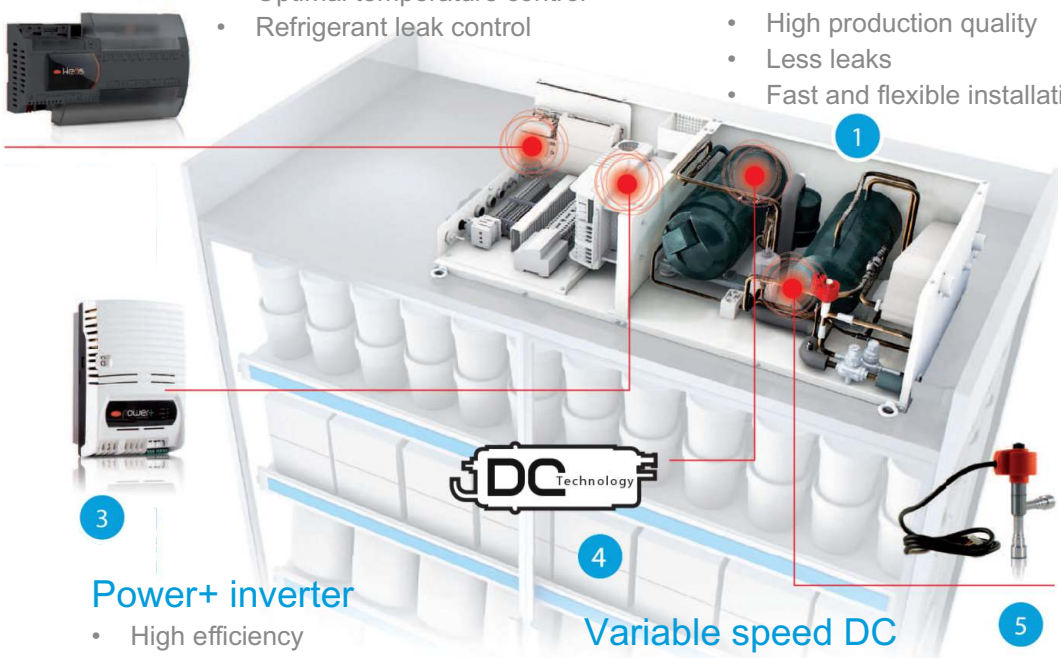
HEOS controller

- Real-time COP calculation
- Real defrost on demand
- Optimal temperature control
- Refrigerant leak control

R290 / R448A / R449A / R410A

Units assembled in the factory

- High production quality
- Less leaks
- Fast and flexible installation



Power+ inverter

- High efficiency
- Compressor envelope control
- Increased reliability

Variable speed DC compressor

- Very high efficiency
- Wide control range
- Minimum ON/OFF cycles

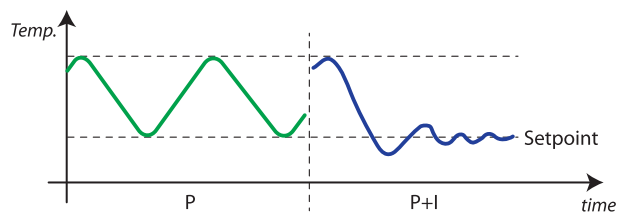
Electronic expansion valve

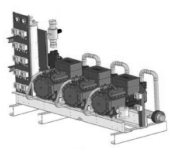
- Optimal superheat control
- Stable evaporation temperature
- Synergy with control envelope

Predictive algorithms

Complete control of the refrigerant circuit according to the various values (temperature, pressure)
Dynamic management of the various components (compressor, expansion valve, fans)
Implementation of advanced algorithms:

- defrosting on demand
- estimating refrigerant leaks
- optimizing COP
- preventive maintenance



Traditional system 	SHS Water loop system
Low evaporation temperature, due to demand from the most critical cabinet	The evaporation temperature of each cabinet depends only on its own set point and load
Modulation only possible with ON-OFF duty cycles. When on, the compressor works at rated conditions	Speed modulation allows higher evaporation temperature, increasing efficiency at part loads
Pressure drop along the lines	Reduced pressure drop

TECHNICAL SPECIFICATION
R290

BLDC compressor • Ester oil lubrication • BPHE condenser • Carel Electronic Expansion Valve • Electrical Switch Board • Defrost Relay 20A 220V/1/50Hz • Heos Controller with sensors • Carel Power+ DC Driver • Liquid receiver 0.4L /0.75 L • Acoustic insulation • Liquid and suction Valve • Powder Coated Housing

SHS XXX XXX

Maximum number of evaporators per unit - 1
Available as standard with 0.4 litres receiver,
0,75 litres optional, depending on local legislation

- LT - Low temperature application
- MT - Medium temperature application
- S - Single evaporator configuration
- Compressor type
- SHS - Water loop refrigeration unit

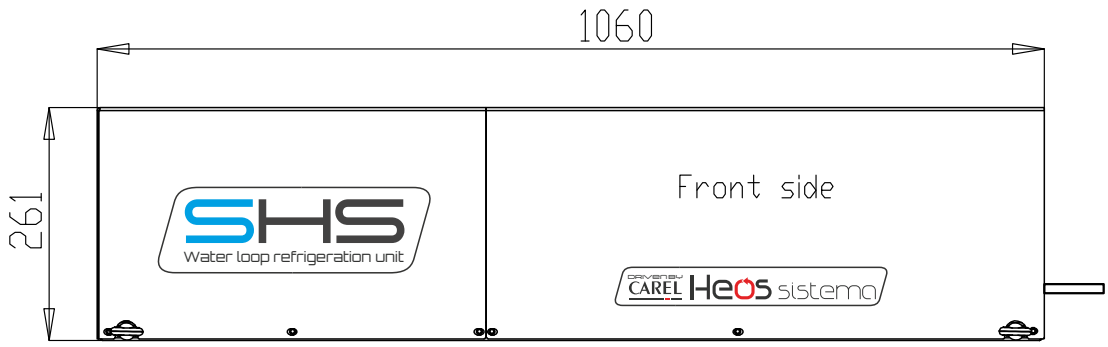
Refrigeration Capcities

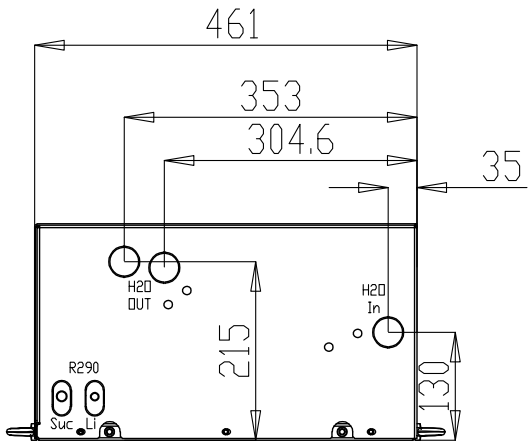
Medium Temperature application - 1,67 kW to 9,75 kW

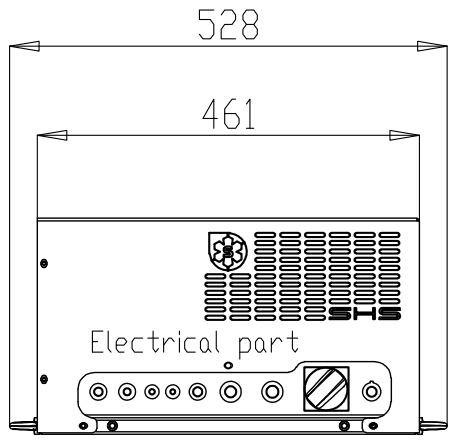
Low Temperature application - 0,50 kw to 3,53 kW

SCHIESSL

MODELS R290







Medium Temperature Application

Model	Cooling capacity	Power consumption	Water connection		Refrigerant connection		Weight	Power Supply
			Inlet	Oulet	Inlet	Outlet		
SHS CRD091 SMT	1,67 kW	0,80 kW	3/4"	3/4"	10 mm	12 mm	66 kg	230V / 1 / 50 Hz
SHS CRD130 SMT	2,40 kW	1,07 kW	3/4"	3/4"	10 mm	12 mm	70 kg	230V / 1 / 50 Hz
SHS CRD220 SMT	3,58 kW	1,47 kW	3/4"	3/4"	10 mm	12 mm	74 kg	230V / 1 / 50 Hz
SHS DPW22 SMT	5,26 kW	2,36 kW	3/4"	3/4"	10 mm	16 mm	79 kg	380V / 3 / 50 Hz
SHS DPW28 SMT	6,70 kW	2,53 kW	1"	1"	10 mm	18 mm	84 kg	380V / 3 / 50 Hz
SHS DPW36 SMT	8,36 kW	3,2 kW	1"	1"	10 mm	18 mm	89 kg	380V / 3 / 50 Hz
SHS DPW42 SMT	9,75 kW	4,46 kW	1"	1"	12 mm	18 mm	94 kg	380V / 3 / 50 Hz

Low Temperature Application

SHS CRD091 SLT	0,50 kW	0,50 kW	3/4"	3/4"	10 mm	12 mm	66 kg	230V / 1 / 50 Hz
SHS CRD130 SLT	0,72 kW	0,70 kW	3/4"	3/4"	10 mm	12 mm	70 kg	230V / 1 / 50 Hz
SHS CRD220 SLT	1,07 kW	1,00 kW	3/4"	3/4"	10 mm	12 mm	74 kg	230V / 1 / 50 Hz
SHS DPW22 SLT	1,86 kW	2,15 kW	3/4"	3/4"	10 mm	16 mm	79 kg	380V / 3 / 50 Hz
SHS DPW28 SLT	2,37 kW	2,30 kW	3/4"	3/4"	10 mm	18 mm	84 kg	380V / 3 / 50 Hz
SHS DPW36 SLT	3,02 kW	2,73 kW	3/4"	3/4"	10 mm	18 mm	89 kg	380V / 3 / 50 Hz
SHS DPW42 SLT	3,53 kW	4,05 kW	3/4"	3/4"	12 mm	18 mm	94 kg	380V / 3 / 50 Hz

All units are pre-charged with nitrogen

MT* - Medium Temperature, Condensing T = 45 °C, Evaporating T = -5 °C, R290
LT* - Low Temperature, Condensing T = 45 °C, Evaporating T = -30 °C, R290

SCHIESSL

R290
SELECTION TABLE COOLING CAPACITY (kW)

Model	Evaporating T																Cond. T
	-35 C°		-30 C°		-25 C°		-20 C°		-15 C°		-10 C°		-5 C°		0 C°		
Speed [rps]	15	90	15	90	15	90	15	90	15	90	15	90	15	90	15	90	
SHS CRD091	0,11	0,71	0,14	0,91	0,17	1,13	0,22	1,40									10 C°
SHS CRD130	0,16	1,02	0,20	1,30	0,25	1,63	0,31	2,02									
SHS CRD220	0,26	1,53	0,34	1,95	0,42	2,44	0,52	3,01									
SHS CRD091	0,10	0,66	0,13	0,85	0,16	1,07	0,20	1,33	0,25	1,63	0,30	1,98					15 C°
SHS CRD130	0,15	0,95	0,19	1,22	0,24	1,54	0,29	1,91	0,36	2,34	0,44	2,84					
SHS CRD220	0,25	1,42	0,32	1,82	0,40	2,30	0,49	2,85	0,61	3,50	0,74	4,24					
SHS CRD091	0,09	0,56	0,11	0,73	0,14	0,94	0,18	1,18	0,22	1,45	0,27	1,78	0,33	2,15	0,39	2,57	25 C°
SHS CRD130	0,12	0,81	0,16	1,06	0,21	1,35	0,26	1,69	0,32	2,09	0,39	2,56	0,47	3,09	0,57	3,70	
SHS CRD220	0,21	1,21	0,27	1,58	0,35	2,02	0,44	2,53	0,54	3,13	0,66	3,82	0,80	4,61	0,96	5,52	
SHS CRD091	0,07	0,46	0,09	0,62	0,12	0,80	0,16	1,02	0,20	1,27	0,24	1,57	0,29	1,91	0,35	2,30	35 C°
SHS CRD130	0,10	0,66	0,14	0,89	0,18	1,16	0,23	1,47	0,28	1,84	0,35	2,26	0,42	2,75	0,51	3,31	
SHS CRD220	0,17	0,99	0,23	1,33	0,30	1,72	0,38	2,19	0,47	2,74	0,58	3,37	0,71	4,11	0,86	4,95	
SHS CRD091	0,05	0,36	0,08	0,50	0,10	0,67	0,13	0,86	0,17	1,09	0,21	1,36	0,26	1,67	0,31	2,02	45 C°
SHS CRD130	0,08	0,52	0,11	0,72	0,15	0,96	0,19	1,24	0,24	1,57	0,30	1,96	0,37	2,40	0,45	2,91	
SHS CRD220	0,13	0,77	0,19	1,07	0,25	1,43	0,32	1,85	0,41	2,35	0,51	2,92	0,62	3,58	0,75	4,35	
SHS CRD091	0,04	0,26	0,06	0,38	0,08	0,53	0,11	0,70	0,14	0,91	0,18	1,14	0,22	1,42	0,27	1,74	55 C°
SHS CRD130	0,06	0,37	0,08	0,55	0,12	0,76	0,15	1,01	0,20	1,30	0,25	1,65	0,31	2,04	0,38	2,50	
SHS CRD220	0,10	0,56	0,14	0,82	0,20	1,14	0,26	1,51	0,34	1,95	0,43	2,46	0,53	3,05	0,65	3,74	

Model	Evaporating T																Cond. T
	-35 C°		-30 C°		-25 C°		-20 C°		-15 C°		-10 C°		-5 C°		0 C°		
Speed [rps]	20	100	20	100	20	100	20	100	20	100	20	100	20	100	20	100	
SHS DPW22	0,38	2,08	0,49	2,64	0,62	3,30	0,78	4,06									10 C°
SHS DPW28	0,47	2,54	0,60	3,21	0,76	4,00	0,96	4,99									
SHS DPW36	0,60	3,00	0,77	3,85	0,97	4,86	1,23	6,16									
SHS DPW42	0,72	3,66	0,92	4,58	1,14	5,67	1,44	7,19									
SHS DPW22	0,33	1,91	0,43	2,42	0,55	3,04	0,70	3,79	0,87	4,63	1,05	5,60	1,26	6,64			20 C°
SHS DPW28	0,43	2,44	0,56	3,09	0,70	3,87	0,89	4,82	1,10	5,90	1,34	7,13	1,61	8,46			
SHS DPW36	0,56	3,18	0,71	3,97	0,90	4,97	1,15	6,09	1,42	7,40	1,72	8,90	2,07	10,64			
SHS DPW42	0,68	3,72	0,85	4,64	1,05	5,73	1,34	7,01	1,65	8,54	2,01	10,31	2,41	12,33			
SHS DPW22	0,30	1,76	0,39	2,21	0,50	2,76	0,64	3,45	0,79	4,22	0,99	5,11	1,22	6,13	1,44	7,24	30 C°
SHS DPW28	0,38	2,22	0,50	2,82	0,64	3,52	0,81	4,39	1,01	5,38	1,26	6,51	1,55	7,80	1,83	9,22	
SHS DPW36	0,52	2,88	0,66	3,60	0,81	4,50	1,03	5,54	1,28	6,75	1,56	8,14	1,88	9,74	2,24	11,58	
SHS DPW42	0,59	3,44	0,76	4,27	0,95	5,24	1,20	6,52	1,49	7,87	1,82	9,50	2,19	11,37	2,61	13,51	
SHS DPW22	0,27	1,56	0,35	1,98	0,44	2,50	0,57	3,12	0,71	3,83	0,88	4,64	1,09	5,57	1,29	6,63	40 C°
SHS DPW28	0,34	2,03	0,44	2,52	0,56	3,18	0,72	3,98	0,90	4,87	1,12	5,90	1,39	7,08	1,64	8,44	
SHS DPW36	0,43	2,58	0,56	3,22	0,70	4,01	0,90	4,97	1,13	6,08	1,38	7,36	1,68	8,83	2,01	10,52	
SHS DPW42	0,53	2,99	0,67	3,76	0,85	4,68	1,05	5,80	1,32	7,09	1,62	8,58	1,95	10,30	2,34	12,27	
SHS DPW22	0,23	1,35	0,30	1,73	0,38	2,20	0,48	2,76	0,61	3,40	0,77	4,12	0,96	4,96	1,19	5,93	50 C°
SHS DPW28	0,29	1,75	0,38	2,22	0,49	2,79	0,61	3,51	0,77	4,32	0,98	5,25	1,22	6,32	1,51	7,55	
SHS DPW36	0,37	2,23	0,47	2,83	0,58	3,54	0,77	4,41	0,98	5,40	1,21	6,55	1,47	7,88	1,77	9,41	
SHS DPW42	0,44	2,60	0,55	3,30	0,71	4,14	0,90	5,14	1,14	6,31	1,41	7,65	1,72	9,20	2,07	10,98	

TECHNICAL SPECIFICATION
R448/9A

SHS XXX XXX LI OS

- OS - Oil separator kit
- LI - Liquid injection kit
- LT - Low temperature application
- MT - Medium temperature application
- S - Single evaporator configuration
- M- Multi evaporator configuration
- Compressor type
- SHS - Water loop refrigeration unit

All multi evaporator units can be equipped with up to 2 slave kits, which include:

- HEOS Controller
- Display
- 4 temperature sensors
- Electrical switch board
- Electronic expansion valve
- Defrost Relay 20A 220V/1/50Hz

MT* - Medium Temperature, Tc = 45 °C, Te = -5 °C
LT* - Low Temperature, Cond. T = 45 °C, Te = -30 °C

Model	No. of evap.	Slave kit for >1 evap	Oil seperator	Cooling Capacity (kW) R448/9A					Liquid injection kit	P0 (kW) Te -5 °C Tc 45 °C	Water		Refrigerant		Weight	Power Supply
				Tc °C	0 °C	-5 °C	-10 °C	-15 °C			In	Out	In mm	Out mm		
SHS 091 SMT	1	-	Optional	35	2,86	2,33	1,88	1,49	Optional	0.65 kW	3/4"	3/4"	10	12	66 kg	230V-1-50 Hz
SHS 091 MMT OS	1-3	Optional	Standard	45	2,46	1,99	1,58	1,23								
SHS 130 SMT	1	-	Optional	35	4,12	3,36	2,70	2,14	Optional	1.28 kW	3/4"	3/4"	10	12	70 kg	230V-1-50 Hz
SHS 130 MMT OS	1-3	Optional	Standard	45	3,55	2,86	2,27	1,77								
SHS 220 SMT	1	-	Optional	35	6,96	5,66	4,56	3,61	Optional	1.95kW	3/4"	3/4"	10	12	74 kg	230V-1-50 Hz
SHS 220 MMT OS	1-3	Optional	Standard	45	5,98	4,83	3,83	2,99								
SHS 330 SMT	1	-	Optional	35	9,22	7,51	6,04	4,78	Optional	2.46 kW	1"	1"	10	12	79 kg	230V-1-50 Hz
SHS 330 MMT OS	1-3	Optional	Standard	45	7,93	6,40	5,08	3,96								
SHS 420 SMT	1	-	Optional	35	11,78	9,59	7,71	6,11	Optional	3.15 kW	1"	1"	10	12	84 kg	230V-1-50 Hz
SHS 420 SMT OS	1-3	Optional	Standard	45	10,13	8,17	6,49	5,06								
				Tc °C	-20 °C	-25 °C	-30 °C	-35 °C		Te -30 °C Tc 45 °C						
SHS 091 SLT LI	1	-	Optional	35	1,15	0,87	0,64	0,07	Standard	0.5 kW	3/4"	3/4"	10	12	66 kg	230V-1-50 Hz
SHS 091 MLT LI OS	1-3	Optional	Standard	45	0,94	0,69	0,48	0,31								
SHS 130 SLT LI	1	-	Optional	35	1,66	1,26	0,92	0,64	Standard	0.72 kW	3/4"	3/4"	10	12	70 kg	230V-1-50 Hz
SHS 130 MLT LI OS	1-3	Optional	Standard	45	1,35	0,99	0,70	0,45								
SHS 220 SLT LI	1	-	Optional	35	2,80	2,12	1,56	1,09	Standard	1.21 kW	3/4"	3/4"	10	12	74 kg	230V-1-50 Hz
SHS 220 MLT LI OS	1-3	Optional	Standard	45	2,28	1,67	1,17	0,76								
SHS 330 SLT LI	1	-	Optional	35	3,71	2,82	2,06	1,44	Standard	1.59 kW	1"	1"	10	12	79 kg	230V-1-50 Hz
SHS 330 MLT LI OS	1-3	Optional	Standard	45	3,01	2,22	1,56	1,01								
SHS 420 SLT LI	1	-	Optional	35	4,75	3,60	2,64	1,84	Standard	2.03 kW	1"	1"	10	12	84 kg	380V-3-50 Hz
SHS 420 MLT LI OS	1-3	Optional	Standard	45	3,85	2,84	1,99	1,29								

All low temperature units come equipped with an electronic liquid injection kit, in order to allow optimal operation at low evaporation temperatures. A liquid injection kit is optional for medium temperature units, which should be used for condensing temperatures above 48 °C.
Each unit can be equipped with an optional oil separator kit (Oil separator, Oil sight glass and capillary tube) in order to ensure safe return of lubricant to the compressor, especially in a multi- evaporator application, where it is standard.
All units are pre-charged with nitrogen

TECHNICAL SPECIFICATION
R410A

SHS XXX XXX LI OS

- OS - Oil separator kit
- LI - Liquid injection kit
- LT - Low temperature application
- MT - Medium temperature application
- S - Single evaporator configuration
- M- Multi evaporator configuration
- Compressor type
- SHS - Water loop refrigeration unit

All multi evaporator units can be equipped with up to 2 slave kits, which include:

- HEOS Controller
- Display
- 4 temperature sensors
- Electrical switch board
- Electronic expansion valve
- Defrost Relay 20A 220V/1/50Hz

MT* - Medium Temperature, Tc = 45 °C, Te = -5 °C
LT* - Low Temperature, Cond. T = 45 °C, Te = -30 °C

Model	No. of evap.	Slave kit for >1 evap	Oil seperator	Cooling Capacity (kW) R410A					Liquid injection kit	P0 (kW) Te -5 °C Tc 45 °C	Water		Refrigerant		Weight	Power Supply
				Tc °C	0 °C	-5 °C	-10 °C	-15 °C			In	Out	In mm	Out mm		
SHS 091 SMT	1	-	Optional	35	2.96	2.41	1.94	1.54	Optional	1,1 kW	3/4"	3/4"	10	12	66 kg	230V-1-50 Hz
SHS 091 MMT OS	1-3	Optional	Standard	45	2.56	2.06	1.64	1.28								
SHS 130 SMT	1	-	Optional	35	4.26	3.47	2.80	2.22	Optional	1,6 kW	3/4"	3/4"	10	12	70 kg	230V-1-50 Hz
SHS 130 MMT OS	1-3	Optional	Standard	45	3.68	2.97	2.36	1.84								
SHS 220 SMT	1	-	Optional	35	6.37	5.19	4.17	3.31	Optional	2,3 kW	3/4"	3/4"	10	12	74 kg	230V-1-50 Hz
SHS 220 MMT OS	1-3	Optional	Standard	45	5.49	4.43	3.53	2.75								
SHS 330 SMT	1	-	Optional	35	9.53	7.77	6.25	4.96	Optional	3 kW	1"	1"	10	12	79 kg	230V-1-50 Hz
SHS 330 MMT OS	1-3	Optional	Standard	45	8.23	6.64	5.28	4.12								
SHS 420 SMT	1	-	Optional	35	12.18	9.93	7.99	6.33	Optional	3,9 kW	1"	1"	10	12	84 kg	230V-1-50 Hz
SHS 420 SMT OS	1-3	Optional	Standard	45	10.52	8.49	6.75	5.27								
				Tc °C	-20 °C	-25 °C	-30 °C	-35 °C		Te -30 °C Tc 45 °C						
SHS 091 SLT LI	1	-	Optional	35	1.20	0.91	0.67	0.47	Standard	0,5 kW	3/4"	3/4"	10	12	66 kg	230V-1-50 Hz
SHS 091 MLT LI OS	1-3	Optional	Standard	45	0.98	0.72	0.51	0.33								
SHS 130 SLT LI	1	-	Optional	35	1.72	1.31	0.96	0.67	Standard	0,72 kW	3/4"	3/4"	10	12	70 kg	230V-1-50 Hz
SHS 130 MLT LI OS	1-3	Optional	Standard	45	1.41	1.04	0.73	0.47								
SHS 220 SLT LI	1	-	Optional	35	2.57	1.95	1.43	1.00	Standard	1,07 kW	3/4"	3/4"	10	12	74 kg	230V-1-50 Hz
SHS 220 MLT LI OS	1-3	Optional	Standard	45	2.10	1.55	1.09	0.71								
SHS 330 SLT LI	1	-	Optional	35	3.85	2.93	2.15	1.50	Standard	1,6 kW	1"	1"	10	12	79 kg	230V-1-50 Hz
SHS 330 MLT LI OS	1-3	Optional	Standard	45	3.14	2.32	1.63	1.06								
SHS 420 SLT LI	1	-	Optional	35	4.93	3.74	2.75	1.92	Standard	2,04 kW	1"	1"	10	12	84 kg	380V-3-50 Hz
SHS 420 MLT LI OS	1-3	Optional	Standard	45	4.02	2.96	2.08	1.35								

All low temperature units come equipped with an electronic liquid injection kit, in order to allow optimal operation at low evaporation temperatures. A liquid injection kit is optional for medium temperature units, which should be used for condensing temperatures above 48 °C.
Each unit can be equipped with an optional oil separator kit (Oil separator, Oil sight glass and capillary tube) in order to ensure safe return of lubricant to the compressor, especially in a multi- evaporator application, where it is standard.
All units are pre-charged with nitrogen

SHS

Water loop refrigeration unit

DRIVEN BY CAREL Heos sistema

SCHIESSL PRODUCTION

CUSTOM UNITS PRODUCTION

Schiessl, as Europe's leading wholesaler in the field of refrigeration and air conditioning technology, offers you a wide range of products as well as compound and special systems. Based on our many years of experience, a team of professionals will develop special solutions for you, tailored to your needs, which can cover a wide range of applications. Many customer requests can also be covered by standard units, available from stock or with short delivery times.

Also in our standard range of products, we value high quality, reliable and future-oriented technology and service friendliness.
With our wide range of solutions combined, Schiessl can meet the need for all individual and special requests for your project.
Our products are used in many areas of application, such as:

- Refrigeration systems for trade and gastronomy
- Refrigeration systems for supermarkets
- Large refrigeration systems for industrial food production
- Chillers for cold water and cold brine production
- Refrigeration and air conditioning systems for marine application
- Special systems for process engineering or test benches

Engineering office

Production

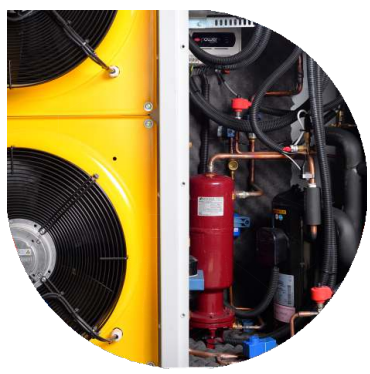
For the realization we use fully and semi-hermetic compressors from all well-known manufacturers as well as screw compressors for larger systems.
We attach particular importance to reliability, which is why we only use components that meet our high standards and quality requirements.

Forward-looking, we are also your competent contact for systems with natural refrigerants.

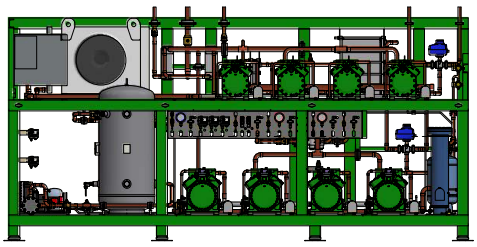
All systems are designed using the latest 3D technology.
The pipe segments are transferred directly from the construction model to our modern bending center and manufactured.

All systems can be equipped with a variety of options.

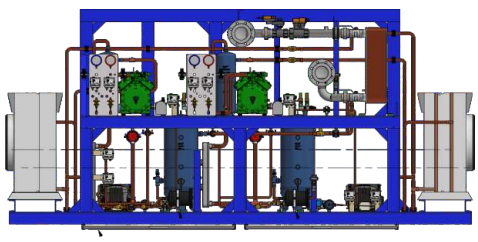
We also have a highly experienced team of electrical engineers who design our cabinets and they are manufactured in accordance with all current electrical and safety regulations.



CO2 UNITS

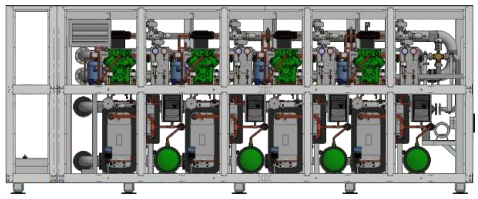


Example:
Transcritical R744 Booster system
LP Stage:
Cooling capacity: 100 kW (Te -32 °C / Tc -10 °C)
HP Stage:
Cooling capacity: 170 kW (Te -10 °C / Tc 38 °C)



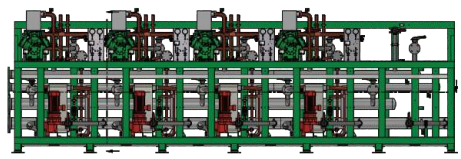
Example:
Water-cooled R744 compressor pack
Cooling capacity: 2x50 kW (Te -32 °C / Tc -3 °C)
Heat carrier condenser: propylene glycol -8 °C / -4 °C
Brine piping made of welded stainless steel

ETHANE / PROPANE / PROPYLENE UNITS



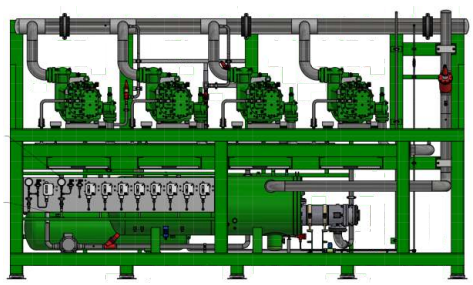
Example:
Low-temperature chiller with 4 circuits - R170
Cooling capacity: 4x35 kW (Te **-65 °C** / Tc -15 °C)
Heat carrier condenser: ethylene glycol
Heat carrier evaporator: Temper55
Brine piping made of welded stainless steel
Equipped with weatherproof housing.
Equipped with control cabinet with Siemens S7 control, gas warning system and ventilation system

ETHANE / PROPANE / PROPYLENE UNITS

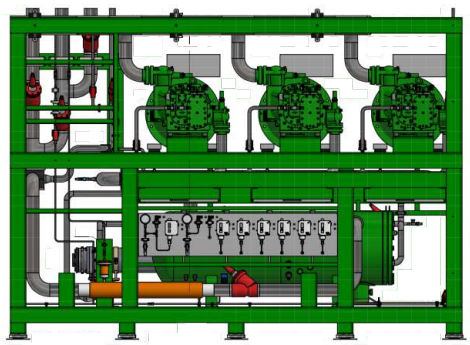


Example:
Chiller with 4 circuits - R1270
Cooling capacity: 4x106 kW (Te -12 °C / Tc 42 °C)
Brine piping made of welded stainless steel
Pumps and compressors pre-wired for inverter operation

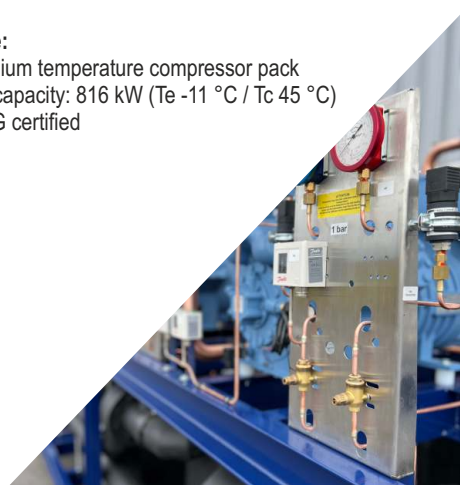
NH3 UNITS



Example:
NH3 deep-freezing compressor pack
Cooling capacity: 305 kW (Te -42 °C / Tc -11 °C)
Module G certified



Example:
Nh3 medium temperature compressor pack
Cooling capacity: 816 kW (Te -11 °C / Tc 45 °C)
Module G certified



HFC UNITS

- Outdoor Units
- Electrical switchboard
- High efficiency
- Weather protection
- Sound insulation
- Individual customization

INCLUDED BASE EQUIPMENT

- SHUT OFF VALVE ON EACH COMPRESSOR
- HIGH PRESSURE SWITCH ON EACH COMPRESSOR
- COMMON HIGH AND LOW PRESSURE SWITCHES
- SUCTION AND DISCHARGE HEADER
- DISCHARGE LINE MUFFLER FOR EACH TWO-STAGE COMPRESSOR
- INSULATED SUCTION HEADER WITH COMPRESSOR SUCTION LINE
- POLYOLESTER LUBRICANT CHARGE (POE) OF COMPRESSORS
- OIL LEVEL CONTROL
- LIQUID RECEIVER FOR TWO AND THREE COMPRESSOR CONFIGURATION
- LIQUID SUBCOOLER FOR EACH TWO-STAGE COMPRESSOR
- GALVANIZED STEEL FRAME WITH POLYESTER COATING
- NITROGEN CHARGE

The Schiessl Engineer can advise you competently on complex projects and find a specifically optimized solution for your application.
You can check the exact execution of your unit before construction and delivery.
Our custom frame designs consist allow for a custom shape and form.
This construction is extremely stable and minimizes vibrations and is also extremely weather-proof.
Since the frames can be made to according to customer specification, we are very flexible in the execution and the dimensions of the units concerned.
We take special care of the pipe routing and use high-quality pipe clamps.

CONTROL CABINET DESIGN AND MANUFACTURING

- Project planning
- Schematic design
- Various applications
- Custom design

SCHIESSL

E-FU-BI

MULTICOMPRESSOR PACKS WITH SEMIHERMETIC BITZER COMPRESSORS FREQUENCY CONTROLLED

// Euro Line multicompressor pack

E-FU-BI with 1/2 compressors

Statutory Regulations:

The following standards and regulations are met in the manufacture of the composite sets:

- Machinery Directive 2006/42 EG
- Pressure Equipment Directive 2014/68/EU
- EMC-directive 2014/30/EU
- EN 378–1, EN 378–2 Refrigeration systems / heat pumps, safety-related conditions
- VDE 0700, Part 1 electrical test
- The Euro Line multicompressor packs E-FU-BI carry the CE 1370 mark.

Assembly instructions :

Before delivery, each multicompressor pack is subjected to a leak test in accordance with EN 378 and a pressure test in accordance with the Pressure Equipment Directive 2014/68 / EU. The Euro Line compound sets are piped ready for connection, filled with oil and filled with an inert gas.

The following instructions must be considered during assembly:

- The Euro Line multicompressor pack must be set up absolutely horizontally so that the oil equalization between the compressors is guaranteed.
- When dimensioning and laying pipes, the recognized technical rules for ensuring a continuous oil return from the system to the compound system must be observed (siphons, split suction lines, etc.). Particularly rising suction and pressure lines have to be calculated for the partial load case.
- The pressure and suction lines laid on a wall must be decoupled from vibrations by means of vibration dampers.
- The installation conditions according to EN 378-3 must be observed.
- If there is a risk of liquid hammers (short pipelines, hot gas defrosting), an external liquid separator must be installed.
- During commissioning, the oil level on the sight glass must be checked after the steady state has been reached. In the case of a widely branched pipeline system, oil may have to be topped up:
- The refrigeration system must not be overfilled with refrigerant.
- When commissioning, the high and low pressure monitors must be in accordance with the operating limits of the compressors can be set using a manometer.
- The special regulations of the individual component manufacturers must be considered.

Operating conditions

The performance data for the Euro Line multicompressor packs relate to operating conditions that have been specified by the Schiessl company. This was done for the reason to offer realistic performance information in the selection tables.

Euro Line Multicompressor pack for medium temperature

Condensing temperature t_c	+ 45 °C
Suction gas temperature	+ 20 °C
Liquid subcooling	0 K
Usable overheating	100 %

// Warranty provisions

Schiessl - compound sets, multicompressor packs and special systems

// Euro Line multicompressor pack

E-FU-BI with one compressor

Functionality:

Frequency-controlled Bitzer compound sets work with a semi-hermetic compressor from the Ecoline series. These units were specially developed for use in refrigeration systems with changing refrigeration requirements. By using a KIMO frequency inverter, it is possible to optimally adapt the cooling capacity to the conditions while the compressor is running continuously. Thus, these units represent an energy-efficient and space-saving alternative to compound systems with several compressors. The Bitzer compound sets are offered in six different performance classes. In the case of air conditioning, the maximum frequency may need to be adjusted. The cooling capacity is regulated depending on the suction pressure. KIMO is used to control the compressor - Frequency inverter used in connection with a pressure transmitter. The pressure transmitter is thermally decoupled and attached to the suction side and records the actual value of the suction pressure. The frequency inverter controls the cooling capacity of the compressor in such a way that the setpoint of the suction pressure is set as precisely as possible. The frequency inverter is included in the scope of delivery of the control cabinet with a presetting for R513A NK. The setting is made via the keyboard. Only a few parameters need to be changed to adapt to the refrigerant used and the area of application. If the frequency inverter malfunctions, it is possible to switch to emergency operation using an LP pressure switch. All components are set up on a painted and welded steel frame. The multicompressor pack stands on the anti-vibration metal feet supplied. The cooling lines are grouped together at the top to make them easy to assemble. To ensure safe operation even with temporarily minimal cold loads, the frequency inverter multicompressor pack is equipped with a heated oil separator as standard.

Advantages of refrigeration systems with frequency-controlled Bitzer multicompressor pack:

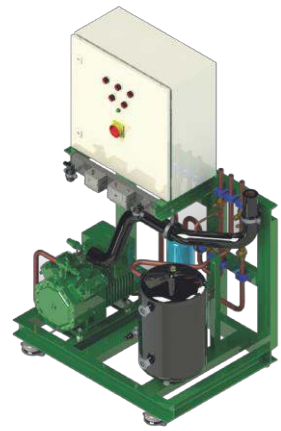
- Optimal adaptation of the compressor output to the load fluctuations of the refrigeration systems
- Small minimum cooling capacity
- Optimal refrigerated goods temperature and quality
- Very little space required due to compact design
- Energy savings through better performance adjustment at optimal evaporation temperatures
- Service-friendly through simple compressor replacement and the use of standard components
- Reduction of the installed cooling capacity and thus the investment costs through Utilization of the simultaneity factor
- Easy installation of a heat recovery through a common heat exchangers for all cold locations
- The Bitzer multicompressor packs are equipped with temperature sensors with which the pressure gas temperature, the total overheating and the outside temperature can be monitored.

Delivery content:

- Control cabinet with KIMO frequency inverter and temperature monitoring
  Semi-hermetic compressor Bitzer
- Shut-off valves on the compressor
- Crankcase heater
- Liquid receiver
- Refrigerant dryer / sight glass
- Filling valve in liquid line
- Ball shut-off valve in pressure and liquid lines
- Pressure transmitter suction pressure -0.5 - 7 bar
- Pressure transmitter high pressure 0 - 30 bar
- Combined high pressure / low pressure monitor, component tested low
- pressure switch for emergency operation
  Oil separator with sight glass and shut-off valve in the return line, with
- electrical heating

»Performance tables for R450A / R513A / R448A / R449A

Euro Line multicompressor pack Bitzer E-FU-1BO-2 to 4 medium temperature



Multicompressor pack		E-FU-1BI-2	E-FU-1BI-3	E-FU-1BI-4
EDV-Nr. Multicompressor pack		**115.2573**	**115.2574**	**115.2575**
Number of compressors		1	1	1
Receiver volume	Liter	20,0	25,0	30,0
Dimensions (W x D x H)	mm	950 x 680 x 1410	950 x 680 x 1410	950 x 680 x 1410
Weight	kg	327	327	332
Sound power at 50 Hz	dB(A)	69	74	74

Total cooling capacity in watts

Operating conditions: condensing temperature 45 ° C, suction gas temperature 20 ° C, liquid subcooling 0 K, usable superheating 100%, performance data based on 30-70 Hz

Refrigerant		R450A	R513A	R448A/R449A	R450A	R513A	R448A/R449A	R450A	R513A	R448A/R449A
t_0 = + 5 °C	min.	2.680	3.220	5.360	4.110	4.920	7.670	5.090	6.080	9.750
	max.	7.880	9.450	15.740	12.070	14.440	22.500	14.940	17.860	2.8600
t_0 = - 10 °C	min.	**2.090**	**2.540**	**4.300**	**3.220**	**3.900**	**6.140**	**4.010**	**4.840**	**7.850**
	max.	**6.130**	**7.450**	**12.640**	**9.460**	**11.450**	**18.050**	**11.780**	**14.230**	**23.000**
t_0 = - 15 °C	min.	1.590	1.960	2.640	2.480	3.040	4.850	3.110	3.800	6.230
	max.	4.680	5.760	9.930	7.280	8.930	14.250	9.130	11.170	18.290
Electrical data of the complete multicompressor pack (compressor and condenser fan)										
Manufacturer		Bitzer			Bitzer			Bitzer		
Type		4FES-5Y-40S			4DES-7Y-40S			4CES-9Y-40S		
Power supply	V/Ph/Hz	380-420V/3/50Hz			380-420V/3/50Hz			380-420V/3/50Hz		
Total current IB max.	A	36,0			40,0			42,0		
Required backup fuse	A	50			50			63		
Connection terminals mm² in the switch box	Piece	6			6			6		
Operating current IB max. A ext. Condenser fan	A	6 (230V/1/50 Hz)			7,2 (400V/3/50 Hz)			7,2 (400V/3/50 Hz)		
Pipe diameter for 30 meters of suction line and 10 meters of pressure line										
Pressure line	mm	16			22			22		
Condensate line	mm	16			22			22		
Liquid line	mm	12			16			22		
Suction line	mm	28			35			42		
Required condenser capacity for R450A at										
t_c +45 °C, t_0 -10 °C	kW	8,88			13,60			16,87		
Required condenser capacity for R513A at										
t_c +45 °C, t_0 -10 °C	kW	10,70			16,35			20,30		
Required condenser capacity for R448A / R449A at										
t_c +45 °C, t_0 -10 °C	kW	18,26			26,00			33,30		
Accessories / spare parts										
Replacement frequency inverter	Type	FPE FU+12			FPE FU+16			FPE FU+23		
		EDV-Nr.			EDV-Nr.			EDV-Nr.		
	Frequency inverter	**297.3551**			**297.3552**			**297.3553**		
	Additional fan	**101.4666**			**101.4666**			**101.4666**		
	Suction line filter (separately)	**251.0293**			**251.0294**			**251.0295**		
	Filter cartridge (separately)	**251.0276**			**251.0276**			**251.0276**		

SCHIESSL

// Euro Line multicompressor pack

E-FU-BI with two compressors

Functionality:

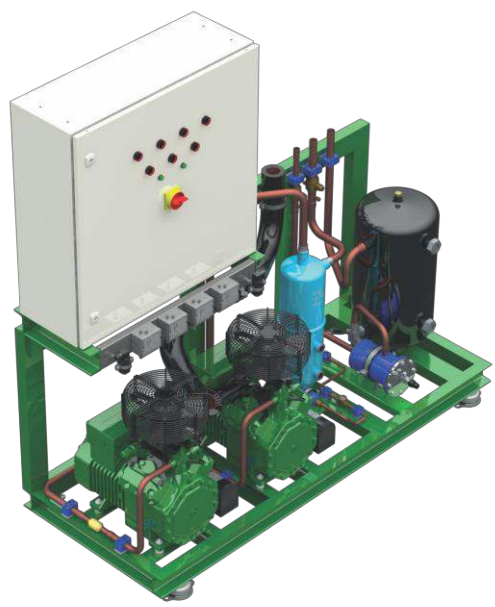
Frequency-controlled Bitzer compound sets work with two semi-hermetic compressors of the Ecoline series, whereby one compressor is always in operation, frequency-controlled, as the master compressor and the second compressor is rigidly connected by the frequency inverter as a slave compressor. These units were specially developed for use in refrigeration systems with changing refrigeration requirements. By using a KIMO frequency inverter, it is possible to optimally adapt the cooling capacity to the conditions while the master compressor is running continuously. In comparison to the EFU-1BI units, the partial load behavior of these units has been further optimized by dividing the output between two compressors. Thus, these units represent an energy-efficient and space-saving alternative to conventional compound systems with several compressors. These Bitzer compound sets are offered in six different performance classes. In the case of air conditioning, the maximum frequency may need to be adjusted. The cooling capacity is regulated depending on the suction pressure. KIMO - Frequency inverter used in connection with a pressure transmitter. The pressure transmitter is thermally decoupled and attached to the suction side and records the actual value of the suction pressure. The frequency inverter controls the cooling capacity of the network in such a way that the target value of the suction pressure is set as precisely as possible. The frequency inverter is included in the scope of delivery of the control cabinet. The setting is made via the keyboard. The frequency inverter is preset for R513A NK. Only a few parameters need to be changed to adapt to the refrigerant used and the area of application. If the frequency inverter malfunctions, you can manually switch to emergency operation with a compressor using an additional low-pressure switch. An automatic sequence switch is provided in the switch cabinet for even loading and oil distribution of both compressors. All components are set up on a welded, painted steel frame. The assembly stands on the anti-vibration metal feet supplied. The cooling lines are grouped together at the top to make them easy to assemble. In order to ensure safe operation even with temporary minimal cold loads, the network is equipped as standard with a combined oil separator / collector with heating and oil level regulators.

Advantages of refrigeration systems with frequency-controlled Bitzer multicompressor packs:

- Optimal adaptation of the compressor output to the load fluctuations of the Refrigeration system
- Minimum cooling capacity
- Optimal refrigerated goods temperature and quality
- Very little space required due to compact design
- Energy saving through better performance adjustment at optimal evaporation temperatures
- Service-friendly through simple compressor replacement and the use of Standard components
- Reduction of the installed cooling capacity and thus the investment costs through Utilization of the simultaneity factors
- Easy installation of a heat recovery through a common Heat exchangers for all cold locations
- The Bitzer multicompressor packs are equipped with temperature sensors with which the Discharge gas temperature, total overheating and the outside temperature are monitored can be.

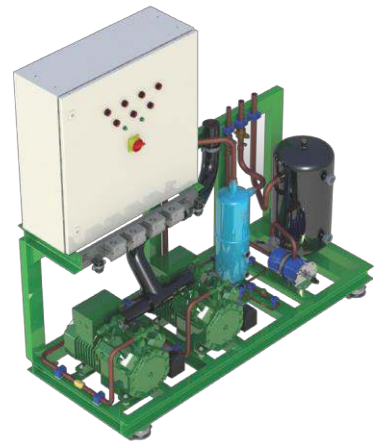
Delivery content:

- Control cabinet with KIMO frequency inverter, optionally installed and wired
- Semi-hermetic compressor manufacturer Bock, with crankcase heating
- Liquid receiver
- Refrigerant dryer / sight glass
- Filling valve in liquid line
- Ball shut-off valve in pressure and liquid lines
- Pressure transmitter suction pressure -0.5 - 7 bar
- Pressure transmitter high pressure 0 - 30 bar
- High pressure monitor (per compressor), component tested
- Low pressure switch, component tested
- Low pressure switch for emergency operation
- Combined oil separator-collector with sight glass and shut-off valve in the Return line, with electrical heating
- Oil level regulators



» Performance tables for R450A / R513A / R448A / R449A

Euro Line multicompressor pack Bitzer E-FU-2BI-0.5 to 1.5 medium temperature



Compressor set		E-FU-2BI-0,5	E-FU-2BI-1	E-FU-2BIO-1,5.
EDV-Nr. Compressor set		**115.2576**	**115.2577**	**115.2578**
Number of compressors		2	2	2
Receiver volume	Liter	15,0	20,0	25,0
Dimensions (W x D x H)	mm	1680 x 680 x 1680	1680 x 680 x 1680	1680 x 680 x 1680
Weight	kg	364	415	419
Sound power at 50 Hz	dB(A)	68	69	70

Total cooling capacity in watts

Operating conditions: condensing temperature 45 ° C, suction gas temperature 20 ° C, liquid subcooling 0 K, usable superheating 100%, performance data based on 30-70 Hz

Refrigerant		R450A	R513A	R448A/ R449A	R450A	R513A	R448A/ R449A	R450A	R513A	R448A/ R449A
t_0 = - 5 °C	min.	1.170	1.390	2.015	1.710	2.040	3.130	2.550	3.050	4.690
	max.	4.810	5.750	8.900	7.060	8.430	12.860	10.550	12.610	19.390
t_0 = - 10 °C	**min.**	**910**	**1.100**	**1.710**	**1.350**	**1.630**	**2.560**	**2.010**	**2.430**	**3.770**
	max.	**3.770**	**4.570**	**7.070**	**5.560**	**6.730**	**10.580**	**8.290**	**10.030**	**15.550**
t_0 = - 15 °C	min.	700	860	1.340	1.040	1.270	2.010	1.540	1.890	2.980
	max.	2.890	3.560	5.520	4.280	5.260	8.290	6.370	7.820	7.140
Electrical data of the complete multicompressor pack (compressor and condenser fan)										
Manufacturer		Bitzer			Bitzer			Bitzer		
Type		2HES-2Y-40S			2FES-3Y-40S			2DES-3Y-40S		
Power supply	V/Ph/Hz	380-420V/3/50Hz			380-420V/3/50Hz			380-420V/3/50Hz		
Total current IB max.	A	26,0			30,0			35,0		
Required backup fuse	A	32			40			40		
Connection terminals mm² in the switch box	St.	6			6			6		
Operating current IB max. A ext. Condenser fan	A	7,2 (400V/3/50 Hz)			7,2 (400V/3/50 Hz)			7,2 (400V/3/50 Hz)		
Pipe diameter for 30 meters of suction line and 10 meters of pressure line										
Pressure line	mm	16			16			22		
Condensate line	mm	16			16			22		
Liquid line	mm	12			12			16		
Suction line	mm	28			28			35		
Required condenser capacity for R450A at										
t_c +45 °C, t_0 -10 °C	kW	5,71			8,39			11,96		
Required condenser capacity for R513A at										
t_c +45 °C, t_0 -10 °C	kW	6,82			10,00			14,37		
Required condenser capacity for R448A / R449A at										
t_c +45 °C, t_0 -10 °C	kW	10,53			15,76			22,46		
Accessories / spare parts										
Replacement frequency inverter	Type	FPE FU+5,5			FPE FU+12			FPE FU+12		
		EDV-Nr.			EDV-Nr.			EDV-Nr.		
	Frequency inverter	**115.3550**			**115.3551**			**115.3551**		
	Additional fan	**2 x 101.3531**			**2 x 101.3531**			**2 x 101.4665**		
	Suction line filter (separately)	**251.0293**			**251.0293**			**251.0294**		
	Filter cartridge (separately)	**251.0276**			**251.0276**			**251.0276**		

SCHIESSL

» Performance tables for R450A/R513A/R448A/R449A

Euro Line multicompressor pack Bitzer E-FU-1BI- 0.5 to 1.5 medium temperature

Multicompressor pack		E-FU-1BI-0,5	E-FU-1BI-1	E-FU-1BI-1,5
EDV-Nr Multicompressor pack		**115.2570**	**115.2571**	**115.2572**
Number of compressors		1	1	1
Receiver volume	Liter	7,6	15,0	20,0
Dimensions (W x D x H)	mm	950 x 680 x 1410	950 x 680 x 1410	950 x 680 x 1410
Weight	kg	279	279	312
Sound power at 50 Hz	dB(A)	65	66	67

Total cooling capacity in watts

Operating conditions: condensing temperature 45 ° C, suction gas temperature 20 ° C, liquid subcooling 0 K, usable superheating 100%, performance data based on 30-70 Hz

Refrigerant		R450A	R513A	R448A/R449A	R450A	R513A	R448A/R449A	R450A	R513A	R448A/R449A
t_0 = - 5 °C	min.	1.170	1.390	2.015	1.710	2.040	3.130	2.550	3.050	4690
	max.	2.800	3.340	5.170	4.100	4.900	7.310	6.130	7.330	11.270
t_0 = - 10 °C	min.	**910**	**1.100**	**1.710**	**1.350**	**1.630**	**2.560**	**2.010**	**2.430**	**3.770**
	max.	**2.190**	**2.660**	**4.110**	**3.230**	**3.910**	**6.150**	**4.820**	**5.830**	**9.040**
t_0 = - 15 °C	min.	700	860	1.340	1.040	1.270	2.010	1.540	1.890	2.980
	max.	1.680	2.070	3.210	2.490	3.060	4.820	3.700	4.550	7.140

Electrical data of the complete multicompressor pack (compressor and condenser fan)				
Manufacturer		Bitzer	Bitzer	Bitzer
Type		2HES-2Y-40S	2FES-3Y-40S	2DES-3Y-40S
Power supply		380-420V/3/50Hz	380-420V/3/50Hz	380-420V/3/50Hz
Total current IB max.	A	20,0	22,0	25,0
Required backup fuse	A	32	32	32
Connection terminals mm² in the switch box	Piece	6	6	6
Operating current IB max. A ext. Condenser fan	A	6 (230V/1/50 Hz)	6 (230V/1/50 Hz)	6 (230V/1/50 Hz)
Pipe diameter for 30 meters of suction line and 10 meters of pressure line				
Pressure line	mm	12	12	16
Condensate line	mm	12	12	16
Liquid line	mm	10	10	12
Suction line	mm	22	22	28
Required condenser capacity for R450A at				
t_c +45 °C, t_0 -10 °C	kW	3,33	4,89	6,98
Required condenser capacity for R513A at				
t_c +45 °C, t_0 -10 °C	kW	4,00	5,90	8,38
Required condenser capacity for R448A / R449A at				
t_c +45 °C, t_0 -10 °C	kW	6,15	9,20	13,10
Accessories / spare parts				
Replacement frequency inverter Type		FPE FU+5,5	FPE FU+12	FPE FU+12
		EDV-Nr.	EDV-Nr.	EDV-Nr.
Frequency inverter		**297.3550**	**297.3551**	**297.3551**
Additional fan		**101.3531**	**101.3531**	**101.4665**
Suction line filter (separately)		**251.0292**	**251.0292**	**251.0293**
Filter cartridge (separately)		**251.0275**	**251.0275**	**251.0276**

SCHIESSL

» Performance tables for R450A / R513A / R448A / R449A

Euro Line multicompressor pack Bitzer E-FU-2BI-2 to 4 medium temperature

Compressor set		E-FU-2BI-2	E-FU-2BI-3	E-FU-2BI-4
EDV-Nr. Compressor set		**115.2579**	**115.2580**	**115.2581**
Number of compressors		2	2	2
Receiver volume	Liter	25,0	30,0	45,0
Dimensions (W x D x H)	mm	1680 x 680 x 1680	1680 x 680 x 1680	1680 x 680 x 1680
Weight	kg	445	450	457
Sound power at 50 Hz	dB(A)	72	77	77

Total cooling capacity in watts

Operating conditions: condensing temperature 45 ° C, suction gas temperature 20 ° C, liquid subcooling 0 K, usable superheating 100%, performance data based on 30-70 Hz

Refrigerant		R450A	R513A	R448A/ R449A	R450A	R513A	R448A/ R449A	R450A	R513A	R448A/ R449A
t_0 = - 5 °C	min.	2.680	3.220	5.360	4.110	4.920	7.670	5.090	6.080	9.750
	max.	13.560	16.260	27.080	20.760	24.840	38.720	25.700	30.720	49.200
t_0 = - 10 °C	min.	**2.090**	**2.540**	**4.300**	**3.220**	**3.900**	**6.140**	**4.010**	**4.840**	**7.850**
	max.	**10.550**	**12.810**	**21.740**	**16.270**	**19.700**	**31.050**	**20.260**	**24.480**	**39.600**
t_0 = - 15 °C	min.	1.590	1.960	2.640	2.480	3.040	4.850	3.110	3.800	6.230
	max.	8.050	9.910	17.140	12.520	15.360	24.510	15.710	19.220	31.460

Electrical data of the complete multicompressor pack (compressor and condenser fan)				
Manufacturer		Bitzer	Bitzer	Bitzer
Type		4FES-5Y-40S	4DES-7Y-40S	4CES-9Y-40
Power supply	V/Ph/Hz	380-420V/3/50Hz	380-420V/3/50Hz	380-420V/3/50Hz
Total current IB max.	A	40,0	50,0	57,5
Required backup fuse	A	50	63	63
Connection terminals mm² in the switch box	St.	6	10	16
Operating current IB max. A ext. Condenser fan	A	7,2 (400V/3/50 Hz)	7,2 (400V/3/50 Hz)	7,2 (400V/3/50 Hz)
Pipe diameter for 30 meters of suction line and 10 meters of pressure line				
Pressure line	mm	22	22	28
Condensate line	mm	22	22	28
Liquid line	mm	16	22	22
Suction line	mm	35	42	54
Required condenser capacity for R450A at				
t_c +45 °C, t_0 -10 °C	kW	15,23	23,32	28,93
Required condenser capacity for R513A at				
t_c +45 °C, t_0 -10 °C	kW	18,34	28,05	34,78
Required condenser capacity for R448A / R449A at				
t_c +45 °C, t_0 -10 °C	kW	31,29	44,57	57,10
Accessories / spare parts				
Replacement frequency inverter	Type	FPE FU+12	FPE FU+16	FPE FU+23
		EDV-Nr.	EDV-Nr.	EDV-Nr.
	Frequency inverter	**297.3551**	**297.3552**	**297.3553**
	Additional fan	**2 x 101.4666**	**2 x 101.4666**	**2 x 101.4666**
	Suction line filter (separately)	**251.0294**	**251.0295**	**251.0296**
	Filter cartridge (separately)	**251.0276**	**251.0276**	**251.0276**

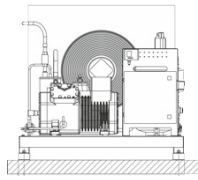
SCHIESSL

HCU

High-effieciency condensing units
Split and Multisplit

DRIVEN BY CAREL HCU sistema

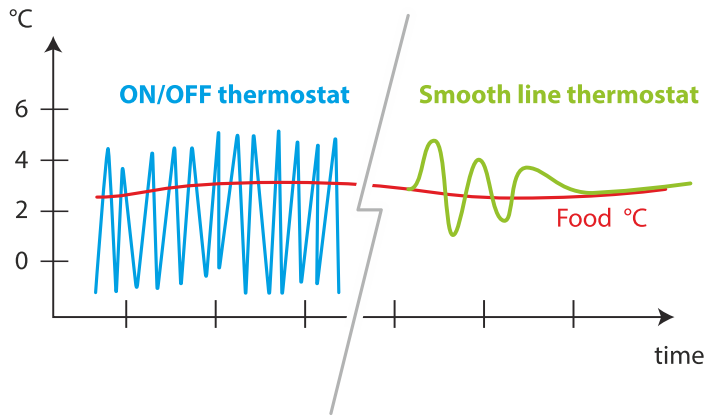
Traditional system



Suction temperature is fixed at the value needed by the unit with the highest demand and the system and evaporators always work at a lower temperature than is actually necessary, at higher costs and the produce is subjected to heat-cool cycles with variations of several degrees around the ideal average value.

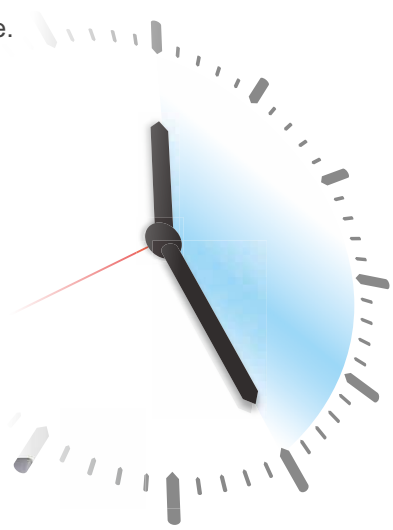
HCU

HCU operation constantly reflects the demand of each unit connected, adapting dynamically to real conditions (floating suction and floating-condensing). The E2V valves on the units adjust refrigerant flow, and the MPXPRO controllers minimise fluctuations in temperature even in the most critical stages, such as when defrosting or in response to variations in load.



Easy setup and extremely fast commissioning

- Fast condensing unit configuration using the wizard start-up procedure.
- Pre-setting of the main unit parameters, such as set point and alarm thresholds, based on the selected type of refrigerant.
- Pre-setting of the probes that are essential for control in each type of application thanks to automatic pre-configurations and simplified service menu
- Fast commissioning with default configuration for connection between condensing unit and showcases
- Automatic pre-configuration of Floating Suction and Oil Recovery Washing function
- Optimised and extensively modifiable default values
- Control parameters optimised for showcases fitted with MPXPRO controllers.



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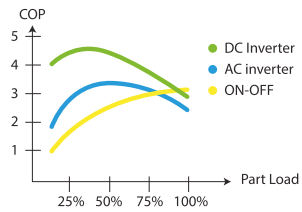
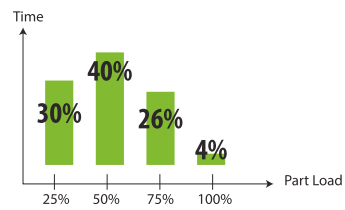
KEY ADVANTAGES

DC Technology

CAREL PREFERRED PARTNERS

SIAM COMPRESSOR INDUSTRY
MITSUBISHI ELECTRIC GROUP

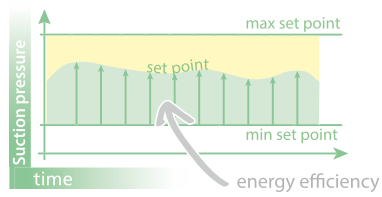




High energy efficiency, especially at part loads

Technology	Saving
AC inverter vs. On-Off	up to 9 %
BLDC power+ vs. On-Off	up to 25 %
BLDC power+ vs. AC INV	up to 15 %

- Higher energy efficiency compared to any other available technology
- Very wide range of cooling capacity modulation
- Implementation of energy saving logic, such as floating suction pressure
- The variable speed compressor can precisely meet system cooling demand
- Continuous exchange of operating parameters between inverter and motor by pRack Hecu
- Showcase operating conditions are communicated in real time to the condensing unit
- Corrective actions to keep the compressor inside optimum operating conditions

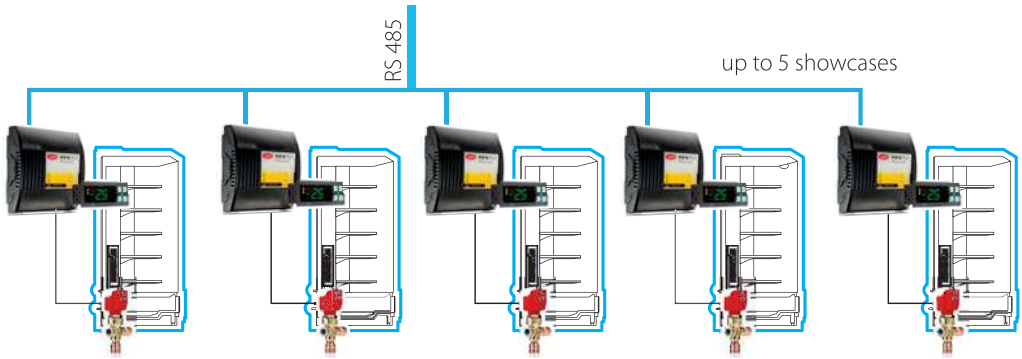


High Reliability

- Failed stat-up management
- Compressor balancing at start-up
- Low noise, low maintenance and long working life, due to the reduced number of ON-OFF cycles
- Guaranteed oil return via the speed boost function and evaporator washing cycles, which recover oil deposits in the system

MPXPRO with EEV

The HCU unit can communicate with an MPXPRO controller and EEV valve on the showcases and interact to apply energy saving algorithms.Moreover, the EEV valves can be controlled directly, to assist oil return to the compressor.



R410A

HCU

High-effieciency condensing units
Split and Multisplit

High energy efficiency

- BLDC Compressor
- Electronic expansion valves for oil and liquid injection
- Serial communication with the showcases, providing real time information about the operation of each evaporator

Reliability

The compressor(s) in the HCU unit are managed by the HECU sistema by a series of software functions, which ensure optimal return of oil to the compressor.
The serial communication with the showcases further allows for actions to be taken directly at the evaporator for optimal oil management.

Usability

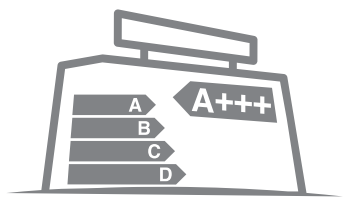
HCU units are equipped with pRack HECU, which comes with a wizard to assist unit configuration and utilizes a fast commissioning procedure, which automatically pre-configures the connection with the showcases and all related functions.

High quality food preservation

Excelent temperature stability through:

- Vareiable speed of the compressor
- Proportional electronic expansion valve
- Continuous modulation of the superheat set point

Model	Refrigeration Capacity (kW)	Gas Type	Power Supply	Fans (mm)	Dimensions WxDxH (mm)	I max (A)	Optional Hot Gas Defrost	Optional Backup Compressor
Medium Temperaure								
HCU 33 MT	1,7 - 11,1	R410a	380V / 3 P / 50 Hz	1x500	1485x690x1038	20,5	-HGD	-BUC
HCU 42 MT	2,1 - 14,1			2x450	1485x690x1385	28,5	-HGD	-BUC
HCU 52 MT	2,8 - 18,1			2x450	1485x690x1385	28,5	-HGD	-BUC
HCU 66 MT	3,5 - 22,9			2x500	1485x690x1385	39,5	-HGD	-BUC
HCU 78 MT	4,1 - 27,2			2x500	1485x690x1385	44,5	-HGD	-BUC
Low Temperature								
HCU 33 LT	0,9 - 5,9	R410a	380V / 3 P / 50 Hz	1x450	1485x690x1038	20,5	-HGD	-
HCU 42 LT	1,1 - 7,5			1x500	1485x690x1038	26,5	-HGD	-
HCU 66 LT	1,8 - 11,8			2x450	1485x690x1385	39,5	-HGD	-



HCU is a range of condensing units, based on the Carel HECU sistema, designed specifically for convenience stores. The system sets the focus on high energy efficiency, low running costs and low environmental impact, in order to achieve maximum levels of energy classification.

High service level

The HCU units can be equipped with an optional backup compressor, activated only in the event of alarms or malfunctions on the main compressor. The system continues operating and service response times are less critical.

Hot gas defrost

The HCU units can be equipped with an optional four way valve in order to enable hot gas defrost on demand. This option is pre-programmed in the controller and easily configurable.

PlantWatchPRO

As part of the Carel ecosystem, HCU can be connected to a PlantWatch supervisory system. Different users such as installers, maintenance personnel and store managers, can monitor and optimize their stores online in a simple and intuitive way.

Medium Temperature

Model	RPS	Cond. T (ºC)	Capacity(kW) Evaporating T (ºC)				Power (kW) Evaporating T (ºC)			
			-15	-10	-5	0	-15	-10	-5	0
HCU 33 MT	30	45	2,21	2,79	3,44	4,18	1,22	1,24	1,26	1,27
	60	45	4,67	5,88	7,24	8,80	2,48	2,53	2,56	2,59
	90	45	7,11	8,94	10,99	13,34	4,13	4,19	4,25	4,29
	120	45	9,54	11,96	14,68	17,80	6,15	6,24	6,32	6,37
	30	50	2,04	2,58	3,19	3,88	1,39	1,41	1,43	1,45
	60	50	4,27	5,40	6,67	8,12	2,82	2,86	2,90	2,93
	90	50	6,45	8,15	10,06	12,25	4,51	4,58	4,64	4,69
	120	50	8,57	10,82	13,35	16,26	6,47	6,56	6,65	6,72
HCU 42 MT	30	45	2,84	3,51	4,33	5,30	1,62	1,62	1,62	1,62
	60	45	5,91	7,33	9,13	11,26	3,33	3,36	3,38	3,39
	90	45	9,07	11,25	13,96	17,15	5,35	5,41	5,47	5,52
	120	45	12,32	15,27	18,82	22,95	7,66	7,78	7,90	7,99
	30	50	2,66	3,30	4,08	4,98	1,83	1,83	1,83	1,83
	60	50	5,55	6,84	8,52	10,53	3,72	3,75	3,76	3,77
	90	50	8,50	10,46	12,98	16,00	5,91	5,97	6,03	6,07
	120	50	11,48	14,16	17,46	21,37	8,40	8,51	8,63	8,74
HCU 52 MT	30	45	3,78	4,66	5,67	6,84	2,14	2,14	2,13	2,11
	60	45	7,63	9,40	11,44	13,81	4,15	4,17	4,17	4,17
	90	45	11,44	14,09	17,52	20,71	6,32	6,42	6,51	6,59
	120	45	15,22	18,74	22,82	27,54	8,67	8,90	9,14	9,37
	30	50	3,51	4,33	5,28	6,38	2,38	2,39	2,38	2,37
	60	50	7,08	8,73	10,65	12,88	4,62	4,64	4,65	4,64
	90	50	10,61	13,10	15,98	19,32	7,02	7,08	7,15	7,22
	120	50	14,12	17,42	21,25	25,69	9,59	9,72	9,90	10,10
HCU 66 MT	30	45	4,70	5,82	7,11	8,60	2,59	2,58	2,57	2,55
	60	45	9,54	11,79	14,39	17,39	5,31	5,30	5,29	5,26
	90	45	14,42	17,82	21,76	26,31	8,31	8,34	8,35	8,33
	120	45	19,35	23,90	29,21	35,34	11,61	11,70	11,75	11,77
	30	50	4,36	5,40	6,61	8,00	2,92	2,92	2,91	2,89
	60	50	8,85	10,94	13,38	16,20	5,94	5,94	5,93	5,90
	90	50	13,36	16,52	20,21	24,49	9,27	9,30	9,31	9,29
	120	50	17,90	22,14	27,11	32,87	12,92	13,00	13,04	13,05
HCU 78 MT	30	45	5,62	6,95	8,49	10,27	3,12	3,11	3,09	3,06
	60	45	11,35	14,03	17,13	20,72	6,30	6,29	6,28	6,24
	90	45	17,13	21,16	25,83	31,23	9,82	9,85	9,86	9,85
	120	45	22,97	28,35	34,60	41,81	13,70	13,77	13,82	13,86
	30	50	5,20	6,44	7,89	9,56	3,54	3,53	3,51	3,48
	60	50	10,50	13,00	15,91	19,28	7,05	7,06	7,05	7,02
	90	50	15,86	19,62	24,00	29,06	10,95	10,97	10,98	10,97
	120	50	21,28	26,29	32,13	38,90	15,21	15,27	15,31	15,34

R410A

Subcooling SC=3ºC and superheat SH=13ºC

Low Temperature

Model	RPS	Cond. T (ºC)	Capacity(W) Evaporating T (ºC)				Power (W) Evaporating T (ºC)			
			-35	-30	-25	-20	-35	-30	-25	-20
HCU 33 MT	60	45	0,58	2,09	3,55	5,00	2,50	2,49	2,51	2,54
	90	45	0,90	3,18	5,36	7,54	3,97	3,97	4,00	4,06
	120	45	1,26	4,25	7,13	10,01	5,66	5,70	5,76	5,85
	60	50	0,41	1,94	3,39	4,82	2,88	2,86	2,87	2,90
	90	50	0,63	2,92	5,09	7,26	4,54	4,52	4,54	4,59
	120	50	0,85	3,88	6,75	9,61	6,41	6,42	6,46	6,54
HCU 42 MT	60	45	0,55	2,47	4,32	6,16	3,30	3,30	3,32	3,36
	90	45	1,14	4,02	6,78	9,54	5,18	5,18	5,21	5,28
	120	45	1,97	5,77	9,41	13,05	7,31	7,31	7,36	7,46
	60	50	0,50	2,44	4,28	6,11	3,73	3,71	3,72	3,76
	90	50	0,75	3,66	6,42	9,15	5,87	5,84	5,86	5,91
	120	50	0,99	4,83	8,46	12,07	8,31	8,27	8,30	8,37
HCU 66 LT	60	45	1,19	4,30	7,27	10,25	4,95	4,95	4,98	5,05
	80	45	1,57	5,64	9,54	1,35	6,96	6,95	7,00	7,09
	100	45	1,87	6,83	11,58	16,33	9,26	9,25	9,32	9,44
	60	50	0,81	3,95	6,92	9,87	5,54	5,51	5,53	5,58
	80	50	1,06	5,17	9,06	12,92	7,77	7,73	7,75	7,82
	100	50	1,30	6,30	11,04	15,74	10,33	10,28	10,31	10,40

R410A

Subcooling SC=40ºC and superheat SH=13º


SCHIESSL
FUTURE ZONE
R290
SHS
R290 Water loop refrigeration unit
Plug-in condensing unit
BLDC inverter driven
Refrigerant R290
Water cooled
DC Technology
DRIVEN BY CAREL Heos sistema
© Image courtesy of CAREL
Easy installation
High energy efficiency
Low maintainance
Solid build
Propan R290 3 GWP
SCHIESSL
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