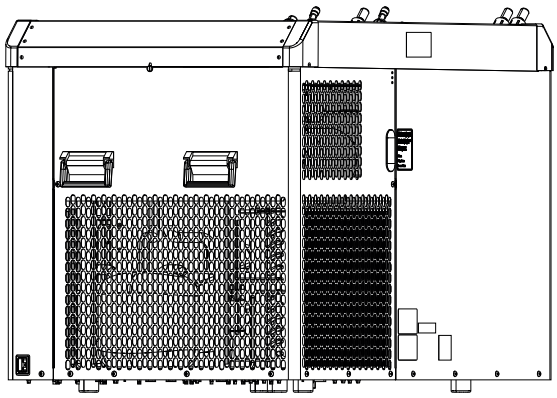
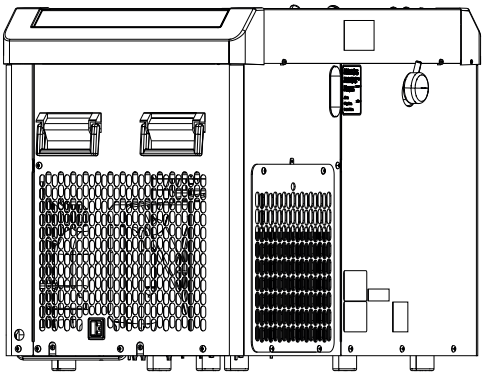
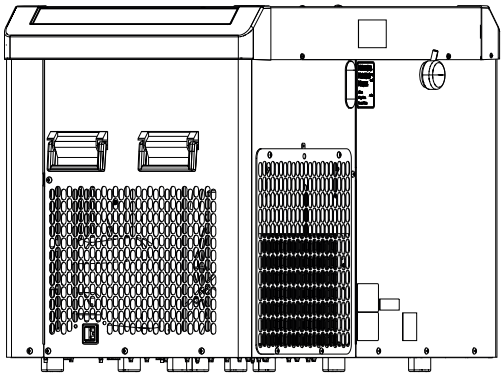
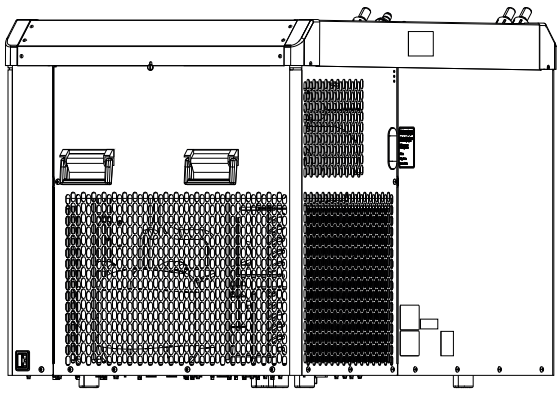
Installation and service manual









Undercounter cooler

Energize 3-5 (R134a)

Legal notice

Installation and service manual (Original)

Document no. TD1005100

Undercounter cooler
Energize 3 (R134a): Unit ID no. 221001300... | 221001302... | 221001305...
Energize 4 (R134a): Unit ID no. 221001400... | 221001402... | 221001404...
Energize 5 (R134a) single: Unit ID no. 221002500... | 221002510... | 221002520...
Energize 5 (R134a) dual: Unit ID no. 221002501... | 221002507... | 221002521...

Energize 3-5 (R134a)

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Installation and service manual
Undercounter cooler

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1 Safety

1.1 Intended use

By using the unit as intended you will not only protect yourself, but also prevent damage occurring to the unit and its components! You can find further information about the intended use of the unit in the undercounter cooler operator manual, document no. TD1005000.

1.2 Improper use

Improper use of the unit and unauthorised modifications to the unit and its components may cause personal injury and equipment damage for which Cornelius Deutschland GmbH shall assume no liability. Improper use of the unit is prohibited.
You can find further information about the improper use of the unit – and the meaning of improper use – in the undercounter cooler operator manual, document no. TD1005000.

1.3 Staff

There is a clear definition as to what group of people is permitted to carry out what type of work on the unit. You can find further information about who is authorised to carry out what type of work on the unit in the undercounter cooler operator manual, document no. TD1005000.

1.4 Presentation of warnings

The documents supplied with the unit provide warnings regarding any dangers or hazards that might exist. You can find more information about the design and presentation of warnings in the Undercounter cooler operator manual, document no. TD1005000.

1.5 Safety information

1.5.1 Safety information to prevent personal injury and equipment damage

Any work on the unit and its components which goes beyond operation and beyond the servicing and maintenance tasks that the operator is authorised for, may only be performed by **experts** (for a definition of experts, see the undercounter cooler operator manual, document no. TD1005000). Furthermore, it is crucial that when performing work on the unit all safety information is observed; this information is set out in the following sections. Some of the tasks may have additional safety information which highlights the specific dangers or hazards associated with such work.

1.5.2 Safety information for using electrical assemblies

DANGER!
To prevent risks to health and safety, please always observe the following five safety rules:
These five safety rules are to be applied before carrying out work on the electrical system and in the order stated below. Once work is completed, the safety rules are to be undone again in reverse order.
- 1. Disconnect from power.
- 2. Secure against reconnection.
- 3. Check that the system is disconnected from power.
- 4. Ground and short-circuit the system.
- 5. Cover or separate adjacent live parts.

WARNING!

Risk of burns when touching hot parts of the unit!
Touching parts of the unit after it has been in continuous use over an extended period of time will result in a risk of burns.
- Take appropriate safeguard measures, such as by wearing heat-resistant protective gloves.

DANGER!

Risk of poisoning and risk of explosion due to improper handling of CO_2 cylinders!
Risk of death from CO_2!
- Observe all information on occupational safety for the safe operation of dispensing systems as applicable in the relevant country of installation.

NOTICE!
- Make sure that the cable markers are not removed from the cables and/or mark or label the cables such that they can be correctly assigned during installation.

ATTENTION!

Cables must be fixed in place using cable ties.
When fixing cables in place using cable ties, observe the following points:
- Once work on the unit is completed, return the area to the same state that you found it in.
- Using cable ties, combines cables in a meaningful way.
- When installing cables, be mindful of any bending radiuses that the manufacturer may have specified.
- To fix cables in place using cable ties, use the mounting bases provided.

2 Transport and packaging

Choose a suitable packaging when returning the unit itself or one of its components to Cornelius Deutschland GmbH, e.g. for repairs. In particular, make sure that the unit and any components are protected from shock/impact, moisture, dirt and electrostatic discharge (ESD). This will prevent transport damage to the unit and to the components, for which the manufacturer shall assume no liability.



ATTENTION!

Component damage due to freezing liquids!
Ambient temperatures that are below freezing will lead to the freezing of any water or cleaning agent residue remaining inside the unit. This will lead to damage to internal components.

- Before shipment, storage or relocation of the unit, the unit is to be cleaned and the cleaning solution is to be fully drained from the unit.

2.1 Storage

Avoid excessive temperature fluctuations as condensate may form, which in turn may cause damage to the unit or to the components.
The permissible storage temperature is -10 °C to +50 °C.
The acclimatisation period is 6 hours.



ATTENTION!

Damage due to improper storage!
Dirt or moisture entering a unit, as well as certain weather conditions (e.g. condensate forming in the unit, sunlight) will cause damage to the unit and its components.

- Protect the unit and its components by storing the unit in a clean and dry place, and by ensuring stable ambient conditions.
- If possible, store the unit in its original packaging. Unpacked units must be covered with a dustproof cover. No condensate must form under the cover.



ATTENTION!

Risk of electrostatic charge!
Improper handling or storage may result in electrostatic charges.

- If possible, store units and/or any electronic components in their original packaging.
- Keep units and/or electronic components away from charged objects, fields and insulators.
- Avoid electrostatic charges when removing packaging and/or handling electronic assemblies and components by working at an ESD-protected workstation or work area.
- When working at the unit or its components, wear a grounding (antistatic) wrist strap at the very least and wear antistatic gloves if necessary.



ATTENTION!

Component damage due to material ageing!
Material can age due to long storage periods, thereby affecting the material's properties (e.g. plastics and seals may become brittle). The properties of lubricants may change due to long storage periods.

- Check the assemblies and components for damage before each use/before installing them. Do not install assemblies or components that show visible signs of ageing.

2.2 Disposal

Disposal of the units must be carried out in compliance with the applicable local and/or national and international regulations. Units must not be disposed of with household waste.
If the unit contains fuels or lubricants in liquid, paste-like or gaseous form, such as oil, grease, cooling agents etc., such fuels or lubricants are to be collected using appropriate measures and disposed of in compliance with the applicable local and/or national and international regulations. Such fuels or lubricants must always be prevented from seeping into the ground, the sewage system and any bodies of water, and must always be prevented from entering the atmosphere.

3 Description

3.1 Undercounter cooler Energize 3 (R134a)

The unit comprises the following assemblies:

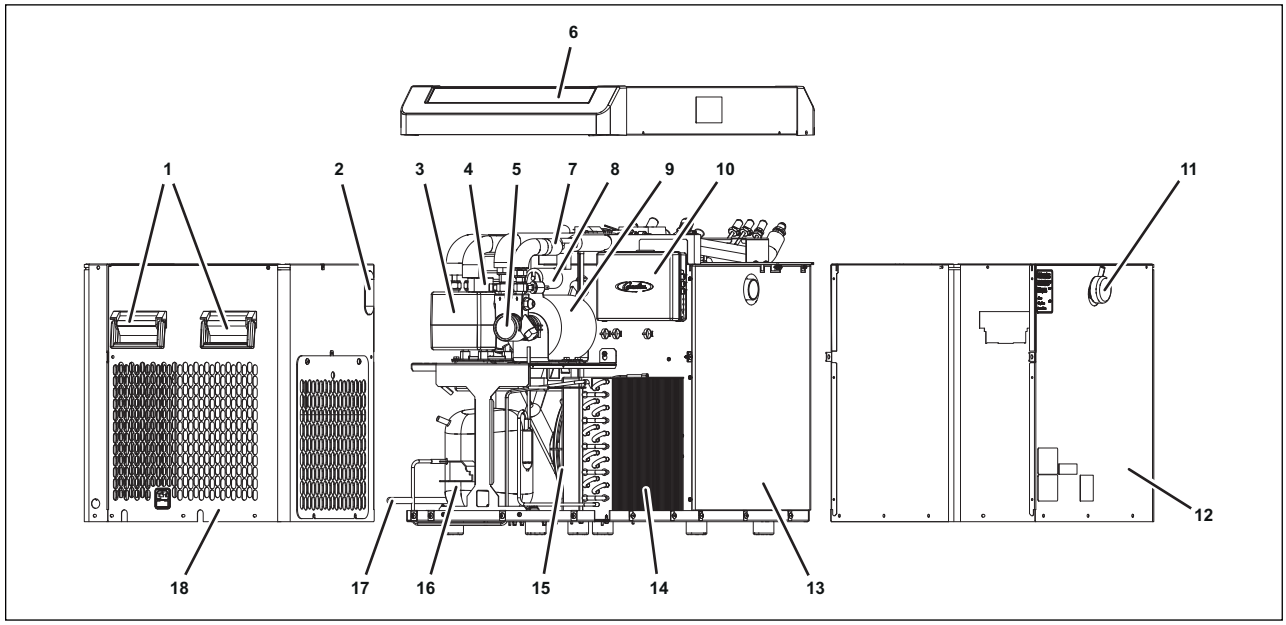


Fig. 1

1 Carry handles
2 Control and indicator panel
3 Circulation pump
4 Pressure manometer for carbonator pump
5 Carbonator pump
6 Cover
7 Water inlet valve
8 Run capacitor for carbonator pump motor
9 Carbonator motor
10 Control system 1
11 Water level gauge
12 Sheet casing (fixed)
13 Water bath
14 Condenser
15 Fan
16 Refrigerant compressor
17 Water bath overflow
18 Sheet casing (service)

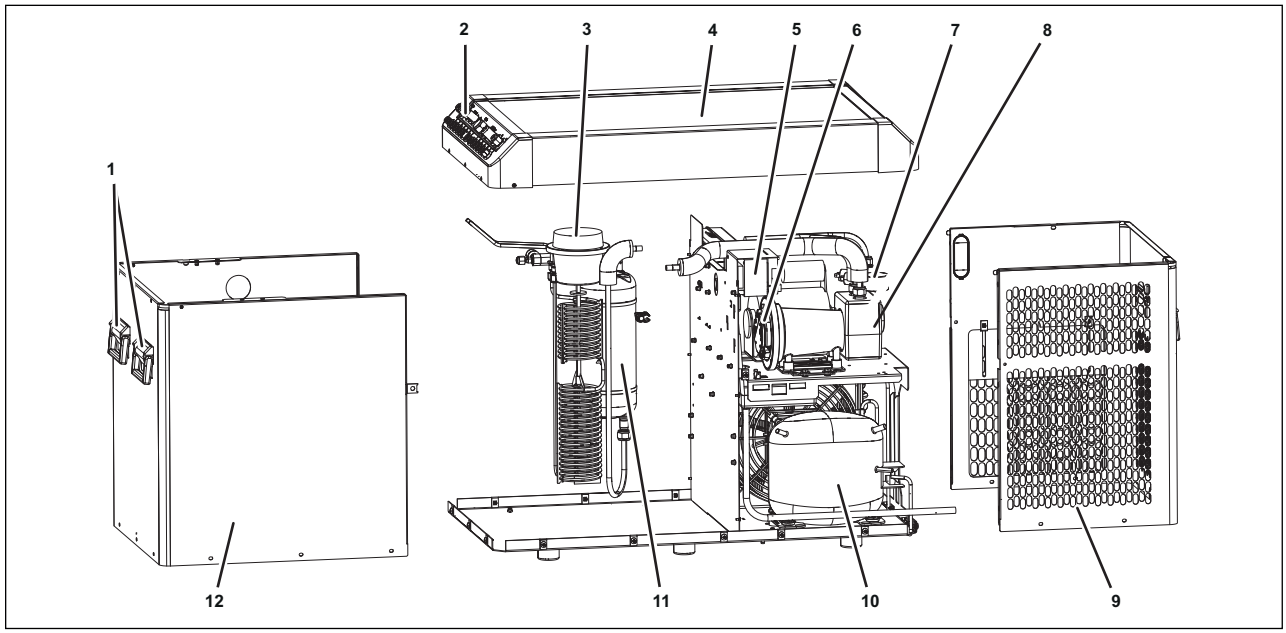


Fig. 2

1 Carry handles
2 Connecting plate with tube connections
3 Agitator motor
4 Cover
5 Transformer
6 Circulation pump motor
7 Pressure manometer for carbonator pump
8 Circulation pump
9 Sheet casing (service)
10 Refrigerant compressor
11 Carbonator tank
12 Sheet casing (fixed)

3.2 Undercounter cooler Energize 4 (R134a)

The unit comprises the following assemblies:

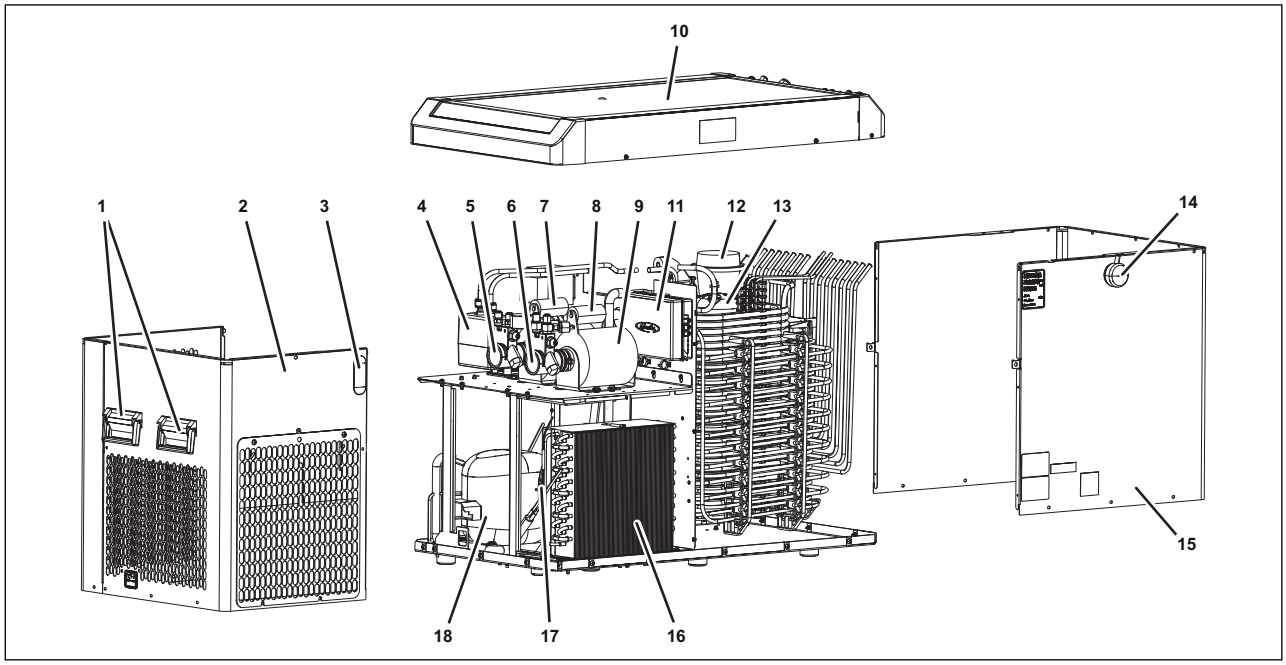


Fig. 3

1 Carry handles
2 Sheet casing (service)
3 Control and indicator panel
4 Circulation pump
5 Carbonator pump 2
6 Carbonator pump 1
7 Run capacitor for carbonator pump motor 2
8 Run capacitor for carbonator pump motor 1
9 Carbonator pump motor
10 Cover
11 Control system 1
12 Agitator motor
13 Carbonator tank
14 Water level gauge
15 Sheet casing (fixed)
16 Condenser
17 Fan
18 Refrigerant compressor

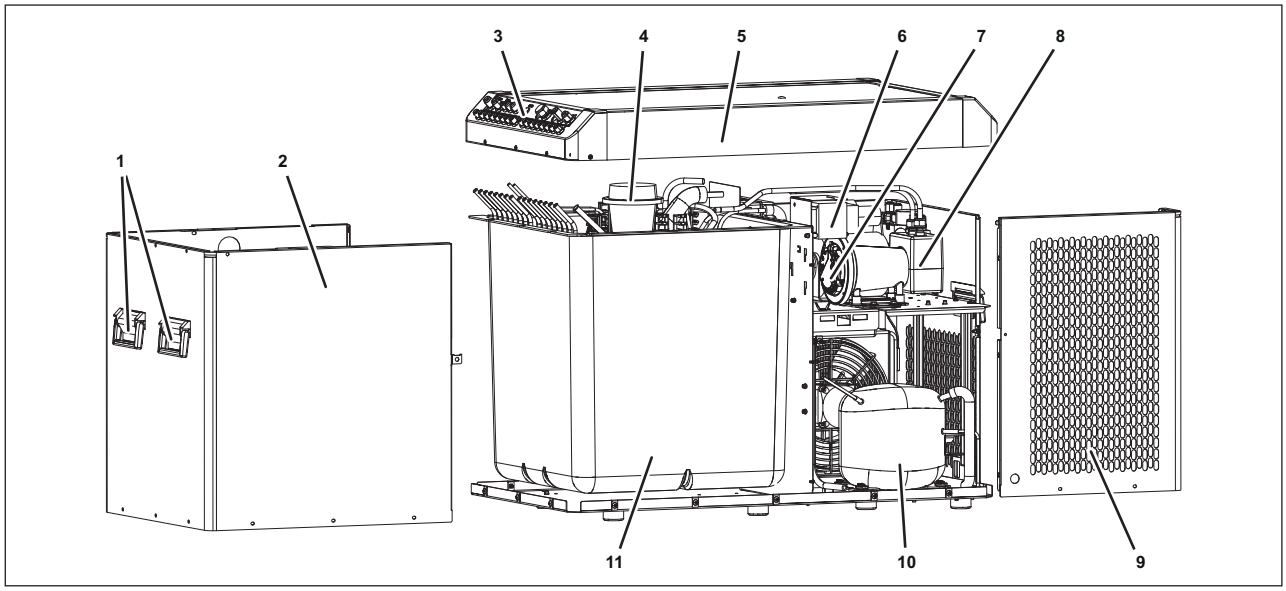


Fig. 4

1 Carry handles
2 Sheet casing (fixed)
3 Connecting plate with tube connections
4 Agitator motor
5 Cover
6 Transformer
7 Circulation pump motor
8 Circulation pump
9 Sheet casing (service)
10 Refrigerant compressor
11 Water bath

3.3 Undercounter cooler Energize 5 (R134a) single

The unit comprises the following assemblies:

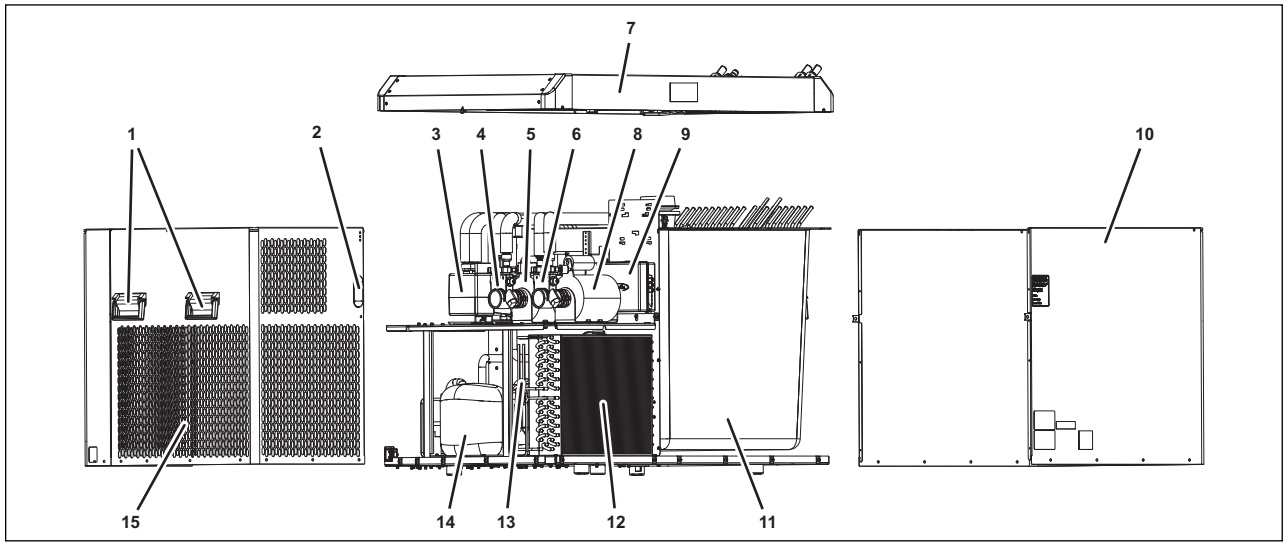


Fig. 5

1 Carry handles
2 Control and indicator panel
3 Circulation pump
4 Carbonator pump 2
5 Carbonator pump motor 2
6 Carbonator pump 1
7 Cover
8 Carbonator pump motor 1
9 Control system 1
10 Sheet casing (fixed)
11 Water bath
12 Condenser
13 Fan
14 Refrigerant compressor
15 Sheet casing (service)

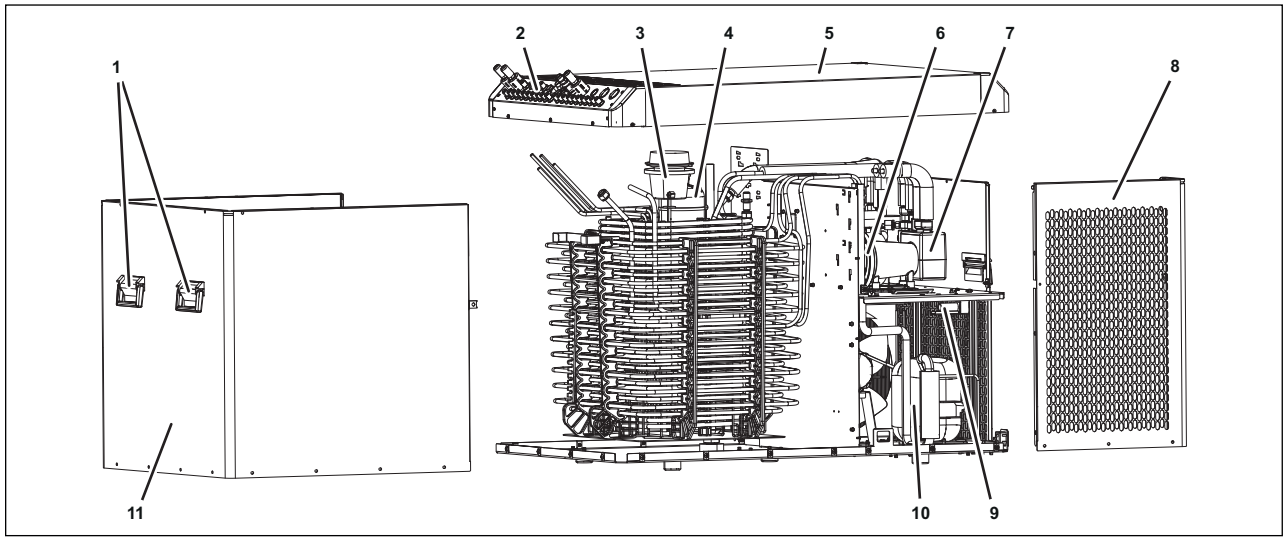


Fig. 6

1 Carry handles
2 Connecting plate with tube connections
3 Agitator motor
4 Carbonator tank
5 Cover
6 Circulation pump motor
7 Circulation pump
8 Sheet casing (service)
9 Compressor fuse
10 Refrigerant compressor
11 Sheet casing (fixed)

3.4 Undercounter cooler Energize 5 (R134a) dual

The unit comprises the following assemblies:

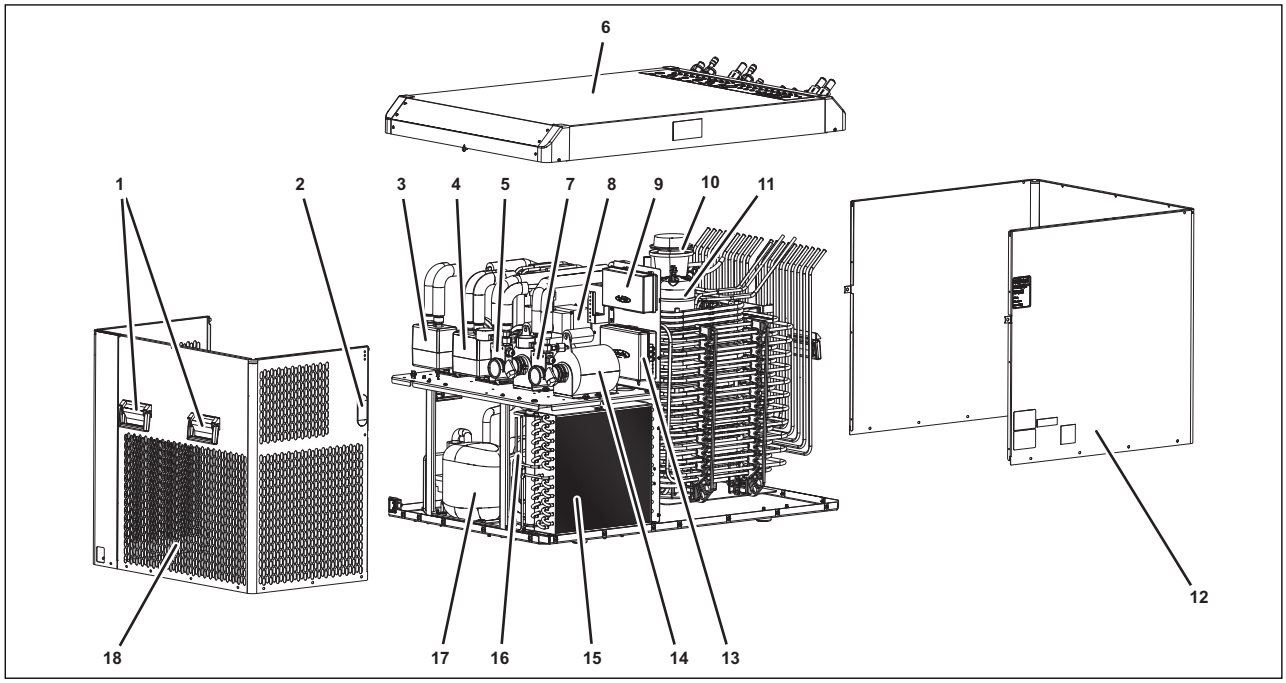


Fig. 7

1 Carry handles
2 Control and indicator panel
3 Circulation pump 2
4 Circulation pump 1
5 Carbonator pump 2
6 Cover
7 Carbonator pump 1
8 Transformer
9 Control system 2
10 Agitator motor
11 Carbonator tank
12 Sheet casing (fixed)
13 Control system 1
14 Carbonator pump motor 1
15 Condenser
16 Fan
17 Refrigerant compressor
18 Sheet casing (service)

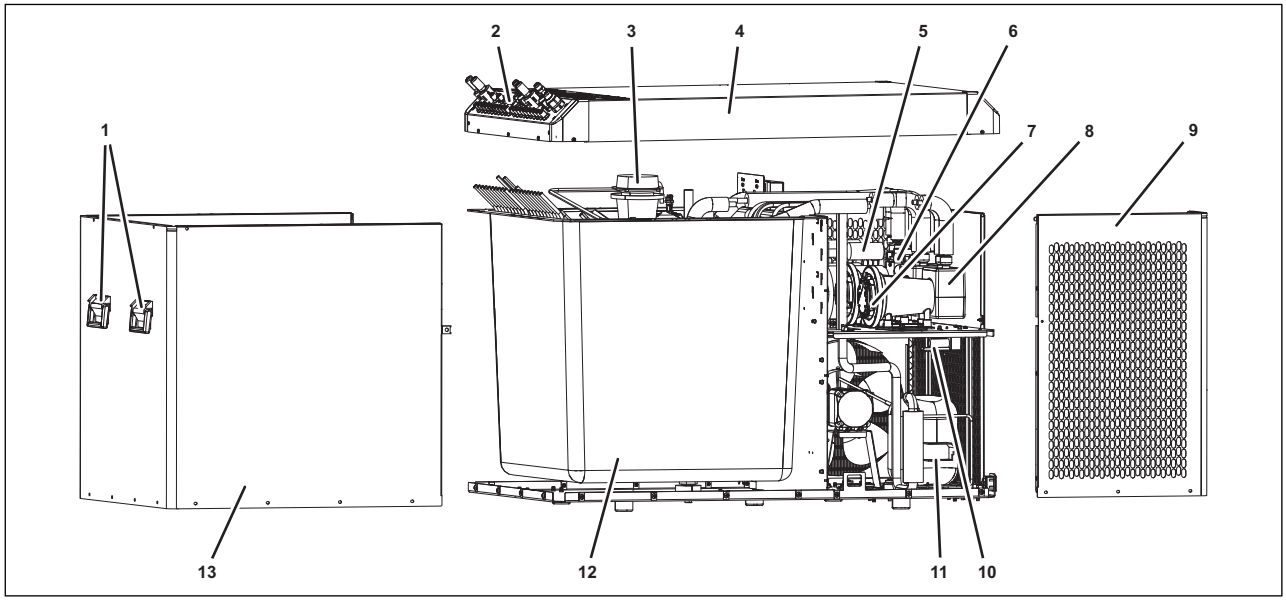


Fig. 8

1 Carry handles
2 Connecting plate with tube connections
3 Agitator motor
4 Cover
5 Run capacitor for carbonator pump motor
6 Pressure switch for carbonator pump
7 Circulation pump motor
8 Circulation pump
9 Sheet casing (service)
10 Compressor fuse
11 Refrigerant compressor
12 Water bath
13 Sheet casing (fixed)

3.5 Functions within the dispensing system

NOTICE!
The description of how the unit works within the dispensing system is included in the relevant operator manual for this unit; see the document “Undercounter cooler operator manual”, document no. TD1005000.

3.6 Functions of the unit

NOTICE!
Flowchart; see chapter 10.1

The three basic functions of the unit are:
– Refrigeration
– Carbonisation
– Conveying

All functions are controlled by the requests at the tower or by the sensor logic of the unit’s internal control system.
The carbonator pump forces the mains water into the carbonator tank at a constant pressure.
The water in the carbonator tank has CO_2 added to it to produce soda. The circulation pump keeps the chilled soda circulating in the secondary refrigeration system to the tower.
Ice is built up in the water bath to refrigerate the products. The agitator keeps the products refrigerated. The ice build-up sensor prevents excessive freezing of the ice build-up.

Cold generator
A cold generator refrigerates the water bath by means of a heat exchanger. In the process, a defined ice build-up is generated around the heat exchanger.
To stop the water bath from freezing up and to maintain more efficient heat exchange, an agitator constantly agitates the cooling water.
Once the unit has been filled with water, the refrigerant compressor automatically starts up after 3 minutes if the compressor is in position “I”. Once the maximum ice build-up has been achieved, the refrigerant compressor automatically switches off.
In ice build-up mode, certain minimum runtimes and operation intervals arise. After switching on the refrigeration circuit, the runtime is at least 5 minutes, even if a shutdown has been signalled beforehand. After switching off the refrigeration circuit, the operation intervals are at least 3 minutes, even if switching on has been signalled beforehand. The operation intervals of 3 minutes also apply to start-up or after a power failure.

Control system and sensor logic
There is a sensor for the water level in the carbonator tank, a probe for controlling the ice build-up, the hot gas sensor for the refrigerating unit, a temperature probe in the python return, an ambient temperature sensor, and a water bath probe.
If CO_2 pressure is insufficient in the carbonator tank, a yellow LED on the control unit will visually indicate that the pressure is too low (< 0.4 MPa).
The tower power supply is cut off in good time to prevent the carbonator tank being pumped empty. Once the carbonator tank has been refilled, the power supply is automatically switched on again.
If the fill level drops below the minimum, the carbonator pump will automatically switch on and fill the carbonator tank.
The carbonator pump switches off when the carbonator tank has been filled to maximum, or after 20 minutes at the latest. Longer runtimes indicate leaks or excessive beverage dispensing. The pump can only be restarted by a reset (temporarily unplugging the mains plug for approx. 10 seconds).

Water supply
The system’s drinking water supply is provided by the mains water which flows through a pressure-reducing valve and filter to the carbonator pump on the unit’s connecting plate. If still water is requested at the tower, the water flows via a heat exchanger in the refrigerated water bath to the tower.
To ensure the water stays chilled, even in the breaks between dispensing, a circulation pump in the unit constantly recirculates the water via a heat exchanger in the water bath.

CO_2 connection
The CO_2 is supplied by the pressurised gas cylinder and pressure-reducing valve to the unit’s CO_2 connection.
Only for types with CO_2-operated syrup pumps:
In the case of CO_2 operated syrup pumps, CO_2 is supplied separately by the pressurised gas cylinder through a dual pressure-reducing valve to the syrup pumps for the supply of standard basic ingredients, and to the syrup pump for the supply of the basic ingredient for reduced calorie (‘light’) products.

Soda and still water connection
The soda is connected to the flow and return connections of the soda water circuit on the unit’s connecting plate.
Still water is connected at the unit’s still water outlet.

Syrup supply
The syrup containers are connected directly to the syrup connections on the unit.
The BiBs are connected to the syrup pumps and from there to the syrup connections on the unit.

3.7 Technical data

3.7.1 Undercounter cooler Energize 3 (R134a)

Description	Parameter	Value	Unit
Dimensions	Height	605/23.8	mm/in.
	Width	850/33.5	mm/in.
	Depth	470/18.5	mm/in.
Dispensing capacity	at a dispensing rate of 2 drinks of 0.3 litres a minute[1]	360 at 2/min	pcs.
Ice build-up size	Weight	18	kg
Ice build-up capacity		1440	kcal/h
Ice build-up	(No python)	120	min.
Refrigerant	1,1,1,2-Tetrafluoroethane R134a	0.400	kg
Power supply	Supply voltage	230	V
	Frequency	50	Hz
Power input	max.	1200	W
Current consumption	max.	5.8	A
Compressor	Output	684	W[2]
Carbonator pump capacity	at 0.2 MPa	280	L/h
Circulation pump capacity	at 0.2 MPa	320	L/h
Python length	max.	15	m
Cooling capacity[3]/ in work area		768	W
		660	kcal/h
Number of cooling coils	max.	7xPOM	pcs.
Shipping weight		80	kg

1. with 15 m SC python
2. at -10 °C evaporation temperature
3. Specifications on cooling capacity and dispensing capacity at an ambient temperature of 32 °C and beverage dispensing temperatures of < 5 °C

3.7.2 Undercounter cooler Energize 4 (R134a)

Description	Parameter	Value	Unit
Dimensions	Height	660/26	mm/in.
	Width	950/37.4	mm/in.
	Depth	515/20.3	mm/in.
Dispensing capacity	at a dispensing rate of 2 drinks of 0.3 litres a minute[1]	700 at 2/min	pcs.
Ice build-up size	Weight	30	kg
Ice build-up capacity		2400	kcal/h
Ice build-up	(No python)	195	min.
Refrigerant	1,1,1,2-Tetrafluoroethane R134a	0.490	kg
Power supply	Supply voltage	230	V
	Frequency	50	Hz
Power input	max.	1700	W
Current consumption	max.	9	A
Compressor	Output	793	W[2]
Carbonator pump capacity	at 0.2 MPa	2 x 280	L/h
Circulation pump capacity	at 0.2 MPa	320	L/h
Python length	max.	30	m
Cooling capacity[3]/ in work area		888	W
		763	kcal/h
Number of cooling coils	max.	8xPOM	pcs.
Shipping weight		110	kg

1. with 30 m SC python
2. at -10 °C evaporation temperature
3. Specifications on cooling capacity and dispensing capacity at an ambient temperature of 32 °C and beverage dispensing temperatures of < 5 °C

3.7.3 Undercounter cooler Energize 5 (R134a) single/Energize 5 (R134a) dual

Description	Parameter	Value	Unit
Dimensions	Height	810/31.9	mm/in.
	Width	1080/42.5	mm/in.
	Depth	690/27.2	mm/in.
Dispensing capacity	at a dispensing rate of 4 drinks of 0.3 litres a minute[1]	700 at 4/min	pcs.
Ice build-up size	Weight	55	kg
Ice build-up capacity		4400	kcal/h
Ice build-up	(No python)	253	min.
Refrigerant	1,1,1,2-Tetrafluoroethane R134a	0.800	kg
Power supply	Supply voltage	230	V
	Frequency	50	Hz
Power input	max.	2200	W
Current consumption	max.	11.5	A
Compressor	Output	1440	W[2]
Carbonator pump capacity	at 0.2 MPa	2 x 280	L/h
Circulation pump capacity	at 0.2 MPa (single)	320	L/h
	at 0.2 MPa (dual)	2 x 320	L/h
Python length	max.	30	m
Cooling capacity[3]/ in work area		1242	W
		1068	kcal/h
Number of cooling coils	max.	10xPOM	pcs.
Shipping weight		125	kg

1. with 30 m SC python
2. at -10 °C evaporation temperature
3. Specifications on cooling capacity and dispensing capacity at an ambient temperature of 32 °C and beverage dispensing temperatures of < 5 °C

3.7.4 Labelling positions

NOTICE!
The applicable operator manual includes illustration of the labelling positions for this unit; see the document “Undercounter cooler operator manual”, document no. TD1005000.

3.7.5 CO_2 working pressures

NOTICE!
The applicable operator manual for this unit includes specifications for the CO_2 working pressures for the unit; see the document “Undercounter cooler operator manual”, document no. TD1005000.

3.8 Connections

3.8.1 Undercounter cooler Energize 3 (R134a)

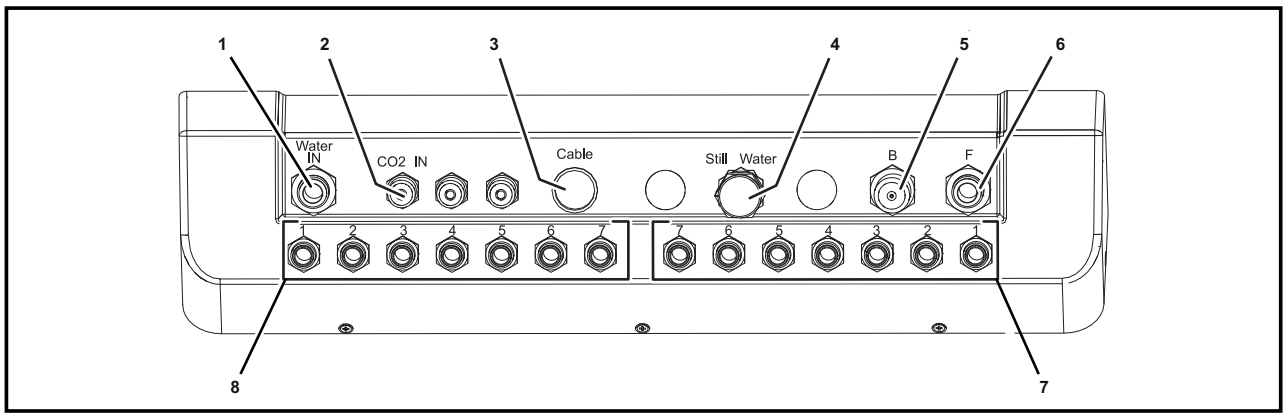


Fig. 9

Item	Designation	Medium	Connection size
1	Water IN	Drinking water connection	3/8" ID and 1/2" OD
2	CO_2 IN	CO_2 supply for carbonation	3/8" ID and 1/2" OD
3	Cable	Cable duct for still water control system	16 mm
4	Still water	Still water dispenser	1/4" ID and 3/8" OD
5	B	Soda water circulation (return)	3/8" ID and 1/2" OD
6	F	Soda water circulation (supply)	3/8" ID and 1/2" OD
7	1, 2, 3, 4, 5, 6, 7	Syrup tubes 1-7 (output)	1/4" ID and 3/8" OD
8	1, 2, 3, 4, 5, 6, 7	Syrup tubes 1-7 (input)	1/4" ID and 3/8" OD

3.8.2 Undercounter cooler Energize 4 (R134a)

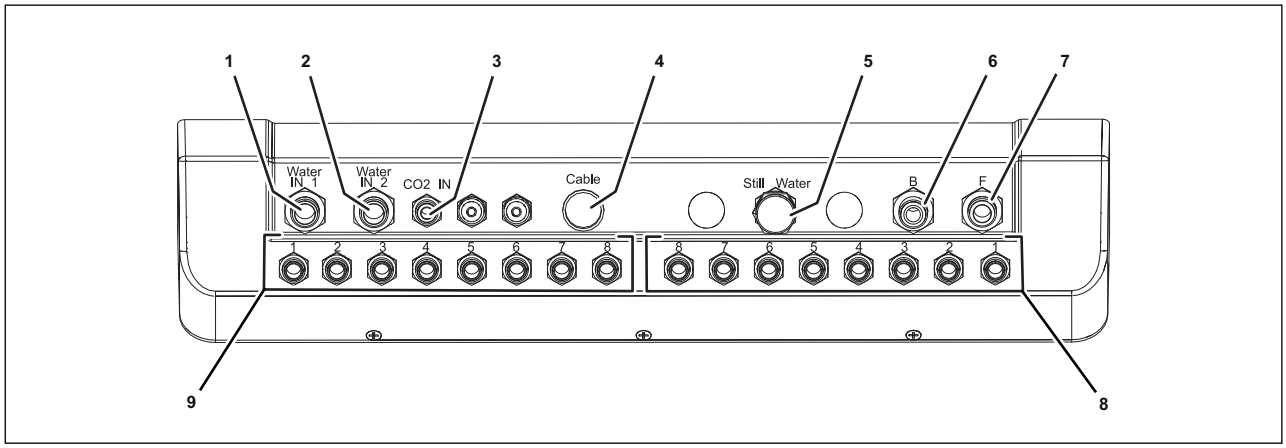


Fig. 10

Item	Designation	Medium	Connection size
1	Water IN 1	Drinking water connection 1	3/8" ID and 1/2" OD
2	Water IN 2	Drinking water connection 2	3/8" ID and 1/2" OD
3	CO_2 IN	CO_2 supply for carbonation	3/8" ID and 1/2" OD
4	Cable	Cable duct for still water control system	16 mm
5	Still water	Still water dispenser	1/4" ID and 3/8" OD
6	B	Soda water circulation (return)	3/8" ID and 1/2" OD
7	F	Soda water circulation (supply)	3/8" ID and 1/2" OD
8	1, 2, 3, 4, 5, 6, 7, 8	Syrup tubes 1-8 (output)	1/4" ID and 3/8" OD
9	1, 2, 3, 4, 5, 6, 7, 8	Syrup tubes 1-8 (input)	1/4" ID and 3/8" OD

3.8.3 Undercounter cooler Energize 5 (R134a) single

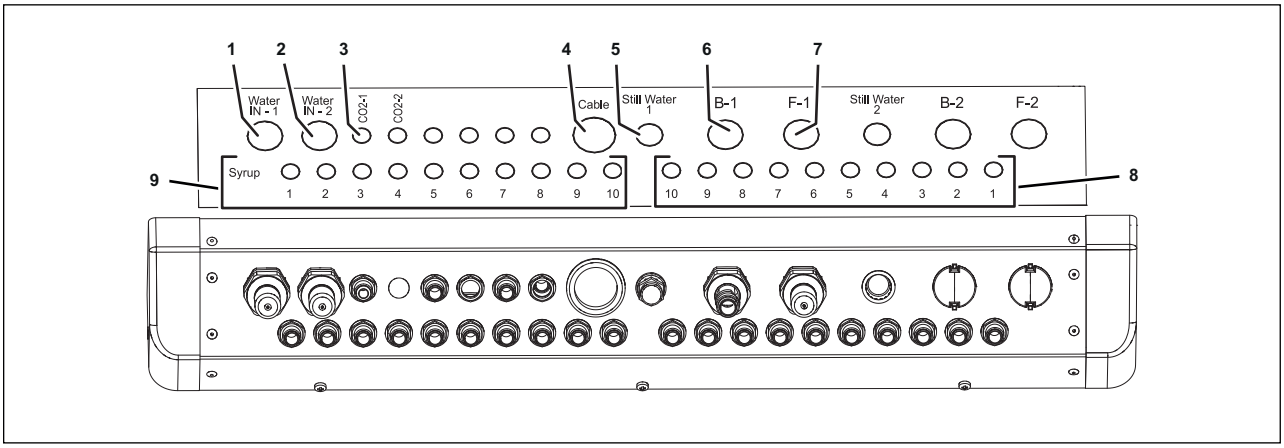


Fig. 11

Item	Designation	Medium	Connection size
1	Water IN 1	Drinking water connection 1	3/8" ID and 1/2" OD
2	Water IN 2	Drinking water connection 2	3/8" ID and 1/2" OD
3	CO_2 -1	CO_2 supply 1 for carbonation	3/8" ID and 1/2" OD
4	Cable	Cable duct for still water control system	16 mm
5	Still Water 1	Still water dispenser 1	1/4" ID and 3/8" OD
6	B 1	Soda water circulation 1 (return)	3/8" ID and 1/2" OD
7	F 1	Soda water circulation 1 (supply)	3/8" ID and 1/2" OD
8	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	Syrup tubes 1-10 (output)	1/4" ID and 3/8" OD
9	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	Syrup tubes 1-10 (input)	1/4" ID and 3/8" OD

3.8.4 Undercounter cooler Energize 5 (R134a) dual

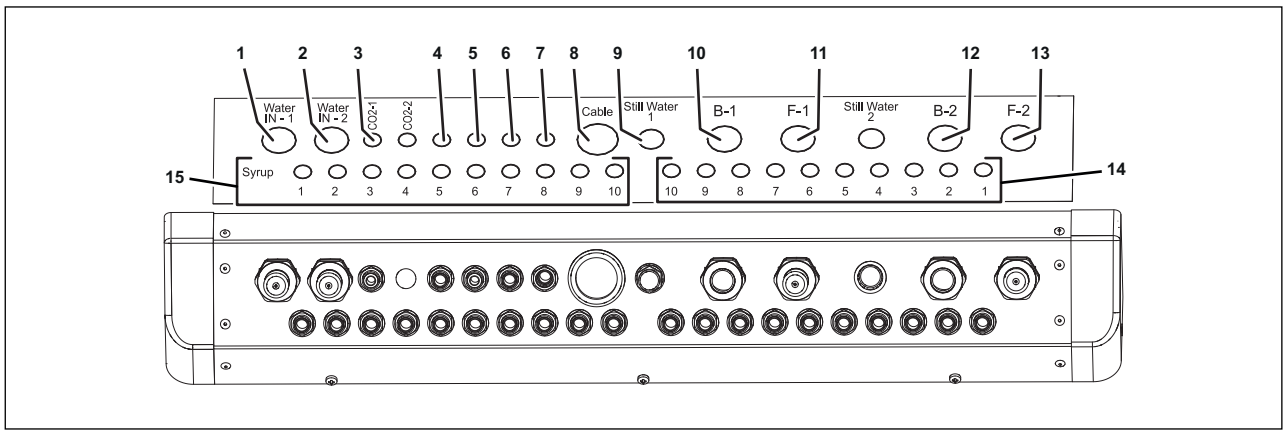


Fig. 12

Item	Designation	Medium	Connection size
1	Water IN 1	Drinking water connection 1	3/8" ID and 1/2" OD
2	Water IN 2	Drinking water connection 2	3/8" ID and 1/2" OD
3	CO_2 -1	CO_2 supply 1 for carbonation	3/8" ID and 1/2" OD
4	1	Additional syrup tube (input) (optional)	3/8" ID and 1/2" OD
5	2	Additional syrup tube (output) (optional)	3/8" ID and 1/2" OD
6	1	Additional syrup tube (input) (optional)	3/8" ID and 1/2" OD
7	2	Additional syrup tube (output) (optional)	3/8" ID and 1/2" OD
8	Cable	Cable duct for still water control system	16 mm
9	Still Water 1	Still water dispenser 1	1/4" ID and 3/8" OD
10	B 1	Soda water circulation 1 (return)	3/8" ID and 1/2" OD
11	F 1	Soda water circulation 1 (supply)	3/8" ID and 1/2" OD
12	B 2	Soda water circulation 2 (return)	3/8" ID and 1/2" OD
13	F 2	Soda water circulation 2 (supply)	3/8" ID and 1/2" OD
14	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	Syrup tubes 1-10 (output)	1/4" ID and 3/8" OD
15	1, 2, 3, 4, 5, 6, 7, 8, 9, 10	Syrup tubes 1-10 (input)	1/4" ID and 3/8" OD

4 Preparing the unit

DANGER!

Risk of personal injury and equipment damage due to non-compliance with safety information!
Failure to observe the safety information will result in a risk of bringing about operating conditions at the unit, which may cause personal injury or equipment damage.
- Please always strictly observe all safety measures and information/instructions; see chapter 1.

This chapter describes the tasks that may be required before carrying out any actual maintenance or repair work.

DANGER!
You may only continue working on the unit if the unit carries no voltage.
If the unit still carries a voltage after you have disconnected it from power, this indicates a defect. Resolve this defect before continuing the checks/inspections or any work.

4.1 Disconnecting the unit from power

Prerequisites	References
The tower has been shut down.	See the document “Tower operator manual”

Required tools/materials	ID/reference	Qty/amount	Comment
Wiring diagram for undercounter cooler Energize 3-5 (R134a)	141660171	1	see chapter 10.5
Tower operator manual	Document no: various	1	
Multimeter	Various	1	Safety category CAT II

1. Turn the compressor switch (Fig. 13/3) to position “0”.
2. Turn the circulation pump switch (Fig. 13/2) to position “0”.
3. Turn the carbonator pump switch (Fig. 13/1) to position “0”.

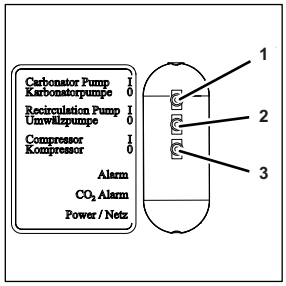


Fig. 13

4. Pull the mains plug out of the earthed socket.

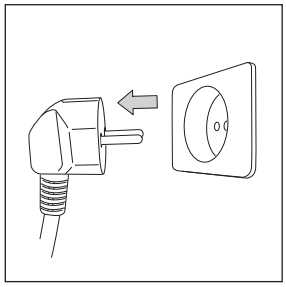


Fig. 14

ATTENTION!

Risk of death from electric shock!
The mains plug may still have residual current.
- Wait a minimum of 1 minute before continuing work on the unit.

ATTENTION!

Risk of equipment damage!
A direct “low ohm” discharge may cause equipment damage.
- Discharge the components properly.

5. Discharge the condensers as follows:
   a) Disconnect the AC power line (Fig. 15/1) from the unit.
   b) Switch the multimeter to alternating voltage.

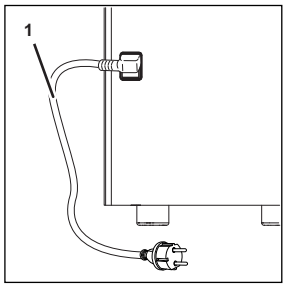


Fig. 15

   c) Measure the voltage at the unit mains connection (Fig. 16/1) using a multimeter. Make sure the voltage drops to a value of 0 V in the process.
   d) Only continue working on the unit once the unit is fully discharged of voltage.

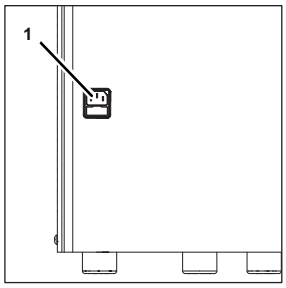


Fig. 16

5 Installation/removal

DANGER!

Risk of personal injury and equipment damage due to non-compliance with safety information!
Failure to observe the safety information will result in a risk of bringing about operating conditions at the unit, which may cause personal injury or equipment damage.
- Please always strictly observe all safety measures and information/instructions; see chapter 1.

NOTICE!
All installation, maintenance and repair work at the unit is to be carried out by an expert only.

WARNING!

Risk of personal injury and equipment damage due to operation by non-qualified staff!
It is dangerous for non-qualified staff to operate the unit!
- Service operations on this unit may only be carried out by trained and certified experts who have been trained in carrying out service operations on this unit.
- All wiring and plumbing must be carried out in compliance with national and local laws, regulations and guidelines. Non-compliance with these laws, regulations and guidelines may result in death, serious injury or equipment damage.

5.1 Installation location

NOTICE!
Observe all rules and regulations regarding installation rooms and electric connections as applicable in the individual countries, as well as accident prevention regulations.

ATTENTION!

Damage due to inadequate ventilation!
If the unit is inadequately ventilated, it will overheat and become damaged.
- During installation of the unit, make sure the site of installation is adequately ventilated.
- Always make sure that the supply and exhaust air grilles are not covered.
- When installing the unit, keep a minimum distance of 30 cm from objects or walls.

NOTICE!
For the Energize 5 (R134a) devices, the operator must ensure that the maximum system impedance at the point of connection to the public low-voltage supply is less than or equal to Zmax of 0.417 Ω.
If necessary, the operator must consult with the responsible electricity supply company.

The unit must be set up and installed close to an earthed mains socket. The electric circuit must be fuse-protected, and no additional units or devices must be connected to the electric circuit.
All connections and outlets/drains must comply with the applicable local and/or national and international regulations.

5.2 Installing the unit

Prerequisites	References
The unit has been unpacked.	See the document “Undercounter cooler operator manual”,document no. TD1005000
The cover has been removed.	see chapter 7.1
The CO_2 bottle has been set up properly.	See the document on the CO_2 system
The pressure-reducing valves have been mounted on the CO_2 bottle.	See the document on the CO_2 system
The pressure-reducing valves have been mounted on the water supply line.	See the document on the drinking water system
The syrup containers and BIBs have been set up.	

Required tools/materials	ID/reference	Qty/amount	Comment
Quick disconnect couplings			
Wiring diagram for undercounter cooler Energize 3-5 (R134a)	141660171	1	see chapter 10.5
Undercounter cooler operator manual	Document no. TD1005000	1	

DANGER!

Risk of personal injury and equipment damage due to non-compliance with rules and regulations!
Risk of death in the case of non-compliance with rules and regulations regarding connection of the water supply!
- In accordance with the current state of the art, install the water supply on the product using an air gap protection back flow system, a vacuum control valve or some other method that has proved effective during tests. Installation must be carried out in compliance with all federal, state and local laws.
- Water pipe connections and fixtures that are directly connected to the drinking water supply must be installed and serviced in compliance with federal, state and local laws.

1. At the site of installation, set up the unit on a flat surface so it cannot tilt.
2. Connect the basic ingredient/beverage tubes to the quick disconnect couplings on the relevant connection of the unit's relevant connecting plate (Fig. 17/2).
   Observe the labels on the individual tubes and connections in the connecting process; see chapter 3.8.
3. Connect the python (Fig. 17/1) to the quick disconnect couplings on the relevant connection on the unit's connecting plate (Fig. 17/2).
   Observe the labels on the individual tubes and connections in the connecting process; see chapter 3.8.

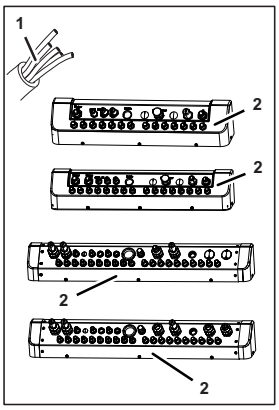


Fig. 17

4. Route the electrical cable (Fig. 18/1) through the relevant cable port (Fig. 18/4) on the relevant connecting plate (Fig. 18/2), through the unit to control system 1(Fig. 18/3).
5. Connect the electrical cable (Fig. 18/1) to control system 1 (Fig. 18/3).

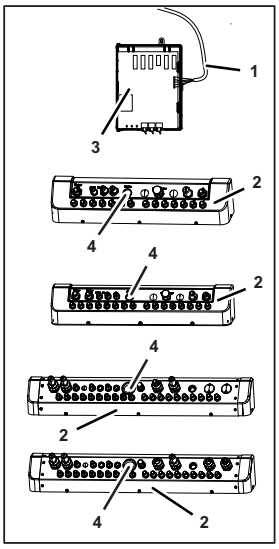


Fig. 18

6. **Only on Energize 5 (R134a) single/Energize 5 (R134a) dual:** Connect a drain tube to the relevant overflow (Fig. 19/1)..
7. Mount the cover; see chapter 7.1.
8. Perform a visual inspection. See the document "Undercounter cooler operator manual", document no. TD1005000.
9. Put the unit into service ("commissioning"); see chapter 8.1.

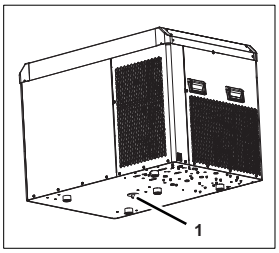


Fig. 19

5.3 Removing the unit

Prerequisites	References
The undercounter cooler has been shut down.	see chapter 8.2

Required tools/materials	ID/reference	Qty/amount	Comment
Wiring diagram for undercounter cooler Energize 3-5 (R134a)	141660171	1	see chapter 10.5

1. **Only on Energize 5 (R134a) single/Energize 5 (R134a) dual:** Disconnect the drain tube from the relevant overflow (Fig. 20/1).

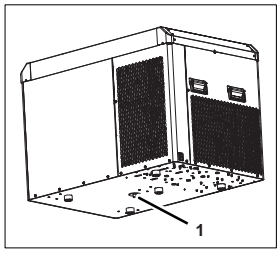


Fig. 20

2. Disconnect the electrical cable (Fig. 21/1) of control system 1 (Fig. 21/3).
3. Pull the electrical cable (Fig. 21/1) through the relevant cable port (Fig. 21/4) on the relevant connecting plate (Fig. 21/2) and out of the unit.

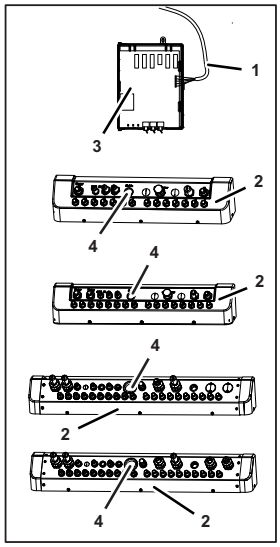


Fig. 21

4. Disconnect the python (Fig. 22/1) from the relevant connection of the unit's relevant connecting plate (Fig. 22/2).
5. Disconnect the basic ingredient/beverage tubes from the relevant connection of the unit's relevant connecting plate (Fig. 22/2).

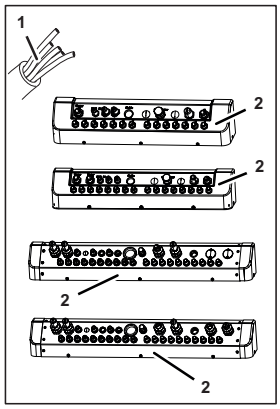


Fig. 22

6 Maintenance

DANGER!

Risk of personal injury and equipment damage due to non-compliance with safety information!
Failure to observe the safety information will result in a risk of bringing about operating conditions at the unit, which may cause personal injury or equipment damage.

- Please always strictly observe all safety measures and information/instructions; see chapter 1.

NOTICE!
All installation, maintenance and repair work at the unit is to be carried out by an expert only.

WARNING!

Risk of personal injury and equipment damage due to operation by non-qualified staff!
It is dangerous for non-qualified staff to operate the unit!

- Service operations on this unit may only be carried out by trained and certified experts who have been trained in carrying out service operations on this unit.
- All wiring and plumbing must be carried out in compliance with national and local laws, regulations and guidelines. Non-compliance with these laws, regulations and guidelines may result in death, serious injury or equipment damage.

6.1 Maintenance table

NOTICE!
The following table provides information on recommended maintenance intervals to be adapted to the relevant installation situation.

Interval	Components	Action
Daily	Undercounter cooler, exterior	Perform a visual inspection. See the document “Undercounter cooler operator manual”, document no. TD1005000
Every 3 months	Undercounter cooler, interior	Clean. See the document “Undercounter cooler operator manual”, document no. TD1005000
Every 3 months	Condenser fins	Clean; see chapter 6.4
Every 3 months	Undercounter cooler	Clean the tubes; see chapter 6.2
Annually	Undercounter cooler	Change the water in the water bath; see chapter 6.3
As required	Undercounter cooler, interior	Thaw the ice build-up; see chapter 6.6

6.2 Cleaning the tubes

NOTICE!
Cleaning the tubes is only possible with the tower mounted.
A description of how to clean the tubes can be found in the relevant tower installation and service manual.

6.3 Changing the water in the water bath

Prerequisites	References
The unit has been disconnected from the power supply.	see chapter 4.1

NOTICE!
To prevent algae building up in the water, the disinfectant Molco (PN 14-9670-150) can be added. The container size with 150 ml disinfectant is sufficient for 30 litres of water.

1. Place the unit in a higher position.
2. Remove the relevant cover of the unit; see chapter 7.1.
3. Suck out the water from the water bath using a suction pump.

Finish tasks

1. Mount the relevant cover; see chapter 7.1.
2. Start up the unit; see chapter 8.1.

6.4 Cleaning the condenser fins

Prerequisites	References
The sheet casing has been removed (service).	see chapter 7.2

Required tools/materials	ID/reference	Qty/amount	Comment
Brush		1	
Vacuum cleaner		1	

1. Clean any dirt off the condenser fins (Fig. 23/1) using a brush and a vacuum cleaner.

Finishing tasks

1. Mount the sheet casing; see chapter 7.2.

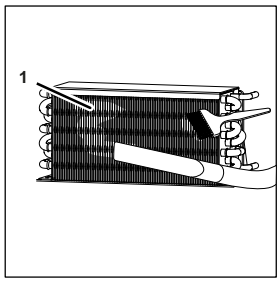


Fig. 23

6.5 Bleeding the carbonator tank

Prerequisites	References
The cover has been removed.	see chapter 7.1

1. Open the drain valve (Fig. 24/1) of the carbonator tank until liquid starts coming out of the drain valve (Fig. 24/1).

Finishing tasks

1. Mount the cover; see chapter 7.1.

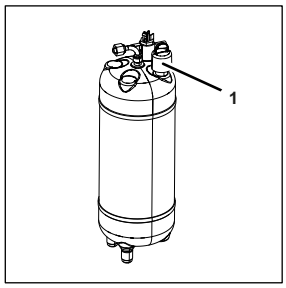


Fig. 24

6.6 Thawing the ice build-up

Prerequisites	References
The unit has been disconnected from the power supply.	see chapter 4.1

1. Wait until the ice has completely thawed.
2. Drain the water from the water bath, see chapter 6.3.

7 Repairs

DANGER!

Risk of personal injury and equipment damage due to non-compliance with safety information!
Failure to observe the safety information will result in a risk of bringing about operating conditions at the unit, which may cause personal injury or equipment damage.

- Please always strictly observe all safety measures and information/instructions; see chapter 1.

NOTICE!
All installation, maintenance and repair work at the unit is to be carried out by an expert only.

WARNING!

Risk of personal injury and equipment damage due to operation by non-qualified staff!
It is dangerous for non-qualified staff to operate the unit!

- Service operations on this unit may only be carried out by trained and certified experts who have been trained in carrying out service operations on this unit.
- All wiring and plumbing must be carried out in compliance with national and local laws, regulations and guidelines. Non-compliance with these laws, regulations and guidelines may result in death, serious injury or equipment damage.

7.1 Replacing the cover

Prerequisites	References
The unit has been disconnected from the power supply.	see chapter 4.1

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Cover	220106499S002	1	
Energize 4 (R134a): Cover	220107929	1	
Energize 5 (R134a) single: Cover	220107042	1	
Energize 5 (R134a) dual: Cover	220107042	1	

1. Loosen/remove the relevant fastening bolt(s) (Fig. 25/1) from the relevant cover (Fig. 25/2).
2. Lift off the relevant cover (Fig. 25/2).
3. Position the new cover (Fig. 25/2) on the unit by first inserting one side with the bolts in the grooves and then lowering the cover onto the unit.
4. Attach the cover (Fig. 25/2) using the fastening bolt(s) (Fig. 25/1).

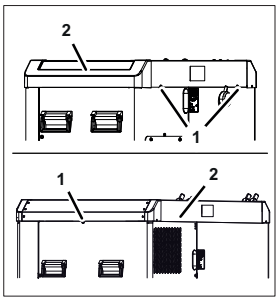


Fig. 25

7.2 Replacing the sheet casing (service)

Prerequisites	References
The cover has been removed.	see chapter 7.1

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Sheet casing	220105578S007	1	
	220105601	1	
Energize 4 (R134a): Sheet casing	220105927	1	
	220105926	1	
Energize 5 (R134a) single: Sheet casing	220107023	1	
	220107024	1	
Energize 5 (R134a) dual: Sheet casing	220107023	1	
	220107024	1	

Undercounter cooler Energize 3 (R134a)

1. Remove the fastening bolts (Fig. 26/2) from the sheet casing (Fig. 26/1).
2. Lift off the sheet casing (Fig. 26/1).
3. Remove the fastening bolts (Fig. 26/4) from the sheet casing (Fig. 26/3).
4. Lift off the sheet casing (Fig. 26/3).
5. Position the new sheet casing (Fig. 26/3) on the unit.
6. Attach the sheet casing (Fig. 26/3) using the fastening bolts (Fig. 26/4).
7. Position the new sheet casing (Fig. 26/1) on the unit.
8. Attach the sheet casing (Fig. 26/1) using the fastening bolts (Fig. 26/2).

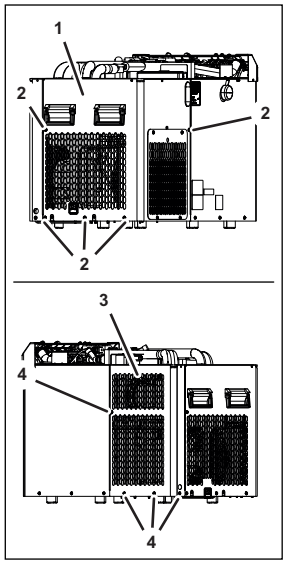


Fig. 26

Undercounter cooler Energize 4 (R134a)

1. Remove the fastening bolts (Fig. 27/2) from the sheet casing (Fig. 27/1).
2. Lift off the sheet casing (Fig. 27/1).
3. Remove the fastening bolts (Fig. 27/4) from the sheet casing (Fig. 27/3).
4. Lift off the sheet casing (Fig. 27/3).
5. Position the new sheet casing (Fig. 27/3) on the unit.
6. Attach the sheet casing (Fig. 27/3) using the fastening bolts (Fig. 27/4).
7. Position the new sheet casing (Fig. 27/1) on the unit.
8. Attach the sheet casing (Fig. 27/1) using the fastening bolts (Fig. 27/2).

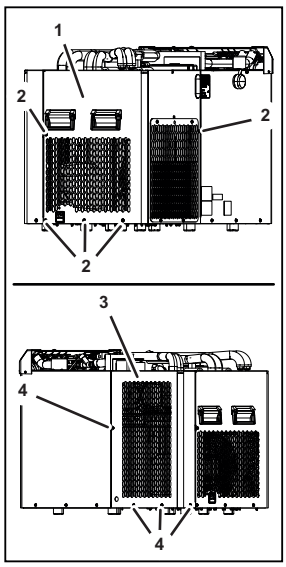


Fig. 27

Undercounter cooler Energize 5 (R134a) single/Energize 5 (R134a) dual

1. Remove the fastening bolts (Fig. 28/2) from the sheet casing (Fig. 28/1).
2. Lift off the sheet casing (Fig. 28/1).
3. Remove the fastening bolts (Fig. 28/4) from the sheet casing (Fig. 28/3).
4. Lift off the sheet casing (Fig. 28/3).
5. Position the new sheet casing (Fig. 28/3) on the unit.
6. Attach the sheet casing (Fig. 28/3) using the fastening bolts (Fig. 28/4).
7. Position the new sheet casing (Fig. 28/1) on the unit.
8. Attach the sheet casing (Fig. 28/1) using the fastening bolts (Fig. 28/2).

Finishing tasks

1. Mount the cover; see chapter 7.1.

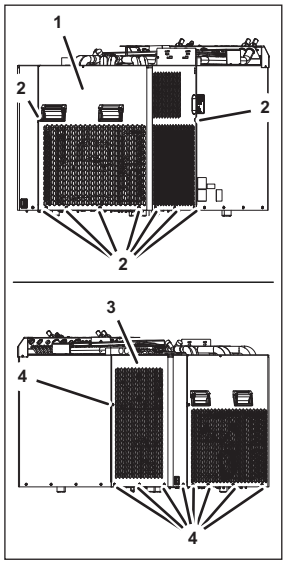


Fig. 28

7.3 Replacing the connecting plate

Prerequisites	References
The cover has been removed.	see chapter 7.1
The python has been removed.	see chapter 5.3

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Connecting plate	220105670	1	
Energize 4 (R134a): Connecting plate	220105928	1	
Energize 5 (R134a) single: Connecting plate	220107330	1	
Energize 5 (R134a) dual: Connecting plate	220107330	1	

1. Disconnect all tubes and lines from the relevant connecting plate (Fig. 29/1).
2. Remove the relevant fastening bolt(s) (Fig. 29/2) from the relevant connecting plate (Fig. 29/1).
3. Lift off the relevant connecting plate (Fig. 29/1).
4. Position the new connecting plate (Fig. 29/1) on the unit.
5. Attach the relevant connecting plate (Fig. 29/1) using the relevant fastening bolts (Fig. 29/2).
6. Connect all lines and tubes to the relevant connecting plate (Fig. 29/1) using quick disconnect couplings.

Finishing tasks

1. Connect the python; see chapter 5.2.
2. Mount the cover; see chapter 7.1.

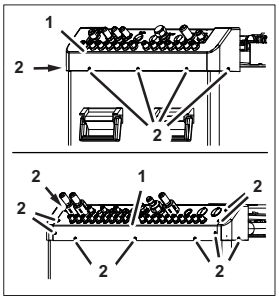


Fig. 29

7.4 Replacing the agitator motor

Prerequisites	References
The cover has been removed.	see chapter 7.1
The cover for control system 1 has been removed.	see chapter 7.21

Spare parts	ID/reference	Qty/amount	Comment
entfällt: Agitator motor	entfällt	1	
Energize 3 (R134a): Agitator motor	220114171	1	
Energize 4 (R134a): Agitator motor	220114171	1	
Energize 5 (R134a) single: Agitator motor	220114314	1	
Energize 5 (R134a) dual: Agitator motor	220114314	1	
Thread adhesive	Loctite 243		

Undercounter cooler Energize 3 (R134a)/Energize 4 (R134a)

1. Disconnect the plugs (Fig. 30/7 and 8) of the agitator motor (Fig. 30/4) from control system 1 (Fig. 30/7).
2. Remove the fastening bolt (Fig. 30/3) from the solenoid valve holder.
3. Remove the fastening bolts (Fig. 30/2) from the agitator motor mount (Fig. 30/5).
4. Lift the agitator motor mount (Fig. 30/5) with agitator motor (Fig. 30/4) out of the unit.

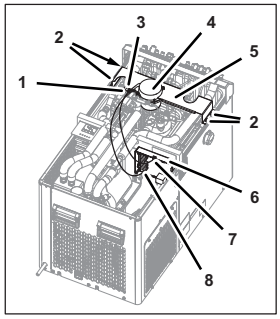


Fig. 30

5. Remove the agitator blade (Fig. 31/3) from the agitator motor (Fig. 31/2).
6. Remove the fastening bolt (Fig. 31/1) from the agitator motor (Fig. 31/2).
7. Attach the new agitator motor (Fig. 31/2) to the agitator motor mount (Fig. 31/4) using the fastening bolts (Fig. 31/1).
8. Attach the agitator blade (Fig. 31/3) to the new agitator motor (Fig. 31/2).
   Secure the agitator blade (Fig. 31/3) by applying Loctite.
9. Position the new agitator motor mount (Fig. 31/4) within the unit.
10. Attach the agitator motor mount (Fig. 30/4) using the fastening bolts (Fig. 30/1).

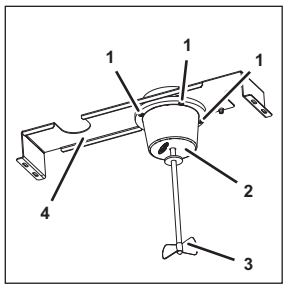


Fig. 31

11. Attach the solenoid valve holder to the agitator motor mount (Fig. 30/4) using the fastening bolt (Fig. 30/3).
12. Connect the plugs (Fig. 30/7 and 8) of the agitator motor (Fig. 30/4) to control system 1 (Fig. 30/6).

Undercounter cooler Energize 5 (R134a) single/Energize 5 (R134a) dual

1. Disconnect the plugs (Fig. 32/6 and 7) of the agitator motor (Fig. 32/3) from control system 1 (Fig. 32/5).
2. Remove the fastening bolt (Fig. 32/4) from the solenoid valve holder.
3. Remove the fastening bolts (Fig. 32/1) from the agitator motor mount (Fig. 32/2).
4. Lift the agitator motor mount (Fig. 32/2) with agitator motor (Fig. 32/3) out of the unit.

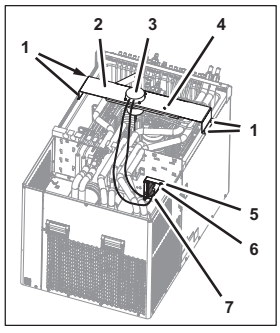


Fig. 32

5. Remove the agitator blade (Fig. 33/3) from the agitator motor (Fig. 33/2).
6. Remove the fastening bolt (Fig. 33/1) from the agitator motor (Fig. 33/2).
7. Attach the new agitator motor (Fig. 33/2) to the agitator motor mount (Fig. 33/4) using the fastening bolts (Fig. 33/1).
8. Apply Loctite to the agitator blade (Fig. 33/3).
9. Attach the agitator blade (Fig. 33/3) to the new agitator motor (Fig. 33/2).
10. Position the new agitator motor mount (Fig. 32/4) within the unit.
11. Attach the agitator motor mount (Fig. 32/4) using the fastening bolts (Fig. 32/1).

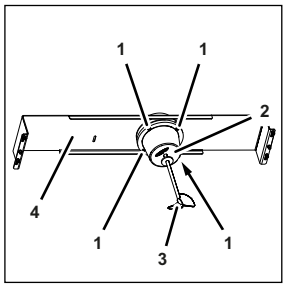


Fig. 33

12. Connect the plugs (Fig. 32/6 and 7) of the agitator motor (Fig. 32/3) to control system 1 (Fig. 32/5).

Finishing tasks

1. Mount the cover of control system 1; see chapter 7.21.
2. Mount the cover; see chapter 7.1.

7.5 Replacing the water bath temperature probe

Prerequisites	References
The cover has been removed.	see chapter 7.1
The cover for control system 1 has been removed.	see chapter 7.21

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Water bath temperature probe	220105778	1	
Energize 4 (R134a): Water bath temperature probe	220105778	1	
Energize 5 (R134a) single: Water bath temperature probe	220105778	1	
Energize 5 (R134a) dual: Water bath temperature probe	220105778	1	

1. Disconnect the plug (Fig. 34/3) of the water bath temperature probe (Fig. 34/1) from control system 1 (Fig. 34/4).
2. Remove the water bath temperature probe (Fig. 34/1) from the mount (Fig. 34/2).
3. Carefully pull the water bath temperature probe (Fig. 34/1) out of the unit, along with the electrical cable.
4. Install the new water bath temperature probe (Fig. 34/1) within the unit, along with the electrical cable.
5. Slide the water bath temperature probe (Fig. 34/1) into the mount (Fig. 34/2).
6. Connect the plug (Fig. 34/3) of the water bath temperature probe (Fig. 34/1) to control system 1 (Fig. 34/4).

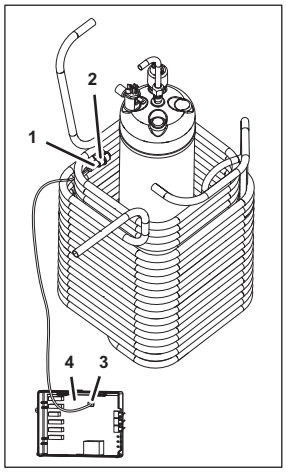


Fig. 34

Finishing tasks

1. Mount the cover of control system 1; see chapter 7.21.
2. Mount the cover; see chapter 7.1.

7.6 Replacing the ambient temperature probe and hot gas sensor

Prerequisites	References
The sheet casing has been removed (service).	see chapter 7.2
The cover for control system 1 has been removed.	see chapter 7.21

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Ambient temperature probe	220105775	1	
Hot gas sensor	220105775	1	
Energize 4 (R134a): Ambient temperature probe	220105775	1	
Hot gas sensor	220105775	1	
Energize 5 (R134a) single: Ambient temperature probe	220105775	1	
Hot gas sensor	220105775	1	
Energize 5 (R134a) dual: Ambient temperature probe	220105775	1	
Hot gas sensor	220105775	1	
Insulation	Armaflex		

1. Disconnect the plug (Fig. 35/1) of the ambient temperature probe (Fig. 35/3) or the plug (Fig. 35/2) of the hot gas sensor (Fig. 35/4) from control system 1 (Fig. 35/5).
2. Disconnect all required cable ties.
3. Remove the insulation from the hot gas sensor (Fig. 35/4).
4. Carefully pull the ambient temperature probe (Fig. 35/3) or the hot gas sensor (Fig. 35/4) out of the unit, along with the electrical cable.
5. Install the new ambient temperature probe (Fig. 35/3) or the new hot gas sensor (Fig. 35/4) within the unit, along with the electrical cable.
6. Attach the insulation to the hot gas sensor (Fig. 35/4).
7. Attach the ambient temperature probe (Fig. 35/3) or the hot gas sensor (Fig. 35/4) using cable ties.
8. Connect the plug (Fig. 35/1) of the ambient temperature probe (Fig. 35/3) or the plug (Fig. 35/2) of the hot gas sensor (Fig. 35/4) to control system 1 (Fig. 35/5).

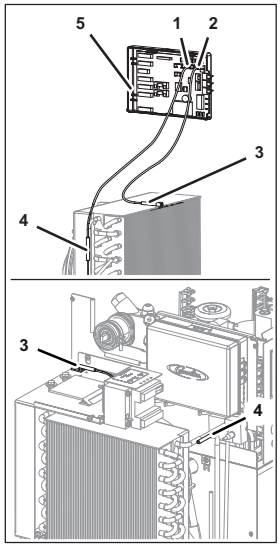


Fig. 35

Finishing tasks

1. Mount the cover of control system 1; see chapter 7.21.
2. Mount the sheet casing (service); see chapter 7.2.

7.7 Replacing the circulation pump

Prerequisites	References
The cover has been removed.	see chapter 7.1
Energize 3 (R134a): The sheet casing has been removed (service).	see chapter 7.2
Energize 4 (R134a): The sheet casing has been removed (service).	see chapter 7.2
Energize 5 (R134a) single: The sheet casing has been removed (service).	see chapter 7.2
Energize 5 (R134a) dual: The sheet casing has been removed (service).	see chapter 7.2

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Circulation pump	220112440B	1	
Energize 4 (R134a): Circulation pump	220112440B	1	
Energize 5 (R134a) single: Circulation pump	220112440B	1	
Energize 5 (R134a) dual: Circulation pump	220112440B	2	

Undercounter cooler Energize 3 (R134a)/Energize 4 (R134a)/Energize 5 (R134a) single

1. Close the shut-off valve (Fig. 36/1).

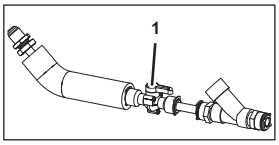


Fig. 36

2. Release the couplings (Fig. 37/1) on the tubes and remove the tubes from the circulation pump (Fig. 37/3).
3. Remove the insulation (Fig. 37/2) from the circulation pump (Fig. 37/3).

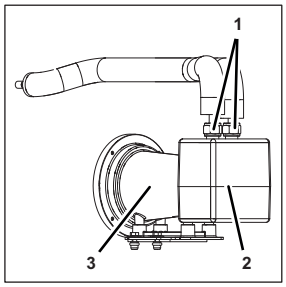


Fig. 37

4. Disconnect either the plug (Fig. 38/6) of the circulation pump (Fig. 38/2) or disconnect the plug (Fig. 38/3) of the circulation pump (Fig. 38/2) from control system 1 (Fig. 38/4).
5. Disconnect the plug (Fig. 38/5) of the circulation pump (Fig. 38/2) from control system 1(Fig. 38/4).
6. Disconnect the earth cable (Fig. 38/1) from the circulation pump (Fig. 38/2).
7. Remove the fastening bolts (Fig. 38/7) from the circulation pump (Fig. 38/2).
8. Lift the circulation pump (Fig. 38/2) out of the unit.
9. Position the new circulation pump (Fig. 38/2) within the unit.
10. Attach the circulation pump (Fig. 38/2) using the fastening bolts (Fig. 38/7).

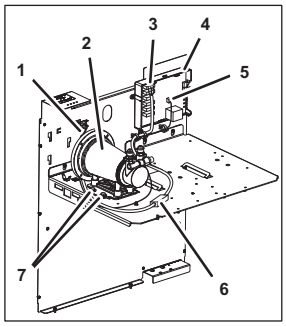


Fig. 38

11. Connect the earth cable (Fig. 38/1) to the circulation pump (Fig. 38/2).
12. Connect the plug (Fig. 38/5) of the circulation pump (Fig. 38/2) to control system 1(Fig. 38/4).
13. Connect either the plug (Fig. 38/6) of the circulation pump (Fig. 38/2) or connect the plug (Fig. 38/3) of the circulation pump (Fig. 38/2) to control system 1 (Fig. 38/4).
14. Attach the tubes to the circulation pump (Fig. 37/3).
15. Attach the insulation (Fig. 37/2) to the circulation pump (Fig. 37/3).
16. Open the shut-off valve (Fig. 36/1).

Undercounter cooler Energize 3 (R134a)/Energize 4 (R134a)/Energize 5 (R134a) single

1. Close the shut-off valve (Fig. 39/1).

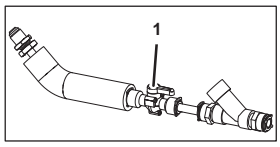


Fig. 39

2. Release the couplings (Fig. 40/1) on the tubes and remove the tubes from the circulation pump (Fig. 40/3).
3. Remove the insulation (Fig. 40/2) from the circulation pump (Fig. 40/3).

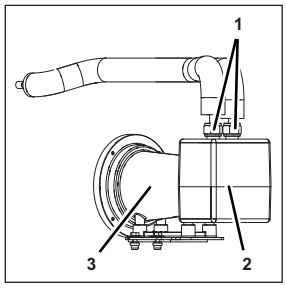


Fig. 40

4. Disconnect either the plug (Fig. 41/6) of the circulation pump (Fig. 41/2) or disconnect the plug (Fig. 41/3) of the circulation pump (Fig. 41/2) from control system 1 (Fig. 41/4).
5. Disconnect the plug (Fig. 41/5) of the circulation pump (Fig. 41/2) from control system 1(Fig. 41/4).
6. Disconnect the earth cable (Fig. 41/1) from the circulation pump (Fig. 41/2).
7. Remove the fastening bolts (Fig. 41/7) from the circulation pump (Fig. 41/2).
8. Lift the circulation pump (Fig. 41/2) out of the unit.
9. Position the new circulation pump (Fig. 41/2) within the unit.
10. Attach the circulation pump (Fig. 41/2) using the fastening bolts (Fig. 41/7).

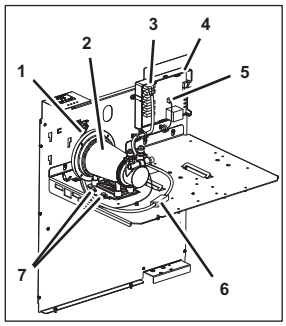


Fig. 41

11. Connect the earth cable (Fig. 41/1) to the circulation pump (Fig. 41/2).
12. Connect the plug (Fig. 41/5) of the circulation pump (Fig. 41/2) to control system 1(Fig. 41/4).
13. Connect either the plug (Fig. 41/6) of the circulation pump (Fig. 41/2) or connect the plug (Fig. 41/3) of the circulation pump (Fig. 41/2) to control system 1 (Fig. 41/4).
14. Attach the tubes to the circulation pump (Fig. 40/3).
15. Attach the insulation (Fig. 40/2) to the circulation pump (Fig. 40/3).
16. Open the shut-off valve (Fig. 39/1).

Finishing tasks

1. **Only on Energize 3 (R134a)/Energize 4 (R134a)/Energize 5 (R134a) single/Energize 5 (R134a) dual:** Mount the sheet casing (service); see chapter 7.2.
2. Mount the cover; see chapter 7.1.

7.8 Replacing the carbonator pump pressure switches

Prerequisites	References
The cover has been removed.	see chapter 7.1

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Input pressure switch	220107390	1	
Energize 3 (R134a): Output pressure switch	220107391	1	
Energize 4 (R134a): Input pressure switch	220107390	1	
Energize 4 (R134a): Output pressure switch	220107391	1	
Energize 5 (R134a) single: Input pressure switch	220107390	1	
Energize 5 (R134a) single: Output pressure switch	220107391	1	
Energize 5 (R134a) dual: Input pressure switch	220107390	1	
Energize 5 (R134a) dual: Output pressure switch	220107391	1	
Thread adhesive	Loctite 243		

1. Disconnect the plugs (Fig. 42/2) from the input pressure switch (Fig. 42/3) or the output pressure switch (Fig. 42/1).
2. Turn the input pressure switch (Fig. 42/3) or the output pressure switch (Fig. 42/1) and remove from the carbonator pump (Fig. 42/4).
3. Apply Loctite to the input pressure switch (Fig. 42/3) or the output pressure switch (Fig. 42/1).
4. Attach the new input pressure switch (Fig. 42/3) or the new output pressure switch (Fig. 42/1) to the carbonator pump (Fig. 42/4) by turning it.
5. Connect the plugs (Fig. 42/2) to the input pressure switch (Fig. 42/3) or the output pressure switch (Fig. 42/1).

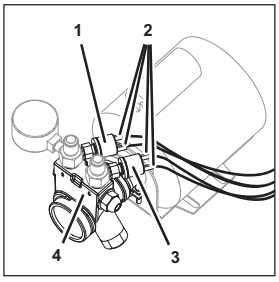


Fig. 42

Finishing tasks

1. Mount the cover; see chapter 7.1.

7.9 Replacing the carbonator pump pressure manometer

Prerequisites	References
The cover has been removed.	see chapter 7.1

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Pressure manometer	142440100	1	
Energize 4 (R134a): Pressure manometer	142440100	1	
Energize 5 (R134a) single: Pressure manometer	142440100	1	
Energize 5 (R134a) dual: Pressure manometer	142440100	1	
Thread adhesive	Loctite 243		

1. Turn the pressure manometer (Fig. 43/1) and remove it from the carbonator pump (Fig. 43/2).
2. Apply Loctite to the new pressure manometer (Fig. 43/1).
3. Attach the new pressure manometer (Fig. 43/1) to the carbonator pump (Fig. 43/2) by turning it.

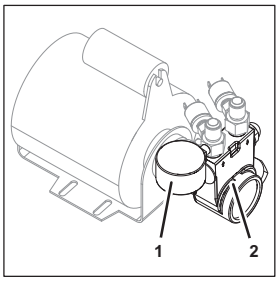


Fig. 43

Finishing tasks

1. Mount the cover; see chapter 7.1.

7.10 Replacing the carbonator pump

Prerequisites	References
The pressure switches have been removed.	see chapter 7.8
The pressure manometer has been removed.	see chapter 7.9

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Carbonator pump	440000761	1	
Energize 4 (R134a): Carbonator pump	440000761	1	
Energize 5 (R134a) single: Carbonator pump	440000761	1	
Energize 5 (R134a) dual: Carbonator pump	440000761	1	
Seal	311304000	2	Plastic, black 5/8"

1. Disconnect the lines by releasing the couplings (Fig. 44/1) from the carbonator pump (Fig. 44/4).
2. Remove the clamp (Fig. 44/2).
3. Disconnect the carbonator pump (Fig. 44/4) from the carbonator pump motor (Fig. 44/3).
4. Lift the carbonator pump (Fig. 44/4) out of the unit.

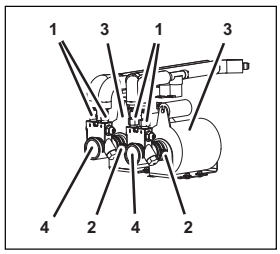


Fig. 44

5. Replace the seals (Fig. 45/1) of the carbonator pump (Fig. 45/2).
6. Position the new carbonator pump (Fig. 44/4) on the carbonator pump motor (Fig. 44/3).
7. Attach the carbonator pump (Fig. 44/4) to the carbonator pump motor (Fig. 44/3) using the clamp (Fig. 44/2).
8. Connect the lines to the carbonator pump (Fig. 44/4) by means of the couplings (Fig. 44/1).

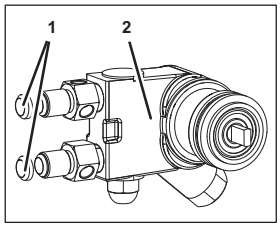


Fig. 45

Finishing tasks

1. Mount the pressure manometer; see chapter 7.9.
2. Mount the pressure switches; see chapter 7.8.

7.11 Replacing the carbonator pump motor

Prerequisites	References
The condenser for the carbonator pump motor has been removed.	see chapter 7.24
The cover for control system 1 has been removed.	see chapter 7.21

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Carbonator pump motor	440000842	1	
Energize 4 (R134a): Carbonator pump motor	440000842	2	
Energize 5 (R134a) single: Carbonator pump motor	440000842	2	
Energize 5 (R134a) dual: Carbonator pump motor	440000842	2	

1. Disconnect either the plug (Fig. 46/4) of the carbonator pump motor (Fig. 46/1) or disconnect the plug (Fig. 46/3) of the carbonator pump motor (Fig. 46/1) from control system 1 (Fig. 46/2).

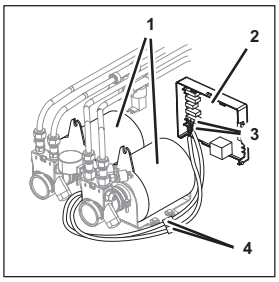


Fig. 46

2. Remove the fastening bolts (Fig. 47/2) from the carbonator pump motor (Fig. 47/1).
3. Remove the clamp (Fig. 47/3).
4. Disconnect the carbonator pump motor (Fig. 47/1) from the carbonator pump (Fig. 47/4).
5. Lift the carbonator pump motor (Fig. 47/1) out of the unit.
6. Position the new carbonator pump motor (Fig. 47/1) on the carbonator pump (Fig. 47/4).
7. Attach the carbonator pump motor (Fig. 47/1) to the carbonator pump (Fig. 47/4) using the clamp (Fig. 47/3).

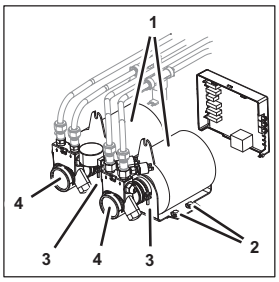


Fig. 47

8. Attach the carbonator pump motor (Fig. 47/1) using the fastening bolts (Fig. 47/2).
9. Connect either the plug (Fig. 46/4) of the carbonator pump motor (Fig. 46/1) or connect the plug (Fig. 46/3) of the carbonator pump motor (Fig. 46/1) to control system 1 (Fig. 46/2).

Finishing tasks

1. Mount the condenser for the carbonator pump motor; see chapter 7.24.
2. Mount the cover of control system 1; see chapter 7.21.

7.12 Replacing the carbonator tank

Prerequisites	References
The cover has been removed.	see chapter 7.1
The water bath temperature probe has been removed.	see chapter 7.5
The level electrode has been removed.	see chapter 7.16
The drain valve for the carbonator tank has been removed.	see chapter 7.17
Energize 3 (R134a): The agitator motor has been removed.	see chapter 7.4
Energize 4 (R134a): The agitator motor has been removed.	see chapter 7.4
Energize 5 (R134a) single: The agitator motor has been removed.	see chapter 7.4
Energize 5 (R134a) dual: The agitator motor has been removed.	see chapter 7.4

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Carbonator tank	440000786	1	1.8 litres
Energize 4 (R134a): Carbonator tank	440000787	1	2.8 litres
Energize 5 (R134a) single: Carbonator tank	440000787	1	2.8 litres
Energize 5 (R134a) dual: Carbonator tank	440000787S002	1	3.8 litres

Undercounter cooler Energize 3 (R134a)

1. Disconnect the plug (Fig. 48/2) of the solenoid valve (Fig. 48/3) by removing the fastening bolt (Fig. 48/1).

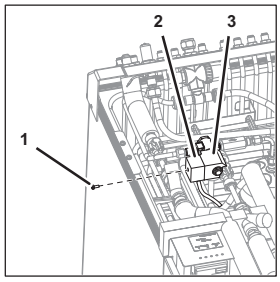


Fig. 48

2. Disconnect the water input line (Fig. 49/11) on the coupling (Fig. 49/2) from the T-fitting of the water inlet pressure reducing valve (Fig. 49/3).
3. Disconnect the connecting line from the non-return valve of the solenoid valve (Fig. 49/10) to the carbonator tank (Fig. 49/6) from the coupling (Fig. 49/7).
4. Lift the water input line (Fig. 49/11) with the connecting line from the non-return valve of the solenoid valve (Fig. 49/10) to the carbonator tank (Fig. 49/6) out of the unit.
5. Disconnect the pre-cooling coil from the coupling (Fig. 49/4).
6. Disconnect the soda water circulation line (return) from the coupling (Fig. 49/1).
7. Disconnect the CO_2-IN line from the coupling (Fig. 49/5).

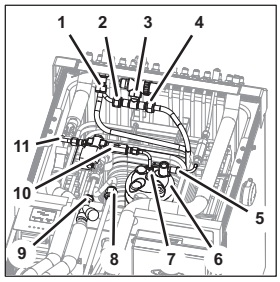


Fig. 49

8. Disconnect the soda water line to the circulation pump from the push-in fitting (Fig. 49/9).
9. Disconnect the carbonator pump connecting line from the pre-cooling coil of the coupling (Fig. 49/8).
10. Lift the cooling coil basket (Fig. 50/2) with carbonator tank (Fig. 50/1) out of the unit.

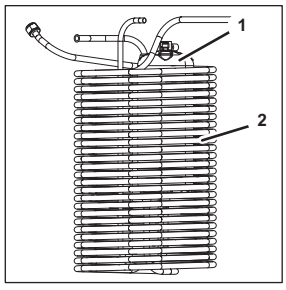


Fig. 50

11. Disconnect the soda cooling line from the coupling (Fig. 51/1).
12. Disconnect the soda water line from the coupling (Fig. 51/2).
13. Lift the carbonator tank (Fig. 50/1) up and out of the cooling coil basket (Fig. 50/2).
14. Position the new carbonator tank (Fig. 50/1) within the cooling coil basket (Fig. 50/2).
15. Attach the carbonator tank (Fig. 50/1) to the cooling coil basket (Fig. 50/2) using a cable tie.
16. Make sure the carbonator tank (Fig. 50/1) is firmly placed against the cooling coils.
17. Attach the soda water line to the coupling (Fig. 51/2).
18. Attach the soda cooling line to the coupling (Fig. 51/1).

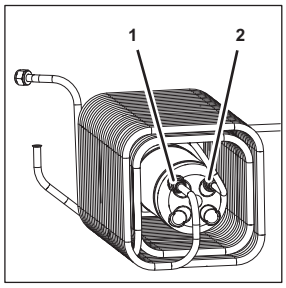


Fig. 51

19. Position the cooling coil basket (Fig. 50/2) with carbonator tank (Fig. 50/1) within the unit.
20. Attach the connecting line from the carbonator pump to the pre-cooling coil to the coupling (Fig. 49/8).
21. Attach the soda water line to the circulation pump to the push-in fitting (Fig. 49/9).
22. Attach the CO_2-IN line to the coupling (Fig. 49/5).
23. Attach the soda water circulation line (return) to the coupling (Fig. 49/1).
24. Attach the pre-cooling coil to the coupling (Fig. 49/4).
25. Position the water input line (Fig. 49/11) with the connecting line from the non-return valve of the solenoid valve (Fig. 49/10) to the carbonator tank (Fig. 49/6) within the unit.
26. Attach the connecting line from the non-return valve of the solenoid valve (Fig. 49/10) to the carbonator tank (Fig. 49/6) to the coupling (Fig. 49/7).
27. Attach the water input line (Fig. 49/11) on the coupling (Fig. 49/2) to the T-fitting of the water inlet pressure reducing valve (Fig. 49/3).
28. Attach the plug (Fig. 48/2) of the solenoid valve (Fig. 48/3) using the fastening bolt (Fig. 48/1).

Undercounter cooler Energize 4 (R134a)

1. Disconnect the plug (Fig. 52/2) of the solenoid valve (Fig. 52/3) by removing the fastening bolt (Fig. 52/1).

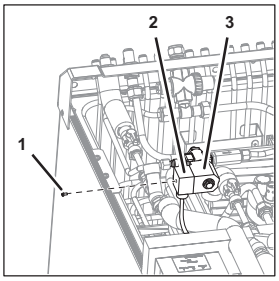


Fig. 52

2. Disconnect the water input line (Fig. 53/11) on the coupling (Fig. 53/2) from the T-fitting of the water inlet pressure reducing valve (Fig. 53/3).
3. Disconnect the connecting line from the non-return valve of the solenoid valve (Fig. 53/10) to the carbonator tank from the coupling (Fig. 53/5).
4. Lift the water input line (Fig. 53/11) with the connecting line from the non-return valve of the solenoid valve (Fig. 53/10) to the carbonator tank out of the unit.
5. Disconnect the pre-cooling coil from the coupling (Fig. 53/4).
6. Disconnect the soda water circulation line (return) from the coupling (Fig. 53/1).
7. Disconnect the CO_2-IN line from the coupling (Fig. 53/6).

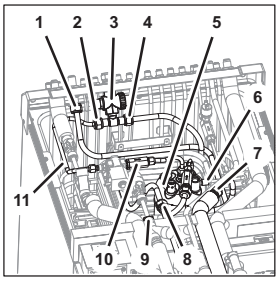


Fig. 53

8. Disconnect the soda water line to the circulation pump from the push-in fitting (Fig. 53/9).
9. Disconnect the connecting line of carbonator pump 1 from the pre-cooling coil 1 of the coupling (Fig. 53/8).
10. Disconnect the connecting line of carbonator pump 2 from the pre-cooling coil 2 of the coupling (Fig. 53/7).

11. Disconnect Water-IN line 2 (Fig. 54/2) from the connecting plate (Fig. 54/1).
12. Disconnect Water-IN line 2 (Fig. 54/2) from the push-in fitting (Fig. 54/3).

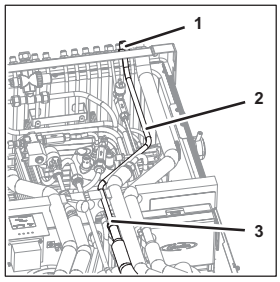


Fig. 54

13. Lift the cooling coil basket (Fig. 55/4) with carbonator tank (Fig. 55/3) out of the unit.
14. Disconnect the connecting line from the non-return valve of the solenoid valve (Fig. 55/2) to the carbonator tank (Fig. 55/3) from the coupling (Fig. 55/1).

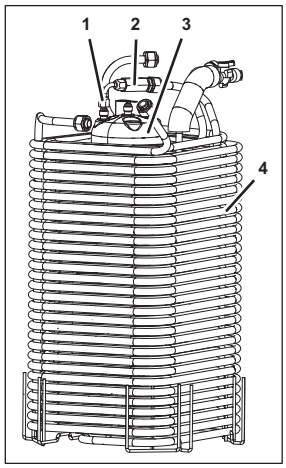


Fig. 55

15. Disconnect the soda cooling line from the coupling (Fig. 56/1).
16. Disconnect the soda water line from the coupling (Fig. 56/2).
17. Lift the carbonator tank (Fig. 55/3) up and out of the cooling coil basket (Fig. 55/4).
18. Position the new carbonator tank (Fig. 55/3) within the cooling coil basket (Fig. 55/4).
19. Attach the carbonator tank (Fig. 55/3) to the cooling coil basket (Fig. 55/4) using a cable tie.
20. Make sure the carbonator tank (Fig. 55/3) is firmly placed against the cooling coils.
21. Attach the soda water line to the coupling (Fig. 56/2).
22. Attach the soda cooling line to the coupling (Fig. 56/1).

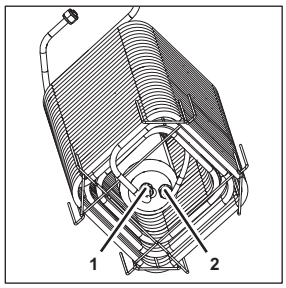


Fig. 56

23. Attach the connecting line from the non-return valve of the solenoid valve (Fig. 55/2) to the carbonator tank (Fig. 55/3) to the coupling (Fig. 55/1).
24. Position the cooling coil basket (Fig. 55/4) with carbonator tank (Fig. 55/3) within the unit.
25. Attach Water-IN line 2 (Fig. 54/2) to the push-in fitting (Fig. 54/3).
26. Attach Water-IN line 2 (Fig. 54/2) to the connecting plate (Fig. 54/1).
27. Attach the connecting line from carbonator pump 2 to pre-cooling coil 2 to the coupling (Fig. 53/7).
28. Attach the connecting line from carbonator pump 1 to pre-cooling coil 1 to the coupling (Fig. 53/8).
29. Attach the soda water line to the circulation pump to the push-in fitting (Fig. 53/9).
30. Attach the CO_2-IN line to the coupling (Fig. 53/6).
31. Attach the soda water circulation line (return) to the coupling (Fig. 53/1).
32. Attach the pre-cooling coil to the coupling (Fig. 53/4).
33. Position the water input line (Fig. 53/11) with the connecting line from the non-return valve of the solenoid valve (Fig. 53/10) to the carbonator tank within the unit.
34. Attach the connecting line from the non-return valve of the solenoid valve (Fig. 53/10) to the carbonator tank to the coupling (Fig. 53/5).
35. Attach the water input line (Fig. 53/11) on the coupling (Fig. 53/2) to the T-fitting of the water inlet pressure reducing valve (Fig. 53/3).
36. Attach the plug (Fig. 52/2) of the solenoid valve (Fig. 52/3) by removing the fastening bolt (Fig. 52/1).

Undercounter cooler Energize 5 (R134a) single

1. Disconnect the plug (Fig. 57/6) of the solenoid valve (Fig. 57/7) by removing the fastening bolt (Fig. 57/1).
2. Disconnect the water input line on the coupling (Fig. 57/5) from the T-fitting of the water inlet pressure reducing valve (Fig. 57/4).
3. Disconnect the pre-cooling coil from the coupling (Fig. 57/2).
4. Disconnect the soda water circulation line (return) from the coupling (Fig. 57/3).

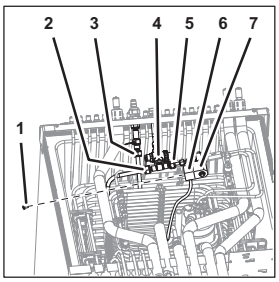


Fig. 57

5. Disconnect the CO_2-IN line from the coupling (Fig. 58/1).
6. Disconnect the connecting line of carbonator pump 1 from the pre-cooling coil 1 of the coupling (Fig. 58/3).
7. Disconnect the connecting line of carbonator pump 2 from the pre-cooling coil 2 of the coupling (Fig. 58/2).
8. Disconnect the soda water line to the circulation pump from the push-in fitting (Fig. 58/4).

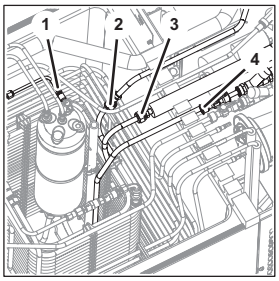


Fig. 58

9. Lift the cooling coil basket (Fig. 59/4) with carbonator tank (Fig. 59/3) out of the unit.
10. Disconnect the connecting line from non-return valve 1 to the carbonator tank (Fig. 59/3) from the coupling (Fig. 59/2).
11. Disconnect the connecting line from non-return valve 2 to the carbonator tank (Fig. 59/3) from the coupling (Fig. 59/1).

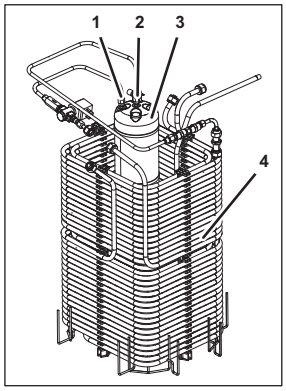


Fig. 59

12. Disconnect the soda cooling line from the coupling (Fig. 60/1).
13. Disconnect the soda water line from the coupling (Fig. 60/2).
14. Lift the carbonator tank (Fig. 59/3) up and out of the cooling coil basket (Fig. 59/4).
15. Position the new carbonator tank (Fig. 59/3) within the cooling coil basket (Fig. 59/4).
16. Attach the carbonator tank (Fig. 59/3) to the cooling coil basket (Fig. 59/4) using a cable tie.
17. Make sure the carbonator tank (Fig. 59/3) is firmly placed against the cooling coils.
18. Attach the soda water line to the coupling (Fig. 60/2).
19. Attach the soda cooling line to the coupling (Fig. 60/1).

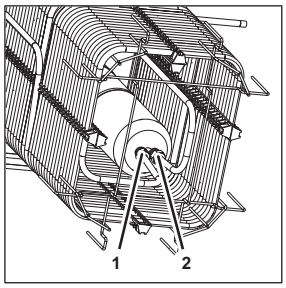


Fig. 60

20. Attach the connecting line from non-return valve 2 to the carbonator tank (Fig. 59/3) to the coupling (Fig. 59/1).
21. Attach the connecting line from non-return valve 1 to the carbonator tank (Fig. 59/3) to the coupling (Fig. 59/2).
22. Position the cooling coil basket (Fig. 59/4) with carbonator tank (Fig. 59/3) within the unit.
23. Attach the soda water line to the circulation pump to the push-in fitting (Fig. 58/4).
24. Attach the connecting line from carbonator pump 2 to pre-cooling coil 2 to the coupling (Fig. 58/2).
25. Attach the connecting line from carbonator pump 1 to pre-cooling coil 1 to the coupling (Fig. 58/3).
26. Attach the CO_2-IN line to the coupling (Fig. 58/1).
27. Attach the soda water circulation line (return) to the coupling (Fig. 57/3).
28. Attach the pre-cooling coil to the coupling (Fig. 57/2).
29. Attach the water input line on the coupling (Fig. 57/5) to the T-fitting of the water inlet pressure reducing valve (Fig. 57/4).
30. Attach the plug (Fig. 57/6) of the solenoid valve (Fig. 57/7) by removing the fastening bolt (Fig. 57/1).

Undercounter cooler Energize 5 (R134a) dual

1. Disconnect the plug (Fig. 61/5) of the solenoid valve (Fig. 61/6) by removing the fastening bolt (Fig. 61/1).
2. Disconnect the plugs (Fig. 61/7) of the CO_2 pressure switch (Fig. 61/8).
3. Disconnect the water input line on the coupling (Fig. 61/3) from the T-fitting of the water inlet pressure reducing valve (Fig. 61/4).
4. Disconnect the coupling (Fig. 61/2) on pre-cooling coil 1 from the T-fitting of the water inlet pressure reducing valve (Fig. 61/4).
5. Disconnect the coupling (Fig. 61/10) of pre-cooling coil 1 from the carbonator tank (Fig. 61/11).
6. Lift the connecting line (Fig. 61/9) of pre-cooling coil 1 out of the unit.

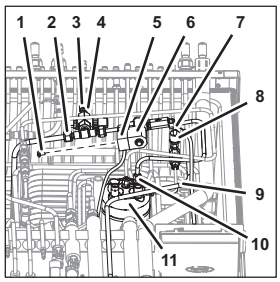


Fig. 61

7. Disconnect the coupling (Fig. 62/1) of pre-cooling coil 2.
8. Disconnect the coupling (Fig. 62/4) of pre-cooling coil 2 from the carbonator tank (Fig. 62/3).
9. Lift the connecting line (Fig. 62/2) of pre-cooling coil 2 out of the unit.
10. Disconnect the CO_2-IN line from the coupling (Fig. 62/5).

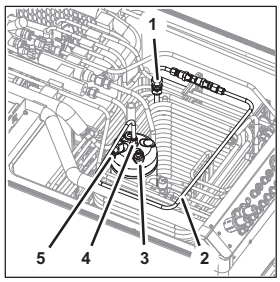


Fig. 62

11. Disconnect the coupling (Fig. 63/5) from the T-fitting (Fig. 63/6) of the soda water circulation line (return) (Fig. 63/7 and 8).
12. Disconnect the additional syrup connections (Fig. 63/9) from the connecting plate (Fig. 63/11).
13. Disconnect the coupling (Fig. 63/10) of Water-IN line 2 (Fig. 63/12) from the connecting plate (Fig. 63/11).
14. Disconnect Water-IN line 2 (Fig. 63/12) from the push-in fitting (Fig. 63/2) of the water inlet valve (Fig. 63/1).
15. Lift Water-IN line 2 (Fig. 63/12) out of the unit.
16. Disconnect the connecting line of carbonator pump 1 from the pre-cooling coil 1 of the coupling (Fig. 63/13).
17. Disconnect the connecting line of carbonator pump 2 from the pre-cooling coil 2 of the coupling (Fig. 63/4).

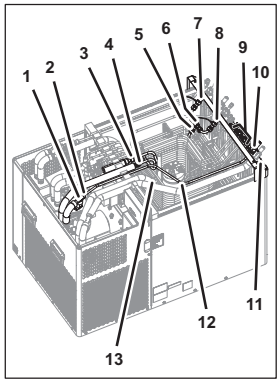


Fig. 63

18. Disconnect the coupling (Fig. 63/3) from the soda water line to the circulation pump from the T-fitting.
19. Lift the cooling coil basket (Fig. 64/2) with carbonator tank (Fig. 64/1) out of the unit.

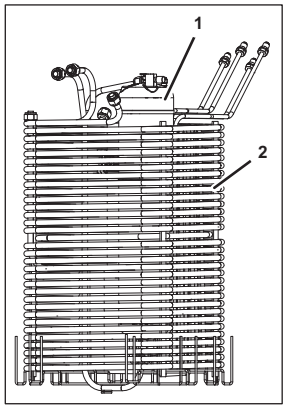


Fig. 64

20. Disconnect the soda cooling line from the coupling (Fig. 65/1).
21. Disconnect the soda water line from the coupling (Fig. 65/2).
22. Lift the carbonator tank (Fig. 64/1) up and out of the cooling coil basket (Fig. 64/2).
23. Position the new carbonator tank (Fig. 64/1) within the cooling coil basket (Fig. 64/2).
24. Attach the carbonator tank (Fig. 64/1) to the cooling coil basket (Fig. 64/2) using a cable tie.
25. Make sure the carbonator tank (Fig. 64/1) is firmly placed against the cooling coils.
26. Attach the soda water line to the coupling (Fig. 65/2).
27. Attach the soda cooling line to the coupling (Fig. 65/1).

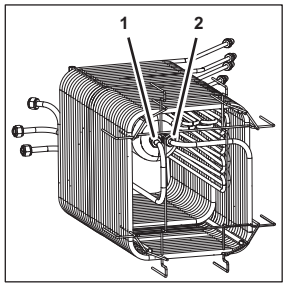


Fig. 65

28. Position the cooling coil basket (Fig. 64/2) with carbonator tank (Fig. 64/1) within the unit.
29. Attach the coupling (Fig. 63/4) from the soda water line to the circulation pump to the T-fitting.
30. Attach the connecting line from carbonator pump 2 to pre-cooling coil 2 to the coupling (Fig. 63/3).
31. Attach the connecting line from carbonator pump 1 to pre-cooling coil 1 to the coupling (Fig. 63/13).
32. Position Water-IN line 2 (Fig. 63/12) within the unit.
33. Attach Water-IN line 2 (Fig. 63/12) to the push-in fitting (Fig. 63/2) of the water inlet valve (Fig. 63/1).
34. Attach the coupling (Fig. 63/10) of Water-IN line 2 (Fig. 63/12) to the connecting plate (Fig. 63/11).
35. Attach the additional syrup connections (Fig. 63/9) to the connecting plate (Fig. 63/11).
36. Attach the coupling (Fig. 63/5) to the T-fitting (Fig. 63/7) of the soda water circulation line (return) (Fig. 63/6 and 8).
37. Attach the CO_2-IN line to the coupling (Fig. 62/5).
38. Position the connecting line (Fig. 62/2) of pre-cooling coil 2 within the unit.
39. Attach the coupling (Fig. 62/4) of pre-cooling coil 2 to the carbonator tank (Fig. 62/3).
40. Attach the coupling (Fig. 62/1) to pre-cooling coil 2.
41. Position the connecting line (Fig. 61/9) of pre-cooling coil 1 within the unit.
42. Attach the coupling (Fig. 61/10) of pre-cooling coil 1 to the carbonator tank (Fig. 61/11).
43. Attach the coupling (Fig. 61/2) on pre-cooling coil 1 to the T-fitting of the water inlet pressure reducing valve (Fig. 61/4).
44. Attach the water input line on the coupling (Fig. 61/3) to the T-fitting of the water inlet pressure reducing valve (Fig. 61/4).
45. Attach the plugs (Fig. 61/7) of the CO_2 pressure switch (Fig. 61/8).
46. Attach the plug (Fig. 61/5) of the solenoid valve (Fig. 61/6) by removing the fastening bolt (Fig. 61/1).

Finishing tasks

1. Mount the agitator motor; see chapter 7.4.
2. Mount the drain valve for the carbonator tank; see chapter 7.17.
3. Mount the level electrode; see chapter 7.16.
4. Mount the water bath temperature probe; see chapter 7.5.
5. Mount the cover; see chapter 7.1.

7.13 Replacing the solenoid valve for the carbonator tank

Prerequisites	References
The cover has been removed.	see chapter 7.1

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Solenoid valve	440000672	1	
Energize 4 (R134a): Solenoid valve	440000672	1	
Energize 5 (R134a) single: Solenoid valve	440000672	1	
Energize 5 (R134a) dual: Solenoid valve	440000672	1	
Seal	311304000	2	Plastic, black 5/8"
Thread adhesive	Loctite 243		

1. Release the coupling (Fig. 66/1) on the solenoid valve (Fig. 66/2).
2. Release the coupling (Fig. 66/4) on the non-return valve (Fig. 66/3).
3. Lift the solenoid valve (Fig. 66/2) with non-return valve (Fig. 66/3) out of the unit.

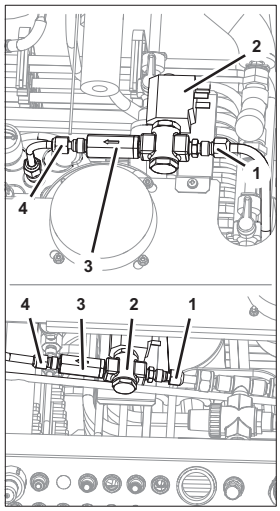


Fig. 66

4. Disconnect the non-return valve (Fig. 67/2) from the solenoid valve (Fig. 67/1).
5. Attach the new solenoid valve (Fig. 67/1) to the non-return valve (Fig. 67/2).
6. Check the seals (Fig. 67/3) for damage.
   Replace any damaged seals (Fig. 67/3).
7. Apply Loctite to the solenoid valve (Fig. 67/1) and to the non-return valve (Fig. 67/2).
8. Position the solenoid valve (Fig. 67/1) with non-return valve (Fig. 67/2) within the unit.
9. Attach the solenoid valve (Fig. 66/2) and the non-return valve (Fig. 66/3) using the couplings (Fig. 66/1 and Fig. 66/4).

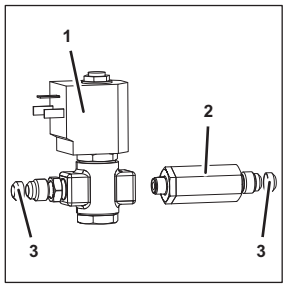


Fig. 67

Finishing tasks

1. Mount the cover; see chapter 7.1.

7.14 Replacing the non-return valve of the solenoid valve for the carbonator tank

Prerequisites	References
The solenoid valve for the carbonator tank has been removed.	see chapter 7.13

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Non-return valve	220105624	1	
Energize 4 (R134a): Non-return valve	220105624	1	
Energize 5 (R134a) single: Non-return valve	220105624	1	
Energize 5 (R134a) dual: Non-return valve	220105624	1	
Seal	311304000	1	Plastic, black 5/8"
Thread adhesive	Loctite 243		

1. Disconnect the non-return valve (Fig. 68/2) from the solenoid valve (Fig. 68/1).
2. Apply Loctite to the new non-return valve (Fig. 68/2).
3. Attach the non-return valve (Fig. 68/2) to the solenoid valve (Fig. 68/1).

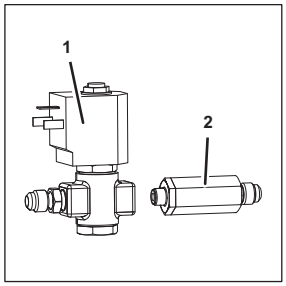


Fig. 68

4. Check the seals (Fig. 69/2) for damage.
   Replace any damaged seals (Fig. 69/2).

Finishing tasks

1. Mount the solenoid valve for the carbonator tank; see chapter 7.13.

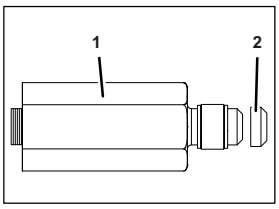


Fig. 69

7.15 Replacing the non-return valve for the carbonator tank

Prerequisites	References
The cover has been removed.	see chapter 7.1

Spare parts	ID/reference	Qty/amount	Comment
Energize 4 (R134a): Non-return valve	220106873	1	
Energize 5 (R134a) single: Non-return valve	77400601	1	
Energize 5 (R134a) dual: Non-return valve	77400601	1	
Seal	311304000	2	Plastic, black 5/8"

Undercounter cooler Energize 4 (R134a)

1. Release the couplings (Fig. 70/1 and 3) on the non-return valve (Fig. 70/2).
2. Lift the non-return valve (Fig. 70/2) out of the unit.

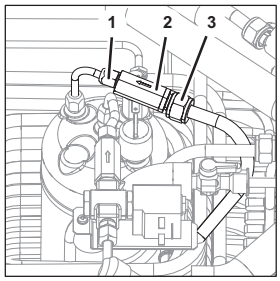


Fig. 70

3. Check the seals (Fig. 71/1) for damage.
   Replace any damaged seals (Fig. 71/1).
4. Position the new non-return valve (Fig. 71/2) within the unit.
5. Attach the non-return valve (Fig. 70/2) using the couplings (Fig. 70/1 and 3).

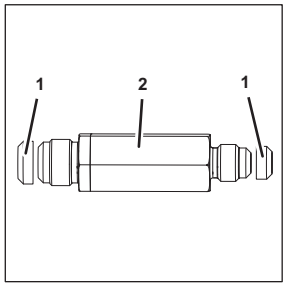


Fig. 71

Undercounter cooler Energize 5 (R134a) single/Energize 5 (R134a) dual

1. Release the couplings (Fig. 72/1 and 3) on the non-return valve (Fig. 72/2).
2. Lift the non-return valve (Fig. 72/2) out of the unit.

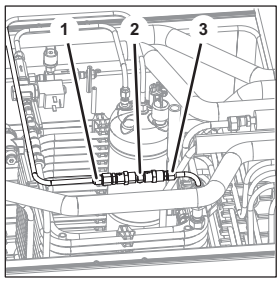


Fig. 72

3. Check the seals (Fig. 73/1) for damage.
   Replace any damaged seals (Fig. 73/1).
4. Position the new non-return valve (Fig. 73/2) within the unit.
5. Attach the non-return valve (Fig. 72/2) using the couplings (Fig. 72/1 and 3).

Finishing tasks

1. Mount the cover; see chapter 7.1.

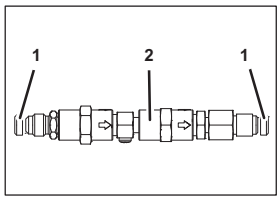


Fig. 73

7.16 Replacing the level electrode for the carbonator tank

Prerequisites	References
The cover has been removed.	see chapter 7.1

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Level electrode	440000802	1	
Energize 4 (R134a): Level electrode	440000806	1	
Energize 5 (R134a) single: Level electrode	440000806	1	
Energize 5 (R134a) dual: Level electrode	440000806	1	
Seal	180024000	1	

1. Disconnect the plug (Fig. 74/1) from the level electrode (Fig. 74/2).
2. Disconnect the earth cable (Fig. 74/3).

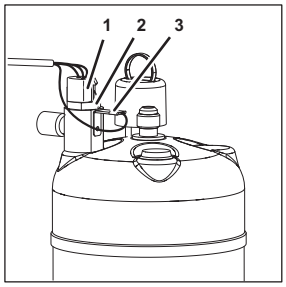


Fig. 74

3. Turn the level electrode (Fig. 75/1) and remove it from the carbonator tank (Fig. 75/2).

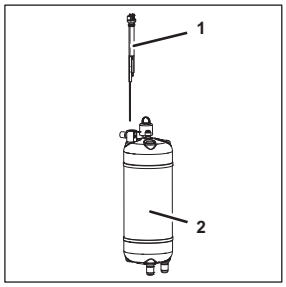


Fig. 75

4. Check the seal (Fig. 76/1) of the level electrode (Fig. 76/2) for damage.
   Replace any damaged seals (Fig. 76/1).
5. Attach the new level electrode (Fig. 75/1) to the carbonator tank (Fig. 75/2) by turning it.
6. Connect the earth cable (Fig. 74/3).
7. Connect the plug (Fig. 74/1) of the level electrode (Fig. 74/2).

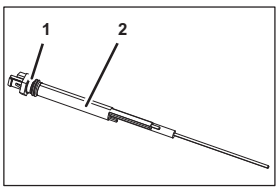


Fig. 76

Finishing tasks

1. Mount the cover; see chapter 7.1.

7.17 Replacing the drain valve for the carbonator tank

Prerequisites	References
The cover has been removed.	see chapter 7.1

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Drain valve	000001116	1	
Energize 4 (R134a): Drain valve	000001116	1	
Energize 5 (R134a) single: Drain valve	000001116	1	
Energize 5 (R134a) dual: Drain valve	000001116	1	

1. Remove the protective cap (Fig. 77/2) from the drain valve (Fig. 77/1).

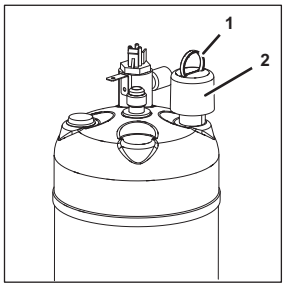


Fig. 77

2. Turn the drain valve (Fig. 78/1) and remove it from the carbonator tank (Fig. 78/2).
3. Attach the new drain valve (Fig. 78/1) to the carbonator tank (Fig. 78/2) by turning it.
4. Attach the protective cap (Fig. 77/2) to the drain valve (Fig. 77/1).

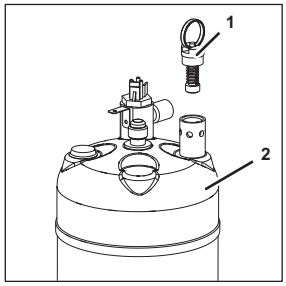


Fig. 78

Finishing tasks

1. Mount the cover; see chapter 7.1.

7.18 Replacing the non-return valve CO_2-IN

Prerequisites	References
The CO_2 pressure switch has been removed.	see chapter 7.19

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Non-return valve	220105782	1	
Energize 4 (R134a): Non-return valve	220105782	1	
Energize 5 (R134a) single: Non-return valve	220105782	1	
Energize 5 (R134a) dual: Non-return valve	220105782	1	
Seal	311304000	2	Plastic, black 5/8"

1. Release the couplings (Fig. 79/1 and 3) on the non-return valve (Fig. 79/2).
2. Lift the non-return valve (Fig. 79/2) out of the unit.

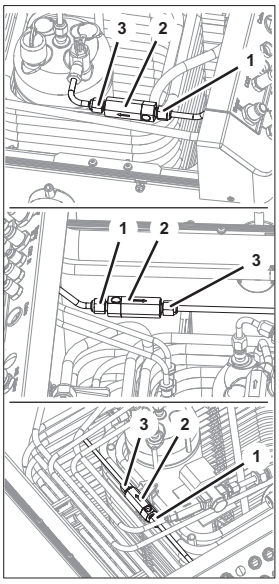


Fig. 79

3. Check the seals (Fig. 80/1) for damage.
   Replace any damaged seals (Fig. 80/1).
4. Position the new non-return valve (Fig. 80/2) within the unit.
5. Attach the non-return valve (Fig. 79/2) using the couplings (Fig. 79/1 and 3).

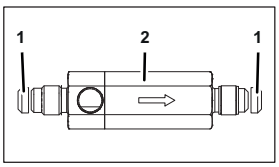


Fig. 80

Finishing tasks

1. Mount the CO_2 pressure switch; see chapter 7.19.

7.19 Replacing the CO_2 pressure switch

Prerequisites	References
The cover has been removed.	see chapter 7.1

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): CO_2 pressure switch	890904815	1	
Energize 4 (R134a): CO_2 pressure switch	890904815	1	
Energize 5 (R134a) single: CO_2 pressure switch	890904815	1	
Energize 5 (R134a) dual: CO_2 pressure switch	890904815	1	
Thread adhesive	Loctite 243		

1. Disconnect the plugs (Fig. 81/1) of the CO_2 pressure switch (Fig. 81/3).
2. Turn the CO_2 pressure switch (Fig. 81/3) and remove it from the non-return valve (Fig. 81/2).
3. Apply Loctite to the new CO_2 pressure switch (Fig. 81/3).
4. Attach the new CO_2 pressure switch (Fig. 81/3) to the non-return valve (Fig. 81/2) by turning it.
5. Connect the plugs (Fig. 81/1) of the CO_2 pressure switch (Fig. 81/3).

Finishing tasks

1. Mount the cover; see chapter 7.1.

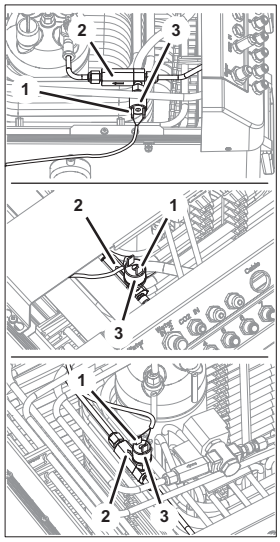


Fig. 81

7.20 Replacing the temperature probe for the soda water circulation

Prerequisites	References
The cover has been removed.	see chapter 7.1
The cover for control system 1 has been removed.	see chapter 7.21
Energize 5 (R134a) dual: The cover for control system 2 has been removed.	see chapter 7.22

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Temperature probe	220105776	1	
Energize 4 (R134a): Temperature probe	220105776	1	
Energize 5 (R134a) single: Temperature probe	220105776	1	
Energize 5 (R134a) dual: Temperature probe	220105776	2	
Thread adhesive	Loctite 243		

Undercounter cooler entfällt/Energize 3 (R134a)/Energize 4 (R134a)/Energize 5 (R134a) single

1. Disconnect the plug (Fig. 82/3) of the temperature probe (Fig. 82/2) from control system 1 (Fig. 82/4).
2. Turn the temperature probe (Fig. 82/2) and remove it from the connection (Fig. 82/1).
3. Apply Loctite to the new temperature probe (Fig. 82/2).
4. Attach the temperature probe (Fig. 82/2) to the connection (Fig. 82/1) by turning it.
5. Install the electrical cable of the temperature probe (Fig. 82/2) within the unit.
6. Connect the plug (Fig. 82/3) of the temperature probe (Fig. 82/2) to control system 1 (Fig. 82/4).

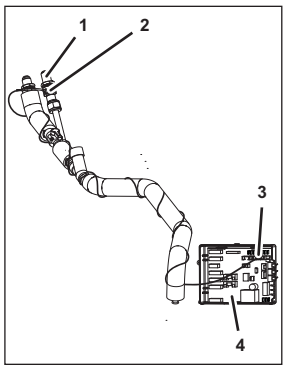


Fig. 82

Undercounter cooler Energize 5 (R134a) dual

1. Disconnect the plug (Fig. 83/3) of temperature probe 1 (Fig. 83/2) from control system 1 (Fig. 83/4).
2. Disconnect the plug (Fig. 83/3) of temperature probe 2 (Fig. 83/2) from control system 2 (Fig. 83/4).
3. Turn the temperature probe (Fig. 83/2) and remove it from the connection (Fig. 83/1).
4. Apply Loctite to the new temperature probe (Fig. 83/2).
5. Attach the new temperature probe (Fig. 83/2) to the connection (Fig. 83/1) by turning it.
6. Install the electrical cable of the temperature probe (Fig. 83/2) within the unit.
7. Connect the plug (Fig. 83/3) of temperature probe 1 (Fig. 83/2) to control system 1 (Fig. 83/4).
8. Connect the plug (Fig. 83/3) of temperature probe 2 (Fig. 83/2) to control system 2 (Fig. 83/4).

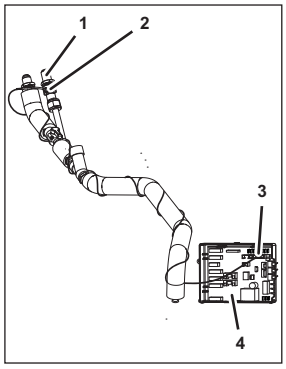


Fig. 83

Finishing tasks

1. Mount the cover of control system 1; see chapter 7.21.
2. **Only on Energize 5 (R134a) dual:** Mount the cover of control system 2; see chapter 7.22.
3. Mount the cover; see chapter 7.1.

7.21 Replacing control system 1

Prerequisites	References
The cover has been removed.	see chapter 7.1

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Control system	141647605B	1	
Energize 4 (R134a): Control system	141647605B	1	
Energize 5 (R134a) single: Control system	141647605B	1	
Energize 5 (R134a) dual: Control system	141647605B	1	

1. Open the cover (Fig. 84/1) of control system 1 (Fig. 85/1).

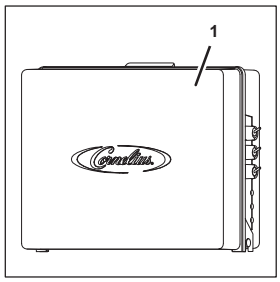


Fig. 84

2. Disconnect all necessary electrical cables and plugs from control system 1(Fig. 85/1).

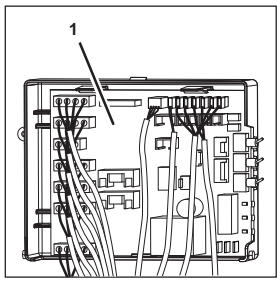


Fig. 85

3. Remove the fastening bolt (Fig. 86/1) from control system 1 (Fig. 86/2).
4. Slide control system 1 (Fig. 86/2) to the left and lift control system 1 (Fig. 86/2) out of the unit.
5. Position the new control system 1 (Fig. 86/2) within the unit.
6. Slide control system 1 (Fig. 86/2) to the right and push control system 1 (Fig. 86/2) down until control system 1 (Fig. 86/2) locks into place.
7. Attach control system 1 (Fig. 86/2) using the fastening bolt (Fig. 86/1).
8. Connect all electrical cables and plugs to control system 1 (Fig. 85/1).
9. Close the cover (Fig. 84/1) of control system 1 (Fig. 85/1).

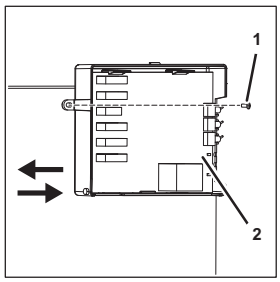


Fig. 86

Finishing tasks

1. Mount the cover; see chapter 7.1.

7.22 Replacing control system 2 (Energize 5 (R134a) dual only)

Prerequisites	References
The cover has been removed.	see chapter 7.1

Spare parts	ID/reference	Qty/amount	Comment
Energize 5 (R134a) dual: Control system	141647605B	1	

1. Open the cover (Fig. 87/1) of control system 2 (Fig. 88/1).

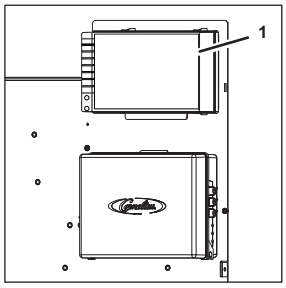


Fig. 87

2. Disconnect all necessary electrical cables and plugs from control system 2(Fig. 88/1).

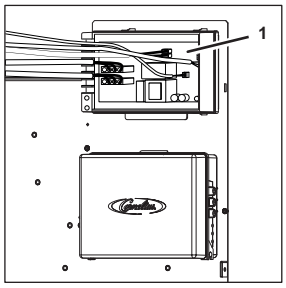


Fig. 88

3. Slide control system 2 (Fig. 89/1) to the left and lift control system 2 (Fig. 89/1) out of the unit.
4. Position the new control system 2 (Fig. 89/1) within the unit.
5. Slide control system 2 (Fig. 89/1) to the right and push control system 2 (Fig. 89/1) down until control system 2 (Fig. 89/1) locks into place.
6. Connect all electrical cables and plugs to control system 2 (Fig. 88/1).
7. Close the cover (Fig. 87/1) of control system 2 (Fig. 88/1).

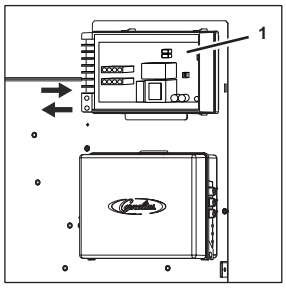


Fig. 89

Finishing tasks

1. Mount the cover; see chapter 7.1.

7.23 Replacing the fan

Prerequisites	References
The sheet casing has been removed (service).	see chapter 7.2
The hot gas sensor has been removed.	see chapter 7.6

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Fan	440000006	1	
Energize 4 (R134a): Fan	440000006	1	
Energize 5 (R134a) single: Fan	440000018	1	
Energize 5 (R134a) dual: Fan	440000018	1	

1. Disconnect the plug (Fig. 90/2) from the fan (Fig. 90/1).

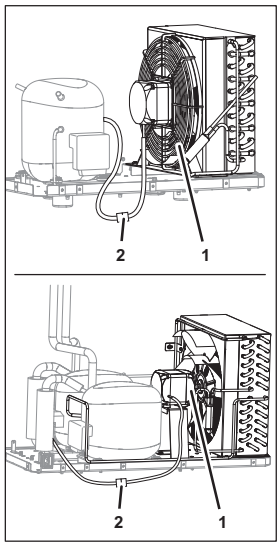


Fig. 90

2. Remove the fastening bolts (Fig. 91/2) from the fan (Fig. 91/1).
3. Carefully lift the air scoop with fan (Fig. 91/1) out of the unit.

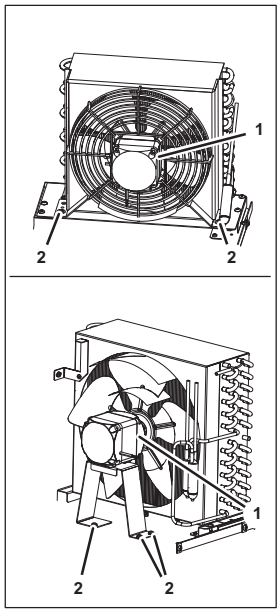


Fig. 91

4. Remove the fan blade (Fig. 92/3) from the fan motor (Fig. 92/2).
5. Remove the fastening bolts/the fastening nuts (Fig. 92/1) from the fan motor (Fig. 92/2).
6. Attach the new fan motor (Fig. 92/2) using the fastening bolts/fastening nuts (Fig. 92/1).
7. Attach the fan blade (Fig. 92/3) to the fan motor (Fig. 92/2).
8. Position the new fan (Fig. 91/1) within the unit.
9. Attach the air scoop with fan (Fig. 91/1) using the fastening bolts (Fig. 91/2).
10. Connect the plug (Fig. 90/2) to the fan (Fig. 90/1).

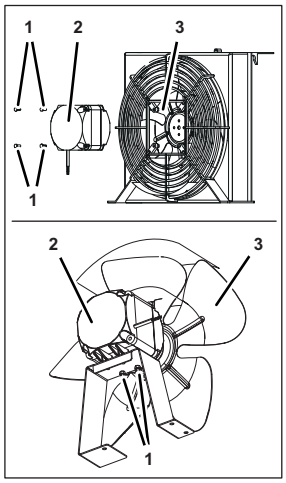


Fig. 92

Finishing tasks

1. Mount the hot gas sensor; see chapter 7.6.
2. Mount the sheet casing (service); see chapter 7.2.

7.24 Replacing the starting capacitor for the carbonator pump motor

Prerequisites	References
The cover has been removed.	see chapter 7.1

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Starting capacitor	440000540	1	
Energize 4 (R134a): Starting capacitor	440000540	2	
Energize 5 (R134a) single: Starting capacitor	440000540	2	
Energize 5 (R134a) dual: Starting capacitor	440000540	2	

1. Remove the protective cap (Fig. 93/1) from the starting capacitor (Fig. 93/2).

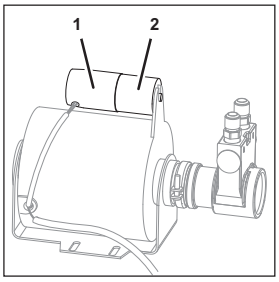


Fig. 93

2. Disconnect the plugs (Fig. 94/1) of the starting capacitor (Fig. 94/2).
3. Remove the fastening nut (Fig. 94/3) from the starting capacitor (Fig. 94/2).
4. Remove the starting capacitor (Fig. 94/2).
5. Position the new starting capacitor (Fig. 94/2) within the unit
6. Attach the starting capacitor (Fig. 94/2) using the fastening nut (Fig. 94/3).
7. Connect the plugs (Fig. 94/1) of the starting capacitor (Fig. 94/2).
8. Attach the protective cap (Fig. 93/1) to the starting capacitor (Fig. 93/2).

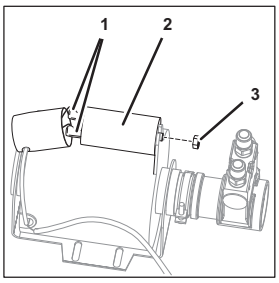


Fig. 94

Finishing tasks

1. Mount the sheet casing (service); see chapter 7.1.

7.25 Replacing the starting capacitor of the compressor

Prerequisites	References
The sheet casing has been removed (service).	see chapter 7.2

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Starting capacitor	440000540	1	
Energize 4 (R134a): Starting capacitor	440000423	1	
Energize 5 (R134a) single: Starting capacitor	440005110	2	
Energize 5 (R134a) dual: Starting capacitor	440005110	2	

1. Remove the cover (Fig. 95/1) from the electrical assembly.

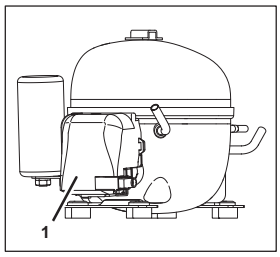


Fig. 95

2. Disconnect the electrical cables (Fig. 96/1).
3. Remove the fastening nut (Fig. 96/2) from the starting capacitor (Fig. 96/3).
4. Remove the starting capacitor (Fig. 96/3).
5. Position the new starting capacitor (Fig. 96/3) within the unit
6. Attach the starting capacitor (Fig. 96/3) using the fastening nut (Fig. 96/2).
7. Connect the electrical cables (Fig. 96/1).
8. Attach the cover (Fig. 95/1) of the electrical assembly.

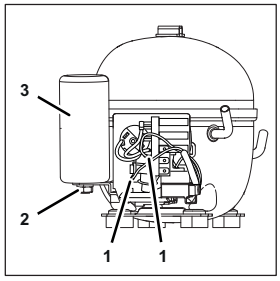


Fig. 96

Finishing tasks

1. Mount the sheet casing (service); see chapter 7.2.

7.26 Replacing the starter relay

Prerequisites	References
The sheet casing has been removed (service).	see chapter 7.2

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Starter relay	440000422	1	
Energize 4 (R134a): Starter relay	440000423	1	
Energize 5 (R134a) single: Starter relay	440000411	2	
Energize 5 (R134a) dual: Starter relay	440000411	2	

1. Remove the cover (Fig. 97/1) from the electrical assembly.

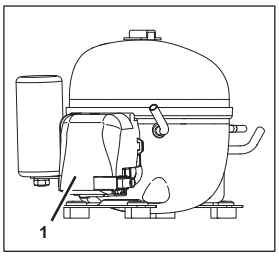


Fig. 97

2. Remove the fastening bolt (Fig. 98/1) from the electrical assembly.

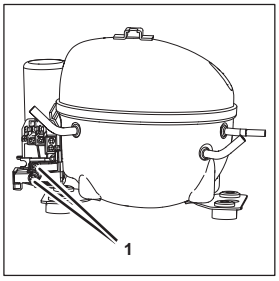


Fig. 98

3. Disconnect the electrical cables (Fig. 99/1) from the starter relay (Fig. 99/2).
4. Remove the starter relay (Fig. 99/2).
5. Position the new starter relay (Fig. 99/2).
6. Connect the electrical cables (Fig. 99/1) of the starter relay (Fig. 99/1).
7. Attach the cover (Fig. 97/1) of the electrical assembly.

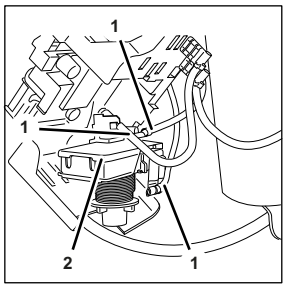


Fig. 99

Finishing tasks

1. Mount the sheet casing (service); see chapter 7.2.

7.27 Replacing the overload protection

Prerequisites	References
The sheet casing has been removed (service).	see chapter 7.2

Spare parts	ID/reference	Qty/amount	Comment
Energize 4 (R134a): Overload protection	440000423	1	
Energize 5 (R134a) single: Overload protection	440005100	1	
Energize 5 (R134a) dual: Overload protection	440005100	1	

1. Remove the cover (Fig. 100/1) from the electrical assembly.

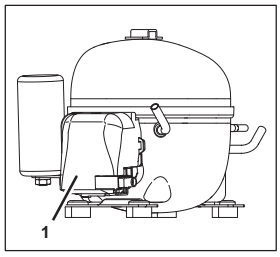


Fig. 100

2. Disconnect the electrical cable (Fig. 101/1) from the overload protection (Fig. 101/2).
3. Remove the overload protection (Fig. 101/2).
4. Position the new overload protection (Fig. 101/2) within the unit.
5. Connect the electrical cable (Fig. 101/1) of the overload protection (Fig. 101/2).
6. Attach the cover (Fig. 100/1) of the electrical assembly.

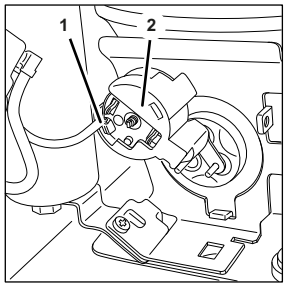


Fig. 101

Finishing tasks

1. Mount the sheet casing (service); see chapter 7.2.

7.28 Replacing the transformer

Prerequisites	References
The cover has been removed.	see chapter 7.1

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Transformer	141647545	1	
Energize 4 (R134a): Transformer	220107889	1	
Energize 5 (R134a) single: Transformer	220107889	1	
Energize 5 (R134a) dual: Transformer	220107889	1	

1. Disconnect all electrical cables from the transformer (Fig. 102/1).

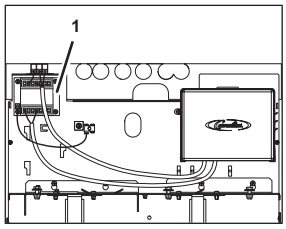


Fig. 102

2. Remove the fastening bolts (Fig. 103/1) from the transformer (Fig. 103/2).
3. Remove the transformer (Fig. 103/2).
4. Position the new transformer (Fig. 103/2) within the unit.
5. Connect all electrical cables to the transformer (Fig. 102/1).

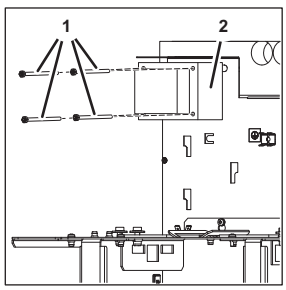


Fig. 103

Finishing tasks

1. Mount the cover; see chapter 7.1.

7.29 Replacing the transformer fuse

Prerequisites	References
The cover has been removed.	see chapter 7.1

Spare parts	ID/reference	Qty/amount	Comment
Energize 3 (R134a): Transformer fuse		1	4 A; type: slow-blow fuse 5x20
Energize 4 (R134a): Transformer fuse		1	4 A; type: slow-blow fuse 5x20
Energize 5 (R134a) single: Transformer fuse		1	4 A; type: slow-blow fuse 5x20
Energize 5 (R134a) dual: Transformer fuse		1	4 A; type: slow-blow fuse 5x20

1. Remove the fuse (Fig. 104/1) from the transformer (Fig. 104/2).
2. Insert the new fuse (Fig. 104/1) into the transformer (Fig. 104/2).

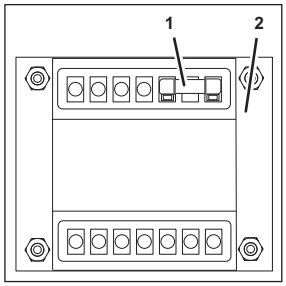


Fig. 104

Finishing tasks

1. Mount the cover; see chapter 7.1.

8 Commissioning/shutdown

DANGER!

Risk of personal injury and equipment damage due to non-compliance with safety information!
Failure to observe the safety information will result in a risk of bringing about operating conditions at the unit, which may cause personal injury or equipment damage.
- Please always strictly observe all safety measures and information/instructions; see chapter 1.

NOTICE!
All installation, maintenance and repair work at the unit is to be carried out by an expert only.

WARNING!

Risk of personal injury and equipment damage due to operation by non-qualified staff!
It is dangerous for non-qualified staff to operate the unit!
- Service operations on this unit may only be carried out by trained and certified experts who have been trained in carrying out service operations on this unit.
- All wiring and plumbing must be carried out in compliance with national and local laws, regulations and guidelines. Non-compliance with these laws, regulations and guidelines may result in death, serious injury or equipment damage.

8.1 Commissioning

NOTICE!
The following describes how the unit is put back into service by an expert following a longer shutdown period (> 24 hours).
If the unit is to be put back into operation after a temporary shutdown (< 24 hours), this may be carried out by the operator or user; see the document “Undercounter cooler operator manual”, document no. TD1005000.

Prerequisites	References
The tower has been put into service.	See the document “Tower installation and service manual”
The unit has been set up properly.	see chapter 5.2
The unit has been cleaned.	See the document “Undercounter cooler operator manual”, document no. TD1005000
All tubes have been properly connected to the unit.	see chapter 5.2

Required tools/materials	ID/reference	Qty/amount	Comment
Undercounter cooler operator manual	Document no. TD1005000	1	
Tower operator manual	Document no. various	1	

NOTICE!
Maximum operating pressure of the valves in the tower is 100 PSI (689.48 kPa).

NOTICE!
To prevent algae building up in the water, the disinfectant Molco (PN 14-9670-150) can be added. The container size with 150 ml disinfectant is sufficient for 30 litres of water.

1. If necessary, fill up the water bath with mains water.
   Make sure the water level is between minimum and maximum.
2. Open the CO_2 bottle valve; see the document on the CO_2 system.
3. Check the pressure-reducing valve on the CO_2 bottle to make sure the CO_2 pressure for carbonation is set as specified (for the setpoint, see the document “Undercounter cooler operator manual”, document no. TD1005000).
4. **Only for types with CO_2-operated syrup pumps:** Check the second pressure-reducing valve on the CO_2 bottle to make sure the CO_2 pressure for pressurising the syrup pumps is set as specified (for the setpoint, see the document “Undercounter cooler operator manual”, document no. TD1005000).
5. Open the CO_2 shut off valves; see the document on the CO_2 system.
6. Open the valve of the water supply; see documentation on the water supply valve.
7. Check the pressure-reducing valve on the water supply pipe to make sure the water pressure is set as specified (for the setpoint, see the document “Undercounter cooler operator manual”, document no. TD1005000).

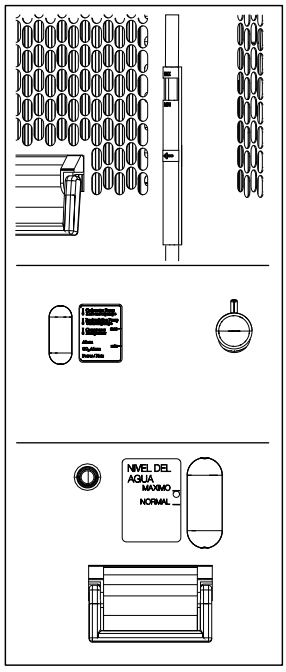


Fig. 105

8. Plug the mains plug into the earthed socket.

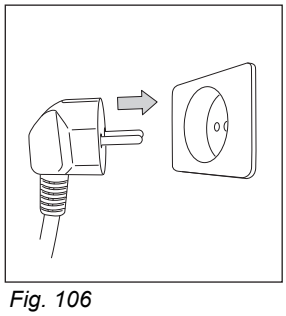


Fig. 106

9. Turn the compressor switch (Fig. 107/3) to position “I”.
10. Turn the carbonator pump switch (Fig. 107/1) to position “I”.
11. Turn the circulation pump switch (Fig. 107/2) to position “I”.

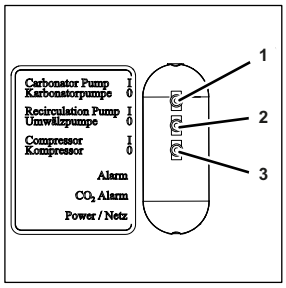


Fig. 107

NOTICE!
Only turn the circulation pump switch to position “I” once the carbonator pump is off.

The unit starts up automatically, switching off the compressor automatically once the ice build-up has reached the specified size.

12. Clean the tubes out; see the document “Tower installation and service manual”.

8.2 Shutdown

NOTICE!
The following describes how the unit is shut down by an expert for a longer period (> 24 hours).
If the unit is to be shut down temporarily (< 24 hours), this may be carried out by the operator or user; see the document “Undercounter cooler operator manual”, document no. TD1005000.

Prerequisites	References
A tower has been installed.	See the document “Tower installation and service manual”

Required tools/materials	ID/reference	Qty/ amount	Comment
Installation and service manual Tower	Document no. various	1	

1. Clean the unit; see the document “Undercounter cooler operator manual”, document no. TD1005000.
2. Shut down the tower; see the document “Tower installation and service manual”.
3. Empty the water bath; see chapter 6.3.
4. Close the CO_2 bottle valve; see documentation on the CO_2 system.
5. Close the CO_2 shut off valves; see documentation on the CO_2 system.
6. Close the valve of the water supply; see documentation on the water system.
7. Turn the compressor switch (Fig. 108/3) to position “0”.
8. Turn the circulation pump switch (Fig. 108/2) to position “0”.
9. Turn the carbonator pump switch (Fig. 108/1) to position “0”.

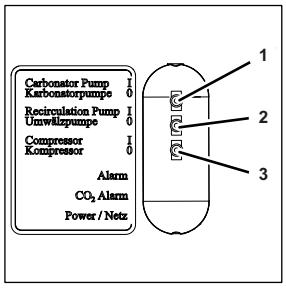


Fig. 108

10. Pull the mains plug out of the earthed socket.

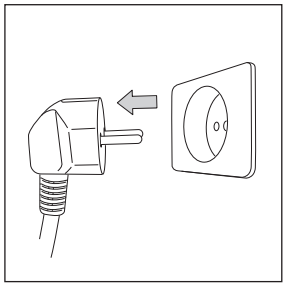


Fig. 109

9 Errors and malfunctions

DANGER!

Risk of personal injury and equipment damage due to non-compliance with safety information!
Failure to observe the safety information will result in a risk of bringing about operating conditions at the unit, which may cause personal injury or equipment damage.

- Please always strictly observe all safety measures and information/instructions; see chapter 1.

NOTICE!
All installation, maintenance and repair work at the unit is to be carried out by an expert only.

WARNING!

Risk of personal injury and equipment damage due to operation by non-qualified staff!
It is dangerous for non-qualified staff to operate the unit!

- Service operations on this unit may only be carried out by trained and certified experts who have been trained in carrying out service operations on this unit.
- All wiring and plumbing must be carried out in compliance with national and local laws, regulations and guidelines. Non-compliance with these laws, regulations and guidelines may result in death, serious injury or equipment damage.

9.1 Troubleshooting table

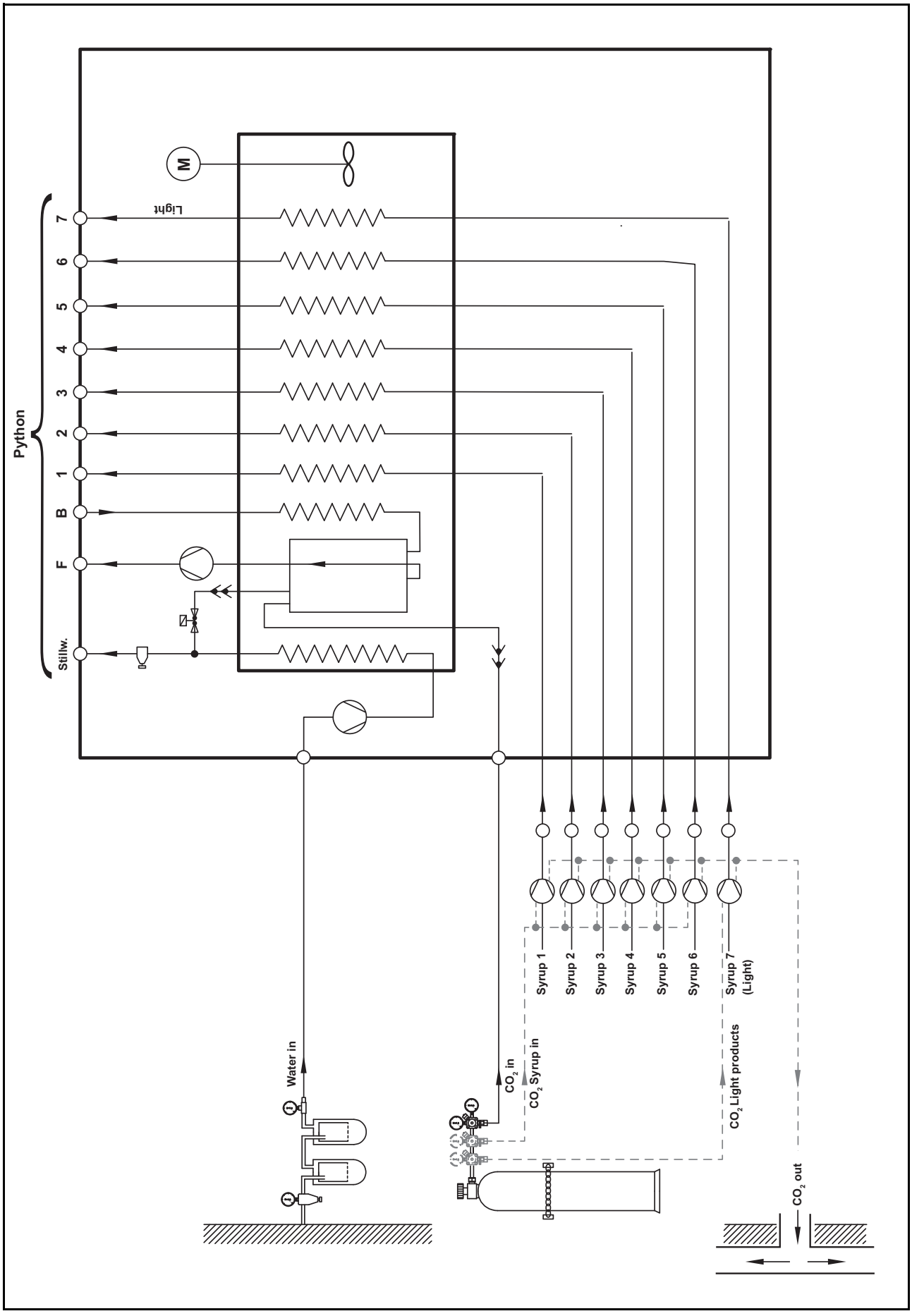
Fault	Probable cause	Remedy
Unable to dispense	No mains/power supply connected	Check the plug on the E-Box as well as the mains plug; insert the plug if necessary (see the document “Tower operator manual”)
	Transformer defective	Replace the transformer; see chapter 7.28
	Transformer fuse defective	Replace the fuse; see chapter 7.29
Beverage is too warm and the compressor is not running	Undercounter cooler is not switched on	Start up the undercounter cooler; see chapter 8.1
	Compressor not running	Switch on the compressor; see chapter 8.1
		Please contact your refrigeration engineer
Beverage is too warm and the compressor is running	Excessive beverage dispensing	Do not exceed the maximum dispensing capacity (see the document “Undercounter cooler operator manual”)
	Condenser is dirty or covered	Clean the condenser; see chapter 6.4
	Agitator motor is defective	Replace the agitator motor; see chapter 7.4
	Circulation pump is defective	Replace the circulation pump; see chapter 7.7
Beverage foams for all brands	All beverages are too warm	Check storage temperature
	CO_2 feed pressure for the soda circuit is too high on the relevant pressure-reducing valve	Adjust the CO_2 feed pressure to the required value (see documentation on the CO_2 system)
	Syrup has been stored too long and has had CO_2 added	Connect a new syrup container (see the document “Undercounter cooler operator manual”)
	Contaminated tubes	Clean the tubes; see chapter 6.2
Only soda is being dispensed	Syrup container is empty	Connect a new syrup container (see the document “Undercounter cooler operator manual”)
	Connections on the syrup container are not properly connected	Connect the connections on the syrup container properly (see documentation on the syrup container)
	CO_2 feed pressure for the syrup circuit is set incorrectly on the relevant pressure-reducing valve	Adjust the CO_2 feed pressure to the required value (see documentation on the CO_2 system)
	Syrup tube is not connected to the syrup container	Connect the syrup tube (see the document “Undercounter cooler operator manual”)
	Syrup tube is contaminated	Clean the syrup tube; see chapter 6.2
	Incorrectly set valve on the tower	Adjust the valve; (see the document “Tower installation and service manual”)
	Defective valve on the tower	Replace the valve; (see the document “Tower installation and service manual”)

Fault	Probable cause	Remedy
	Shut-off valve or pressure-reducing valve for the fresh water supply is closed	Open the shut-off valve and pressure-reducing valve for the fresh water supply (see documentation on the drinking water system)
	Water pressure too high or too low	Check the water pressure on the pressure-reducing valve and adjust, if necessary; see chapter 8.1
Only syrup is being dispensed	Circulation pump is switched off	Switch on the circulation pump; see chapter 8.1
	Circulation pump is defective	Replace the circulation pump; see chapter 7.7
	Carbonator pump is switched off	Switch on the carbonator pump; see chapter 8.1
	Carbonator pump is defective	Replace the carbonator pump; see chapter 7.10
	Carbonator pump motor defective	Replace the carbonator pump motor; see chapter 7.11
	Water in the cooling coils is frozen	Thaw the ice build-up; see chapter 6.6
Soda/syrup ratio is incorrect	Too little/too much soda	Check the soda flow setting (see the document “Tower operator manual”)
		Adjust the valve; (see the document “Tower installation and service manual”)
	Too little/too much syrup	Check the flow setting for the affected brand (see the document “Tower operator manual”)
		Adjust the valve; (see the document “Tower installation and service manual”)
	CO_2 feed pressure for the syrup circuit is set incorrectly on the relevant pressure-reducing valve	Adjust the CO_2 feed pressure to the required value (see documentation on the CO_2 system)
Insufficient amount of CO2 in the beverage	CO_2 pressure for soda is set incorrectly on the relevant pressure-reducing valve	Correctly adjust the CO_2 pressure for soda on the relevant pressure-reducing valve (see documentation on the CO_2 system)
	Air in the carbonator tank	Bleed the carbonator tank; see chapter 6.5
	CO_2 supply is contaminated	Clean the CO_2 supply; see chapter 6.2
Alarm on (red)	Time out on pump cycle; carbonator pump is blocked	Check the water pressure; see chapter 8.1
		Briefly stop operation of the undercounter cooler; see chapter 8.2
Alarm (red) flashes approx. 1x per second	Time out due to insufficient water (pressure fluctuations), carbonator pump is blocked.	Check the water pressure; see chapter 8.1
		Briefly stop operation of the undercounter cooler; see chapter 8.2
CO_2 alarm on (orange)	CO_2 pressure <0.35 MPa; carbonator pump, valves and solenoid valve deactivated	Check the CO_2 supply; see chapter 8.1
	24 V power supply to the tower is interrupted	Check the 24 V power supply; see chapter 8.1
Power/mains (green) flashes approx. 1x per second	Low voltage < 190 V, consumers are blocked	Automatic reset is performed
Power/mains (green) flashes approx. 4x per second	Overvoltage > 260 V, consumers are blocked	Automatic reset is performed
Power/mains (green) + alarm (rot) flash alternately	Carbonator system is blocked	Disconnect the undercounter cooler from power; see chapter 4.1
	Control system 1 defective	Replace control system 1; see chapter 7.21
	Control system 2 defective	Replace control system 2; see chapter 7.22

NOTICE!
Crushed ice in the cup may also cause decarbonisation.
When the finished beverage comes into contact with sharp-edged ice, CO_2 is released from the dispensed drink.

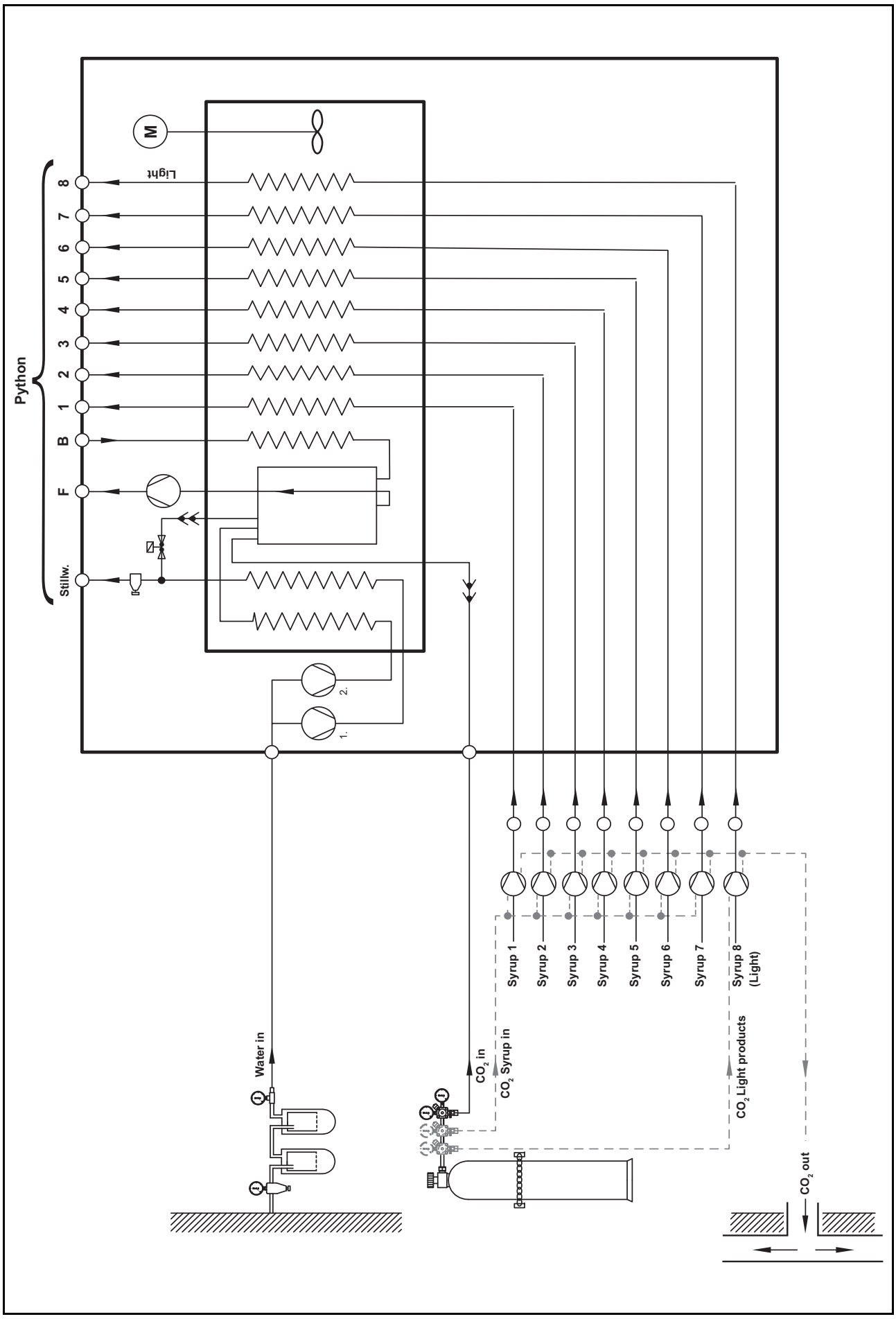
10 Applicable documents

10.1 Flowchart Undercounter cooler Energize 3 (R134a)



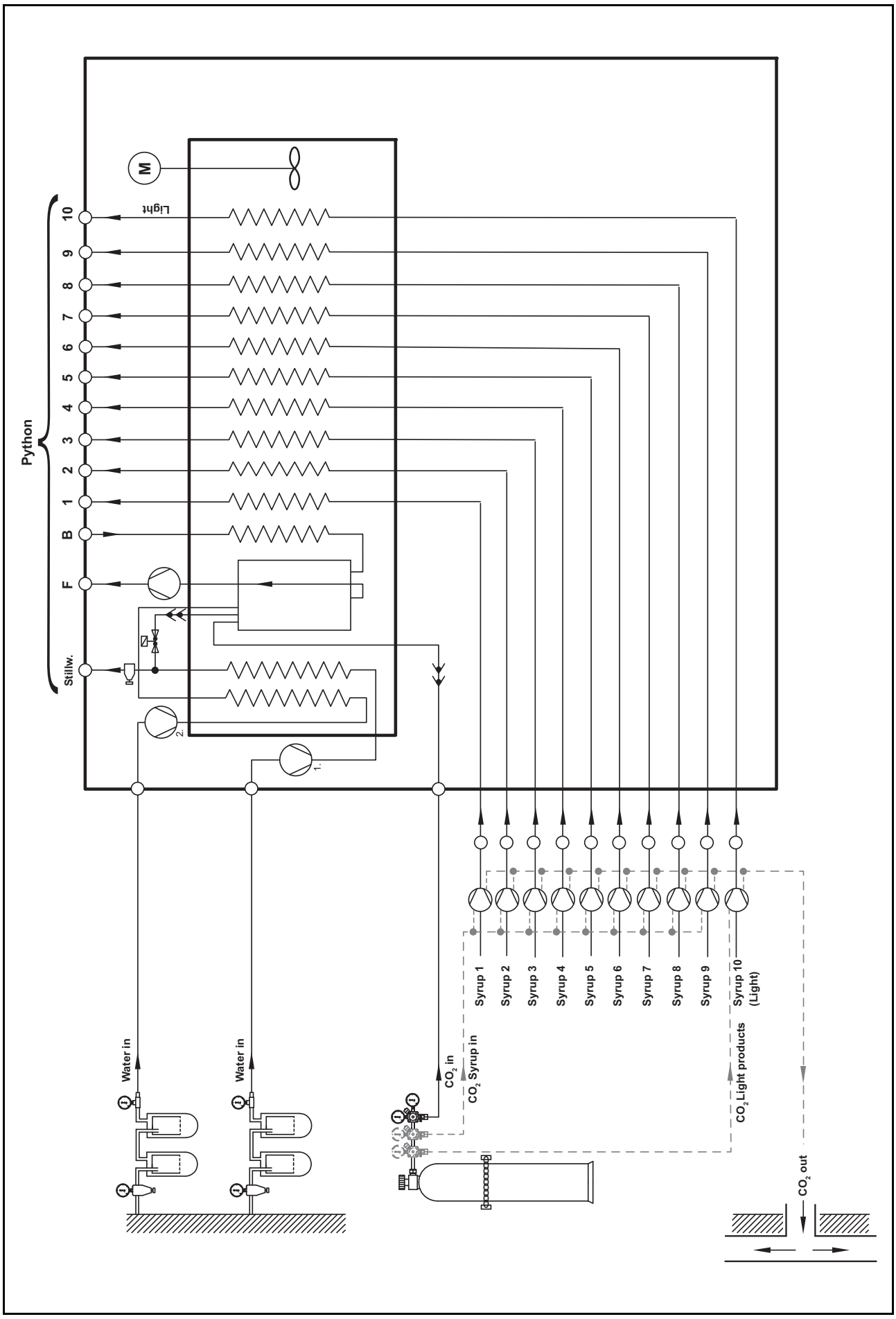
B = Backward F = Forward

10.2 Flowchart Undercounter cooler Energize 4 (R134a)



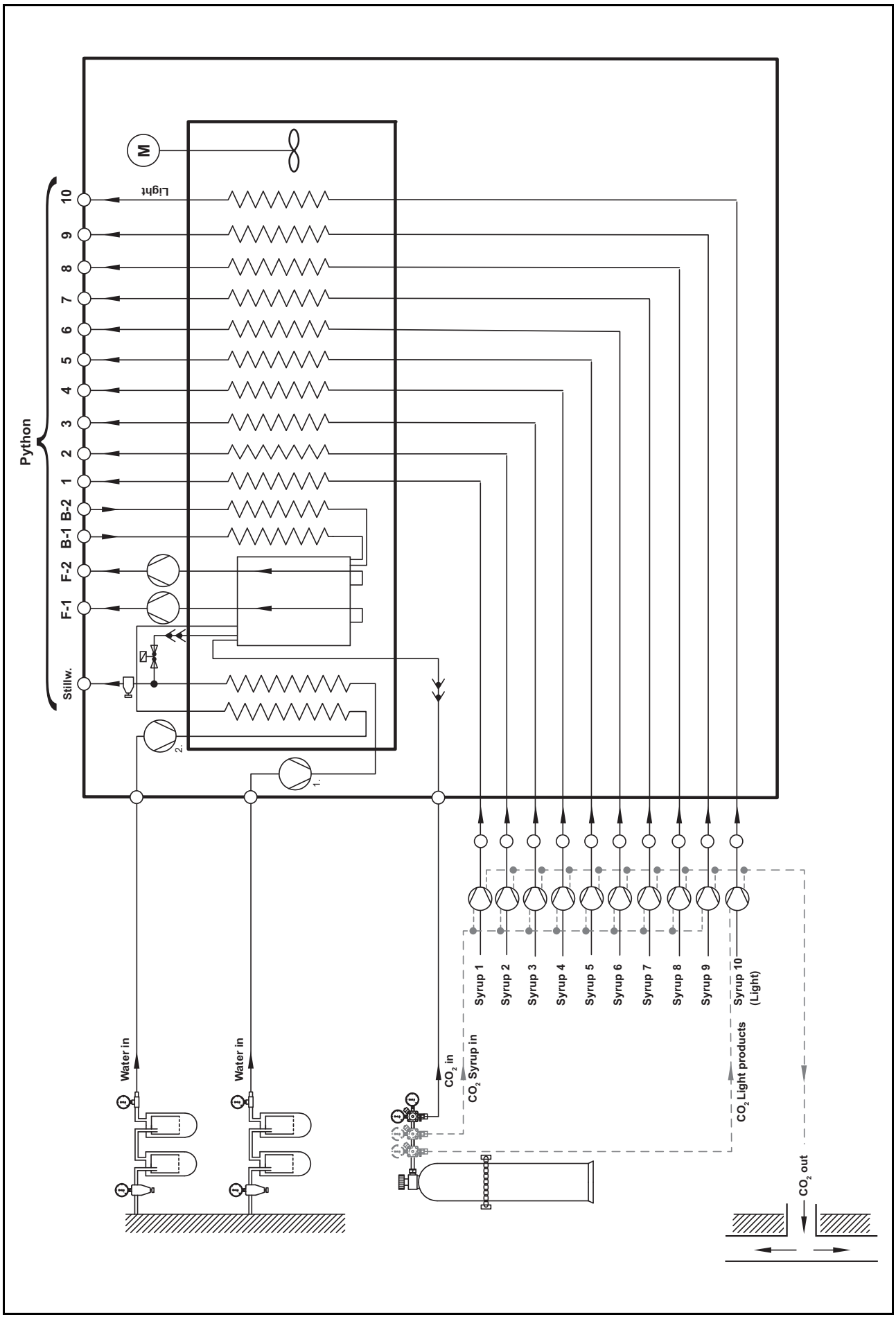
B = Backward F = Forward

10.3 Flowchart Undercounter cooler Energize 5 (R134a) single



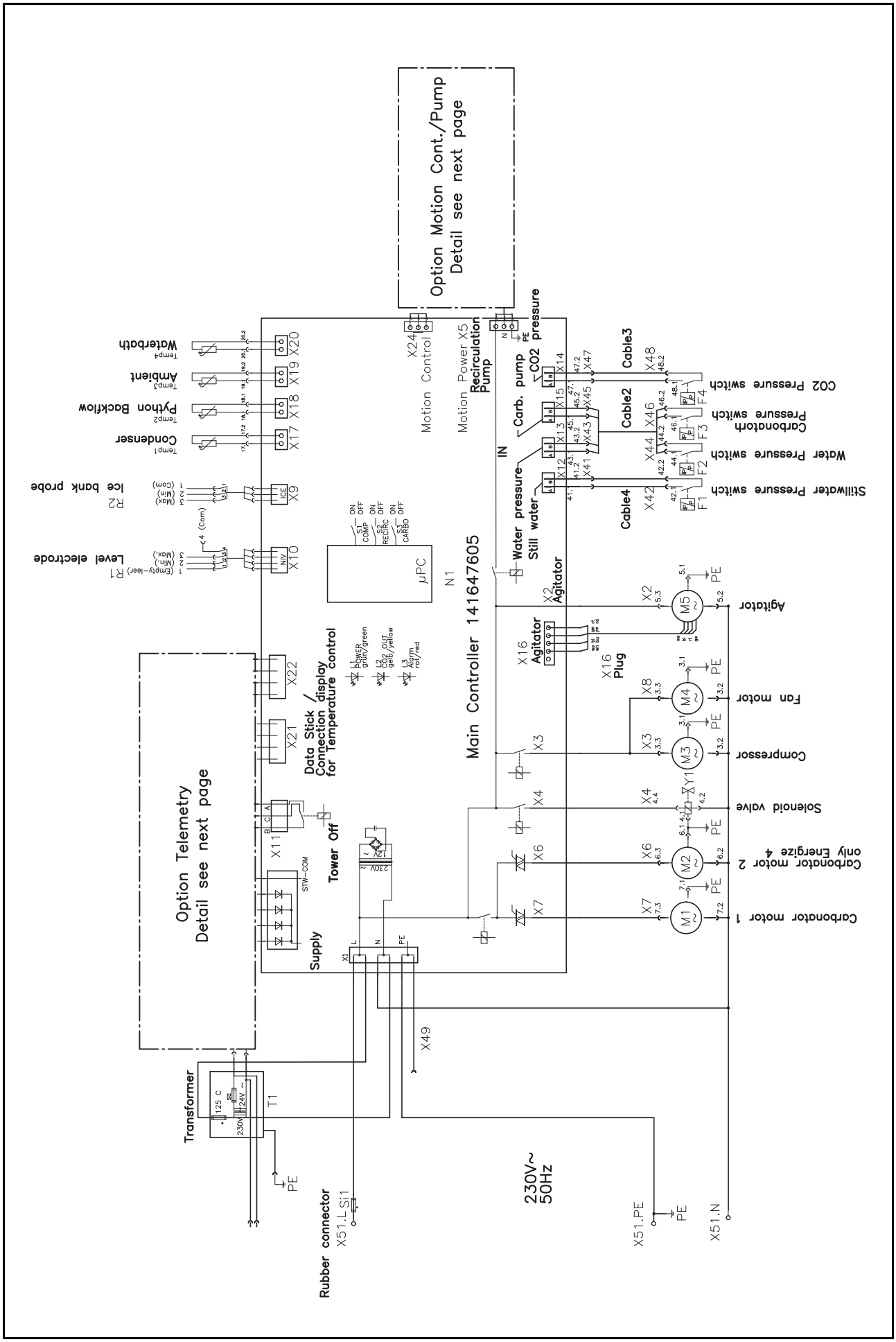
B = Backward F = Forward

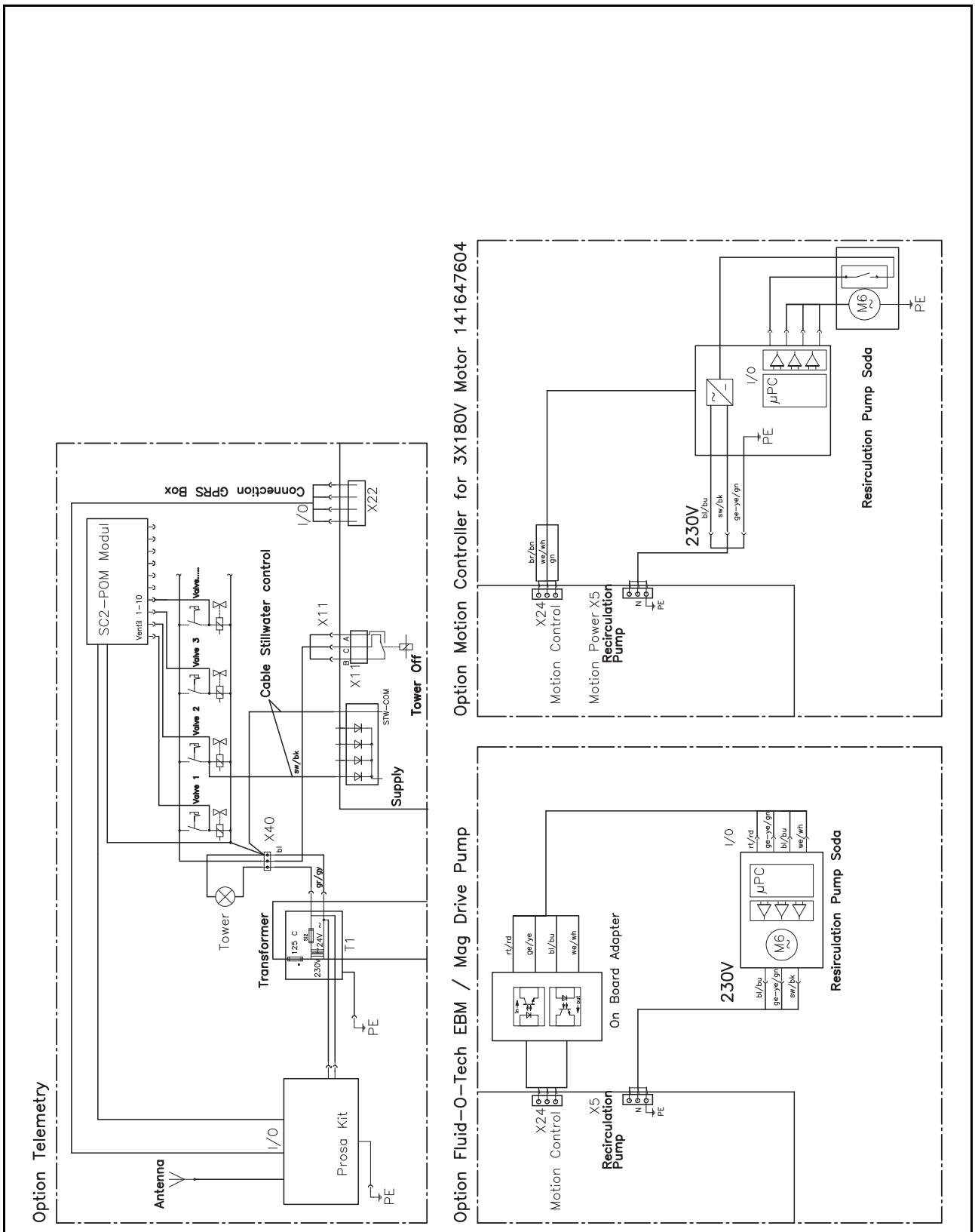
10.4 Flowchart Undercounter cooler Energize 5 (R134a) dual



B = Backward F = Forward

10.5 Wiring diagram Undercounter cooler Energize 3-5 (R134a)




Option Telemetry
Antenna
I/O
Prosa Kit
PE
SC2-POM Modul
Ventil 1-10
Valve 1
Valve 2
Valve 3
Valve....
Connection GPRS Box
I/O
X22
X11
X1
Cable Stillwater control
sw/bk
STW-COM
Supply
Tower Off
X40
bl
g/gy
Tower
Transformer
T1
125 c
230V
24V
PE
Option Fluid-O-Tech EBM / Mag Drive Pump
X24
Motion Control
X5
Recirculation Pump
On Board Adapter
rt/rd
ge/ye
bl/bu
we/wh
I/O
µPC
M6
230V
ge-ye/gn
sw/bk
Resirculation Pump Soda
PE
Option Motion Controller for 3X180V Motor 141647604
X24
Motion Control
Motion Power X5
Recirculation Pump
br/bn
we/wh
gn
230V
bl/bu
sw/bk
ge-ye/gn
I/O
µPC
M6
PE
Resirculation Pump Soda



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