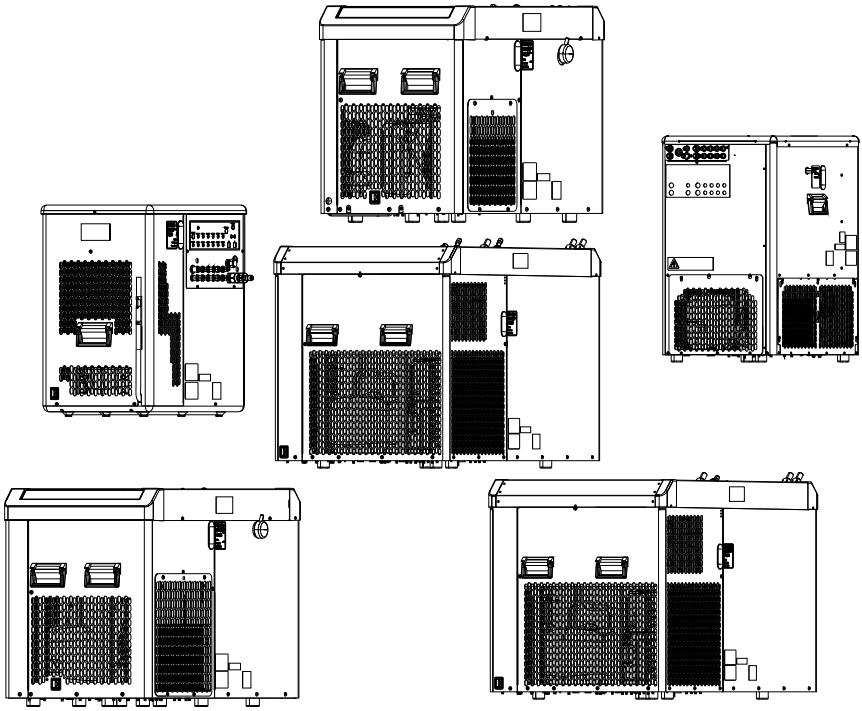
Installation and service manual



Undercounter cooler

Energize 2-5 HC

Legal notice

Installation and service manual (Original)

Document no. TD1002100

Undercounter cooler

Energize 2 HC: Unit ID no. 221002210
Energize 3 HC: Unit ID no. 221001320
Energize 3v HC: Unit ID no. 221001330
Energize 4 HC: Unit ID no. 221001420
Energize 5 HC single: Unit ID no. 221002571
Energize 5 HC dual: Unit ID no. 221002570

Energize 2-5 HC

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Installation and service manual
Undercounter cooler

Table of contents

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. TD1002000.

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. TD1002000.

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. TD1002000.

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. TD1002000.

1.5 Safety instructions

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. TD1002000)*. 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:

1. Disconnect from power.
2. Secure against reconnection.
3. Verify that the system is disconnected from power.
4. Ground and short-circuit the system.
5. Cover or separate adjacent live parts.

These five safety rules are to be applied before carrying out work on the electrical system and in the above stated order. Once work is completed, the safety rules are to be undone again in reverse order.

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 respective 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.

Caution!

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.

Caution!

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.

Caution!

Damage due to improper storage

Dirt or moisture entering a unit, as well as certain weather conditions (e.g. condensate forming at 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.

Caution!

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.

Caution!

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.

Caution!

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.

2.2 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 Assemblies and components

The housing accommodates all assemblies and components.

3.1.1 Undercounter cooler Energize 2 HC

The unit comprises the following assemblies:

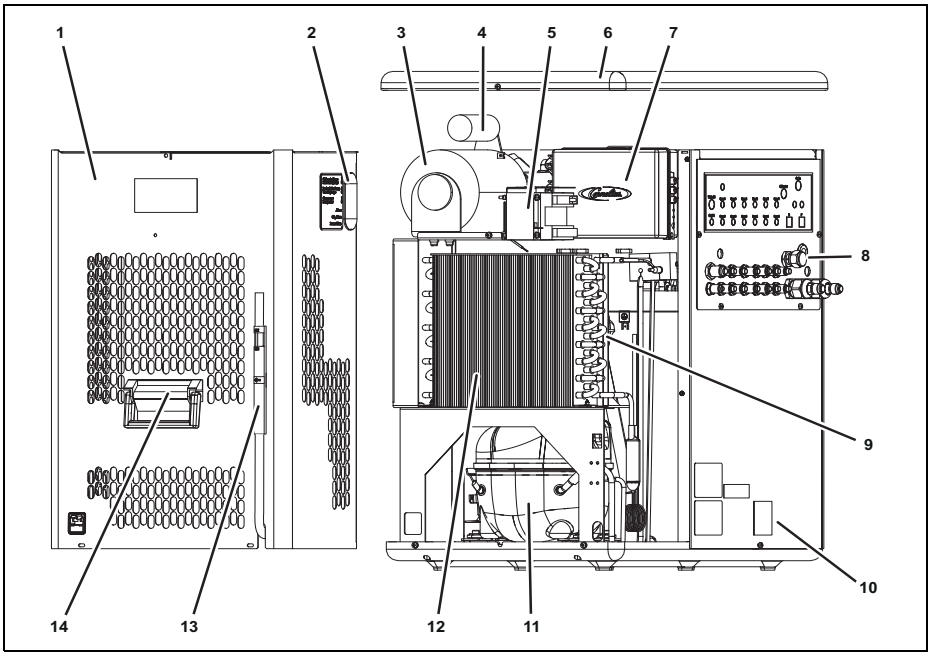


Figure 1

1 Sheet casing (service)
2 Control and indicator panel
3 Carbonator pump motor
4 Run capacitor for carbonator pump motor
5 Transformer
6 Cover
7 Control system 1
8 Connecting plate with tube connections
9 Fan
10 Sheet casing (fixed)
11 Refrigerant compressor
12 Condenser
13 Water level gauge
14 Carry handle

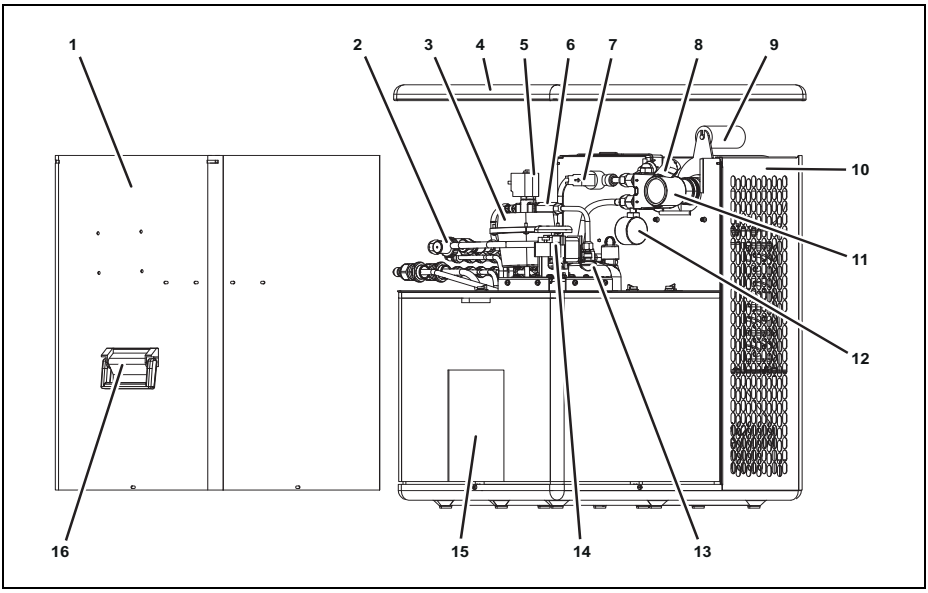


Figure 2

1 Sheet casing (fixed)
2 Water pressure control valve
3 Stirrer motor
4 Cover
5 Solenoid valve for carbonator pump
6 Non-return valve for carbonator pump
7 Water inlet valve
8 Pressure switch for carbonator pump
9 Run capacitor for carbonator pump motor
10 Sheet casing (service)
11 Carbonator pump
12 Pressure manometer for carbonator pump
13 Carbonator tank
14 Circulation pump
15 Water bath
16 Carry handle

3.1.2 Undercounter cooler Energize 3 HC

The unit comprises the following assemblies:

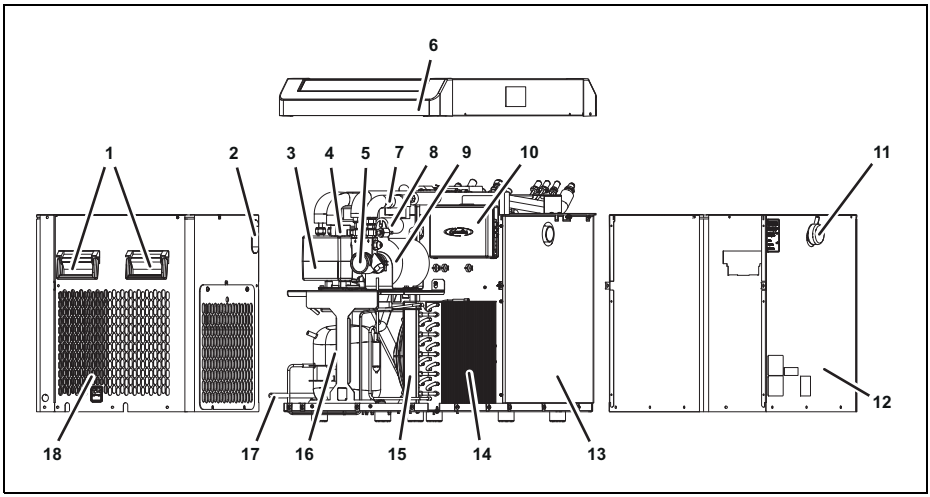


Figure 3

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)

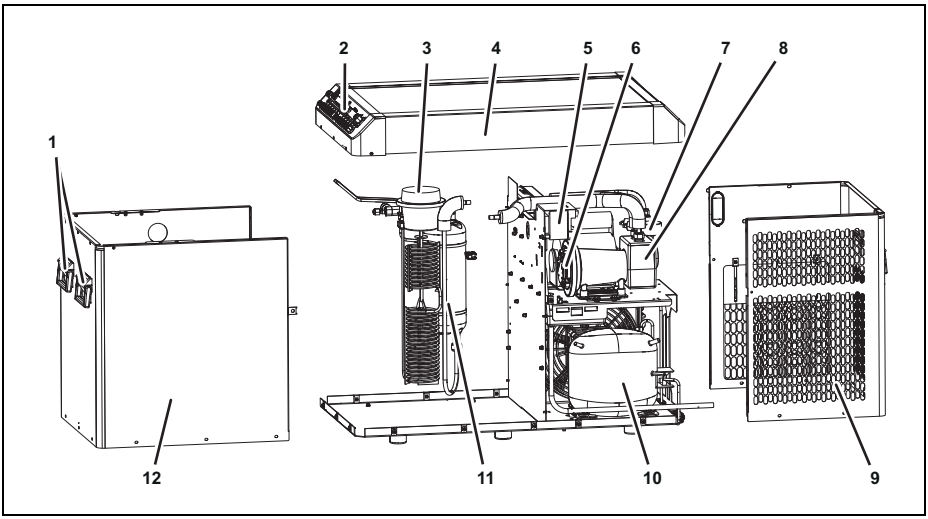


Figure 4

1 Carry handles
2 Connecting plate with tube connections
3 Stirrer 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)

3.1.3 Undercounter cooler Energize 3v HC

The unit comprises the following assemblies:

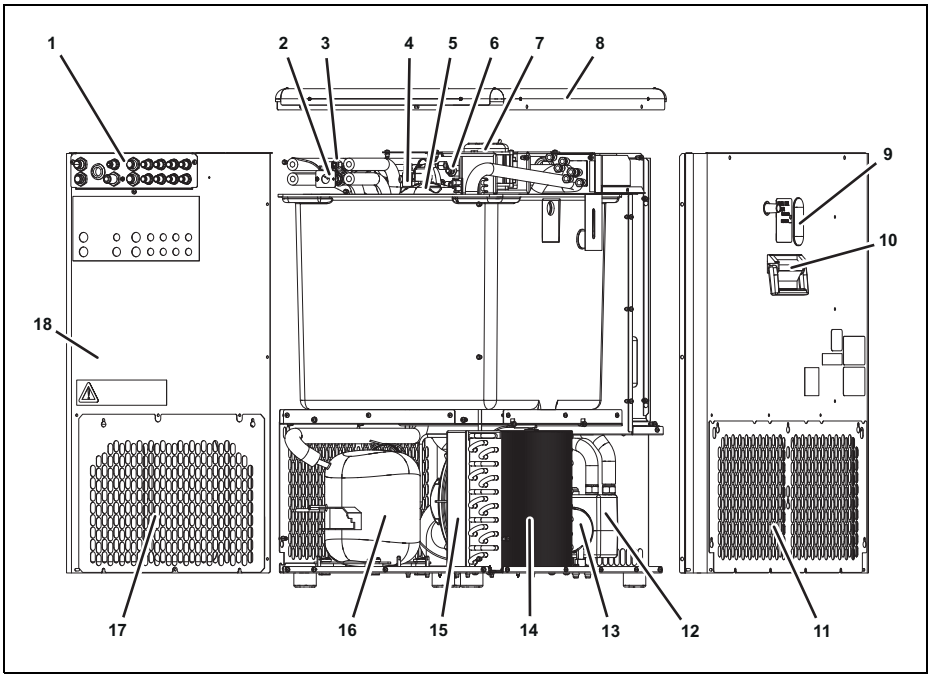


Figure 5

1 Connecting plate with tube connections
2 Water inlet valve
3 CO_2 pressure switch with non-return valve
4 Level electrode for carbonator tank
5 Carbonator tank
6 Non-return valve for carbonator tank
7 Stirrer motor
8 Cover
9 Water level gauge
10 Carry handle
11 Service cover (front)
12 Circulation pump
13 Circulation pump motor
14 Condenser
15 Fan
16 Refrigerant compressor
17 Service cover (right)
18 Sheet casing (fixed)

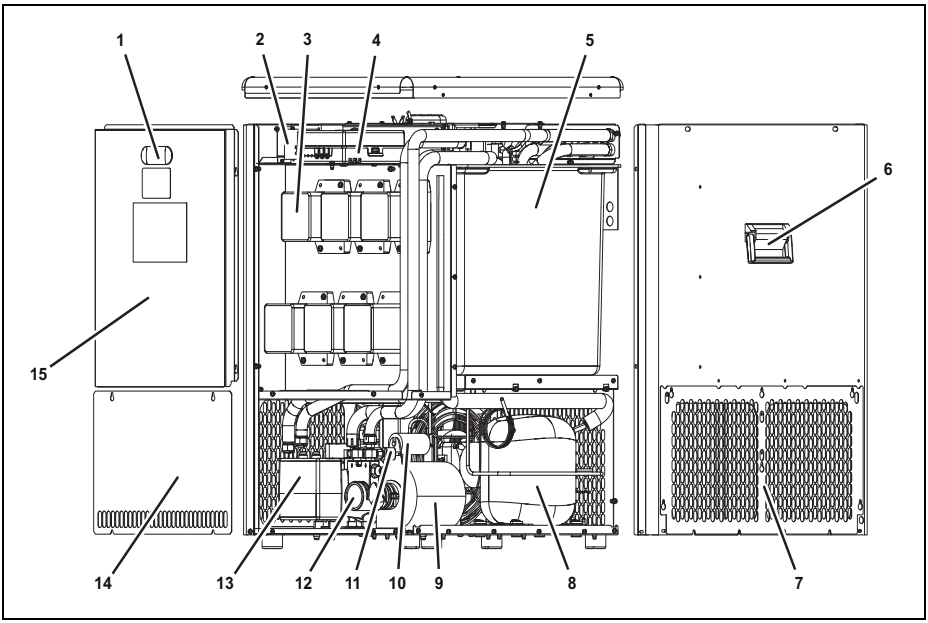


Figure 6

1 Control and indicator panel
2 Transformer
3 Syrup pumps
4 Control system 1
5 Water bath
6 Carry handle
7 Service cover (rear)
8 Refrigerant compressor
9 Carbonator pump motor
10 Run capacitor for carbonator pump motor
11 Pressure switch for carbonator pump
12 Carbonator pump
13 Circulation pump
14 Service cover (left)
15 Service cover (syrup pumps)

3.1.4 Undercounter cooler Energize 4 HC

The unit comprises the following assemblies:

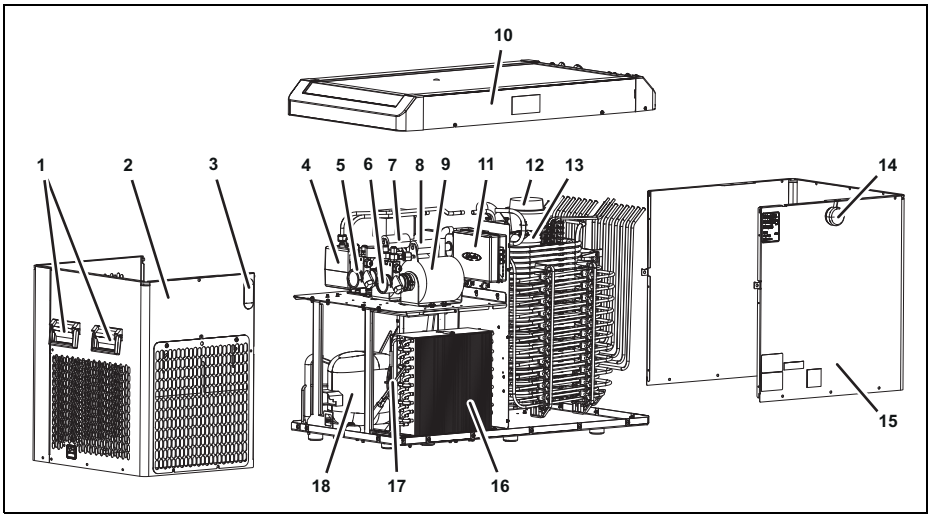


Figure 7

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 Stirrer motor
13 Carbonator tank
14 Water level gauge
15 Sheet casing (fixed)
16 Condenser
17 Fan
18 Refrigerant compressor

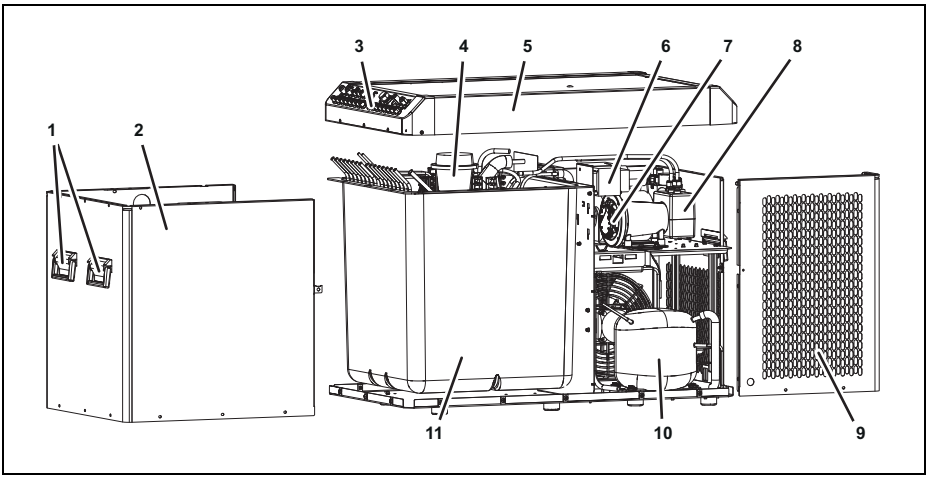


Figure 8

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

3.1.5 Undercounter cooler Energize 5 HC single

The unit comprises the following assemblies:

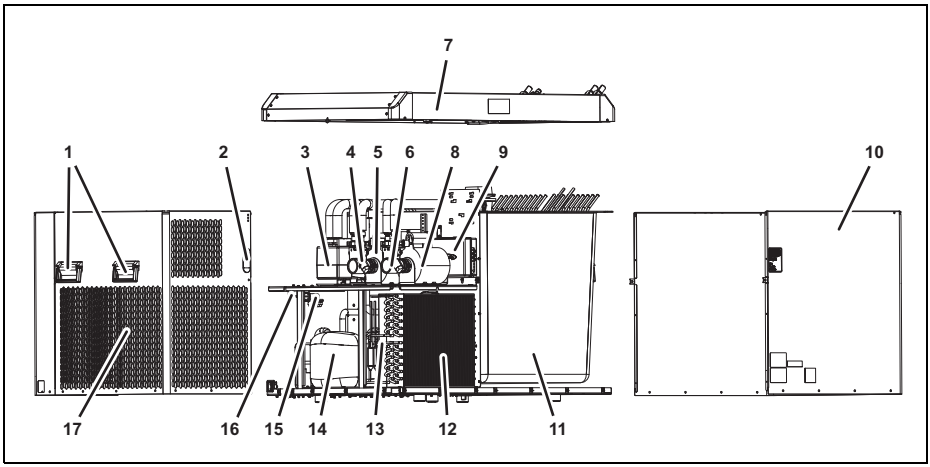


Figure 9

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 Manifold block and fuse
16 Compressor relay
17 Sheet casing (service)

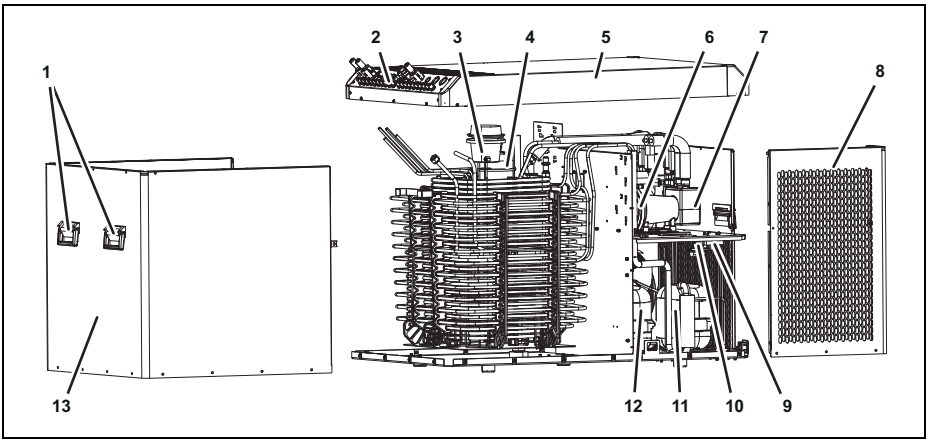


Figure 10

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

3.1.6 Undercounter cooler Energize 5 HC dual

The unit comprises the following assemblies:

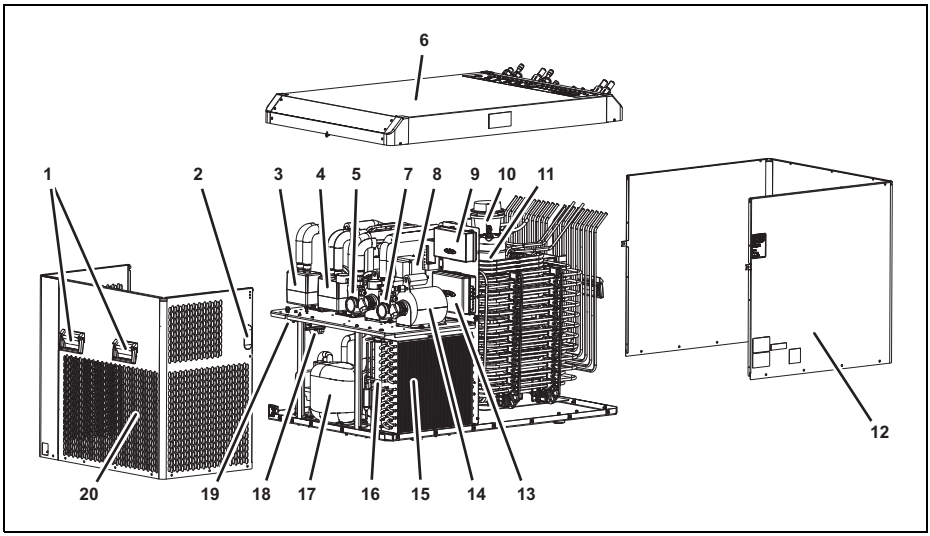


Figure 11

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 Stirrer 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 Manifold block and fuse
19 Compressor relay
20 Sheet casing (service)

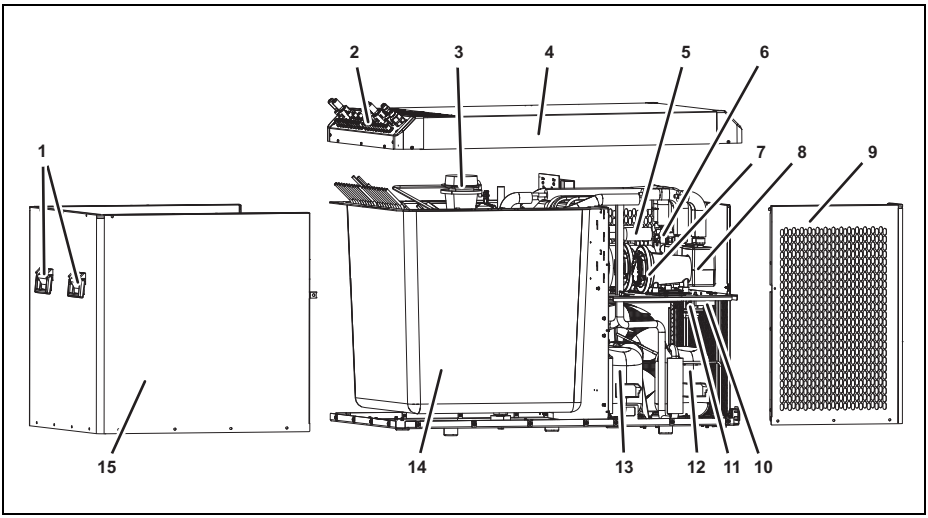


Figure 12

1 Carry handles
2 Connecting plate with tube connections
3 Stirrer 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 relay
11 Compressor fuse
12 Refrigerant compressor 1
13 Refrigerant compressor 2
14 Water bath
15 Sheet casing (fixed)

3.2 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. TD1002000*.

3.3 Functions of the unit

Notice!

Flowchart *see chapter A.1, page 136*.

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 stirrer 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, a stirrer 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.

3.4 Technical data

3.4.1 Undercounter cooler Energize 2 HC

Description	Parameter	Value	Unit
Dimensions	Height	635/25	mm/in.
	Width	620/24.4	mm/in.
	Depth	410/16.1	mm/in.
Dispensing capacity	for a dispensing rate of 2 beverages a minute, each 0.3 litres[1]	135 at 2/min	Unit
Ice build-up size	Weight	10	kg
Ice build-up capacity		800	kcal/h
Ice build-up	(No python)	227	min.
Refrigerant	Propane R290	0.095	kg
Power supply	Supply voltage	230	V
	Frequency	50	Hz
Power input	max.	980	W
Current consumption	max.	5.2	A
Compressor	Output	600 (0.82)	W (hp)[2]
Carbonator pump capacity	at 0.2 MPa	280	L/h
Circulation pump capacity	at 0.2 MPa	120	L/h
Python length	max.	15	m
Cooling capacity[3]/ in work area		384	W
		330	kcal/h
Number of cooling coils	max.	6xPOM	Unit
Shipping weight		58	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

3.4.2 Undercounter cooler Energize 3 HC

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	for a dispensing rate of 2 beverages a minute, each 0.3 litres[1]	360 at 2/min	Unit
Ice build-up size	Weight	18	kg
Ice build-up capacity		1440	kcal/h
Ice build-up	(No python)	138	min.
Refrigerant	Propane R290	0.150	kg
Power supply	Supply voltage	230	V
	Frequency	50	Hz
Power input	max.	1150	W
Current consumption	max.	6	A
Compressor	Output	724 (0.98)	W (hp)[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		660	W
		568	kcal/h
Number of cooling coils	max.	7xPOM	Unit
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

3.4.3 Undercounter cooler Energize 3v HC

Description	Parameter	Value	Unit
Dimensions	Height	627/24.7	mm/in.
	Width	341/13.4	mm/in.
	Depth	590/23.2	mm/in.
Dispensing capacity	for a dispensing rate of 2 beverages a minute, each 0.3 litres[1]	360 at 2/min	Unit
Ice build-up size	Weight	18	kg
Ice build-up capacity		1400	kcal/h
Ice build-up	(No python)	138	min.
Refrigerant	Propane R290	0.135	kg
Power supply	Supply voltage	230	V
	Frequency	50	Hz
Power input	max.	1150	W
Current consumption	max.	6	A
Compressor	Output	724 (0.98)	W (hp)[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		660	W
		568	kcal/h
Number of cooling coils	max.	7xPOM	Unit
Shipping weight		85	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

3.4.4 Undercounter cooler Energize 4 HC

Description	Parameter	Value	Unit
Dimensions	Height	660/26	mm/in.
	Width	950/37.4	mm/in.
	Depth	515/20.3	mm/in.
Dispensing capacity	for a dispensing rate of 2 beverages a minute, each 0.3 litres[1]	700 at 2/min	Unit
Ice build-up size	Weight	30	kg
Ice build-up capacity		2400	kcal/h
Ice build-up	(No python)	235	min.
Refrigerant	Propane R290	0.135	kg
Power supply	Supply voltage	230	V
	Frequency	50	Hz
Power input	max.	1350	W
Current consumption	max.	6.7	A
Compressor	Output	918 (1.245)	W (hp)[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		750	W
		645	kcal/h
Number of cooling coils	max.	8xPOM	Unit
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

3.4.5 Undercounter coolers Energize 5 HC single/Energize 5 HC 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	for a dispensing rate of 4 beverages a minute, each 0.3 litres[1]	700 at 4/min	Unit
Ice build-up size	Weight	55	kg
Ice build-up capacity		4400	kcal/h
Ice build-up	(No python)	261	min.
Refrigerant	Propane R290	2 x 0.127	kg
Power supply	Supply voltage	230	V
	Frequency	50	Hz
Power input	max.	2200	W
Current consumption	max.	11.5	A
Compressor	Output	2 x 918 (2 x 1.245)	W (hp)[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		1360	W
		1170	kcal/h
Number of cooling coils	max.	10xPOM	Unit
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

3.4.6 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. TD1002000*.

3.4.7 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. TD1002000*.

3.5 Connections

3.5.1 Undercounter cooler Energize 2 HC

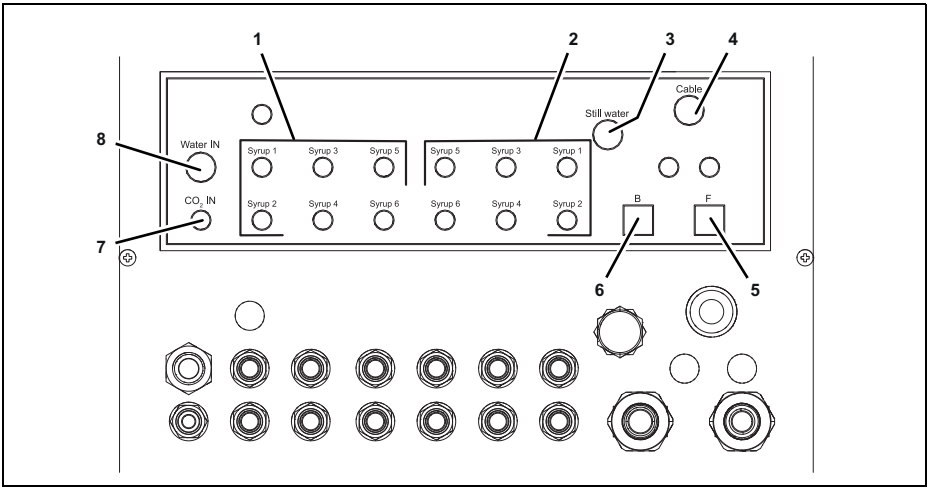


Figure 13

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

3.5.2 Undercounter cooler Energize 3 HC

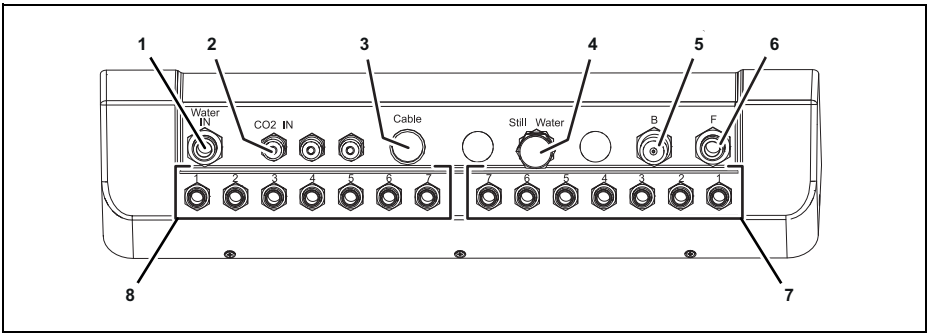


Figure 14

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

3.5.3 Undercounter cooler Energize 3v HC

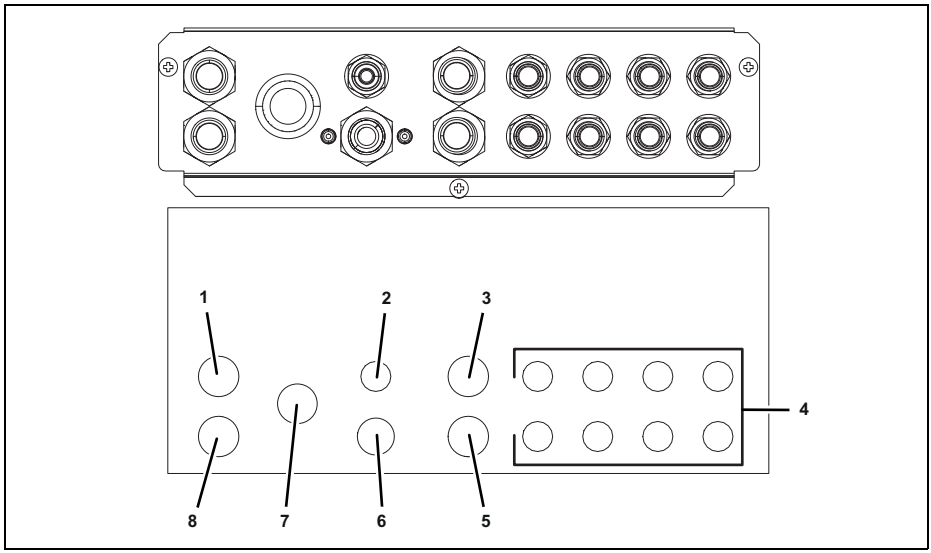


Figure 15

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	Still water	Still water dispenser	1/4" ID and 3/8" OD
4	1, 2, 3, 4, 5, 6, 7	Syrup tubes 1-7 (output)	1/4" ID and 3/8" OD
5	Still water	Still water inlet	1/4" ID and 3/8" OD
6	B	Soda water circulation (return)	3/8" ID and 1/2" OD
7	Cable	Cable duct for still water control system	16 mm
8	F	Soda water circulation (supply)	3/8" ID and 1/2" OD

3.5.4 Undercounter cooler Energize 4 HC

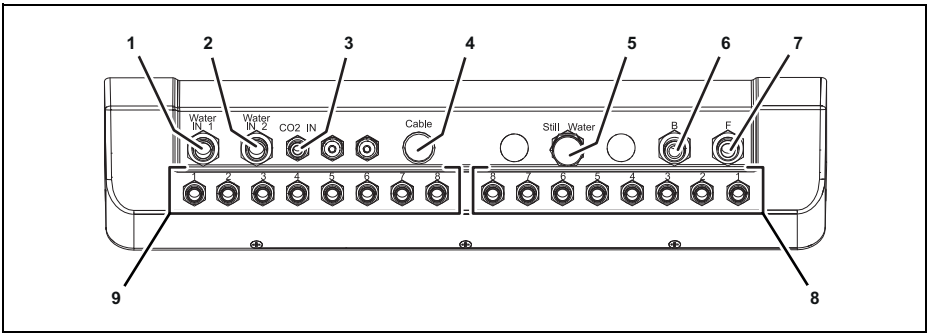


Figure 16

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

3.5.5 Undercounter cooler Energize 5 HC single

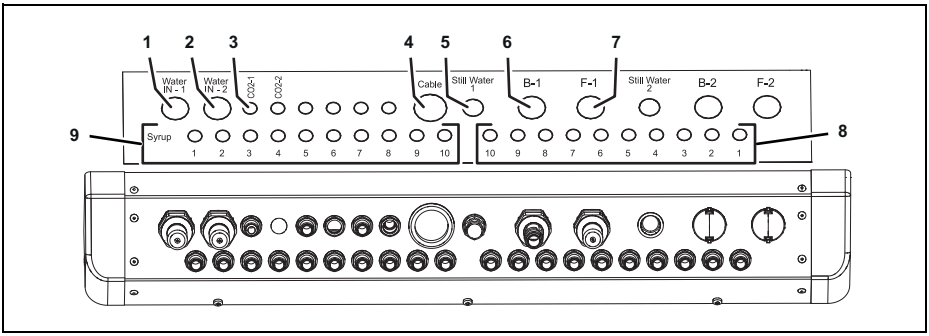


Figure 17

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	1/4" 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

3.5.6 Undercounter cooler Energize 5 HC dual

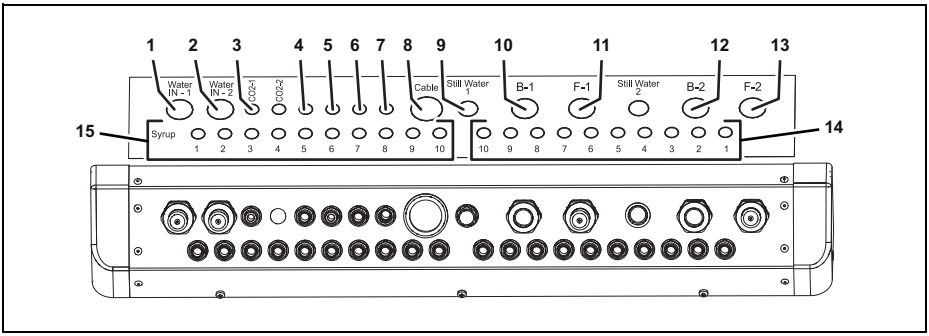


Figure 18

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	1/4" 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, page 5*.

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	Reference
The tower has been shut down.	See the document *"Tower operator manual"*.

Required tools/materials	ID/ Reference	Qty/ amount	Comment
Undercounter cooler circuit diagram Energize 2 - 5 HC	141660171	1	*see chapter A.7, page 142*.
Tower operator manual	Document no: various	1	
Multimeter	Various	1	Safety category CAT II

1. Turn the compressor switch (Figure 19/3) to position "0.
2. Turn the circulation pump switch (Figure 19/2) to position "0.
3. Turn the carbonator pump switch (Figure 19/1) to position "0.

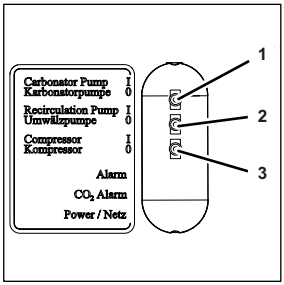


Figure 19

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

Caution!

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.

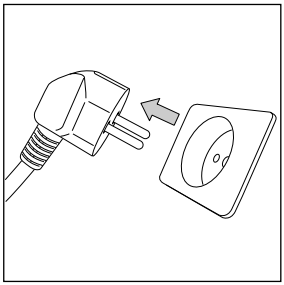


Figure 20

5. Discharge the condensers as follows:
   a. Disconnect the AC power line (Figure 21/1) from the unit.
   b. Switch the multimeter to alternating voltage.

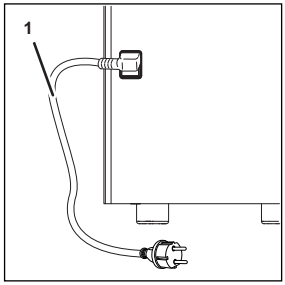


Figure 21

Caution!

Risk of equipment damage

A direct “low ohm” discharge may cause equipment damage.

- Discharge the components properly.

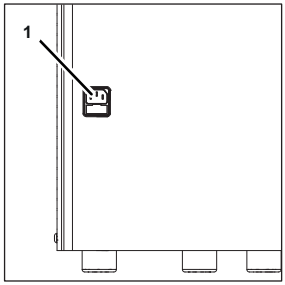


Figure 22

   c. Measure the voltage at the unit mains connection (Figure 22/1) using a multimeter.
   Make sure the voltage drops to a value of 0 V in the process.

Notice!

If the residual current is too high, use a suitable load to discharge the condensers.

   d. Only continue working on the unit once the unit is fully discharged of voltage.

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, page 5*.

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.

Caution!

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.

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	Reference
The unit has been unpacked.	See the document *"Undercounter cooler operator manual", document no. TD1002000.*
The cover has been removed.	*see chapter 7.1, page 53*.
The CO_2 bottle has been set up properly.	*see the document on the CO2 system.*
The pressure-reducing valves have been mounted on the CO_2 bottle.	*see the document on the CO2 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
Push-in fittings			
Quick disconnect couplings			
Undercounter cooler circuit diagram Energize 2 - 5 HC	141660171	1	*see chapter A.7, page 142*.
Undercounter cooler operator manual	Document no. TD1002000	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 or 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 push-in fittings or quick disconnect couplings on the relevant connection of the unit's relevant connecting plate (Figure 23/2).

   Observe the labels on the individual tubes and connections in the connecting process; *see chapter 3.5, page 31*.
3. Insert the retaining spring in accordance with the push-in fitting instructions.
4. Connect the python (Figure 23/1) to the push-in fittings or quick disconnect couplings on the relevant connection of the unit's relevant connecting plate (Figure 23/2).

   Observe the labels on the individual tubes and connections in the connecting process; *see chapter 3.5, page 31*.
5. Insert the retaining spring in accordance with the push-in fitting instructions.

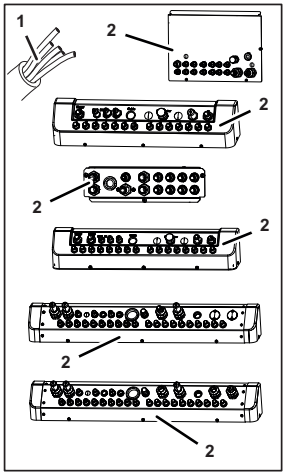


Figure 23

6. Route the electrical cable (Figure 24/1) through the relevant cable port (Figure 24/4) on the relevant connecting plate (Figure 24/2), through the unit to control system 1(Figure 24/3).
7. Connect the electrical cable (Figure 24/1) to control system 1 (Figure 24/3).

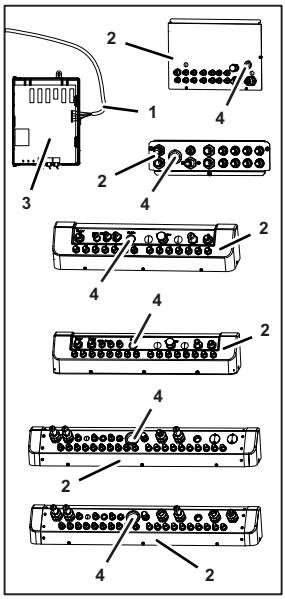


Figure 24

8. **For Energize 3v HC/Energize 5 HC single/Energize 5 HC dual only:** Connect a drain tube to the relevant overflow (Figure 25/1).
9. Mount the cover; *see chapter 7.1, page 53*.
10. Perform a visual inspection. See the document *"Undercounter cooler operator manual", document no. TD1002000*.
11. Put the unit into service ("commissioning"); *see chapter 8.1, page 126*.

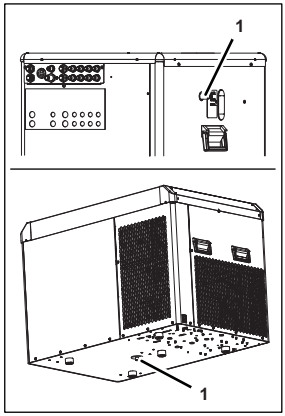


Figure 25

5.3 Removing the unit

Prerequisites	Reference
The undercounter cooler has been shut down.	*see chapter 8.2, page 128*.

Required tools/materials	ID/ Reference	Qty/ amount	Comment
Undercounter cooler circuit diagram Energize 2 - 5 HC	141660171	1	*see chapter A.7, page 142*.

1. Disconnect the electrical cable (Figure 26/1) at control system 1 (Figure 26/3).
2. Pull the electrical cable (Figure 26/1) through the relevant cable port (Figure 26/4) on the relevant connecting plate (Figure 26/2) and out of the unit.

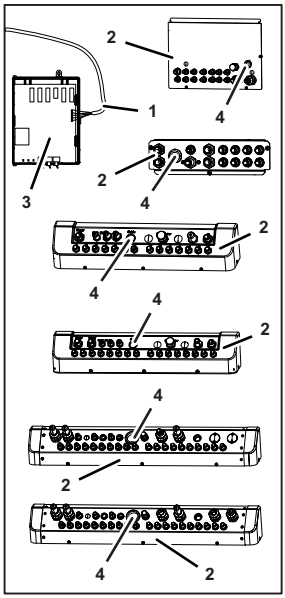


Figure 26

3. Disconnect the python (Figure 27/1) from the relevant connection of the unit's relevant connecting plate (Figure 27/2).
4. Disconnect the basic ingredient/beverage tubes from the relevant connection of the unit's relevant connecting plate (Figure 27/2).

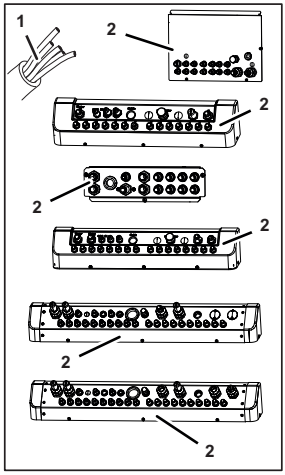


Figure 27

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, page 5*.

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. TD1002000*.
Every 3 months	Undercounter cooler, interior	Clean. See the document *"Undercounter cooler operator manual", document no. TD1002000*.
Every 3 months	Condenser fins	Clean; *see chapter 6.2, page 49*.
Every 3 months	Undercounter cooler	Clean the tubes; *see chapter 6.3, page 49*.
Annually	Undercounter cooler	Change the water in the water bath; *see chapter 6.4, page 50*.
As required	Undercounter cooler, interior	Thaw the ice build-up; *see chapter 6.6, page 51*.

6.2 Cleaning the condenser fins

Prerequisites	Reference
The sheet casing has been removed (service).	*see chapter 7.2, page 54*.

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

1. Clean any dirt off the condenser fins (Figure 28/1) using a brush and a vacuum cleaner.

Finishing tasks

1. Install the sheet casing; *see chapter 7.2, page 54*.

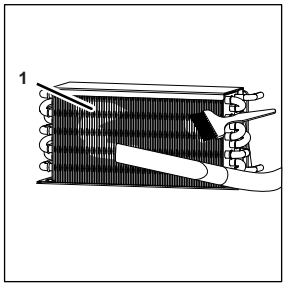


Figure 28

6.3 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.

6.4 Changing the water in the water bath

Prerequisites	Reference
The unit has been disconnected from the power supply.	*see chapter 4.1, page 38*.

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.

Undercounter cooler Energize 2 HC

1. Pull the tube (Figure 29/1) of the water level gauge down through the mount.
2. Leave the tube (Figure 29/1) of the water level gauge in position until the water bath is empty.
3. Pull the tube (Figure 29/1) of the water level gauge up through the mount.
4. Place the unit in its site of installation.
5. Remove the cover; *see chapter 7.1, page 53*.
6. Fill the water bath up until the level on the water level gauge is between minimum and maximum.

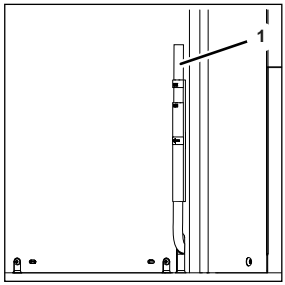


Figure 29

Undercounter coolers Energize 3 HC/Energize 3v HC/ Energize 4 HC/Energize 5 HC single/Energize 5 HC dual

1. Remove the relevant cover of the unit; *see chapter 7.1, page 53*.
2. Suck out the water from the water bath using a suction pump.

Finishing tasks

1. Mount the relevant cover; *see chapter 7.1, page 53*.
2. Start up the unit; *see chapter 8.1, page 126*.

6.5 Bleeding the carbonator tank

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.

1. Open the drain valve (Figure 30/1) of the carbonator tank until liquid starts coming out of the drain valve (Figure 30/1).

Finishing tasks

1. Mount the cover; *see chapter 7.1, page 53*.

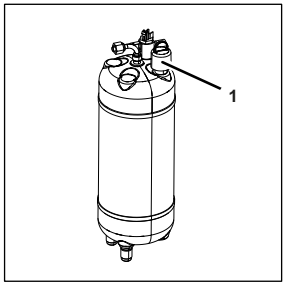


Figure 30

6.6 Thawing the ice build-up

Prerequisites	Reference
The unit has been disconnected from the power supply.	*see chapter 4.1, page 38*.

1. Wait until the ice has completely thawed.

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, page 5*.

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	Reference
The unit has been disconnected from the power supply.	*see chapter 4.1, page 38*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Cover	220111825	1	
Energize 3 HC: Cover	220112014	1	
Energize 3v HC: Cover	220114390	1	
Energize 4 HC: Cover	220112223S001	1	
Energize 5 HC single: Cover	220114330	1	
Energize 5 HC dual: Cover	220114330	1	

1. Loosen/remove the relevant fastening bolt(s) (Figure 31/ 1) from the relevant cover (Figure 31/2).
2. Lift off the relevant cover (Figure 31/2).
3. Position the new cover (Figure 31/2) 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 (Figure 31/2) using the fastening bolt(s)(Figure 31/1).

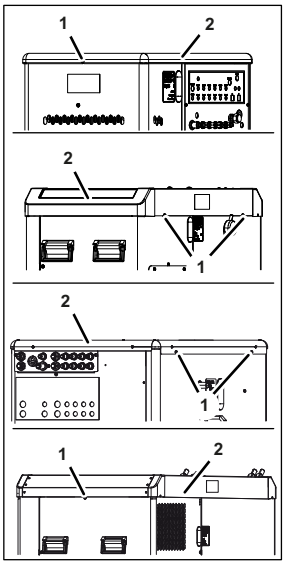


Figure 31

7.2 Replacing the sheet casing (service)

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.
Energize 2 HC: The water bath has been emptied.	*see chapter 6.4, page 50*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Sheet casing	220106406	1	
Energize 3 HC: Sheet casing	220114218	1	
	220105601	1	
Energize 4 HC: Sheet casing	220114196	1	
	220105926	1	
Energize 5 HC single: Sheet casing	220114315	1	
	220107024	1	
Energize 5 HC dual: Sheet casing	220114315	1	
	220107024	1	

Undercounter cooler Energize 2 HC

1. Pull the tube (Figure 32/3) of the water level gauge out of the mount.
2. Disconnect the earth cable from the sheet casing (Figure 32/1).
3. Remove the fastening bolts (Figure 32/2) from the sheet casing (Figure 32/1).
4. Lift off the sheet casing (Figure 32/1).
5. Position the new sheet casing (Figure 32/1) on the unit.
6. Attach the sheet casing (Figure 32/1) using the fastening bolts (Figure 32/2).
7. Connect the earth cable to the sheet casing (Figure 32/ 1).
8. Pull the tube (Figure 32/3) of the water level gauge up through the mount.

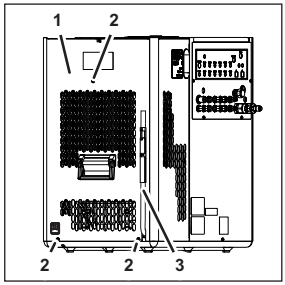


Figure 32

Undercounter cooler Energize 3 HC

1. Remove the fastening bolts (Figure 33/2) from the sheet casing (Figure 33/1).
2. Lift off the sheet casing (Figure 33/1).
3. Remove the fastening bolts (Figure 33/4) from the sheet casing (Figure 33/3).
4. Lift off the sheet casing (Figure 33/3).
5. Position the new sheet casing (Figure 33/3) on the unit.
6. Attach the sheet casing (Figure 33/3) using the fastening bolts (Figure 33/4).
7. Position the new sheet casing (Figure 33/31) on the unit.
8. Attach the sheet casing (Figure 33/1) using the fastening bolts (Figure 33/2).

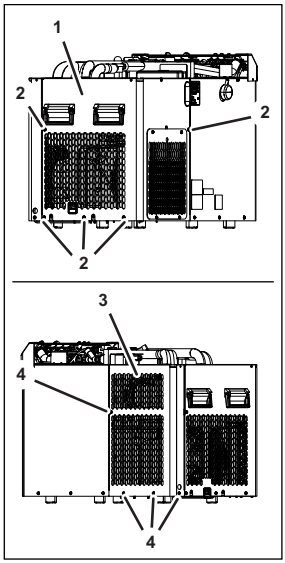


Figure 33

Undercounter cooler Energize 4 HC

1. Remove the fastening bolts (Figure 34/2) from the sheet casing (Figure 34/1).
2. Lift off the sheet casing (Figure 34/1).
3. Remove the fastening bolts (Figure 34/4) from the sheet casing (Figure 34/3).
4. Lift off the sheet casing (Figure 34/3).
5. Position the new sheet casing (Figure 34/3) on the unit.
6. Attach the sheet casing (Figure 34/3) using the fastening bolts (Figure 34/4).
7. Position the new sheet casing (Figure 34/31) on the unit.
8. Attach the sheet casing (Figure 34/1) using the fastening bolts (Figure 34/2).

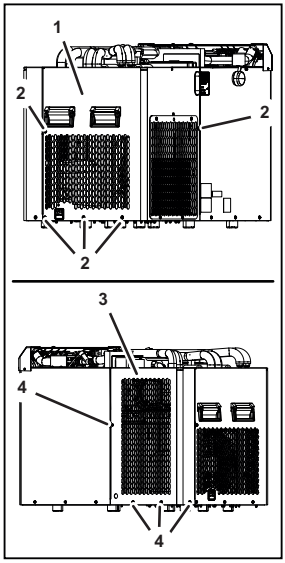


Figure 34

Undercounter coolers Energize 5 HC single/Energize 5 HC dual

1. Remove the fastening bolts (Figure 35/2) from the sheet casing (Figure 35/1).
2. Lift off the sheet casing (Figure 35/1).
3. Remove the fastening bolts (Figure 35/4) from the sheet casing (Figure 35/3).
4. Lift off the sheet casing (Figure 35/3).
5. Position the new sheet casing (Figure 35/3) on the unit.
6. Attach the sheet casing (Figure 35/3) using the fastening bolts (Figure 35/4).
7. Position the new sheet casing (Figure 35/31) on the unit.
8. Attach the sheet casing (Figure 35/1) using the fastening bolts (Figure 35/2).

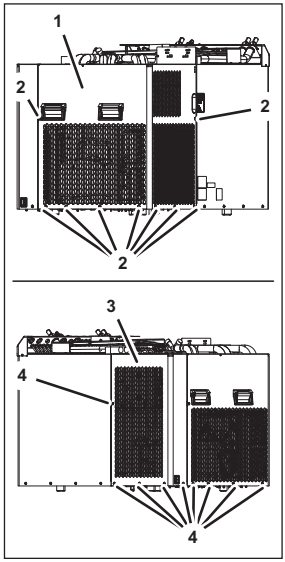


Figure 35

Finishing tasks

1. **For Energize 2 HC only:** Fill up the water bath; *see chapter 6.4, page 50*.
2. Mount the cover; *see chapter 7.1, page 53*.

7.3 Replacing the service covers (Energize 3v HC only)

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.

Spare parts	ID/reference	Qty/ amount	Comment
Service cover	06-0-241731	1	Front
Service cover	06-0-241717	2	Left, right
Service cover	06-0-241705	1	Syrup pumps
Service cover	06-0-241707	1	Rear

1. Loosen the fastening bolts (Figure 36/1) on the relevant service cover (Figure 36/2).
2. Remove the fastening bolts (Figure 36/3) from the relevant service cover (Figure 36/2).
3. Lift off the relevant service cover (Figure 36/2).
4. Position the relevant new service cover (Figure 36/2) on the unit.
5. Attach the relevant service cover (Figure 36/2) using the fastening bolts (Figure 36/1 and 3).

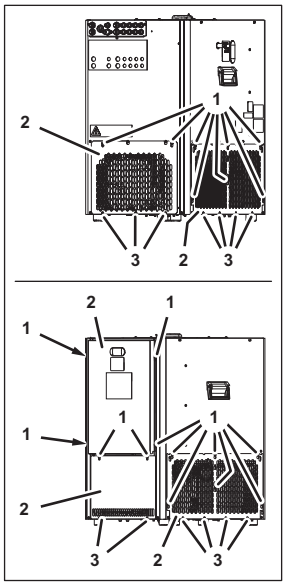


Figure 36

Finishing tasks

1. Mount the cover; *see chapter 7.1, page 53*.

7.4 Replacing the connecting plate

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.
The python has been removed.	*see chapter 5.3, page 45*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Connecting plate	220108155S008	1	
Energize 3 HC: Connecting plate	220114173	1	
Energize 3v HC: Connecting plate	06-0-241716	1	
Energize 4 HC: Connecting plate	220114192	1	
Energize 5 HC single: Connecting plate	220107330	1	
Energize 5 HC dual: Connecting plate	220107330	1	

1. Disconnect all tubes and connections from the relevant connecting plate (Figure 37/1).
2. Remove the relevant fastening bolt(s) (Figure 37/2) from the relevant connecting plate (Figure 37/1).
3. Lift off the relevant connecting plate (Figure 37/1).
4. Position the new connecting plate (Figure 37/1) on the unit.
5. Attach the relevant connecting plate (Figure 37/1) using the relevant fastening bolts (Figure 37/ 2).
6. Connect all tubes and connections to the relevant connecting plate (Figure 37/1) by means of push-in fittings.

Finishing tasks

1. Connect the python; *see chapter 5.2, page 42*.
2. Mount the cover; *see chapter 7.1, page 53*.

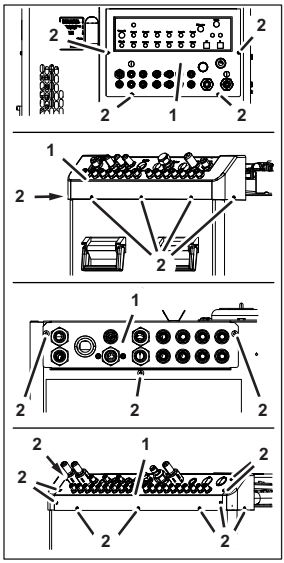


Figure 37

7.5 Replacing the stirrer motor

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.
The cover for control system 1 has been removed.	*see chapter 7.24, page 109*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Stirrer motor	06-0-240149	1	
Energize 3 HC: Stirrer motor	220114171	1	
Energize 3v HC: Stirrer motor	440000105	1	
Energize 4 HC: Stirrer motor	220114171	1	
Energize 5 HC single: Stirrer motor	220114314	1	
Energize 5 HC dual: Stirrer motor	220114314	1	
Thread adhesive	Loctite 243		

Undercounter cooler Energize 2 HC

1. Remove the fastening bolts (Figure 38/1) from the stirrer motor mount (Figure 39/).

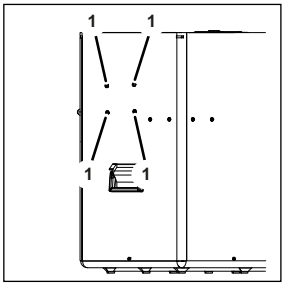


Figure 38

2. Disconnect the plugs (Figure 39/6 and 7) of the stirrer motor (Figure 39/4) from control system 1 (Figure 39/5).
3. Open the cable mount (Figure 39/2) and remove the electrical cable (Figure 39/1) from the cable mount (Figure 39/2).
4. Lift the stirrer motor mount (Figure 39/3) with stirrer motor (Figure 39/4) out of the unit.

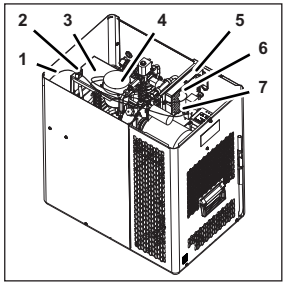


Figure 39

5. Remove the stirrer blade (Figure 40/3) from the stirrer motor (Figure 40/2).
6. Remove the fastening bolt (Figure 40/1) from the stirrer motor (Figure 40/2).
7. Attach the new stirrer motor (Figure 40/2) to the stirrer motor mount (Figure 40/4) using the fastening bolts (Figure 40/1).
8. Apply Loctite to the stirrer blade (Figure 40/3).
9. Attach the stirrer blade (Figure 40/3) to the new stirrer motor (Figure 40/2).
10. Position the new stirrer motor mount (Figure 40/4) within the unit.

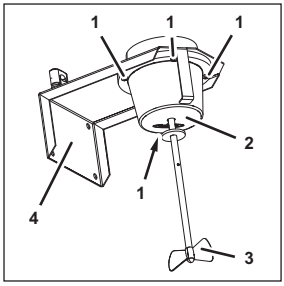


Figure 40

11. Attach the stirrer motor mount (Figure 40/4) using the fastening bolts (Figure 38/1).
12. Connect the plugs (Figure 39/6 and 7) of the stirrer motor (Figure 39/4) to control system 1 (Figure 39/5).
13. Insert the electrical cable (Figure 39/1) into the cable mount (Figure 39/2) and close the cable mount (Figure 39/2).

Undercounter coolers Energize 3 HC/Energize 4 HC

1. Disconnect the plugs (Figure 41/7 and 8) of the stirrer motor (Figure 41/4) from control system 1 (Figure 41/7).
2. Remove the fastening bolt (Figure 41/3) from the solenoid valve holder.
3. Remove the fastening bolts (Figure 41/2) from the stirrer motor mount (Figure 41/5).
4. Lift the stirrer motor mount (Figure 41/5) with stirrer motor (Figure 41/4) out of the unit.

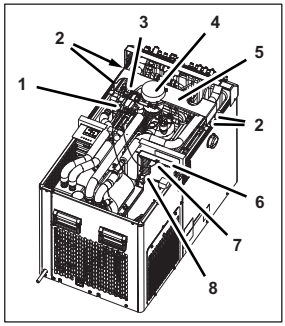


Figure 41

5. Remove the stirrer blade (Figure 42/3) from the stirrer motor (Figure 42/2).
6. Remove the fastening bolt (Figure 42/1) from the stirrer motor (Figure 42/2).
7. Attach the new stirrer motor (Figure 42/2) to the stirrer motor mount (Figure 42/3) using the fastening bolts (Figure 42/1).
8. Attach the stirrer blade (Figure 42/3) to the new stirrer motor (Figure 42/2).

   Secure the stirrer blade (Figure 42/3) by applying Loctite.
9. Position the new stirrer motor mount (Figure 40/3) within the unit.

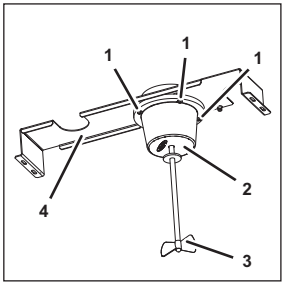


Figure 42

10. Attach the stirrer motor mount (Figure 42/3) using the fastening bolts (Figure 41/1).
11. Attach the solenoid valve holder to the stirrer motor mount (Figure 42/3) using the fastening bolt (Figure 41/3).
12. Connect the plugs (Figure 41/7 and 8) of the stirrer motor (Figure 41/4) to control system 1 (Figure 41/6).

Undercounter cooler Energize 3v HC

1. Disconnect the plug (Figure 43/4) from the stirrer motor (Figure 43/2).
2. Remove the fastening bolts (Figure 43/1) from the stirrer motor mount (Figure 43/3).
3. Lift the stirrer motor mount (Figure 43/3) with stirrer motor (Figure 43/2) out of the unit.

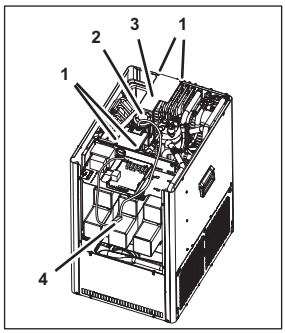


Figure 43

4. Remove the stirrer blade (Figure 44/3) from the stirrer motor (Figure 44/2).
5. Remove the fastening bolt (Figure 44/1) from the stirrer motor (Figure 44/2).
6. Attach the new stirrer motor (Figure 44/2) to the stirrer motor mount (Figure 44/3) using the fastening bolts (Figure 44/1).
7. Apply Loctite to the stirrer blade (Figure 44/3).
8. Attach the stirrer blade (Figure 44/3) to the new stirrer motor (Figure 44/2).

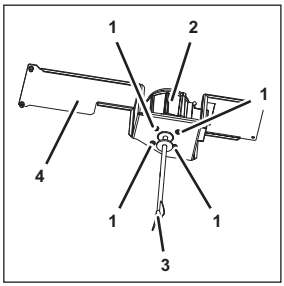


Figure 44

9. Position the new stirrer motor mount (Figure 44/3) within the unit.
10. Attach the stirrer motor mount (Figure 44/3) using the fastening bolts (Figure 44/1).
11. Connect the plug (Figure 43/4) to the stirrer motor (Figure 43/2).

Undercounter coolers Energize 5 HC single/Energize 5 HC dual

1. Disconnect the plugs (Figure 45/6 and 7) of the stirrer motor (Figure 45/3) from control system 1 (Figure 45/5).
2. Remove the fastening bolt (Figure 45/4) from the solenoid valve holder.
3. Remove the fastening bolts (Figure 45/1) from the stirrer motor mount (Figure 45/2).
4. Lift the stirrer motor mount (Figure 45/2) with stirrer motor (Figure 45/3) out of the unit.

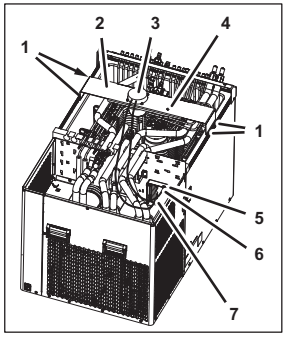


Figure 45

5. Remove the stirrer blade (Figure 46/3) from the stirrer motor (Figure 46/2).
6. Remove the fastening bolt (Figure 46/1) from the stirrer motor (Figure 46/2).
7. Attach the new stirrer motor (Figure 46/2) to the stirrer motor mount (Figure 46/3) using the fastening bolts (Figure 46/1).
8. Apply Loctite to the stirrer blade (Figure 46/3).
9. Attach the stirrer blade (Figure 46/3) to the new stirrer motor (Figure 46/2).
10. Position the new stirrer motor mount (Figure 46/3) within the unit.

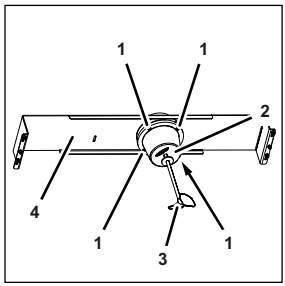


Figure 46

11. Attach the stirrer motor mount (Figure 46/3) using the fastening bolts (Figure 46/1).
12. Connect the plugs (Figure 45/6 and 7) of the stirrer motor (Figure 45/3) to control system 1 (Figure 45/5).

Finishing tasks

1. Mount the cover for control system 1; *see chapter 7.24, page 109*.
2. Mount the cover; *see chapter 7.1, page 53*.

7.6 Replacing the water bath temperature probe

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.
The cover for control system 1 has been removed.	*see chapter 7.24, page 109*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Water bath temperature probe	220105778	1	
Energize 3 HC: Water bath temperature probe	220105778	1	
Energize 3v HC: Water bath temperature probe	220105778	1	
Energize 4 HC: Water bath temperature probe	220105778	1	
Energize 5 HC single: Water bath temperature probe	220105778	1	
Energize 5 HC dual: Water bath temperature probe	220105778	1	

1. Disconnect the plug (Figure 47/3) of the water bath temperature probe (Figure 47/1) from control system 1(Figure 47/4).
2. Remove the water bath temperature probe (Figure 47/1) from the mount (Figure 47/2).
3. Carefully pull the water bath temperature probe (Figure 47/1) out of the unit, along with the electrical cable.
4. Install the new water bath temperature probe (Figure 47/1) within the unit, along with the electrical cable.
5. Slide the water bath temperature probe (Figure 47/1) into the mount (Figure 47/2).
6. Connect the plug (Figure 47/3) of the water bath temperature probe (Figure 47/1) to control system 1(Figure 47/4).

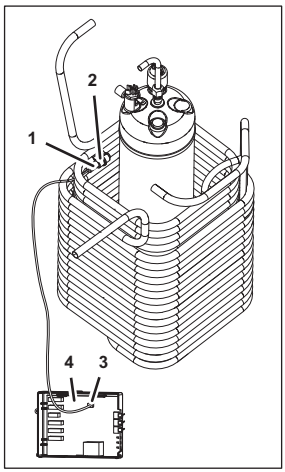


Figure 47

Finishing tasks

1. Mount the cover for control system 1; *see chapter 7.24, page 109*.
2. Mount the cover; *see chapter 7.1, page 53*.

7.7 Replacing the ambient temperature probe and hot gas sensor

Prerequisites	Reference
The sheet casing has been removed (service).	*see chapter 7.2, page 54*.
Energize 3v HC: The service cover (left) has been removed.	*see chapter 7.3, page 57*.
The cover for control system 1 has been removed.	*see chapter 7.24, page 109*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Ambient temperature probe	220105775	1	
Hot gas sensor	220105775	1	
Energize 3 HC: Ambient temperature probe	220105775	1	
Hot gas sensor	220105775	1	
Energize 3v HC: Ambient temperature probe	220105775	1	
Hot gas sensor	220105775	1	
Energize 4 HC: Ambient temperature probe	220105775	1	
Hot gas sensor	220105775	1	
Energize 5 HC single: Ambient temperature probe	220105775	1	
Hot gas sensor	220105775	1	
Energize 5 HC dual: Ambient temperature probe	220105775	1	
Hot gas sensor	220105775	1	
Insulation	Armaflex		

1. Disconnect the plug (Figure 48/1) of the ambient temperature probe (Figure 48/3) or the plug (Figure 48/2) of the hot gas sensor (Figure 48/4) from control system 1 (Figure 48/5).
2. Disconnect all required cable ties.
3. Remove the insulation from the hot gas sensor (Figure 48/4).
4. Carefully pull the ambient temperature probe (Figure 48/3) or the hot gas sensor (Figure 48/4) out of the unit, along with the electrical cable.
5. Install the new ambient temperature probe (Figure 48/3) or the new hot gas sensor (Figure 48/4) within the unit, along with the electrical cable.
6. Attach the insulation to the hot gas sensor (Figure 48/4).
7. Attach the ambient temperature probe (Figure 48/3) or the hot gas sensor (Figure 48/4) using cable ties.
8. Connect the plug (Figure 48/1) of the ambient temperature probe (Figure 48/3) or the plug (Figure 48/2) of the hot gas sensor (Figure 48/4) to control system 1 (Figure 48/5).

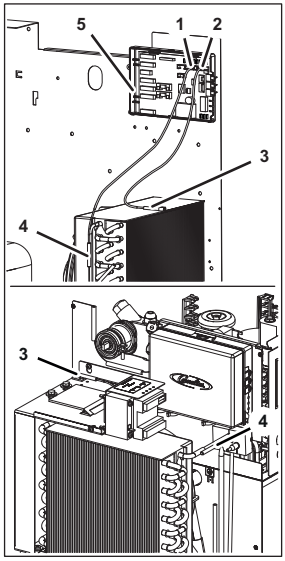


Figure 48

Finishing tasks

1. Mount the cover for control system 1; *see chapter 7.24, page 109*.
2. Install the sheet casing (service); *see chapter 7.2, page 54*.
3. For Energize 3v HC only: Mount the service cover (left); *see chapter 7.2, page 54*.

7.8 Replacing the circulation pump

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.
Energize 2 HC: The stirrer motor has been removed.	*see chapter 7.5, page 59*
Energize 3 HC: The sheet casing has been removed (service).	*see chapter 7.2, page 54*.
Energize 3v HC: The service covers have been removed.	*see chapter 7.3, page 57*.
Energize 4 HC: The sheet casing has been removed (service).	*see chapter 7.2, page 54*.
Energize 5 HC single: The sheet casing has been removed (service).	*see chapter 7.2, page 54*.
Energize 5 HC dual: The sheet casing has been removed (service).	*see chapter 7.2, page 54*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Circulation pump	06-0-240149	1	
Energize 3 HC: Circulation pump	220112440B	1	
Energize 3v HC: Circulation pump	220112440B	1	
Energize 4 HC: Circulation pump	220112440B	1	
Energize 5 HC single: Circulation pump	220112440B	1	
Energize 5 HC dual: Circulation pump	220112440B	2	

Undercounter cooler Energize 2 HC

1. Disconnect the plug (Figure 49/1) from the circulation pump (Figure 49/2).

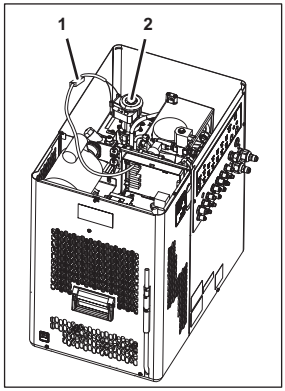


Figure 49

2. Disconnect the lines of the circulation pump (Figure 50/2) from the push-in fittings (Figure 50/4).
3. Remove the fastening bolts (Figure 50/1) from the circulation pump mount (Figure 50/3).
4. Lift the circulation pump mount (Figure 50/3) with circulation pump (Figure 50/2) up and out of the unit.

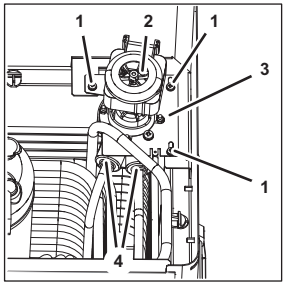


Figure 50

5. Remove the fastening bolts (Figure 51/2) from the circulation pump (Figure 51/1).
6. Disconnect the circulation pump mount (Figure 51/3) from the circulation pump (Figure 51/1).
7. Attach the circulation pump (Figure 51/1) to the circulation pump mount (Figure 51/3) using the fastening bolts (Figure 51/2).
8. Connect the lines of the circulation pump (Figure 50/2) by means of the push-in fittings (Figure 50/4).
9. Position the circulation pump mount (Figure 50/3) with circulation pump (Figure 50/2) within the unit.
10. Attach the circulation pump mount (Figure 49/2) using the fastening bolts (Figure 49/1).

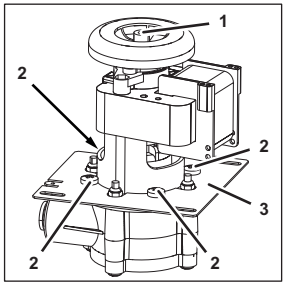


Figure 51

Undercounter coolers Energize 3 HC/Energize 3v HC/Energize 4 HC/Energize 5 HC single

1. Close the shut-off valve (Figure 52/1).

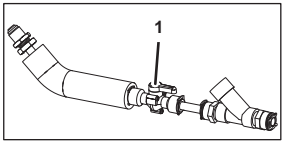


Figure 52

2. Release the couplings (Figure 53/1) on the tubes and remove the tubes from the circulation pump (Figure 53/3).
3. Remove the insulation (Figure 53/2) from the circulation pump (Figure 53/3).

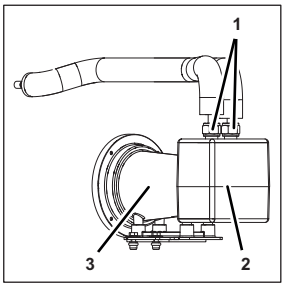


Figure 53

4. Disconnect either the plug (Figure 54/6) of the circulation pump (Figure 54/2) or disconnect the plug (Figure 54/3) of the circulation pump (Figure 54/2) on control system 1 (Figure 54/4).
5. Disconnect the plug (Figure 54/5) of the circulation pump (Figure 54/2) from control system 1(Figure 54/4).
6. Disconnect the earth cable (Figure 54/1) from the circulation pump (Figure 54/2).
7. Remove the fastening bolts (Figure 54/7) from the circulation pump (Figure 54/2).
8. Lift the circulation pump (Figure 54/2) out of the unit.
9. Position the new circulation pump (Figure 54/2) within the unit.
10. Attach the circulation pump (Figure 54/2) using the fastening bolts (Figure 54/7).

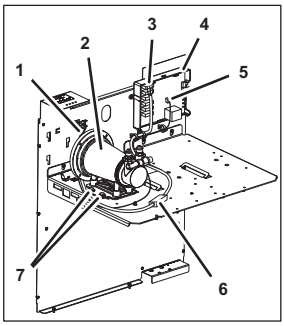


Figure 54

11. Connect the earth cable (Figure 54/1) to the circulation pump (Figure 54/2).
12. Connect the plug (Figure 54/5) of the circulation pump (Figure 54/2) to control system 1(Figure 54/4).
13. Connect either the plug (Figure 54/6) of the circulation pump (Figure 54/2) or connect the plug (Figure 54/3) of the circulation pump (Figure 54/2) to control system 1 (Figure 54/4).
14. Attach the tubes to the circulation pump (Figure 53/3).
15. Attach the insulation (Figure 53/2) to the circulation pump (Figure 53/3).
16. Open the shut-off valve (Figure 52/1).

Undercounter cooler Energize 5 HC dual

1. Close the shut-off valve (Figure 55/1).

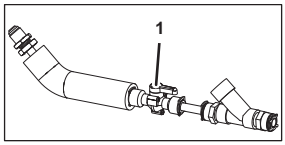


Figure 55

2. Release the couplings (Figure 53/1) on the tubes and remove the tubes from the relevant circulation pump (Figure 53/3).
3. Remove the insulation (Figure 53/2) from the relevant circulation pump (Figure 53/3).

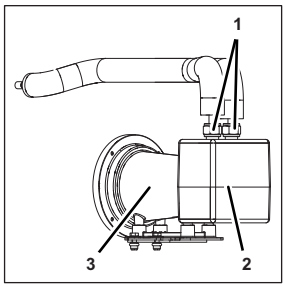


Figure 56

4. Disconnect the plug (Figure 57/3) of circulation pump 1 (Figure 57/2) on control system 2(Figure 57/6).
5. Disconnect the plug (Figure 57/8) of circulation pump 1 (Figure 57/2) on control system 1(Figure 57/7).
6. Disconnect the plug (Figure 57/4) of circulation pump 2 (Figure 57/1) on control system 2(Figure 57/6).
7. Disconnect the plug (Figure 57/5) of circulation pump 2 (Figure 57/2) on control system 2(Figure 57/6).
8. Remove the fastening bolts (Figure 57/9) from the relevant circulation pump (Figure 57/1 and 2).
9. Lift the relevant circulation pump (Figure 57/1 and 2) out of the unit.

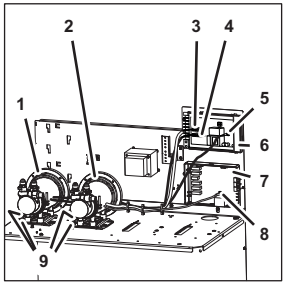


Figure 57

10. Position the new circulation pump (Figure 57/1 and 2) within the unit.
11. Attach the circulation pump (Figure 57/1 and 2) using the fastening bolts (Figure 57/9).
12. Connect the plug (Figure 57/5) of circulation pump 2 (Figure 57/2) to control system 2(Figure 57/6).
13. Connect the plug (Figure 57/4) of circulation pump 2 (Figure 57/1) to control system 2(Figure 57/6).
14. Connect the plug (Figure 57/8) of circulation pump 1 (Figure 57/2) to control system 1(Figure 57/7).
15. Connect the plug (Figure 57/3) of circulation pump 1 (Figure 57/2) to control system 2(Figure 57/6).
16. Open the shut-off valve (Figure 57/1).

Finishing tasks

1. **For Energize 3 HC/Energize 4 HC/Energize 5 HC single/Energize 5 HC dual only:** Install the sheet casing (service); *see chapter 7.2, page 54*.
2. **For Energize 3v HC only:** Mount the service covers; *see chapter 7.3, page 57*.
3. **For Energize 3v HC only:** Install the stirrer motor; *see chapter 7.5, page 59*.
4. Mount the cover; *see chapter 7.1, page 53*.

7.9 Replacing the carbonator pump pressure switches

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.
Energize 3v HC: The service covers have been removed.	*see chapter 7.3, page 57*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Input pressure switch	220107390	1	
Energize 2 HC: Output pressure switch	220107391	1	
Energize 3 HC: Input pressure switch	220107390	1	
Energize 3 HC: Output pressure switch	220107391	1	
Energize 3v HC: Input pressure switch	220107390	1	
Energize 3v HC: Output pressure switch	220107391	1	
Energize 4 HC: Input pressure switch	220107390	1	
Energize 4 HC: Output pressure switch	220107391	1	
Energize 5 HC single: Input pressure switch	220107390	1	
Energize 5 HC single: Output pressure switch	220107391	1	

Spare parts	ID/reference	Qty/ amount	Comment
Energize 5 HC dual: Input pressure switch	220107390	1	
Energize 5 HC dual: Output pressure switch	220107391	1	
Thread adhesive	Loctite 243		

1. Disconnect the plugs (Figure 58/2) from the input pressure switch (Figure 58/3) or the output pressure switch (Figure 58/1).
2. Turn the input pressure switch (Figure 58/3) or the output pressure switch (Figure 58/1) and remove from the carbonator pump (Figure 58/4).
3. Apply Loctite to the input pressure switch (Figure 58/3) or the output pressure switch (Figure 58/1).
4. Attach the new input pressure switch (Figure 58/3) or the new output pressure switch (Figure 58/1) to the carbonator pump (Figure 58/4) by turning it.
5. Connect the plugs (Figure 58/2) to the input pressure switch (Figure 58/3) or the output pressure switch (Figure 58/1).

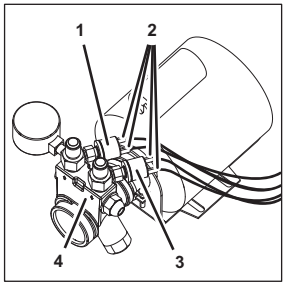


Figure 58

Finishing tasks

1. **For Energize 3v HC only:** Mount the service covers; *see chapter 7.3, page 57*.
2. Mount the cover; *see chapter 7.1, page 53*.

7.10 Replacing the carbonator pump pressure manometer

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.
Energize 3v HC: The service covers have been removed.	*see chapter 7.3, page 57*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Pressure manometer	142440100	1	
Energize 3 HC: Pressure manometer	142440100	1	
Energize 3v HC: Pressure manometer	142440100	1	
Energize 4 HC: Pressure manometer	142440100	1	
Energize 5 HC single: Pressure manometer	142440100	1	
Energize 5 HC dual: Pressure manometer	142440100	1	
Thread adhesive	Loctite 243		

1. Turn the pressure manometer (Figure 59/1) and remove from the carbonator pump (Figure 59/2).
2. Apply Loctite to the new pressure manometer (Figure 59/1).
3. Attach the new pressure manometer (Figure 59/1) to the carbonator pump (Figure 59/2) by turning it.

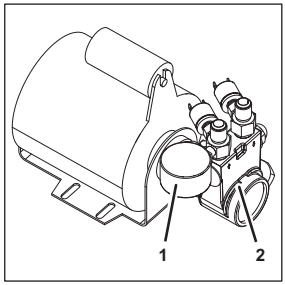


Figure 59

Finishing tasks

1. **For Energize 3v HC only:** Mount the service covers; *see chapter 7.3, page 57*.
2. Mount the cover; *see chapter 7.1, page 53*.

7.11 Replacing the carbonator pump

Prerequisites	Reference
The pressure switches have been removed.	*see chapter 7.9, page 70*.
The pressure manometer has been removed.	*see chapter 7.10, page 72*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Carbonator pump	220114270	1	
Energize 3 HC: Carbonator pump	220114270	1	
Energize 3v HC: Carbonator pump	220114270	1	
Energize 4 HC: Carbonator pump	220114270	1	
Energize 5 HC single: Carbonator pump	220114270	1	
Energize 5 HC dual: Carbonator pump	220114270	1	
Seal	311304000	2	Plastic, black 5/8"

1. Disconnect the lines by releasing the couplings (Figure 60/1) from the carbonator pump (Figure 60/4).
2. Remove the clamp (Figure 60/2).
3. Disconnect the carbonator pump (Figure 60/4) from the carbonator pump motor (Figure 60/3).
4. Lift the carbonator pump (Figure 60/4) out of the unit.

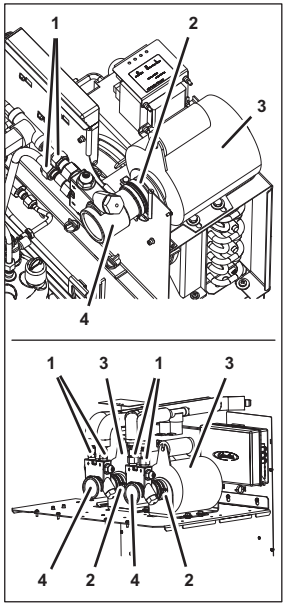


Figure 60

5. Replace the seals (Figure 61/1) of the carbonator pump (Figure 61/2).
6. Position the new carbonator pump (Figure 60/4) on the carbonator pump motor (Figure 60/3).
7. Attach the carbonator pump (Figure 60/4) to the carbonator pump motor (Figure 60/3) using the clamp (Figure 60/2).
8. Connect the lines to the carbonator pump (Figure 60/4) by means of the couplings (Figure 60/1).

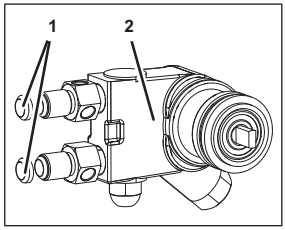


Figure 61

Finishing tasks

1. Install the pressure manometer; *see chapter 7.10, page 72*.
2. Install the pressure switches; *see chapter 7.9, page 70*.

7.12 Replacing the carbonator pump motor

Prerequisites	Reference
The condenser for the carbonator pump motor has been removed.	*see chapter 7.27, page 114*.
The cover for control system 1 has been removed.	*see chapter 7.24, page 109*.

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

1. Disconnect either the plug (Figure 62/4) of the carbonator pump motor (Figure 62/1) or disconnect the plug (Figure 62/3) of the carbonator pump motor (Figure 62/1) on control system 1 (Figure 62/2).

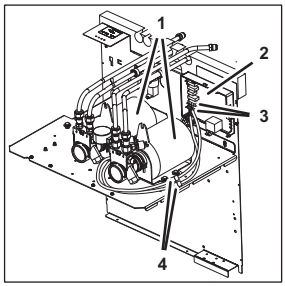


Figure 62

2. Remove the fastening bolts (Figure 63/2) from the carbonator pump motor (Figure 63/1)
3. Remove the clamp (Figure 63/3).
4. Disconnect the carbonator pump motor (Figure 63/1) from the carbonator pump (Figure 63/4).
5. Lift the carbonator pump motor (Figure 63/1) out of the unit.
6. Position the new carbonator pump motor (Figure 63/1) on the carbonator pump (Figure 63/4).
7. Attach the carbonator pump motor (Figure 63/1) to the carbonator pump (Figure 63/4) using the clamp (Figure 63/3).

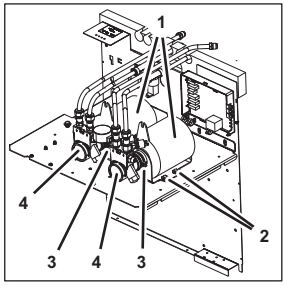


Figure 63

8. Attach the carbonator pump motor (Figure 63/1) using the fastening bolts (Figure 63/2).
9. Connect either the plug (Figure 62/4) of the carbonator pump motor (Figure 62/1) or connect the plug (Figure 62/3) of the carbonator pump motor (Figure 62/1) to control system 1 (Figure 62/2).

Finishing tasks

1. Install the condenser for the carbonator pump motor; *see chapter 7.27, page 114*.

7.13 Replacing the carbonator tank

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.
The water bath temperature probe has been removed.	*see chapter 7.6, page 63*.
The level electrode has been removed.	*see chapter 7.17, page 97*.
The drain valve for the carbonator tank has been removed.	*see chapter 7.18, page 99*.
Energize 2 HC: The stirrer motor has been removed.	*see chapter 7.5, page 59*.
Energize 3 HC: The stirrer motor has been removed.	*see chapter 7.5, page 59*.
Energize 4 HC: The stirrer motor has been removed.	*see chapter 7.5, page 59*.
Energize 5 HC single: The stirrer motor has been removed.	*see chapter 7.5, page 59*.
Energize 5 HC dual: The stirrer motor has been removed.	*see chapter 7.5, page 59*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Carbonator tank	440000786	1	2 litres
Energize 3 HC: Carbonator tank	440000786	1	2 litres
Energize 3v HC: Carbonator tank	440000786	1	2 litres
Energize 4 HC: Carbonator tank	440000787	1	3 litres
Energize 5 HC single: Carbonator tank	440000787	1	3 litres
Energize 5 HC dual: Carbonator tank	440000787S002	1	5 litres

Undercounter cooler Energize 2 HC

1. Disconnect the plug (Figure 64/5) of the solenoid valve (Figure 64/4) by removing the fastening bolt (Figure 64/7).
2. Disconnect the electrical cables from the water inlet valve (Figure 64/1).
3. Disconnect the Water-IN line from the coupling (Figure 64/2).
4. Disconnect the electrical cables from the CO_2 pressure switch (Figure 64/6).
5. Disconnect the connecting line from the carbonator pump to the pre-cooling coil from the coupling (Figure 64/3).

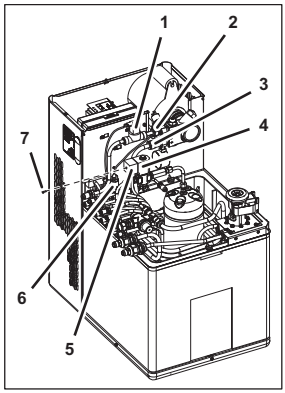


Figure 64

6. Remove the nut (Figure 65/4) from the soda water circulation connection (supply) (Figure 65/3).
7. Disconnect soda water circulation line (supply) (Figure 65/3) from the circulation pump (Figure 65/2).
8. Disconnect the soda water line (Figure 65/1) from the circulation pump (Figure 65/2).

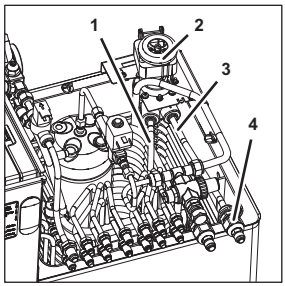


Figure 65

9. Remove the fastening bolts (Figure 66/1) from the connecting plate (Figure 66/2).

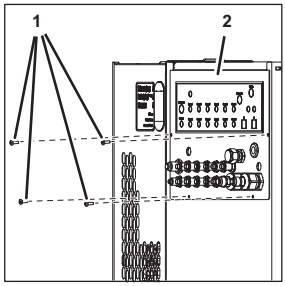


Figure 66

10. Lift the cooling coil basket (Figure 67/3) with connecting plate (Figure 67/1) and carbonator tank (Figure 67/2) out of the unit.

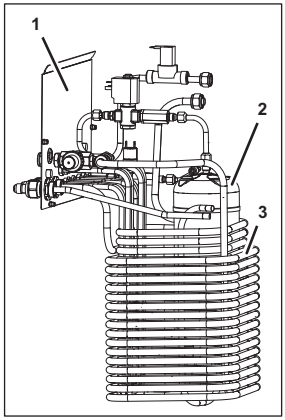


Figure 67

11. Disconnect the connecting line from the non-return valve of the solenoid valve (Figure 68/2) to the carbonator tank (Figure 68/4) from the coupling (Figure 68/1).
12. Disconnect the CO_2-IN line from the coupling (Figure 68/3).

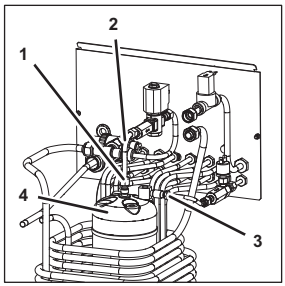


Figure 68

13. Disconnect the soda cooling line from the coupling (Figure 69/1).
14. Disconnect the soda water line from the coupling (Figure 69/2).
15. Lift the carbonator tank (Figure 67/2) up and out of the cooling coil basket (Figure 67/3).
16. Position the new carbonator tank (Figure 67/2) within the cooling coil basket (Figure 67/3).
17. Attach the carbonator tank (Figure 67/2) to the cooling coil basket (Figure 67/3) using a cable tie.
18. Make sure the carbonator tank (Figure 67/2) is firmly placed against the cooling coils.
19. Attach the soda water line to the coupling (Figure 69/2).
20. Attach the soda cooling line to the coupling (Figure 69/1).
21. Attach the CO_2-IN line to the coupling (Figure 68/3).
22. Attach the connecting line from the non-return valve of the solenoid valve (Figure 68/2) to the carbonator tank (Figure 68/4) to the coupling (Figure 68/1).

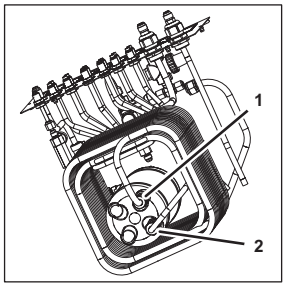


Figure 69

23. Position the cooling coil basket (Figure 67/3) with connecting plate (Figure 67/1) and carbonator tank (Figure 67/2) within the unit.
24. Attach the connecting plate (Figure 66/2) using the fastening bolts (Figure 66/1).
25. Attach the soda water line (Figure 65/1) to the circulation pump (Figure 65/2).
26. Attach the soda water circulation line (supply) (Figure 65/3) to the circulation pump (Figure 65/2).
27. Attach the nut (Figure 65/4) to the soda water circulation connection (supply) (Figure 65/3).
28. Attach the connecting line from the carbonator pump to the pre-cooling coil to the coupling (Figure 64/3).
29. Connect the electrical cables to the CO_2 pressure switch (Figure 64/6).
30. Attach the Water-IN line to the coupling (Figure 64/2).
31. Connect the electrical cables to the water inlet valve (Figure 64/1).
32. Attach the plug (Figure 64/5) of the solenoid valve (Figure 64/4) using the fastening bolt (Figure 64/7).

Undercounter cooler Energize 3v HC

1. Disconnect the connecting line from the non-return valve of the solenoid valve (Figure 70/2) to the carbonator tank (Figure 70/5) from the coupling (Figure 70/1).
2. Disconnect the CO_2-IN line from the coupling (Figure 70/4).
3. Disconnect the soda water line from the coupling (Figure 70/3).
4. Disconnect the connecting line from the carbonator pump to the pre-cooling coil from the coupling (Figure 70/7).
5. Disconnect the connecting line from the circulation pump to the soda supply from the couplings (Figure 70/6 and 8).

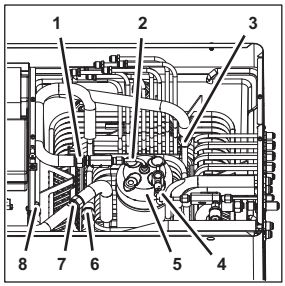


Figure 70

6. Disconnect the electrical cables from the CO_2 pressure switch (Figure 71/5).
7. Remove the nut (Figure 71/3) of the CO_2-IN connection (Figure 71/2) from the connecting plate (Figure 71/1).
8. Lift the CO_2-IN line (Figure 71/4) out of the unit.

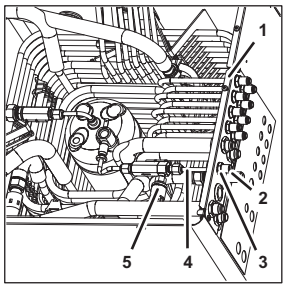


Figure 71

9. Remove the nut (Figure 72/5) of the soda water circulation connection (return) (Figure 72/4) from the connecting plate(Figure 72/3).
10. Disconnect the soda water circulation line (return) from the coupling (Figure 72/2).
11. Disconnect the Water-IN line (Figure 72/6) from the push-in fitting of the water inlet valve (Figure 72/7).
12. Disconnect all syrup tubes (Figure 72/1).

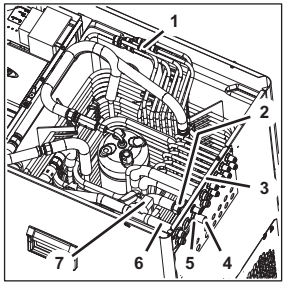


Figure 72

13. Remove the fastening bolts (Figure 73/1) from the connecting plate (Figure 73/2).

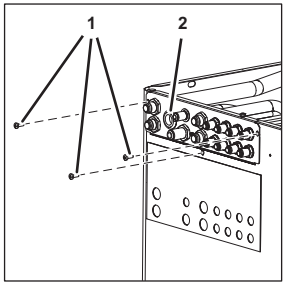


Figure 73

14. Lift the cooling coil basket (Figure 74/5) with connecting plate (Figure 74/4) and carbonator tank (Figure 74/3) out of the unit.
15. Disconnect the connecting line from the non-return valve of the solenoid valve (Figure 74/1) to the carbonator tank (Figure 74/3) from the coupling (Figure 74/2).

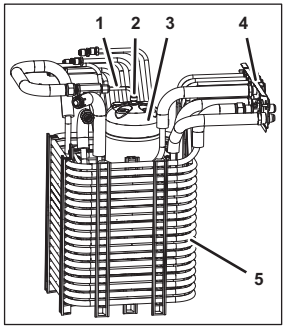


Figure 74

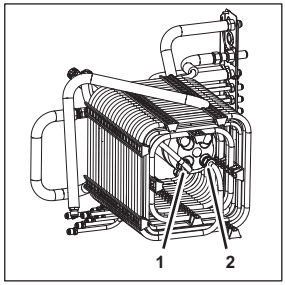


Figure 75

16. Disconnect the soda cooling line from the coupling (Figure 75/2).
17. Disconnect the soda water line from the coupling (Figure 75/1).
18. Lift the carbonator tank (Figure 74/3) up and out of the cooling coil basket (Figure 74/5).
19. Position the new carbonator tank (Figure 74/3) within the cooling coil basket (Figure 74/5).
20. Attach the carbonator tank (Figure 74/3) to the cooling coil basket (Figure 74/5) using a cable tie.
21. Make sure the carbonator tank (Figure 74/3) is firmly placed against the cooling coils.
22. Attach the soda water line to the coupling (Figure 75/1).
23. Attach the soda cooling line to the coupling (Figure 75/2).
24. Attach the connecting line from the non-return valve of the solenoid valve (Figure 74/1) to the carbonator tank (Figure 74/3) to the coupling (Figure 74/2).
25. Position the cooling coil basket (Figure 74/5) with connecting plate (Figure 74/4) and carbonator tank (Figure 74/3) within the unit.
26. Attach the connecting plate (Figure 73/2) using the fastening bolts (Figure 73/1).
27. Attach all syrup tubes (Figure 72/1).
28. Attach the Water-IN line (Figure 72/6) to the push-in fitting of the water inlet valve (Figure 72/7).
29. Attach the soda water circulation line (return) to the coupling (Figure 72/2).
30. Attach the nut (Figure 72/5) of the soda water circulation connection (return) (Figure 72/4) to the connecting plate(Figure 72/3).
31. Position the CO_2-IN line (Figure 71/4) within the unit.
32. Attach the nut (Figure 71/3) of the CO_2-IN connection (Figure 71/2) to the connecting plate (Figure 71/1)
33. Connect the electrical cables to the CO_2 pressure switch (Figure 71/5).
34. Attach the connecting line from the circulation pump to the soda supply to the couplings (Figure 70/6 and 8).
35. Attach the connecting line from the carbonator pump to the pre-cooling coil to the coupling (Figure 70/7).
36. Attach the soda water line to the coupling (Figure 70/3).
37. Attach the CO_2-IN line to the coupling (Figure 70/4).
38. Attach the connecting line from the non-return valve of the solenoid valve (Figure 70/2) to the carbonator tank (Figure 70/5) to the coupling (Figure 70/1).

Undercounter cooler Energize 3 HC

1. Disconnect the plug (Figure 76/2) of the solenoid valve (Figure 76/3) by removing the fastening bolt (Figure 76/1).

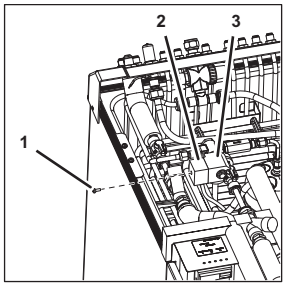


Figure 76

2. Disconnect the water input line (Figure 77/11) on the coupling (Figure 77/2) from the T-fitting of the water inlet pressure reducing valve (Figure 77/3).
3. Disconnect the connecting line from the non-return valve of the solenoid valve (Figure 77/10) to the carbonator tank (Figure 77/6) from the coupling (Figure 77/7).
4. Lift the water input line (Figure 77/11) with the connecting line from the non-return valve of the solenoid valve (Figure 77/10) to the carbonator tank (Figure 77/6) out of the unit.

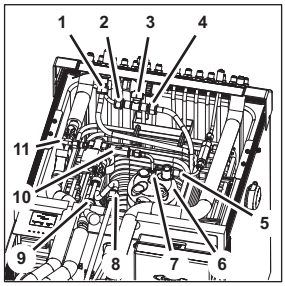


Figure 77

5. Disconnect the pre-cooling coil from the coupling (Figure 77/4).
6. Disconnect the soda water circulation line (return) from the coupling (Figure 77/1).
7. Disconnect the CO_2-IN line from the coupling (Figure 77/5).
8. Disconnect the soda water line to the circulation pump from the push-in fitting (Figure 77/9).
9. Disconnect the connecting line from the carbonator pump to the pre-cooling coil from the coupling (Figure 77/8).
10. Lift the cooling coil basket (Figure 78/2) with carbonator tank (Figure 78/1) out of the unit.

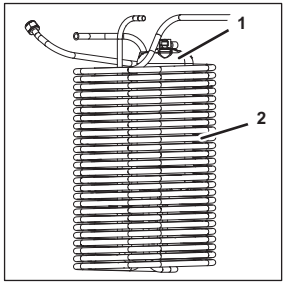


Figure 78

11. Disconnect the soda cooling line from the coupling (Figure 79/1).
12. Disconnect the soda water line from the coupling (Figure 79/2).
13. Lift the carbonator tank (Figure 78/1) up and out of the cooling coil basket (Figure 78/2).
14. Position the new carbonator tank (Figure 78/1) within the cooling coil basket (Figure 78/2).
15. Attach the carbonator tank (Figure 78/1) to the cooling coil basket (Figure 78/2) using a cable tie.
16. Make sure the carbonator tank (Figure 78/1) is firmly placed against the cooling coils.
17. Attach the soda water line to the coupling (Figure 79/2).
18. Attach the soda cooling line to the coupling (Figure 79/1).

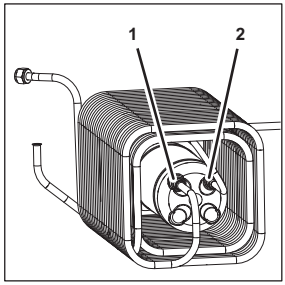


Figure 79

19. Position the cooling coil basket (Figure 78/2) with carbonator tank (Figure 78/1) within the unit.
20. Attach the connecting line from the carbonator pump to the pre-cooling coil to the coupling (Figure 77/8).
21. Attach the soda water line to the circulation pump to the push-in fitting (Figure 77/9).
22. Attach the CO_2-IN line to the coupling (Figure 77/5).
23. Attach the soda water circulation line (return) to the coupling (Figure 77/1).
24. Attach the pre-cooling coil to the coupling (Figure 77/4).
25. Position the water input line (Figure 77/11) with the connecting line from the non-return valve of the solenoid valve (Figure 77/10) to the carbonator tank (Figure 77/6) within the unit.
26. Attach the connecting line from the non-return valve of the solenoid valve (Figure 77/10) to the carbonator tank (Figure 77/6) to the coupling (Figure 77/7).
27. Attach the water input line (Figure 77/11) on the coupling (Figure 77/2) to the T-fitting of the water inlet pressure reducing valve (Figure 77/3).
28. Attach the plug (Figure 76/2) of the solenoid valve (Figure 76/3) using the fastening bolt (Figure 76/1).

Undercounter cooler Energize 4 HC

1. Disconnect the plug (Figure 80/2) of the solenoid valve (Figure 80/3) by removing the fastening bolt (Figure 80/1).

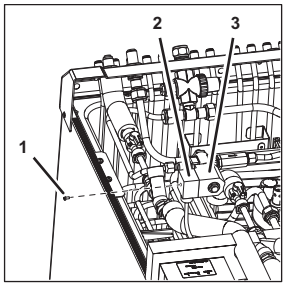


Figure 80

2. Disconnect the water input line (Figure 81/11) on the coupling (Figure 81/2) from the T-fitting of the water inlet pressure reducing valve (Figure 81/3).
3. Disconnect the connecting line from the non-return valve of the solenoid valve (Figure 81/10) to the carbonator tank from the coupling (Figure 81/5).
4. Lift the water input line (Figure 81/11) with the connecting line from the non-return valve of the solenoid valve (Figure 81/10) to the carbonator tank out of the unit.
5. Disconnect the pre-cooling coil from the coupling (Figure 81/4).
6. Disconnect the soda water circulation line (return) from the coupling (Figure 81/1).

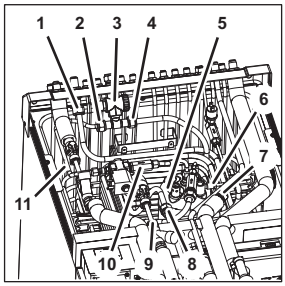


Figure 81

7. Disconnect the CO_2-IN line from the coupling (Figure 81/6).
8. Disconnect the soda water line to the circulation pump from the push-in fitting (Figure 81/9).
9. Disconnect the connecting line from carbonator pump 1 to pre-cooling coil 1 from the coupling (Figure 81/8).
10. Disconnect the connecting line from carbonator pump 2 to pre-cooling coil 2 from the coupling (Figure 81/7).
11. Disconnect Water-IN line 2 (Figure 82/2) from the connecting plate (Figure 82/1).
12. Disconnect Water-IN line 2 (Figure 82/2) from the push-in fitting (Figure 82/3).

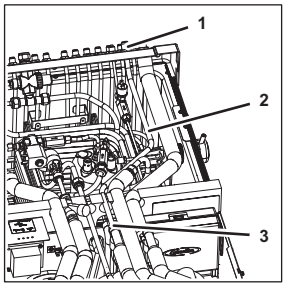


Figure 82

13. Lift the cooling coil basket (Figure 83/4) with carbonator tank (Figure 83/3) out of the unit.
14. Disconnect the connecting line from the non-return valve of the solenoid valve (Figure 83/2) to the carbonator tank (Figure 83/3) from the coupling (Figure 83/1).

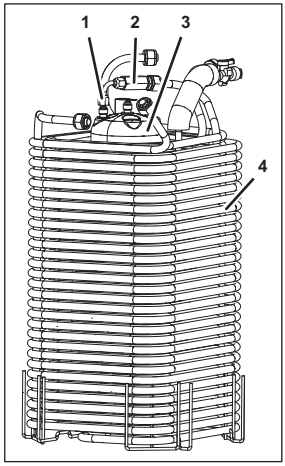


Figure 83

15. Disconnect the soda cooling line from the coupling (Figure 84/1).
16. Disconnect the soda water line from the coupling (Figure 84/2).
17. Lift the carbonator tank (Figure 83/3) up and out of the cooling coil basket (Figure 83/4).
18. Position the new carbonator tank (Figure 83/3) within the cooling coil basket (Figure 83/4).
19. Attach the carbonator tank (Figure 83/3) to the cooling coil basket (Figure 83/4) using a cable tie.
20. Make sure the carbonator tank (Figure 83/3) is firmly placed against the cooling coils.
21. Attach the soda water line to the coupling (Figure 84/2).
22. Attach the soda cooling line to the coupling (Figure 84/1).

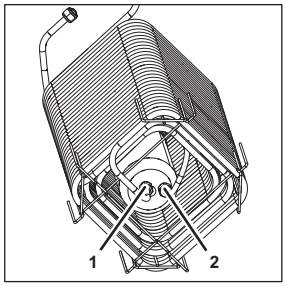


Figure 84

23. Attach the connecting line from the non-return valve of the solenoid valve (Figure 83/2) to the carbonator tank (Figure 83/3) to the coupling (Figure 83/1).
24. Position the cooling coil basket (Figure 83/4) with carbonator tank (Figure 83/3) within the unit.
25. Attach Water-IN line 2 (Figure 82/2) to the push-in fitting (Figure 82/3).
26. Attach Water-IN line 2 (Figure 82/2) to the connecting plate (Figure 82/1).
27. Attach the connecting line from carbonator pump 2 to pre-cooling coil 2 to the coupling (Figure 81/7).
28. Attach the connecting line from carbonator pump 1 to pre-cooling coil 1 to the coupling (Figure 81/8).
29. Attach the soda water line to the circulation pump to the push-in fitting (Figure 81/9).
30. Attach the CO_2-IN line to the coupling (Figure 81/6).

31. Attach the soda water circulation line (return) to the coupling (Figure 81/1).
32. Attach the pre-cooling coil to the coupling (Figure 81/4).
33. Position the water input line (Figure 81/11) with the connecting line from the non-return valve of the solenoid valve (Figure 81/10) to the carbonator tank within the unit.
34. Attach the connecting line from the non-return valve of the solenoid valve (Figure 81/10) to the carbonator tank to the coupling (Figure 81/5).
35. Attach the water input line (Figure 81/11) on the coupling (Figure 81/2) to the T-fitting of the water inlet pressure reducing valve (Figure 81/3).
36. Attach the plug (Figure 80/2) of the solenoid valve (Figure 80/3) by removing the fastening bolt (Figure 80/1).

Undercounter cooler Energize 5 HC single

1. Disconnect the plug (Figure 85/6) of the solenoid valve (Figure 85/7) by removing the fastening bolt (Figure 85/1).
2. Disconnect the water input line on the coupling (Figure 85/5) from the T-fitting of the water inlet pressure reducing valve (Figure 85/4).
3. Disconnect the pre-cooling coil from the coupling (Figure 85/2).
4. Disconnect the soda water circulation line (return) from the coupling (Figure 85/3).

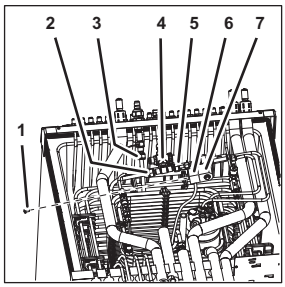


Figure 85

5. Disconnect the CO_2-IN line from the coupling (Figure 86/1).
6. Disconnect the connecting line from carbonator pump 1 to pre-cooling coil 1 from the coupling (Figure 86/3).
7. Disconnect the connecting line from carbonator pump 2 to pre-cooling coil 2 from the coupling (Figure 86/2).
8. Disconnect the soda water line to the circulation pump from the push-in fitting (Figure 86/4).

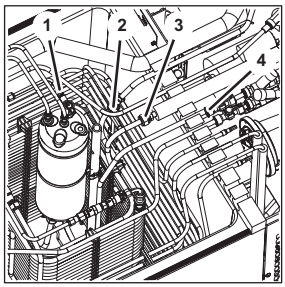


Figure 86

9. Lift the cooling coil basket (Figure 87/4) with carbonator tank (Figure 87/3) out of the unit.
10. Disconnect the connecting line from non-return valve 1 to the carbonator tank (Figure 87/3) from the coupling (Figure 87/2).
11. Disconnect the connecting line from non-return valve 2 to the carbonator tank (Figure 87/3) from the coupling (Figure 87/1).

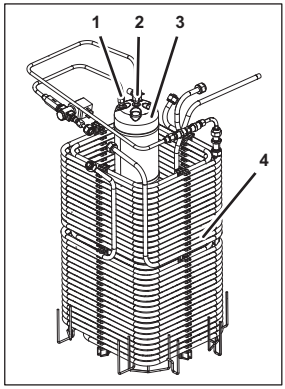


Figure 87

12. Disconnect the soda cooling line from the coupling (Figure 88/1).
13. Disconnect the soda water line from the coupling (Figure 88/2).
14. Lift the carbonator tank (Figure 87/3) up and out of the cooling coil basket (Figure 87/4).
15. Position the new carbonator tank (Figure 87/3) within the cooling coil basket (Figure 87/4).
16. Attach the carbonator tank (Figure 87/3) to the cooling coil basket (Figure 87/4) using a cable tie.
17. Make sure the carbonator tank (Figure 87/3) is firmly placed against the cooling coils.
18. Attach the soda water line to the coupling (Figure 88/2).
19. Attach the soda cooling line to the coupling (Figure 88/1).

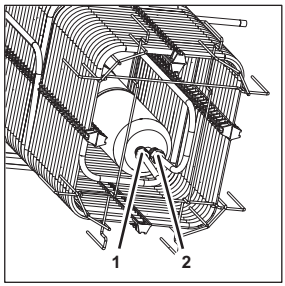


Figure 88

20. Attach the connecting line from non-return valve 2 to the carbonator tank (Figure 87/3) to the coupling (Figure 87/1).
21. Attach the connecting line from non-return valve 1 to the carbonator tank (Figure 87/3) to the coupling (Figure 87/2).
22. Position the cooling coil basket (Figure 87/4) with carbonator tank (Figure 87/3) within the unit.
23. Attach the soda water line to the circulation pump to the push-in fitting (Figure 86/4).
24. Attach the connecting line from carbonator pump 2 to pre-cooling coil 2 to the coupling (Figure 86/2).
25. Attach the connecting line from carbonator pump 1 to pre-cooling coil 1 to the coupling (Figure 86/3).
26. Attach the CO_2-IN line to the coupling (Figure 86/1).
27. Attach the soda water circulation line (return) to the coupling (Figure 85/3).
28. Attach the pre-cooling coil to the coupling (Figure 85/2).

29. Attach the water input line on the coupling (Figure 85/5) to the T-fitting of the water inlet pressure reducing valve (Figure 85/4).
30. Attach the plug (Figure 85/6) of the solenoid valve (Figure 85/7) by removing the fastening bolt (Figure 85/1).

Undercounter cooler Energize 5 HC dual

1. Disconnect the plug (Figure 89/5) of the solenoid valve (Figure 89/6) by removing the fastening bolt (Figure 89/1).
2. Disconnect the plugs (Figure 89/7) of the CO_2 pressure switch (Figure 89/8).
3. Disconnect the water input line on the coupling (Figure 89/3) from the T-fitting of the water inlet pressure reducing valve (Figure 89/4).
4. Disconnect the coupling (Figure 89/2) on pre-cooling coil 1 from the T-fitting of the water inlet pressure reducing valve (Figure 89/4).
5. Disconnect the coupling (Figure 89/10) of pre-cooling coil 1 from the carbonator tank (Figure 89/11).

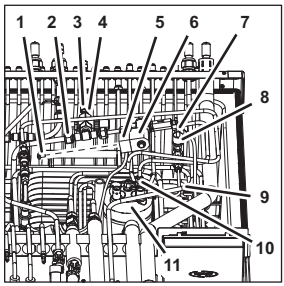


Figure 89

6. Lift the connecting line (Figure 89/9) of pre-cooling coil 1 out of the unit.
7. Disconnect the coupling (Figure 90/1) of pre-cooling coil 2.
8. Disconnect the coupling (Figure 90/4) of pre-cooling coil 2 from the carbonator tank (Figure 90/3).
9. Lift the connecting line (Figure 90/2) of pre-cooling coil 2 out of the unit.
10. Disconnect the CO_2-IN line from the coupling (Figure 90/5).

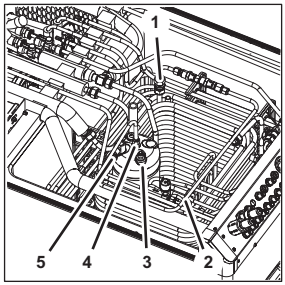


Figure 90

11. Disconnect the coupling (Figure 91/5) from the T-fitting (Figure 91/6) of the soda water circulation line (return) (Figure 91/7 and 8).
12. Disconnect the additional syrup connections (Figure 91/9) from the connecting plate (Figure 91/11).
13. Disconnect the coupling (Figure 91/10) of Water-IN line 2 (Figure 91/12) from the connecting plate (Figure 91/11).
14. Disconnect Water-IN line 2 (Figure 91/12) from the push-in fitting (Figure 91/2) of the water inlet valve (Figure 91/1).
15. Lift Water-IN line 2 (Figure 91/12) out of the unit.
16. Disconnect the connecting line from carbonator pump 1 to pre-cooling coil 1 from the coupling (Figure 91/13).
17. Disconnect the connecting line from carbonator pump 2 to pre-cooling coil 2 from the coupling (Figure 91/4).
18. Disconnect the coupling (Figure 91/3) from the soda water line to the circulation pump from the T-fitting.

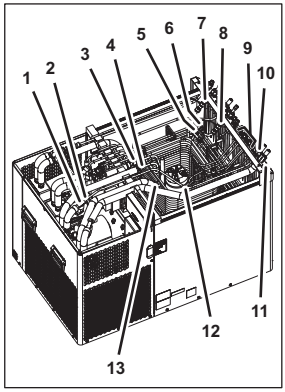


Figure 91

19. Lift the cooling coil basket (Figure 92/2) with carbonator tank (Figure 92/1) out of the unit.

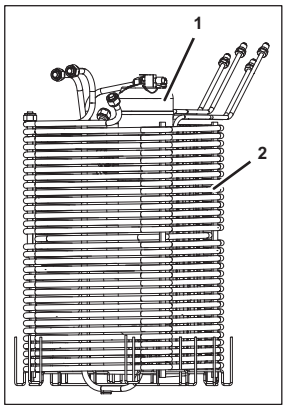


Figure 92

20. Disconnect the soda cooling line from the coupling (Figure 93/1).
21. Disconnect the soda water line from the coupling (Figure 93/2).
22. Lift the carbonator tank (Figure 92/1) up and out of the cooling coil basket (Figure 92/2).
23. Position the new carbonator tank (Figure 92/1) within the cooling coil basket (Figure 92/2).
24. Attach the carbonator tank (Figure 92/1) to the cooling coil basket (Figure 92/2) using a cable tie.

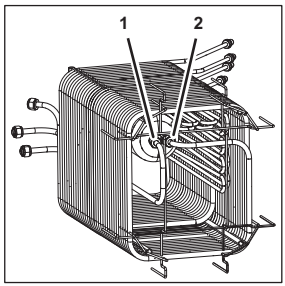


Figure 93

25. Make sure the carbonator tank (Figure 92/1) is firmly placed against the cooling coils.
26. Attach the soda water line to the coupling (Figure 93/2).
27. Attach the soda cooling line to the coupling (Figure 93/1).
28. Position the cooling coil basket (Figure 92/2) with carbonator tank (Figure 92/1) within the unit.
29. Attach the coupling (Figure 91/4) 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 (Figure 91/3).
31. Attach the connecting line from carbonator pump 1 to pre-cooling coil 1 to the coupling (Figure 91/13).
32. Position Water-IN line 2 (Figure 91/12) within the unit.
33. Attach Water-IN line 2 (Figure 91/12) to the push-in fitting (Figure 91/2) of the water inlet valve (Figure 91/1).
34. Attach the coupling (Figure 91/10) of Water-IN line 2 (Figure 91/12) to the connecting plate (Figure 91/11).
35. Attach the additional syrup connections (Figure 91/9) to the connecting plate (Figure 91/11).
36. Attach the coupling (Figure 91/5) to the T-fitting (Figure 91/7) of the soda water circulation line (return) (Figure 91/6 and 8).
37. Attach the CO_2-IN line to the coupling (Figure 90/5).
38. Position the connecting line (Figure 90/2) of pre-cooling coil 2 within the unit.
39. Attach the coupling (Figure 90/4) of pre-cooling coil 2 to the carbonator tank (Figure 90/3).
40. Attach the coupling (Figure 90/1) to pre-cooling coil 2.
41. Position the connecting line (Figure 89/9) of pre-cooling coil 1 within the unit.
42. Attach the coupling (Figure 89/10) of pre-cooling coil 1 to the carbonator tank (Figure 89/11).
43. Attach the coupling (Figure 89/2) on pre-cooling coil 1 to the T-fitting of the water inlet pressure reducing valve (Figure 89/4).
44. Attach the water input line on the coupling (Figure 89/3) to the T-fitting of the water inlet pressure reducing valve (Figure 89/4).
45. Attach the plugs (Figure 89/7) of the CO_2 pressure switch (Figure 89/8).
46. Attach the plug (Figure 89/5) of the solenoid valve (Figure 89/6) by removing the fastening bolt (Figure 89/1).

Finishing tasks

1. Install the stirrer motor; *see chapter 7.5, page 59*.
2. Install the drain valve for the carbonator tank; *see chapter 7.18, page 99*.
3. Install the level electrode; *see chapter 7.17, page 97*.
4. Install the water bath temperature probe; *see chapter 7.6, page 63*.
5. Mount the cover; *see chapter 7.1, page 53*.

7.14 Replacing the solenoid valve for the carbonator tank

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.

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

1. Release the coupling (Figure 94/1) on the solenoid valve (Figure 94/2).
2. Release the coupling (Figure 94/4) on the non-return valve (Figure 94/3).
3. Lift the solenoid valve (Figure 94/2) with non-return valve (Figure 94/3) out of the unit.

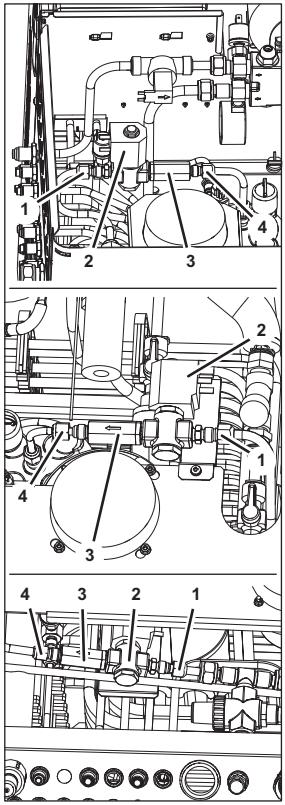


Figure 94

4. Disconnect the non-return valve (Figure 95/2) from the solenoid valve (Figure 95/1).
5. Attach the new solenoid valve (Figure 95/1) to the non-return valve (Figure 95/2).
6. Check the seals (Figure 95/3) for damage.

   Replace any damaged seals (Figure 95/3).
7. Apply Loctite to the solenoid valve (Figure 95/1) and to the non-return valve (Figure 95/2).
8. Position the solenoid valve (Figure 95/1) with non-return valve (Figure 95/2) within the unit.
9. Attach the solenoid valve (Figure 94/2) and the non-return valve (Figure 94/3) using the couplings (Figure 94/1 and Figure 94/4).

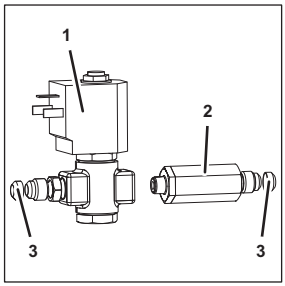


Figure 95

Finishing tasks

1. Mount the cover; *see chapter 7.1, page 53*.

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

Prerequisites	Reference
The solenoid valve for the carbonator tank has been removed.	*see chapter 7.14, page 92*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Non-return valve	220105624	1	
Energize 3 HC: Non-return valve	220105624	1	
Energize 4 HC: Non-return valve	220105624	1	
Energize 5 HC single: Non-return valve	220105624	1	
Energize 5 HC dual: Non-return valve	220105624	1	
Seal	311304000	1	Plastic, black 5/8"
Thread adhesive	Loctite 243		

Undercounter coolers Energize 2 HC/Energize 3 HC/Energize 4 HC/Energize 5 HC single/Energize 5 HC dual

1. Disconnect the non-return valve (Figure 96/2) from the solenoid valve (Figure 96/1).
2. Apply Loctite to the new non-return valve (Figure 96/2).
3. Attach the non-return valve (Figure 96/2) to the solenoid valve (Figure 96/1).

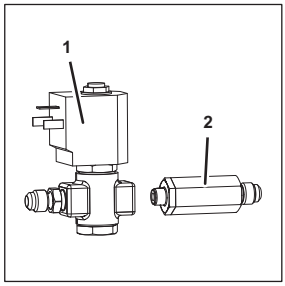


Figure 96

4. Check the seals (Figure 97/2) for damage.
   Replace any damaged seals (Figure 97/2).
5. Position the new non-return valve (Figure 97/1) within the unit.
6. Attach the solenoid valve (Figure 94/2) and the non-return valve (Figure 97/1) using the couplings (Figure 94/1 and Figure 94/4).

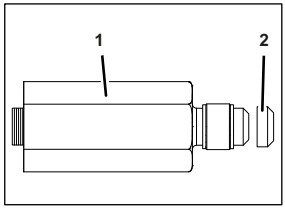


Figure 97

Finishing tasks

1. Install the solenoid valve for the carbonator tank; *see chapter 7.14, page 92*.

7.16 Replacing the non-return valve for the carbonator tank

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 3v HC: Non-return valve	220106873	1	
Energize 4 HC: Non-return valve	220106873	1	
Energize 5 HC single: Non-return valve	77400601	1	
Energize 5 HC dual: Non-return valve	77400601	1	
Seal	311304000	2	Plastic, black 5/8"

Undercounter cooler Energize 3v HC

1. Release the couplings (Figure 98/1 and 3) on the non-return valve (Figure 98/2).
2. Lift the non-return valve (Figure 98/2) out of the unit.

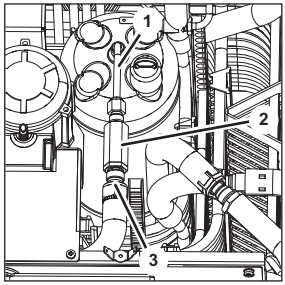


Figure 98

3. Check the seals (Figure 99/1) for damage.
   Replace any damaged seals (Figure 99/1).
4. Position the new non-return valve (Figure 99/2) within the unit.
5. Attach the non-return valve (Figure 98/2) using the couplings (Figure 98/1 and 3).

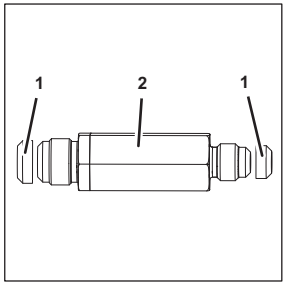


Figure 99

Undercounter cooler Energize 4 HC

1. Release the couplings (Figure 100/1 and 3) on the non-return valve (Figure 100/2).
2. Lift the non-return valve (Figure 100/2) out of the unit.

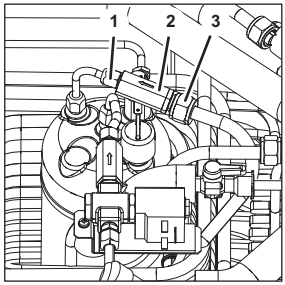


Figure 100

3. Check the seals (Figure 101/1) for damage.
   Replace any damaged seals (Figure 101/1).
4. Position the new non-return valve (Figure 101/2) within the unit.
5. Attach the non-return valve (Figure 100/2) using the couplings (Figure 100/1 and 3).

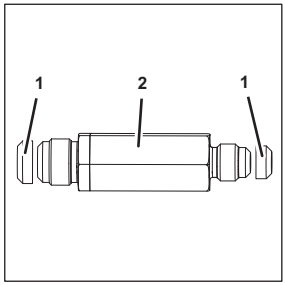


Figure 101

Undercounter coolers Energize 5 HC single/Energize 5 HC dual

1. Release the couplings (Figure 102/1 and 3) on the non-return valve (Figure 102/2).
2. Lift the non-return valve (Figure 102/2) out of the unit.

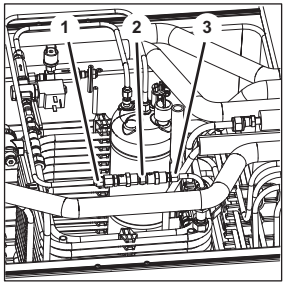


Figure 102

3. Check the seals (Figure 103/1) for damage.
   Replace any damaged seals (Figure 103/1).
4. Position the new non-return valve (Figure 103/2) within the unit.
5. Attach the non-return valve (Figure 102/2) using the couplings (Figure 102/1 and 3).

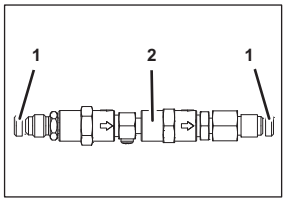


Figure 103

Finishing tasks

1. **M**ount the cover; *see chapter 7.1, page 53*.

7.17 Replacing the level electrode for the carbonator tank

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Level electrode	440000802	1	
Energize 3 HC: Level electrode	440000802	1	
Energize 3v HC: Level electrode	440000802	1	
Energize 4 HC: Level electrode	440000806	1	
Energize 5 HC single: Level electrode	440000806	1	

Spare parts	ID/reference	Qty/ amount	Comment
Energize 5 HC dual: Level electrode	440000806	1	
Seal		1	

1. Disconnect the plug (Figure 104/1) from the level electrode (Figure 104/2).
2. Disconnect the earth cable (Figure 104/3).

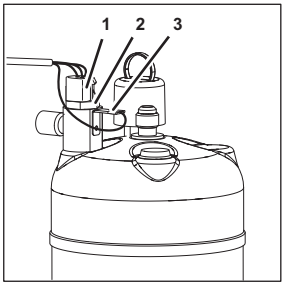


Figure 104

3. Turn the level electrode (Figure 105/1) and remove from the carbonator tank (Figure 105/2).

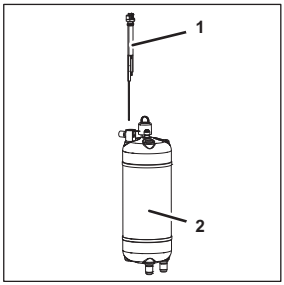


Figure 105

4. Check the seal (Figure 106/1) of the level electrode (Figure 106/2) for damage.

   Replace any damaged seals (Figure 106/1).
5. Attach the new level electrode (Figure 105/1) to the carbonator tank (Figure 105/2) by turning it.
6. Connect the earth cable (Figure 104/3).
7. Connect the plug (Figure 104/1) to the level electrode (Figure 104/2).

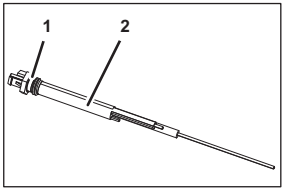


Figure 106

Finishing tasks

1. Mount the cover; *see chapter 7.1, page 53*.

7.18 Replacing the drain valve for the carbonator tank

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53.*

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Drain valve	000001116	1	
Energize 3 HC: Drain valve	000001116	1	
Energize 3v HC: Drain valve	000001116	1	
Energize 4 HC: Drain valve	000001116	1	
Energize 5 HC single: Drain valve	000001116	1	
Energize 5 HC dual: Drain valve	000001116	1	

1. Remove the protective cap (Figure 107/2) from the drain valve (Figure 107/1).

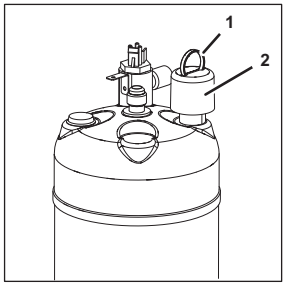


Figure 107

2. Turn the drain valve (Figure 108/1) and remove from the carbonator tank (Figure 108/2).
3. Attach the new drain valve (Figure 108/1) to the carbonator tank (Figure 108/2) by turning it.
4. Attach the protective cap (Figure 107/2) to the drain valve (Figure 107/1).

Finishing tasks

1. Mount the cover; *see chapter 7.1, page 53*.

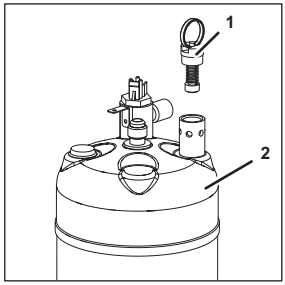


Figure 108

7.19 Replacing the non-return valve for CO_2-IN

Prerequisites	Reference
The CO_2 pressure switch has been removed.	*see chapter 7.20, page 102*.

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

1. Release the couplings (Figure 109/1 and 3) on the non-return valve (Figure 109/2).
2. Lift the non-return valve (Figure 109/2) out of the unit.

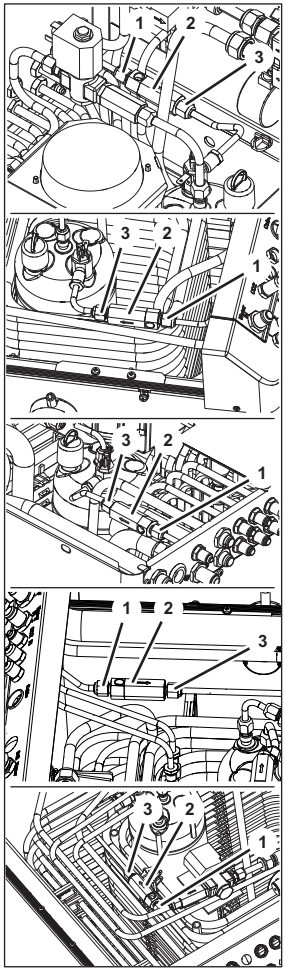


Figure 109

3. Check the seals (Figure 110/1) for damage.
   Replace any damaged seals (Figure 110/1).
4. Position the new non-return valve (Figure 110/2) within the unit.
5. Attach the non-return valve (Figure 109/2) using the couplings (Figure 109/1 and 3).

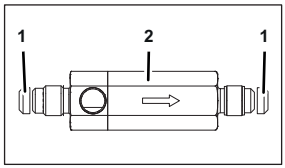


Figure 110

Finishing tasks

1. Install the CO_2 pressure switch; *see chapter 7.20, page 102*.

7.20 Replacing the CO_2 pressure switch

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53.*

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: CO_2 pressure switch	890904815	1	
Energize 3 HC: CO_2 pressure switch	890904815	1	
Energize 3v HC: CO_2 pressure switch	890904815	1	
Energize 4 HC: CO_2 pressure switch	890904815	1	
Energize 5 HC single: CO_2 pressure switch	890904815	1	
Energize 5 HC dual: CO_2 pressure switch	890904815	1	
Thread adhesive	Loctite 243		

1. Disconnect the plugs (Figure 111/1) of the CO_2 pressure switch (Figure 111/3).
2. Turn the CO_2 pressure switch (Figure 111/3) and remove from the non-return valve (Figure 111/2).
3. Apply Loctite to the new CO_2 pressure switch (Figure 111/3).
4. Attach the new CO_2 pressure switch (Figure 111/3) to the non-return valve (Figure 111/2) by turning it.
5. Connect the plugs (Figure 111/1) of the CO_2 pressure switch (Figure 111/3).

Finishing tasks

1. Mount the cover; *see chapter 7.1, page 53*.

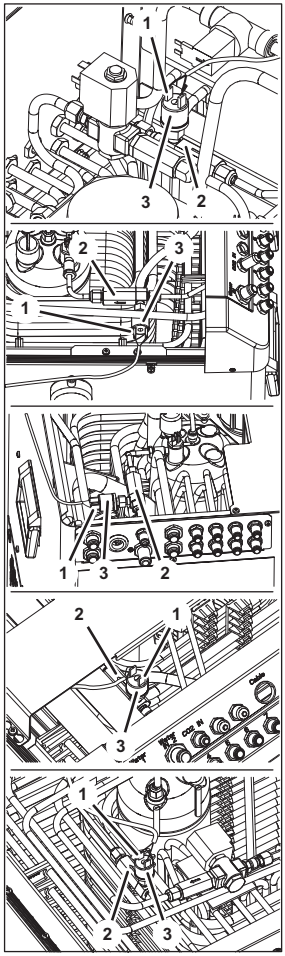


Figure 111

7.21 Replacing the water inlet valve

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Water inlet valve	580400240	1	
Energize 3 HC: Water inlet valve	580400240	1	
Energize 3v HC: Water inlet valve	580400240	1	
Energize 4 HC: Water inlet valve	580400240	2	
Energize 5 HC single: Water inlet valve	580400240	2	
Energize 5 HC dual: Water inlet valve	580400240	2	

1. Disconnect the plugs (Figure 112/4) of the water inlet valve (Figure 112/2).
2. Disconnect the water inlet valve (Figure 112/2) from the push-in fittings (Figure 112/1 and 3).
3. Attach the new water inlet valve (Figure 112/2) to the push-in fittings (Figure 112/1 and 3).
4. Connect the plugs (Figure 112/4) of the water inlet valve (Figure 112/2).

Finishing tasks

1. Mount the cover; *see chapter 7.1, page 53*.

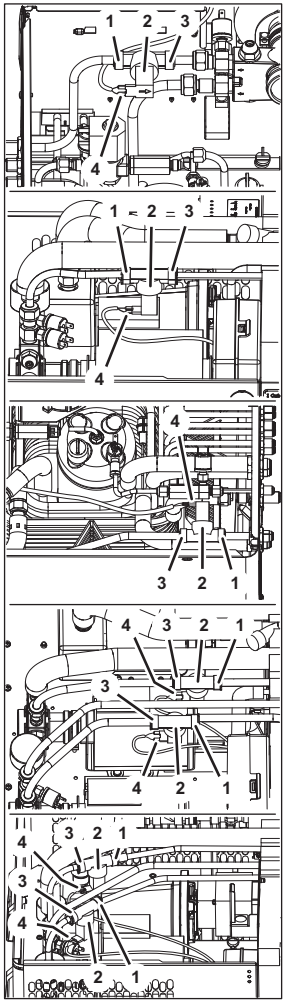


Figure 112

7.22 Replacing the water filter

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 3 HC: Water filter	Various	1	
Energize 4 HC: Water filter	Various	2	
Energize 5 HC single: Water filter	Various	2	
Energize 5 HC dual: Water filter	Various	2	

1. Remove the lock nut (Figure 113/1) from the water filter housing (Figure 113/4).
2. Lift the water filter (Figure 113/3) out of the water filter housing (Figure 113/4).
3. Insert the new water filter (Figure 113/3) into the water filter housing (Figure 113/4).
4. Check the seal (Figure 113/2) for damage.
   Replace any damaged seals (Figure 113/2).
5. Attach the lock nut (Figure 113/1) to the water filter housing (Figure 113/4).

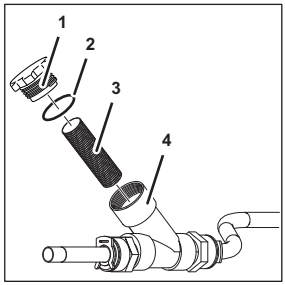


Figure 113

Finishing tasks

1. Mount the cover; *see chapter 7.1, page 53*.

7.23 Replacing the temperature probe for the soda water circulation

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.
The cover for control system 1 has been removed.	*see chapter 7.24, page 109*.
Energize 5 HC dual: The cover for control system 2 has been removed.	*see chapter 7.25, page 111*.

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

Undercounter coolers Energize 2 HC/Energize 3 HC/Energize 3v HC/Energize 4 HC/ Energize 5 HC single

1. Disconnect the plug (Figure 114/3) of the temperature probe (Figure 114/2) from control system 1(Figure 114/ 4).
2. Turn the temperature probe (Figure 114/2) and remove from the connection (Figure 114/1).
3. Apply Loctite to the new temperature probe (Figure 114/ 2).
4. Attach the temperature probe (Figure 114/2) to the connection (Figure 114/1) by turning it.
5. Install the electrical cable of the temperature probe (Figure 114/2) within the unit.
6. Connect the plug (Figure 114/3) of the temperature probe (Figure 114/2) to control system 1(Figure 114/4).

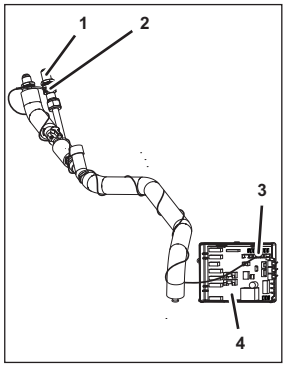


Figure 114

Undercounter cooler Energize 5 HC dual

1. Disconnect the plug (Figure 114/3) of temperature probe 1 (Figure 114/2) from control system 1(Figure 114/ 4).
2. Disconnect the plug (Figure 114/3) of temperature probe 2 (Figure 114/2) from control system 2(Figure 114/ 4).
3. Turn the temperature probe (Figure 114/2) and remove from the connection (Figure 114/1).
4. Apply Loctite to the new temperature probe (Figure 114/ 1).
5. Attach the new temperature probe (Figure 114/2) to the connection (Figure 114/1) by turning it.
6. Install the electrical cable of the temperature probe (Figure 114/2) within the unit.
7. Connect the plug (Figure 114/3) of temperature probe 1 (Figure 114/2) to control system 1(Figure 114/4).
8. Connect the plug (Figure 114/3) of temperature probe 2 (Figure 114/2) to control system 2(Figure 114/4).

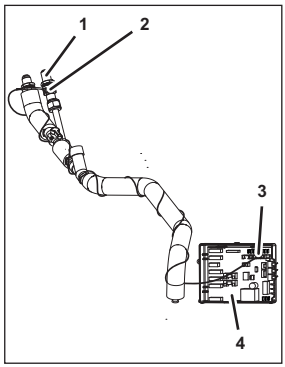


Figure 115

Finishing tasks

1. Mount the cover for control system 1; *see chapter 7.24, page 109*.
2. **For Energize 5 HC dual only:** Mount the cover for control system 2; *see chapter 7.25, page 111*.
3. Mount the cover; *see chapter 7.1, page 53*.

7.24 Replacing control system 1

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.
Energize 3v HC: The service cover (syrup pumps) has been removed.	*see chapter 7.3, page 57*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Control system	141647605	1	
Energize 3 HC: Control system	141647605	1	
Energize 3v HC: Control system	141647605	1	
Energize 4 HC: Control system	141647605	1	
Energize 5 HC single: Control system	141647605	1	
Energize 5 HC dual: Control system	141647605	1	

1. Open the cover (Figure 116/1) of control system 1.

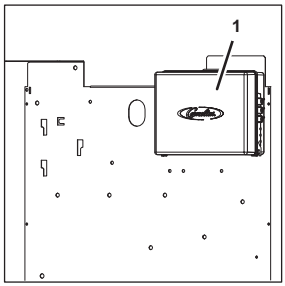


Figure 116

2. Disconnect all necessary electrical cables and plugs from control system 1(Figure 117/1).

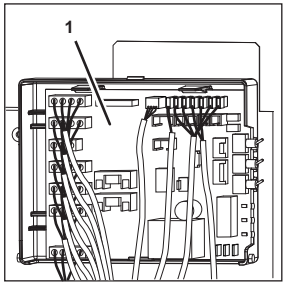


Figure 117

3. Remove the fastening bolt (Figure 118/1) from control system 1 (Figure 118/2).
4. Slide the control system to the left and lift control system 1 (Figure 118/2) out of the unit.
5. Position the new control system 1 (Figure 118/2) within the unit.
6. Slide control system 1 (Figure 118/2) to the right and push control system 1 (Figure 118/2) down until control system 1 (Figure 118/2) locks into place.
7. Attach control system 1 (Figure 118/2) using the fastening bolt (Figure 118/1).
8. Connect all electrical cables and plugs to control system 1 (Figure 117/2).
9. Close the cover (Figure 116/1) of the control system.

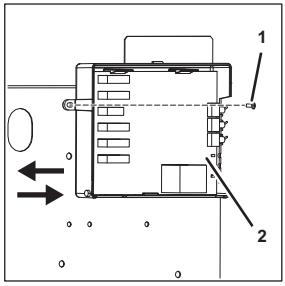


Figure 118

Finishing tasks

1. **Energize 3v HC only:** Mount the service cover (syrup pumps); *see chapter 7.3, page 57*.
2. Mount the cover; *see chapter 7.1, page 53*.

7.25 Replacing control system 2 (Energize 5 HC dual only)

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53.*

Spare parts	ID/reference	Qty/ amount	Comment
Energize 5 HC dual: Control system	141647716	1	

1. Open the cover (Figure 119/1) of control system 2.

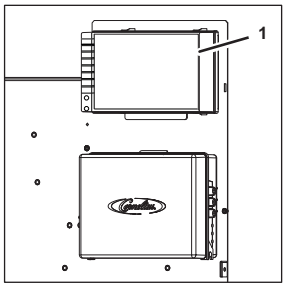


Figure 119

2. Disconnect all necessary electrical cables and plugs from control system 2(Figure 120/1).

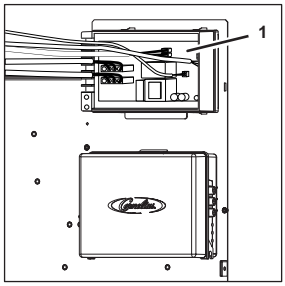


Figure 120

3. Slide control system 2 to the left and lift the control system (Figure 121/1) out of the unit.
4. Position the new control system 2 (Figure 121/1) within the unit.
5. Slide control system 2 (Figure 121/1) to the right and push control system 2 (Figure 121/1) down until control system 2 (Figure 121/1) locks into place.
6. Connect all electrical cables and plugs to control system 2 (Figure 120/1).
7. Close the cover (Figure 119/1) of control system 2.

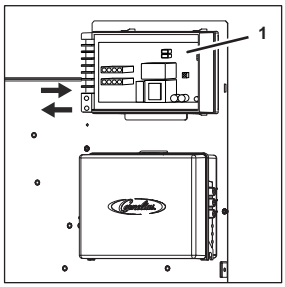


Figure 121

Finishing tasks

1. Mount the cover; *see chapter 7.1, page 53*.

7.26 Replacing the fan

Prerequisites	Reference
The sheet casing has been removed (service).	*see chapter 7.2, page 54*.
Energize 3v HC: The service cover (left) has been removed.	*see chapter 7.3, page 57*.
The hot gas sensor has been removed.	*see chapter 7.7, page 64*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Fan	220114209	1	
Energize 3 HC: Fan	220114164	1	
Energize 3v HC: Fan	220114346	1	
Energize 4 HC: Fan	220114164	1	
Energize 5 HC single: Fan	220114294	1	
Energize 5 HC dual: Fan	220114294	1	

1. Disconnect the plug (Figure 122/2) from the fan (Figure 122/1).

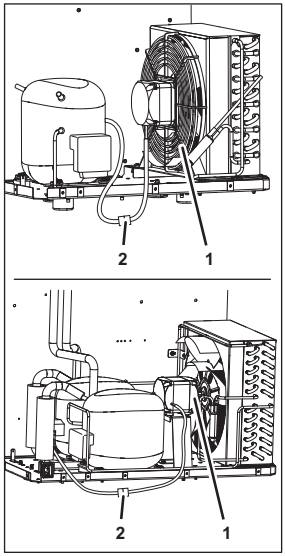


Figure 122

2. Remove the fastening bolts (Figure 123/2) from the fan (Figure 123/1).
3. Carefully lift the air scoop with fan (Figure 123/1) out of the unit.

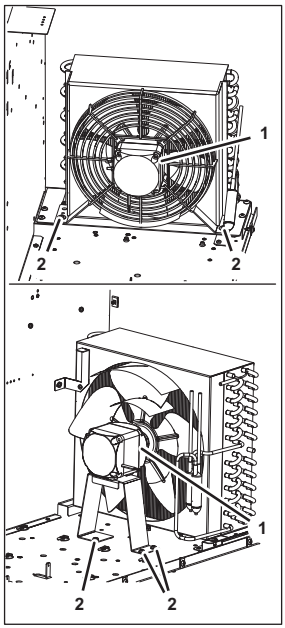


Figure 123

4. Remove the fan blade (Figure 124/3) from the fan motor (Figure 124/2).
5. Remove the fastening bolt/the fastening nuts (Figure 124/1) from the fan motor (Figure 124/2).
6. Attach the new fan motor (Figure 124/2) using the fastening bolts/fastening nuts (Figure 124/1).
7. Attach the fan blade (Figure 124/3) to the fan motor (Figure 124/2).
8. Position the new fan (Figure 123/1) within the unit.
9. Attach the air scoop with fan (Figure 123/1) using the fastening bolts (Figure 123/2).
10. Connect the plug (Figure 122/2) to the fan (Figure 122/1).

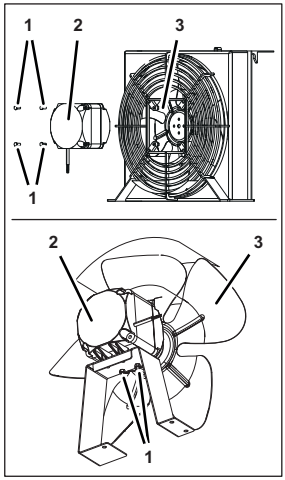


Figure 124

Finishing tasks

1. Install the sheet casing (service); *see chapter 7.2, page 54*.
2. **Energize 3v HC only:** Mount the service cover (left); *see chapter 7.3, page 57*.

7.27 Replacing the run capacitor for the carbonator pump motor

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.
Energize 3v HC: The service cover (left) has been removed.	*see chapter 7.3, page 57*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Run capacitor	141647318	1	
Energize 3 HC: Run capacitor	141647318	1	
Energize 3v HC: Run capacitor	141647318	1	
Energize 4 HC: Run capacitor	141647318	2	

Spare parts	ID/reference	Qty/ amount	Comment
Energize 5 HC single: Run capacitor	141647318	2	
Energize 5 HC dual: Run capacitor	141647318	2	

1. Remove the protective cap (Figure 125/1) from the run capacitor (Figure 125/2).

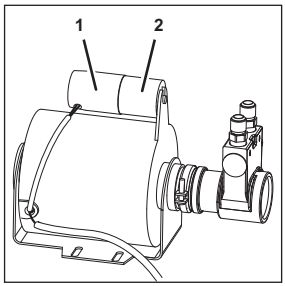


Figure 125

2. Disconnect the plugs (Figure 126/1) of the run capacitor (Figure 126/2).
3. Remove the fastening nut (Figure 126/3) from the run capacitor (Figure 126/2).
4. Remove the run capacitor (Figure 126/2).
5. Position the new run capacitor (Figure 126/2) within the unit.
6. Attach the run capacitor (Figure 126/2) using the fastening nut (Figure 126/3).
7. Connect the plugs (Figure 125/1) of the run capacitor (Figure 125/2).
8. Attach the protective cap (Figure 125/1) to the run capacitor (Figure 125/2).

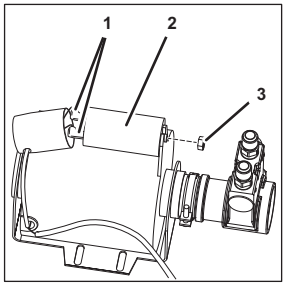


Figure 126

Finishing tasks

1. Install the sheet casing (service); *see chapter 7.2, page 54*.
2. **Energize 3v HC only:** Mount the service cover (left); *see chapter 7.3, page 57*.

7.28 Replacing the starting capacitor of the compressor

Prerequisites	Reference
The sheet casing has been removed (service).	*see chapter 7.2, page 54*.
Energize 3v HC: The service cover (right) has been removed.	*see chapter 7.3, page 57*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Starting capacitor	440005112	1	
Energize 3 HC: Starting capacitor	440000540	1	
Energize 3v HC: Starting capacitor	440000540	1	
Energize 4 HC: Starting capacitor	440000540	1	
Energize 5 HC single: Starting capacitor	440000540	2	
Energize 5 HC dual: Starting capacitor	440000540	2	

Undercounter cooler Energize 2 HC

1. Remove the cover (Figure 127/1) from the electrical assembly.

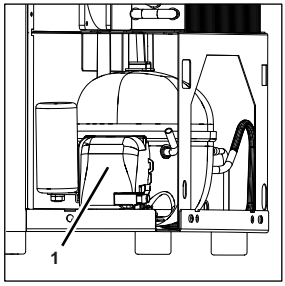


Figure 127

2. Disconnect the electrical cables (Figure 128/1).
3. Remove the fastening nut (Figure 128/2) from the starting capacitor (Figure 128/3).
4. Remove the starting capacitor (Figure 128/3).
5. Position the new starting capacitor (Figure 128/3) within the unit.
6. Attach the starting capacitor (Figure 128/3) using the fastening nut (Figure 128/2).
7. Connect the electrical cables (Figure 128/1).
8. Attach the cover (Figure 127/1) of the electrical assembly.

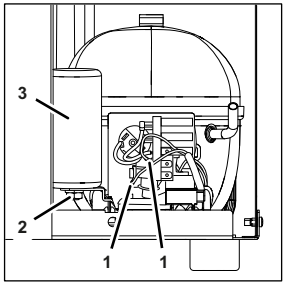


Figure 128

Undercounter coolers Energize 3 HC/Energize 3v HC/ Energize 4 HC/Energize 5 HC single/Energize 5 HC dual

1. Lift the starting capacitor (Figure 129/1) out of the mount (Figure 129/2).

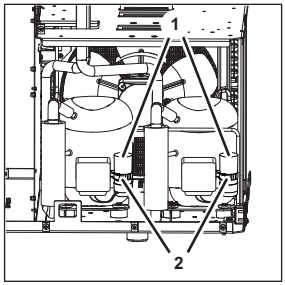


Figure 129

2. Remove the protective cap (Figure 130/1) from the starting capacitor (Figure 130/2).
3. Disconnect the plugs (Figure 130/3) of the starting capacitor (Figure 130/2).
4. Connect the plugs (Figure 130/3) to the new starting capacitor (Figure 130/2).
5. Attach the protective cap (Figure 130/1) to the starting capacitor (Figure 130/2).
6. Position the starting capacitor (Figure 130/2) within the unit.
7. Attach the starting capacitor (Figure 129/1) to the mount (Figure 129/2).

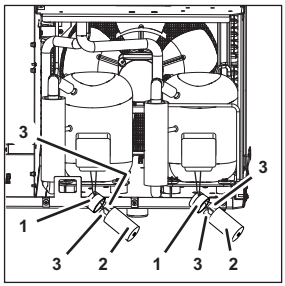


Figure 130

Finishing tasks

1. Install the sheet casing (service); *see chapter 7.2, page 54*.
2. **Energize 3v HC only:** Mount the service cover (right); *see chapter 7.3, page 57*.

7.29 Replacing the starter relay

Prerequisites	Reference
The sheet casing has been removed (service).	*see chapter 7.2, page 54*.
Energize 3v HC: The service cover (right) has been removed.	*see chapter 7.3, page 57*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Starter relay	440005120	1	
Energize 3 HC: Starter relay	440005104	1	
Energize 3v HC: Starter relay	440005104	1	
Energize 4 HC: Starter relay	440005105	1	
Energize 5 HC single: Starter relay	440005105	2	
Energize 5 HC dual: Starter relay	440005105	2	

Undercounter cooler Energize 2 HC

1. Remove the cover (Figure 131/1) from the electrical assembly.

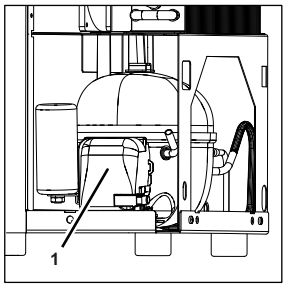


Figure 131

2. Remove the fastening bolt (Figure 132/1) from the electrical assembly.

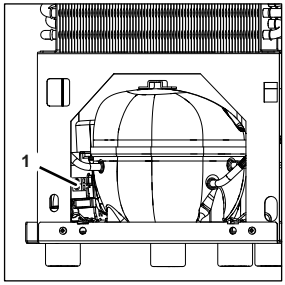


Figure 132

3. Disconnect the electrical cables (Figure 133/1) from the starter relay (Figure 133/2).
4. Remove the starter relay (Figure 133/2).
5. Place the new starter relay (Figure 133/2) into position.
6. Connect the electrical cables (Figure 133/1) of the starter relay (Figure 133/1).
7. Attach the cover (Figure 131/1) of the electrical assembly.

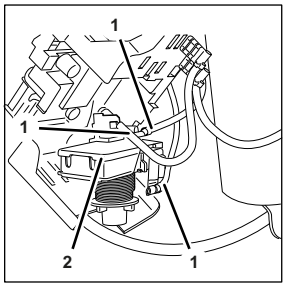


Figure 133

Undercounter coolers Energize 3 HC/Energize 3v HC/ Energize 4 HC/Energize 5 HC single/Energize 5 HC dual

1. Remove the cover (Figure 134/1) from the electrical assembly.

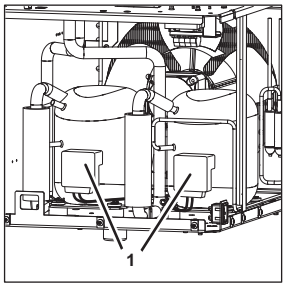


Figure 134

2. Disconnect all necessary electrical cables from the starter relay (Figure 135/1).
3. Remove the starter relay (Figure 135/1).
4. Place the new starter relay (Figure 135/1) into position.
5. Connect all electrical cables to the starter relay (Figure 135/1).
6. Attach the cover (Figure 134/1) of the electrical assembly.

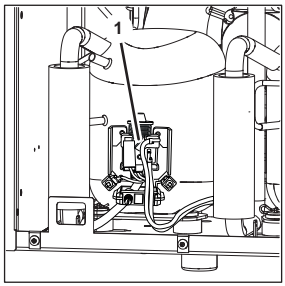


Figure 135

Finishing tasks

1. Install the sheet casing (service); *see chapter 7.2, page 54*.
2. **Energize 3v HC only:** Mount the service cover (right); *see chapter 7.3, page 57*.

7.30 Replacing the overload protection (Energize 2 HC only)

Prerequisites	Reference
The sheet casing has been removed (service).	*see chapter 7.2, page 54*.

Spare parts	ID/reference	Qty/ amount	Comment
Overload protection	440005119	1	

1. Remove the cover (Figure 136/1) from the electrical assembly.

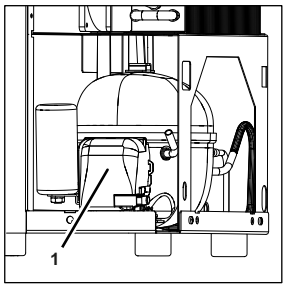


Figure 136

2. Disconnect the electrical cable (Figure 137/1) from the overload protection (Figure 137/2).
3. Remove the overload protection (Figure 137/2).
4. Position the new overload protection (Figure 137/2) within the unit.
5. Connect the electrical cable (Figure 137/1) of the overload protection (Figure 137/2).
6. Attach the cover (Figure 136/1) of the electrical assembly.

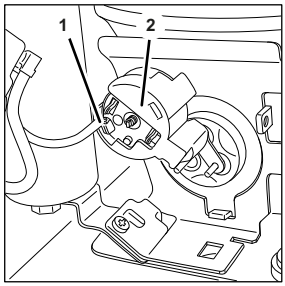


Figure 137

Finishing tasks

1. Install the sheet casing (service); *see chapter 7.2, page 54*.

7.31 Replacing the transformer

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Transformer	141647545	1	
Energize 3 HC: Transformer	141647545	1	
Energize 3v HC: Transformer	141647545	1	
Energize 4 HC: Transformer	220107889	1	
Energize 5 HC single: Transformer	220107889	1	
Energize 5 HC dual: Transformer	220107889	1	

1. Disconnect all electrical cables from the transformer (Figure 138/1).

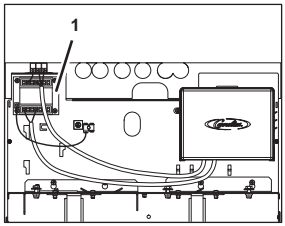


Figure 138

2. Remove the fastening bolts (Figure 139/1) from the transformer (Figure 139/2).
3. Remove the transformer (Figure 139/2).
4. Position the new transformer (Figure 139/2) within the unit.
5. Connect all electrical cables to the transformer (Figure 138/1).

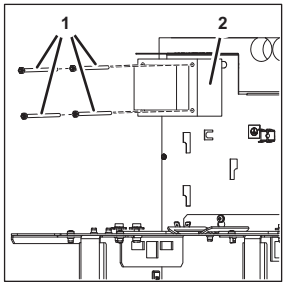


Figure 139

Finishing tasks

1. Mount the cover; *see chapter 7.1, page 53*.

7.32 Replacing the transformer fuse

Prerequisites	Reference
The cover has been removed.	*see chapter 7.1, page 53*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 2 HC: Transformer fuse		1	4 A; type: slow-blow fuse 5x20
Energize 3 HC: Transformer fuse		1	4 A; type: slow-blow fuse 5x20
Energize 3v HC: Transformer fuse		1	4 A; type: slow-blow fuse 5x20
Energize 4 HC: Transformer fuse		1	4 A; type: slow-blow fuse 5x20
Energize 5 HC single: Transformer fuse		1	4 A; type: slow-blow fuse 5x20
Energize 5 HC dual: Transformer fuse		1	4 A; type: slow-blow fuse 5x20

1. Remove the fuse (Figure 140/1) from the transformer (Figure 140/2).
2. Insert the new fuse (Figure 140/1) into the transformer (Figure 140/2).

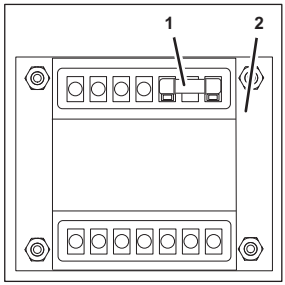


Figure 140

Finishing tasks

1. Mount the cover; *see chapter 7.1, page 53*.

7.33 Replacing the compressor relay (Energize 5 HC only)

Prerequisites	Reference
The sheet casing has been removed (service).	*see chapter 7.2, page 54*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 5 HC single: Compressor relay	141647682	1	
Energize 5 HC dual: Compressor relay	141647682	1	

1. Disconnect all electrical cables from the compressor relay (Figure 141/1).
2. Remove the fastening bolts (Figure 141/2) from the compressor relay (Figure 141/1).
3. Remove the compressor relay (Figure 141/1).
4. Position the new compressor relay (Figure 141/1) within the unit.
5. Attach the compressor relay (Figure 141/1) using the fastening bolts (Figure 141/2).
6. Connect all electrical cables to the compressor relay (Figure 141/1).

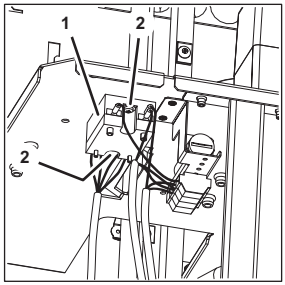


Figure 141

Finishing tasks

1. Install the sheet casing (service); *see chapter 7.2, page 54*.

7.34 Replacing the compressor fuse (Energize 5 HC only)

Prerequisites	Reference
The sheet casing has been removed (service).	*see chapter 7.2, page 54*.

Spare parts	ID/reference	Qty/ amount	Comment
Energize 5 HC single: Fuse	141647632	1	16 A; type: SPT 5x20
Energize 5 HC dual: Fuse	141647632	1	16 A; type: SPT 5x20

1. Turn and remove the fuse holder (Figure 142/1).

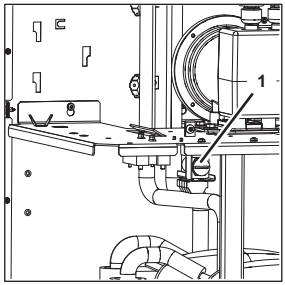


Figure 142

2. Remove the fuse (Figure 143/1) from the fuse holder (Figure 143/2).
3. Position the new fuse (Figure 143/1) within the fuse holder (Figure 143/2).
4. Attach the fuse holder (Figure 142/1) within the unit.

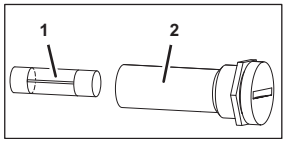


Figure 143

Finishing tasks

1. Install the sheet casing (service); *see chapter 7.2, page 54*.

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, page 5*.

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. TD1002000*.

Prerequisites	Reference
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, page 42*.
The unit has been cleaned.	see the document *"Undercounter cooler operator manual", document no. TD1002000.*
All tubes have been properly connected to the unit.	*see chapter 5.2, page 42*.

Required tools/materials	ID/reference	Qty/ amount	Comment
Undercounter cooler operator manual	Document no. TD1002000	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. TD1002000)*.
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. TD1002000*).
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. TD1002000*).
8. Plug the mains plug into the earthed socket.

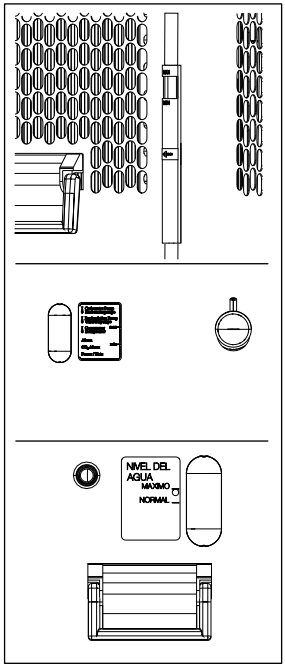


Figure 144

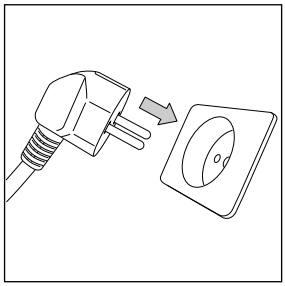


Figure 145

9. Turn the compressor switch (Figure 146/1) to position “I”.
10. Turn the carbonator pump switch (Figure 146/3) to position “I”.
11. Turn the circulation pump switch (Figure 146/2) to position “I”.

Notice!

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

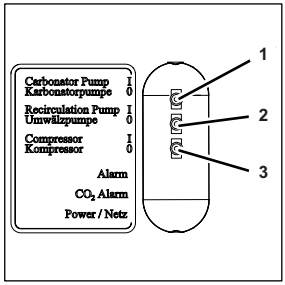


Figure 146

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. TD1002000*.

Prerequisites	Reference
A tower has been installed.	See the installation and service manual for the relevant tower.

Required tools/materials	ID/reference	Qty/ amount	Comment
Tower installation and service manual		1	

1. Clean the unit; see the document *“Undercounter cooler operator manual”, document no. TD1002000*.
2. Shut down the tower; see the document *“Tower installation and service manual”*.
3. Empty the water bath; *see chapter 6.4, page 50*.

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, page 5*.

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 7.31, page 121*
	Transformer fuse defective	Replace the fuse; *see chapter 7.32, page 122*
	Compressor fuse defective	Replace the fuse; *see chapter 7.34, page 124*
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, page 126*
	Compressor not running	Switch on the compressor; *see chapter 8.1, page 126*
		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 6.2, page 49*
	Stirrer motor is defective	Replace the stirrer motor; *see chapter 7.5, page 59*
	Circulation pump is defective	Replace the circulation pump; *see chapter 7.8, page 66*

Continued overleaf

Fault	Probable cause	Remedy
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 tubes; *see chapter 6.3, page 49*.
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 6.3, page 49*
	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")*

Continued overleaf

Fault	Probable cause	Remedy
Only soda is being dispensed	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, page 126*
Only syrup is being dispensed	Circulation pump is switched off	Switch on the circulation pump; *see chapter 8.1, page 126*
	Circulation pump is defective	Replace the circulation pump; *see chapter 7.8, page 66*
	Carbonator pump is switched off	Switch on the carbonator pump; *see chapter 8.1, page 126*
	Carbonator pump is defective	Replace the carbonator pump; *see chapter 7.11, page 73*
	Carbonator pump motor defective	Replace the carbonator pump motor; *see chapter 7.12, page 75*
	Water in the cooling coils is frozen	Thaw the ice build-up; *see chapter 6.6, page 51*
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")*

Continued overleaf

Fault	Probable cause	Remedy
	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, page 51*
	CO_2 supply is contaminated	Clean the CO_2 supply; *see chapter 6.3, page 49*
Alarm on (red)	Time out on pump cycle; carbonator pump is blocked	Check the water pressure; *see chapter 8.1, page 126*
		Briefly stop operation of the undercounter cooler; *see chapter 8.2, page 128*
Alarm (red) flashes 1 Hz	Time out due to insufficient water (pressure fluctuations), carbonator pump is blocked.	Check the water pressure; *see chapter 8.1, page 126*
		Briefly stop operation of the undercounter cooler; *see chapter 8.2, page 128*
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, page 126*
	24 V power supply to the tower is interrupted.	Check the 24 V power supply; *see chapter 8.1, page 126*

Continued overleaf

Fault	Probable cause	Remedy
Power/mains (green) flashes 1 Hz	Low voltage < 190 V, consumers are blocked	Automatic reset is performed
Power/mains (green) flashes 4 Hz	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, page 38*
	Control system 1 defective	Replace control system 1; *see chapter 7.24, page 109*
	Control system 2 defective	Replace control system 2; *see chapter 7.25, page 111*

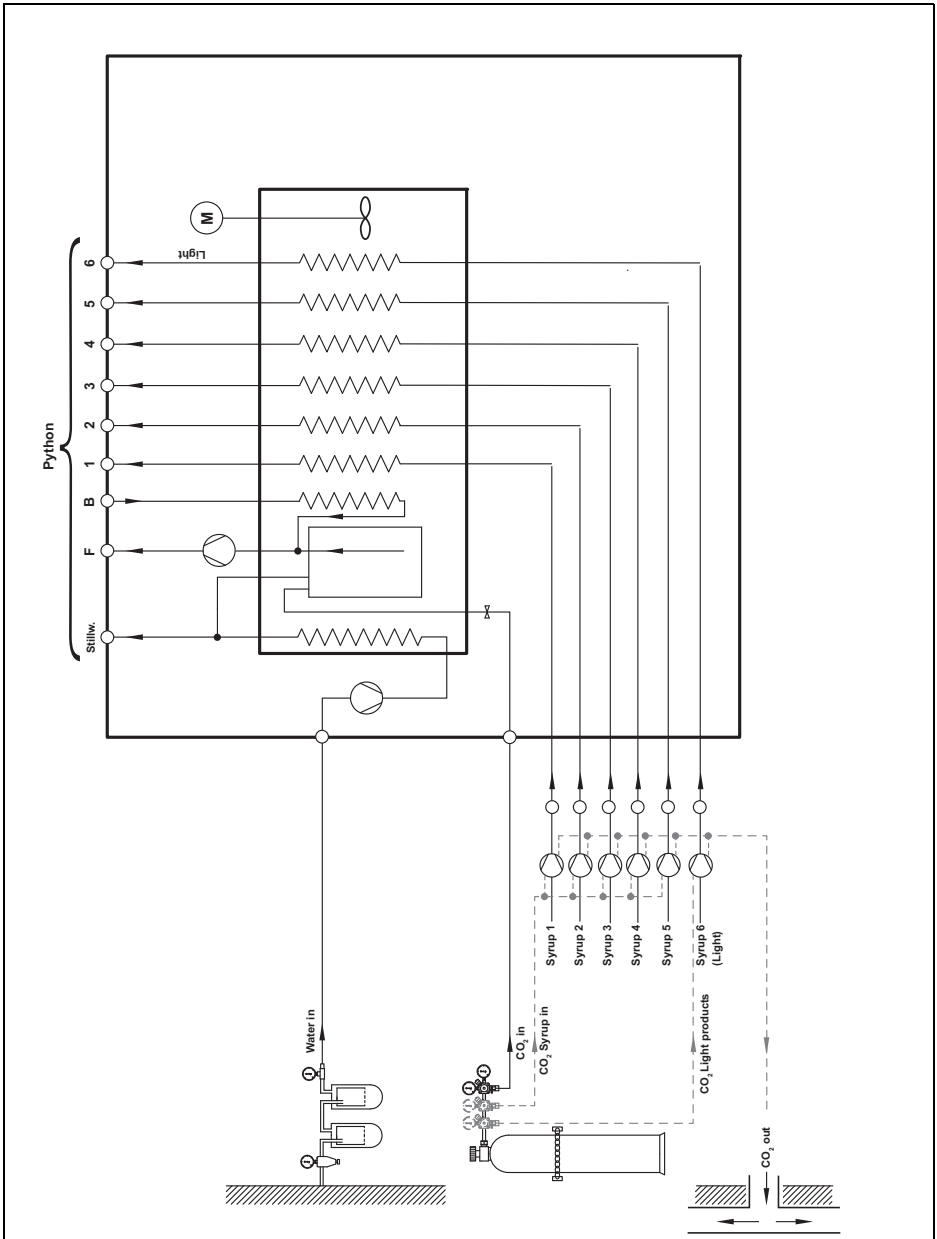
Notice!

Crushed ice in the cup may also cause dispensing problems.

When the finished beverage comes into contact with sharp-edged ice, CO2 is released from the dispensed drink.

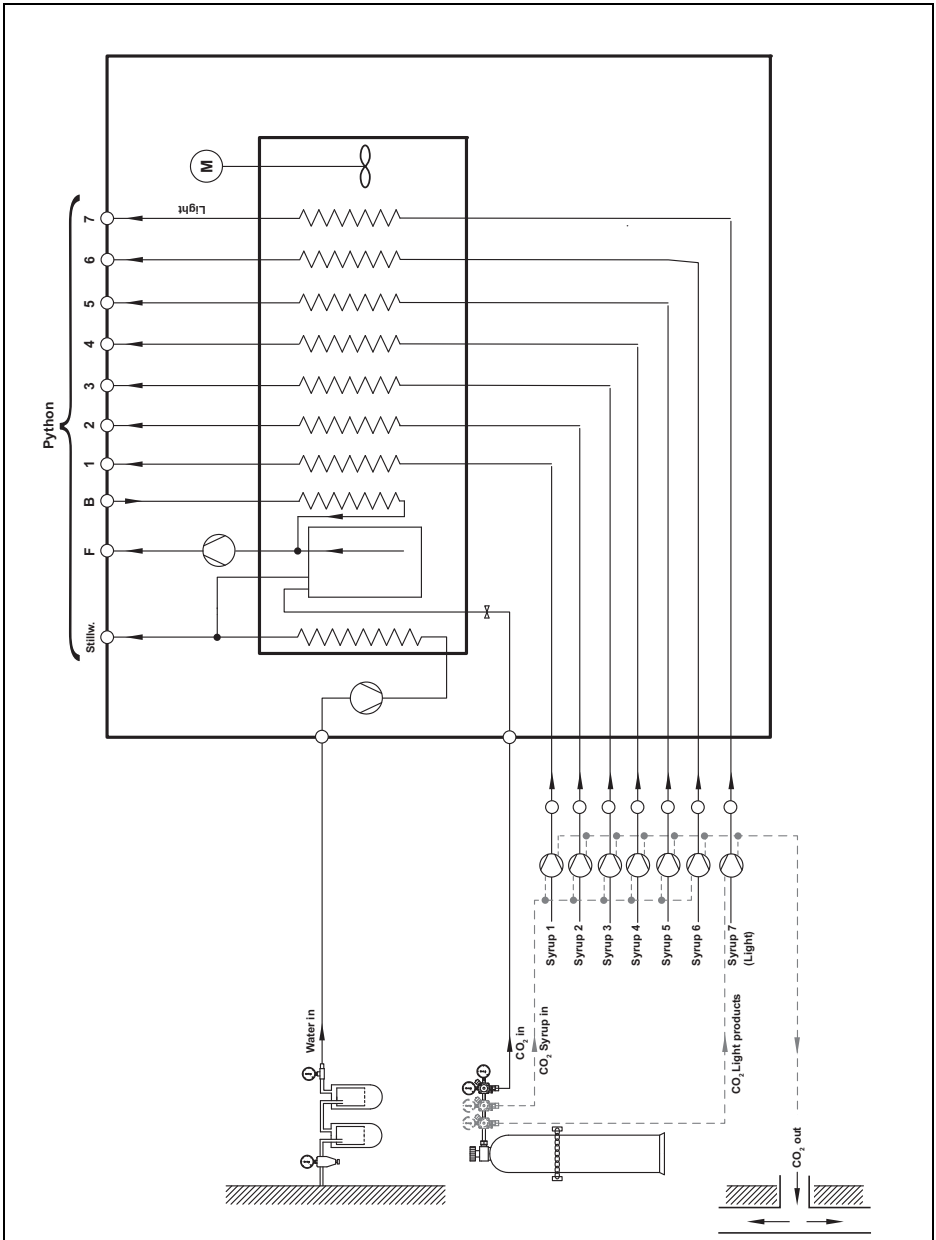
A Applicable documents

A.1 Undercounter cooler flowchart Energize 2 HC



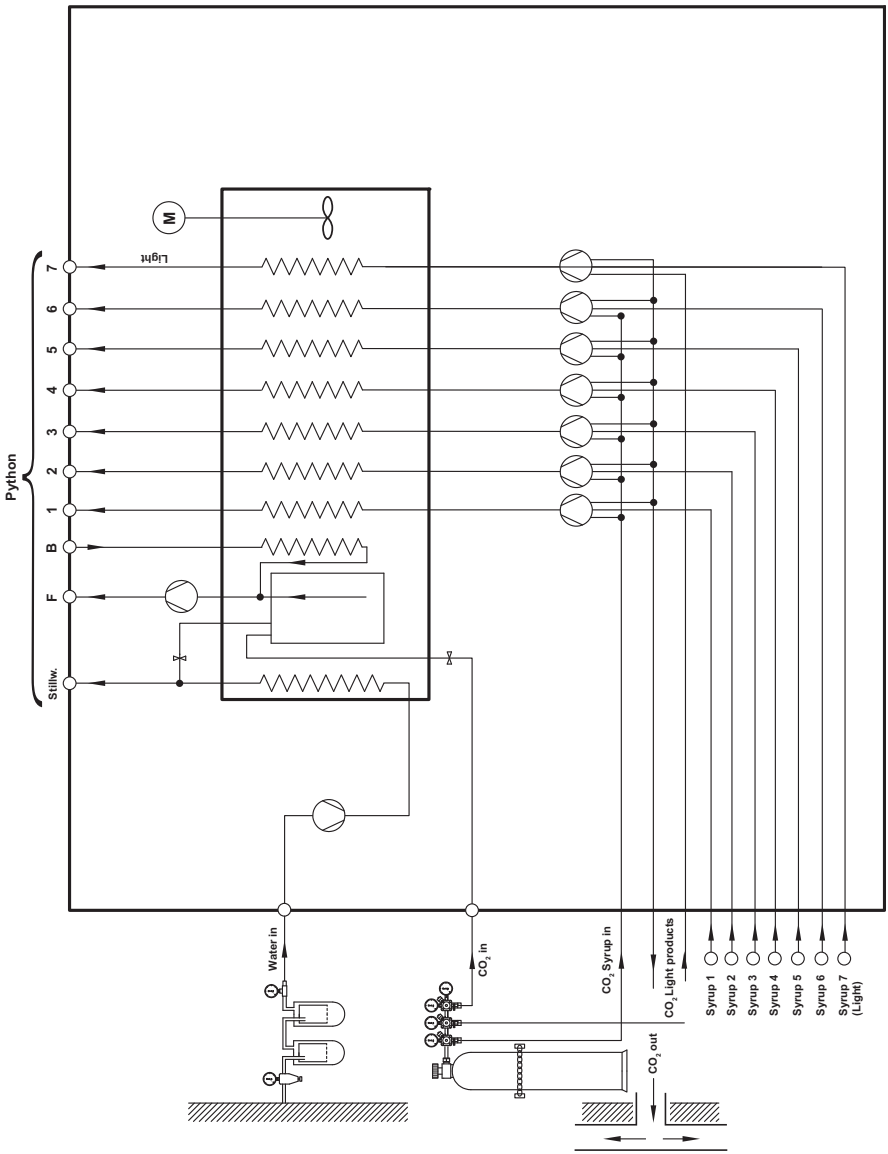
B = Backward F = Forward

A.2 Undercounter cooler flowchart Energize 3 HC



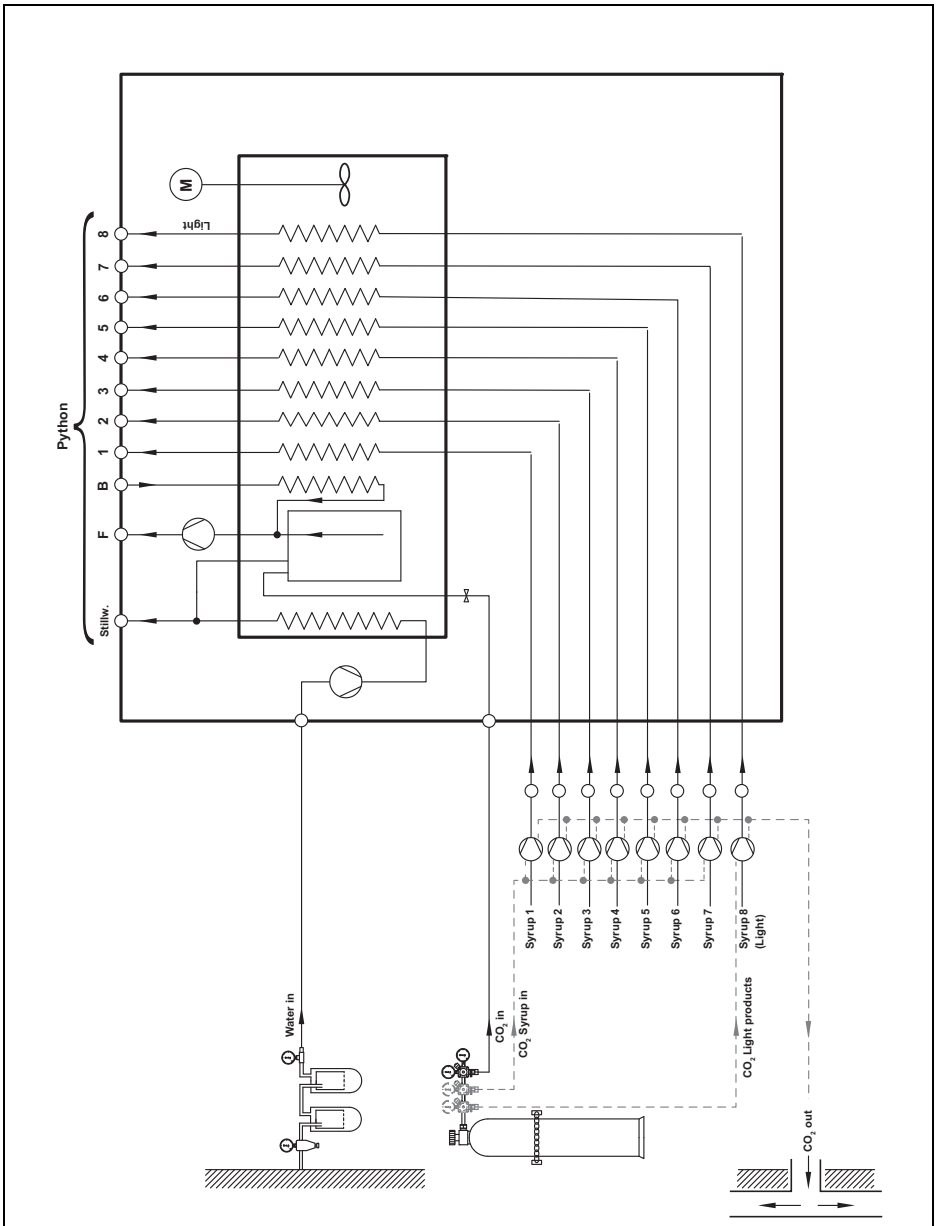
B = Backward F = Forward

A.3 Undercounter cooler flowchart Energize 3v HC



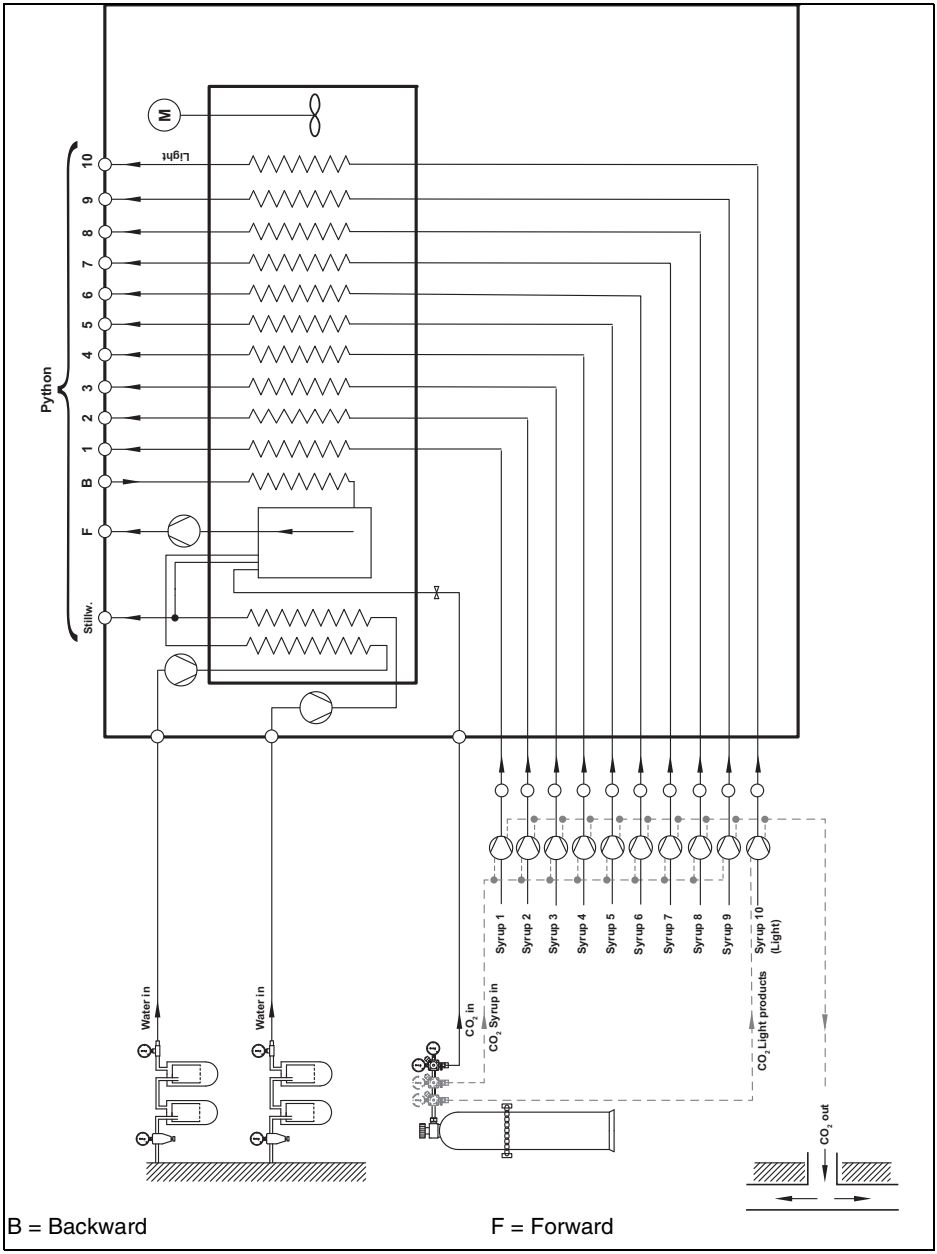
B = Backward F = Forward

A.4 Undercounter cooler flowchart Energize 4 HC

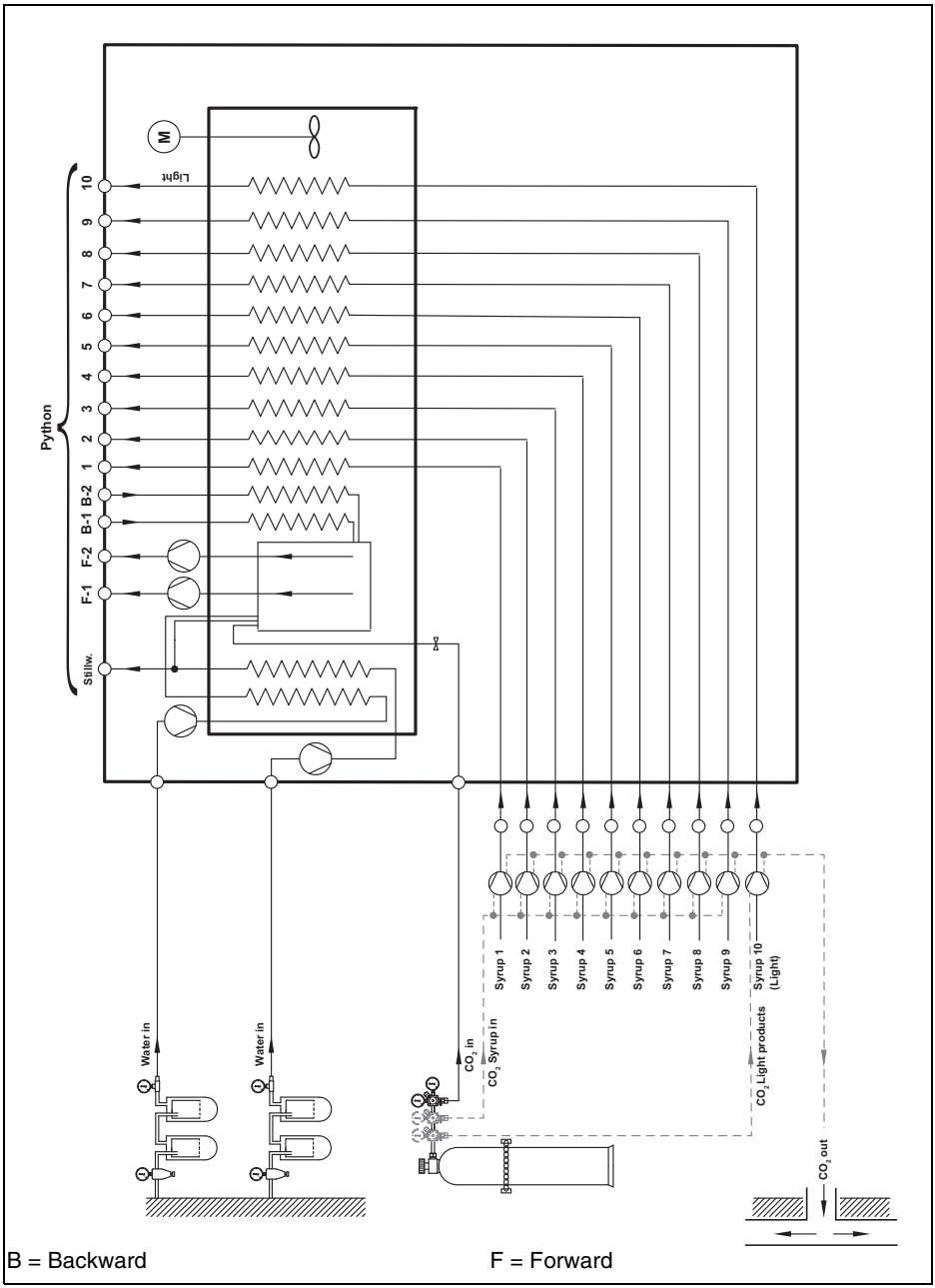


B = Backward F = Forward

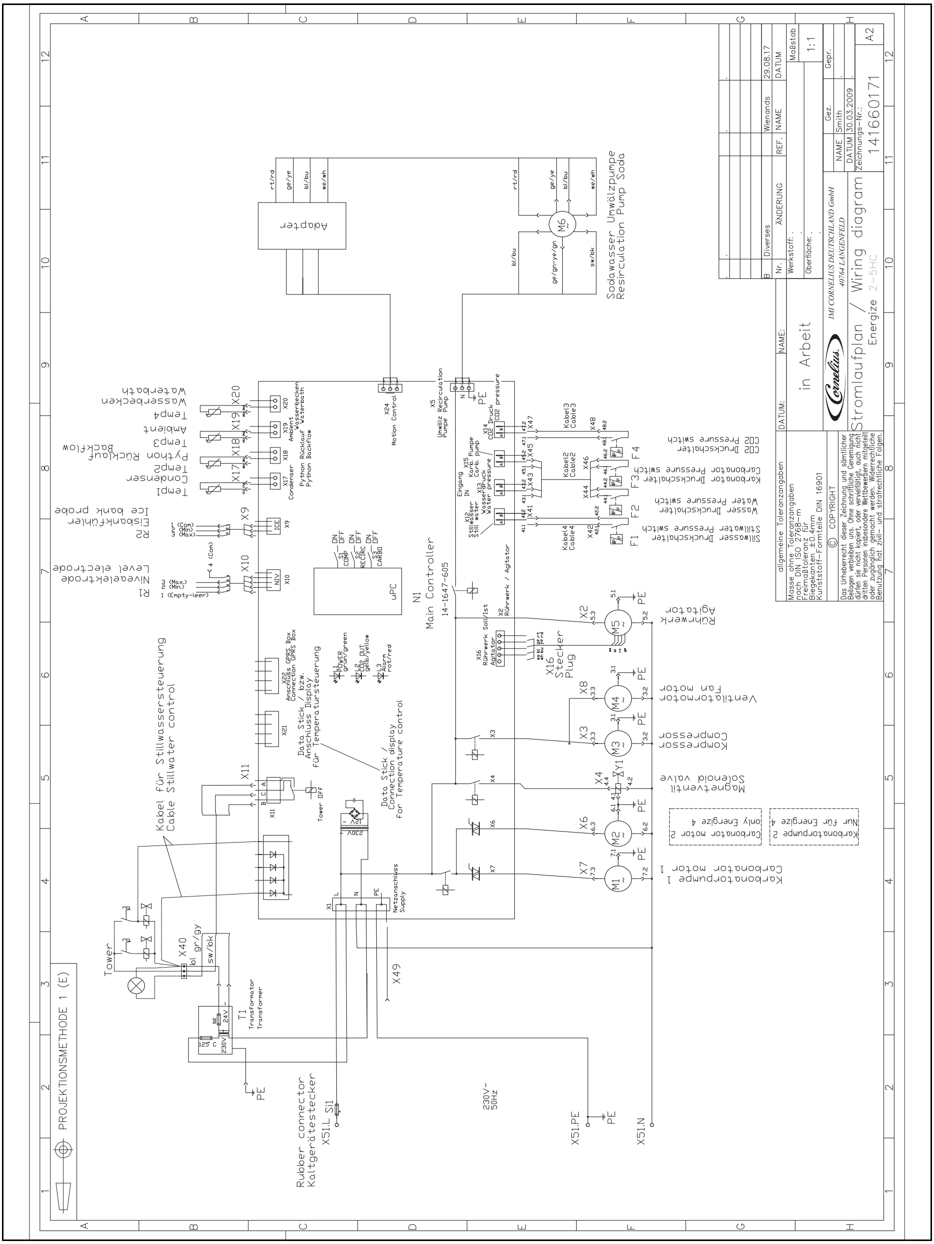
A.5 Undercounter cooler flowchart Energize 5 HC single



A.6 Undercounter cooler flowchart Energize 5 HC dual



A.7 Undercounter cooler circuit diagram Energize 2 - 5 HC



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