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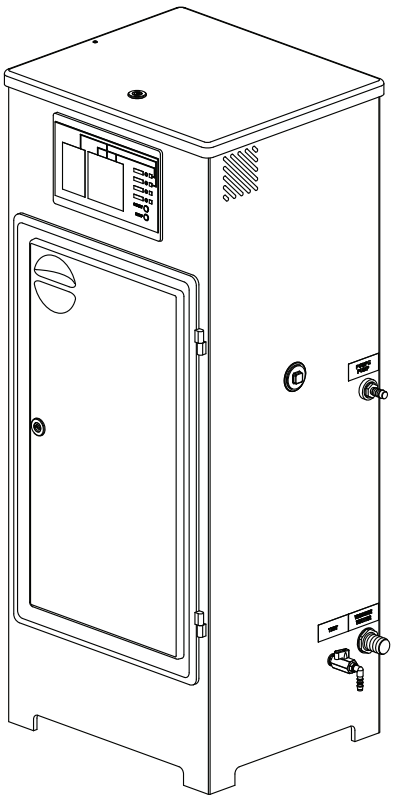


Original installation and operation manual

Emulsion splitting plant
BEKOSPLIT®

› BS12

03-042

Table of contents

1. General

1.1 Contact

Manufacturer	Customer service and tools
BEKO TECHNOLOGIES GmbH Im Taubental 7 | D-41468 Neuss Tel. + 49 2131 988 - 1000 info@beko-technologies.com www.beko-technologies.com	**BEKO** TECHNOLOGIES GmbH Im Taubental 7 | D-41468 Neuss Tel. + 49 2131 988 - 1000 service-eu@beko-technologies.com www.beko-technologies.com

1.2 Information regarding installation and operation manual

INFORMATION	Copyright protection!
	The contents of the installation and operation manual in the form of text, figures, illustrations, photographs, technical drawings, diagrams and other representations are protected by the copyright of the manufacturer. This applies especially to duplication, reproduction, microfilming and storage as well as processing in electronic systems.

Publication date	Revision	Version	Reason for amendment	Scope of amendment
12th January 2021	04	00	Correction of Consumables, accessories and spare parts	Correction of material numbers

The installation and operation manual, hereinafter referred to as the manual, must always be retained close to the product and the accessories and be in a permanently legible condition.
The manual must be handed over along with the product and the accessories if it is sold or passed on.

NOTE	Follow the instructions given in the manual!
	This manual contains all the basic information required for safe operation of the product and the accessories and must therefore be read before any actions are performed. Otherwise personal and material hazards as well as functional and operational malfunctions are possible.

1.3 Other applicable documents

This manual contains all the necessary steps for installation and operation of the product and the accessories.
More detailed information can be obtained from the following documents:

- Authorisation/licensing procedure
- General approval of the building inspectorate

2. Safety

2.1 Explanation of the symbols used

The symbols used below indicate safety-relevant and important information which must be adhered to when handling the product and to ensure safe and optimum operation.

2.1.1 In the documentation

Symbol	Description/Explanation
	General warning (danger, warning, caution)
	Warning: pressurised system
	Warning: electric voltage
	Note the installation and operation manual
	General note
	Wear safety footwear
	Use respiratory protection, protection class FFP 3 (particle-filtering half mask)
	Use protective gloves (cut-proof and liquid-resistant)
	Wear safety goggles with side shields
	General information

2.1.2 On the product

Symbol	Description/Explanation
	**General warning symbol** This symbol can be found on the type plate and on all the drives installed.
	**Warning: electric voltage** This symbol is located on the power supply unit.
	**Note the installation and operation manual** This symbol is only located on the type plate.
	**Beware of the automatic start-up of rotating metering unit parts** This symbol is located on the storage tank for the metering unit.
	**Condensate inlet - connection safety container** This symbol is located on the pre-separation container.
	**Condensate discharge - connection emulsion pump** This symbol is located on the pre-separation container.
	**Maintenance information - emulsion pump** This symbol is located next to the emulsion pump.
	**Maintenance information - electric drives** This symbol is located on the electric drives.
	**General approval of the building inspectorate** This symbol is located on the front of the emulsion splitting plant.
	**Specification of direction of rotation** This symbol is located on the metering unit.

2.2 Use

2.2.1 Intended use

The **BEKOSPLIT®** emulsion splitting plant, termed product or emulsion splitting plant below, is used for the legally compliant treatment of emulsified compressor condensates.

Any use of this system other than the use described in this manual is hereby deemed to be non-intended and can cause a hazard for the safety of people and the environment.

The following must be noted for intended use:

- Read and follow the installation and operation manual.
- Only operate the product and accessories with media which are free of caustic, aggressive, corrosive, toxic, flammable, oxidising or inorganic components.
  In cases of doubt an analysis must be carried out.
- Only use the product and accessories within the operating parameters given in the technical data and the agreed delivery conditions.
- Only use the product and accessories within pipework designed for the technical data with appropriate connections, pipe diameters and assembly clearance.
- Only use the product and accessories outside potentially explosive atmospheres.
- Only use the product and accessories away from direct solar radiation and heat sources as well as areas subject to frost.
- Only combine the product and accessories with the products named and recommended by **BEKO** TECHNOLOGIES in the manual.
- Adhere to inspection and maintenance intervals.

Before using the product and the accessories, the operating company must make sure that all conditions and prerequisites for intended use are given.

The product and accessories exclusively designed for stationary use in a commercial or industrial area. All the assembly, installation, operation, disassembly and disposal work described may only be performed by qualified skilled personnel.

2.2.2 Reasonably foreseeable inappropriate use

Reasonably foreseeable inappropriate use is deemed to have occurred if the product and accessories are used in any other way than that described in the chapter "Intended use". Reasonably foreseeable inappropriate use includes the use of the product and accessories in a manner not intended by the manufacturer or supplier but which may result from foreseeable human behaviour.

Reasonably foreseeable inappropriate use includes:

- Executing of modifications of all kinds, in particular design and process engineering interventions, as these can lead to personal injury and damage to property as well as malfunction and device failure.
- The overriding, bridging or non-application of existing or recommended safety devices.

This list is not exhaustive as not all possible inappropriate use can be foreseen in advance. If the operating company is aware of any inappropriate use of the product or accessories which are not listed here, the manufacturer must be informed immediately.

2.3 Responsibility of the operating company

Due to the approval obligation for emulsion splitting plants, it is the responsibility of the operating company to apply for such approval from the authorities responsible.

The enclosed document “Authorisation/licensing procedure” can be used for the application (see “1.3 Other applicable documents” on Page 4).

The responsible operating company must ensure the following to prevent accidents, incidents and adverse effects on the environment:

- Before all actions, check to ensure that the manual available does in fact belong to the product.
- The product and the accessories are used, serviced and repaired in accordance with the intended use.
- All applicable statutory requirements, safety regulations and accident prevention regulations are being adhered to.
- All regulations and operating guidelines for safe working and information regarding behaviour in the event of accidents and fires are accessible at the operating location at all are times.
- The product and accessories are only used with the recommended and functioning safety devices.
- All assembly, installation and maintenance work is carried out by qualified skilled personnel only.
- Personnel have the necessary personal protective equipment available and also use this equipment.
- Suitable technical safety measures are taken so that the permissible operating parameters are not exceeded or undershot.

2.4 Target group and personnel

This manual addresses the skilled personnel listed below who are involved with work on the product or the accessories.

INFORMATION	Personnel requirements!
	The personnel may not execute any actions on the emulsion splitting plant or the accessories when they are under the influence of drugs, medications, alcohol or other substances that may impair their consciousness.

Operating personnel
Operating personnel are persons who are able to operate the product and the accessories safely on the basis of knowledge of the manual and instruction at the product and accessories. Operating personnel can recognise possible faults and dangerous situations independently and arrange for corresponding measures.

Skilled personnel - transport and storage
Skilled personnel - transport and storage are people who, due to their training, professional experience and qualifications, have all the necessary capabilities to safely execute all actions related to the transport and storage of the product and accessories, to instruct and to independently foresee potential hazardous situations and take appropriate measures to avoid any danger. The capabilities include, in particular, experience with hoists, forklifts and lifting equipment and knowledge of local laws, standards and guidelines relating to transport and storage.

Skilled personnel - compressed gas technology
Skilled personnel - compressed gas technology are people who, due to their training, professional experience and qualification, have all the necessary capabilities to safely execute all actions related to compressed gases and pressurised systems, to instruct and to independently foresee potential hazardous situations and take appropriate measures to avoid any danger. The capabilities include, in particular, experience in handling measurement and control technology as well as knowledge of the regionally applicable laws, standards and regulations for compressed gas technology.

Skilled personnel - electrical engineering
Skilled personnel - electrical engineering are people who, due to their training, professional experience and qualification, have all the necessary capabilities to safely execute all actions related to electricity, to instruct and to independently foresee potential hazardous situations and take appropriate measures to avoid any danger. The capabilities include, in particular, experience in handling electric voltage plants, measurement and control technology as well as knowledge of the regionally applicable laws, standards and regulations (e.g. VDE 0100 / IEC 60364/ ATEX) applicable for handling electrical technology.

2.5 Safety instructions

Safety instructions warn against residual risks when handling the product and accessories.
These safety instructions must be strictly observed in order to prevent accidents, personal injury, damage to property and impairments during operation.

Structural design of the safety instructions:

SIGNAL WORD	**Type and source of danger!**
 Safety symbol	Possible consequences if the danger is ignored
	• Measure to prevent the danger

Signal words:

DANGER	**Imminent hazard** Consequences of non-compliance: Death or serious personal injury
WARNING	**Imminent hazard** Consequences of non-compliance: Death or serious personal injury are possible
CAUTION	**Potential danger** Consequences of non-compliance: Personal injury or damage to property are possible
NOTE	**Additional notes, information, tips** Consequences of non-compliance: Malfunction and device failure during handling and maintenance are possible. No danger to people or regarding the safe operation.

DANGER	**Operation of plant outside the permissible limit range!**
	Operation of the product or accessories outside the permissible limits and operating parameters, unauthorised intervention and modifications may result in death or serious injury.
	• For safe operation of the product and accessories, always adhere to the limit values, operating parameters and maintenance intervals as well as the set-up and ambient parameters specified on the type plate and in the manual. • Inspect whether the operating parameters have been amended or restricted by the use of accessories.

DANGER	**Pressurised system!**
	Death or serious personal injury can result through contact with fast or suddenly escaping compressed gas or through bursting system parts.
	• All work on the compressed gas system must be carried out in the depressurised state and with the compressed gas system secured against unintentional pressure build-up. • Set up a safety area around the working area during all assembly, installation, maintenance and repair work. • Before applying pressure to the system, check all pipe connections and tighten if necessary. • Slowly pressurise the system with pressure. • Avoid pressure blows and high differential pressures. • Assemble all pipelines without stress. • Avoid any vibrations occurring in the pipe network by using vibration dampers.

DANGER	**Electric voltage!**
	There is a danger of death or serious injuries following contact with components which are in contact with electric voltage. Malfunction and device failure or material damage can occur.
	• Only carry out installation, maintenance and repair work on the product and accessories when they have been de-energised and secured against being switched back on again. • Set up a safety area around the working area during all installation, maintenance and repair work. • Only operate the product and accessories with the cover or housing complete and closed.

DANGER	**Use of incorrect spare parts, accessories or materials!**
	The use of incorrect spare parts, accessories or materials, as well as auxiliary and operating materials, may result in death or serious injury. Malfunction and device failure or material damage can occur.
	• For all installation, servicing and maintenance work, only use undamaged original parts, auxiliary and operating materials which are specified by the manufacturer. • Only use fittings and connecting elements approved for the respective application as well as suitable tools in perfect operating condition. • Only use cleaned pipes that are free of dirt and corrosion.

CAUTION	**Polluted condensate!**
	Contact with condensate containing substances which endanger health and the environment can pose a health hazard, causing irritation and/or damage to the eyes, skin and mucous membranes. Polluted condensate must be prevented from entering sewerage system, waters or the ground.
	• Use personal protective equipment. • Pick up and dispose of any escaped or spilled condensate in line with local regulations.

3. Product information

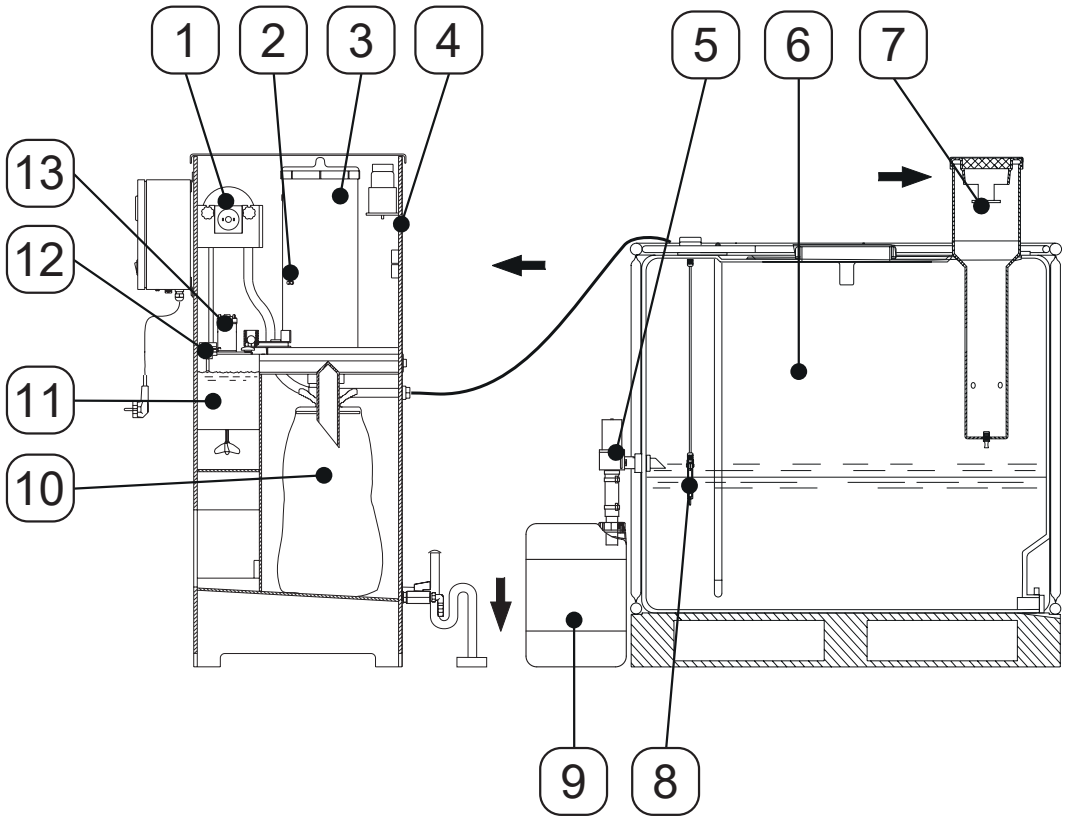
3.1 Product description

The **BEKOSPLIT®** emulsion splitting plant is used for the legally compliant treatment of emulsified compressor condensates.

Insoluble in water organic contaminations and soiling , like oil and solid contamination will be removed from the condensate by the addition of a special reaction release agent. The treated condensate may be discharged to the wastewater sewer system.

3.2 Product overview

The emulsion splitting plant is made up of the following components:



Position no.	Description/Explanation
[1]	Emulsion pump
[2]	Level sensor for reaction release agent
[3]	Metering unit
[4]	Splitting unit
[5]	Oil drain valve
[6]	Pre-separation container
[7]	Pressure relief chamber
[8]	START-sensor
[9]	Oil collector
[10]	Filter bag
[11]	Reaction chamber
[12]	Sensor for filter monitoring
[13]	Agitator

3.3 Function description

The condensate, comprising water and water-insoluble organic soiling (oils and solid soiling) is routed via a pressure relief chamber **[7]** to the pre-separation container **[6]**. Any excess pressure is discharged to the pressure relief chamber **[7]** without causing any turbulence in the pre-separation container **[6]**.

The condensate calms in the pre-separation container **[6]** and free oil floats to the top. The floating oil forms a layer on the condensate and is discharged via the oil drain valve **[5]** to the oil collector **[9]**.

The capacitive START-sensor **[8]** monitors the condensate level in the pre-separation container **[6]** and can distinguish between free oil and condensate. When a defined condensate level is reached, the START-sensor **[8]** sends a signal to the splitting unit **[4]**, which closes the oil drain valve **[5]** and starts the splitting process. If the condensate level falls to below this defined value, the splitting process stops and the oil drain valve **[5]** is opened. This ensures that no condensate gets into the oil collector **[9]** or free oil into the splitting unit **[4]**.

After the signal has been received from the START-sensor **[8]**, the following steps are carried out in the splitting unit **[4]**:

- The agitator **[13]** starts.
- The emulsion pump **[1]** starts and pumps the condensate into the reaction chamber **[11]**.
- The metering unit **[3]** starts at predetermined intervals to pump a defined quantity of reaction release agent into the reaction chamber **[11]**.

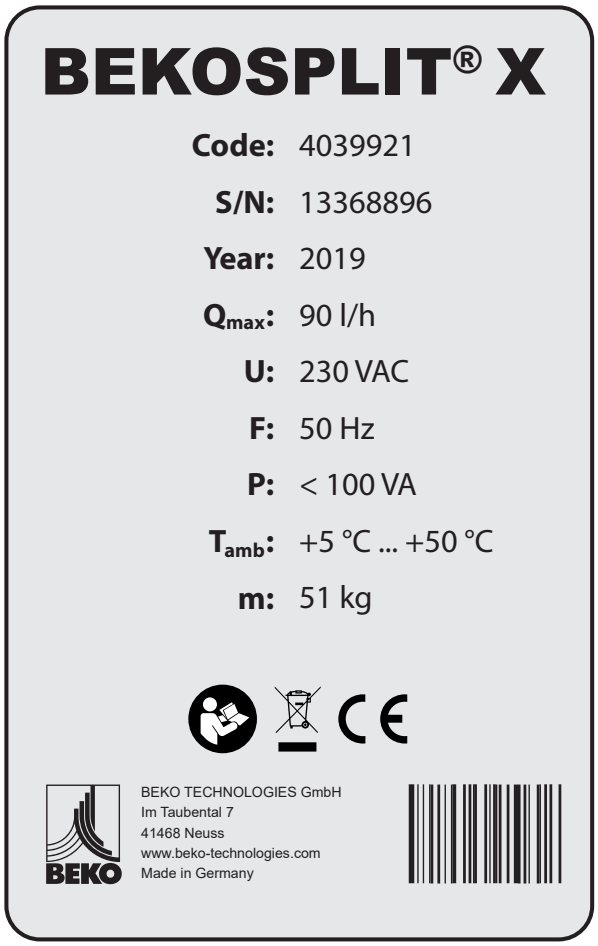
In the reaction chamber **[11]** the condensate is mixed evenly with the reaction release agent. The oil and dirt components contained in the condensate are bound by the reaction release agent and form macro flakes which are good to filter. The water-macro flake mixture flows via a drain channel into the filter bag **[10]**. The cleaned water which leaves the filter bag **[10]** can now be discharged to the wastewater sewer system. The macro flakes remain in the filter bag **[10]** as semi-solid filter cake.

A further capacitive sensor **[12]** monitors the filling level of the reaction chamber **[11]** and the filter bag **[10]**.

When the filter bag **[10]** is full, the treated wastewater can no longer flow off through the filter bag **[10]**. The resulting increase in level in the drain channel and the reaction chamber **[11]** is recorded by the sensor **[12]** and triggers a fault signal. This fault signal is displayed on the control panel and leads to the emulsion splitting plant coming to a standstill.

It is possible to tap all fault and maintenance signals as potential-free signals via message relay for external processing of the signals.

3.4 Type plate



Sample type plate

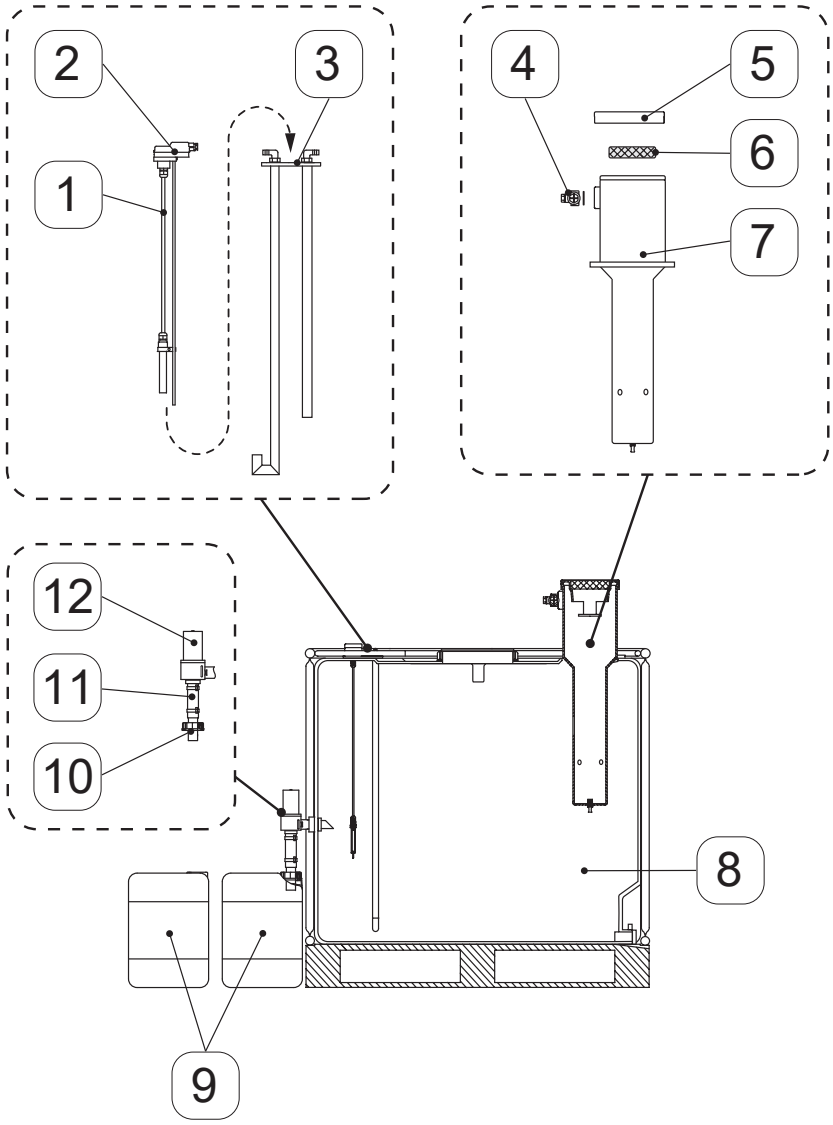
Position on type plate	Description/Explanation
BEKOSPLIT®	Product name
X	Placeholder for size (e.g. 12)
Code	Material number
S/N	Plant serial number
Year	Year of manufacturer
$Q_{max.}$	Maximum throughput capacity of the plant
U	Operating voltage
F	Mains frequency
P	Power consumption
T_{amb}	Maximum and minimum ambient temperature for use of the plant
m	Weight

NOTE	**Handling the type plate!**
	Never damage, remove or make the type plate illegible.

For more information regarding the symbols printed on the type plate, see “2.1 Explanation of the symbols used” on Page 5.

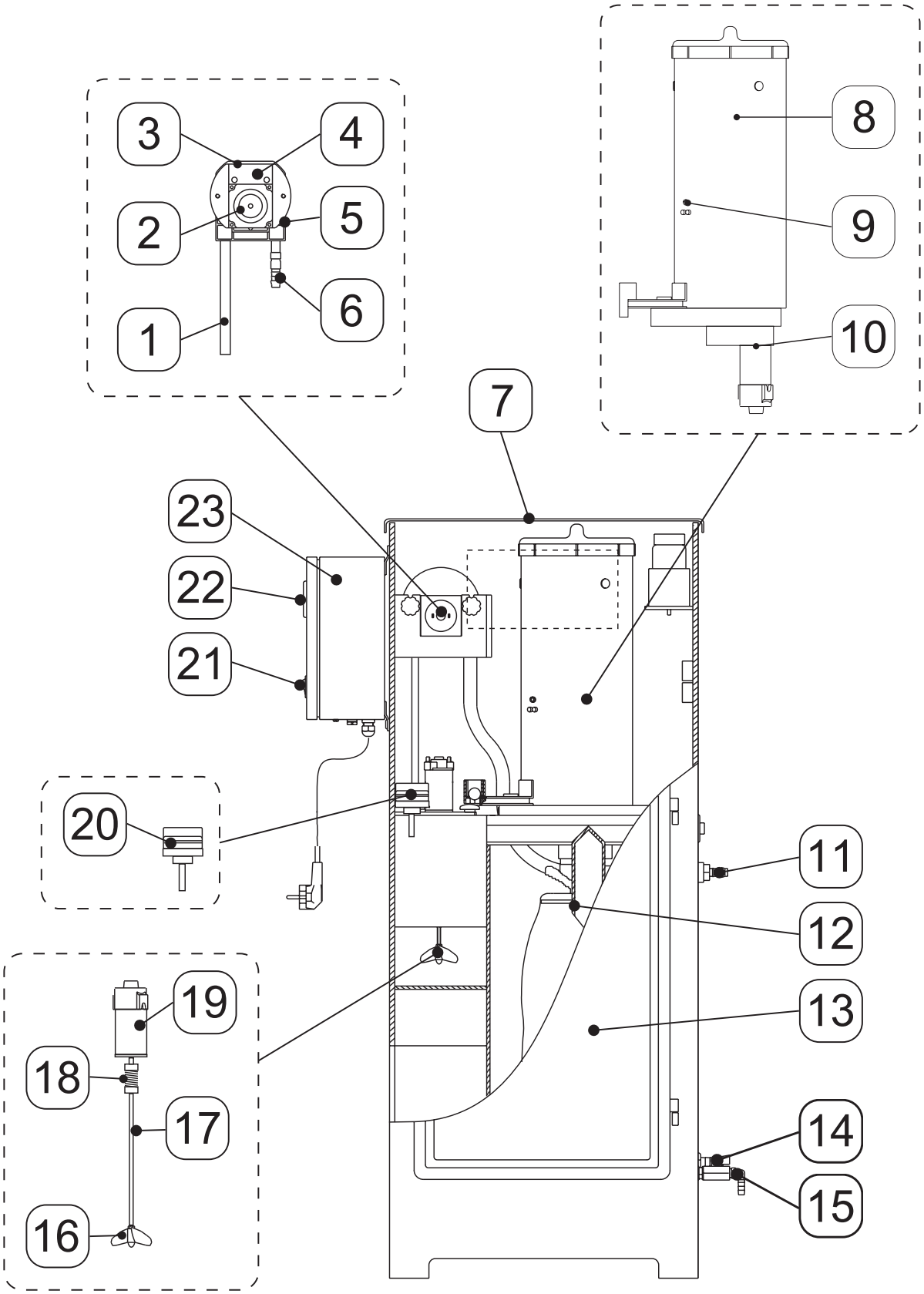
3.5 Parts and components

3.5.1 Assembly unit pre-separation container



Position	Description/Explanation
[1]	START-sensor
[2]	Electronic printed circuit board START-sensor
[3]	Bracket
[4]	Connection adapter
[5]	Cap
[6]	Aerosol filter mat
[7]	Pressure relief chamber
[8]	Pre-separation container
[9]	Oil collector
[10]	Inlet port with threaded joint
[11]	Hose
[12]	Oil drain valve

3.5.2 Assembly unit splitting unit



Position	Description/Explanation
[1]	Inlet pipe
[2]	Gear motor for emulsion pump
[3]	Emulsion pump head
[4]	Emulsion pump
[5]	Emulsion pump hose (not visible)
[6]	Double grommet
[7]	Cover of the splitting unit
[8]	Metering unit
[9]	Level sensor for reaction release agent
[10]	Gear motor for metering unit
[11]	Emulsion pump connection
[12]	Filter bag with inlet extension and strap
[13]	Door
[14]	Connection for water outlet (not visible)
[15]	Sample valve
[16]	Agitator blade
[17]	Agitator shaft
[18]	Agitator coupling
[19]	Agitator motor
[20]	Sensor for filter monitoring
[21]	Main switch
[22]	Operating hours counter
[23]	Power supply unit

3.6 Scope of delivery

The following table shows the scope of delivery of the emulsion splitting plant.

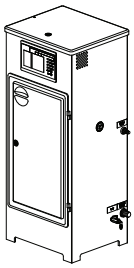
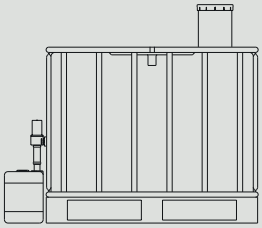
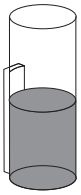
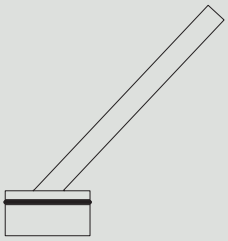
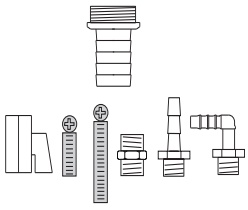
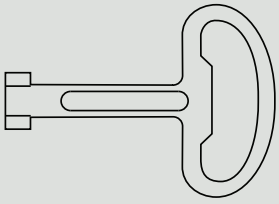
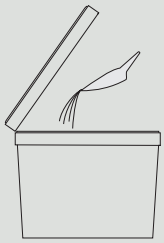
Figure	Description/Explanation
	Splitting unit
	Pre-separation container (600l or 100l) with connection hose, oil collector 2x, oil collector connection kit
	Vessel for checking turbidity
	Channel seal
	Connecting kit
	Double bit key

Figure	Description/Explanation
	Cleaning brush
	Reaction release agent supply bucket with shovel
	Installation and operation manual
	Authorisation/licensing procedure
	General approval of the building inspectorate

INFORMATION	Possible product combinations!
	The scope of delivery can vary depending on the product combination. Details are included on the delivery note and the invoice.

4. Technical data

4.1 Operating parameters

Splitting unit	BS12
Maximum plant performance	30 l/h 7.93 gal/h
Max. compressor capacity	25 m³/min 882.87 cfm
Min. / Max. operating temperature	+5 °C ... +50 °C +41 °F ... +122 °F
Min. / Max. condensate temperature	+5 °C ... +50 °C +41 °F ... +122 °F
Min. / Max. ambient temperature	+5 °C ... +50 °C +41 °F ... +122 °F
Filling volume - reaction chamber	10 l 2.64 gal
Filling volume - reaction release agent container	8.5 l 2.25 gal
Filling volume - filter bag	25 l 6.60 gal
Wet weight - filter bag	25 kg ... 30 kg 55.12 lb ... 66.14 lb
Operating weight - splitting unit	82 kg 180.78 lb
Operating voltage	See type plate on the device
Output voltage power supply unit	24 VDC
Max. power consumption	< 100 VA
Relay contact load	> 5 VDC / > 10 mA < 35 VDC / < 12 VAC / < 5A / < 150 VA/W
Degree of protection power supply unit	IP 54
Fuse power supply unit, without pump control relay	1.0 A / T (time-lag - 230 VAC) 1.0 A / T (time-lag - 200 VAC) 2.5 A / T (time-lag - 115 VAC)
Fuse power supply unit, with pump control relay	3.15 A / T (time-lag - 230 VAC) 6.30 A / T (time-lag - 115 VAC)
Fuse control	3.15 A / T (time-lag)

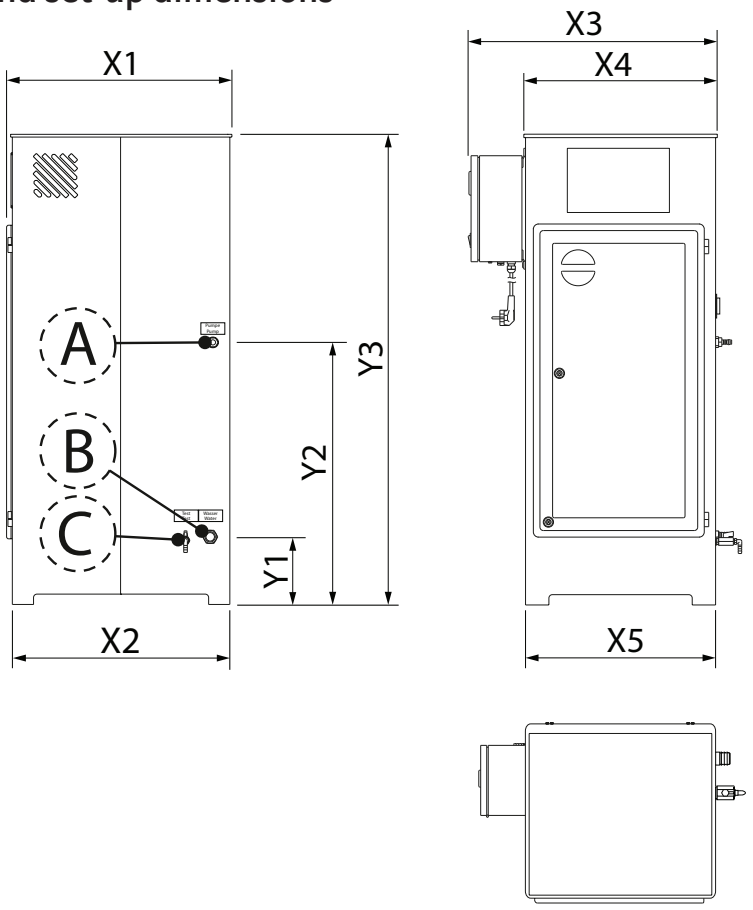
Pre-separation container	600 l	1000 l
Filling volume - pre-separation container	600 l 158.50 gal	1000 l 264.17 gal
Max. operating pressure at inlet	25 bar (g) 362.59 psi (g)	
Filling volume - oil collector	10 l 2.64 gal	20 l 5.28 gal
Min. / Max. operating temperature	+5 °C ... +50 °C +41 °F ... +122 F	
Min. / Max. condensate temperature	+5 °C ... +50 °C +41 °F ... +122 F	
Min. / Max. ambient temperature	+5 °C ... +50 °C +41 °F ... +122 F	
Operating weight - pre-separation container	666 kg 1468.28 lb	1096 kg 2416.27 lb

4.2 Storage and transport parameters

Splitting unit	BS12
Min. / Max. storage and transport temperature	+5 °C ... +50 °C +41 °F ... +122 °F
Empty weight - splitting unit	33 kg 72.75 lb

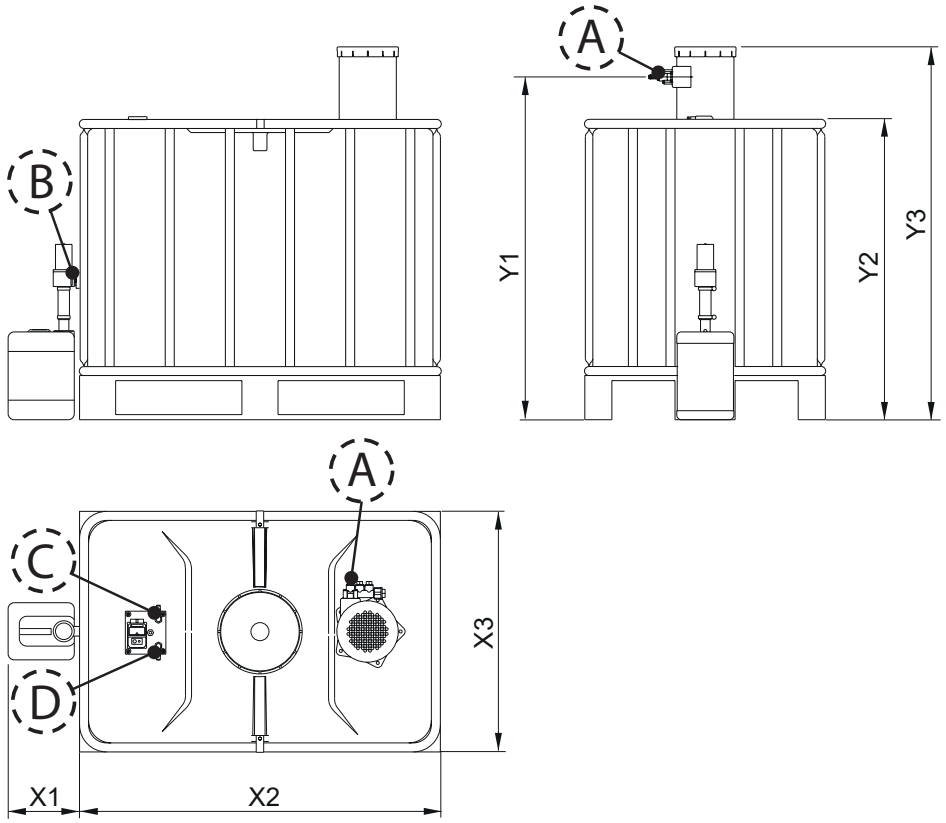
Pre-separation container	600 l	1000 l
Empty weight - pre-separation container	56 kg 123.46 lb	76 kg 167.55 lb

4.3 Connection and set-up dimensions



Dimensions subject to tolerance in accordance with DIN ISO 2768-m

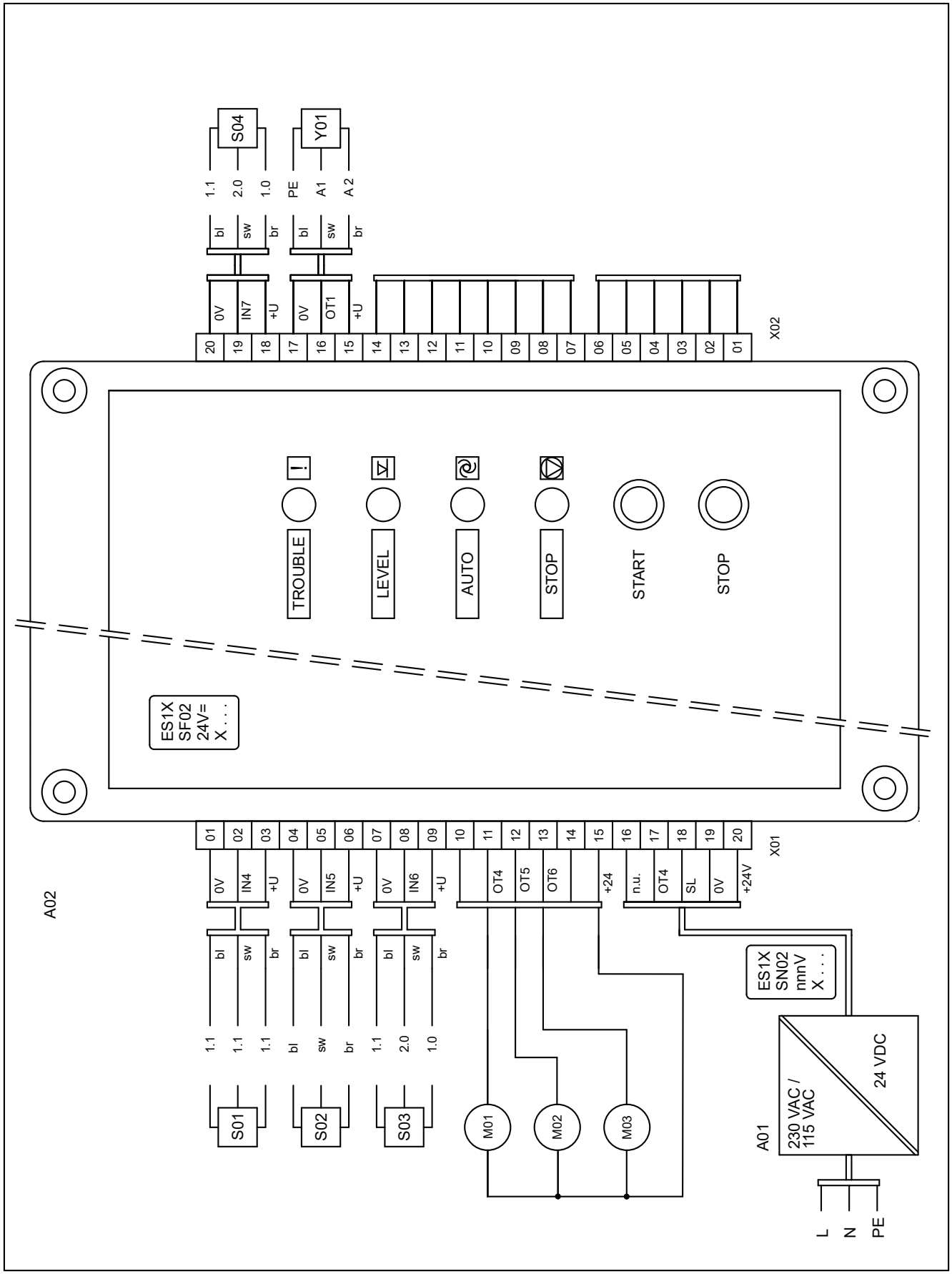
Splitting unit	BS12
[X1]	424 mm 16.693 in
[X2]	400 mm 15.748 in
[X3]	600 mm 23.622 in
[X4]	484 mm 19.055 in
[X5]	470 mm 15.504 in
[Y1]	172 mm 6.772 in
[Y2]	618 mm 24.331 in
[Y3]	1 155 mm 45.472 in
[A] - Emulsion pump connection (hose)	G½" (Ø = 13 mm / 0.5 in)
[B] - Water outlet connection (hose)	G1" (Ø = 25 mm / 1 in)
[C] - Sample valve connection (hose)	G¼" (Ø = 8 mm / 0.32 in)



Dimensions subject to tolerance in accordance with DIN ISO 2768-m

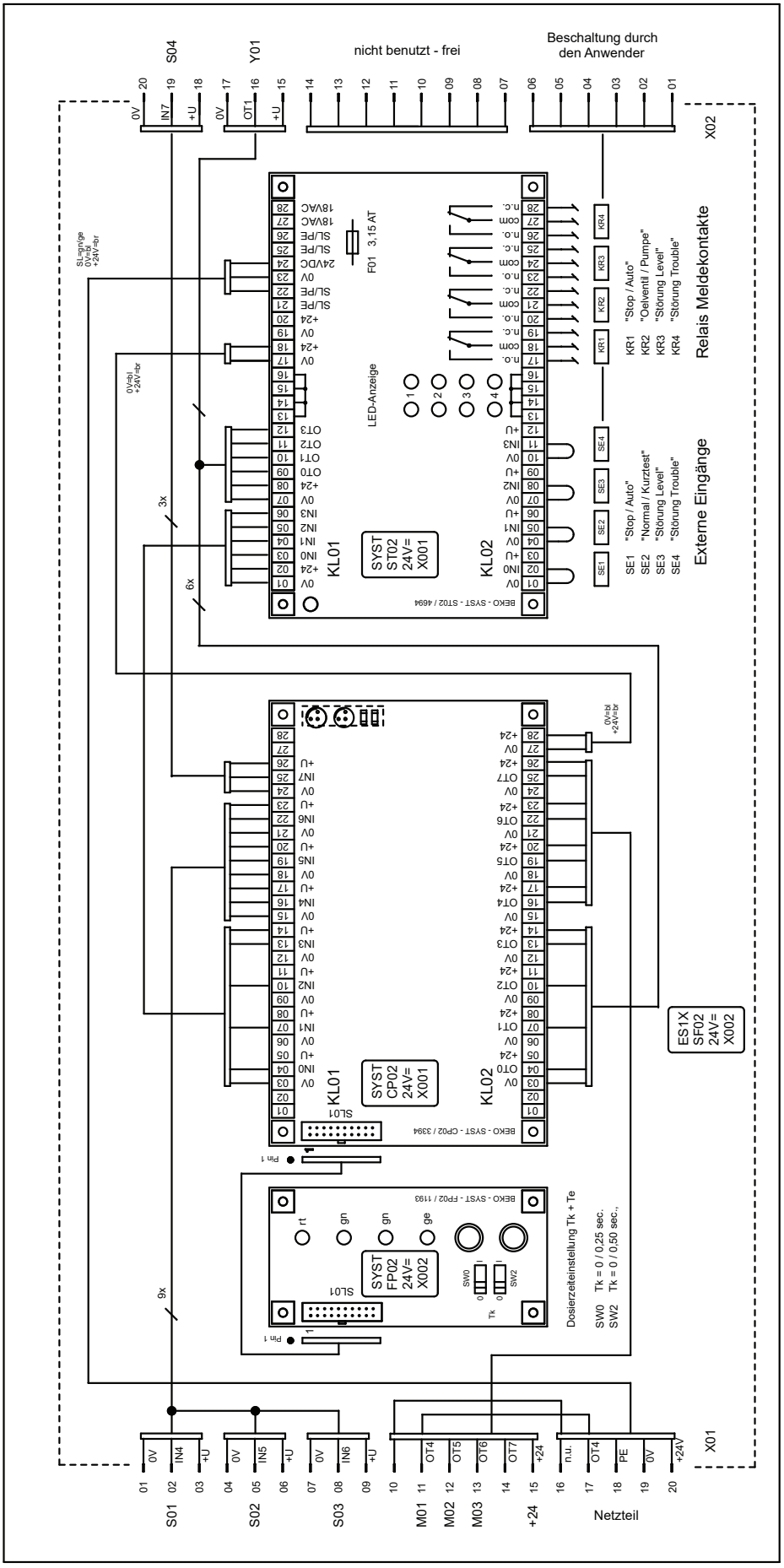
Pre-separation container	600 l	1000 l
[X1]	246 mm 7.874 in	310 mm 7.874 in
[X2]	1200 mm 47.244 in	1200 mm 47.244 in
[X3]	800 mm 31.496 in	1000 mm 39.370 in
[Y1]	1155 mm 45.472 in	1340 mm 52.756 in
[Y2]	1013 mm 39.882 in	1160 mm 45.669 in
[Y3]	1255 mm 49.409 in	1440 mm 56.693 in
[A] - Condensate inlet (hose)	3 x G½" (13 mm / 0.5 in)	
[B] - Oil outlet	Ø = 32 mm / 1.26 in	
[C] - Condensate inlet - safety container connection (hose)	G½" (13 mm / 0.5 in)	
[D] - Condensate discharge - emulsion pump connection (hose)	G½" (13 mm / 0.5 in)	

4.3.1 Terminal assignment



Terminal	Designation/explanation
X01 / 01	S01 Sensor filter bag stop
X01 / 02	
X01 / 03	
X01 / 04	S02 Sensor storage tank reaction release agent empty
X01 / 05	
X01 / 06	
X01 / 07	S03 Sensor filter bag auto (LEVEL signal)
X01 / 08	
X01 / 09	
X01 / 10	Free
X01 / 11	M01 Motor emulsion pump (minus pole)
X01 / 12	M02 Motor metering unit (minus pole)
X01 / 13	M03 Motor agitator (minus pole)
X01 / 14	Free
X01 / 15	M01, M02, M03 (plus pole) +24 VDC
X01 / 16	A01 Current supply / power supply unit
X01 / 17	
X01 / 18	
X01 / 19	
X01 / 20	
X02 / 01	External signal inputs and outputs, user-dependent
X02 / 02	
X02 / 03	
X02 / 04	
X02 / 05	
X02 / 06	
X02 / 07	Free
X02 / 08	Free
X02 / 09	Free
X02 / 10	Free
X02 / 11	Free
X02 / 12	Free
X02 / 13	Free
X02 / 14	Free
X02 / 15	Y01 Solenoid coil oil valve
X02 / 16	
X02 / 17	
X02 / 18	S04 START-sensor
X02 / 19	
X02 / 20	

4.3.2 Internal wiring



5. Transport and storage

Permissible storage and transport conditions, refer to “4.2 Storage and transport parameters” on Page 21.

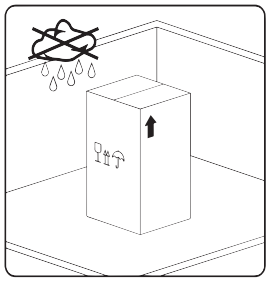
5.1 Warning notices

WARNING	**Insufficient qualification!**
	Insufficient qualification of the personnel carrying out work on the product and accessories can lead to accidents, personal injury and damage to property as well as impair operation.
	• The work on the product and accessories described below may only be executed and documented by skilled personnel - transport and storage.

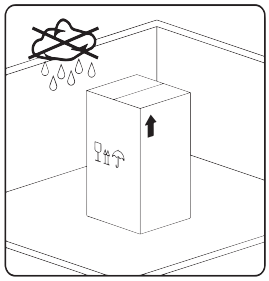
CAUTION	**Inappropriate transport or storage!**
	Inappropriate transport or storage may result in personal injury or damage to the device.
	• Use personal protective equipment during all work with packaging material. • The product may only be transported or stored by skilled personnel - transport and storage. • Handle packaging, the product and accessories carefully. • Pack all parts impact-proof using suitable material. • Transport and handle the packaging according to the markings (note lifting gear attachment points, the centre of gravity and alignment e.g. keep vertical, do not throw etc.). • Only use proper means of transport and lifting equipment that is in proper working order. • Always adhere to the permissible transport and storage parameters. • Store the product and accessories only outside of areas exposed to direct sunlight and heat sources.

NOTE	**Handling packaging material!**
	Inappropriate disposal of packaging materials can cause environmental damage.
	• The packaging material is recyclable. • Dispose of the packaging material in accordance with the regional laws, provisions, guidelines and regulations of the country and place of use.

5.2 Transport

NOTE	Transport notes!
	The following conditions must be adhered to during transport of the product and the accessories: • Transport in the original packaging. • Transport in an upright position. • Transport fixed to a pallet. • Secure against falling and slipping during transport. • Only lifting by the pallet is permitted.

5.3 Storage

NOTE	Storage notes!
	The following conditions must be adhered to during storage of the product and the accessories: • Stored in the original packaging and kept in a dry as well as frost-free room. The ambient conditions, transport and storage parameters must never fall short of or exceed the specifications in the technical data chapter. • Stored protected from external influences of the weather. • Secured at the storage location in such a way that it cannot fall over and is protected against vibration.

6. Assembly

6.1 Warning notices

DANGER	**Use of incorrect spare parts, accessories or materials!**
	The use of incorrect spare parts, accessories or materials, as well as auxiliary and operating materials, may result in death or serious injury. Malfunction and device failure or material damage can occur.
	• For all installation, servicing and maintenance work, only use undamaged original parts, auxiliary and operating materials which are specified by the manufacturer. • Only use fittings and connecting elements approved for the respective application as well as suitable tools in perfect operating condition. • Only use pipes that are free of dirt, damage and corrosion.

DANGER	**Pressurised system!**
	Death or serious personal injury can result through contact with fast or suddenly escaping compressed gas or through bursting system parts.
	• All work on the compressed gas system must be carried out in the depressurised state and with the compressed gas system secured against unintentional pressure build-up. • Set up a safety area around the working area during all assembly, installation, maintenance and repair work. • Before applying pressure to the system, check all pipe connections and tighten if necessary. • Slowly pressurise the system with pressure. • Avoid pressure blows and high differential pressures. • Assemble all pipelines without stress. • Install fixed pipes as supply and discharge pipes.

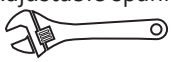
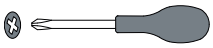
WARNING	**Insufficient qualification!**
	Insufficient qualification of the personnel carrying out work on the product and accessories can lead to accidents, personal injury and damage to property as well as impair operation.
	• All work on the product and the accessories may only be carried out by skilled personnel - compressed gas technology.

CAUTION	**Inappropriate assembly!**
	Inappropriate assembly of the product and the accessories can lead to personal injury and damage to property as well as impair operation.
	• Always fix and fasten hoses in such a way that they cannot flap around.

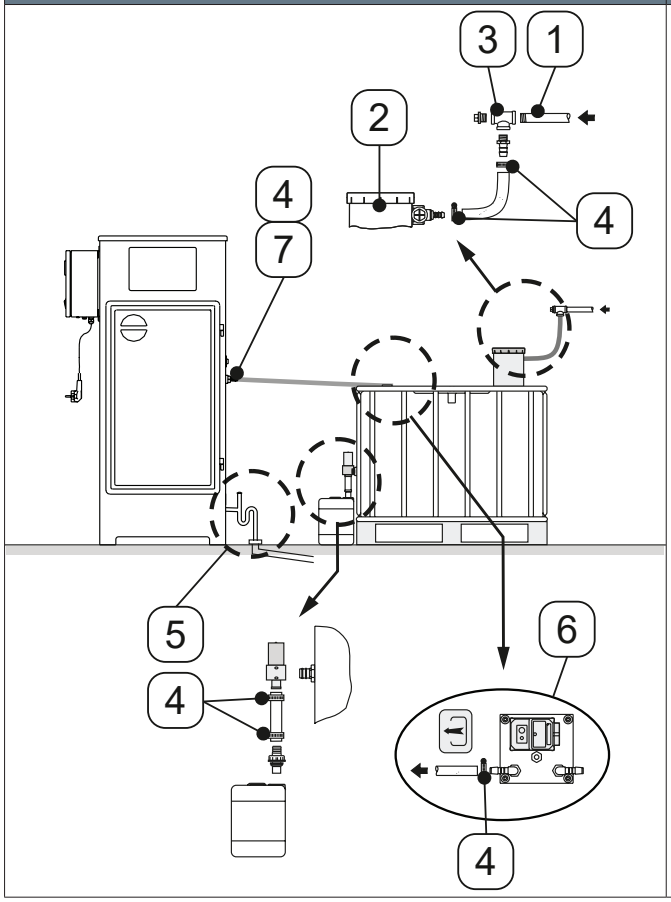
NOTE	**Vibrations of adjacent devices or machines!**
	Vibrations of adjacent devices or machines can lead to compression of the reaction release agent in the storage tank, which can lead to faulty metering of the reaction release agent. Metering can also fail completely, depending on the degree of compression.
	• Choose the place of installation for the emulsion splitting plant in such a way that no vibrations from other devices or machines can be transferred to the emulsion splitting plant. • Do not set the emulsion splitting plant up on an oscillating base.

6.2 Assembly work

For assembly work to be carried out, the following prerequisites must be fulfilled and the preparatory tasks must have been completed.

Prerequisites		
Tools	**Material**	**Protective equipment**
• Adjustable spanner  • Screwdriver - cross-head PH2 	• Sealing materials such as e.g. PTFE tape (EN 837-2)	**Always to be worn:** 

Preparatory tasks	
1.	The place of installation is in a frost-proof inside area.
2.	Sealed set-up area or spill protection basin are available. In the event of damage, no untreated condensate or oil may get into the sewer system or the soil.
3.	The set-up area is level (gradient ≤ 1°) and smooth.
4.	The condensate inlet pipe provided by the customer is pressureless and secured against unintentional pressure build-up.
5.	The cross-section of the condensate collecting pipe is greater than G1" (Ø = 25 mm).
6.	The condensate collecting pipe is routed at a slight gradient (≥ 3°) to the place of installation of the pre-separation container and at least 300 mm (1 ft) higher than the condensate inlet on the pressure relief chamber.
7.	Emulsion splitting plant and pre-separation container are undamaged and empty.

Assembly work	
Figure	**Description**
	1. Attach the shut-off valve to the withdrawal point **[3]** on the condensate collecting pipe **[1**]. 2. Set the pre-separation container up under the withdrawal point **[3]** in such a way that the pressure relief chamber is positioned 300 mm (1 ft) offset to the withdrawal point **[3]** and is not directly underneath. 3. Use a hose (G½") to connect the withdrawal point **[3]** with the condensate inlet of the pressure relief chamber **[2]**. During routing make sure that the hose does not sag (pocket formation). 4. Set the splitting unit up next to the pre-separation container. The maximum distance between the pump connection **[7]** of the splitting unit and the condensate discharge **[6]** of the pre-separation container must not exceed 2.5 m (8 ft). 5. Connect the pump connection **[7]** and the condensate discharge **[6]** using the enclosed G½ hose. 6. Attach the oil collector on the oil outlet of the pre-separation container and screw tight using the enclosed connection set. Take care that the oil collector is standing on the set-up area. 7. All hoses must be secured against becoming loose and slipping using hose clamps **[4]** or equivalent hose clips. 8. Fasten the water outlet hose **[5]** on the water outlet of the splitting unit and route to the wastewater connection at a steady gradient. The wastewater connection should be equipped with a siphon as an odour trap.

7. Electrical installation

7.1 Warning notices

DANGER	**Use of incorrect spare parts, accessories or materials!**
	The use of incorrect spare parts, accessories or materials, as well as auxiliary and operating materials, may result in death or serious injury. Malfunction and device failure or material damage can occur.
	• For all installation, servicing and maintenance work, only use undamaged original parts, auxiliary and operating materials which are specified by the manufacturer. • Use only the approved materials and suitable tools for the respective purpose and make sure that they are in perfect working order.

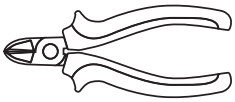
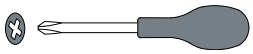
DANGER	**Electric voltage!**
	There is a danger of death or serious injuries as well as malfunction and device failure following contact with components which are in contact with electric voltage.
	• Only carry out installation, maintenance and repair work on the product and accessories when they have been de-energised and secured against being switched back on again. • Set up a safety area around the working area during all installation, maintenance and repair work. • For installation of the device, adhere to all applicable regulations (e.g. VDE 0100 / IEC 60634/ ATEX). • Connect the protective conductor (earth connection) according to regulations.

WARNING	**Insufficient qualification!**
	Insufficient qualification of the personnel carrying out work on the product and accessories can lead to accidents, personal injury and damage to property as well as impair operation.
	• All work on the product and the accessories may only be carried out by skilled personnel - electrical engineering.

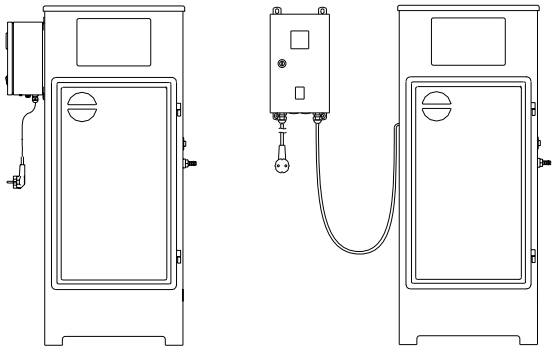
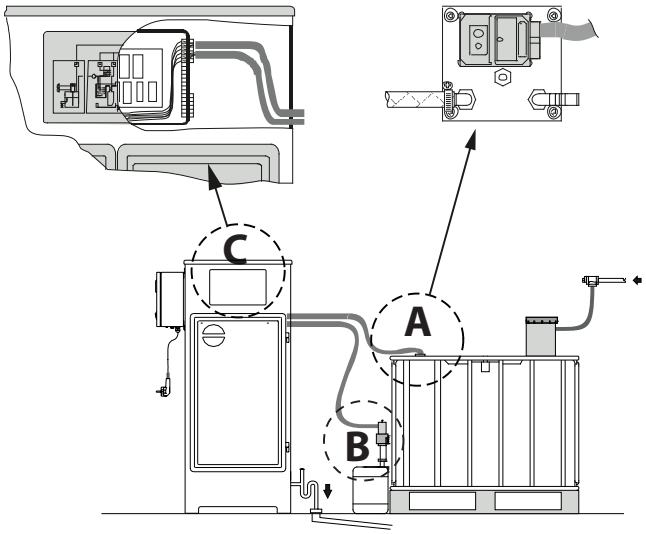
CAUTION	**Inappropriate electrical installation!**
	Inappropriate electrical installation of the product and the accessories can lead to personal injury and damage to property as well as impair operation.
	• Check all plug-type connections for a correct fit. • Avoid stumbling hazard through appropriate cable routing. • Avoid mechanical load on the cables through appropriate cable routing.

7.2 Connection of the components

For electrical installation work to be carried out, the following prerequisites must be fulfilled and the preparatory tasks must have been completed.

Prerequisites		
Tools	**Material**	**Protective equipment**
• Hexagon socket key size 5  • Side cutters  • Screwdriver - cross-head PH2 	• Fixing material for cables • Cable ties	**Always to be worn:** 

Preparatory tasks	
1.	A protective contact socket is installed in an easily accessible spot at the place of installation.
2.	Fusing of the protective contact socket is sufficiently dimensioned for the power consumption.
3.	Set up of the splitting unit and the pre-separation container have been completed.

Connection work	
Figure	**Description**
	1. Remove the power supply unit from the splitting unit. 2. Fix the power supply unit at the designated fixing points on the splitting unit housing or freely positioned on a wall. The screw-in threaded joints on the power supply unit must be aligned facing downwards.
	3. Roll out the signal cable **[A]** of the start sensor and route it through the opening in the back of the splitting unit housing. 4. There are connector position numbers printed on the connector for the signal cable **[A]**. Plug the connector of the signal cable **[A]** into the corresponding connector position on the control unit **[C]** . 5. Roll out the signal cable **[B]** for the oil drain valve and route it through the opening in the back of the splitting unit housing. 6. There are connector position numbers printed on the connector of the cable **[B]**. Plug the connector of the cable **[B]** into the corresponding connector position on the control unit **[C]**. 7. If external signal processing is to take place, external signal connections can be connected in accordance with the internal wiring diagram and terminal assignment diagram. 8. Plug the protective contact plug into the protective contact socket.

8. Commissioning

8.1 Warning notices

DANGER	**Operation of plant outside the permissible limit range!**
	Operation of the product and accessories outside the permissible limits and operating parameters, unauthorised intervention and modifications may result in death or serious injury.
	• For safe operation of the product and accessories, always adhere to the limit values, operating parameters and maintenance intervals as well as the set-up and ambient parameters specified on the type plate and in the manual. • Inspect whether the operating parameters have been amended or restricted by the use of accessories.

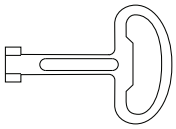
DANGER	**Pressurised system!**
	Death or serious personal injury can result through contact with fast or suddenly escaping compressed gas or through bursting system parts.
	• All work on the compressed gas system must be carried out in the depressurised state and with the compressed gas system secured against unintentional pressure build-up. • Set up a safety area around the working area during all assembly, installation, maintenance and repair work. • Before applying pressure to the system, check all pipe connections and tighten if necessary. • Slowly pressurise the system with pressure. • Avoid pressure blows and high differential pressures. • Assemble all pipelines without stress. • Avoid any vibrations occurring in the pipe network by using vibration dampers.

DANGER	**Electric voltage!**
	There is a danger of death or serious injuries as well as malfunction and device failure following contact with components which are in contact with electric voltage.
	• Only carry out installation, maintenance and repair work on the product and accessories when they have been de-energised and secured against being switched back on again. • Set up a safety area around the working area during all installation, maintenance and repair work. • Only operate the product and accessories with the cover or housing complete and closed.

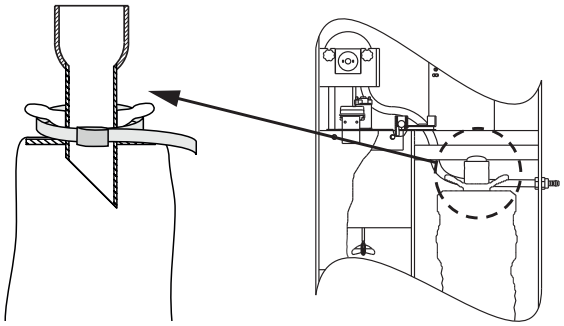
WARNING	**Insufficient qualification!**
	Insufficient qualification of the personnel carrying out work on the product and accessories can lead to accidents, personal injury and damage to property as well as impair operation.
	• All work on the product and the accessories may only be carried out by skilled personnel - compressed gas technology and skilled personnel - electrical engineering.

8.2 Commissioning work

For commissioning work to be carried out, the following prerequisites must be fulfilled and the preparatory tasks must have been completed.

Prerequisites		
Tools	**Material**	**Protective equipment**
• Double bit key 	• Reaction release agent • Clean tap water	**Always to be worn:**  **Depending on actions:** 

Preparatory tasks	
1.	Assembly work has been completed.
2.	Electrical installation work has been completed.

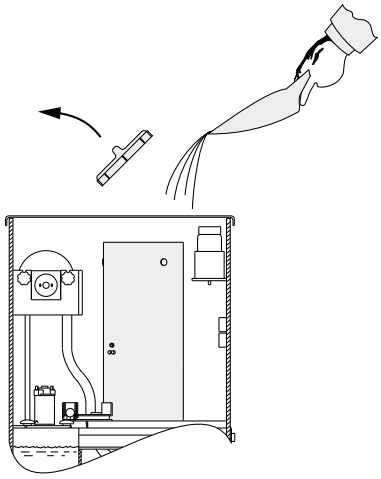
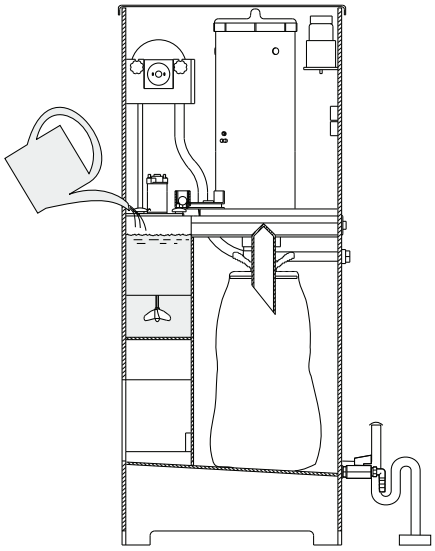
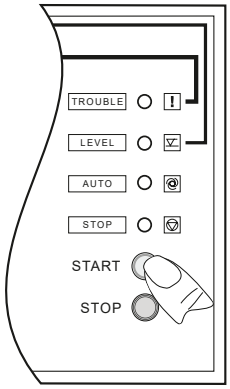
Commissioning work	
Figure	**Description**
	1. Use the double bit key to unlock and open the cover of the splitting unit. 2. Use the double bit key to unlock and open the door of the splitting unit. 3. Insert filter bag (for details see “10.3.2 Filter bag replacement” on Page 44)

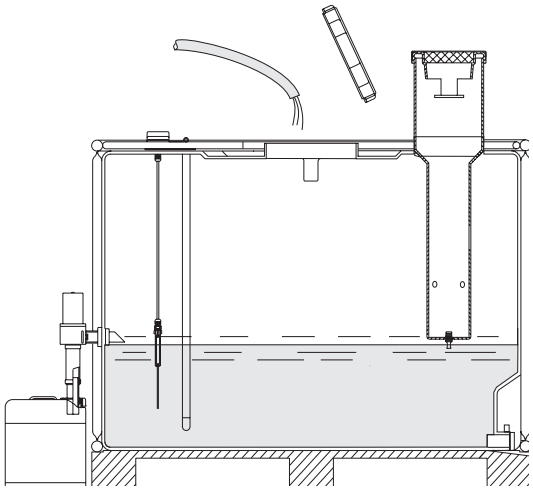
CAUTION

Dust development through filling process!

Inappropriate filling of the storage tank can cause an increased concentration of dust in the ambient air, which can lead to damage to persons.

- Put on personal protective equipment before working with reaction release agent.
- Fill reaction release agent carefully into the storage tank.
- Ventilate the room thoroughly during and after filling.

Commissioning work	
Figure	**Description**
	4. Fill the reaction release agent carefully using the shovel included. Avoid unnecessary dust development (for details see “10.3.3 Filling reaction release agent” on Page 45)
	5. Remove the channel seal from the drain channel. 6. Fill the reaction chamber with clean tap water. Do not stop the water supply until water escapes through the filter bag. 7. Close open door and cover of the splitting unit and lock using the double bit key.
	8. Switch the voltage supply on. To do this, set the main switch on the power supply unit to “I”. 9. Press the START-button on the control panel. The emulsion splitting plant is now in automatic mode.

Commissioning work	
Figure	**Description**
	10. Fill the pre-separation container with clean tap water. 11. As soon as the agitator starts, stop the water supply. The water level has reached the START-value for the START-sensor. 12. Open the condensate inlet at the condensate collecting pipe. 13. The emulsion splitting plant is now ready for operation and can be filled with condensate.

9. Operation

9.1 Warning notices

DANGER	**Operation of plant outside the permissible limit range!**
	Operation of the product and accessories outside the permissible limits and operating parameters, unauthorised intervention and modifications may result in death or serious injury.
	• For safe operation of the product and accessories, always adhere to the limit values, operating parameters and maintenance intervals as well as the set-up and ambient parameters specified on the type plate and in the manual. • Inspect whether the operating parameters have been amended or restricted by the use of accessories.

DANGER	**Electric voltage!**
	There is a danger of death or serious injuries as well as malfunction and device failure following contact with components which are in contact with electric voltage.
	• Only operate the product and accessories with the cover or housing complete and closed.

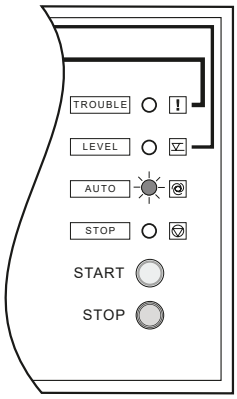
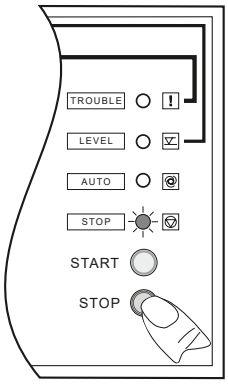
NOTE	**Operating personnel!**
	Insufficient knowledge of the product and the accessories can lead to damage to property and the environment as well as impair operation.
	• The product and accessories may only be operated and used by qualified operating personnel.

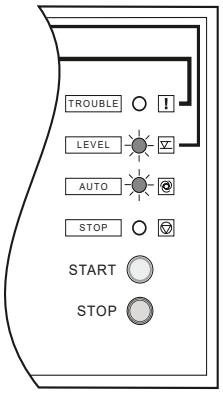
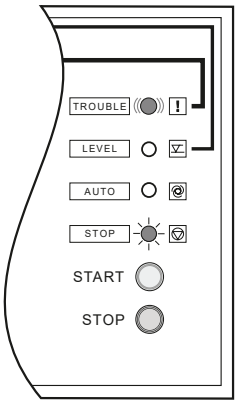
9.2 Operating states

For commissioning work to be carried out, the following prerequisites must be fulfilled and the preparatory tasks must have been completed.

Prerequisites		
Tools	**Material**	**Protective equipment**
• None	• Reaction release agent	**Always to be worn:** 

Preparatory tasks	
1.	Assembly work has been completed.
2.	Electrical installation work has been completed.
3.	Commissioning work has been completed.

Operating states	
Figure	**Description**
	**AUTOMATIC mode** The LED-AUTO is lit permanently. ➝ The splitting unit is ready for operation or in the treatment process.
	**STOP mode** The LED-STOP is lit permanently. ➝ The emulsion splitting plant has been stopped. ➝ AUTOMATIC mode has been stopped.

Operating states	
Figure	**Description**
	**Warning signal - filling level** The LED-AUTO and LED-LEVEL are lit permanently → The emulsion splitting plant remains in operation. → Check the filling level in the pre-separation container, since the START-sensor is covered for longer than 1800 seconds. → After the fault has been eliminated the message goes out automatically.
	**Fault message - filling level** The LED-STOP is lit permanently and the LED-TROUBLE is flashing at the same time. → The emulsion splitting plant is stopped and remains out of operation. → Check whether the filter bag is full and replace this if necessary (for details see “10.3.2 Filter bag replacement” on Page 44). → Check the filling level of the reaction release agent storage tank and fill up if necessary (for details see “10.3.3 Filling reaction release agent” on Page 45). → After the fault has been eliminated, press the STOP-button to acknowledge the message. → After the message has been acknowledged AUTOMATIC mode can be started again.

10. Servicing and maintenance

10.1 Warning notices

DANGER	**Pressurised system!**
	Death or serious personal injury can result through contact with fast or suddenly escaping compressed gas or through bursting system parts.
	• All maintenance and repair work on the system must be carried out in the depressurised state and with the system secured against unintentional pressure build-up. • Set up a safety area around the working area during all assembly, installation, maintenance and repair work. • Before applying pressure to the system, check all pipe connections and tighten if necessary. • Slowly pressurise the system with pressure. • Avoid pressure blows and high differential pressures. • Assemble all pipelines without stress. • Avoid any vibrations occurring in the pipe network by using vibration dampers. • Install fixed pipes as supply and discharge pipes.

DANGER	**Electric voltage!**
	There is a danger of death or serious injuries as well as malfunction and device failure following contact with components which are in contact with electric voltage.
	• Only carry out installation, maintenance and repair work on the product and accessories when they have been de-energised and secured against being switched back on again. • Set up a safety area around the working area during all installation, maintenance and repair work. • Only operate the product and accessories with the cover or housing complete and closed.

DANGER	**Use of incorrect spare parts, accessories or materials!**
	The use of incorrect spare parts, accessories or materials, as well as auxiliary and operating materials, may result in death or serious injury. Malfunction and device failure or material damage can occur.
	• For all installation, servicing and maintenance work, only use undamaged original parts, auxiliary and operating materials which are specified by the manufacturer. • Only use fittings and connecting elements approved for the respective application as well as suitable tools in perfect operating condition. • Only use cleaned pipes that are free of dirt and corrosion.

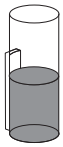
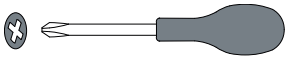
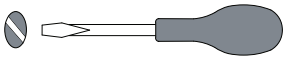
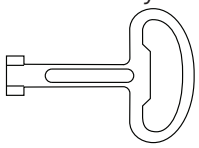
WARNING	**Insufficient qualification!**
	Insufficient qualification of the personnel carrying out work on the product and accessories can lead to accidents, personal injury and damage to property as well as impair operation.
	• All work on the product and the accessories may only be carried out by skilled personnel - compressed gas technology and skilled personnel - electrical engineering.

10.2 Servicing and maintenance schedule

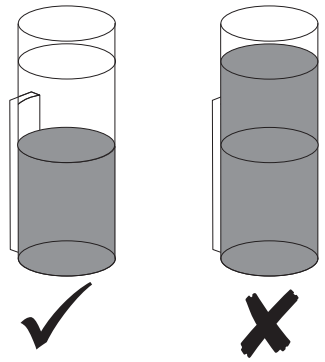
Maintenance	Interval
Turbidity check of the wastewater	Weekly
Filling level check - storage tank for the metering unit	Daily
Filling level check - filter bag	Daily
Filling level check - oil collector	Daily
Basic cleaning	At least every six months, depending on the degree of contamination
Cleaning of all components with macro-flake contact	Weekly
Maintenance of the electrical drives	In accordance with the specifications on the adhesive label maintenance information - electric drives
Maintenance of the emulsion pump	In accordance with the specifications on the adhesive label maintenance information - emulsion pump
Visual inspection	Weekly
Leakage test	Recommended interval: At the end of all assembly work and maintenance and servicing work on the product

10.3 Servicing and maintenance work

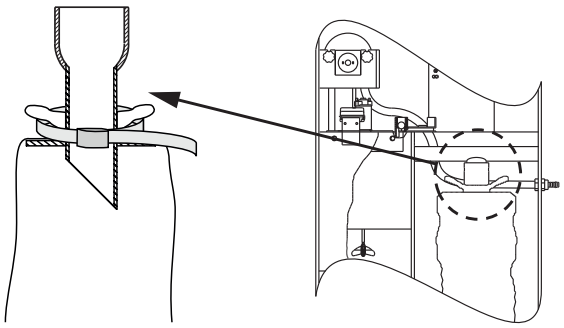
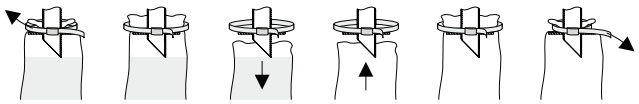
For servicing and maintenance work to be carried out, the following prerequisites must be fulfilled and the preparatory tasks must have been completed.

Prerequisites		
Tools	**Material**	**Protective equipment**
• Vessel for checking turbidity  • Screwdriver - cross-head PH2  • Screwdriver slotted head SL10  • Double bit key 	• Reaction release agent • Filter bag	**Always to be worn:**  **Depending on actions:** 

10.3.1 Turbidity check of the wastewater

Figure	Description
	1. Fill a wastewater sample into the vessel provided via the test valve. 2. Compare this sample visually with the reference turbidity provided. **Sample clearer than reference turbidity:** → The emulsion splitting plant is working flawlessly. **Sample the same or more heavily clouded than reference turbidity** → Stop the emulsion splitting plant immediately and contact **BEKO** TECHNOLOGIES Service.

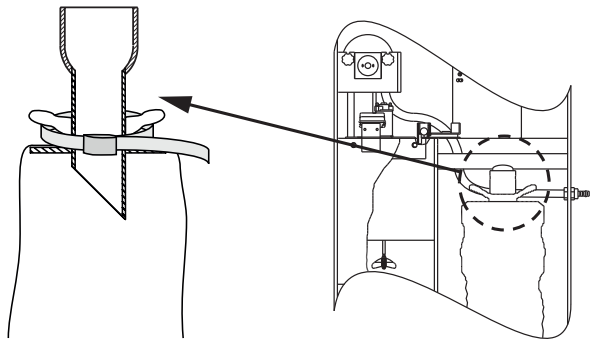
10.3.2 Filter bag replacement

Figure	Description
	1. Use the double bit key to unlock and open the door of the splitting unit. 2. Close of the drain channel using the channel seal at the branch for the fill filter.
	3. Undo and remove the strap. 4. Pull the full filter bag off the inlet extension and remove it. 5. Set the full filter bag onto a drainer and secure against falling over. 6. Place a new filter bag over the inlet extension.

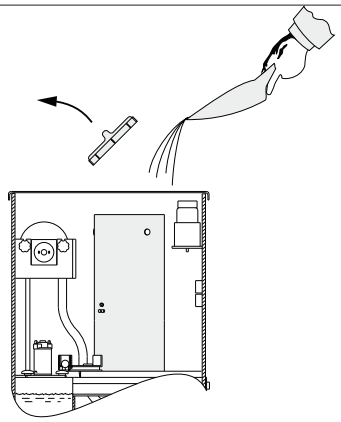
NOTE

Correct fit of the strap!

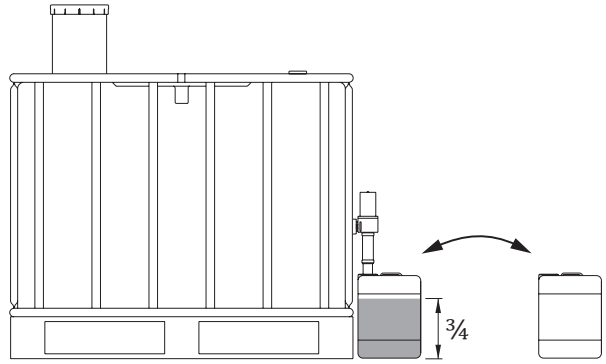
The filter bag can become loose and filter cake can escape if the strap is not set in place correctly and pulled tight.

	7. Set the strap in place and pull tightly. 8. Remove the channel seal. 9. Dispose of the full filter bag according to regulations (see “14.2 Disposal of operational materials” on Page 58). 10. Close the door of the splitting unit and lock using the double bit key.

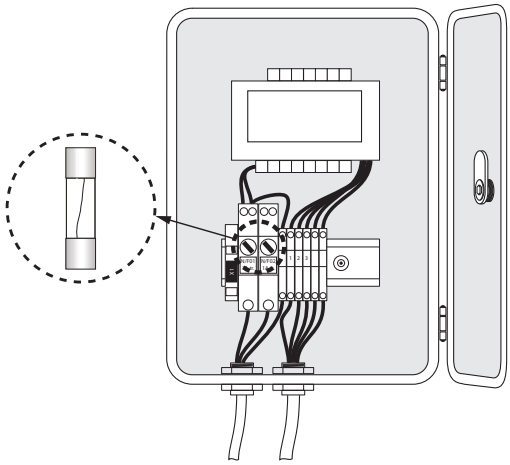
10.3.3 Filling reaction release agent

Figure	Description
	1. Use the double bit key to unlock and open the cover of the splitting unit. 2. Remove the cover of the storage tank.
CAUTION 	**Dust development through filling process!** Inappropriate filling of the storage tank can cause an increased concentration of dust in the ambient air, which can lead to damage to persons. • Put on personal protective equipment before working with reaction release agent. • Fill reaction release agent carefully into the storage tank. • Ventilate the room thoroughly during and after filling.
	3. Fill the reaction release agent carefully using the shovel included. 4. Set the cover back onto the storage tank and check for the correct fit. 5. Close the cover of the splitting unit and lock it using the double bit key.

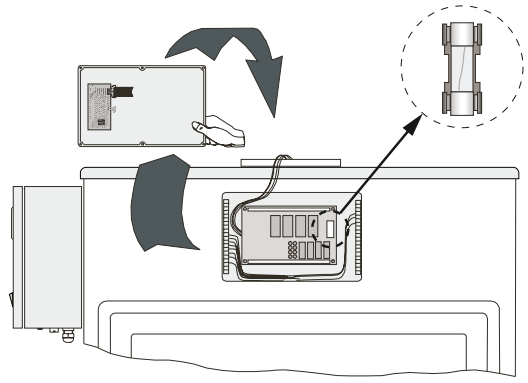
10.3.4 Checking and replacing the oil collector

Figure	Description
	1. Check the filling level of the oil collector. If the oil collector is more than ¾ full, it has to be replaced. 2. Close the condensate inlet. 3. Open the filler neck of the oil collector. 4. Remove the full oil collector and place an empty oil collector under the oil drain valve. 5. Screw the filler neck tightly to the oil collector again. 6. Open the condensate inlet. 7. Seal the full oil collector and dispose of it according to regulations (see “14.2 Disposal of operational materials” on Page 58).

10.3.5 Changing the fine wire fuse of the power supply unit

Figure	Description
	1. Switch the voltage supply off. To do this, set the main switch on the power supply unit to “0”. 2. Pull the protective contact plug from the socket. 3. Unlock the catch on the power supply unit cover using a slotted head screwdriver and open the cover. 4. Replace the two fine wire fuses (F01 / F02) by two new fuses (type see “4.1 Operating parameters” on Page 20). 5. Close the cover of the power supply unit and lock the catch on the cover using a slotted head screwdriver. 6. Plug the protective contact plug into the protective contact socket. 7. Switch the voltage supply on. To do this, set the main switch on the power supply unit to “I”.

10.3.6 Changing the fine wire fuse of the control unit

Figure	Description
	1. Switch the voltage supply off. To do this, set the main switch on the power supply unit to “0”. 2. Undo the four screws on the control panel of the control unit. 3. Take the control panel off and place it on the top of the splitting unit. 4. Replace the fine wire fuse by a new fuse (type see “4.1 Operating parameters” on Page 20). 5. Place the housing cover on the control unit again. 6. Tighten the four screws on the control panel of the control unit again. 7. Switch the voltage supply on. To do this, set the main switch on the power supply unit to “I”.

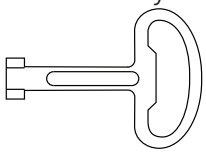
10.3.7 Maintenance work

NOTE	**Performance of maintenance work!**
	The maintenance work described below may only be performed by **BEKO** TECHNOLOGIES Service personnel or by service personnel qualified by **BEKO** TECHNOLOGIES.

Maintenance	Interval
Maintenance of the electrical drives	In accordance with the specifications on the marking maintenance information - electric drives
Maintenance of the emulsion pump	In accordance with the specifications on the marking maintenance information - emulsion pump

10.3.8 Cleaning

For cleaning work to be carried out, the following prerequisites must be fulfilled and the preparatory tasks must have been completed.

Prerequisites		
Tools	**Material**	**Protective equipment**
• Double bit key  • Cleaning brush 	• Mild detergent • Cotton cloth or disposable tissue	**Always to be worn:** 

Preparatory tasks	
1.	Close the condensate feed and secure it against being opened again.
2.	Stop the emulsion splitting plant.
3.	Switch the voltage supply off. To do this, set the main switch on the power supply unit to “0”.

CAUTION	**Inappropriate cleaning and use of the wrong cleaning media!**
	Inappropriate cleaning and the use of the wrong cleaning media may result in minor injuries as well as damage to health and property.
	• Never use abrasive or aggressive cleaning agents or solvents which could damage the outer coating (e.g. markings, type plate, corrosion protection, etc.). • Never clean the device with hard or pointed implements. • Use an anti-static, damp cloth for cleaning the outside. • Immediately replace any product markings (pictograms, markings) that have become illegible.

NOTE	**Local hygiene regulations!**
	In addition to the cleaning instructions listed, any local hygiene regulations which are in place must be heeded.

10.3.8.1 Weekly cleaning

Components	Description
Electric components	1. Spray mild detergent onto a cotton cloth or disposable tissue until this is damp (not wet). 2. Rub the surfaces with the damp cloth. 3. Then dry using a dry cloth.
Reaction chamber, agitator, drain channel and sensor	1. Empty the reaction chamber. 2. Remove the filter bag. 3. Rinse all the components with tap water. Remove stubborn residue carefully using the brush included. 4. Fit the filter bag again. 5. Fill the reaction chamber with tap water until tap water flows into the drain channel.

Concluding work	
1.	Switch the voltage supply on. To do this, set the main switch on the power supply unit to “I”.
2.	Start the emulsion splitting plant.
3.	Open the condensate feed.

10.3.8.2 Basic cleaning

Assembly unit/component	Description
Electric components	1. Spray mild detergent onto a cotton cloth or disposable tissue until this is damp (not wet). 2. Rub the surfaces with the damp cloth. 3. Then dry using a dry cloth.
Reaction chamber, agitator, drain channel, sensor and clear water tub	1. Empty the reaction chamber. 2. Remove the filter bag. 3. Rinse all the components with tap water. Remove stubborn residue carefully using the brush included. 4. Fit the filter bag again.
Pre-separation container	1. Empty the pre-separation container. 2. Remove the START-sensor assembly unit. 3. Remove the pressure relief chamber. 4. Rinse all the components with tap water. Remove stubborn residue carefully using the brush included. 5. Replace the pressure relief chamber. 5. Replace the START-sensor assembly unit.

Concluding work	
1.	Put the plant back into operation in accordance with the specifications in chapter “8.2 Commissioning work” on Page 36.
2.	Open the condensate feed.

10.3.9 Visual inspection

During the visual inspection of the emulsion splitting plant, all components must be inspected for mechanical damage and corrosion. Any damaged components must be replaced immediately.

10.3.10 Leakage test

The leakage test on the emulsion splitting plant can only be carried out during operation.

All hose connections and other connections must be subjected to a visual inspection for leaks. The following table contains possible sources of leaks and measures for elimination.

Source of leak	Measure
Leaky hose	• Replace the hose.
Leaky hose connection	• Tighten the hose clamp. • Replace hardened hose and respective hose clamps.
Leaky screw connection	• Tighten the screw connection. • Apply sealant to the screw connection again.
Leaky shut-off valve	• Replace the shut-off valve.

11. Consumables, accessories and spare parts

11.1 Order information

BEKO TECHNOLOGIES Service requires the following data for an inquiry or order:

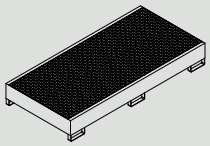
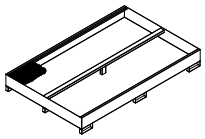
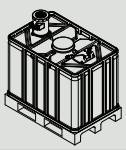
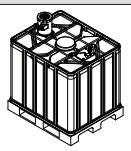
- **BEKO** TECHNOLOGIES code (see type plate)
- Plant serial number (see type plate)
- Material number and designation of the accessory or spare part
- Required quantity of accessories or spare parts to be delivered

The contact data for the **BEKO** TECHNOLOGIES Service responsible are listed in chapter “1.1 Contact” on Page 4.

11.2 Consumables

Designation	Material number
Reaction release agent FL 02 - 10 kg (22.05 lb)	4020598
Reaction release agent FL 02 - 25 kg (55.12 lb)	4020596
Reaction release agent FL 11 - 10 kg (22.05 lb)	4021427
Reaction release agent FL 11 - 25 kg (55.12 lb)	4021430
Replacement filter kit - 5 pcs.	4012868
Replacement fleece filter kit - 5 pcs.	4012867

11.3 Accessories

Designation	Figure	Material number
Drying rack for filter bags		2002628
Spill protection basin 607 l (160.35 gal) in accordance with StawaR, suitable for pre-separation container 600 l		4047648
Spill protection basin 1000 l (264.17 gal) in accordance with StawaR, suitable for pre-separation container 1000 l		4047649
Safety container 600 l (158.5 gal), suitable for pre-separation container 600 l		2002549
Safety container 1000 l (264.17 gal), suitable for pre-separation container 1000 l		2002550
Analysis case 10 mg/l		4001208
Analysis case 20 mg/l		4001212

11.4 Spare parts

11.4.1 Spare parts - splitting unit

Designation	Material number
Power supply unit 230VAC, without pump control relay	2000106
Power supply unit 200VAC, without pump control relay	4007032
Power supply unit 115VAC, without pump control relay	4025970
Power supply unit 230VAC, with pump control relay	4027051
Power supply unit 115VAC, with pump control relay	4032266
System control / control unit	4001814
Operating hours counter	2000011
Sensor for filter monitoring	2000108
Level sensor for reaction release agent	2000391
Emulsion pump	2800525
Gear motor for emulsion pump up to serial no. 10.046.560	2800484
Gear motor for emulsion pump from serial no. 10.046.561	2800484
Metering unit, complete (without filling level sensor)	4008082
Gear motor for metering unit up to serial no. 10.400.702	2800476
Gear motor for metering unit from serial no. 10.400.703	4008380
Agitator	2002624
Motor for agitator	2002625
Agitator shaft	2002626
Door unit, complete	2001938
Cover	2002305
Strap for filter bag; 2 pcs	2800495
Pump hose kit up to serial no. 10.046.560	2800527
Pump hose kit from serial no. 10.046.561	2800527
Carbon brush kit for metering unit, gear motor up to serial no. 10.400.702	2000389
Carbon brush kit for metering unit, gear motor from serial no. 10.400.703	4014400

11.4.2 Spare parts - pre-separation container and safety container

Designation	Material number	
	600 l	1000 l
Pressure relief chamber without connection adapter	2800887	2800887
Filter kit for pressure relief chamber	2800889	2800889
Connection adapter for pressure relief chamber	2001046	2001046
Oil drain valve, complete	2000101	2000101
Connection cable for oil drain valve	4006840	4006840
Oil collector set	2000379	2000400
Oil collector	2000380	4003931
Bracket, complete (without START-sensor)	2000599	2000600
START-sensor (balanced for water, without cable)	2000012	2000012
Connection cable for START-sensor	4005040	4005040
Immersion pump with float switch	2800517	2800517

12. Decommissioning

The emulsion splitting plant must be decommissioned during longer periods of standstill, for example in the case of:

- Repairs to the emulsion splitting plant
- Longer standstill of the overall compressed air system due to planned work (e.g. conversion work, major repairs, decommissioning of the overall compressed air system).

12.1 Warning notices

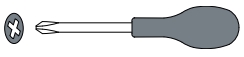
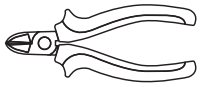
DANGER	**Pressurised system!**
	Death or serious personal injury can result through contact with fast or suddenly escaping compressed gas or through bursting system parts.
	• All work on the system must be carried out in the depressurised state and with the system secured against unintentional pressure build-up. • Set up a safety area around the working area during all assembly, installation, maintenance and repair work.

DANGER	**Electric voltage!**
	There is a danger of death or serious injuries as well as malfunction and device failure following contact with components which are in contact with electric voltage.
	• Only carry out installation, maintenance and repair work on the product and accessories when they have been de-energised and secured against being switched back on again. • Set up a safety area around the working area during all installation, maintenance and repair work.

WARNING	**Insufficient qualification!**
	Insufficient qualification of the personnel carrying out work on the product and accessories can lead to accidents, personal injury and damage to property as well as impair operation.
	• All work on the product and the accessories may only be carried out by skilled personnel - compressed gas technology and skilled personnel - electrical engineering.

12.2 Decommissioning work

For decommissioning work to be carried out, the following prerequisites must be fulfilled and the preparatory tasks must have been completed.

Prerequisites		
Tools	**Material**	**Protective equipment**
• Adjustable spanner  • Screwdriver - cross-head PH2  • Side cutters 	• None	**Always to be worn:**  **Depending on actions:** 

Preparatory tasks	
1.	None.

Decommissioning work	
1.	Close the condensate feed and secure it against being opened again.
2.	Stop the emulsion splitting plant.
3.	Switch the voltage supply off. To do this, set the main switch on the power supply unit to “0”.
4.	Pull the protective contact plug from the socket.
5.	Empty the pre-separation container.
6.	Remove the START-sensor and clean it.
7.	Disassemble the pressure relief chamber and clean it.
8.	Clean the pre-separation container.
9.	Install the pressure relief chamber and the START-sensor.
10.	Replace the oil collector by an empty one and dispose of it according to regulations.
11.	Empty the connection hose between the splitting unit and the pre-separation container and rinse with tap water.
12.	Empty the reaction chamber.
13.	Empty the storage tank of the metering unit and dispose of the reaction release agent according to regulations or put it into storage. 
14.	Remove the filter bag and dispose of it according to regulations.
15.	Clean the reaction chamber, the agitator, the drain channel, the sensor and the clear water tub with tap water.
16.	Insert a new filter bag.
17.	Seal all openings of the emulsion splitting plant.

13. Disassembly

13.1 Warning notices

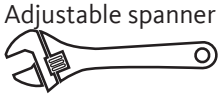
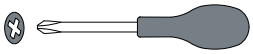
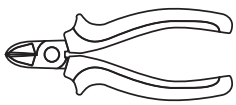
DANGER	**Pressurised system!**
	Death or serious personal injury can result through contact with fast or suddenly escaping compressed gas or through bursting system parts.
	• All work on the system must be carried out in the depressurised state and with the system secured against unintentional pressure build-up. • Set up a safety area around the working area during all assembly, installation, maintenance and repair work.

DANGER	**Electric voltage!**
	There is a danger of death or serious injuries as well as malfunction and device failure following contact with components which are in contact with electric voltage.
	• Only carry out installation, maintenance and repair work on the product and accessories when they have been de-energised and secured against being switched back on again. • Set up a safety area around the working area during all installation, maintenance and repair work.

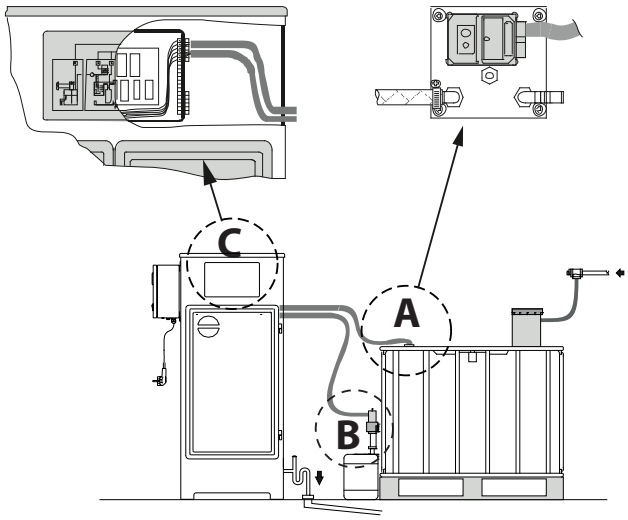
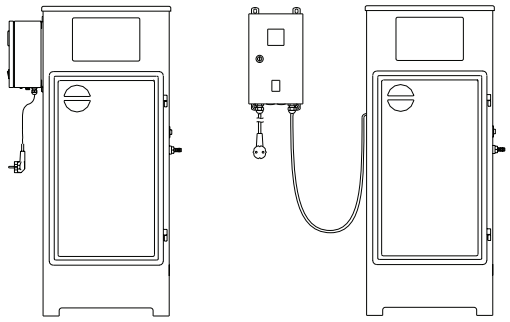
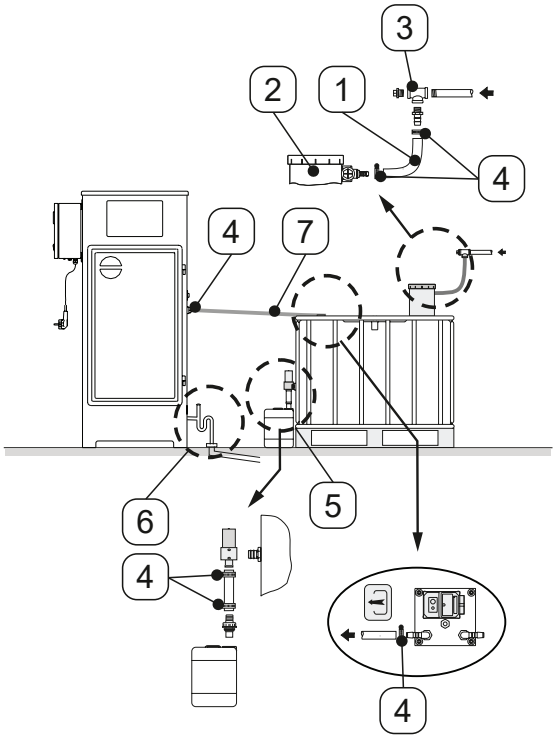
WARNING	**Insufficient qualification!**
	Insufficient qualification of the personnel carrying out work on the product and accessories can lead to accidents, personal injury and damage to property as well as impair operation.
	• All work on the product and the accessories may only be carried out by skilled personnel - compressed gas technology and skilled personnel - electrical engineering.

13.2 Dismantling work

For assembly work to be carried out, the following prerequisites must be fulfilled and the preparatory tasks must have been completed.

Prerequisites		
Tools	**Material**	**Protective equipment**
• Adjustable spanner  • Screwdriver - cross-head PH2  • Hexagon socket key size 5  • Side cutters 	• None	**Always to be worn:** 

Preparatory tasks	
1.	Close the condensate feed and secure it against being opened again.
2.	Put the emulsion splitting plant out of operation (see “12. Decommissioning” on Page 54).

Dismantling work	
Figure	**Description**
	1. Pull the protective contact plug from the protective contact socket and roll the cable up. 2. Pull the signal cable **[A]** for the start sensor from the terminals on the control unit **[C]** and roll it up. 3. Pull the cable **[B]** for the oil drain valve from the terminals on the control unit **[C]** and roll it up. 4. Disconnect the external signal connections and roll the cable up. 5. Pull the supply cable for the control unit **[C]** out of the terminals on the control unit **[C]** and roll it up.
	6. Screw the power supply unit off the wall or the housing and place it in the plant.
	7. Undo all hose clamps **[4]**. 8. Remove the hose **[1]** between the withdrawal point **[3]** and condensate inlet of the pressure relief chamber **[2]**. 9. Remove the hose **[7]** between the splitting unit and pre-separation container. 10. Remove the water outlet hose **[6]** on the water outlet of the splitting unit. 11. Remove the oil collector on the oil outlet **[5]** of the pre-separation container. 12. Transport the pre-separation container away. 13. Set the splitting unit onto a pallet and transport it away.

14. Disposal

At the end of its useful life, the product must be disposed of properly e.g. by a specialist company. Materials such as glass, plastics and some chemical compounds are mostly recoverable, reusable or recyclable.

14.1 Warning notices

NOTE	**Inappropriate disposal!**
	Inappropriate disposal of parts and components, operating and auxiliary materials as well as cleaning media can cause environmental damage.
	• Dispose of all parts and components, operating and auxiliary materials as well as cleaning media professionally and in accordance with regional legal provisions, regulations and requirements. • In case of uncertainties regarding disposal, always consult a regional waste management company.

14.2 Disposal of operational materials

Operating material	EU waste code
Filter cake and used filter bag	19 08 14
Waste oil - mineral	13 02 05
Waste oil - synthetic	13 02 06
Adsorption and filter materials, cleaning wipes and protective clothing - soiled by oils or other hazardous substances	15 02 02
Adsorption and filter materials, cleaning wipes and protective clothing - with the exception of those classified by 15 02 02	15 02 03
Packaging - paper and cardboard	15 01 01
Packaging - plastic material	15 01 02
Reaction release agent	See material safety data sheet for the reaction release agent

14.3 Disposal of components

Mechanical, electrical and electronic components must not be disposed of via municipal waste disposal companies or household waste. At the end of its useful life, the product must be disposed of properly e.g. by a specialist company.

15. Troubleshooting / FAQ

Error or fault pattern	Possible causes	Remedy
The LED-STOP is lit permanently and the LED-TROUBLE is flashing at the same time.	Filter volume exhausted	• Acknowledge the fault signal by pressing the STOP-button on the control panel. • Replace the full filter bag by an empty one (for details see “10.3.2 Filter bag replacement” on Page 44). • Start the plant in AUTOMATIC mode by pressing the START-button on the control panel.
	Storage tank for the metering unit is empty	• Acknowledge the fault signal by pressing the STOP-button on the control panel. • Fill up with reaction release agent (for details see “10.3.3 Filling reaction release agent” on Page 45). • Start the plant in AUTOMATIC mode by pressing the START-button on the control panel.
The LED-AUTO and LED-LEVEL are lit permanently.	START-sensor in the pre-separation container is covered for more than 1800 seconds	• Check the condensate inlet, throttle if necessary. • Check the emulsion pump of the splitting unit for leak tightness/ function.
No LED lit on the control panel with the power supply unit switched on.	Problem with the connection between power supply unit and control unit	• Check plug-type contact of the cable at the control unit. • Check transmission of the connection cable, replace the cable if necessary.
	Fine wire fuse faulty	• Check the fine wire fuse of the control unit, replace if necessary (for details see “10.3.6 Changing the fine wire fuse of the control unit” on Page 47). • Check the fine wire fuse of the power supply unit, replace if necessary (for details see “10.3.5 Changing the fine wire fuse of the power supply unit” on Page 46).
Leakage	Leaky hose connection	• Tighten the hose clamp. • Replace hardened hose and respective hose clamps.
	Leaky hose	• Replace the hose.
	Leaky screw connection	• Tighten the screw connection. • Apply sealant to the screw connection again.
	Leaky shut-off valve	• Replace the shut-off valve.

16. Approval certificates and declarations of conformity

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www.beko-technologies.com

EU-Konformitätserklärung

Wir erklären hiermit, dass die nachfolgend bezeichneten Produkte den Anforderungen der einschlägigen Richtlinien und technischen Normen entsprechen. Diese Erklärung bezieht sich nur auf die Produkte in dem Zustand, in dem sie von uns in Verkehr gebracht wurden. Nicht vom Hersteller angebrachte Teile und/oder nachträglich vorgenommene Eingriffe bleiben unberücksichtigt.

Produktbezeichnung:	Emulsionsspaltanlage
Modelle:	BEKOSPLIT® 11, 12, 13, 14, 14S, 15, 16
Spannungsvarianten:	BEKOSPLIT 11: 100 VAC – 240 VAC ±10%, 50 – 60Hz BEKOSPLIT 12 – 16: 100 VAC, 110 VAC, 115 VAC, 200 VAC, 230 VAC ±10%, 50 – 60Hz
Produktbeschreibung und Funktion:	Anlage zur Aufbereitung emulsionshaltiger Kompressorenkondensate

Maschinen-Richtlinie 2006/42/EG

Angewandte harmonisierte Normen:	EN 60204-1:2006 + A1:2009 + AC:2010 EN ISO 12100:2010
Name des Dokumentationsbevollmächtigten:	Johannes Sinstedten Im Taubental 7 41468 Neuss Deutschland

Niederspannungs-Richtlinie 2014/35/EU

Angewandte harmonisierte Normen:	EN 61010-1:2010 Kapitel 1-14, 16, 17 Anhang A-D, F, G, I-L, ZA

EMV-Richtlinie 2014/30/EU

Angewandte harmonisierte Normen:	EN 55014-1:2006 EN 55014-2:1997 + A1:2001 + A2:2008 Kategorie II

ROHS II-Richtlinie 2011/65/EU

Die Vorschriften der Richtlinie 2011/65/EU zur Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten werden erfüllt.

Der Hersteller trägt die alleinige Verantwortung für die Ausstellung dieser Konformitätserklärung.

Unterzeichnet für und im Namen von:

Neuss, 06.07.2018

BEKO TECHNOLOGIES GMBH

i.V. Christian Riedel
Leiter Qualitätsmanagement International

EU-decl_BS11-16_de_07_2018.docx

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EU Declaration of Conformity

We hereby declare that the products named below comply with the stipulations of the relevant directives and technical standards. This declaration only refers to products in the condition in which they have been placed into circulation. Parts which have not been installed by the manufacturer and/or modifications which have been implemented subsequently remain unconsidered.

Product designation:	Emulsion splitting plant
Type:	BEKOSPLIT® 11, 12, 13, 14, 14S, 15, 16
Supply voltage versions:	BEKOSPLIT 11: 100 VAC – 240 VAC ±10%, 50 – 60Hz BEKOSPLIT 12 – 16: 100 VAC, 110 VAC, 115 VAC, 200 VAC, 230 VAC ±10%, 50 – 60Hz
Product description and function:	Plant for treating compressor condensates containing emulsion

Machinery Directive 2006/42/EC

Applied harmonised standards:	EN 60204-1:2006 + A1:2009 + AC:2010 EN ISO 12100:2010
Name of the authorised Documentation Representative:	Johannes Sinstedten Im Taubental 7 41468 Neuss Germany

Low Voltage Directive 2014/35/EU

Applied harmonised standards:	EN 61010-1:2010 Chapter 1-14, 16, 17 Annex A-D, F, G, I-L, ZA

EMC Directive 2014/30/EU

Applied harmonised standards:	EN 55014-1:2006 EN 55014-2:1997 + A1:2001 + A2:2008 Category II

RoHS II Directive 2011/65/EU

The products meet the requirements laid down in European Directive 2011/65/EU concerning the restriction of the use of certain hazardous substances in electrical and electronic devices.

The manufacturer shall have sole responsibility for issuing this declaration of conformity.

Signed for and on behalf of:

Neuss, 06.07.2018

BEKO TECHNOLOGIES GMBH

i.V. Christian Riedel
Head of International Quality Management

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17. Notes

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