Operating instructions

FRIALOAD clamping device

FRIATEC

aliaxis

Table of Content

2571 • Stand: 03-2023

1. About this document

1.1. Purpose of these instructions and target group

These instructions describe all the necessary work steps and precautions to ensure safe and correct handling and installation of the product. These instructions are intended for the following target group:

- Trained fitters
- Owners

1.2. About these operating instructions

INFO

- Read these operating instructions carefully before assembly and use.
- Observe all applicable documents.
- The operator must keep these operating instructions for the lifetime of the product.
- Follow the described sequence of operations.
- If there is a change of ownership, pass on these instructions with the unit.

1.3. Symbols used

The following flags and symbols are used in this document:

⚠ DANGER

This warning describes an immediate threatening danger.

▶ Failing to heed it can result in death or extremely serious injuries.

⚠ WARNING

This warning describes a possibly threatening danger.

▶ Failing to heed it can result in death or extremely serious injuries.

⚠ CAUTION

This warning describes a possibly threatening danger.

▶ Failing to heed it can cause slight or minor injuries.

HINT

This warning describes a danger that can result in damage to property.

▶ Measures for avoiding damage to property are described here.

INFORMATION

This notice provides information about the following subjects:

- Usage tips
- Additional information

1.4. Applicable relevant documents

The following documents also apply in connection with these instructions:

- FRIATOOLS Operating Instructions for Tapping Set FWAB XL/FWAB ASA
- FRIATOOLS Operating Instructions for Scraper Tools FWSG
- FRIAMAT Fusion Units Operating Instructions
- FRIALEN Assembly Instructions for Large pipe technique for laying large pipes and relining pipe networks
- FRIAFIT Assembly Instructions for Sewer system for gravity pipelines and HDPE pressure pipes
- Technical Data Sheets from Aliaxis Deutschland GmbH
- Instructions and product information which are enclosed with the product
- All designation markings and instructions on the product
- *Operating instructions for the vacuum lifter (PUMP) from GRABO LLC

1.5. Updating these operating instructions

These technical statements are regularly reviewed in order to ensure that they are up to date.
The date of the last revision is indicated on the document.
Updated instructions can be found on the Internet at
https://www.aliaxis.de/en/services/downloads

*The statements and actuality of the operating instructions for the vacuum lifter (PUMP) are the sole responsibility of GRABO LLC.

Also see this on the Internet at **https://de.grabo.com**

2. Safety

The FRIALOAD clamping device, with all its components, corresponds to the current state of the art and has been constructed according to recognised technical safety regulations and standards.

The FRIALOAD clamping device has been fully tested for function and safety before delivery. In the event of incorrect operation or misuse, there is a risk of danger to the health of the operator present, as well as damage to the clamping device or other property of the owner and/or operator, or the functionality of the clamping device can be impaired.

2.1. Designated, intended use

The FRIALOAD clamping device is intended for processing the FRIALEN spigot saddle **SA VL** and the FRIAFIT spigot saddle **ASA VL** in the following dimension ranges;

- SA VL d 400 - d 1200 with outlet d 225 - d 400
- Processing ASA VL d 200 - d 630 with outlet d 160 **with** additional rubber mat*
- Processing ASA VL d 355 - d 630 with outlet d 225 **without** additional rubber mat

* Rubber mat included in the scope of delivery for ASA VL with outlet d 160, for processing refer to Chapter 7.2.1.

The FRIALOAD clamping device with its components of PUMP and PLATE must not be utilised elsewhere and/or separately from the unit. Exchanging it is only permitted with original parts from Aliaxis Deutschland GmbH or GRABO LLC.

Intended use also includes complying with all the information in these operating instructions. Any deviation from the intended use is not permitted!

For specific applications, in case of queries or in case of deviating applications, please always contact our hotline, telephone +49 621 486-1486.

INFO

For drilling or tapping when under operating pressure, please also contact our hotline, telephone +49 621 486-1486!

2.2. Staff training

All people who will be involved in the processing, machining and intended use must always fulfil the following prerequisites:

- They must have received training in accordance with DVGW GW 330 regarding fusing and for assembling the products and the operation of the tools.
- They must follow and comply with the specifications of DVGW GW 330, GW 331 and DVS, or the respective country-specific provisions, regulations and standards.
- They must have read and understood these operating instructions and all other applicable documents.

INFO

For additional information about processing or machining and for technical support. Please visit the website of Aliaxis Deutschland GmbH **https:**// **www.aliaxis.de**/**en** or contact the hotline from Aliaxis Deutschland GmbH, telephone number: +49 621 486-1486.

2.3. General safety information

The following basic points must always be observed in order to prevent personal injury and damage to property:

- Always read and understand these operating instructions and any other applicable documents.
- The information and processing instructions stated on and enclosed with the clamping device, PUMP and PLATE always have priority.
- Always inspect the proper condition of the equipment for wear and damage before commissioning it. Worn or damaged components must always be replaced.
- Inspect components for fault-free delivery. Never install damaged components!
- Store the components in the specified ambient conditions.

2.4. Obligations of the owner or operator

All people who will be involved in the commissioning, operation, servicing and maintenance as well as the intended use of the FRIALOAD clamping device must always:

- be suitably qualified and
- observe these operating instructions exactly.

The operating instructions must be available to the operator at all times and should always be retained in the transport case.
Always observe the valid accident prevention regulations, environmental regulations and legal rules, as well as the relevant safety provisions, regulations and conditions as

well as all country-specific standards, laws and directives when using the unit as intended.

2.5. Structural alterations to the product

Alterations, additions or conversions must never be executed on the unit without the prior approval of Aliaxis Deutschland GmbH.

INFO

Only utilise original spare parts from Aliaxis Deutschland GmbH and GRABO LLC.

3. Processing information

3.1. Pressure bearing capacity

The FRIALOAD clamping device is to be utilised for the FRIALEN spigot saddle **SA VL** with the pressure bearing capacity according to the following table and may only be utilised on PE pipe systems in gas supply systems and potable water supply.

Maximum operating pressure (in bar)		
SDR Level	**Water**	**Gas**
17	10 bar	5 bar
11	16 bar	10 bar

Furthermore, the clamping device is also to be utilised for the FRIAFIT spigot saddle **ASA VL 160/225** exclusively on PE pipe systems, with a maximum working pressure of 2.5 bar water / wastewater.
Always consider any reduction factors e.g. at operating temperatures > 20 °C.

INFO

Contact our hotline for any deviating application conditions, telephone +49 621 486-1486.

3.2. Storage conditions and processing conditions

Storage conditions for the clamping device:

- All the components must be cleaned regularly in order to remove dirt and deposits. Utilise a clean and dry cloth for this - never utilise any aggressive cleaning agents.

- Never spray the vacuum lifter (PUMP) with a high-pressure cleaning device, rather clean the outside with a cleaning cloth from time to time.
- The vacuum lifter (PUMP) must always be stored in a dry and clean place. Always store it in the dry transport box after every application.
- Store the vacuum lifter (PUMP) battery in a temperature range of 0 °C - 45 °C.
- Protect the accumulator against heat, avoid direct sunlight and fire.
- Never open the accumulator.
- Keep the accumulator away from other metal objects to prevent a short circuit.
- If the accumulator is defective, then liquid can escape from it and possibly get into the fusion zone of the spigot saddle which is to be processed.
- Store the clamping device in closed and dry rooms in case of longer storage periods.

Storage conditions for the spigot saddle:

- In closed rooms or containers (e.g. in cardboard boxes).
- Always exclude UV irradiation.
- Protected against the effects of weather such as moisture and frost.
- Storage temperatures: up to +50 °C.

Under these prerequisites, a storage capability and processing life of more than ten years can therefore be assumed.

INFO

Improperly stored components must never be processed because they can result in a leaking fusion joint.

Processing conditions:

- Permissible application range 0 °C to +45 °C.
- For PE pipes, a melt flow rate MFR 190/5 in the range from 0.2 to 1.7 g/10 min. applies.
- Processable with pipes of raw material types PE 63, PE 80, PE 100 and PE 100 RC.
- Processing with pipes of raw material type PE-Xa on request.

INFO

The pipes and fittings should always be at an even temperature level during processing.

INFO

Fusing with other pipe materials, e.g. PP, PVC etc. is not possible.

4. Technical Data

Technical Data*	FRIALOAD clamping device
Order No. - PUMP	613810
Order No. - PLATE	617372
Accumulator voltage	14.8 V Lithium Ion
Accumulator capacity	2.6 Ah
Suction performance	16 W
PUMP dimensions (L X W X H)	300 X 184 X 118 mm
PUMP weight	1.5 kg
Ambient temperature	0°C to +45°C
PUMP working time	Approx. 1.5 hours

* Subject to technical alterations

5. Standards and guidelines

Always observe the guidelines of the DVGW regulations, the DVS, BGR 500 (VBG 50), EN 1555, EN 12201, EN 13244, the UVV or corresponding country-specific provisions or regulations for FRIALEN safety fittings.

FRIALEN safety fittings are made of PE 100 and fulfil the requirements according to DIN 16963-5, -7, EN 1555-3, EN 12201-3, EN 13244-3, ISO 4427-3, ISO 8085-3, as well as the DVGW testing principles. In the case of material transfer joints, the material-specific standards or system-specific standards and assembly guidelines also apply.

The FRIAFIT sewer system made of PE 100 complies with EN 12666 and is therefore regarded as a regulated construction product. Therefore, there is no need for a general building supervision approval. A certificate of conformity from the DIBt (German Institute of Building Technology), Berlin, is available.

FRIAFIT fittings can be machined and processed with pipes made of PE 80, PE 100 as well as PE 100 RC according to EN 12666, DIN 8074/75, EN 1555-2, EN 12201-2, ISO 4437 and ISO 4427, PE-Xa according to DIN 16892/93.
In the case of material transfer joints, the material-specific standards or system-specific standards and assembly guidelines also additionally apply.

Always observe the guidelines of the DVGW regulations, the DVS, EN 12201, the UVV and/or any other corresponding country-specific provisions and regulations.

6. Product description

6.1. Scope of delivery for the FRIALOAD clamping device

The FRIALOAD clamping device comprises the following components:

Image 1:

- Vacuum lifter (PUMP) Order No. 613810

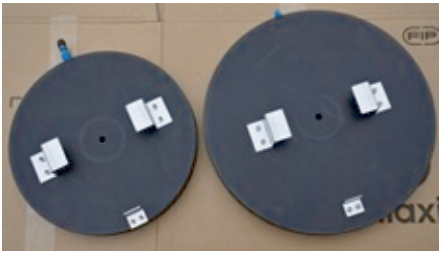

Image 2:

- PLATE (2 pcs.) Order No. 617372 with plug-in cap
- PLATE large (d 400 mm)
- PLATE small (d 325 mm)

6.2. Designation markings on the saddle components and spigot saddles

6.2.1. Batch labelling

A batch label is affixed to the component.

It is to be read from the left to the right.

Example:

- Week of manufacture (calendar week) (stamp 1+2)
- Year of manufacture (stamp 2)
- Material code (stamp 3)

⇒ Week 14/2019/E

Some components are simply marked in plain text.

Image 3:

6.2.2. Barcode sticker on spigot saddle

All FRIALEN and FRIAFIT fusion fittings are provided with a barcode sticker.

Top barcode (fusing barcode according to ISO 13950):

The fusing parameters are included in the main barcode. The parameters will be entered into the fusion unit via a reading wand or hand-held scanner. The 24-digit number sequence can be entered manually into the fusion unit via the emergency entry mode. The fusion unit always automatically monitors the fusing sequence and thereby regulates the introduced energy in specified limits.

Image 4:

The barcode stickers will be gradually provided with a 2D barcode according to ISO 12176-5 on all FRIALEN safety fittings. This new 2D barcode will provide various advantages for the user: With just one reading process using a scanner or smartphone, a lot of important data can be read out quickly and securely, for example, in addition to fusion data, additional information about the product, the manufacturer or traceability.

Lower barcode (traceability barcode according to ISO 12176-4):

Data relating to the fitting, e.g. manufacturer, dimension, material, batch are contained in this barcode and therefore enable traceability (component traceability). This data can be archived electronically together with the fusion parameters. Suitable fusion units are always required. The 26-digit number sequence can be entered manually into the fusion unit via the emergency entry mode.

6.2.2.1. Preheating barcode sticker

In addition to the barcode sticker (white barcode sticker) with the fusion barcode and traceability barcode, there is a barcode sticker provided for preheating (yellow barcode sticker) on the component of the SA VL ≥ d 400 spigot saddles.

This specially adapted preheating barcode enables the joining partners (spigot saddle and pipe) to be optimally aligned.

7. Assembling the FRIALOAD clamping device

7.1. Preparatory work

Prepare the fusion joint according to the following work steps (e.g. remove oxide layer, cleaning work etc.).

INFO

The described sequence of working steps must always be adhered to.

7.1.1. Cleaning the pipe

Image 5:

- Roughly remove dirt and dust from the pipe in the area of the fusion zone.
- Cleaning material: absorbent, non-linting and not dyed paper.

7.1.2. Measure and mark the fusion zone

- Measure the pipe surface to be covered by the saddle and mark it with a marker.

Image 6:

INFO

A processing allowance of a few millimetres to the overlapped area enables verification, after the fusing work, that the oxide layer on the pipe has been properly removed.

7.1.3. Applying marking lines

- Applying marking (control) lines is recommended for controlling that the surface has been applied completely and without any gaps. If there are any areas which are not adhered correctly when scraping the surface, then these must be reworked.

Image 7:

7.1.4. Removing the oxide layer

The oxide layer which has formed on the surface of PE pipes during storage must be immediately removed without any gaps with the aid of a rotary scraping device, e.g. FWSK scraping chain, before assembling the spigot saddle.

A processing allowance of approx. + 5 mm to the saddle surface makes it possible to verify after fusing that the oxide layer has been properly reworked.

Image 8:

INFO

Utilising hand scrapers is generally permissible in sewer systems. The use of hand scrapers is only permitted in gas systems and water supply systems in exceptional cases according to DVS 2207-1 and must be justified in advance and requires technical knowledge. When using a hand scraper, always please note that the oxide layer must also be removed without gaps and with an even swarf thickness of minimum 0.25 mm.

INFO

If the oxide layer is not completely removed, then a leaking fusion connection can result.

INFO

Filing or sanding the pipe is not permitted because impurities will be rubbed in.

7.1.5. Cleaning the fusion zones

⚠ CAUTION

Contact of the skin with cleaning agent
Oil removal from the skin, drying

- ▶ Wear protective gloves.
- ▶ Use in regulated doses.
- ▶ Observe the safety instructions issued by the manufacturer.

Image 9:

- The surfaces of the pipe to be fused and

Image 10:

- the inner surface of the saddle of the spigot saddle

must always be absolutely clean, dry and free of grease. These surfaces must be cleaned with a suitable cleaning agent immediately before assembly and after removal of the oxide layer, and only with absorbent, non-linting and not dyed paper.

We recommend PE cleaning agents which have been certified in accordance with the DVGW-VP 603 testing basis e.g. AHK cleaner.

INFO

The alcohol content must be at least 99.8% according to DVGW-VP 603 when utilising cleaning agents containing alcohol.

Always prevent rubbing soiling, contamination or dirt from the unscraped pipe surface from entering into the fusion zone when cleaning.
The cleaning agent must have evaporated completely before fusing. Touching the cleaned fusion zone with your hand must be prevented. Any moisture, e.g. arising from dew or frost in the area of the jointing surface, must be removed with suitable aids.

7.2. Assembling the spigot saddle

- Place the SA VL and/or ASA VL spigot saddle on the prepared pipe surface.

Image 11:

Image 12:

7.2.1. Addendum for assembling the ASA VL spigot saddle with outlet d 160

A rubber mat must be placed around the saddle in order to support the vacuum generation when assembling the ASA VL spigot saddle with outlet d 160. This rubber mat is included in the scope of delivery for the ASA VL d 160 spigot saddle.

INFO

An additional bar code is adhered on the rubber mat, as the bar code on the saddle surface is no longer accessible after fitting the rubber mat.

Image 13:

- Remove the protective film from the adhesive rear side of the rubber mat.

Image 14:

- Place the adhesive side of the rubber mat on the saddle surface of the ASA VL d 160 spigot saddle.
- Always ensure that the contact lugs of the ASA VL d 160 spigot saddle are located in the openings provided in the rubber mat.

Image 15:

- Press the rubber mat evenly and firmly around the outlet of the ASA VL d 160 spigot saddle onto the saddle surface and the pipe surface.

INFO

Adhere the rubber mat initially to the saddle surface, then adhere the rubber mat firmly by brushing it in the direction of the pipe surface. Always ensure that the rubber mat fits tightly everywhere.

7.3. Assembling the PLATE and PUMP

Assembling the PLATE:

Image 16:

- Select the appropriate PLATE for the SA VL or ASA VL d 160/225 spigot saddle which is to be processed.
- SA VL outlet ≥ d 250 large PLATE (d 400).
- SA VL outlet ≤ d 225 small PLATE (d 325).
- ASA VL d 160/d 225 small PLATE (d 325).
- Place the PLATE on the outlet of the SA VL and/or ASA VL d 160/225 spigot saddle. Always ensure that the holding clamps for the vacuum lifter (PUMP) are freely accessible.

INFO

Inspect the rubber mat located on the back of the PLATE to ensure that it is in perfect condition before assembling the PLATE. If the rubber mat is defective, then it may not be possible to generate a vacuum. In this case, do not utilise the FRIALOAD clamping device and contact the hotline of Aliaxis Deutschland GmbH, telephone +49 621 486-1486.

- Establish a connection with the pneumatic hose between the SA VL and/or ASA VL d 225 spigot saddle and the PLATE. Utilise the pneumatic connections located on the spigot saddle and on the PLATE to establish the connection.

Image 17:

- The pneumatic connection on the PLATE must be closed with a plug cap when utilising the ASA VL d 160 spigot saddle.

Image 18:

Assembling the PUMP:

- Push the vacuum lifter (PUMP) in the guides onto the PLATE until it reaches the end stop.

Image 19:

Image 20:

- Always ensure that the FRIALOAD clamping device, with its PLATE and PUMP components, are correctly assembled before starting to generate the vacuum.

8. Tensioning the spigot saddle

The SA VL and ASA VL d 160/225 spigot saddles are tensioned, i.e. clamped, by generating a vacuum with the FRIALOAD clamping device.

Image 21:

- Switch on the On/Off main switch of the vacuum lifter (PUMP) by sliding the switch located on it to the "On" position.
- Inspect the LED display to see whether the accumulator charge level is sufficient to execute the assembly work for the spigot saddle.
- If the accumulator charge level is low, then charge it first. Refer to Chapter 14.2. "Instructions for Care and Maintenance".
- The vacuum lifter (PUMP) will be put into operation by pressing the green button.

INFO

It can take a few seconds before the full suction power is reached after switching on the vacuum lifter (PUMP).

Image 22:

- You can support the vacuum generation process by pressing the vacuum lifter (PUMP) onto the PLATE.
- The vacuum will be generated when the vacuum lifter (PUMP) makes suction noises and the numbers on the digital display begin to increase.
- A vacuum of at least -0.6 bar must be achieved, then the vacuum lifter (PUMP) will switch off automatically.
- The vacuum lifter (PUMP) will continue to automatically readjust the vacuum whenever necessary.

INFO

The vacuum **must** always be maintained throughout the entire processing time until the end of the cooling time.

9. Executing fusion

CAUTION

Discharge of plastic melt during the fusion
Burn injuries on the skin
For your general safety, always keep a distance of one meter from the fusion site during the fusion process.

INFO

Always observe the operating instructions of the fusion unit manufacturer, e.g. FRIAMAT fusion unit from Aliaxis Deutschland GmbH or comparable.

Image 23:

- Connect the fusing cable of the fusion unit with the contact plug sockets of the spigot saddle. The fusion plug socket must be plugged in completely, i.e. over the entire inner contact length, onto the contact plugs of the spigot saddle.

Image 24:

- The fusion parameters are contained in the (upper) barcode, which is attached to the barcode sticker on the spigot saddle.
- The lower barcode on the barcode sticker contains the data for ensuring component traceability. It is only to be read out when the component traceability should be used.
- Fusion parameters are read into the fusion unit by utilising a reader wand or a hand-held scanner.

INFO

Before commencing any fusing work, always ensure that the vacuum on the digital display of the vacuum lifter (PUMP) is constant at least -0.6 bar.

Image 25:

- Please compare the data on the display of the fusion unit with the data of the spigot saddle after reading in the fusing barcode. If the data corresponds, then fusing can be started.
- The fusion unit automatically monitors the fusing sequence and thereby regulates the introduced energy in specified limits.

INFO

The indicator provides an indication of the fusing sequence which is being executed. However, the correct fusing sequence is only indicated by the fusion unit.

9.1. Designation marking of the fusion joint

Image 26:

- After fusing has been completed, the actual fusing time achieved must be compared with the target fusing time on the fusion unit and noted down on the pipe or the spigot saddle with a marker.

INFO

This marking procedure ensures that no fusing position is overlooked.

INFO

After the fusing time has elapsed, the fusion unit can be switched off and the fusing cable can be disconnected from the spigot saddle.

10. Cooling time

INFO

Never dismantle the FRIALOAD clamping device before the cooling time (also referred to as CT) has elapsed. Failure to comply with the stated cooling times and clamping times can result in a leaking fusion joint!

INFO

The cooling time CT is indicated on the barcode of the SA VL and/or ASA VL d 160/225 spigot saddle.

11. Dismantling the FRIALOAD clamping device

⚠ CAUTION

Danger of injury caused by dismantling the clamping device
The FRIALOAD clamping device can suddenly fall from the outlet of the spigot saddle and therefore cause injuries when releasing the vacuum clamping device. Always secure the FRIALOAD clamping device against falling down when releasing the vacuum clamping device.

Image 27:

- The vacuum can be removed from the spigot saddle after the cooling time has elapsed.
- The vacuum will be switched off and the vacuum lifter (PUMP) then detaches from the PLATE by pressing the red button.
- Then slide the On/Off main switch of the vacuum lifter (PUMP) to the Off position. The vacuum lifter (PUMP) is now therefore switched off.

Image 28:

- Slide the vacuum lifter (PUMP) out of the PLATE guides.
- Stow the vacuum lifter (PUMP) in the transport box again to protect it.
- Then remove the PLATE from the outlet of the spigot saddle.
- Also stow the PLATE in the transport box again to protect it.

12. Tapping (unpressurised)

⚠ DANGER

Explosive and/or health-threatening gas mixtures
Injuries caused by explosion and/or inhalation of hazardous gas mixtures (e.g. residual gas, decomposing digester gas).
Always ensure that the pipe is depressurised and completely empty before any drilling work or tapping.

⚠ DANGER

Escaping medium (e.g. residual water) in the drilling machine.
Electric shock.
Always ensure that the pipe is completely empty and that there is no medium located in the pipe in the area of the pipe bottom before any drilling work or tapping.

⚠ CAUTION

Carbide cutting edges on the hole saw
A danger of injury to the hands exists when removing the drill core and the chips.
Always wear protective gloves.

Image 29:

- Tapping is to be executed with the FRIATOOLS FWAB tapping set, without any operating pressure present, and with the pipe in a totally empty condition.
- Please always observe the operating instructions for the FRIATOOLS FWAB tapping set.
- The current instructions can be found on our homepage in the download area at **www.aliaxis.de/en/services/downloads**

INFO

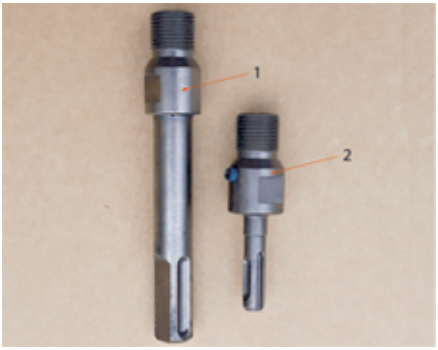

Image 30:

Please consider that the drilling machine, which is to be utilised for tapping, must always be suitable for use with a hole saw holder for **SDS max.** (1) or **SDS plus** (2) - depending on the pipe wall thickness.

Always observe the recommended minimum requirements for the drilling machine such as e.g. power consumption and revolution speed range, which are included in the operating instructions for the FWAB tapping set!

Image 31:

- The SA VL and ASA VL d 160/225 spigot saddles are to be tapped by inserting the hole saw vertically and centrally into the outlet of the spigot saddle and subsequently drilling through the pipe wall.
- Always remove any chips from the hole saw after drilling is completed. If necessary, also remove any chips which may have entered the pipe.
- Always deburr the cut edge after tapping.

Image 32:

- A plastic pipe section, DN 150, must be inserted into the outlet in order to protect the heating coil or the centric guide in the outlet spigot when tapping the ASA VL d 160 and ASA VL/KG spigot saddles.
- The FRIATOOLS FWAB ASA d 160 tapping set contains all the components which are described in these operating instructions.

INFO

Always consider that the rubber seal located in the outlet of the ASA VL/KG spigot saddle must be removed before any tapping is commenced. It must be reinserted when tapping is concluded.

Image 33:

13. Tapping (under pressure)

An external tapping device (e.g. from Hütz und Baumgarten) is required for tapping the pipe which is still under operating pressure, which enables tapping by utilising a shut-off device (e.g. FRIALOC).

INFO

Tapping pipe which is still under operating pressure with external hot tapping equipment: Contact our hotline in advance for technical support, telephone +49 621 486-1486 or your local specialised consultant.
Always observe the manufacturer's specifications for tapping pipe which is still under operating pressure.

14. Care, maintenance and service

14.1. Device maintenance

INFO

The device must be serviced at least once a year according to BGV A3 "Electrical installations and equipment". This can be executed for the vacuum lifter (PUMP) directly at the manufacturer GRABO LLC or at the InnoConcept OHG sales partner.

14.2. Instructions for care, servicing and maintenance

- All the components of the FRIALOAD clamping device must be cleaned regularly in order to remove dirt and deposits. Always utilise a commercially available cleaner for this - do not utilise an aggressive cleaning agent.
- Never allow liquids to enter into the air path of the vacuum lifter (PUMP), the pneumatic connections on the PLATE and the pneumatic hose.
- The FRIALOAD clamping device must always be stored in a dry and clean place. Always store it in the dry transport box after every application.
- Keep the handles and gripping surfaces dry, clean and free of oil and grease. Slippery handles and gripping surfaces will prevent safe handling of the tool.
- Only charge the vacuum lifter (PUMP) with the charger which has been specified by the manufacturer. A charger suitable for one type of accumulator can pose a fire hazard when used with another accumulator
- Only utilise the vacuum lifter (PUMP) with the accumulator which has been specifically designed for it. Utilising any other type of accumulator can create a danger of injury and fire.
- When the vacuum lifter (PUMP) accumulator is not in use, then always keep it away from other metal objects such as paper clips, coins, keys, nails, screws and other small metal objects which could create a short circuit. Short-circuiting the accumulator can cause burns or fires.
- When the vacuum lifter (PUMP) accumulator is not handled properly, then liquid can leak out of the accumulator; be sure to prevent contact with this.
- Never utilise damaged or modified accumulators or tools. Damaged or modified accumulators can behave in unpredictable ways and cause fires, explosions or danger of injuries.
- When the vacuum level drops noticeably even though the accumulator is fully charged, then inspect the foam seal for wear or damage. Never attempt to generate a vacuum before the seal has been replaced.

INFO

Incorrect or improper handling or transport of the accumulator which, e.g. could cause a short circuit, will invalidate the warranty.

Spare parts for the vacuum lifter (PUMP)

- **Replace the foam seal**. Remove the foam seal when it is worn or damaged.

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1. Pull out the foam seal.
2. Carefully press a new foam seal into the correct place.
3. Always ensure the replacement foam seal is seated properly and securely.

Image 34:

- **Replace or clean the air filter**. Clean the filter when it is dirty. The filter must always be replaced when it is badly worn or damaged (at the customer's discretion). This will depend on how the vacuum lifter (PUMP) is utilised.

Image 35:

1. Turn the vacuum lifter (PUMP) upside down.
2. Utilise the tip of a screwdriver to remove the air filter lock ring (K) and the air filter mat.
3. Perform one of the following procedures:
   - Clean the filter with compressed air or
   - Replace it with a new air filter mat.
4. Insert the air filter lock ring (K) in order to secure the filter.

INFO

Never clean a soiled air filter with water! It can become clogged and unusable.
Any decrease in suction power indicates that the air filter must be cleaned and/or replaced. Always ensure that the air pipe is free of obstacles or foreign objects when exchanging the filter.

INFO

The air filter is considered to be a wearing part whose wear is determined by frequent use and external influences (sand, soil, dust, ...). If damage occurs to the vacuum lifter (PUMP) as a result of insufficient filter exchanging, then the warranty will become invalid.

- **Charge and exchange the accumulator**. Charge the accumulator when the capacity is low or the accumulator is discharged.

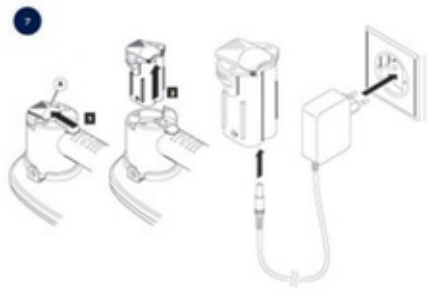

Image 36:

1. Slide the accumulator lock latch to unlock the accumulator.
2. Remove the accumulator.
3. Connect the accumulator to a wall socket using the accumulator charging device with connectors.
4. When the accumulator is fully charged, then the accumulator charge indicator lights up as green.
5. Disconnect the accumulator charging device with the connectors from the wall socket and remove the accumulator.
6. Insert the accumulator into the accumulator compartment.
7. Press and slide the accumulator lock latch to lock the accumulator in place.

INFO

- Only charge the accumulator with the charging device which has been specified by the manufacturer!
- Only use the charging device in a dry environment. The charging device is not waterproof!
- Always ensure that the supply voltage corresponds to the specifications on the rating plate of the accumulator charging device!
- Keep the charging device away from flammable objects during charging!

INFO

Transporting the accumulator
The lithium content of the supplied accumulator is below the applicable limits. The accumulators are not therefore subjected to national or international regulations for hazardous substances, neither as individual components nor when utilised in your vacuum lifter (PUMP).
However, when transporting several accumulators, the provisions or regulations for dangerous goods can still be relevant. In this case, it can be necessary to comply with special conditions.

INFO

All spare parts (foam seal, air filter and accumulator) for the vacuum lifter (PUMP) can be purchased directly from the manufacturer, GRABO LLC, or from the InnoConcept OHG sales partner.

14.2.1. Maintenance, testing and inspection intervals

What?	When?	Who?
Clean soiling, dirt and deposits from the vacuum lifter (PUMP) and PLATE	Daily	▪ Operator
Controlling for any damage	Daily	▪ Operator
Inspect and test function	Before every use	▪ Operator
Inspect the connections and, if necessary clean or exchange them	Before every use	▪ Operator
Inspect the accumulator capacity and, if necessary, charge it	Before every use	▪ Operator
Device servicing for the vacuum lifter (PUMP)	Annually	▪ GRABO LLC ▪ InnoConcept OHG

14.3. Warranty

The warranty period is 1 year. This period does not apply to parts which can wear out prematurely due to the environment (sand, soil, corrosive substances and similar).

Warranty claims and liability claims for personal injury and damage to property are always excluded when they are due to one or more of the following causes:

- non-intended use of the FRIALOAD clamping device,
- structural modifications which have not been approved by Aliaxis Deutschland GmbH and GRABO LLC or the sales partner for Germany, InnoConcept OHG, in accordance with Section 2.3,
- improper handling and improper transport,
- improperly performed servicing, maintenance work or repair work,
- any damage which is caused by parts or accessories that were not obtained or purchased from an authorised dealer or which were not approved by the manufacturer Aliaxis Deutschland GmbH and/or GRABO LLC or the InnoConcept OHG sales partner,
- non-compliance with the information in these operating instructions and other applicable documents and/or
- utilising worn functional parts and/or a damaged vacuum lifter (PUMP) or PLATE.

14.3.1. Service Hotline

Please contact the **Service Hotline** for troubleshooting questions or areas of application which deviate from these instructions.

- Aliaxis Deutschland GmbH, telephone **+49 621 486-1486**

For the vacuum lifter (PUMP):

- GRABO LLC, Homepage **www.GRABO.com/GRABO-pro-troubleshoot**

or the sales partner for Germany,

- InnoConcept OHG, telephone **+49 2542 86974-0**
  Email: **info@inno-concept.com**

15. Disposal

The European Directive 2012/19/EU (WEEE - Waste Electrical Devices and Electronic Equipment) regulates the disposal, reusage and recycling of used electrical and electronic products. The WEEE Directive was implemented in 2005 with the ElektroG for the German disposal market. Accordingly, used electrical devices and electronic equipment must always be disposed of correctly and/or recycled properly.

- Always dispose of the device in accordance with European Directive 2012/19/EU (WEEE - Waste Electrical Devices and Electronic Equipment).
- Always additionally observe other country-specific provisions, regulations, standards and directives.

Possible locations, bodies for proper disposal:

- Aliaxis Deutschland GmbH
- GRABO LLC and/or at the InnoConcept OHG sales partner

16. Authorised service stations

- **for the FRIALOAD clamping device:**

Aliaxis Deutschland GmbH
Steinzeugstraße 50
68229 Mannheim
Service Hotline Tools Service telephone +49 621 486-1533

- **Alternative for vacuum lifter (PUMP):**

InnoConcept OHG
Grüner Grund 17
48712 Gescher
Telephone: +49 2542 869 74-0, Email: info@inno-concept.com

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