



# Assembly instructions

GAB 1" and GAB 2" purge stacks for venting gas pipes



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# 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 groups:

- Trained fitters
- Owners

## 1.2. How to use these instructions

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### **I** INFORMATION

- Before assembly and use, read these instructions carefully.
  - Follow all the other applicable documents.
  - The operator must preserve these instructions for the life of the product.
  - Compliance with the described sequence of operations is mandatory.
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## 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.

## **i INFORMATION**

This notice provides information about the following subjects:

- Usage tips
- Additional information

### **1.4. Other applicable documents**

The following documents are applicable in conjunction with these installation instructions:

- FRIALEN installation instructions for DAV RED SNAP pressure tapping valves
- FRIATOOLS operating instructions from Aliaxis Deutschland GmbH for working with and installing the described components
- Operating instructions for FRIAMAT fusion units
- Technical data sheet for purge stacks from Aliaxis Deutschland GmbH
- Quick guides and product information supplied with the product.
- All labelling on the product

### **1.5. Updates to these assembly instructions**

The technical information contained in these assembly instructions is reviewed regularly to make sure it is up to date.

The date of the last revision is specified on the document.

Updated instructions are available online at

**<https://www.aliaxis.de/en/services/downloads>**

## 2. Intended use

### 2.1. Purge stack applications



The FRIALEN purge stack is an assembly which makes it possible to subsequently create a controlled access point for venting and flushing gas mixtures (in accordance with DVGW code of practice G 260) in an operating gas pipeline made of HDPE.

Access to the main pipe is achieved by means of a tapping valve (DAV RED SNAP) and a threaded transition adapter (UAM) with a brass plug (brass safety plug).

Subsequent access to gas pipelines is necessary for:

- Venting (discharging gas/air mixtures)
- Venting air (during commissioning after repairs)
- Measuring points (e.g. for odorant concentration)
- Emergency connections (bypass line)

Image 1:

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## **i** INFO

The information and installation instructions specified on or enclosed with the fitting take priority.

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### **2.2. Personnel qualifications**

All persons involved in handling and using the device as intended must meet the following requirements:

- They must have received training in accordance with DVGW GW 330 for fusion and installation of the products and use of the tools.
- They must follow the instructions of DVGW GW 330 and GW 331.
- They must have read and understood these instructions and other applicable documents.

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## **i** INFO

For more information on working with the fittings and for technical support, visit the Aliaxis Deutschland GmbH website <https://www.aliaxis.de/en> or contact the Aliaxis Deutschland GmbH hotline: +49 621 486-1486.

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## **3. Installation instructions**

### **3.1. Pressure loading capacity**

The maximum operating pressure of the FRIALEN purge stack made of PE 100 is 10 bar (gas).

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## **i** INFO

In case of deviating operating conditions, please call the Aliaxis Deutschland GmbH hotline on: +49 621 486-1486.

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## 3.2. Ambient, storage and working conditions

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### **i** INFO

Components that have been improperly stored must not be used, as they could result in a leaky fusion joint.

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#### **Storage conditions:**

- In closed rooms or containers (e.g. cardboard boxes)
- Protected from UV radiation
- Protected from the weather, e.g. damp conditions and frost
- Storage temperatures: up to +50 °C

Under these conditions, a storage life and serviceability life of more than ten years can be expected.

#### **Working conditions:**

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### **i** INFO

The pipe and fitting should be at an equalised temperature level during installation.

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- Acceptable temperature range: -10 °C to +45 °C
- For PE pipes, the melt flow rate MFR 190/5 is 0.2-1.7 g/10 min
- Can be used with pipes of raw material types PE 63, PE 80, PE 100, PE 100 RC and PE 100 RT
- Use with pipes of raw material type PE-Xa on request

## 4. Standards and regulations

FRIALEN safety fittings made of PE 100 for gas applications from Aliaxis Deutschland GmbH meet the requirements of EN 1555-3 as well as DVGW GW 335-B2.

FRIALEN safety fittings can be used in accordance with DIN 8074/75, EN 1555-2 and ISO 4437.

FRIALEN GAB 1" and GAB 2" purge stacks, with all of their components, conform to factory standard 208083-AD of Aliaxis Deutschland GmbH.

The safety plug (brass) has a manufacturer's certificate of suitability for gas applications.

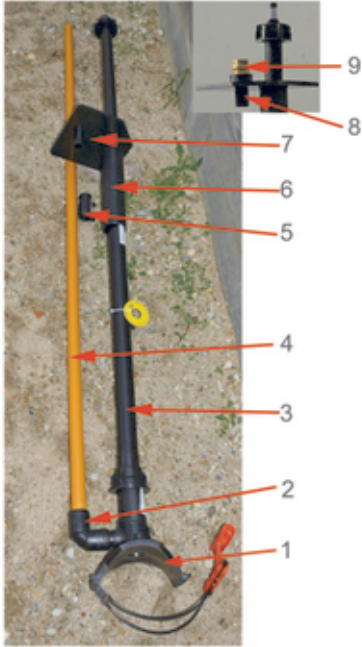
All other components in contact with the medium conform to the above-mentioned regulations and standards.



Please also observe all country-specific regulations.

## 5. Product description

### 5.1. Design of the purge stack

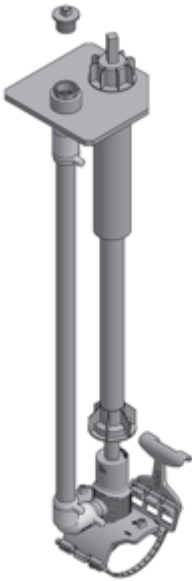


The FRIALEN GAB purge stack consists of the following components:

1. FRIALEN DAV RED SNAP d 63 – d 225
2. FRIALEN elbow W90° d 32 + d 63
3. Installation kit for DAV (DBS)
4. HDPE venting pipe d 32 + d 63
5. FRIALEN MB coupler d 32 + d 63
6. Ground spike / fixing element
7. Base plate type 1" or 2"
8. FRIALEN UAM transition adapter d 32/1" or d 63/2"
9. Brass plug with vent hole 1" or 2"

Image 2:

The FRIALEN GAB purge stack is available in two versions:



- With 1" blow-out aperture and base plate in square design.
- Base plate suitable for G2 valve box, with recess for cover bolt.

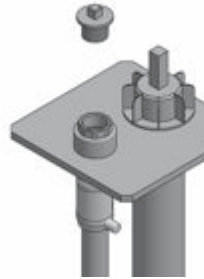
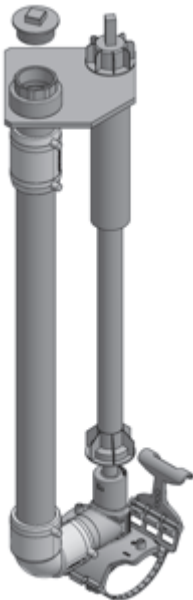


Image 3:



- With 2" blow-out aperture and base plate in diagonal design.
- Base plate suitable for G2 valve box, with recess for cover bolt.

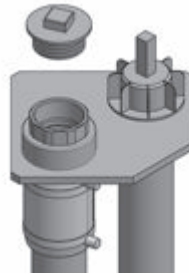


Image 4:

## 5.2. Labelling on the component

FRIALEN safety fittings with the GAB purge stack are provided with labelling and/or barcode stickers on the surface of the component.

### 5.2.1. 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 5:

### 5.2.2. Barcode sticker

Components are provided with a barcode sticker.



Image 6:

#### Top barcode (fusion barcode conforming to ISO 13950):

The fusion parameters are contained in the main barcode. The parameters are read into the fusion unit via a wand or handheld scanner. Via the emergency input mode, the 24-digit number sequence can be entered manually into the fusion unit. The fusion units automatically monitor the fusion process and regulate the energy supplied within set limits.

On all FRIALEN safety fittings, a 2D barcode conforming to ISO 12176-5 is being successively added to the barcode sticker. This new 2D barcode offers various advantages for the user: With just one scan using a scanner or smartphone, a lot of important data can be read quickly and reliably. For example, this could be further information about the product or manufacturer, or traceability information, in addition to the fusion data.

**Bottom barcode (traceability barcode conforming to ISO 12176-4):**

Data about the fitting (e.g. manufacturer, size, material, batch) are contained in this barcode and enable component traceability. These data can be archived electronically together with the fusion parameters. Suitable electrofusion units are required. Via the emergency input mode, the 26-digit number sequence can be entered manually into the fusion unit.

## 6. Installation method

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### **i** INFO

The sequence of work steps must be strictly followed as described.

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#### 6.1. Installation of the FRIALEN DAV RED SNAP pressure tapping valve

##### 6.1.1. Preparatory work

Prepare the fusion joint as described in the following work steps (e.g. remove oxide layer, clean, etc.)

##### 6.1.1.1. Cleaning the pipe surface



First remove contaminants from the surface of the pipe in the area where the DAV RED SNAP is going to be installed.  
Use a clean and grease-free cleaning cloth.

Image 7:

### 6.1.1.2. Measuring and marking the fusion zone



Image 8:

Mark the fusion zone with a marker pen.

We recommend marking the whole surface so that it is possible to check the consistent removal of material without missing any areas.

## **I** INFO

We recommend adding an allowance of approx. +5 mm onto the fusion zone. After fusion, this shows that the oxide layer was properly removed.

### 6.1.1.3. Remove oxide layer

## **⚠** CAUTION

### **Risk of injury from rotating scraper tool.**

Injuries to hands or arms.

Please follow the respective operating instructions and information from the manufacturer.

Do not reach into the tool's working area.



Image 9:

With the aid of a scraper tool, immediately before installation, the oxide layer has to be completely removed in the area of the fusion zone.

A single and complete removal of the oxide layer should be sufficient (at least 0.15 mm). This should produce a uniform surface without flattening or edges around the pipe diameter. Any unscraped patches and spots on the surface must be scraped again.

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## 8 INFO

If the oxide layer is not completely removed, this may result in a leaky fusion joint.

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## 8 INFO

Filing or sanding are not acceptable, as impurities could be rubbed into the pipe.

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The scraped zone must be protected against dirt, soap, grease, discharging water and adverse weather conditions (e.g. effects of moisture and frost).

### 6.1.1.4. Cleaning the surfaces to be fused



Image 10:

The **pipe surface** being fusion welded and the **inner saddle surfaces of the pressure tapping valve** must be absolutely clean, dry and free of grease. Directly before installation and after scraping, clean these surfaces with a suitable cleaning agent and exclusively absorbent, lint-free, and undyed paper.

We recommend PE cleaning agents that are certified to meet the test requirements of DVGW-VP 603, e.g. AHK cleaner.



Image 11:

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## **i** INFO

When using alcohol-based cleaning agents, the alcohol content must be at least 99.8% in accordance with DVGW-VP 603.

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When cleaning, avoid rubbing dirt from the unscraped pipe surface into the fusion zone. A fresh sheet of cleaning paper should be used for each fusion surface, or several if necessary for larger surfaces.

The cleaning agent must have evaporated completely before the fusion process.

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## **i** INFO

The joining surfaces must be clean and dry before the pressure tapping valve is installed. Avoid touching the cleaned fusion zones with your fingers. Moisture, e.g. dew or frost on the joining surface, must be removed using suitable means.

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Then use a marker to redraw the marking lines for the fusion zone width on the pipe, as these lines will have been removed during the oxide layer removal and subsequent cleaning.

### **6.1.2. Fitting the DAV RED SNAP pressure tapping valve**

Do not remove the GAB purge stack with all of its components from the packaging until just before it is to be installed.

This packaging protects the fittings against external influences during transportation and storage.

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## **i** INFO

The venting pipe is non-detachably fixed to the DAV RED SNAP pressure tapping valve at the factory, using a FRIALEN W90° elbow, via electrofusion. Therefore assembly and fusion by the customer is not required.

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Image 12:

- Position the pressure tapping valve with the venting pipe and installation kit on the prepared pipe surface and guide the lower clamp around the pipe.



Image 13:

- Place the clamping surface of the RED SNAP lever into the clamping strip on the upper saddle part of the pressure tapping valve. Make sure that the clamping bar is correctly positioned on the saddle.
- Ensure correct alignment of the purge stack on the pipe! Correct it if necessary.





Image 14:

- Push the RED SNAP lever upwards to firmly clamp the pressure tapping valve with venting pipe and installation kit onto the pipe.

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## **i** INFO

Do not turn the square end: for pressure tapping valves, the factory drill setting must not be changed before the fusion process.

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## **i** INFO

For more information about installing and using FRIALEN pressure tapping valves, refer to the installation instructions for FRIALEN DAV RED SNAP pressure tapping valves, available from the download area of the Aliaxis Deutschland GmbH website at [www.aliaxis.de/en/downloads](http://www.aliaxis.de/en/downloads).

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### 6.1.3. Fusion

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## **i** INFO

Use only fusion units that are approved by their manufacturer for processing fusion fittings from Aliaxis Deutschland GmbH, e.g. FRIAMAT fusion units or similar. See DVS 2207-1 and ISO 12176-2.

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When installing the fusion fitting, make sure that the fusion contacts on the fusion fitting are easily accessible and that stresses or loads from the fusion cables do not affect the fusion joint.

Connect the fusion cable with the fusion plug connectors to the contacts on the fusion fitting. The fusion plug connectors must be plugged in all the way, i.e. over the entire inner contact length, into the contact connectors on the fusion fitting.

### 6.1.3.1. Scan the barcode and start the fusion process

#### **⚠ 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.



Image 15:

The fusion parameters are contained in the (upper) barcode on the barcode sticker affixed to the fusion fitting (see section "Labelling on the component"). When using fully automatic fusion units, such as FRIAMAT fusion units or similar, the fusion parameters are read into the fusion unit using a wand or handheld scanner.

The lower barcode on the barcode sticker contains traceability data. It only needs to be read if component traceability is being used.

Once the fusion barcode has been read, which is confirmed by an acoustic signal tone, the data on the electrofusion unit's display should be compared with the data for the fusion fitting. If the data match, the fusion process can begin. The electrofusion unit automatically monitors the fusion process and regulates the supplied energy within set limits.

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#### **i INFO**

The indicator provides an indication that the fusion process has been carried out. However, please note that only the fusion unit itself indicates the actual progress of the process.

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### 6.1.3.2. Marking the fusion joint

Once the fusion welding has been completed, the actual fusion time should be compared with the nominal fusion time on the unit and noted on the pipe or fusion fitting using a marker pen.

Marking the pipe or fusion fitting in this way also ensures that no fusion joint is overlooked.

Once the fusion time has elapsed, the fusion unit can be switched off and the fusion cable disconnected from the fusion fitting.

### 6.1.3.3. Cooling time

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#### **i** INFO

Moving the fusion joint prematurely, i.e. before the cooling time CT has elapsed, will result in leaking joints.

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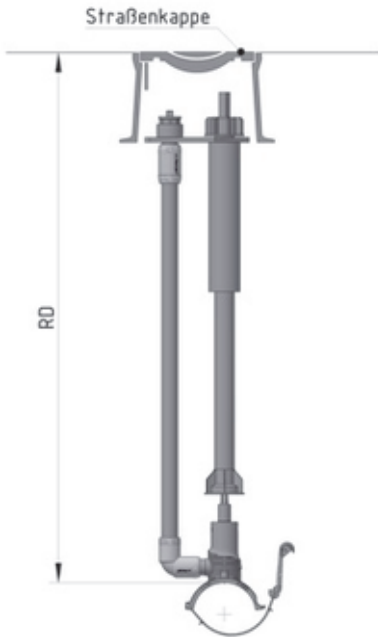
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#### **i** INFO

It is imperative that you observe the cooling time specified on the barcode.

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## 6.2. Fitting the purge stack unit



The preassembled DBS installation kit with base plate has to be joined to the (orange) venting pipe.

The venting pipe has to be shortened to the appropriate length (corresponding to the pipe cover depth).

Image 16:

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### **i** INFO

The standard length of the venting pipe supplied is 1 m. Other lengths are available on request.

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Image 17:

The (orange) venting pipe is joined to the base plate by electrofusion using a FRIALEN MB coupler d 32 or d 63 and a FRIALEN UAM transition adapter 32/1" or 63/2".

Perform all necessary preparatory work for electrofusion, such as cleaning and scraping, as described in section 6.1.1.

The FRIALEN MB coupler is to be installed in accordance with the installation instructions for FRIALEN fittings for domestic service and distribution lines up to d 225, available from the download area of the Aliaxis Deutschland GmbH website at [www.aliaxis.de/en/downloads](http://www.aliaxis.de/en/downloads)



Image 18:

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## **I** INFO

The DBS installation kit is continuously telescopic in its specified length range (RD = pipe cover depth) and is self-supporting in any extension position.

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Image 19:

The DBS installation kit is attached with the coupling sleeve to the actuation square end of the DAV RED SNAP pressure tapping valve via the KlickFix system, which ensures optimum pull-out protection, without the need for tools.



Image 20:

Slide the sleeve tube bell on the DBS installation kit over the tapping stack of the pressure tapping valve.

The sleeve tube bell connects to the stack of the DAV RED SNAP pressure tapping valve by means of a snap-on function with high axial strength. This prevents unintentional detachment of the installation kit.

An optional foam rubber ring integrated into the sleeve tube bell prevents the ingress of dirt.

### 6.3. Installing the base plate in the valve box



Image 21:

The base plate must be correctly positioned in the valve box.

Because the base plate is dimensioned to be as large as possible, it may be necessary to fit the concrete surround at an angle over the base plate.

Installation suitable for all DIN 3582 type valve boxes.



Image 22:

In the valve box, the body of the box must **always** rest against the side of the valve's installation kit.

This ensures that the greatest possible distance remains on the opposite side between the venting plug and the sidewall of the valve box.

### 6.4. Tapping

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## **i** INFO

It is essential to perform a leakage test before tapping the main pipe.

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Tapping with the DAV RED SNAP pressure tapping valve is carried out via the DBS installation kit using a suitable 14 mm key, e.g. operating key type E in accordance with DIN 3223.

Turn the drill evenly clockwise until it reaches the lower stop. The DAV RED SNAP pressure tapping valve is now connected and the purge stack is closed. To open the purge stack, the drill of the DAV RED SNAP pressure tapping valve must be turned back in the anticlockwise direction until the upper stop.

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## **i** INFO

After using the GAB purge stack, always close the DAV RED SNAP pressure tapping valve by turning the drill clockwise until the lower stop.

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## **i** INFO

When opening or closing the brass plug with vent hole (9) and assembling/ disassembling devices or adapters to the existing thread, the tightening torque must be intercepted by using suitable tools on the spanner flat of the FRIALEN transition adapter UAM (8) by "counter-holding".

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