

Type **S-CUT**

Spiral Wound Element

Spiralwickelmodul

Module à membrane spiralée



Quickstart

English Deutsch Français

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Operating Instructions 1804/01_EU-EN_00769961 / Original DE

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1 QUICKSTART GUIDE

The quickstart guide contains the most important information and notes regarding the use of the product. A detailed description can be found in the operating instructions for Type S-CUT.

 The operating instructions can be found on the Internet at: www.cut-membrane.com

Keep the quickstart guide in a location which is easily accessible to every user and make it available to every new owner of the device.

WARNING!

Important Safety Information.

Read Quickstart carefully and thoroughly. Study in particular the chapters entitled „[Authorized Use](#)“ and „[Basic Safety Instructions](#)“.

- ▶ Quickstart must be read and understood.

1.1 Product-specific Data Sheet

With each product, a product-specific data sheet is included containing information on the product. This information must be noted in addition to the operating instructions.

Should you no longer have the data sheet at your disposal, you can find it on the internet at: www.cut-membrane.com.

1.2 Definitions of Terms

In these instructions, the term „product“ always refers to the S-CUT spiral wound element.

1.3 Symbols

The following symbols are used in these instructions:

DANGER!

Warns of an immediate danger.

- ▶ Failure to observe the warning will result in a fatal or serious injury.

WARNING!

Warns of a potentially dangerous situation.

- ▶ Failure to observe the warning may result in serious injuries or death.


CAUTION!


Warns of a possible danger.

- ▶ Failure to observe this warning may result in a moderate or minor injury.

NOTE!

Warns of damage to property.

 Important tips and recommendations.

 Refers to information in these operating instructions or in other documentation.

- ▶ Designates instructions for risk prevention.
- Designates a procedure which you must carry out.

2 AUTHORIZED USE

Incorrect use of the S-CUT spiral wound element may be a hazard to people, nearby equipment and the environment.

- ▶ This product is designed to filter substances out of liquid media.
- ▶ The specification data, the operating conditions and conditions of use specified in the contract documents, operating instructions and product-specific data sheet must be observed during use.
- ▶ This product may only be used following detailed consultation with a representative of Bürkert Fluid Control Systems.
- ▶ Correct transportation, correct storage and installation and careful use and maintenance are essential for reliable and problem-free operation.
- ▶ Use the product only as intended.

2.1 Restrictions

If exporting the product, observe any restrictions in force.

3 BASIC SAFETY INSTRUCTIONS

These safety instructions do not make allowance for any

- contingencies and events which may arise during assembly, operation, and maintenance of the product.
- local safety regulations - the operator is responsible for observing these regulations, also in relation to the installation personnel.



DANGER!

Risk of poisoning, chemical burns, contamination from escaping medium.

- ▶ Check the product for leak-tightness prior to commencing use.
- ▶ When handling hazardous substances, always take appropriate precautionary measures and wear personal protective equipment in accordance with the requirements of the medium.
- ▶ Before disconnecting lines, the medium must be flushed from the entire system.

Risk of injury from high pressure in the system/product.

- ▶ Before working on the system or product, switch off the pressure and vent/drain the lines and product.

General hazardous situations:

To prevent injuries:

- ▶ Ensure that the system cannot be activated unintentionally.
- ▶ Installation and maintenance work may be carried out only by authorized technicians with the appropriate tools.
- ▶ After an interruption in the filtration process, ensure that the process is restarted in a controlled manner.
- ▶ The general rules of technology apply to application planning and operation of the product.

To prevent damage to the product:

- ▶ Protect the product from excessive exposure to UV radiation and from frost.
- ▶ Do not allow the product to come into contact with organic solvents. Remove contaminants with water or approved cleaning agents.
- ▶ Do not expose the product to heavy impacts.
- ▶ Do not back-flush the device.
- ▶ Always keep the interior of the product in a moist state.
- ▶ Do not exceed the maximum pressure drop.
- ▶ The pressure on the permeate side must never be higher than on the feed side.
- ▶ At the maximum permitted temperature, the module must not be operated at pressures higher than those specified in the product-specific data sheet.
- ▶ Do not make any external modifications to the product.
- ▶ Pressure surges, sudden increases in the solid content of the feed, heavy cross-flow drops and temperature shocks must absolutely be avoided.
- ▶ Only feed in the media types specified in Section [“5.4.1 Compatible Media”](#) to the media connections. The use of unnamed media is the responsibility of the user.
- ▶ Do not place a physical load on the module (e.g. by placing objects on it or standing on it).

4 GENERAL INFORMATION

4.1 Contact Address

Germany

Bürkert Fluid Control Systems
CUT Membrane Technology GmbH
Feldheider Str. 42
D-40699 Erkrath/Düsseldorf
Tel: +49 (0) 2104 - 176 32 0
Fax: +49 (0) 2104 - 176 32 22
E-Mail: info@cut-membrane.com

International

Contact addresses can be found in the internet at:

www.burkert.com

4.2 Warranty

The warranty is only valid if the type S-CUT spiral wound element is used correctly in accordance with the specified usage conditions.

4.3 Information on the Internet

The operating instructions and data sheets for the type S-CUT spiral wound element can be found on the Internet at: www.cut-membrane.com

5 TECHNICAL DATA

5.1 Product Data

Please refer to the product-specific data sheet for the product data.

5.2 Operating and Usage Conditions

NOTE!

- The operating conditions (cross-flow and trans-membrane pressure) are dependent on the specific filtration application and should be optimized by means of laboratory or pilot tests!
- The limit values for pressure and temperature must not be exceeded.
- The ambient temperature must not exceed the medium temperature and must not give rise to frost.

Please refer to the product-specific data sheet for further information on operating and usage conditions.

5.2.1 Compatible Media

Aqueous media (within certain pH and temperature ranges – please refer to product-specific data sheet for precise information).

When using media not specified in the product-specific data sheets, please consult a representative of Bürkert Fluid Control Systems beforehand. The use of unnamed media without such prior consultation is the responsibility of the user.

6 INSTALLATION AND PREPARATION FOR USE



DANGER!

Risk of poisoning, chemical burns, contamination from escaping medium.

- ▶ Check the product for leak-tightness prior to commencing use.
- ▶ When handling hazardous substances, always take appropriate precautionary measures and wear personal protective equipment in accordance with the requirements of the medium.
- ▶ Before disconnecting lines, the medium must be flushed from the entire system.

Risk of injury from high pressure in the system/product.

- ▶ Before working on the system or product, switch off the pressure and vent/drain the lines.

Risk of injury from improper operation.

Improper operation may result in injuries as well as damage to the product and the surrounding area.

- ▶ Before start-up, ensure that the operating personnel are familiar with and completely understand the contents of the operating instructions.
- ▶ Observe the safety instructions and intended use.
- ▶ Only adequately trained personnel may start up the equipment/ the product.



WARNING!

Risk of injury from improper installation.

- ▶ Installation may be carried out by authorized technicians only and with the appropriate tools.

Risk of injury from unintentional activation of the system and uncontrolled restart.

- ▶ Secure system against unintentional activation.
- ▶ Following installation, ensure a controlled restart.

6.1 Before Installation

- Only remove the module from its plastic packaging immediately before installing it in the pressurized pipe. Once removed from the packaging, the module must be treated with particular care.
- Examine the module for any external physical damage.
- Clean the system and pipelines to ensure that soiling and oily substances cannot be flushed into the module from the system.

New modules are supplied dry or filled with a preservative fluid. If the module is filled with preservative fluid, please drain the module first immediately before installing it.

Dispose of the preservative fluid in accordance with the applicable waste disposal and environmental protection regulations.

6.2 Installation of the Modules in the Pressurized Pipe

If necessary, a very small amount of glycerine may be applied to the O-rings and lip seal as a lubricant for the installation of the module in the pressurized pipe.



Only use other lubricants following prior consultation with a representative of Bürkert Fluid Control Systems.

Modules should always be pushed into or pulled out of pressurized pipes **in the direction of the feed flow**. This prevents the lip seal from rolling up.

6.2.1 Installation of a Single Module

- Push the module into the pressurized pipe in the direction of feed flow (the direction of the module itself is not relevant).
- The ATD is operated with a lip seal on the feed end (inflow end).
- Pull the lip seal into the groove of the ATD so that the U-shaped cross section of the lip seal is counter to the flow during operation.
 - Place the O-rings on the permeate adapter.
 - Place the ATD on the guide element of the permeate adapter so that the ATD with its plane surface is firmly on the cross section of the module when installed.
 - Place the sealing ring for the end cap onto the inflow end of the pressurized pipe.

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- Slide the permeate adapter with the welded-on end cap into the permeate pipe by lightly pushing and turning it.
- Place the end cap onto the pressurized pipe, ensuring in the process that the sealing ring is correctly seated.
- Tighten the clamping ring.
- Proceed in the same fashion on the outflow end. However, install the ATD without the lip seal and attach the dummy adapter with the end cap instead of the permeate adapter.

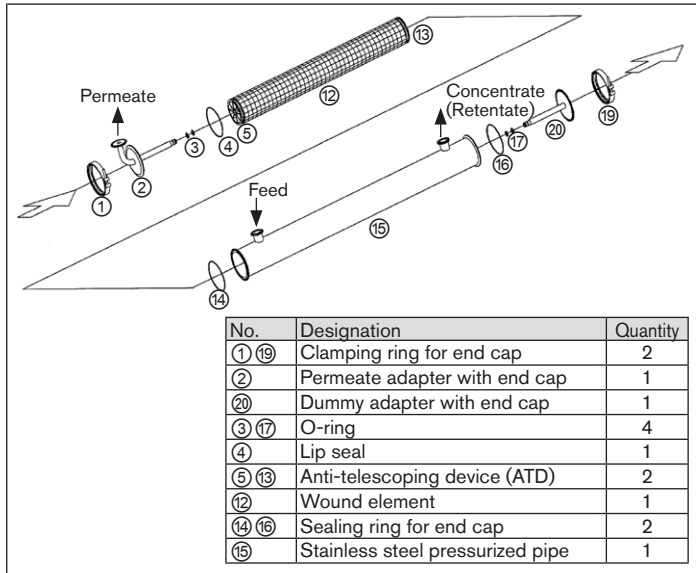


Fig. 1: Installation of Individual Modules in the Pressurized Pipe

6.2.2 Installation of Multiple Modules

- Please note which module (serial number) is installed in which pipe.
- Push the (first) module two-thirds in the direction of feed flow into the pressurized pipe (the direction of the module itself is not relevant).
- Place the O-rings and ATDs on the inter-permeate connector. The plane surfaces of the ATDs must be firmly on the cross section of the module when installed.
- To prevent a leakage on the ATD, which is located on the inflow end of the module, apply a lip seal.
- Feed the inter-permeate connector into the permeate pipe by lightly pushing and turning it.
- Note the serial number and position of the second module.
- Push the second module onto the inter-permeate connector until both modules are flush with the ATDs.
- Carefully push the module bundle into the pressurized pipe until the second module is protruding by one third from the pipe.
- Repeat the procedure until all modules have been installed.
- Insert sealing ring for the end caps on both ends of the pressurized pipe.
- Slide both permeate adapters with the O-rings and ATDs applied (inflow-end ATD with lip seal!) into the permeate pipe by lightly pushing and turning them.
- Place the end caps onto the pressurized pipe, ensuring in the process that the sealing rings are correctly seated.
- Tighten the clamping rings.

NOTE!

- Errors in the installation of the modules may result in leaks and a deterioration in the quality of the permeate.

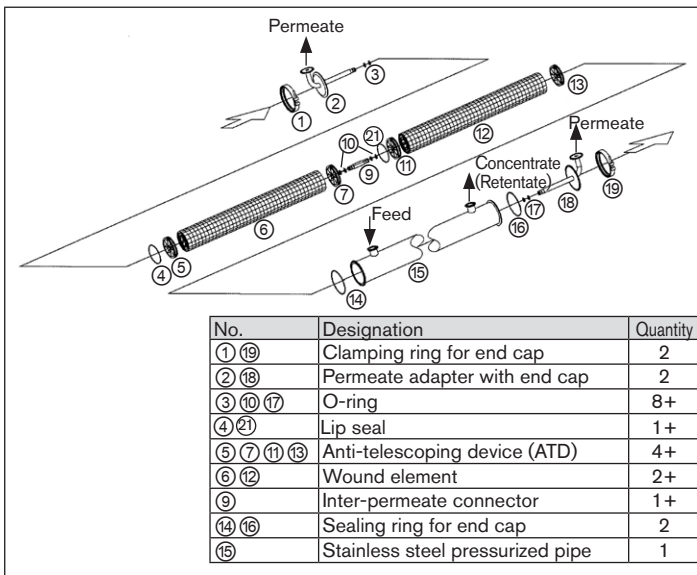


Fig. 2: Installing Multiple Modules in a Pressurized Pipe

6.3 Prior to Preparation for Use

6.3.1 Test Run

During the test run, the rest of the preservative fluid (often glycerine or sodium metabisulfite) is flushed out of the module.



CAUTION!

Mildly toxic preservative fluid.

- ▶ Avoid contact with eyes and skin.



The water used for flushing purposes must satisfy certain purity requirements. These are product-specific and must be inquired about.

- Check connections for leakage.
- Perform test run with water (approx. 10 minutes).
- Ensure that the connections do not exhibit any leaks. If there are leaks, cease operation and take appropriate measures to eliminate them. If the seals are correctly seated, it is generally sufficient to tighten the brackets by hand.
- Deaerate the system.
- Determine and document the water equivalent.

In the case of applications with very strict product purity requirements, it is strongly recommended that the modules also be cleaned following flushing before beginning filtration of the feed solution.



Any concentrate or permeate generated during the test run is to be disposed of. Please observe any applicable national environmental regulations.

During the deaeration process (approx. 2 minutes), the system should be operated at very low pressure in order to prevent pressure surges.

6.4 Filtration

The module must not be operated in Dead End mode.

→ Ensure that the permeate can flow out without the aid of pressure (open permeate valve/s). The permeate pressure must not exceed 0.2 bar!

Note the geodetic head when establishing the permeate pipes.

→ Carefully and slowly open the feed valve (increase the flow on the module for around 3 minutes under low pressure to avoid pressure surges when aerating the system).



The limit values for pressure and cross-flow rate must not be exceeded.

7 CLEANING AND MAINTENANCE

Fouling of the membrane surface may result in a decline in the flow rate of the permeate. In most cases, the coatings can be removed from the membrane and the permeate flow rate can be for the most part restored.

Use authorized membrane cleaning agents only. Please contact our technical service before using cleaning agents which have not been authorized for the cleaning of membranes.

8 DISASSEMBLY



DANGER!

Risk of poisoning, chemical burns, contamination from escaping medium.

- ▶ When handling hazardous substances, always take appropriate precautionary measures and wear personal protective equipment in accordance with the requirements of the medium.
- ▶ Before disconnecting lines, the medium must be flushed from the entire system.

Risk of injury from high pressure in the system/product.

- ▶ Before working on the system or product, switch off the pressure and vent/drain the lines.

Risk of injury from improper disassembly.

- ▶ Only adequately trained personnel may remove the product.

→ Completely drain the system.

→ Flush out the rest of the feed solution with water until the concentrate is clear.

→ Flush the entire system for 20 minutes using warm water. Any concentrate or permeate generated is to be disposed of.

→ Completely drain the system.

→ Disconnect the connections.

→ Remove the product.



Please consult a representative of Bürkert Fluid Control Systems if you have any questions.

9 NON-USE/MODULE STORAGE

Used membranes must be kept moist at all times. To inhibit bacterial growth during periods of non-use or module storage, moist membranes should be rinsed using suitable disinfectants.

We recommend storing the module inside the system.

9.1 Short-term Storage

Non-use up to 24 hours

→ No measures required.

Non-use between 24 hours and 7 days

- Carefully rinse the module with a suitable disinfectant.
- Perform a filtration once a day using clean water, permeate or cleaning agent.

9.2 Long-term Storage

Non-use between 7 day and 12 months

- Clean the module prior to disinfection.
- Fill pressurized pipe with preservative solution
1.0% sodium bisulfite (NaHSO_3) or
0.5% formaldehyde (CH_2O).
Causing a brief and slight cross-flow through the modules will ensure that the permeate chamber is completely filled with preservative solution.
- Leave the solution in the module and replace it every 14 days.

Non-use Lasting Several Months/Years

- Clean the module prior to disinfection.
- Fill the entire system with 500 ppm benzoic acid, leave the fluid in the module.

10 PACKAGING AND TRANSPORT

NOTE!

Transport damage.

Inadequately protected products may be damaged during transportation.

- ▶ Protect the product against light, moisture and dirt in shock-resistant packaging during transportation.
- ▶ Prevent the temperature from exceeding or dropping below the permitted storage temperature.
- ▶ Storage temperature 5 ... 40 °C.

Damage to the environment caused by parts of the product contaminated with media.

- ▶ Dispose of the product and packaging in an environmentally friendly manner.
- ▶ Observe applicable waste disposal and environmental regulations.

www.burkert.com