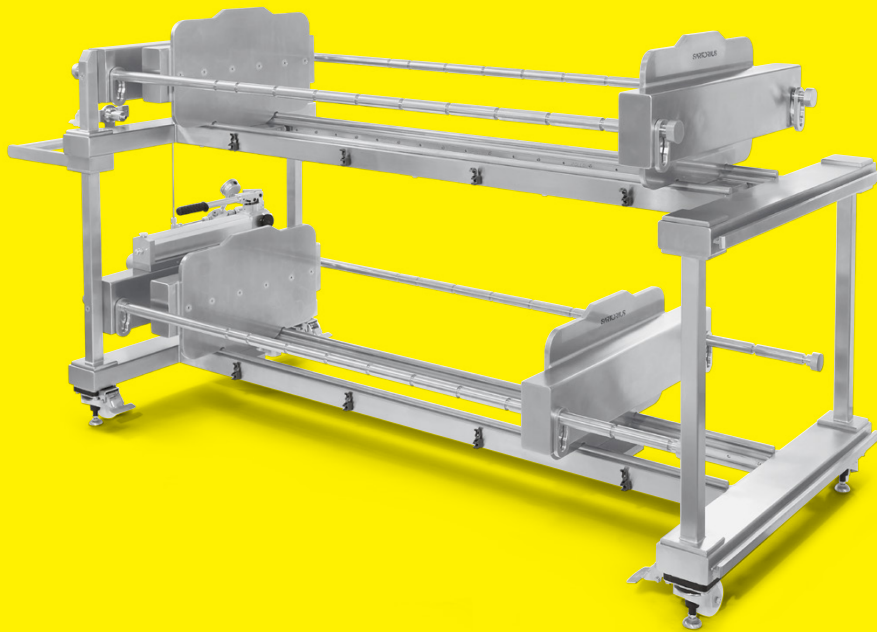


Operating Instructions
Original Operating Instructions

Process Filter Holder | Double Process Filter Holder

2ZGL--0006 | 2ZGL--0007

Cassette Holder for Sartoclear® Depth Filter | Sartobind® Membrane Adsorbers



85037-553-20



SARTORIUS

Contents

1	About this Document	5
1.1	Scope	5
1.2	Accompanying Documents	5
1.3	Target Groups	5
1.4	Symbols Used	6
1.4.1	Warnings	6
1.4.2	Other Symbols	6
1.4.3	Figures in these Instructions	6
2	Safety Instructions	7
2.1	Intended Use	7
2.2	Personnel Qualification	7
2.3	Significance of these Instructions	8
2.4	Flawlessness of the Device	8
2.5	Safety Equipment	8
2.6	Accessories, Consumables, and Spare Parts	8
2.7	Conduct in an Emergency	9
2.8	Personal Protective Equipment	9
2.9	Hydraulic Energy	9
2.10	Moving the Device	10
2.11	Handling of Heavy Components	10
2.12	Defective Tubing Lines and Screw Connections	10
2.13	Rolling Away of the Device	10
2.14	Domed Feet on the Device	10
3	Device Description	11
3.1	Device Overview	11
3.2	Hydraulic Pump with Pressure Gage	12
3.3	Overview with Installed Cassettes	13
3.4	Manifold Plates	14
3.5	Clamping Plate	14
3.6	Pressure Plate	14
3.7	Sartoclear® Baffle Plate	14
3.8	Safety Equipment	14
3.8.1	Domed Feet	14
4	Installation	15
4.1	Scope of Delivery	15
4.2	Prerequisites for Assembly	15
4.3	Unpacking the Device	15
4.4	Securing the Device at the Place of Installation	16
4.5	Draw in Domed Feet for Moving the Device	16
4.6	Starting up the Hydraulic Pump	16

5	Operation	17
5.1	Note on the Figures	17
5.2	Moving Holding Clamps	17
5.3	Operating the Hydraulic Pump	18
5.3.1	Releasing the Hydraulic Pump	18
5.3.2	Releasing the Hydraulic Cylinder	18
5.3.3	Checking the Tensioning Pressure	19
5.4	Inserting and Tensioning the Cassettes	19
5.4.1	Adjusting the Pressure Plate and Clamping Plate	19
5.4.2	Inserting the Cassettes	20
5.4.3	Observing the Permissible Stroke of the Hydraulic Cylinder	22
5.4.4	Tensioning the Cassettes	23
5.5	Performing the Filtration or Adsorption Process	24
5.6	Removing the Cassettes	24
6	Cleaning	25
7	Malfunctions	26
8	Transportation	27
9	Storage and Shipping	28
9.1	Storage	28
9.2	Storage Instructions	28
9.3	Shipping-related Tasks Returns	28
10	Disposal	29
10.1	Information on Decontamination	29
10.2	Decommissioning the Device	29
10.3	Disposing of the Device and Parts	29
10.3.1	Information on Disposal	29
10.3.2	Disposal	30
11	Technical Data	31
11.1	Dimensions and Weight	31
11.2	Hydraulic Cylinder Dimensions	31
11.3	Accommodation of Cassettes	31
11.4	Ambient Conditions During Operation	32
11.5	Design and Lifespan	32
12	Accessories	33
13	Consumables	33
14	Sartorius Service	33
15	Conformity	34

1 About this Document

1.1 Scope

The manual applies to the device in the following versions:

Device	Type
Process Filter Holder	2ZGL--0006
Double Process Filter Holder	2ZGL--0007

1.2 Accompanying Documents

This manual contains the instructions for operating the device with the standard equipment intended for this purpose.

- ▶ In addition to this manual, observe the following documents:
 - Operating Instructions for the Sartoclear® Depth Filter cassettes used
 - Operating Instructions for the Sartobind® adsorption cassettes used, e.g., Sartobind® Q and S, Sartobind STIC® PA, Sartobind® Phenyl
 - Hydraulic pump Operating Instructions
 - Instructions for the filtration or adsorption system with which the device is operated

1.3 Target Groups

These instructions are designed for the following target groups. The target groups must possess the knowledge listed.

Target Group	Knowledge responsibilities
User	<p>The user is familiar with the operation of the device and the associated work processes. The user knows the dangers that can occur when working with the device and can avoid these dangers.</p> <p>The user has been trained in the operation of the device.</p> <p>Training takes place within the scope of startup and is carried out by the operating engineer laboratory manager or the operator of the device.</p>
Operator	<p>The operator of the device is responsible for compliance with safety requirements and workplace safety regulations.</p> <p>The operator must ensure that all persons who work with the device have access to the relevant information and have been instructed in work with the device.</p>

1.4 Symbols Used

1.4.1 Warnings

WARNING

Denotes a danger with risk that death or (severe) injury may result if it is not avoided.

CAUTION

Denotes a danger with risk that moderate or minor injury may result if it is not avoided.

NOTICE

Denotes a danger that can result in property damage if the risk is not avoided.

1.4.2 Other Symbols

- ▶ Required action: Describes tasks that need to be carried out in the order listed.
- ▷ Result: Describes the result of the activities carried out.

1.4.3 Figures in these Instructions

Depending on the product configuration, the figures depicting the product and operating display may differ slightly from the supplied product. The variants shown in these instructions are examples.

2 Safety Instructions

2.1 Intended Use

The device is a hydraulic tensioning device and is intended to tension cassettes that are used in filtration and adsorption processes of membrane chromatography. Sartoclear® filter cassettes must be used for filtration; Sartobind® adsorption cassettes must be used for adsorption chromatography. The cassettes **must not** be mixed.

The device is **not fitted with any** connections for unfiltered or filtered solutions. Manifold plates must be used for filtration.

Only approved cassettes and manifold plates may be used (approved cassettes and manifold plates, see Chapter “13 Consumables”, page 33). Some of the cassettes and manifold plates are single-use products and must be disposed of after one use. Some cassettes may be reused; their reusability is specified in the instructions for the cassette.

The required tensioning pressure must only be generated using the hydraulic pumps specified by Sartorius. The use of other hydraulic pumps poses a risk to operational safety and the safety of the operator and reduces the quality of the end product.

Do not install unauthorized objects in the device. **Do not** use this device in potentially explosive environments. The device may only be used indoors.

Only use the device with the equipment and under the operating conditions described in the Technical Data. **Do not** modify the device or make any technical changes.

Any further use beyond this is considered **improper** and is forbidden. These instructions are part of the device. The device is intended exclusively for use in accordance with these instructions.

Foreseeable Misuse

The use of the device is only safe when it is used properly. The following applications, for example, are **not** permitted:

- Use of the device as a transport aid
- Use of the device as a climbing aid

2.2 Personnel Qualification

All persons working on the device must possess the necessary knowledge (for a description, see Chapter “1.3 Target Groups”, page 5).

The activities described are addressed to the operator. If individual actions must be carried out by other target groups or by Sartorius Service personnel, this will be indicated.

2.3 Significance of these Instructions

Failure to follow the instructions in this manual can have serious consequences, e.g. exposure of individuals to electrical, mechanical or chemical hazards.

- ▶ Before working with the device: Read the instructions carefully and completely.
- ▶ If the instructions are lost: Request a replacement or download the latest instructions from our website.
- ▶ The information in these instructions must be accessible to users or the target groups named.

2.4 Flawlessness of the Device

Damaged equipment or worn-out parts can cause malfunctions or lead to hard-to-detect hazards.

- ▶ Only operate the device when it is safe and in perfect working order.
- ▶ Have any malfunctions or damage repaired immediately by the Sartorius Service.

2.5 Safety Equipment

The safety equipment on the device protects persons who work with the device against the hazards and harms associated with it, e.g. electrical current.

- ▶ The device's safety equipment must not be dismantled or modified (Safety Equipment, see Chapter 3.8, page 14).

2.6 Accessories, Consumables, and Spare Parts

The use of unsuitable accessories, consumables, and spare parts can be hazardous and have the following consequences:

- Damage to the device
- Malfunction of the device
- Device failure

- ▶ Only use Sartorius accessories, consumables, and spare parts. Information on operational quality is available upon request from Sartorius.
- ▶ Only use accessories, consumables, and spare parts that are in proper working order.

2.7 Conduct in an Emergency

Malfunctions may result in injury or property damage. If there is immediate danger of personal injury or damage to the device, take the device out of operation immediately:

- ▶ Turn off the higher-level control.
- ▶ Have malfunctions repaired immediately by the Sartorius Service.

2.8 Personal Protective Equipment

Personal protective equipment protects against risks arising from the equipment and the material being processed.

Protective equipment designation	Explanation examples
Protective work clothing	Tight-fitting work clothing with low tear resistance, tight sleeves, and without any projecting parts. Protects against getting caught in moving parts.
Head covering	Protects hair from being pulled into moving parts.
Safety gloves	Protect against chemicals, heat, and injuries.
Safety glasses	Protect against substances escaping under high pressure, and liquid spray and splashes.
Safety boots non-slip shoes	Protect against injuries to the feet caused by mechanical effects. Protect against slipping on wet surfaces.

- ▶ Wear appropriate personal protective equipment.
- ▶ Also follow any instructions posted in the work area pertaining to personal protective equipment.

2.9 Hydraulic Energy

Releasing and tensioning the cassettes using the hydraulic cylinder present a risk of crushing.

- ▶ Never reach inside the hydraulic area or grab moving parts.
- ▶ Do **not touch** moving parts when releasing and tensioning the cassettes.
- ▶ Before performing any work on the hydraulic system: Depressurize hydraulic system.
- ▶ Before tensioning or removing the cassettes: Release the hydraulic cylinder.

2.10 Moving the Device

The device has moving components and a high intrinsic weight. When moving the device, there is a risk of crushing.

- ▶ Use the handle to move the device. Do **not** touch the device on the pull rods or pressure plates.
- ▶ Ensure that **no** individuals get in its path.

2.11 Handling of Heavy Components

The device has a high intrinsic weight. When lifting the device, there is a risk of injury.

- ▶ Lift the device only with lifting accessories.
- ▶ When lifting the cassettes and manifold plates, get assistance from other persons.
- ▶ Never lift the device on the pull rods or pressure plates. Only ever lift the device on the frame where the guide rollers are mounted.
- ▶ Wear personal protective equipment.

2.12 Defective Tubing Lines and Screw Connections

Defective tubing lines and screw connections can result in uncontrollable spillage of media. Escaping media can result in dangers like scalding, chemical burns etc.

- ▶ Check whether the hoses, tubes, and screw connections on the device are damaged.

2.13 Rolling Away of the Device

Any uncontrolled rolling away of the device can lead to injuries.

- ▶ Only place the device on level surfaces.
- ▶ Secure the device by setting the domed feet.
- ▶ Wear personal protective equipment.

2.14 Domed Feet on the Device

Improper operation of the domed feet can result in injuries.

- ▶ Only operate the domed feet with your foot.
- ▶ Wear personal protective equipment.

3 Device Description

3.1 Device Overview

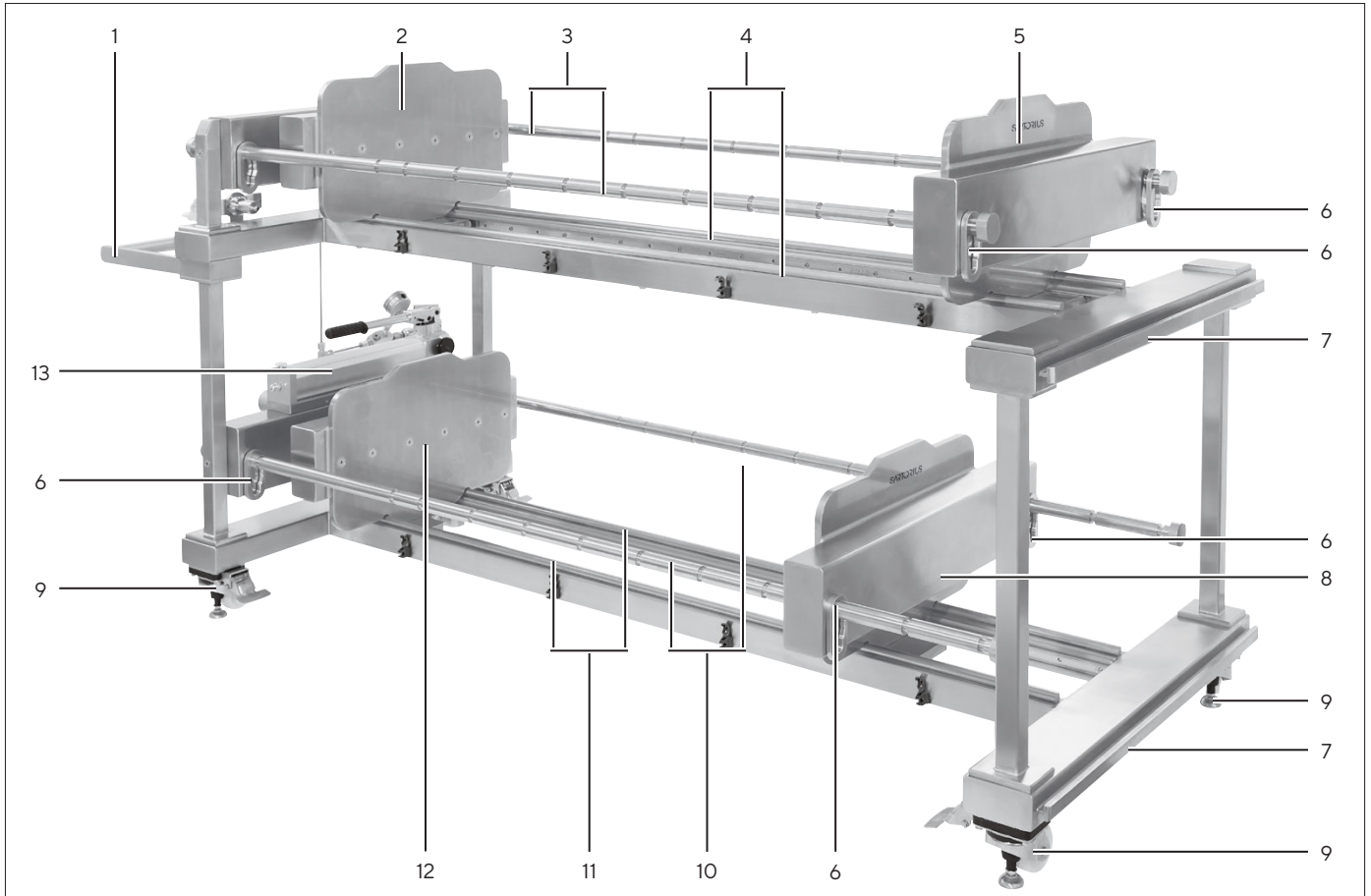


Fig. 1: Double Process Filter Holder (example)

No.	Designation	Description
1	Handle	
2	Pressure plate, top	Hydraulically adjustable.
3	Pull rods, top	
4	Guide rods, top	
5	Clamping plate, top	Manually adjustable.
6	Holding clamp	Fixes the base and clamping plates to the pull rods.
7	System rail	Accommodates accessories, e.g., holders for sterile filters or tubing holder.
8	Clamping plate, bottom	Manually adjustable.
9	Guide rollers	
10	Pull rods, bottom	
11	Guide rods, bottom	
12	Pressure plate, bottom	Hydraulically adjustable.
13	Hydraulic pump with pressure gage	

3.2 Hydraulic Pump with Pressure Gage

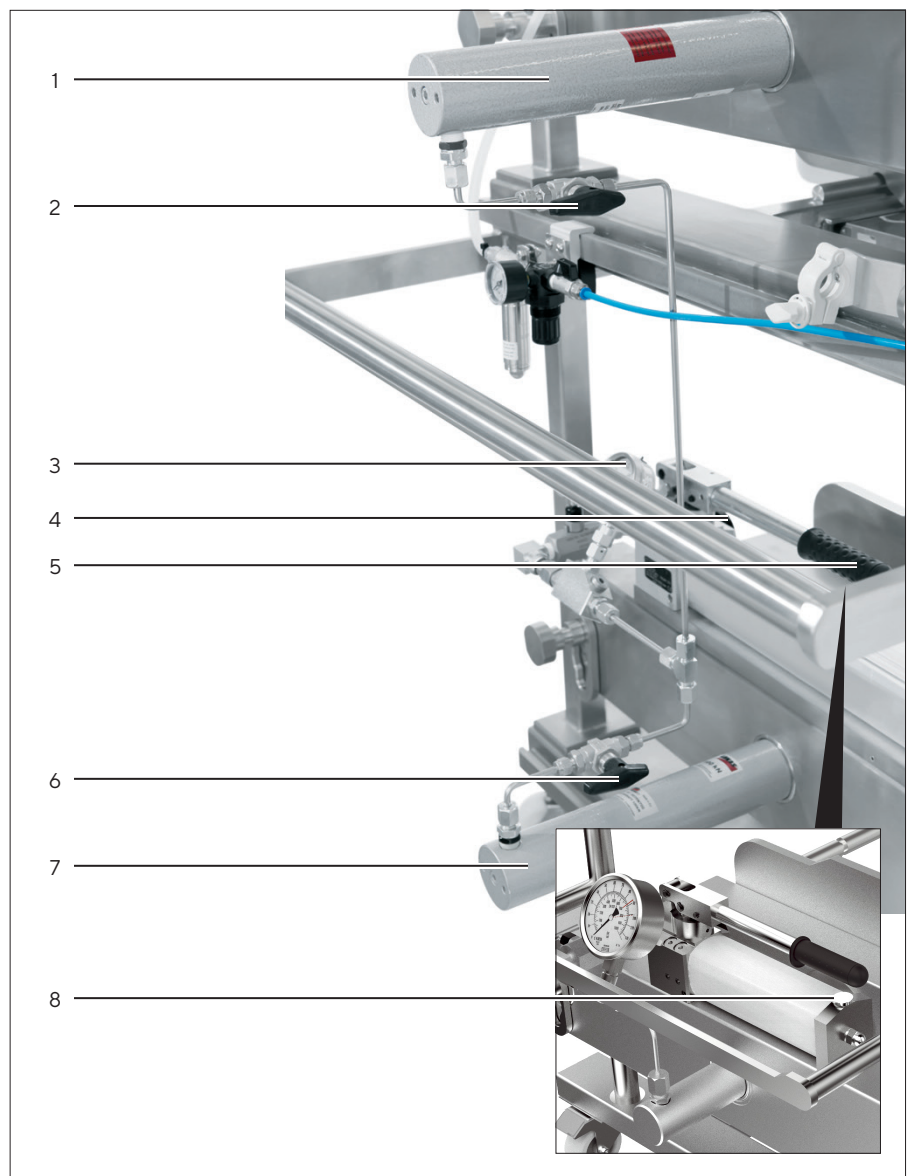


Fig. 2: Hydraulic system at the Double Process Filter Holder (example)

No.	Designation	Description
1	Hydraulic cylinder, top	For Double Process Filter Holder only
2	Needle valve, top	For Double Process Filter Holder only
3	Pressure gage	
4	Release valve of hydraulic pump	
5	Pump lever	
6	Needle valve, bottom	
7	Hydraulic cylinder, bottom	
8	Ventilation screw	Opens and closes the vent valve on the hydraulic pump.

3.3 Overview with Installed Cassettes

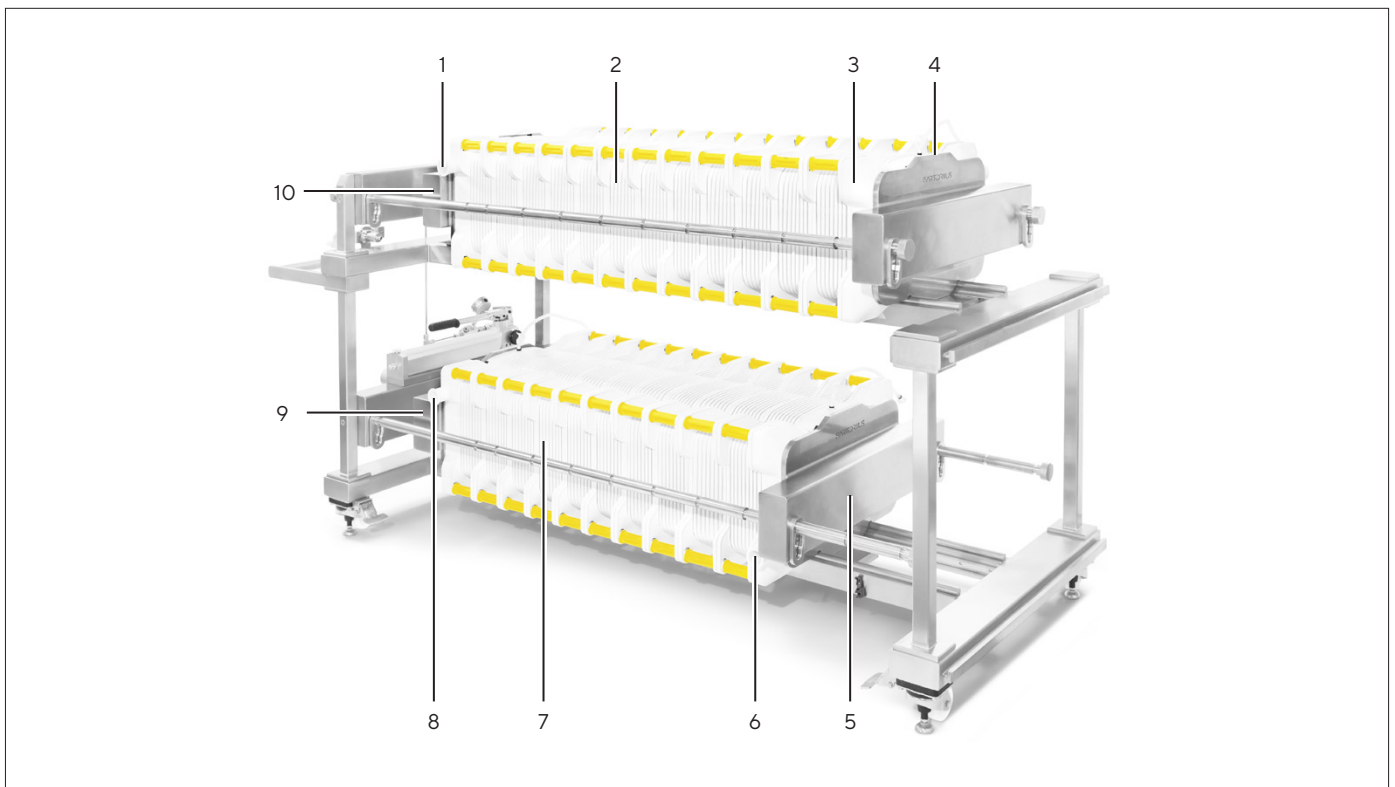


Fig.3: Double Process Filter Holder with installed Sartoclear® filter cassette (example)

No.	Designation	Description
1	Manifold plate for inlet, top	Draws the liquid in. For filtration: Unfiltered solution
2	Cassette, top	Filter cassette or adsorption cassette
3	Manifold plate for outlet, top	Purges the liquid. For filtration: Filtered solution
4	Clamping plate, top	
5	Clamping plate, bottom	
6	Manifold plate for outlet, bottom	Purges the liquid. For filtration: Filtered solution
7	Cassette, bottom	Filter cassette or adsorption cassette
8	Manifold plate for inlet, bottom	Draws the liquid in. For filtration: Unfiltered solution
9	Pressure plate, bottom	
10	Pressure plate, top	

3.4 Manifold Plates

The manifold plates rest against the pressure and clamping plates. The cassettes are seated between the manifold plates. The filtration and adsorption processes **cannot** be performed without manifold plates.

3.5 Clamping Plate

The clamping plate is fastened on to the pull rods by the holding clamps. The position of the clamping plate depends on the number of installed cassettes.

3.6 Pressure Plate

By moving out the hydraulic cylinder, the pressure plate is pressed against the inserted cassettes and the clamping plate.

3.7 Sartoclear® Baffle Plate

The Sartoclear® baffle plate is intended to install pressure sensors.

3.8 Safety Equipment

3.8.1 Domed Feet

The domed feet are designed to secure the device and prevent it from rolling away.

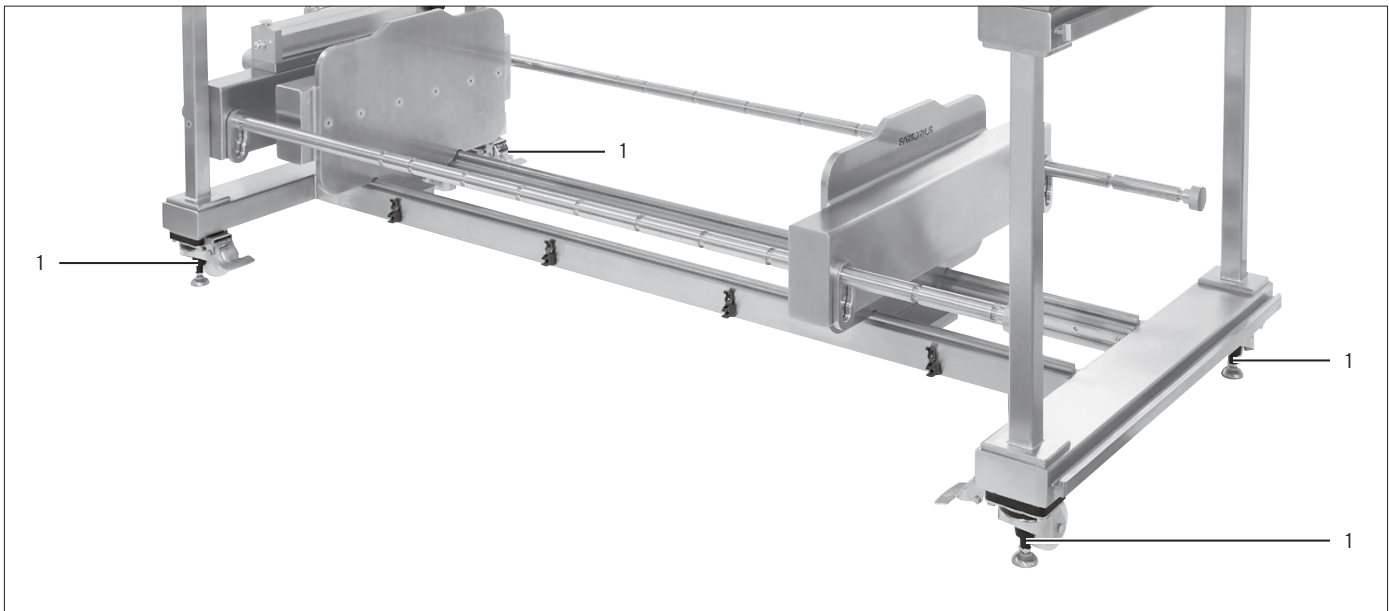


Fig. 4: Domed feet

No.	Designation
1	Domed foot

4 Installation

4.1 Scope of Delivery

Item	Quantity
Process Filter Holder Double Process Filter Holder	1
Operating Instructions	1

4.2 Prerequisites for Assembly

Procedure

- Ensure that the following conditions are met at the workplace:

Condition	Features
Footprint	<ul style="list-style-type: none"> – Even surface – Sufficient space for the device and peripheral devices (see Chapter 11.1, page 31 for dimensions). – Sufficient load bearing for the device and peripheral devices, even when filled (see Chapter 11.1, page 31 for device weight).
Access to parts relevant to operation	Convenient and safe
Resistance of work surfaces	Resistant against the media used, such as acids
Cleaning and disinfecting work surfaces	Easy to clean, can be disinfected if contaminated
Ambient conditions	Suitability tested according to Chapter 11.4, page 32.

4.3 Unpacking the Device

Procedure

- Remove all packaging parts.
- Remove the transport lock with which the device is fixed in place.

4.4 Securing the Device at the Place of Installation

The device must be secured at the place of installation. To do so, move out the domed feet.

Procedure

- ▶ **⚠ CAUTION** Danger of crushing when operating the domed feet!
Wear personal protective equipment.
- ▶ Press down on the lever with your foot.
- ▶ The device is secured against moving.

4.5 Draw in Domed Feet for Moving the Device

To move the device, the domed feet must be drawn in.

Procedure

- ▶ **⚠ CAUTION** Danger of crushing when operating the domed feet!
Wear personal protective equipment.
- ▶ Lift the lever up with the foot.
- ▶ The device is now mobile.

4.6 Starting up the Hydraulic Pump



- ▶ When the hydraulic pump is used for the first time, open the ventilation screw (1) by one turn.
- ▶ This allows aeration and venting of the hydraulic tank.

Once the work is completed or at the latest before transport, screw the ventilation screw (1) back on tightly.

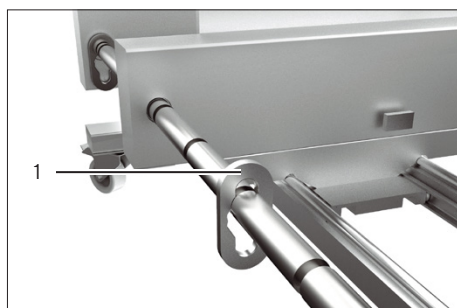
5 Operation

5.1 Note on the Figures

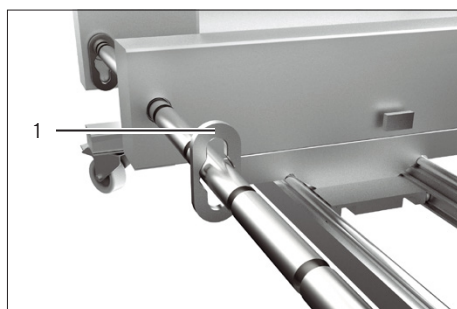
The figures on the following pages partially present the Sartorius Pilot Filter Holder. The procedure is identical to the Process | Double Process Filter Holder.

5.2 Moving Holding Clamps

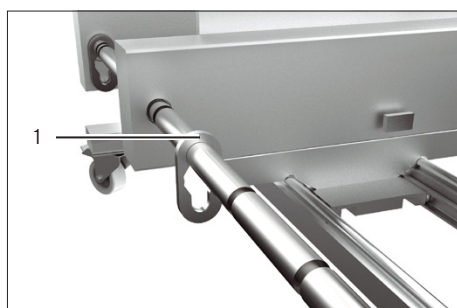
Procedure



- ▶ Pull the holding clamp (1) halfway up.



- ▶ Move the holding clamp (1) along the pull rod to the desired position.



- ▶ Allow the holding clamp (1) to fall to the desired depth.
- ▷ The holding clamp is in the new position.

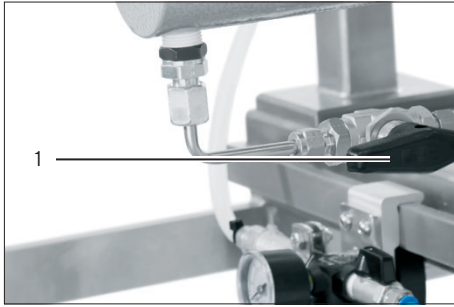
5.3 Operating the Hydraulic Pump

5.3.1 Releasing the Hydraulic Pump

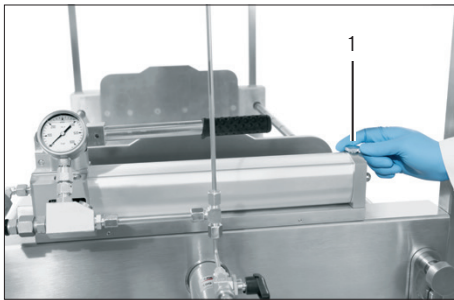
Prerequisites

- The hydraulic pump is operational (see Chapter "4.6 Starting up the Hydraulic Pump", page 16).

Procedure



- ▶ Turn the two needle valves (1) clockwise. This closes the needle valves of the hydraulic cylinder.
- ▶ **NOTICE** Danger of damage to the hydraulic pump due to retained pressure in the hydraulic piston of the hydraulic pump! Release the hydraulic pump after the cassettes are compressed.



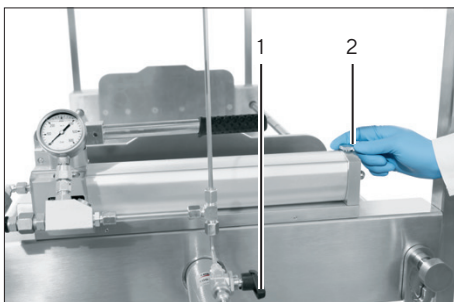
- ▶ Open the vent valve on the hydraulic pump. Turn the ventilation screw (1) counterclockwise.
- ▷ This builds up pressure in the hydraulic piston.
- ▶ **⚠ CAUTION** Danger of injury due to upright pump lever! Push the pump lever down into its original position.

5.3.2 Releasing the Hydraulic Cylinder

Prerequisites

- The cassettes have been depressurized.
- The cassettes have been drained of any residue.

Procedure



- ▶ If leakage of liquid residue is likely: Place the collecting tank under the filter holder.
- ▶ Open the vent valve on the hydraulic pump. Turn the ventilation screw (2) counterclockwise.
- ▶ **⚠ CAUTION** Danger of crushing from the moving hydraulic cylinder! Open the needle valve (1) on the hydraulic cylinder. To do so, turn the needle valve clockwise.
- ▷ The hydraulic cylinder releases and draws back.
- ▶ Wait until the pressure gage display reads zero and the hydraulic cylinder is fully loosened.
- ▶ Close the needle valve. To do so, turn the needle valve clockwise.

5.3.3 Checking the Tensioning Pressure

The tensioning pressure applied during compression may reduce during operation, with the result that the cassettes are **not** sufficiently compressed. Reduced tensioning pressure may negatively impact on the performance of the cassettes.

Procedure

- ▶ During the filtration or adsorption process, check regularly whether the required tensioning pressure is being achieved (see instructions for the cassette). To do so, observe the pressure gage display.
 - ▶ If required: Re-adjust the cassettes (see Chapter "5.4.4 Tensioning the Cassettes", page 23).

5.4 Inserting and Tensioning the Cassettes

5.4.1 Adjusting the Pressure Plate and Clamping Plate

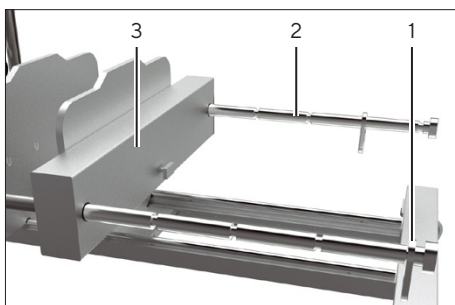
Depending on the number of cassettes to be inserted, the distances between the pressure plate and clamping plate have to be adjusted in relation to each other.

Prerequisites

- The hydraulic cylinder is released (see Chapter "5.3.2 Releasing the Hydraulic Cylinder", page 18).
- There are **no** used cassettes in the device.

Procedure

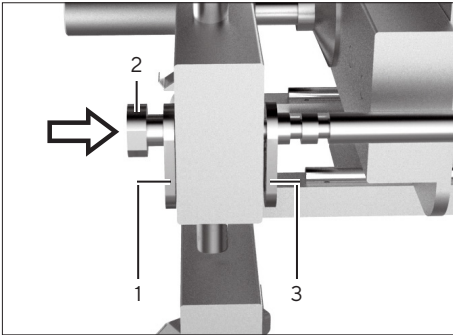
- ▶ **NOTICE** Danger of damage to the hydraulic cylinder! **Never** pressurize the hydraulic cylinder without inserted cassettes. Since the hydraulic cylinder only has a limited stroke, the cassettes must be positioned very tightly together.
- ▶ Move the pressure plate and clamping plate to the outermost stop. To do so, proceed as follows:
 - ▶ Move the holding clamps on the clamping plate to the pull rod's outermost position (1) (see Chapter "5.2 Moving Holding Clamps", page 17).
 - ▶ Repeat the process with the second pull rod (2).
 - ▶ Push the clamping plate (3) on to the holding clamps.



Moving the Pull Rods to the Outermost Stop

Procedure

- ▶ Move the outer holding clamps (1) on the two pull rods to the respective left-hand position (see Chapter 5.2, page 17).
- ▶ Move both pull rods (2) as far as the stop on the right at the same time.
- ▶ Move the inner holding clamps on the two pull rods to the respective left-hand position (3).



5.4.2 Inserting the Cassettes

NOTICE

Danger of damage to the cassette!

Improper handling of the cassette during installation may damage the cassette.

- ▶ Hold the cassettes by the handles. Sartobind® adsorption cassettes and depth filter cassettes (Sartoclear® Depth Filter) can also be held at the sides.
- ▶ Only place the cassettes on clean surfaces.
- ▶ **Do not apply** any pressure to the cassettes. **Do not** allow the cassettes to fall.
- ▶ Take great care when inserting the cassettes.

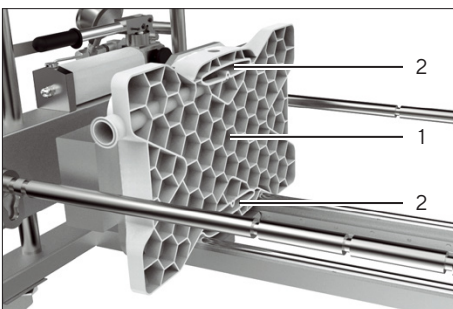
NOTICE

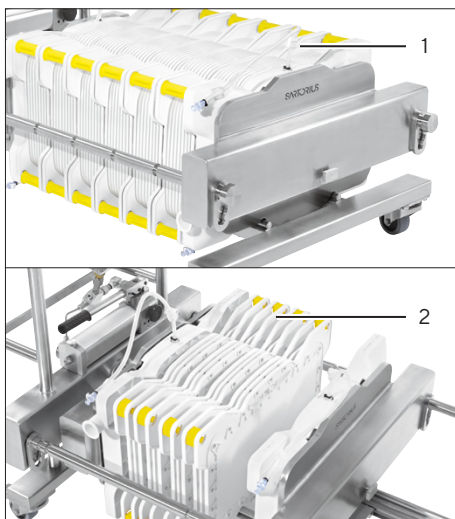
Danger of damage to the filtration or adsorption system!

- ▶ The filtration or adsorption system must **not** be operated without a cassette.

Procedure

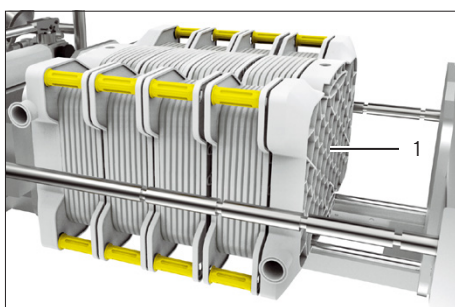
- ▶ **NOTICE** Danger of damage to the filtration or adsorption system! If the manifold plate is aligned incorrectly, the flow rate is disturbed and this may cause liquid to leak or cause damage to the manifold plate and cassettes.
- ▶ Place the manifold plates (1) for the fluid inlet according to their labeling onto the bottom guide rods (for labeling see the instructions for the manifold plate).
- ▶ The channels (2) must be aligned in the direction of the cassettes.
- ▶ Push the manifold plate onto the pressure plate.



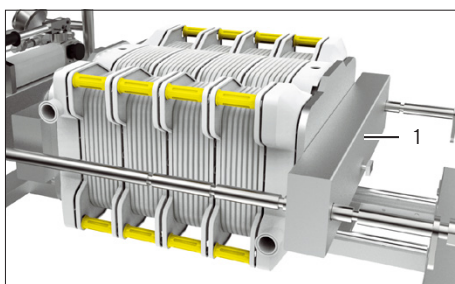


- ▶ Insert the desired number of Sartoclear® filter cassettes (1) or Sartobind® adsorption cassettes (2) one after the other, according to their labeling, on the bottom guide rods. Please observe the following notes:
 - ▶ Pay attention to the alignment (up | down) of the cassettes (see the instructions for the cassettes used).
 - ▶ Do **not** exceed the maximum number of cassettes to be tensioned (for number, see Chapter "11.3 Accommodation of Cassettes", page 31).

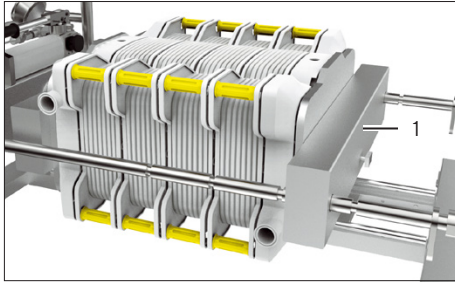
- ▶ If a Sartoclear® baffle plate is to be used, the Sartoclear® baffle plate should be placed between the Sartoclear® filter cassette or Sartobind® adsorption cassettes. Pay attention to the alignment of the Sartoclear® baffle plate (see the instructions for the cassettes used).
- ▶ Push the cassettes towards each other until there is **no longer any** free space between them.
- ▶ Check the position of the cassettes. The notches of the cassettes must be positioned on the bottom guide rods of the device.
- ▶ Ensure that the cassettes are seated evenly and flush inside the device.



- ▶ Place the manifold plate (1) for the fluid outlet according to its labeling onto the bottom guide rods (see the instructions for the manifold plate).
- ▶ Push the manifold plate onto the cassettes.



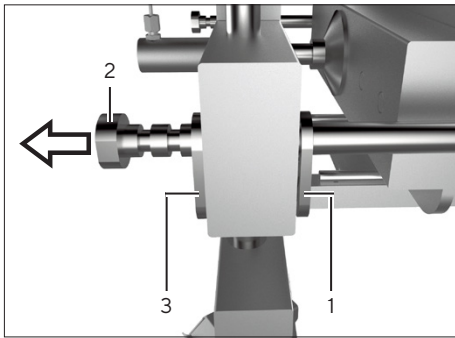
- ▶ Push the clamping plate (1) on to the manifold plate.



- ▶ Position the holding clamps as closely as possible to the clamping plate (1) (see Chapter "5.2 Moving Holding Clamps", page 17).

Moving the Cassettes Towards the Pressure Plate

Procedure



- ▶ Move the inner holding clamps (1) on the two pull rods to the respective right-hand position (see Chapter "5.2 Moving Holding Clamps", page 17).
- ▶ Move the cassettes as close as possible to the pressure plate by pulling on both pull rods (2) at the same time. The cylinder stroke should be kept as small as possible.
- ▶ Move the outer holding clamps (3) on the two pull rods to the right-hand position.

5.4.3 Observing the Permissible Stroke of the Hydraulic Cylinder

Depending on the number of cassettes used, there is a risk that the hydraulic cylinder must be moved so far out for tensioning that the maximum permissible stroke of the hydraulic cylinder is exceeded and the cassettes **cannot** be tensioned sufficiently.

When the marking on the hydraulic cylinder becomes visible: The distance between the base plate and clamping plate is too great and must be set to a shorter distance with the holding clamps.

NOTICE

Danger of damage to the hydraulic cylinder!

- ▶ During pumping, always observe the marking (1) on the hydraulic cylinder.
- ▶ When the marking becomes visible: Cancel the pumping process. If the pumping process is continued, this may cause damage to the hydraulic cylinder and oil leakage.



Procedure

- ▶ Prior to pressurization on the hydraulic cylinder: Set the fine adjustment on the guide rods. Doing so prevents the permissible stroke of the hydraulic cylinder from being exceeded.

5.4.4 Tensioning the Cassettes

NOTICE

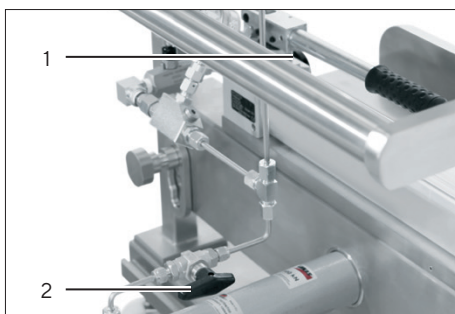
Danger of damage to the filtration or adsorption system!

Never tension the cassettes without inserting and screwing guide rods into the device.

Prerequisites

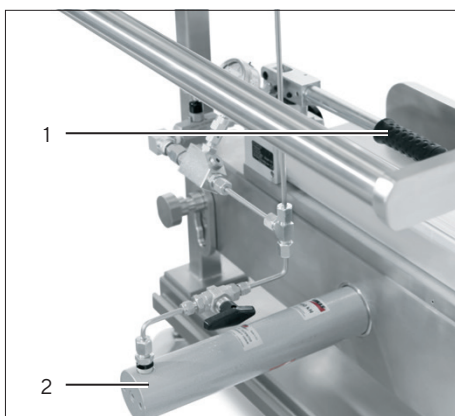
- The manifold plates and cassette(s) are inserted in the right position.
- The holding clamps are positioned according to the number of cassettes used. The cylinder stroke of the hydraulic cylinder is kept as short as possible.
- There are **no** tools, transfer lines, or other objects in the tensioning area of the device.

Procedure



- ▶ Close the release valve (1). To do so, turn the release valve clockwise.
- ▶ Open the needle valve (2). To do so, turn the needle valve counterclockwise.
- ▶ Observe the information regarding the permissible tensioning force for the cassettes used (see the instructions for the cassette) and the following information regarding the tensioning force (kilonewton; kN)/12.6 cm² filter area:

Force [kN]/ 15.9 cm ²	Pressure [bar]	Force [kN]/ 15.9 cm ²	Pressure [bar]	Force [kN]/ 15.9 cm ²	Pressure [bar]
0	0	15	95	30	189
5	32	20	126	35	221
10	63	25	158	40	252



- ▶ Check the pressure gage display when compressing the cassette(s) in order to ensure that the applied tensioning force does **not** exceed the permissible value (for the permissible tensioning force see the instructions for the cassette).
- ▶ Slowly pump the lever (1) on the hydraulic pump with approx. 1 stroke every 2 seconds to build up the required pressure. The modules may get damaged if operation is too quick.
- ▷ The hydraulic cylinder (2) moves forward and the pressure plate compresses the Sartoclear® filter cassettes.
- ▶ When compressing the filter cassette, check the marking on the hydraulic cylinder (see Chapter "5.4.3 Observing the Permissible Stroke of the Hydraulic Cylinder", page 22).
- ▶ When the pressure gage indicates the permissible tensioning force or the permissible stroke is exceeded: Stop the pressure buildup (stop pumping).
- ▶ Release the hydraulic pump (see Chapter 5.3.1, page 18).
- ▷ The cassette is completely mounted and compressed in the device.

5.5 Performing the Filtration or Adsorption Process

Procedure

- ▶ Connect the tubing lines to the manifold plates (see the Operating Instructions for the cassettes used).
- ▶ Perform the filtration or adsorption process (see instructions for the filtration or adsorption system).

5.6 Removing the Cassettes

Prerequisites

The cassettes have been depressurized and completely drained.

Procedure

- ▶ Place the collecting tank under the device so that any liquid residue is caught when releasing the hydraulic cylinder.
- ▶ Drain the system (see the Operating Instructions for the cassettes used).
- ▶ Disconnect the tubing lines from the manifold plates.
- ▶ Release the hydraulic cylinder (see Chapter 5.3.2, page 18).
- ▶ To make it easier to remove the cassettes, proceed as follows:
 - ▶ Move the holding clamps into an outer position.
 - ▶ Move the pressure plate and clamping plate outwards.
- ▶ **⚠ CAUTION** Risk of injury due to heavy components. Remove the following components from the device one after the other:
 - Manifold plate for outlet
 - Cassette(s)
 - Manifold plate for inlet
- ▶ Dispose of the manifold plates and cassettes together with the associated tubing lines.

6 Cleaning

Regular cleaning is essential. Operational reliability depends, in addition to several other factors, also on proper cleaning.

Cleaning intervals largely depend on the stress placed on the equipment by aggressive components contained in the media (e.g. acids and bases used to regulate pH) and the level of contamination from culture and metabolic product residues attached to this equipment.

NOTICE

Danger of corrosion and damage to the device by unsuitable cleaning agents!

- Avoid highly caustic or chloride-containing detergents.
 - Avoid solvent-based cleaning agents.
 - Ensure that the cleaning agents used are compliant materials.
-

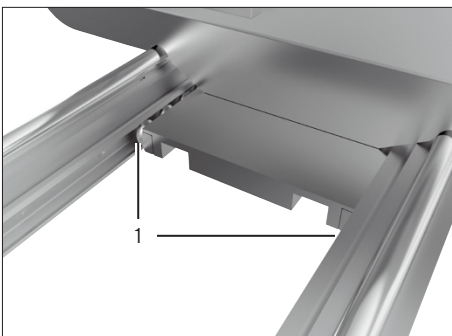
Procedure

- ▶ Observe the safety instructions for the cleaning agents.
The use and disposal of cleaning agents, and water containing such agents, may be subject to legal or environmental protection regulations in your country.
- ▶ Be sure not to scratch the device.
Future contamination is otherwise more difficult to remove.
- ▶ Take the following preliminary steps when performing cleaning work:
 - ▶ Release the hydraulic cylinder.
 - ▶ If required: Remove the cassette(s).
- ▶ Clean the device with a slightly damp cloth.
For more severe contamination, use a mild soap solution.

Rinsing the Roller Bearings on the Bottom Guide Rods

Procedure

- ▶ Use a mild soap solution to rinse the roller bearings (1) on the guide rods.



7 Malfunctions

Problem	Cause	Correction	Chapter, Page
Liquid exits at the bottom of the tensioned cassette(s).	The tensioning pressure is not sufficient.	Check the pressure gage display. If required: Increase the inlet pressure. Observe the tensioning force (kN) of the inserted cassette(s) (see instructions for the cassette).	5.4, 19
	The hydraulic piston has moved out completely without the Sartoclear® filter cassettes being sufficiently compressed.	Set the fine adjustment to a narrower distance.	5.2, 17
		Check whether the maximum permissible stroke is exceeded.	5.4, 19 11.2, 31
Hydraulic oil is leaking from the hydraulic cylinder.	The cassettes have not been inserted and aligned correctly.	Insert the manifold plate and the cassettes into the device to the lowest point and align them so that they are flush.	5.4, 19
	The hydraulic cylinder is faulty.	Contact Sartorius Service.	

Consult Sartorius Service regarding any problems you **cannot** solve yourself. Do **not** carry out any unauthorized repair work on the device.

8 Transportation

Prerequisites

- All cassettes have been removed.
- The device has been shut off.

Procedure

- ▶ Tighten the ventilation screw of the hydraulic pump securely (see Chapter “4.6 Starting up the Hydraulic Pump”, page 16).
- ▶ Draw in the domed feet (see Chapter 4.5, page 16).
- ▶ **⚠ CAUTION** Danger of crushing from the moving clamping plate!
Use the handle to move the device. Do **not** touch the device on the pull rods or pressure plates.
- ▶ **⚠ CAUTION** Risk of injury to other persons caused by the device!
Ensure that **no** individuals get in its path.
- ▶ Transport the device to its new location.
- ▶ Secure the device at the installation site (see Chapter 4.4, page 16).

9 Storage and Shipping

9.1 Storage

Procedure

- ▶ Decommission the device.
- ▶ If required: Pack the device.

9.2 Storage Instructions

- Dry buildings
- **Do not** expose to UV radiation and direct sunlight
- **Do not** store in rooms where solvents, chemicals, acids, and fuels are stored.

9.3 Shipping-related Tasks | Returns

Defective devices or parts can be sent back to Sartorius. Returned devices must be clean, decontaminated, and properly packed.

Transport damage as well as measures for subsequent cleaning and disinfection of the device or parts by Sartorius shall be charged to sender.

WARNING

Risk of injury due to contaminated equipment!

Devices contaminated with hazardous materials (NBC contamination) will **not** be accepted for repair or disposal.

- ▶ Observe the information on decontamination (see Chapter “10.1 Information on Decontamination”, page 29).
-

Procedure

- ▶ Decommission the device (see Chapter “10.2 Decommissioning the Device”, page 29).
- ▶ Complete the Decontamination Declaration. Use the forms available on our website (www.sartorius.com).
- ▶ Enclose the Decontamination Declaration with the delivery documents. The recipient must be able to inspect the completed Decontamination Declaration before removing the device from the packaging.
- ▶ Pack the device and its parts properly.
- ▶ Return the device to Sartorius Service. The service addresses for returns can be found on our website (www.sartorius.com).

10 Disposal

10.1 Information on Decontamination

The device does **not** contain any hazardous materials that would necessitate special disposal measures. The cultures and media (e.g. acids, bases) used during the fermentation processes are potentially hazardous materials that could cause biological or chemical hazards.

According to the EU directives [European directive on hazardous substances], the owners of devices that come into contact with hazardous substances are responsible for properly disposing of these devices and must declare such devices when transporting them.

WARNING

Risk of injury due to contaminated devices!

Devices contaminated with hazardous materials (NBC contamination) will **not** be accepted for repair or disposal.

10.2 Decommissioning the Device

Procedure

- ▶ Release the hydraulic cylinder.
- ▶ Remove the all the cassettes.
- ▶ Clean the device.
- ▶ Decontaminate the device.

10.3 Disposing of the Device and Parts

10.3.1 Information on Disposal

The device and its accessories do **not** belong in your regular household waste, since they are made of high-grade materials which can be recycled and reused. All parts must be disposed of properly by disposal facilities.

The packaging is made of environmentally friendly materials that can be used as secondary raw materials.

The consumables are designed and intended for single-use and must be disposed of after one use.

10.3.2 Disposal

Requirements

The device has been decontaminated.

Procedure

- ▶ Dispose of the device. Follow the disposal instructions on our website (www.sartorius.com).
- ▶ Dispose of the packaging in accordance with local government regulations.
- ▶ Dispose of the consumables in accordance with local government regulations.

11 Technical Data

11.1 Dimensions and Weight

Specification	Unit	Process Filter Holder	Double Process Filter Holder
Weight without cassettes	kg	500	950
Weight with 12 filled Sartoclear® Depth Filter cassettes and 2 manifold plates, approx.	kg	780	-
Weight with 24 filled Sartoclear® Depth Filter cassettes and 2 manifold plates, approx.	kg	-	1.430
Length × width × height	mm	2300 × 925 × 905	2300 × 925 × 1216

11.2 Hydraulic Cylinder Dimensions

Specification	Unit	Value
Maximum permissible stroke of the hydraulic cylinder	mm	290
Maximum stroke of the hydraulic cylinder	mm	300

11.3 Accommodation of Cassettes

Specification	Unit	Process Filter Holder	Double Process Filter Holder
Number of Sartoclear® Depth Filter cassettes, minimum maximum		1 12	1 24
Number of Sartobind® adsorption cassettes, minimum maximum		1 On request	1 On request
Required number of manifold plates per level		2	2

11.4 Ambient Conditions During Operation

Specification	Unit	Value
Installation site: usually laboratory rooms, max. 2000 m above sea level		
Ambient temperatures in the operating temperature range	°C	+10 – +40
Relative humidity		
For temperatures up to 31 °C	%	< 80
Decreasing linearly thereafter at temperatures from 31°C – 40°C	%	< 50
Impurities		
Pollution degree 2 according to EN 61010 (normally only non-conductive pollution occurs. Occasionally, however, temporary conductivity caused by condensation must be expected.)		

11.5 Design and Lifespan

Specification	Unit	Value
Parts exposed to the atmosphere: Stainless steel		
Maximum lifespan	Years	8

12 Accessories

This table contains an excerpt of the accessories that can be ordered. For information on other products, please contact Sartorius.

Accessories	Order number
Dripping pan for Process Filter Holder and Double Process Filter Holder	2ZGL--0015
Sartoclear® Separation Plate	2ZGL--0013
Pressure safety device	2ZGL--0014

13 Consumables

This table contains an excerpt of the consumables that can be ordered. For information on other products, contact Sartorius.

Accessories	Order number
Sartoclear® Depth Filters	On request
Sartobind® adsorption cassettes, e.g., Sartobind® Q and S, Sartobind STIC® PA, Sartobind® Phenyl	On request
Inlet and outlet adapter plates (Manifold Set)	29Z-S00001
Inlet and outlet adapter plates Gamma for Sartobind® adsorption cassettes (Manifold Set Gamma)	29Z-S00003

14 Sartorius Service

Sartorius Service is available for queries regarding the device. For information about the service addresses, services provided or to contact a local representative, please visit the Sartorius website (www.sartorius.com).

15 Conformity

The attached documents declare the conformity of the device with the designated directives or standards.



Original

EG-/EU-Konformitätserklärung EC / EU Declaration of Conformity

Hersteller **Sartorius Stedim Systems GmbH**
 Manufacturer 34302 Guxhagen, Germany

erklärt in alleiniger Verantwortung, dass das Betriebsmittel
declares under sole responsibility that the equipment

Geräteart Sartoclear Process Filterhalter
 Device type Sartoclear Process Filter Holder

Modell **2ZGL-0006**
 Model

in der von uns in Verkehr gebrachten Ausführung allen einschlägigen Bestimmungen der folgenden Europäischen Richtlinie entspricht und die anwendbaren Anforderungen folgender harmonisierter Europäischer Norm einschließlich deren zum Zeitpunkt der Erklärung geltenden Änderungen erfüllt:

in the form as delivered fulfils all the relevant provisions of the following European Directive and meets the applicable requirements of the harmonized European Standard including any amendments valid at the time this declaration was signed listed below:

	Maschinen Machines
Richtlinie Directive	2006/42/EG 2006/42/EC
Norm(en) Standard(s)	EN ISO 12100:2010

Die Person, die bevollmächtigt ist, die technischen Unterlagen zusammenzustellen:
The person authorised to compile the technical file:

Sartorius Stedim Systems GmbH
 Product Compliance
 34302 Guxhagen, Germany

Sartorius Stedim Systems GmbH
 Guxhagen, 2022-05-20

DocuSigned by:
Ariane Rindlisbacher

 Name des Unterzeichners: Ariane Rindlisbacher
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Marco Hassenpflug

 Name des Unterzeichners: Marco Hassenpflug
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Ariane Rindlisbacher
 Head of Operations Guxhagen

Marco Hassenpflug
 Manager Quality Site



Original

EG-/EU-Konformitätserklärung EC / EU Declaration of Conformity

SARTORIUS

Hersteller **Sartorius Stedim Systems GmbH**
 Manufacturer 34302 Guxhagen, Germany

erklärt in alleiniger Verantwortung, dass das Betriebsmittel
declares under sole responsibility that the equipment

Geräteart Sartoclear Double Process Filterhalter
 Device type Sartoclear Double Process Filter Holder

Modell **2ZGL-0007**
 Model

in der von uns in Verkehr gebrachten Ausführung allen einschlägigen Bestimmungen der folgenden Europäischen Richtlinie entspricht und die anwendbaren Anforderungen folgender harmonisierter Europäischer Norm einschließlich deren zum Zeitpunkt der Erklärung geltenden Änderungen erfüllt:

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 Directive
 Norm(en)
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Maschinen Machines
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Sartorius Stedim Systems GmbH
 Product Compliance
 34302 Guxhagen, Germany

Sartorius Stedim Systems GmbH
 Guxhagen, 2022-05-20

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Marco Hassenpflug
 Manager Quality Site

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PMF: 2046817

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Original

UK Declaration of Conformity



Manufacturer Sartorius Stedim Systems GmbH
 Robert-Bosch-Str. 5-7, 34302 Guxhagen, Germany
 declares under sole responsibility that the equipment

Device type Sartoclear Process Filter Holder

Model 2ZGL-0006


in the form as delivered fulfils all the relevant provisions of the following British Regulation and meets the applicable requirements of the British Designated Standard including any amendments valid at the time this declaration was signed listed below:

Regulation	Machinery
	The Supply of Machinery (Safety) Regulations 2008
Standard(s)	UK Statutory Instruments 2008 No. 1597
	BS EN ISO 12100:2010

The person authorised to compile the technical file:

Sartorius Stedim UK Ltd.
 Longmead Business Centre, Blenheim Road
 KT19 9 QQ Epsom, Surrey, UK

Sartorius Stedim Systems GmbH
 Guxhagen, 2022-05-20

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Marco Hassenpflug
 Manager Quality Site



Original

UK Declaration of Conformity

Manufacturer Sartorius Stedim Systems GmbH
Robert-Bosch-Str. 5-7, 34302 Guxhagen, Germany
declares under sole responsibility that the equipment

Device type Sartoclear Double Process Filter Holder

Model 2ZGL-0007

in the form as delivered fulfils all the relevant provisions of the following British Regulation and meets the applicable requirements of the British Designated Standard including any amendments valid at the time this declaration was signed listed below:

Regulation	Machinery
	The Supply of Machinery (Safety) Regulations 2008
Standard(s)	UK Statutory Instruments 2008 No. 1597
	BS EN ISO 12100:2010

The person authorised to compile the technical file:

Sartorius Stedim UK Ltd.
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KT19 9 QQ Epsom, Surrey, UK

Sartorius Stedim Systems GmbH
Guxhagen, 2022-05-20

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August-Spindler-Strasse 11
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