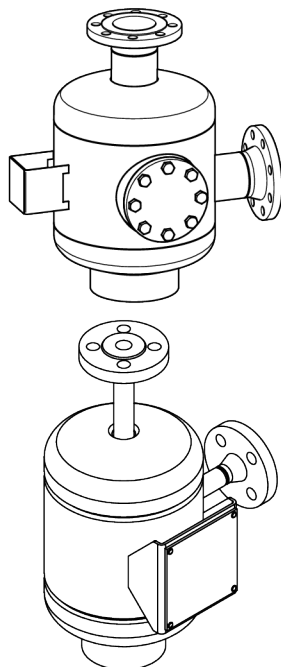


Condensate Dampening Pot

ED



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Foreword

This installation & operating manual will help you use the condensate dampening pot ED safely and efficiently for its intended purpose. The condensate dampening pot ED will be called equipment in this document.

This installation & operating manual is intended for anyone commissioning, using, operating, servicing, cleaning or disposing of this equipment and, in particular, for professional after-sales service technicians, qualified personnel and authorised and trained staff.

All of these persons must read and understand the content of this installation & operating manual.

Following the instructions given in this installation & operating manual helps avoiding danger and increases the reliability and service life of the equipment. Please note that in addition to the instructions given in this installation & operating manual you must also observe all locally applicable rules and regulations concerning the prevention of accidents as well as approved safety guidelines for good professional practice.

Availability

Keep this installation & operating manual together with the plant documentation for future reference. Make sure that this installation & operating manual is available to the operator.

The installation & operating manual is part of the equipment. Please hand over this installation & operating manual when selling the equipment or passing it on.

Formatting features in the document

Certain text elements of this installation & operating manual feature a specific typographic design. You can easily distinguish the following text elements:

Standard text

Cross-reference

► Listing

► Sub-items in listings

➤ Steps for action.



Here you will find additional useful information and tips serving to assist you in using the equipment to its fullest potential.

Safety

Use for the intended purpose

The condensate dampening pot ED is designed for installation in steam and condensate systems.

The equipment is designed for steam systems where condensate has to be transported with low noise and no waterhammer and lifted into elevated condensate headers

The equipment must only be used within the allowable pressure and temperature limits and only if the chemical and corrosive influences on the equipment are taken into account.

Correct use includes compliance with the instructions given in this installation & operating manual, in particular obedience to all safety instructions.

Any other use of the equipment is considered to be improper.

Note that the equipment is also used incorrectly if the materials of the equipment are not suitable for the fluid.

Basic safety notes

Risk of severe injuries

- The equipment may become hot during operation. Do not operate the equipment unless thermal insulation or protection against accidental contact prevents you from touching hot surfaces.
- The equipment is under pressure during operation and may be hot. Before carrying out any work on the equipment make sure that the following requirements are met:
 - The pipes must be depressurized (0 bar).
 - The fluid must be completely removed from the pipes and the equipment.
 - During work on the equipment the installation must be switched off and protected against unauthorised or unintended activation.
 - The pipes and the equipment must have cooled down to room temperature (approx. 20 °C).
- If the equipment is used in contaminated areas there is a risk of severe injuries or death caused by harmful substances in or on the equipment. Before working on the equipment make sure that it is completely decontaminated. Always wear the protective clothing prescribed for contaminated areas when working on the equipment.
- The equipment must only be used with fluids that do not attack the material and the gaskets and sealings of the equipment. Otherwise leaks may occur and hot or toxic fluid could escape.
- The equipment and its component parts must only be mounted or removed by qualified personnel. A qualified person must be acquainted with and experienced in the following:
 - Making pipe connections.
 - Selecting suitable lifting gear and understanding the rules for its safe use.
 - Working with dangerous (contaminated, hot or pressurized) fluids.

- If the admissible pressure and temperature ratings are exceeded, the equipment may be destroyed and hot or pressurized fluid may escape. Make sure that the equipment is always used within the admissible pressure and temperature ratings. You can find information on the pressure and temperature ratings on the name plate.
- If unsuitable lifting gear is used or the gear is used improperly the equipment or parts of it could fall down.
 - Make sure that only qualified personnel lifts the equipment or parts of it.
 - Make sure that nobody is standing or working below the hoisted equipment.
 - Make sure that the lifting gear is of sufficient strength for the load to be hoisted and that the load is properly secured and attached to it. For more information on the nature and weight of the components and safe lifting points please contact the manufacturer.
 - Make sure that all locally applicable regulations on safety and the prevention of accidents are strictly adhered to.

Risk of minor injuries

- Sharp edges on internals present the danger of cuts to hands. Always wear industrial gloves when servicing the equipment.
- If the support of the equipment during installation is insufficient the equipment might fall down, thereby causing bruises or injuries. Make sure the equipment is safely held in place during installation and cannot fall down. Wear protective safety footwear.

Information on property damage or malfunctions

- ▶ Malfunctions will occur if the equipment is installed in a wrong position or with the flow pattern in the opposite direction of the fluid flow. This may result in damage to the equipment or the installation. Make sure that the flow pattern indicated in this installation and operating manual matches the direction of the fluid flow in the pipe.
- ▶ If the material is unsuitable for the fluid, increased wear may occur and fluid may escape. Make sure that the material is suitable for the fluid used in your installation.

Qualification of personnel

A qualified person must be acquainted with and experienced in the following:

- ▶ the pertinent on-site rules and regulations for preventing fire and explosions
- ▶ working on pressure equipment
- ▶ making pipe connections
- ▶ working with dangerous (hot or pressurized) fluids
- ▶ lifting and transporting loads
- ▶ observing all notes and instructions in this installation & operating manual and the applicable documents

Protective gear

The required protective gear depends on the types of fluid used and the regulations on site. For more information on suitable safety clothing and safety gear refer to the safety data sheet of the fluid in question.

Protective gear comprises the following items:

- ▶ protective helmet
- ▶ work boots
- ▶ industrial leather gloves

Typographic features of safety notes

Danger note



DANGER

Notes with the heading DANGER warn against imminent dangerous situations that can lead to death or serious injuries.



WARNING

Notes with the heading WARNING warn against possibly dangerous situations that could lead to death or serious injuries.



CAUTION

Notes with the heading CAUTION warn against dangerous situations that could lead to minor or moderate injuries.

Information on environmental and property damage

Attention!

This note warns against situations that may lead to environmental and/or property damage.

Description

Scope of supply and equipment specification

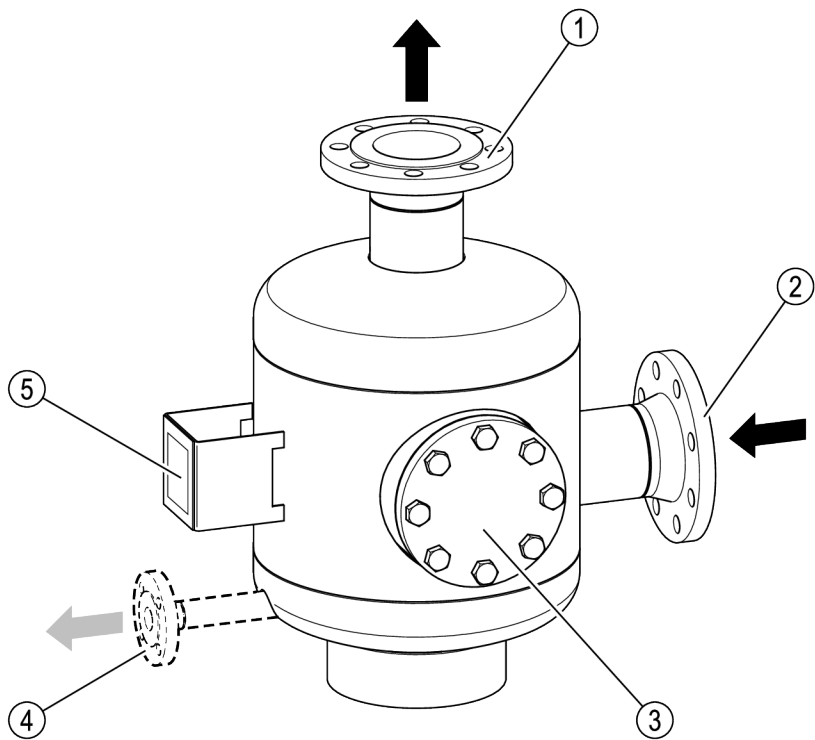
Scope of supply

Our equipment is delivered packed and ready for assembly.

Equipment specification

The equipment features the following connections:

- Connection for condensate inlet
- Connection for condensate outlet
- Drainage (optional)



No.	Designation
1	Condensate outlet connection
2	Condensate inlet connection
3	Inspection hole (only available in condensate dampening pots with a volume of ≥ 50 l)
4	Connection for draining the condensate dampening pot (optional)
5	Name plate

End connections

The equipment is available with the following end connections:

- Flanges

Name plate

The following items are indicated on the name plate:

- Manufacturer
- Type designation
- Min. service temperature
- Max. service temperature
- Max. service pressure
- Mark e.g. CE, UKCA (if required)
- Year of construction
- Serial number
- Type of vessel
- Weight
- Body of regulations
- Test pressure
- Test date
- Volume

Task and function

Purpose

The condensate dampening pot ED is designed for installation in steam and condensate systems.

The equipment is designed for steam systems where condensate has to be transported with low noise and no waterhammer and lifted into elevated condensate headers.

In addition the equipment cushions any fluctuations in back pressure, thus ensuring more steady conditions resulting in trouble-free operation of the steam trap installed next to the consumer.

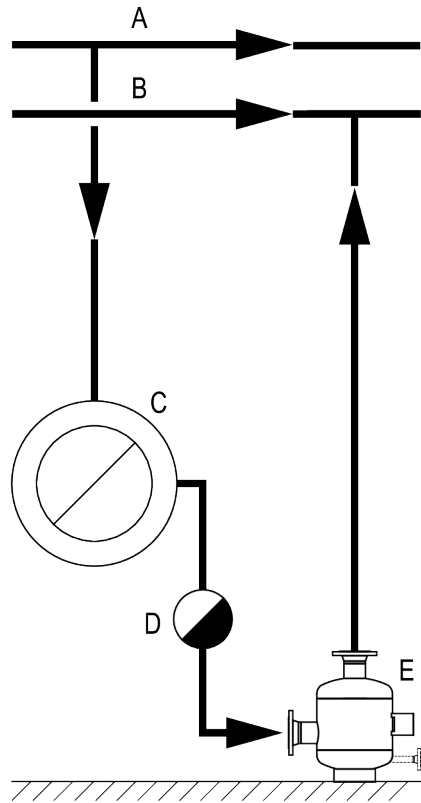
Function

A rise in the steam line can lead to waterhammer problems.

Waterhammer occurs when steam bubbles, which are either entrained in condensate or created by flashing, come in contact with condensate at a much lower temperature. The steam bubbles implode rapidly and, in passing into the liquid state, considerably reduce their volume. A vacuum is formed which immediately draws in condensate from all directions, causing pressure shocks and waterhammer.

Note that the equipment has to be installed at the lowest point of the pipeline. The inlet and outlet connections are arranged such that in the upper part of the pot, during start-up of the plant, a dampening cushion is formed by the air and steam bubbles carried over, while in the lower part of the pot, condensate will stay and act as sealing liquid. All condensate flowing in is then pushed by the pressure inside the equipment into the elevated condensate header.

Schematic representation



No.	Designation
A	Steam line
B	Condensate header
C	Consumer
D	Steam trap
E	Condensate dampening pot

Application of European Directives

Pressure Equipment Directive

The equipment conforms to this directive (see "Manufacturer's Declaration" section) and can be used for the following media:

- Fluids of group 2

ATEX Directive

The equipment does not have its own potential ignition source and is not subject to this directive (see "Manufacturer's Declaration" section).

Static electricity: Static electricity can be produced in the system if the equipment is installed between pipe flanges.

If the equipment is used in potentially explosive atmospheres, the discharge or prevention of possible electrostatic charging is the responsibility of the manufacturer or operator of the system.

Storing and transporting the equipment

Attention!

Equipment can be damaged if stored or transported improperly.

- Close all openings with the sealing plugs or covers supplied with the equipment or use similar sealing covers.
- Protect the equipment against moisture and corrosive atmospheres.
- Please contact the manufacturer if the specified transport and/or storage requirements cannot be met.

Storing the equipment

- Please observe the following items when storing the equipment:
- Do not store the equipment for more than 12 months.
- Use the supplied sealing plugs or other suitable seal caps in order to seal off all openings of the equipment.
- Protect the sealing surfaces and contact areas against mechanical damage.
- Protect the equipment and all components against hard shocks and impacts.
- Store the equipment only in closed rooms that meet the following environmental conditions:
 - Air humidity below 50 %, not condensing
 - Indoor air: clean, salt-free and non-corrosive
 - Temperature 5–40 °C.
- Make sure that all these requirements are always met when storing the equipment.
- Please contact the manufacturer if you cannot comply with the recommended storage conditions.

Transporting the equipment



DANGER

Risk of bruises if the equipment or component parts fall down.

- Use suitable lifting gear when moving or lifting the equipment and/or component parts.
 - Make sure that the equipment cannot topple over.
 - Make sure that nobody is standing below the lifted equipment.
-
- Meet the requirements for storage also when transporting the equipment.
 - Prior to transport seal off connections with sealing plugs.



If you do not have the sealing plugs supplied with the equipment use appropriate seal caps to seal off the connections.

- For short distances (only a few metres) you can transport the equipment unpacked.
- When transporting the equipment over larger distances use the original packaging.
- If you do not have the original packaging use a box that protects the equipment adequately against corrosion and physical damage.



For a short period of time the equipment may be transported even if the temperature is below 0 °C, provided that the equipment is completely empty and dry.

Mounting and connecting the equipment

Preparing installation



DANGER

Risk of bruises if the equipment or component parts fall down.

- Use suitable lifting gear when moving or lifting the equipment and/or component parts.
 - Make sure that the equipment cannot topple over.
 - Make sure that nobody is standing below the lifted equipment.
-
- Take the equipment out of the transport packaging.
 - Check the equipment for transport damage.
 - Contact the manufacturer if you detect any kind of shipping damage.

When supplied by the factory, the connections may be sealed off with sealing plugs.

- Remove sealing plugs before mounting the equipment.
- Keep the sealing plugs and the packing for further use.



DANGER

Personnel working on pipes are exposed to safety risks and may suffer severe injuries, poisoning or even loss of life.

- Make sure that no hot or hazardous fluid is in the equipment or the pipes.
- Make sure that the pipes upstream and downstream of the equipment are depressurised.
- Make sure that the installation is switched off and protected against unauthorised or unintended activation.
- Make sure that the equipment and the pipes have cooled down to room temperatures.
- Wear protective clothing that is suitable for the fluid and, if necessary, wear protective gear.

For more information on suitable safety clothing and safety gear refer to the safety data sheet of the fluid in question.

- Drain pipes until they are empty.
- Switch the installation off and protect it against unauthorised or unintended re-activation.

Connecting the equipment



DANGER

Incorrectly connected equipment can cause fatal accidents or severe injuries.

- Make sure that only qualified skilled personnel connect the equipment to pipes.

Specialist personnel must be highly qualified and fully experienced in making pipe connections for the respective type of end connection.

Attention!

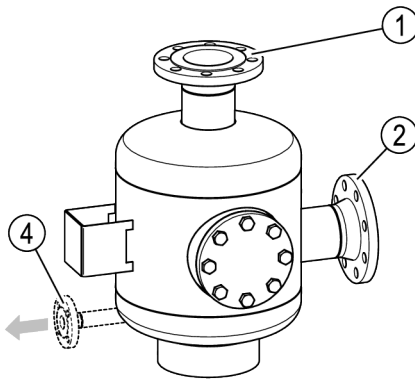
The equipment can be damaged if connections are too weak.

- Make sure that the connected equipment is not subjected to any forces or torques.

The operator has to ensure that the equipment and the sealing material is suitable for the fluid used in his system.

- Make sure that all components of the equipment are made of materials that are suitable for the fluid used.
- For more information please contact the manufacturer.
- Inspect all seals before installation to ensure they are in perfect condition.
- Make sure that the pipe system of the plant is clean.
- Make sure that the equipment is free from foreign matter.
- Install the condensate dampening pot at the lowest point of the condensate pipe.

- Fit the equipment so that the condensate outlet connection (1) is facing up.
- Make sure that the condensate supply is connected to the condensate inlet connection (2).
- Make sure that the condensate drain is connected to the condensate outlet connection (1).
- Make sure that the drainage pipe is connected to the drainage connection (4, if present).



- Make sure that the equipment is safely mounted and that all connections are made correctly.
- At operating temperature, check that flange connections are tight.

If flange connections are leaking, proceed as follows:

- Power down the system and wait until the tank and pipes are cool enough to touch.
- Re-tighten threaded joints.
- Power the system up again.
- Again check that flange connections are tight at operating temperature.

During operation the surface of the equipment gets hot. This presents the risk of burns.

- Lag the surface of the equipment with suitable insulating material.

Operation

Do not work on the equipment while it is operating.

After operation



DANGER

If the equipment is used in contaminated areas there is a risk of severe injuries or death caused by harmful substances in or on the equipment.

- Only qualified personnel are allowed to perform work on contaminated equipment.
- Always wear the protective clothing prescribed for contaminated areas when working on the equipment.
- Make sure that the equipment is completely decontaminated before carrying out any service work.
- Follow the pertinent instructions for handling the hazardous substances in question.

Attention!

Frost damage may occur when the installation is shut down.

- Drain the equipment if ambient temperatures below 0 °C (frost) are to be expected.

Removing external dirt deposits

- To remove dirt deposits rinse the equipment with fresh water and wipe it with a clean, lint-free cloth.
- To remove any persistent residues use a cleaning agent that is suitable for the material and carefully wipe the equipment with a clean, lint-free cloth.

Maintaining the equipment

The equipment does not require any particular maintenance.

- Examine the equipment at regular intervals and check it for correct operation.
 - If necessary, clean the equipment.
- No spare parts are available for the equipment.
- Replace a defective device with a new one.

Putting the equipment out of operation

Removing harmful substances



DANGER

If the equipment is used in contaminated areas there is a risk of severe injuries or death caused by harmful substances in or on the equipment.

- Only qualified personnel are allowed to perform work on contaminated equipment.
- Always wear the protective clothing prescribed for contaminated areas when working on the equipment.
- Make sure that the equipment is completely decontaminated before carrying out any service work.
- Follow the pertinent instructions for handling the hazardous substances in question.

Qualified personnel must have extensive experience with and a working knowledge of:

- pertinent rules and regulations concerning handling hazardous substances
- special regulations for handling the hazardous substances encountered on site
- using the required personal protective equipment (PPE) and clothing

Attention!

Environmental damage may be caused by poisonous fluid residues.

- Before disposing of the equipment make sure that it is clean and free of fluid residues.
 - For the disposal of all materials observe the pertinent legal regulations concerning waste disposal.
-
- Remove all residues from the equipment.
 - For the disposal of all residues observe the pertinent legal regulations concerning waste disposal.

Removing the equipment



DANGER

Personnel working on pipes are exposed to safety risks and may suffer severe injuries, poisoning or even loss of life.

- Make sure that no hot or hazardous fluid is in the equipment or the pipes.
- Make sure that the pipes upstream and downstream of the equipment are depressurised.
- Make sure that the installation is switched off and protected against unauthorised or unintended activation.
- Make sure that the equipment and the pipes have cooled down to room temperatures.
- Wear protective clothing that is suitable for the fluid and, if necessary, wear protective gear.

For more information on suitable safety clothing and safety gear refer to the safety data sheet of the fluid in question.



DANGER

Risk of bruises if the equipment or component parts fall down.

- Use suitable lifting gear when moving or lifting the equipment and/or component parts.
- Make sure that the equipment cannot topple over.
- Make sure that nobody is standing below the lifted equipment.

- Detach the end connections of the equipment from the pipes.
- Put the equipment onto a suitable base.
- Store the equipment as described in section "Storing the equipment" on page 9.

Re-using equipment after storage

Observe the following instructions if you want to remove the equipment and use it again somewhere else:

- ▶ Make sure that the equipment is free of any fluid residues.
- ▶ Make sure that all connections are in good condition and leak-free.
- Use the equipment only for its intended purpose and the service conditions for which it was specified.

Returning the equipment

You can return the equipment to your contractual partner.

- Make sure that all harmful substances are removed from the equipment.
- Pay attention to the instructions in section "Transporting the equipment" from page 9.

- Pack the equipment in its original packaging or in suitable transport packaging.

The transport packaging must protect the equipment from damage in the same way as the original packaging.

- Send the completed and signed decontamination declaration with the equipment. The decontamination declaration must be attached to the packaging so that it is accessible from outside.
- Register the return delivery with your contractual partner before returning the equipment.

Disposing of the equipment



CAUTION

Environmental damage may be caused by poisonous fluid residues.

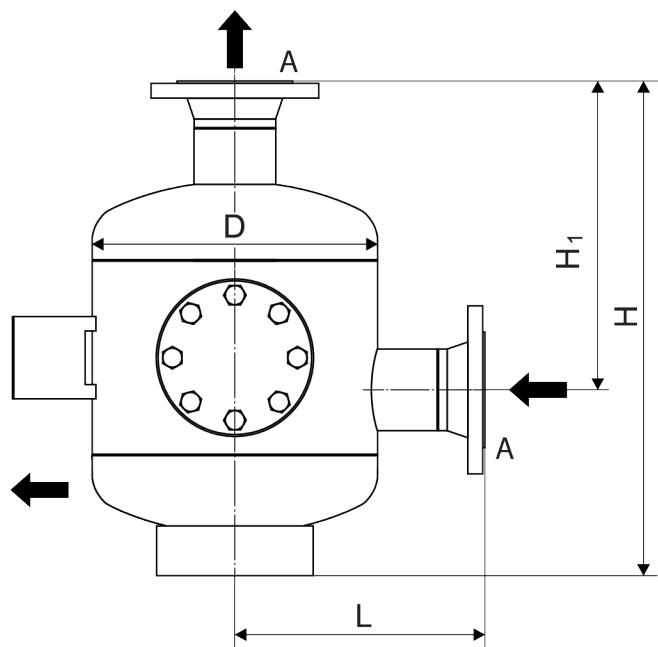
- Before disposing of the equipment make sure that it is clean and free of fluid residues.
- For the disposal of all materials observe the pertinent legal regulations concerning waste disposal.

The equipment is made of welded sheet steel or stainless steel.

Material		
Flange	1.0460 (P250GH+N)	1.4571 (X6CrNiMoTi17-12-2)
Base	1.0425 (P265GH)	1.4571 (X6CrNiMoTi17-12-2)
Pipe (jacket)	1.0345 (P235GH+N)	1.4571 (X6CrNiMoTi17-12-2)
Pipe (standpipe)	1.0345 (P235GH+N)	1.4571 (X6CrNiMoTi17-12-2)
Pipe (foot)	1.0345 (P235GH+N)	1.4571 (X6CrNiMoTi17-12-2)

Technical data

Dimensions and weights



Volume	[l]	4			9			25		50
A (DN)	[mm]	15	20	25	32	40	50	65	80	100
A (DN)	[inch]	½	¾	1	1¼	1½	2	2½	3	4
D	[mm]	180			219			273		400
H	[mm]	388			454			634		694
H1	[mm]	240			275			430		430
L	[mm]	184			210			237		350

Weights

You can find the values for your equipment on the name plate.

Pressure & temperature ratings

You can find the values for your equipment on the rating plate.

Manufacturer's declaration

You can find details on the conformity of the equipment in our Declaration of Conformity or Manufacturer's Declaration.

You can download the latest Declaration of Conformity or Manufacturer's Declaration at www.gestra.com or request it from the address below:

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This declaration is no longer valid if modifications are made to the equipment without consultation with us.



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