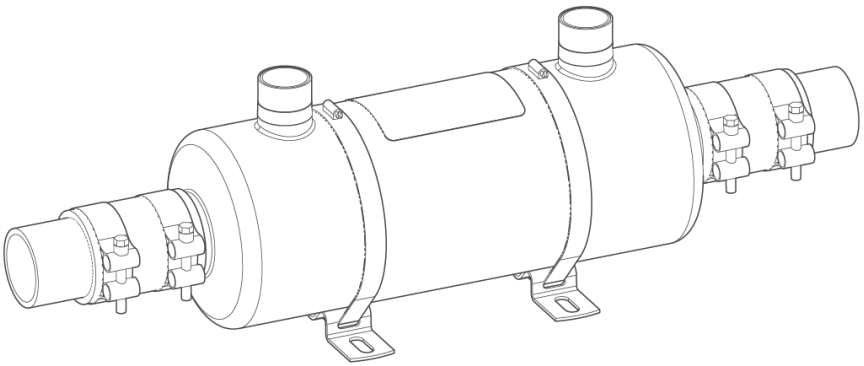
We understand water.



Accessories | Heat exchanger GENO-WT 42/76/105

Operation manual

grünbeck

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Availability
Monday to Thursday
7:00 am - 6:00 pm

Friday
7:00 am - 4:00 pm

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Table of contents

1 Introduction

This manual is intended for owners/operating companies, operators/users as well as qualified specialists and ensures the safe and efficient handling of the product. The manual is an integral part of the product.

- ► Carefully read this manual and the included manuals on the components before you operate your product.
- ► Obey all safety and handling instructions.
- ► Keep this manual and all other applicable documents, so that they are available when needed.

Illustrations in this manual are for basic understanding and can differ from the actual design.

1.1 Validity of the manual

- Heat exchanger GENO-WT 42
- Heat exchanger GENO-WT 76
- Heat exchanger GENO-WT 105
- Special designs that essentially correspond to the standard products given above.

1.2 Other applicable documents

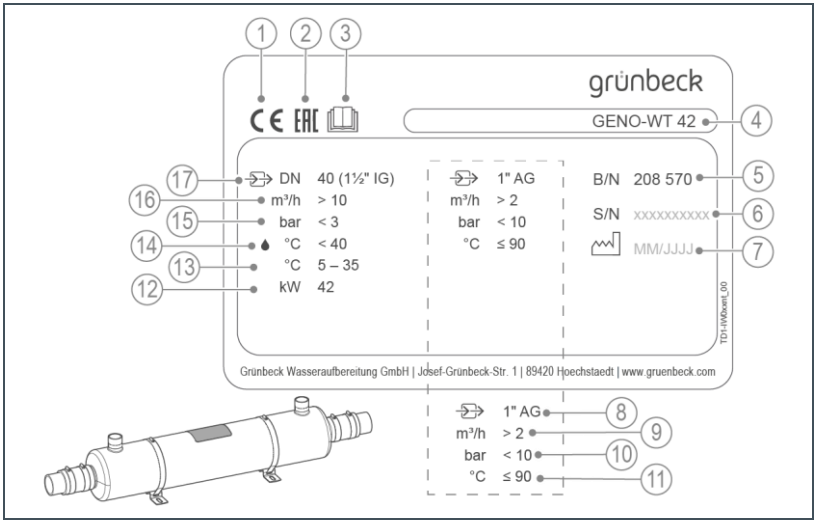
- Manuals of components from other manufacturers

1.3 Product identification

You can identify your product based on the product designation and the order no. indicated on the type plate.

► Check whether the products indicated in chapter 1.1 correspond to your product.

The type plate is located on the housing.



	Designation
1	CE mark
2	EAC test mark
3	Obey the operation manual
4	Product designation
5	Order no.
6	Serial no.
7	Date of manufacture
8	Heating connection
9	Heating flow rate

	Designation
10	Heating pressure
11	Heating supply temperature
12	Heat transfer capacity
13	Ambient temperature
14	Water temperature
15	Swimming pool pressure
16	Swimming pool flow rate
17	Nominal connection diameter on heat exchanger

1.4 Symbols used

Symbol	Meaning
	Danger and risk
	Important information or requirement
	Useful information or tip
	Written documentation required
	Reference to further documents
	Work that must be carried out by qualified specialists only
	Work that must be carried out by qualified electricians only
	Work that must be carried out by technical service personnel only

1.5 Depiction of warnings

This manual contains information and instructions that you must obey for your personal safety. The information and instructions are highlighted by a warning symbol and are structured as shown below:

SIGNAL WORD Type and source of hazard

- Possible consequences
- ► Preventive measures

The following signal words are defined subject to the degree of danger and might be used in the present document:

Warning symbol and signal word		Consequences if the information/ instructions are ignored	
	**DANGER**	Personal injury	Death or serious injuries
	**WARNING**		Possible death or serious injuries
	**CAUTION**		Possible moderate or minor injuries
	NOTE	Damage to property	Possible damage to components, the product and/or its functions, or an object in its vicinity

1.6 Demands on personnel

During the individual life cycle phases of the product, different people carry out work on the product. This work requires different qualifications.

1.6.1 Qualification of personnel

Personnel	Requirements
Operator/user	• No special expertise required • Knowledge of the tasks assigned • Knowledge of possible dangers in case of incorrect behaviour • Knowledge of the required protective equipment and protective measures • Knowledge of residual risks
Owner/operating company	• Product-specific expertise • Knowledge of statutory regulations on work safety and accident prevention
Qualified specialist • Electrical engineering • Sanitary engineering (HVAC and plumbing) • Transport	• Professional training • Knowledge of relevant standards and regulations • Knowledge of detection and prevention of potential hazards • Knowledge of statutory regulations on accident prevention
Technical service (Grünbeck's technical service/authorised service company)	• Extended product-specific expertise • Trained by Grünbeck

1.6.2 Authorisations of personnel

The table below describes which tasks may be carried out by whom.

	Operator/ user	Owner/ operating company	Qualified specialist	Technical service
Transport and storage			X	X
Installation and mounting			X	X
Start-up/Commissioning			X	X
Operation and handling	X	X	X	X
Cleaning	X	X	X	X
Inspection	X	X	X	X
Maintenance semi-annually			X	X
annually			X	X
Troubleshooting	X	X		X
Repair			X	X
Decommissioning and restart/ recommissioning			X	X
Dismantling and disposal			X	X

1.6.3 Personal protective equipment

► As an owner/operating company, make sure that the required personal protective equipment is available.

The components below fall under the heading of personal protective equipment (PPE):


Protective gloves


Protective footwear


Protective overall


Protective goggles

2 Safety

2.1 Safety measures

- Only operate your product if all components are installed properly.
- Obey the local regulations on drinking water protection, accident prevention and occupational safety.
- Do not make any changes, alterations, extensions or program changes on your product.
- Only use genuine spare parts for maintenance or repair.
- Keep the premises locked against unauthorised access to protect imperilled or untrained persons from residual risks.
- Comply with the maintenance intervals (refer to chapter 8.2).

2.1.1 Mechanical hazards

- You must never remove, bridge, or otherwise tamper with safety equipment.
- For all work on the system that cannot be carried out from the ground, use stable, safe and self-standing access aids (e.g. stepladders).
- Make sure that the system is set up in a way that it cannot tip over and that the stability of the system is guaranteed at all times.

2.1.2 Pressure-related hazards

- Components can be under pressure. There is a risk of injuries and damage to property due to escaping water and unexpected movement of components. Check the system's pressure lines at regular intervals.
- Before starting repair and maintenance work, make sure that all affected components are depressurised.

2.1.3 Groups of persons requiring protection

- This product is not designed to be used by persons (including children) with reduced capabilities, lack of experience or lack of knowledge.
- Children must be supervised to make sure that they do not play with the product.

2.2 Product-specific safety instructions

CAUTION

Thermal hazard due to contact with hot surfaces (up to 90°C)

- Burns

► Do not touch the hot surfaces of the heat exchanger and of the components on the heating side.

► Sufficiently insulate the components on the heating side.

► Allow the components to cool down before carrying out any work.

► Use suitable protective gloves when working on the system.

Labels on the product

Hot surface

The affixed information and pictograms must be clearly legible.

They must not be removed, soiled or painted over.

► Obey all warnings and safety instructions.

► Immediately replace illegible or damaged symbols and pictograms.

2.3 Conduct in emergencies

2.3.1 In case of leaking pool or heating water

1. De-energise the system.
2. Locate the leak.

CAUTION Hot heating water (up to 90 °C)

- Scalding

► Wear personal protective equipment.

3. Eliminate the cause of the leaking pool or heating water.
4. Contact a qualified specialist or the technical service personnel, if necessary.

3 Product description

3.1 Intended use

- The heat exchanger GENO-WT is used for heating up pool water (freshwater) in private or public swimming pools and whirlpools.

3.1.1 Application limits

The heat exchanger GENO-WT is designed for counterflow operation in a dual-circuit system.

For its use, the following parameters apply as limit values for the approved substances contained in the water:

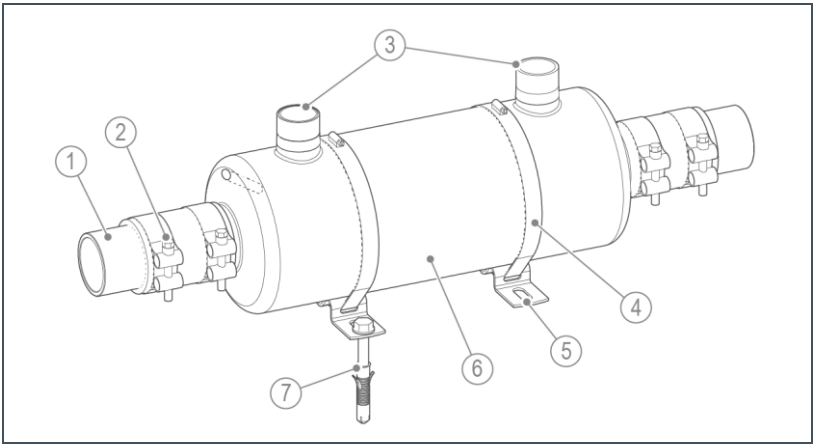
Parameters		Value
pH value	-	6.8 – 7.8
Free chlorine	mg/l	< 1.3 (briefly < 20)
Chloride content	mg/l	< 500
Bromine	mg/l	≤ 6
Total hardness	°dH	< 14

On the heating side, only heating water according to VDI 2035 or water-glycol mixes with a maximum content of 50 % glycol may be pumped.

3.1.2 Foreseeable misuse

- Use in salt, sea or brine water is not permitted.

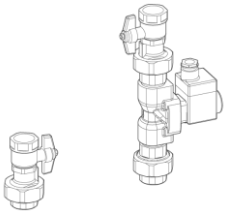
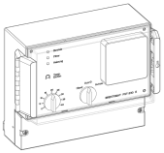
3.2 Product components



	Designation	Function
1	Hose connection	for pool water
2	Bolt clamps	to fix the hose connections
3	Connections for supply and return	for connection to the heating circuit
4	Clamps	to fix the heat exchanger
5	Clamp holder	for wall or floor mounting
6	Heat exchanger incl. thermowell	for heat transfer and to house the temperature sensor
7	Fastening material	4x hexagon head screw, washer, dowel

3.3 Accessories

Your product can be retrofitted with accessories. Please contact your local Grünbeck representative or Grünbeck's headquarters in Hoechstaedt/Germany for details.

Illustration	Product	Order no.
	**Heat exchanger shut-off kit 1"**	**208 444**
	To hydraulically shut off a heating circulation provided by the client on site as well as to protect the on-site piping.	
	**Control unit BWH-W I17/1**	**208 607**
	Is used for semi-automatic operation of the filter system by means of a timer and to control the temperature.	
	**Digital temperature controller**	**208 693**
	Is required if the pool water controller does not feature a temperature control function.	
	Thermostat 10 – 60 °C including stainless steel thermowell	**208 625**
	For use as maximum temperature limiter. Product to monitor the maximum pool water temperature and to protect the piping provided by the client on site.	

4 Transport and storage

4.1 Shipping/Delivery/Packaging

The product is packed in a cardboard box at the factory.

► Upon receipt, immediately check for completeness and transport damage.

4.2 Transport

► Transport the product in its original packaging only.

4.3 Storage

► Protect the product from the impacts below when storing it:

- Dampness, moisture
- Environmental impacts such as wind, rain, snow, etc.
- Frost, direct sunlight, severe heat exposure
- Chemicals, dyes, solvents and their vapours

5 Installation

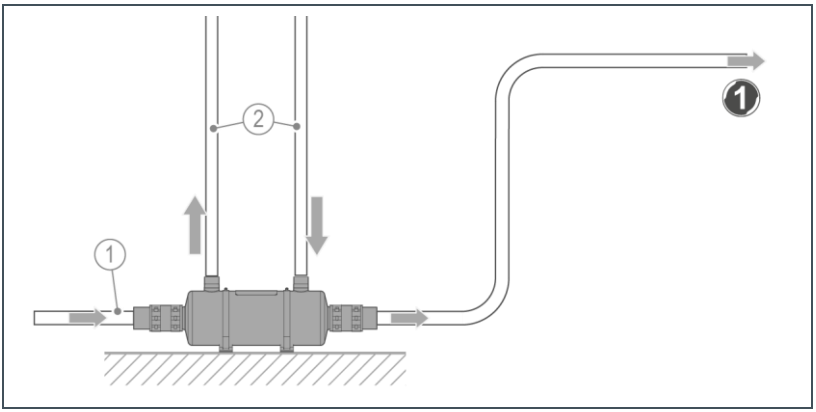
The installation of the system must be carried out by a qualified specialist only.

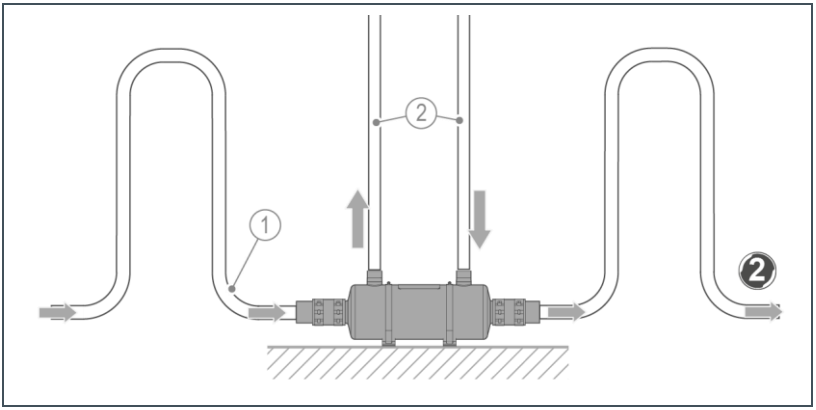
NOTE Leaks or system damage due to corrosion.

- Leaks, water loss, water damage, system failure.

► Position the dosing system for chemicals or the dosing points//injection points in the pipe downstream of the heat exchanger.

Installation example in full flow (horizontal installation on the floor)





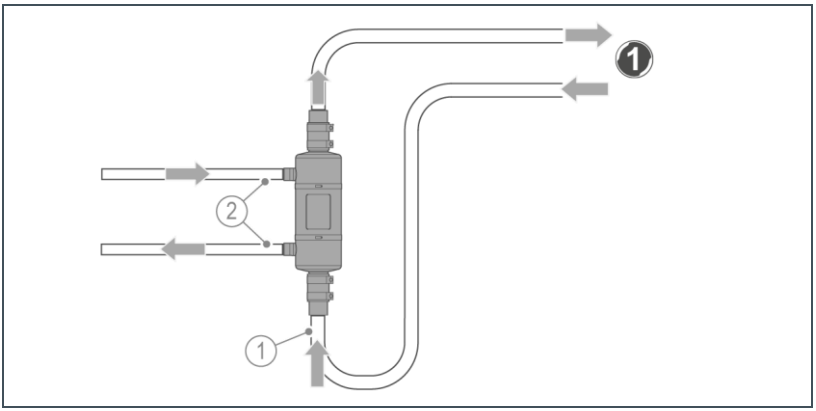
	Designation
1	Below water level

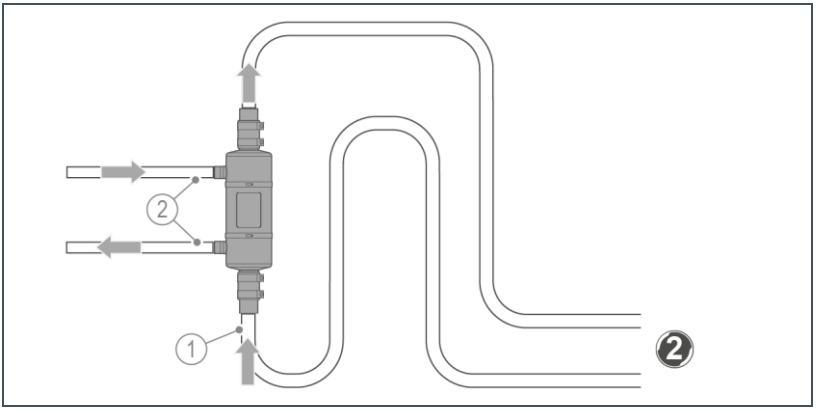
	Designation
2	Above water level (with pipe loops)

	Designation
1	Main pipe of pool water circuit

	Designation
2	Heating circuit

Installation example in full flow (vertical installation on the wall)





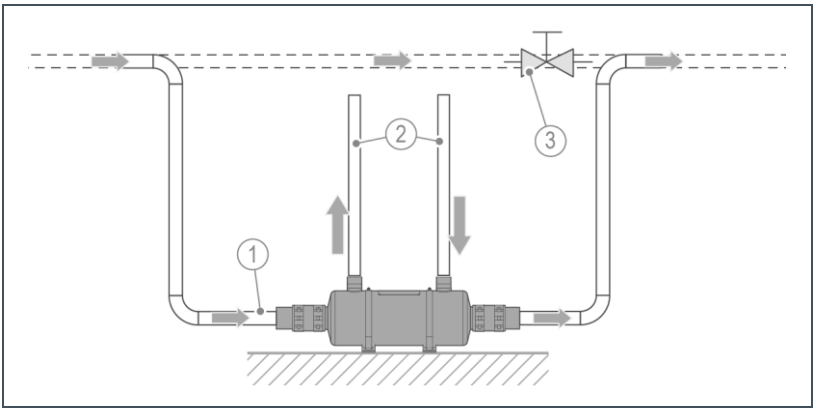
	Designation
1	Below water level

	Designation
2	Above water level (with pipe loops)

	Designation
1	Main pipe of pool water circuit

	Designation
2	Heating circuit

Installation example in partial flow



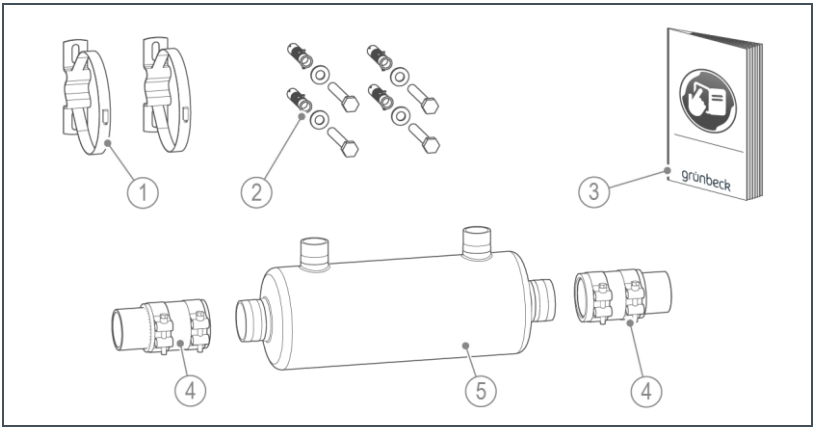
	Designation
1	Bypass pipe of pool water circuit
2	Heating circuit

	Designation
3	Shut-off valve provided by client on site in the main pipe of the pool water circuit

5.1 Requirements for the installation site

- The adequately dimensioned installation surface of the system must be level and provide sufficient strength and load-bearing capacity to support the system's operating weight.
- The installation site must be frost-proof and ensure the system's protection from direct sunlight, chemicals, dyes, solvents and their vapours, etc.
- The installation site must have a chemical-resistant floor drain. If no floor drain is available, an appropriate safety device must be installed in order to prevent water damage.
- The installation site must be adequately illuminated and ventilated. It must not be at risk of flooding.
- The system must be easily accessible for maintenance and repair work. Therefore, a clearance of at least 1 metre is required in front of the system.
- It must be possible to shut off, depressurise and drain the system for maintenance and repair work. To do so, the client must provide suitable fittings on site.
- Disturbing influences and restrictions on site must be indicated in advance and taken into account in the design of the system.
- The installation site should be located below the water level (pool level).
- If the installation site is above the water level (pool level), pipe loops must be provided on the pool water side.

5.2 Checking the scope of supply



	Designation
1	Fastening clamps
2	Fastening material
3	Operation manual

	Designation
4	Hose connection with PVC-U nipple
5	Heat exchanger

► Check the scope of supply for completeness and damage.

5.3 Installing the heat exchanger

Installation below pool level

► Install the heat exchanger below pool level downstream of the filter system in the partial or full flow.

Installation above pool level (optional)

The heat exchanger must never run dry.

► Obey the following when installing the heat exchanger below pool level downstream of the filter system:

1. Lay pipe loops on the pool water side.

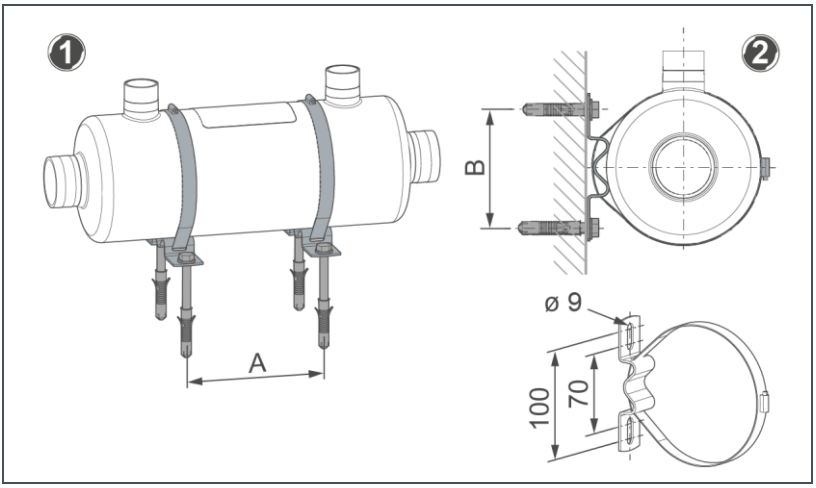
5.3.1 Fastening the heat exchanger

You can fasten the heat exchanger horizontally on the wall or on the floor.

► Recommendation: Use a wall bracket provided by the client on site for solid wall mounting.

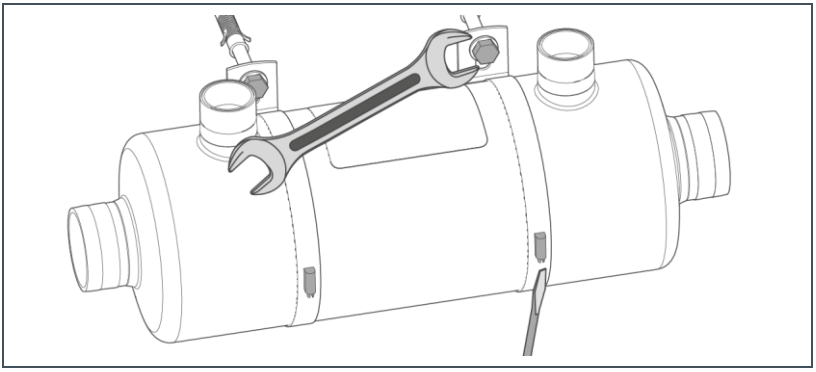
► Check the installation situation on site for available space.

► For wall mounting, check the static condition of the masonry.



Designation	Designation
1 Floor mounting	2 Wall mounting

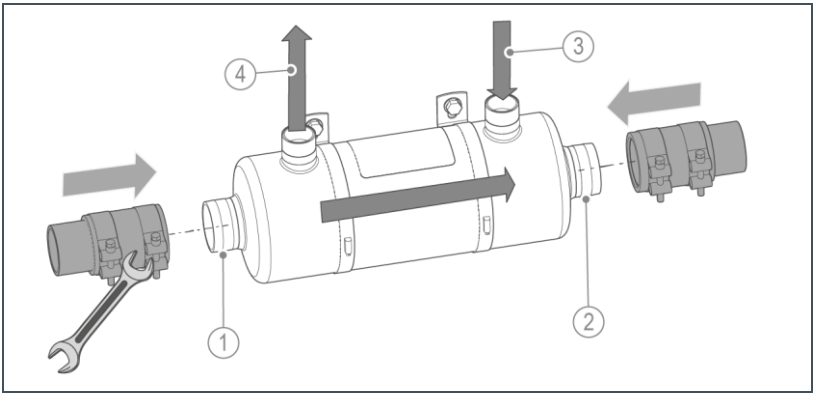
1. Determine the type of mounting: Wall or floor.
2. Determine distance A between the fastening clamps – as far apart as possible.
   a Recommended distance A:
   GENO-WT-K 42 ~ **140** mm
   GENO-WT-K 76 ~ **300** mm
   GENO-WT-K 105 ~ **400** mm
3. Determine distance B.
4. Securely fasten the product according to the conditions on site.



5. Insert the heat exchanger.
6. Firmly secure the heat exchanger – tighten the clamps.
    a. Make sure that the heating outlets point plumb upwards.
7. Check that all connections are secure.

5.3.2 Connecting the pipes

Obey the flow directions on the heating and pool water side.

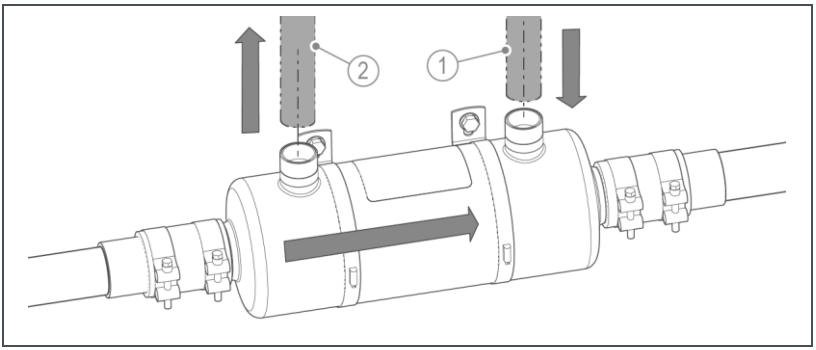


	Designation		Designation
1	Pool water inlet	3	Supply from the heating system
2	Outlet to the pool	4	Return to the heating system

1. Push the hose connections onto the connections on the right and left of the heat exchanger.
2. Tighten all bolt clamps hand-tight.

5.3.3 Connecting the heating

The connections to the heating circuit provided by the client on site must be removable.



	Designation		Designation
1	Heating supply	2	Heating return

1. Fasten the heating supply pipe.
2. Fasten the heating return pipe.
3. Install shut-off valves provided by the client on site into the supply and return pipe.

5.3.4 Installing components/water pipes provided by the client on site

NOTE

Temperature increase on the pool water side of the heat exchanger to more than 40 °C.

- Damage and failure of the system or of the PVC-U piping.

► Install a maximum temperature limiter downstream of the heat exchanger which switches off the heating circulation pump if the temperature is exceeded.

6 Start-up/Commissioning

The initial start-up/commissioning of the product must be done by technical service personnel only.

CAUTION

Thermal hazard due to contact with hot surfaces (up to 90 °C)

- Burns

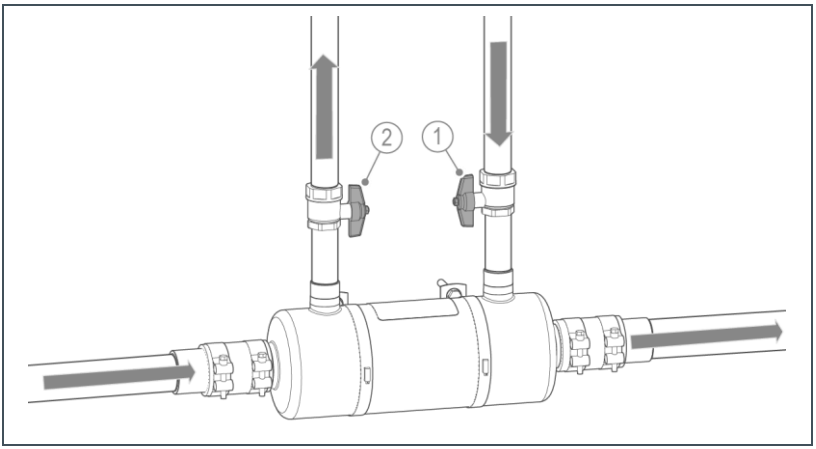
► Do not touch the hot surfaces of the heat exchanger and of the components on the heating side.

► Sufficiently insulate the components on the heating side.

► Allow the components to cool down before carrying out any work.

► Use protective gloves.

6.1 Venting the system/checking for leaks



	Designation		Designation
1	Heating supply shut-off valve provided by client on site	2	Heating return shut-off valve provided by client on site

1. Open the shut-off valves provided by the client on site.
2. Vent the lines on the pool water and heating water side.
3. Visually check the installation for leaks.

6.2 Checking the system for function

1. Check the heat input into the swimming pool.
2. Check the locking of the heat supply (e.g. heating circulation pump) provided by the client on site with the pool water circulation pump being switched off.

6.3 Handing over the product to the owner/operating company

- ► Explain to the owner/operating company how the product works.
- ► Use the manual to brief the owner/operating company and answer any questions.
- ► Inform the owner/user about the need for inspections and maintenance.
- ► Hand over all documents to the owner/operating company for keeping.

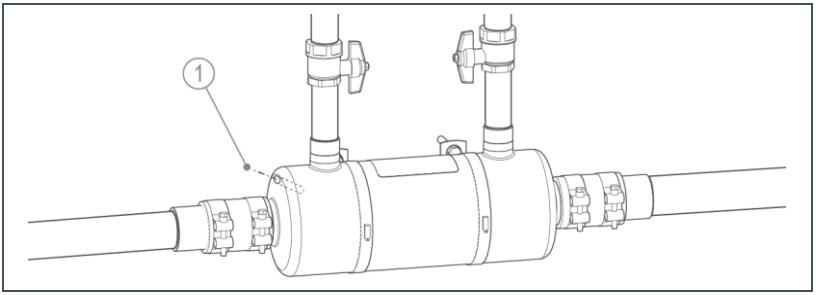
7 Operation/handling

CAUTION Maximum temperature exceeded

- System failure and risk of water damage
- ► Take measures in the control technology or by mechanical means to make sure that if the pool water circulation pump is at a standstill, the flow on the heating side is stopped or interrupted as well.

The heat exchanger features a thermowell.

A temperature sensor provided by the client on site can be inserted into the thermowell. In combination with a controller, the pool water temperature can be measured via the temperature sensor.



	Designation
1	Thermowell

8 Maintenance and repair

Maintenance and repair includes cleaning, inspection and maintenance of the product.

The responsibility for inspection and maintenance is subject to local and national requirements. The owner/operating company is responsible for compliance with the prescribed maintenance and repair work.

By concluding a maintenance contract you make sure that all maintenance work will be carried out on time.

► Only use genuine spare and wearing parts from Grünbeck.

WARNING Mechanical hazards due to pressurised components

- Splashing by medium, startling, scalding in case of hot media.

► Depressurise and drain the entire system before removing any components.

CAUTION Thermal hazards due to unexpected supply of heating water when the heat exchanger or components are removed.

- Escaping heating water with temperatures of up to 90 °C.
- Scalding

► Close the shut-off and ball valves provided by the client on site before removing any components.

8.1 Cleaning

Have the cleaning work only carried out by persons who have been instructed on the risks and dangers that can arise from the product.

- ► Use personal protective equipment.
- ► Only clean the outside of the system.
- ► Do not use any strong or abrasive cleaning agents.
- ► Clean the system at regular intervals to remove dirt and chemical residues.
- ► Only wipe the components with a damp cloth.

8.2 Intervals

By way of regular inspections and maintenance, malfunctions can be detected in time and system failures might be avoided.

- ► (As owner/operating company) Determine which components must be inspected and maintained at which intervals (load-dependent). This is subject to the actual conditions such as: water condition, degree of impurities, environmental impacts, consumption, etc.

The interval table below shows the minimum intervals for the activities to be carried out.

Task	Interval	Activities
Inspection	monthly	• Check the heat exchanger for function • Check the locking of the heat supply (e.g. heating circulation pump) provided by the client on site with the pool water circulation pump being switched off • Check all components for leaks
Maintenance	semi-annually	• Check all product components for impurities and clean them, if necessary • Check all product components for function and leaks. • Check product components for unusual noises or vibration • Check connections for damage and tight fit • Check the heat input into the pool. • Check the locking of the heat supply (e.g. heating circulation pump) provided by client on site with the pool water circulation pump being switched off • Check the function of the maximum temperature limiter (optional accessory)
	annually	• Check the system for scale deposits
Repair	5 years	• Recommendation: Replace wearing parts

8.3 Inspection

You as owner/operating company can carry out the regular inspections yourself.

► Carry out an inspection at least once a month and proceed as follows when doing so:

1. Check the heat exchanger for function.
2. Check the locking of the heat supply (e.g. heating circulation pump) provided by the client on site with the pool water circulation pump being switched off.
3. Check all components for leaks.

8.4 Maintenance

Regular work is required in order to ensure the proper functioning of the product in the long term.

8.4.1 Semi-annual maintenance

1. Check all product components for impurities and clean them, if necessary.
2. Check all product components for function and leaks.
3. Check all product components for unusual noises or vibration.
4. Check all connections for damage and a tight fit.
5. Check the heat input into the swimming pool.
6. Check the locking of the heat supply (e.g. heating circulation pump) provided by the client on site with the pool water circulation pump being switched off.
7. Check the function of the maximum temperature limiter (optional accessory).
8. Record the data and work performed, including repairs, in the operation log (refer to chapter 13).

8.4.2 Annual maintenance

Annual maintenance work requires expert knowledge. This kind of maintenance work must be carried out by Grünbeck's technical service or by qualified specialists trained by Grünbeck only.

In addition to the semi-annual maintenance, the following work must be done:

9. Check the system for scale deposits.

8.4.2.1 Checking the heat exchanger for scale deposits

The higher the heating temperatures and the total hardness of the pool water, the more scale precipitation in the heat exchanger.

Scale is an extremely poor conductor of heat, and even thin layers of scale must be removed.

In order to check the heat exchanger for scale deposits while it is installed, an access on the pool water side can be used, e.g. the hose connection on the pool water side.

1. Make sure that the system is depressurised.
2. Remove the hose connection on the pool water side.
3. Check the interior of the heat exchanger for scale deposits.
4. Clean the heat exchanger with scale remover when detecting scale deposits (refer to chapter 8.4.3).
5. Install the hose connection on the pool water side.
   a. Use a new hose, if necessary.
6. Check all product components for function and leaks.

8.4.3 Cleaning with scale remover

Obey the safety and application instructions of the scale remover used.

The interior of the heat exchanger must only be cleaned while the heat exchanger is removed.

1. Make sure that the system is depressurised.
2. Remove the heat exchanger.
3. Clean the interior of the heat exchanger with a special scale remover.
4. Thoroughly rinse the heat exchanger with clear water.
   The scale remover used must not get into the pool water.
5. Reinstall the cleaned heat exchanger.
   a. Use new hoses and seals, if necessary.
6. Check all product components for function and leaks.

8.5 Spare parts

For an overview of the spare parts, refer to our spare parts catalogue at www.gruenbeck.com. You can obtain the spare parts from your local Grünbeck representative.

8.6 Wearing parts

Wearing parts must be replaced by qualified specialists only.

Wearing parts are listed below:

- Seals, hoses

9 Troubleshooting

9.1 Observations

Observation	Explanation	Remedy
Pool water does not heat up	Heat exchanger is not operated in counterflow mode	► Check flow direction and change it, if necessary
	Air present in the heating water circuit	► Thoroughly vent the heating water circuit
	Heat output of heating system provided by client on site too low	► Check heat output of heating system provided by client on site and increase it, if necessary.
	Heat transfer capacity of heat exchanger too low for existing on-site heating output or operating mode (low supply temperatures)	► Use suitable heat exchanger

If a malfunction cannot be eliminated, the technical service personnel can take further measures.

► Contact technical service (refer to inner cover sheet for contact data).

10 Decommissioning

The work below must be carried out by technical service personnel only.

10.1 Temporary shutdown

If a longer standstill of the system is planned, the system must be shut down.

The tasks below must be carried out:

1. Flush the system with clear water to remove chlorine and salt residues.
2. Drain and clean the system completely.
3. Completely drain all lines that are at risk of freezing.

» The system is out of operation.

10.2 Restart

► Put the system into operation (refer to chapter 6).

11 Dismantling and disposal

11.1 Dismantling

The work described herein represents an intervention into your pool water and heating water installation.

► Have this work carried out by qualified specialists only.

1. Flush the system with clean pool water on the pool water side.
2. Close the shut-off valves provided by the client on site (pool water and heating water).
3. Depressurise the system and drain it.
4. Disconnect the hydraulic connections of pool water and heating water installation.
5. Remove individual components such as accessories, if necessary.
6. Transport the system secured in a suitable cardboard box or on a pallet.

11.2 Disposal

► Obey the applicable national regulations.

Packaging

► Dispose of the packaging in an environmentally sound manner.

NOTE Danger to the environment due to incorrect disposal

- Packaging materials are valuable raw materials that can be reused in many cases.
- Incorrect disposal can cause hazards to the environment.

► Dispose of packaging materials in an environmentally sound manner.

► Obey the local disposal regulations.

► If necessary, commission a specialist company with the disposal.

Product

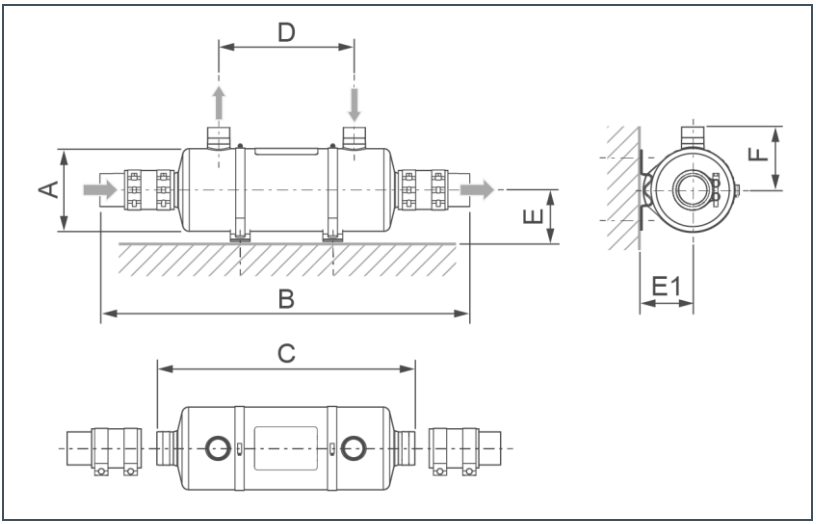
If this symbol (crossed-out wheelie bin) is on the product, it means that this product or its electrical and electronic components must not be disposed of as household waste.

► Find out about the local regulations on the separate collection of electrical and electronic products.

► Make use of the collection points available to you for the disposal of your product.

For information on collection points for your product contact your municipality, the public waste management authority, an authorised body for the disposal of electrical and electronic products or your waste disposal service.

12 Technical specifications



Dimensions and weights			WT 42	WT 76	WT 105
A	Diameter	mm	125	125	160
B	Total length	mm	555	845	975
C	Housing length	mm	385	680	780
D	Distance between the pipes on the heating side	mm	205	495	590
E	Distance to floor	mm	78	78	96
E1	Distance to wall	mm	78	78	96
F	Height		~ 95	~ 95	~ 120
	Weight	kg	~ 4	~ 6.5	~ 9.5

Connection data		WT 42	WT 76	WT 105
Nominal connection diameter PW (thread on heat exchanger)		DN 40 (1½" fem. thread)	DN 40 (1½" fem. thread)	DN 50 (2″ fem. thread)
Heating connection		1" male thread		
Swimming pool pressure	bar	< 3		
Heating pressure	bar	< 10		
Heating supply temperature	°C	≤ 90		
Floor drain		DN ≥ 100		

Performance data		WT 42	WT 76	WT 105
Heat transfer capacity (supply 90 °C, PW 20 °C)	kW	42	84	133
Swimming pool flow rate	m³/h	> 10	> 12	> 15
Swimming pool pressure loss (at flow)	bar m³/h	~ 0.10 (10)	~ 0.22 (12)	~ 0.22 (15)
Heating flow rate	m³/h	> 2	> 3	> 4
Heating pressure loss * (at flow)	bar m³/h	~ 0.18 (2)	~ 0.23 (3)	~ 0.44 (4)
Heating surface	m²	0.17	0.35	0.56

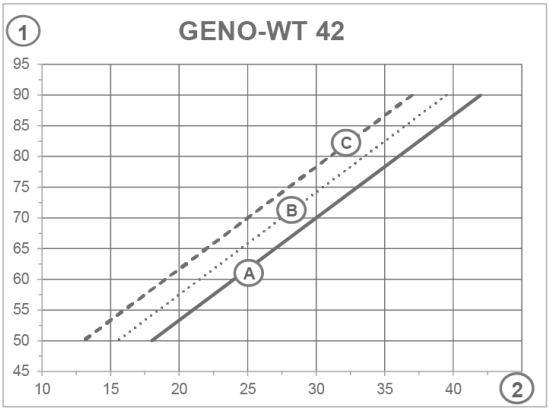
* Heating pressure loss of HE without heating circulation pump and ball valves

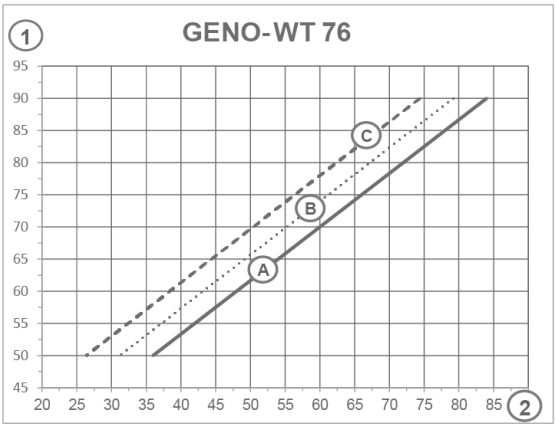
General data		WT 42	WT 76	WT 105
Housing material		1.4404		
Water temperature	°C	< 40		
Ambient temperature	°C	5 – 35		
Order no.		**208 570**	**208 575**	**208 580**

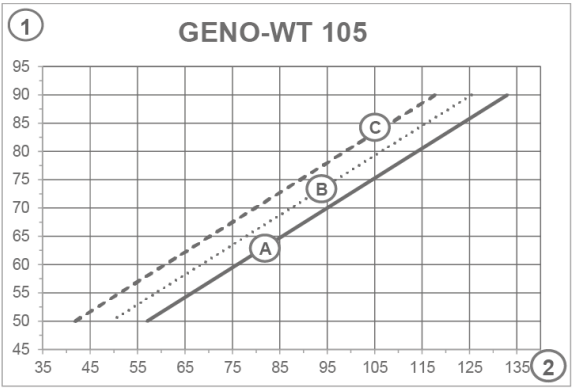
HE =Heat exchanger
PW = Pool water

12.1 Capacity curves of GENO-WT

The capacity of the heat exchanger in kW refers to the maximum possible transfer capacity at the minimum flow rates specified.







	Designation
1	Supply temperature of heating in °C
2	Capacity of heat exchanger in kW at water temperature

	Designation
A	20 °C water temperature
B	24 °C water temperature
C	28 °C water temperature

13 Operation log

- ► Document the initial start-up/commissioning and all maintenance activities.
- ► Copy the maintenance report.

Heat exchanger GENO-WT _____

Serial no.: _____

13.1 Start-up/Commissioning log

Customer	
Name	
Address	

Pool version		
Design	☐ Indoor pool	☐ Outdoor pool
Pool size	Volume in m³	
Disinfectant	☐ Sodium hypochlorite GENO-Chlor A	
	☐ GENO-Brom	
	☐ Others	

Technology / mechanical room		
Below water level	☐ Yes	☐ No
Floor drain available	☐ Yes	☐ No

Installation/Accessories		
Installation type	☐ Partial flow	☐ Full flow
Maximum temperature limiter available	☐ Yes	☐ No
Heat exchanger shut-off kit 1"	☐ Yes	☐ No

Installation/Accessories		
Control unit used	☐ GENO-BW-tronic	☐ BWH-W
	☐ Digital tempera-ture controller	☐ Others

Pool water	
Water temperature	° C
Total water hardness	°dH
pH value	–
Conductivity	µS
Value of disinfectant in the pool (free chlorine, bromine, ...)	mg/l

Remarks

Start-up/Commissioning	
Company	
Service technician	
Work time certificate (no.)	
Date/signature	

Maintenance no.: ___

Enter the measured values and operating data.
Confirm the tests with **OK** or record any repairs carried out.

Operating values

Pool water	Before maintenance	After maintenance
Water temperature	°C	°C
Total water hardness	°dH	°dH
pH value	-	-
Conductivity	µS	µS
Value of disinfectant in the pool (free chlorine, bromine, ...)	mg/l	mg/l

Maintenance work

Preliminary maintenance work	OK
Product components checked for cleanliness, cleaned or replaced, if necessary.	☐
Product components checked for function and leaks. Faulty components repaired.	☐
Product components checked for unusual noises or vibration.	☐
Connections checked for damage and tight fit. Faulty or worn components replaced. Loose connections tightened.	☐
Heat input into the pool checked.	☐
Heat exchanger checked for scale deposits and scale deposits removed, if necessary.	☐
Locking of heat supply (e.g. heating circulation pump) provided by client on site checked with the pool water circulation pump being switched off.	☐
Function of maximum temperature limiter checked.	☐

Remarks

Carried out by	
Company:	
Service technician:	

Maintenance no.: ____

Enter the measured values and operating data.
Confirm the tests with **OK** or record any repairs carried out.

Operating values

Pool water	before maintenance	after maintenance
Water temperature	°C	°C
Total water hardness	°dH	°dH
pH value	-	-
Conductivity	µS	µS
Value of disinfectant in the pool (free chlorine, bromine, ...)	mg/l	mg/l

Maintenance work

Preliminary maintenance work	OK
Product components checked for cleanliness, cleaned or replaced, if necessary.	☐
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Locking of heat supply (e.g. heating circulation pump) provided by client on site checked with the pool water circulation pump being switched off.	☐
Function of maximum temperature limiter checked.	☐

Remarks

Carried out by	
Company:	
Service technician:	

Maintenance no.: ___

Enter the measured values and operating data.
Confirm the tests with **OK** or record any repairs carried out.

Operating values

Pool water	before maintenance	after maintenance
Water temperature	°C	°C
Total water hardness	°dH	°dH
pH value	-	-
Conductivity	µS	µS
Value of disinfectant in the pool (free chlorine, bromine, ...)	mg/l	mg/l

Maintenance work

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Heat exchanger checked for scale deposits and scale deposits removed, if necessary.	☐
Locking of heat supply (e.g. heating circulation pump) provided by client on site checked with the pool water circulation pump being switched off.	☐
Function of maximum temperature limiter checked.	☐

Remarks

Carried out by	
Company:	
Service technician:	

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