GEISER INOX

Domestic hot water calorifiers

Double-walled tanks in stainless steel

A 2000

Installation and Usage Instructions for Fitters and Users

Contents

EC Marking

The products listed in this note are conforming with European Directive 89/336/EEC of Electromagnetic compatibility and 73/23/EEC of Low Voltage
D.H.W. calorifiers:

GX-60-D/DEC, GX-100-D/DEC, GX-150-D/DEC, GX-200-D/DEC, GX-300-D/DEC y GX-500-D/DEC

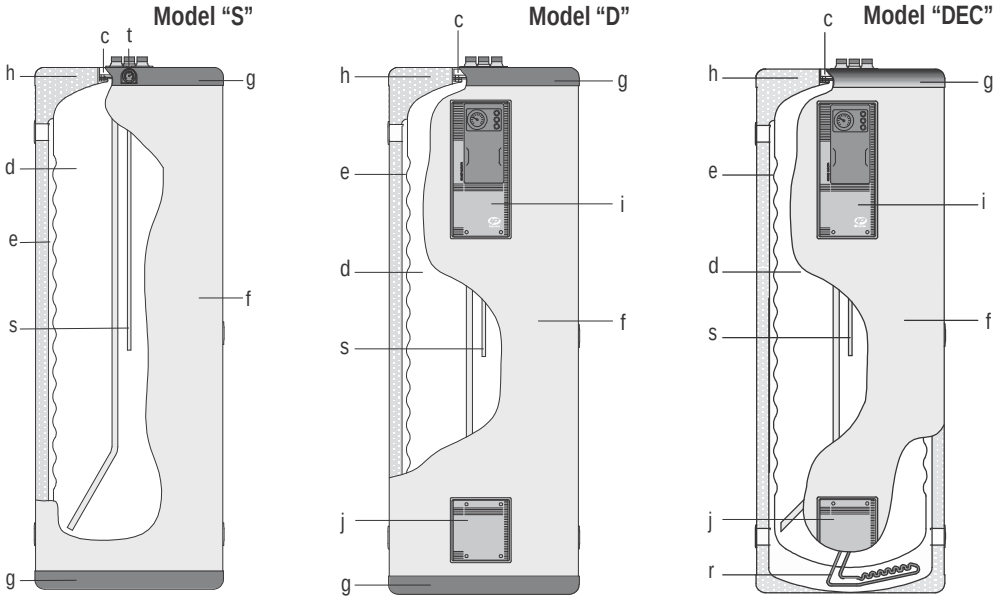
Model GX-500-D**/**DEC, with 4,5 kW, 230 V heating resistance is conforming with European Directive 89/336/EEC for instalation network impedances of undeer (0.4 + 0.25 j) Ohm.

National conditions may contain restrictions respect to their installations in bathrooms.

All the models have been approved as per Standard EN-60335 on

“Safety in Household Appliances and Similar”, by Officially Approved Laboratories.

Double walled tanks



c - Inspection hole
d - D.H.W. storage tank
e - Heating body
f - External lining
g - Cover
h - Thermal insulation
i - Control panel
j - Hole for electric resistance
r - Electrical heating element
s - Probe for sensors
t - Thernometer

kw - Cold water inlet
ww - Hot water outlet
z - Recirculation
kv - Primary circuit inlet
kr - Primary circuit return

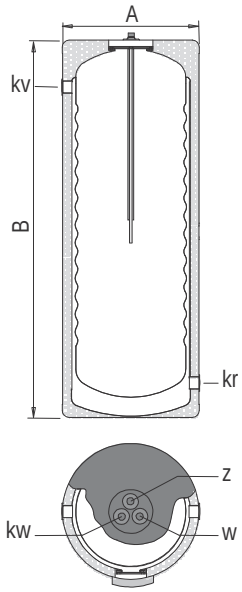
Description

A double-walled tank for domestic hot water production and storage, with capacities from 60 to 500 litres. Made of AISI-316, chemically descaled and passivated stainless steel.St.37.2 steel casing (as per DIN 17100) for the production of D.H.W. by means of indirect heating by a boiler, solar panel, heat pump or electric heating element. Thermally insulated with CFC-free, mould-injected rigid polyurethanefoam. The whole range is designed for vertical or horizontal installation and for wall installation for the models from 60 to 150 litres.

- Models "S": The tank has a D.H.W. thermometer on its top cover. This model does not offer the option of electrical heating.

- Models "D": The tank includes a "K" type control panel and so that an electric heating element can be fitted. For electric heating, all that is needed is an electric element wich is supplied with the necessary power leads so that it can be connected up to the "K" control panel which is supplied totally wired up and has all the necessary regulating controls. The electric heating element should be fitted under the secondary stainless steel tank in the primary water. This means that there is no possibility of scale forming on the heating element or it being corroded by the secondary water.

- Models "DEC": The tanks include the complete heating equipment already installed. The electrical element is between the stainless steel tank and the double wall, this way, no corrosion and/or incrustation (usual in the H.S.W. side), will damage it. The 60 and 100 litres models are fitted with the "K" control panel and the rest with the "KP1" type.

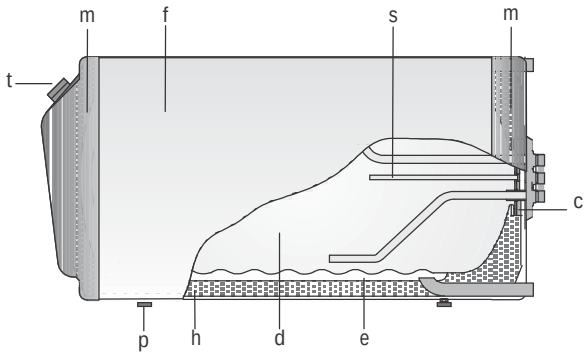


Technical characteristics		GX-60-S/D /DEC	GX-100-S/D /DEC	GX-150-S/D /DEC	GX-200-S/D /DEC	GX-300-S/D /DEC	GX-500-S/D /DEC
D.H.W. capacity	l.	55	92	146	193	285	466
Heating body capacity	l.	22	30	41	56	65	108
Max. woking temperature in primary circuit	ºC	110	110	110	110	110	110
Max. woking pressure in primary circuit	bar	3	3	3	3	3	3
Max. woking temperature in secondary circuit	ºC	90	90	90	90	90	90
Max. woking pressure in secondary circuit	bar	8	8	8	8	8	8
Weight aprox.	Kg.	36	52	65	78	107	151
Heat exchange surface		0.6	1.0	1.2	1.6	2.4	3.1
A : External diameter	m^2	480	480	620	620	620	770
B : Overall height	mm.	749	1154	983	1239	1724	1730
kw : Cold water inlet	mm.	3/4	1	1	1	1	1
ww : Hot water outlet		3/4	1	1	1	1	1
z : Recirculation	"male	—	1	1	1	1	1
kv : Primary circuit inlet	"male	1	1	1	1	1	1-1/2
kr : Primary circuit return	"male	1	1	1	1	1	1-1/2

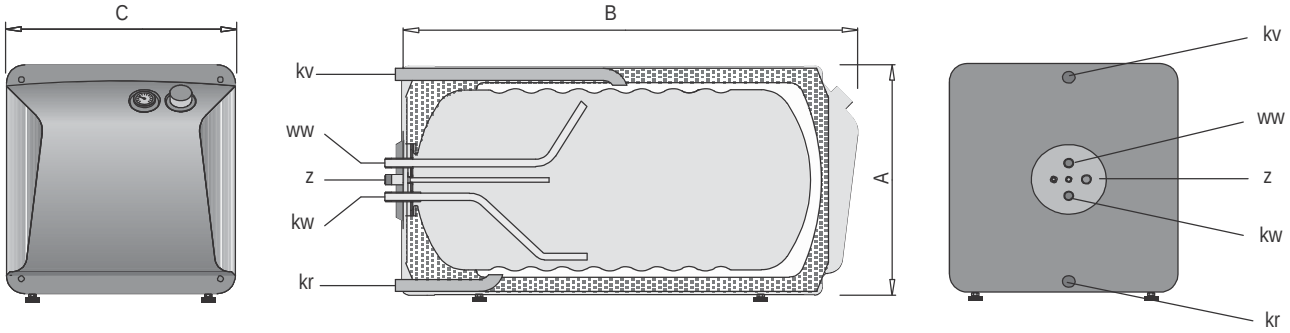
Double walled tanks

Models "TS", only for horizontal installation

Description
A double-walled tank for domestic hot water production and storage, with capacities of 150 and 200 litres.
Made of AISI-316, chemically descaled and passivated stainless steel St-37-2 steel casing (as per DIN 17100) for the production of D.H.W. by means of indirect heating by a boiler, solar panel, or heat pump.
Thermally insulated with CFC-free, rnould-injected rigid polyurethane foam.
Specially designed for horizontal installation, A boiler of up to 300 kg. can be installed on top of the tank,
The tank has a D.H.W. thermometer and a regulating thermostat both of which are situated on the front of the tank
This model does not offer the option of electríc heating,



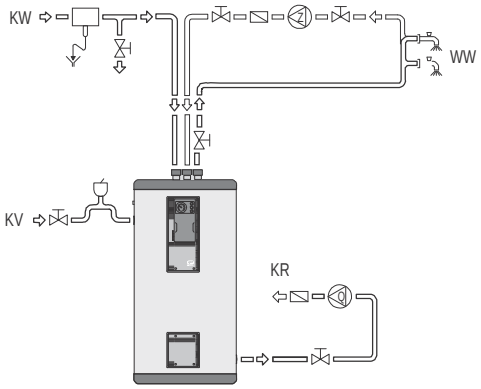
c - Inspection hole
d - D.H.W. storage tank
e - Heating body
f - External lining
h - Thermal insulation
m - Front and back covers
p - Support legs
t - Thermometer and termostat
s - Probe tube for sensor



Technical characteristics		GX-150-TS	GX-200-TS
D.H.W. capacity	l	146	193
Heating body capacity	l	25	33
Max. working temp. in primary circuit	ºC	110	110
Max. working press. in primary circuit	bar	3	3
Max. working temp. in secondary circuit	ºC	90	90
Max. working press. in secondary circuit	bar	8	8
Heat exchange surface	m2	1,2	1.6
Weight aprox.	kg	66	85
A: Height (without support legs)	mm	630	630
B: Lenght (without connection pipes)	mm	1000	1255
C: Width	mm	630	630
kw: Cold water inlet	"male	3/4	3/4
ww: Hot water outlet	"male	3/4	3/4
z: Recirculation	"male	3/4	3/4
kv:Primary circuit inlet	"male	1	1
kr: Primary circuit outlet	"male	1	1

Hydraulic installation

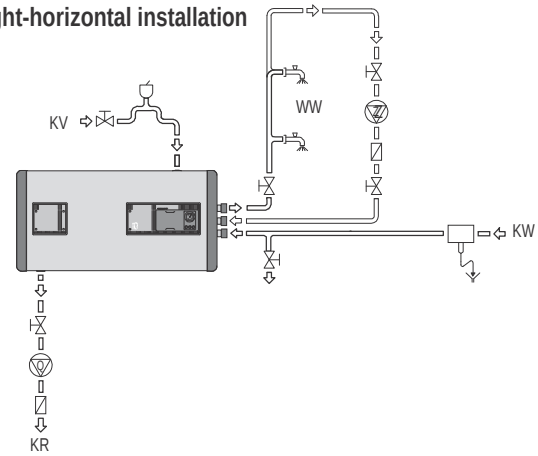
Vertical installation



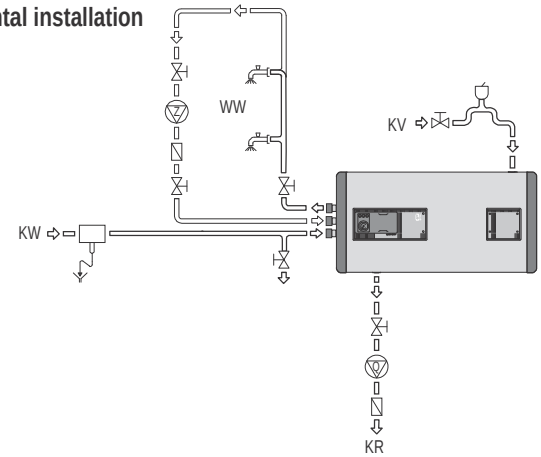
- Safety group
- Non-return valve
- Primary pump
- Circulating pump
- Shut-off valve
- Air vent
- Draining
- Pressure reducing valve
- Safety valve (< 8 bar)

WW	D.H.W.
KW	Cold water inlet
Z	Recirculation
KV	Primary inlet
KR	Primary return

Right-horizontal installation



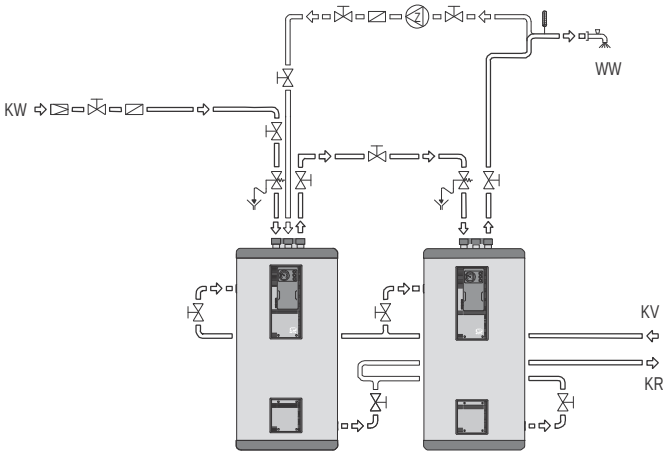
Left-horizontal installation



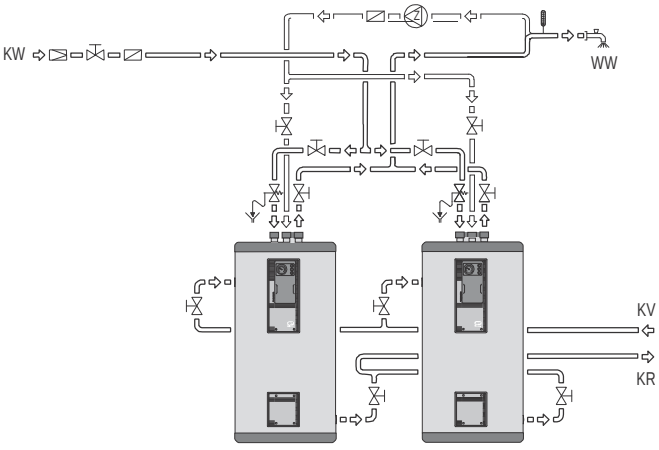
ATTENTION!!

For left-horizontal installation, the lid with the secondary circuit connections should be rotated 180º from its original position, so that the cold water inlet tube is in the top position and works as hor water outlet

Battery mounted-series connection



Battery mounted-series connection

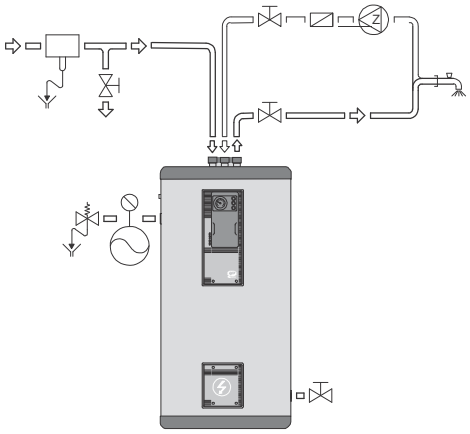


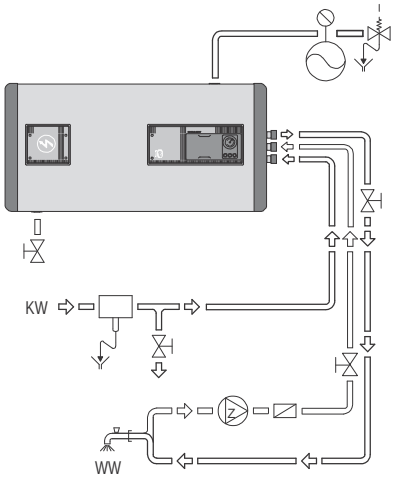
Hydraulic installation
Schemes

GX-60...500-D/DEC
For electric heating only

- Safety group
- Non-return valve
- Circulation pump
- Shut-off valve
- Draining
- Safety valve
- Expansion vessel

WW D.H.W.
KW Cold water inlet
Z Recirculation

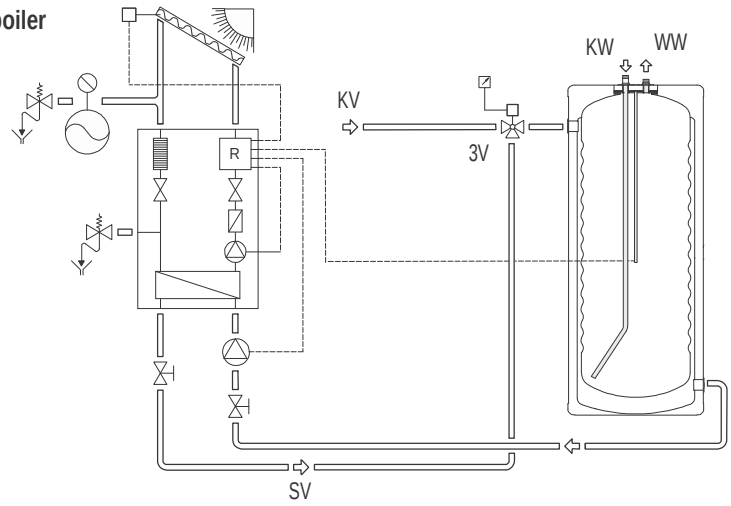




Hydraulic installation norms for electric heating only

1. Once the tank has been wired up, first fill the secondary circuit (domestic water) and pressurise.
2. Fit the shutoff cock for emptying at the outlet of the primary circuit (bottom connection).
3. Fill the primary circuit with water through its inlet (top connection) and fit a safety valve, set to a maximum pressure of 3 bar.
4. Connect the electric unit and heat.
5. It is advisable to keep the primary circuit purger open when heating up for the first time so that any excess water in the circuit is evacuated.
6. It is advisable to check the primary circuit once a year and top it up with water, if necessary.

GX-200...500-S/D/DEC
Heating by comination with solar panel and boiler



WW D.H.W.
KW Cold water inlet
Z Recirculation
KV Primary inlet
SV Solar inlet
3V 3-way-valve

Hydraulic installation
Norms for installations

General norms for hydraulic Installation:

ATTENTION!

Once the pipes have been connected, first fill the domestic water tank (secondary circuit) and pressurise it. Then fill the primary circuit. In the event that the tank has to be emptied, this process should be carried out in reverse order. Tank filling and emptying must only be carried out by a qualified fitter.

1. The secondary circuit (or domestic water circuit) should be fitted with a safety valve which is set at 8 bar, maximum.
2. The safety valve evacuating pipe must lead to a drain but this pipe must not be directly connected to the drain.
3. The primary circuit (or heating water circuit) should be fitted with a safety valve which is set at 3 bar, maximum.
4. Once the tank has been installed, firstly fill the secondary circuit (domestic water) and pressurise it.
5. Once step 4 has been carried out, fill the primary circuit.
6. If the main pipe is not a stainless steel pipe then dielectric bushes must be fitted at secondary circuit connections.
7. If the cold water entry pressure is higher than the equipment's design pressure a pressure reducer must be fitted with a pressure setting of less than the design pressure.
8. To prevent heat loss through the hot water pipe in night rate storage systems, an anti-thermal siphon should be fitted at the storage tank outlet.The hot water pipe should be lagged (at least up to the anti-thermal siphon).
9. Return circuits should be avoided when made of copper.
10. The probe tube will be placed at the cold water intake in vertically isntalled tanks and the hot water outlet in horizontally installed tanks (see installations diagrams).

Instructions for user:

a) The nominal operating pressure for the safety unit is < 8 bar.

b) When the inains pressure is more than 5.25 bar then a pressure reducer should be installed.

c) The discharge of water during heating (expansion) is normal. This volume of this discharge can be up to 3% of the storage tank's capacity.

d) The safety valve should be opened at least once a month (by activating the emptying device).

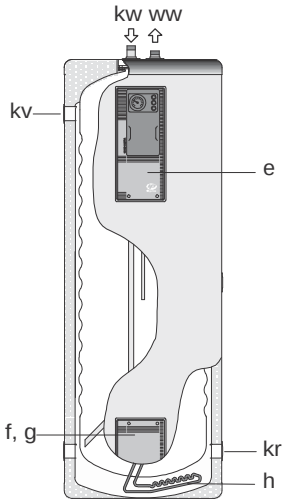
e) The safety unit's drain should be kept free of all obstructions. If there is a water leakage in the pressure protection device's discharge pipe, close the pipe's shutoff cock. The discharge pipe should always be open to atmosphere.

f) The connection of the safety unit to the tank (cold water intake) must be long enough for the safety unit to be installed next to the tank and never on top of the tank.

Electric heating
Electric heating resistances

GX-60...500-D/DEC

Position of the electric heating resitances



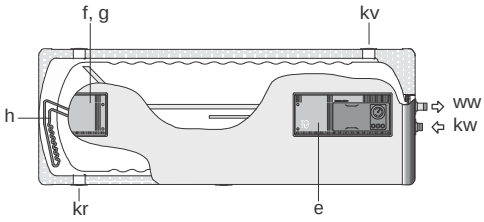
kw - Cold water inlet
ww - Hot water outlet
kv - Primary inlet
kr - Primary return
e - Control panel
f - Electric heating resitance hole
g - Cover
h - Electric heating resistance, right position “D”
r - Electric heating resistance, left position “I”

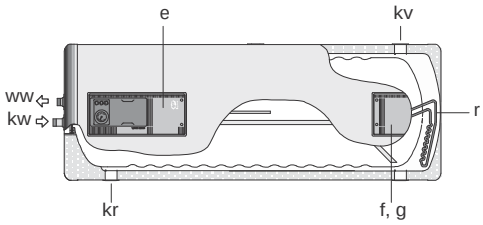
The “D” models are supplied with a “K” type control panel and flanged housing to allow an electric heating element to be fitted.

The heating element is supplied in separate packing with the power cables to connect it to control planel.

All of the models with electric heating element can be installed in the vertical position. It must be noted if the heating resistance is valid for the right position (tables 1 and 3) or left position (table 2) when the tank is installed horizontally.

The tank includes the complete heating equipment already installed. The electrical element is between the stainless steel tank and the double wall, this way, no corrosion and/or incrustation (usual in the HSW side), will damage it. The 60 and 100 liters models are fitted with the "K" control panel and the rest with the "KP1" type.





For vertical and right horizontal position:

Characteristics/Tank type		GX-60-D /DEC	GX-100-D /DEC	GX-150-D /DEC	GX-200-D /DEC	GX-300-D /DEC	GX-500-D /DEC
Designation		RC 5/15 D	RC 6/22 D	RC 11/22	RC 7/25 D	RC 7/25 D	RC 45 D
Power	(kW)	1,5	2,2	2,2	2,5	2,5	4,5
Voltage	(~ V)	230	230	230	230	230	230

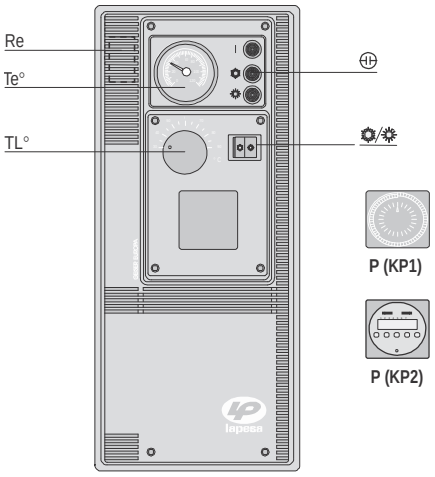
For vertical and left horizontal position:

Characteristics/Tank type		GX-60-D /DEC	GX-100-D /DEC	GX-150-D /DEC	GX-200-D /DEC	GX-300-D /DEC	GX-500-D /DEC
Designation		RC 5/15 I	RC 6/22 I	RC 11/22 I	RC 7/25 I	RC 7/25 I	RC 45 I
Power	(kW)	1,5	2,2	2,2	2,5	2,5	4,5
Voltage	(~ V)	230	230	230	230	230	230

Optional models for vertical and right horizontal position:

Characteristics/Tank type							GX-500-D/DEC	
Designation							RC 50	RC 75
Power	(kW)						5	7,5
Voltage	(~ V)						380	380

Control panels, Models "K", "KP1", "KP2"

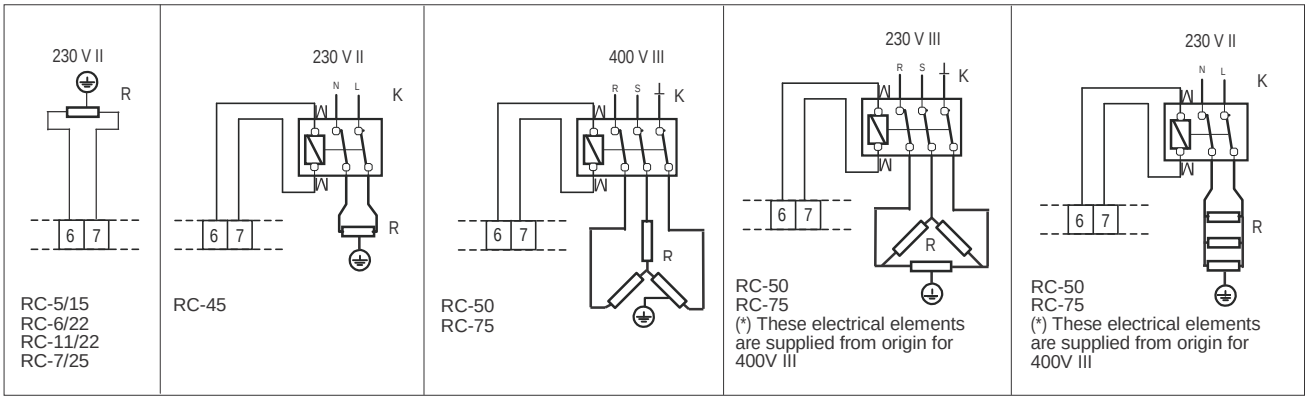


- Panel "K": without time programmer
- Panel "KP1": with analogue time programmer
- Panel "KP2": with digital time programmer

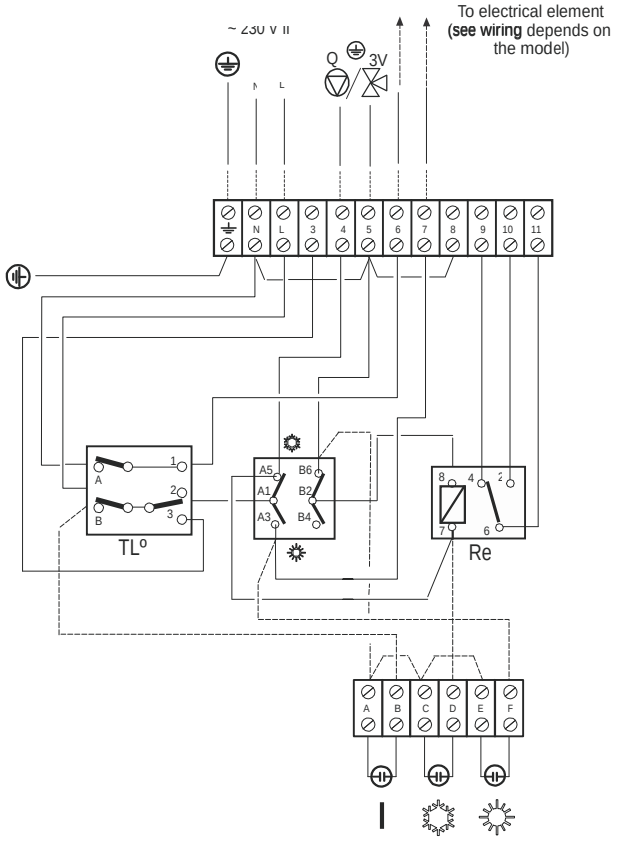
Te - Thermometer ºC
⊕ - Lamps
TL - Regulating and safety thermostat
☼/❄ - Summer-winter switch
Re - Relais
P - (KP1) Analogue time programmer
- (KP2) Digital time programmer
R - Electrical element
K - Power contactor
Q - Circulating pump
3V - 3-way valve

- Summer position ❄ : the panel controls the electrical element.
- Winter position ☼ : the panel controls another device (e.g. pump, 3-way valve, etc...)

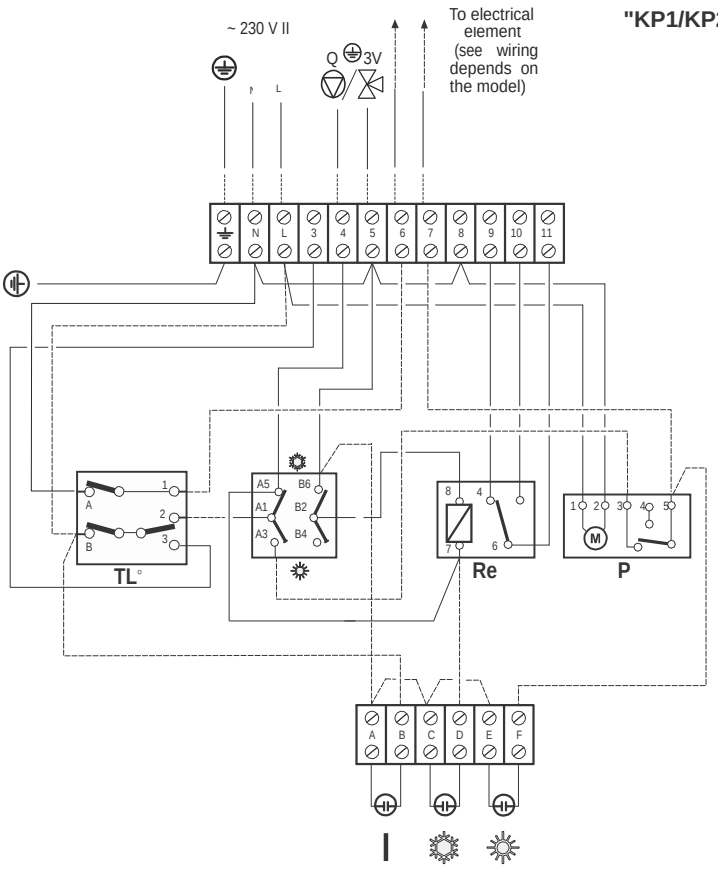
Electrical element wiring



"K"

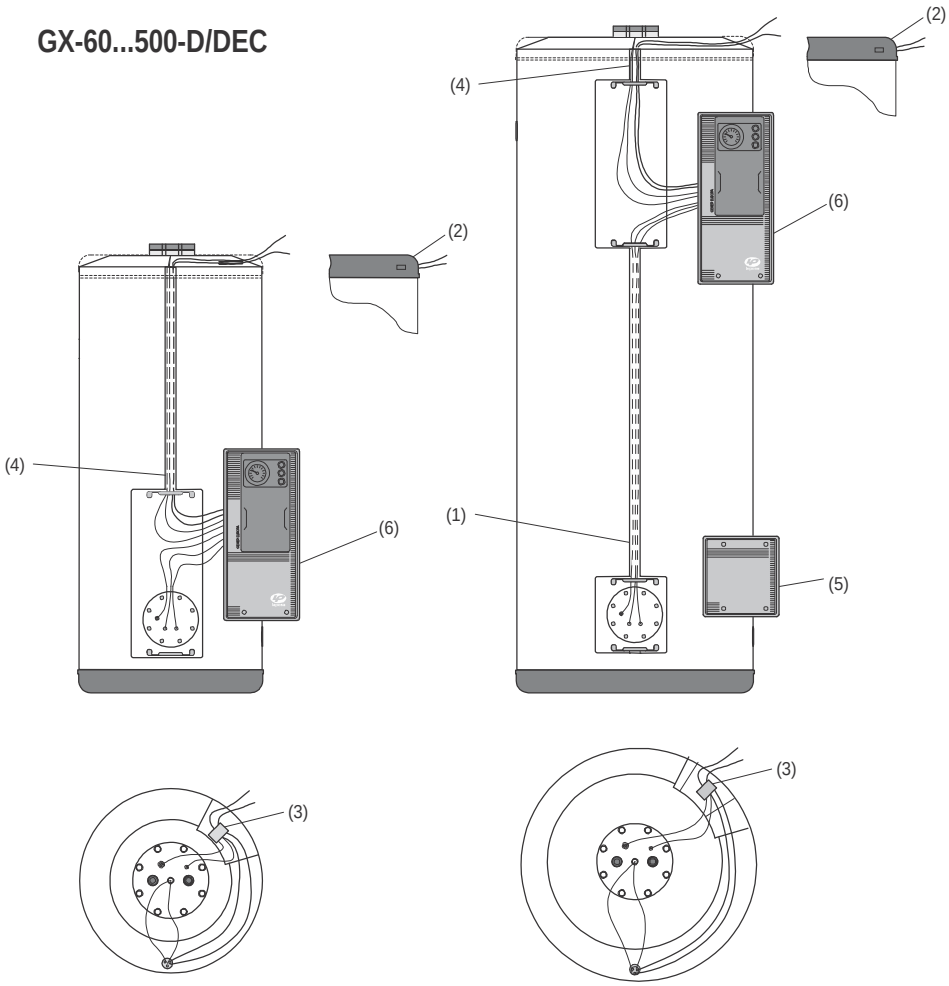


"KP1/KP2"



Wiring

GX-60...500-D/DEC



GX-60/100/150-D/DEC

GX-200/300/500-D/DEC

The electric wires are hidden as they are situated inside the insulation.

Ther is a tube (1) that yakes the wires that connect the electric element to the control panel (6). The wires that go from the outside to the control panel are led through the practically invisible opening in the plastic cover (2), they are held in place with the clamp (3) and are connected to the panel through the conduit (4).

Note the minimum wire section.

Both the control panel (6) and the lid (5) which covers the electric elements are fastened to the tank by four screws. The top cover fits the tank.

A multipolar tripping device with a gap of 3 mm. or more between contacts is required to carry out the installation.

IMPORTANT!!

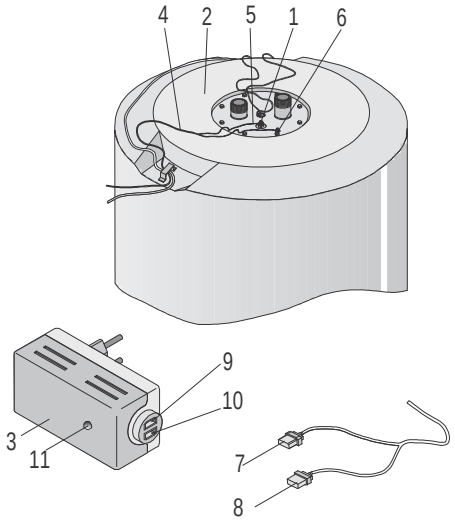
BEFORE HANDLING CONNECTIONS ELECTRICALLY ISOLATE ALL EQUIPMENT

Permanent cathode protection

In areas with particulary hard water (this can be seen from the chloride content) a cathode protection system should be installed in the storage tank.
Although the health authorities define the limits of the chloride content of water at 50 mg/l. for drinking water, the cathode protection unit for the storage tank should be fitted when the chloride content is 150 mg/l. or more.
All GEISER-INOX storage heaters can be equipped with the LAPESA Correx-up permanent cathode protection system which is totally automatic and maintenance free.
It basically comprises a titanium anode (1) mounted on the storage tank's connection plate (2) and connected to a potentiostat (3) which automatically regulates the input current to the anode, constantly measuring the potential of the storage tank), through the leads (4). Wiring the anode to the potentiostat by means of leads (4) is carried out in the following way:

To the anode: connection (5), round terminal.
To earth: connection (6), U shaped terminal.
To the potentiostat: connections at (9) and (10), pins (7) and (8) respectively.

Lapesa Correx-up



Models:	Cathode protection, ref:
GX-60...200-S/D/DEC GX-150/200-TS	“MP/1,9V-400”
GX-300/500-S/D/DEC	”24/1,9V-800”

WARNINGS !

- Use original wires only. To avoid any risk of corrosion due to reverse polariry do not lengthen nor shorten the wires. Use a socket base near to the storage heater for this purpose.
- The protective anode starts comes into operation when the storage heater is full of water. When there is no water the control pilot light (11) lights up red and blinks on and off.
- If the pilot light (11) is green, this shows that the storage heater is receiving a protective current. If the pilot light is not on or lights up red and blinks, check the connections, contacts and mains supply. If this anomaly continues, contact the fitter or our Customer Technical Service Department.
- In the case of vertically installed storage heaters from wich water is not going to be extracted for periods of more than 3 months, we recommend fitting an automatic purger at the D.H.W. outlet.
- If the storage heater is installed horizontally, we recommend the extraction of water at least once every 3 months.
- The potentiostat (3) and connecting wires (4) must not be disconnected, except when the storage heater is emptied.
- Do not disconnect the protection system during periods of absense (holidays, etc.).
- Occasionally check that the pilot light is working correctly (11).

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