

# Solar storage cylinders 7200/2 – 1500–2000 HV PLUS

EN INSTALLATION INSTRUCTIONS

# RIELLO

Dear Installer,  
thank you for choosing a Riello 7200/2 HV PLUS solar storage cylinder, a modern high quality product, providing you with the utmost wellbeing and with a high level of reliability and safety.

This instruction booklet contains important information and suggestions that should be observed for easy installation and better use of the solar storage cylinder Riello 7200/2 HV PLUS.

Please accept our renewed thanks for your purchase.  
Riello

MODEL	CODE
RIELLO 7200/2 - 1500 HV PLUS	20136237
RIELLO 7200/2 - 2000 HV PLUS	20136239

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The following symbols are used in this manual:

 CAUTION! = Indicates actions that require caution and adequate preparation.

 STOP! = Identifies actions that you MUST NOT do.

## 1 Safety precautions

- ⚠** Check that the product is complete, undamaged and as ordered as soon as you receive it. Report any discrepancies or damage to the **RIELLO** dealer who sold it.
- ⚠** This product must be installed by a legally qualified heating engineer. On completion of the installation, the installer must issue the owner with a declaration of conformity confirming that the installation has been completed to the highest standards in compliance with the instructions provided by **RIELLO** in this instruction manual, and that it conforms to all applicable laws and standards.
- ⚠** This product must only be used for the purpose for which it is designed and made, as specified by **RIELLO**. **RIELLO** declines all responsibility, contractual or other, for damage to property or injury to persons or animals caused by improper installation, adjustment, maintenance or use.
- ⚠** The product must be serviced at least once a year. Servicing must be arranged in advance with the **RIELLO** Technical Assistance Centre.
- ⚠** All servicing and repairs must be performed by a qualified heating engineer.
- ⚠** If water leaks from the storage cylinder, turn off the water supply and contact **RIELLO's** Technical Assistance Centre or a qualified heating engineer immediately.
- ⚠** If the product is not going to be used for an extended period of time, contact the manufacturer's Technical Assistance Centre to have at least the following operations performed:
  - Close the shut-off cocks for the domestic hot water circuit
  - Shut down the boiler connected to the storage cylinder as instructed in its own manual
  - Switch the storage cylinder OFF at the control panel (if fitted) and at the mains power switch
  - Drain the central heating circuit and domestic hot water circuit if there is any risk of freezing.
- ⚠** This instruction manual is an integral part of the product. It must be kept safe and must ALWAYS accompany the product, even if it is sold to another owner or transferred to another user or to another installation. If you lose this manual, order a replacement immediately. Keep the product purchase documents to be presented to the **RIELLO** authorised Technical Assistance Centre to request a service call under warranty.
- ⚠** Size the solar expansion tank so as to ensure complete absorption of the expansion of the fluid contained within the system, with reference to the prevailing regulations on the matter. In particular, consider fluid characteristics, considerable fluctuation of service temperature and vapour that might be generated during solar collector stagnation stage. Proper size of expansion tank ensures setting off of all volume changes of the heat transfer fluid, avoiding excessive pressure increase. Limited pressure changes avoid reaching safety valve opening pressure and the consequent fluid drainage.

## 2 General safety information

Please remember that the use of products using electric power and water involves respect for a few basic safety rules such as:

- ⊖** Never attempt to install the system without using suitable personal protection equipment and without following all applicable occupational safety standards.
- ⊖** Do not touch the product when barefoot or wet if it has any electrical accessories installed in it.
- ⊖** Never clean or service the storage cylinder without first turning the mains power switch OFF to disconnect all electrical accessories (if fitted) from the mains electricity supply.
- ⊖** Never pull, disconnect, or twist any electrical cables coming from the appliance even if it is disconnected from the mains electricity supply.
- ⊖** Do not expose the storage cylinder to the elements. It is not designed for use outdoors.
- ⊖** If solar plant pressure decreases, it is forbidden to top up with only water as there is a danger of freezing and overheating.
- ⊖** Do not use connections or safety devices or fittings (expansion vessels, pipes, insulation) that are not specifically designed and tested for use in solar water heating systems.
- ⊖** Do not allow children or infirm persons to operate the system unsupervised.
- ⊖** Do not dispose of packaging material into the environment, or leave it within the reach of children, since it can become a potential hazard. Dispose of packaging material in compliance with applicable legislation.

### 3 Product description

The solar storage cylinders can be integrated into solar systems for the production of domestic hot water. The main technical elements of the design of the solar storage cylinder are:

- the careful study of the geometries of the tank and the coils that allow you to obtain the best performance in terms of stratification, heat exchange and reactivation times
- the regulation of the connections to various heights for employing various types of heat generators, without influencing the stratification
- the polyurethane insulation without any CFC and the

elegant outer covering to limit dispersion and to improve efficiency

- the use of the flange to facilitate cleaning and maintenance
- the use of the magnesium anode with an "anti-corrosion" function

The storage cylinders can be equipped with a specific solar regulator and they can easily be inserted into solar system where the boilers or thermal systems act as auxiliary producers of heat.

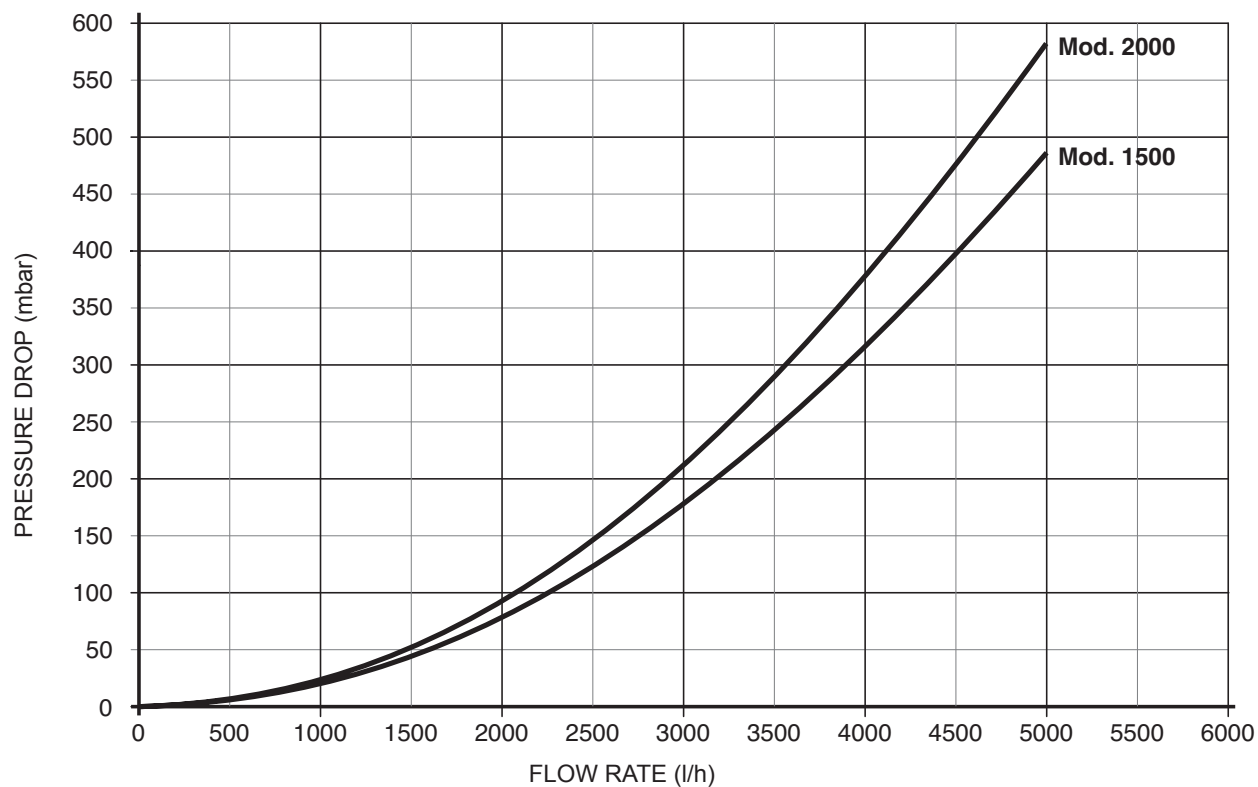
### 4 Technical data

DESCRIPTION	7200/2 1500 HV PLUS	7200/2 2000 HV PLUS	
Type of storage cylinder	Vitrified		
Storage cylinder layout	Vertical		
Heat exchanger layout	Vertical		
Storage cylinder capacity	1390	1950	l
Useful non-solar volume (Vbu)	525	800	l
Diameter with insulation	1200	1300	mm
Diameter of storage cylinder without insulation	1000	1100	mm
Height without insulation	2120	2370	mm
Height with insulation	2185	2470	mm
Insulation thickness	100	100	mm
Total net weight	325	540	kg
First magnesium anode (Ø x length)	32x700		mm
Second magnesium anode (Ø x length)	32x400		mm
Flange diameter (external/internal)	290/220		mm
Diameter/length of sensor socket	8/200		mm
Sleeve for electric heating element (**)	1" 1/2		mm
Coil water capacity	19,4	28,1	L
Coil heat exchange surface area	3,4	4,6	m <sup>2</sup>
Power absorbed by coil (*)	88	120	kW
Domestic hot water production (*)	2200	2900	l/h
Flow required at coil (*)	3,8	5,2	m <sup>3</sup> /h
Top coil water capacity	10,4	16,9	l
Top coil heat exchange surface area	1,8	2,8	m <sup>2</sup>
Power absorbed by top coil (*)	47	73	kW
Hot water production – top coil (*)	1200	1800	l/h
Flow required at top coil (*)	2	3,1	m <sup>3</sup> /h
Maximum operating pressure	8		bar
Maximum operating temperature	99		°C
Discharges according to EN 12897:2006 (ΔT=45 °C, ambient 20°C and storage at 65°C)	162	186	W
	3,89	4,46	kWh/24h
Insulation type	Soft PU		
Maximum operating pressure of coil	10		bar
Maximum working temperature of coil	110		°C
NL performance factor	55	84	

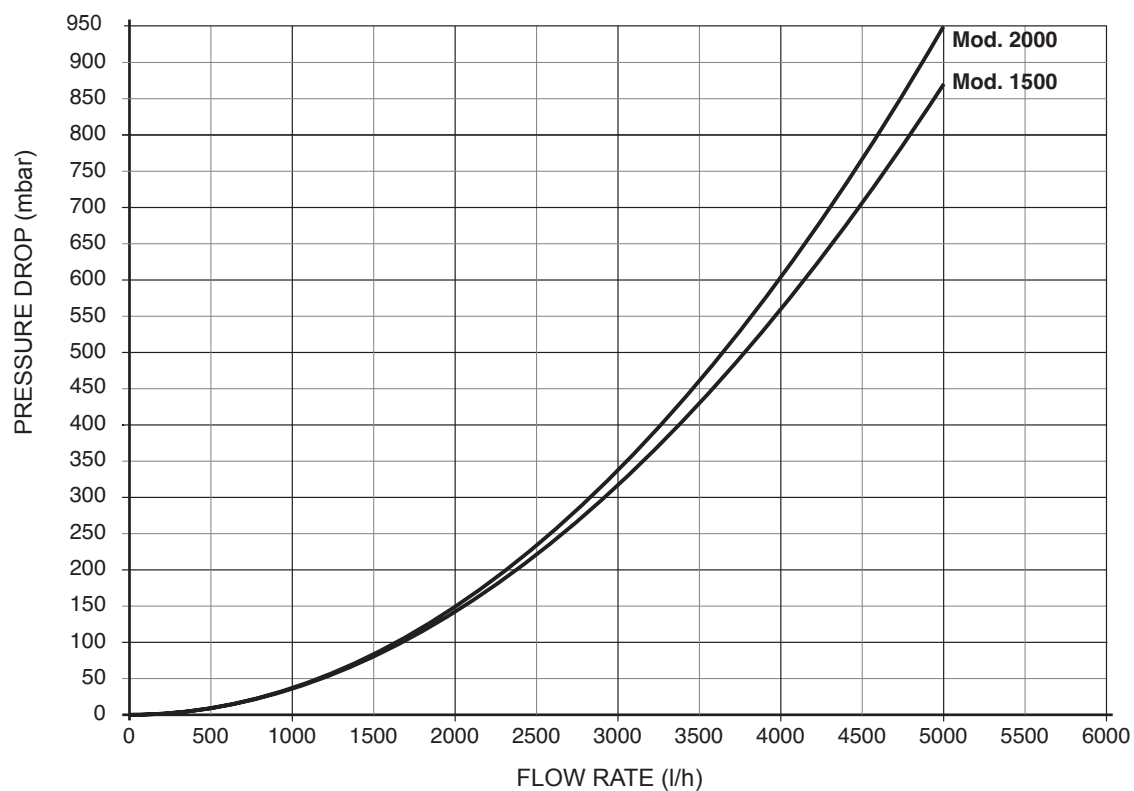
(\*) In accordance with DIN 4708 with a ΔT of 20°C (80°/60°C) at the coil.

(\*\*) Electrical heating element (not supplied)

Pressure drop TOP COIL

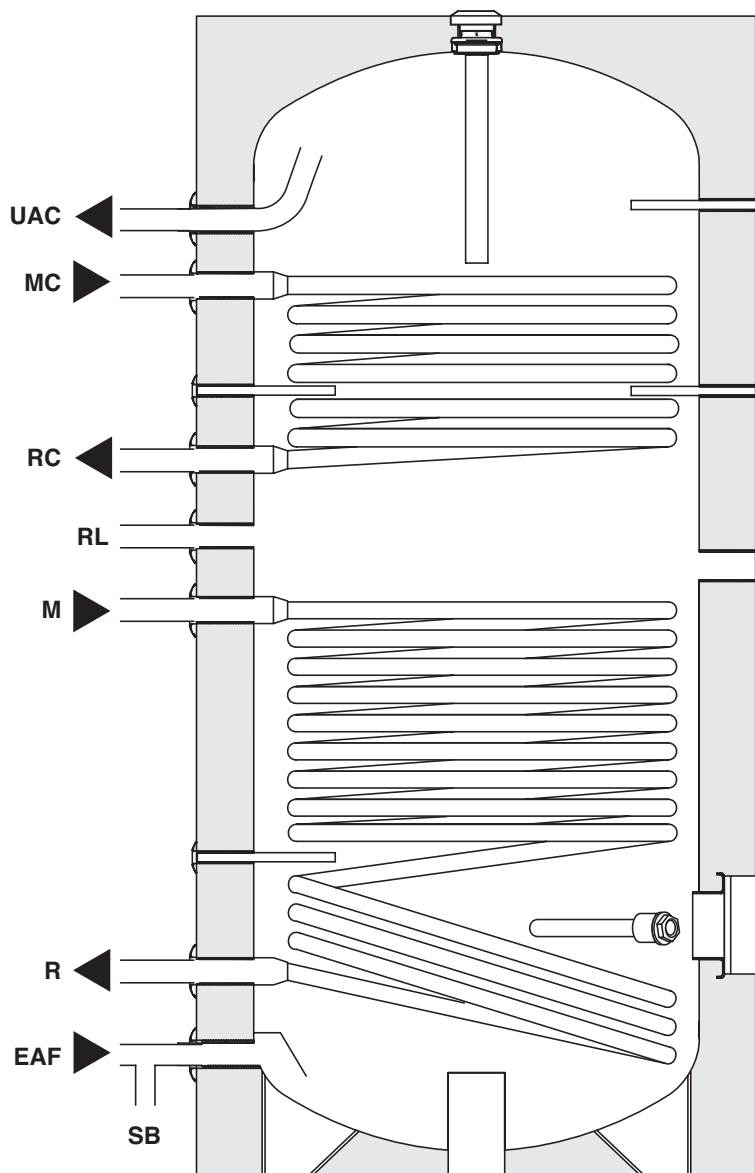


Pressure drop BOTTOM COIL



## 5 Water circuit

### 1500 HV PLUS - 2000 HV PLUS



UAC - DHW outlet

MC - Flow  
RC - Return } BOILER

M - Flow  
R - Return } SOLAR

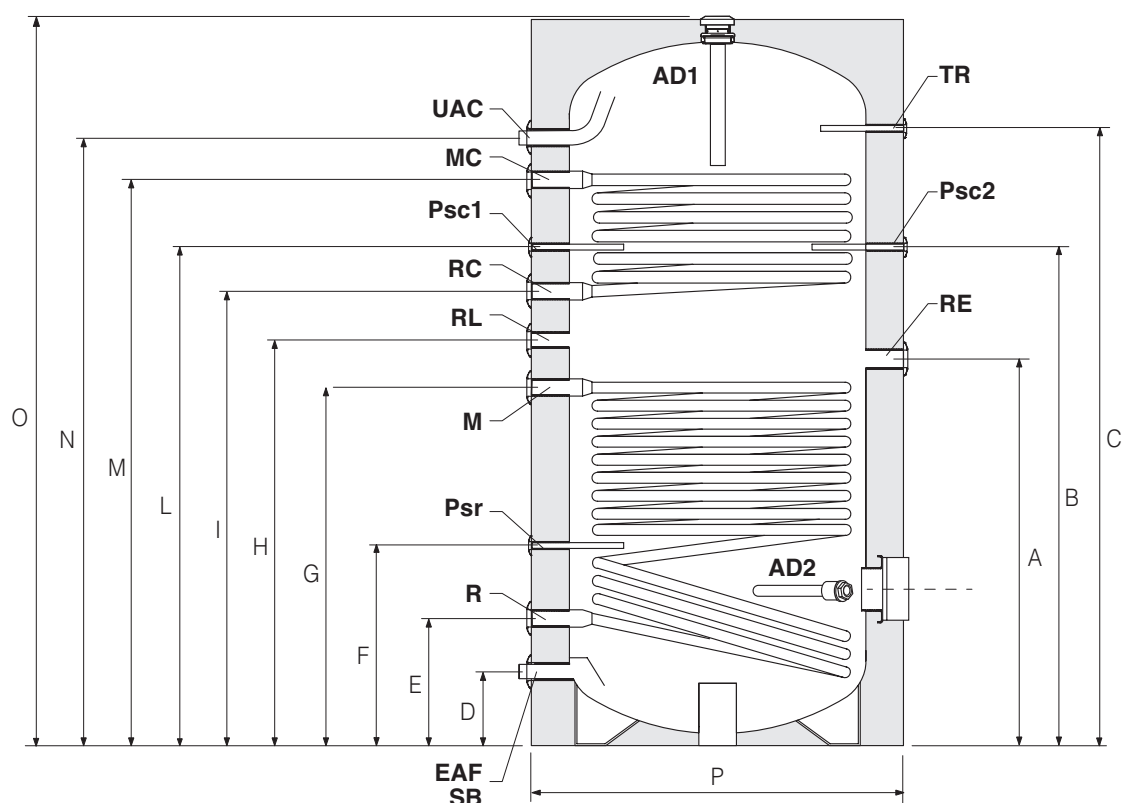
RL - DHW ricirculation

EAF - Domestic cold water inlet

SB - Cylinder drain

**A** The solar storage cylinder Riello 7200/2 HV PLUS is not equipped with load circulators which should be appropriately sized and installed on the system. For the recommended flow rate of the solar heating circuit, see the instructions for assembling the solar collector and the Riello operation and maintenance manual of the solar system.

## 6 Dimensions and connections

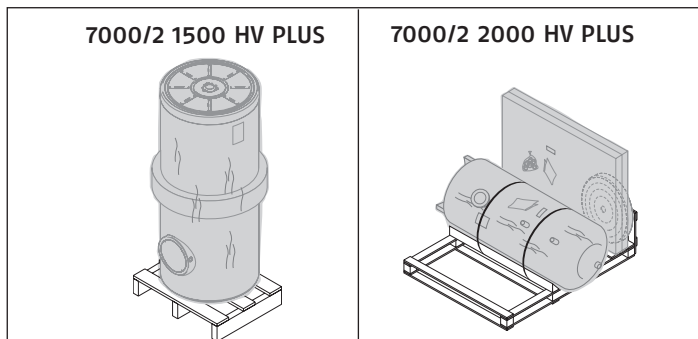


DESCRIPTION	MODELLO 7200/2		
	1500 HV PLUS	2000 HV PLUS	
UAC - Domestic hot water outlet		1"1/2 F	Ø
MC - Outlet from boiler		1"1/4 F	Ø
RC - Return to boiler		1"1/4 F	Ø
M - Outlet from solar collector		1"1/4 F	Ø
R - Return to solar collector		1"1/4 F	Ø
RL - DHW recirculation		1" F	Ø
EAF (SB) - Domestic cold water inlet (storage cylinder drain)		1"1/2 F	Ø
Psc1 - Diameter/length of boiler sensor socket	8/200	-	mm
Psc2 - Diameter/length of boiler sensor socket	-	8/200	mm
Psr - Diameter/length of solar controller sensor socket		8/200	mm
RE - Sleeve for electric heating element (not supplied)		1"1/2 F	Ø
AD1 - Diameter/length of first magnesium anode		32/700	Ø/mm
AD2 - Diameter/length of second magnesium anode		32/400	Ø/mm
TR - Temperature gauge		1/2" F	Ø
A	1230	1340	mm
B	-	1487	mm
C	1775	2000	mm
D	280	250	mm
E	415	400	mm
F	525	662	mm
G	1125	1205	mm
H	1225	1315	mm
I	1325	1425	mm
L	1420	-	mm
M	1730	1870	mm
N	1890	1990	mm
O	2120	2045	mm
P	1200	1300	mm

## 7 Receiving the product

The solar storage cylinders Riello 7200/2 1500 HV PLUS are supplied in a single package, protected by a nylon bag and put on wood pallets.

The two magnesium anodes are supplied in a cardboard box on the pallet



Model Riello 7200/2 2000 HV PLUS are supplied in two separate packages:

- the first package is composed of the painted tank, protected by a nylon bag and put on wooden pallets.
- the second package, also protected by a nylon bag, is composed of the polyurethane insulation with an elegant outer covering, the outer trim rings of the pipe coupling, the top cover, the flange covers, the identification labels and the documentation.

The following material is supplied in a plastic envelope inside the package:

- Instruction booklet
- Hydraulic test certificate
- n° 3 adjustable feet
- n° 2 threaded inserts for fixing solar controller (accessory).

The two magnesium anodes are supplied in a cardboard box on the pallet

## 8 Handling

The handling of the storage cylinder is carried out with equipment that is suitable for the weight of the appliance.

To remove the storage cylinder from the pallet, cut the straps (1).

For models 7000/2 1500 HV PLUS these can be found under the insulation near the hinges.

To lift the 7000/2 1500 HV PLUS storage cylinders, there is a plug (2) with a hole where a lifting hoop (Ø 10 mm) suitable for the weight of the tank can be inserted.

To lift the 7000/2 2000 HV PLUS storage cylinders, after removing the insulation, bind the high part of the boiler with a cord that can bear the weight and carefully lift it.

⚠ It is possible to dismantle the insulation covering to make it easier to get through the door of the boiler room.

⚠ Use suitable accident-prevention protections.

⊘ It is forbidden to dispose of the packaging material and keep within children's reach, as it may be a potential source of danger.

⚠ The instruction booklet is an integral part of the storage cylinder and it is recommended that it be read and kept safe.

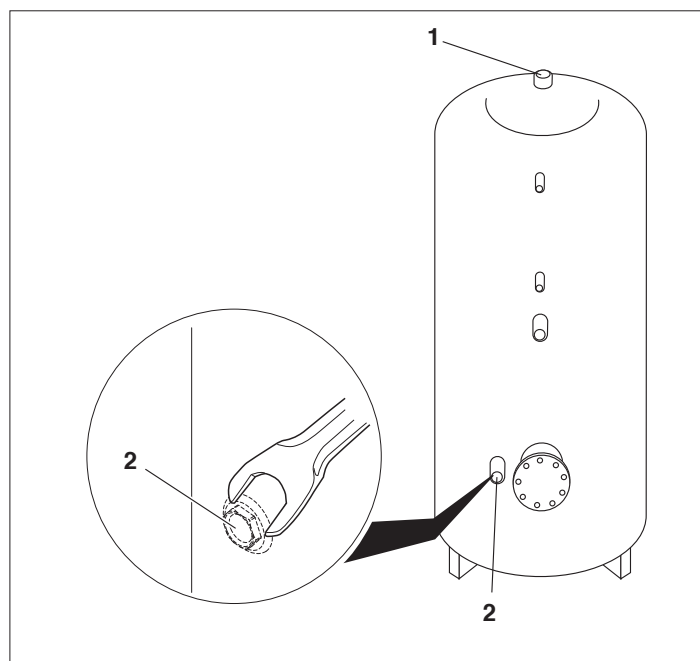
### INSTALLING THE MAGNESIUM ANODES

Proceed as follows to install the magnesium anodes:

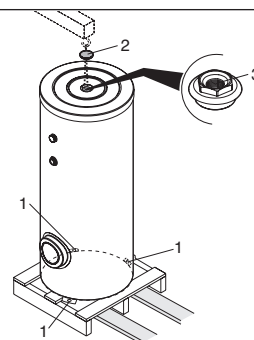
- Remove the protective plugs
- Fit the two magnesium anodes in the fittings (1) and (2)
- Screw in the magnesium anodes using a suitable spanner.

The two magnesium anodes are supplied in a cardboard box on the pallet

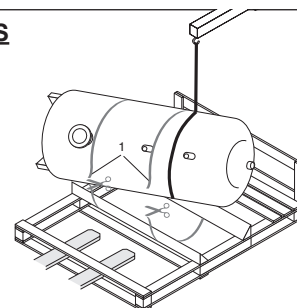
NOTE:  
Tighten to a torque of 25 Nm.



#### 7000/2 1500 HV PLUS



#### 7000/2 2000 HV PLUS





## 9 Installation on appliances that are old or that need to be updated

When the solar storage cylinders Riello 7200/2 HV PLUS are installed on appliances that are old or that need to be updated, check that:

- The installation comes with the safety and control components in compliance with the specific regulations
- The appliance has been washed, cleaned of mud and grime, de-aerated and the water seals have been checked
- There is a treatment system for when the supply/make-up water is particular (the values in the table can be used as reference values).

REFERENCE VALUES	
pH	6-8
Electric conductivity	less than 200 $\mu\text{S}/\text{cm}$ (25°C)
Chlorine ions	less than 50 ppm
Sulphuric acid ions	less than 50 ppm
Total iron	less than 0.3 ppm
M alkalinity	less than 50 ppm
Total hardness	less than 35°F
Sulphur ions	none
Ammonia ions	none
Silicon ions	less than 30 ppm

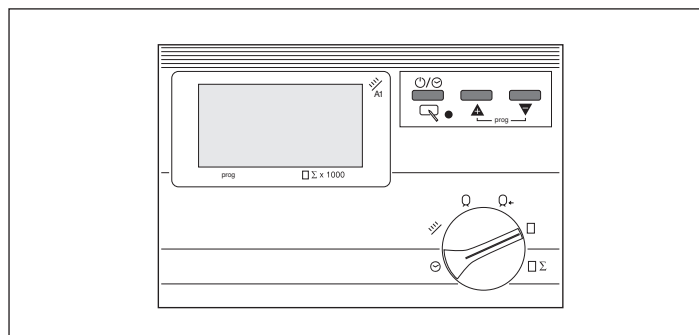
## 10 First commissioning

Before the start-up and before testing the storage cylinder, it is absolutely necessary to check that:

- The domestic hot water circuit supply taps are open
- Any water connections which connect to the boiler and to the water unit of the solar system have been carried out correctly
- The procedure for washing and filling up the solar heating circuit with the water-glycol has been carried out correctly, and the equipment has been de-aerated at the same time.

The transfer of heat into the solar heating circuit takes place when the temperature of the solar collector is higher than that of the storage cylinder. Therefore in managing the solar equipment the exact temperature is not important, but rather the temperature difference.

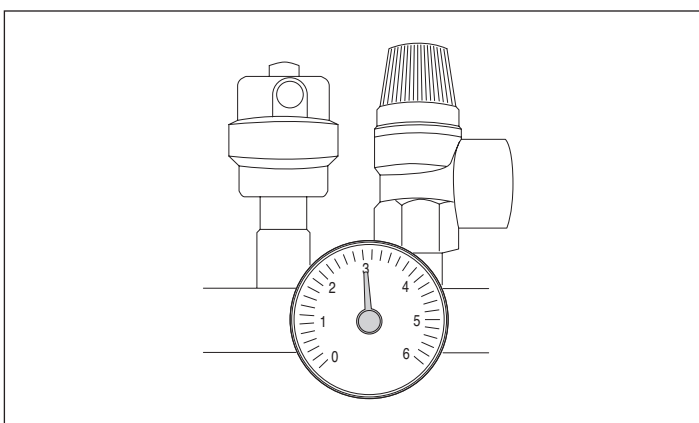
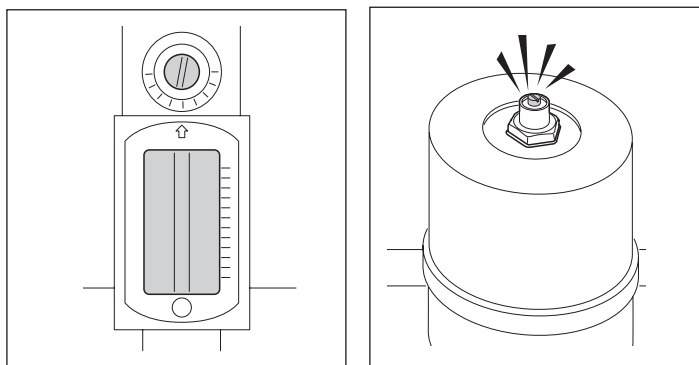
- Set the temperature difference between the collector and the storage cylinder (see the instruction manual of the regulator).
- Commission the boiler for the auxiliary heating of the storage cylinder.



At the start-up make sure that:

- The flow rate of the solar heating circuit is 30 l/h per m<sup>2</sup> of collector surface
- The solar heating circuit is completely vented
- The cold pressure of the equipment is about 3 bar
- The safety valves intervenes at 6 bar
- The piping of the hydraulic supply are insulated in full respect of current regulations.

If all conditions have been met, restart the boiler and storage cylinder and check the regulated temperature and the amount of DHW that can be taken.



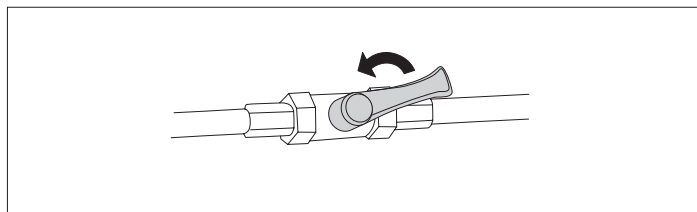
## 11 Deactivation for long periods

Not using the solar storage cylinder for a long period of time requires that the following operations be carried out:

- Empty the solar heating circuit
- Close the intercept devices of the sanitary system
- Switch off the boiler in the manner described in the appliance's instruction booklet
- Position the system's master switch to off.

**A** Drain the heating and domestic hot water systems if there is any risk of freezing.

The Technical Assistance Centre is available if the procedure reported above is difficult to do.

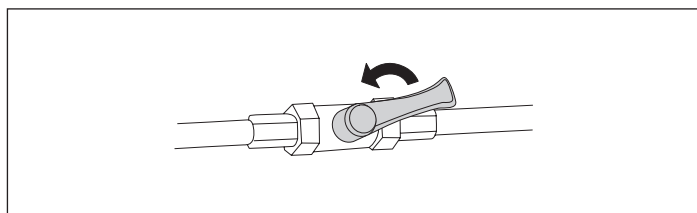
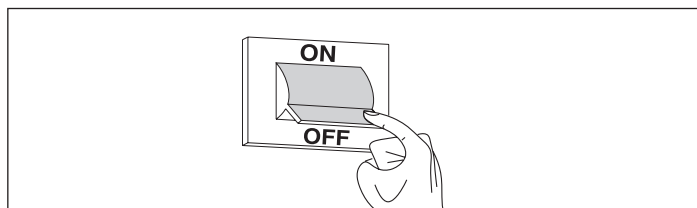


## 12 Maintenance

Periodic maintenance, which is essential for safety purposes, the efficiency and the life of the solar storage cylinder, provides reduced consumption and keeps the product reliable over time. Remember that the maintenance of the storage cylinder, can be carried out by the Technical Assistance Centre or else by qualified professional personnel and should take place at least once a year.

Before doing any maintenance work:

- Disconnect the storage cylinder's hydraulic unit and the respective generator from the electrical supply, positioning the main switch and that of the control panel to "off"
- Close the intercept devices of the sanitary system
- Empty the storage cylinder's secondary circuit.



## 13 Cleaning the storage cylinder and dismantling the internal components

### OUTSIDE

Cleaning the cover of the storage cylinder should be carried out with damp cloths and water and soap. In the case of stubborn stains dampen the cloth with a mixture of 50% water and methylated spirit or with specific products for the marks. Once the cleaning is finished, dry the storage cylinder.

- ⚠ Do not use abrasive products, gasoline or trichloroethylene.

### INSIDE

Removing and checking the magnesium anodes

First magnesium anode:

- Remove the plug (1), the cover (2) and, with a wrench, unscrew the anode-carrying plug (3)

Second magnesium anode:

- Partially remove the cover (4) and, with a wrench, unscrew the anode-carrying plug (5)

Check the state of wear of the magnesium anode and replace it if necessary.

Once the cleaning operations are finished, reassemble all the components, following the above instructions in the reverse order.

NOTE: the tightening torque of the anode-carrying plug should be 25-30 Nxm.

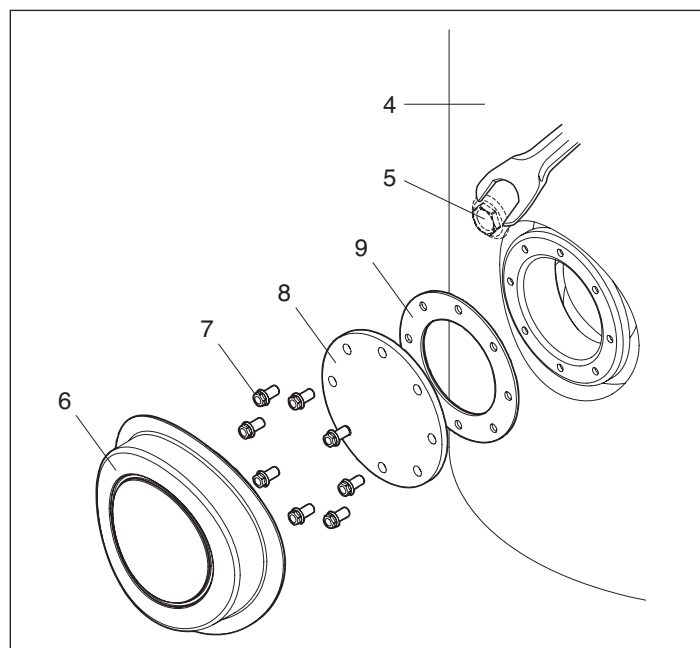
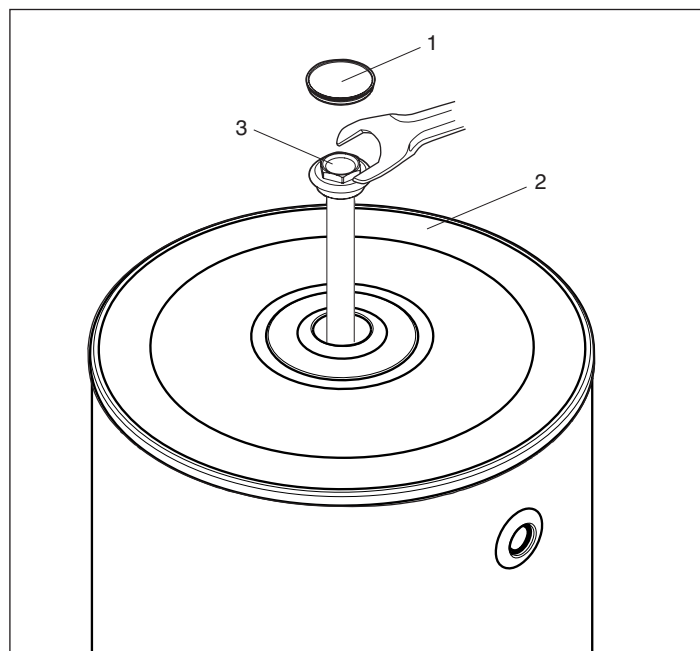
Cleaning the parts inside the storage cylinder

- Remove the flange cover (6)
- Unscrew the bolts (7), remove the cover (8) and the gasket (9).
- Clean the inside surfaces and remove the residues through the opening.

Once the cleaning operations are finished, reassemble all the components, following the above instructions in the reverse order.

- ⚠ Tighten the bolts (7) with a "cross-head" system to uniformly distribute pressure on the gasket.

- Load the storage cylinder's secondary circuit and check the seal of the gaskets.
- Carry out a performance test.



## 14 Recycling/disposal

When they are no longer needed, the components of the solar storage cylinder (boiler body, insulation and outer cover) can be separated from one another and disposed of using the most environmentally compatible recycling procedure.

# RIELLO

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The manufacturer strives to continuously improve all products. Appearance, dimensions, technical specifications, standard equipment and accessories are therefore liable to modification without notice.