



# KOMBISOLAR 2S

EN INSTALLATION, OPERATION AND MAINTENANCE MANUAL

**RIELLO**

## RANGE

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Model	Code
KOMBISOLAR 430 2S	20088789
KOMBISOLAR 550 2S	20088790
KOMBISOLAR 750 2S	20145329
KOMBISOLAR 1000 2S	20145332

### ACCESSORIES

For a complete list of accessories and details of their compatibility, refer to the Catalogue.

Dear Customer,

Thank you for choosing a **RIELLO** Combination cylinder. You have purchased a modern, quality product that is designed to give dependable and safe service and to provide comfort in the home for many years to come. Arrange for your **RIELLO** Combination cylinder to be serviced regularly by an authorised **RIELLO** service centre. Their personnel are specially trained to keep your Combination cylinder efficient and cheap to run. **RIELLO** service centres also stock any original spare parts that might be required.

This manual contains important instructions and precautions that must be observed to ensure the trouble-free installation and efficient functioning of your **RIELLO** Combination cylinder.

Please accept our renewed thanks for your purchase,

Riello S.p.A.

## CONFORMITY

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**RIELLO** combination cylinders conform to DIN 4753-3 and UNI EN 12897 standards.

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The following symbols are used in this manual:



**CAUTION!** = Identifies actions that require caution and adequate preparation.



**STOP!** = Identifies actions that you MUST NOT do.

This manual, Code 20145445 – Rev. 1 (05/2018) comprises 24 pages.

## 1 GENERAL SAFETY INFORMATION

-  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 Service.
-  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 Service 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 Service 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 Service to request a service call under warranty.

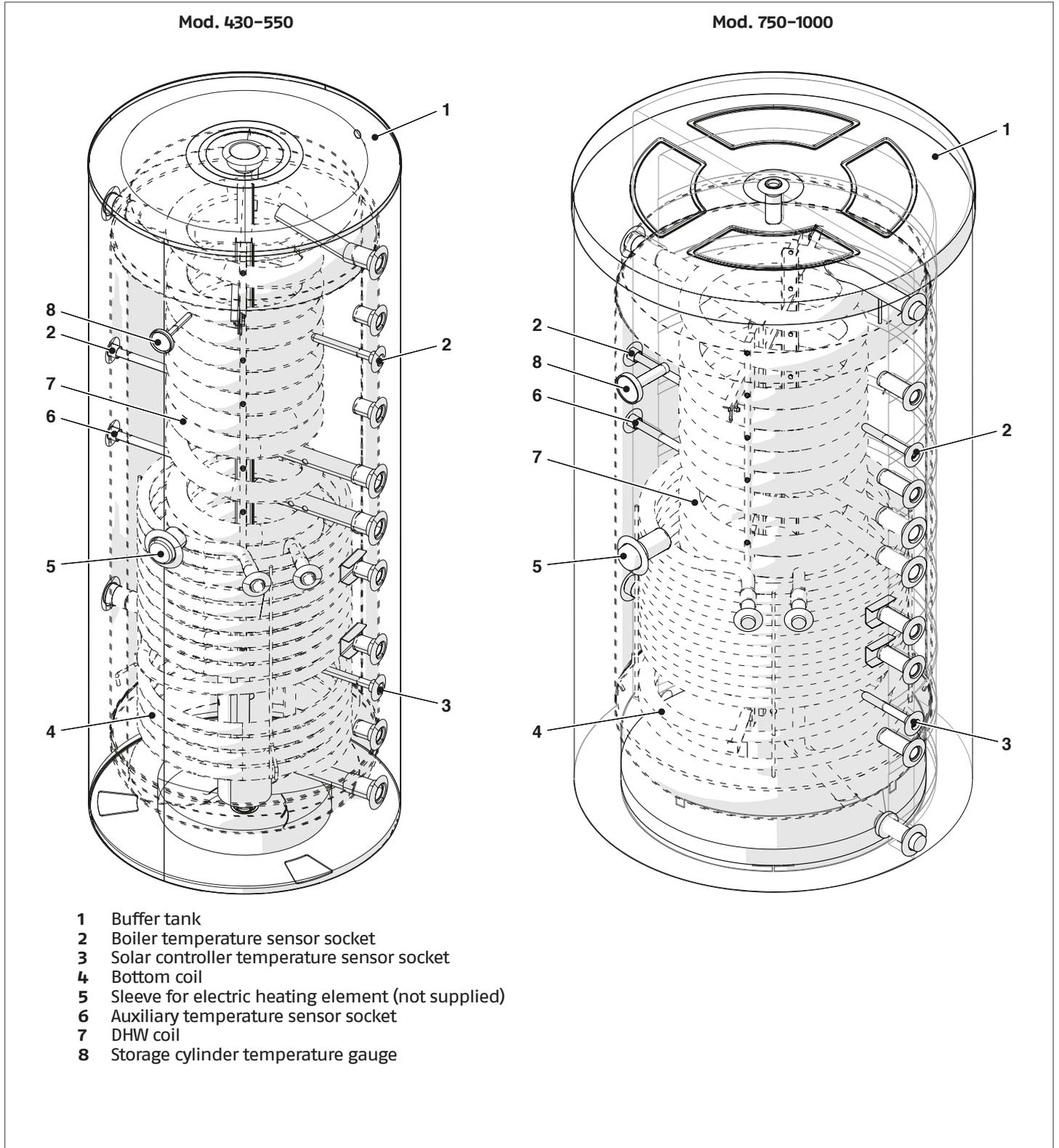
## 2 IMPORTANT SAFETY PRECAUTIONS

The operation of any appliance that uses electrical power demands that a number of fundamental safety precautions be respected. In particular:

-  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.



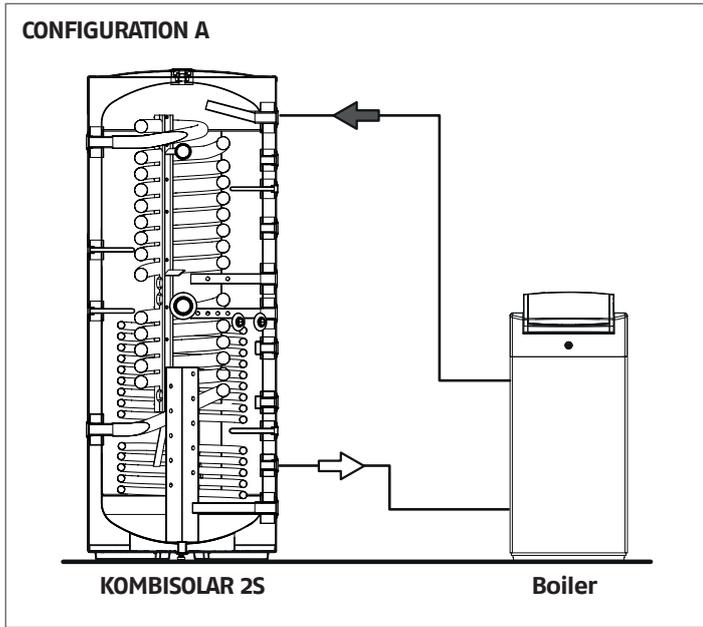
5 SYSTEM LAYOUT



## 6 TECHNICAL SPECIFICATIONS

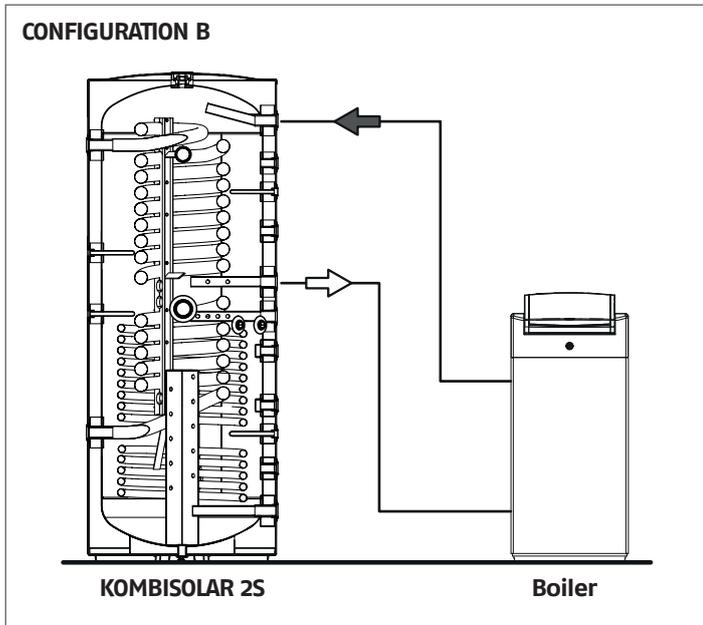
Description	KOMBISOLAR 2S				
	430	550	750	1000	
Type of inertial storage cylinder	non vitrified				
Storage cylinder layout	vertical				
Heat exchanger layout	vertical				
Bottom coil	smooth steel pipe				
DHW coil	Corrugated pipe in AISI 316 L stainless steel				
Inertial storage cylinder capacity	415	528	742	908	l
Diameter with insulation	755	755	1000	1000	mm
Diameter of storage cylinder without insulation	650	650	790	790	mm
Height	1635	1985	1845	2170	mm
Insulation thickness	50		100		mm
Sensor socket diameter (boiler and solar circuits)	16				∅ mm
Temperature sensor diameter	16				∅ mm
Temperature gauge sensor diameter	10				∅ mm
Bottom primary coil water capacity	11,0	12,8	17,4	19,8	l
DHW coil water capacity	23,6	23,6	30,4	30,4	l
Bottom primary coil heat exchange surface area	1,8	2,1	2,9	3,34	m <sup>2</sup>
DHW coil heat exchange surface area	4,5	4,5	5,8	5,8	m <sup>2</sup>
Maximum working pressure of inertial storage cylinder	3		5		bar
Maximum working temperature of inertial storage cylinder	99				°C
Maximum working pressure of primary coils	10				bar
Maximum working pressure of DHW coil	6				bar
Maximum working temperature of primary coils	99				°C
Maximum working temperature of DHW coil	99				°C
Recommended surface area of solar panel	6	8	12	14	m <sup>2</sup>
Net weight	155	177	218	248	kg
Heat loss according to EN 12897:2006 at ΔT=45 °C	78	85	93	98	W
Energy efficiency class	B				

Performance of combination storage cylinder with boiler connected in:



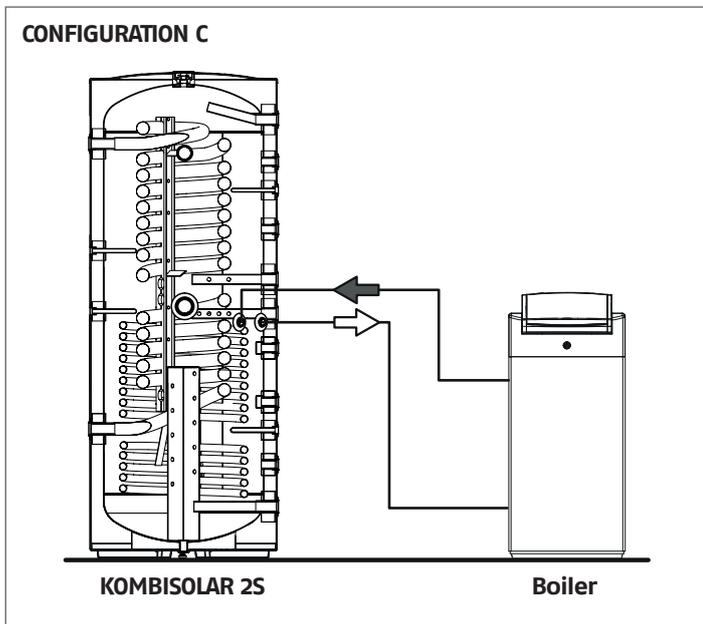
Description	KOMBISOLAR 2S				
	430	550	750	1000	
Domestic hot water production (*)	3050	3300	3150	3200	l/h
Domestic hot water production (**)	1970	2115	1980	2250	l/h
Water draw in 10 minutes with mean $\Delta T$ of 35°C and primary storage cylinder at:					
90°C	600	670	800	800	l
80°C	425	470	670	670	l
70°C	370	400	570	570	l
60°C	220	280	285	285	l
Useful non-solar volume (Vbu)	330	440	575	730	l

- (\*) With  $\Delta T = 35^\circ\text{C}$  and primary temperature = 80°C. Performance achieved with boiler of suitable power configured for a flow rate of 3000 l/h.
- (\*\*) With  $\Delta T = 35^\circ\text{C}$  and primary temperature = 80°C. Performance achieved with boiler of suitable power configured for a flow rate of 1500 l/h.



Description	KOMBISOLAR 2S				
	430	550	750	1000	
Domestic hot water production (*)	2300	2400	2600	2650	l/h
Domestic hot water production (**)	1650	1750	1900	1950	l/h
Water draw in 10 minutes with mean $\Delta T$ of 35°C and primary storage cylinder at:					
90°C	350	400	420	560	l
80°C	260	310	350	470	l
70°C	200	220	285	350	l
60°C	130	160	200	240	l
Useful non-solar volume (Vbu)	165	220	290	385	l

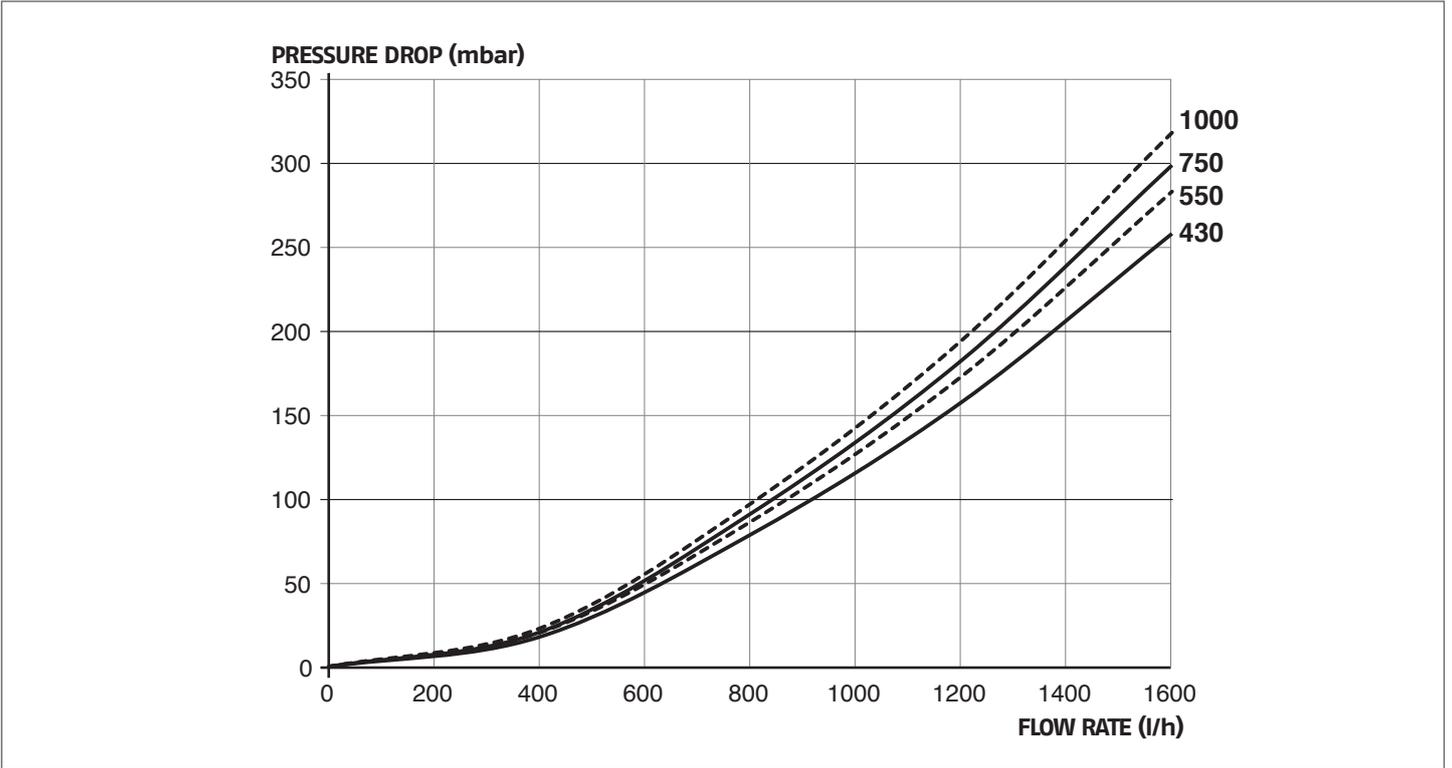
- (\*) With  $\Delta T = 35^\circ\text{C}$  and primary temperature = 80°C. Performance achieved with boiler of suitable power configured for a flow rate of 3000 l/h.
- (\*\*) With  $\Delta T = 35^\circ\text{C}$  and primary temperature = 80°C. Performance achieved with boiler of suitable power configured for a flow rate of 1500 l/h.



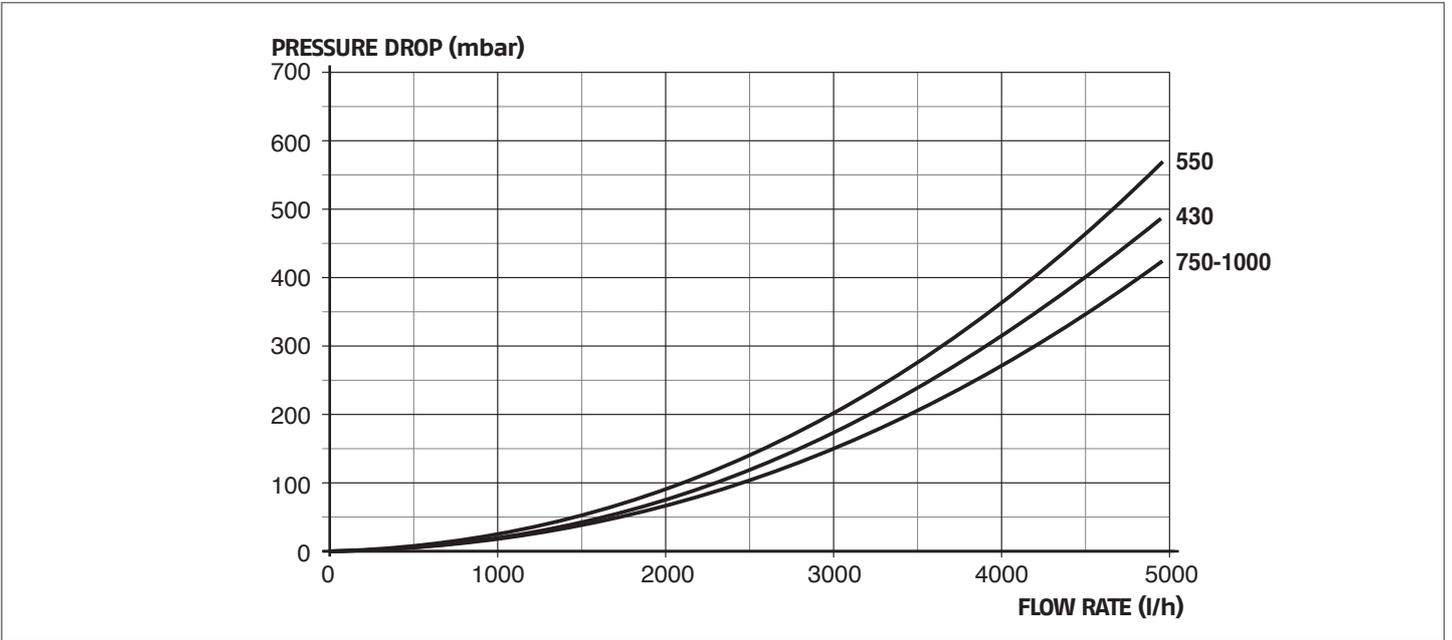
Description	KOMBISOLAR 2S				
	430	550	750	1000	
Domestic hot water production (*)	690	790	1100	1270	l/h

- (\*) With  $\Delta T = 35^\circ\text{C}$  and primary temperature = 80°C. Performance achieved with boiler of suitable power configured for a flow rate of 3000 l/h.

**Pressure drops  
KOMBI-SOLAR 2S BOTTOM COIL**



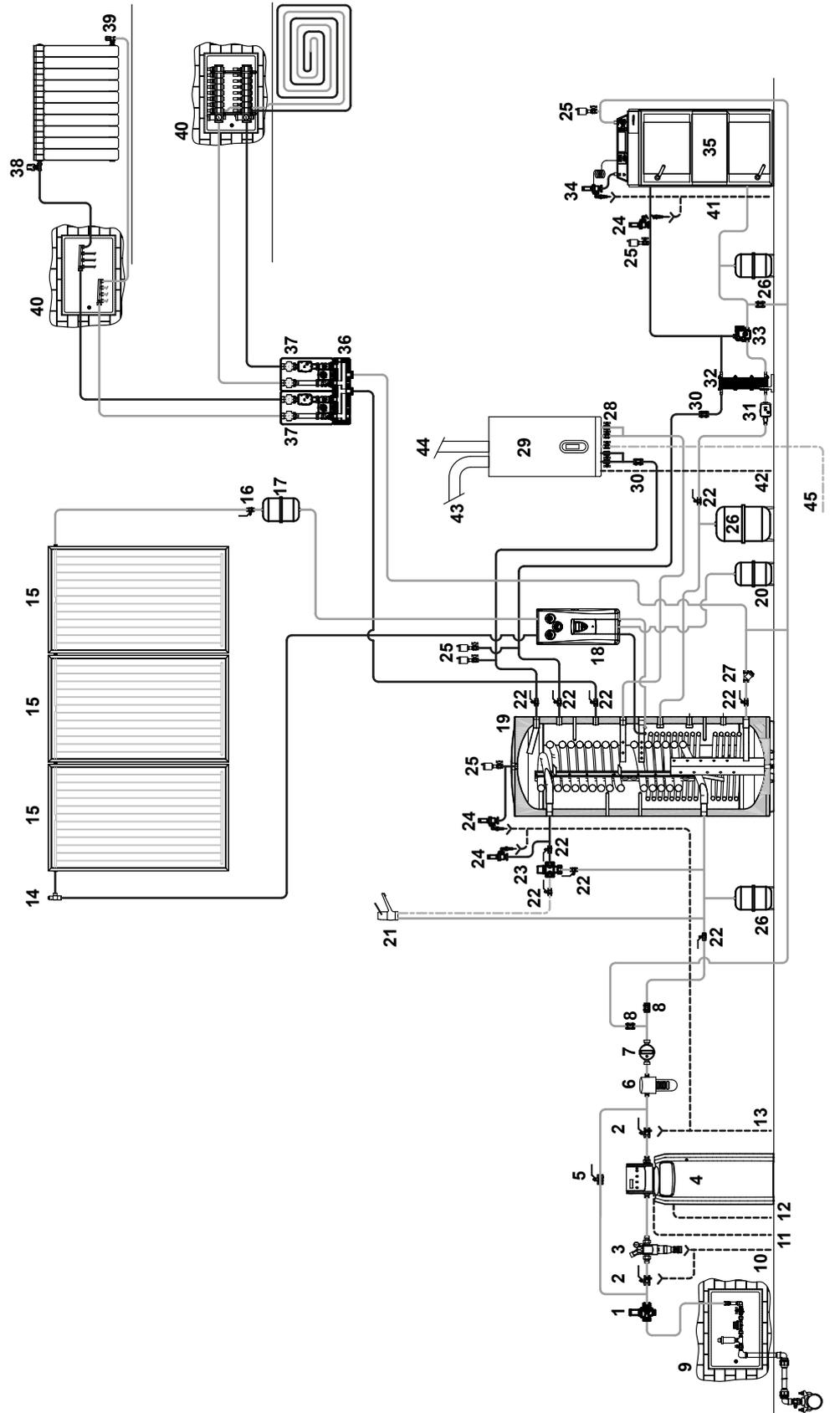
**Pressure drops  
KOMBI-SOLAR 2S DHW COIL**



7 TYPICAL WATER SYSTEM SCHEMATICS

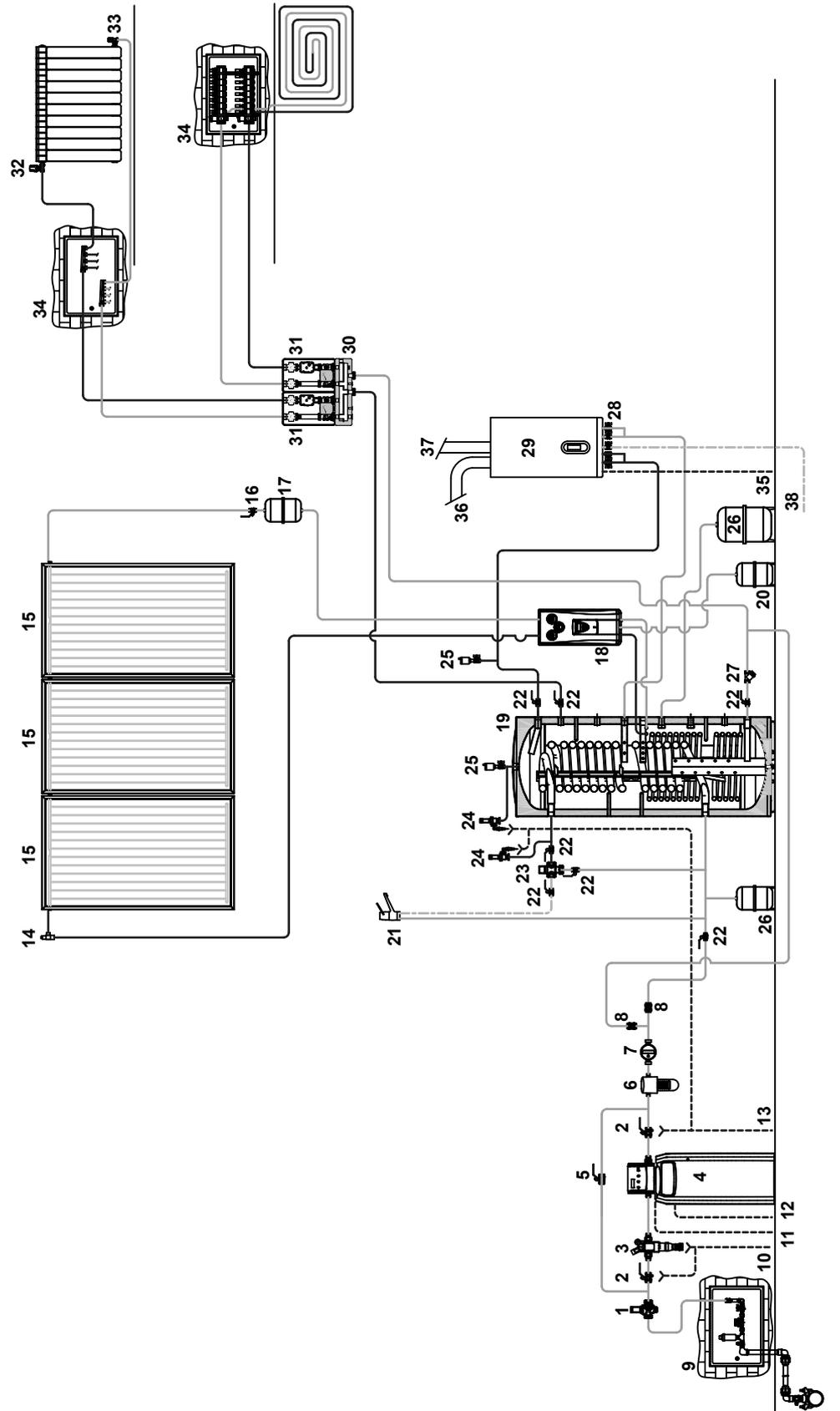
EXAMPLE 1: Water circuit with conventional boiler and biomass fuelled boiler

- 1 Pressure reducer-stabiliser
- 2 Ball valve with sampling cock
- 3 Sand filter
- 4 Water softener
- 5 Bypass pipe (normally closed)
- 6 Polyphosphate dosing unit (DHW)
- 7 Sanitary water meter
- 8 Non-return valve
- 9 Mains water inlet
- 10 Filter and valve drain
- 11 Resin wash drain
- 12 Overflow drain
- 13 Filter and valve drain
- 14 Manual bleed valve
- 15 Solar collector
- 16 Solar circuit disconnect valve
- 17 Safety tank
- 18 Solar module with solar controller
- 19 KOMBISOLAR 2S
- 20 Solar circuit expansion vessel
- 21 DHW user
- 22 Isolating valve
- 23 Thermostatic mixer valve
- 24 Safety valve
- 25 Bleed valve
- 26 DHW circuit expansion vessel
- 27 Filter
- 28 System cocks
- 29 Boiler with built-in pump
- 30 Non-return valve
- 31 Pump
- 32 Plate heat exchanger
- 33 Laddomat 21
- 34 Thermal drain valve
- 35 Biomass fuelled boiler
- 36 Distribution manifold
- 37 MIX module
- 38 Thermostatic valve
- 39 Detent
- 40 Distribution manifold
- 41 Valve drain
- 42 Condensate outlet
- 43 Air inlet
- 44 Exhaust flue duct
- 45 Gas supply connection



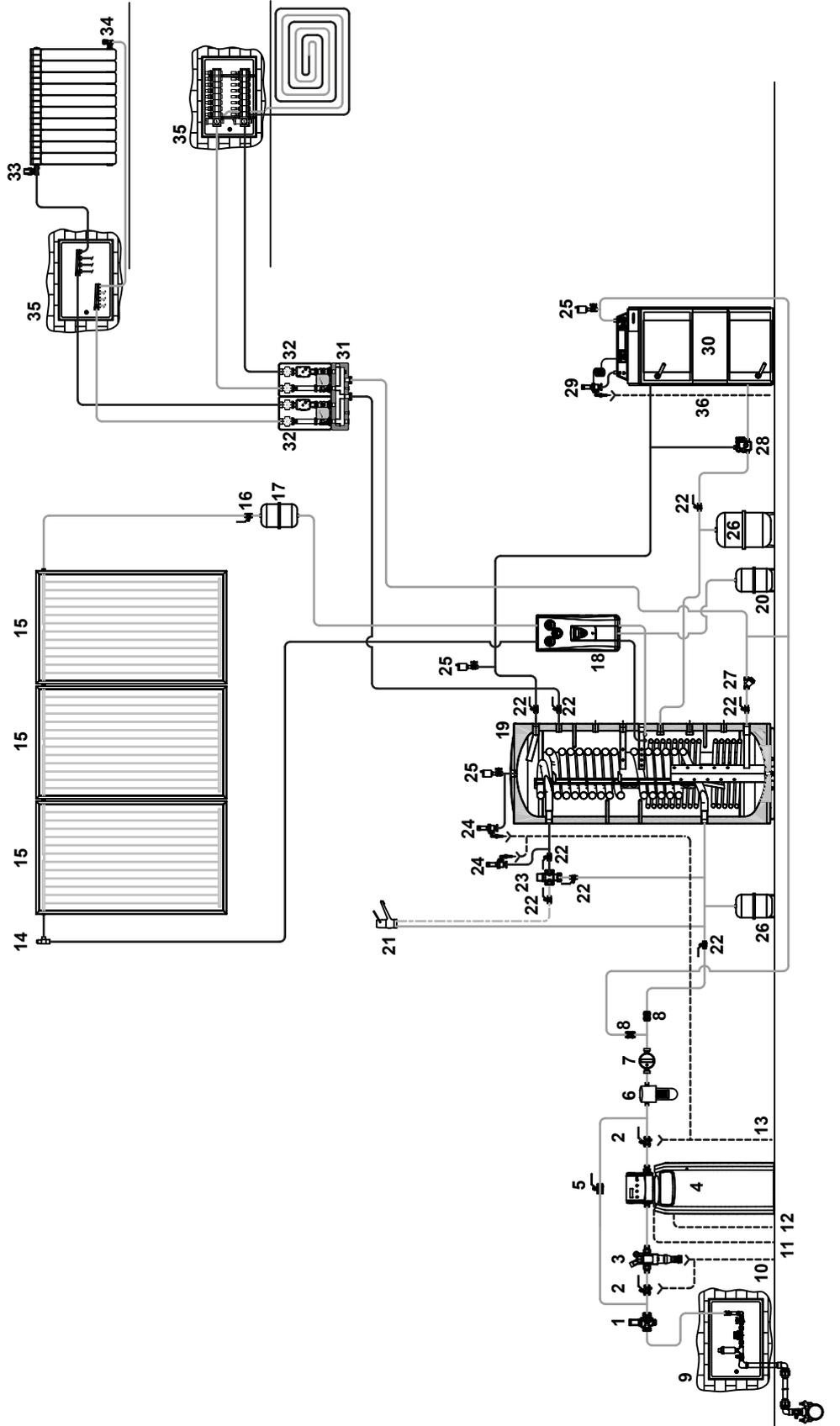
**EXAMPLE 2: Water circuit with conventional boiler**

- 1 Pressure reducer-stabiliser
- 2 Ball valve with sampling cock
- 3 Sand filter
- 4 Water softener
- 5 Bypass pipe (normally closed)
- 6 Polyphosphate dosing unit (DHW)
- 7 Sanitary water meter
- 8 Non-return valve
- 9 Mains water inlet
- 10 Filter and valve drain
- 11 Resin wash drain
- 12 Overflow drain
- 13 Filter and valve drain
- 14 Manual bleed valve
- 15 Solar collector
- 16 Solar circuit disconnect valve
- 17 Safety tank
- 18 Solar module with solar controller
- 19 KOMBISOLAR 2S
- 20 Solar circuit expansion vessel
- 21 DHW user
- 22 Isolating valve
- 23 Thermostatic mixer valve
- 24 Safety valve
- 25 Bleed valve
- 26 DHW circuit expansion vessel
- 27 Filter
- 28 System cocks
- 29 Boiler with built-in pump
- 30 Distribution manifold
- 31 MIX module
- 32 Thermostatic valve
- 33 Detent
- 34 Distribution manifold
- 35 Condensate outlet
- 36 Air inlet
- 37 Exhaust flue duct
- 38 Gas supply connection



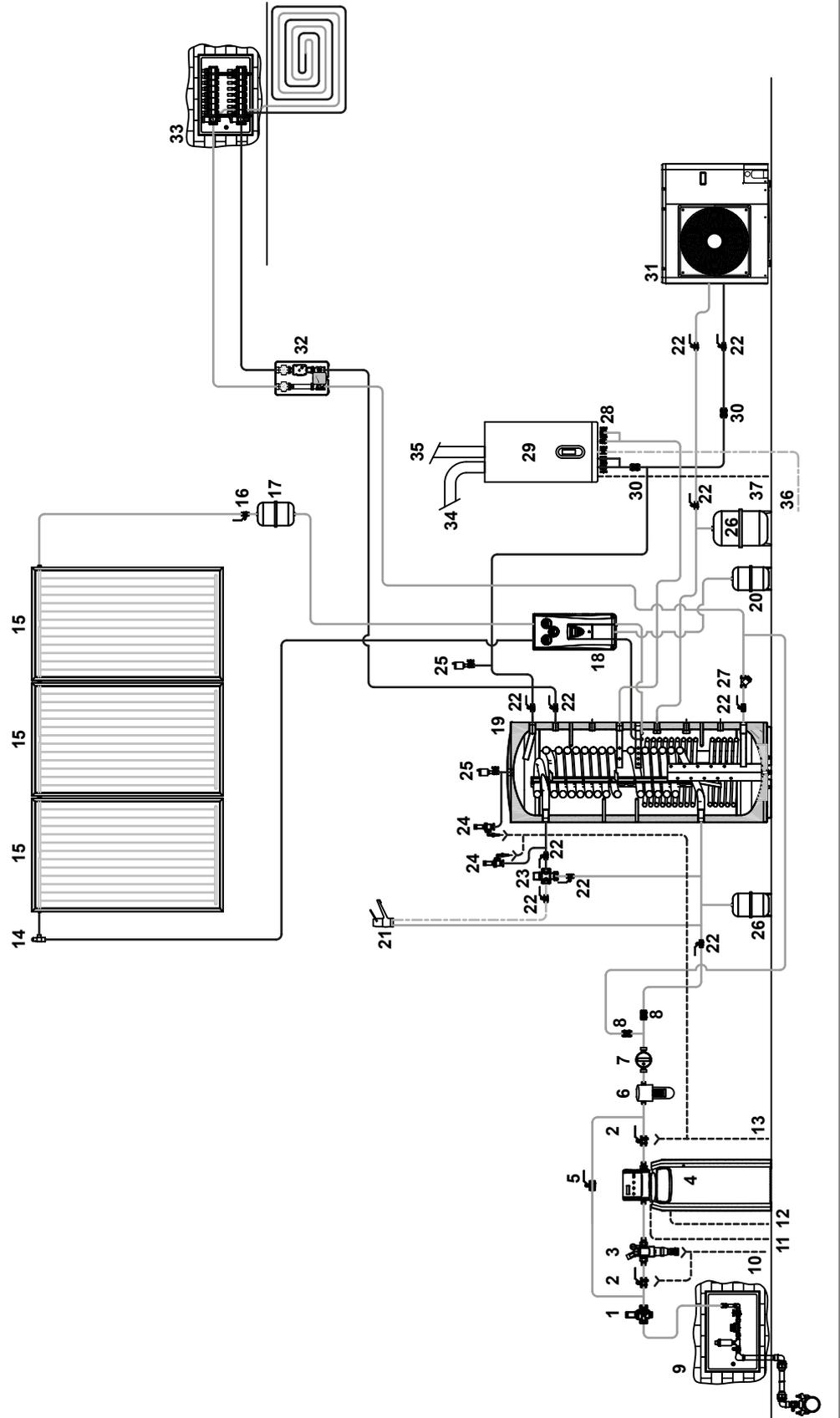
**EXAMPLE 3: Water circuit with biomass fuelled boiler**

- 1 Pressure reducer-stabiliser
- 2 Ball valve with sampling cock
- 3 Sand filter
- 4 Water softener
- 5 Bypass pipe (normally closed)
- 6 Polyphosphate dosing unit (DHW)
- 7 Sanitary water meter
- 8 Non-return valve
- 9 Mains water inlet
- 10 Filter and valve drain
- 11 Resin wash drain
- 12 Overflow drain
- 13 Filter and valve drain
- 14 Manual bleed valve
- 15 Solar collector
- 16 Solar circuit disconnect valve
- 17 Safety tank
- 18 Solar module with solar controller
- 19 KOMBISOLAR 2S
- 20 Solar circuit expansion vessel
- 21 DHW user
- 22 Isolating valve
- 23 Thermostatic mixer valve
- 24 Safety valve
- 25 Bleed valve
- 26 DHW circuit expansion vessel
- 27 Filter
- 28 Laddomat 21
- 29 Thermal drain valve
- 30 Biomass fuelled boiler
- 31 Distribution manifold
- 32 MIX module
- 33 Thermostatic valve
- 34 Detent
- 35 Distribution manifold
- 36 Condensate outlet



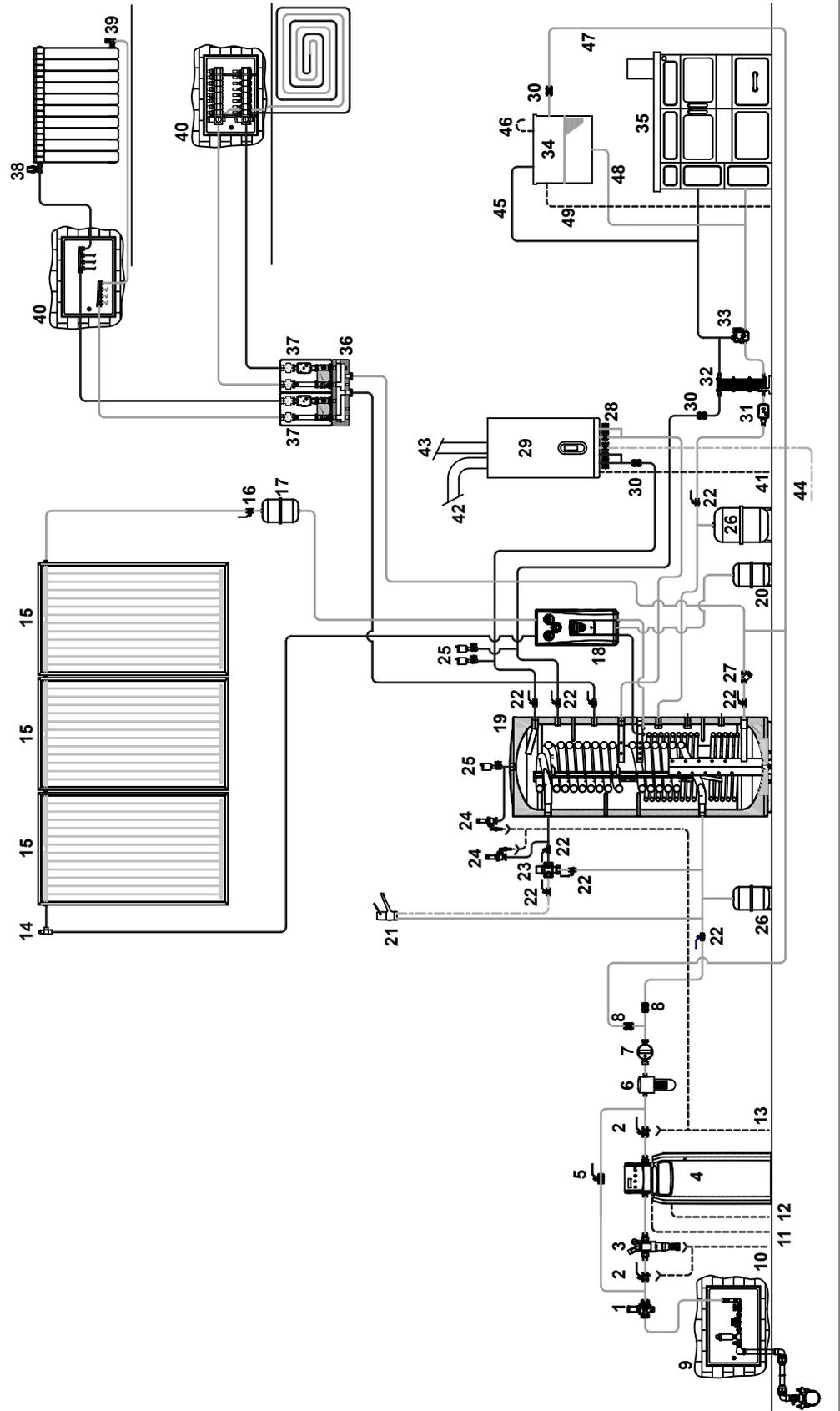
**EXAMPLE 4: Water circuit with conventional boiler and heat pump**

- 1 Pressure reducer-stabiliser
- 2 Ball valve with sampling cock
- 3 Sand filter
- 4 Water softener
- 5 Bypass pipe (normally closed)
- 6 Polyphosphate dosing unit (DHW)
- 7 Sanitary water meter
- 8 Non-return valve
- 9 Mains water inlet
- 10 Filter and valve drain
- 11 Resin wash drain
- 12 Overflow drain
- 13 Filter and valve drain
- 14 Manual bleed valve
- 15 Solar collector
- 16 Solar circuit disconnect valve
- 17 Safety tank
- 18 Solar module with solar controller
- 19 KOMBISOLAR 2S
- 20 Solar circuit expansion vessel
- 21 DHW user
- 22 Isolating valve
- 23 Thermostatic mixer valve
- 24 Safety valve
- 25 Bleed valve
- 26 DHW circuit expansion vessel
- 27 Filter
- 28 System cocks
- 29 Boiler with built-in pump
- 30 Non-return valve
- 31 Heat pump with integrated hydronic unit
- 32 MIX module
- 33 Distribution manifold
- 34 Air inlet
- 35 Exhaust flue duct
- 36 Gas supply connection
- 37 Condensate outlet



**EXAMPLE 5: Water circuit with conventional boiler and water heating stove**

- 1 Pressure reducer-stabiliser
- 2 Ball valve with sampling cock
- 3 Sand filter
- 4 Water softener
- 5 Bypass pipe (normally closed)
- 6 Polyphosphate dosing unit (DHW)
- 7 Sanitary water meter
- 8 Non-return valve
- 9 Mains water inlet
- 10 Filter and valve drain
- 11 Resin wash drain
- 12 Overflow drain
- 13 Filter and valve drain
- 14 Manual bleed valve
- 15 Solar collector
- 16 Solar circuit disconnect valve
- 17 Safety tank
- 18 Solar module with solar controller
- 19 KOMBISOLAR 2S
- 20 Solar circuit expansion vessel
- 21 DHW user
- 22 Isolating valve
- 23 Thermostatic mixer valve
- 24 Safety valve
- 25 Bleed valve
- 26 DHW circuit expansion vessel
- 27 Filter
- 28 System cocks
- 29 Boiler with built-in pump
- 30 Non-return valve
- 31 Pump
- 32 Plate heat exchanger
- 33 Laddomat 21
- 34 Open expansion vessel
- 35 Water heating cooking stove
- 36 Distribution manifold
- 37 MIX module
- 38 Thermostatic valve
- 39 Detent
- 40 Distribution manifold
- 41 Condensate outlet
- 42 Air inlet
- 43 Exhaust flue duct
- 44 Gas supply connection
- 45 Safety pipe
- 46 Bleed pipe
- 47 Filling pipe
- 48 Charging pipe
- 49 Overflow



**⚠** **RIELLO KOMBISOLAR 2S** combination storage cylinders are delivered without pumps. Suitably rated pumps must be provided and installed separately. Flow rate from the solar collector circuit depends on the type and number of collectors installed. For further information, consult the manual for the collectors.

**⚠** The domestic hot water system **MUST INCLUDE** an expansion vessel, safety valve, automatic vent valve and combination storage cylinder drain cock.

**⚠** Safety valves must be connected to a suitable collection and drain system. The manufacturer declines all responsibility for damage caused by water escaping from the safety valve.

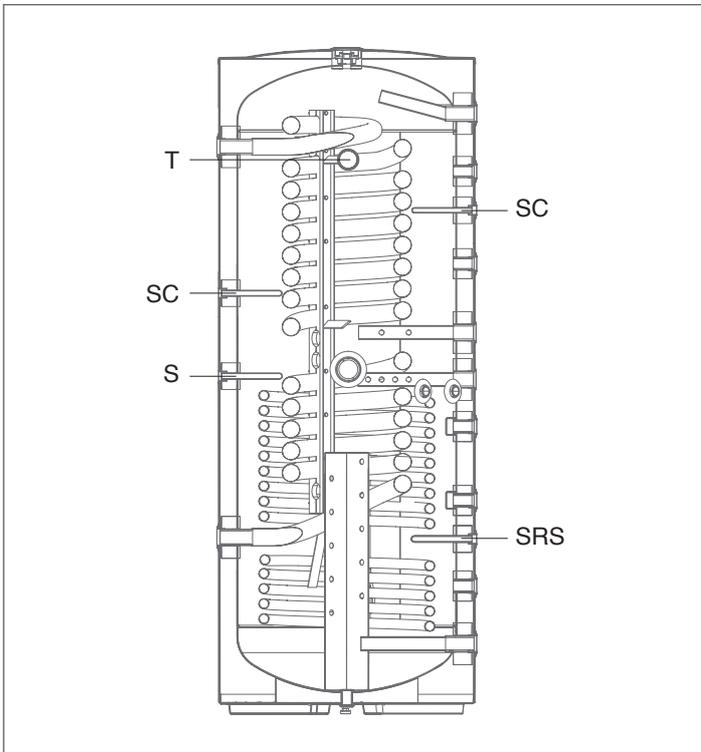
**⚠** The selection and the installation of the components of the system is the responsibility of the installer, who must operate in accordance with good practice and current Legislation.

**⚠** Circuits filled with anti-freeze must be fitted with water disconnectors.

## 8 LOCATION OF SENSORS

**RIELLO KOMBISOLAR 2S** combination storage cylinders incorporate sockets for solar controller and boiler sensors. Make sure that these sensors are pushed firmly home into the sockets.

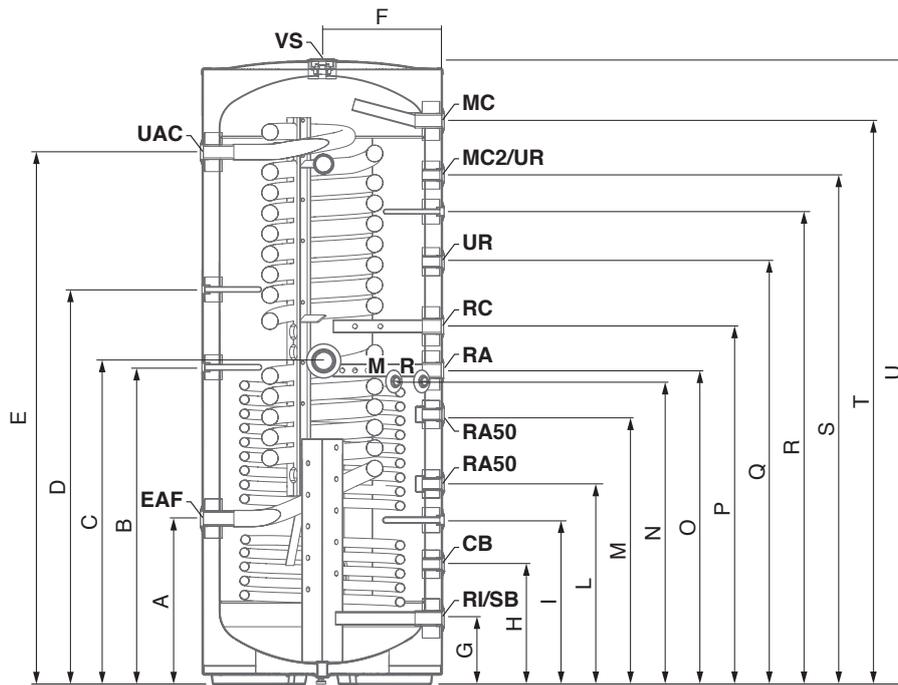
**⚠** **The installer is responsible for making all necessary connections to the boiler and solar collectors. Installers must use their expertise to ensure proper installation and functioning in compliance with all applicable legislation.**



- T** Temperature gauge socket (10 mm)
- SC** Boiler temperature sensor socket (16 mm)
- S** Temperature sensor socket (16 mm)
- SRS** Solar controller temperature sensor socket (16 mm)

**⚠** In case of a probe, any electric junction between probe cable and extensions for the connection to the electric panel must be soldered and protected with a sheath or a suitable electric insulation.

9 OVERALL DIMENSIONS AND WATER FITTINGS

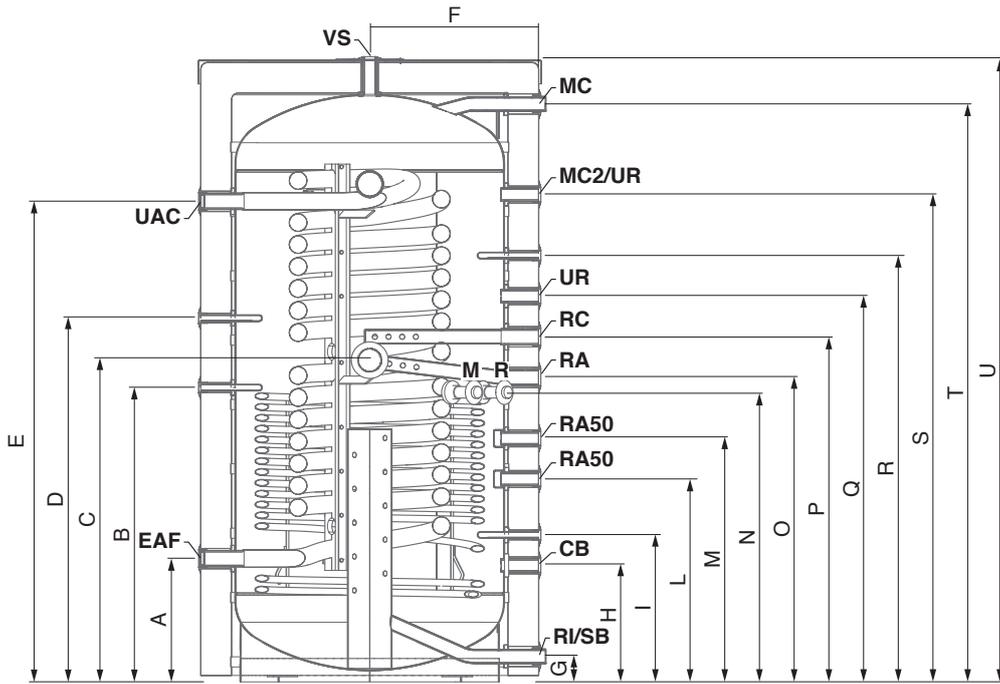


- |               |   |              |   |
|---------------|---|--------------|---|
| <b>UAC</b>    | Domestic hot water outlet (Ø 1"1/4 F)                     | <b>RC</b>    | Return to boiler (Ø 1"1/4 F)  |
| <b>EAF</b>    | Domestic cold water inlet (Ø 1"1/4 F)                     | <b>RA</b>    | Water return (Ø 1"1/4 F)  |
| <b>M</b>      | Collector outlet (Ø 1" M)                                 | <b>RA50</b>  | Water return 50°C (Ø 1" F)  |
| <b>R</b>      | Collector return (Ø 1" M)                                 | <b>CB</b>    | Buffer tank charging (Ø 1" F)                                       |
| <b>MC</b>     | Outlet from boiler (Ø 1"1/4 F)                            | <b>RI/SB</b> | Heating system return / Inertial storage cylinder drain (Ø 1"1/4 F) |
| <b>MC2/UR</b> | Flow from second boiler / Central heating outlet (Ø 1" F) | <b>VS</b>    | Vent valve fitting (Ø 1" F)   |
| <b>UR</b>     | Central heating outlet (Ø 1" F)                           |              |   |

DESCRIPTION	KOMBISOLAR 2S		
	430	550	
A	307	525	mm
B	815	1005	mm
C	945	1025	mm
D	1042	1252	mm
E	1343	1688	mm
F	377	377	mm
G	208	208	mm
H	380	380	mm
I	490	520	mm
L	610	635	mm
M	730	855	mm
N	865	920	mm
O	845	995	mm
P	980	1135	mm
Q	1090	1340	mm
R	1208	1499	mm
S	1320	1615	mm
T	1442	1787	mm
U	1635	1985	mm

**⚠** We recommend that you install isolating valves in the outlet and return lines.

**⚠** Check the efficiency of the seals when filling/refilling the buffer tank.



- |               |   |              |   |
|---------------|---|--------------|---|
| <b>UAC</b>    | Domestic hot water outlet (Ø 1"1/4 F)                     | <b>RC</b>    | Return to boiler (Ø 1"1/4 F)  |
| <b>EAF</b>    | Domestic cold water inlet (Ø 1"1/4 F)                     | <b>RA</b>    | Water return (Ø 1"1/4 F)  |
| <b>M</b>      | Collector outlet (Ø 1" M)                                 | <b>RA50</b>  | Water return 50°C (Ø 1" F)  |
| <b>R</b>      | Collector return (Ø 1" M)                                 | <b>CB</b>    | Buffer tank charging (Ø 1" F)                                       |
| <b>MC</b>     | Outlet from boiler (Ø 1"1/4 M)                            | <b>RI/SB</b> | Heating system return / Inertial storage cylinder drain (Ø 1"1/4 M) |
| <b>MC2/UR</b> | Flow from second boiler / Central heating outlet (Ø 1" F) | <b>VS</b>    | Vent valve fitting (Ø 1" F)   |
| <b>UR</b>     | Central heating outlet (Ø 1" F)                           |              |   |

DESCRIPTION	KOMBISOLAR 2S		
	750	1000	
A	365	365	mm
B	870	950	mm
C	950	1020	mm
D	1075	1190	mm
E	1420	1745	mm
F	500	500	mm
G	75	75	mm
H	345	345	mm
I	435	440	mm
L	600	600	mm
M	720	720	mm
N	855	925	mm
O	900	980	mm
P	1020	1130	mm
Q	1140	1475	mm
R	1260	1575	mm
S	1440	1745	mm
T	1705	2030	mm
U	1845	2170	mm

**⚠** We recommend that you install isolating valves in the outlet and return lines.

**⚠** Check the efficiency of the seals when filling/refilling the buffer tank.

## 10 UNPACKING THE PRODUCT

**RIELLO KOMBISOLAR 2S** combination cylinders are supplied in a single package on a wooden pallet.

The insulation and the lining components of the models 750 and 1000 are supplied separately from the structural work and are to be assembled upon receiving the product as described in the paragraph "Assembly of the insulation and the lining".

The following items are delivered in a plastic bag inside the packaging:

- Instruction manual
- Bar code label
- Hydraulic test certificate
- Energy label (to be applied to device upon installation)
- No. 4 adjustable feet to be mounted during installation (for models 750 – 1000 only).

**⚠** The instruction manual is an integral part of the solar storage cylinder. Once located, read it thoroughly and keep it safe.

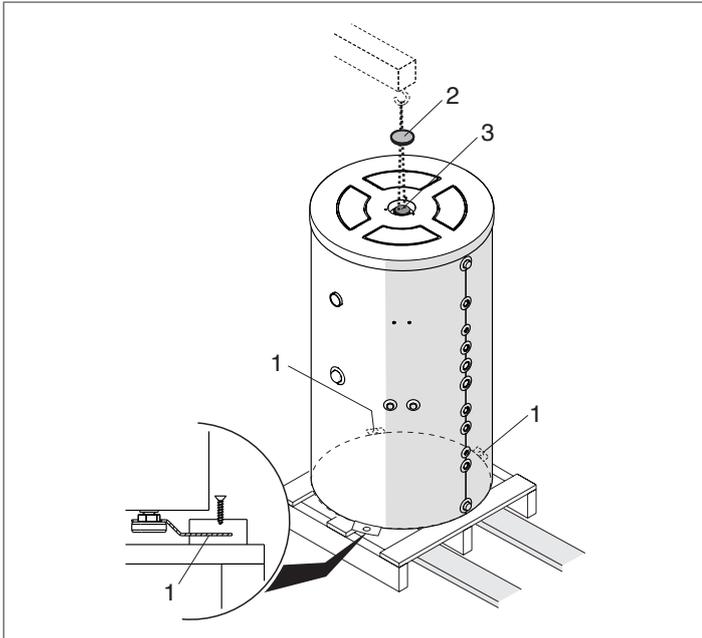
**⚠** For handling operations, thoroughly follow the instructions on device package label.

## 11 HANDLING

Make sure that any lifting equipment is of adequate capacity to lift and move the combination cylinder.

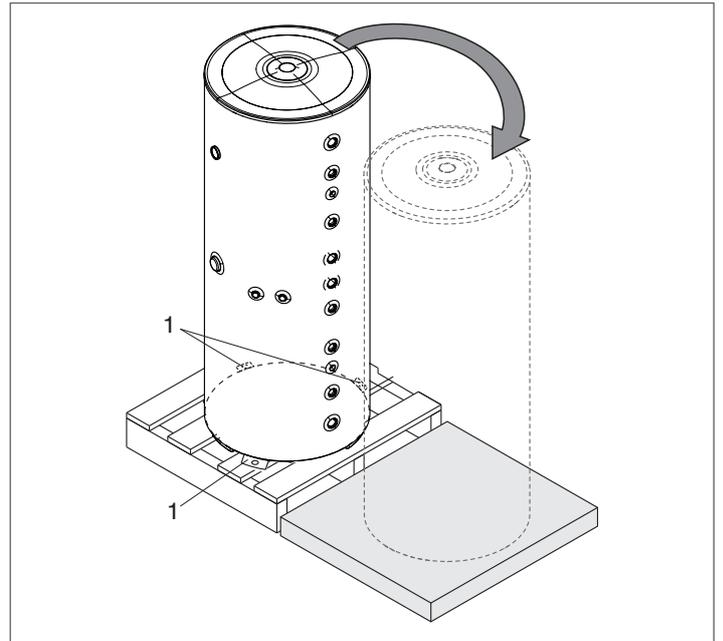
Remove the brackets (1) to free the combination cylinder from the pallet.

To lift the combination cylinder, remove the plug (2) and screw an eyebolt ( $\varnothing 1''$ ) of suitable capacity for the weight into the hole (3).

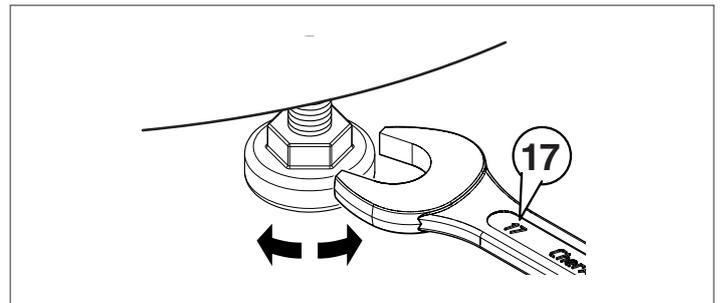


If suitable equipment is not on hand to lift the combination cylinder off the pallet using the eyebolt, proceed as follows.

- Place a platform of about half the height of the pallet near the combination cylinder. Make sure the platform is able to support the weight of the combination cylinder
- Remove the brackets (1) then carefully rotate and slide the combination cylinder off the pallet on to the platform
- Make sure that the combination cylinder is perfectly stable, and then remove the pallet
- Carefully rotate and slide the combination cylinder off the platform on to the floor
- Remove the platform and position the combination cylinder as required.



Adjust the feet to ensure that the storage cylinder is perfectly level.



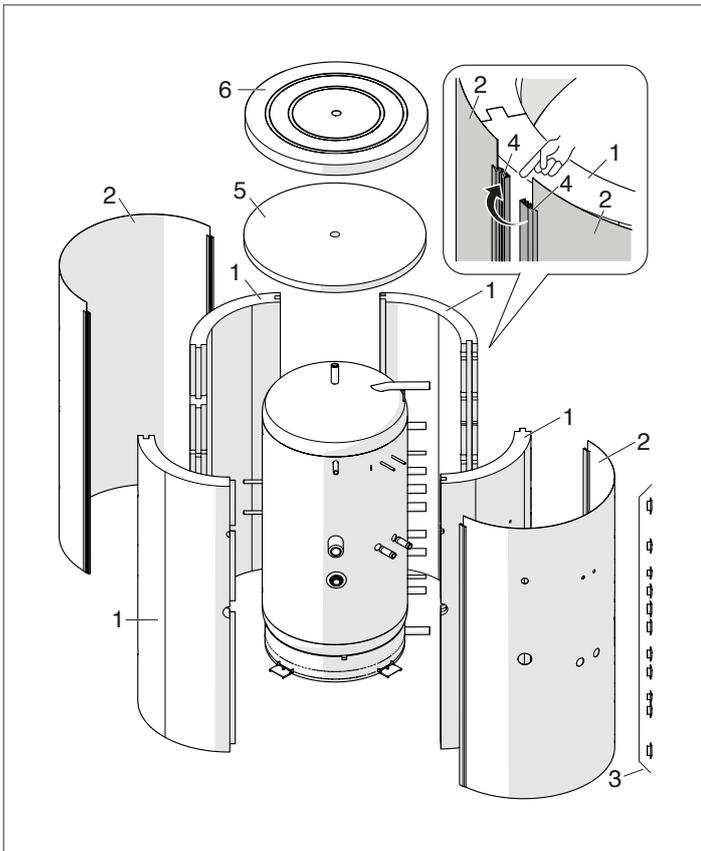
**⚠** Wear suitable personal protective equipment and use suitable safety devices.

**⊖** 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.

## 12 ASSEMBLY OF THE INSULATION AND THE LINING

### KOMBISOLAR 2S 750 – 1000

The assembly of the insulation and lining components must be performed at the site of installation to facilitate passage through any doors and/or entries to the room.



Proceed as follows:

- Assemble the insulating covers (1) around the body of the heater, making sure that the engagement points on the edges are positioned correctly. The edges are not required to be closed completely
- Place the front protection plate (2) correctly on the attachments
- Put the washers on the attachments (3)
- Place the rear protection plate by closing the interlocking flaps (4) without closing completely (leave one tooth open)
- Apply the upper insulation (5) and the upper cover (6) (in order to insert the cover, exert a light and homogeneous pressure)
- Close the interlocking flaps (4) completely, which were previously left with an open tooth
- Apply the technical data plate and serial number plate

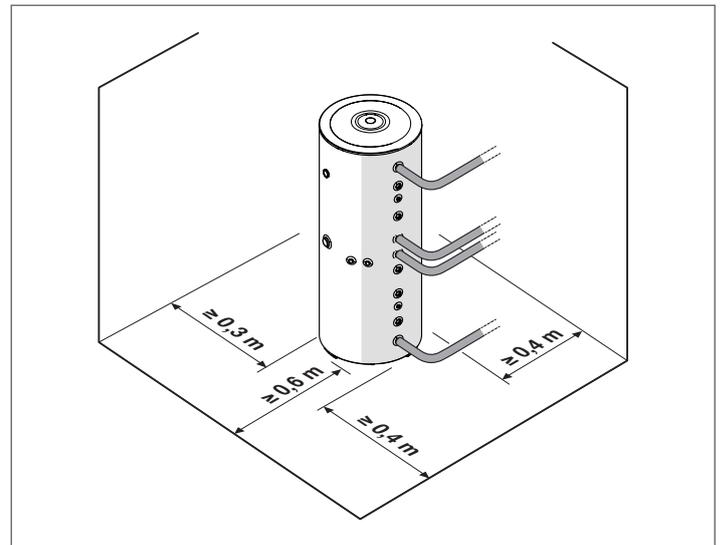
If disassembling is required, proceed in reverse order.

**⚠** Wear suitable personal protective equipment and use suitable safety devices.

**♻** 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.

## 13 PLACE OF INSTALLATION

**RIELO KOMBISOLAR 2S** combination storage cylinders can be installed in any room where there is no specific requirement for an electrical protection rating higher than IP X0D.



**⚠** Respect the minimum specified installation distances to ensure correct installation and access for maintenance.

### 13.1 Installation in older systems and systems requiring modernisation

When installing **RIELO KOMBISOLAR 2S** combination storage cylinders in old systems or systems requiring modernisation, always perform the following checks.

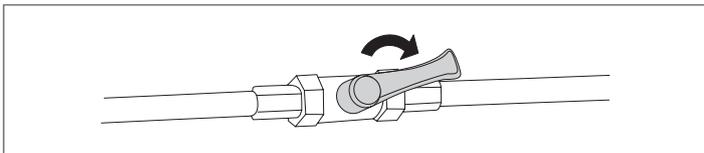
- Make sure that the system is fitted with safety and control devices in accordance with applicable legislation and standards
- Make sure that the central heating circuit has been flushed out to remove all sludge and lime scale, and has been vented and seal tested
- Make sure that a suitable water treatment system is installed if the quality of the supply/recirculation water so demands (refer to the reference values listed in the table alongside).

REFERENCE VALUES	
pH	6-8
Electrical 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
Alkalinity M	less than 50 ppm
Total hardness	less than 35°F
Sulphur ions	none
Ammonia ions	none
Silicon ions	less than 30 ppm

## 14 PUTTING INTO SERVICE

It is essential to perform the following checks before starting up or testing the functioning of the combination cylinder. In particular, check that:

- The supply cocks in the domestic water circuit are all open

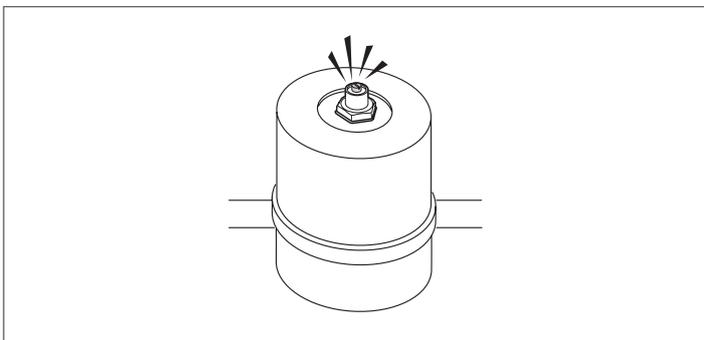


- The water connections to the boiler and solar collectors have been made correctly
- All the pipes in the water circuit have been insulated in conformity to relevant standards
- The solar collector circuit has been correctly flushed out and filled with water-glycol mix, and all air has been bled out of the circuit (see the manual for the solar collectors)
- Start up the combination cylinder's auxiliary heating boiler (if installed) as instructed in its own manual
- Put the solar collectors into service. See the manuals for the solar collectors and associated accessories.

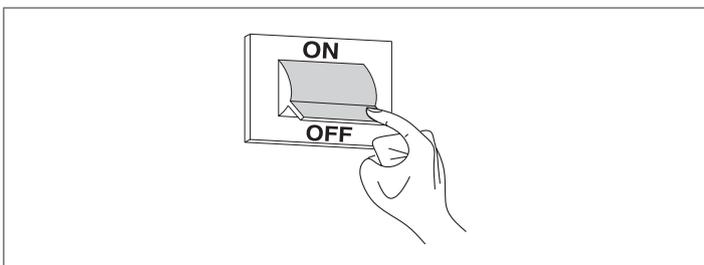
**⚠** The domestic hot water tank must be filled and pressurised before the inertial storage cylinder is filled.

Once the system has been started up, perform the following checks.

- Make sure that all pumps are free and rotate in the right direction
- Make sure that all circuits have been bled.



- Make sure that the boiler and solar collectors connected to the system shut down correctly when their mains power switches are turned OFF.



Provided the above checks have been completed satisfactorily, restart the system and verify its performance.

## 15 TEMPORARY SHUTDOWN

If you are going away for a short period of time like a weekend or a short holiday, etc., and outdoor temperatures are going to remain above ZERO, proceed as follows.

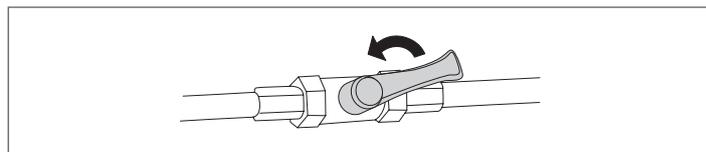
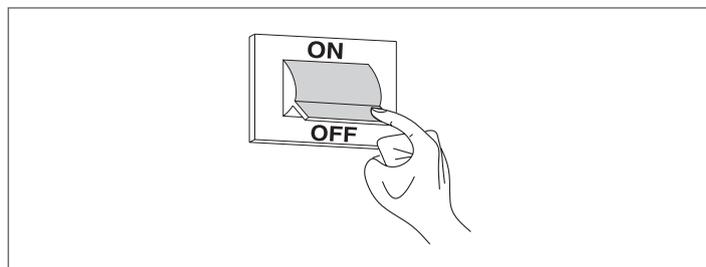
- Adjust the combination storage cylinder's thermostat to its minimum setting.

**⚠** If outdoor temperature may drop below ZERO (risk of freezing) perform the operations described in the "Preparing for extended periods of disuse" section.

## 16 PREPARING FOR EXTENDED PERIODS OF DISUSE

If the combination storage cylinder is not going to be used for an extended period of time, prepare it for shut-down as follows:

- Switch the electricity supply to the storage cylinder and to any associated boiler OFF at the main switch and at the control panel (if present)
- Close the shut-off cocks for the domestic hot water circuit.



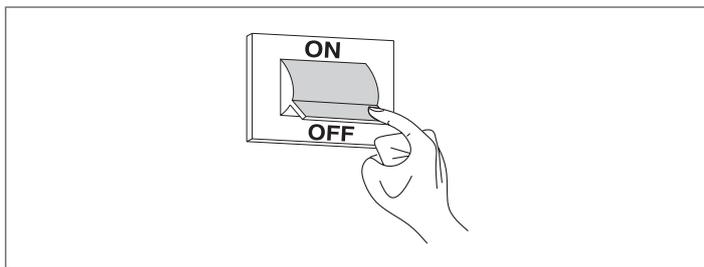
**⚠** Drain the central heating circuit and domestic hot water circuit if there is any risk of freezing.

### 16.1 Maintenance

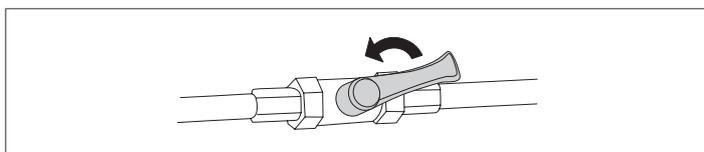
Scheduled maintenance is essential for the safety, efficiency and long working life of your combination storage cylinder. Proper maintenance also reduces energy consumption and ensures reliability over time. Have your combination storage cylinder serviced either by the manufacturer's Technical Assistance Service or by a qualified heating engineer at least once a year.

Perform the following operations before beginning any maintenance:

- Switch the electricity supply to the storage cylinder's valve group and to any associated boiler OFF at the main switch and at the control panel (if present)



- Close the shut-off cocks for the domestic hot water circuit



- Empty the combination storage cylinder.

## 17 CLEAN THE COMBINATION STORAGE CYLINDER

### **EXTERNAL CLEANING**

Clean the outside of the combination storage cylinder's insulation with a soft cloth damped in soapy water. To remove stubborn marks, use a cloth damped in a 50% mix of water and denatured alcohol or a suitable cleaning product. Dry the combination storage cylinder after cleaning it.

 Do not use abrasive products, petrol or triethylene.

## 18 RECYCLING AND DISPOSAL

At the end of its useful working life, do not abandon the combination storage cylinder in the environment, but dispose of it in accordance with applicable legislation.

## 19 TROUBLESHOOTING

## SUPPLEMENTARY HEATING CIRCUIT

FAULT	CAUSE	SOLUTION
<b>The buffer tank functions incorrectly or irregularly</b>	Flow rate too high	- Fit a pressure limiter - Fit a flow reducer
	There are blockages or deposits in the domestic hot water circuit	- Check and clean as necessary
	The pump is malfunctioning	- Check the pump
	The water temperature from the boiler is too low	- Check the temperature setting
	There is air in the primary circuit	- Bleed the circuit

## SOLAR COLLECTOR CIRCUIT

FAULT	CAUSE	SOLUTION
<b>The buffer tank functions incorrectly or irregularly</b>	There is air in the circuit	- Bleed the circuit
	The flow rate is too low or too high	- Check the flow rate of the collector circuit
	Pressure is too low	- Check that circuit pressure is approximately 3 bar when cold
	There is lime scale or sludge in the cylinder	- Check and clean as necessary
<b>The storage cylinder loses a lot of heat overnight</b>	There is natural circulation to the collectors	- Make sure that the non-return valve is efficient and closes properly. Replace if necessary

## END USER INSTRUCTIONS

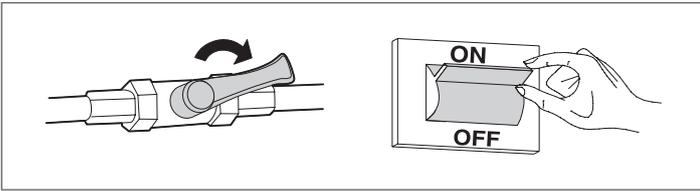
Refer to the **GENERAL SAFETY INFORMATION** and **PRECAUTIONS** section for safety-related information.

### 20 START-UP

The combination storage cylinder must be put into service for the first time by personnel from the manufacturer's Technical Assistance Service.

Under certain circumstances, such as after long periods of disuse, the user may need to re-start it without involving the Technical Assistance Service. Before doing so, perform the following checks and operations.

- Check that the supply cocks in the domestic water circuit are all open
- Switch the electricity supply ON at the mains power switch and at control panel switch (if fitted).



### 21 TEMPORARY SHUTDOWN

To reduce impact on the environment and save energy, before leaving for the weekend or a short break, etc., provided outdoor temperatures will remain above ZERO, simply adjust the combination storage cylinder's temperature control device to its minimum setting.

**!** If outdoor temperature may drop below ZERO (risk of freezing) perform the operations described in the "Preparing for extended periods of disuse" section.

### 22 PREPARING FOR EXTENDED PERIODS OF DISUSE

If the combination storage cylinder is not going to be used for an extended period of time, ask the manufacturer's Technical Assistance Service to make the system safe.

### 23 EXTERNAL MAINTENANCE

Clean the cover, painted and plastic parts with a cloth damped in soap and water. To remove stubborn marks, use a cloth damped in a 50% mix of water and denatured alcohol or a suitable cleaning product.

**!** Do not use fuels, sponges impregnated with abrasive solutions or powder detergents.

# 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.