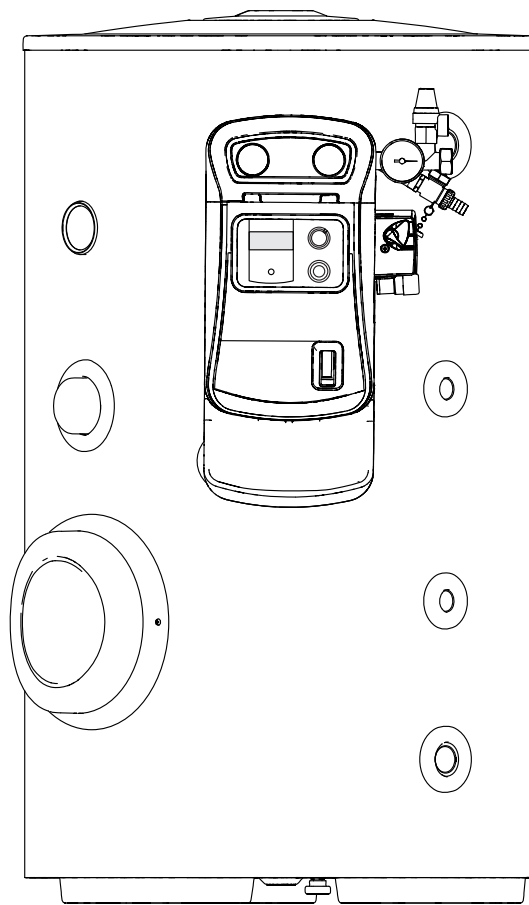


**SOLAR  
STORAGE  
CYLINDER  
IDRA MS 150 FI**

**SOLAR**



**INSTALLATION MANUAL  
USER MANUAL**

 **Beretta**

## RANGE

MODEL	CODE
IDRA MS 150 FI	20072888

### ACCESSORIES

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

Dear Customer,  
Thank you for choosing a **Beretta** solar storage 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 **Beretta** solar storage cylinder to be serviced regularly by an authorised **Beretta** service centre. Their personnel are specially trained to keep your solar storage cylinder efficient and cheap to run. **Beretta** 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 **Beretta** solar storage cylinder.

Please accept our renewed thanks for your purchase.

Beretta

## CONFORMITY

**Beretta** storage cylinders conform to DIN 4753-3 and UNI EN 12897 standards.



This product must only be used for the purpose for which it is designed and made, as specified by **Beretta**. **Beretta** declines all responsibility, contractual or other, for damage to property or injury to persons or animals caused by improper installation, adjustment, maintenance or use.

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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.

## 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 **Beretta** 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 **Beretta** 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 **Beretta**. **Beretta** 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 **Beretta** 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 **Beretta's** Technical Assistance Centre or a qualified heating engineer immediately.
-  If the solar storage cylinder 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.
-  Anti-freeze (propylene glycol) is available separately and must be mixed with water in a percentage varying from 30% to 50% as instructed in the installation and maintenance manual for the **Beretta** solar collectors.
-  Only fill the solar collector (primary) circuit with water and glycol premixed in the percentages specified in the **Beretta** installation and maintenance manual.
-  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.

## 2 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 storage cylinder when barefoot or wet if it has any electrical accessories connected to 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 the pressure in the solar collector circuit drops, do not top up with water alone, since this increases the risk of damage from freezing.
-  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 DESCRIPTION OF THE APPLIANCE

**Beretta IDRA MS FI** solar storage cylinders are designed for installation in domestic hot water production systems heated by **Beretta** solar collectors.

The most important technical features of these solar storage cylinders are:

- The storage cylinder and coil are specially designed and shaped for optimum performance in terms of stratification, heat exchange and replenishment times
- The double vitrified cylinder lining is bacteriologically inert for maximum hygiene, reduced lime scale deposits and easy cleaning
- CFC-free polyurethane insulation and an elegant external casing reduce heat loss and improve efficiency
- Temperature sensor and power cables are all internally routed
- A flange is provided for easy cleaning and maintenance of the anti-corrosion magnesium anode.



**Beretta IDRA MS FI** storage cylinders are equipped with a special solar controller and can easily be integrated in solar heating systems in which **Beretta** boilers or water heaters provide supplementary heat.



### 4 IDENTIFICATION

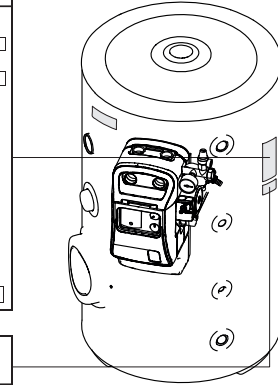
**Beretta IDRA MS FI** storage cylinders are identified by:

#### Data plate

This lists the technical specifications and performance of the product.

		Beretta Caldas Via Risorgimento, 13 23060 Lariano (LC)			
SOLAR STORAGE CYLINDER					
Model	<input type="text"/>	Serial number	<input type="text"/>		
Code	<input type="text"/>	Year	<input type="text"/>		
Maximum absorbed power (Primary T = 80°C)	<input type="text"/>	kW			
Specific top flow rate (ΔT 35°C)	<input type="text"/>	l/h			
Bottom maximum power consumption (Primary T = 80°C)	<input type="text"/>	kW			
Specific bottom flow rate (ΔT 35°C)	<input type="text"/>	l/h			
Maximum working pressure of cylinder	<input type="text"/>	bar			
Storage cylinder capacity	<input type="text"/>	l			
Electrical consumption	<input type="text"/>	W			
Power supply	<input type="text"/>	V-Hz			
Obligatory ground connection					

		Beretta Caldas Via Risorgimento, 13 23060 Lariano (LC)			
Serial number	<input type="text"/>	Maximum absorbed power	<input type="text"/>	kW	
Model	<input type="text"/>	Bottom max. power consumption	<input type="text"/>	kW	



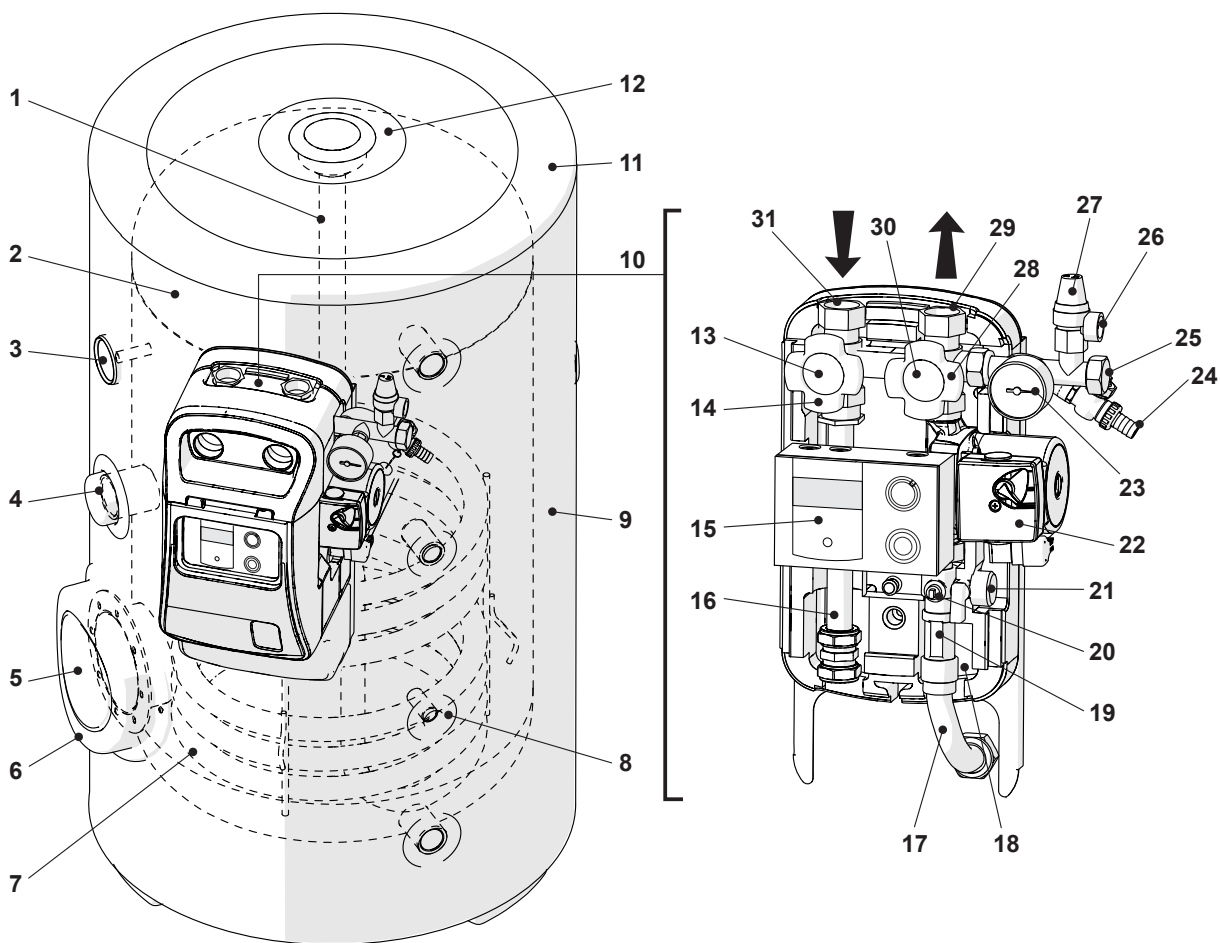
#### Serial number plate

This specifies the serial number and model.



If these plates or any other means of clearly identifying the product are defaced, removed or lost, proper installation and servicing may be rendered difficult.

## 5 SYSTEM LAYOUT



6

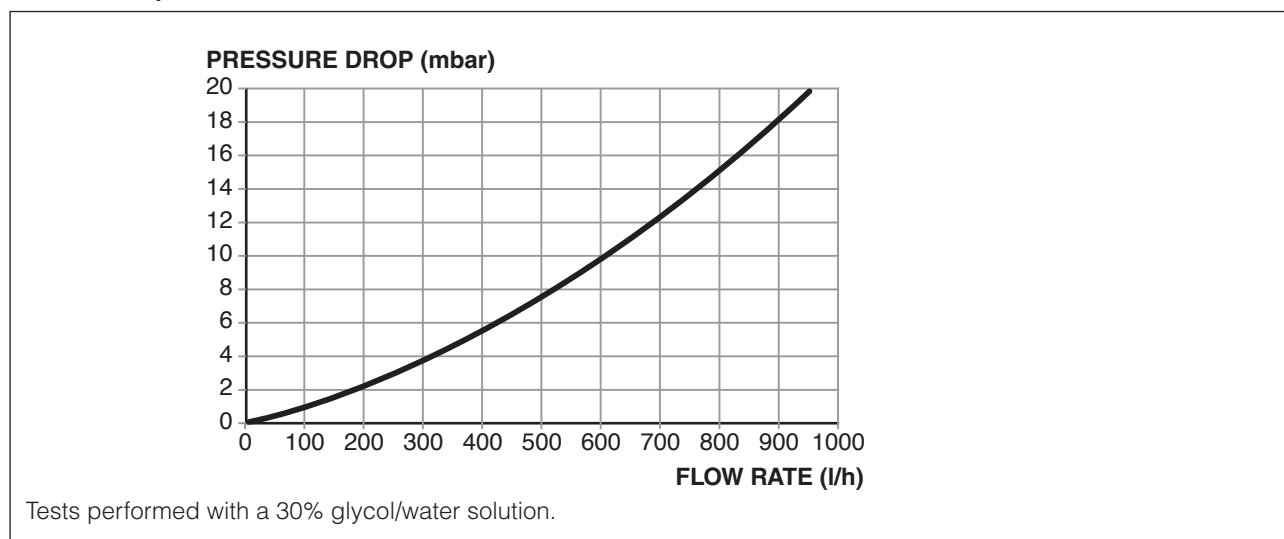
- |    |  |    |                                       |
|----|--|----|---------------------------------------|
| 1  | Magnesium anode                                    | 20 | Flow regulator                        |
| 2  | Storage cylinder                                   | 21 | Cock B                                |
| 3  | Temperature gauge                                  | 22 | Pump                                  |
| 4  | Sleeve for electric heating element (not supplied) | 23 | Pressure gauge                        |
| 5  | Cylinder inspection flange                         | 24 | Cock A                                |
| 6  | Flange cover                                       | 25 | Fitting for expansion vessel          |
| 7  | Coil   | 26 | Safety valve outlet                   |
| 8  | Sensor socket                                      | 27 | Safety valve (6 bar)                  |
| 9  | Insulation   | 28 | Return valve R                        |
| 10 | Valve group  | 29 | Fitting for pipe to solar collector   |
| 11 | Cover  | 30 | Return temperature gauge              |
| 12 | Plug for anode inspection and lifting              | 31 | Fitting for pipe from solar collector |
| 13 | Outlet temperature gauge                           |    |                                       |
| 14 | Outlet valve M                                     |    |                                       |
| 15 | Solar controller                                   |    |                                       |
| 16 | Outlet pipe to coil                                |    |                                       |
| 17 | Return pipe from coil                              |    |                                       |
| 18 | Sensor/power cable entrance                        |    |                                       |
| 19 | Flow meter (l/min)                                 |    |                                       |

## 6 TECHNICAL SPECIFICATIONS

DESCRIPTION		IDRA MS 150 FI	
Type of storage cylinder		Vitrified	
Storage cylinder layout		Vertical	
Heat exchanger layout		Vertical	
Storage cylinder capacity		150	l
Diameter of storage cylinder with insulation		605	mm
Height with insulation		1055	mm
Insulation thickness		50	mm
Diameter/length of first magnesium anode		33/450	mm
Flange diameter (external/internal)		183/130 - 120	mm
Diameter/length of sensor sockets		16/175	mm
Sleeve for electric heating element (not supplied)		1 ½" F	Ø
Coil water capacity		4,8	l
Coil heat exchange surface area		0,78	m <sup>2</sup>
DHW production (ΔT 35°C)	Primary coil at 80°C	585	l/h
	Primary coil at 88°C	645	l/h
NL performance factor (*)		1,7	
Heat loss in 24h		2,4	kWh/24h
Maximum working pressure of coils		10	bar
Maximum working pressure of storage cylinder		10	bar
Maximum operating temperature		99	°C
Net weight with insulation		72	kg

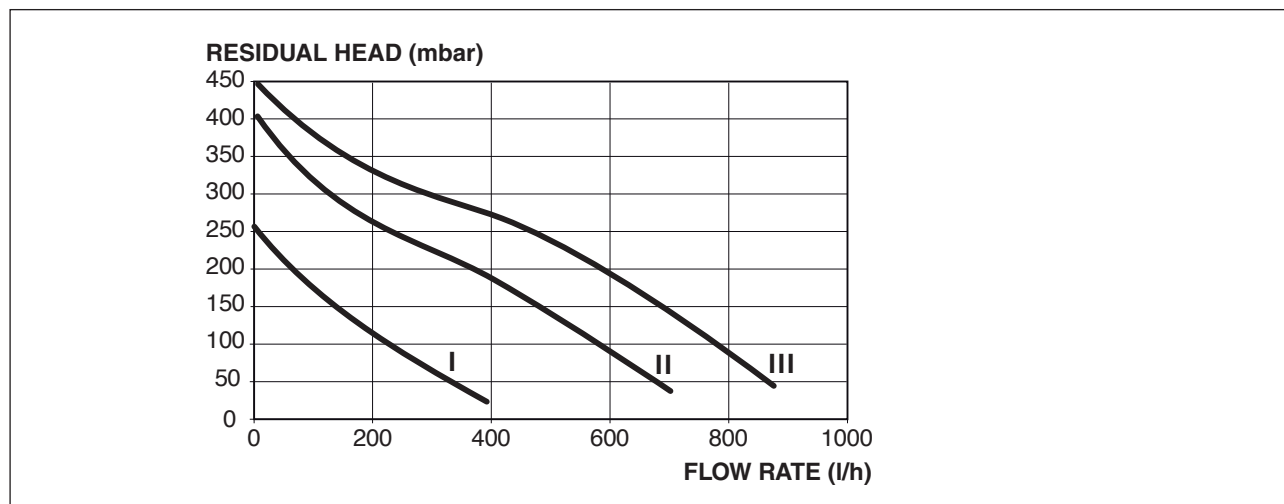
(\*) NL performance factor calculated according to DIN 4708, with primary circuit at a temperature of 80-65°C and water in storage cylinder at 65°C.

### Pressure drops COIL



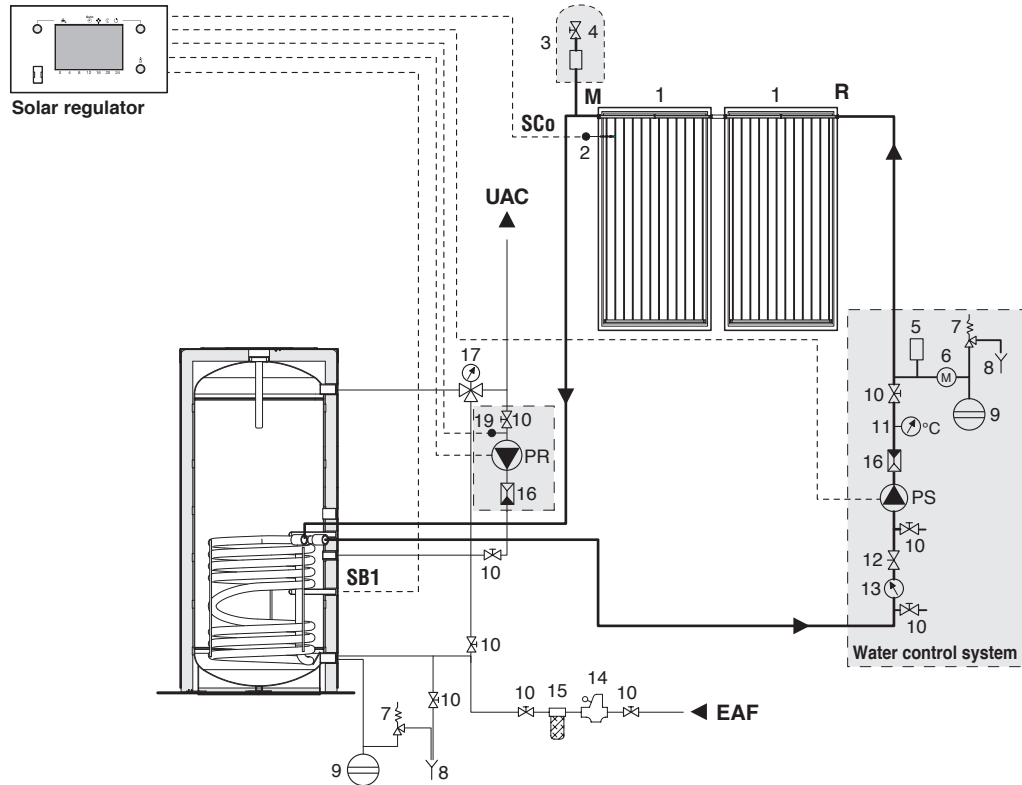
7

### Residual head of valve group fitted to Beretta IDRA MS 150 FI storage cylinders



## 7 WATER CIRCUIT

TYPICAL WATER SYSTEM SCHEMATIC



- |    |                                     |     |  |
|----|-------------------------------------|-----|--|
| 1  | Solar collector                     | 18  | Solar storage cylinder                     |
| 2  | Collector temperature sensor socket | 19  | DHW recirculation temperature sensor       |
| 3  | Manual bleed valve                  | UAC | Domestic hot water outlet                  |
| 4  | Vent cock                           | EAF | Domestic cold water inlet                  |
| 5  | Vent valve                          | M   | Collector outlet                           |
| 6  | Pressure gauge                      | R   | Collector return                           |
| 7  | Safety valve                        | PR  | DHW recirculation pump                     |
| 8  | Drain                               | PS  | Solar collector circuit pump               |
| 9  | Expansion vessel                    | SB1 | Storage cylinder bottom temperature sensor |
| 10 | Disconnect valves                   | SCo | Collector probe                            |
| 11 | Temperature gauge                   |     |  |
| 12 | Flow regulator                      |     |  |
| 13 | Flow meter                          |     |  |
| 14 | Pressure reducer                    |     |  |
| 15 | Water softener filter               |     |  |
| 16 | Non-return valve                    |     |  |
| 17 | Thermostatic mixer valve            |     |  |


Note! The above schematic is purely indicative.

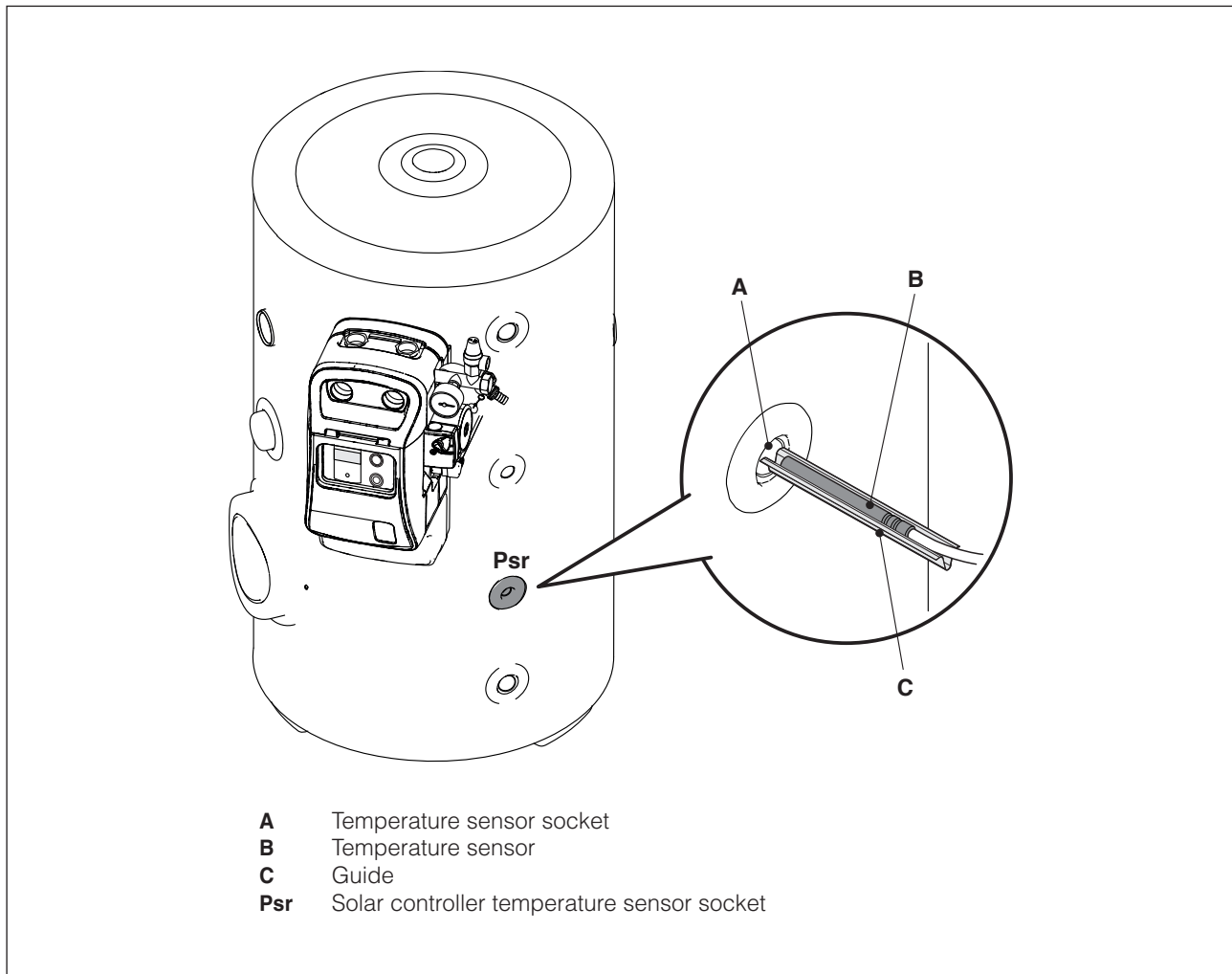
- ⚠ **Beretta IDRA MS FI** storage cylinders are delivered without a boiler heating pump. A suitably rated pump must be provided and installed separately. Flow rate from the solar collector circuit depends on the type and number of collectors installed. For further information, consult the manual for the collectors.
- ⚠ The domestic hot water system **MUST INCLUDE** an expansion vessel, safety valve, automatic vent valve and 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 safety valves.
- ⚠ The choice of system components and the method of their installation are left up to the heating engineer installing the system. Installers must use their expertise to ensure proper installation and functioning in conformity to all applicable legislation.
- ⚠ Circuits filled with anti-freeze must be fitted with water disconnectors.




## 8 LOCATION OF SENSORS

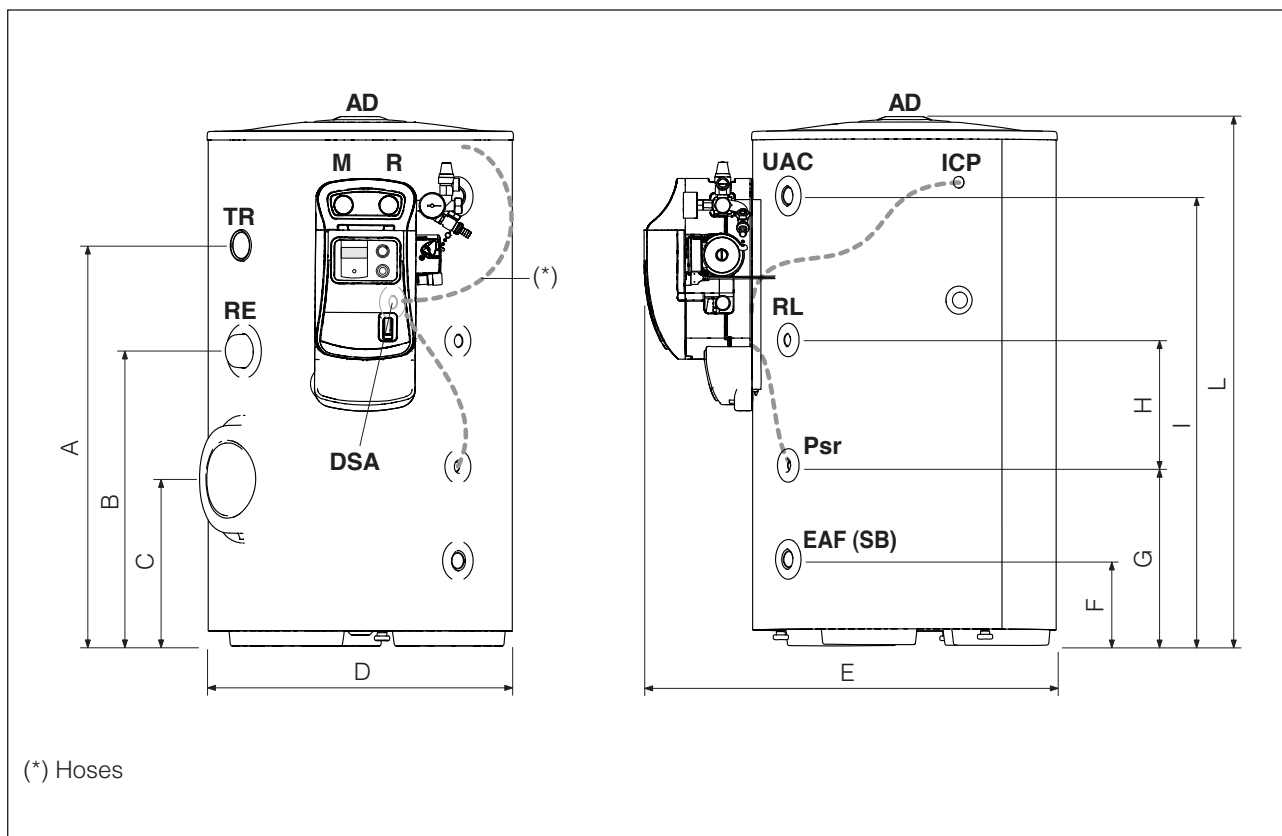
Beretta IDRA MS FI storage cylinders are equipped with dedicated sockets for the storage cylinder TEMPERATURE GAUGE or TEMPERATURE SENSOR.

 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.



 Joins between temperature sensor cables and control panel extension cables must be soldered and protected by sheaths or other forms of electrical insulation.

## 9 OVERALL DIMENSIONS AND WATER FITTINGS



DESCRIPTION	IDRA MS 150 FI	
UAC Domestic hot water outlet	1" F	Ø
M Outlet from solar collector	1" M	Ø
R Return to solar collector	1" M	Ø
RL DHW recirculation	¾" F	Ø
EAF (SB) Domestic cold water inlet (storage cylinder drain)	1" F	Ø
Psr Diameter/length of solar controller sensor socket	16/175	mm
RE Sleeve for electric heating element (not supplied)	1 ½" F	mm
AD Diameter/length of magnesium anode	33/450	mm
TR Temperature gauge		
DSA Sensor/power cable entrance		
ICP Rear cable entrance		
A	800	mm
B	590	mm
C	335	mm
D	605	mm
E	825	Ø mm
F	170	mm
G	360	mm
H	250	mm
I	895	mm
L	1055	mm

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

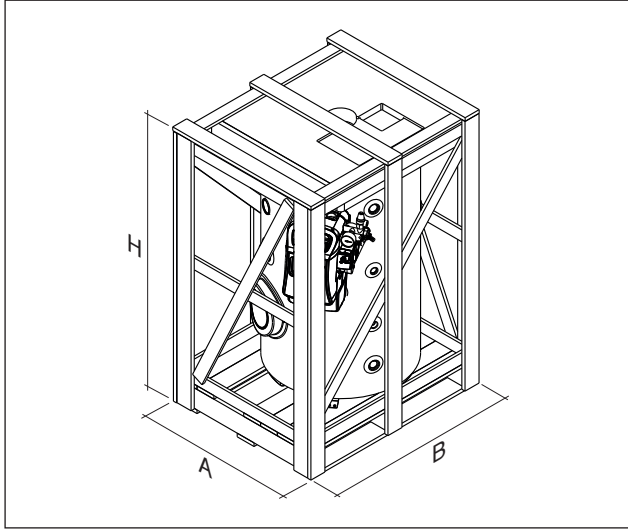
⚠ Check the efficiency of the seals when filling/refilling the storage cylinder.

## 10 UNPACKING THE PRODUCT

Beretta IDRA MS FI storage cylinders are delivered in a single package, protected by a cardboard box on a wooden pallet.

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

- Instruction manual
- Spare parts catalogue
- Hydraulic test certificate.

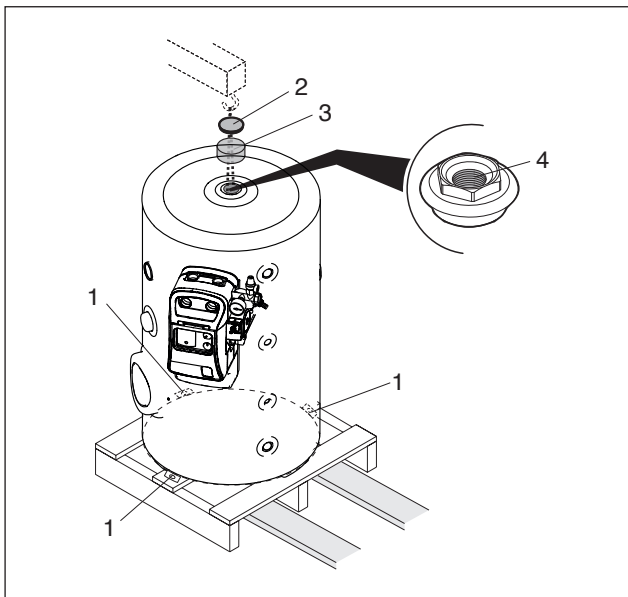


IDRA MS 150 FI		
A	880	mm
B	1040	mm
H	1280	mm

## 11 HANDLING

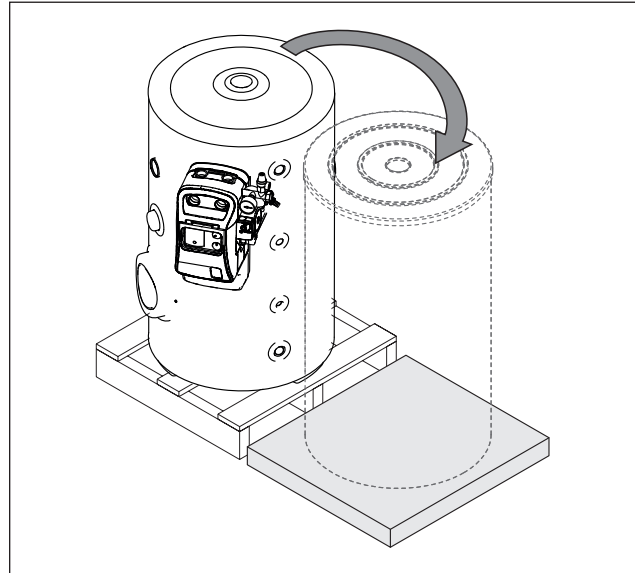
Make sure that any lifting equipment is of adequate capacity to lift and move the storage cylinder. Remove the brackets (1) to free the storage cylinder.

To lift the storage cylinder, remove the plug (2) and insulation (3) and screw an eyebolt (Ø 10 mm) of suitable capacity for the weight of the cylinder into the hole (4).

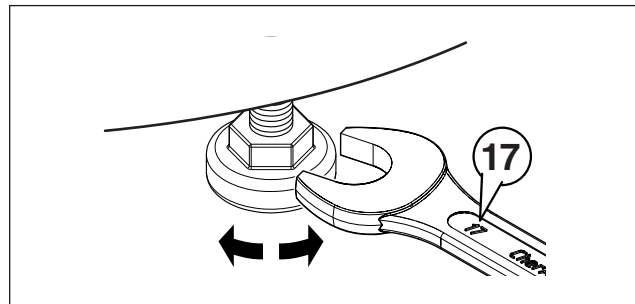



If suitable equipment is not on hand to lift the storage cylinder off the pallet using the eyebolt, proceed as follows.


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



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




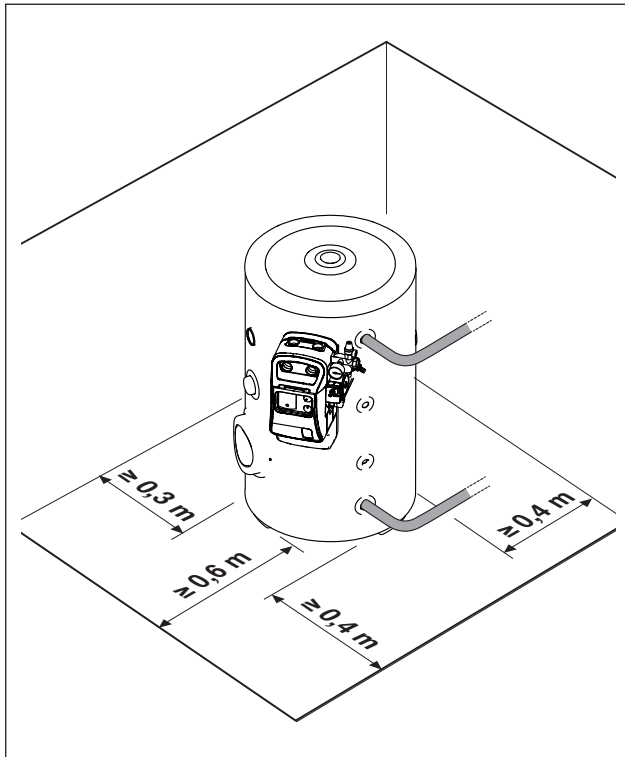
 Wear suitable personal protective equipment and use suitable safety devices.

 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 PLACE OF INSTALLATION

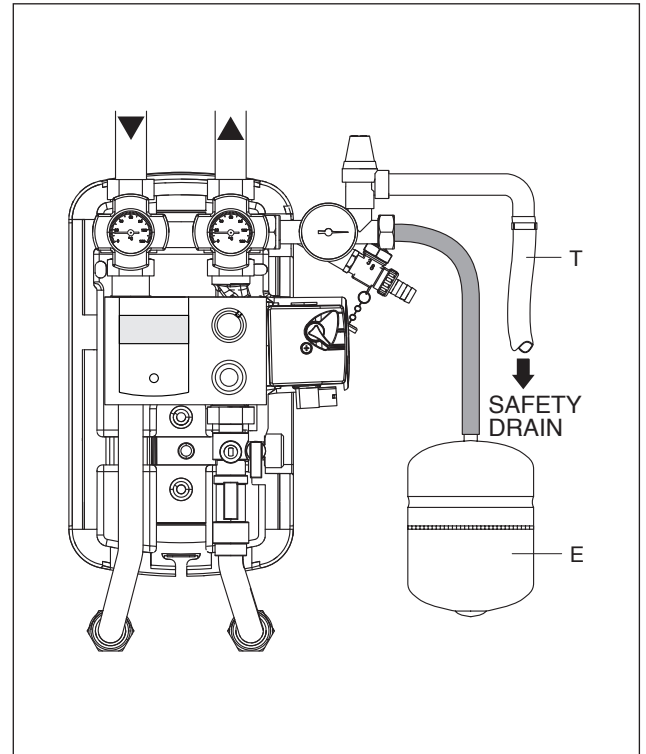
Beretta IDRA MS FI storage cylinders can be installed in any room where there is no specific requirement for an electrical protection rating higher than IP X0D.

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



## 14 PREPARING FOR INITIAL STARTUP

- Connect the safety valve drain to a pipe (T) to avoid burns from expelled fluid and to permit the heat transfer fluid to be recovered
- Connect up an expansion vessel (E) designed for use in solar water heating systems
- Connect the pump and the sensors to the solar controller (if provided) as instructed in the manual supplied with the controller.



12

## 13 INSTALLATION IN OLDER SYSTEMS AND SYSTEMS REQUIRING MODERNISATION

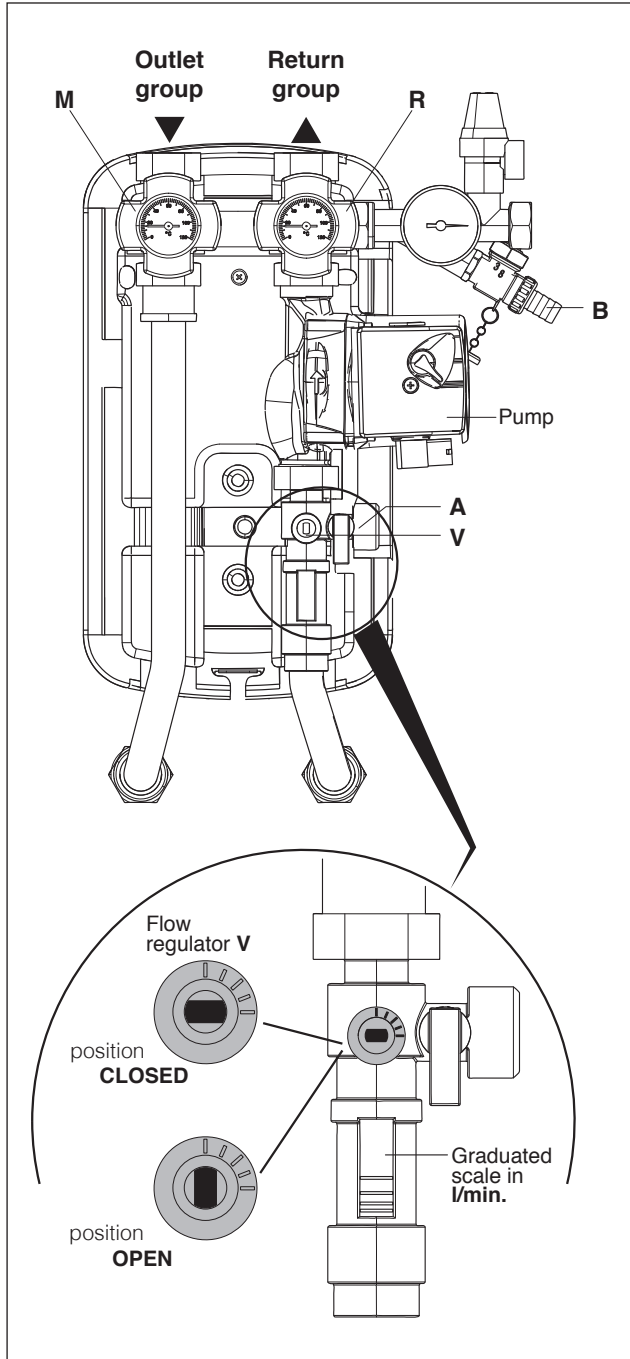
When installing Beretta IDRA MS FI storage cylinders in old systems or systems requiring modernisation, always perform the following checks.

- 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

**FLUSHING THE SYSTEM**

- Turn the knobs of the outlet and return valves (M) and (R) fully anti-clockwise
- Close the flow regulator (V) (so that the screw slot is horizontal)
- Open the cocks (A) and (B) on the return valve group
- Flush water in through the cock (B) and wait for it to come out of the cock (A)
- Close the cocks (A) and (B) and re-open the flow regulator (V) (so that the screw slot is vertical).



**PREMIXING WATER + GLYCOL**

Glycol anti-freeze is supplied separately and must be pre-mixed with water in a suitable container before being used to fill the system. For example, a mix of 40% glycol and 60% water provides anti-freeze protection down to a temperature of -21°C.

Anti-freeze	Temperature	Density
50%	-32 °C	1.045 kg/dm <sup>3</sup>
40%	-21 °C	1.037 kg/dm <sup>3</sup>
30%	-13 °C	1.029 kg/dm <sup>3</sup>

- ⚠ The propylene glycol supplied is specially formulated for solar collector applications and remains fully efficient throughout the -32 to +180°C temperature range. It is also non-toxic, biodegradable and bi-compatible.
- ⚠ Do NOT part fill the circuit with pure glycol then add water later.
- ⚠ Do not use automatic or manual filling systems.
- ⚠ If the water supply is highly chlorinated, use distilled water to prepare the glycol/water mix.

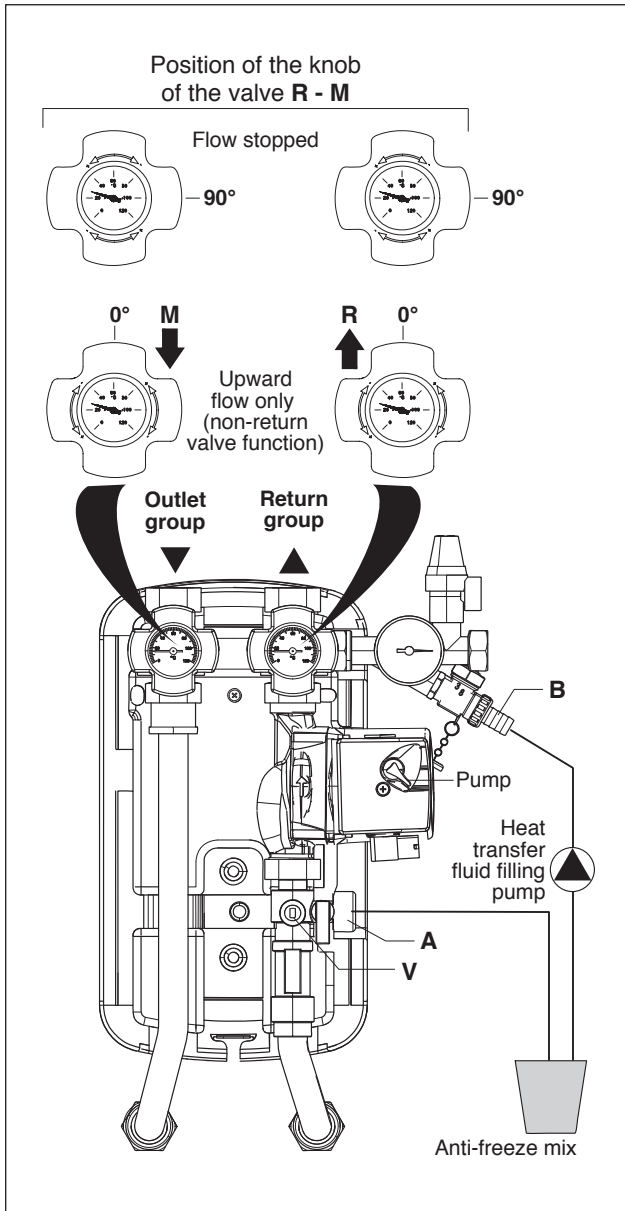
**15 INITIAL STARTUP**

**FILLING THE SYSTEM**

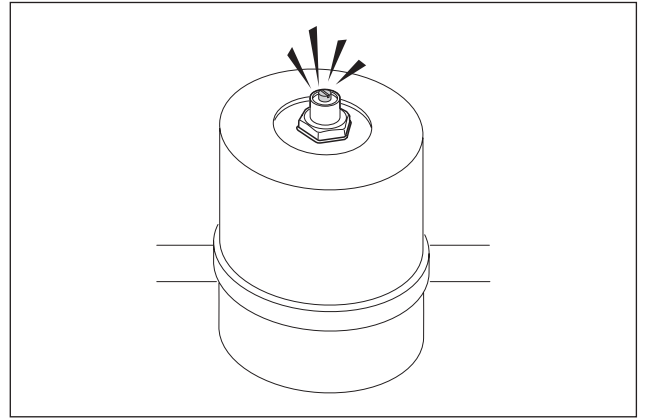
- 1 Turn the knobs of the outlet and return valves (M) and (R) fully anti-clockwise  
Close the flow regulator (V) (so that the screw slot is horizontal)
- 2 Open the manual bleed valve at the highest point in the system and keep it open throughout the filling operation
- 3 Pump the heat transfer fluid around the circuit with an external filling pump until all air bubbles have been eliminated. Close the manual bleed valve at the highest point in the system.
- 4 Temporarily raise the pressure in the system to 4 bar
- 5 Start up the system for about 20 minutes
- 6 Bleed the system again from step 2 until all the air has been removed
- 7 Set the pressure in the system to 3 bar
- 8 Close the cocks (A) and (B) and re-open the flow regulator (V)

- ⚫ Do not fill the system in bright, sunny conditions or if the collectors are hot.

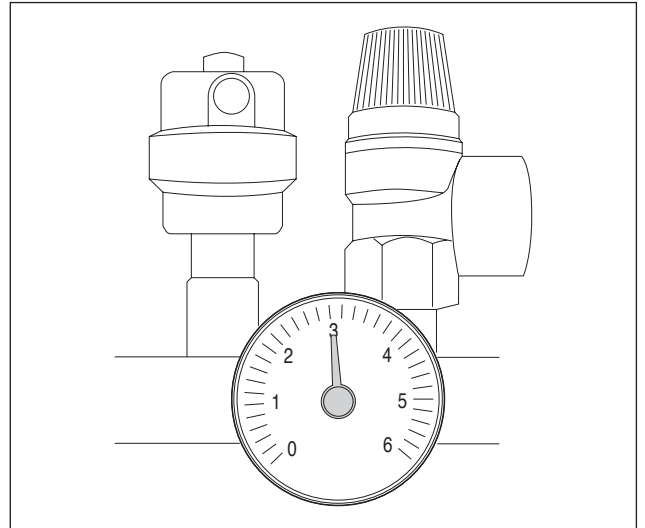
- ⚠ If copper piping has been used and joints have been hot brazed, flush out the system to remove any brazing residues. Seal test the system after you have flushed it out.
- ⚠ Fill the solar collector with glycol/water mix immediately after flushing it out, because flushing water may remain trapped in the circuit (with a consequent risk of freezing).



- Check that the solar collector circuit has been properly bled



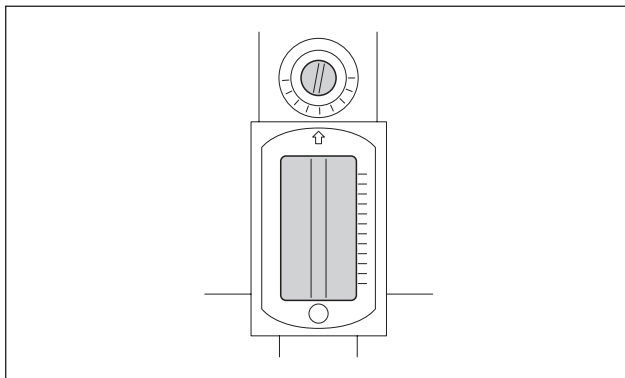
- Check that the pressure of the system when cold is approximately 3 bar
- Check that the safety valve operates at 6 bar
- Check that all pipes in the water circuit have been insulated in conformity to relevant standards.



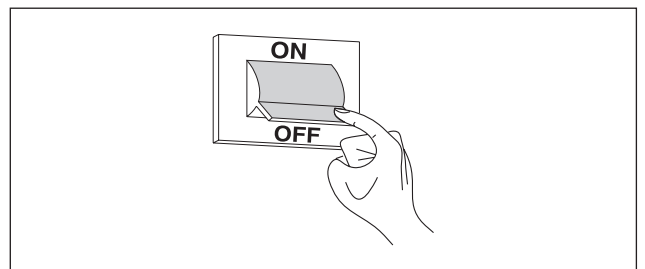
## 16 CHECKS DURING AND AFTER INITIAL START-UP

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

- Check that the flow rate in the solar collector circuit is equivalent to 30 l/h for each m<sup>2</sup> of collector area



Provided all the above checks have been completed successfully, re-start the boiler and the storage cylinder and check the temperature settings and domestic hot water draw rate.



## 17 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 storage cylinder thermostat to its minimum setting.

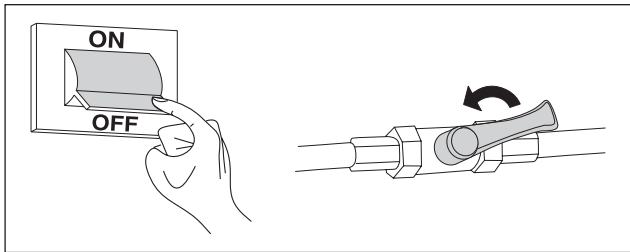


If outdoor temperature may drop below ZERO (risk of freezing) perform the operations described in the "Preparing for extended periods of disuse" section.

## 18 PREPARING FOR EXTENDED PERIODS OF DISUSE

If the storage cylinder is not going to be used for an extended period of time, perform the following operations.

- Cover the solar collectors with suitable protection
- 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
- Close the shut-off cocks for the domestic hot water circuit.



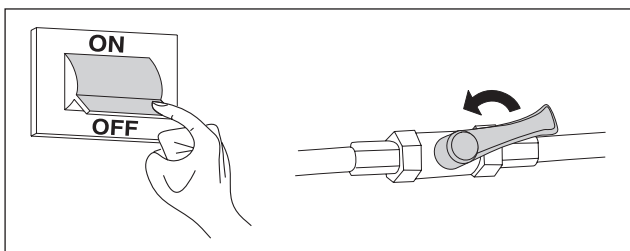
Drain the domestic hot water circuit if there is any risk of freezing.

Contact your local **Beretta** Technical Assistance Centre if you encounter any problems in completing the above procedure.

## 19 MAINTENANCE

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

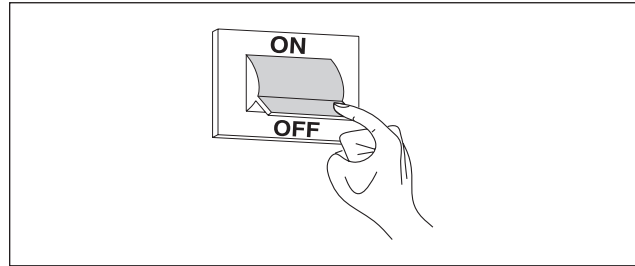
- Switch the electricity supply to the storage cylinder's valve group and to any associated boiler OFF at the main switch and at the control panel
- Close the shut-off cocks for the domestic hot water circuit
- Drain the storage cylinder's DHW (secondary) water circuit.



## REPLACING THE PUMP

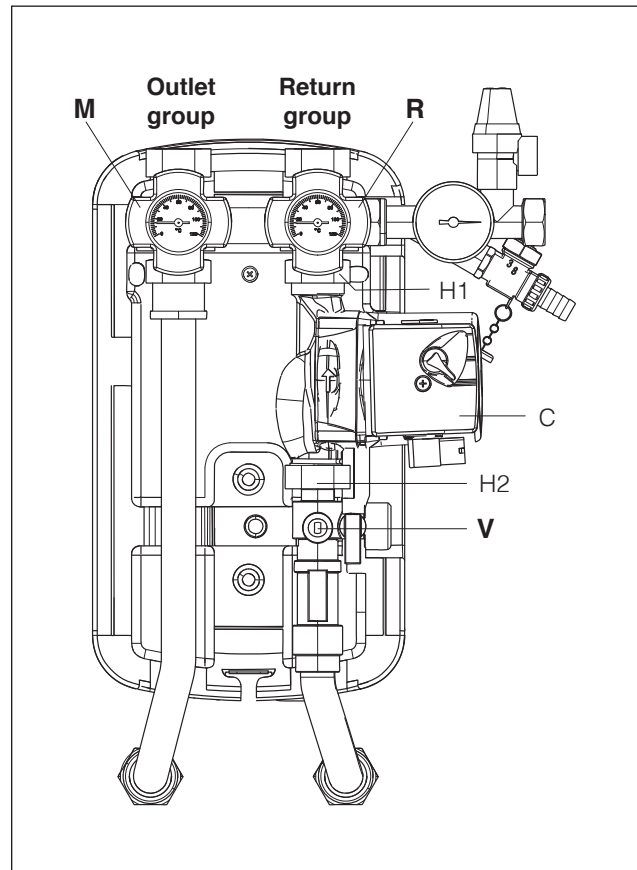
Perform the following operations before starting work to replace the pump (C).

- 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



- Close the flow regulator (V)
- Turn the valve knob 90° clockwise to close the valve (R)
- Unscrew the ring nuts H1 and H2 and remove the pump (C).

Reverse the above steps to fit the new pump.



## 20 CLEANING AND REMOVING INTERNAL COMPONENTS

### EXTERNAL CLEANING

Clean the outside of the storage cylinder 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 storage cylinder after cleaning it.



Do not use abrasive products, petrol or triethylene.

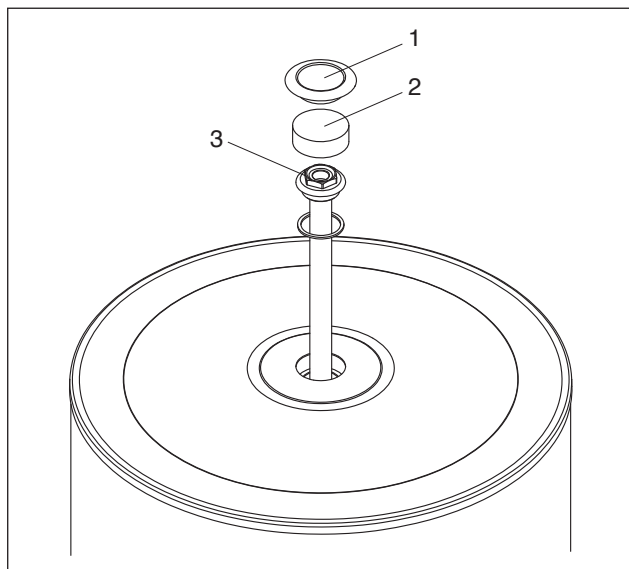
### INTERNAL CLEANING

#### Removing and checking the magnesium anode

- Remove the plug (1) and insulation (2), and use a suitable wrench to unscrew the anode holder (3)
- Check the magnesium anode for wear and replace it if necessary.

On completion of cleaning, follow the above steps in the reverse order to refit all removed parts.

**NOTE:** Tighten the anode plug to a torque of 25-30 Nm.



#### Cleaning inside the storage cylinder

- Remove the screws (4)
- Remove the flange cover (5)
- Remove the insulation (6)
- Unscrew the bolts (7) and remove the cover (8)
- Remove the seal (9)
- Clean inside the storage cylinder and remove any residues through the access hole.



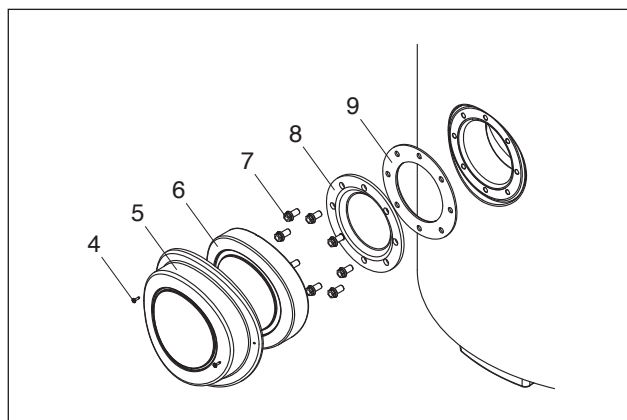
Check the seal for wear and replace it if necessary.

On completion of cleaning, follow the above steps in the reverse order to refit all removed parts.



Tighten the bolts (7), proceeding diagonally around the flange to apply pressure uniformly around the seal.

- Fill the storage cylinder's DHW (secondary circuit) and check that there are no leaks from any of the seals
- Check the performance of the storage cylinder.



## 21 RECYCLING AND DISPOSAL

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



## 22 TROUBLESHOOTING

FAULT	CAUSE	SOLUTION
<b>The storage cylinder 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
	Solar controller malfunction	- Solar controller malfunction
<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

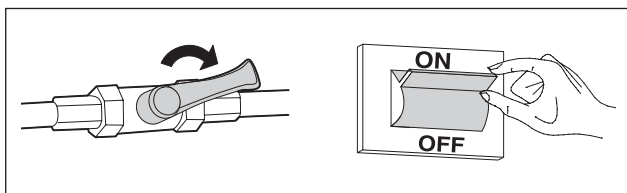
Refer to the **GENERAL SAFETY INFORMATION** and **PRECAUTIONS** section for safety-related information.

### 23 START-UP

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

Under certain circumstances, such as after long periods of disuse, the user may need to re-start it without involving the Technical Assistance Centre. 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).



### 24 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 storage cylinder's thermostat to its minimum temperature.

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

### 25 PREPARING FOR EXTENDED PERIODS OF DISUSE

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

### 26 EXTERNAL MAINTENANCE

Clean the cover, painted and plastic parts with a cloth dampened in soap and water. To remove stubborn marks, use a cloth dampened 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.





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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.