



UNVENTED HOT WATER CYLINDERS

INSTALLATION & OPERATION MANUAL

ECO Series DHW Cylinders



ALL TECHNICAL & WARRANTY QUESTIONS SHOULD:

Be directed to the local dealer from which the cylinder was purchased. If you are unsuccessful, call the phone number shown on the installation and operation manual.

KEEP THIS MANUAL IN THE POCKET OF THE CYLINDER FOR FUTURE REFERNECE
WHENEVER MAINTENENCE ADJUSTMENT OR SERVICE IS REQUIRED



SAFE INSTALLATION, USE AND SERVICE

The proper installation, use and servicing of this hot water cylinder is extremely important to your safety and the safety of others. Many safety-related messages and instructions have been provided in this manual and on your own cylinder to warn you and others of a potential injury hazard. Read and obey all safety messages and instructions throughout this manual. It is very important that the meaning of each safety message is understood by you and others who install, use, or service this cylinder.

	This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol, to avoid possible injury or death.
	DANGER indicates an imminently hazardous situation, which, if not avoided, will result in injury or death.
	WARNING indicates a potentially hazardous situation, which, if not avoided, could result in injury or death.
	CAUTION indicates a potentially hazardous situation, which, if not avoided, could result in minor or moderate injury.
	CAUTION used without the safety alert indicates a potentially hazardous situation, which, if not avoided, could result in property damage.
	NOTICE indicates special instructions on installation, operation or maintenance that are important but not related to personal injury or property damage.

All safety messages will generally tell you about the type of hazard, what can happen if you do not follow the safety message, and how to avoid the risk of injury.



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GENERAL SAFETY INFORMATION

	⚠ WARNING
	Read and understand this instruction manual and the safety messages herein before installing, operating or servicing this storage tank.
	Failure to follow these instructions and safety messages could result in death or serious injury. This manual must remain with the storage tank.

⚠ WARNING
Areas of potential danger.
<ol style="list-style-type: none">1. All water lines, joints and valves.2. All power connections and cables.3. If the unit has been in operation, allow the water in the heater and all components and surfaces (tank surface, water piping, etc.) to cool before starting the procedure.4. Assure that all power to associated water heating equipment has been shut off and disconnected before attempting any procedures.5. Assure that all incoming and outgoing water lines have been shut off at the manual shutoff valves.

	⚠ WARNING
	Explosion Hazard
	<ul style="list-style-type: none">• Overheated water can cause water tank explosion.• Properly sized temperature and pressure relief valve must be installed in the opening provided.

	⚠ WARNING
	Electrical Shock Hazard
	<ul style="list-style-type: none">• Turn off power at the branch circuit breaker serving the water heater before performing any service.• Label all wires prior to disconnecting when performing service. Wiring errors can cause improper and dangerous operation.• Verify proper operation after servicing.• Failure to follow these instructions can result in personal injury or death.

This manual is intended to cover the installation, operation, and maintenance procedures for the Eco series Hot Water Cylinders. It should be located on a level surface (no more than one-half degree of slope), capable of supporting the unit's total weight when filled.

After all installation procedures have been completed, and all water piping to the energy source and power connections have been double checked, the unit is ready for operation. The following startup procedure focuses on the cylinder. Check the Installation and Operation Manual of the hot water source for additional startup and shutdown procedures.



CYLINDER PRE-START FLUSH

It is recommended that the cylinder be flushed before startup in order to clear the vessel of loose particles and material from the installation process. . To flush the cylinder, see “Flushing the cylinder” instructions in this manual's “Maintenance” section.

NOTE

Do not install a manual shut off valve between the relief valve and the discharge. Doing so could cause serious injury or death if the relief valve released and the manual valve was closed. This would cause excessive buildup of pressure in the cylinder which could result in an explosion.

STARTUP PROCEDURE

1. Assure that all manual shutoff valves are closed.
2. Slowly open the manual shut-off valve on the cold water supply line. Check to ensure that there are no leaks at the valve or any joints. Allow the cylinder to fill with water. As the cylinder is filling, open hot water taps at the highest location in the building. This will speed up the filling process. Make sure the cylinder is full of water and free of air.
3. Follow the Startup procedure for the water heater to initiate a call for heat. Adjust the operating temperature control to the desired operating temperature and set the safety high limit.
4. As the unit is heating the water, carefully re-inspect the water piping, connections and the cylinder hot water outlet for signs of leakage.
5. After the unit has reached operating temperature, recheck all joints for signs of leakage. In addition, check all gauges and controls to verify that the water temperature and pressure are within design specifications.
6. The unit is now ready for normal operation.



SHUTDOWN PROCEDURE

1. Turn off all power to the circulating pump and the hot water source controls.
2. Ensure the cold water supply is isolated and at least two hot water taps are open prior to draining the cylinder.
3. One of the hot water taps should be as close as possible to the height of the cylinder in draw-off terms.
4. If possible use the drain valve at the cold water inlet to drain the contents of the cylinder.
5. Isolate the coil from the heating system. If necessary, drain out the coil before moving the cylinder.
6. Proceed with the required maintenance or repairs.
7. After performing the required maintenance or repairs, return the unit to operation by following the Startup Procedure.

INSTALLATION DETAILS

The cylinder installation is according to the customers' solar, heat pump, and boiler heating systems installation. Please install the cylinder according to the heating source's instructions. Every connection point on the cylinder is labelled. For the installation connections, it shall be done according to the actual design and specification of the cylinder that the end user purchases.

Safe Installation Conditions

This is an integral part of the warranty to which it refers. It is not an installation guide. It refers to the appropriate conditions for a safe and correct installation.

GENERAL INSTRUCTIONS

1. This manual is an essential and indispensable part of this device. It has to be carefully kept and always accompany the device.



2. Please read the instructions and warnings carefully. They contain crucial information concerning the safe installation, operation and maintenance of this new device.
3. The responsibility of installation lies with the buyer and has to be performed by an authorised qualified installer.
4. Using the device for reasons other than those specified in the manual is strictly prohibited. The manufacturer shall not be held liable for any damage caused by improper or unjustifiable use or by failure to comply with the instructions in the manual.
5. Installation, maintenance, and other special work on the device must be carried out by a person competent in installing and maintaining unvented hot water systems.
6. Faulty installation may cause personal injury or damage to your property. The manufacturer shall not be held liable for such damage.
7. Keep all packaging materials (clips, plastic bags, polystyrene foam) out of reach of children, as hazards may occur.
8. All repairs must be performed exclusively by a qualified installer, using only the appropriate parts. Failing to comply with the instructions above may affect your safety and relieves the manufacturer of all responsibility.

CAUTION!

The installation must be carried out in accordance with the following recommendations:

All current Building Regulations issued by the Department of the Environment, i.e. Building Regulation G3 (England and Wales), Technical Standard P3 (Scotland) or Building Regulation P5 (Northern Ireland) and the Water Fitting Regulations (England and Wales) or Water Byelaws (Scotland).

The installation should also be in accordance with the following British Standard Codes of Practice:

BS 5449:1990 Forced circulation hot water systems

BS 5546:2000 Installation of hot water supplies for domestic purposes

BS 5918:1989 Solar heating systems for domestic hot water

BS 6700:2006 Design, installation, testing and maintenance of services supplying water.

Failure to install this appliance correctly could lead to prosecution and will invalidate the guarantee. It is in your own interest and that of safety to ensure that the law is complied with.

RISK TO HEALTH

Improper installation work can contaminate the potable water.

Install the cylinder hygienically and thoroughly in accordance with current standards.

Rinse the cylinder and piping thoroughly with potable water. Install and equip the potable water pipes according to your country's applicable regulations and instructions.

A thermostatic mixer should be installed in the system to prevent the risk of scalding.



INSTALLATION & DIMENSION

REQUIREMENTS FOR THE INSTALLATION

Before installing the cylinder, you have to choose the right location carefully and check the surface, to ensure it can bear the device's weight. The cylinder must be installed on a flat surface with adequate bearing capacity.

WORKING CONDITIONS

1. To ensure the systems safety, all the cylinders have an exhaust hole on the top.
2. The cylinders come with a magnesium anode. The anode should be checked every year to see its condition. If it has broken down too much due to bad quality water condition, please replace it. If in a normal water quality area, it is suggested to replace the anode every 2 years.
3. The cylinder is designed for a maximum working pressure of 6 Bar. Please be careful to install related temperature and pressure relief valves and expansion tanks to ensure system safety and protect the cylinder, failure to fit a temperature and pressure relief valve will void the warranty.
4. When the temperature and pressure relief valves are draining hot water, please do not touch the hot water as it can cause burns or injuries. The draining water pipe must be piped to drain the water according to local regulations.
5. Keep the installation area clean and free of objects that may hinder the installation process. Do not allow other people, apart from the installer to get near the tools, as well as the installation location. Use only parts that are compatible with the water heater you bought. The use of other parts or unsuitable tools may cause accidents or pose other hazards.
6. The installation of water heaters must be performed exclusively by qualified installers. Always wear protective glasses, suitable working attire, protective shoes, and helmet. In hazardous locations, all protection measures must be taken, and only special equipment must be used.
7. A lack of safety devices can lead to potentially fatal injuries, all necessary safety devices must be installed correctly in the system. The use of an electric immersion may lead to the build-up of electrical potential in the water. This can in turn cause corrosion of the immersion. To prevent this, ensure the immersion heater and the hot and cold pipework are correctly bonded and connected to the earth line.
8. If plastic pipes are used, they must be approved temperature resistant to 95°C at a pressure of/or at least 10bar.
9. If there are leaks found in the system shut off the cold water stop valve from the main supply and contact a competent person immediately.



DEVICE TRANSPORTATION:

Abrupt movements must be avoided during the transportation of the cylinder, as they may result in fall and damage.

In order to avoid possible accidents, injuries and other hazards at least two people should lift the cylinder.

The cylinder must be stored in a dry are.

To avoid damaging the cylinder, do not remove the packaging, until it reaches the installation location.

Do not place the cylinder on hard or uneven surfaces.

Each Hot Water cylinder is packaged and crated as necessary at the factory. The plastic foam board is designed to provide protection for the unit during transportation, and to provide a safe means by which to lift and move the unit with a fork lift or hand truck.

ATTENTION!

IN CASE THAT ALL THE NECESSARY SAFETY MEASURES ARE NOT TAKEN AND THE SYSTEM IS OVERHEATED, EXCEEDING THE SAFETY TEMPERATURE OF 95°C, THEN THE SYSTEM IS OUT OF THE WARRANTY.

DEVICE MAINTENANCE

The cylinder maintenance must be performed according to the plan determined upon delivery.

The maintenance book must always be completed after the maintenance personnel visit.

DISMANTLING AND DISPOSAL

All the device's materials have to be properly disposed of, according to local legislation. Uninstalling, transportation and other costs obligations of the owner must be paid by the owner.

EXAMINING THE UNIT

After the unit has been unpackaged and set in place, it should be carefully examined to assure the cylinder has not been damaged during shipping.

If any evidence of damage is detected that could affect the safe operation of the unit, contact your authorised sales representative to report the damage and to receive instructions on how to proceed. After the unit and all components have been inspected for damage, it is suggested that all optional or independent pressure and temperature control components be checked to assure that they meet or exceed design specifications.



During the constant evolution and improvement of the products and services, the manufacturer reserves the right to change or modify the information or the specifications mentioned here in this manual without prior notice or other obligation.

Cylinder Construction

Our Hot Water Storage Cylinders are pre-engineered and pre-assembled complete with all fittings. They are thoroughly tested to ensure proper performance from the moment they are installed.

Cylinder Orientation: Cylinders are available in vertical orientation.

Inner Cylinder: Inner cylinders are Duplex 2205 stainless steel, up to food grade.

Pressure Rating: The working pressure of the cylinders is 6bar, testing pressure of the cylinders is 10bar.

Cathodic Protection: All cylinders are equipped with magnesium anodes to provide protection against corrosion.

Foam layer: Foam layer is polyurethane with excellent thermal insulation performance. For details of thickness, please see the drawings.

Heat Exchanger Coil: The heat exchanger divides the domestic sanitary water and central heating water while still allowing the heat to transfer from the heating system to the DHW.

Drain: Tapping or drainpipe will be connected to a low point on the cylinder for drainage.

Cylinder Stat Opening: All cylinders are provided with a cylinder temperature sensor hole/probe opening that allow proper temperature control of the cylinder when used for hot water supply.



Design

The domestic hot water cylinder is designed to store hot water for the central hot water system. It can be heated with solar, heat pump, boiler, and/or electric heater heating sources. The domestic hot water cylinder contains one heat exchanger coil inside. Specification data is as follows.

Model	Eco-200	Eco-300	Eco-500
Water Tank Capacity	200L	300L	500L
Outer Tank Diameter	Ø560mm (+/- 5mm)	Ø600mm (+/- 5mm)	Ø700mm (+/- 5mm)
Inner Tank Diameter	Ø470mm (+/- 5mm)	Ø500mm (+/- 5mm)	Ø600mm (+/- 5mm)
Height	1312mm	1572mm	1822mm
Material of Inner Tank	SS Duplex 2205	SS Duplex 2205	SS Duplex 2205
Thickness of Inner Tank	1mm (+/- 0.16mm)	1mm (+/- 0.16mm)	1mm (+/- 0.16mm)
Working Pressure	0.6Mpa	0.6Mpa	0.6Mpa
Material of Outer Tank	Galvanized steel with white painting		
Electrical Heater Type	G1 1/2" 3.0kw electric heater with thermostat		
Insulation	Environmental Friendly Polyurethane Foaming		
Insulation Thickness	45mm (+/- 2mm)	50mm (+/- 2mm)	50mm (+/- 2mm)
Foaming Density	40kg/m ² (+/- 2)	40kg/m ² (+/- 2)	40kg/m ² (+/- 2)
Weight	45kg	65kg	96kg
Heat Exchanger (Coil) Material	SUS316L	SUS316L	SUS316L
Heat Exchanger (Coil) Size	Ø28mm x 25m	Ø28mm x 25m	Ø28mm x 30m
Heat Exchanger (Coil) Surface	3.2m ²	3.2m ²	4.1m ²
Packaging Dimensions	630mm x 630mm x 1400mm	670mm x 670mm x 1650mm	768mm x 768mm x 1940mm



Troubleshooting Guide

Problem	Cause	Solution
No Hot Water	No water supply, the water inlet and outlet valve is closed or blocked.	Open the cold water inlet valve and hot water valve, Check for blockages in all relevant valves.
	The cold water pipe is frozen	Wait for the thawing of the pipe and ensure pipe is properly insulated.
The water Temperature is too low.	Air in the heat exchange coils or solar collector manifold, Circulating pump / valve malfunctioning.	Purge the heat exchange coil and system pipework of air. Check correct operation of circulating pump/valve.
	Incorrect system control, pipe linkage or setting.	Refer to manual and consult the installer / manufacturer
	The heat exchange coil is scaling due to long term high temperature operation.	Clean the tank and consider and consider adding water treatment to remove the scale.
Leakage of the water tank	Long term overvoltage operation of the tank.	Replace the tank
	Water that is low quality causing a hole or split.	Replace the tank
	A leak in the joint made te tank unusable	Replace the tank



Warranty

Stainless Steel Hot Water Cylinder

Please keep a copy of this document and proof of purchase.

WARRANTY REQUIREMENTS

In order to meet the terms and conditions of this water heater warranty, the water heater must be installed to comply with local and national water standards, with operating temperatures not exceeding 95°C, and with correct installation operations.

WARRANTY PERIOD

5 YEARS*

*From the invoice date (see date on invoice)

Extended warranty available (Please contact manufacturer)

Important Information:

Please keep a record of the following information

Supplier:	
Invoice Number:	
Date of Installation:	
Product Serial Number (Can be found on cylinder & also on cylinder box)	
Installers Name:	
Installers email & contact number:	
Location of Install (please include eircode where possible)	



Coverage

1. Should a defect or malfunction result in a leakage of water within the above-stated warranty periods due to defective material, a manufacturing malfunction or failure.
2. In the event of a leakage of water from a replacement water heater due to defective material, a manufacturing malfunction or failure, NRG Awareness reserves the right to refund to the original purchaser the published wholesale price available at the date of manufacture of the original water heater.

If you have questions about the coverage of this warranty, please contact NRG Awareness.

Owner Responsibilities

To avoid the exclusion list in this warranty, the owner or installer must:

1. Operate the water heater assembly at water pressures not exceeding the working pressure shown on the nameplate.
2. Keep the water heater free of damaging scale deposits.
3. Use the water heater in an open system, or in a closed system with a properly sized and installed thermal expansion tank.
4. Make provisions so that if the water heater or any component part or connection should leak, the resulting flow of water will not cause damage to the area in which it is installed.

Warranty Exclusions

This limited warranty will not cover:

1. Any water heater purchased from an unauthorised dealer.
2. Any water heater not installed by a qualified heating installer/ service technician.
3. Failure to locate the water heater in an area where leakage of the cylinder or water line connections and the combination temperature and relief valve will not result in damage to the area adjacent to the water heater or lower floors of the structure.
4. Any failed components of the heating system not manufactured by the **manufacturer** as part of the water heater.
5. Damages, malfunctions, or failures resulting from failure to install the water heater in accordance with applicable building codes/ordinances or good plumbing and electrical trade practices.



6. Damages, malfunctions, or failures resulting from failure to operate the water heater at pressures not exceeding the working pressure shown on the nameplate.
7. Damages, malfunctions, or failures caused by abuse, accident, fire, flood, freeze, lightning, acts of God, and the like.
8. Failures (leaks) caused by operating the water heater in a corrosive or contaminated atmosphere.
9. Any damages, malfunctions, or failures resulting from the use of dielectric unions.
10. Damages, malfunctions, or failures resulting from failure to operate the water heater at **temperatures** not exceeding the working pressure shown on the nameplate.
11. Any damage to the property or third party goods, caused by a defective cylinder is not covered under the warranty / guarantee terms & conditions.

If you have questions about the coverage of this warranty, please contact NRG Awareness.

These are the only written warranties applicable to the water heater manufactured and sold by NRG Awareness.

NRG Awareness neither assumes nor authorises anyone to assume for it any other obligation or liability in connection with said water heaters.

Claim Information

Claims under this warranty should be lodged with:

Sea Box Energy T/A NRG Awareness

Tel: +353 (0)21 435 5728

Web: www.nrgawareness.com

Email: info@nrgawareness.com

Address: Brooklodge East, Glanmire, T45Y018, Ireland

Please provide the following to support your claim:

1. Photos or videos of the cylinder in its installed position. Photos or videos of any leakage from the cylinder in its installed position
2. The information requested in the above table.



Please note that additional information may be requested to confirm the nature of the fault.

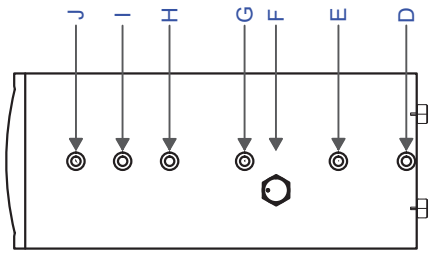
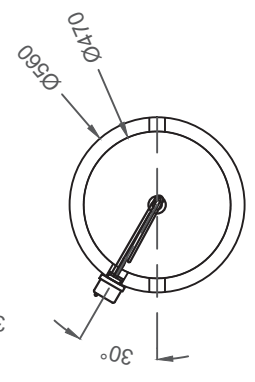
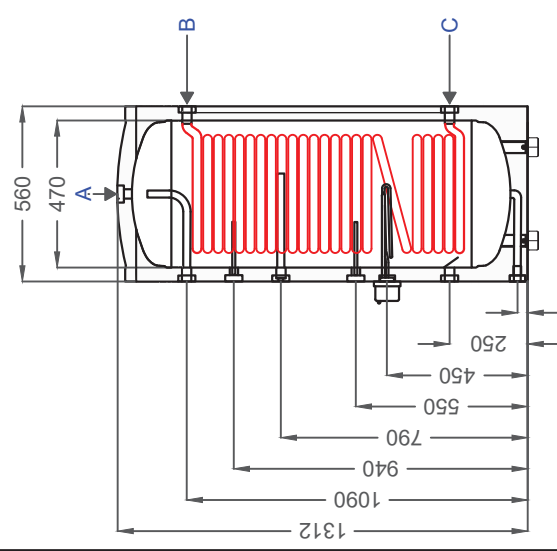
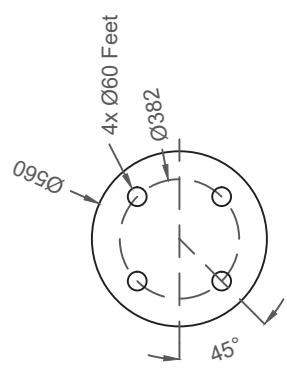
There may be freight charges payable.

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Notes

Legend

	Connections	M/F	Size	Colour
A	Exhaust	F	G 3/4"	Red
B	Coil Inlet	F	G 1"	Red
C	Coil Outlet	F	G 1"	Blue
D	Drain	F	G 3/4"	Blue
E	Cold Water Inlet	F	G 1"	Blue
F	Electric Heater (Immersion)	F	G 1 1/2"	Red
G	Temperature Sensor	F	G 1/2"	Blue
H	Magnesium Anode	F	G 3/4"	Red
I	Temperature Sensor	F	G 1/2"	Blue
J	Hot Water Outlet	F	G 1"	Red



NRG Awareness
Telephone: +353 214 355728
Unit 8, Little Island Industrial Estate Email: info@nrgawareness.com
Little Island, Co. Cork Website: NRGawareness.com

Project Name

ECO 200 L High Recovery Cylinder

Drawing Title

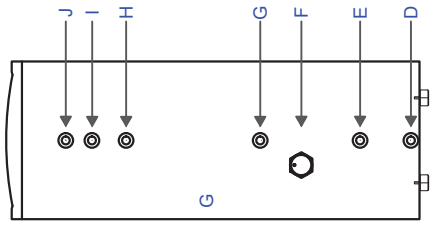
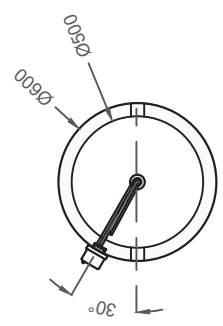
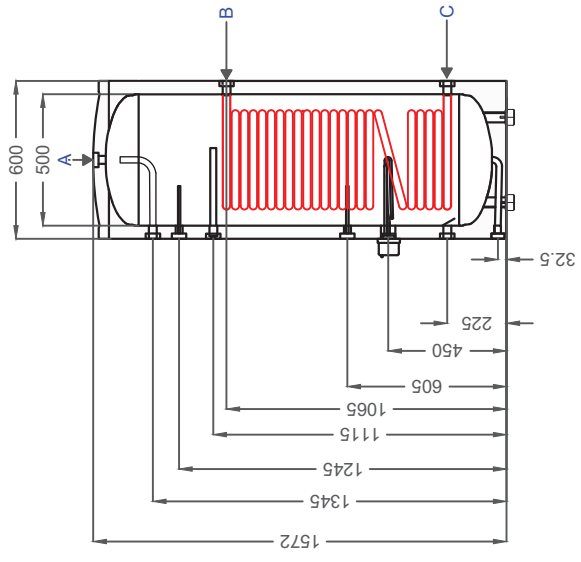
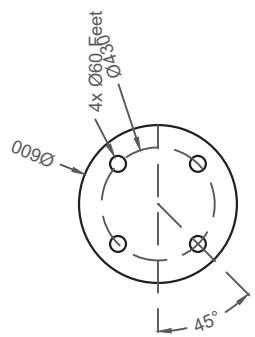
Dimensions and Connections

Designed By Checked By Date Revision

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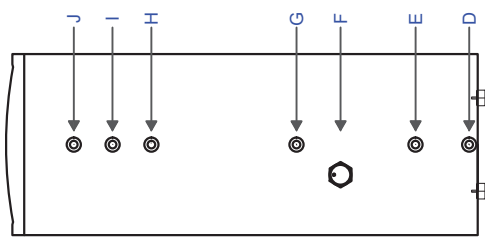
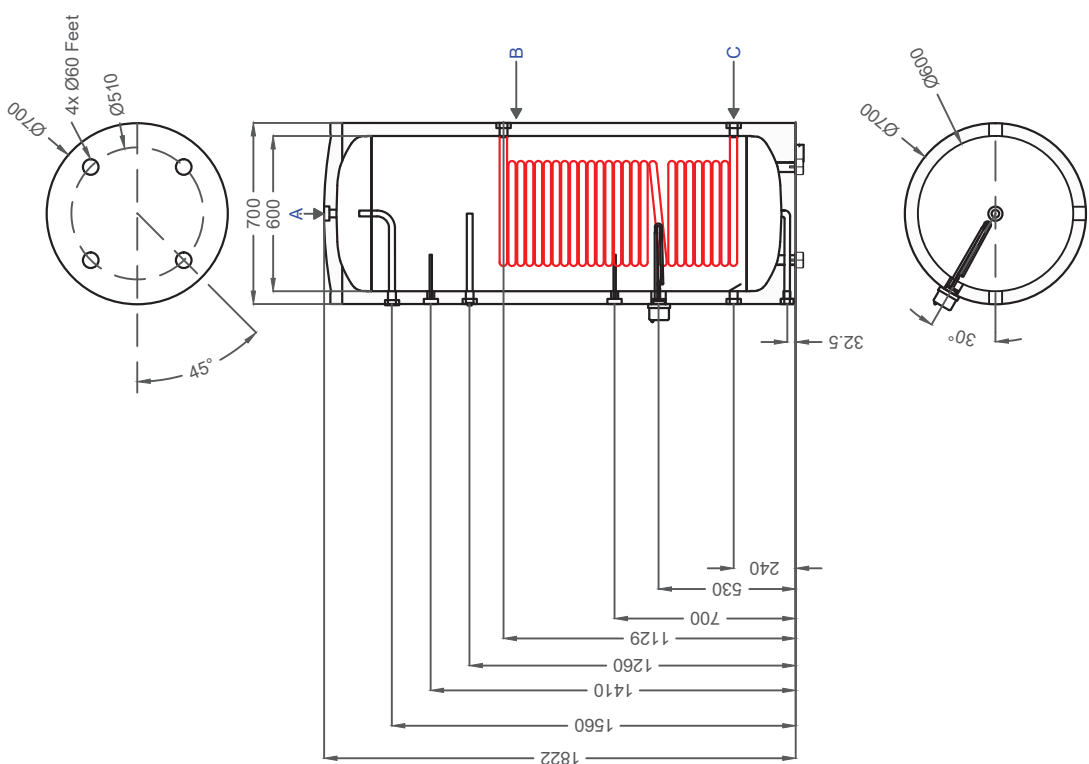
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Project Name

ECO 500 L High Recovery Cylinder

Drawing Title

Dimensions and Connections

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