

GRANT CYLINDER & STORE RANGE



High Efficiency **Direct and Indirect Hot Water Storage Solutions**



FEATURES:

MonoWave single-coil and DuoWave twin-coil unvented heat pump cylinders

DuoWave direct and indirect twin-coil unvented solar cylinders

DuoWave Plus open-vented and unvented indirect triple coil cylinders

ThermaWave open-vented thermal stores



Grant Profile

The Company

With an established history of over 30 years designing, manufacturing and supplying a wide range of highly efficient and reliable heating products, Grant has become a firm favourite for many householders and installers, when choosing a new or replacement heating system. From the award winning Vortex range of oil-fired condensing boilers to the latest Wave Range of cylinders, solar products and heat pumps, Grant focuses on providing cost effective solutions to the problem of rising energy costs.

Quality design

Despite the sophisticated technology employed in the development of new products, Grant's design engineers have kept true to the original concept of simplicity in installation and maintenance, which are essential ingredients of today's heating systems.

Grant products are manufactured from the highest quality materials and designed not just to meet, but to exceed all relevant performance and environmental standards. Backed by highly efficient administration and Grant's comprehensive warranty schemes, the Company is also focused on providing an exceptional after-sales service for all of its customers.

Rest assured

When you order from any of Grant's stockists you can feel secure in the knowledge that you are purchasing the best quality and most reliable product from a long established independent heating specialist.

Our policy has always been, and always will be, total commitment to the environment we live in and the customers we serve.

Technology for the future

The Company has achieved an enviable reputation within the heating industry for its high-efficiency approach to new concepts. The same can be said about the new Wave range of Direct and Indirect high efficiency stainless steel cylinders and thermal stores, which are suitable for either conventional or renewable applications.

The new Wave cylinders have been developed to the highest specification, as you would expect from any Grant product and have powerful mains-pressure performance, with exceptionally high hot water flow rates, whilst the thermal stores have been specifically designed to enable complementary technologies to be easily combined.

These ranges are ideal for the typical Eco-friendly home, with a need for a reliable, energy efficient, hot water supply.



Grant Wave Cylinder and Thermal Store Range

Contents

Exceptional efficiencies

Grant DuoWave, DuoWave Plus, Heat Pump cylinders and ThermaWave stores have sizes ranging between 125 and 500 litres. These efficient appliances have been designed to be coupled with almost any household hot water system from oil and gas boilers to electric heating, air source heat pumps and even solar thermal.

The cylinders are unique in their design, with every unit being manufactured from the highest specification 1mm thick duplex 2304 stainless steel. The outer casings are injected with 40mm of CFC/HCFC free, fire retardant polyurethane foam. This insulation ensures all models achieve surprisingly low standing heat losses and outstanding efficiency and reliability.

Hot water production and control

Models incorporating internal coils are constructed from 20mm or 25mm corrugated stainless steel tube, giving maximum heat transfer, high efficiency and quick recovery. Grant Wave cylinders and thermal stores are pressure tested to a full 12 bar.



Approvals

All cylinders are manufactured in accordance with BS EN 12897 the specification for unvented hot water storage vessels. They all comply with Building Regulations G3 and Water Regulations. Cylinder performance complies with the requirements BS6700, BS1566 and BS7206 and meets the NHBC criteria.

Benchmark

All cylinders are fully integrated within the Code of Practice for the installation and commissioning of central heating systems – Benchmark. The aim of the scheme is to advance professionalism of the heating industry and increase levels of customer satisfaction.



Range benefits

Key features of the new Wave Cylinder and Thermal Store Ranges:

- 25-year material guarantee on cylinder/store shell*
- 22mm and 28mm compression fittings
- No anode required
- Stainless steel immersion element
- Fast recovery stainless steel corrugated coils (all indirect and solar direct models)
- Labeled and colour-coded tappings
- Global Warming potential (GWP) = less than 3
- Ozone depletion potential (ODP) = 0

* See terms and conditions

4. Grant Heat Pump Cylinder Range

6. Grant DuoWave Solar Cylinder Range

8. Grant DuoWave Plus Solar Cylinder Range

10. Grant ThermaWave Store Range

12. Further information



Grant **Heat Pump** Cylinder Range

Duplex stainless steel unvented indirect, mains pressure cylinders for either Grant Aerona Air Source Heat Pumps or combining ASHP with solar thermal systems.



Heat Pump cylinders

Grant have introduced a range of stainless steel cylinders specifically matched to the Aerona ASHP, which incorporate a larger primary coil for quicker heat transference.

The new cylinders are available in six indirect single coil versions, ranging from 125-300 litres and five indirect twin coil versions ranging from 170-400 litres.

Grant Heat Pump cylinders feature compression fittings which are conveniently located to make installation quicker and easier.

Domestic Hot Water (DHW) Boost Kit

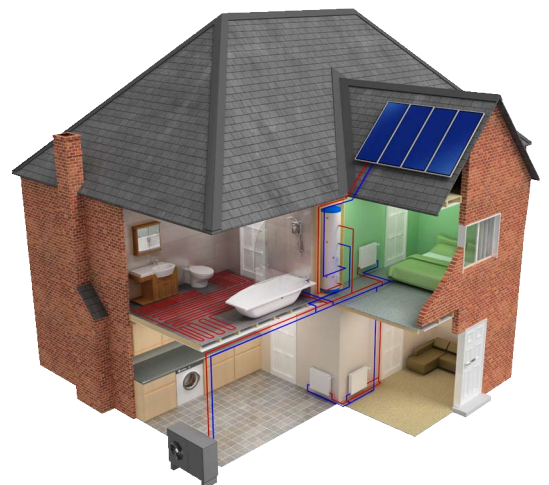
Whilst it is possible to raise the DHW to 60°C with an Aerona Air Source Heat Pump, it can be more efficient to set the hot water temperature between 45°C and 50°C and utilise Grant's Domestic Hot Water Boost Kit (product code: HPDHWBK1) to take the cylinder up to the desired higher temperature. This unit comprises an enclosure with 20A rated contactor, an override switch and relay, which works with the immersion element fitted as standard in all Grant heat pump cylinders.

Components

Grant MonoWave and DuoWave Heat Pump Cylinders include a factory-fitted temperature and pressure relief valve, set to operate at 7 bar and 90°C. Indirect models are also supplied with an installation kit comprising:

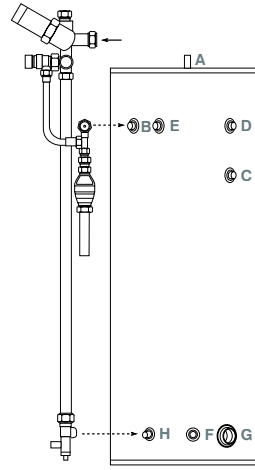
Indirect Models

Expansion vessel
15mm/22mm Tundish
Inlet manifold assembly
Installation and user instruction manual
Benchmark book
Dual thermostat
2-port zone valve

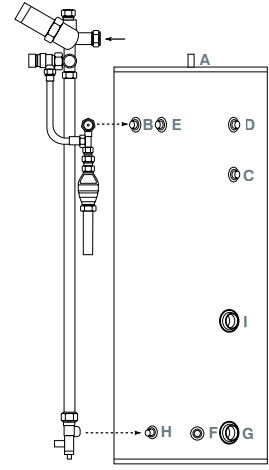


Grant MonoWave HP connections

- A Hot Out
- B T+P Valve
- C Secondary Return
- D Heat Pump Flow
- E Heat Pump Return
- F Thermostat Pocket
- G Immersion heater
- H Cold In
- I Immersion heater (300 & 400ltr models only)



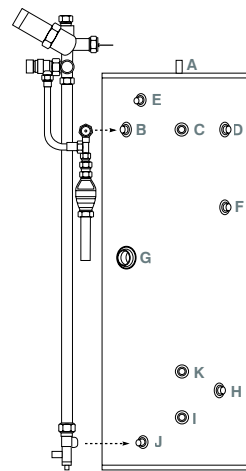
Grant MonoWave HP 125ltr, 150ltr, 170ltr, 200ltr and 250ltr models



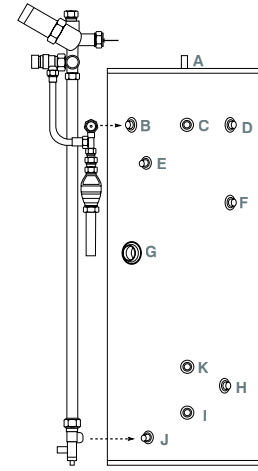
Grant MonoWave HP 300ltr and 400ltr models

Grant DuoWave HP connections

- A Hot Out
- B T+P Valve
- C Heat Pump Flow
- D Heat Pump Return
- E Secondary Return
- F Thermostat Pocket (Top)
- G Immersion
- H Thermostat Pocket (Bottom)
- I Solar Flow
- J Cold In
- K Solar Return



Grant DuoWave HP 170ltr model



Grant DuoWave HP 200ltr, 250ltr, 300ltr and 400ltr models

Grant MonoWave Heat Pump Cylinders Unvented Indirect Single Coil Duplex Stainless Steel

Model	Capacity (ltrs)	Pressure Regulator (bar)	Immersion fitted (kW)	Expansion Vessel (ltrs)	Coil Rating Primary (kW)	Standing Heat Loss (kW/24hrs)	Dimensions Height (mm)	Dimensions Diameter (mm)	Weight Empty (kg)	Weight Full (kg)
HPMONO/IND125	125	3	3	12	24.0	1.70	800	580	30	155
HPMONO/IND150	150	3	3	12	27.8	1.92	890	580	32	182
HPMONO/IND170	170	3	3	19	27.8	2.04	1075	580	45	215
HPMONO/IND200	200	3	3	19	47.0	2.45	1230	580	49	249
HPMONO/IND250	250	3	3	24	47.0	2.69	1480	580	59	309
HPMONO/IND300	300	3	3	24	56.6	2.71	1745	580	68	368

Grant DuoWave Heat Pump Cylinders Unvented Indirect Solar Twin Coil Duplex Stainless Steel

Model	Capacity (ltrs)	Pressure Regulator (bar)	Immersion fitted (kW)	Expansion Vessel (ltrs)	Coil Rating Primary (kW)	Solar (kW)	Standing Heat Loss (kW/24hrs)	Dimensions Height (mm)	Dimensions Diameter (mm)	Weight Empty (kg)	Weight Full (kg)
HPDUO/IND170	170	3	3	19	32	8.5	2.04	1075	580	57	227
HPDUO/IND200	200	3	3	19	47	10	2.45	1230	580	61	261
HPDUO/IND250	250	3	3	24	47	16	2.69	1480	580	71	321
HPDUO/IND300	300	3	3	24	55.6	16	2.71	1745	580	80	380
HPDUO/IND400	400	3	3	35	55.6	23	2.94	2110	580	100	500

Grant DuoWave Solar Cylinder Range

Duplex stainless steel, unvented, direct solar single coil and indirect solar twin-coil mains pressure hot water cylinders for renewable applications.

Grant DuoWave cylinders

The DuoWave range of mains pressure hot water cylinders were developed to meet the growing demand for systems that combine a renewable heat source with a standard oil, gas or electric boiler. They are particularly suitable for use with solar hot water systems like Grant Solar Thermal. When correctly installed this arrangement can significantly reduce the dependence on traditional fossil fuels resulting in lower energy bills.

Sizes range from 170 litres to 500 litres, comprising five direct and six indirect models which can meet the needs of even the largest of domestic properties.

Design

The cylinders have two coils for connection to primary heat sources. The solar heat supply should be connected to the bottom coil, which is designed to preheat, or heat the surrounding water, depending on the temperature of the incoming supply. The central heating boiler connections should then be made to the top coil. The boiler will only operate if the water in the cylinder has not reached the desired pre-set temperature and the boiler/cylinder controls are installed and commissioned correctly. Featuring high efficiency corrugated heating coils, the Grant DuoWave range is developed to ensure a maximum transfer of the energy collected by renewable systems.

Direct and indirect options

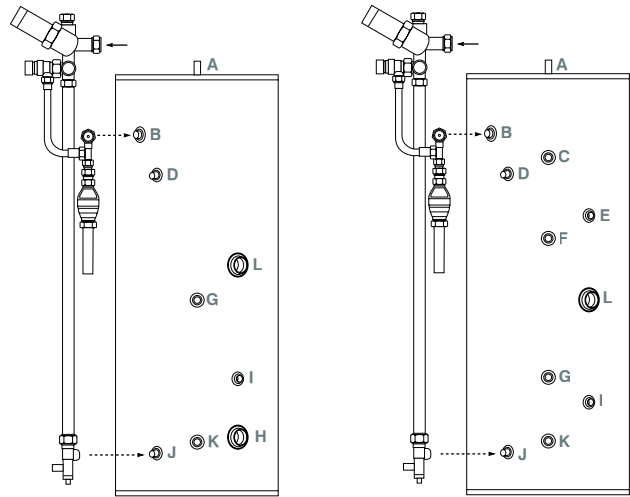
Direct models are designed to be electrically heated but also incorporate a high performance solar coil to allow easy connection to a solar thermal system.

Indirect cylinders are heated from a conventional oil, gas or electric boiler, but provided with a second high performance coil which is linked with a renewable heat source, like solar thermal. As a safety feature, indirect cylinders are supplied with a control/high limit thermal cut-out that operates at 90°C.



Grant DuoWave connections

- A** Hot Out
- B** T+P Valve
- C** Primary Return (Indirect Only)
- D** Secondary Return
- E** Top Thermostat Pocket (Indirect Only)
- F** Primary Flow (Indirect Only)
- H** Immersion heater (Direct Models Only)
- I** Thermostat Pocket (Bottom)
- J** Cold Mains In
- K** Solar Flow
- L** Immersion heater



Grant DuoWave Direct models

Grant DuoWave Indirect models

Components

DuoWave Cylinders include a factory-fitted temperature and pressure relief valve, set to operate at 7 bar and 90°C, and 3kW immersion heater(s).

They are also supplied with an installation kit comprising:

Direct Models	Indirect Models
Expansion vessel with hose and bracket	Expansion vessel with hose and bracket (no bracket and hose on 500ltr model)
15mm/22mm Tundish	15mm/22mm Tundish
Inlet manifold assembly	Inlet manifold assembly
Installation and user instruction manual	Installation and user instruction manual
Benchmark book	Benchmark book
Dual thermostat	2 x Dual thermostats
	2-port zone valve

Grant DuoWave Cylinders Unvented Direct Solar Single Coil Duplex Stainless Steel

Model	Capacity (ltrs)	Pressure Regulator (bar)	Expansion Vessel (ltrs)	Coil Rating Solar (kW)	Standing Heat Loss (kW/24hrs)	Dimensions Height (mm)	Dimensions Diameter (mm)	Weight Empty (kg)	Weight Full (kg)
GDUO/DIR170	170	3	19	8.5	2.04	1075	580	37	207
GDUO/DIR200	200	3	19	10.0	2.45	1230	580	41	241
GDUO/DIR250	250	3	24	16.0	2.69	1480	580	47	297
GDUO/DIR300	300	3	24	16.0	2.71	1745	580	53	353
GDUO/DIR400	400	3	35	24.0	2.94	2110	580	65	465

Grant DuoWave Cylinders Unvented Indirect Solar Twin Coil Duplex Stainless Steel

Model	Capacity (ltrs)	Pressure Regulator (bar)	Expansion Vessel (ltrs)	Coil Rating Primary (kW)	Solar (kW)	Standing Heat Loss (kW/24hrs)	Dimensions Height (mm)	Dimensions Diameter (mm)	Weight Empty (kg)	Weight Full (kg)
GDUO/IND170	170	3	19	8.5	8.5	2.04	1075	580	49	219
GDUO/IND200	200	3	19	8.5	10.0	2.45	1230	580	53	253
GDUO/IND250	250	3	24	8.5	13.9	2.69	1480	580	63	313
GDUO/IND300	300	3	24	8.5	16.0	2.71	1745	580	72	372
GDUO/IND400	400	3	35	10.0	24.0	2.94	2110	580	92	492
GDUO/DIR500	500	3	50	16.0	27.0	3.15	1835	660	108	608

Grant DuoWave Plus Solar Cylinder Range

Duplex stainless steel, open-vented or unvented, indirect, triple-coil, mains pressure hot water cylinders for combining solid fuel, biomass, gas, electric or oil-fired boilers and solar thermal systems.*

Grant DuoWave Plus cylinders

The Grant DuoWave Plus is a further development of the 'DuoWave' cylinder range and is available in a 300 litre model only. The cylinder is designed to combine different heating technologies within a single system by utilizing up to three separate high performance heating coils and one 3kW immersion heater.

Design specifications

When installed as an open vented cylinder, it is possible to combine a solid fuel or wood burning appliance with an oil or gas boiler. An additional heat source, such as solar thermal can also be linked using the high performance coil, located at the bottom of the cylinder.

The unvented version is similar in design, but incorporates all of the additional controls necessary to use the unit in an unvented system installation. It enables up to three separately controlled heat sources to be linked together. This is particularly useful when combining traditional fossil fuel appliances like oil or gas boilers with renewable technologies like heat pumps, solar thermal or fully controlled wood pellet (biomass) boilers.

Components

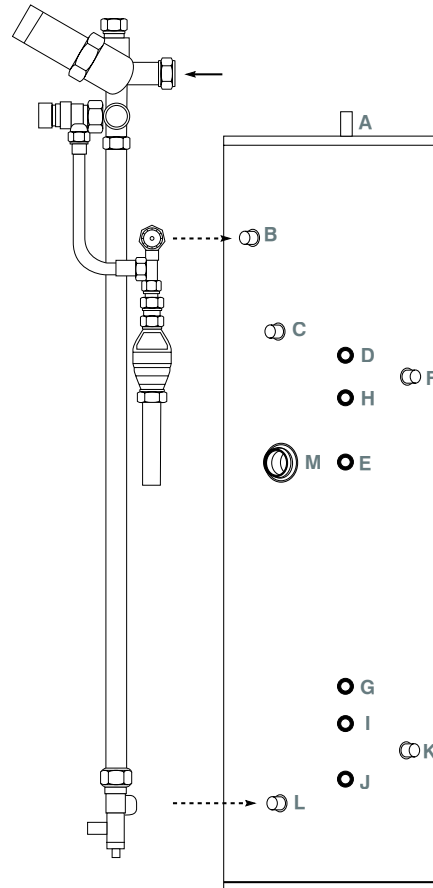
DuoWave Plus Cylinders include a factory-fitted temperature and pressure relief valve, set to operate at 7 bar and 90°C, and one 3kW immersion heater. They are also supplied with an installation kit comprising:

Open-vented Models	Unvented Models
2 x Dual thermostats	Expansion vessel with hose and bracket
15mm/22mm Tundish	15mm/22mm Tundish
Benchmark book	Inlet manifold assembly
Installation and user instruction manual	Installation and user instruction manual
	2 x Dual thermostats
	2-port zone valve
	Benchmark book



Grant DuoWave Plus connections

- A Hot Out
- B T+P Valve
- C Secondary Return
- D Primary Return
- E Solid Fuel Flow
- F Thermostat Pocket (Top)
- G Solid Fuel Return
- H Primary Flow
- I Solar Return
- J Solar Flow
- K Thermostat Pocket (Bottom)
- L Cold Mains In
- M Immersion



Grant DuoWave Plus Open Vented/Unvented models

Grant DuoWave Plus Cylinders Open vented Indirect Solar Triple Coil Duplex Stainless Steel

Model	Capacity (ltrs)	Coil Rating			Standing Heat Loss (kW/24hrs)	Dimensions		Weight	
		Primary 1 (kW)	Primary 2 (kW)	Solar (kW)		Height (mm)	Diameter (mm)	Empty (kg)	Full (kg)
GDUO/PLUS300	300	11.6	8.5	16	2.71	1745	580	57	357

Grant DuoWave Plus Cylinders Unvented Indirect Solar Triple Coil Duplex Stainless Steel

Model	Capacity (ltrs)	Pressure Regulator (bar)	Expansion Vessel (ltrs)	Coil Rating			Standing Heat Loss (kW/24hrs)	Dimensions		Weight	
				Primary 1 (kW)	Primary 2 (kW)	Solar (kW)		Height (mm)	Diameter (mm)	Empty (kg)	Full (kg)
GDUO/PLUS300U	300	3	24	11.6	8.5	16	2.71	1745	580	57	357

* Important

If the DuoWave Plus is to be connected to a non-thermostatically controlled appliance (e.g. Solid fuel back boiler), the cylinder must be installed in an open-vented system to comply with current Building Regulations.

Note: In an open-vented system, the T+P Valve would not operate in pressure mode, but may still be operated on temperature, so it should be connected in the correct manner (see installation manual).

Grant **ThermaWave Store** Range

Duplex stainless steel, open vented thermal stores for combining multiple heat sources in a variety of configurations.



Combining technologies

With rising fuel prices, looking for ways to lower home heating costs and save energy are now more important than ever. Many people are opting for renewable technologies to heat their homes. However, finding a way of combining several renewable technologies with traditional heating systems has proved very difficult, until now.

Grant ThermaWave stores

The Grant ThermaWave allows multiple heat sources to be connected in a number of different ways, with the back-up feature of two 3kW immersion elements. This unit makes it possible to now have a gas or oil fired boiler connected to a solid fuel appliance and also a renewable heat source such as solar thermal or a heat pump. Furthermore, underfloor heating system manifolds as well as radiator circuits can also be directly connected to the store.

Models are available in three sizes - 250 litres, 300 litres and 400 litres, in an open-vented configuration.

A separate domestic hot water kit (product code: G THERM/KIT1) is also available for those situations where domestic hot water supply is required. Where there is a greater demand for domestic hot water, the store should be linked with Grant's DuoWave cylinders.

Design features

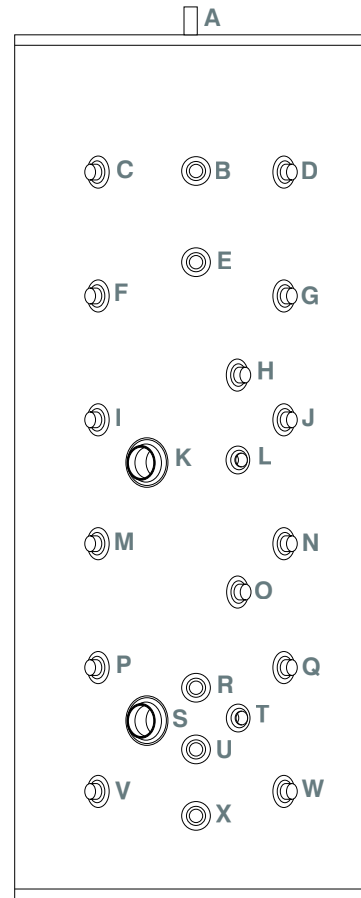
The store has been designed in such a way that it slows inlet water velocities, ensuring multi-level temperature distribution. High specification 1mm thick 2304 duplex stainless steel is utilised which resists all forms of corrosion. Compression fittings on all connections (except 28mm) dramatically reduce fitting time for the installer and 40mm injected polyurethane foam insulation gives an exceptionally low standing heat loss, making the units highly efficient.

The stores also come with a 25-year shell guarantee (subject to Terms and Conditions) which is testament to the product's reliability and durability.



Grant ThermaWave connections*

- A** Output Seven (e.g to DHW Kit or flow to DHW Cylinder + OSV)
- B** 1/2" BSPF (not used)
- C** Input One (e.g flow from boiler if DHW is fitted)
- D** Output One (e.g CH flow if no DHW is fitted)
- E** Thermostat Pocket
- F** Input Two (e.g flow from boiler if no DHW is fitted)
- G** Output Two (e.g CH flow if DHW is fitted)
- H** 28mm Gravity Flow (e.g solid fuel)
- I** Input Three (e.g return from DHW Kit or Cylinder)
- J** Output Three (e.g to UFH if high capacity)
- K** Immersion heater
- L** Thermostat Pocket
- M** Input Four (e.g flow from Heat Pump)
- N** Output Four (e.g return to boiler)
- O** 28mm Gravity Return (e.g solid fuel)
- P** Input Five (e.g return from CH)
- Q** Output Five (e.g UFH flow if low capacity)
- R** Solar Coil Return
- S** Immersion heater
- T** Thermostat Pocket
- U** Solar Coil Flow
- V** Input Six (e.g return from UFH)
- W** Output Six (e.g return to heat pump)
- X** 22mm Fill and Drain Point



Grant DuoWave Plus Open Vented/Unvented models

Grant ThermaWave Stores Open-Vented Duplex Stainless Steel

Model	Capacity (ltrs)	Coil Rating Solar (kW)	Standing Heat Loss (kW/24hrs)	Dimensions Height (mm)	Diameter (mm)	Weight Empty (kg)	Full (kg)
G THERM/250	250	16	2.69	1485	580	55	305
G THERM/300	300	16	2.71	1735	580	61	361
G THERM/400	400	24	2.94	2110	580	74	474

*Note

The inputs and outputs highlighted above may vary depending upon the technologies being connected to the thermal store, and if a nominal quantity of domestic hot water is also required.

For further guidance consult the installation manual or contact Grant Technical Services.

Further Information

Water supply

All Grant cylinders will operate at minimum Byelaw supply requirements however, the best performance is achieved above 25 l/m and 1.5 bar working pressure.

Installation

The installation of a Grant Cylinder or Store must be carried out by a competent person in accordance with the current IEE Wiring Regulations, Electricity at Work Regulations 1989, relevant Building Regulations, Building Standards in Scotland, Water Regulations and Bylaws of the local Water Authority. Comprehensive technical information can be found in the installation manual, which is supplied with every cylinder/store.

Designed to be installed in a vertical position only, the cylinders/stores can stand on any flat level surface without special preparation, provided that the flooring is capable of supporting the weight of the fully filled cylinder/store.

The cylinders/store controls should be wired to the heat source(s) in accordance with chosen control scheme. The immersion heater(s) for direct models must be permanently connected to the supply through a double pole linked isolating switch with a minimum breaking capacity of 13A.

Training Academy

The Grant Training Academy now runs Logic Unvented Domestic Hot Water Certificate Courses, intended for plumbers and heating installers who wish to obtain the necessary qualification to allow them to install domestic unvented hot water systems in compliance with the Building Regulations G3 in England & Wales. The 1-day course involves both theory and 'hands on' training, whilst the assessment involves both written and practical tasks.

Compatibility

All Grant Indirect Cylinders can be used with gas, oil and electric boilers in either open-vented or sealed heating systems. The cylinders themselves can also operate in either open-vented or unvented arrangements. Unvented cylinders must not be used with an uncontrolled heat source such as a solid fuel back boiler.

Guarantees

Grant Cylinders and Stores have a full two-year component guarantee as well as a 25-year guarantee on the stainless steel cylinder shell, from the date of purchase (see terms and conditions). All guarantees are subject to being installed in accordance with the manufacturer's instructions and serviced on an annual basis. On completion of the installation, the system should be commissioned by a competent person and the cylinder registered online with Grant UK.

After sales service

For peace of mind, Grant Cylinders and Stores are backed by a national network of service engineers.

In the unlikely event of a problem occurring, your installer should telephone our customer service department on: **01380 736920**

Website downloads

For further information about the Grant product range or to download brochures please visit our website at **www.grantuk.com**

Our website is regularly updated with the latest news and changes to our product range.



GRANT ENGINEERING (UK) LTD
HOPTON HOUSE, HOPTON INDUSTRIAL ESTATE,
DEVIZES, WILTSHIRE, SN10 2EU
T: 01380 736920 F: 01380 736991
E: SALES@GRANTUK.COM W: WWW.GRANTUK.COM

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