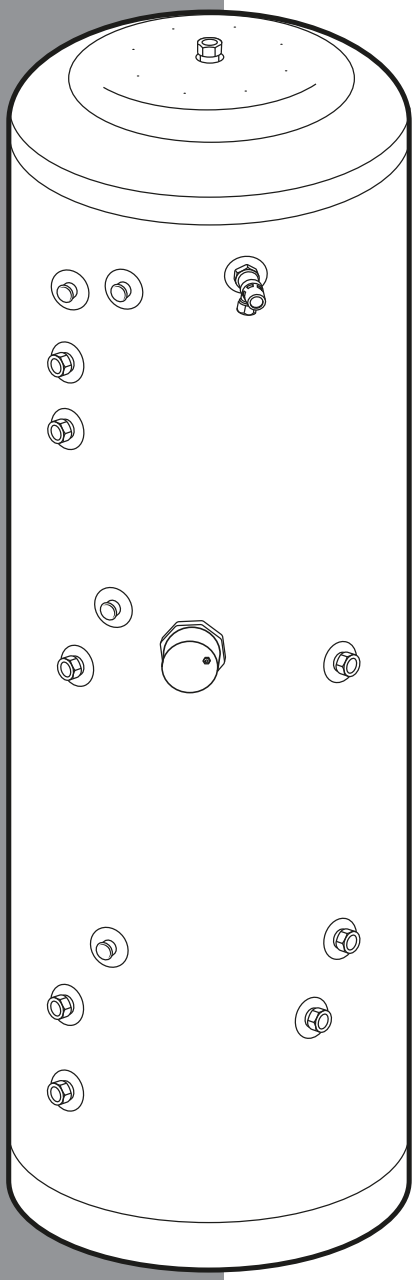
Installation & Maintenance Instructions
Single & Twin Coil Unvented Cylinders

Green Storage Cylinders

90/120/150/180/210/250/300 litre



Part No: 1002647 - NOV2020

hot water association
CHARTER MEMBER

benchmark
COLLECTIVE MARK
THE MARK OF QUALITY FOR THE INSTALLATION, COMMISSIONING AND SERVICING OF DOMESTIC HEATING AND HOT WATER SYSTEMS

WB RANGE

CONTENTS

INTRODUCTION

These cylinders are manufactured to the highest specification standards with superior product engineering, materials and stringent production processes, to deliver the highest quality products.

When installed and maintained in accordance with this manual, the cylinders will reliably store and generate hot water for years to come. The manual details how to prepare, install, commission, service and decommission the cylinders. It covers both indirect and solar models with an external thermal expansion vessel. A separate insert sheet contains specific technical details for your chosen hot water cylinder.

As well as comprehensive instructions for installers, the manual provides guidance and guarantee information for homeowners.

WORCESTER BOSCH CONTACT INFORMATION

TECHNICAL SUPPORT:	0330 123 3366
CONTROLS & CONNECTIVITY TEAM:	0330 123 3641
APPOINTMENTS:	0330 123 9339
SPARES:	0330 123 9779
LITERATURE:	0330 123 9119
TRAINING:	0330 123 0166
SALES:	0330 123 9669

THE BENCHMARK CODE DEMONSTRATING COMPLIANCE, REASSURING HOMEOWNERS

Benchmark places responsibilities on both the manufacturer and installer. The purpose is to ensure that customers are provided with the correct equipment for their needs, that the equipment is installed, commissioned and serviced in accordance with the manufacturer's instructions by competent persons and that it meets the requirements of the appropriate Building Regulations. The Benchmark Checklist can be used to demonstrate compliance with Building Regulations and should be provided to the customer for future reference.

Installers are required to carry out installation, commissioning and servicing work in accordance with the Benchmark Code of Practice which is available from the Heating and Hotwater Industry Council who manage and promote the Scheme.
Visit www.centralheating.co.uk for more information.

We are a Charter Members of the Hot Water Association and undertake to meet the requirements of the Charter Scheme: To supply fit for purpose products clearly and honestly described. To supply products that meet or exceed appropriate standards and building and water regulations. To provide pre- and post-technical support.

To provide a clear and concise warranty details to customers. For further details on the Charter, please visit www.hotwater.org.uk/hwa-charter

IMPORTANT NOTE TO THE INSTALLER

Read these instructions before commencing installation. Unvented cylinders are a controlled service as defined in the latest edition of the building regulations and should only be fitted by a competent person.
You must ensure the installation complies with the current Building Regulations and or Technical Standards Documents for England, Scotland, Wales, N Ireland or Ireland.

After installation the Benchmark Commissioning Checklist on page 21 must be completed and left, with these instructions, with the householder for future reference.

IMPORTANT NOTE TO THE HOMEOWNER

Please ensure that the installer has fully completed the Benchmark Commissioning Checklist on page 21 of this installation manual. You will need this information should you need to make a claim against your product guarantee in the future.

This product requires servicing every 12 months and the Service Record must be maintained to protect your 25-year guarantee.

Please note all images are for illustrative purposes only and specific products will vary for each product line.

YOUR CYLINDER AND ITS COMPONENTS

YOUR CYLINDER AND ITS COMPONENTS

The unvented cylinder comes complete with the necessary fittings, safety and control devices needed to connect to the cold water mains. All have been pre-adjusted. High quality controls have been selected to combine high flow rate performance with minimum pressure drop to make the unvented cylinder perform well in all areas, even those with poor water pressure. See insert sheet for a list of spare parts.

SUPPLIED COMPONENTS

All indirect models are supplied with installation and maintenance instructions, technical performance & specification data fiche, an inlet control set, a temperature and pressure relief valve, an acetal tundish and an external expansion vessel, immersion heater, dual Thermostat, two-port motorised valve.

In addition to the above twin coil / solar indirect models also include a single high limit thermostat and a sensor pocket retaining bung.

Note: If the water quality is aggressive, we recommend exchanging the immersion heater for a titanium element.

PREPARING TO INSTALL THE CYLINDER

STORAGE PRIOR TO INSTALLATION

The unvented cylinder should be stored in its original packaging in an upright position in an area free from excessive moisture.

HANDLING PRODUCT

The unvented cylinder should be carried upright where possible. Assessments of risks for carrying the cylinder should be conducted. Use more than one person for carrying where appropriate. Always follow latest guidelines for lifting techniques, to avoid injury, or damage to the product.

WATER SUPPLY

The unvented cylinder operates at 3 bar (controlled by the inlet control set) and is capable of delivering over 50 litres per minute. The high quality inlet control set has been designed to make the most of the flow rates available, however the performance of any unvented system is only as good as the mains water supply. The maximum possible water demand should be assessed, taking into consideration that both hot and cold services are supplied simultaneously from the mains.

The water supply should be checked to ensure it can meet these requirements. If necessary, consult the local water company regarding the likely pressure and flow rate availability.

If measuring the water pressure, note that a high static (no flow) mains pressure is no guarantee of good flow availability. In a domestic installation 1.5 bar and 25 l/ min. should be regarded as the minimum. The maximum mains pressure that the inlet control set can accept is 12 bar.

Consideration should be given to upgrading existing 1/2" (15mm) cold mains pipework to a larger size if the recommended minimum pressure/flow rate is not being achieved.

ELECTRICITY SUPPLY

The unvented cylinder requires 230V 50Hz electrical supply for the immersion elements. The electrical supply to each immersion heater must be fused at 13A via a double pole isolating switch that meets the current BS Standards. The cable must be at least 2.5mm^2 heat resistant (85°C HOFR) sheathed flex complying to the current BS Standards.

SITING THE UNIT

The unvented cylinder can supply outlets above it or at some distance from it. Site the unit to minimise "dead leg" distances, especially to the point of most frequent use. Outlets above the unvented cylinder will reduce the outlet pressure available by 0.1 bar for every 1m of height difference. The unit should be protected from frost. Particular care is needed if siting in a garage, outbuilding or loft space. All exposed pipework should be insulated. The unvented cylinder must be installed in the correct orientation i.e. vertically, on a flat base capable of supporting the weight of the cylinder when full. See technical specification insert sheet for weights. The minimum recommended cupboard size for vertical models is 750mm square.

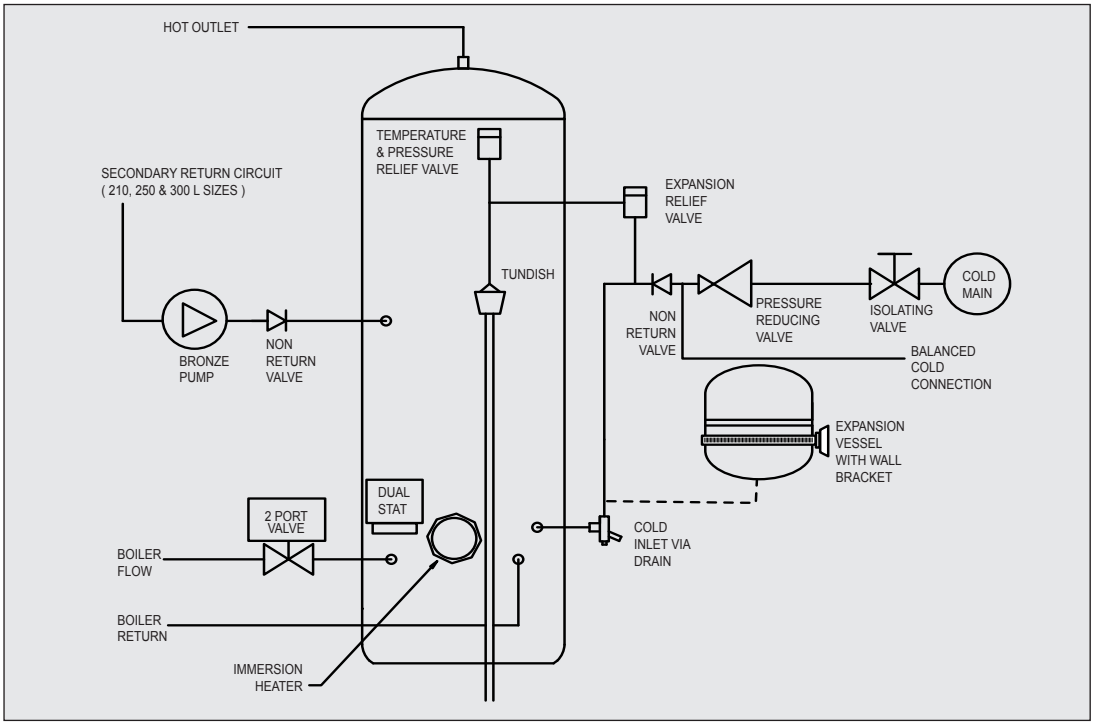
Access

Consideration should be given to the position of discharge pipework (tundish) and drain valves. Avoid positioning these too close to electrical devices and components. Also allow sufficient space so that the cylinder can be inspected, maintained and serviced in the future.

The immersion heaters are 400mm long and care should be taken to ensure that they can be withdrawn, enabling the immersion heater to be replaced at the end of its working life and providing inspection access to the interior of the cylinder during servicing if required.

The discharge pipework from the safety valves should fall continuously and terminate safely.

INSTALLATION INSTRUCTIONS



Notes:
The pressure reducing valve, non-return valve and expansion relief valve are combined together in the inlet control set.

On 120 – 180 litre sizes there is no dedicated secondary return boss and the secondary return circuit should be tee'd into the cold feed pipe just above the drain elbow.

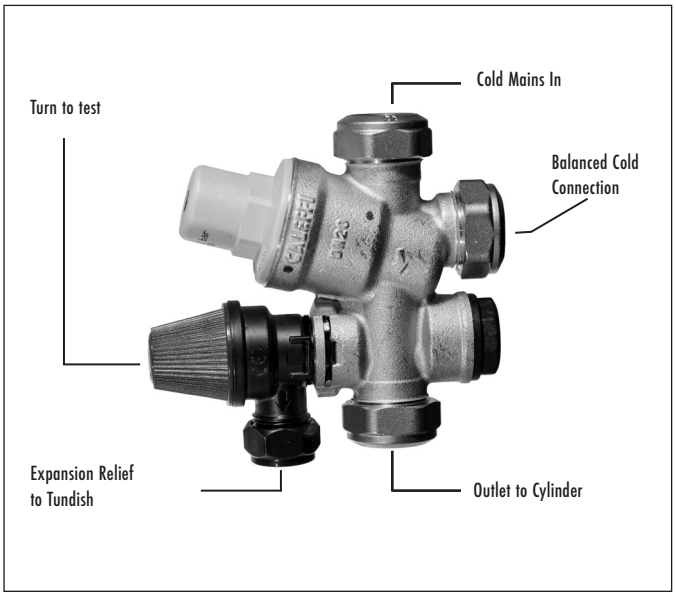
COLD MAINS PIPEWORK

Run the cold mains through the building to the place where the unvented cylinder is to be installed. Take care not to run the cold pipe near hot water or heating pipework so that the heat pick-up is minimised. Identify the cold water supply pipe and fit an isolating valve (not supplied).

We recommend using a full bore 22mm quarter turn ball valve, alternatively a 22mm stopcock can be used, however this may reduce the flow rate. **Do not** use a "screwdriver slot" or similar service valve.

Make the connection to the cold feed of the cylinder and incorporate a drain valve. Position the drain valve no higher than the cold inlet to ensure sufficient draining of the cylinder when required. Position the inlet control just **above** the Temperature & Pressure Relief Valve (TPRV) mounted on the side of the cylinder. This ensures that the cylinder does not have to be drained down in order to service the inlet control set. Ensure that the arrow points in the direction of the water flow.

Select a suitable position for the expansion vessel. Mount it to the wall using the bracket attached to the vessel. Use suitable fittings capable of supporting full vessel weight (and with appropriate consideration to wall material). Connect the expansion vessel to the cold feed pipework between the inlet control set and the cold inlet on the cylinder. Ensure that the top of the vessel is accessible for servicing.



Connecting to the cylinder

All of the pipework connections on the cylinder are 22mm compression and supplied complete with gland nuts and olives, in the Accessory Kit box. Only connect 22mm BS EN1057-R250 copper tube to these connections.

Cut the tube square using a rotary tube cutter and ensure no sharp edges or burrs protrude. Slide both gland nut and olive onto the tube and push tube fully home into the connection, ensuring the tube end fully bottoms on the connection recess. Smear the outer wall of the olive with plumbing paste and tighten the gland nut in the prescribed manner. Upon filling/commissioning, ensure all connections are completely watertight, including immersion bosses and any pre-plumbed pipework if applicable.

Note: No control or isolation valve should be fitted between the expansion relief valve and the storage cylinder. The relief valve connections should not be used for any other purpose.

INSTALLATION INSTRUCTIONS (CONTINUED)

BALANCED HOT & COLD SUPPLY

The installer must safeguard the hot water system from back flow by ensuring the hot and cold supply to all outlet locations are balanced. All mixer: taps, showers or valve shall be installed to comply with the Water Supply (Water Fittings) Regulations 1999. If these devices have un-balanced supplies there must be single check valves installed at both inlets, to stop over-pressurisation of either supply. Note the inlet control set provided with this cylinder features a balanced cold connection, to facilitate the installation of balanced supply.

HOT WATER PIPEWORK

Run the first part of the hot water distribution pipework in 22mm. This can be reduced near to the outlet to 15mm or 10mm if appropriate, for example to suit the type of tap. You should aim to keep the run length of any hot water pipework from the cylinder to outlet to a practical minimum so the time taken for the hot water to reach the outlet is as quick as possible.

Then connect the hot water pipework to the hot water draw-off on the cylinder (Position B in the diagrams on pages 9).

CONNECTIONS FOR INDIRECT UNITS

For Solar input models refer to the shaded box before making any connections.

Connect the primary connections using the compression connections provided. The primary circuit must be positively pumped. Gravity circulation is not suitable. Either primary connection may be used as the primary flow, reheat times are not affected. The primary circuit can be open vented or sealed, up to a maximum pressure of 3.5 bar. If you seal the primary circuit an additional expansion vessel and safety valve is required.

Connect the two port valve into the primary flow pipework. The direction of the flow arrow should be towards the primary flow connection.

Where connecting to a boiler, the boiler can be Gas, Electric or Oil, but must be under effective thermostatic control. Uncontrolled heat sources such as some AGAs, back boilers, solid fuel stoves, etc. are not suitable. Please contact our Technical department for guidance.

Consult the boiler manufacturer's instructions to confirm sizing is suitable for the heating system and guidance on positioning.

SOLAR INDIRECT UNVENTED (TWIN COIL)

Upper coil

The upper coil is connected to the fossil fuel boiler as per the instructions for the unvented indirect single coil model, with the dual stat control and high limit thermostat inserted into pocket G2 (boiler). The wiring requirements are shown on page 13/17

Lower coil: solar installation

The flow and return from the solar heat source are to be connected to the bottom coil. Either primary coil connection may be utilised as the flow or return. The solar primary circuit must have its own dedicated circulating pump, thermal and safety controls, which must be installed as per the solar manufacturer's instructions. The solar control system used must be of the solar differential control type and should be connected to the solar sensor.

The solar sensor, supplied as part of the solar controls should be inserted into Pocket G1 (boiler) and is held in-situ with the black sensor pocket retaining bung provided.

It is necessary to connect the solar pump via the overtemperature high limit cut-out (provided) to ensure the heat input to the solar coil is interrupted if the cylinder overheats. Some method to prevent thermosyphoning must also be employed. Non-return check valves in the primary flow and return pipework would be acceptable. If solar controls do not offer appropriate isolation, a two port zone valve (not supplied) can be used with the pump and high limit stat as shown on page 14/15.

Note:

If it is intended to fit a cylinder with a solar coil to be used at a later date, the two coils should be connected in series to make use of the solar coil, using the dual stat in Pocket G2 (solar) or Pocket G1 (Solar), as shown in the diagram on page 9.

The Domestic Heating Compliance Guide document L1A and L1B provides excellent advice in sizing both cylinder dedicated solar areas and heat exchangers to the surface area of the solar collectors. Using this guide we are able to offer sizing advice for specification.

Note:

Consult all details of the compliance guide documentation prior to specifying product or commencing design.

INSTALLATION INSTRUCTIONS (CONTINUED)

SECONDARY CIRCULATION CONNECTION

This can be used with secondary circulation. An appropriate WRAS approved bronze or stainless steel circulator should be used in conjunction with a non-return valve to prevent backflow.

On large secondary circulation systems it may be necessary to incorporate an extra expansion vessel into the circuit to accommodate the increased system water volume.

A secondary return boss is fitted as standard on 210, 250 & 300 ltr units. On smaller sizes, use a swept tee to connect into the cold feed pipe above the drain.

IMMERSION HEATERS

Only immersion heaters with a thermal cut-out that comply with BS EN 60335-2-73 may be used. To help ensure this, the immersion heaters have a special 1¾" thread. They are rated at 3kW at 240V and are of a low noise incoloy construction.

They have both a thermostat and a high limit cut-out. Please order the correct replacement via ourselves; fitting non-approved immersions may affect your guarantee. When fitting, ensure the 'O' ring is positioned correctly on the head of the immersion heater and lubricate before fitting. Fit it by hand until almost home then tighten gently, as the 'O' rings will seal easily. Electrical supply refer to page 3.

Do not operate the immersion heater/s until the cylinder is full of water.

Do not operate the immersion heater/s if any sterilisation liquid is in the cylinder as this will cause premature failure.

If the water quality is aggressive we recommend exchanging the immersion heater for a titanium element.

Note: Immersion heaters should never be used as the primary heat source.

ELECTRICAL CONNECTIONS

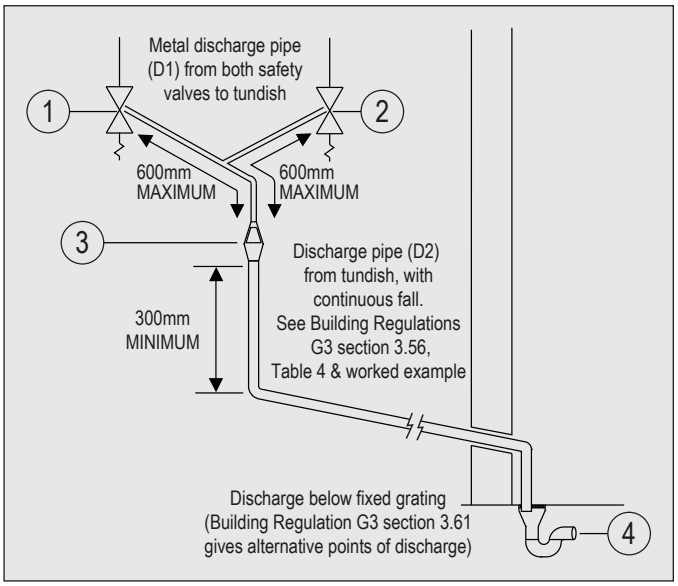
Complete the wiring – use the appropriate wiring diagrams on pages 13-17.

DISCHARGE ARRANGEMENT

You will need to position the inlet control group so that the discharge from both safety valves can be joined together via a 15mm tee (see diagram below). Connect the tundish and then connect and route the discharge pipe.

Ensure all pipes to and from the tundish are cut square, are free from burrs or damage, and that the tundish if fitted vertically.

The discharge pipework must be routed in accordance with Part G3 of schedule 1 of the Building Regulations. The information that follows is not exhaustive and if you are in doubt you should seek advice.



1) Expansion relief valve on inlet control set
2) Temperature & pressure relief valve on cylinder
3) Tundish
Note: The discharge will consist of scalding water and steam. Asphalt, roofing felt and non-metallic rainwater goods may be damaged by such discharges.

Note: Although Building Regulations now permit the D2 pipe from the tundish to be installed in soil stacks within premises, we do not recommend this, as discharge from the temperature and pressure valve may continue for long periods of time. It is the installer's responsibility to ensure the discharge pipework can support the discharge for prolonged periods. If used, follow the guidance given in the G3 Building Regulations (mechanical seal without water trap). As discharge can be in excess of 90°C, discharge into plastic pipework is also not recommended.

INSTALLATION INSTRUCTIONS (CONTINUED)

The two safety valves will only discharge water under fault conditions. When operating normally water will not be discharged. The tundish should be located in the same space as the unvented hot water storage system and be fitted as close as possible to, and lower than, the safety device, with no more than 600mm of pipe between the valve outlet and the tundish. The tundish should be positioned away from electrical devices.

The tundish should be located in a position so that any discharge is visible. In addition, where discharges from safety devices may not be apparent, extra consideration should be given, e.g. for people with impaired vision or mobility. This could be via the installation of a suitable electronically operated or other safety device to warn when discharge takes place.

The discharge pipe (D2) from the tundish should:

A) Have a vertical section of pipe at least 300mm long, below the tundish before any elbows or bends in the pipework.

B) Be installed with a continuous fall of at least 1 in 200 thereafter.

The discharge pipe (D2) from the tundish should be of metal or other material that has been demonstrated to be capable of withstanding temperatures of the water discharged.

The discharge pipe (D2) should be at least one pipe size larger than the nominal outlet size of the safety device, unless its total equivalent hydraulic resistance exceeds that of a straight pipe 9m long. Therefore, discharge pipes between 9m and 18m equivalent resistance length should be at least two sizes larger than the nominal outlet size of the safety device; between 18 and 27m at least three sizes larger. Bends must be taken into account in calculating the flow resistance. Refer to the diagram, Table 2 and the worked example.

An alternative approach for sizing discharge pipes would be to follow BS EN 806:2 specifications for design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages.

The discharge pipe (D2) should terminate in a safe place where there is no risk to persons in the vicinity of the discharge. Examples of acceptable discharge arrangements are:

A) To a trapped gully with the end of the pipe below the fixed grating and above the water seal.

B) Downward discharges at a low level; i.e. up to 100mm above external surfaces such as car parks, hard standings, grassed areas etc. are acceptable, providing that – where children play or otherwise could come into contact with discharges – a visible wire cage or similar guard is positioned to prevent contact.

C) Discharges at a high level; e.g. into a metal hopper and metal down pipe with the end of the discharge pipe clearly visible; or onto a roof capable of withstanding high temperature discharges of water and 3m from any plastic guttering systems that would collect such discharges.

D) Device to warn when discharge takes place.

Discharge worked example

The example below is for G1/2 temperature relief valve with a discharge pipe (D2) having four elbows and a length of 7m from the tundish to the point of discharge.

Maximum resistance allowed for a straight length of 22mm copper discharge pipe (D2) from a G1/2 temperature relief valve is: 9.0m.

Subtract the resistance for four 22mm elbows at 0.8m each = 3.2m.

Therefore the maximum permitted length equates to: 5.8m.

5.8m is less than the actual length of 7m, therefore calculate the next largest size.

Maximum resistance allowed for a straight length of 28mm pipe (D2) from a G1/2 temperature relief valve equates to: 14m.

As the actual length is 7m, a 28mm (D2) copper pipe will be satisfactory.

Table 2: Sizing of copper discharge pipe 'D2' for a temperature relief valve with a G1/2 outlet size (as supplied).

Size of discharge pipework	Maximum length of straight pipe (no bends or elbows)	Deduct the figure below from the maximum length for each bend or elbow in the discharge pipe
22mm	Up to 9m	0.8m
28mm	Up to 18m	1.0m
35mm	Up to 27m	1.4m

SPECIFICATION DETAILS

The unvented cylinder is made from Duplex stainless steel for excellent corrosion resistance. The cylinder has a strong rust-proofed steel case and is highly insulated with environmentally-friendly foam. Further details are below.

MATERIALS

- Inner shell – Duplex stainless steel
- Coil – 22mm diameter stainless steel
- Bosses – Stainless steel
- Polyurethane CFC- and HCFC-free foam insulation. This insulation has an Ozone Depletion Potential of Zero and a Global Warming Potential of 3.1.
- Casing – galvanized steel, durable finish
- Anode – none fitted/required

All cylinders are welded using our advanced welding production methods, under a controlled oxygen purged process, to maximize the corrosion resistant qualities of the high-grade Duplex stainless steel. Every cylinder is checked using 15 bar pressure testing.

IMMERSION HEATER

- 1¾" BSP parallel threaded head
- Long life incoloy sheathed low noise element and thermostat pocket
- Brazed construction
- Combined thermostat and safety cut-out
- Element rating 3kW at 230V A/C

GUARANTEE

The inner cylinder carries a 25-year guarantee against faulty materials or manufacture. All parts supplied with the cylinder carry a 5-year guarantee. All guarantees must be registered at:
https://www.worcester-bosch.co.uk/support/guarantees

FLOW RATES

Our cylinders are renowned for their fast flow rates. The graph below illustrates the speed at which hot water can distributed reliably throughout the home.

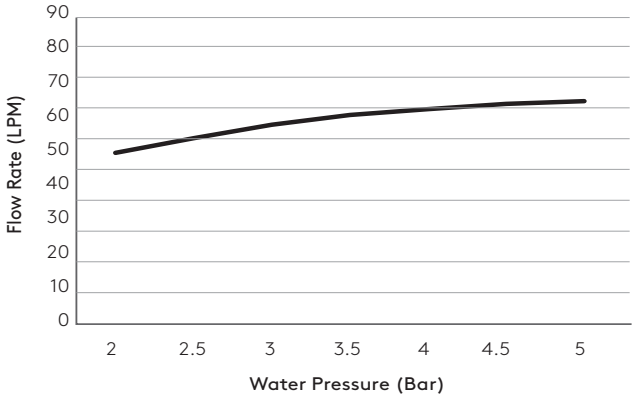


Table 3: Pressure specifications

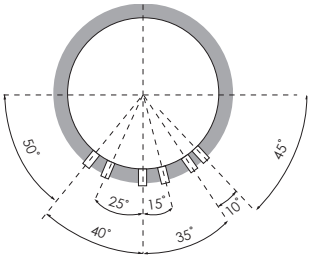
Maximum Inlet Water Pressure	12.0 bar
Operating Pressure/Maximum Design Pressure	3.0 bar
Expansion Valve Opening Pressure	6.0 bar
Expansion Vessel Charge Pressure	3.0 bar
Maximum Operating Pressure	7.0 bar
Opening Pressure of T & P Valve	7.0 bar
Opening Temperature of T & P Valve	90˚C
Maximum Pressure on Primary Circuit (Indirect / Solar Coil)	3.5 bar

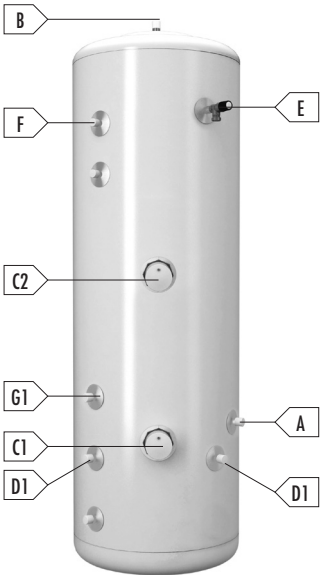
Table 4: Immersion element specifications

Element Rating	3kW 230V
Thread Type	1¾" BSP
Fuse Requirement	13A via Double Pole Switch
Control Thermostat for Element Temperature Range	45˚C - 65˚C
High Limit Thermostat for Element Temperature Set Point	85˚C

PRODUCT DIAGRAMS

INDIRECT



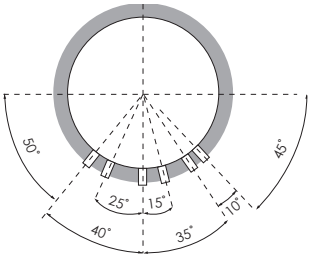


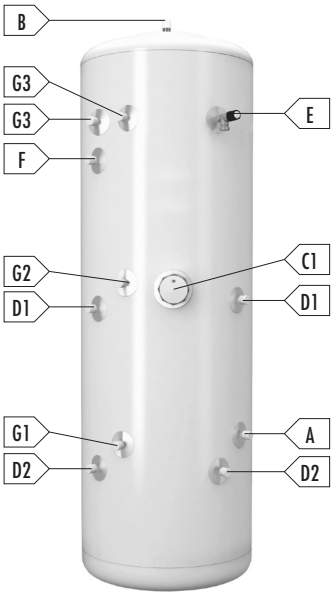
CONNECTIONS:

- **A** 22mm Cold feed with dip pipe to diffuser in bottom of cylinder
- **B** 22m Hot water outlet
- **C1** Immersion heater
- **C2** Secondary immersion heater - 250 litre & above only
- **D1** 22mm Boiler coil connections
- **E** ½" Temperature & pressure relief valve (factory-fitted to cylinder)
- **F** 22mm Secondary return – for cylinders with a capacity of 210 litres and above only
- **G1** Dry stat pocket

Capacity (L)	Height (mm)	Dia (mm)	A (mm)	B (mm)	C1 (mm)	C2 (mm)	D1 (mm)	E (mm)	F (mm)	G1 (mm)
90	745	550	390	745	330	n/a	290	520	n/a	385
120	933	550	390	933	330	n/a	290	705	n/a	385
150	1120	550	465	1120	370	n/a	330	895	n/a	425
180	1308	550	465	1308	370	n/a	330	1080	n/a	425
210	1496	550	465	1496	405	n/a	365	1270	1150	465
250	1746	550	465	1746	405	950	365	1520	1400	560
300	2055	550	465	2055	405	1100	365	1830	1600	660

SOLAR INDIRECT





CONNECTIONS:

- **A** 22mm Cold feed with dip pipe to diffuser in bottom of cylinder
- **B** 22m Hot water outlet
- **C1** Immersion heater
- **D1** 22mm Boiler coil connections
- **D2** 22mm Solar coil connections
- **E** ½" Temperature & pressure relief valve (factory-fitted to cylinder)
- **F** 22mm Secondary return – for cylinders with a capacity of 210 litres and above only
- **G1** Dry stat pocket
- **G2** Dry stat pocket
- **G3** Dry stat pocket

Capacity (L)	Height (mm)	Dia (mm)	A (mm)	B (mm)	C1 (mm)	D1 (mm)	D2 (mm)	E (mm)	F (mm)	G1 (mm)	G2 (mm)	G3 (mm)
180	1308	550	390	1308	725	674	290	1080	n/a	345	729	1080
210	1496	550	465	1496	830	779	365	1270	1150	420	834	1270
250	1746	550	465	1746	1000	950	365	1520	1400	420	1005	1520
300	2055	550	465	2055	1030	980	365	1830	1600	420	1035	1830

TECHNICAL PERFORMANCE AND SPECIFICATION DATA - FICHE

Nominal Capacity (Litre)	Product Codes Worcester Bosch / OMC	Energy Rating	Standing Loss (W)	Total Height	Weight Empty (kg)	Weight Full (kg)	Actual Capacity (Litre)
Indirect unvented hot water cylinders & Pre-Plumb variants							
90	7-733-601-298 / GSSC90ERP	C	49	761	30	117.9	87.9
120	7-733-601-299 / GSSC120ERP	C	54	933	35	155.1	120.1
150	7-733-601-300 / GSSC150ERP	C	59	1120	35	185.4	150.4
180	7-733-601-301 / GSSC180ERP	C	67	1308	45	225.6	180.6
210	7-733-601-302 / GSSC210ERP	C	75	1496	50	260.6	210.6
250	7-733-601-303 / GSSC250ERP	C	84	1746	55	305.9	250.9
300	7-733-601-304 / GSSC300ERP	C	93	2059	60	360.3	300.3
Solar twin coil unvented hot water cylinders & Pre-Plumb variants							
180	7-733-601-306 / GSTC180ERP	C	67	1308	60	228	178
210	7-733-601-307 / GSTC210ERP	C	75	1496	65	259.6	204.6
250	7-733-601-308 / GSTC250ERP	C	84	1746	70	307	247
300	7-733-601-309 / GSTC300ERP	C	93	2059	75	360.6	295.6

PARTS LIST

Installation and maintenance instructions
Spare part no: 8-716-121-839
Download www.worcester-bosch.co.uk

Inlet control set – with balanced Cold
3 bar PRV 6 bar expansion relief
Spare part no: 8-716-121-840

Temperature & pressure relief valve
1/2" NPT x 15mm
Spare part No: 8-716-121-841

Anti splash tundish
15 x 22 mm
Spare part no: 8-716-121-842

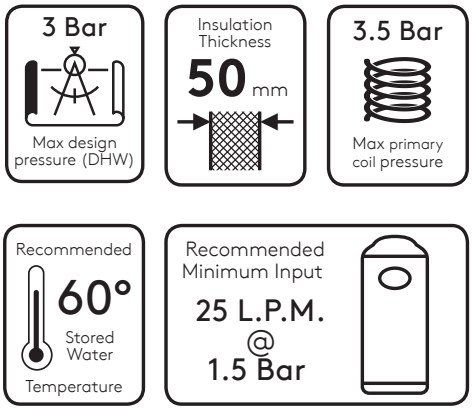
External expansion vessel - DHW

Units 250L & under - 19 litre vessel
Spare part no: 8-716-121-843

300L units - 24 litre vessel
Spare part no: 8-716-121-844

Heat-up Time (Minutes)	Heat Loss (kW/24Hr)	Pressure Drop	Product specifics		
			Indirect Coil Surface Area	Indirect Coil Capacity (Litre)	Indirect Coil (kW Rating)
18.18	1.18	0.16	0.67	3.69	17.98
23.85	1.29	0.14	0.67	3.69	18.49
27	1.41	0.16	0.77	4.22	19.72
32.5	1.61	0.15	0.77	4.22	20.17
35.15	1.79	0.17	0.86	4.75	21.35
40.62	2.02	0.17	0.86	4.75	22.4
51.77	2.24	0.16	0.86	4.75	21.43

All Cylinders



			Dedicated Solar Volume (Litre)	Solar Coil Surface Area	Solar Coil Capacity	Solar Coil (kW Rating)	Indirect Coil Surface Area	Indirect Coil Capacity (Litre)
35.75	1.61	0.15	53.6	0.67	3.69	18.48	0.67	3.69
35.42	1.79	0.17	51.8	0.77	4.22	19.75	0.86	4.75
40.5	2.02	0.17	92.2	0.77	4.22	20.68	0.86	4.75
48.38	2.24	0.16	79.3	0.86	4.75	22.08	0.86	4.75

PARTS LIST

Two port valve
Spare Part No: 8-716-121-848

Dual thermostat
Spare part nos: 8-716-121-847

Immersion heater
Incoloy long life 3 kW immersion heater
Spare part no: 8-716-121-849

High limit thermostat (Solar only)
Spare part no: 8-716-121-851