



setting the standards



The next generation  
of **stainless steel**  
unvented cylinders

## Not just an Unvented cylinder

For many years the UK has relied on storage tanks and copper cylinders for our day-to-day cold and hot water supplies. With the introduction of mains pressure cylinders or Unvented cylinders as they are commonly known, we have the benefit of wholesome potable water and power shower performance to every outlet, without the need of loft tanks. This type of cylinder linked with a modern high efficiency boiler is becoming the preferred system for many architects, heating engineers and end users.

As good as Unvented cylinders are, it is true to say they will only be as good as the main supply that feeds them, for both pressure and flow rate, and with pressures in certain areas of the UK being reduced, and the installation of multi-bathroom dwellings, customers are demanding a system that meets their individual requirements. So more than ever it is essential to choose a system meeting this demand. We have all suffered from showers or taps losing pressure and flow rates when other taps are turned on, **Now you don't have to.**

### G.A.H - the company ▼

The G.A.H group of companies was formed in 1993 to provide world class solutions to the ever changing demands in the heating, refrigerated transport and water control industries.

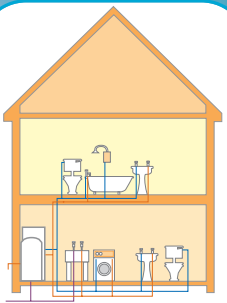
Based in Suffolk our manufacturing facility is second to none and is a testament to our forward thinking, dedication and commitment to invest in the latest state of the art equipment.

### Unrivalled performance ▼

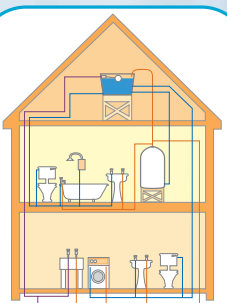
G.A.H (Heating Products) Ltd has developed the **Dualstream system** utilising the technology of an Accumulator, with a Stainless steel unvented cylinder. The Accumulator has a controlled butyl diaphragm that stores cold mains water at mains pressure (**Like a modern day cold tank**). When a tap or shower is turned on the Accumulator enhances the main supply and helps maintain the pressure to all hot and cold outlets regardless of the flow rate on the incoming main supply. There is an air charge in the top of the Accumulator to help force the water from the vessel into the hot and cold supplies, enabling more than one outlet to be run, at the same time maintaining pressures whilst giving greater flow rates at taps, showers and baths. Making the system ideal for properties with poor mains supplies or multi-bathroom outlets.

### High flow ▼

The Accumulator is the driving force behind the system, feeding both hot and cold supplies it must be sized correctly. More than one Accumulator can be linked together for greater volume and demand. The Accumulators have been designed to increase flow rates to mains fed systems and help to maintain pressures and overcome pressure fluctuations on the main supply. Very simple to install with outstanding performance, the Dualstream system really is the ultimate unvented package and has many benefits over traditional systems and other unvented cylinders.



▲ Home with a Dualstream system installed



▲ Traditional home without a Dualstream system installed

## So why choose a Dualstream system?

- No cistern in the loft –no risk of water stagnation, Legionella and frost damage
- Greater plumbing designs, uses less pipe-work, saving time and money
- Wholesome water to all cold taps and balanced hot and cold water supplies
- Dualstream utilises one of the slimmest and highest volume yielding Unvented cylinders on the market
- Will provide a substantial increase in water volume, to both hot and cold-water outlets, within the building
- Will work at very low flow rates (9 l/min) 1 Bar (min Water Board supply requirements)
- Sized correctly the system will fill any number of baths simultaneously and ideal for multi-bathroom dwellings
- True 'power shower' performance without the need of pumps
- Overcomes problems associated with low mains pressure or inadequate flow rates
- Efficient insulation, low power consumption. All Unvented cylinders are insulated with high density CFC free insulation.
- Can replace the need for high maintenance noisy break tanks and booster pump sets
- Accumulators and cylinders can be linked together for greater demands, for the larger properties, small hotels and leisure and sports clubs
- Indirect Models from 125 -500-litres (heated from a boiler source)
- Direct Models from 125-500 litres (heated from electric immersion)
- Accumulator models from 100- 500 litres
- Twin coil cylinders available on request
- Immersion heater upgrades available
- Unvented stainless steel cylinders up to 300 litres with 25 year warranty
- All electrical components are covered by 2-year warranty
- Accumulators have longest industry warranty at 5 years
- Dualstream systems available through all leading plumbing and heating merchants and small independent plumbing stores

**Dualstream is protected by Patent No GB 2349908 this protection applies to the use of any Accumulator with any mains fed appliance (example:- Unvented Cylinder, Combination Boiler, Electric Shower) and the application of its use subject to permission being obtained from G.A.H (Heating Products) Limited. WRAS Certificate No 0109003.**

**No other Unvented system can match its performance**



# The complete package

## Quality



With many years experience in the heating industry G.A.H offer a full design service and technical support to Architects, Heating Engineers and end users. With a network of Sales Managers available for local support adding that personal contact, to ensure each Dualstream sale has the best back up service we can provide.

When developing Dualstream systems G.A.H looked to provide its customers with a system of the highest quality. The Accumulator has a patented double diaphragm and stainless steel water connection with WRAS approval for use on wholesome, potable water. The Accumulator goes through a series of comprehensive testing to ensure the structural integrity of each vessel. The tough butyl diaphragm seals water in a true non-corrosive chamber reducing the risk of Legionella and a metal clench ring ensures a smooth operation and protection against the vessels inner walls. The air chamber surrounding the butyl diaphragm protects the water from the risk of freezing in most installations The Accumulator's design reduces the risk of condensation and the two-part Almond coloured polyurethane primed paint finish provides a tough hardwearing exterior, all Accumulators are covered by a 5-year warranty.

## Peace of mind



The range of stainless steel cylinders supplied with Dualstream systems are one of the slimmest on the market, built with first grade materials tested to 12 bar to guarantee a long life backed by a 25-year guarantee. A high density CFC free layer of thick environmentally sound thermal insulation offers excellent thermal retention whilst at the same time drastically cutting power consumption. All the Unvented cylinders are stainless steel (excluding 500 Model) equipped with a temperature and pressure relief valve (T & P) valve. The 7 Bar T&P valve is factory fitted and conforms to the requirements of BS 7206 and the current G3 building regulations. All T&P valves are 15mm as standard < reducing the need for a 28mm discharge in most cases. All cylinders are supplied with quality cylinder thermostats and immersions with over heat cut-outs which guarantee high performance and safety, along with a 22mm or 28mm spring return zone valve for installation on a S plan system on indirect models only. The exclusive high quality orange peel outer paint finish gives the cylinder a tough, durable and fresh appearance. All the cylinders are supplied with an Unvented control kit comprising of a 3.5 bar pressure reducing valve and 6 bar expansion relief valve along with cylinder tappings and full bore lever valves for isolation of hot and cold supplies. All plumbing and electrical connections are within 90 degrees of the cylinder, making installations in those awkward spaces easier. The unique coil design allows full quantity of water to be heated and quicker recovery times.

**Our continuous research into new technology and design ensures our quality and reliability whilst offering the highest standard our customers have come to expect.**

## Ease of installation

Each Dualstream system is supplied with a comprehensive installation manual and installation kit, including the inlet water control kit for the unvented cylinder, pressure regulating valve, expansion vessel, cylinder connection fittings and lever valves. To assist in the installation of Dualstream Systems, a pipe work frame is attached to the Unvented hot water cylinder (as shown in Diagram 1), this framework saves on installation time and allows heating engineers to follow installation diagrams in the Dualstream Manual.

Many customers are replacing existing hot water cylinders or new building design has allocated space for one cylinder, normally a cupboard on the first floor. With Dualstream systems there are two cylinders to accommodate and sometimes finding space for the Accumulator can be difficult.

The Accumulator design requires no power supply or discharge arrangements, making it available to be installed in many locations from basements to garages, from utility rooms to lofts. The Accumulator can simply be installed anywhere on the main supply feeding the Unvented cylinder and balanced cold supplies, along with a pressure regulating valve and non-return valve (supplied with each Dualstream system). If space is not an issue both cylinders can be installed side by side in the same designated area, both installation methods are fully illustrated in our manual, but should you require guidance please do not hesitate to contact a member of the Dualstream team at GAH.

Always remember that choosing the right position for both cylinders is important and you must take into account access and future service requirements.

Diagram 1



Some Unvented cylinders are designed to take up expanded hot water internally in the vessel and are commonly referred to as “bubble tops”, air trapped in the top of the cylinder takes up the expanded water, but water under pressure absorbs air and this can be often seen when turning on a tap and the water has a ‘milky’ look to it, which are the bubbles in the water as air is released. In some locations of the country and some installation situations the air pocket or bubble tops can prematurely lose their bubble, which requires a full or partial drain down by a competent person, which can be disruptive and expensive. Dualstream systems utilise the Accumulator or an external expansion vessel with rubber diaphragms that separates the water from the air, thus solving the problem and allowing our cylinder to give customers a **full capacity**.

## Renewable Energy ▼

There have been many discussions and papers written on renewable energies over the last few years and the benefits to our planet, country and ultimately ourselves both financially and morally. Renewable energies like wind and solar power amongst many can be utilised to provide supplemented energy resources or designed in new builds to provide all the homes energy resource. Over the last few years the renewable market has seen increased growth and there are now many different forms of heating systems, utilising renewable energy and low or zero rated carbon emissions.

The sun still remains one of the best forms of renewable energy and with many companies designing solar panels to suit the varying house types, now is the ideal time to consider using a twin coil cylinder as part of your hot water system.

GAH offer Dualstream systems with two models of twin coiled Unvented cylinder. The 210 and 300 models, are compatible with renewable energies like solar or ground/air heat source pumps and have twinned 3 kW immersions for customers generating their own electricity or simply looking to use cheap rate electricity, having the same dimensions as the standard models. They also include two cylinder pocket files for thermostats and sensors for the primary and secondary heat source. For further details please contact GAH.

## Choosing the right system

Storing too much hot water wastes energy and increase running costs, so getting the right balance is important. There are two main factors to consider when choosing any Unvented cylinder and that is pressure (the force of water) and flow-rate (the amount of water carried in the pipe-work). There are other factors like the number of occupants and the number of outlets, bathrooms etc and the pattern of usage, along with how you intend to heat the cylinder either by Direct (Electric immersion) or Indirect (from a boiler source.)

Because Dualstream systems utilise the Accumulator to increase the flow rate and performance, the greater the amount of cold-water stored- the longer the performance can be obtained.

The Accumulator Model under average incoming mains pressure conditions is made up of approximately 60% water /40% air charge, so we advise to increase the size of the Accumulator to at least one or two sizes larger than the Unvented cylinder size, depending on the incoming mains flow rate. For high demand or greater volume, cylinders and Accumulators can be linked in parallel. This method is ideal for the larger properties and leisure-sports facilities. And unlike standard Unvented cylinders that are totally reliant on the mains supply. Dualstream systems can bank the Accumulators to create the cold volume to run the Unvented cylinders regardless of the incoming mains flow rate.

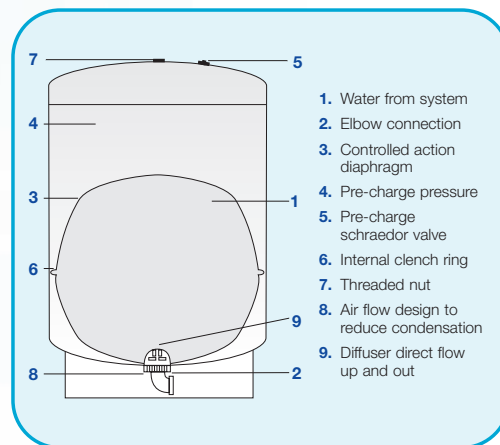
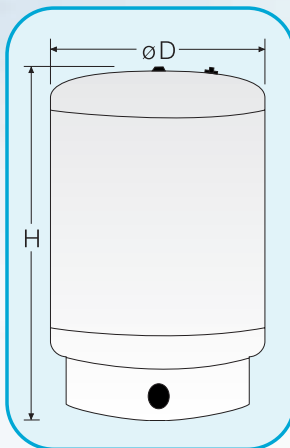
The sizing chart is a guide to choosing the correct combination of Cylinders, but should you require expert advice please consult G.A.H. Telephone 01394 421160

Accumulator model options	Application	Cylinder size
200 - 240	1-2 bed, 1 bath/shower, kitchen	125 litres
200 - 240 - 300	2-3 bed, 1 bath/shower, kitchen, cloakroom	150 litres
300 - 500	4-5 bed, 2 baths/shower, kitchen, utility, cloakroom	200 litres
300 - 500	4-6 bed, 3 baths/shower, kitchen, utility, cloakroom	300 litres
500 or 2x500	Large, 4-5 baths/shower, kitchen, utility, cloakroom	500 litres

When ordering please quote Accumulator model first then Cylinder size.

**Example :- TDI 500 - 300 = Dualstream system with 500 litre Accumulator and 300 litre Indirect Cylinder.**

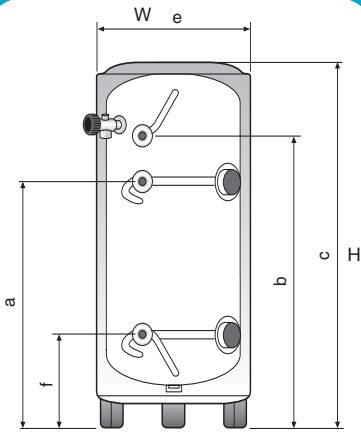
## Dualstream Technical Specification - Accumulator



Accumulator size	Diameter	Height	Nett weight (kg)	Connection
200 model	535mm	920mm	30.4	1"
240 model	535mm	1215mm	37.2	1"
300 model	535mm	1500mm	44.5	1"
500 model	668mm	1530mm	69.5	1"

## Dualstream Technical Specification - Cylinder

Cylinder size 125-300 ltr

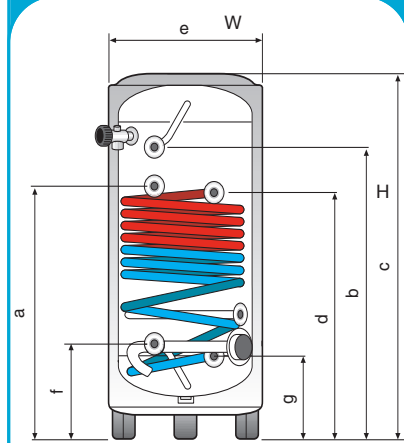


Direct

### Indirect and Direct Unvented Cylinders

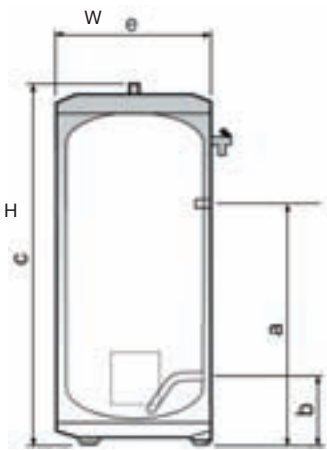
- Quality steel tank tested to 12 bar
- Stainless steel inner tank (excluding 500 model)
- CFC free polyurethane thermal insulation
- All plumbing connections within a 90° angle
- Unique coil allows full quantity of water to be heated
- Slimmest design available on the market
- Secondary return connection on all models

Cylinder size 125-300 ltr



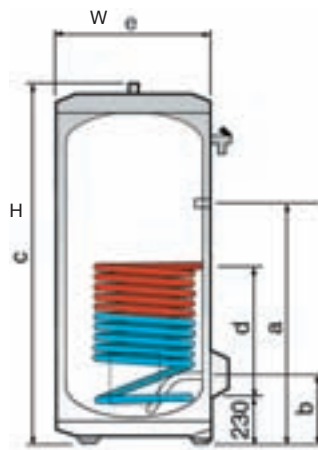
Indirect

Cylinder size 500 ltr



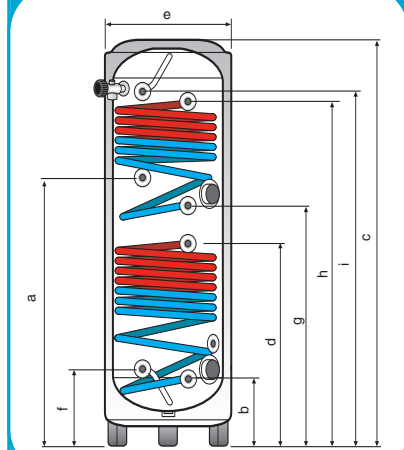
Direct

Cylinder size 500 ltr



Indirect

Cylinder size 210-300 ltr



Twin Coil

Model	Storage capacity	Units	pipe size inlet outlet	Coil surface m <sup>2</sup>	Coil rating	Reheat time (ΔT=50°C)	Element power	Max temp.	Dimensions in mm									Weight full (kg)	
									A	B	Height		width			F	G		H
<b>DIRECT RANGE</b>																			
TDD125	125 ltr		3/4"			150 min	3kW+3kW	70°C	650	755	995		505	265					138
TDD 150	150 ltr		3/4"			175 min	3kW+3kW	70°C	790	915	1155		505	265					164
TDD 210	200 ltr		3/4"			240 min	3kW+3kW	70°C	940	1230	1475		505	265					220
TDD 300	300 ltr		3/4"			350 min	3kW+3kW	70°C	1215	1555	1790		560	275					331
TDD 500	495 ltr		1"			290 min	6kW	70°C	1390	335	1870		714						630
<b>INDIRECT RANGE</b>																			
TDI 125	125 ltr		3/4"	0.75	20.5kW	18 min	3kW	70°C	650	755	995	625	505	265	225				143
TDI 150	150 ltr		3/4"	0.9	26.7kW	22 min	3kW	70°C	790	915	1155	765	505	265	225				171
TDI 210	200 ltr		3/4"	0.9	26.7kW	26 min	3kW	70°C	940	1230	1475	765	505	265	225				227
TDI 300	300 ltr		3/4"	0.9	26.7kW	40 min	3kW	70°C	1215	1555	1790	815	560	275	255				337
TDI 500	495 ltr		1"	1.5	31.8kW	54 min	6kW	70°C	1390	335	1870	700	714						641
<b>TWIN COIL</b>																			
TDTI 210	200 ltr		3/4"	0.75	2x20.5kW	34 min	3kW+3kW	70°C	940	225	1475	625	505	265	806	1206	1220		244
TDTI 300	300 ltr		3/4"	0.9	20.5kW+20.5kW	40 min	3kW+3kW	70°C	1215	260	1790	800	560	275	1116	1516	1556		360

Unvented cylinders need to be serviced once a year by a competent installer for the correct operation of safety valves and under conditions of the manufacturer's warranty and Benchmark scheme.

G.A.H offer a technical help line and sales support along with a designated spares line should you require replacement components.

▼ Further products by G.A.H (HEATING PRODUCTS) LIMITED

▼ Thermeco Oil Boilers



Welcome to the new generation of Oil-Fired central heating boilers. Thermeco's comprehensive range provide the ultimate choice.

Quality, reliability, efficiency and quiet operation are standard.

The thermeco range incorporates both internal and external wall mounted and floor standing models.

The thermeco design ensures flexibility of siting and is further enhanced by the extensive new multi-choice range of round telescopic balanced flue systems and conventional flue systems.

With responsive after sales support and dedication to customer satisfaction you are sure to find available within the range, a thermeco boiler to suit your needs.

▼ G.A.H Water Softeners



All G.A.H Water Softeners are highly efficient and WRAS approved. Low salt and water use during regeneration gives you considerably lower running costs when compared to other softeners.

There is something special about a G.A.H Water Softener. Something unique that gives both incomparable performance and specification. The secret is in the resin. This determines the quality of your soft water. All G.A.H Water Softeners incorporate a resin that has been specially purified. It is both food grade and free from chlorinated solvents (solvent-free). So whether you bathe, shower, wash your hair, your clothes or simply brush your teeth in it, the water from your G.A.H Water Softener will not only be lovely and soft, but solvent-free too.

G.A.H's confidence in its product is supported by a comprehensive 2 year parts and labour guarantee.

▼ G.A.H Electrastream



Electrastream..... a complete cost effective solution for Hot and Cold water supply and Electric Central Heating with water filled radiators, suitable for Self Contained Flats, Small Dwellings, Offices and Granny Annexes.

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