

Halstock

- Stainless steel calorifiers
- Single and twin coil
- Water storage tanks

**SUITABLE
FOR USE
WITH
SOLAR**

C



CONTINUOUS OUTPUTS 390 - 2106 L/H
STORAGE CAPACITIES 300 - 965 LITRES



CONTENTS

- Introduction & features 2
- Technical data & dimensions - calorifiers 4
- Technical data & dimensions - storage tanks 6
- Specification & options 8
- Hydraulic schemes 9
- Case study 10
- Training 11
- Complete your system 12
- Service & warranty 13
- About Hamworthy 14

Low maintenance

The Halstock range of stainless steel calorifiers and storage tanks provide a reliable and low maintenance option for hot water generation.

They can be easily coupled to any heating boiler or renewable energy source to provide highly efficient domestic hot water.



Efficient and flexible to suit your project

The Halstock features a durable, corrosion-resistant, Acerinox duplex stainless steel tank and coil, for a long life backed up by a 5-year cylinder warranty. With stainless steel tanks, there are no electrical corrosion protection systems or sacrificial anodes required.

There are 5 calorifier sizes available from 300-965 litre with single and twin coil options. To complement the range and provide additional storage for high demand hot water applications, 5 buffer vessels/storage tanks have been added in 2021. They range from 300-965 litre also.

Benefit from a highly efficient product that features a corrugated coil design for maximum heat transfer, and a generous layer of CFC-free polyurethane tank insulation under protective plastisol cladding ensures minimal standing losses.

Halstock calorifiers give you flexibility in installation as no flues are required. They can be coupled to Hamworthy boilers and thanks to the second coil have the option of coupling with solar thermal panels for a sustainable, energy saving system.

Key benefits



Twin coils give control & choice in configuration



Easy access for service and maintenance



Quick heat recovery



Insulating jacket reduces standing losses



Integrate with solar

Key features:

- ⊗ Stainless steel calorifiers and storage tanks.
- ⊗ 2 models of calorifier with a single coil with continuous outputs (@44°C ΔT) of 390 and 527 l/h.
- ⊗ 3 models of calorifier with twin coils with continuous outputs (coils connected in series) (@44°C ΔT) of 1843 - 2106 l/h.
- ⊗ Heat up times with both coils in series 19-31 minutes.
- ⊗ Recovery times for 70% of the cylinder volume @50°C ΔT - 13-22 minutes
- ⊗ 5 storage tank models with storage capacities of: 300 - 965 litres.

Optional kits (Page 9)

- ⊗ De-stratification pump kit (factory fitted)
- ⊗ Electric immersion heater kits (6, 9 or 12kW)
- ⊗ Levelling feet (400L + models)

Service & Warranty (Page 14)

- ⊗ Range of service options
- ⊗ 5-year warranty

Anatomy of the Halstock

- ① Auxiliary port
- ② De stratification/secondary return
- ③ DHW Outlet
- ④ Temperature and pressure relief valve
- ⑤ (Upper) top coil
- ⑥ Immersion connection
- ⑦ (Lower) bottom coil
- ⑧ Twin thermostat
- ⑨ De stratification
- ⑩ Drain
- ⑪ Cold water inlet



Technical data

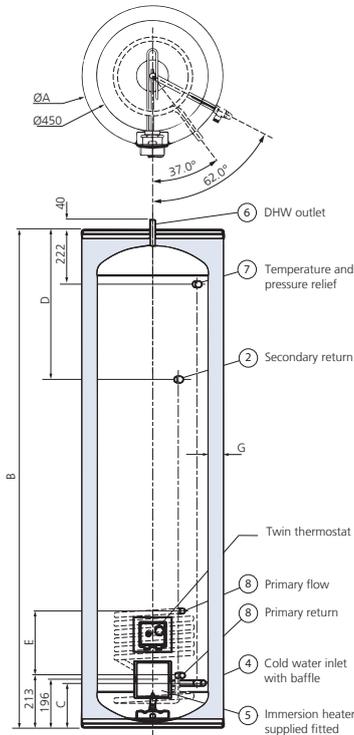
Halstock calorifiers all models

	Halstock model	Units	HS305UV*	HS400 / HS400UV*	HS5002CO / HS500UV2CO*	HS8102CO / HS810UV2CO*	HS9652CO / HS965UV2CO*
Water	Capacity, nominal	litres	305	400	500	810	965
	Capacity with coil	litres	298	396	496	803	958
	Continuous output @44°C ΔT	l/h	390	527	1843	1843	2106
	Continuous output @50°C ΔT	l/h	344	464	1622	1622	1853
	Maximum working pressure, tank	bar	6	6	6	6	6
	Hydraulic test pressure	bar	9	9	9	9	9
Energy	Number of coils		1	1	2	2	2
	Lower coil output	kW	20	27	67.5	67.5	81
	Heat up time @50°C ΔT, lower coil only	min	54	53	26	42	42
	Upper coil output	kW	N/A	N/A	27	27	27
	Heat up time @50°C ΔT, top coil only	min	N/A	N/A	66	105	126
	Heat up time @50°C ΔT, combined coils	min	N/A	N/A	19	31	31
	Recovery time 70% @50°C ΔT, combined coils	min	38	36	13	21	22
	10 min peak output @50°C ΔT	litres	361	481	770	1080	1274
	Coil max operating temperature	°C	100	100	100	100	100
	Coil max operating pressure	bar	3	3	3	3	3
	Upper Coil tube diameter	DN	NA	NA	DN25	DN25	DN25
	Upper coil surface area	m²	NA	NA	1	1	1
	Lower coil tube diameter	DN	DN20	DN25	DN25	DN25	DN25
	Lower coil surface area	m²	0.75	1	2.5	2.5	3
	Reheat total delta T 50°C lower	mins	38	36	18	29	29
	Reheat total delta T 50°C both	mins	N/A	N/A	13	21	22
	Standby losses	kW/24hr	1.77	2.35	2.74	3.29	3.43
ErP efficiency rating	-	C	C	C	Compliant	Compliant	
Immersion	Immersion heater option, power	kW	3	6	6	9	12
	Immersion heater option, phase	ph	1ph	3ph/1ph	3ph/1ph	3ph	3ph
	Heat up time, Immersion only	hour	5.8	3.9	4.9	5.3	4.7
	Recovery time, Immersion only	hour	4.1	2.7	3.4	3.7	3.3
misc.	Expansion vessel size	litres	24	35	35	50	80
	Weight empty	kg	75	105	115	140	180
	Weight full	kg	379	505	615	950	1145

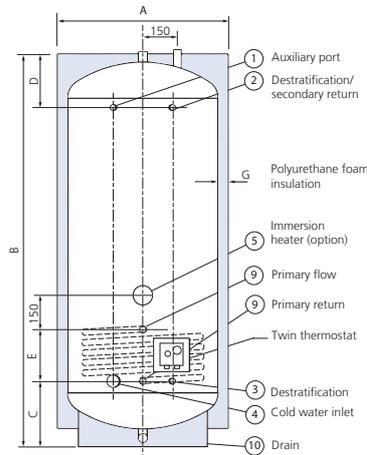
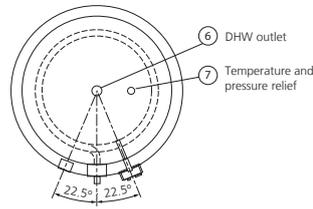
*Supplied with unvented kit

Dimensions

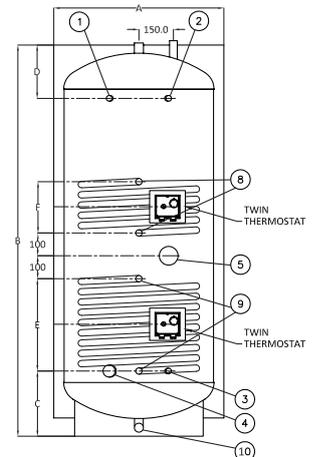
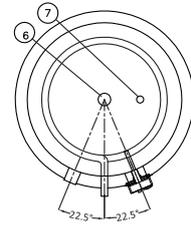
Halstock calorifiers all models



HS305UV



HS400 & HS400UV



HS50002CO & HS500UV2CO
HS8102CO & HS810UV2CO
HS9652CO & HS965UV2CO

Note: All dimensions in mm unless otherwise stated.

Calorifiers																
Models	Dimensions (mm)							Connections (BSP Female)								
	A	B	C	D	E	F	G	1	2 & 3	4	5	6	7	8	9	10
	Dia.	Height	Inlet	2nd Return	Bottom coil centres	Top coil centres	Insulation	Aux port input	De Strat	Inlet	Immersion	Outlet	T&P	Top Coil Ø	Bottom Coil Ø	Drain
305	570	2028	182	610	262.5	NA	60	½"	22mm Stub	22mm	1¾"	22mm	½"	NA	22mm Stub	None
400	750	1430	286	234	225	NA	50	½"	22mm Stub	1"	2¼"	1"	¾"	NA	28mm Stub	1"
500	750	1715	286	234	495	225	50	½"	22mm Stub	1"	2¼"	1"	¾"	28mm Stub	28mm Stub	1"
810	1080	1604	341	341	315	135	90	½"	22mm Stub	1"	2¼"	1"	¾"	28mm Stub	28mm Stub	1"
965	1080	1850	341	341	405	135	90	½"	22mm Stub	1½"	2¼"	1½"	¾"	28mm Stub	28mm Stub	1"

5

MODELS

STORAGE
CAPACITY

300 - 965

LITRES

Technical data

Halstock buffers/storage tanks all models

Parameter	Units	HB300	HB400	HB500	HB810	HB965
Capacity nominal	litres	300	400	500	810	965
Max operating temperature	°C	100	100	100	100	100
Max operating pressure	bar	6	6	6	6	6
Standby loss	kW/hr/24hr	1.77	2.35	2.74	3.29	3.43
ErP category		C	C	C	Compliant	Compliant
Hydraulic test pressure	bar	9	9	9	9	9
Immersion heater option power	kW	3	6,9 or 12	6,9 or 12	6,9 or 12	6,9 or 12
Phase		1ph	1ph or 3ph	1ph or 3ph	3ph	3ph
Weight empty	kg	55	80	95	155	175
Weight full	kg	355	480	595	965	1140

STORAGE
CAPACITY

300 - 965

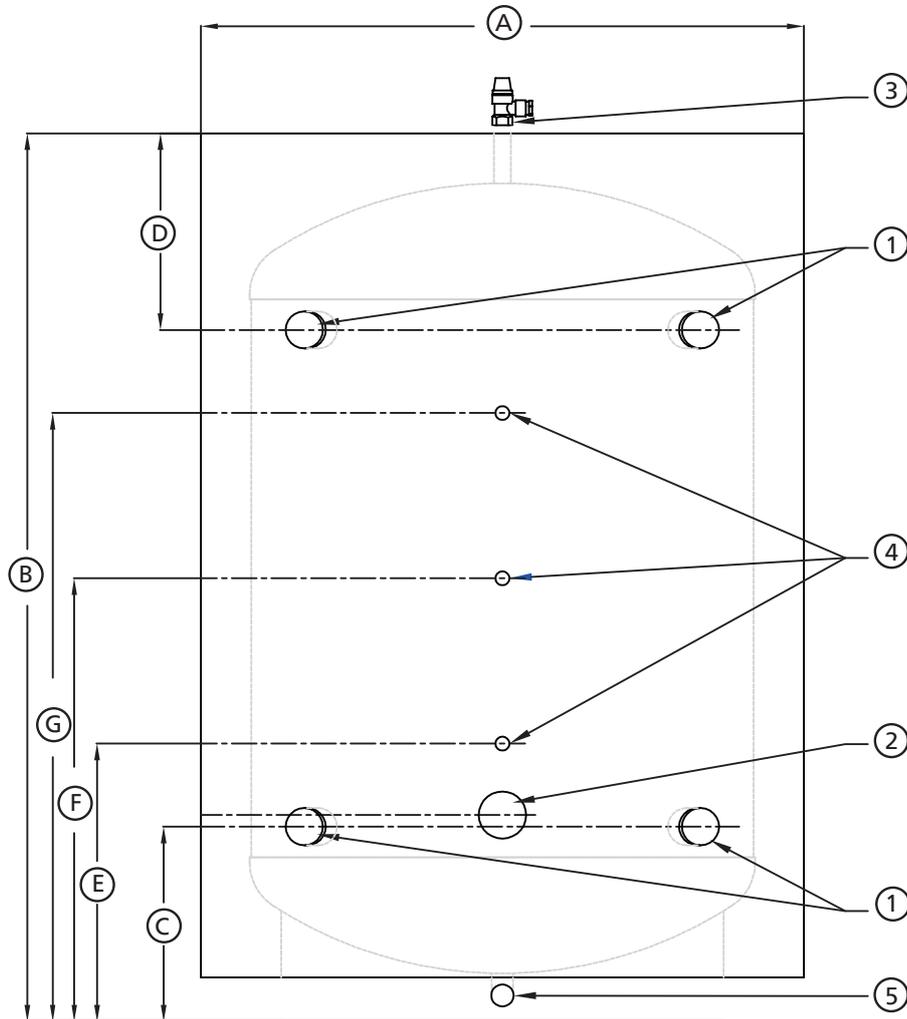
5

MODELS

LITRES

Dimensions

Halstock buffers/storage tanks all models



Heating Buffers (Stainless Steel)

Models	Dimensions mm								Connections (BSP Female)				
	A	B	C	D	E	F	G		1	2	3	4	5
	Dia.	Height	Bottom inlet	Top inlet	Bottom sensor pocket	Middle Sensor pocket	Top sensor pocket	Insulation	Top/Bottom inlet	Immersion	T&P	Sensor pockets	Drain
300	570	2028	185	222	355	1029	1653	60	28mm stub	1¾"	¾"	½"	None
400	750	1430	295	254	445	736	1027	50	2"	2¼"	¾"	½"	1"
500	750	1715	295	254	445	878	1312	50	2"	2¼"	¾"	½"	1"
810	1080	1604	352	355	502	800.5	1098	90	2"	2¼"	¾"	½"	1"
965	1080	1850	352	355	502	923	1345	90	2"	2¼"	¾"	½"	1"

Specification

Construction

The Halstock calorifier tank is constructed in corrosion-resistant, Acerinox duplex stainless steel and features a single or twin corrugated coil.

The cylinder is insulated with a thick layer of CFC-free polyurethane insulation underneath a protective plastisol outer cladding.

The Halstock is designed for use with natural gas, LPG or oil-fired boilers for indirect heating, and back-up heating via optional Incoloy 800 electrical immersion heaters (included as standard in HS305UV model).

Twin thermostats: high limit 82°C ± 5°C and control 30–70°C, provide simple temperature control and overheat protection via their volt-free contacts when wired to external controls.

A motorised shut-off valve is also included with the HS305UV model for additional protection to shut off primary heat supply to the coil.

Calorifier heat exchanger coils

The smaller HS305 and HS400 models have a single high capacity heating coil whilst the larger models, HS5002CO to HS9652CO, each have two heating coils that can be connected to two independent heat sources.

Alternatively, the twin coils can be connected in series (connection not Hamworthy supply), to create an extended surface area single coil for high recovery and output rates.

This allows greater control of the heat input and gives you the flexibility to choose how you heat your system. The calorifiers can be connected to renewable heating sources such as a solar collector array. All connections to the heat exchanger coils are conveniently located on the side of the cylinder providing good access for pipe work installation.

Anodes

No electrical corrosion protection systems or sacrificial anodes are required. This makes the Halstock particularly suited to areas of the country that have particularly soft water and therefore poor conductivity of the water, and magnesium sacrificial anodes are often not fully effective in providing protection against corrosion.

Unvented models

To suit your application, calorifier models HS400 – HS965 are available as vented or unvented. This must be specified at the time of ordering, and the unvented model is supplied with all the accessories needed for an unvented system.

The Unvented models include:

- ⊗ SRV/PRV (Safety relief & pressure reducing valves including check valve)
- ⊗ Tundish 22mm x 28mm
- ⊗ Factory fitted T&P (Temperature and Pressure) valve, ¾" BSP, 7 bar, 90°C
- ⊗ Expansion vessel, sized for tank and for max 65°C
 - ⊗ HS305UV = 24 l
 - ⊗ HS400UV and HS500UV = 35 l
 - ⊗ HS810UV = 50 l
 - ⊗ HS965UV = 80 l

De-stratification pump kits

In order to prevent stratification within the cylinder, a de-stratification/top to bottom recirculation pump kit can be specified. This is factory fitted and **must be specified at the same time as ordering the calorifier.**

Levelling feet

To help you deal with uneven floor surfaces Halstock models 400 litre and above can be provided with levelling feet as an optional extra.

Immersion kits

To ensure continuous supply of hot water we offer optional Incoloy immersion heaters for back-up heating. Please note: A 3kW immersion is supplied as standard on HS305UV and this calorifier model cannot be used with the larger immersions listed below.

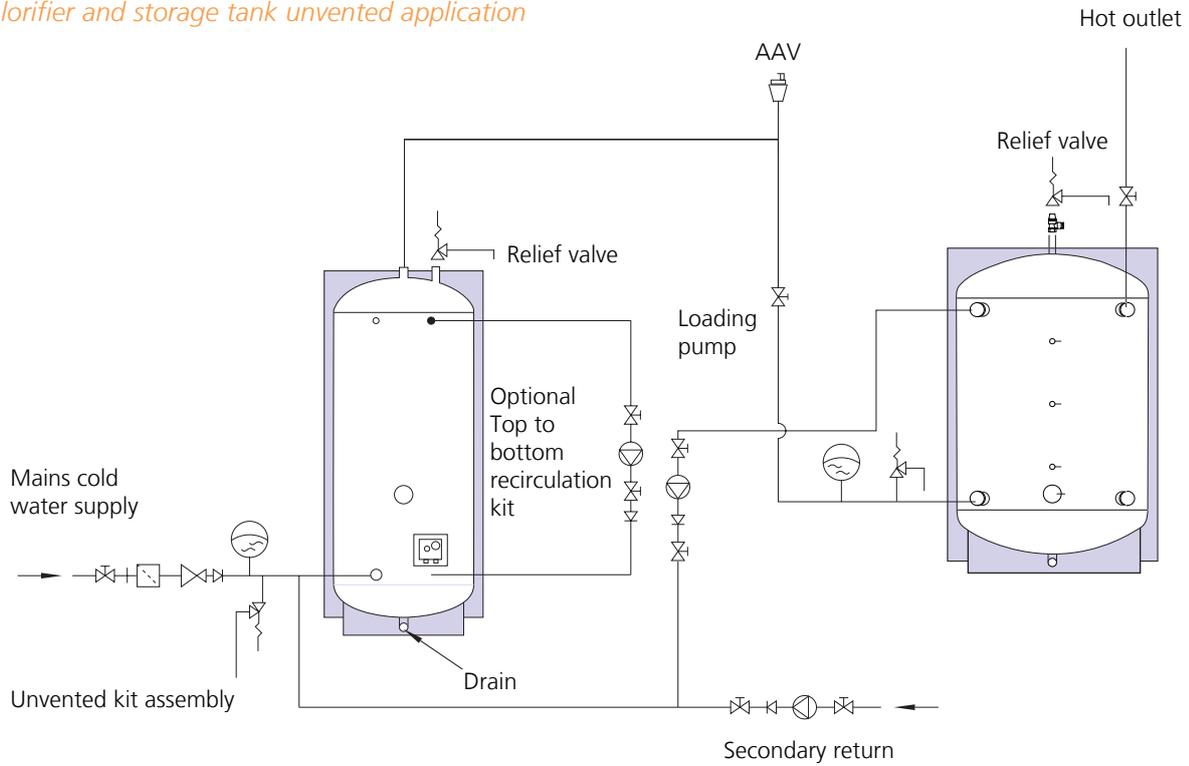
Part number	Power/ kW	Phase
563901556	6	1 phase / 3 phase
563901557	9	3 phase
563901558	12	3 phase

T&P Valve

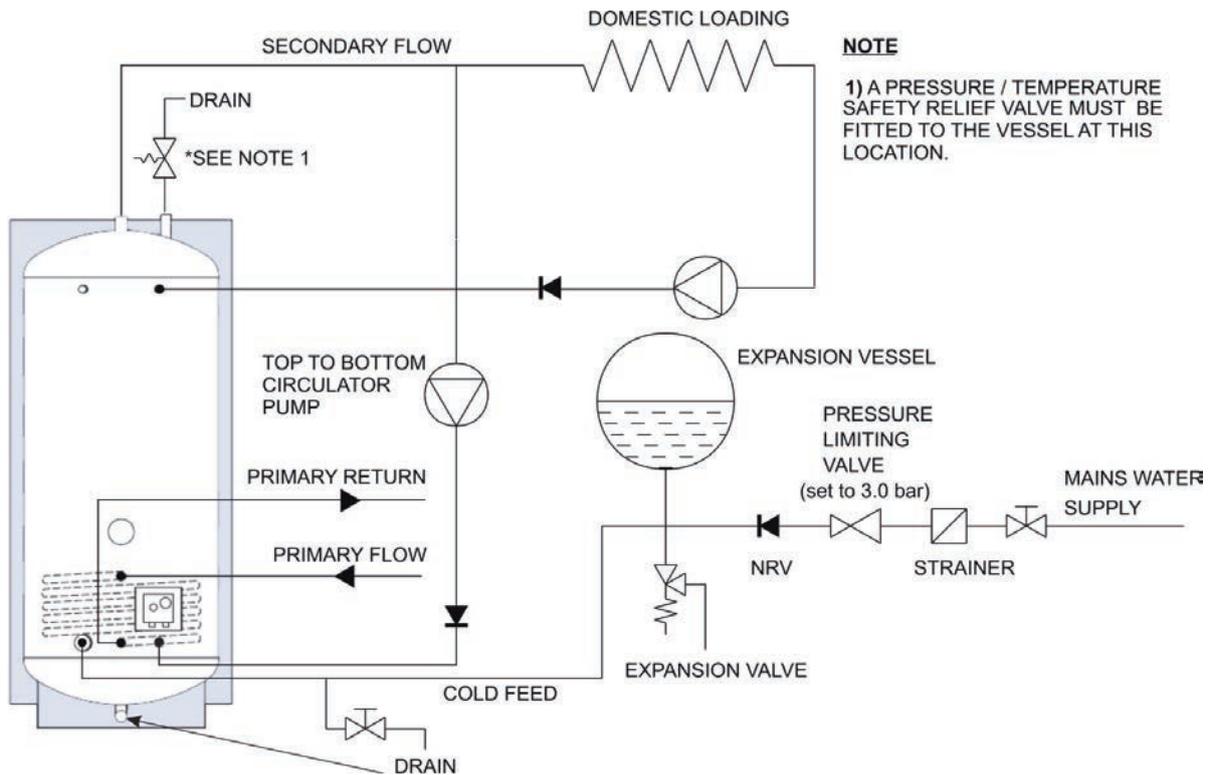
All units are supplied with a fitted temperature and pressure relief valve.

Hydraulic schemes

Calorifier and storage tank unvented application



Unvented Application



Case study

Riverside Children's Centre, Canterbury

Project

- ⊗ Nursery heating and hot water refurbishment

Products

- ⊗ Stratton mk2 wall hung condensing boiler
- ⊗ Halstock calorifier

Application

- ⊗ Space heating 43kW
- ⊗ Domestic hot water 390L



The challenge

Riverside Children's Centre, based in Canterbury, is one of Busy Bee's 342 nurseries in the UK. Providing childcare and cooked midday meals for children aged 6 weeks to 5 years, a reliable heating and hot water system is a must. Philip Kiss, Building Services Engineer at Canterbury City Council, turned to Hamworthy for a reliable and efficient heating and hot water solution.

The challenge was to combine a low-temperature underfloor heating circuit and a high-temperature hot water circuit. The old boiler installed in the building was a Hamworthy Ferndown combination boiler (heat and hot water), rated at 70kW. Philip was looking for a suitable replacement that fulfilled the criteria of reliability, high efficiency and to satisfy the hot water demand for meal preparation in the kitchen and other points of use throughout the building.

A continuous heating and hot water supply while the boiler was being replaced was crucial, as the nursery would be open throughout. Canterbury also has very hard water, caused by dissolved calcium hydrogen carbonate. This leaves calcium deposits in heating systems behind which can have a negative effect on heating equipment. For this reason, the nursery had a water softener installed. However, carbonic acid which naturally occurs in water through the absorption of CO₂ from the air is more aggressive when it is not saturated by dissolved hardness. A corrosion-resistant solution was therefore needed.

The solution:

Focused on achieving maximum energy savings, he chose Hamworthy's Stratton mk2 stainless steel wall hung condensing boiler as an ideal replacement. The selected model delivers 43kW output, a gross seasonal efficiency of 95.75% and features an extensive Siemens LMS controls platform to deliver heat and hot water the most efficient way.

With a turndown ratio of up to 5:1, the boiler can match the heat load flexibly and efficiently from 8kW up to 43kW. It also comes with a 5-year warranty on the stainless steel heat exchanger.

To cover the hot water demand, the centre required an adequate but not oversized water heater. The choice fell on a Hamworthy Halstock HS305UV stainless steel calorifier with a continuous output of 390 litres per hour at a differential temperature (difference between hot water system flow and supply temperature) of 44°C.

This model is suited for combination with smaller output boilers such as the chosen Hamworthy Stratton mk2.

Both stainless steel products were chosen due to their corrosion resistance to counteract the effect of softened, more aggressive water.

Full heating temperature control

The nursery has underfloor heating which can only take a maximum water temperature of 50°C to avoid structural damage to floors. To cater to those needs, a hot water priority strategy using the boiler's built-in LMS controls platform was adopted.

Ian says, "We wanted to make full use of the built-in LMS controls of the boiler for controlling the heating and hot water. **The Halstock calorifier heats up quickly – in only 38 minutes from cold. When required, the heating circuit is switched off and all power directed to hot water production at 80°C in non-condensing mode which takes merely a few minutes to top up water in the water heater.** As soon as excess heat has been distributed around the hot water supply primary circuit, heating operation goes back to lower temperature condensing mode. This way, the underfloor heating circuit is protected from high temperatures and boiler running time in less efficient non-condensing mode is minimised. All this is done from the boiler itself, without the need for extra controls."

Overcoming continuous heating supply challenges

The nursery was in constant use during the boiler and water heater replacement and could not be deprived of heating or hot water for significant periods. In the first phase, the Halstock hot water cylinder was installed over a weekend and initially run on an immersion heater connected to a local plug top. The original boiler, which previously delivered heating and hot water, was then only providing space heating. To avoid any disruptions, the new Stratton mk2 boiler was installed out of the heating season.



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We're accredited with CIBSE to deliver approved Continuing Professional Development (CPD) courses.

It's our opportunity to share our knowledge with you. More than 3,000 people have attended our CPD seminars and 95% rated them as good or excellent.

Hamworthy CPD seminars are free to attend and our flexible approach means that we are able to tailor our training to suit your business. Lots of our customers choose to run these online at lunchtime or at their own premises so that there is minimal disruption to the working day.

“Very good session with lots of very detailed and relevant information. Would highly recommend!”



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Product Training

Get hands-on training with Hamworthy's commercial boilers.

We can provide training onsite, online, or you can attend a course at one of our training centres. Delivered by Groupe Atlantic engineers with years of product knowledge and industry experience. By attending our training you'll be more confident in running our equipment.

The course will guide you through the servicing and fault finding of Hamworthy products to ensure they are operating at their maximum efficiencies.

Hamworthy's training centres are conveniently located across the UK.

Each training centre has live firing boilers as well as a display of boilers, water heaters and additional system equipment.

See the latest training dates and book your place online:
hamworthy-heating.com/training

Training courses available:

- ⊙ **Purewell Variheat mk2 boiler**
- ⊙ **Stratton mk2 wall hung boiler**
- ⊙ **Wessex ModuMax mk3 boiler**
- ⊙ **Upton boiler**



Complete your system

As well as calorifiers and storage tanks, we supply commercial boilers and supporting equipment to help complete your system.

System equipment

Trigon solar thermal system

A complete solar hot water system including solar collectors, transfer stations, and controllers that can be combined with a solar water heater.

A Trigon solar circuit is completed by connecting a field of collectors, via a transfer station, to a solar coil heat exchanger in a Halstock calorifier. This forms the closed loop circuit around which propylene glycol solar fluid is pumped, transferring solar energy captured at the collector to the Halstock's stored water via the coil.



Burstock expansion vessel



Trigon solar thermal system

Burstock expansion vessel

Floor standing expansions vessels for use with sealed heating and hot water systems. Available in 10 models from 25 to 1000 litres.

Boilers

Floor standing condensing boilers

We have an extensive range of floor standing modular boilers with outputs from 70kW up to 1050kW. With natural gas and LPG options available they can be used across the UK.

The Upton and Wessex ModuMax mk3 boilers are designed as vertically stacking modular boilers to fit in the smallest of plant rooms – offering over 1MW output from 1 metre squared footprint.

Purewell Variheat mk2 boilers are built around a cast iron heat exchanger for tolerance to older heating circuits, making them a perfect choice for refurbishment and replacing old atmospheric boilers.

For larger heat loads or simplified design, the Varmax boilers do not need to be installed with a primary circuit and have split temperature return connections for improved efficiency.



Upton



Purewell Variheat mk2



Stratton mk2



Wessex ModuMax mk3



Ensburly LT

Wall hung condensing boilers

The Stratton mk2 wall hung boiler offers the benefits of a long life and corrosion resistance with a stainless steel heat exchanger. It can also fit into low height plant rooms thanks to a built in flue gas non return valve and low height pipework kits.

Pressure jet boilers

For higher heating demands and a greater choice of fuel options including oil and biofuel, Hamworthy can provide pressure jet/power flame boilers. With outputs from 440kW right up to 10MW, and a choice of matched burners.

Services and warranty



Service

Installed water heaters will experience a wide variation in operating conditions that can occur due to differing patterns of usage and the variable chemical nature of distributed water supplies. It is therefore strongly recommended that water heaters be drained and inspected within 3 months of the initial commissioning. Once the levels of calcium deposition are established a suitable maintenance schedule can be implemented, however, as a minimum all water heaters should be serviced annually.

To maintain your water heaters, we have a range of servicing options that can be tailored to your requirements. For more information on commissioning and service please contact Hamworthy Heating Service Department.



Warranty

The Halstock comes with a 5-year cylinder warranty (except for consumables in line with our Terms and Conditions). Full details of warranty terms and conditions are available on request.



Spares

Essential to any maintenance and service regime is the availability of quality spare parts.

By coming to us, you can be assured of genuine spare parts and may also benefit from technological improvements. We have a long-term commitment to spare parts for our products.

Delivery

Halstock calorifiers and storage tanks are supplied securely mounted on a wooden pallet wrapped in a protective polythene. The packaging identifies the unit model.

Standard delivery for all Hamworthy products is free of charge.

Deliveries are closely co-ordinated with the customer, to suit the site construction programme. Products are delivered to ground level and it is the responsibility of the customer to arrange movement of products from there to the required location on site.

To enquire about special delivery services including FORS and time critical deliveries (additional charges apply) please contact our customer services team.

Service

Tel: **01202 662555**

Email: **service@hamworthy-heating.com**

Spares

Tel: **01202 662525** Fax: **01202 662551**

Email: **spares@hamworthy-heating.com**

About Hamworthy



Hamworthy Heating is a leading British commercial boiler manufacturer. Our energy efficient heating, hot water and renewable solutions are used in buildings across the UK.

The Hamworthy difference

British engineering excellence

Here in the UK, we design, test, manufacture and source market-leading products. We know our products inside out, back to front and from start to finish. You can trust that we know what we're talking about.

Lifetime support

From design and specification, through to commissioning, training and maintenance, as well as commitment to spares availability. We provide long term support for businesses with their commercial heating and hot water needs.

People first

It's not just our products that set us apart, it's our people. Truly excellent customer service, great technical knowledge and being easy to deal with.

That's the Hamworthy difference.



Everyone's got history, we've got heritage

Our roots date back to 1914 when two brothers in Poole set up Hamworthy Engineering. Decades of experience go in to every nut, screw and bolt. Every phone call, text and email. Since 2008, we've been part of Groupe Atlantic, a company with a similar ethos to us. Groupe Atlantic was founded in 1968 by two engineers and is now one of the market leaders in the European heating and hot water industry. We're now part of their growing UK, ROI and North America Divisions.



Our associations

We are an active member of trade associations and professional bodies supporting the industries we work in.

Our accreditations

International Organisation for Standardisation (ISO) is the world's largest developer of voluntary International Standards. We are proud to have been awarded the following ISO accreditations:

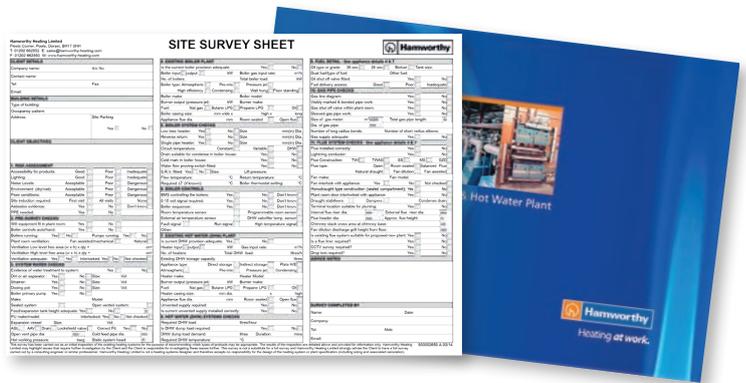
- ISO 9001 Quality Management System
- ISO 14001 Environmental Management System
- ISO 45001 Health and Safety Management System

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Contact our in-house technical support team

on 01202 662505

Your local contact is:



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ISO 45001 Health & Safety Management System



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Hamworthy Heating reserves the right to make changes and improvements
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