Byworth
BOILERS

Hot Water

THE QUEEN'S AWARDS
FOR ENTERPRISE
INNOVATION
2016

MADE IN
BRITAIN

byworth.co.uk

CELEBRATING 50 YEARS IN BUSINESS 1968 - 2018

"I am writing as a businessman for businessmen"

Dennis Baldwin, 1990,
in his book "Soil sterilisation using steam".

Dennis Baldwin, Founder of Byworth Boilers. Dennis used steam to heat his commercial greenhouses where he grew Chrysanthemums.

Byworth BOILERS

Our Story

Dennis Baldwin – the customer turned entrepreneur - the essence of our brand and our heritage.

Byworth was founded in 1968 by Dennis Baldwin. Dennis became a well-established chrysanthemum and tomato grower. The entrepreneur ran his own successful business from the young age of 17.

Based on 3 sites around Yorkshire, Dennis used steam boilers to heat his 3 acres of glasshouses.

He came from a long line of engineers and with that inherent talent, he decided to design and install his own heating and boiler systems. Soon after, other horticultural businesses were recognising his flair for producing high-quality steam boilers and the demand for his products rose.
With two sons more interested in engineering than growing, Dennis took the brave decision (aged 42) to make a career change. He sold his successful horticultural company to finance a land investment to set up a factory. This was when Dennis Baldwin & Sons boiler manufacturers were first established; later to be known as Byworth Boilers. They supplied steam boilers, not only to growers but to other industries as well.

Dennis was able to build a product that better suited the needs of his industry. These values remain today as Byworth seek to produce solutions that fit the customer's requirements, never offering a 'one size' fits all. We understand the challenges organisations often face, and our team of experts will work in partnership with you to deliver solutions that better support your individual needs.

Our Customers

Today we serve a diverse range of customers, big and small, in a multitude of industries including:

- Food
- Beverage
- Healthcare
- Paper and Packaging
- Pharmaceutical
- Architecture/M&E/Civil Engineering
- Petrochemical
- Animal Feeds & Farming
- Laundries
- Textiles

Your Guide

FELLSMAN

The Fellsman reverse flame hot water boiler, is a compact and highly efficient solution for commercial heating and industrial process applications.
Pages 5 - 8

DALESMAN

The Dalesman is a traditional three pass wet back shell hot water boiler and is ideally suited to cope with the rigours and continual heavy workload demanded for commercial heating and industrial process applications.
Pages 9 - 12

PHW

The PHW's reverse flame, wet back design ensures a highly efficient and economical boiler that is compact in size, simple to operate and easy to install and maintain.
Pages 13-16

FELLSMAN

Sizes From - 250kW to 3000kW
Working Pressure - Up to 10 bar g maximum temperature of 140°C

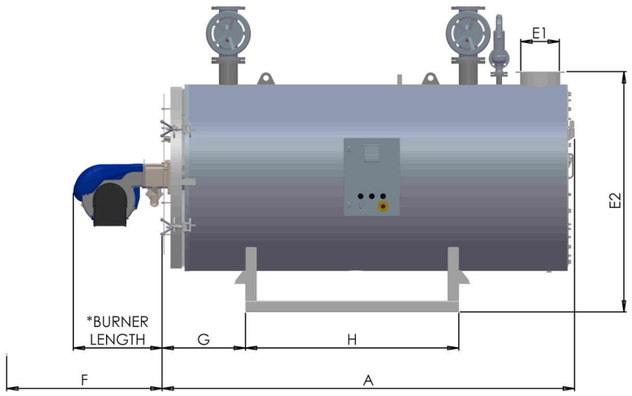
Made exclusively in the UK, the Byworth Fellsman is the popular option for small to medium applications.

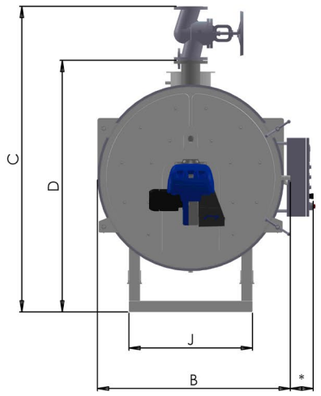
Robust, reliable and designed for long-term ease of maintenance; the Fellsman range is a compact and highly efficient solution for commercial heating and industrial process applications.

Principal Features

- The ideal balance between efficiency and size
- Fully wet back
- Designed and manufactured in our UK facility
- Reliable with long life span
- Suitable for a wide range of liquid or gaseous fuels including natural gas, LPG, LNG, biogas and heating oils
- Lightweight, hinged front-door
- Removable rear doors
- Spiral wound turbulators significantly improve efficiency without increasing the boiler footprint
- Generous shell and furnace sizes
- Output easily achieved
- Removable rear doors
- Easy access for cleaning and inspection

The Fellsman Dimensions



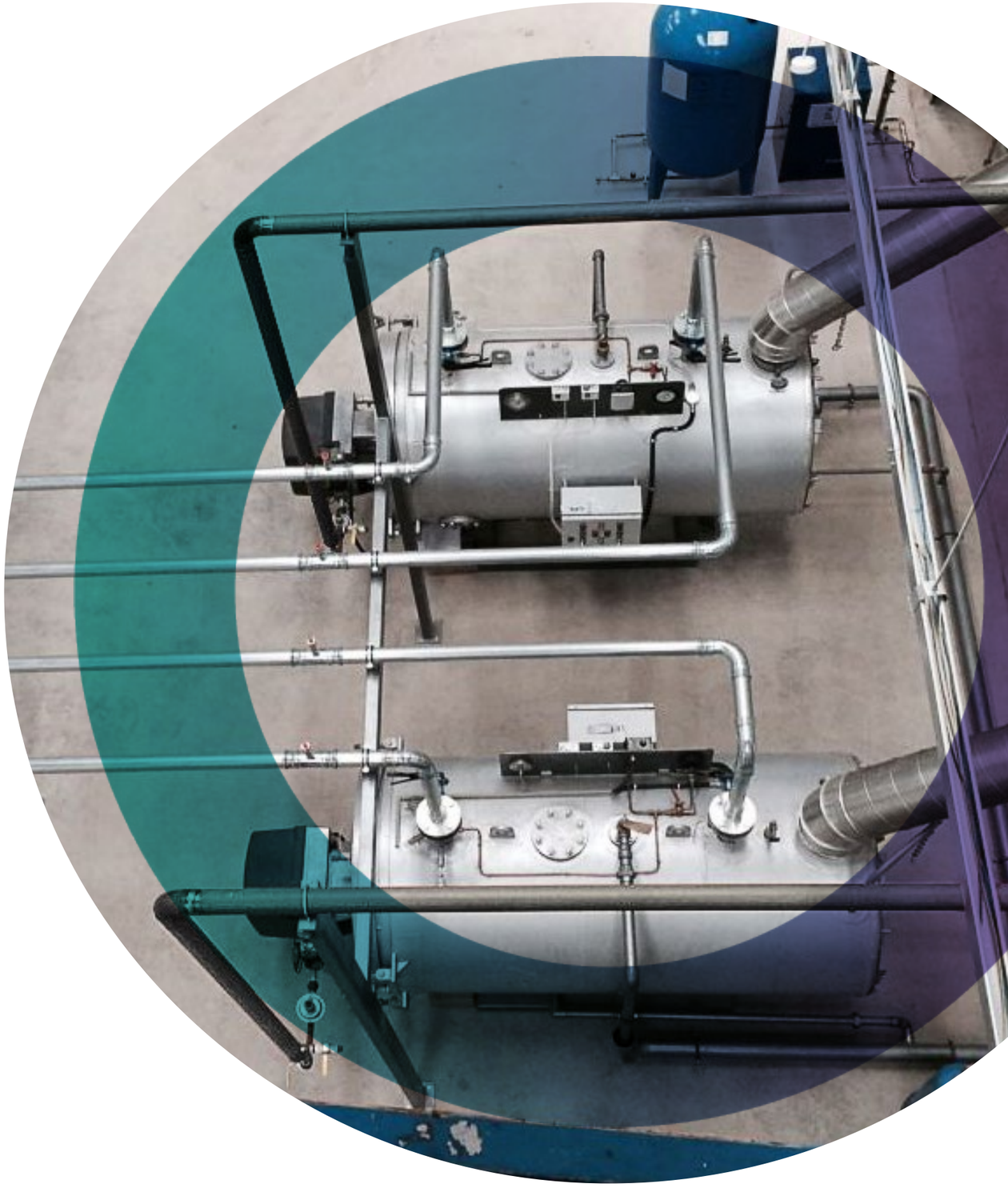


FELLSMAN - BOILER DIMENSIONS

Model FM		250	500	750	1000	1250	1500	1750	2000	2500	3000
Output kW	**kW**	250	500	750	1000	1250	1500	1750	2000	2500	3000
Overall Length	**A**	1900	2220	2400	2550	2750	3270	3600	3630	3720	3920
Overall Width	**B1**	1090	1250	1350	1560	250	1560	1690	1910	2000	2070
Overall Height	**C1**	1946	2106	2206	2431	2541	2516	2766	2921	3011	3081
Minimum Height	**D**	1516	1676	1776	1986	2096	1986	2236	2336	2426	2496
Chimney I/D Standard	**E1**	200	225	250	300	300	350	350	400	450	450
Chimney Height	**E2**	1430	1590	1690	1900	2010	1900	2150	2250	2340	2410
Tube Withdrawal	**F**	1200	1500	1700	1800	1980	2400	2660	2660	2700	2900
Base inset	**G**	410	510	580	580	585	595	730	730	730	730
Max. distance over base	**H**	1125	1230	1275	1520	1520	1590	1900	1900	2000	2100
Max. width base	**J**	880	900	900	900	900	950	1100	1100	1100	1200
Standard flow and return size	**DN**	100	150	150	150	200	200	150	200	250	250
Weight Empty	**kg**	1480	1920	2670	3610	4970	5370	6030	7000	7800	8460
Weight Floaded	**kg**	1895	2560	3530	5280	6540	6330	8550	9800	10700	11760

** Variable depending upon burner manufacturer*

For illustration purposes only design drawings available upon request



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DALESMAN

Sizes From - 1000kW – 10000kW
Working Pressure - up to 16 bar g maximum temperature of 180°C

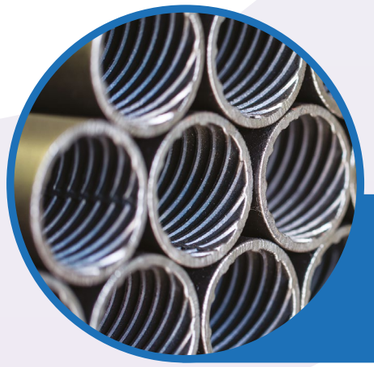
The Dalesman is a traditional three pass, full wet back hot water boiler. It is ideally suited to cope with the rigours and continual heavy workloads for industrial applications.

Every Dalesman is exclusively designed and built in the UK to meet customers specific hot water requirements.

The Dalesman high and medium temperature versions incorporate the unique X-ID boiler tube. With special helical internal ribs this tube increases heat transfer from tube to water space, making the Dalesman a most energy efficient hot water boiler.

Principal Features

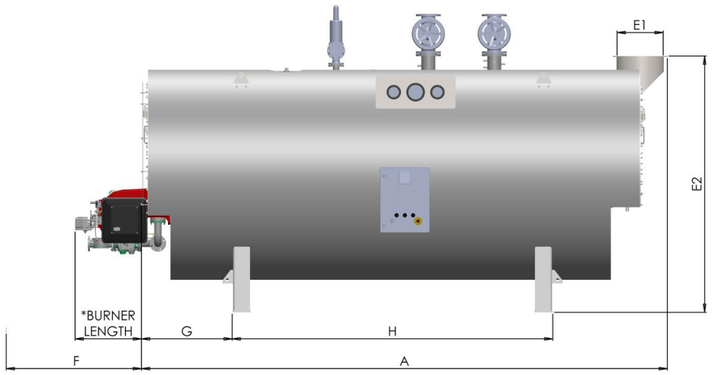
- High efficiency
- Low NOx emissions
- Reliable and robust with long life span
- Generous shell and furnace sizes.
- Output easily achieved
- Central furnace with bowling hoops
- Easy access for cleaning and inspection
- High performance X-ID firetubes (med/high temperature models)
- High performance ceramic fireside insulation
- Thermal stresses are alleviated due to a central furnace and flat flanged end plates
- Heat losses are minimised with high-density external insulation
- By using high-performance, ceramic materials we have eliminated problems associated with traditional refractory cement
- Quality assured. Our internal inspection regime exceeds BS and EN requirements; this includes 100% ultrasonic inspections of all major welds
- Manufactured in Britain
- Removable NDT inspection panels
- Boiler access platform available upon request

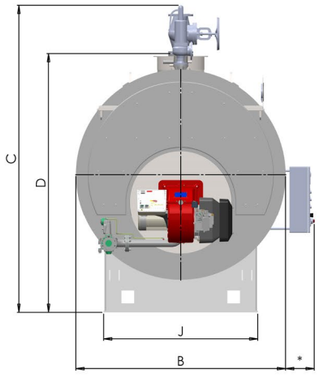


Our unique X-ID tubes buit into all medium and high temperature boilers. Reducing fuel comsumption and minimising maintenance.

Each boiler is designed and manufactured in our UK facility, ensuring the highest standards of quality control.

The Dalesman Dimensions





DALESMAN - BOILER DIMENSIONS

Model DM		1000	1500	2000	2500	3000	3500	4000	4500	5000	6000	7000	8000	9000	10000
OTP		3100	3610	3960	4160	4400	4800	4900	5010	5100	5300	5410	5600	5700	6100
Output kW	**kW**	1000	1500	2000	2500	3000	3500	4000	4500	5000	6000	7000	8000	9000	10000
Overall Length	**A**	3730	4370	4860	5165	5465	5895	6070	6165	6395	6640	6845	7190	7400	7800
Overall Width	**B1**	1770	1890	2060	2170	2290	2350	2430	2490	2590	2780	2890	3040	3160	3250
Overall Height	**C1**	2650	3025	3185	3295	3385	3475	3685	3745	3845	4041	4141	4335	4505	4595
Minimum Height	**D**	2220	2440	2600	2710	2800	2890	2970	3030	3130	3326	3336	3530	3700	3790
Chimney I/D Standard	**E1**	250	300	350	400	400	450	500	500	550	600	650	700	750	800
Chimney Height	**E2**	1780	2300	2460	2570	2660	2750	2870	2890	3090	3190	3190	3390	3560	3650
Tube Withdrawal	**F**	2780	3030	3960	4160	4400	4800	4900	5010	5100	5300	5410	5600	5700	5900
Base inset	**G**	570	750	745	830	870	900	950	1020	1030	1230	1230	1330	1370	1390
Max. distance over base	**H**	2300	3030	3315	3470	3665	4025	3530	4170	3900	4330	4150	4230	4570	4730
Max. width base	**J**	1170	1450	1450	1770	1770	1770	1770	1870	1870	2070	2070	2070	2320	2320
10 degC	**DN**	100	150	150	150	200	200	200	200	250	250	250	300	300	300
20 DegC	**DN**	80	100	125	125	150	150	150	150	200	200	200	250	250	250
30 DegC	**DN**	65	80	100	100	125	125	125	125	150	150	150	200	200	200
Weight Empty	**kg**	7908	9840	10930	12050	13250	15420	17680	18700	19500	22430	23630	24860	28064	31220
Weight Floaded	**kg**	10414	13930	16750	18825	21350	24730	27070	29780	31695	37270	40390	43390	49284	54224

Note - for DM5000 and above support saddles supplied only

** Variable depending upon burner manufacturer*

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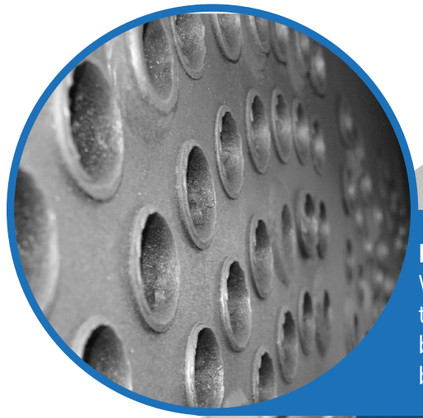


Eliminating the cracks
We only weld the heat transfer tubes at the hottest end to allow the tubes to expand and contract with the boiler, eliminating tube-end cracks that are typical of boilers with tubes fixed at both ends.

MADE IN BRITAIN

PHW

Sizes From - 100kW – 1000kW
Working Pressure - Up to 5 bar (g) maximum temperature of 95°c

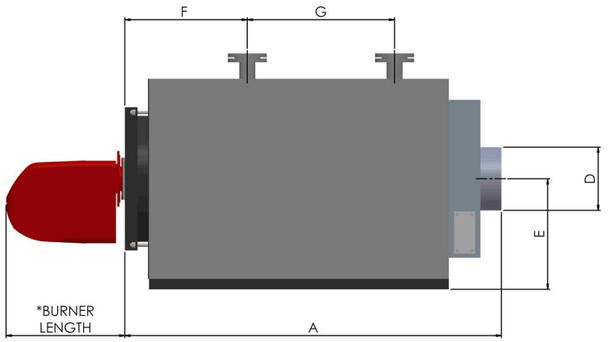
The PHW has a fully opening front door which provides quick and simple access for inspection and maintenance. The door can also be hinged on either the right or the left for your convenience.

The reverse flame, wet back design ensures a highly efficient and economical boiler that is compact in size, simple to operate and easy to install and maintain.

Principal Features

- High Efficiency
- Designed to manufacturing standards BN303
- European Pressure Equipment Directive compliant
- Economical operation
- Minimal heat loss
- Heavy Insulation
- Reliability
- Low Maintenance
- Stainless steel retarders provide maximum thermal exchange
- The boiler/burner controls are incorporated into a custom-made panel mounted on top of the boiler for easy access
- Each boiler has a rear smoke box complete with explosion relief door, chimney connection and condensation outlet
- The smoke box is fully detachable should access be required

The PHW Dimensions



PHW - BOILER DIMENSIONS

Model PHW		120	180	230	320	400	500	600	800	1000
Nominal capacity	**kW**	140	210	268	372	465	581.5	700	930	1163
	kcal/h x1000	120	180	230	320	400	500	602	800	1000
Furnace capacity	**kW**	157	235	300	418	523	653	784	1046	1307
	kcal/h x1000	135	202	258	360	450	561	674	900	1124
Combustion chamber press.	**mbar**	2	2.5	3	4.2	4.5	5	6	6.5	7
Water content	**dm²**	335	410	410	780	780	875	1020	1189	1485
Water side loss pressure	**mbar**	1290	1340	1385	1575	1635	1705	1725	1845	1910
Length	**A**	1555	1975	1975	2285	2285	2355	2555	2640	3140
Width	**B**	950	950	950	1140	1140	1210	1230	1350	1350
Height	**C**	1235	1225	1225	1430	1430	1510	1530	1670	1670
Chimney O/D Standard	**D**	220	220	220	250	250	250	250	350	350
Chimney Height	**E**	580	580	580	680	680	725	735	805	805
Distance from front to Inlet	**F**	378	427	427	479	479	488	488	579	578
Space between inlet to outlet	**G**	700	970	970	1060	1060	110	1360	1200	1700
Connections r-m	**DN**	65	65	65	80	80	100	100	125	125
Connection Safety Valve	**DN**	25	25	25	25	25	25	25	25	25
Empty weight PACK-PAS B	**kg**	760	1080	1080	1540	1540	1675	2060	2350	2930
Empty weight PACK-PAS A	**kg**	1160	1560	1560	1850	1850	1970	2550	2800	3500

** Variable depending upon burner manufacturer*

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