Hamworthy

Heating *at work.*

Upton

- Floor standing
- Condensing modular boiler
- Small footprint, high output
- Low noise, low NOx

OVER **1MW** IN 1M²

18 MODELS, OUTPUTS 100 - 1050KW

up to 97% Gross Seasonal Efficiency

Nat Gas LPG

up to 15:1 Turndown

5 Yr Heat Exchanger Warranty*

ErP Part L Compliant

BIM Objects

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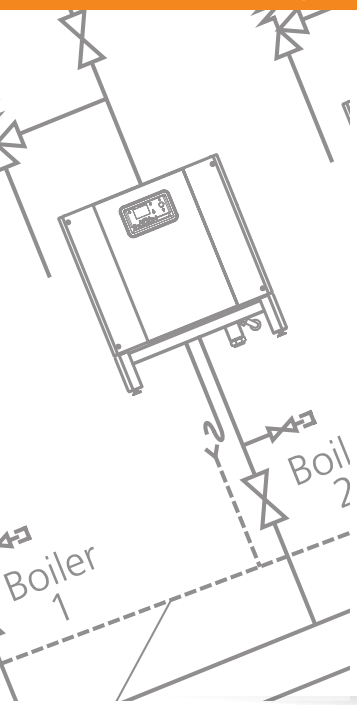
Efficiency and power, **built for the city**

The Upton floor standing modular boiler from Hamworthy builds on a long and successful heritage in modular boilers.

Designed and manufactured in the UK, the Upton is a space saving, vertically stacking condensing modular boiler.



Compact power meets high-end versatility

Choose from single module boilers and pre-assembled two or three high modules, in up to 18 combinations with output power options from 100kW to 1,050kW. The largest 3-high boiler can output 1,050kW from less than a square metre footprint, overcoming space restrictions and access issues in limited space, city centre, packaged, and rooftop plantrooms.

All boiler models have identical water and gas connections, enabling you to change the size of boiler through your design with minimal impact on pipework design. Featuring an aluminium sectional heat exchanger for maximum efficiency up to 108% (nett efficiency) makes it fully compliant with the Energy Related Products Directive (ErP) and Building Regulations Part L.

Using a modular boiler offers the benefits of high turndown ratios and load matching for improved efficiencies – delivering the right amount of heat at the right time with little or no wastage.

Designed for sealed and pressurised systems only, the hydraulic installation can be fast tracked using factory manufactured pipework kits that include automatic air vents, boiler safety relief valve, pressurisation unit connections and optional matched boiler pumps and optional low loss header with integrated air and dirt separator.

Key benefits

- Small footprint - over 1MW from 1m² footprint
- Advanced sequence control for up to 16 boiler modules
- Easy access for service and system cleaning
- Close load matching for improved efficiencies
- Low noise for installation close to occupants
- Gas and water connection positions identical across range

Key features:

- Floor standing condensing modular boiler
- 18 models: 100, 150, 200, 250, 300 & 350kW output single modules
- Single boiler modules can be stacked two or three high up to 1,050kW output
- Natural gas and LPG
- Sealed systems only
- Up to 15:1 turndown ratio
- Up to 97% Gross Seasonal Efficiency
- Aluminium sectional heat exchanger

Pipework kits - updated 2021

(Page 10)

- Four sizes of factory assembled pipework kits:
  - DN100 (100/150kW) 12 modules 1.8MW
  - DN150 (200/250kW) 12 modules 3.0MW
  - DN150* (300/350kW) 6 modules 2.1MW
  - DN200 (300/350kW) 12 modules 4.2MW
- Gas manifold
- Condensate drain pipe work
- Optional matched pumps
- Boiler safety relief valves
- Automatic air vents
- Optional blanking plate with tappings for system safety relief valve and pressurisation unit
- Optional low loss header with integrated air and dirt separator
- Optional 3 port manifold

* With larger pump.

Controls (Page 22)

- Built in advanced Navistem (Siemens LMS) controls as standard
- Boiler sequencing cascade controller
- Room & outside temperature sensors
- LPB bus communications modules
- Zone control
- DHW cylinder sensor kit

Flues (Page 27)

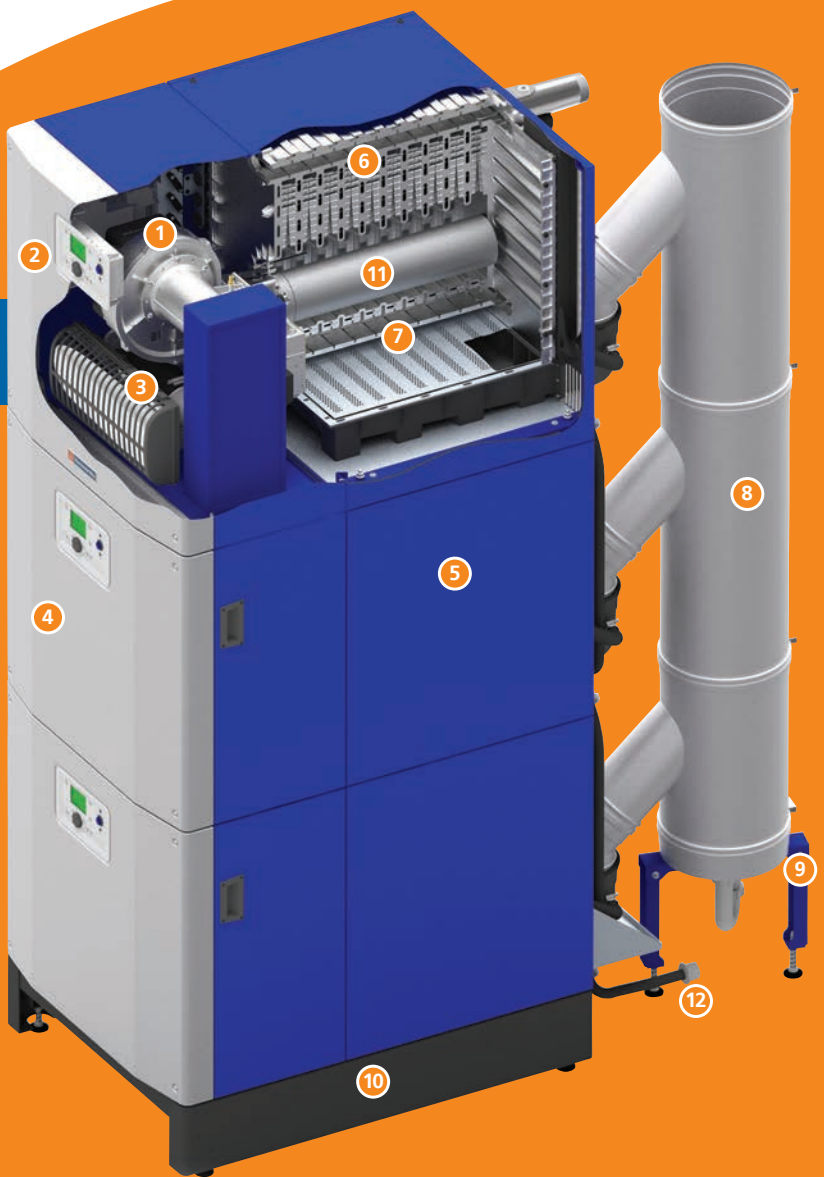
- B23p open flue system

Service & Warranty

(Page 36)

- 5-year heat exchanger warranty
- Range of service options
- Commissioning

Anatomy of the Upton



1. Variable speed fan
2. HMI inc. Siemens LMS Platform
3. Air intake filter
4. Removable front panel
5. Removable side panel
6. Sectional aluminium heat exchanger
7. Sump with incorporated baffle for noise reduction
8. Cascade flue
9. Flue support bracket
10. Metal skid with adjustable feet
11. Burner
12. Condensate drain

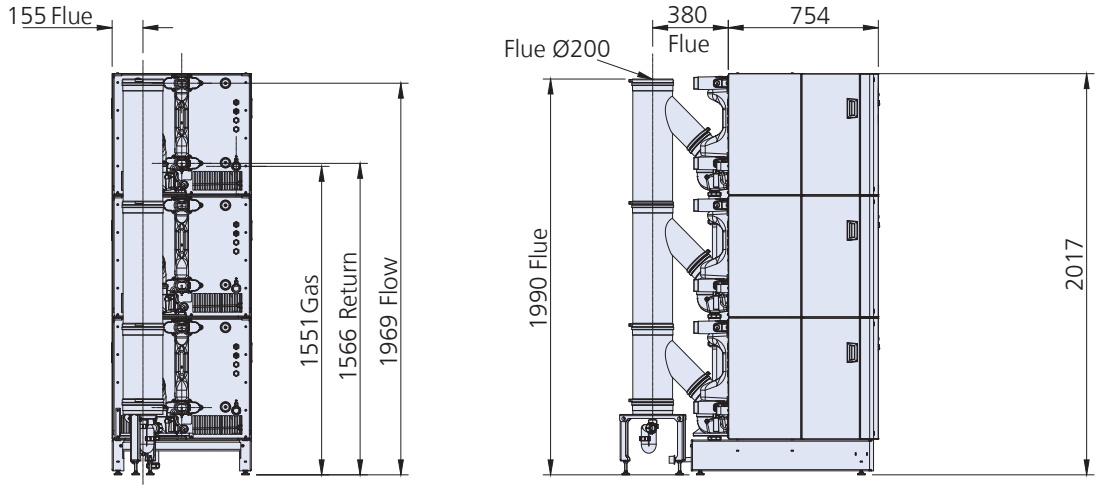
6 MODELS

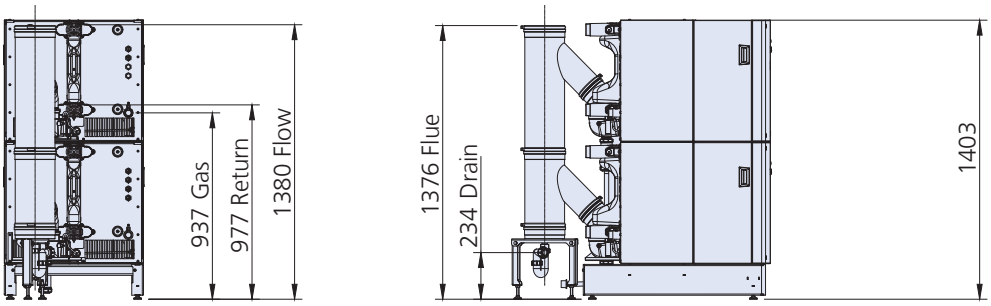
98-441 kW OUTPUT

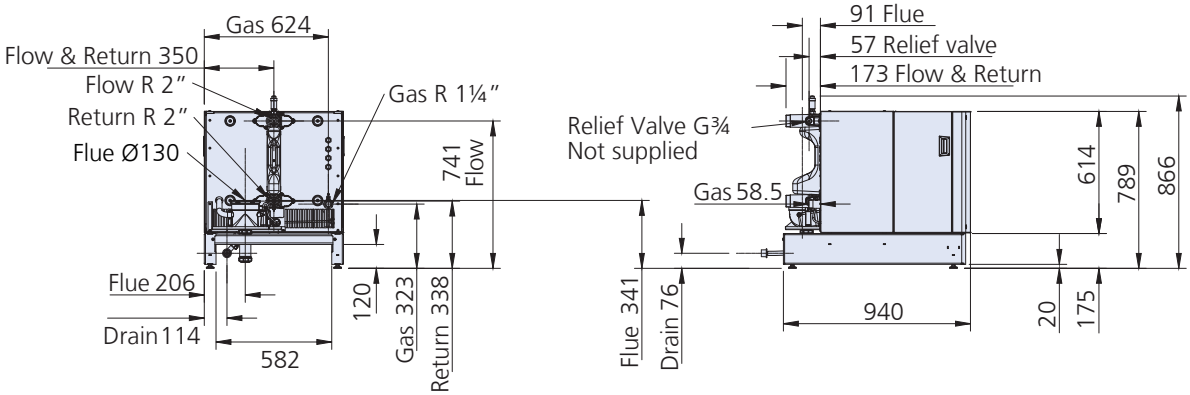
Technical data & dimensions

Models UF100-1, UF200-2, UF300-3, UF150-1, UF300-2, UF450-3
100 and **150kW** modules

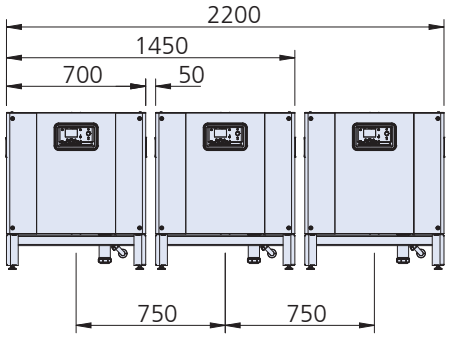
	Boiler model	Units	UF100-1	UF200-2	UF300-3	UF150-1	UF-300-2	UF450-3
	No. of modules		1	2	3	1	2	3
Energy	Building Regulations Part L seasonal efficiency	% gross	97.4	97.4	97.4	95.6	95.6	95.6
	Building Regulations Part L seasonal efficiency	% nett	108.2	108.2	108.2	106.2	106.2	106.2
	Boiler output 80/60°C	kW	89.1	178.2	267.3	134.5	269	403.5
	Boiler output 50/30°C	kW	98.6	197.2	295.8	147.3	294.6	441.9
	Boiler input gross (maximum)	kW	103	206	309.0	154.6	309.2	463.8
	Boiler input nett (maximum)	kW	92.8	185.5	278.3	139.2	278.4	417.6
	Boiler output 80/60°C (minimum)	kW	17.8	17.8	17.8	26.9	26.9	26.9
	Boiler output 50/30°C (minimum)	kW	19.7	19.7	19.7	29.5	29.5	29.5
Water	Water content	litres	9	18	27	12.6	25.2	37.8
	System design flow rate @ 11°C ΔT rise	l/s	2.2	4.3	6.5	3.3	6.5	9.8
	Water side pressure loss @ 11°C ΔT rise	mbar	736	736	736	820	820	820
	System design flow rate @ 20°C ΔT rise	l/s	1.2	2.4	3.6	1.8	3.6	5.4
	Water side pressure loss @ 20°C ΔT rise	mbar	225	225	225	250	250	250
	Minimum operating water pressure	barg	0.5	0.5	0.5	0.5	0.5	0.5
	Maximum operating water pressure	barg	5.3	5.3	5.3	5.3	5.3	5.3
	Maximum water pressure	barg	6	6	6	6	6	6
	Maximum flow temperature setting	°C	85	85	85	85	85	85
	Minimum flow temperature setting	°C	30	30	30	30	30	30
Gas	Gas flow rate (maximum) (Nat gas)	m^3/hr	9.8	19.6	29.5	14.7	29.5	44.2
	Gas flow rate (maximum) (LPG)	m^3/hr	3.8	7.6	11.4	5.7	11.4	17.1
	Nominal inlet pressure (Nat gas)	mbar	20	20	20	20	20	20
	Nominal inlet pressure (LPG)	mbar	37	37	37	37	37	37
	Maximum inlet pressure (Nat gas)	mbar	25	25	25	25	25	25
	Maximum inlet pressure (LPG)	mbar	45	45	45	45	45	45
Flue	Approx flue gas volume @ 72°C , 9.0% CO_2	m^3/hr	155	310	465	233	466	699
	Maximum flue gas temperature @ 80/60°C	°C	72	72	72	72	72	72
	Maximum flue gas temperature @ 50/30°C	°C	42	42	42	42	42	42
	Pressure available at flue connection	Pa mbar	150 1.5	150 1.5	150 1.5	150 1.5	150 1.5	150 1.5
	NOx,pond,Hs (gross) emission (0% excess oxygen, dry air) (Nat gas)	mg/kWh	33	33	33	32	32	32
	NOx,pond,Hs (gross) emission (0% excess oxygen, dry air) (LPG)	mg/kWh	42.8	42.8	42.8	44.8	44.8	44.8
	NOx,pond (nett) emission (0% excess oxygen, dry air) (Nat gas)	mg/kWh	37	37	37	36	36	36
	NOx,pond (nett) emission (0% excess oxygen, dry air) (LPG)	mg/kWh	48.3	48.3	48.3	48.7	48.7	48.7
	NOx Class		6	6	6	6	6	6
Connection	Water flow/return connections	inches	R2-11	R2-11	R2-11	R2-11	R2-11	R2-11
	Gas inlet connection pipe thread size	inches	G1¼	G1¼	G1¼	G1¼	G1¼	G1¼
	Flue connection diameter (I/D)	mm	130	200	200	130	200	200
	Condensate trap connections (O/D)	mm	34	34	34	34	34	34
Electrics	Electrical supply		230V ~ 50Hz	230V ~ 50Hz	230V ~ 50Hz	230V ~ 50Hz	230V ~ 50Hz	230V ~ 50Hz
	Power consumption - maximum boiler modulation	W	139	278	417	304	608	912
	Run current (per module)	Amp	0.6	0.6	0.6	1.3	1.3	1.3
	Approx shipping weight	kg	152	286	420	177	336	495
	Noise emission @1m @max modulation (per module)	Max dB (A)	55.8	55.8	55.8	59.4	59.4	59.4

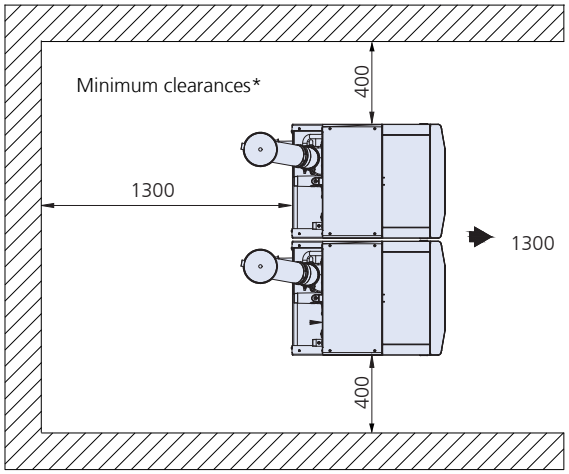






Minimum boiler to boiler spacing





Note: All dimensions in mm unless otherwise stated.

*Note: the rear clearance allows for installation of a Hamworthy pipe kit. If installing a third stack of boilers either an additional 500mm clearance would be required behind the pipe kit or the spacer spool (400mm) would need to be fitted between the second and third boiler stack.

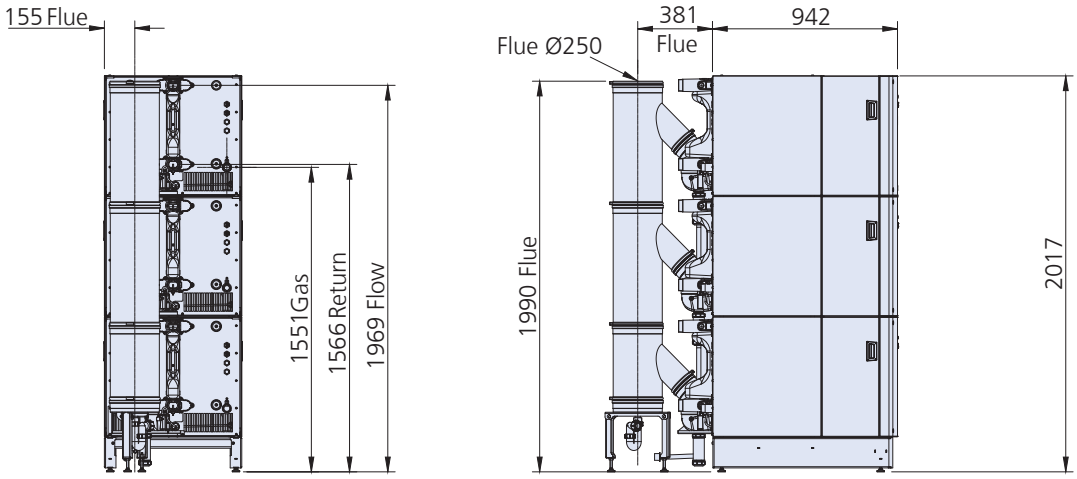
6 MODELS

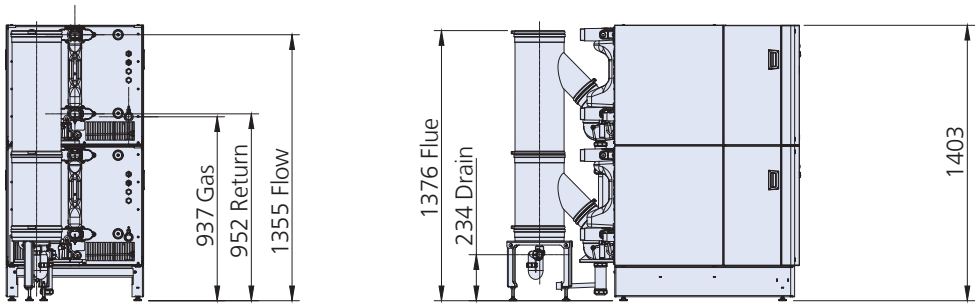
197-740 kW OUTPUT

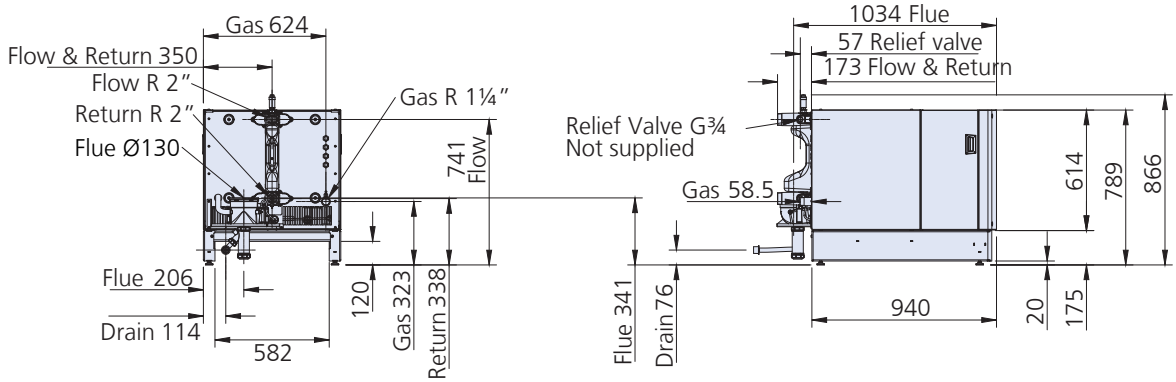
Technical data & dimensions

Models UF200-1, UF400-2, UF600-3, UF250-1, UF500-2, UF750-3
200 and **250kW** modules

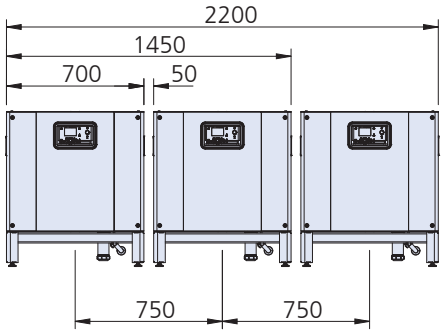
	Boiler model	Units	UF200-1	UF400-2	UF600-3	UF250-1	UF500-2	UF750-3
	No. of modules		1	2	3	1	2	3
Energy	Building Regulations Part L seasonal efficiency	% gross	96.5	96.5	96.5	94.3	94.3	94.3
	Building Regulations Part L seasonal efficiency	% nett	107.2	107.2	107.2	104.8	104.8	104.8
	Boiler output 80/60°C	kW	181.7	363.4	545.1	229.4	458.8	688.2
	Boiler output 50/30°C	kW	197.9	395.8	593.7	246.9	493.8	740.7
	Boiler input gross (maximum)	kW	208.9	417.7	626.6	261.9	523.9	785.8
	Boiler input nett (maximum)	kW	188.1	376.1	564.2	235.9	471.7	707.6
	Boiler output 80/60°C (minimum)	kW	36.3	36.3	36.3	45.9	45.9	45.9
	Boiler output 50/30°C (minimum)	kW	39.6	39.6	39.6	49.4	49.4	49.4
Water	Water content	litres	16.2	32.4	48.6	19.8	39.6	59.4
	System design flow rate @ 11°C ΔT rise	l/s	4.3	8.7	13	5.4	10.9	16.3
	Water side pressure loss @ 11°C ΔT rise	mbar	710	710	710	767	767	767
	System design flow rate @ 20°C ΔT rise	l/s	2.4	4.8	7.2	3	6	9
	Water side pressure loss @ 20°C ΔT rise	mbar	217	217	217	234	234	234
	Minimum operating water pressure	barg	0.5	0.5	0.5	0.5	0.5	0.5
	Maximum operating water pressure	barg	5.3	5.3	5.3	5.3	5.3	5.3
	Maximum water pressure	barg	6	6	6	6	6	6
	Maximum flow temperature setting	°C	85	85	85	85	85	85
	Minimum flow temperature setting	°C	30	30	30	30	30	30
Gas	Gas flow rate (maximum) (Nat gas)	m^3/hr	19.1	38.2	57.3	25	49.9	74.9
	Gas flow rate (maximum) (LPG)	m^3/hr	7.7	15.4	23.1	9.7	19.4	29.1
	Nominal inlet pressure (Nat gas)	mbar	20	20	20	20	20	20
	Nominal inlet pressure (LPG)	mbar	37	37	37	37	37	37
	Maximum inlet pressure (Nat gas)	mbar	25	25	25	25	25	25
	Maximum inlet pressure (LPG)	mbar	45	45	45	45	45	45
Flue	Approx flue gas volume @ 72°C , 9.0% CO_2	m^3/hr	314	628	942	394	788	1182
	Maximum flue gas temperature @ 80/60°C	°C	72	72	72	72	72	72
	Maximum flue gas temperature @ 50/30°C	°C	42	42	42	42	42	42
	Pressure available at flue connection	Pa mbar	150 1.5	150 1.5	150 1.5	150 1.5	130 1.3	130 1.3
	NOx,pond,Hs (gross) emission (0% excess oxygen, dry air) (Nat gas)	mg/kWh	33	33	33	35	35	35
	NOx,pond,Hs (gross) emission (0% excess oxygen, dry air) (LPG)	mg/kWh	49	49	49	40.1	40.1	40.1
	NOx,pond (nett) emission (0% excess oxygen, dry air) (Nat gas)	mg/kWh	36	36	36	39	39	39
	NOx,pond (nett) emission (0% excess oxygen, dry air) (LPG)	mg/kWh	53.3	53.3	53.3	43.6	43.6	43.6
	NOx Class		6	6	6	6	6	6
Connection	Water flow/return connections	inches	R2-11	R2-11	R2-11	R2-11	R2-11	R2-11
	Gas inlet connection pipe thread size	inches	G1¼	G1¼	G1¼	G1¼	G1¼	G1¼
	Flue connection diameter (I/D)	mm	130	250	250	130	250	250
	Condensate trap connections (O/D)	mm	34	34	34	34	34	34
Electrics	Electrical supply		230V ~ 50Hz	230V ~ 50Hz	230V ~ 50Hz	230V ~ 50Hz	230V ~ 50Hz	230V ~ 50Hz
	Power consumption - maximum boiler modulation	W	220	440	660	285	570	855
	Run current (per module)	Amp	1	1	1	1.2	1.2	1.2
	Approx shipping weight	kg	220	422	624	247	476	705
	Noise emission @1m @max modulation (per module)	Max dB (A)	59.7	59.7	59.7	58.5	58.5	58.5

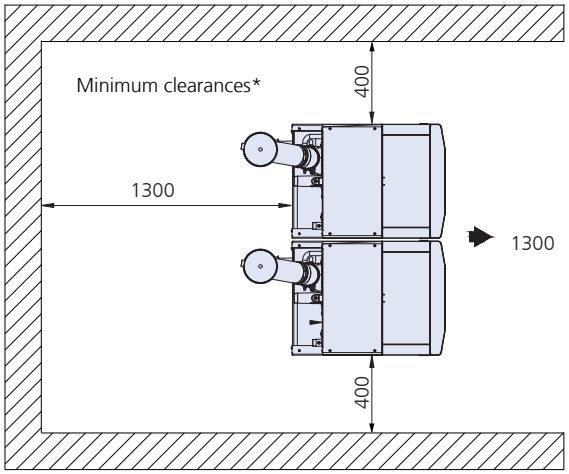






Minimum boiler to boiler spacing





Note: All dimensions in mm unless otherwise stated.

*Note: the rear clearance allows for installation of a Hamworthy pipe kit. If installing a third stack of boilers either an additional 500mm clearance would be required behind the pipe kit or the spacer spool (400mm) would need to be fitted between the second and third boiler stack.

6 MODELS

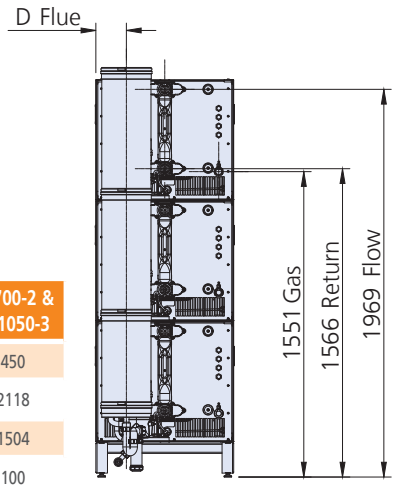
295-1046 kW OUTPUT

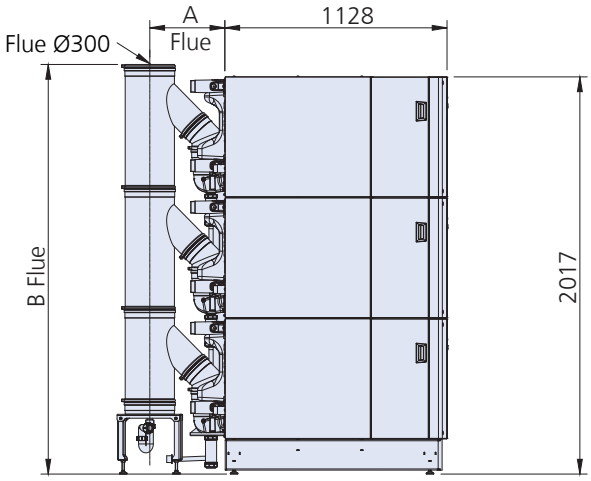
Technical data & dimensions

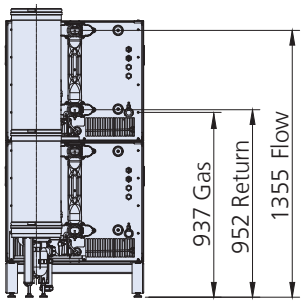
Models UF300-1, UF600-2, UF900-3, UF350-1, UF700-2, UF1050-3
300 and **350kW** modules

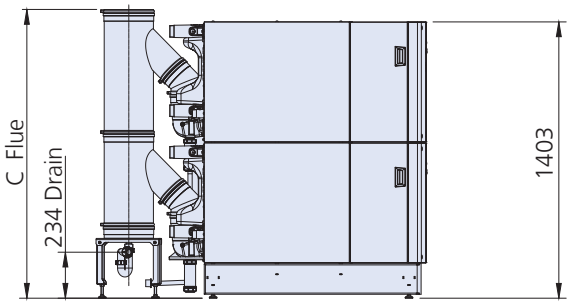
	Boiler model	Units	UF300-1	UF600-2	UF900-3	UF350-1	UF700-2	UF1050-3
	No. of modules		1	2	3	1	2	3
Energy	Building Regulations Part L seasonal efficiency	% gross	95.6	95.6	95.6	96.9	96.9	96.9
	Building Regulations Part L seasonal efficiency	% nett	106.2	106.2	106.2	107.7	107.7	107.7
	Boiler output 80/60°C	kW	273	546	819	316.4	632.8	949.2
	Boiler output 50/30°C	kW	295.9	591.8	887.7	348.9	697.8	1046.7
	Boiler input gross (maximum)	kW	314.6	629.1	943.7	360.8	721.6	1082.5
	Boiler input nett (maximum)	kW	283.3	566.5	849.8	324.9	649.8	974.8
	Boiler output 80/60°C (minimum)	kW	54.6	54.6	54.6	63.3	63.3	63.3
	Boiler output 50/30°C (minimum)	kW	59.2	59.2	59.2	69.8	69.8	69.8
Water	Water content	litres	23.4	46.8	70.2	27	54	81
	System design flow rate @ 11°C ΔT rise	l/s	6.5	13	19.6	7.6	15.2	22.8
	Water side pressure loss @ 11°C ΔT rise	mbar	807	807	807	835	835	835
	System design flow rate @ 20°C ΔT rise	l/s	3.6	7.2	10.8	4.2	8.4	12.6
	Water side pressure loss @ 20°C ΔT rise	mbar	246	246	246	255	255	255
	Minimum operating water pressure	barg	0.5	0.5	0.5	0.5	0.5	0.5
	Maximum operating water pressure	barg	5.3	5.3	5.3	5.3	5.3	5.3
	Maximum water pressure	barg	6	6	6	6	6	6
	Maximum flow temperature setting	°C	85	85	85	85	85	85
	Minimum flow temperature setting	°C	30	30	30	30	30	30
Gas	Gas flow rate (maximum) (Nat gas)	m^3/hr	30	60	89.9	34.4	68.8	103.1
	Gas flow rate (maximum) (LPG)	m^3/hr	11.6	23.2	34.8	13.3	26.6	39.9
	Nominal inlet pressure (Nat gas)	mbar	20	20	20	20	20	20
	Nominal inlet pressure (LPG)	mbar	37	37	37	37	37	37
	Maximum inlet pressure (Nat gas)	mbar	25	25	25	25	25	25
	Maximum inlet pressure (LPG)	mbar	45	45	45	45	45	45
Flue	Approx flue gas volume @ 72°C , 9.0% CO_2	m^3/hr	474	948	1422	543	1086	1629
	Maximum flue gas temperature @ 80/60°C	°C	72	72	72	72	72	72
	Maximum flue gas temperature @ 50/30°C	°C	42	42	42	42	42	42
	Pressure available at flue connection	Pa mbar	100 1	100 1	80 0.8	110 1.1	70 0.7	60 0.6
	NOx,pond,Hs (gross) emission (0% excess oxygen, dry air) (Nat gas)	mg/kWh	34	34	34	36	36	36
	NOx,pond,Hs (gross) emission (0% excess oxygen, dry air) (LPG)	mg/kWh	47.3	47.3	47.3	47.1	47.1	47.1
	NOx,pond (nett) emission (0% excess oxygen, dry air) (Nat gas)	mg/kWh	37	37	37	40	40	40
	NOx,pond (nett) emission (0% excess oxygen, dry air) (LPG)	mg/kWh	51.5	51.5	51.5	51.2	51.2	51.2
	NOx Class		6	6	6	6	6	6
Connection	Water flow/return connections	inches	R2-11	R2-11	R2-11	R2-11	R2-11	R2-11
	Gas inlet connection pipe thread size	inches	G1¼	G1¼	G1¼	G1¼	G1¼	G1¼
	Flue connection diameter (I/D)	mm	130	300	300	130	300	300
	Condensate trap connections (O/D)	mm	34	34	34	34	34	34
Electrics	Electrical supply		230V ~ 50Hz	230V ~ 50Hz	230V ~ 50Hz	230V ~ 50Hz	230V ~ 50Hz	230V ~ 50Hz
	Power consumption - maximum boiler modulation	W	442	884	1326	508	1016	1524
	Run current (per module)	Amp	1.9	1.9	1.9	2.2	2.2	2.2
	Approx shipping weight	kg	287	551	815	310	597	884
	Noise emission @1m @max modulation (per module)	Max dB (A)	60.9	60.9	60.9	60.9	60.9	60.9

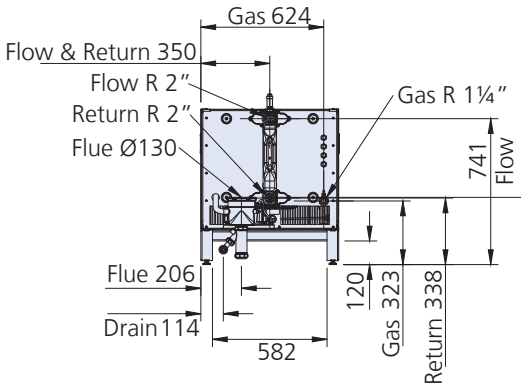
Ref.	UF600-2 & UF900-3	UF700-2 & UF1050-3
A	381	450
B	2080	2118
C	1466	1504
D	155	100

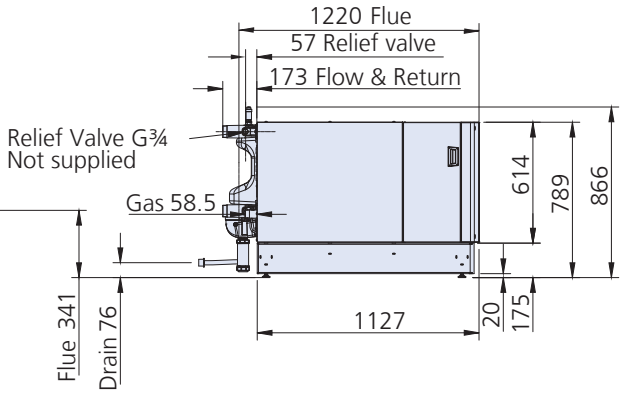




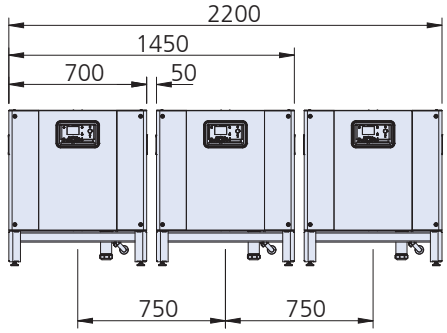


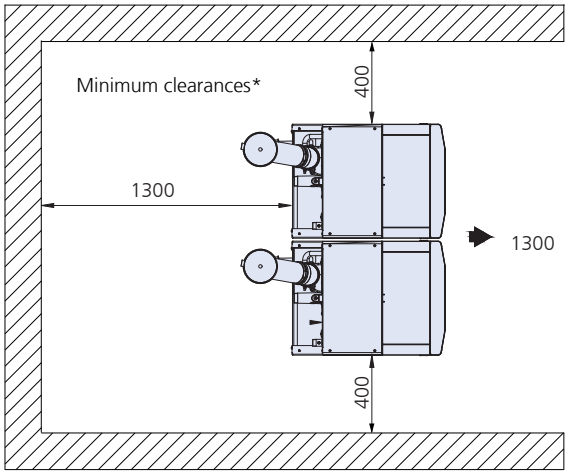






Minimum boiler to boiler spacing





Note: All dimensions in mm unless otherwise stated.

*Note: the rear clearance allows for installation of a Hamworthy pipe kit. If installing a third stack of boilers either an additional 500mm clearance would be required behind the pipe kit or the spacer spool (400mm) would need to be fitted between the second and third boiler stack.

4 MODELS

197-441 kW OUTPUT

Pipe kit details & dimensions

Models UF200-2, UF300-3, UF300-2 and UF450-3
100mm dia. headers for 2 and 3 high stacked
100 or 150kW modules, max 12 modules up to **1.8MW**

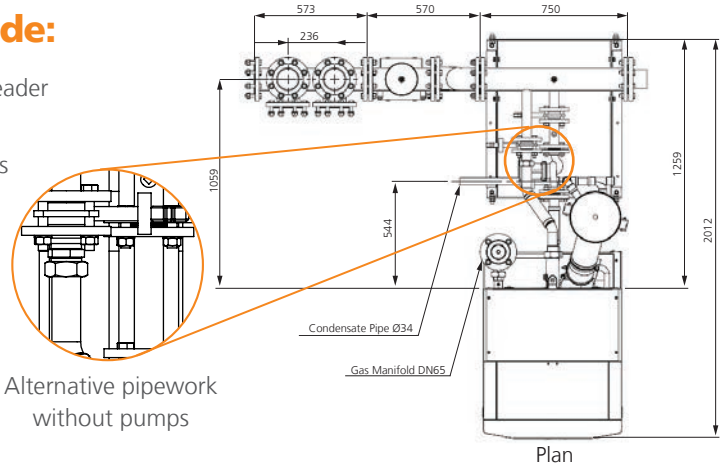
Designed to save time and simplify installation, optional pipe kits are available for Upton boilers. The kits enable multiple boilers to be connected in configurations of 2 and 3 modules high. Vertical stacks can be installed side by side. The pipe kits are factory tested and supplied part assembled for ease of installation.

Pipe kits are available with or without matched boiler pumps and the required model must be specified when ordering.

Upton model	Module output (kW)	No. of modules	Pump	Pipe kit weight (kg)	
				With pump	Without pump
UF200-2	100	2	Wilo Yonos Maxo 25/0.5-12	130	121
UF300-3	100	3	Wilo Yonos Maxo 25/0.5-12	193	165
UF300-2	150	2	Wilo Yonos Maxo 25/0.5-12	130	121
UF450-3	150	3	Wilo Yonos Maxo 25/0.5-12	193	165

Pre-assembled pipe kits include:

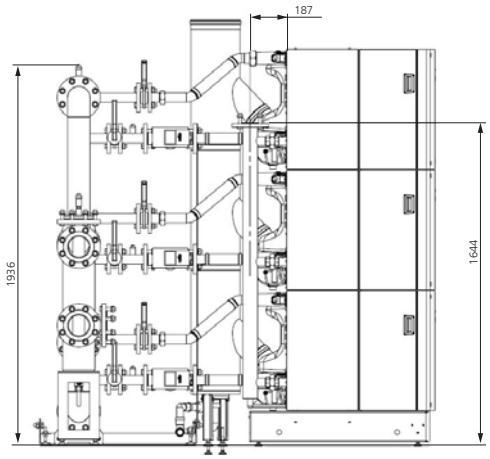
- Automatic air vents on manifold and low loss header
- Condensate pipe drainwork
- Connections for pressurisation unit and end caps
- Flushing points
- Boiler safety relief valve
- Optional matched pumps signalled by boiler LMS (see page 20)
- Optional matched low loss header with combined air and dirt separator (see page 14)
- Optional 3 port manifold kit (see page 14)



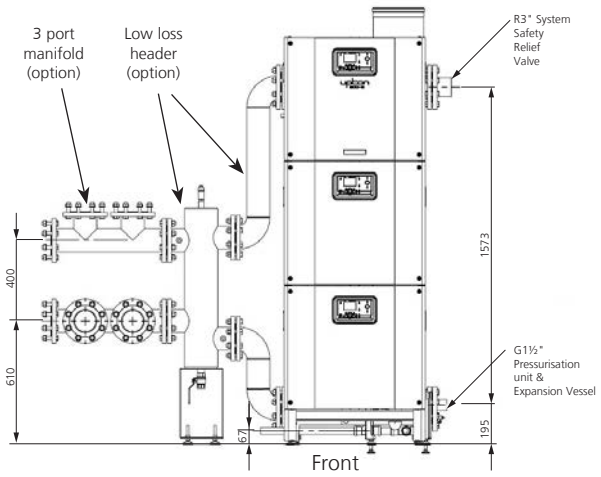
Alternative pipework without pumps

Plan

3-high pipe kits with 100mm dia. for Upton models UF300-3 and UF450-3

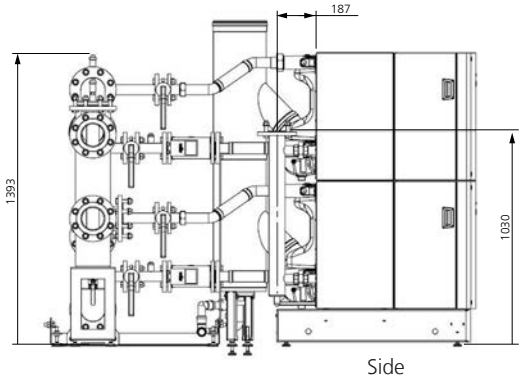


Side



Front

2-high pipe kits with 100mm dia. for Upton models UF200-2 and UF300-2



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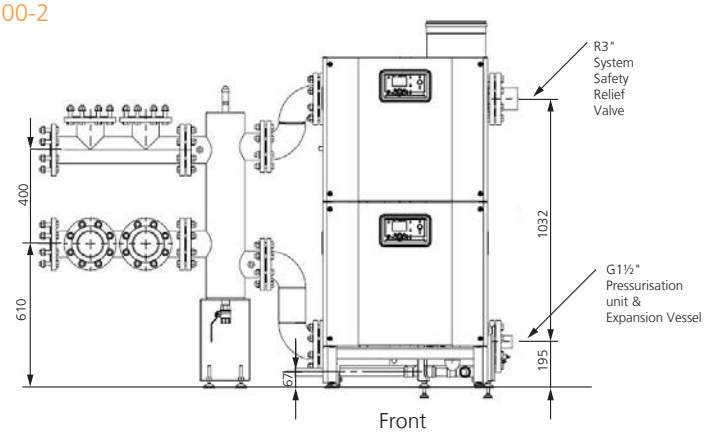


Front

Note: All dimensions in mm unless otherwise stated.

4 MODELS

395-740 kW OUTPUT

Pipe kit details & dimensions

Models UF400-2, UF600-3, UF500-2 and UF750-3
150mm dia. headers for 2 and 3 high stacked
200 or 250kW modules, max 12 modules up to **3.0MW**

Designed to save time and simplify installation, optional pipe kits are available for Upton boilers. The kits enable multiple boilers to be connected in configurations of 2 and 3 modules high. Vertical stacks can be installed side by side. The pipe kits are factory tested and supplied part assembled for ease of installation.

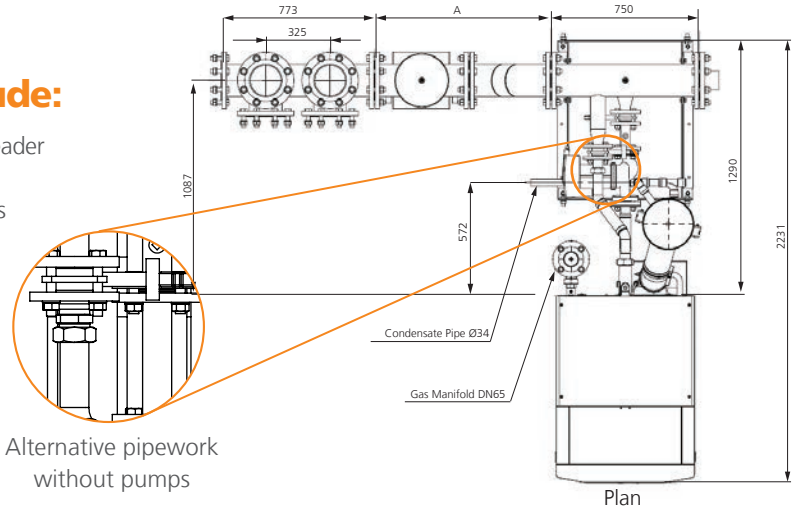
Pipe kits are available with or without matched boiler pumps and the required model must be specified when ordering.

Upton model	Module output (kW)	No. of modules	A (mm)	Pump	Pipe kit weight (kg)	
					With pump	Without pump
UF400-2	200	2	891	Wilo Yonos Maxo 40/0.5-12	186	160
UF600-3	200	3	808	Wilo Yonos Maxo 40/0.5-12	254	215
UF500-2	250	2	891	Wilo Yonos Maxo 40/0.5-12	186	160
UF750-3	250	3	808	Wilo Yonos Maxo 40/0.5-12	254	215

Pre-assembled pipe kits include:

- Automatic air vents on manifold and low loss header
- Condensate pipe drainwork
- Connections for pressurisation unit and end caps
- Flushing points
- Boiler safety relief valve
- Optional matched pumps signalled by boiler LMS (see page 20)
- Optional matched low loss header with combined air and dirt separator (see page 14)
- Optional 3 port manifold kit (see page 14)

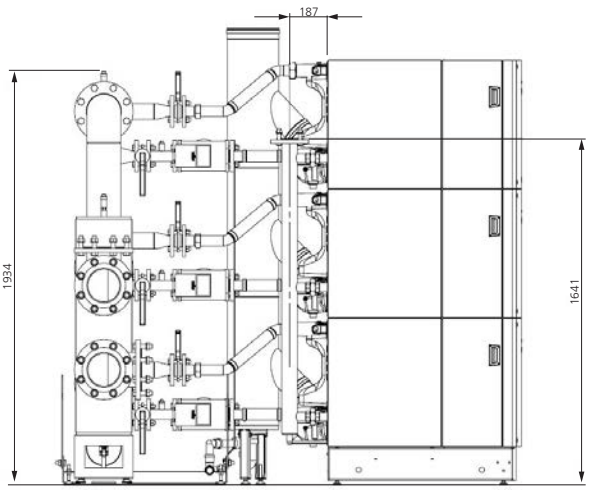
Note: All dimensions in mm unless otherwise stated.



Alternative pipework without pumps

Plan

3-high pipe kits with 150mm dia. for Upton models UF600-3 and UF750-3



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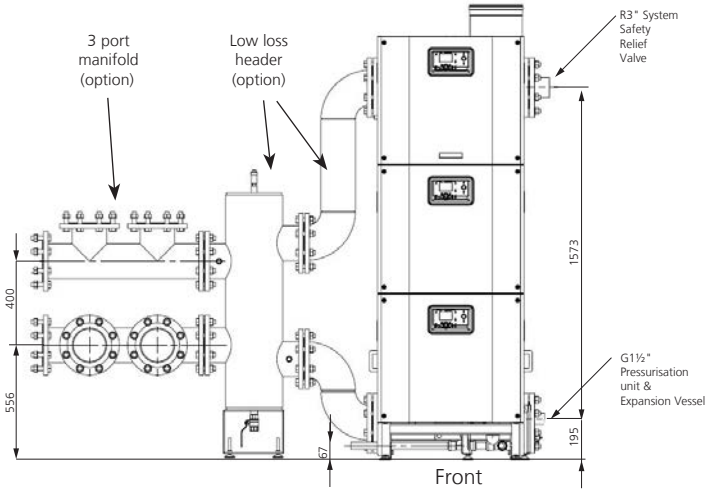
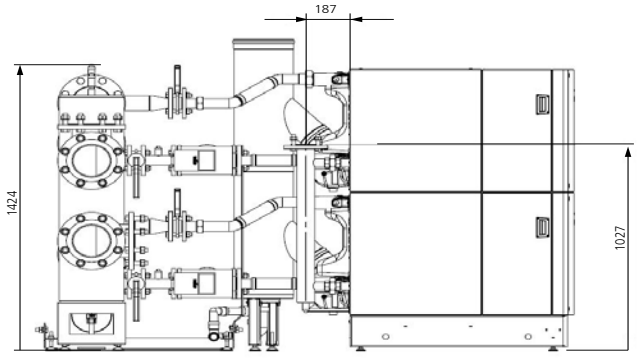
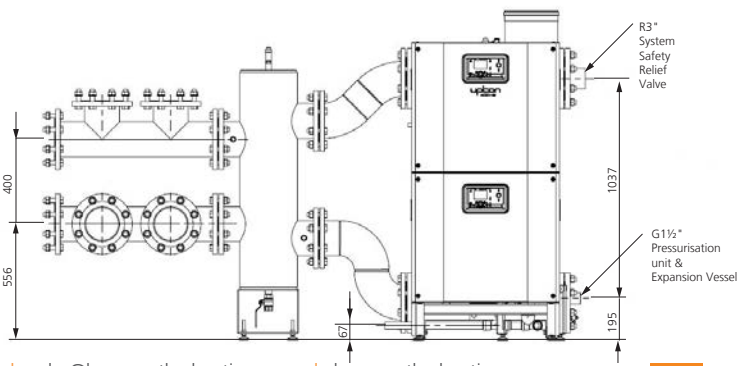


Front

2-high pipe kits with 150mm dia. for Upton models UF400-2 and UF500-2





4 MODELS

591-1046 kW OUTPUT

Pipe kit details & dimensions

Models UF600-2, UF900-3, UF700-2 and UF1050-3
150mm dia. headers for 2 and 3 high stacked
300 or 350kW modules, max 6 modules up to **2.1MW** (for installations up to **4.2MW** see p13)

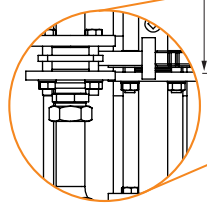
Designed to save time and simplify installation, optional pipe kits are available for Upton boilers. The kits enable multiple boilers to be connected in configurations of 2 and 3 modules high. Vertical stacks can be installed side by side. The pipe kits are factory tested and supplied part assembled for ease of installation. This pipekit model features a larger pump than the DN150 model on page 11 to enable it to be used with the larger output boiler modules.

Pipe kits are available with or without matched boiler pumps and the required model must be specified when ordering.

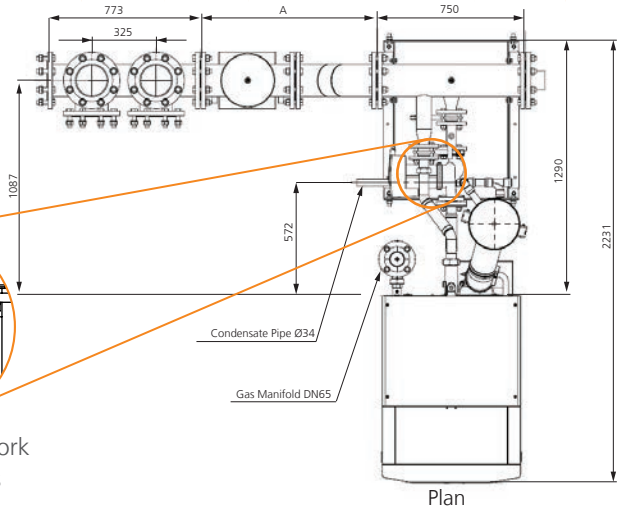
Upton model	Module output (kW)	No. of modules	A (mm)	Pump	Pipe kit weight (kg)	
					With pump	Without pump
UF600-2	300	2	891	Wilo Yonos Maxo 40/0.5-16	206	160
UF900-3	300	3	808	Wilo Yonos Maxo 40/0.5-16	284	215
UF700-2	350	2	891	Wilo Yonos Maxo 40/0.5-16	206	160
UF1050-3	350	3	808	Wilo Yonos Maxo 40/0.5-16	284	215

Pre-assembled pipe kits include:

- Automatic air vents on manifold and low loss header
- Condensate pipe drainwork
- Connections for pressurisation unit and end caps
- Flushing points
- Boiler safety relief valve
- Optional matched pumps signalled by boiler LMS (see page 20)
- Optional matched low loss header with combined air and dirt separator (see page 14)
- Optional 3 port manifold kit (see page 14)

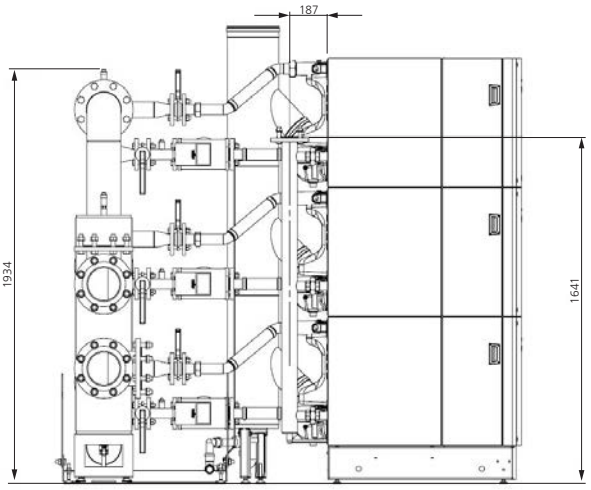


Alternative pipework without pumps

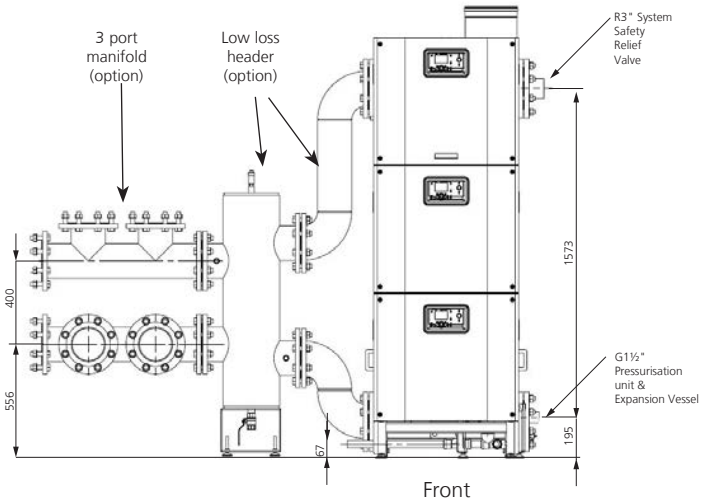


Plan

3-high pipe kits with 150mm dia. for Upton models UF900-3 and UF1050-3



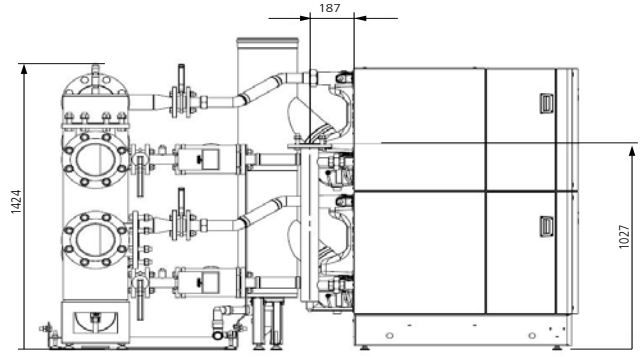
Side



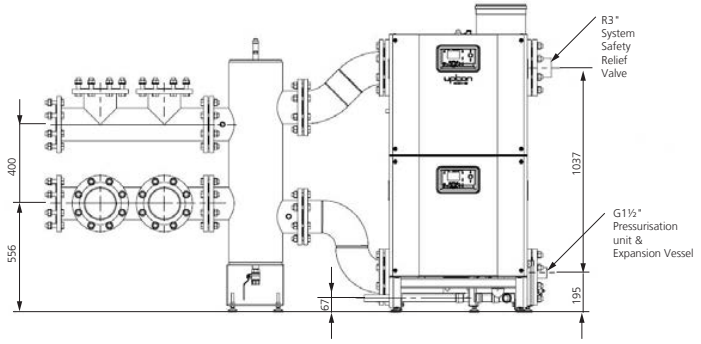
Front

2-high pipe kits with 150mm dia. for Upton models UF600-2 and UF700-2

Note: All dimensions in mm unless otherwise stated.



Side



Front

4 MODELS

591-1046 kW OUTPUT

Pipe kit details & dimensions

Models UF600-2, UF900-3, UF700-2 and UF1050-3
200mm dia. headers for 2 and 3 high stacked
300 or 350kW modules, max 12 modules up to **4.2MW**

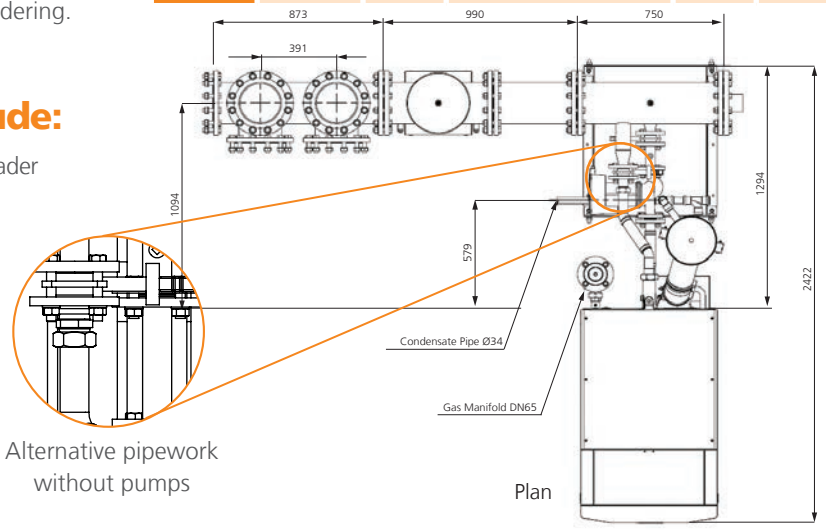
Designed to save time and simplify installation, optional pipe kits are available for Upton boilers. The kits enable multiple boilers to be connected in configurations of 2 and 3 modules high. Vertical stacks can be installed side by side. The pipe kits are factory tested and supplied part assembled for ease of installation.

Pipe kits are available with or without matched boiler pumps and the required model must be specified when ordering.

Upton model	Module output (kW)	No. of modules	Pump	Pipe kit weight (kg)	
				With pump	Without pump
UF600-2	300	2	Wilo Yonos Maxo 40/0.5-16	241	197
UF900-3	300	3	Wilo Yonos Maxo 40/0.5-16	318	252
UF700-2	350	2	Wilo Yonos Maxo 40/0.5-16	241	197
UF1050-3	350	3	Wilo Yonos Maxo 40/0.5-16	318	252

Pre-assembled pipe kits include:

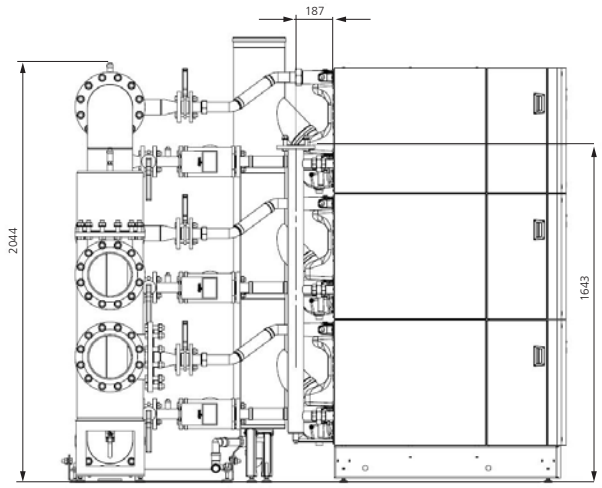
- Automatic air vents on manifold and low loss header
- Condensate pipe drainwork
- Connections for pressurisation unit and end caps
- Flushing points
- Boiler safety relief valve
- Optional matched pumps signalled by boiler LMS (see page 20)
- Optional matched low loss header with combined air and dirt separator (see page 14)
- Optional 3 port manifold kit (see page 14)



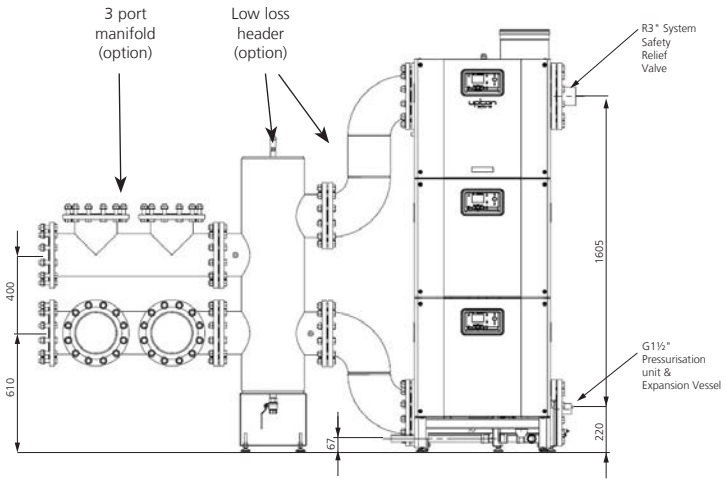
Alternative pipework without pumps

Plan

3-high pipe kits with 200mm dia. for Upton models UF900-3 and UF1050-3



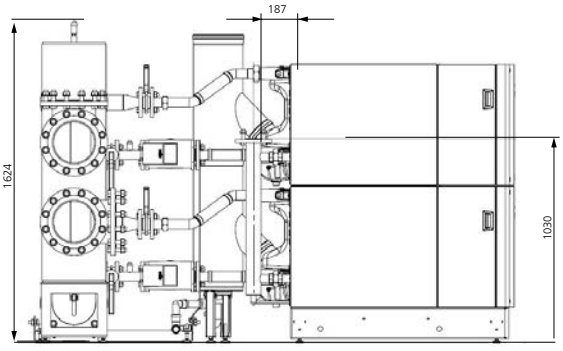
Side

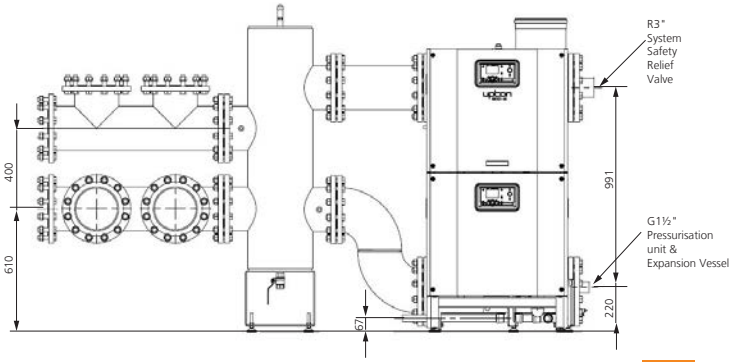


Front

2-high pipe kits with 200mm dia. for Upton models UF600-2 and UF700-2

Note: All dimensions in mm unless otherwise stated.





Low loss header & 3 port manifold

When choosing Hamworthy pipework kits you can also select the following optional components:

- Low loss header with combined air and dirt separator
- 3 port manifolds (pair)
- Blanking plates (pair) with tappings for boiler safety relief valve and pressurisation stubs.

The sizes are matched to the pipework kits to help speed up installation and simplify procurement.

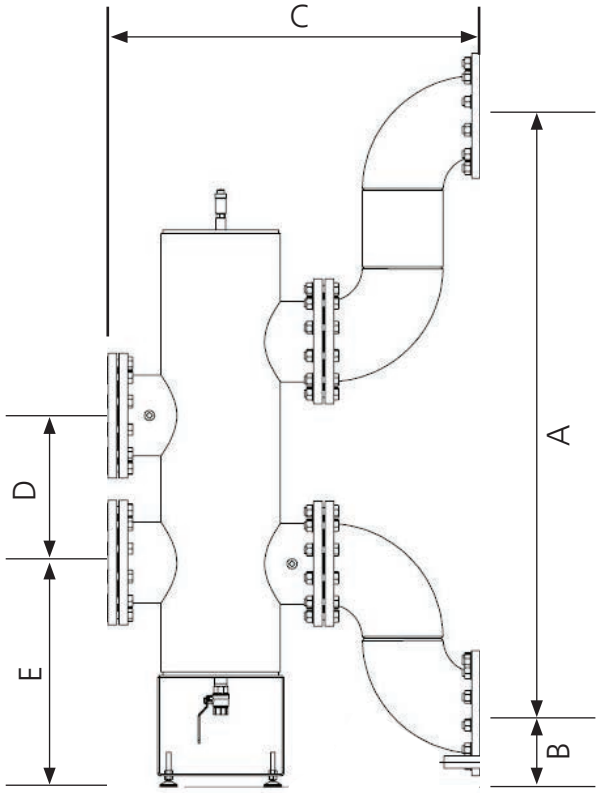
Low loss header & pipework (optional)

	DN100		DN150		DN200	
	2 High	3 High	2 High	3 High	2 High	3 High
A (mm)	1052	1593	1057	1598	1011	1625
B (mm)	175	175	175	175	200	200
C (mm)	570	570	891	808	990	990
D (mm)	400	400	400	400	400	400
E (mm)	610	610	556	556	610	610
Weight (kg)	125	132	338	349	416	438

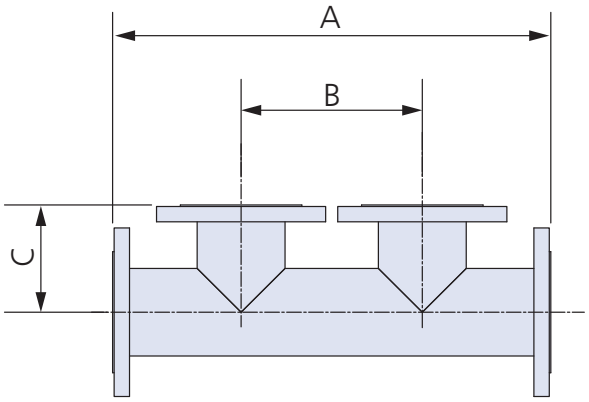
Manifold extension kits (optional)

	DN100	DN150	DN200
A	573	773	873
B	236	325	391
C	140	180	210
Weight (kg)	64	98	160

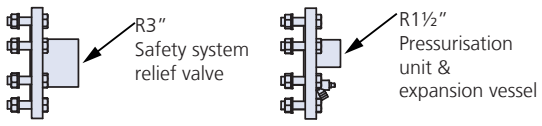
Low loss header & pipework (optional)



Manifold extension kits (optional)



Blanking plate (optional)



Available in DN100, DN150 and DN200

Electrical connections

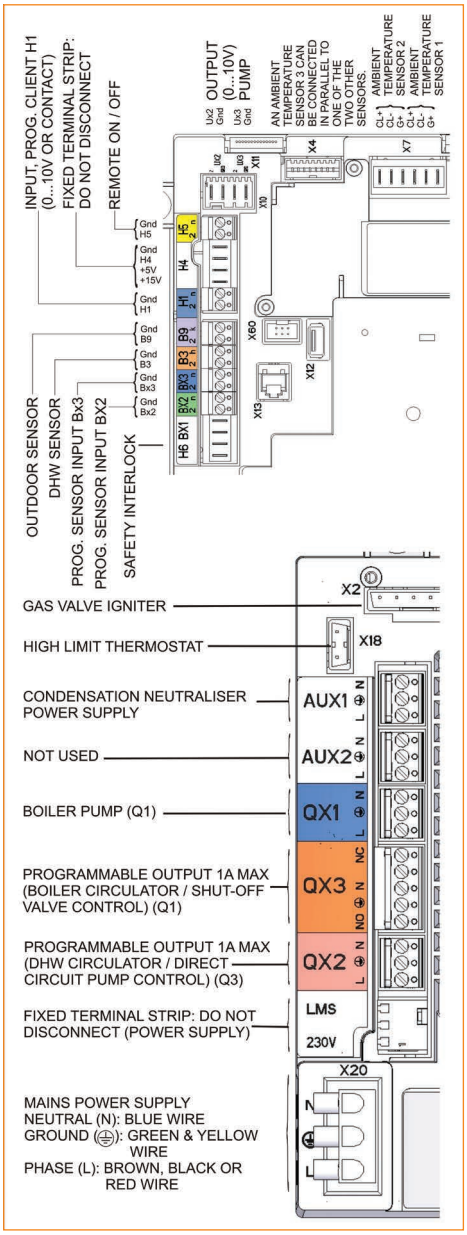
Connections to boiler

Low voltage connections

Terminal reference	Function	Electrical	Max load
H5	Remote On/Off (vfc switch)	24V DC	
H4	Not for customer use		
H1	Programmable input for: 1. 0-10V analogue signal 2. Remote enable switch/time clock (vfc switch)	0-10V 24V DC	
B9	Input for outside air temperature sensor	Resistance input	
B3	Programmable input for DHW temperature: 1. QAZ36 DHW sensor kit input 2. Mechanical thermostat input (vfc switch)	Resistance input 24V DC	
BX3	Programmable input - spare		
BX2	Programmable input for: 1. Common flow sensor for master/slave sequence control (Master boiler only)	Resistance input	
BX1	Not for customer use		
H6	Safety interlock	5V DC	

High voltage connections

Terminal reference	Function	Electrical	Max load
AUX1	Power supply to condensate neutraliser where fitted	230v 50Hz 1Ph	1 Amp
AUX2	Power supply to optional controls kit for: 1. Optional volt free contacts (run and fault signal) 2. Optional heating circuit control kits	230v 50Hz 1Ph	
QX1	Programmable power supply for either: 1. Alarm - common fault 2. Non-Hamworthy boiler shunt pump/circulator	230v 50Hz 1Ph	1 Amp
QX3	Programmable power supply for either: 1. Boiler shut off valve 2. Non-Hamworthy boiler shunt pump/circulator 3. Direct uncompensated heating circuit pump	230v 50Hz 1Ph	
QX2	Programmable power supply for either: 1. DHW pump/circulator 2. Direct uncompensated heating circuit pump	230v 50Hz 1Ph	
LMS 230V	Not for customer use		
L N E	Main power supply	230v 50Hz 1Ph	6.3 Amp



Electrical Connections

There are three dedicated electrical conduit connections at the rear left hand side of each boiler module to accept cables for power supply and controls. These conduits are routed through the casing to the control panel located at the front of the boiler. Cables carrying mains voltage (230V 50Hz 1Ph) for electrical supply and pump outputs should be routed via a separate conduit to low voltage cables serving sensors and enable circuits.

Power Supply

An independent isolator and fused electrical supply is recommended for each boiler module. Supply 230 volt, 50Hz, single phase. Wiring external to the boiler must be installed in accordance with IET Regulations and any local regulations which apply. Wiring must be completed in heat resistant 3 core cable, (size 1.0 mm² c.s.a.) Fascia fuse rating is 2 amp. External fuses should be 6 amp for all single boiler sizes.
To prevent drawing excessive current (>1 amp) through the boiler control panel, it is recommended that pumps are connected via contactors.

Specification

Burner (1)

A pre-mix, fully modulating cylindrical burner is positioned centrally within the heat exchanger. At 5:1 turndown ratio per module it offers excellent turndown capabilities to ensure the load can be accurately matched. The burner uses a push fit system for easy dismantling and reassembly to the fan duct when the boiler is being serviced.

Operating efficiency

Dependent on operating temperatures the Upton boiler is capable of delivering high efficiency with part load efficiency in excess of 108% Nett and full load efficiency exceeding 99% Nett across the whole boiler range.

The boiler range exceeds the minimum requirements of Building Regulations Part L and European ErP legislation for both new and existing buildings.

MCPD

The Medium Combustion Plant Directive (MCPD) is legislation that regulates individual combustion plants with a rated thermal input greater than or equal to 1MW but less than 50MW. The Upton UF1050-3 falls into this category. The boiler is compliant with the emission limit values but registration/permission is required from the relevant authority before the plant can be put to service. Find out more at hamworthy-heating.com/mcpd

Spark ignition

The burner is lit directly using a spark ignition, which offers improved reliability over hot surface ignitors as well as consistent operation. Flame proving is achieved by means of a flame rectification probe.

Air inlet filter (2)

Combustion air drawn from the plantroom passes through an air inlet filter ensuring particle free clean combustion. The trapped dirt is highly visible allowing fast assessment of whether maintenance is required and the filter is far easier to clean than if dirt was allowed to clog the burner.

Connections (3)

All models in the Upton range have identically positioned water and gas connections allowing the easy change of model size with minimal changes to the design of associated pipe work.

Condensate discharge

Due to the high thermal efficiency of modern boilers, condensation will occur within the boiler during firing from a cold start, in low load conditions and when the return temperature falls below 55°C.

A drain with an integral trap is fitted to the rear of each module to enable the disposal of the condensate, and to the base of the flue riser supplied with 2 and 3 high stacked boilers. Furthermore on 2 and 3 high stacked models, the condensate traps are linked to the trap below to allow for simple and easier condensate drainage pipework.

Water systems

The Upton is designed for a maximum working pressure of 6 bar, with each module tested to 1.5 times the working pressure to ensure reliability. Connections for installing Safety Relief Valves (SRVs) are provided on each boiler module but are not supplied with the boiler.

Where water feed quality has a degree of hardness, Hamworthy strongly recommends that the water be treated to prevent the build-up of scale or sludge in the boiler water passageways.


1. Burner


2. Air inlet filter


3. Connections

Heat exchanger

The Upton range utilises an aluminium sectional heat exchanger at its heart. Designed in Britain, specifically for the Upton boiler, the one-piece casting features two waterways in a parallel flow. This guarantees there is an equal flow of water through the heat exchanger preventing hot spots. This low water content heat exchanger also features a high-water velocity ensuring that any scale build up is pulled off in small chunks, reducing the potential for areas of large scale build up. The heat exchanger has a polypropylene sump to connect to the flue system and condensate is drained safely away via a trap.

Fin and pin design

Fingers guide water in a serpentine route through the heat exchanger, and rubber seals ensure there is no bypassing.

Features

- Parallel flow for even heat distribution
- Quick to respond with low water content
- One piece casting with two water paths for higher flow velocity
- Highly efficient heat transfer
- 5-year warranty
- Tested up to 32 bar, certified for 6 bar

Aluminium sectional heat exchanger

Flow switch

Protecting the boiler from inadequate circulation, the integral water flow switch prevents the boiler from firing should the flow rate become too low.

Pressure sensor

The boiler is protected from both high and low water pressure conditions. Water pressure within the boiler is monitored by the integral sensor and the boiler prevented from operating under the following conditions:

- **High pressure** - The burner is prevented from firing should internal boiler pressure reach 6 bar and released for operation once the pressure drops to 5.8 bar.
- **Low pressure** - The burner is reduced to 20% modulation should internal pressure drop below 1 bar, and prevented from firing should internal pressure drop below 0.8 bar. Once the internal pressure recovers to 1 bar the burner operates at 20% modulation until pressure reaches 1.2 bar when full burner modulation resumes.

Remote signalling

Optional volt free contacts are available to indicate common fault and normal run. The contacts are BMS compatible and allow remote monitoring of boiler operating status.

One volt free contact kit must be specified per boiler module, e.g. for an Upton three high stacked boiler, 3 volt free contact kits should be specified.

Temperature controls (4)

Upton boilers can operate independently using their integral temperature control. Flow temperature is monitored using an electronic flow temperature sensor with a corresponding maximum set point of 85°C. The boiler control will modulate the burner set point back as the temperature set point is approached for near continuous operation with minimum cycling.

The boiler control can also be configured to receive a 0-10 volt analogue BMS signal to define either the temperature set point up to the maximum 85°C, or the burner load setting up to the maximum 100% output.

Each boiler is additionally fitted with a manual reset high limit thermostat factory set to 95°C but which can be set up to a maximum of 110°C dependent on application.

Sealed systems

The Upton boiler is designed for use on sealed & pressurised heating systems only. Sealed systems are advantageous as they take up less space, assist with system cleanliness, improve water quality and reduce oxygen ingress. Sealed systems also benefit from having all equipment (pressurisation units and expansion vessels) within the plantroom making service and maintenance simpler.

Flues (5)

Upton boilers are suitable for B23p open flue system only.

Each Upton boiler module combination is designed for direct connection to a flue system. The two-module and three-module boiler stacks are supplied with a separate close-coupled vertical flue header to connect each module's flue spigot to a common outlet, and includes a condensate trap at the lowest point in the header as well as a flue support bracket for improved stability of the flue.

The outlets from more than one boiler or boiler stack may be connected to a single chimney. A fixed draught diverter is not required in the flue system, however, a draught stabiliser is recommended for some installations.

The flue system must be capable of handling the wet flue gases, and horizontal sections should incorporate a fall for drainage of the condensate that forms in the flue system. Refer to pages 26-28 for further details on the flue system.

Primary circulation pumps (6)

To aid the ease of installation, Upton boilers can be supplied with optional matched primary circuit pumps (Wilo Yonos Maxo pumps) when ordered with Hamworthy pipe kits. These pumps are connected to, and signalled by, the boilers LMS controls. For more information, see page 20.

Noise

Upton boilers are low noise and as such are suitable for use in plantrooms with a close proximity to the buildings occupants, such as in hospitals, offices and classrooms.

4. Temperature controls

5. Flues

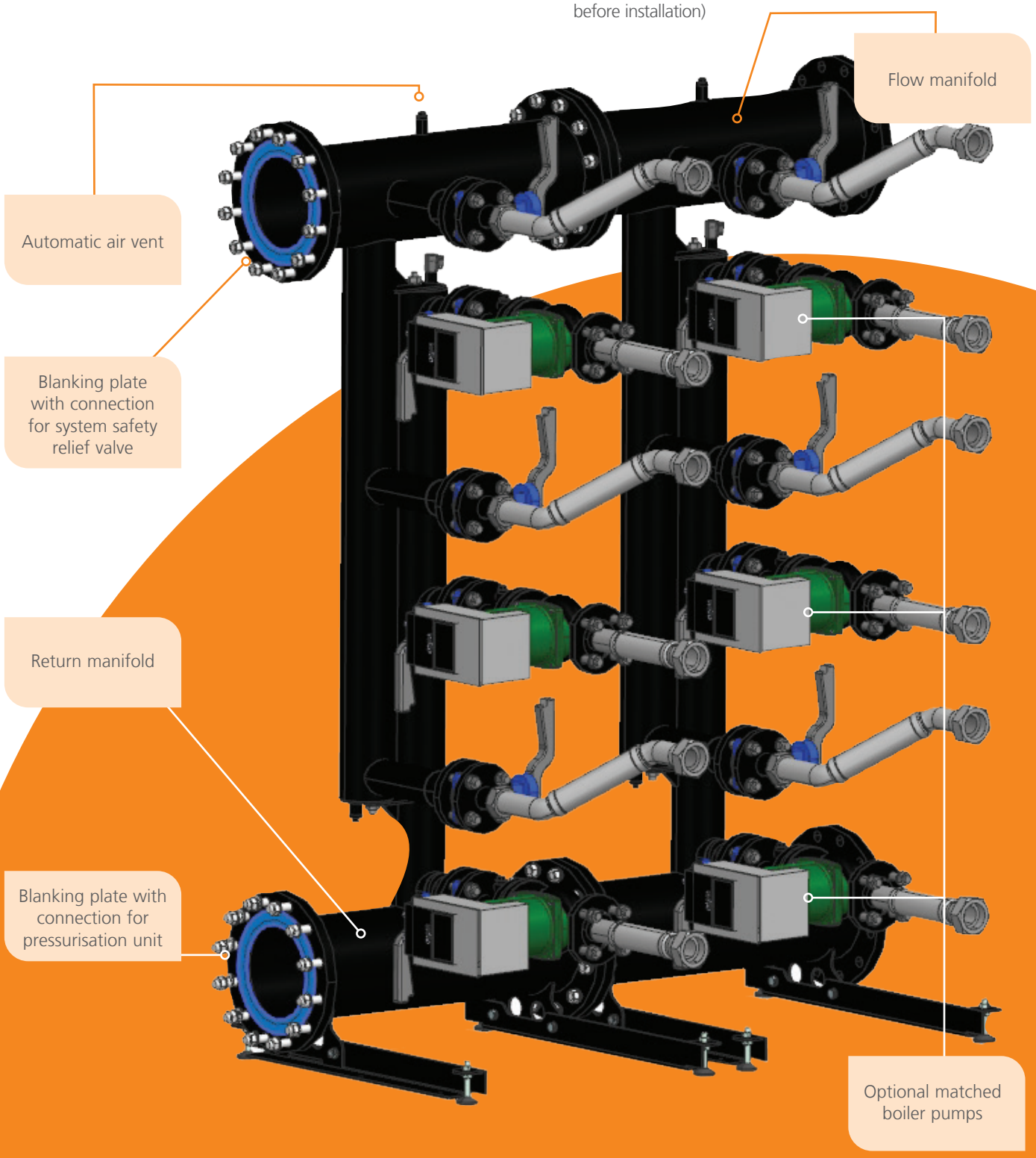
6. Primary circulation pump

Pipe kits - updated 2021

A range of optional pipework kits for 2 and 3 high stacked boilers are available to save time and simplify installation. Pipe kits come complete with the options of matched pumps, a low loss header with combined air & dirt separator and a 3-port manifold extension kit. See pages 10 – 14.

The latest upgrade to the pipework kits give you:

- Reduced size and clearances – to fit into smaller plant rooms
- Simpler pump installation
- Reduced weight
- New bracket with eyelets for easier transport and handling with a forklift truck (not shown below as must be removed before installation)



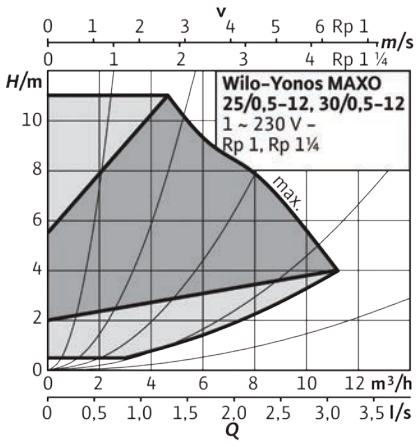
Pumps - updated 2021

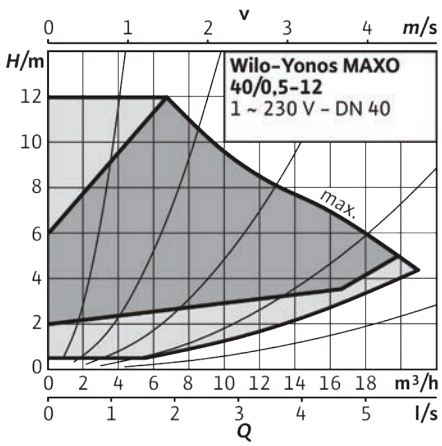
To aid installation you can choose pipework kits with matched boiler pumps. The pumps used on our Upton boilers is the Wilo Yonos Maxo pump.

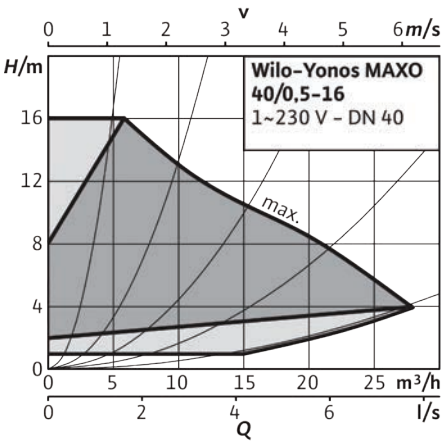
- Energy-saving high-efficiency pump
- LED display shows you set delivery head, speed stage and potential errors
- Green button allows for simple adjustment of control mode Δp-v, Δp-c and three speed stages
- Reliable operation due to collective fault signal

When setting with pipe kits the boilers need to operate with a 20°C Δt and be set to constant differential pressure.

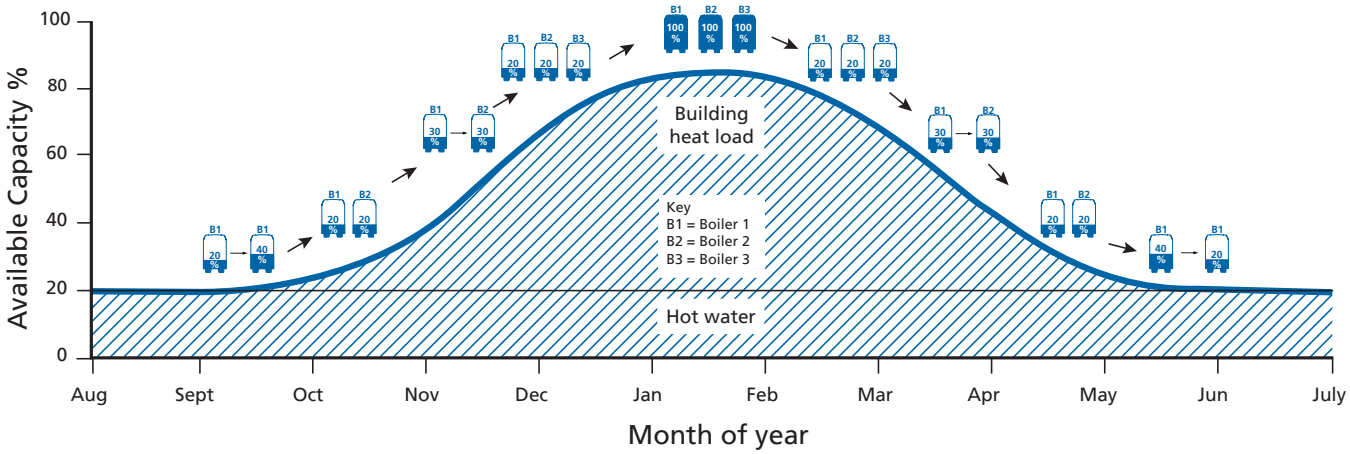
Pump name	Used with pipework kit size	Upton models
Yonos Maxo 25/0.5-12	DN100	UF200-2 UF300-3 UF300-2 UF450-3
Yonos Maxo 40/0.5-12	DN150	UF400-2 UF600-3 UF500-2 UF750-3
Yonos Maxo 40/0.5-16	DN150 DN200	UF600-2 UF900-3 UF700-2 UF1050-3







Energy and load matching



The overall efficiency of a multiple boiler plant depends on how close its total output can be controlled to match the load profile of the building. Therefore, it is a really important aspect of product selection.

Why match plant output to load?

Matching the building's heat load enables you to deliver the right amount of heat at the right time with little or no wastage. A commercial heating system is designed to match the peak load to heat a building up to full temperature within a short period of time. This requires a large load from the heat source; the boilers. However most of the time the boilers will be working at much lower loads. The trick is to match both, peak loads and low loads without oversizing the boiler and wasting energy. And to do this you need a system with a large turndown ratio.

Turning it down

Let's look at turndown ratios. Turndown ratio refers to the width of the operational range of the boiler, and is defined as the ratio of the maximum capacity to minimum capacity.

In a typical modular boiler system each module could have a turndown ratio of 5 to 1. So a vertical stack of 3 modules will have 15 to 1 turndown. This gives you a substantial range of outputs.

Upton boiler - turndown

- An Upton UF350-1 module has a 5:1 turndown – can deliver energy from 70kW to 350kW.
- A 3-high stack Upton UF1050-3 has a 15:1 turndown – can deliver energy from 70kW to 1,050kW.

up to 15:1 Turndown

It's about how you drive it

Just like your car, a boiler needs to be driven correctly to achieve high operating efficiencies and close load matching. A good boiler sequence controller will help control the boilers in the most efficient way. The Upton boiler has one built in, but for larger sites the Merley sequence controller can be used (see pages 21-25 for control options).

Saving fuel, money and the environment

Accurate load matching ensures you only use the fuel you need. This saves you money and reduces carbon emissions. And depending on the size of the project, these savings can be quite considerable.

Large vs small

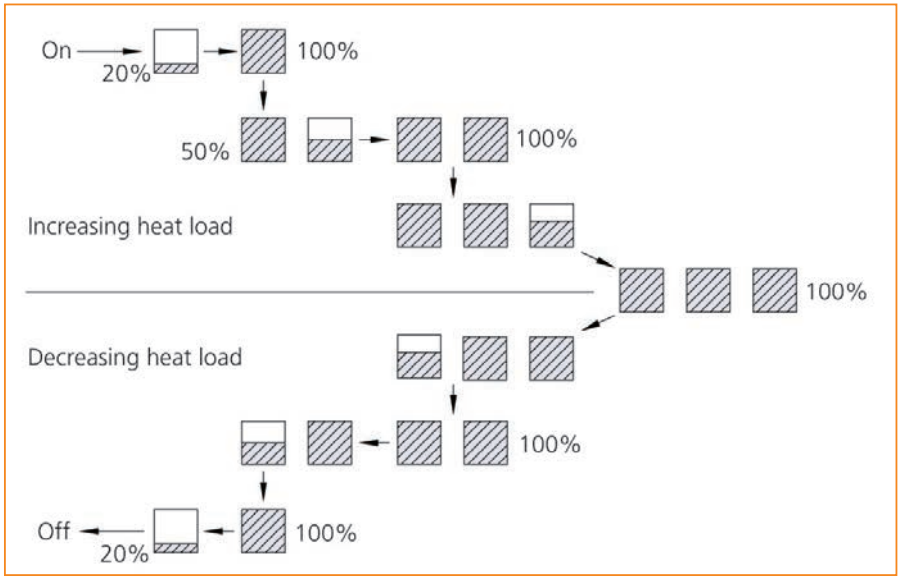
But have you also considered the impact of replacing one large output single boiler with multiple smaller output modular boilers? The differences in gas use for the right application can be huge.

A large boiler will have to fully heat up regardless of how much heat is actually needed by the system. Whereas smaller modules can be setup to come on at low modulation, or only one module out of the system may need to fire up to meet the demand. Plus, smaller modules will get to temperature quicker than a large boiler due to a lower water content.

Boiler sequence control strategies

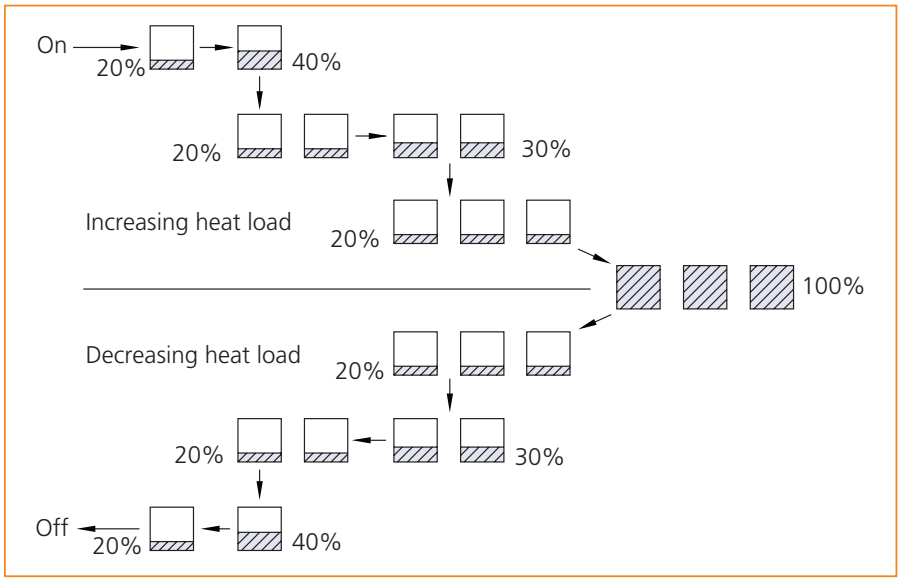
Cascade control

Steps a boiler module on at its lowest rate and then modulates it to its maximum rate before switching on the next boiler module. Maintains the lowest number of boiler modules in operation for a given heat load.



Unison control

Steps each boiler module on at its lowest rate until all boiler modules are firing and then modulates all boilers modules simultaneously to higher rates to match the system load. This method of sequencing can offer higher operating efficiencies, taking advantage of the higher part load efficiency of the boiler at lower firing rates.



Pump and motorised isolating valve control

Upton boilers can be installed using pumping solutions that best match the system design requirements. It is recommended to install the boilers within a dedicated primary circuit having a low loss header to ensure adequate boiler flow regardless of flow conditions within the secondary circuits.

Option 1 is to install a dedicated primary circuit pump (not HHL supply) serving the flow requirements of all boilers with flow being present through both firing and non-firing boiler modules. Controlled from the Master boiler via a suitable contactor (not HHL supply) the primary circuit pump should be set for constant flow ensuring correct flow for each module. The primary pump will operate for the full duration of heat demand across all boilers and is provided with a 5 minute overrun period. Reverse return flow and return pipework is required with this arrangement.

This arrangement is beneficial when there is insufficient space to install dedicated boiler module shunt pumps and where an existing pump might be suitable for re-use.

Option 2 is to install dedicated boiler shunt pumps (not HHL supply, unless using Hamworthy pipework kits) in the return connection to each boiler module to isolate flow when the boiler module is not firing. Individual boiler pumps are wired to and controlled from their respective boiler module and provided with a 5 minute overrun period. A suitable pump contactor (not HHL supply) should be fitted between the individual boiler module and its pump. Reverse return flow and return pipework is not necessary with this arrangement.

This arrangement offers the benefit of reduced energy consumption for pumping as well as increased standby capacity should one pump fail. There will be increased requirements for electrical supplies and controls wiring with this arrangement.

Option 3 is to install a motorised isolation valve in the return connection to each boiler module to isolate flow when the boiler module is not firing. Individual motorised valves are wired to and controlled from their respective boiler module and provided with a 5 minute overrun period. Motorised valves can be motor open, motor close, or motor open, spring return.

This arrangement requires reverse return flow and return pipework and a dedicated primary circuit pump set for constant pressure allowing the pump to modulate according to the number of boiler modules on line at any time contributing to energy savings. There will be increased requirements for electrical supplies and controls wiring with this arrangement.

Controls for single boilers

Single boilers may be used in a variety of situations, often smaller premises without sophisticated controls such as Building Management Systems. Upton is perfectly suited to such installations having a control system that's expandable from very basic integral time clock control with fixed temperature operation all the way up to controlling multiple zone systems with full inside/outside temperature compensation and optimised time programming. Control functions available as standard (no optional extras):

- Time control with 3 programs per day
- Fixed flow temperature control
- Boiler shunt pump control (pump contactor required to suit electrical load of pump – not HHL supply)
- 5 minute over run for shunt pump
- Pump kick for shunt pump to help prevent seizure
- Frost protection based on water temperature, 5°C fixed set point

Optional heating circuit control kit

Up to 3 independent heating circuits incorporating mixing valves is possible with each circuit operating with a different flow and room temperature requirement to the other circuits. The boiler generates flow water to the highest zone temperature requirement whilst the other zones use mixing valve control to reduce flow temperature into their respective circuits. This allows heating to be maintained throughout any demand and domestic hot water requirement.

An optional heating circuit kit must be fitted to the boiler comprising a clip in controls module AGU2.550A109 which the circuit flow temperature sensor, mixing valve and pump are all wired to. Pumps must be connected via a suitably rated contactor – (not HHL supply).

Optional heating circuit control kits

Single heating circuit - Part number 563605692
Two heating circuits - Part number 563605693
Three heating circuits - Part number 563605694

Boiler capacity for optional clip in controls

Each boiler only has the capacity for three optional clip in control kits. If remote fault and run signalling using the optional volt free contact kit is required this will use up one of the optional clip in kit locations. In such instances only 2 optional heating circuit control kits may be fitted.

1. Navistem control panel
2. Navistem controller
3. Location for optional volt free contact kit
4. Location for optional OCI 345 LPB bus interface unit
5. Mounting point for up to 3 optional AGU 2.5 clip in extension modules

Optional outside air temperature sensor - QAC34

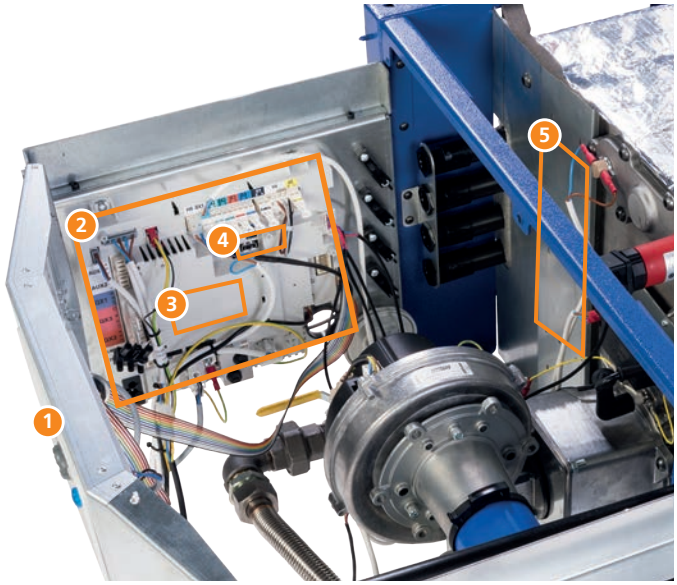
It is always recommended to fit an outside air temperature sensor allowing enhanced frost protection for protection of both the building infrastructure and the boiler plant. The sensor should be located on a north facing wall. Control functions available with outside air temperature sensor fitted:

- **2 Stage frost protection** – based on water temperature and outside air temperature.
- **Stage 1** – Air temperature: starts circulation pumps to move heat around the circuit from within the building protecting the plantroom.
- **Stage 2** – Water temperature: starts the boiler to prevent water within the system freezing.
- **Summer shutdown** - Stops boiler operation when outside temperature reaches a predetermined set-point.
- **Adaptable weather compensation** - Matches boiler flow temperature to building thermal dynamics as outside air temperature fluctuates up and down.

Part number 533901457

Optional room temperature sensors

Each heating circuit can be equipped with an independent room temperature sensor. There are two types of room sensor, a fully **programmable room sensor QAA74**, and an **offset adjustable room sensor QAA55**. When a room temperature sensor is fitted enhanced control of the heating circuits can be achieved based on both internal and outside air temperatures. This could for instance compensate for an unexpected higher internal air temperature allowing the heating system to start later and at a lower flow temperature saving energy.



Optional programmable room sensor - QAA74

This communicates with the boiler and allows full adjustment of the room temperature, time clock, holiday periods and frost protection settings. The unit also displays fault codes from the boiler plant.

- 3 programmable periods per day
- Reduced temperature/night set back for non occupancy hours
- Holiday period (frost protection remains active)
- Programme lock to prevent tampering
- Indication of operating parameters and boiler fault condition
- 7 day time clock with automatic summer/winter clock adjustment

Part number 563605695

Optional offset adjustable room sensor - QAA55

For installations where limited control is required by the building occupants, the offset adjustable room sensor may be used. This permits adjustment +/- 3°C from the programmed room temperature set point and communicates room temperature to the boiler.

- Setting the operating mode between automatic operation, continuous operation comfort or night setback temperature, off with frost protection active
- Setting a temporary off condition during an un-programmed non occupancy period that will reset automatically according to following program settings
- Programmable lock to prevent tampering.

Part number 563605696

Optional domestic hot water control

A single domestic hot water cylinder (calorifier) may be controlled from the boiler. Energy loading of the cylinder is achieved by starting and stopping the pump to the cylinder coil. Internal temperature sensing for the stored domestic hot water is achieved by either fitting the cylinder with an optional domestic hot water kit (temperature sensor QAZ36 and pocket) or the boiler can be configured to receive a Normally Open/Normally Closed signal from a standard cylinder thermostat. The high limit thermostat for the cylinder must also be wired to ensure the boiler energy supply is isolated from the cylinder in the event of the high limit thermostat setting being reached.

Controls option	Part number
Outside air temperature - QAC34	533901457
Domestic hot water sensor kit (sensor and pocket) - QAZ36	563605674
Volt free contact kit for remote signalling status - AGU2.55A109	563605666
Mixing valve heating circuit control kit (clip in module, temperature sensor and pocket) for 1 zone	563605692
Mixing valve heating circuit control kit (clip in module, temperature sensor and pocket) for 2 zones	563605693
Mixing valve heating circuit control kit (clip in module, temperature sensor and pocket) for 3 zones Note: Cannot be used in conjunction with volt free contact kit	563605694
Programmable room sensor QAA74	563605695
Offset adjustable room sensor QAA55	563605696

Remote start stop

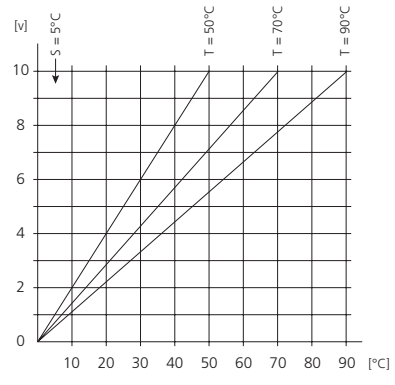
Each boiler is equipped with a remote start stop circuit. On receiving a start signal from, for instance, an outside time clock the boiler will operate according to its internal temperature management program. This level of control simply overrides the boilers internal time clock program. The boiler may still be equipped with optional controls including an outside air temperature sensor, room temperature sensors and individual heating zone controls whilst controlling also domestic hot water cylinder using the control options detailed above.

BMS control

All Upton boilers may be controlled with more sophisticated controls such as Building Management Systems (BMS) using the 0-10 volt analogue input which can be configured for temperature or load control. Where a BMS exists it is recommended that heating circuit and domestic hot water control is managed by this system.

For full details concerning control set up refer to Manual Navistem B3000 ref 500001310.

0-10 volt analogue temperature input chart



T = maximum value of heat demand
S = minimum limitation of heat demand = 5°C

Controls for multiple boilers

Multiple boilers are likely to be installed within larger buildings where the controls requirements can be expected to be more complex. Often larger buildings are equipped with Building Management Systems and where this is the case it is recommended to take advantage of the powerful control capability of these systems to not only manage the various heating circuits within the building but also to control the operation of the boilers.

Where Building Management Systems are not present, or independent control of the boilers is required there are two alternative options available from Hamworthy:

1. Sequencing of up to 15 additional boiler modules using integral Master/Slave feature of control.

2. Sequencing of up to 15 boiler modules using the Hamworthy Merley boiler sequence controller for mounting remote to the boiler or within clients own control panel.

Key features of both methods of control:

- Choice of control inputs including:
  - External enable signals
  - 0-10V analogue heat demand signal
  - Built-in time clock settings
- Choice of cascade or unison sequencing strategies
- Lead boiler rotation
- 7 Day integral time clock – 3 programmable periods per day
- Optimised start and stop based on outside and room air temperatures
- Holiday periods
- Frost protection
- Constant or variable flow temperature based on outside and room air temperatures
- 2 stage frost protection based on outside and room air temperature
  - Stage 1 – Air temperature: starts circulation pumps to move heat around the circuit from within the building protecting the plantroom
  - Stage 2 – Water temperature: starts the boiler to prevent water within the system freezing
- Summer shutdown
- Reduced temperature/night set back for non-occupancy hours
- Pump kick for connected pumps

Master/Slave boiler sequence controller

When using Master/Slave sequencing it is important to select which boiler module is going to be the Master. All site wiring associated with the sequence control function must be routed to this boiler and connected to the boiler controller. Programming of the sequence control will also be completed via the interface on this boiler module.

LPB bus communication kit - OCI345

Up to 16 boiler modules may be sequence controlled and communication between boiler modules is facilitated via an LPB bus. Each boiler module must be equipped with an optional LPB bus communications kit.

Part number 563605667

Outside air temperature sensor - QAC34

It is always recommended to fit an outside air temperature sensor allowing enhanced frost protection for protection of both the building infrastructure and the boiler plant. The sensor should be located on a north facing wall. Control functions available with outside air temperature sensor fitted:

- 2 Stage frost protection – based on water temperature and outside air temperature
  - Stage 1 – Air temperature: starts circulation pumps to move heat around the circuit from within the building protecting the plantroom
  - Stage 2 – Water temperature: starts the boiler to prevent water within the system freezing
- Summer shutdown to prevent boiler operation when outside temperature reaches a pre-determined set-point
- Adaptable weather compensation to match boiler flow temperature to building thermal dynamics as the outside air temperature fluctuates up and down.

Part number 533901457

Common flow temperature sensor - QAZ36

A flow temperature sensor must be located in the common primary flow leaving the boilers and before the low loss header. The sequence controller responds to signals from this sensor, comparing temperature set-point with actual flow temperature, then manages the number of boilers in operation and modulation rate of each boiler to achieve and maintain the desired flow temperature. A dedicated sensor kit including immersion pocket is available. The number of boiler modules released to fire is selected according to the programmed sequence control strategy.

Part number 563605673

Controls for multiple boilers

Time control

A 7 day time clock with 3 adjustable time periods per day is a standard feature of the sequence controller.

Optimised start and stop

The optimiser uses a combination of the actual room temperature and outside air temperature to calculate the exact time at which the heating will be started or stopped to ensure comfort levels at the correct occupancy times. A self-learning function monitors discrepancies in room temperatures at the pre-defined times allowing the optimiser to fine tune to the building thermal performance.

Manual over-ride

Continuous on or off operation can be set during which the time program is overridden until the over-ride function is manually de-activated. Frost protection and summer shutdown controls remain active.

Remote enable

Continuous on or off operation can be set during which the time program is overridden until the over-ride function is manually de-activated. Frost protection and summer shutdown controls remain active.

Summer shutdown

Whenever the outside air temperature exceeds the adjustable programmed setting the heating is turned off.

Using BMS 0-10 volt signals

The sequence controller can be configured to accept a BMS analogue input to initiate heat generation. NOTE: When using a BMS to initiate cascade control via a 0-10 volt analogue signal, the internal time clock and remote enable circuit functions are disabled.

Input signals to the sequence controller must be temperature configured. The input signal is translated to a temperature set point for the flow temperature, and translation is according to a linear graph from 5°C to an upper limit set during commissioning. 10 Volts corresponds with the upper limit with a maximum 85°C setting.

Optional controls kits for multiple boilers

Controls options	Part number
Outside air temperature sensor QAC34	533901457
Volt free contact kit for remote status signalling AGU2.550A109	563605666
Heating circuit sensor kit (sensor & pocket) QAZ36	563605673
Merley boiler sequence controller, wall mounted	563605672
Merley boiler sequence controller, loose kit for panel mounting	563605671
LPB Bus communications module OCI345, one required per boiler module	563605667
Programmable room sensor QAA74	563605695

Navistem (Siemens LMS) control panel.

Flue systems

Upton boilers are designed to be used with natural draught flues. Upton 2-high & 3-high stacked boilers are supplied with a flue riser

Each floor standing Upton boiler module has separate connections for the flue, with the combustion air supply being taken directly from the plant room in an open flue system.

The following points should be noted:

- The Upton boilers are designed to be used with natural draught flues. Flue systems should be designed in accordance with regulations and with reference to BS-6644 and IGE/UP/10. All flue discharges for plant exceeding 333kW output must comply with the third edition of the 1993 Clean Air Act Memorandum.
- Upton boilers are suitable for open flue (type B23p) installation, drawing combustion air from the plant room.
- Flue termination, routing and construction must comply with the requirements of the Clean Air Act 1993, BS 6644, BS 5440 and IGE/UP/10 where applicable.
- The flue system must be designed acknowledging that there is a positive pressure generated by the boiler combustion fan.
- The flue system must be designed to limit the max. suction to 100Pa (negative), measured at the flue sample point of the base module in the boiler stack. This condition must be checked hot and with all boilers firing.
- The flue system must be self supporting and facilitate access for cleaning and maintenance near the boiler connection.
- When designing the flue system, care must be taken to ensure that any condensate that forms within the system can be drained safely to a suitable waste point, and that the flue and drain materials are resistant to the corrosive effect of condensate.
- Due to low flue gas temperatures, around 80°C, condensation will occur in the flue therefore flue materials must be impervious to acidic condensate pH 3.5 and use fully sealing joints.
- Twin-walled flue construction is recommended, with adequate facilities provided for draining the flue condensate

Boiler and flue condensate discharge

32mm diameter drain trap connections and drain traps are provided on each Upton boiler modules, and also on the flue risers supplied with two-high and three-high stacked boiler configurations. These are for connection to a condensate drain system (not HH supply) in standard plastic waste piping so that boiler condensate can be safely drained away. The pipework should be a suitable PVC plastic system with sealed joints to prevent the escape of condensate.

The condensate drains should be designed in line with BS 6644, incorporating drain traps and an open tundish, with a minimum fall of 2.5 degrees (approximately 50 mm per metre).

Notes:

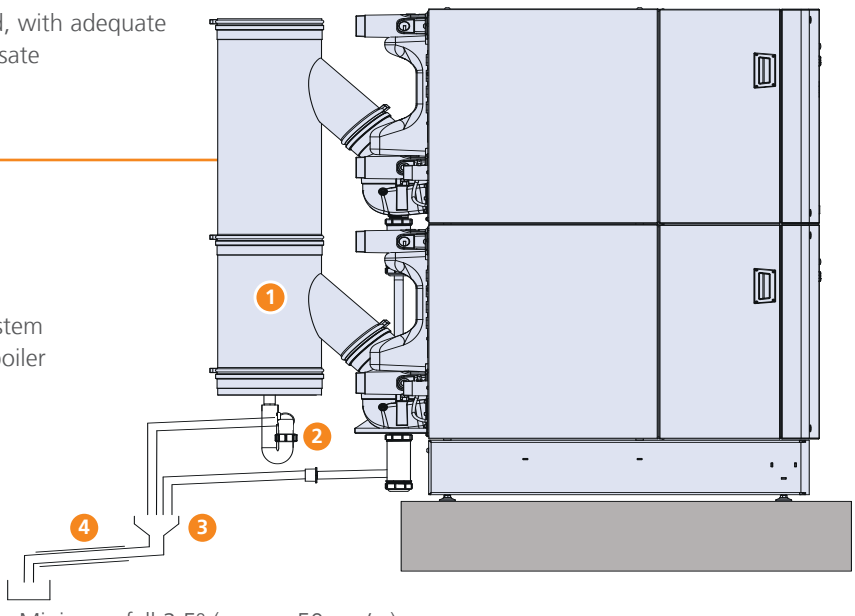
1. Single module Upton boilers are not supplied with a flue riser and flue riser condense trap. Therefore any flue system used with these boilers should have adequate provision for draining flue condensate.

2. Where multiple Upton boilers are used with common flue headers feeding a single riser, additional condensate drainage lines may also be required.

Condensate information

- Typical 3.5 pH
- Slightly acidic, but less so than vinegar
- The volume of condensate is related to the system water temperature and the firing rate of the boiler

1. Boiler flue
2. Condensate "U" trap
3. Open tundish
4. Metal sheath to protect plastic pipe



Minimum fall 2.5° (approx 50mm/m)

Flue guide

Maximum flue lengths

Boiler model	Flue diameter (mm)	Maximum flue length (m)	Pressure available at flue connection (Pa)	Equivalent lengths (m)	
				45° elbow	90° elbow
UF100-1	130	114	150	0.8	1.6
UF200-2	200	267	150	1.3	2.7
UF300-3	200	126	150	1.4	2.9
UF150-1	130	54	150	0.9	1.7
UF300-2	200	126	150	1.5	3.0
UF450-3	200	59	150	1.4	2.9
UF200-1	130	31	150	0.9	1.8
UF400-2	250	219	150	1.9	3.7
UF600-3	250	103	150	2.0	3.9
UF250-1	130	20	150	0.9	1.8
UF500-2	250	125	130	1.9	3.8
UF750-3	250	58	130	2.0	4.0
UF300-1	130	9	100	0.9	1.9
UF600-2	300	168	100	2.3	4.7
UF900-3	300	63	80	2.5	5.0
UF350-1	130	8	110	0.9	1.9
UF700-2	300	91	70	2.4	4.8
UF1050-3	300	37	60	2.5	5.1

Notes

1. As the flue coupled to these boilers will be pressurised and the flue gases wet, leading to running condensation within the flue, it is important that the flue components used are fully sealed and resistant to the aggression of condensate.

2. The pressure available at the flue connection is at the outlet of the flue header on two and three high modules.

3. Elbows are based on the pressure loss factor of 0.2 for 45° bends and 0.4 for 90° bends. Alternative bends and components will have differing performance characteristics leading to a final performance that doesn't match the details in the table.

Flue data for each boiler including approximate flue gas volumes, flue gas temperatures, pressure available at flue connection, and dry NO_x emissions, can be found in the Technical Data tables on pages 4 to 9.

Open flue

Upton boilers are designed for Type B23p open flue systems.

Type B23 - A type B2 appliance incorporating a fan upstream of the combustion chamber/heat exchanger.

For details of the full range of classifications refer to BSI publication PD CR 1749:2001.

Equivalent length components

For single, or individually flued multiple boilers, it is possible to design a flue system that has an overall length within the specified limits. The maximum flue length is the sum of all the vertical and horizontal sections plus the equivalent lengths of all the 90 degree and 45 degree elbows.

Flue system for multiple boilers

Multiple boilers may be installed using a common flue header. For more information see page 28.

Flue systems

Multiple Upton boilers - same appliance type

The use of swept connections from appliances into a common flue is recommended to assist the flow of gases into the common flue in the intended direction of flow.

The combustion circuit within Upton boilers is equipped with a back flow prevention device to prevent flue gases spilling through non-firing appliances.

Flue liners

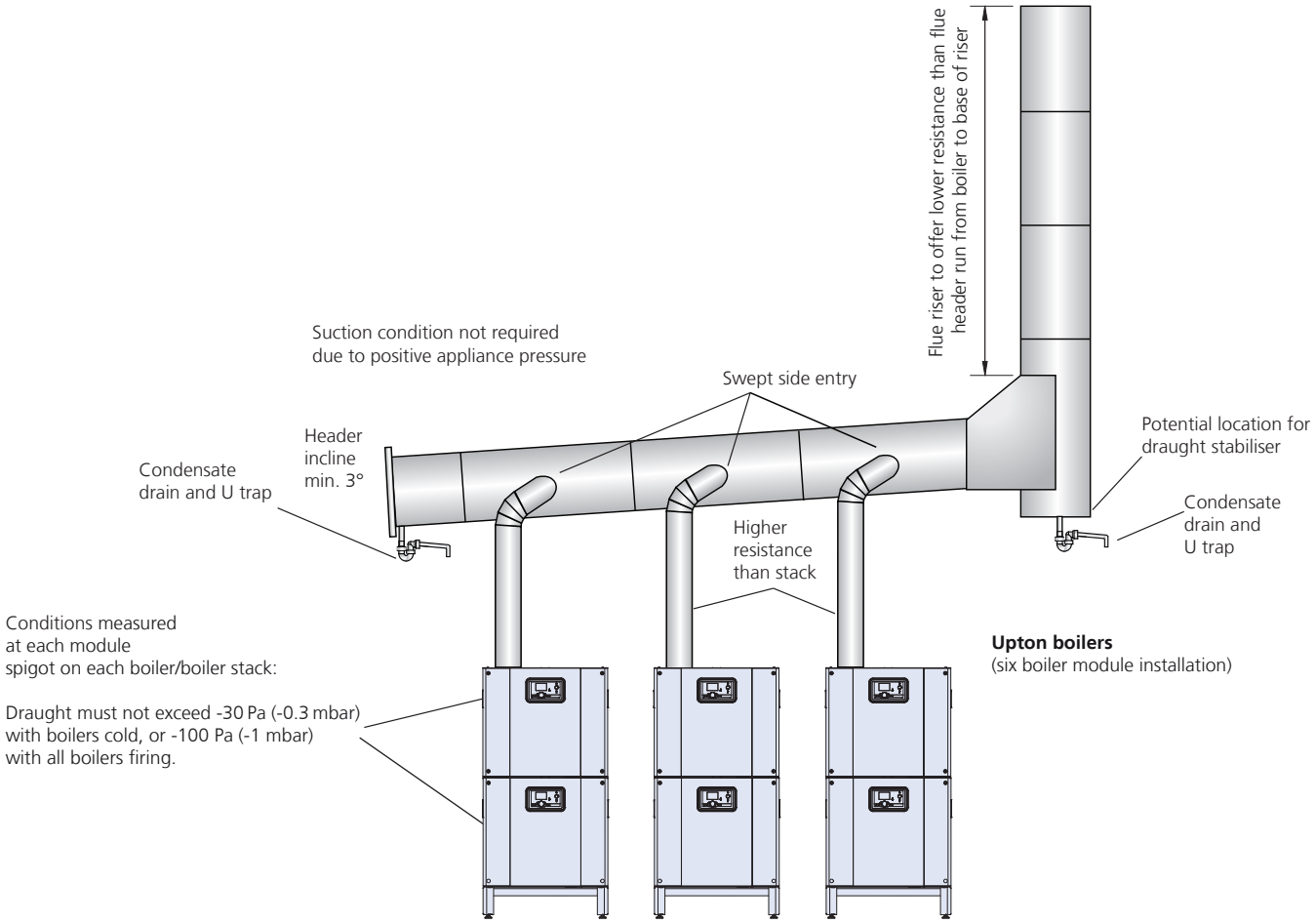
When replacing atmospheric boilers appliances it may be possible to install a continuous stainless steel flue liner within the existing flue riser as atmospheric appliances typically have larger diameter flue systems than modern fan-assisted pre-mix appliances. At the base of any such flue riser the flue header is likely to require replacement using fully sealed and pressure tight components that have been sized for the installed appliances.

Flue system condensate discharge

In addition to the boiler condensate discharge it is important that the flue header and riser used with multiple appliance systems is drained independently to avoid flue condensate draining back through the boiler or other appliance. Condensate traps should be used to prevent flue gas discharge through condensate drains.

Draught generated by flue risers

- 2 Pa (0.2 mbar) per metre height @80°C
- 0 Pa (0.0 mbar) per metre height @40°C



Upton boilers
(six boiler module installation)

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

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

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- **Best Practice Heating & Hot Water Plant Refurbishment**
- **Energy Saving in Commercial Heating and Hot Water - Could you save a £million?**
- **Best Practice in Domestic Hot Water (DHW) - 3 modules**

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**

Application and water system

Water systems

Upton boilers are suitable for sealed pressurised systems only. For safe operation (formerly a requirement of the Health and Safety Document PM5; now withdrawn) Hamworthy recommends sealed systems to have a fuel supply cut off in the event of low and high-pressure conditions.

Hamworthy also recommend for sealed systems to use a Chesil pressurisation unit with correctly sized Burstock expansion vessels (see page 35 for details of these products).

It is advisable to thoroughly flush both new as well as existing systems to remove loose debris before connecting the new boilers. For badly contaminated systems it may be necessary to use a proprietary system cleaner to remove stubborn deposits. Once flushing and cleaning is complete suitable corrosion inhibitors should be added to the system and their concentration levels maintained throughout the life of the boiler installation.

The primary circuit should be fitted with a suitable strainer in the common return pipe to the boilers to filter out water born debris. Cleaning strainers should be part of a regular site maintenance schedule. Additional use of a Clenston dirt and air separator in the primary circuit will help filter out smaller suspended particles as well as micro air bubbles. Reducing air in the system is a major contributor to protection against corrosion, noise and inefficiency.

System feed water quality

If boiler feed water has a high degree of hardness (>180mg CaCO3/litre) it is strongly recommended that the water be treated to prevent the build-up of sludge and scale. Any make up water introduced to the system will dilute water treatment. It is therefore recommended to fit a water meter in the make-up water supply to monitor the volume of water entering the system so that appropriate action can be taken regarding the maintenance of corrosion inhibitor concentration. Metering the make-up water supply will also assist in identifying system leaks which might otherwise go unnoticed, e.g. underground pipe ruptures. For further guidance, please refer to ICOM'S 'Water treatment and conditioning of commercial heating systems' document.

Safety relief valves

Boiler safety relief valves are only provided as part of optional pipe kits. Where a Hamworthy pipe kit is not used an appropriately sized safety relief valve must be fitted on the flow outlet before any isolation valve. Full details regarding the selection and sizing of safety relief valves is provided in BS 6644.

Location

The location chosen for the boiler must permit the provision of a satisfactory flue system and an adequate air supply. Adequate space should be allowed for installation, servicing and air circulation around each unit. This includes any electrical trunking laid along the floor and to the appliance. Refer to dimensional drawings on pages 10 & 11 for more details on clearances. Any combustible material adjacent to the boiler and the flue system must be so placed or shielded to ensure that its temperature does not exceed 65°C. Further details regarding boiler location are given in BS 6644. Upton boilers should be positioned on a level non-combustible surface that is capable of supporting the boiler weight when filled with water, plus any ancillary equipment.

Adequate water flow / primary circuit design

The Upton boiler is designed as a rapid response, low water content unit, to run continuously with maximum reliability. Care should be taken in the initial design and layout to ensure adequate water flow through the boiler(s) having due regard for the influence of the control system. The primary circuit design should be such that secondary circuit conditions cannot have an influence over reliable operation of the boilers. The use of the matched low loss header to separate the two systems is recommended. Refer to page 14 for details.

Upton boilers do not have an integral boiler pump and so it is necessary to include a dedicated primary circuit pump in the hydraulic layout, unless you are using the Hamworthy pipework kits which include a matched boiler pump.

Gas supply pipes

Supply pipes must be fitted in accordance with BS 6891 or IGE/UP/2 as appropriate. Pipework must be of adequate diameter for the length of run, and must not be of a smaller diameter than the boiler's gas connections. For gas pipe sizing calculations refer to Chartered Institute of Building Services Engineers (CIBSE) Guide C. The complete installations must be purged and tested for soundness as described in BS 6891 or IGE/UP/1 and IGE/UP/1A as appropriate.

Condensate discharge & ventilation

Condensate discharge

Natural gas boilers typically produce condensate at a rate of 13 litres per hour per 100kW input energy when operating in condensing mode. Although the condensate produced is mildly acidic (typical pH~3.5), normally it can be disposed of through the drainage system. If in any doubt about local regulations, check with the local water authority.

The Upton boilers are equipped with a polypropylene syphon drain connection to which plastic polypropylene piping, with O rings should be connected to dispose of the condensate. When installing a 2 or 3 high Upton boiler the condensate drains from each module connect for a single drain point. All condensate traps have floats to remove the risk of water and gases entering the boiler should there be a dry trap.

The condense discharge pipe should have a minimum fall of 2.5° to drain, and should discharge via tundish arrangement. To prevent any risk of freezing in winter, the condense pipe should be insulated and/or routed internal to the building where possible.

General ventilation requirements

An adequate supply of fresh air for combustion and ventilation must be provided in accordance with BS 6644 for boiler installations greater than 70kW nett rated input.

Boiler house temperatures

Additional requirement of BS 6644 for multiple boiler installations requires that the air supplied for boiler house ventilation shall be such that the maximum temperatures within the boiler house do not exceed:

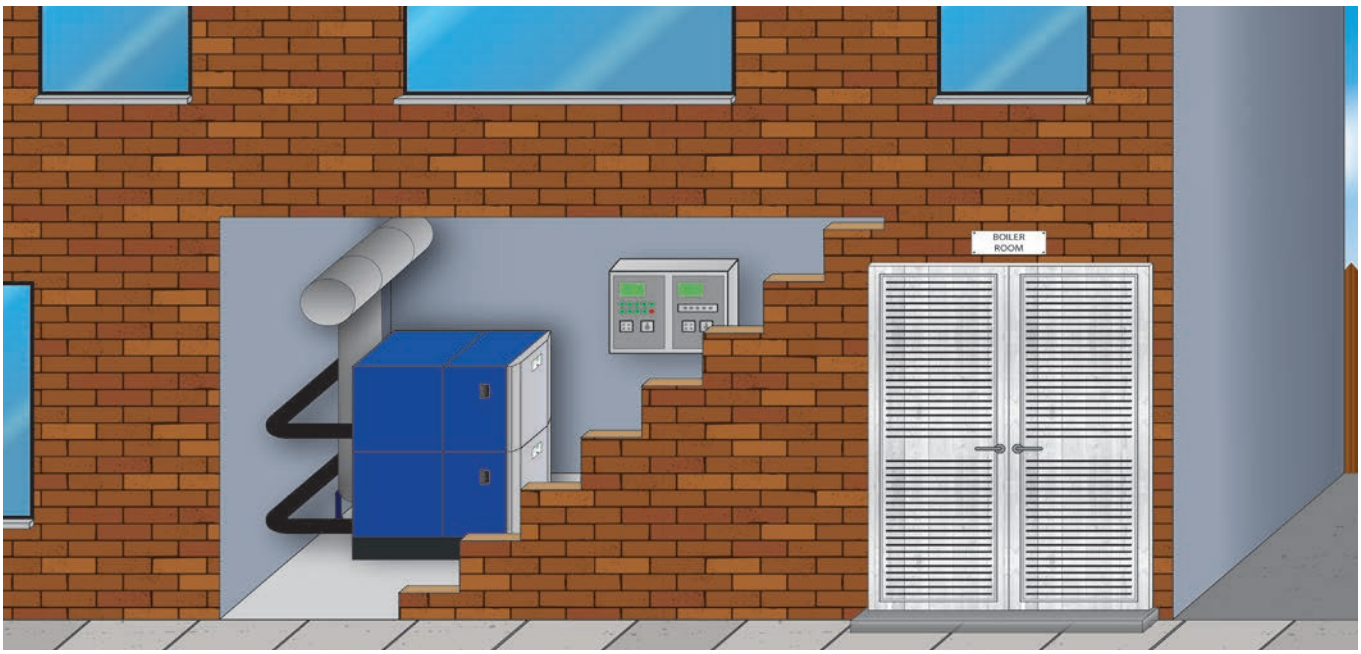
- At floor level, 25°C (or 100mm above floor level)
- At mid-level, 32°C (1.5m above floor level)
- At ceiling height, 40°C (or 100mm below ceiling height)

Ventilation grille openings

High and low level ventilation grilles shall be positioned as high and as low as practicably possible. Low level grills will be located within 1metre of floor level for Natural Gas. High level grilles are recommended to be positioned within 15% of the boiler room height from the ceiling. High and low ventilation grilles shall communicate with the same room or internal space where compartment ventilation is used. Where ventilation grilles communicate directly with outside air they shall be positioned on the same wall.

Air supply

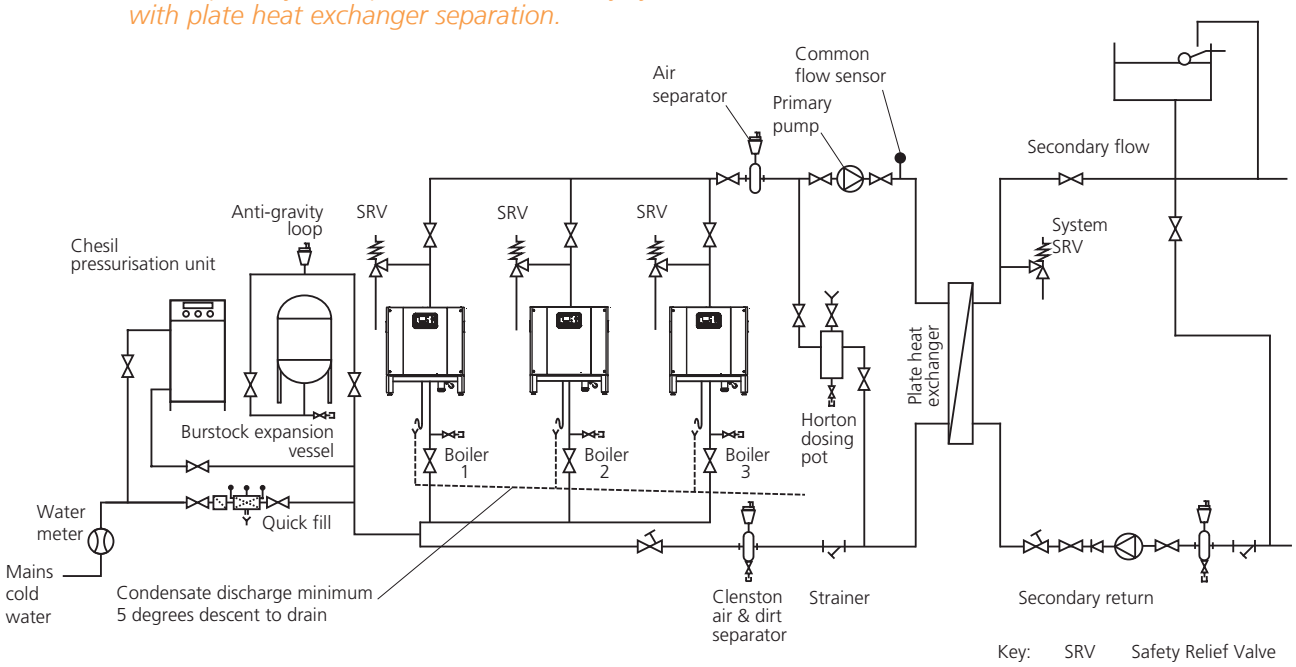
The air supply should be free from contamination such as building dust and insulation fibres from lagging. To avoid unnecessary cleaning and servicing of the boiler modules, the boilers should not be fired whilst building work is being undertaken. Where a boiler installation is to operate throughout the summer months, e.g. for domestic hot water production for more than 50% of the time, then additional ventilation allowances are required. Refer to BS 6644 for more information.



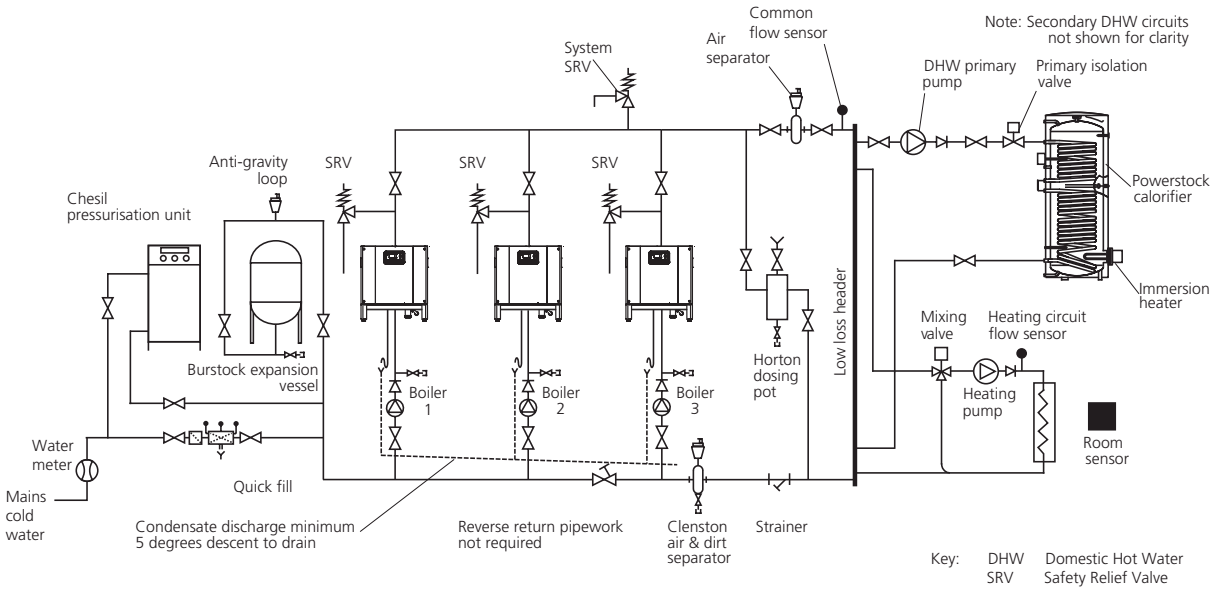
Typical boiler house ventilation.

Hydraulic schemes

Scheme 1: *Sealed primary and open vented secondary system with plate heat exchanger separation.*

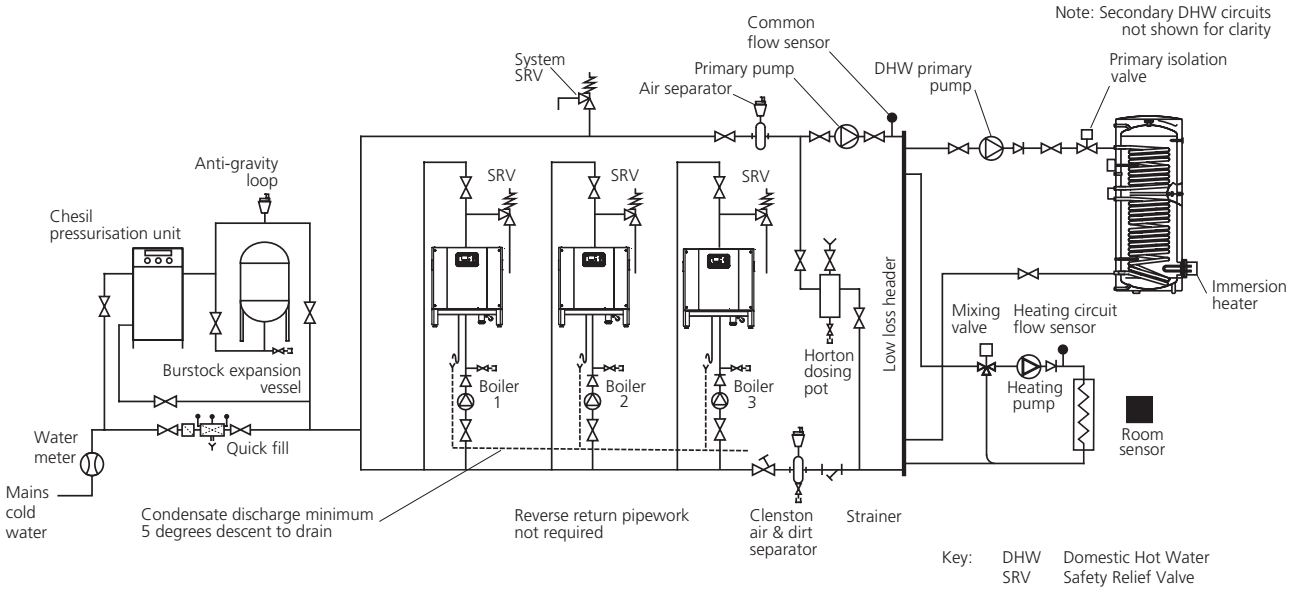


Scheme 2: *Sealed system with pump per boiler and low loss header*

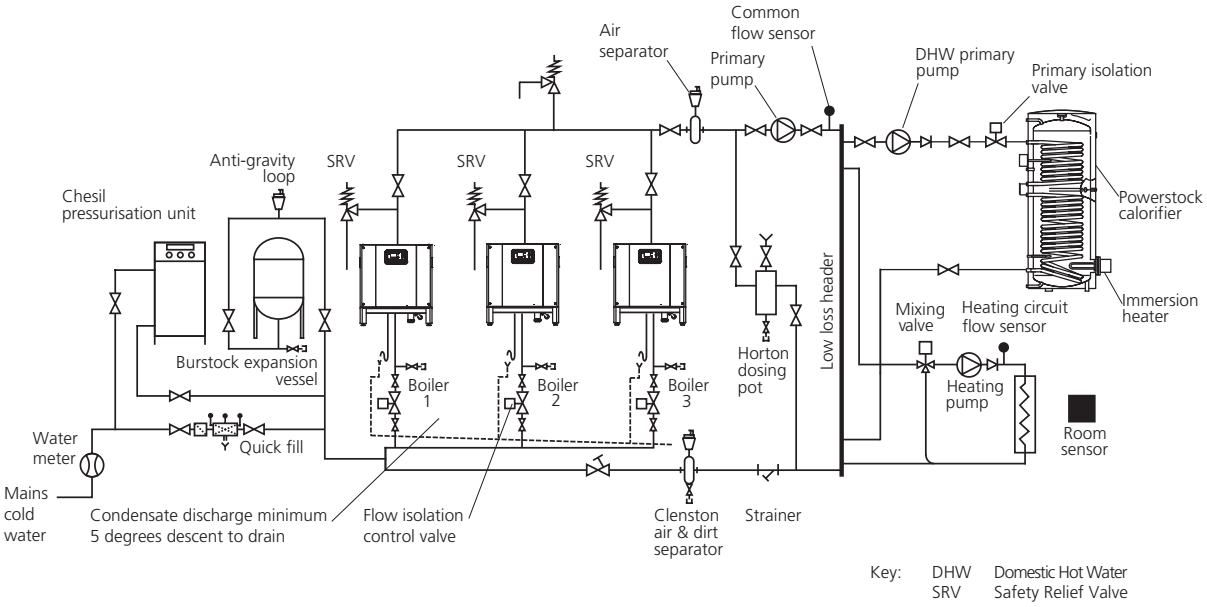


Note: These schematics have been provided for reference only.

Scheme 3: *Sealed system single pipe header, individual boiler pumps, system pump and low loss header.*



Scheme 4: *Sealed system with flow isolation valves and a low loss header.*



Case study

Upton House, Poole

Project

- Grade II* listed building refurbishment

Application

- Space heating 394kW

The challenge:

Upton House is a Grade II* listed Georgian Mansion House which was built from 1816-1818. Three Hamworthy UR430 atmospheric single stage cast iron boilers installed in the building had come to the end of their life and needed replacing. At the same time, Hamworthy was looking for a suitable test site for its new Upton boiler.

The solution:

With a name fitting the site and a long working relationship with Hamworthy, an Upton UF400-2 modular boiler, delivering an output of up to 394kW, was chosen as a replacement for the old equipment. Thanks to their compact size, the boiler modules could be transported down the stairs. Access like this usually complicates refurbishments, but the boiler was sited in the plant room without the need for bigger handling equipment.

Mike Morris, senior property manager for Bournemouth, Christchurch and Poole (BCP) Council, comments.

"I was really surprised. When I first saw it, I thought it was one boiler. Then I realised it's two modules stacked vertically, whereas before we had three big boilers side-by-side."

Accommodating old and new installation

The existing heating system is open vented. A system chemical clean was carried out to improve poor circulation and reduce blockages in the system. To protect the existing pipework from the pressure necessary for the new boilers, a plate heat exchanger, connecting (and hydraulically separating) secondary and primary circuit, was installed. This ensures an adequate system flow through the boilers and protects them from magnetic sludge and debris present in the secondary circuit. New pipework has been used in the primary circuit which the Upton boiler is connected to.

To create the pressurised primary circuit which the Upton boilers require, a Hamworthy Burstock expansion vessel and Chesil wall mounted single pump pressurisation unit were installed. A Hamworthy Clenston air and dirt separator to catch any further debris and Horton dosing pot to introduce chemicals such as corrosion inhibitor into the system have also been added to the secondary circuit. Thanks to the compact size of the Upton boiler, all the new equipment fitted neatly into the plant room.

Results:

The new boiler modules are set up to run in sequence from the built-in boiler controls. The boiler is connected to combined room sensor controllers installed in the basement (storage of materials and consumables), on the ground floor (function rooms, often used for conferences and other events such as weddings) and first floor (office space for the co-ordination of council activities). These three different so-called 'heat zones' have been set up with different temperatures and start-up times to accommodate individual area use.

Upton boiler and plate heat exchanger (left).

Before, the building users had to turn the heating in the entire building on or off. With the new zone control, **each floor can now be operated at different hours and reduce energy wastage thanks to dedicated room sensors and control valves.** With the installation of an external air sensor, the heating flow temperature now also regulates depending on outside temperatures (weather compensation), reducing energy wastage.

Customer feedback:

With the system flush, installation of the plate heat exchanger and new boilers we're experiencing better circulation. The heating zones and control accuracy of the system is a vast improvement. Everything is much more comfortable for the staff and visitors. We've also improved the visual aspect by upgrading the flue.

Mike Morris, BCP Council

Services and warranty

Commissioning

We strongly recommend that all boilers are commissioned by our service department, and some specifications state that it must be carried out by the manufacturer. As well as ensuring your product is set up correctly for maximum efficiencies you will receive extra benefits on warranty (see below). On completion, you will get a report with details of the initial operating settings.

Service

The Upton boiler has been designed with ease of service in mind. The combustion analysis and drain point is at the front of the boiler and there is a mains power outlet making it easier for service engineers in plant rooms with no power outlets. The cover and sides are easily removable for access to all the components. An air inlet filter for clean combustion air and fast assessment of maintenance requirement is fitted to all Upton boilers.

To maintain your boilers, 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

5 Yr Heat Exchanger Warranty

The Upton boiler comes with a 5-year warranty on the heat exchanger. All other parts carry Hamworthy's standard two years' warranty (except for consumables in line with our Terms and Conditions). Where the product is commissioned by Hamworthy service engineers within 6 months of delivery date, then the two-year warranty covers parts and labour from date of commissioning. We offer tailored packages to suit individual customer requirements, many of which include extended warranty benefits. Full details of warranty terms and conditions are available on request.

Service

Tel: **01202 662555**

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

Spares

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

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

Spares

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

By coming to us, the Original Equipment Manufacturer (OEM), 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

Each boiler is despatched fully assembled and factory tested with the casing and control panel fitted. Upton modular boilers are delivered to site secured to a pallet to ensure safe manoeuvrability. Standard delivery for all Hamworthy products is free of charge.

Boilers are delivered to ground level and are closely co-ordinated with the customer, to suit the site construction programme.

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

Complete your system

As well as energy efficient commercial boilers, we supply direct and indirect fired water heaters plus equipment to enhance the efficiency and longevity of your heating system.

From dosing pots and air & dirt separators for system cleanliness to pressurisation units and expansions vessels for sealed systems, Hamworthy can offer the support equipment needed for your system installation.

Burstock expansion vessel

Chesil pressurisation units

System equipment

Chesil pressurisation unit

Wall hung and floor standing pressurisation units for sealed systems. Available in 5 models with single and twin pump options.

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.

Clenston air and dirt separator

For the removal of dissolved gas and air particles from heating systems. Available in 7 models to suit pipe sizes from DN50 to DN200.

Horton dosing pots

Chemical dosing pots for introducing chemicals into a sealed heating system. Available in 4 models from 3.5 to 15 litres capacity.

Hot water

Powerstock calorifiers and storage tanks

Glass lined calorifier for indirect domestic hot water production with single and twin coil options. Available in 7 models with continuous outputs from 569 to 1,858 litres per hour.

Glass lined storage tanks for domestic hot water available in 4 models with storage capacities of 300 to 990 litres.

Halstock calorifiers and storage tanks

Stainless steel calorifiers for domestic hot water production with single and twin coil options. Available in 5 models with continuous outputs from 300 to 2106 litres per hour.

Stainless steel storage tanks for domestic hot water available in 5 models with storage capacities of 300 to 965 litres.

Dorchester direct fired water heaters

5 ranges of condensing and non-condensing direct fired water heaters with glass lined and stainless steel options to choose from. Available in over 22 models with continuous outputs from 228 to 2,400 litres per hour.

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.

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

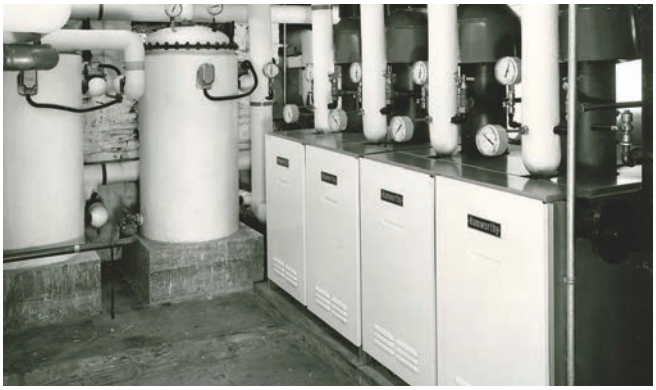
We are an active member of trade associations and professional bodies supporting the industries we work in.

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

When you deal with Hamworthy, have confidence that we're working within a defined set of standards that is internationally recognised.



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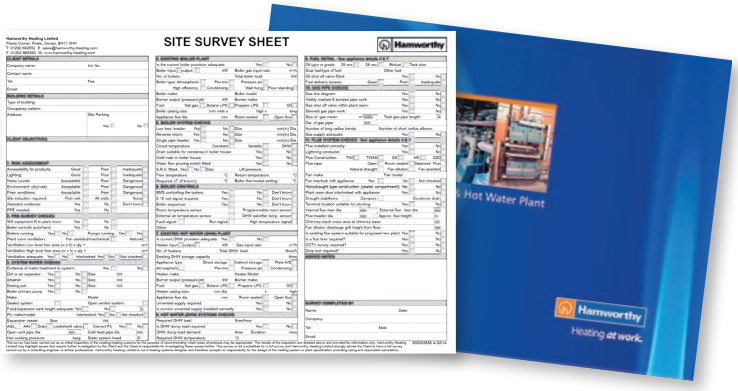

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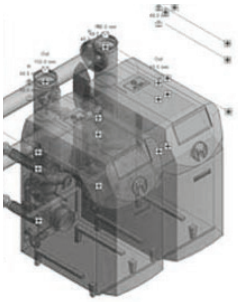
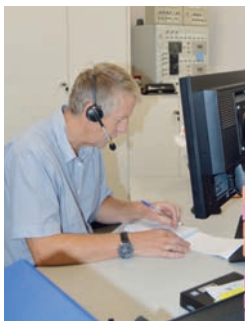


Find out who your local contact is

hamworthy-heating.com/find-your-local-sales-manager

Get information for discontinued products

hamworthy-heating.com/discontinued-products



Contact our in-house technical support team on

01202 662505

Your local contact is:

British engineering excellence from Hamworthy Heating; the commercial heating and hot water specialists.

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Hamworthy Heating Accreditations
ISO 9001 Quality Management System
ISO 14001 Environmental Management System
ISO 45001 Health & Safety Management System

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