Keston

EVERYTHING IS POSSIBLE

7 YEAR†

T&Cs apply. See Page 3

Twin Flue Boiler Range
& Accessories

British Built Since 2013

Image for illustrative purposes only

When you choose to work with Keston you can be confident to know that you're partnering with a British manufacturer that's supported by a dedicated national service team, delivering help and advice to you and your customers, 364 days a year.

7 Year Warranty†

Providing ultimate reliability, Keston boilers are offered with warranties of up to 7 years when fitted with a Keston System Filter

Twin Flue Design

Providing the perfect solution for problematic and awkward installations

Weather Compensator

All models in the Keston range come complete with weather compensation as standard

British Built Since 2013

All Keston boilers are built in and designed for the British market

† Keston System and Combi: 5 year parts & labour warranty as standard. 7 year warranty when installed with a Keston 22mm System Filter and registered within 30 days of installation. 7 year warranty available until 31/12/19. Terms and conditions apply. Keston Heat: 2 year parts & labour warranty as standard. 5 year warranty available subject to being commissioned by Keston Boilers. Free Commissioning only available when a Keston 28mm System Filter is installed with a single Keston Heat boiler; not available on multiple boiler installations. Terms and conditions apply.

Twin Flue Technology

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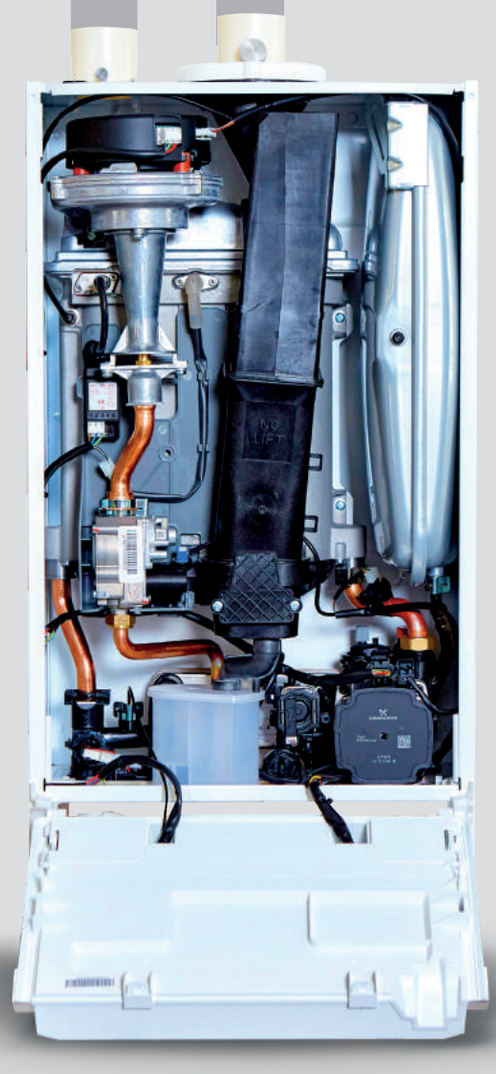


DESIGNED TO WORK WITHOUT COMPROMISE

When you choose to work with Keston you can be confident that you're partnering with a British manufacturer that's supported by a dedicated national service team, delivering help and advice to you and your customers, 364 days a year.

Our rigorous research & development procedures and manufacturing quality control checks ensures that all of our products are produced to the highest of standards, delivering total comfort and peace of mind.

The Keston Twin Flue system makes every job easier. To give you maximum flue flexibility, you can run the flue vertically or horizontally from an elevation of 1.5° and the flue can be extended up to 27 metres from the boiler allowing for easy and hassle-free installation. This allows the boiler to be sited in the most convenient and practical location.

The Ultimate Simple Flue System

- Flexible flue positioning avoids pluming
- Widely available from plumbing and builders merchants
- Flue can be painted when installed internally and externally
- 50mm muPVC (PVC-C)* solvent weld allowing simple cost effective installation

* The only systems approved for this application are: Marley muPVC (PVC-C) Solvent Weld Waste System (50mm), Polypipe System 2000 muPVC (PVC-C) Solvent Weld Waste System (50mm), Polypipe Terrain Solvent Weld System (50mm) and Wavin Osma PVC-C Solvent Weld System (50mm). Please use the recommended Solvent Weld Cement for each system. Please see page 9 for more details.

A Keston for all Occasions

The Keston range includes both domestic and light commercial models which come complete with twin flue capability.

Keston boilers are offered with a warranty of up to 7 years†, ensuring the ultimate peace of mind for both you and your customer. The Keston range is made up of Combi, Heat only and System boilers, offering a solution for all applications.

Every model in the range offers a market leading solution for awkward and problematic installations, thanks to the twin flue capability.

You can rest assured when choosing Keston as you will be supported by a national customer service team, offering support 7 days a week.

7 YEAR WARRANTY†
Keston boilers are available with warranties of up to 7 years when a Keston System Filter is also installed†

With Keston, your boiler can be situated any room, any place, anywhere – no compromise.

Where I Don't Want the Boiler In Sight

Where There is a Long Distance from Boiler to Outlet

Images for illustrative purposes only.

† Keston System and Combi: 5 year parts & labour warranty as standard. 7 year warranty when installed with a Keston 22mm System Filter and registered within 30 days of installation. 7 year warranty available until 31/12/19. Terms and conditions apply. Keston Heat: 2 year parts & labour warranty as standard. 5 year warranty available subject to being commissioned by Keston Boilers. Free Commissioning only available when a Keston 28mm System Filter is installed with a single Keston Heat boiler; not available on multiple boiler installations. Terms and conditions apply.

Twin Flue Systems

The benefits of unique Keston flue systems make every installation easier.

A low cost, small diameter (50mm) muPVC (PVC-C) pipe (Marley, Polypipe 2000 System, Polypipe Terrain 200 and Wavin Osma systems only) is the only item required for use with the innovative Keston flue and air intake system. This is readily available from your local merchant at a fraction of the cost of concentric flue.

The Keston flue system makes every job easier. To give you maximum flexibility, you can run the flue vertically or horizontally from an elevation of 1.5° and the flue can be extended up to 27* metres from the boiler allowing for easy and hassle-free installation.

Keston System
27m maximum flue length*

Keston Combi
27m maximum flue length*

Keston Heat
21m maximum flue length*

* For flue fall and maximum total equivalent flue lengths, please refer to each boiler's installation manual.

Approved Flue Pipe Systems

When installing a replacement boiler a new flue system is recommended. However re-using the existing boiler flue installation is acceptable if the installer checks and confirms:

- The flue pipe is the approved Marley/Polypipe/Terrain/Wavin 50mm muPVC (PVC-C) solvent weld flue system
- The flue installation is upgraded to the most recent flue standards taking particular care to comply with flues in voids regulation
- A risk assessment is conducted to confirm the effectiveness of the flue
- The existing flue will last the lifetime of the new appliance

Design

Individual air supply and flue outlet pipes are used as standard.

The material approved for this application which MUST be used are:

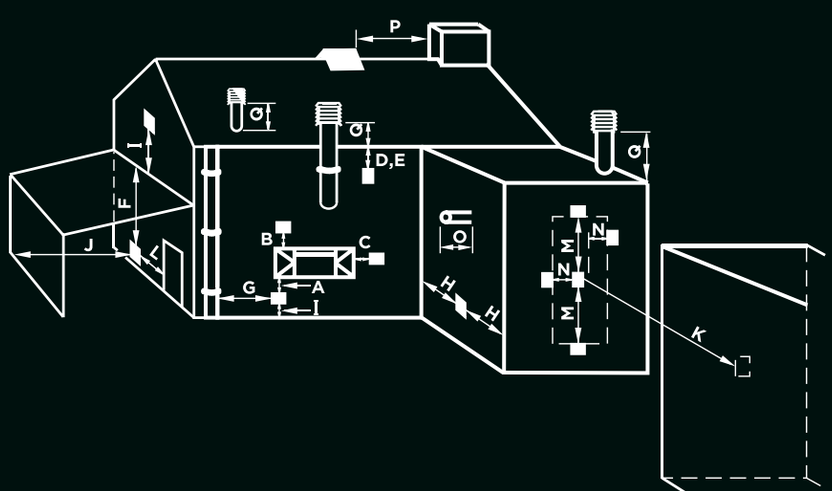
- Marley muPVC Solvent Weld System (50mm)
- Polypipe System 2000 muPVC solvent weld (50mm)
- Polypipe Terrain 200 muPVC Solvent Weld System (50mm)
- Wavin OSMA PVC-C Solvent Weld System (50mm)

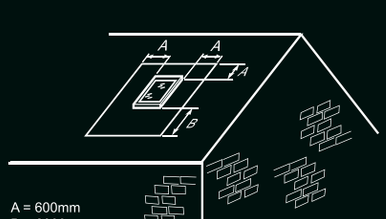
to BS5255 and/or BSEN1566-11 and BSEN1329, are the only systems approved for this application.

The following pipe and fittings are approved:

Marley muPVC Solvent Weld System (50mm)	
Marley Code	
KP 304	50mm x 4m double spigot pipe
KP32	50mm x 45 deg bend
KSC3	50mm straight coupling
KB3	50mm x 88.5 deg bend
KT3	50mm swept tee
Polypipe System 2000 muPVC Solvent Weld System (50mm)	
Polypipe Code	
MU 301	4m length muPVC wastepipe 5/225
MU 313	50mm x 45 deg muPVC obtuse bend
MU 314	50mm x 92.5 deg muPVC swept bend
MU 310	50mm muPVC straight coupling
MU 316	50mm muPVC straight coupling
MU 316	50mm x 92.5 deg muPVC swept tee
Polypipe Terrain Solvent 200 Weld System (50mm)	
Polypipe Code	
200.2.40	4m length muPVC wastepipe
201.2.135	50mm x 135 deg muPVC bend
200.2.91	50mm x 91 1/4 deg muPVC swept bend
210.2	50mm muPVC straight coupling
204.2.135	50mm muPVC swept tee
Wavin OSMA PVC-C Solvent Weld System (50mm)	
Wavin Code	
2M073	3M lenght waste pipe 50mm
2M163	50mm x 45 deg bend
2M161	50mm x 87.5 deg bend
2M104	50mm double socket
2M190	50mm x 8.75 tee

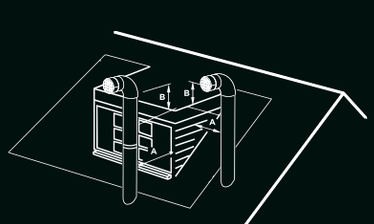
Flue Positioning



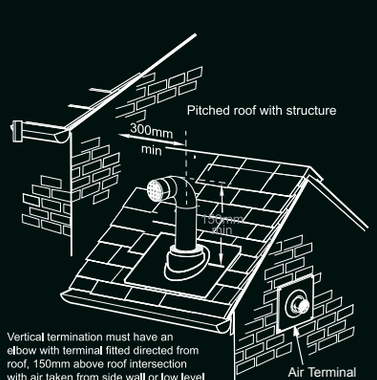


A = 600mm
B = 2000mm

The flue terminal shall not penetrate the shaded area of the roof



If chimney penetrates shaded area such that
A is less than 300mm,
B shall not be less than 300mm.



Vertical termination must have an elbow with terminal fitted directed from roof, 150mm above roof intersection with air taken from side wall or low level (min 500mm separation).

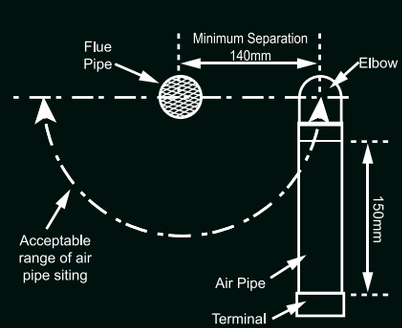
Note: 90 degree elbow must be fitted facing downwards to prevent rain ingress

Termination of the Flue and Air

The flue and air pipes may terminate independently through any external walls within the same dwelling except on opposing walls, within the maximum lengths shown in the graphs on pages 18, 24 and 30 (alternatively a vertical flue pipe termination is acceptable). The air pipe must have an elbow and 150mm length of pipe directed downwards with a termination grill fitted. C13 only, C53 must have a minimum of a 90 degree elbow and terminal fitted facing downwards to prevent rain ingress.

The air pipe can be situated at the side or beneath the flue pipe to a minimum dimension of 140mm (see diagram below). It must not be sited above the flue pipe. The flue and air pipes must extend by at least 40mm from the wall surface. Condensing boilers emit a visible plume of water vapour from the flue terminal, this is normal. It is the responsibility of the installer to judiciously select a terminal location that does not cause a nuisance. If either the flue or air terminal is below a height of 2m from ground level a terminal guard must be fitted.

Note. Any vertical termination MUST comply with C53 installation with the air being taken from greater than 500mm away and from a flat wall termination as diagram in "Flue Positioning".



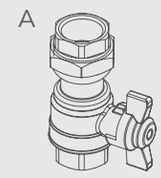
Keston Flue Terminal Positions - C13 Classification

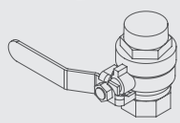
	Twin Flue Positions when Flue & Air Terminal are less than 500mm apart	Flue minimum spacing	Air minimum spacing
A	Below an opening (1)	300mm	50mm
B	Above an opening (1)	300mm	50mm
C	Horizontally to an opening	300mm	50mm
D	Below gutters,soil pipes or drain pipes	75mm	75mm
E	Below eaves	200mm	50mm
F	Below balcony or car port roof	200mm	50mm
G	From a vertical drain pipe or soil pipe	150mm	50mm
H	From an internal or external corner or to a boundary alongside the terminal (2)	200mm	50mm
I	Above ground,roof or balcony level	300mm	100mm
J	From a surface or boundary facing the terminal	600mm	100mm
K	From a terminal facing a terminal	1200mm	1200mm
L	From an opening in the car port into the building	1200mm	100mm
M	Vertically from a terminal on the same wall	1500mm	1500mm
N	Horizontally from a terminal on the same wall	300mm	300mm
O	From the wall on which the terminal is mounted	40mm	40mm
P	From a vertical structure on the roof	N/A	N/A
Q	Above intersection with roof	N/A	N/A
(1)	In addition, for temperature and structural reasons, the terminal should not be nearer than 150 mm (fanned draught) to an opening in the building fabric formed for the purpose of accommodating a built-in element such as a window frame		
(2)	The reference to external corners does not apply to building protrusions not exceeding 450 mm, such as disused chimneys on external walls for: fanned draught appliances		

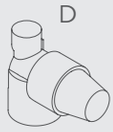
Keston Flue Terminal Positions - C53 Classification

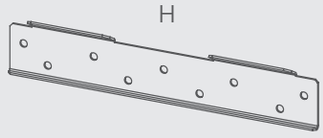
	Twin Flue Positions when Flue & Air Terminal are more than 500mm apart	Flue minimum spacing	Air minimum spacing
A	Below an opening (1)	300mm	50mm
B	Above an opening (1)	300mm	50mm
C	Horizontally to an opening	300mm	50mm
D	Below gutters,soil pipes or drain pipes	75mm	75mm
E	Below eaves	200mm	50mm
F	Below balcony or car port roof	200mm	50mm
G	From a vertical drain pipe or soil pipe	150mm	50mm
H	From an internal or external corner or to a boundary alongside the terminal (2)	200mm	50mm
I	Above ground,roof or balcony level	300mm	100mm
J	From a surface or boundary facing the terminal	600mm	100mm
K	From a terminal facing a terminal	1200mm	1200mm
L	From an opening in the car port into the building	1200mm	100mm
M	Vertically from a terminal on the same wall	1500mm	1500mm
N	Horizontally from a terminal on the same wall	300mm	300mm
O	From the wall on which the terminal is mounted	40mm	40mm
P	From a vertical structure on the roof	300mm	N/A
Q	Above intersection with roof	150mm	N/A
(1)	In addition, for temperature and structural reasons, the terminal should not be nearer than 150 mm (fanned draught) to an opening in the building fabric formed for the purpose of accommodating a built-in element such as a window frame		
(2)	The reference to external corners does not apply to building protrusions not exceeding 450 mm, such as disused chimneys on external walls for: fanned draught appliances		

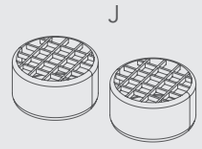
Supplied with Keston Heat

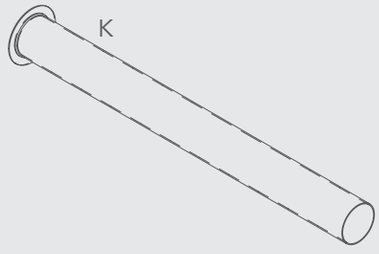


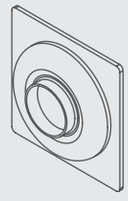


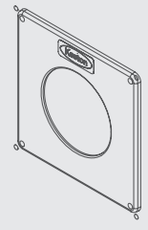






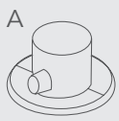


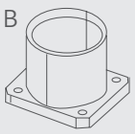


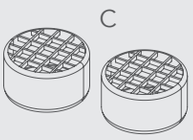


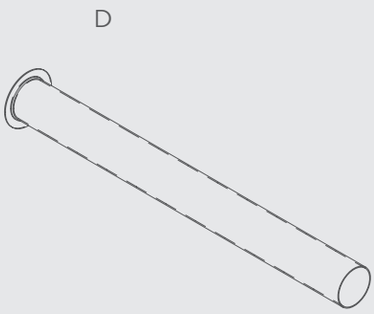
A. Gas cock
B. Ball Valve - 2 off
C. M1 Tee 3/4
D. Pressure Relief Valve
E. M1 Tee 1/2
F. Drain Nipple 3/4
G. Drain Nipple 1/2
H. Wall Mounting Plate
J. Terminals - 2 off
K. Flue Sleeve
L. Wall Plate & Screws
M . Wall Seal
N. Weather Compensation
P. Screws - 4 off
Q. Wall Plugs - 4 off

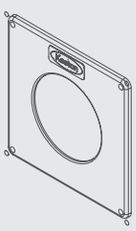
Supplied with Keston System/Combi

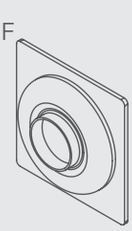








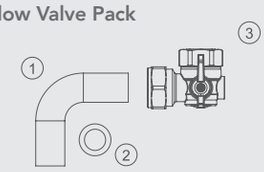




A. Flue Adapter
B. Air Spigot
C. Terminals - 2 off
D. Flue Sleeve
E. Wall Plate
F .Wall Seal
G. Outside sensor
H. Screws - 4 off
J. Wall Plugs - 4 off

Keston System Connection Pack

Flow Valve Pack

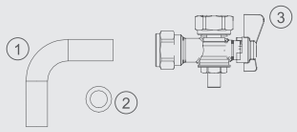


1. Pipe CH Flow
2. Washer CH
3. Valve Flow

Return Valve Pack

1. Pipe CH Flow
2. Washer CH
3. Valve Flow

Gas Valve Pack



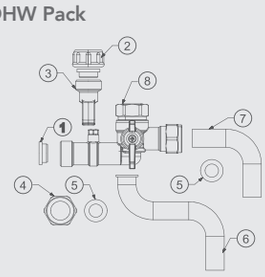
1. Screw (x2)
2. Wallplug (x2)
3. Turret Clamp Screw (spare) (x1)

Accessory Pack

1. Pipe - Gas Inlet
2. Washer - Gas (blue)
3. Gas Cock

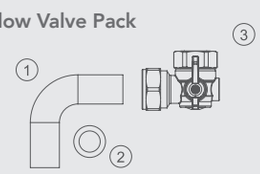
Keston Combi Connection Pack

DHW Pack



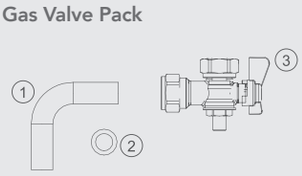
1. 1/2" Top Hat Washer (x2)
2. Cap Female
3. Plug Male and Clip
4. Nut G1/2 16 Brass (Flat)
5. Washer 18.5 x 11 x 11.8 (x2)
6. Pipe DHW Outlet
7. Pipe DHW Inlet
8. Valve DHW Inlet

Flow Valve Pack



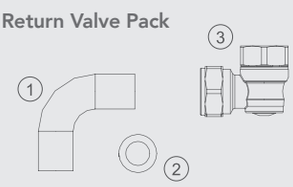
1. Pipe CH Flow
2. Washer CH
3. Valve Flow

Gas Valve Pack



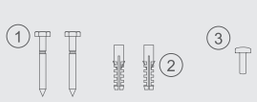
1. Pipe - Gas Inlet
2. Washer - Gas (blue)
3. Gas Cock

Return Valve Pack



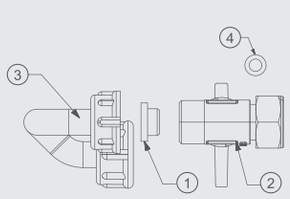
1. Pipe CH Return
2. Washer CH
3. Valve Return

Accessory Pack



1. Screw (x2)
2. Wallplug (x2)
3. Turret Clamp Screw

Filling Loop Pack

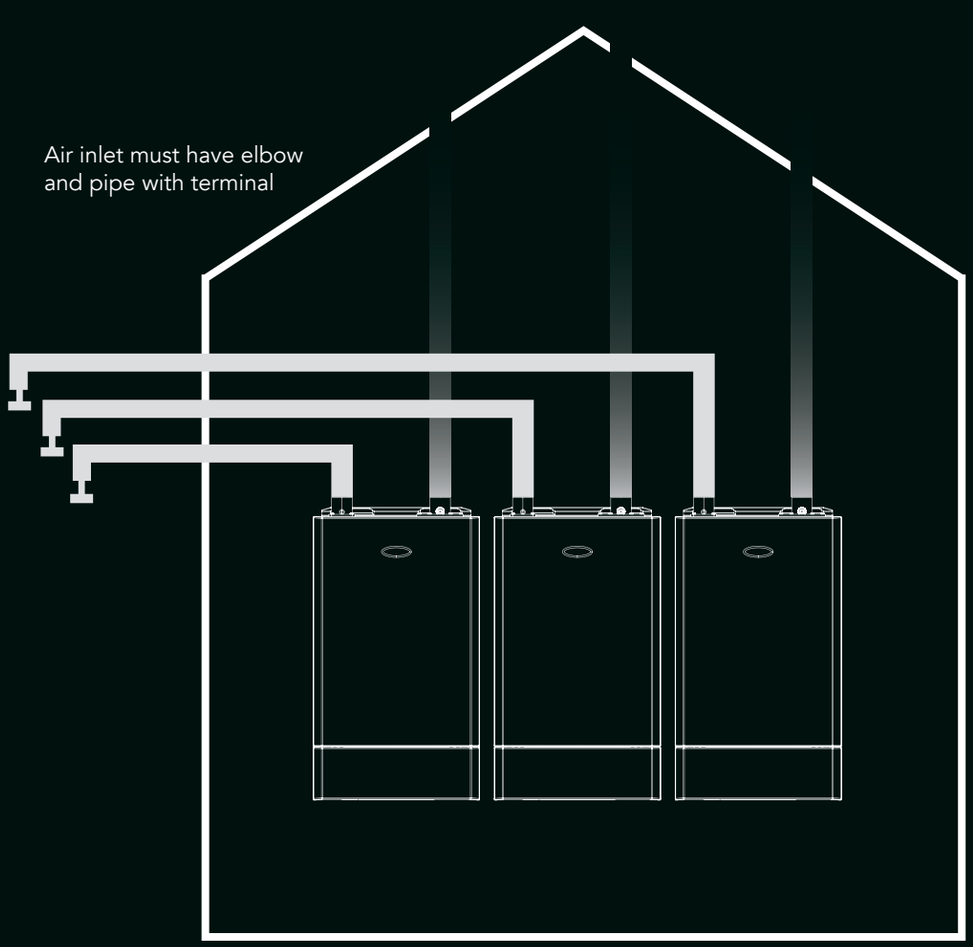


1. 3/8" Fibre washer
2. Valve Filling Loop
3. Pipe Filling Loop
4. Washer

Cascade Installation

The termination of the flue pipes must be a minimum of 140mm apart.

There is no minimum spacing required when running flue pipes vertically within the building.



150mm above intersection of roof vertical flue pipe to have elbow and terminal pointing away from pitch.

If long runs of vertical pipe are utilised, it is recommended to fit a condensate trap at the base of the vertical section (if offset to flue adaptor).

- Air must be taken from vertical wall below roof level
- No minimum separation required between air intakes required
- No fall required for air intake - can be horizontal

Keston Boiler Range

7 Year Warranty†

Providing ultimate reliability, Keston boilers are offered with warranties of up to 7 years when fitted with a Keston System Filter

Twin Flue Design

Providing the perfect solution for problematic and awkward installations

Weather Compensator

All models in the Keston range come complete with weather compensation as standard

British Built Since 2013

All Keston boilers are built in and designed for the British market

† Keston System and Combi: 5 year parts & labour warranty as standard. 7 year warranty when installed with a Keston 22mm System Filter and registered within 30 days of installation. 7 year warranty available until 31/12/19. Terms and conditions apply. Keston Heat: 2 year parts & labour warranty as standard. 5 year warranty available subject to being commissioned by Keston Boilers. Free Commissioning only available when a Keston 28mm System Filter is installed with a single Keston Heat boiler; not available on multiple boiler installations. Terms and conditions apply.

Keston System

30kW Output

High SEDBUK efficiency rating and easy to install.

Keston System boiler provides a simple and reliable solution for a wide variety of sealed domestic systems.

Available with a 30kW output, Keston System provides a dependable and efficient solution for new and replacement installations. Time saving push & clip flue spigot connections and a wide range of alternative flueing solutions help to ensure the product is installed quickly in virtually any domestic situation.

With a lightweight design, concealed connections at the base and no compartment ventilation required, Keston System can be conveniently fitted out of sight into a standard kitchen cupboard*.

Complete with a 7 year parts and labour warranty†, Keston System boiler provides simple heating control, all from a single compact appliance.

The Facts

- 7 year warranty†
- Easy to see pressure gauge
- Large backlit display with user friendly controls
- Low lift weight
- Low component count maximising reliability
- Compact dimensions
- Twin flue up to 27m**
- 50mm muPVC (PVC-C) solvent weld flue allowing simple, cost effective installations***
- Weather compensation supplied as standard
- Inbuilt frost protection
- Fully modulating
- LPG conversion kit available

7 Year Warranty†
Providing ultimate reliability, Keston System boilers are offered with a 7 year warranty when fitted with a Keston 22mm System Filter

Twin Flue Design
Providing the perfect solution for problematic and awkward installations

Weather Compensator
All models in the Keston range come complete with weather compensation as standard

British Built Since 2013
All Keston boilers are built in and designed for the British market

INSTALL THE KESTON 22MM SYSTEM FILTER
with a Keston System boiler to receive a 7 year warranty†

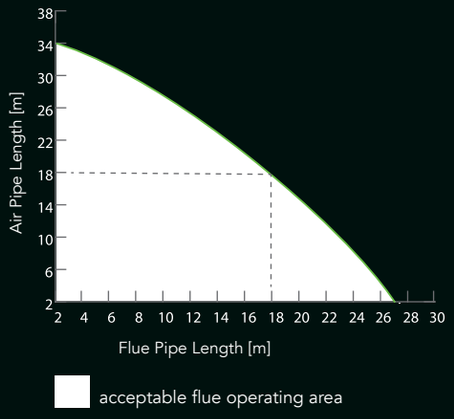
7 YEAR†

† 7 year warranty when installed with a Keston 22mm System Filter and registered within 30 days of installation. 5 year parts & labour warranty as standard. 7 year warranty available until 31/12/19. Terms and conditions apply.
* Please check cupboard size prior to installation
** For the maximum total equivalent flue length, please refer to the installation manual.
*** The only systems approved for this application are: Marley muPVC (PVC-C) Solvent Weld Waste System (50mm), Polypipe System 2000 muPVC (PVC-C) Solvent Weld Waste System (50mm), Polypipe Terrain Solvent Weld System (50mm) and Wavin Osma PVC-C Solvent Weld System (50mm). Please use the recommended Solvent Weld Cement for each system. Please see page 9 for more details.

energy saving trust endorsed product

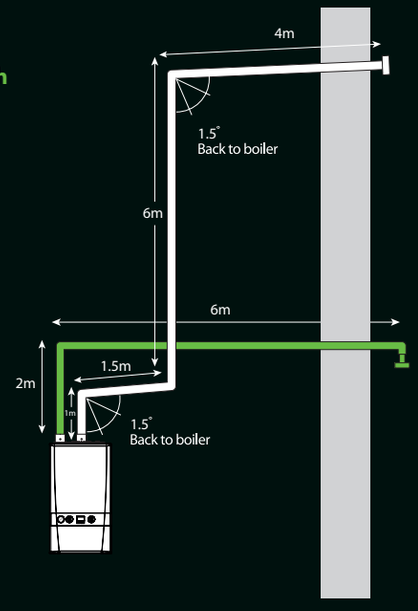
Flue Installation

Keston System S30 - Flue & Air Pipe Length



acceptable flue operating area

Graph indicates maximum flue run 27m with 2m air. Also, 18m flue with 18m air pipe for parallel twin flue run.

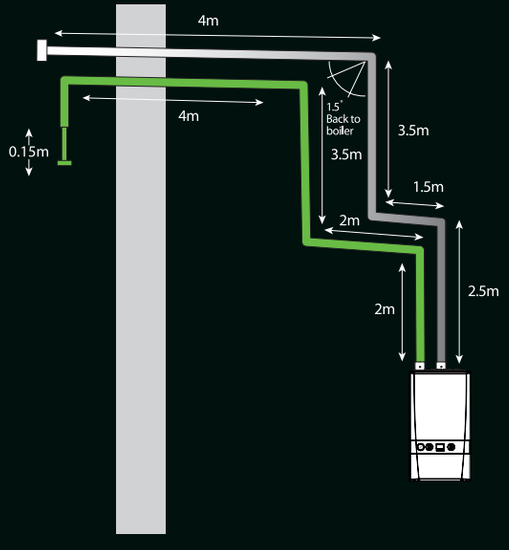


C53 HORIZONTAL

Calculations

Flue
Elbows 3 x 1m = 3m
Straights 4+6+1.5+1 = 12.5m
Total = 15.5m

Air
Elbows 2 x 1m = 2m
Straights 6+2+0.1+1 = 8.1m
Total = 10.1m



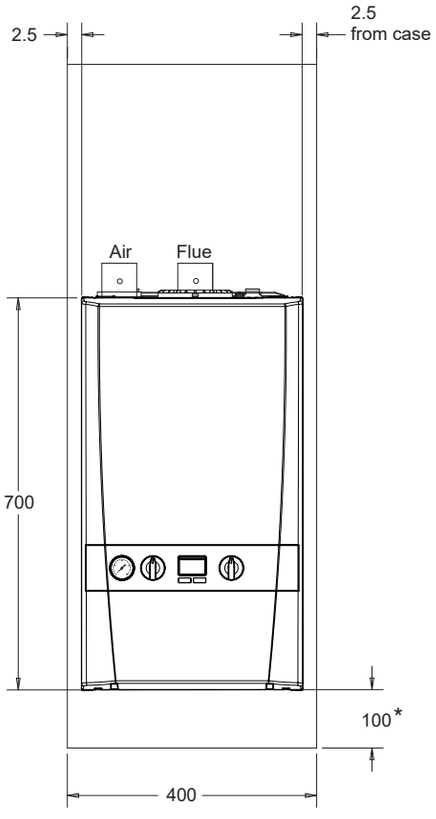
C13 HORIZONTAL

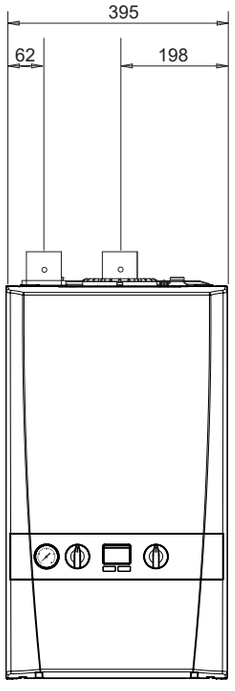
Calculations

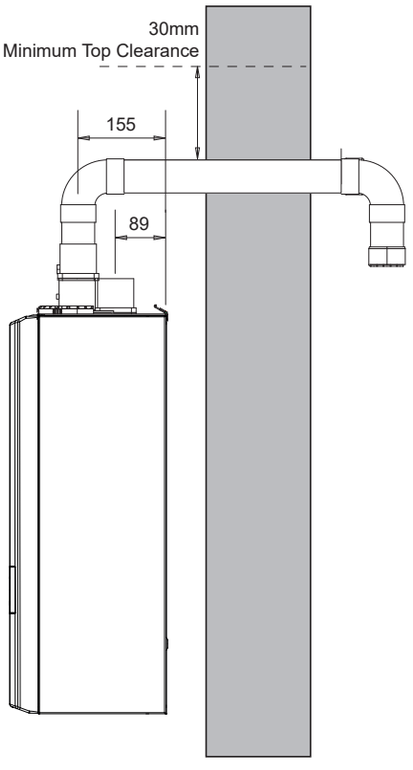
Flue
Elbows 3 x 1m = 3m
Straights 4+3.5+1.5+2.5 = 11.5m
Total = 14.5m

Air
Elbows 4 x 1m = 4m
Straights 2+2+3.5+4+0.15 = 11.65m
Total = 15.65m

Dimensions & Weight





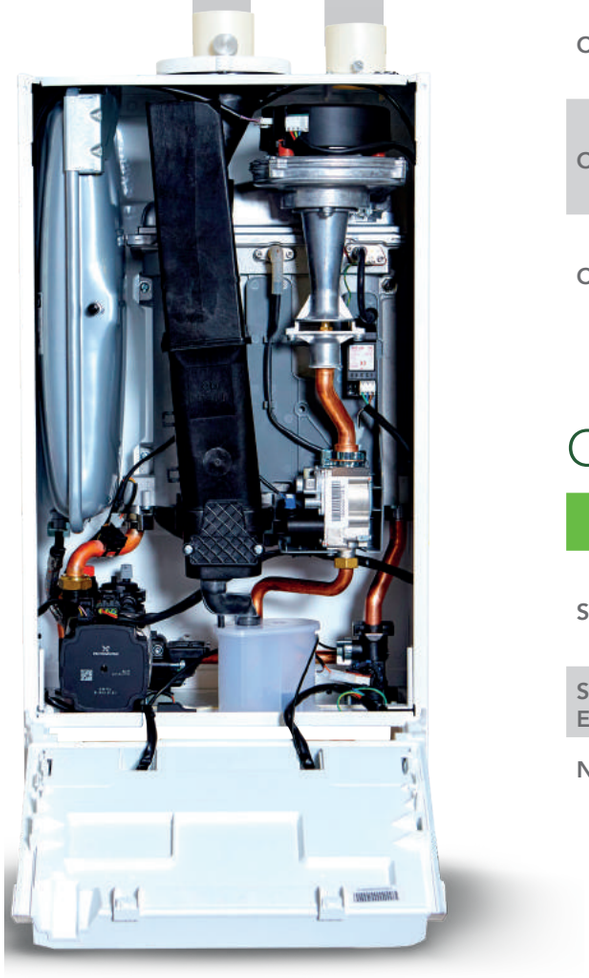


KESTON SYSTEM	
Height	700mm
Width	395mm
Depth	278mm

The following minimum clearances must be maintained for operation and servicing.
Front of boiler - 450mm†
Sides of boiler - 2.5mm
Above boiler - 350mm, with 30mm above the flue
Below boiler - 100mm†

* Or equivalent length.
† Can be reduced to 5mm for cupboard fit, 450mm required for servicing.

Specification Data



Central Heating

			S30
CH Output @ 70°C	Max	kW	30.3
	Min	kW	6.1
CH Output @ 40°C	Max	kW	31.0
	Min	kW	6.4
CH Input	Nett CV Max	kW	30.4
	Nett CV Min	kW	6.1
CH Input	Gross CV Max	kW	33.7
	Gross CV Min	kW	6.7
CH Gas Consumption	Max	m3/h	3.135
	Min	m3/h	0.622

Others

			S30
Seasonal Efficiency	SEDBUK 2005	%	91.1
	SEDBUK 2009	%	89.6
Seasonal Space Heating Efficiency Class			A
NOx Classification			Class 5

General Data

		S30
Max Horizontal Flue Length	m	27 Flue / 2 Air
Max Horizontal Flue Length (Parallel)	m	18 Flue / 18 Air
Flue Terminal Diameter	mm	50
Gas Supply		2H - G20 - 20mbar
Gas Supply Connection		15mm copper compression
Injector Size	mm	4.65
Flow Connection (CH)		22mm copper compression
Return Connection (CH)		22mm copper compression
Average Flue Temp - Mass Flow Rate		69°C - 13g/s
CO_2 Content (±0.7) (Max CH)	%	9.3
CO_2 Content (±0.7) (Min CH)	%	8.8
Max Working Pressure (Sealed Systems)	bar (psi)	2.5 (36.3)
Electrical Supply		230V - 50Hz
Power Consumption	W	100
Fuse Rating		External 3A / Internal: T4A HRC L250V
Water Content	l (gal)	1.2 (0.26)
Weight (Packed)	kg	31.6
Maximum Installation Weight	kg	26.2

Keston Combi

30kW & 35kW Output

Complete hassle-free home comfort from a single compact appliance.

Offering first-class comfort in a compact, wall-hung appliance small enough to fit inside a standard kitchen cupboard*, the Keston Combi range enables heating and hot water to be controlled independently, ensuring maximum comfort and efficiency.

Keston Combi can be sited almost anywhere in the home, without the need for a separate tank. And because it connects to the unique Keston Twin Flue system, the boiler can be situated anywhere up to 27** metres from the flue outlet, helping to provide further flexibility when required.

Fully modulating, and with weather compensation, Keston Combi provides excellent energy savings, making it the perfect choice for new or replacement installations alike.

The Facts

- 7 year warranty†
- Easy to see pressure gauge
- Large backlit display with user friendly controls
- Low lift weight
- Low component count maximising reliability
- Compact dimensions
- Twin flue up to 27m**
- 50mm muPVC (PVC-C) solvent weld flue allowing simple, cost effective installations***
- Weather compensator supplied as standard making Keston Combi **Boiler Plus compliant out of the box**
- Pre-fitted filling loop
- Inbuilt frost protection
- Fully modulating
- LPG conversion kit available

7 Year Warranty†
Providing ultimate reliability, Keston Combi boilers are offered with a 7 year warranty when fitted with a Keston 22mm System Filter

Twin Flue Design
Providing the perfect solution for problematic and awkward installations

Weather Compensator
All models in the Keston range come complete with weather compensation as standard, making Keston Combi **Boiler Plus compliant out of the box**

British Built Since 2013
All Keston boilers are built in and designed for the British market

INSTALL THE KESTON 22MM SYSTEM FILTER
with a Keston Combi boiler to receive a 7 year warranty†

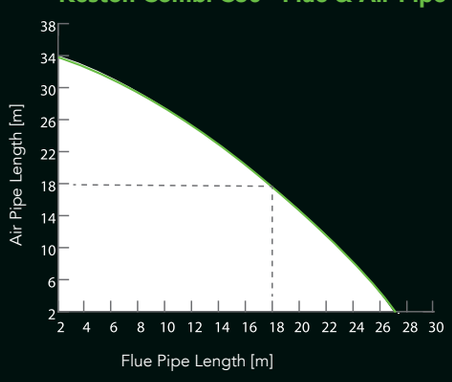
7 YEAR†

† 7 year warranty when installed with a Keston 22mm System Filter and registered within 30 days of installation. 5 year parts & labour warranty as standard. 7 year warranty available until 31/12/19. Terms and conditions apply.
* Please check cupboard size prior to installation.
** For the maximum total equivalent flue length, please refer to the installation manual.
*** The only systems approved for this application are: Marley muPVC (PVC-C) Solvent Weld Waste System (50mm), Polypipe System 2000 muPVC (PVC-C) Solvent Weld Waste System (50mm), Polypipe Terrain Solvent Weld System (50mm) and Wavin Osma PVC-C Solvent Weld System (50mm). Please use the recommended Solvent Weld Cement for each system. Please see page 9 for more details.

energy saving trust endorsed product

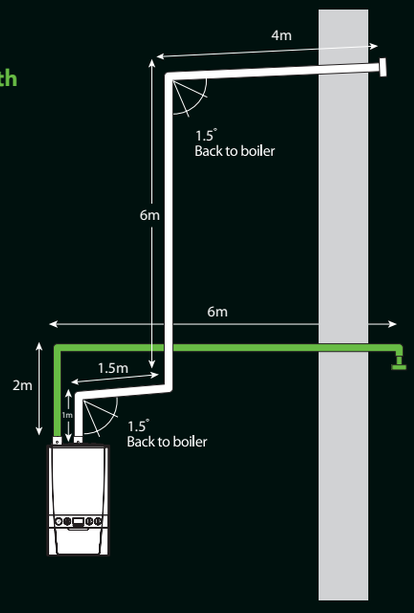
Flue Installation

Keston Combi C30 - Flue & Air Pipe Length



acceptable flue operating area

Graph indicates maximum flue run 27m with 2m air. Also, 18m flue with 18m air pipe for parallel twin flue run.



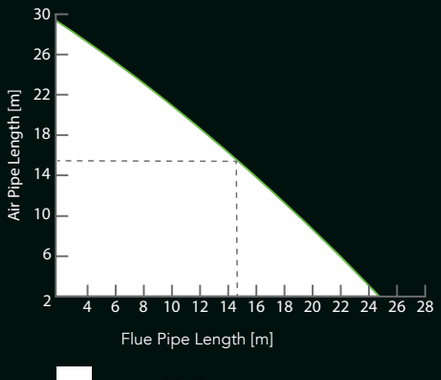
C53 HORIZONTAL

Calculations

Flue
Elbows 3 x 1m = 3m
Straights 4+6+1.5+1 = 12.5m
Total = 15.5m

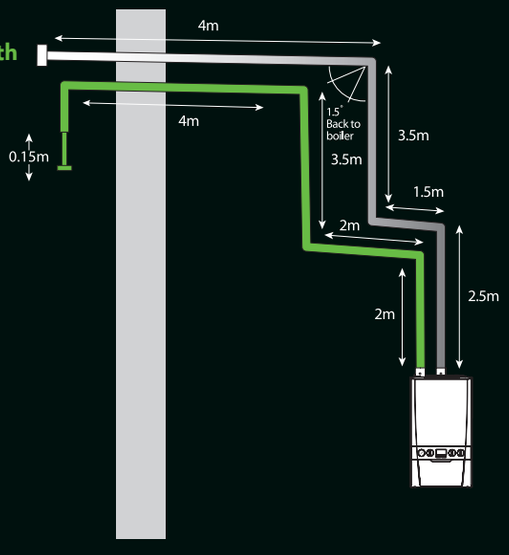
Air
Elbows 2 x 1m = 2m
Straights 6+2+0.1+1 = 8.1m
Total = 10.1m

Keston Combi C35 - Flue & Air Pipe Length



acceptable flue operating area

Graph indicates maximum flue run 25m with 2m air. Also, 15m flue with 15m air pipe for parallel twin flue run.



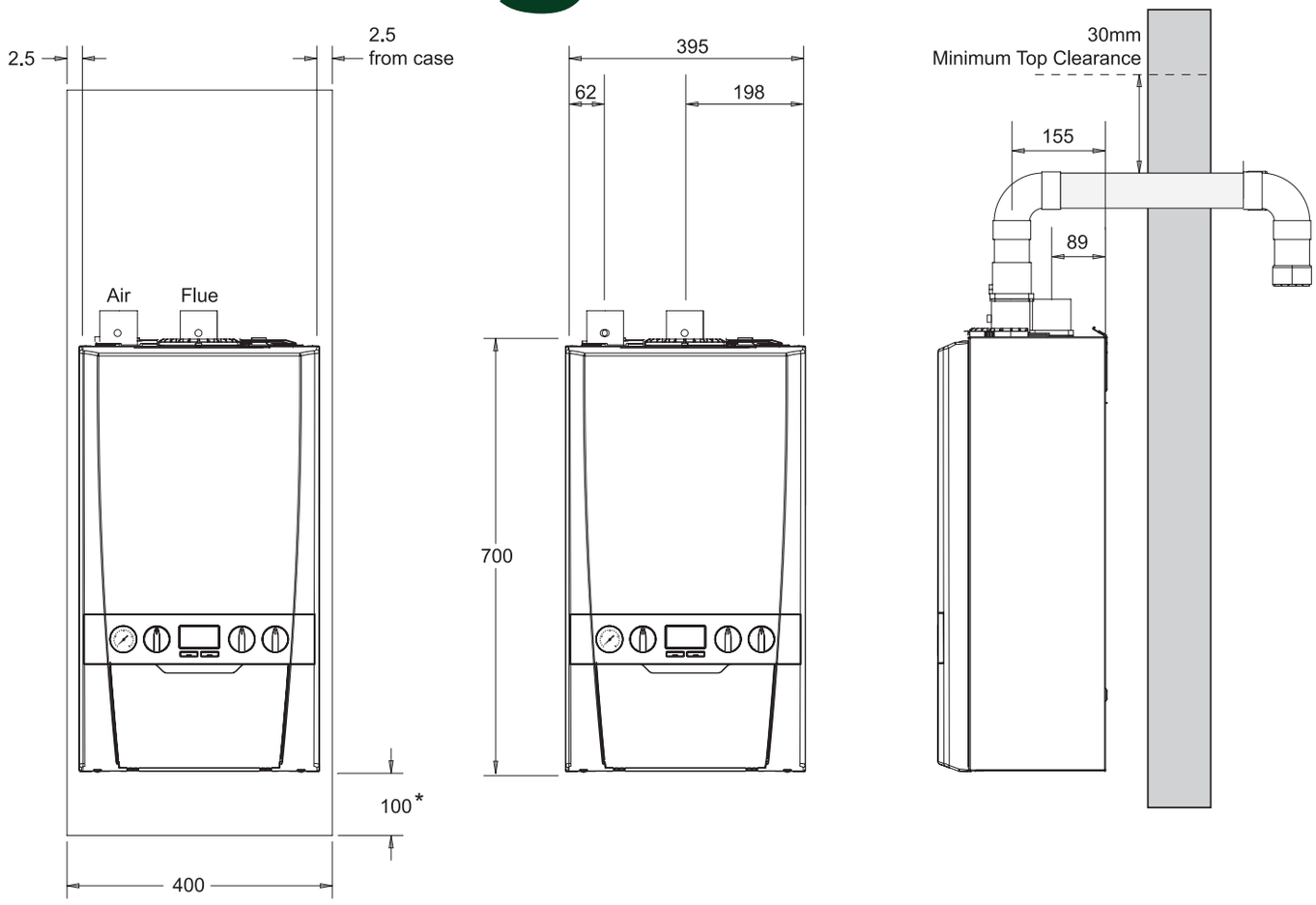
C13 HORIZONTAL

Calculations

Flue
Elbows 3 x 1m = 3m
Straights 4+3.5+1.5+2.5 = 11.5m
Total = 14.5m

Air
Elbows 4 x 1m = 4m
Straights 2+2+3.5+4+0.15 = 11.65m
Total = 15.65m

Dimensions & Weight

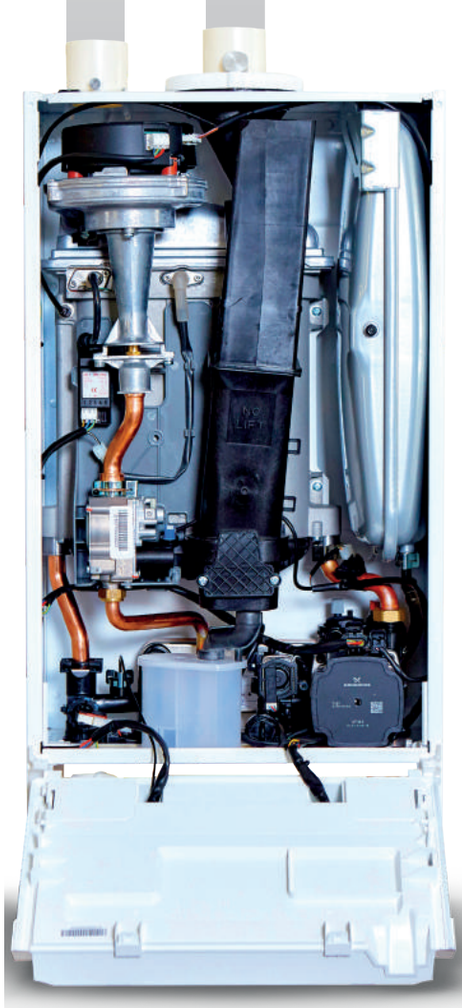


KESTON COMBI	
Height	700mm
Width	395mm
Depth	278mm

The following minimum clearances must be maintained for operation and servicing.
Front of boiler - 450mm†
Sides of boiler - 2.5mm
Above boiler - 350mm, with 30mm above the flue
Below boiler - 100mm†

* Or equivalent length.
† Can be reduced to 5mm for cupboard fit, 450mm required for servicing

Specification Data



Central Heating

			C30	C35
CH Output @ 70°C	Max	kW	24.2	24.2
	Min	kW	6.1	7.1
CH Output @ 40°C	Max	kW	25.6	25.6
	Min	kW	6.4	7.5
CH Input	Nett CV Max	kW	24.3	24.3
	Nett CV Min	kW	6.1	7.1
CH Input	Gross CV Max	kW	27.0	27.0
	Gross CV Min	kW	6.7	7.9
CH Gas Consumption	Max	m^3/h	2.512	2.512
	Min	m^3/h	0.623	0.734

Hot Water

			C30	C35
DHW Output	Max	kW	30.3	35.3
DHW Input	Nett CV Max	kW	30.4	35.4
DHW Input	Gross CV Max	kW	33.7	39.3
DHW Gas Consumption		m^3/h	3.135	3.658
DHW Flow Rate at 35°C Rise		l/min	12.4	14.5
DHW Specific Rate		l/min	14.5	16.9

Others

			C30	C35
Seasonal Efficiency	SEDBUK 2005	%	91.1	91.1
	SEDBUK 2009	%	89.6	89.6
Seasonal Space Heating Efficiency Class			A	A
NOx Classification			Class 5	Class 5

General Data

		C30	C35
Max Horizontal Flue Length	m	27 Flue / 2 Air	25 Flue / 2 Air
Max Horizontal Flue Length (Parallel)	m	18 Flue / 18 Air	15 Flue / 15 Air
Flue Terminal Diameter	mm	50	
Gas Supply		2H - G20 - 20mbar	
Gas Supply Connection		15mm copper compression	
Injector Size	mm	4.65	4.90
Flow Connection (CH)		22mm copper compression	
Return Connection (CH)		22mm copper compression	
Inlet Connection (DHW)		15mm copper compression	
Outlet Connection (DHW)		15mm copper compression	
Average Flue Temp - Mass Flow Rate (DHW)		68°C - 13g/s	73°C - 15g/s
CO_2 Content (±0.7) (Max CH)	%	8.8	8.9
CO_2 Content (±0.7) (Max DHW)	%	9.3	9.5
Max Working Pressure (Sealed Systems)	bar (psi)	2.5 (36.3)	
Max DHW Inlet Pressure	bar (psi) (kPa)	10.0 (145) (1000)	
Min DHW Inlet Pressure	bar (psi) (kPa)	1.3 (18.9) (130)	
Electrical Supply		230V - 50Hz	
Power Consumption	W	101	114
Fuse Rating		External 3A / Internal: T4A HRC L250V	
Water Content (CH)	l (gal)	1.2 (0.26)	
Water Content (DHW)	l (gal)	0.5 (0.11)	
Weight (Packed)	kg	34.4	34.5
Maximum Installation Weight	kg	31.4	31.5

Keston Heat

45kW & 55kW Output
Natural Gas & LPG

The Keston Heat range offers a number of key features that enables ease of installation, maintenance and operation.

Supported by a 5 year parts and labour warranty and Free Commissioning†, Keston Heat is a reliable and efficient wall hung solution. The quality of this product range has been developed through meticulous design, careful component selection and proving; leading to reliability and longevity.

The range provides high efficiencies for low running costs with up to 110% part load, seasonal efficiency (ref Building Regs Part L2) up to 97%. The range also provides low NOx emissions at Class 5 and at less than 40mg/kWh achieves maximum points under BREEAM schemes. Keston Heat provides the perfect solution for a wide variety of commercial installations.

Keston Heat boilers are easy to cascade using our Frame and Header kits, see pages 36-38 for full details. Please note that Free Commissioning is not available on multiple boiler installations.

The Facts

- 7 year warranty†
- Free Commissioning†
- Condensing outputs 45 & 55kW
- Inbuilt weather compensator
- Inbuilt pump (low energy modulating)
- Minimum pressure 0.3 bar
- Minimum head 3m
- Twin flue up to 21m*
- 5:1 turndown ratio
- Small installation footprint
- Low NOx Class 5
- 50mm muPVC (PVC-C) solvent weld flue allowing simple, cost effective installations**
- Commercial control system compatibility as standard
- British Gas service listed
- ECA listed

5 Year Warranty†
Providing ultimate reliability, Keston Heat boilers are offered with a 5 year warranty when commissioned by Keston Boilers

Twin Flue Design
Providing the perfect solution for problematic and awkward installations

Weather Compensator
All models in the Keston range come complete with weather compensation as standard

Frame and Header Kits
Able to facilitate up to 6 heat only boilers in cascade

Modulating Pump
Keston Heat boilers have a low energy modulating pump which complies with energy efficiency requirements

British Built Since 2013
All Keston boilers are built in and designed for the British market

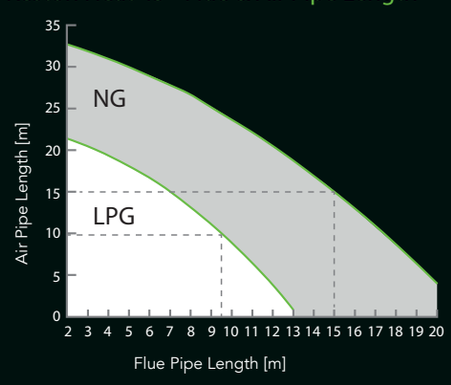
INSTALL THE KESTON 28MM SYSTEM FILTER with a Keston Heat boiler to receive FREE COMMISSIONING†

† 2 year parts & labour warranty as standard. 5 year warranty available subject to being commissioned by Keston Boilers. Free Commissioning only available when a Keston 28mm System Filter is installed with a single Keston Heat boiler; not available on multiple boiler installations. Terms and conditions apply.
* For maximum total equivalent flue length please refer to the installation instructions for full details.
** The only systems approved for this application are: Marley muPVC (PVC-C) Solvent Weld Waste System (50mm), Polypipe System 2000 muPVC (PVC-C) Solvent Weld Waste System (50mm), Polypipe Terrain Solvent Weld System (50mm) and Wavin Osma PVC-C Solvent Weld System (50mm). Please use the recommended Solvent Weld Cement for each system. Please see page 9 for more details.

Qualified for **Energy Technology List** www.eca.gov.uk

Flue Installation

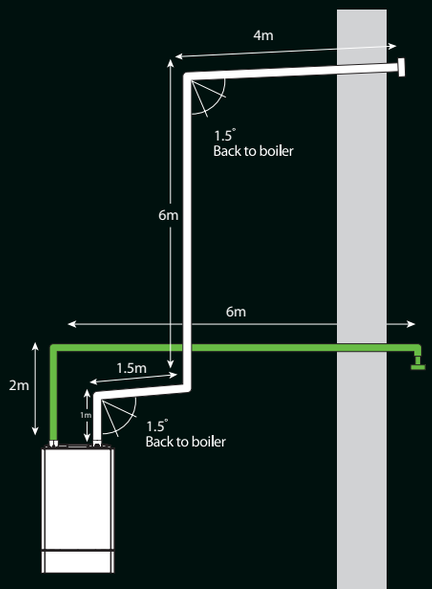
Keston Heat 45 - Flue & Air Pipe Length



acceptable flue operating area

Graph indicates:
Natural Gas: maximum flue run 21m with 2m air. Also, 15m flue with 15m air pipe for parallel twin flue run.

LPG: maximum flue run 13m with 1m air. Also, 9.5m flue with 9.5m air pipe for parallel twin flue run.



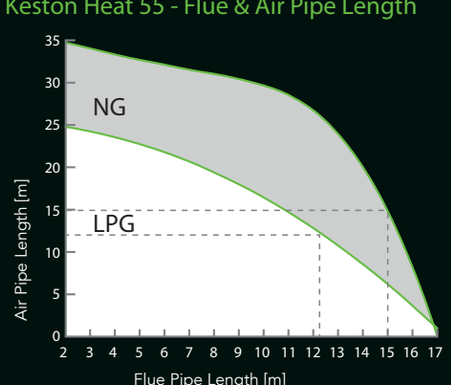
C53 HORIZONTAL

Calculations

Flue
Elbows 3 x 1m = 3m
Straights 4+6+1.5+1 = 12.5m
Total = 15m

Air
Elbows 2 x 1m = 2m
Straights 6+2+0.1m = 8.1m
Total = 10.1m

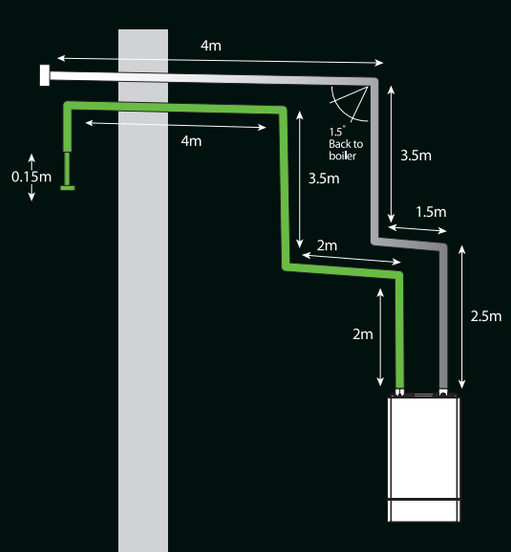
Keston Heat 55 - Flue & Air Pipe Length



acceptable flue operating area

Graph indicates:
Natural Gas: maximum flue run 17m with 2m air. Also, 15m flue with 15m air pipe for parallel twin flue run.

LPG: maximum flue run 17m with 1m air. Also, 12.25m flue with 12.25m air pipe for parallel twin flue run.



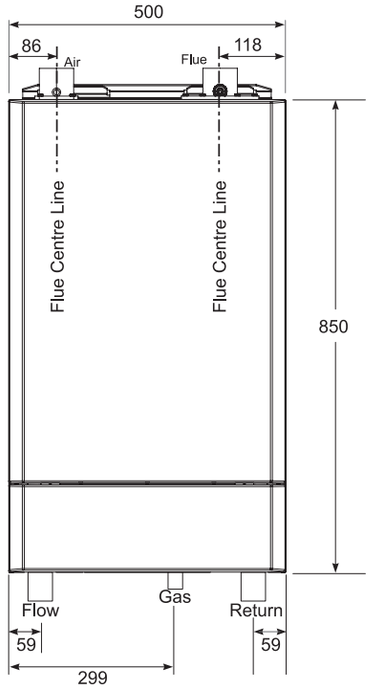
C13 HORIZONTAL

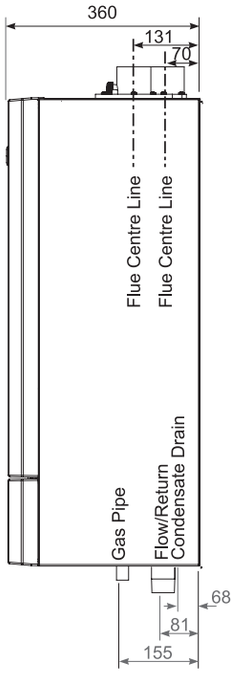
Calculations

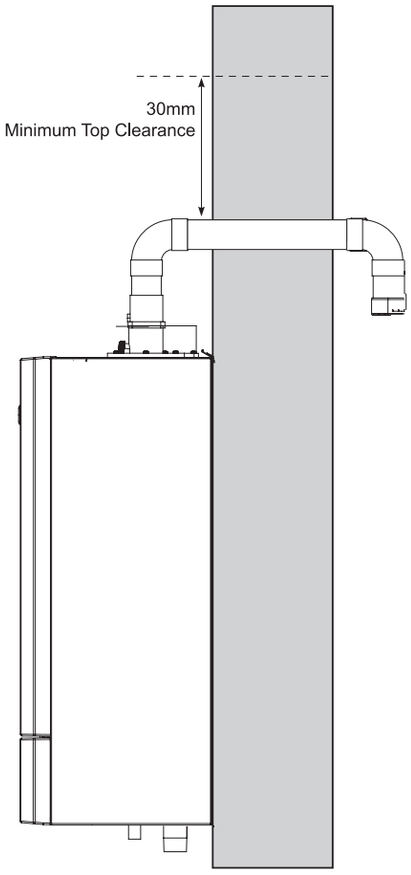
Flue
Elbows 3 x 1m = 3m
Straights 2.5+1.5+3.5+4 = 11.5m
Total = 14.5m

Air
Elbows 4 x 1m = 4m
Straights 2+2+3.5+4+0.15 = 11.65m
Total = 15.65m

Dimensions & Weight





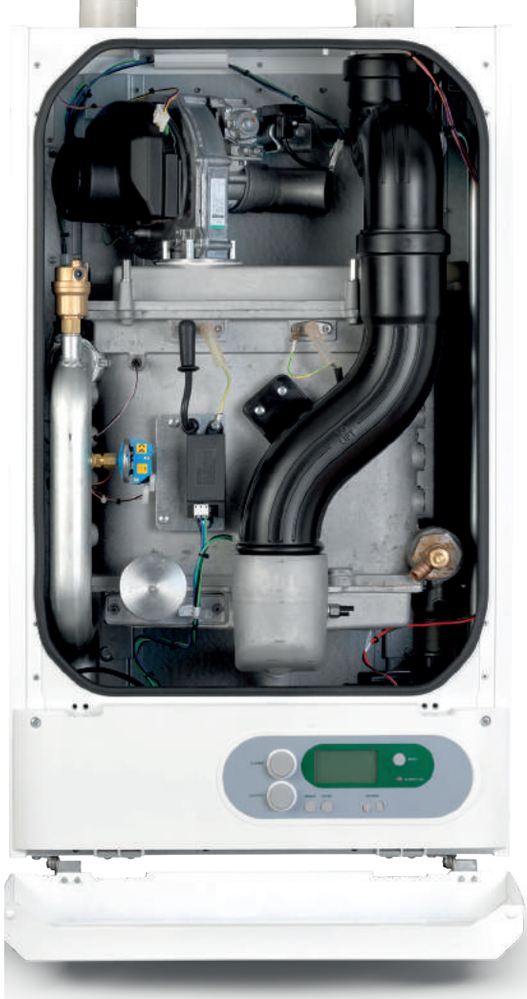


KESTON HEAT	
Height	850mm
Width	500mm
Depth	360mm

The following minimum clearances must be maintained for operation and servicing.
Front of boiler - 450mm*
Sides of boiler - 25mm
Above boiler - 350mm, with 30mm above the flue
Below boiler - 300mm
Clearance between multiple boiler installations - 25mm

* Can be reduced to 5mm for cupboard fit, 450mm required for servicing

Specification Data



Central Heating

			45	45P	55	55P
Boiler Output	Max	kW	42.6	42.6	52.1	52.1
(Non Condensing) Mean 70°C	Min	kW	12.0	12.0	12.0	12.0
Boiler Output	Max	kW	45.0	45.0	55.0	55.0
(Condensing) Mean 40°C	Min	kW	12.7	12.7	12.7	12.7
Boiler Input Net	Max	kW	43.2	43.2	52.7	52.7
	Min	kW	12.2	12.2	12.2	12.2
Boiler Input Gross	Max	kW	47.9	47.9	58.5	58.5
	Min	kW	13.5	13.5	13.5	13.5
Gas Consumption / Rate	Max	m^3/h	4.56	1.78	5.57	2.18
	Max	ft^3/h	161.2	62.9	196.9	76.8
Flue Gas Flow Rate	Max	m^3/h	66.4	64.3	81.0	77.4
	Max	ft^3/h	2,343	2,271	2,861	2,733

Others

			45	45P	55	55P
Efficiency	Seasonal	%	96	96	96.7	96.7
	SEDBUK 2009	%	89.2	89.2	89.6	89.6
Seasonal Space Heating Efficiency Class			A	A	A	A
NOx	Weighted	mg/kWh	38.6	43.9	38.3	59.2
		ppm DAF	21.9	24.7	21.7	33.3
	Classification		Class 5	Class 5	Class 5	Class 5
CO_2 (±0.5)	Max	%	9.3	11	9.5	11.2
	Min	%	8.4	10.2	8.4	10.2

General Data

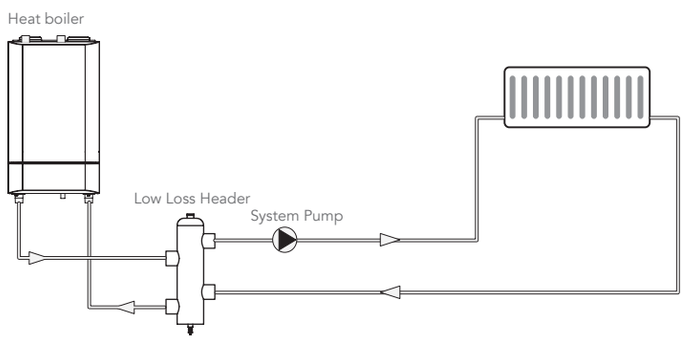
		45	45P	55	55P
Max Horizontal Flue Length	m	21 Flue / 2 Air	13 Flue / 1 Air	17 Flue / 2 Air	17 Flue / 1 Air
Max Horizontal Flue Length (Parallel)	m	15 Flue / 15 Air	9.5 Flue / 9.5 Air	15 Flue / 15 Air	12.25 Flue / 12.25 Air
Flue Terminal Diameter	mm	50			
Gas Supply		2H - G20 - 20mbar	3P - G20 - 37mbar	2H - G20 - 20mbar	3P - G20 - 37mbar
Gas Supply Connection		G 3/4			
Flow Connection		G 1 1/4			
Return Connection		G 1 1/4			
Max Pressure (Sealed System)	bar (psi)	6.0 (87.0)			
Maximum Static Head	m	61.0			
Electricity Supply		230V - 50Hz			
Fuse Rating	A	4.0			
Power Consumption	W	180	202	262	239
IP Rating		IP20			
Condensate Drain	mm	25			
Water Content	l	5.0			
Dry Weight	kg	60.3			

Installation with Low Loss Header

Single Keston Heat Boiler with Low Loss Header

If the system has or requires an additional circulation pump, the Keston Heat model must be fitted as shown in the diagram below, with the inclusion of a Low Loss Header.

Multiple heating circuits can be added with the appropriate controls. The installation of a suitably sized dirt separator in the return pipework to the low loss header is recommended, particularly in the case of old systems.



Modulating Sequencer

The modulating sequence controller is designed to control Keston boilers operating in cascade. An OpenTherm interface is used for the exchange of data between the controller and the boilers. The requested load is transmitted to each boiler separately. The setpoint flow temperature is determined from a heating curve, or from the setpoint flow temperature from an OpenTherm room thermostat. The Controller is also capable of being used in combination with

1. **Programmable Room Thermostat Kit**
2. **On/Off room thermostat, in addition to this, the Controller can also actuate a hot water storage circuit or a pump circuit.**
3. **OpenTherm compatable BMS**

The universal design of the system, the consistent menu structure and the simple operation enables the installer to commission the controller quickly.

Installer Features

- Each module can control up to 5 boilers (20 in total with 4 modules)
- OpenTherm BMS compatible as standard
- Can use OpenTherm to gateway adaptors (Bac Net etc)
- Can support weather compensation with the supplied outside sensor configured
- Additional control with the addition of Plant room sensor/room sensor (modulation taken from central point in building or can be set up as a plant room high temp limit)
- Can support hot water with an addition of tank sensor

Customer Features

- Date & time
- Daylight saving
- Hours run & pulse counters
- Data logger (48 hrs storage with 5 min interval)
- Fault detection
- Restore factory settings

Multi Boiler Installations

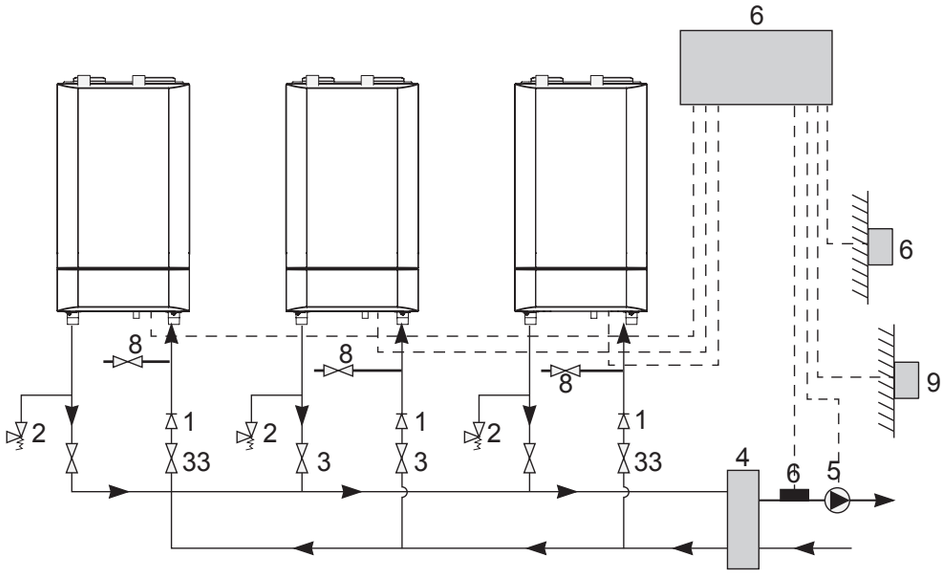
System in Cascade

Systems that require a heat load greater than the output of a single boiler capacity can be easily achieved by fitting the required number of units in cascade. The Keston Heat range has a turndown rate of 5:1 allowing system requirements to be easily matched.

In installations where the heat load is greater than the boiler capacity an ideal solution is to use multiple boiler arrangements.

The ideal way to control a multiple boiler installation is with our modulating sequencer

See below a typical installation with our modulating sequencer kit. This device is capable of controlling up to 5 boilers. Additional kits are required for greater than this.



Legend

1. Non-return valve
2. Safety valve
3. Service valve
4. Mixing header
5. System pump
6. Modulating Sequencer kit complete with outdoor sensor and flow sensor
7. Flue gas terminal
8. Drain cock
9. Room sensor

Keston can also supply a cascade controller for up to 5 boilers, for total system outputs of up to 275kW. The control unit is also capable of controlling the domestic hot water via a separate hot water cylinder. For full details of the Keston QSpa cylinder or QSpa twin coil cylinders ranges please refer to pages 43-46

Frame and Header Kits

Install up to 6 boilers in cascade with Keston Heat Frame and Header kits.

The Keston Heat Frame and Header kits offer a simple system installation allowing for outputs from 90kW to 330kW

The Facts

Small footprint

- 560mm depth for all variants of the Keston Heat frame and header, with boilers in cascade
- Height of all Frame and Header kits is 1945mm

Low lift weight

- Lift weights are as low as possible

Time saving

- The flow and return and the low loss header, in the header kit, are pre insulated which improves efficiency and reduces heat loss, as well as reducing installation time

Controls

- The Frame and Header Kit can be installed with either a Keston Sequencer (up to 5 boilers) offering direct modulation of the system, which reduces running costs
- For installation of 6 boilers, two Keston sequencers are required

Flexibility of Siting

Flue system

- The twin flue system allows awkward and difficult to site flue runs up to 21m* (please note each appliance will need a flue and air pipe assembly installed, there is no flue cascade)
- Simple 50mm muPVC (PVC-C)** solvent weld flue reduces time cost
  and labour
- For increased flexibility of siting, additional elbows and bends are available for both flue systems
- Only 1m reduction in equivalent flue length per 90° bend
- Gas pressure test point fitted to both ends of the gas header to allow left or right hand installation

* For the maximum total equivalent flue length, please refer to the installation manual. ** The only systems approved for this application are: Marley muPVC (PVC-C) Solvent Weld Waste System (50mm), Polypipe System 2000 muPVC (PVC-C) Solvent Weld Waste System (50mm), Polypipe Terrain Solvent Weld System (50mm) and Wavin Osma PVC-C Solvent Weld System (50mm). Please use the recommended Solvent Weld Cement for each system. Please see page 9 for more details.

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Frame and Header System Design Options

Output kW	No. of boilers	Boiler options	Footprint (w x d x h (mm)	Header kits required	Optional frame kit*
90	2	2 x 45	1500 x 560 x 1945	355014	2 x 355013
100	2	1 x45 & 1 x55	1500 x 560 x 1945	355014	2 x 355013
110	2	2 x 55	1500 x 560 x 1945	355014	2 x 355013
135	3	3 x 45	2055 x 560 x 1945	355015	3 x 355013
145	3	2 x 45 & 1 x 55	2055 x 560 x 1945	355015	3 x 355013
155	3	1 x 45 & 2 x 55	2055 x 560 x 1945	355015	3 x 355013
165	3	3 x 55	2055 x 560 x 1945	355015	3 x 355013
180	4	4 x 45	2600 x 560 x 1945	355016	4 x 355013
190	4	3 x 45 & 1 x 55	2600 x 560 x 1945	355016	4 x 355013
200	4	2 x 45 & 2 x 55	2600 x 560 x 1945	355016	4 x 355013
210	4	1 x 45 & 3 x 55	2600 x 560 x 1945	355016	4 x 355013
220	4	4 x 55	2600 x 560 x 1945	355016	4 x 355013
225	5	5 x 45	3150 x 560 x 1945	355017	5 x 355013
235	5	4 x 45 & 1 x 55	3150 x 560 x 1945	355017	5 x 355013
245	5	3 x 45 & 2 x 55	3150 x 560 x 1945	355017	5 x 355013
255	5	2 x 45 & 3 x 55	3150 x 560 x 1945	355017	5 x 355013
265	5	1 x 45 & 4 x 55	3150 x 560 x 1945	355017	5 x 355013
275	5	5 x 55	3150 x 560 x 1945	355017	5 x 355013
280	6	5 x 45 & 1 x 55	3150 x 560 x 1945	355018	6 x 355013
290	6	4 x 45 & 2 x 55	3150 x 560 x 1945	355018	6 x 355013
300	6	3 x 45 & 3 x 55	3150 x 560 x 1945	355018	6 x 355013
310	6	2 x 45 & 4 x 55	3150 x 560 x 1945	355018	6 x 355013
320	6	1 x 45 & 5 x 55	3150 x 560 x 1945	355018	6 x 355013
330	6	6 x 55	3700 x 560 x 1945	355018	6 x 355013

2 - 6 Boilers Cascade

2 - 6 boilers (45kW, 55kW or mixed outputs)

Low loss header left or right hand

Gas inlet left or right handed (2 ”pipe)

Frames are an optional extra, if unable to wall mount the boilers (1 frame per boiler)

Single Frame Kit*

Single frame kit accessory which will facilitate a single boiler or cascade installations, one frame required per boiler

Low loss header kit accessory DN80 suitable for multiple boiler installations

If this option is chosen, during installation the headers and gas pipework would be required to be piped.

Pipework Connections

All pipework connections are supplied with either the boiler, header kit or are pre-assembled to the header kit

Pre-assembled to header; the boiler the flow and return flexible connections, which reduce installation time

Delivered with header kit: connection pipe assembly, non return valves & pipe work connector

Supplied with the Keston Heat boiler: all isolation valves, pressure relief valve, drain cock and associated fittings

* If the boilers are not wall mounted then a frame kit is required

Keston

Service, Support & Aftersales

When you choose a Keston appliance, you are selecting a solution that has been expertly produced to the highest of standards.

Support

When you choose to work with Keston you can be confident to know that you're partnering with a British manufacturer that's supported by a dedicated national service team, delivering help and advice to you and your customers, 364 days a year.

Our rigorous research and development procedures and manufacturing quality control checks ensures that all of our products are produced to the highest of standards, delivering total comfort and peace of mind.

Service

Our dedicated service team of engineers are fully trained to exacting standards and are Gas Safe Registered, providing one-to-one advice on the road, over the phone or via the net to thousands of customers each year.

Parts

Keston's extensive quality testing procedures ensure that all of our products are manufactured to the highest of quality standards.

In the unlikely event that a spare part is required, you can be rest assured that most parts are readily available to order via your local spares outlet up to 10 years after appliance production has ceased.

Keston spare parts can be obtained from any of Ideal's nationwide network of approved stockists.

Aftersales

Supported by a dedicated national service team, delivering help and advice to you and your customers, 364 days a year, all of Keston's products come with their own dedicated warranty. Each product design undergoes a rigorous research and development procedure and manufacturing quality control check to ensure that every product is produced to the highest of standards, helping to deliver total home comfort and peace of mind.

Our call centre team based in Hull are comprehensively trained to provide tailored advice to homeowners and the trade.

Installer helpline & Homeowner helpline
01482 443 005

FOR INFORMATION ABOUT ANY KESTON SPARE PARTS

For a list of stockists, please call our Spares Department or visit our website **www.keston.co.uk**

Spares Department
01482 443 005

Keston Training

Here at Keston, we understand that having the confidence to be able to specify and install a wide range of products is an essential part of your day-to-day job.

With this in mind, we have created a wide range of comprehensive training courses, utilising both classroom and hands-on learning techniques to enable you to become a more efficient, skilled heating engineer.

All of our training courses have been designed to ensure that you get the most out of the time spent off the road and can be easily adapted to suit the desired knowledge level. So, if you're looking to refresh your existing knowledge, or to learn how to install something completely new, Keston has a course for you.

For more information, please contact the training department on 01482 443 005.

Course Content

Each course covers the following:

Product range overview

Product specification

Installation requirements

Flue and accessory options

Component review overview

Component change and repair

User controls

Sequence of operation

Fault finding

The course involves discussion with tutors, demonstrations with practical advice. Lunch and refreshments are provided and a certificate is awarded upon completion.

Locations

Centres of Excellence in Hull, Leeds and Reading.

These are comprehensive one-day courses, which can be mixed and matched for individual installation and servicing companies. The course uses a simple step-by-step approach with hands on training to ensure all aspects of commissioning, servicing and fault finding can be dealt with quickly and efficiently.

If you are an installer/service engineer you must be Gas Safe Registered to attend a course.

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Product Information

Boiler Packaged

Keston System	Keston Combi	Keston Heat
355063 - Keston System S30 Boiler Packaged	355061- Keston Combi C30 Boiler Packaged 355062 - Keston Combi C35 Boiler Packaged	355003 - Keston Heat 45 Boiler Packaged 355004 - Keston Heat 55 Boiler Packaged 355079 - Keston Heat 45P Boiler Packaged 355078 - Keston Heat 55P Boiler Packaged

Accessories

Keston System	Keston Combi	Keston Heat
355005 - Keston Twin Combi/System Stand Off Kit 355006 - Keston Air Terminal Finishing Kit 355007 - Keston Flue Sleeve Kit 355077 - Keston System Filter 22mm 355071- Keston System S30 LPG Conversion Kit	355005 - Keston Twin Combi/System Stand Off Kit 355067 - 7 Day Plug in Electronic timer 355066 - RF Electronic Programmable Stat 355006 - Keston Air Terminal Finishing Kit 355007 - Keston Flue Sleeve Kit 355077- Keston System Filter 22mm 355069 - Keston Combi C30 LPG Conversion Kit 355070 - Keston Combi C35 LPG Conversion Kit	355008 - Keston Heat Room Controller 355009 - Keston Heat Modulating Sequencer Kit 355010 - Keston Heat Tank Sensor Kit 355011 - Keston Heat Safety Interlock Kit 355012 - Keston Heat Room Sensor Kit 355006 - Keston Air Terminal Finishing Kit 355082 - Keston System Filter 28mm

Frame and Header Kits

Keston Heat
355013 - Single Frame Inline Kit 355014 - Header Inline DN80 x 2 Kit 355015 - Header Inline DN80 x 3 Kit 355016 - Header Inline DN100 x 4 Kit 355017 - Header Inline DN100 x 5 Kit 355018 - Header Inline DN100 x 6 Kit 355019 - Header Low Loss DN80

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EVERYTHING IS POSSIBLE

Manufactured to the highest UK standards,
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In accordance with our policy of constant improvement we reserve the right to alter the design and specification of products without prior notice.
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