Keston
BY IDEAL HEATING

INSTALLATION & SERVICING

HEAT 2
45 55 45P 55P

When replacing any part on this appliance, use only spare parts that you can be assured conform to the safety and performance specification that we require. Do not use reconditioned or copy parts that have not been clearly authorised by Keston.

For the very latest copy of literature for specification and maintenance practices visit our website keston.co.uk where you can download the relevant information in PDF format.

ICOM Water treatment and conditioning of commercial heating systems guide.

Where reference is made throughout these instructions I.S.813:2002 "Domestic Gas Installations" reference should also be made to I.S.820:2000 "Non-Domestic Gas Installations" as applicable.

1.4 SAFE HANDLING

This boiler will require 2 or more operatives to move it to its installation site, remove it from its packaging base and during movement into its installation location. Manoeuvring the boiler may include the use of a sack truck and involve lifting, pushing and pulling.

Caution should be exercised during these operations.

Operatives should be knowledgeable in handling techniques when performing these tasks and the following precautions should be considered:

- Grip the boiler at the base.
- Be physically capable.
- Use personal protective equipment as appropriate, e.g. gloves, safety footwear.

During all manoeuvres and handling actions, every attempt should be made to ensure the following unless unavoidable and/ or the weight is light.

- Keep back straight.
- Avoid twisting at the waist.
- Avoid upper body/top heavy bending.
- Always grip with the palm of the hand.
- Use designated hand holds.
- Keep load as close to the body as possible.
- Always use assistance if required.

1.5 SAFE HANDLING OF SUBSTANCES

No asbestos, mercury or CFCs are included in any part of the boiler or its manufacture.

1.6 LOCATION OF BOILER

The boiler must be installed on a flat and vertical wall capable of adequately supporting the weight of the boiler and any ancillary equipment or on a boiler frame supplied in kit form.

The wall must be 90° (±5°) from the perpendicular. This is to allow safe operation of the integral flue non-return valve.

The boiler must not be fitted outside.

1.7 GAS SUPPLY

IMPORTANT

Ensure all gas valve connections are gas tight with a gas soundness check up to the gas multi-functional control valve.

The local gas supplier should be consulted, at the installation planning stage, in order to establish the availability of an adequate supply of gas. An existing service pipe must NOT be used without prior consultation with the local gas supplier.

A gas meter can only be connected by the local gas supplier or by a suitably qualified Gas Safe registered engineer or in IE by a competent person.

An existing meter should be checked, preferably by the gas supplier, to ensure that the meter is adequate to deal with the rate of gas supply required. A minimum working gas pressure of 17.5mbar MUST be available at the boiler inlet for Natural gas and 32mbar for Propane.

Do not use pipes of smaller size than the boiler inlet gas connection.

The complete installation MUST be tested for gas soundness and purged in accordance with the appropriate standards listed on page 8.

1.8 FLUE INSTALLATION

Individual air supply and flue outlet pipes are used. The material used for the flue outlet and the air intake systems, must be muPVC (PVC-C) to BS 5255. In addition the flue outlet and air intake pipework must be marked BSEN 1566-1 and the fittings must be marked BSEN 1329. Marley muPVC Solvent Weld System (50mm), Polypipe System 2000 muPVC Solvent Weld System (50mm), Wavin Osma Solvent Weld System and Polypipe Terrain 200 muPVC Solvent Weld System are recommended.

DO NOT USE ABS PIPE OR FITTINGS.

IMPORTANT

It is the responsibility of the installer to ensure, in practice, that products of combustion discharging from the terminal cannot

re-enter the building or any other adjacent building through ventilators, windows, doors, other sources of natural air infiltratior or forced ventilation / air conditioning.

If this should occur the appliance MUST be turned OFF, labelled as 'unsafe' and corrective action taken.

Where the lowest part of the terminal is fitted less than 2m above a balcony, above ground or above a flat roof to which people have access then the terminal MUST be protected by a purpose designed guard. The minimum spacing between the balcony anc the terminal should be 75mm, in order to allow a terminal guard t be fitted.

Terminal guards are available from boiler suppliers

Ensure that the guard is fitted centrally.

The air inlet/products outlet duct and the terminal of the boiler MUST NOT be closer than 25mm to combustible material. Detailed recommendations on the protection of combustible material are given in BS. 5440-1. In IE refer to I.S.813.

The flue must be installed in accordance with Building Regulations and the recommendations of BS. 5440-1 for inputs up to 70kW nett.

1.9 WATER CIRCULATION SYSTEM

The boiler must NOT be used for direct hot water supply. The ho water storage cylinder MUST be of the indirect type.

Single feed, indirect cylinders are not recommended and MUST NOT be used on sealed systems.

The appliances are NOT suitable for gravity central heating nor are they suitable for the provision of gravity domestic hot water.

The hot water cylinder and ancillary pipework, not forming part of the useful heating surface, should be lagged to prevent heat loss and any possible freezing - particularly where pipes run through roof spaces and ventilated underfloor spaces.

The boiler must be vented.

Draining taps MUST be located in accessible positions, which permit the draining of the whole system - including the boiler and hot water storage vessel. They should be at least 1/2" BSP nominal size and be in accordance with BS. 2879.

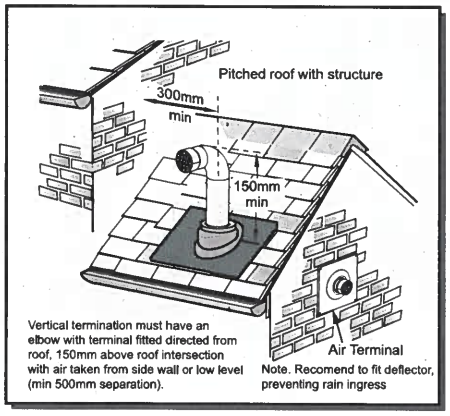
The central heating system should be in accordance with the relevant standards listed on page 8.

The Keston boilers feature an integral circulating pump which has sufficient excess head to drive most domestic systems. The available head is indicated in the chart below. If the system resistance, at the desired flow rate, is in excess of the available head from the integral pump an additional system pump will be required.

FLUE OUTLET

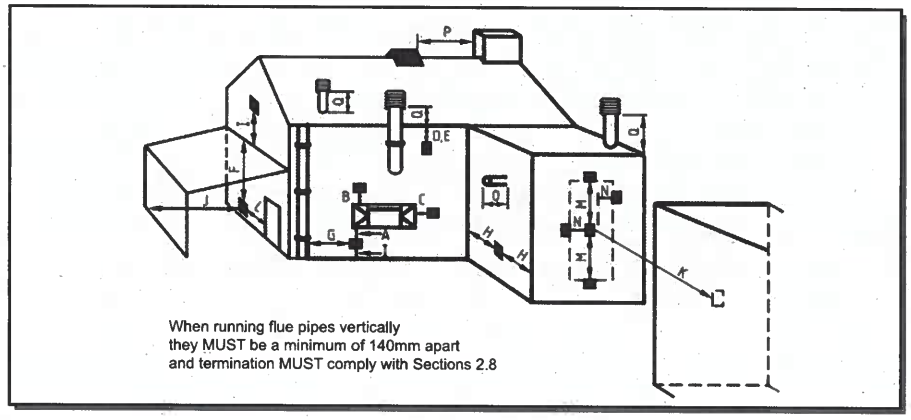
2.9 FLUE TERMINATION POSITION

Twin Flue Positions		When Flue & Air Terminals are less than 500mm apart		When Flue & Air Terminals are more than 500mm apart	
		Flue min. spacing	Air min. spacing	Flue min. spacing	Air min. spacing
A	Below an opening (1)	300mm	50mm	300mm	50mm
B	Above an opening (1)	300mm	50mm	300mm	50mm
C	Horizontally to an opening	300mm	50mm	300mm	50mm
D	Below gutters,soil pipes or drain pipes	75mm	75mm	75mm	75mm
E	Below eaves	200mm	50mm	200mm	50mm
F	Below balcony or car port roof	200mm	50mm	200mm	50mm
G	From a vertical drain pipe or soil pipe	150mm	50mm	150mm	50mm
H	From an internal or external corner or to a boundary alongside the terminal (2)	200mm	50mm	200mm	50mm
I	Above ground,roof or balcony level	300mm	100mm	300mm	100mm
J	From a surface or boundary facing the terminal	600mm	100mm	600mm	100mm
K	From a terminal facing a terminal	1200mm	1200mm	1200mm	1200mm
L	From an opening in the car port into the building	1200mm	100mm	1200mm	100mm
M	Vertically from a terminal on the same wall	1500mm	1500mm	1500mm	1500mm
N	Horizontally from a terminal on the same wall	300mm	300mm	300mm	300mm
O	From the wall on which the terminal is mounted	40mm	40mm	40mm	40mm
P	From a vertical structure on the roof	NA	NA	300mm	NA
Q	Above intersection with roof	NA	NA	150mm	NA
,(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				

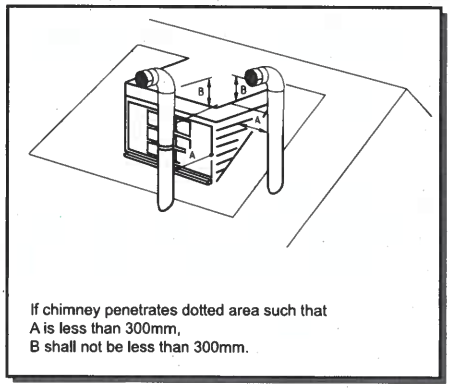


Vertical termination must have an elbow with terminal fitted directed from roof, 150mm above roof intersection with air taken from side wall or low level (min 500mm separation).

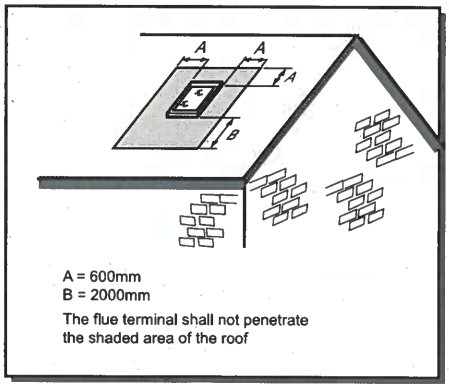
Note. Recomend to fit deflector, preventing rain ingress



When running flue pipes vertically they MUST be a minimum of 140mm apart and termination MUST comply with Sections 2.8

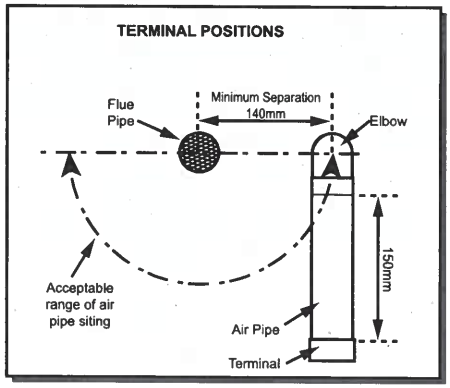


If chimney penetrates dotted area such that A is less than 300mm, B shall not be less than 300mm.



A = 600mm
B = 2000mm

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



GENERAL INSTALLATIONS

All parts of the system must be constructed in accordance with BS 5440 Part 1, except where specifically mentioned in these instructions.

All pipe work must be adequately supported.

All joints other than approved push-on or plastic compression connectors must be made and sealed with solvent cement suitable for muPVC pipes and conforming to BS 6209.

Consideration must be given to Gas Safe bulletin TB200/TB008 regarding flues in voids.

The boiler casing must always be correctly fitted to the boiler when leaving the appliance operational.

External wall faces and any internal faces of cavity walls must be good.

AIR SUPPLY

The Keston Heat is a room-sealed appliance and therefore does not require purpose provided ventilation to the boiler room for combustion air.

COMPARTMENT INSTALLATION

Due to the low casing temperatures generated by the boiler, no compartment ventilation is required. However, the cupboard or compartment must not be used for storage.