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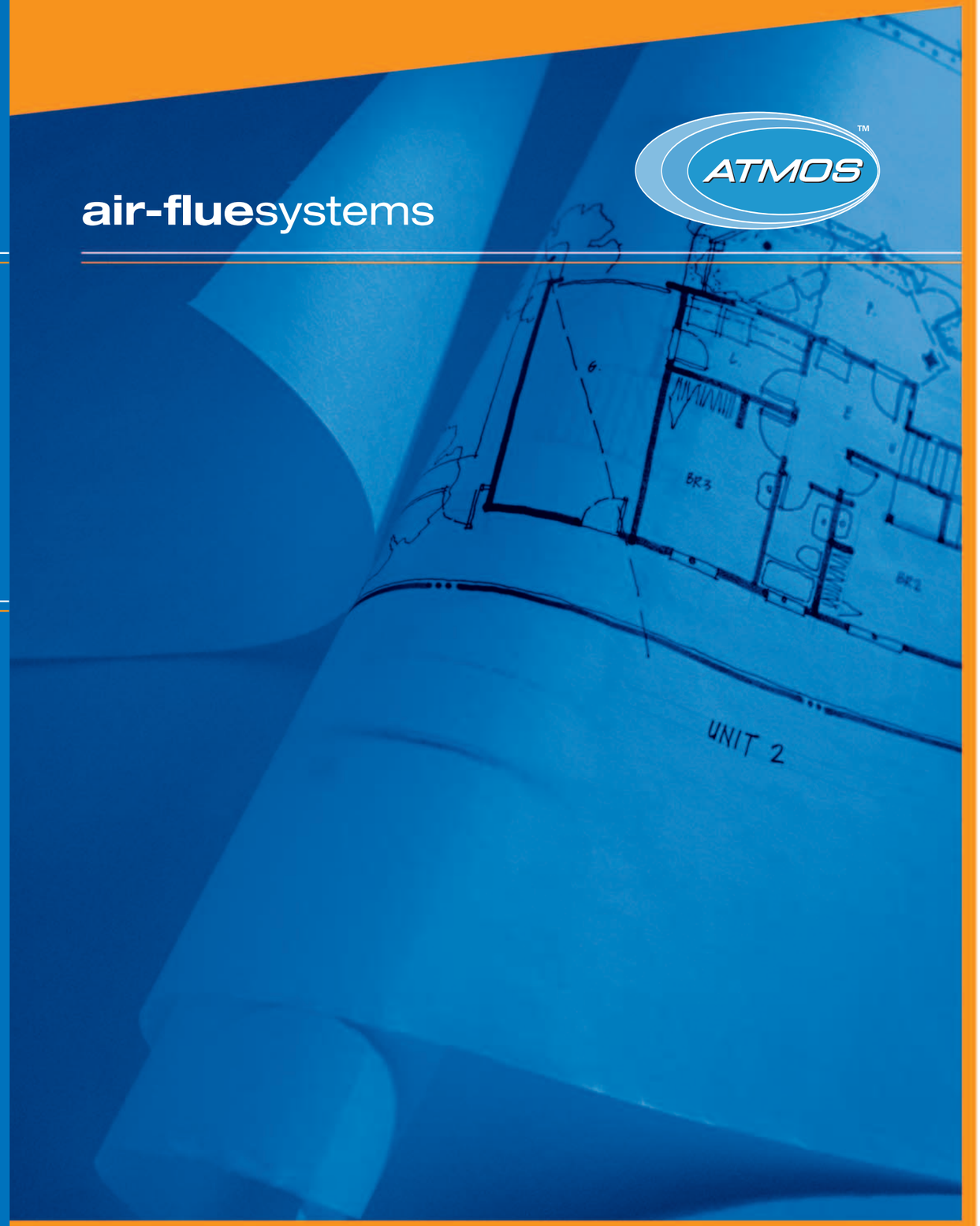
air-fluesystems



atmos heating systems

welcome to atmos

Atmos Heating Systems started business in 1976 as Skaino Services, a heating and plumbing company operating in the Midlands. The company installed all types of heating systems, but always tried to design systems that were energy efficient. In the 1980's Skaino Services became Northamptonshire's only "Registered Energy Efficient Heating Company" with the fledgling Energy Saving Trust, promoting energy efficient heating systems.

In 1995 John Thomason invented and patented a revolutionary concept in high efficiency heating for commercial properties. The Atmos Heat Recovery System was launched and a new division named Atmos Heating Systems, specialising in high energy efficient products was born.

In 1999 the Atmos team visited European companies looking for energy efficient heating products for the UK domestic market, and their eyes lighted upon the Multi. High efficiency condensing boilers were still in their infancy in the UK, but in The Netherlands they had been mainstream products for 9 years, and were already in their second generation. The Multi is made by the Dutch water heater manufacturer, Daalderop, a market leader in The Netherlands since 1896. A deal was quickly done and Atmos became Daalderop's partner in the UK.

So in 2000, Atmos launched into the domestic heating market with the innovative Atmos Multi. It was the first condensing "Storage Combi" in the UK, and immediately won the prestigious H&V News Award "Best Domestic Product of 2001".

Then in 2002 Atmos launched another of Daalderop's energy saving products, the unique MonoSolar Solar thermal hot water system.

In 2004 Atmos decided to look for a condensing instantaneous Combi boiler, and once again, the ideal product was found in Holland. Intergas, another leading Dutch boiler manufacturer since 1970, made Atmos their UK partner, and so highly successful Intergas range of boilers was launched in the UK.

Flue systems for condensing boilers are different to non-condensing boilers. Not surprisingly the Dutch are the leaders in condensing boiler flue systems, and so Atmos set up a partnership with Cox Geelen, a Dutch flue manufacturer. Atmos are therefore proud not only to present an advanced range of boilers, but also an advanced range of flue systems to meet every possible application; from single boilers to multi-storey applications.

Atmos are committed to the promotion of high quality, energy efficient and environmentally friendly solutions. Our products are designed for the future and built to last. They use the minimum of fossil fuels, thus reducing environmental pollution and running costs.

We are committed to continuous improvement and provide whole package innovative solutions. We work in partnership with our customers - installers, service engineers and contract customers from design to installation and service back up.

Leaders in low carbon heating.

Yours sincerely
John Thomason, Manager

concentric

Atmos boilers have great flexibility with air-flue systems, in part due to the extra long maximum flue lengths (see Technical page). Choose Concentric, Twin Pipe or a mix of the two. Atmos also has an innovative solution for multi storey buildings. Please check the relevant installation manual and current Atmos price list for full system specifications and components.

Concentric System (CC)

This comprises an inner flue pipe, and a white outer air inlet pipe. Air for combustion flows down the space between the flue pipe and the outer pipe. A concentric system always has a single air/flue terminal, and the outer surface is cool.

Concentric systems can be 60/100mm or 80/125mm. Intergas boilers use 60/100mm as standard for horizontal (as well as 80/125mm or 80/80mm Twin Pipe) and 80/125mm for vertical systems. Multi boilers use 80/125mm (as well as 80/80mm Twin Pipe). In order to utilize an existing chimney, the chimney kit uses flexible pipe to carry the flue gas to a special 80/125mm terminal. The space between this pipe and the chimney wall is used to draw air in.

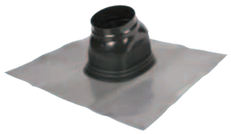
60/100mm
Intergas standard flue kit

60/100mm
Intergas easy fit flue kit

80/125mm
Horizontal flue terminal

80/125mm
Vertical flue terminal

80/125mm
Flat roof terminal flashing



80/125mm
Pitched roof terminal flashing

80/125mm
Intergas adaptor - with gas test points

80/125mm
Multi adaptor

80/125mm
60/100mm to 80/125mm increaser

80/125mm
Chimney flue kit

twin pipe

The separate air intake and flue discharge pipes can be routed individually according to the specific needs of an installation. The flue pipe is always warm to touch. Air-flue pipe can start in 80mm twin pipe then convert to 80/125mm by using the Multi 80/125mm adaptor (shown on previous page). 80mm PPS and 50mm MuPVC “plastic” systems are also available. The 50mm system is for special applications only.

Twin pipe
horizontal flue kit

Single flue terminal &
single air inlet terminal

80mm PPS terminal

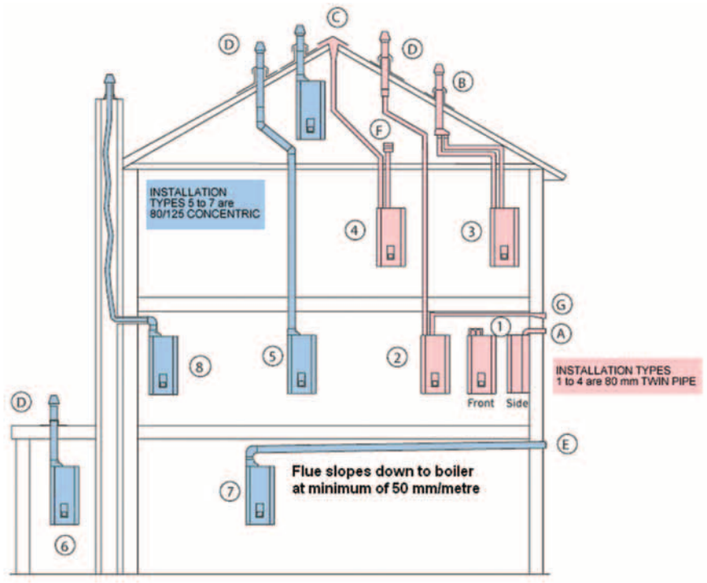
50mm MuPVC terminal

Vertex - air inlet
from roof space

Vertical ridge
terminal assembly

Where planning restrictions will not permit a terminal protruding 600mm above the roof line:

- Vertex air inlet terminal in the roof space which MUST be adequately ventilated (normal for new housing through eaves’ vents)
- Vertical ridge flue terminal and adapter. Note: the roof ridge tile (not supplied), must be cut and slotted with an angle grinder and stone cutting disc to accept the terminal.



Air-Flue installation examples

TERMINALS;
A = HORIZONTAL TP
B = VERTICAL TP
C = RIDGE VENT 80mm
D = VERTICAL CC
E = HORIZONTAL CC

AIR INLETS;
F = VENTILATED ROOF SPACE
G = AIR BRICK 9" x 2.5"
to 80mm PIPE OR TO
50mm X 200mm FLAT DUCT

TRADITIONAL CHIMNEY (8)
The 80mm flexible flue liner system permits flue gas to be discharged to a special terminal. Air for combustion is drawn down the chimney to create a balanced flue.

multi storey

Multi storey dwellings present particular issues with condensing boilers:

1. If flues are discharged to the outside wall, the result in winter is an accumulated plume (steam cloud) which is unacceptable
2. Boilers are often placed away from the outside wall. It is often difficult to run horizontal flues at high level with an adequate slope
3. Condensing boilers are incompatible with SE ducts typically used on multi-storey buildings

The only answer is to have a vertical flue system which discharges at high level at the top of the building. The Atmos range of boilers and associated multi storey air-flue systems are designed to provide solutions for buildings up to 24 storeys (or 75m total height). **A design service is provided for each application.**

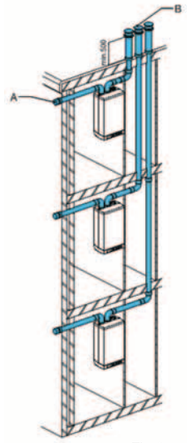


Fig.1

Atmos MS system (Category C53)

(Individual vertical flue and separate horizontal air inlet) *Fig.1*
Each boiler has its own vertical flue discharge; air is taken from the outside wall of each flat. The maximum length permitted is determined for each boiler from the equivalent length table on the technical page. Flue terminals can be individual, or common terminals can be provided for groups of up to 6 flues. *Fig.2*

Fig.2

Atmos Communal Flue System (CFS)

The CFS is either naturally vented or fan-assisted. The CFS can also be used with a mix of HE (condensing) and SE (non-condensing) gas boilers, and may be able to fit within the existing SE duct. This gives greater flexibility to boiler installations in multi-storey buildings. See separate brochure for full details

1. Atmos CFS^{EO} - FA System (Category C83)

(Communal Flue System, Exhaust (Flue) Only - Fan Assisted) *Fig.3*
A complete communal flue system, providing flue gas and condensate removal from multiple gas boilers. Air is taken from the outside wall of each flat. Fan assisted positive pressure operation allows the system to become more space saving. There is a common condensate collector at the base of the flue system which must be taken to a suitable drain.

This is an ideal system for buildings with an existing SE duct system, where the size of the duct is too small for the full CFS system. The diameter of the flue pipe can be calculated from the CFS table (see next page), which is D1 (140 to 400mm).

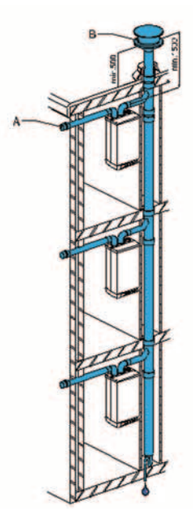


Fig.3

CFS

Each CFS system is supplied as a complete kit of push fit parts. Illustrated are: pipe section with T-piece connections, Condensate collector base unit with adjustable floor support, Balanced Flue terminal with storm collar and concentric air-flue pipe.

2. Atmos CFS-NV (Category C43)

A complete communal flue system, providing air supply to and exhaust gas and condensate removal from, multiple gas boilers via concentric pipes, all operating under a fully naturally vented negative pressure. Connections from the boiler can either be Twin Pipe or Concentric Pipe.

3. Atmos CFS-FA (Category C43)

A complete communal flue system, providing air supply to and exhaust gas and condensate removal from, multiple gas boilers (with non-return valves fitted) via concentric pipes. Fan assisted, positive pressure operation allows the system to become more space saving for an extra compact installation. The non-return valve arrangement on each boiler connection is essential to prevent recirculation of exhaust gases to non operational appliances. Connections from the boiler can either be Twin Pipe or Concentric Pipe.

Concentric diameter data is specific to the number of appliances connected and is available upon request.

CFS-FA Pipe Diameters: suitable for Intergas range and Multi 24/80+ and 32/80+

Boilers per stack	Concentric		Parallel		CFS[EO]	
	Flue	Air	Flue	Air	Flue	Air
3	100	150	100	100	100	2 x 80
4	110	160	110	110	110	3 x 80
5	130	200	130	130	130	4 x 80
6	130	200	130	150	150	5 x 80
7	150	230	150	150	150	6 x 80
8	165	260	170	170	160	7 x 80
9	165	260	170	170	160	8 x 80
10	165	260	170	170	160	9 x 80
11	180	275	180	180	170	10 x 80
12	180	275	180	180	170	11 x 80
12	180	275	180	180	170	12 x 80

Please note: The above is for the CFS-FA system in three configurations: Concentric Pipes, Parallel (where the duct cross section is restricted depth - not illustrated) and the CFS[EO] (see previous page). Data for CFS-NV is also available.

technical

General
Correct design and installation of the air/flue system is vitally important for safe and effective functioning of a boiler. All air/flue systems must be installed in accordance with current Gas Safety Regulations, and the manufacturer's instructions.

All Atmos flue systems are tested and approved for use with condensing boilers, in accordance with the European standards. The following information is a guide for the design of such systems, although the individual boiler installation manual should be consulted for final details. Please consult the current Atmos price list for full details of components available.

Installation
Condensation takes place within the flue system, and it is imperative that all systems are installed with a continuous fall back to the boiler, which is fitted with a means of condensate discharge. Horizontal runs should be kept as short as possible, and must have a minimum slope of 50mm (or more) per metre.

Materials
The condensate water which forms within the flue pipe is mildly acidic. For this reason all flue systems supplied by Atmos are made of approved materials. The aluminium pipe is 1.5mm thick, and the plastic PPS pipe is acid resistant and approved for temperatures up to 120°c.

Both are fitted with special acid resistant seals. If using 50mm MuPVC, the first metre of flue pipe must be in 80mm PPS, and then use the reducer to 50mm. Use of non-approved flue systems will invalidate the boiler guarantee.

Equivalent length
The equivalent length of a twin pipe air flue system is the sum of the straight lengths of the air and flue pipes, plus the equivalent lengths for fittings. For the concentric system it is the sum of the concentric pipe length plus fittings (see tables).

Terminals
In cold weather the flue gases will form a plume or steamy cloud at the exit point. Particular care should be taken when deciding where to locate the flue terminal, to avoid causing a nuisance.

Vertical Roof Terminals
These are recommended as a vertical discharge from a roof is rarely a nuisance. Atmos vertical terminals are carefully designed so that condensate water runs down the flue pipe internally, and is never a problem. Ridge terminal connectors are also available to connect to an appropriate ridge tile (not supplied).

Existing Chimneys
An 80mm flexible flue liner and balanced flue terminal is available. This enables a conventional chimney to be utilised as an air/flue system.

Maximum Equivalent Length
The equivalent length (metres) must not exceed the values in Table 2 below.

Table 1

Component	Equivalent pipe length (m)
90° bend	3m
45° bend	1.5m
Vertical roof terminal	6m
Horizontal terminal	3m

Table 2

Boiler Type	Concentric		Twin Pipe		
	60/100mm	80/125mm	80mm AL	80mm PPS	50mm MuPVC
Multi	N/A	18/14/12m #1	64m	64m	TBA
Intergas	10m	27m	60m	60m	TBA
Compact N40C	N/A	12m	25m	25m	TBA

Maximum equivalent lengths include an allowance for the terminal. Thus when calculating actual eqivalent length, the terminal can be ignored.
#1 - 24/80+, 32/80+, 38/80+ accordingly.