FLUE PIPE ACCESSORIES
FOR STANDARD AND CONDENSING GAS BOILERS

EASE OF INSTALLATION - UNRIVALED FLEXIBILITY

INDEX

1.0 GENERAL

2.0 COAXIAL SYSTEMS

3.0 TWIN PIPE SYSTEMS

4.0 CONDENSING SYSTEMS

1.1 Flue terminal positions

In accordance with BS 5440-1:2000
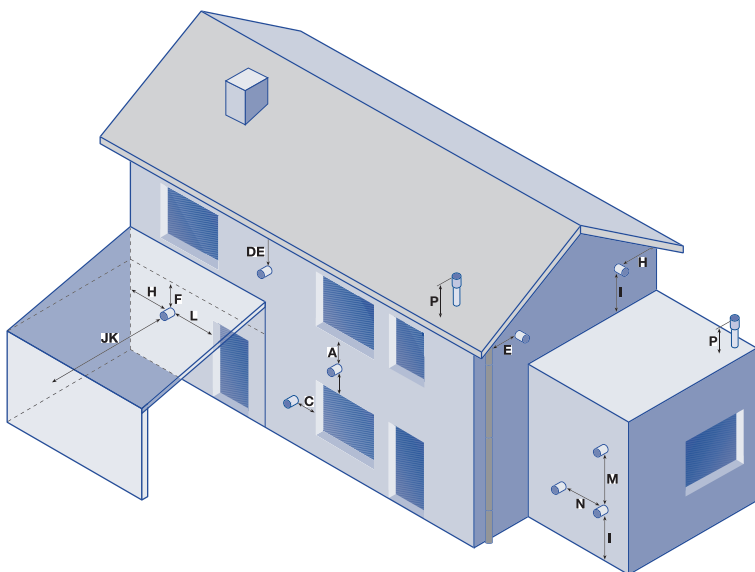
|	*TERMINAL POSITION*	*mm*
A	Directly below an opening, air brick, opening windows, etc	300
B	Above an opening, air brick, opening windows, etc	300
C	Horizontally to an opening, air brick, opening windows, etc	300
D	Below gutters, soil pipes or drain pipes	75
E	Below eaves	200
F	Below balconies or car port roof	200
G	From vertical drain or soil pipe	150
H	From an internal or external corner	300
I	Above ground roof or balcony level	300
J	From a surface facing the terminal	600
K	From a terminal facing the terminal	1200
L	From an opening in the car port (eg door, window) into the dwelling	1200
M	Vertically from a terminal on the same wall	1500
N	Horizontally from a terminal in the same wall	300
P	Fixed by use of terminal and matched flashing plate	-

1.2 Installation types

Ariston boilers offer the best choice because they are all designed to be completely adaptable to the many different situations that may be encountered on a daily basis.
The need for alteration is almost completely eliminated, allowing you to install the boiler in a short time and with the utmost ease. This will also contribute towards the success of your business: an objective that has always distinguished the relationship between Ariston and its customers/partners.
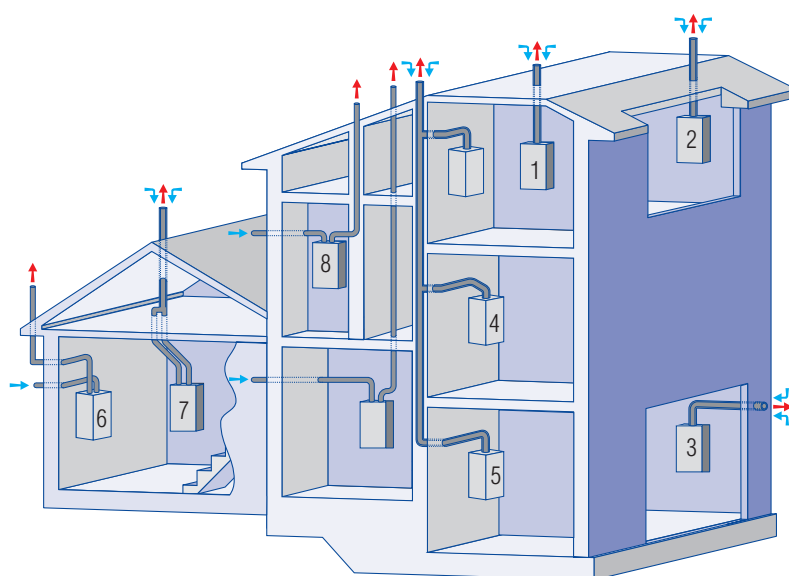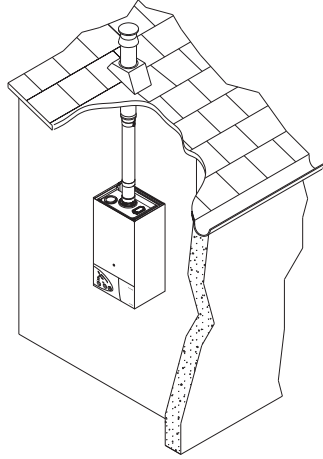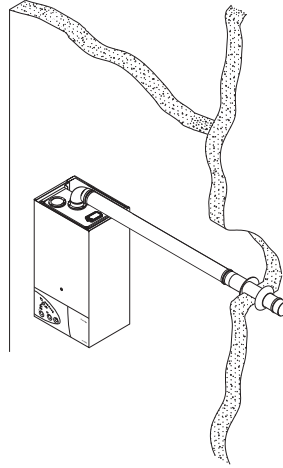
TYPE 1 Coaxial System
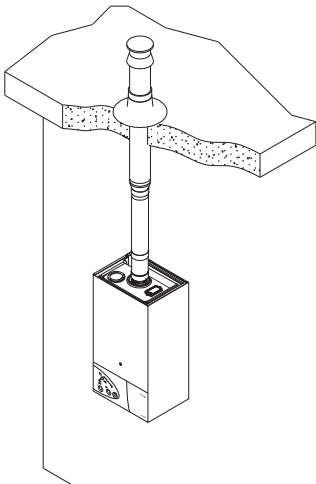
Vertical exhaust / suction system with coaxial piping on a flat roof.
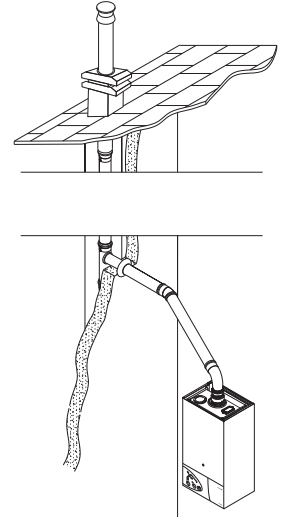
TYPE 2 Coaxial System

Vertical exhaust / suction system with coaxial piping on a pitched roof.
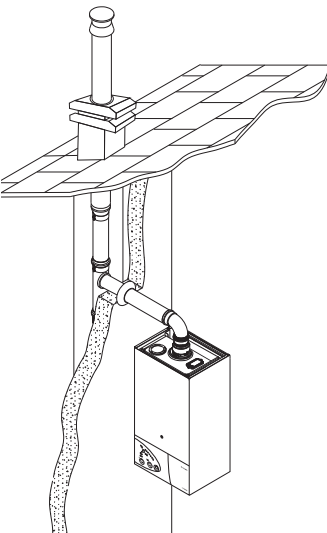
TYPE 3 Coaxial System

Horizontal exhaust / suction system with coaxial piping.
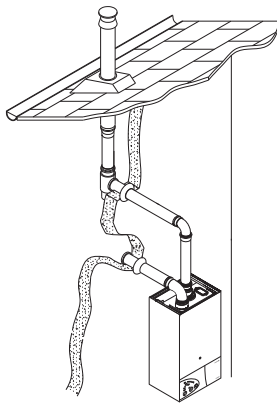
TYPE 4 Coaxial System

Exhaust / suction system with 45° elbows, connected to an air / fume flue duct system.

TYPE 5 Coaxial System

Exhaust / suction system with a 90° elbow, connected to an air / fume flue system.

TYPE 6 Twin pipe system

Exhaust / suction system with two separate pipes - exhaust on a pitched roof, suction through a wall.

TYPE 7 Twin pipe system
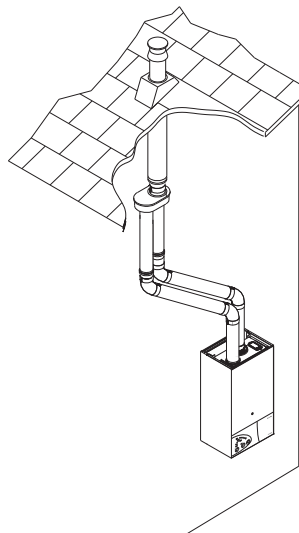
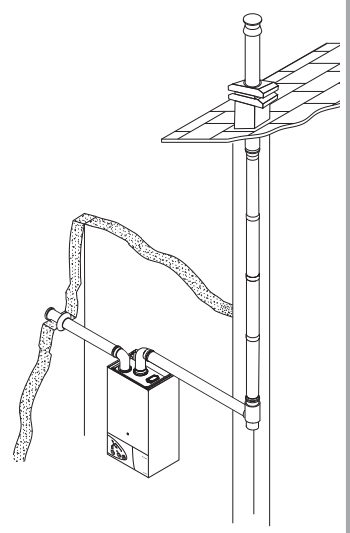Exhaust / suction system with two separate pipes - exhaust and suction on a pitched roof via a coaxial adaptor.

TYPE 8 Twin pipe system

Exhaust / suction system with two separate pipes - exhaust via flue duct, suction through a wall.

1.3 Method of calculating the maximum length of flue systems

Method of length equivalency.

This is a practical method for sizing the pipes for the intake of combustible air and the discharge of combustion by-products. The principle that forms the basis of the method is that of assigning each component a resistance factor that corresponds to a length in metres of a rectilinear pipe and where said lengths of pipe share the same cross-sectional dimensions. This length in metres, which in this manual is called length equivalency (L_{eq}), is calculated as follows:

$$L_{eq} = \frac{\Delta R_{comp.}}{\Delta R_{pipe}} \ [m]$$

Where:
$\Delta R_{comp.}$ = resistance (loss of pressure) of the component under standard conditions.
ΔR_{pipe} = resistance (loss of pressure) of a pipe (with a pre-established diameter) measuring 1 metre under standard conditions.
A standard condition is assumed to be representative of the different operating conditions at play and is an experimental value for the capacities, fume temperature and air temperature for the various thermal power values.
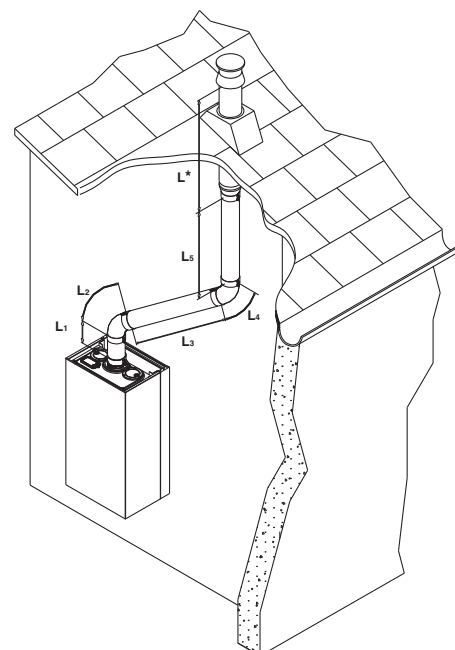
Examples of coaxial system calculations
a) Plan the system run;
b) Measure the length of the system run;
c) Determine the values of the length equivalency for all components;
d) Calculate the value of the total length;
e) Compare the value with the maximum permissible length.
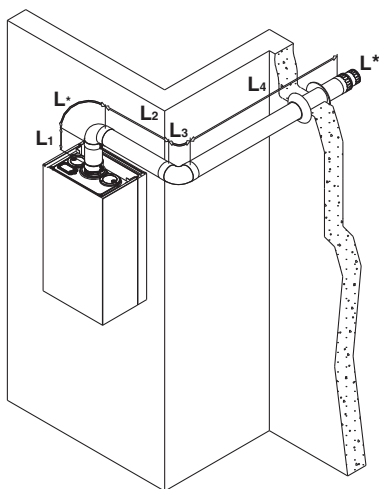
L_1	=	0.2 m +	
L_2	=	0.5 m +	
L_3	=	0.8 m +	
L_4	=	0.75m +	
$L_{eq}\,tot$	=	2.25m	2.25 < L_{max} = 4m

L* is taken into account in the maximum length.

L_1	=	0.2m +	
L_2	=	0.5m +	
L_3	=	1.0m +	
L_4	=	0.5m +	
L_5	=	0.5m	
$L_{eq}\,tot$	=	2.7m	2.7 < L_{max} = 4m

L* is taken into account in the maximum length.

Examples of twin pipe system calculations
a) Plan the system run;
b) Measure the length of the system run;
c) Determine the values of the length equivalency for all components;
d) Calculate the value of the total length;
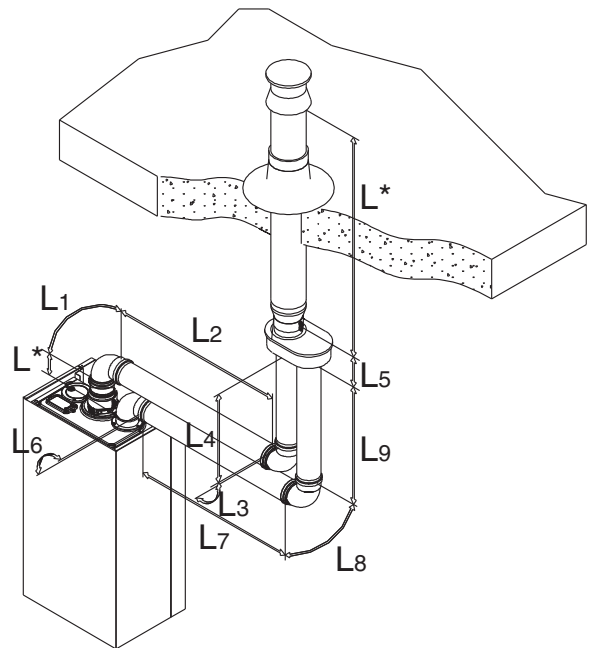**e)** Compare the value with the maximum permissible length.

L_1	=	1.3 m +	
L_2	=	1.0 m +	
L_3	=	1.3 m +	
L_4	=	1.0 m +	
L_5	=	1.3 m +	
L_6	=	0.5 m +	
L_7	=	1.0 m +	
L_8	=	1.0 m +	
L_9	=	1.3 m +	
L_{10}	=	1.0 m +	
L_{eq}^{tot}	=	10.7m	$10.7 < L_{max} = 54m$

L* is taken into account in the maximum length.

|			
L_1	=	1,3 m +	
L_2	=	1,0 m +	
L_3	=	1,3 m +	
L_4	=	1,0 m +	
L_5	=	10,0 m +	
L_6	=	1,3 m +	
L_7	=	1,0 m +	
L_8	=	1,3 m +	
L_9	=	1,0 m +	
L_{eq}^{tot}	=	19,2 m	$19,2 < L_{max} = 54m$

L* is taken into account in the maximum length.

For the maximum length of the flue system, please refer to the table contained within the "Flue Pipe Accessories" manual supplied with each boiler.

1.4 **Installation tips**

Insertion of the restrictor in the exhaust.

Consult the "FLUE PIPE ACCESSORIES" manual with each model of boiler.
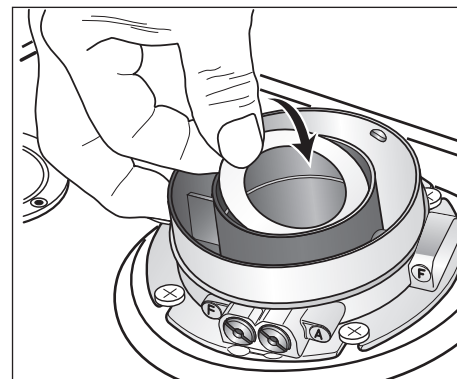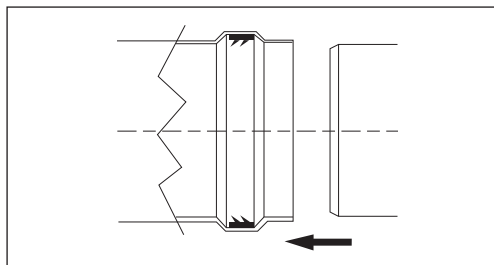
When assembling the pipes make sure that the gaskets are positioned correctly. Use a suitable lubricant on the gasket before assembly.

In the case of coaxial systems, for any extension that needs to be shortened it is imperative that the inner exhaust tube is 40mm longer than the outer air inlet tube.
After cutting to size it is necessary to file any swarf in order to avoid damage to gaskets.
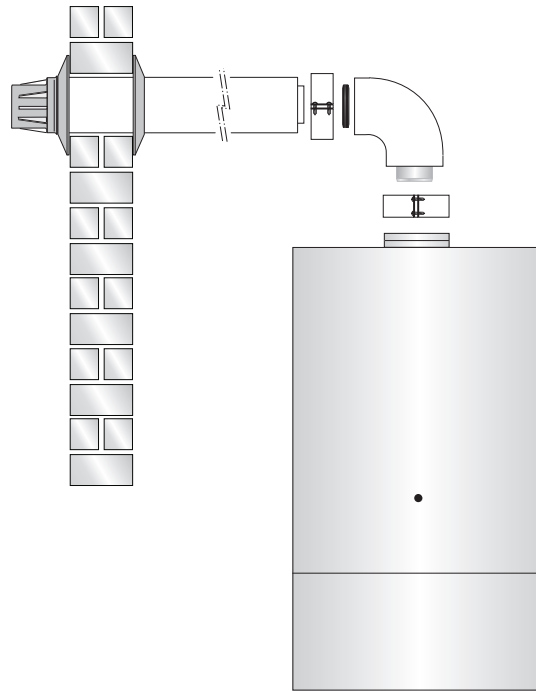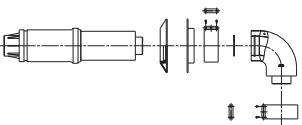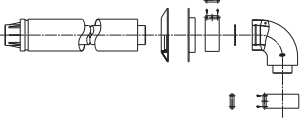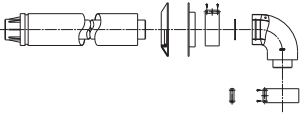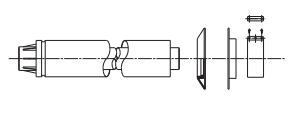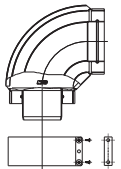Do not use dented or damaged components.
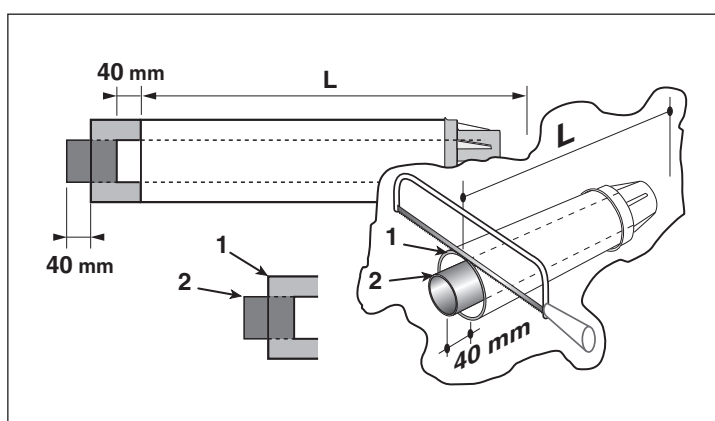
In the case of twin pipe systems, take care not to inadvertently cross the air and exhaust tubes.
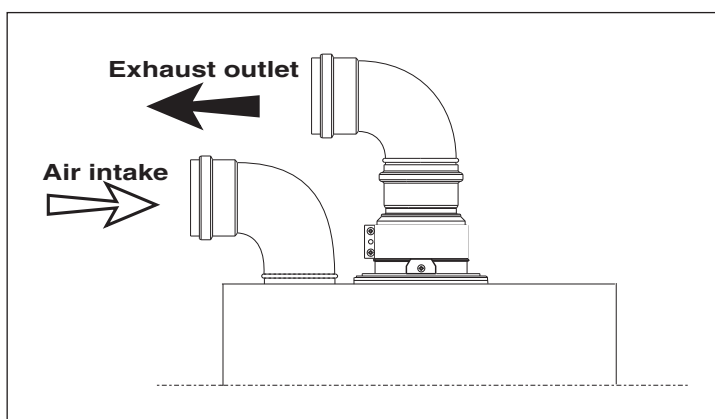
2.0 COAXIAL SYSTEMS

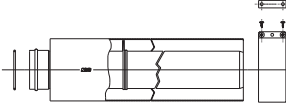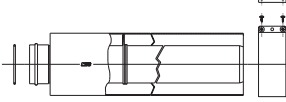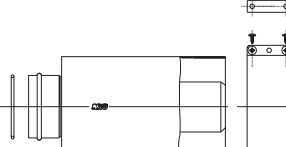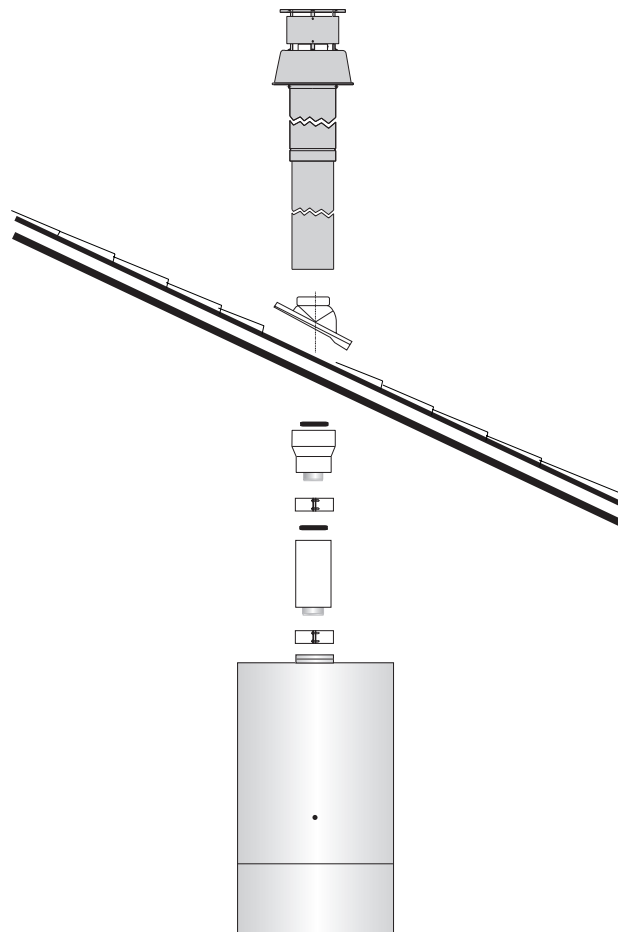## 2.1 Air/exhaust systems with coaxial tubes Ø 60/100 (horizontal)
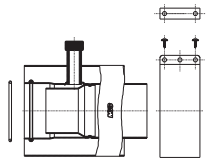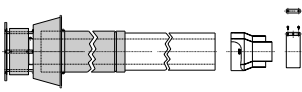
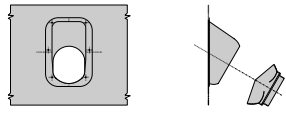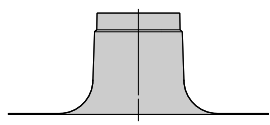| SCHEME	DESCRIPTION OF COMPONENTS	QTY	CODE	Leq
	TELESCOPIC HORIZONTAL COAXIAL KIT 600mm coaxial kit complete with 90° elbow and terminal Packet with gaskets and fixing screws Cover plate in EPDM	1	707067	0.75m
	STANDARD HORIZONTAL COAXIAL KIT 750mm coaxial kit complete with 90° elbow and terminal Packet with gaskets and fixing screws Cover plate in EPDM	1	705785	0.75m
	STANDARD HORIZONTAL COAXIAL KIT 1000mm coaxial kit complete with 90° elbow and terminal Packet with gaskets and fixing screws Cover plate in EPDM	1	705958	1.0m
	STANDARD HORIZONTAL COAXIAL KIT WITHOUT ELBOW 750mm coaxial kit complete with terminal Packet with gaskets and fixing screws Cover plate in EPDM	1	705783	0.75m
	90° COAXIAL ELBOW 90° coaxial elbow Packet with gaskets and fixing screws	1	705787	0.8m

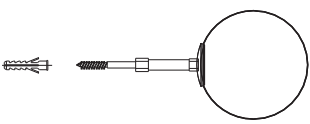| SCHEME	DESCRIPTION OF COMPONENTS	QTY	CODE	Leq
	45° COAXIAL ELBOW 45° coaxial elbow Packet with gaskets and fixing screws	2	705788	0.5m
	COAXIAL EXTENSION 1000mm coaxial extension with centering spring Packet with gaskets and fixing screws	1	705786	1.0m
	COAXIAL EXTENSION 500mm coaxial extension with centering spring Packet with gaskets and fixing screws	1	705790	0.5m
	COAXIAL EXTENSION 160mm coaxial extension with centering spring Packet with gaskets and fixing screws	1	705812	0.2m

**2.**2 **Air/exhaust systems with coaxial tubes Ø 60/100 (vertical)**

SCHEME	DESCRIPTION OF COMPONENTS	QTY	CODE	Leq
	COAXIAL STUB WITH CONDENSATE TRAP 160 mm coaxial stub with condensate discharge connection Packet with gaskets and fixing screws	1	705792	0.3m
	STANDARD VERTICAL FLUE (BLACK) Vertical flue kit 80/125 complete with 60/100 conical adaptor Packet with gaskets and fixing screws	1	705764	
	STANDARD VERTICAL FLUE (TERRACOTTA)	1	705765	
	LEAD FLASHING BASE CAP (BLACK) Lead pitched roof flashing with collar	1	705781	
	LEAD FLASHING BASE CAP (TERRACOTTA)	1	705724	
	VENT BASE CAP FOR FLAT ROOF (BLACK)	1	704830	

2.3 Air/exhaust systems with coaxial tubes Ø 60/100 (special components)
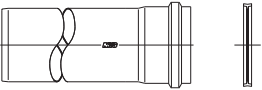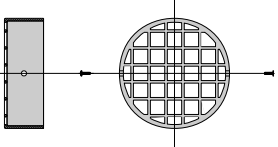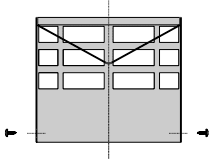
SCHEME	DESCRIPTION OF COMPONENTS	QTY	CODE	Leq
	WALL BRACKET KIT Wall fixing bracket Ø80-120 Complete with plugs	3	705778	

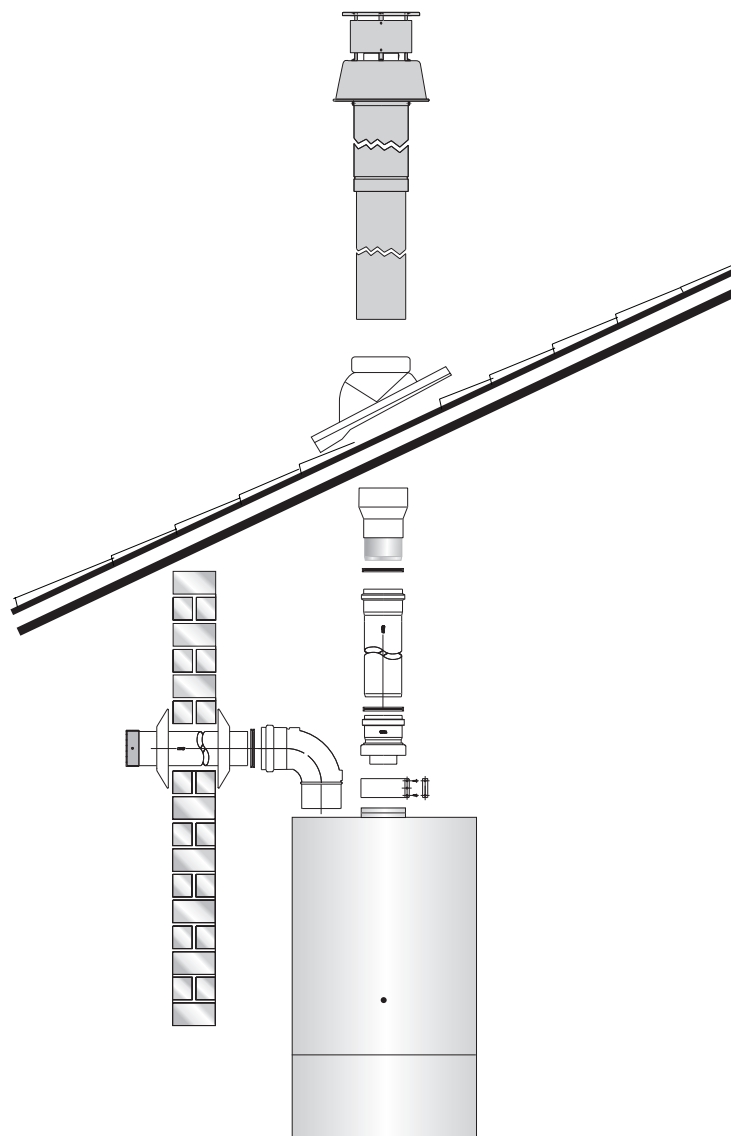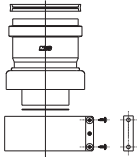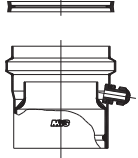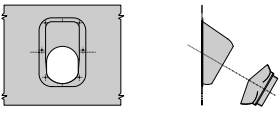### 3.1 Air/exhaust systems with separate tubes Ø 80 (horizontal)
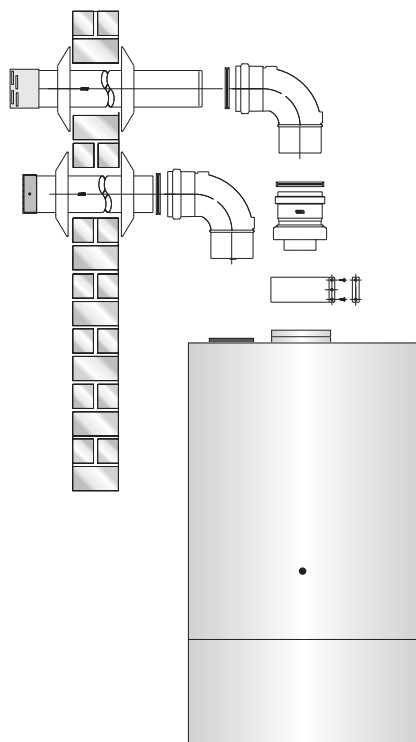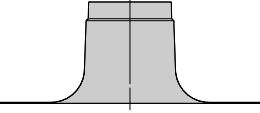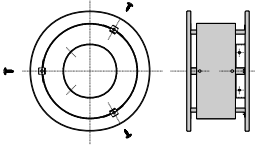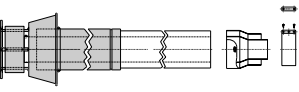
SCHEME	DESCRIPTION OF COMPONENTS	QTY	CODE	Leq
	TWIN PIPE FLUE KIT Adaptor 60/80 d 100 for connection to boiler Packet with gaskets and fixing screws N° 2 90° elbows N° 2 pipes L1000 MF Air intake terminal	1	706026	
	90° MF ELBOW (Ø80) 90° elbow in aluminium (white)	2	705758	1.3 m
	90° MF ELBOW (Ø80)	20	705759	
	45° MF ELBOW (Ø80) 45° elbow in aluminium (white)	2	705760	1.0 m
	PIPE - 2000 mm (Ø80) Pipe L2000 MF in aluminium (white)	1	706279	2.0 m
	PIPE - 1000 mm (Ø80) Pipe L1000 MF in aluminium (white)	1	705761	1.0 m
	PIPE - 1000 mm (Ø80)	10	705762	
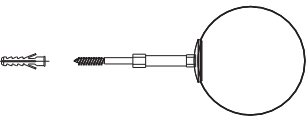
SCHEME	DESCRIPTION OF COMPONENTS	QTY	CODE	Leq
	PIPE - 500 mm (Ø80) Pipe L500 MF in aluminium (white)	10	7057770	0.5 m
	INTAKE VENT CAP Air intake terminal Ø80 (plastic) Fixing screws	1	704738	
	STAINLESS STEEL EXHAUST VENT CAP Exhaust terminal Ø80 (stainless steel) Fixing screws	1	705113	

3.2 Air/exhaust systems with separate tubes Ø 80 (vertical)

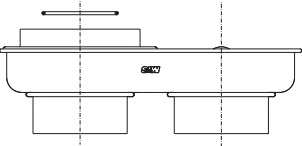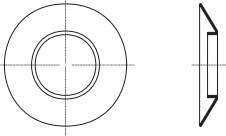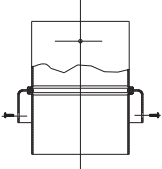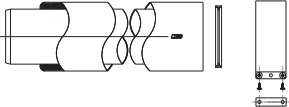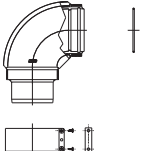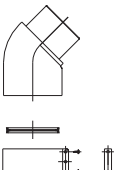| SCHEME	DESCRIPTION OF COMPONENTS	QTY	CODE	Leq
	Adaptor (Ø60/80) FOR TWIN PIPE SYSTEM Adaptor Ø60/80 with Ø100 connection to boiler Packet with gaskets and fixing screws	1	705757	
	STUB (Ø80) WITH CONDENSATE COLLECTOR Pipe L85 MF in aluminium (white) with condensate drain	1	705798	0.2m
	LEAD FLASHING BASE CAP (BLACK) Lead pitched roof flashing with collar	1	705781	
	LEAD FLASHING BASE CAP (TERRACOTTA)		705724	
	VENT BASE CAP FOR FLAT ROOF (BLACK)	1	704830	
	VENT CAP (Ø80) FOR VERTICAL TERMINATION Terminal Ø80 for flat roofs (black) Fixing screws	1	705160	
	PIPE REDUCER (Ø118/80) Adaptor for vertical terminal	1	707166	
	STANDARD VERTICAL FLUE (BLACK) Vertical flue kit 80/125 complete with 60/100 conical adaptor Packet with gaskets and fixing screws	1	705764	
	STANDARD VERTICAL FLUE (TERRACOTTA)	1	705765	

3.3 Air/exhaust systems with separate tubes Ø 80 (special components)

SCHEME	DESCRIPTION OF COMPONENTS	QTY	CODE	Leq
	WALL BRACKET KIT Wall fixing bracket Ø80-120 Complete with plugs	3	705778	
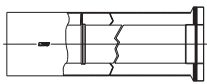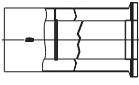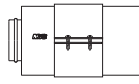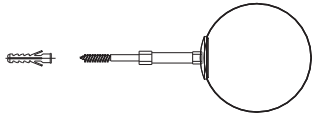
SCHEME	DESCRIPTION OF COMPONENTS	QTY	CODE	Leq
	PIPE BRIDGE (Ø80) Pipe bridge with Ø80/80 M/M inlet and Ø100 M outlet	1	705767	10m
	COVER PLATE (Ø80) EPDM cover plate	2	705784	
	ADAPTOR (Ø80) FOR INSULATED PIPES Adaptor Ø80 for connection insulated exhaust pipes complete with fixing screws	1	705769	0.2m
	INSULATED PIPE L 1000 Pipe Ø80/100 L 1000 insulated Packet with gaskets and fixing screws	1	705771	1m
	90° INSULATED ELBOW (Ø80) 90° insulated elbow Ø80/100 Packet with gaskets and fixing screws	1	705772	1.3m
	45° INSULATED ELBOW (Ø80) 45° insulated elbow Ø80/100 Packet with gaskets and fixing screw	1	705773	1m

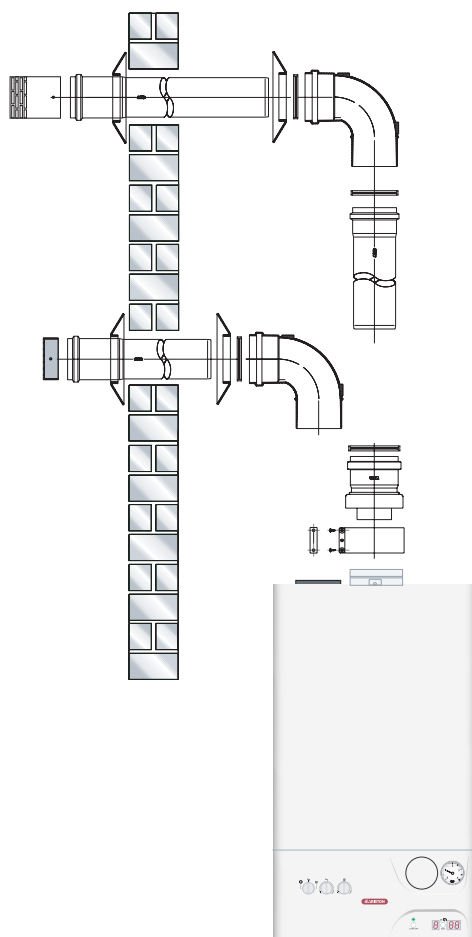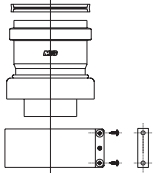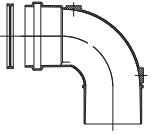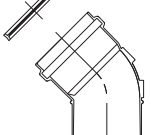## 4.1 Air/exhaust systems with coaxial tubes Ø 60/100 (horizontal)
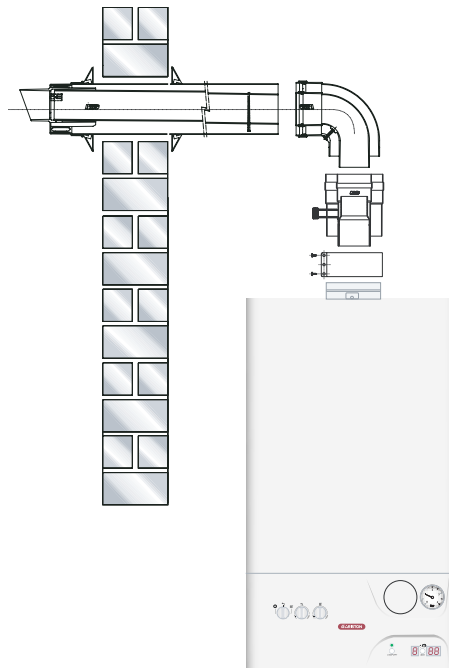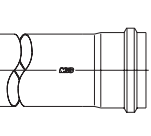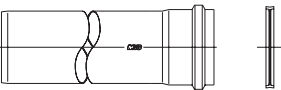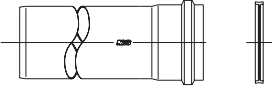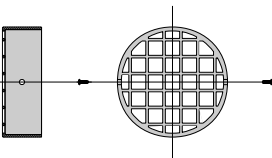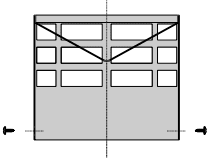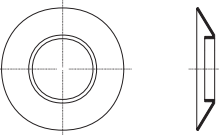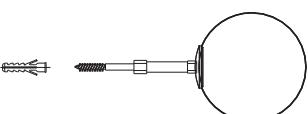
SCHEME	DESCRIPTION OF COMPONENTS	QTY	CODE	Leq
	STANDARD HORIZONTAL COAXIAL KIT 750mm coaxial kit AL/PP complete with 90° elbow and terminal Packet with gaskets and fixing screws Cover plate in EPDM	1	706108	0.75 m
	STANDARD HORIZONTAL COAXIAL KIT 1000mm coaxial kit AL/PP complete with 90° elbow and terminal Packet with gaskets and fixing screws Cover plate in EPDM	1	706138	1.0 m
	STANDARD HORIZONTAL COAXIAL KIT WITHOUT ELBOW 750mm coaxial kit AL/PP complete with terminal Packet with gaskets and fixing screws Cover plate in EPDM	1	706109	0.75 m
	90° COAXIAL ELBOW 90° coaxial elbow AL/PP Packet with gaskets and fixing screws	1	706110	0.8 m
	45° COAXIAL ELBOW 45° coaxial elbow AL/PP	2	706111	0.5 m

SCHEME	DESCRIPTION OF COMPONENTS	QTY	CODE	Leq
	COAXIAL EXTENSION 1000 mm Coaxial extension 1000mm (Ø60 M/F) AL/PP with centering spring	1	706112	1.0 m
	COAXIAL EXTENSION 500 mm Coaxial extension 500mm (Ø60 M/F) AL/PP with centering spring	1	706113	0.5m
	COAXIAL EXTENSION (INSPECTION) Coaxial extension 350mm AL/PP with centering spring and inspection hatch	1	706114	0.4m
	WALL BRACKET KIT Wall fixing bracket Ø80-120 Complete with plugs	3	705778	
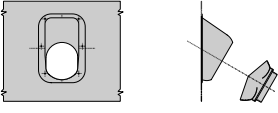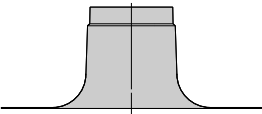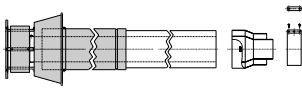
4.2 Air/exhaust systems with separate tubes Ø 80 (horizontal)

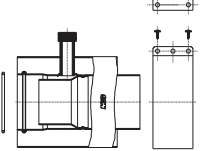| SCHEME	DESCRIPTION OF COMPONENTS	QTY	CODE	Leq
	Adaptor (Ø60/80) FOR TWIN PIPE SYSTEM Adaptor Ø60/80 with Ø100 connection to boiler Packet with gaskets and fixing screws	1	706132	
	90° MF ELBOW (Ø80) 90° elbow in aluminium (white)	2	705758	1.3m
	90° MF ELBOW (Ø80)	20	705759	
	45° MF ELBOW (Ø80) 45° elbow in aluminium (white)	2	705760	1m
	PIPE - 1000 mm (Ø80) Pipe L1000 MF in aluminium (white)	1	706133	1m
	PIPE - 500 mm (Ø80) Pipe L500 MF in aluminium (white)	1	706134	0.5m
	INTAKE VENT CAP Air intake terminal Ø80 (plastic) Fixing screws	1	704738	
	STAINLESS STEEL EXHAUST VENT CAP Exhaust terminal Ø80 (stainless steel) Fixing screws	1	705113	
	COVER PLATE (Ø80) EPDM cover plate	2	705784	
	WALL BRACKET KIT Wall fixing bracket 80-120 Complete with plugs	3	705778	

4.3 Air/exhaust systems (vertical)

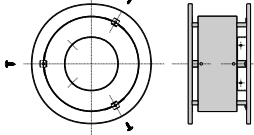| SCHEME	DESCRIPTION OF COMPONENTS	QTY	CODE	Leq
	COAXIAL STUB WITH CONDENSATE TRAP 160 mm coaxial stub with condensate discharge connection Packet with gaskets and fixing screws	1	706125	0.2m
	LEAD FLASHING BASE CAP (BLACK) Lead pitched roof flashing with collar	1	706065	
	LEAD FLASHING BASE CAP (TERRACOTTA)	1	706067	
	VENT BASE CAP FOR FLAT ROOF (BLACK)	1	706069	
		1		
	VENT CAP (Ø80) FOR VERTICAL TERMINATION Terminal Ø80 for flat roofs (black) Fixing screws	1	705160	
	STANDARD VERTICAL FLUE (BLACK) Vertical flue kit 80/125 complete with 60/100 conical adaptor Packet with gaskets and fixing screws	1	706116	
	STANDARD VERTICAL FLUE (TERRACOTTA)	1	706117	

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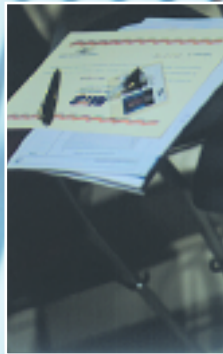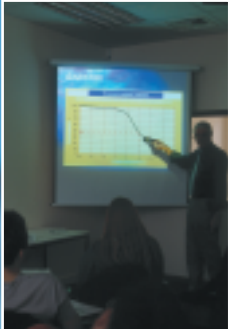
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Programmes across the entire Ariston product range covering all theoretical and practical aspects. Designed for commercial heating installers, merchants and independent gas-heating service organisations: courses are offered at 3 fully equipped training centres in the UK. In addition permanent training facilities are available at a number of technical colleges nationwide.

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