

EcoSable range Flue Guide



Models covered:
LGSS200-600
LGSS200-720

DOCUMENT CONTROL

Article	Language	Version	Modified by
EcoSable flue guide	English	V1.3 June 2024	S Addis

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GENERAL

CERTIFIED FLUE SYSTEMS

Lochinvar Water Heaters are certified for use on the following flue categories:

Installation type	Category	Description
B23	Open flue	An appliance intended to be connected to a flue that evacuates the products of combustion to the outside of the room containing the appliance. The combustion air is drawn directly from the room.
C13	Closed Flue	An appliance connected to either a concentric or twin-pipe flue system with a Horizontal flue terminal. Both the air inlet and flue exhaust must be in the same pressure zone.
C33	Closed Flue	An appliance connected to either a concentric or twin-pipe flue system with a Vertical flue terminal. Both the air inlet and flue exhaust must be in the same pressure zone.
C43	Closed Flue	An appliance connected to a common air inlet and flue exhaust system, which is designed for more than one appliance. This common system has a single air inlet and flue exhaust and is part of the building not the appliance.
C53	Closed Flue	An appliance connected to a twin-pipe flue system with a Horizontal or Vertical flue terminal. Both air inlet and flue exhaust may be in different pressure zones.
C63	Closed Flue	An appliance intended to be connected to a separately approved and marketed system for the supply of combustion air and discharge of combustion products (i.e. other than that supplied by the water heater manufacturer).

All installations should comply with the requirements of:

- For appliances up to 70kW net input- BS5440-1:2023 - Flueing and ventilation for gas appliances of rated input not exceeding 70 kW net (1st, 2nd and 3rd family gases). Specification for installation of gas appliances to chimneys and for maintenance of chimneys.
 - Refer to drawing 1 and table 1 for details of terminal locations **and the risk assessment**
 - Horizontal flue terminations (other than for fan dilution systems) must not be installed for any single appliance or group of appliances with a total nett input exceeding 333kW net heat input.
 - For any single appliance or group of appliances with a total net heat input exceeding 333 kW, the general requirements of IGEM/UP/10 Edition 4 +A: 2016 shall apply and approval must be sought from the Local Authority prior to commencement of the installation.
- The Clean Air Act for installations exceeding 333kW nett input.

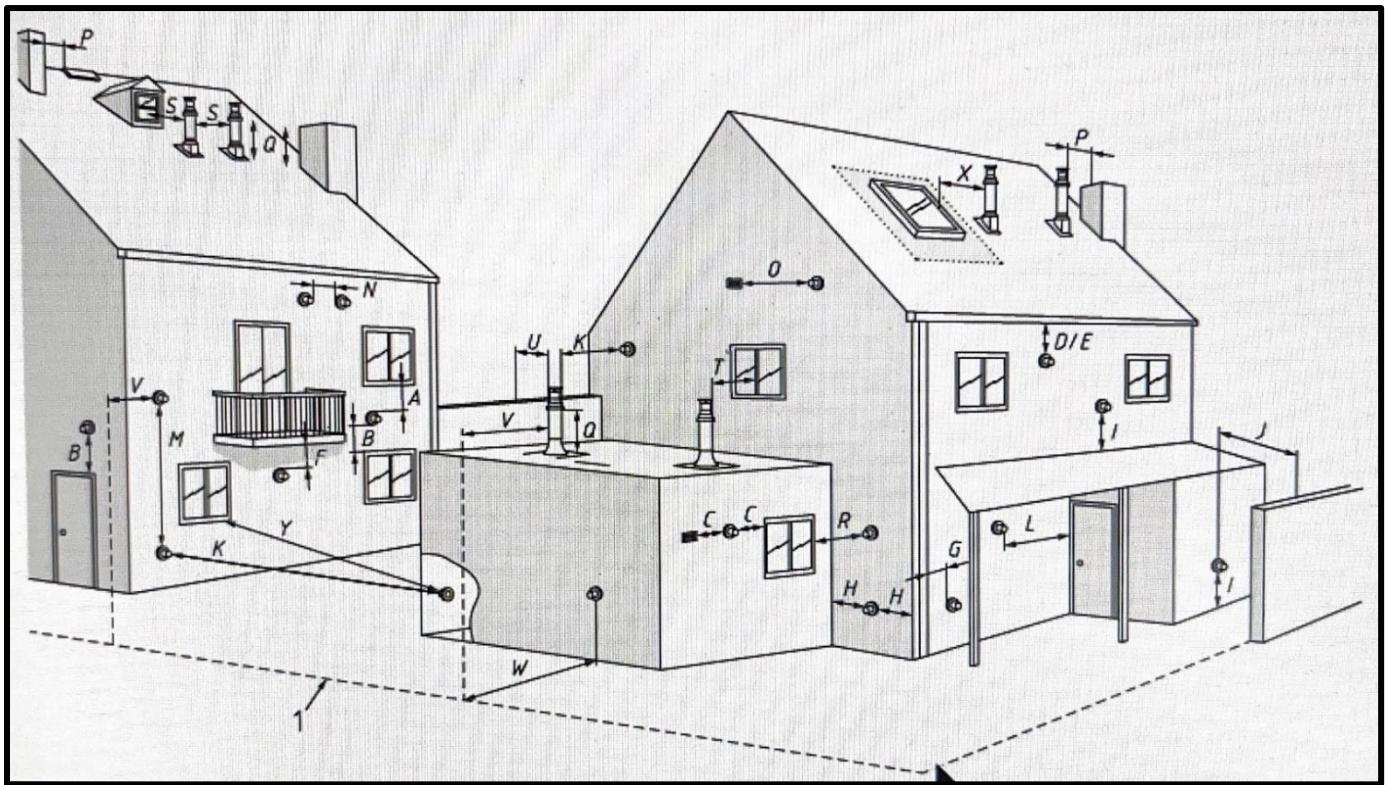


TABLE 1 WATER HEATER TERMINAL LOCATIONS

Location	Description		LGSS200-600	LGSS200-720
	Water heater nett input	kW	35.9	46.2
A	Directly below an opening, air brick, opening windows etc.	mm	300	300
B	Above an opening, air brick, opening windows etc.	mm	300	300
C	Horizontally to an opening, air brick, opening windows etc.	mm	300	300
D	Below a gutter or sanitary pipework	mm	75	75
E	Below the eaves	mm	300	300
F	Below a balcony or car port roof	mm	200	200
G	From a vertical drain or soil pipe	mm	150	150
H	From an internal or external corner	mm	300	300
I	Above ground, roof or balcony level	mm	300	300
J	From a surface facing the terminal	mm	600	600
K	From a terminal facing the terminal	mm	1200	1200
L	From an opening in the car port (e.g. door, window) into the dwelling	mm	1200	1200
M	Vertically from a terminal on the same wall	mm	1500	1500
N	Horizontally from a terminal on the same wall	mm	300	300
O	Horizontally from a mechanical air inlet on the same wall	mm	1000	1000
P	From a vertical structure on the roof	mm	N/A	N/A
Q	Above intersection with the roof	mm	300	300
R	Diagonally across from an opening into a building on a different wall	mm	600	600
S	Vertical terminal from another vertical terminal	mm	600	600
T	Vertical terminal adjacent to an opening into a building	mm	1500	1500
U	Vertical terminal from a wall	mm	500	500
V	Terminal alongside a boundary	mm	300	300
W	Terminal facing a boundary	mm	600	600
X	Adjacent to an opening into a building on a pitched roof	mm	Contact Lochinvar Technical support	
Y	Terminal facing an opening into a building	mm	2000	2000

The table above should be used in conjunction with the following notes:

- The above should be read in conjunction with the latest edition of BS5440-1
- For Water Heater installation above 333kW nett input the table above should not be used, these installations are covered by the clean air act and must comply with its requirements in full, contact your local environmental health team for further guidance

For further guidance please contact Lochinvar Technical support

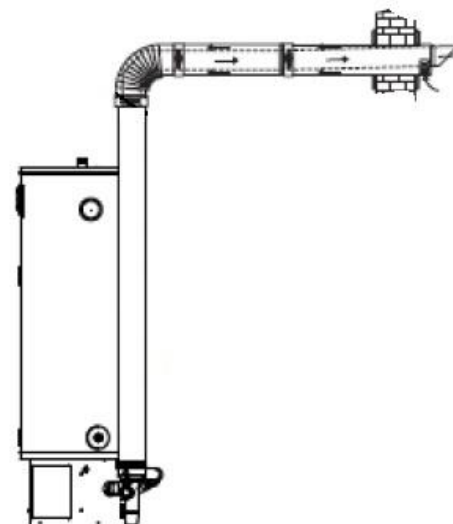
Further to the requirements in BS5440-1:2023 Annex D and Figure C.8, table C.1 the following risk assessment gives guidance for the positioning of horizontal flues. This form should be completed before work commences and undertaken by a person who is competent to undertake the risk assessment.

Type C appliances with net heat input not exceeding 70kW Low level flue discharge risk assessment (including net heat input for groups of appliances)			
No.	Regarding the flue position	No	Yes
1	Will the flue terminal contravene the positions set out in table C.1 for room sealed chimney outlets?	No	Yes
2	Will the terminal be sited in a position that will likely allow products of combustion to build up (e.g. enclosed by adjacent structures)?	No	Yes
3	Is the termination in a light well?	No	Yes
4	Is the termination within a carport without two unobstructed sides?	No	Yes
5	Will the termination be in an area that might have combustible material in the vicinity?	No	Yes
6	Will the termination be in an area that might have hazardous material in the vicinity (e.g. petrochemicals)?	No	Yes
7	Will the termination be sited within a covered walkway?	No	Yes
8	Are there any restrictions stopping the fitting of a terminal guard if required?	No	Yes
9	Will the termination discharge over a boundary?	No	Yes
10	Is a plume management kit required to circumvent the termination distances as required in table C.1?	No	Yes
No.	Nuisance considerations	No	Yes
11	Is the termination sited over a pathway that is likely to cause nuisance (e.g. head height or plumbing towards users)?	No	Yes
12	Is the termination likely to cause a nuisance to neighbours?	No	Yes
No.	Chimney/flue routes	No	Yes
	Will the flue be installed in a void that will not be able to satisfy a full visual inspection?	No	Yes
	Are there any restrictions that will prevent the flue from being supported throughout its entire length?	No	Yes
	Do the flue materials contravene building regulations(e.g. high risk buildings)?	No	Yes
	Will the flue route pass though any fire protected areas without the ability to maintain its protection?	No	Yes
	Will the flue pass through another dwelling?	No	Yes
	Is the flue likely to be damaged due to its route/location(e.g. materials stored on it in a plantroom or storeroom)?	No	Yes
	Does the flue affect the integrity of the structure it is in (e.g. lintels, cavity trays, barriers or membranes)?	No	Yes
If all answers are Blue then the flue position should be suitable			
If any answer is Orange then the flue position is unsuitable, consider revising the position or type of flue outlet or contact the local Environmental Health officer for assistance and/or approval			

CONCENTRIC FLUE SYSTEMS

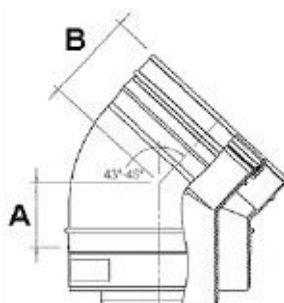
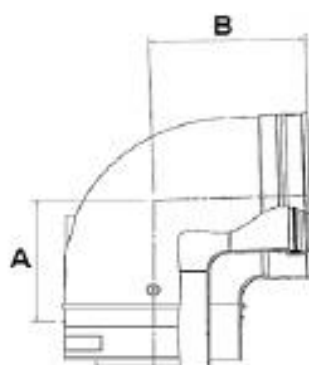
LV310759 CONCENTRIC HORIZONTAL FLUE ASSEMBLY ALL MODELS		
COMPONENTS INCLUDED		
Item No.	Description	Included
LV310759	CONCENTRIC HORIZONTAL FLUE ASSEMBLY 80/125mm PP Includes: Horizontal Concentric terminal, wall plates, 90 bend and 500mm concentric extension	1
Maximum equivalent flue length =20 Metres		
Maximum number of bends allowed =5		

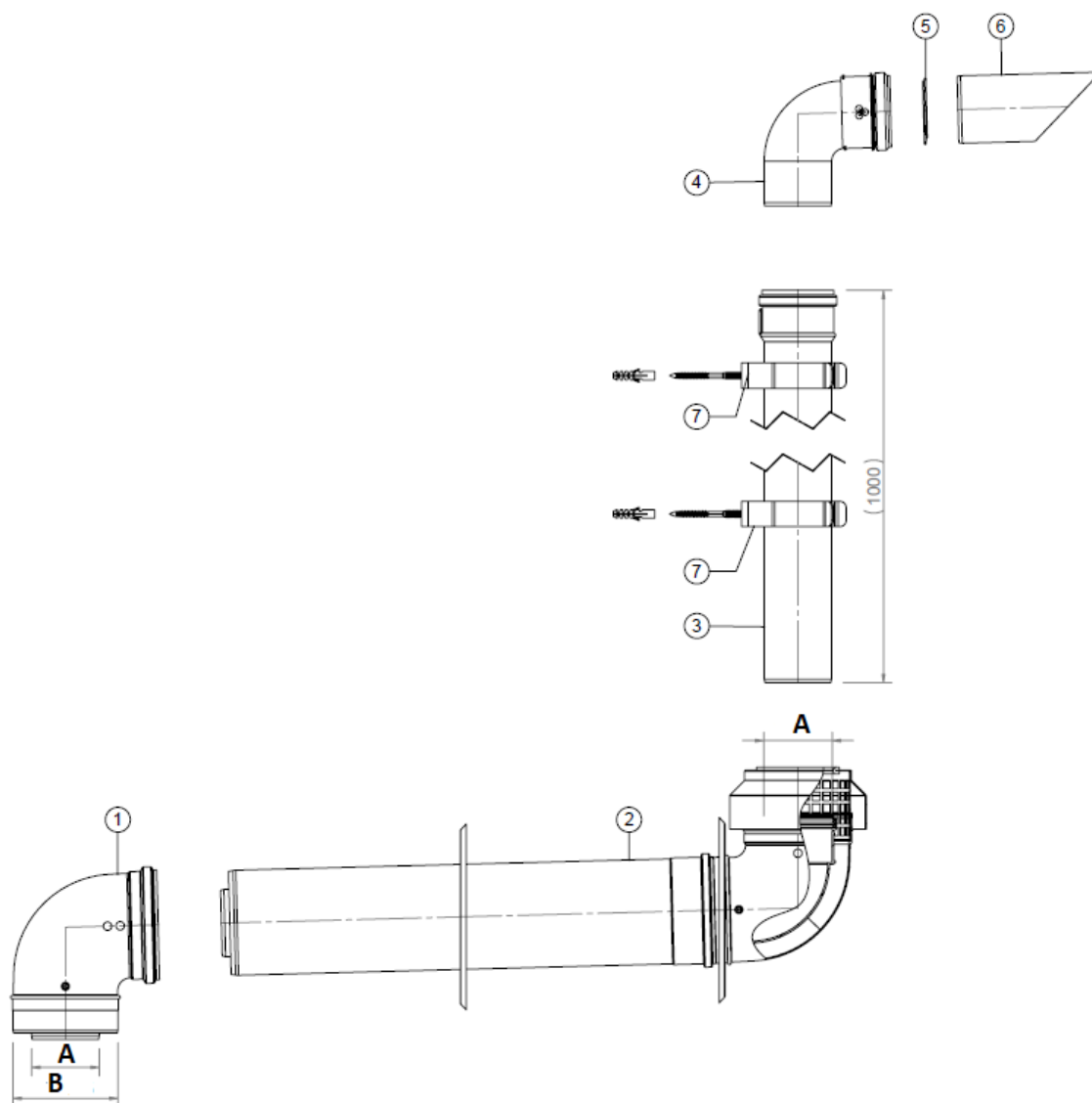
LV310755 CONCENTRIC HORIZONTAL FLUE ASSEMBLY ALL MODELS		
COMPONENTS INCLUDED		
Item No.	Description	Included
LV310755	CONCENTRIC VERTICAL FLUE ASSEMBLY 80/125mm PP Includes: Vertical Concentric terminal, flat roof flashing and 1000mm concentric extension	1
Maximum equivalent flue length =20 Metres		
Maximum number of bends allowed =5		



Additional Concentric flue items available to complete the installation

Additional Flue Ancillary Items	
Item No.	Description
LV310740	CONCENTRIC EXTENSION - Ø80/125mm PP FIXED (250mm)
LV310745	CONCENTRIC EXTENSION - Ø80/125mm PP (500mm)
LV310742	CONCENTRIC EXTENSION - Ø80/125mm PP FIXED (1000mm)
LV310743	CONCENTRIC EXTENSION - Ø80/125mm PP FIXED (2000mm)
LV310744	CONCENTRIC EXTENSION - Ø80/125mm PP TELESCOPIC
LV310734	CONCENTRIC BEND 45° Ø80/125mm PP (A=45mm B=62.5mm)
LV310735	CONCENTRIC BEND 90° Ø80/125mm PP (A=95mm B=110mm)
M87195	WALL CLAMP Ø130mm





LG800008B PLUME MANAGEMENT KIT Ø80/125mm

No	Description	All models
1	CONCENTRIC BEND 90°-PP	Ø80/125mm
2	CONCENTRIC HORIZONTAL PLUME KIT TERMINAL -PP	Ø80/125mm
3	EXTENSION -PP CUTABLE (1000mm)	Ø80mm
4	BEND 90°-PP	Ø80mm
5	PLUME KIT BIRD GUARD	Ø80mm
6	PLUME KIT FLUE EXIT-PP	Ø80mm
7	WALL CLAMP	Ø80mm
A	INTERNAL DIAMETER	Ø80mm
B	EXTERNAL DIAMETER	Ø125mm



The plume kit must not be used to correct an illegal terminal location



The plume kit can only be used as supplied; further extensions are not permitted

TWIN PIPE FLUE SYSTEMS

ELGPH001 TWIN PIPE HORIZONTAL FLUE ASSEMBLY USING A CONCENTRIC TERMINAL ALL MODELS

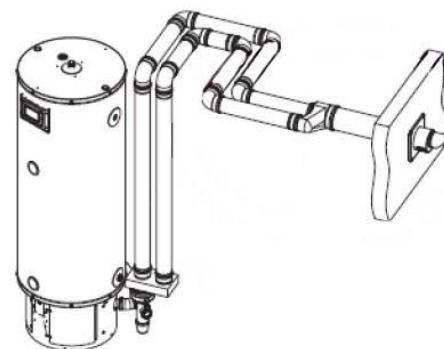
COMPONENTS INCLUDED

Item No.	Description	Included
LV310728	CONC HORZ TERMINAL - Ø80/80mm TO Ø80/125mm PP	1
M85291	BEND 90° Ø80mm PP	2
LV310718	EXTENSION - Ø80mm (250mm) PP	2
LV310722	EXTENSION - Ø80mm PP TELESCOPIC	2
LV312209	CONC TO TWIN PIPE ADAPTOR - Ø80/125 - 80/80 PP/ALU	1

Maximum equivalent flue length =50 Metres

Reduction for each 90 bend=3.9metre

Reduction for each 45 bend=1.1metre



ELGPV001 TWIN PIPE VERTICAL FLUE ASSEMBLY- USING A CONCENTRIC TERMINAL ALL MODELS

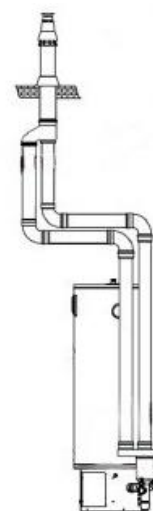
COMPONENTS INCLUDED

Item No.	Description	Included
LV310708	VERTICAL CONC TERMINAL - Ø80/80mm TO Ø80/125mm PP	1
M85272	EXTENSION Ø80mm (1000mm) PP	2
LV310722	EXTENSION - Ø80mm PP TELESCOPIC	2
LV312209	CONC TO TWIN PIPE ADAPTOR - Ø80/125 - 80/80 PP/ALU	1

Maximum equivalent flue length =50 Metres

Reduction for each 90 bend=3.9metre

Reduction for each 45 bend=1.1metre



TWIN PIPE HORIZONTAL FLUE UTILISING SEPARATE AIR INLET AND FLUE OUTLET ALL MODELS

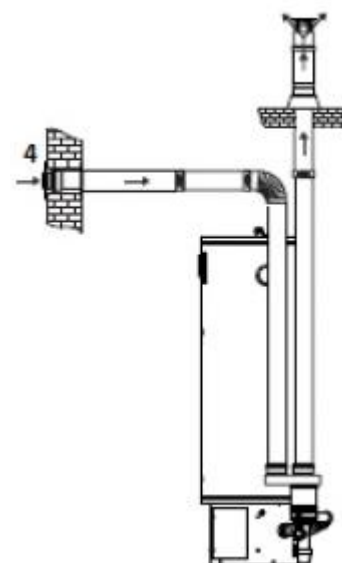
COMPONENTS REQUIRED TO START INSTALLATION

Item No.	Description
LV312209	CONCENTRIC TO TWIN PIPE ADAPTOR Ø80/125mm - 2X80mm
LV310753	CONCENTRIC VERTICAL TERMINAL - Ø80/125mm PP
LV302520	FLAT ROOF FLASHING Ø140mm ALU
LV305016	HORIZONTAL AIR INLET Ø80mm

Maximum equivalent flue length =50 Metres

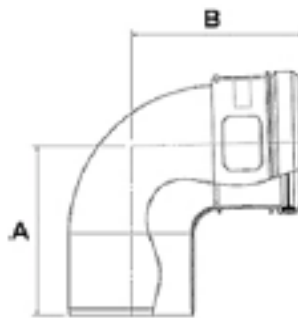
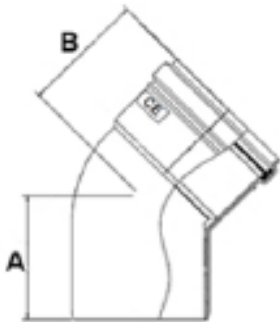
Reduction for each 90 bend=3.9metre

Reduction for each 45 bend=1.1metre



Additional Twin-pipe flue items available to complete the installation

Additional Flue Ancillary Items	
Item No.	Description
LV310718	EXTENSION - Ø80mm PP 250mm
M85271	EXTENSION Ø80mm PP 500mm
M85272	EXTENSION Ø80mm PP 1000mm
LV310721	EXTENSION - Ø80mm PP 2000mm
LV310722	EXTENSION - Ø80mm PP TELESCOPIC
M85292	BEND 45° Ø80mm PP (A=72.5mm B=72.5mm)
M85291	BEND 90° Ø80mm PP (A=110mm B=110mm)
LV310703	BEND WITH SUPPORT 90° Ø80mm PP
LV310690	SUPPORT BRACKET
M87191	WALL CLAMP Ø80mm



CONVENTIONAL FLUE SYSTEMS

FAN ASSISTED CONVENTIONAL FLUE TRANSITION-ALL MODELS

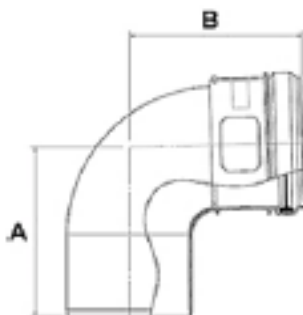
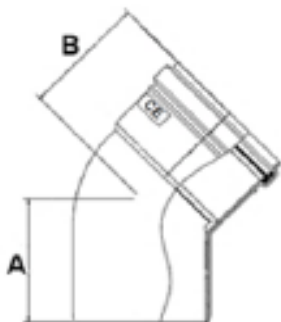
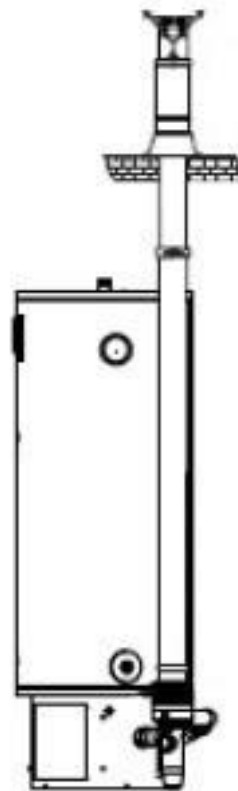
COMPONENTS INCLUDED

Item No.	Description
LV305030	APPLIANCE AIR INTAKE GUARD Ø80/125mm
LV310753	CONCENTRIC VERTICAL TERMINAL - Ø80/125mm PP
LV302520	FLAT ROOF FLASHING Ø140mm ALU
Maximum equivalent flue length =50 Metres	
Reduction for each 90 bend=3.9metre	

ADDITIONAL CONVENTIONAL FLUE ITEMS AVAILABLE TO COMPLETE THE INSTALLATION

Additional Flue Ancillary Items

Item No.	Description
LV310718	EXTENSION - Ø80mm PP
M85271	EXTENSION Ø80mm PP
M85272	EXTENSION Ø80mm PP
LV310721	EXTENSION - Ø80mm PP
LV310722	EXTENSION - Ø80mm PP TELESCOPIC
M85292	BEND 45° Ø80mm PP (A=72.5mm B=72.5mm)
M85291	BEND 90° Ø80mm PP (A=110mm B=110mm)
LV310703	BEND WITH SUPPORT 90° Ø80mm PP
LV310690	SUPPORT BRACKET
M87191	WALL CLAMP Ø80mm



Any installations using flue type c63 must be designed and installed in compliance with any local building or planning regulations, but as these systems use a flue system not supplied by Lochinvar, Lochinvar cannot comment / advise or provide support on the design of this type of flue system. To design such a flue system, the installer/contractor must consult a specialist flue supplier who will be responsible for the design and installation of the separate flue system. When designing the type c63 flue system, the instructions in the installation manual, provided with the water heater, must be considered. Lochinvar will provide pressure loss figures for the specific units, but other than that, Lochinvar cannot provide support on common flue requests because flue certification is limited to the certified categories in the table on page 2. Lochinvar cannot accept any responsibility for flue system design.

	Maximum Pressure					
	Inlet Only		Outlet Only		Inlet + Outlet	
	P_{inlet}	P_{outlet}	P_{inlet}	P_{outlet}	P_{inlet}	P_{outlet}
	Pa	Pa	Pa	Pa	Pa	Pa
LGSS200-600	-176	0	0	176	-85	92
LGSS200-780	-291	0	0	291	-140	151

Notes-Items to Order		
Item No	No Required	Notes

Contact Lochinvar customer service to order additional flue items on 01295 269981

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