



Lochinvar CMP58 CPM Boiler Range Flue Instruction Manual

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Lochinvar®

Lochinvar CMP58 CPM Boiler Range Flue



GENERAL

Lochinvar CPM Boilers 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).
C83	Closed Flue	<p>An appliance connected via one of its ducts to a single or common duct system. This duct system consists of a single natural draught duct (i.e. not incorporating a fan) that evacuates the products of combustion.</p> <p>The appliance is connected via a second of its ducts to a terminal, which supplies air to the appliance from outside the building.</p>

All installations should comply with the requirements of:

1. For appliances up to 70kW net input- BS5440-1:2008- 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.
2. Refer to drawing 1 and table 1 for details of terminal locations.
3. For appliances over 70kW net input- IGEM/UP/10 Edition 4 +A: 2016 – Installation of flued gas appliances in industrial and commercial premises, specific attention should be paid to the following sections.
4. Refer to drawing 1 and table 1 for details of terminal locations.
5. Horizontal terminations shall be located according to the minimum distances given in table 1, and subject to the risk assessment criteria shown in table 2.
6. Horizontal flue terminations (other than for fan dilution systems) must not be installed for any single appliance or group of appliances with a total net input exceeding 333kW net heat input.
7. 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.

8. The Clean Air Act for installations exceeding 333kW nett input.

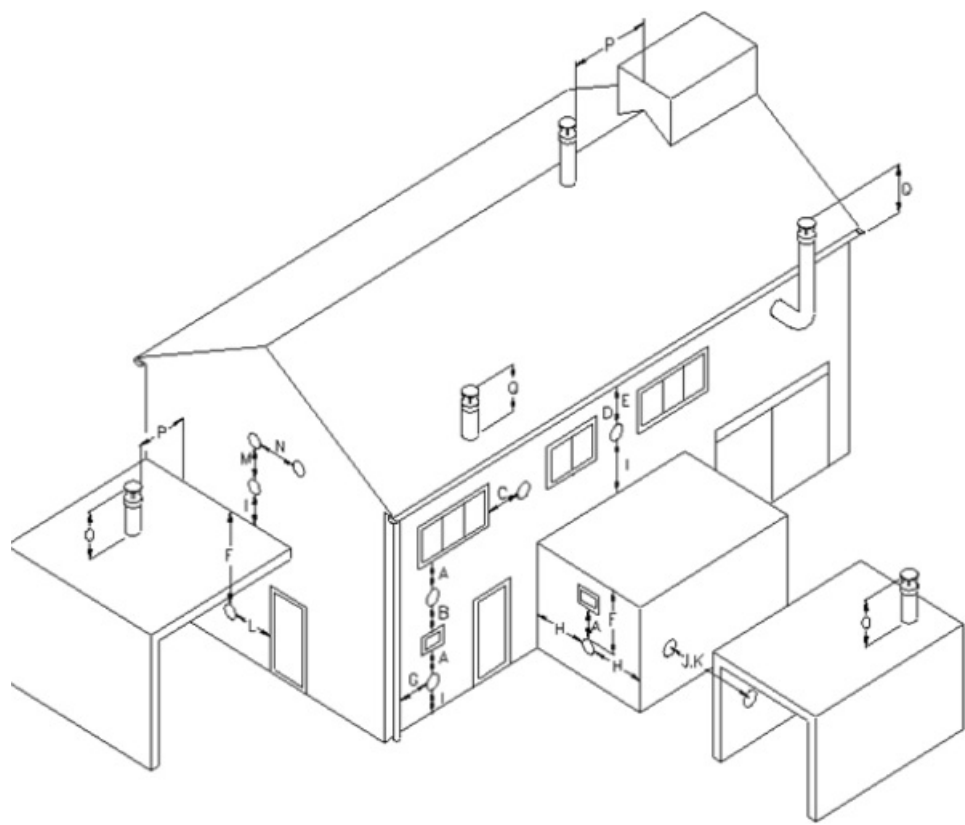


TABLE 1 BOILER TERMINAL LOCATIONS

Locat ion	Description		CPM 58	CPM 77	CPM 96	CPM1 16	CPM1 44	CPM1 75
A	Directly below an opening, air brick, opening windows etc.#	m m	300	2500	2500	2500	2500	2500
B	Above an opening, air brick, opening windows etc.	m m	300	631	760	896	1092	1294
C	Horizontally to an opening, air brick, opening windows etc.#	m m	300	631	760	896	1092	1294
D	Below a gutter or sanitary pipework	m m	75	200	200	200	200	200
E	Below the eaves	m m	200	200	200	200	200	200
F	Below a balcony or car port roof	m m	200	Not recommended see UP10 risk assessment				
G	From a vertical drain or soil pipe	m m	144	150	150	150	150	150
H	From an internal or external corner	m m	300	1099	1513	1948	2573	3220
I	Above ground, roof or balcony level	m m	300	300	300	300	300	300
J	From a surface facing the terminal	m m	600	1100	1514	1948	2573	3220
K	From a terminal facing the terminal	m m	1200	2083	2429	2792	3314	3855
L	From an opening in the car port (e.g. door, window) into the dwelling	m m	1200	Not recommended see UP10 risk assessment				
M	Vertically from a terminal on the same wall	m m	1500	2500	2500	2500	2500	2500
N	Horizontally from a terminal on the same wall*	m m	300	600	600	900	900	n/a**
P	From a vertical structure on the roof	m m	300	1500	1500	1500	1500	1500
Q	Above intersection with the roof	m m	150	311	359	409	481	556

- distances shown ensure the boilers will operate without problems under most conditions, these distances can be reduced in certain circumstances contact Lochinvar Technical support for assistance if required.
- multiple boiler installation of model CPM175 are covered by the clean air act and must comply with its requirements see UP10 figure 7 for full clarification

TABLE 2 RISK ASSESMENT

The table below is an excerpt from IGEMUP10 and should be used in conjunction with that document

Further to the requirements in IGEM/UP/10 Edition 4 +A: 2016 Section 8 under clause 8.7.3.3 and Figure 7 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 exceeding 70 kW and not exceeding 333 kW low level flue discharge risk assessment (including net heat input for groups of appliances)			
No.	Regarding the flue position	No	Yes
1	Is the proposed flue termination within the distance in Figure K of a road, path, track, thoroughfare, walkway, property boundary or area, which is used for general public access other than for maintenance purposes?	No	Yes
2	Is the proposed flue termination within the distance in Figure K to a playground, school, yard, seating area, or area where there may be a public gathering?	No	Yes
3	If the proposed flue termination is enclosed on more than two sides then does it comply with the requirements of Figure 11B?	No	Yes
4	Is the proposed flue termination within the distance in Figure K of a surface or building element that may be affected by corrosion or deterioration from plume condensate?	No	Yes
5	Is the proposed flue position in an area where vehicles could be parked within distances from Figure 12 Line G to the flue?	No	Yes
6	Are there shrubs or trees within minimum distances shown on Figure K of the proposed terminal position?	No	Yes
7	Is the proposed flue termination within a light well?	No	Yes
8	Are the products of combustion from the proposed flue position likely to build up under unfavourable atmospheric conditions, due to poor cross flow of air caused by enclosures or adjacent structures and/or likely to cause nuisance?	No	Yes
9	Is the flue termination position likely to cause a nuisance to adjoining properties?	No	Yes
Building Regulations part J			
10	Is the proposed flue termination less than 300 mm from the boundary of the property, as measured from the side of the terminal to the boundary?	No	Yes
Regarding the Clean Air Act			
11	Is the total output of the individual, or group of flue terminals (if within 5U (see A3.7)), greater than 333 kW net heat input?	No	Yes
General			
12	Are there any other considerations that are required for this risk assessment, see separate sheet.	No	Yes

13	Comments:							
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								

BOILER FLUE INFORMATION

Model Number		CPM58	CPM77	CPM96	CPM116	CPM144	CPM175
FLUE DATA TYPE B23							
Nominal flue diameter	mm	80		100		130	
Maximum flue gas temp	°C	95					
Flue gas temperature	°C	85-95					
Flue draught requirements	mba r	-0.03 to -0.1					
Available pressure for the flue system	Pa	200					
Maximum flue gas volume	g/s	5.59 to 28.9	6.52 to 38.6	7.69 to 47.9	11.6 to 57.7	15.2 to 71.7	20.1 to 86.2
FLUE DATA TYPE C13 & C33							
Nominal flue diameter	mm	80/125		100/150			
Maximum flue gas temp	°C	95					
FLUE DATA TYPE C43 & C53							
Nominal flue diameter	mm	80		100		130	
Maximum flue gas temp	°C	95					

CONCENTRIC FLUE SYSTEMS

CPMH001 **CONCENTRIC HORIZONTAL FLUE ASSEMBLY MODELS** – CPM58, CPM77

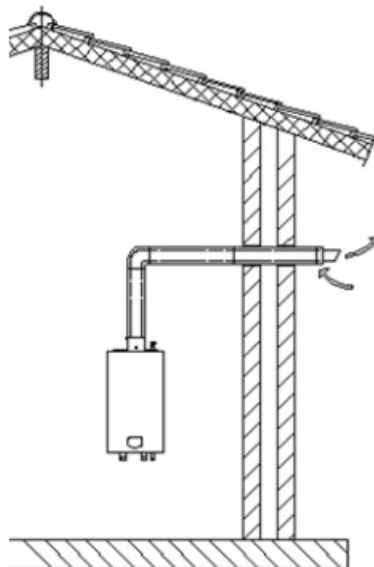
COMPONENTS INCLUDED

Item No.	Description	Included
LV310757	CONCENTRIC HORIZONTAL TERMINAL – Ø80/125mm PP	1
M28925B	TERMINAL WALL PLATES	1
LV310735	CONCENTRIC BEND 90° Ø80/125mm PP	1

Maximum resistance in the flue system ≤200pa

Additional Flue Ancillary Items

Item No.	Description	Dimensions
LV310740B	CONCENTRIC EXTENSION – Ø80/125mm PP FIXED	250mm
LV310745B	CONCENTRIC EXTENSION – Ø80/125mm PP	500mm
LV310742B	CONCENTRIC EXTENSION – Ø80/125mm PP FIXED	1000mm
LV310743B	CONCENTRIC EXTENSION – Ø80/125mm PP FIXED	2000mm
LV310744B	CONCENTRIC EXTENSION – Ø80/125mm PP TELESCOPIC	240mm-360mm
LV310734B	CONCENTRIC BEND 45° Ø80/125mm PP	See Drawing Below
LV310735B	CONCENTRIC BEND 90° Ø80/125mm PP	See Drawing Below
M84481B	WALL CLAMP Ø125mm	N/A



CPMH003 **CONCENTRIC HORIZONTAL FLUE ASSEMBLY** MODELS – CPM96, CPM116

COMPONENTS INCLUDED

Item No.	Description	Included
LV310758B	CONCENTRIC HORIZONTAL TERMINAL Ø100/150mm PP	1
M84410B	CONCENTRIC BEND 90° Ø100/150mm PP SHORT RADIUS	1

Maximum resistance in the flue system ≤200pa

CPMH004 **CONCENTRIC HORIZONTAL FLUE ASSEMBLY** MODELS – CPM144, CPM175

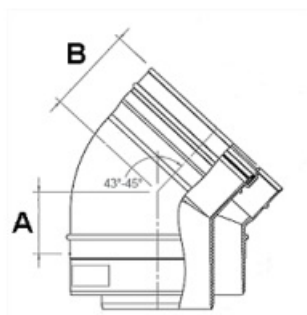
COMPONENTS INCLUDED

Item No.	Description	Included
LV310758B	CONCENTRIC HORIZONTAL TERMINAL Ø100/150mm PP	1
E61-001-172B	CONCENTRIC CONVERSION KIT	1
M84410B	CONCENTRIC BEND 90° Ø100/150mm PP SHORT RADIUS	1

Maximum resistance in the flue system ≤200pa

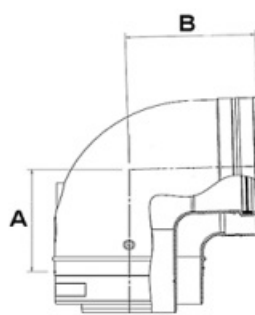
Additional Flue Ancillary Items

Item No.	Description	Dimensions
M84405B	CONCENTRIC EXTENSION Ø100/150mm Cutable	500mm
M84402B	CONCENTRIC EXTENSION Ø100/150mm PP FIXED	1000mm
M84412B	CONCENTRIC BEND 90° Ø100/150mm PP	See Drawing Below
M84413B	CONCENTRIC BEND 45° Ø100/150mm PP	See Drawing Below
M84421B	SAMPLING POINT Ø100/150mm PP	115mm
M87196B	WALL CLAMP Ø150mm	



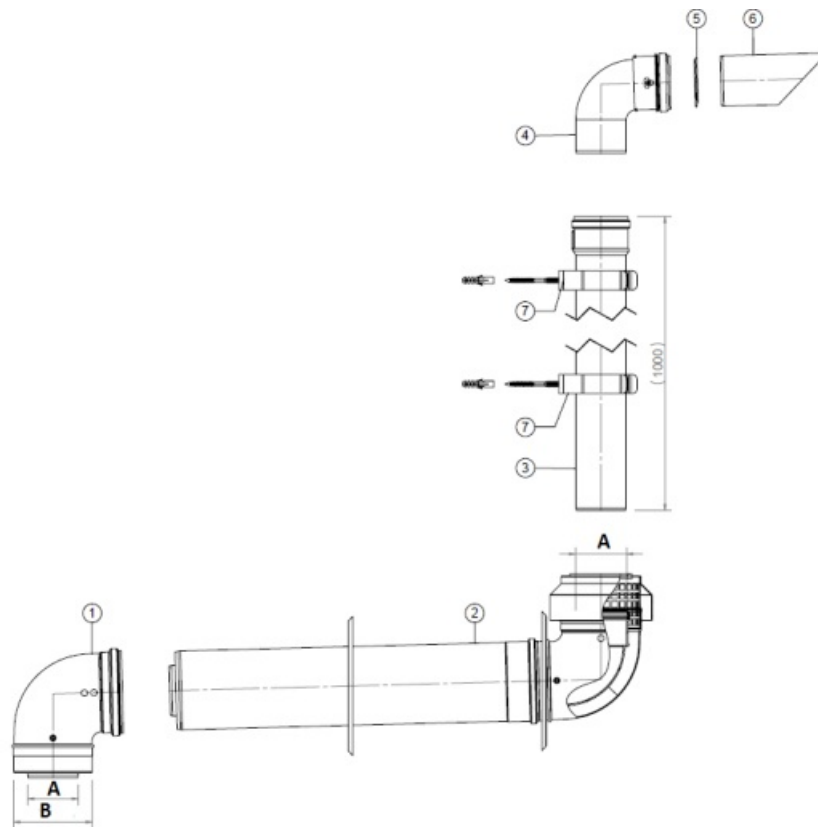
CPM58-77
A=45mm
B=62.5mm

CPM96-175
A=128mm
B=128mm



CPM58-77
A=95mm
B=110mm

CPM96-175
A=223mm
B=208mm



PLUME MANAGEMENT KITS

LG800008B	PLUME MANAGEMENT KIT Ø80/125mm
LG800009B	PLUME MANAGEMENT KIT Ø100/150mm

N o	Description	CPM58	CPM77	CPM96	CPM116	CPM1 44	CPM1 75
1	CONCENTRIC BEND 90°-PP	Ø80/125 mm	Ø80/125 mm	Ø100/150 mm	Ø100/150 mm	N/A	N/A
2	CONCENTRIC HORIZONTAL PLUME KIT TERMINAL -PP	Ø80/125 mm	Ø80/125 mm	Ø100/150 mm	Ø100/150 mm	N/A	N/A
3	EXTENSION -PP CUTABLE (1000mm)	Ø80mm	Ø80mm	Ø100mm	Ø100mm	N/A	N/A
4	BEND 90°-PP	Ø80mm	Ø80mm	Ø100mm	Ø100mm	N/A	N/A
5	PLUME KIT BIRD GUARD	Ø80mm	Ø80mm	Ø100mm	Ø100mm	N/A	N/A
6	PLUME KIT FLUE EXIT-PP	Ø80mm	Ø80mm	Ø100mm	Ø100mm	N/A	N/A
7	WALL CLAMP	Ø80mm	Ø80mm	Ø100mm	Ø100mm	N/A	N/A
A	INTERNAL DIAMETER	Ø80mm	Ø80mm	Ø100mm	Ø100mm	N/A	N/A
B	EXTERNAL DIAMETER	Ø125mm	Ø125mm	Ø150mm	Ø150mm	N/A	N/A

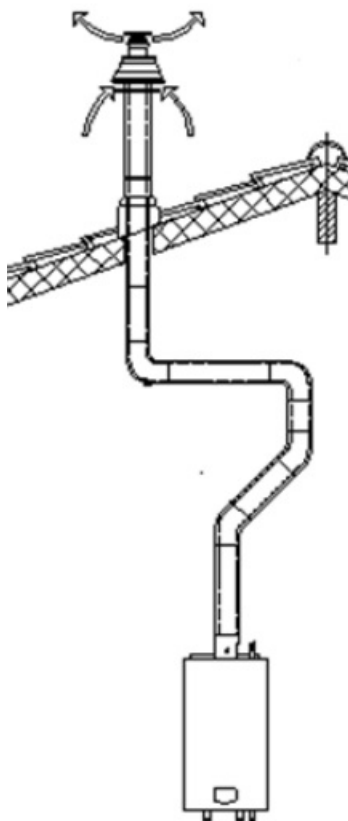
CPMV001 CONCENTRIC VERTICAL FLUE ASSEMBLY MODELS – CPM58, CPM77**COMPONENTS INCLUDED**

Item No.	Description	Included
LV310753	CONCENTRIC VERTICAL TERMINAL – Ø80/125mm PP	1
LV310745B	CONCENTRIC EXTENSION – Ø80/125mm PP (500mm)	1
LV310742B	CONCENTRIC EXTENSION – Ø80/125mm PP FIXED (1000mm)	1

Maximum resistance in the flue system ≤200pa

Additional Flue Ancillary Items

Item No.	Description	Dimensions
LV310740B	CONCENTRIC EXTENSION – Ø80/125mm PP FIXED	250mm
LV310745B	CONCENTRIC EXTENSION – Ø80/125mm PP	500mm
LV310742B	CONCENTRIC EXTENSION – Ø80/125mm PP FIXED	1000mm
LV310743B	CONCENTRIC EXTENSION – Ø80/125mm PP FIXED	2000mm
LV310744B	CONCENTRIC EXTENSION – Ø80/125mm PP TELESCOPIC	240-360mm
LV310734B	CONCENTRIC BEND 45° Ø80/125mm PP	See Drawing Below
LV310735B	CONCENTRIC BEND 90° Ø80/125mm PP	See Drawing Below
M84481B	WALL CLAMP Ø125mm	N/A
LV302520	FLAT ROOF FLASHING Ø140mm ALU	N/A



CPMV003 CONCENTRIC VERTICAL FLUE ASSEMBLY MODELS – CPM96, CPM116

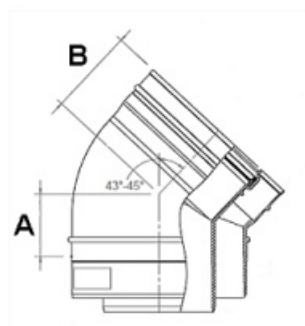
COMPONENTS INCLUDED

Item No.	Description	Included
LV310754B	CONCENTRIC VERTICAL TERMINAL Ø100/150mm PP	1
M84405B	CONCENTRIC EXTENSION Ø100/150mm (500mm) Cutable	1
M84402B	CONCENTRIC EXTENSION Ø100/150mm (1000mm) PP FIXED	1

Maximum resistance in the flue system $\leq 200\text{pa}$

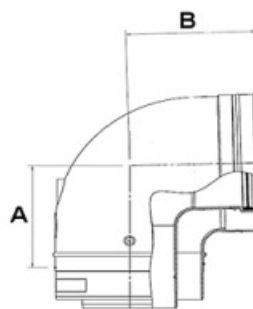
Additional Flue Ancillary Items

Item No.	Description	Dimensions
M84405B	CONCENTRIC EXTENSION Ø100/150mm Cutable	500mm
M84402B	CONCENTRIC EXTENSION Ø100/150mm PP FIXED	1000mm
M84412B	CONCENTRIC BEND 90° Ø100/150mm PP	See Drawing Below
M84413B	CONCENTRIC BEND 45° Ø100/150mm PP	See Drawing Below
M84421B	SAMPLING POINT Ø100/150mm PP	115mm
M87196B	WALL CLAMP Ø150mm	



CPM58-77
A=45mm
B=62.5mm

CPM96-175
A=128mm
B=128mm



CPM58-77
A=95mm
B=110mm

CPM96-175
A=223mm
B=208mm

CONCENTRIC FLUE SIZING/CALCULATIONS

Item	Resistance in Pa					
	CPM 58 80/ 125	CPM 77 80/ 125	CPM 96 100/ 150	CPM 116 100/ 150	CPM 144 100/ 150	CPM 175 100/ 150
Wall terminal	13	22	19	24	40	48
Roof terminal	34	61	39	45	69	86
Straight tube (m)	9	12	8	10	14	16
45° Elbow	5	7	8	9	14	16
90° Elbow	8	13	11	13	22	28
Plume kit	10	10	20	25	n/a	n/a

Use the table below to calculate the total flue system resistance

Item	Quantity	Resistance	Total
Wall terminal			
Roof terminal			
Straight tube (m)			
45° Elbow			
90° Elbow			
Plume kit			
Total Resistance (Pa)			

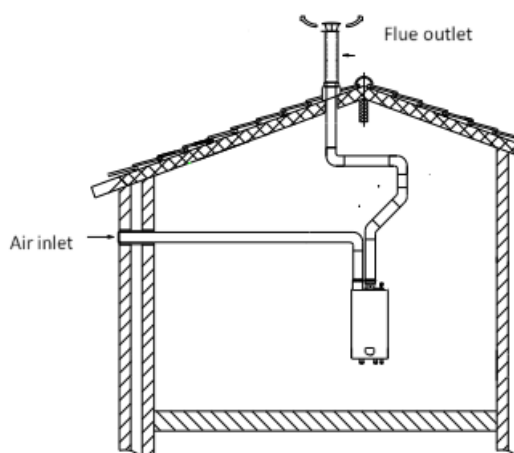
TWIN-PIPE FLUE SYSTEMS TYPE C53

CPM TWIN-PIPE FLUE ASSEMBLY MODELS CPM58 CPM77**COMPONENTS REQUIRED TO START INSTALLATION****VERTICAL FLUE**

Item No	Description	No Required
LV305030B	APPLIANCE AIR INTAKE GUARD Ø80/125mm	1
LV310753B	CONCENTRIC VERTICAL TERMINAL Ø80/125mm PP	1
LV305016	HORIZONTAL AIR INLET Ø80mm	1
M28925B	TERMINAL WALL PLATES (PAIR)	1

HORIZONTAL FLUE

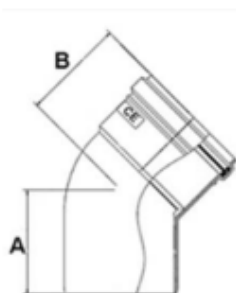
Item No	Description	No Required
LV305030B	APPLIANCE AIR INTAKE GUARD Ø80/125mm	1
LV310757B	CONCENTRIC HORIZONTAL TERMINAL Ø80/125mm PP	1
LV305016	HORIZONTAL AIR INLET Ø80mm	1
M28925B	TERMINAL WALL PLATES (PAIR)	1



Additional Flue Ancillary Items		
Item No.	Description	Dimensions
LV310718B	EXTENSION – Ø80mm PP CUT TO LENGTH	250mm
M85271B	EXTENSION Ø80mm PP CUT TO LENGTH	500mm
M85272B	EXTENSION Ø80mm PP CUT TO LENGTH	1000mm
LV310721B	EXTENSION – Ø80mm PP CUT TO LENGTH	2000mm
LV310722B	EXTENSION – Ø80mm PP TELESCOPIC	240-360mm
M85292B	BEND 45° 80mm PP	See Drawing Below
M85291B	BEND 90° 80mm PP	See Drawing Below
M87191B	WALL CLAMP Ø80mm	N/A

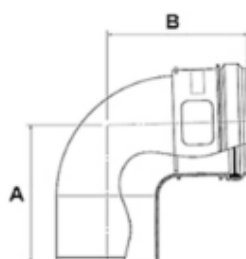
CPM TWIN-PIPE FLUE ASSEMBLY MODELS CPM96,CPM116		
COMPONENTS REQUIRED TO START INSTALLATION		
VERTICAL FLUE		
Item No	Description	No Required
LV304872B	APPLIANCE AIR INTAKE GUARD Ø100/150mm	1
LV310754B	CONCENTRIC VERTICAL TERMINAL Ø100/150mm PP	1
HORIZONTAL FLUE		
Item No	Description	No Required
LV304872B	APPLIANCE AIR INTAKE GUARD Ø100/150mm	1
LV310758B	CONCENTRIC HORIZONTAL TERMINAL Ø100/150mm PP	1
LV305039B	HORIZONTAL AIR INLET Ø100mm ALU	1

Additional Flue Ancillary Items		
Item No.	Description	Dimensions
M85176B	EXTENSION Ø100mm PP CUT TO LENGTH	500mm
M85177B	EXTENSION Ø100mm PP CUT TO LENGTH	1000mm
M85181B	BEND 90° 100mm PP	See Drawing Below
M85182B	BEND 45° 100mm PP	See Drawing Below
M87193B	WALL BAND (100mm)	n/a



CPM58-
CPM77
A=72.5mm,
B=72.5mm

CPM96-
CPM116
A=78mm,
B=65mm



CPM58-
CPM77
A=110mm,
B=110mm

CPM96-
CPM116
A=78mm,
B=65mm

TWIN-PIPE FLUE SIZING/CALCULATIONS

Item	Size (mm)	Resistance (Pa)					
		CPM 58	CPM 77	CPM 96	CPM 116	CPM 144	CPM 175
Straight tube (per metre)	80	4	7.5	X	X	n/a	n/a
Straight tube (per metre)	100	1.2	3	3.5	4	n/a	n/a
Straight tube (per metre)	130	0.4	0.7	0.8	1.1	n/a	n/a
45° Elbow	80	2	3.5	X	X	n/a	n/a
45° Elbow	100	0.6	1.5	1.7	2	n/a	n/a
45° Elbow	130	0.2	0.4	0.4	0.5	n/a	n/a
90° Elbow	80	4	7	X	X	n/a	n/a
90° Elbow	100	1.2	3	3.5	4	n/a	n/a
90° Elbow	130	0.3	0.7	0.8	1.1	n/a	n/a
Vertical inlet cap	80	10.4	18.1	X	X	n/a	n/a
Vertical inlet cap	100	4.2	7.4	11.4	16.7	n/a	n/a
Vertical inlet cap	130	1.5	2.6	4	5.8	n/a	n/a

To be used for Lochinvar supplied M&G air inlet system components resistance only

Item	Size (mm)	Resistance (Pa)					
		CPM 58	CPM 77	CPM 96	CPM 116	CPM 144	CPM 175
Straight tube (per metre)	80	5	8	X	X	n/a	n/a
Straight tube (per metre)	100	2	3.5	4	6.5	n/a	n/a
Straight tube (per metre)	130	0.5	0.8	1.2	1.8	n/a	n/a
45° Elbow	80	2.5	4	X	X	n/a	n/a
45° Elbow	100	1	1.7	2	3.2	n/a	n/a
45° Elbow	130	0.2	0.4	1.6	0.8	n/a	n/a
90° Elbow	80	5	8	X	X	n/a	n/a
90° Elbow	100	2	3.5	4	6.5	n/a	n/a
90° Elbow	130	0.4	0.8	1.2	1.8	n/a	n/a
Vertical exhaust cap	80	13.8	24	X	X	n/a	n/a
Vertical exhaust cap	100	5.6	9.8	15.2	22.1	n/a	n/a
Vertical exhaust cap	130	2	3.5	5.3	7.8	n/a	n/a

Use the table below to calculate the flue system resistance.

Flue exhaust	Item	Quantity	Resistance	Total
	Straight tube (m)			
	45° Elbow			
	90° Elbow			
	Concentric Vertical terminal			
	Total Resistance flue exhaust (Pa)			
Air Inlet	Item	Quantity	Resistance	Total
	Straight tube (m)			
	45° Elbow			
	90° Elbow			
	Air Inlet			
	Total Resistance air inlet (Pa)			
Total Resistance air inlet and flue exhaust (Pa)				

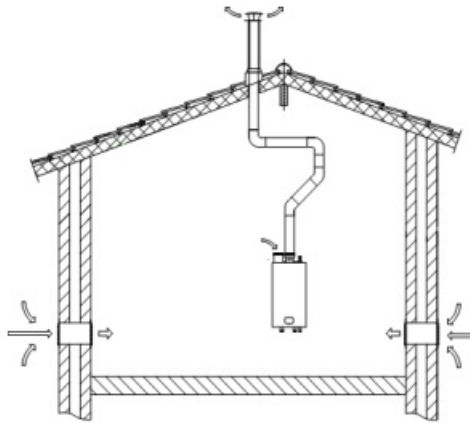
CONVENTIONAL (EXHAUST ONLY) FLUE SYSTEMS TYPE B23

CPM CONVENTIONAL FLUE ASSEMBLY MODELS CPM58-CPM77**COMPONENTS REQUIRED TO START INSTALLATION****VERTICAL FLUE**

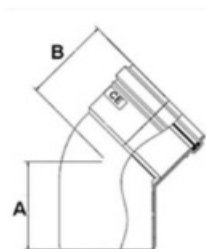
Item No	Description	No Required
LV305030B	APPLIANCE AIR INTAKE GUARD Ø80/125mm	1
M86864B	CONCENTRIC VERTICAL TERMINAL Ø80/125mm PP	1

Additional Flue Ancillary Items

Item No.	Description	Dimensions
LV310718B	EXTENSION – Ø80mm PP CUT TO LENGTH	250mm
M85271B	EXTENSION Ø80mm PP CUT TO LENGTH	500mm
M85272B	EXTENSION Ø80mm PP CUT TO LENGTH	1000mm
LV310721B	EXTENSION – Ø80mm PP CUT TO LENGTH	2000mm
LV310722B	EXTENSION – Ø80mm PP TELESCOPIC	240-360mm
M85292B	BEND 45° 80mm PP	See Drawing Below
M85291B	BEND 90° 80mm PP	See Drawing Below
M87191B	WALL CLAMP Ø80mm	N/A

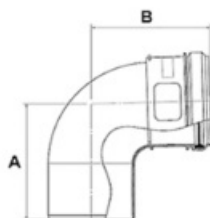
**CPM CONVENTIONAL FLUE ASSEMBLY MODELS CPM96-CPM116****COMPONENTS REQUIRED TO START INSTALLATION****VERTICAL FLUE**

Item No.	Description	No Required
LV304872B	APPLIANCE AIR INTAKE GUARD Ø100/150mm	1
LV310754B	CONCENTRIC VERTICAL TERMINAL Ø100/150mm PP	1



CPM58-
CPM77
A=72.5mm,
B=72.5mm

CPM96-
CPM116
A=78mm,
B=65mm



CPM58-
CPM77
A=110mm,
B=110mm

CPM96-
CPM116
A=78mm,
B=65mm

CONVENTIONAL FLUE SIZING/CALCULATIONS

Item	Size (mm)	Resistance (Pa)					
		CPM 58	CPM 77	CPM 96	CPM 116	CPM 144	CPM 175
Straight tube (per metre)	80	4	7.5	X	X	n/a	n/a
Straight tube (per metre)	100	1.2	3	3.5	4	n/a	n/a
Straight tube (per metre)	130	0.4	0.7	0.8	1.1	n/a	n/a
45° Elbow	80	2	3.5	X	X	n/a	n/a
45° Elbow	100	0.6	1.5	1.7	2	n/a	n/a
45° Elbow	130	0.2	0.4	0.4	0.5	n/a	n/a
90° Elbow	80	4	7	X	X	n/a	n/a
90° Elbow	100	1.2	3	3.5	4	n/a	n/a
90° Elbow	130	0.3	0.7	0.8	1.1	n/a	n/a
Vertical inlet cap	80	10.4	18.1	X	X	n/a	n/a
Vertical inlet cap	100	4.2	7.4	11.4	16.7	n/a	n/a
Vertical inlet cap	130	1.5	2.6	4	5.8	n/a	n/a

Use the table below to calculate the flue system resistance.

Item	Quantity	Resistance	Total
Straight tube (m)			
45° Elbow			
90° Elbow			
Concentric Vertical terminal			
Total Resistance flue exhaust (Pa)			

FLUE SYSTEMS USING FLUE NOT SUPPLIED BY LOCHINVAR TYPE C63

In general, boilers are certified with their own purpose supplied Concentrically or Twin Pipe flue systems, C63 certified appliances allow the installer to use other flue systems when installing the boiler however, they must be of a suitable minimum standard as per the table below.

CE string Flue gas material	Europea n standard	Temp eratur e clas s	Press ure cl ass	Resist ance t o con densa te	Corros ion res istanc e class	Metal: liner s pecifica tion s	Soot fi re resi stance class	Distan ce to c ombu stible materi al	Plast ics:	Plast ics: f ire b ehav iour	Plas tics:
min. eis PP	EN 14471	T120	P1	W	1	n/a	O	30	I of E	C/E	L
min. eis RV S	EN 1856- 1	T120	P1	W	1	L2004 0	O	40	n/a	n/a	n/a

Material	Boiler	dnom	Doutside	dinside	Lintert
SS	CPM58-CPM77	80	80 +0,3/ -0,7	81 +0,3/ -0,3	50 +2/ -2
SS	CPM96-CPM116	100	100 +0,3/ -0,7	101 +0,3/ -0,3	50 +2/ -2
SS	CPM144-CPM175	130	130 +0,3/ -0,7	131 +0,5/ -0,5	50 +2/ -2
PP	CPM58-CPM77	80	80 +0,6/ -0,6		50 +20/ -2
PP	CPM96-CPM116	100	100 +0,6/ -0,6		50 +20/ -2
PP	CPM144-CPM175	130	130 +0,9/ -0,9		50 +20/ -2

Aluminium flue pipe must not be used on this appliance as it may lead to premature failure of the heat exchanger and will invalidate the warranty.

COMMON FLUE SYSTEMS


Lochinvar can supply a PP common flue header see separate guide available at www.lochinvar.ltd.uk
Alternatively the installer can use a flue installation specialist to design and supply a separate flue system under the flue designation C63 using the specifications shown on page 13 and information in the table below. 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 boiler, must be taken into account. 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.

	CPM 58	CPM 77	CPM 96	CPM 116	CPM 144	CPM 175
Available pressure at the flue gas outlet	200Pa	200Pa	200Pa	200Pa	200Pa	200Pa
Flue Gas Mass Rate (G20) 96% (g/sec)	22.6	29.8	37.1	45.1	55.6	67.3
Flue Gas Mass Rate (G20) 25% (g/sec)	5.7	7.5	9.3	11.3	13.9	16.8
Flue Gas Mass Rate (G31) 96% (g/sec)	23.2	30.6	38.8	46.2	57	69
Flue Gas Mass Rate (G31) 25% (g/sec)	5.8	7.7	9.7	11.6	14.3	17.3



warning: CPM boiler range does not have an internal Non-Return Valve (NRV) as such any flue must be

designed on zero or negative pressure unless a suitable NRV is fitted and if necessary interlocked to the appliance. Non Return Valves are included with the Lochinvar common flue header.

Documents / Resources

	<p>Lochinvar CMP58 CPM Boiler Range Flue [pdf] Instruction Manual CMP58, CPM77, CPM96, CPM116, CPM146, CPM176, CMP58 CPM Boiler Range Flue, CPM Boiler Range Flue</p>
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References

-  [Lochinvar High Efficiency Boilers & Water Heaters | Lochinvar](#)
-  [Lochinvar High Efficiency Boilers & Water Heaters | Lochinvar](#)