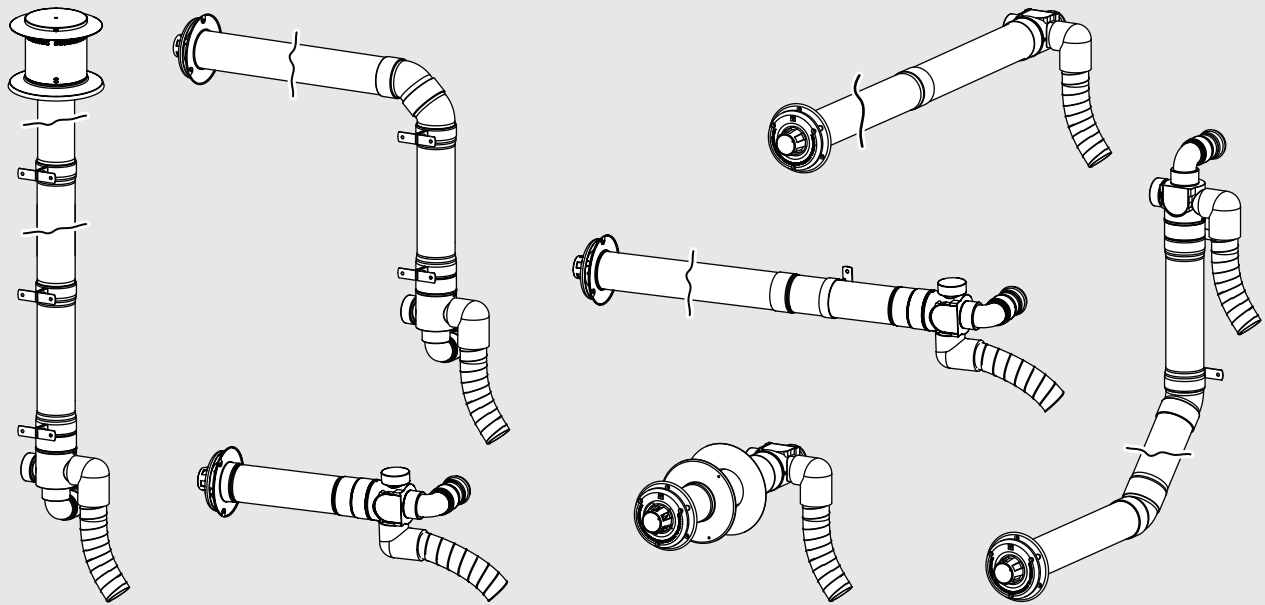


## Models:

# Flametech® (RHFE0800F)

**LS1000 (RHFE1000)**

LS1500 (RHFE1500)



# LS - Gas Fireplace

# Flue Installation Manual

# Rinnai

Congratulations on the purchase of your Rinnai LS Gas Fireplace. We trust you will have many years of comfort and enjoyment from your appliance.



### **BEFORE INSTALLING OR USING THIS APPLIANCE**

Before proceeding with the operation or installation read this manual thoroughly and gain a full understanding of the appliance, to ensure safe and correct installation and use.

### **USE ONLY RINNAI GENUINE PARTS**

This Flue Installation Manual provides detailed requirements and instructions for Flue Systems connected to LS - Gas Fireplaces.

This appliance must be installed in accordance with:

- Manufacturer's Installation Instructions
- Current AS/NZS 3000, AS/NZS 3500 & AS/NZS 5601
- Local Regulations and Municipal Building Codes including local OH&S requirements

This appliance must be installed, maintained and removed **ONLY** by an Authorised Person.

For continued safety of this appliance it must be installed and maintained in accordance with the manufacturer's instructions.



The Australian  
Gas Association  
All Rinnai gas products  
are A.G.A. certified.

### **This manual to suit LS - Gas Fireplace Heater Models:**

Flametech® *	LS800	LS1000	LS1500
RHFE0800SF *	RHFE8000S	RHFE1000S	RHFE1500S
RHFE0800DF *	RHFE8000D	RHFE1000D	RHFE1500D
RHFE0800PF *	RHFE8000P		

*\*Incorporates Flametech® self burning log technology.*

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This appliance **MUST** be installed, maintained and removed **ONLY** by an Authorised Person.

For continued safety of this appliance it **MUST** be installed and maintained in accordance with the manufacturers instructions. Using **ONLY** Rinnai genuine parts.



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# WARNINGS & IMPORTANT INFORMATION



## BEFORE USING OR INSTALLING THIS APPLIANCE

Before proceeding with the operation or installation read this manual thoroughly and gain a full understanding of the appliance, to ensure safe and correct use.

Failure to carefully read and follow all instructions in this manual can result in equipment malfunction, property damage, personal injury and/or death.

**DANGER:** Indicates an imminently hazardous situation which, if not avoided, will result in personal injury or death.

**WARNINGS:** Indicates a potentially hazardous situation which, if not avoided, could result in personal injury or death.

**CAUTIONS:** Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury or damage to the appliance. It may also be used to alert against unsafe practices.



## REGULATORY INFORMATION

This appliance and Flue system shall be installed in accordance with:

Manufacturer's Installation Instructions.

Current AS/NZS 3000, AS/NZS 3500 & AS/NZS 5601.

Local Regulations and Municipal Building Codes including local OH&S requirements.

This appliance and Flue system has been certified by the Australian Gas Association. The A.G.A. Certification Number is shown on the data plate.

This appliance and Flue system **MUST** be installed, maintained and removed **ONLY** by an Authorised Person.

For continued safety of this appliance it **MUST** be installed and maintained in accordance with the manufacturers instructions.

## NOTICE TO VICTORIAN CONSUMERS

This appliance **MUST** be installed by a person licensed with the Victorian Building Authority. **ONLY** a licensed person will have insurance protecting their workmanship.

So make sure you use a licensed person to install this appliance and ask for your Compliance Certificate. For further information contact the Victorian Building Authority on 1300 815 127.



## DRESS GUARD WARNINGS

The guard is fitted to this appliance to reduce the risk of fire or injury from burns and no part of it should be permanently removed. For protection of young children or the infirm, a secondary guard is required.

The wire dress guard supplied with this appliance **MUST NOT** be permanently removed as it fulfils an operational safety function. Additional dress guards including free standing types may be used in conjunction with, but **NOT** replace, the dress guard supplied with this appliance.



## MANDATORY INSPECTION PRIOR TO INSTALLATION

Immediately report any damage or discrepancies to the Supplier of any components. This appliance was inspected and tested at the time of manufacture and packaging, and released for transportation without known damage. Upon receipt, inspect the exterior for evidence of rough handling in shipment. Ensure that the appliance is labelled correctly for the gas and electrical supply, and/or other services it is intended to be connected to.

For safety and warranty purposes, appliances or flue components that may be damaged or incorrect **MUST NOT** be installed or operated under **ANY** circumstances. Installation of damaged or incorrect appliances may contravene local government regulations. Rinnai disclaims any liability or responsibility whatsoever in relation to the installation or operation of damaged or incorrect appliances.

Take care when opening or unpacking this appliance. Failure to do so may result in serious injury or product failure. Check the label for the correct gas type (refer rating plate, inside the appliance). Refer to local gas authority for confirmation of the gas type if you are in doubt.



### MODIFICATIONS.

**DO NOT MODIFY THIS APPLIANCE**, modifying from original specifications may create a dangerous situation and will void your warranty. Failure to comply with these instructions could result in a fire or explosion, which could cause serious injury, death or property damage.

**DO NOT** modify the electrical wiring of this appliance.

If the power cord is damaged or deteriorated then it **MUST** be replaced by an authorised person. Failure to do so may result in electric shock, fire, serious injury or product failure.

Improper installation, adjustments, service or maintenance can cause serious injury, death or property damage. Such work **MUST ONLY** be performed by an authorised person.



### GENERAL SAFETY WARNINGS

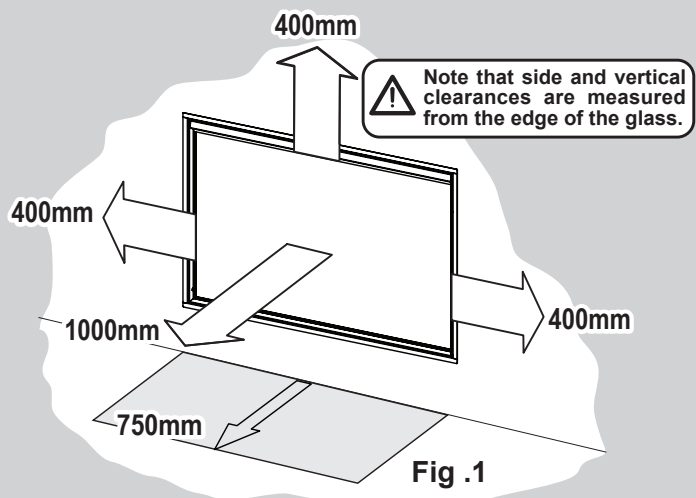
This appliance is **HEAVY**, during installation the use of a mechanical lifting aid is recommended, noting that improper lifting may result in serious personal injury or damage to the appliance.

**WARNING:** This heater **MUST NOT** be used if any of the glass panels are damaged.

Flue terminal **MUST** always vent directly to outdoors. **DO NOT** extend the flue vertically or horizontally in ways other than prescribed in this appliance manufacturer's installation instructions. **ONLY** the flue components specified by Rinnai must be used.

When considering installation ensure minimum clearances as follows are adhered to, refer Fig. 1.

Heat radiating from the front of this heater may over time affect the appearance of some materials used for flooring such as carpet, vinyl, cork or timber. This effect may be amplified if the air in the room contains cooking vapours, candle vapours and cigarette smoke, etc. To avoid this possibility, it is recommended that a mat or similar protective sheet be placed in front of the appliance, extending at least 750 mm in front of the dress guard. Refer to the installation manual for mantle clearances, additional installation information and warnings.



This appliance **MUST NOT** be installed where curtains or other combustible materials could come into contact with it. In some cases curtains may need restraining.

This appliance is **NOT** intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

The appliance is **NOT** intended for use by young children or infirm persons without supervision. Young children and the infirm **SHOULD** be supervised at all times when in the vicinity of this heater while it is in operation.

The heater **MUST NOT** be located immediately below a power socket outlet.

A dedicated 230 V earthed 10 Amp power point must be used with this appliance.

Suitable **ONLY** for indoor installation.

**NOT** to be connected to an LP gas cylinder located indoors.

Please keep this instruction booklet in a safe place for future reference. All dimensions referred to in these instructions are in millimetres, unless otherwise specified.

**DO NOT SPRAY AEROSOLS IN THE VICINITY OF THIS APPLIANCE.**














**DO NOT USE OR STORE FLAMMABLE MATERIALS IN OR NEAR THIS APPLIANCE.**

**DO NOT PLACE ARTICLES ON OR NEAR THIS APPLIANCE.**

## ADDITIONAL SYMBOL BASED DIRECTIONS USED IN THIS MANUAL



The following are additional terms that may be used to highlight specific requirements during installation steps and **MUST** be observed.

-  **CLEARANCES:** Where required clearances will be provided and must be observed.
-  **FALL:** Ensure that the specified 2° fall is maintained to either the terminal or the appliance as stipulated.
-  **MEASURE:** Required measurements will be provided and **MUST BE** observed for correct installation.
-  **CUT:** Cut as required to the specified measurements.
-  **FINISH:** Ensure that burrs and swarf are removed from all cut ends.
-  **DISCARD:** Denotes items that are not required for the specific installation.
-  **OBSERVE CORRECT ORIENTATION:** Where specified ensure that components are installed with the correct vertical or horizontal orientation.
-  **LUBRICATE:** Use the supplied container of silicone grease to lubricate components. **DO NOT** use other lubricants as these may damage the flue components.
-  **SECURE:** Where specified secure components with either installer provided or component supplied fixings.
-  **DO NOT:** Failure to observe **DO NOT** instructions will void the warranty of an appliance and may cause injury or death.
-  **CAUTION:** Caution notes and or warnings that **MUST** be observed for safe and correct installations.
-  **WARNING:** Important notes that **MUST** be observed for safe and correct installations.
-  **NOTE:** General hints and guides provided to ease the installation.

## FLUE TERMINAL LOCATION

The flue terminal **MUST BE** positioned away from flammable materials.

In areas subject to heavy snowfall, keep snow clear of flue terminal at all times.

**DO NOT** flue into natural draught flues or fireplaces.

**DO NOT** flue into other rooms.

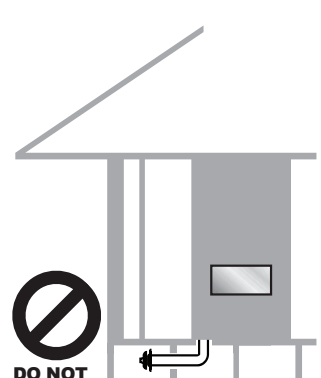
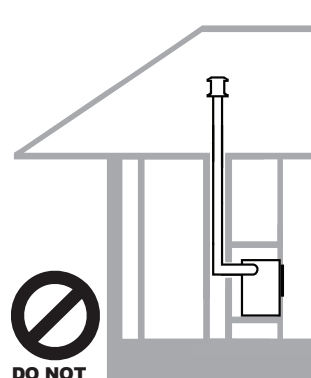
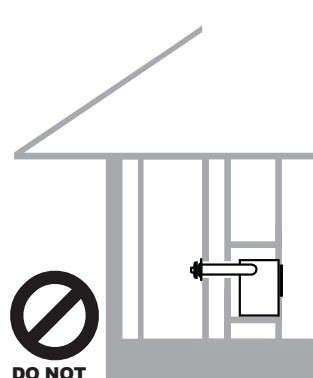
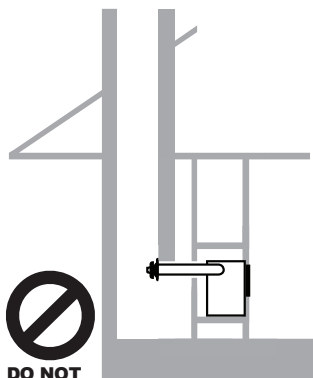
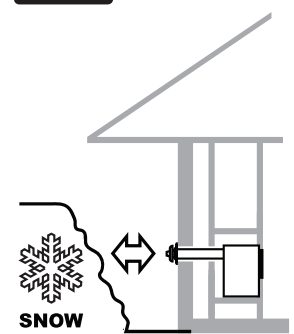
**DO NOT** flue into roof spaces.

**DO NOT** flue into under floor spaces.

**DO NOT** Install the heater in an unusually dusty area.



**DO NOT**



For other important information regarding the location of the heater refer to the installation and operation manuals supplied with the appliance.

**INSTALLATION CONFIGURATION WARNINGS**


**ONLY** the Rinnai flue system components specified in this reference manual **MUST** be used. Components **NOT** specified in these manuals, whether manufactured by Rinnai or otherwise, are **NOT** compatible and **MUST NOT** be used! Rinnai appliance warranty conditions may be voided if non Rinnai flue components are fitted.

Use **ONLY** the supplied silicone grease when lubricating the O-rings.

**ONLY** an authorised person **MUST** install, service and remove the Rinnai heater & flue system.

The maximum flue length is 8.5m <sup>(1)</sup> and the maximum number of 90° bends is 3 <sup>(2)</sup>.

(1) For every 90 ° bend, the overall flue length **MUST** be reduced by 1m.

(2) The 90° bend of the flue transition piece is **NOT** counted as a 90 ° bend.

LS / Flametech series heaters combustion settings are factory set for "long flue", which is for flue lengths that are 3 metres or greater. For flue lengths shorter than 3 metres it may be necessary to change dip switch setting, refer to the commissioning instructions for full details.



**Note 1.** When cutting the flue transition for joining to other components the minimum total length **MUST NOT** be less than 300mm!



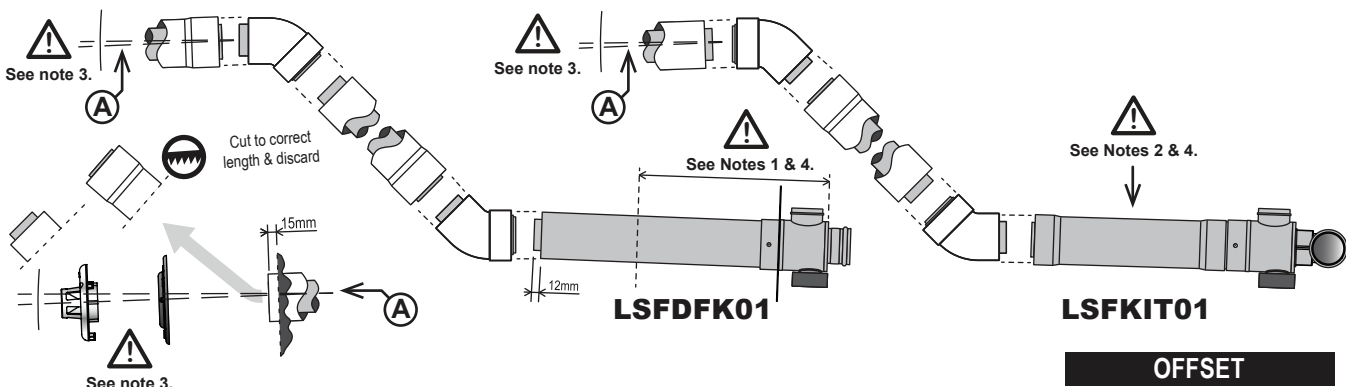
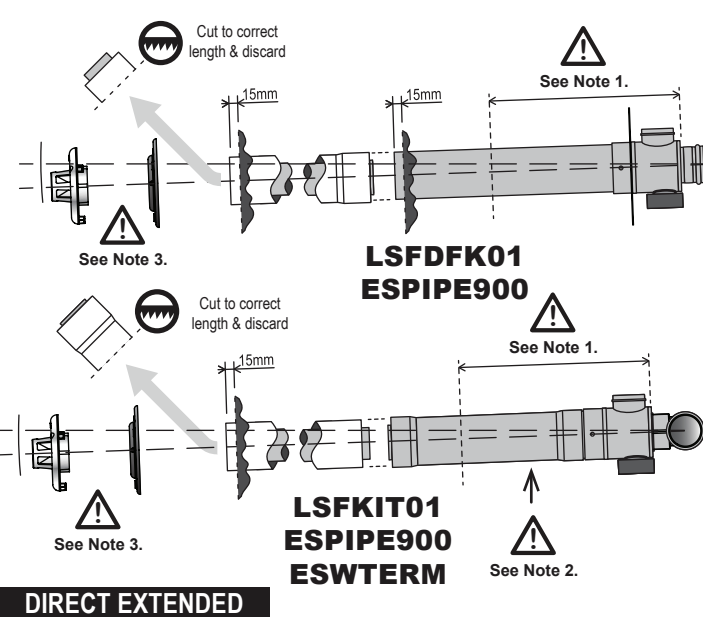
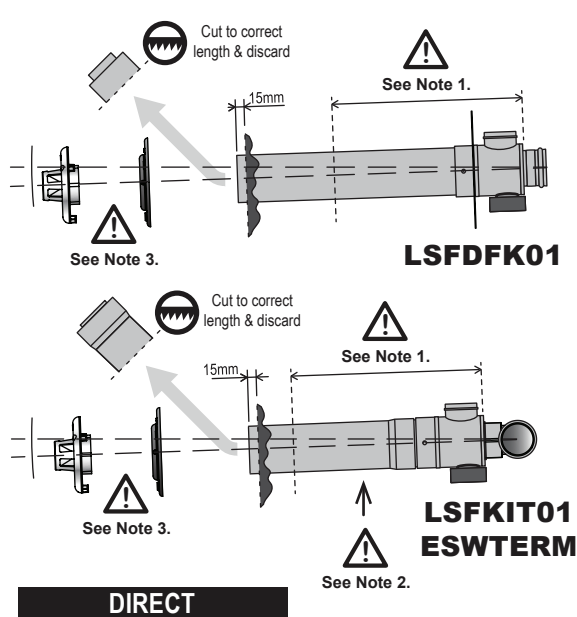
**Note 2.** The all aluminium flue extension component **MUST** be fitted at this point.

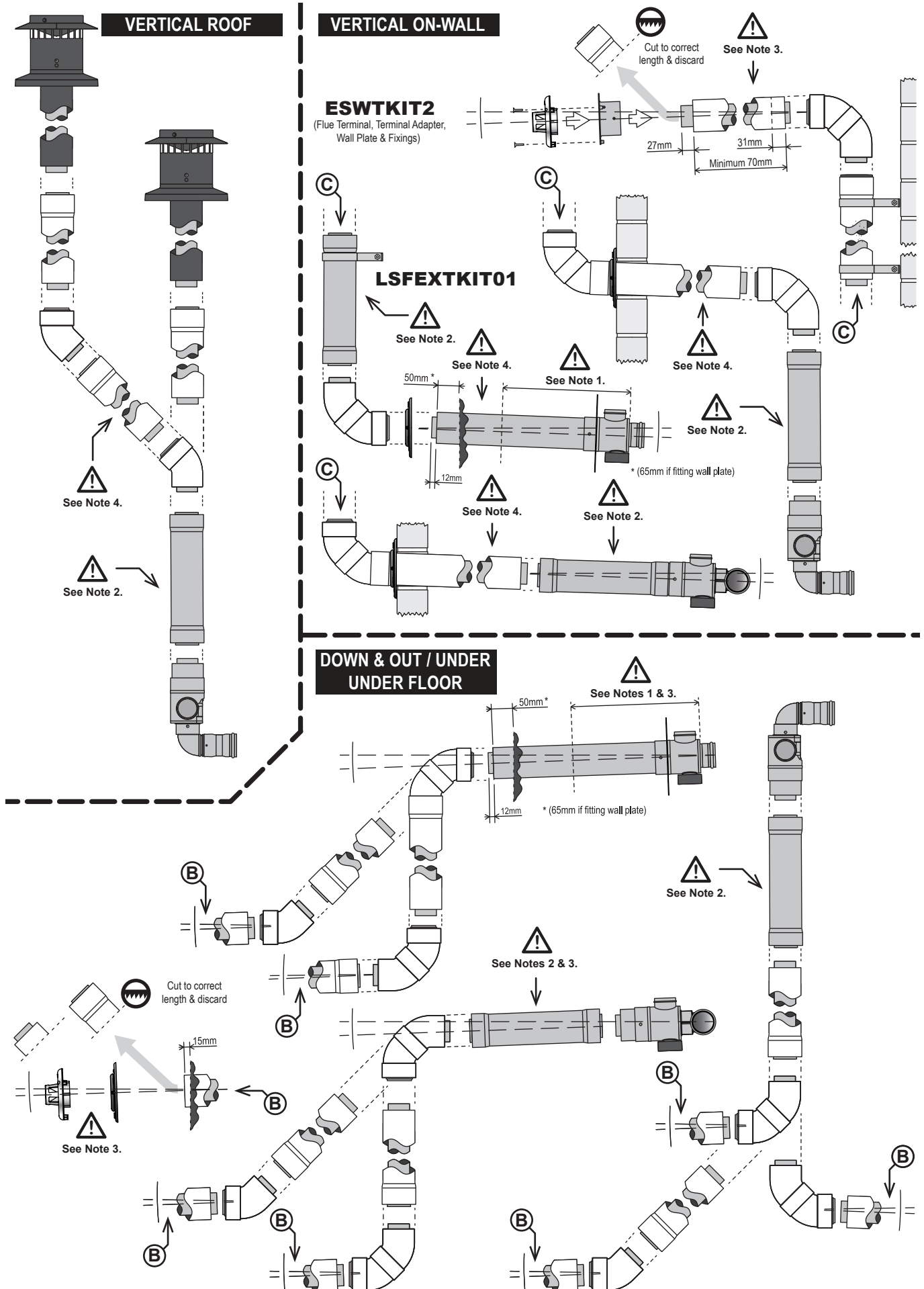


**Note 3.** Where stipulated a Minimum 2° fall towards the terminal is required to ensure correct drainage of condensation formed in the discharge flue.



**Note 4.** Where stipulated a Minimum 2° fall towards the appliance is required to ensure correct drainage of condensation formed in the discharge flue.

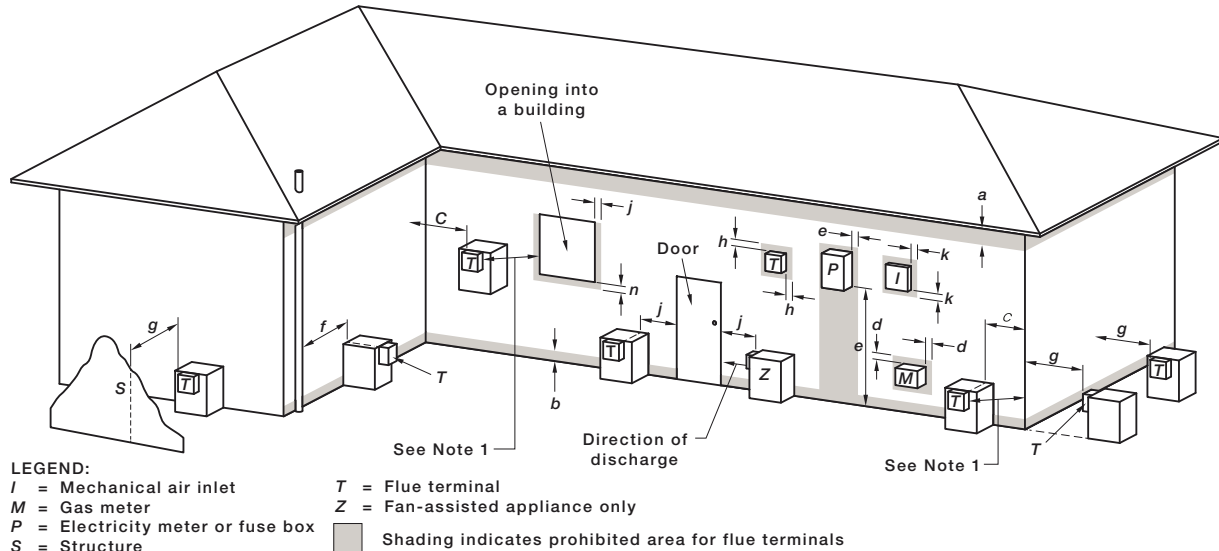






Ensure that the location of the flue terminal can comply with the requirements of AS/NZS 5601 - Fig. 6.2 which is reproduced in part below.

AS/NZ 5601 was current at the time of printing but may have been superseded. It is the installer's responsibility to ensure that requirements of the current version of AS/NZS 5601 are met.



Ref.	Item	Min. Clearances (mm)
		Fan Assisted
a	Below eaves, balconies and other projections:	
	• Appliances up to 50 MJ/h input	200
	• Appliances over 50 MJ/h input	300
b	From the ground, above a balcony or other surface *	300
c	Front a return wall or external corner *	300
d	From a gas meter (M) (see 5.11.5.9 for vent terminal location of regulator) (see Table 6.6 for New Zealand requirements)	1000
e	From an electricity meter or fuse box (P) †	500
f	From a drain pipe or soil pipe	75
g	Horizontally from any building structure* = or obstruction facing a terminal	500
h	From any other flue terminal, cowl, or combustion air intake †	300
j	Horizontally from an openable window, door, non-mechanical air inlet, or any other opening into a building with the exception of sub-floor ventilation:	
	• Appliances up to 150 MJ/h input *	300
	• Appliances over 150 MJ/h input up to 200 MJ/h input *	300
	• Appliances over 200 MJ/h input up to 250 MJ/h input *	500
	• Appliances over 250 MJ/h input *	1500
k	• All fan-assisted flue appliances, in the direction of discharge	1500
	From a mechanical air inlet, including a spa blower	1500
n	Vertically below an openable window, non-mechanical air inlet, or any other opening into a building with the exception of sub-floor ventilation:	
	• Space heaters up to 50 MJ/hr input	150
	• Other appliances up to 50 MJ/hr input	500
	• Appliances over 50 MJ/h input and up to 150 MJ/h input	1000
	• Appliances over 150 MJ/h input	1500

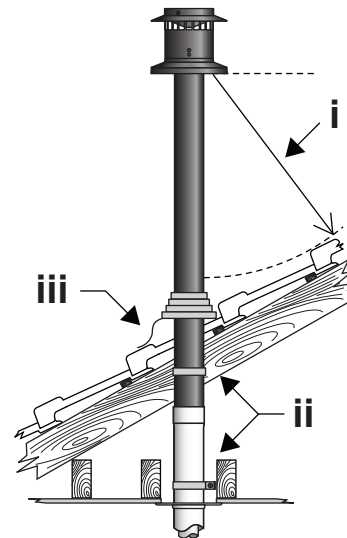
\* - Unless appliance is certified for closer installation

† - Prohibited area below electricity meter or fuse box extends to ground level.

**NOTES:**

- Where dimensions c, j or k cannot be achieved an equivalent horizontal distance measured diagonally from the nearest discharge point of the terminal to the opening may be deemed by the Technical Regulator to comply.
- See Clause 6.9.4 for restrictions on a flue terminal under a covered area.
- See Figure J3 for clearances required from a flue terminal to an LP Gas cylinder. A flue terminal is considered to be a source of ignition.
- For appliances not addressed above acceptance should be obtained from the Technical Regulator.

FIGURE 6.2 (in-part) MINIMUM CLEARANCES REQUIRED FOR FAN-ASSISTED FLUE TERMINALS, ROOM-SEALED APPLIANCE TERMINALS AND OPENINGS OF OUTDOOR APPLIANCES



- i Minimum clearance 500mm to nearest part of roof
- ii Minimum clearance 25mm to any combustible materials
- iii Decktite or lead collar flashing



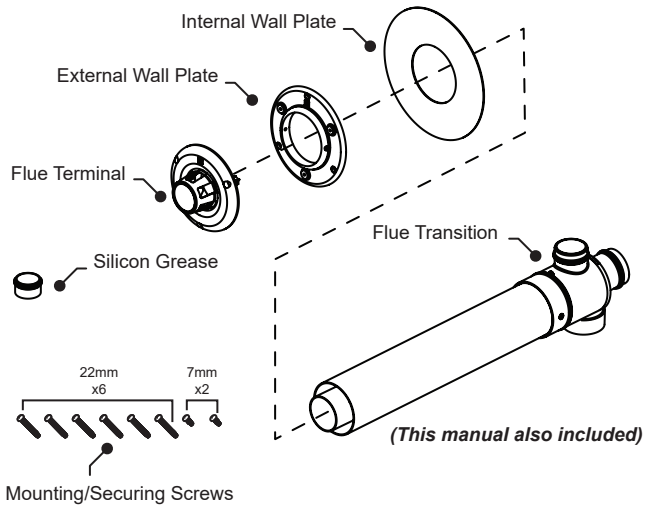
**The flue terminal must be positioned away from flammable materials.**



# FLUE KITS & COMPONENTS

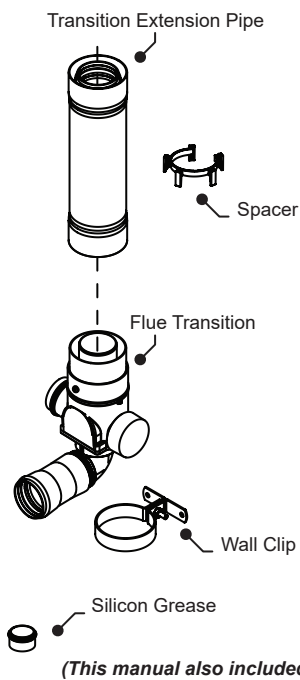
## LSFDFK01

(Direct Flue Kit)



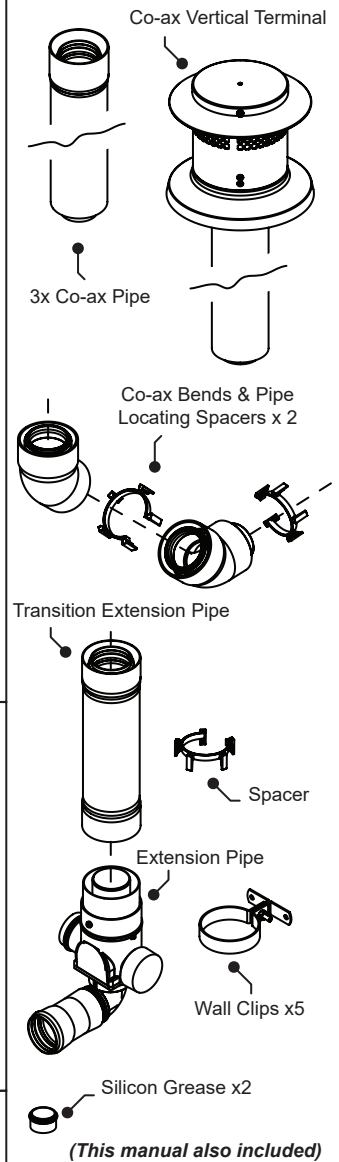
## LSFKIT01

(Flue Adaption Kit)



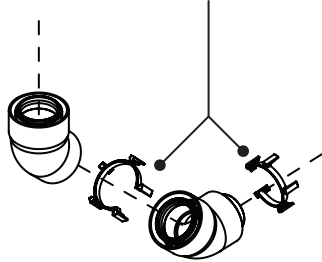
## LSFKIT02

(Extended Flue Adaption Kit)

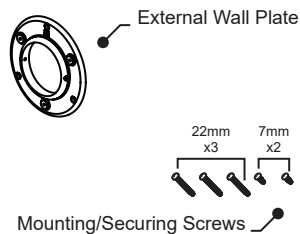


## ESBEND

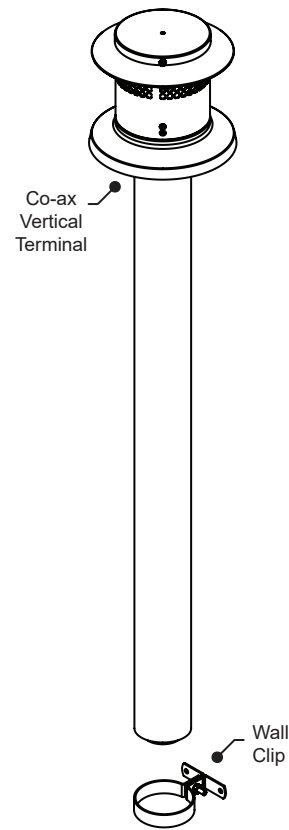
Co-ax Bends & Pipe Locating Spacer x2  
(BOTH spacers are required for all offset and extended offset installations!)



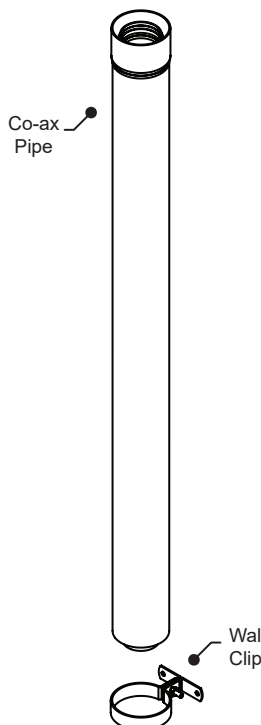
## ESPLATE



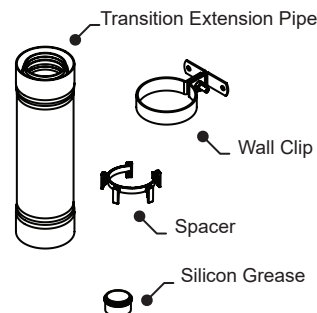
## ESROOFCOWL



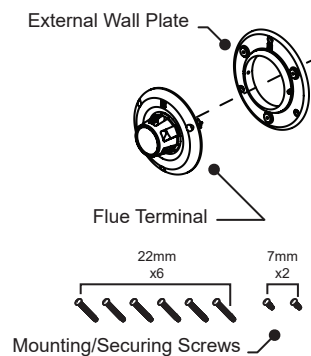
## ESPIPE900



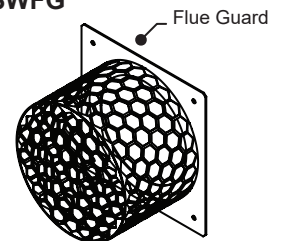
## LSFEXTKIT01



## ESWTERM

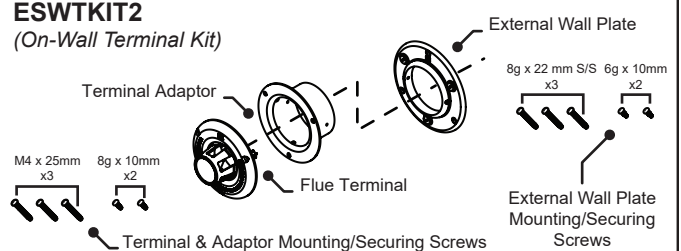


## ESWFG



## ESWTKIT2

(On-Wall Terminal Kit)



# CONFIGURATIONS QUICK GUIDE

## QUICK GUIDE NOTES



The information presented on the following pages are intended as quick reference guide to the basic recommended installation configurations currently available for the LS - Gas Fireplace appliances.

For alternatives to these configurations contact Rinnai.

For an overview of component configurations in greater detail and the installation restrictions for these configurations refer to the "Installation Configuration Warnings" on page 8.

For full descriptions of all the available LS - Gas Fireplace compatible flue components kits and there contents refer to "Flue Kits & components" on page 11.

The maximum flue length is 8.5m <sup>(1)</sup> and the maximum number of 90° bends is 3 <sup>(2)</sup>.

- (1) For every 90 ° bend, the overall flue length **MUST** be reduced by 1m.
- (2) The 90° bend of the flue transition piece is **NOT** counted as a 90 ° bend.
- (3) LSFEXTKIT01 is provided as a component of LSFKIT01 and LSFKIT02 and **MUST** be fitted as the first component after the flue transition (refer to "Installation Configuration Warnings" on page 8 for details).
- (4) Order extra components as required.
- (5) This component is optional
- (6) An LSFKIT02 kit already contains ESPIPE900 (x3), ESBEND (2x 45°) and an ESROOFCOWL.
- (7) On some double sided installations only an LSFDFK01 installation method will be suitable.
- (8) When joining to plastic components the minimum total length **MUST NOT** be less than 300mm!

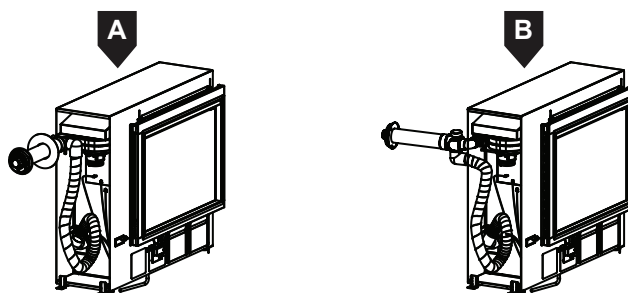
## DIRECT

Flue is run horizontally from the appliance to the termination point. The appliance is designed to allow a direct flue to be terminated to the side using LSFDFK01 or to the rear <sup>(7)</sup> using LSFKIT01.

There **MUST** be a continuous 2° fall from heater connection point to the wall terminal.

(For LSFDFK01 go to page 20 for assembly details)

(For LSFKIT01 go to page 21 for assembly details)



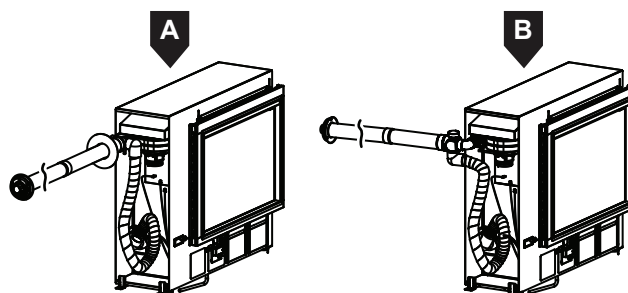
Recommended Components	<b>A</b>	LSFDFK01 <sup>(7)</sup> , ESWFG <sup>(4)</sup>
	<b>B</b>	LSFKIT01 <sup>(3) (7)</sup> , ESPIPE900 <sup>(5)</sup> , ESWTERM, ESWFG <sup>(5)</sup>

## DIRECT EXTENDED

This option is the same as that of a Direct flue installation with the key difference being that additional lengths of ESPIPE900 are used to reach the termination point.

There **MUST** be a continuous 2° fall from heater connection point to the wall terminal.

(Go to page 22 for assembly details)



Recommended Components	<b>A</b>	LSFDFK01 <sup>(9)</sup> , LSPIPE900 <sup>(4)</sup> , ESWFG <sup>(5)</sup>
	<b>B</b>	LSFKIT01 <sup>(3) (7)</sup> , ESPIPE900 <sup>(4)</sup> , ESWTERM, ESWFG <sup>(5)</sup>

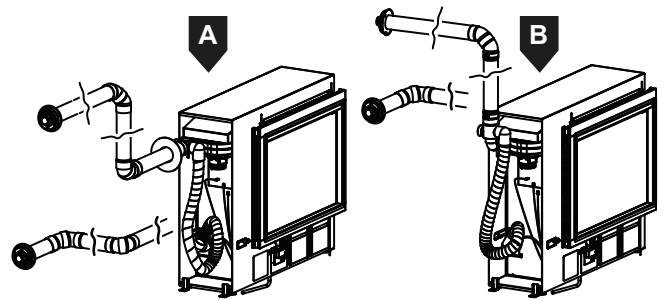


## OFFSET

Similar to EXTENDED, however the flue is offset with the use of ESBEND <sup>(1) (2) (3)</sup> either horizontally or vertically to reach the termination point.



Go to page 24 for assembly details and information regarding continuous 2° fall requirements for this installation method.



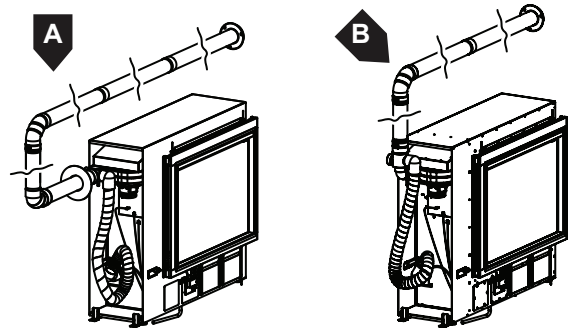
Recommended Components	<b>A</b>	LSFDFK01, LSPIPE900 <sup>(4)</sup> , ESBEND <sup>(1) (2) (4)</sup> , ESWFG <sup>(5)</sup>
	<b>B</b>	LSFKIT01 <sup>(3)</sup> , ESPIPE900 <sup>(4)</sup> , ESBEND <sup>(1) (2) (4)</sup> , ESWTERM, ESWFG <sup>(5)</sup>

## UP & OVER

Similar to OFFSET, however the flue run back over the appliance to reach the termination point. Noting that a minimum clearance of 55mm from the top of the heater engine **MUST** be maintained. Additionally ESBEND <sup>(1) (2) (3)</sup> components can be used to create an offset the flue around obstacles.



Go to page 24 for assembly details and information regarding continuous 2° fall requirements for this installation method.

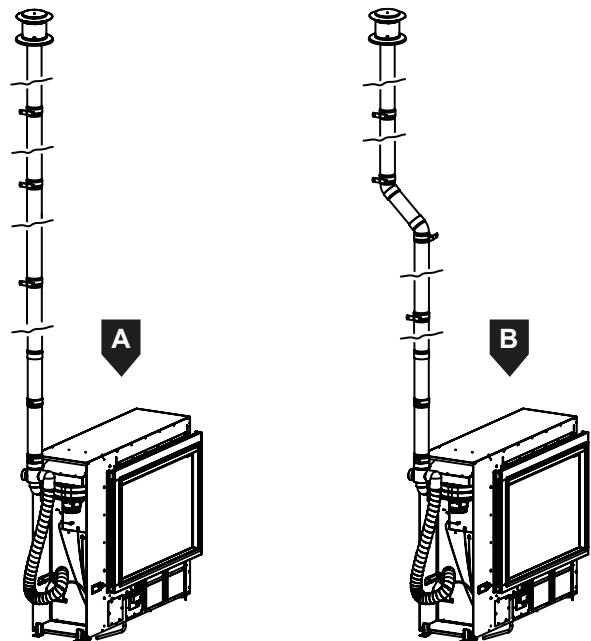


Recommended Components	<b>A</b>	LSFDFK01, LSPIPE900 <sup>(4)</sup> , ESBEND <sup>(1) (2) (4)</sup> , ESWFG <sup>(5)</sup>
	<b>B</b>	LSFKIT01 <sup>(3)</sup> , ESPIPE900 <sup>(4)</sup> , ESBEND <sup>(1) (2) (4)</sup> , ESWTERM, ESWFG <sup>(5)</sup>

## VERTICAL - ROOF TERMINATION

Flue is run vertically from the appliance to the termination point, this is usually via an internal wall cavity. ESBEND <sup>(1) (2) (3)</sup> components can be used to create an offset the flue around obstacles.

(Go to page 27 for assembly details)

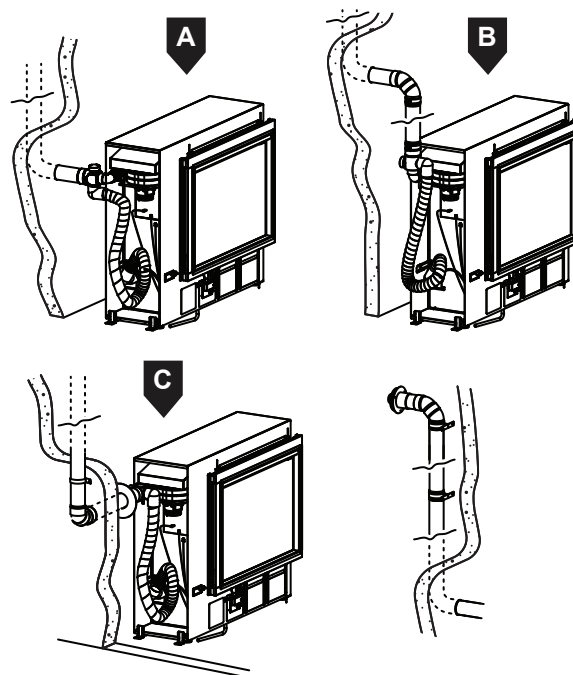


Recommended Components	<b>A</b>	LSFKIT02 <sup>(2) (3) (6)</sup> , ESPIPE900 <sup>(4)</sup>
	<b>B</b>	LSFKIT02 <sup>(2) (3) (6)</sup> , ESPIPE900 <sup>(4)</sup> , ESBEND <sup>(1) (2) (4)</sup>

## VERTICAL - WALL TERMINATION

(Go to page 27 for assembly details)

An ON-WALL terminal using ESWTKIT2 is for when the flue is run vertically from the appliance through an external to the termination point, and a roof terminal or a DIRECT flue option are not available. ESBEND <sup>(1)</sup> <sup>(2)</sup> <sup>(3)</sup> components can be used to create an offset the flue around obstacles.



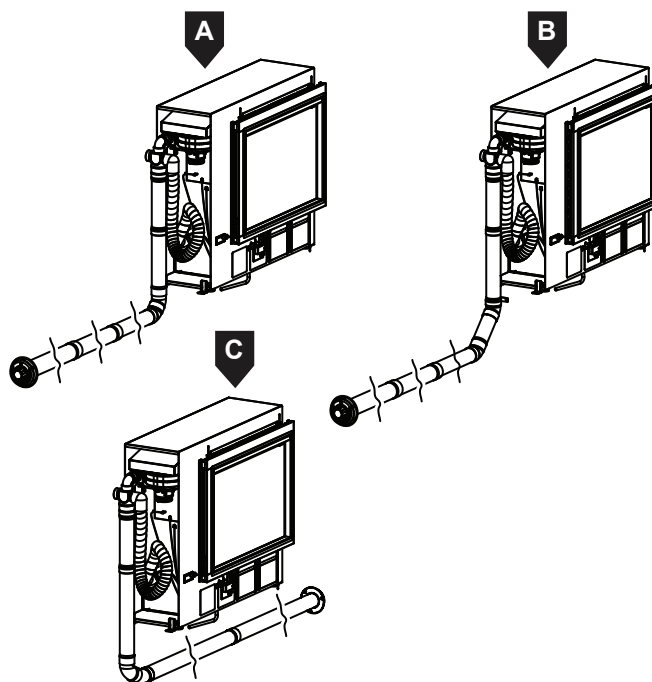
Recommended Components	<b>A</b>	LSFKIT01 <sup>(2)</sup> <sup>(3)</sup> , ESBEND <sup>(1)</sup> <sup>(2)</sup> <sup>(4)</sup> , ESPIPE900 <sup>(4)</sup> , ESWTKIT2
	<b>B</b>	LSFKIT01 <sup>(2)</sup> <sup>(3)</sup> , ESBEND <sup>(1)</sup> <sup>(2)</sup> <sup>(4)</sup> , ESPIPE900 <sup>(4)</sup> , ESWTKIT2
	<b>C</b>	LSFDFK01, ESBEND <sup>(1)</sup> <sup>(2)</sup> <sup>(4)</sup> , ESPIPE900 <sup>(4)</sup> , ESWTKIT2

## DOWN & UNDER / OUT

(Go to page 31 for assembly details)

Similar to VERTICAL INTERNAL WALL, however the flue is directed down under the floor to the termination point. This can be in any direction including back under the heater. ESBEND <sup>(1)</sup> <sup>(2)</sup> <sup>(3)</sup> components can be used to create an offset the flue around obstacles.

There **MUST** be a continuous 2° fall from heater connection point to the wall terminal. The terminal **MUST NOT** be terminated under floor spaces.



Recommended Components	<b>A</b>	LSFKIT01 <sup>(2)</sup> <sup>(3)</sup> , ESBEND <sup>(1)</sup> <sup>(2)</sup> <sup>(4)</sup> , ESPIPE900 <sup>(4)</sup> , ESWTERM, ESWFG <sup>(5)</sup>
	<b>B</b>	LSFKIT01 <sup>(2)</sup> <sup>(3)</sup> , ESBEND <sup>(1)</sup> <sup>(2)</sup> <sup>(4)</sup> , ESPIPE900 <sup>(4)</sup> , ESWTERM, ESWFG <sup>(5)</sup>
	<b>C</b>	LSFKIT01 <sup>(2)</sup> <sup>(3)</sup> , ESBEND <sup>(1)</sup> <sup>(2)</sup> <sup>(4)</sup> , ESPIPE900 <sup>(4)</sup> , ESWTERM, ESWFG <sup>(5)</sup>

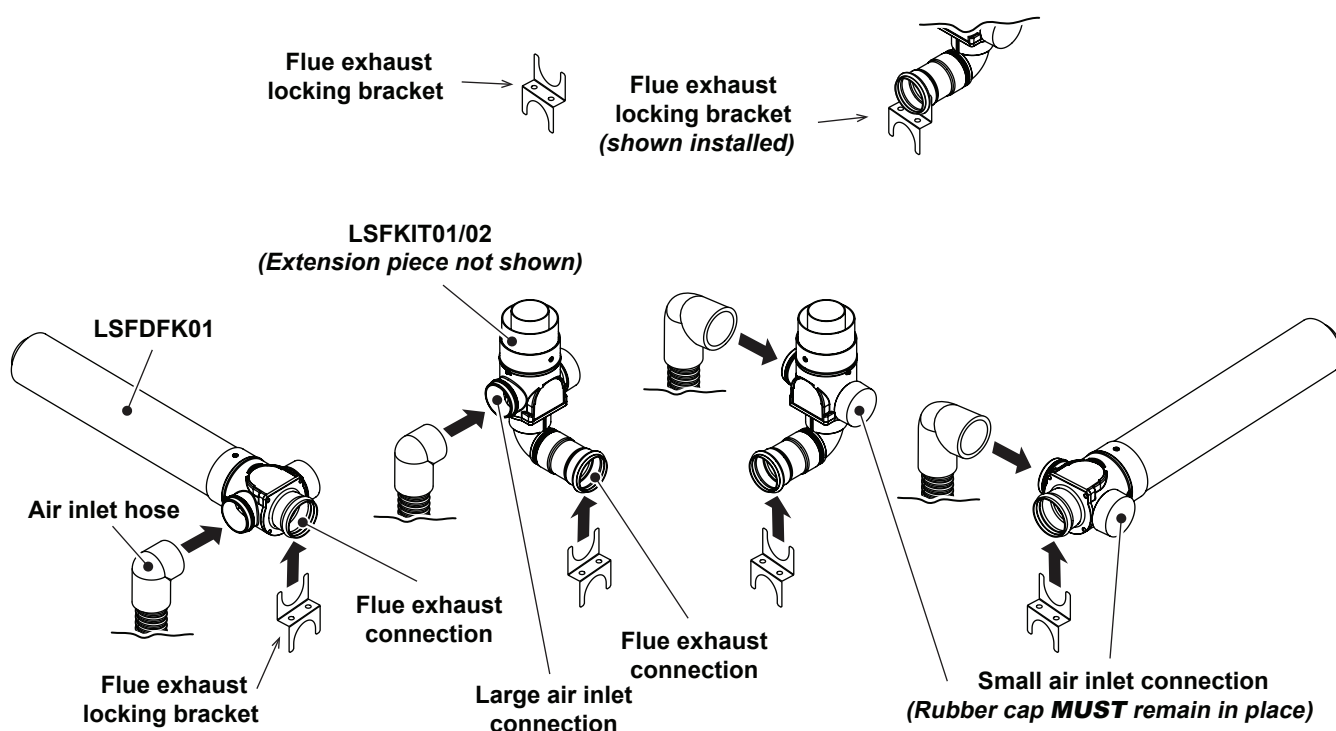
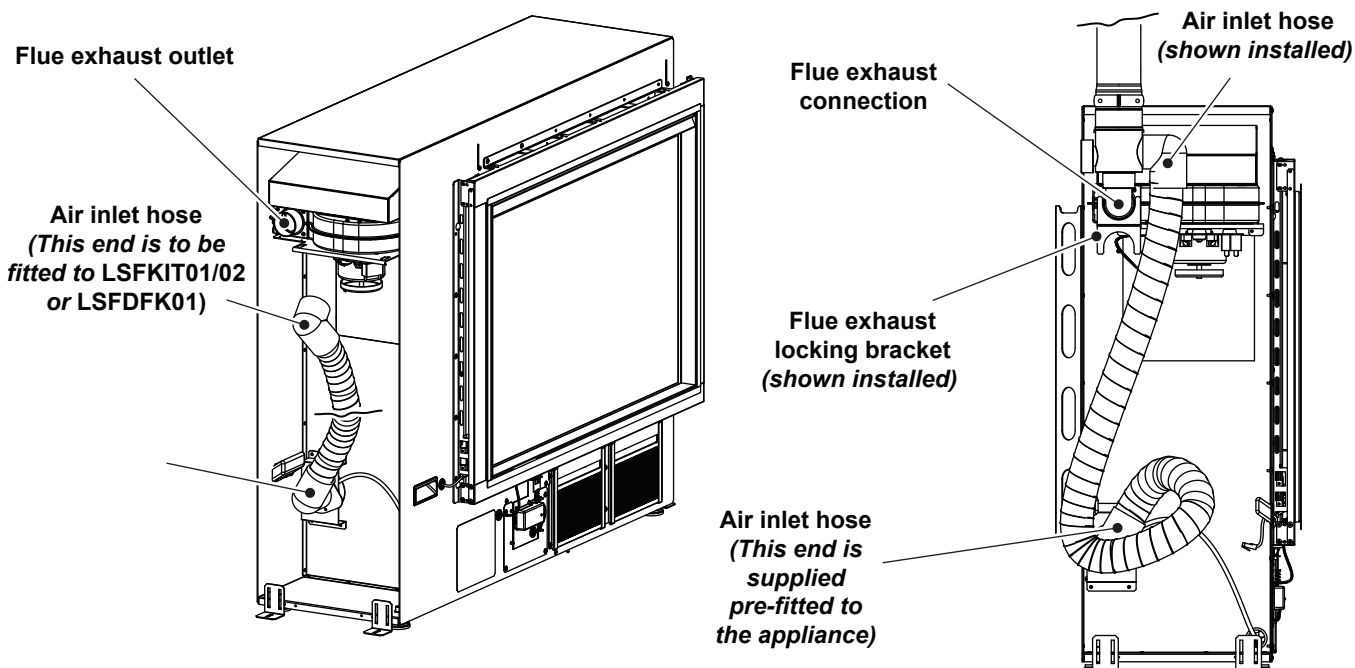
# COMMON COMPONENT ASSEMBLIES

## EXHAUST & AIR CONNECTIONS



The following steps in the installation are critical. If the connections are not secured correctly, then products of combustion could disperse into living areas.

1. Connect the flue terminal exhaust connection to the flue exhaust outlet, and secure in place (two screws) with the flue locking bracket (supplied in the accessories plastic bag with the remote control).
2. Secure the flue transition to the framing using a wall clip (supplied with LSFKIT01/02 or LSFDFK01).
3. Attach the air intake hose to the large air inlet connection on the flue transition (LSFKIT01/02 or LSFDFK01) and secure in place with the supplied cable tie (also supplied), noting that the other end of the air inlet hose is already pre-installed to the appliance.
4. Ensure that the rubber cap remains secured in place on the unused (small) air inlet connection.



## LUBRICATING INNER PIPE COMPONENTS

The inner flue pipe joints are sealed with an "O" ring seal. To ease assembly, a small container of silicone grease is provided flue transitions components.

Use this silicone grease to lubricate the "O" ring on the inner pipes prior to assembly.



The following precautions are to be observed for all flue pipe assemblies.

⚠ Use **ONLY** the supplied silicone based "O Ring" seal lubricant.

⊘ **DO NOT** use petroleum based lubricants such as petroleum jelly. The use of petroleum jelly, Vaseline® or similar petroleum based lubricants will cause rapid deterioration of the 'O Ring' seals.

🔒 **ONLY** use PVC cement between externally located joints of PVC pipes to secure and seal these joints against ingress of dust and water.

🔒 Joints between the flue transition and flue transition extension **MUST** be secured by a pop rivet or screw through the outer Co-axial pipes to prevent accidental or erroneous dislodgement.

⚠ **ONLY** use non-acidic silicone sealant between externally located joints of PVC flue pipe and any mating aluminium components (such as the transition extension piece) to secure and seal these joints against ingress of dust and water. Silicone containing acetic acid, (characteristically having a vinegar odour), as the curing agent or other acids may cause corrosion of aluminium components and **MUST NOT** be used.

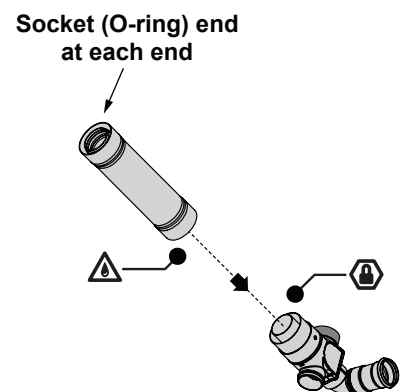
## TRANSITION EXTENSION PIPE LSFEXTKIT01



All "External Wall", "Internal Wall", "Sideways" and "Under Floor" flue installations **MUST** be fitted with Transition Extension Pipe when using LSFKIT01/02.

- ⚠ Observe the above precautions. Lubricate all 'O-Rings' with the silicone grease provided.
- 🔒 Assemble the components by joining and securing the flue transition and the transition extension pipe components together. Noting that the transition extension pipe connections are sockets at both ends, so either end may be mated.

Refer to the follow section "Cutting Components" on page 17 for details of how to cut this component when required.

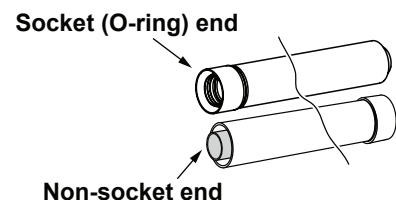


## CONNECTING ESPIPE900

- ⚠ ⚡ Observe the above precautions. Lubricate all 'O-Rings' with the silicone grease provided.

The socket end of the pipe (female outer and inner) contain the 'O-Rings' and remain orientated to the same end. They **DO NOT** alternate. 🔒 Connect the non-socketed end to the socketed end of the previous component and secure.

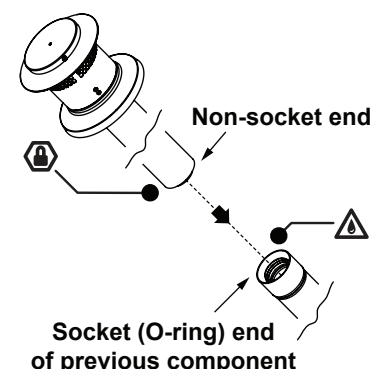
Refer to the follow section "Cutting Components" on page 17 for details of how to cut this component when required.



## CONNECTING ESROOFCOWL

- ⚠ ⚡ Observe the above precautions. Lubricate all 'O-Rings' with the silicone grease provided
- 🔒 Connect the non-socketed end to the socketed end of the previous component and secure.

Refer to the follow section "Cutting Components" on page 17 for details of how to cut this component when required.



## CUTTING COMPONENTS



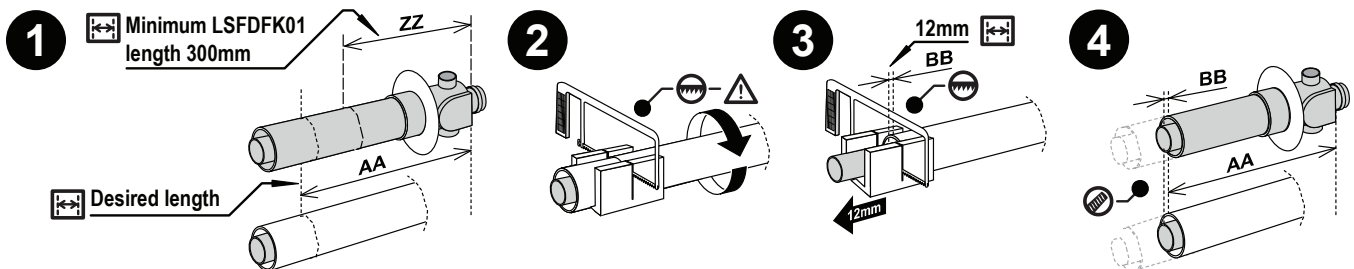
Refer to the following instructions when cutting flue pipe components LSDFDK01, LSFKIT01/02, LSFEXTKIT01, ESPIPE900 and ESROOFCOWL.

Components other than those listed here unless otherwise stated are **NOT** designed to be cut.

Cutting of pipes is not required for the purposes of joining flue components together, however cutting of the last component in the flue assembly (the component furthest away from the heater) may be required to achieve the required flue system length. Cutting is also required at a wall penetration. Cutting for both purposes is described below:

Components may also require cutting when creating horizontal flue terminations, refer to "Wall Terminal Assembly" on page 18 and "On-Wall Terminal Assembly ESWTKIT2" on page 19 for details.

## Cutting Components to Achieve a Desired Length



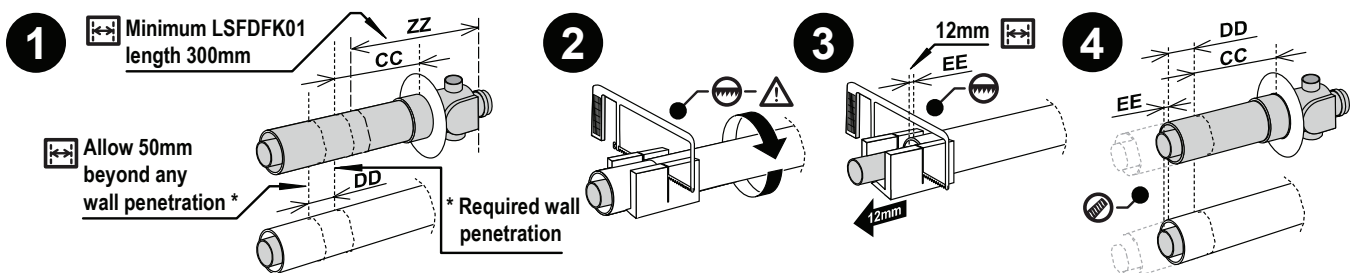
1. Measure and mark off the outer pipe at the desired length (**AA**).



The minimum length (**ZZ**) of LSDFDK01 when measured from the back plate of the casting **MUST NOT** be less than 300mm when joining to other components.

2. Cut the outer pipe to the required length. Take care **NOT** to cut the inner pipe.
3. From the 'new' end of the outer pipe (cut in Step 2), measure and mark off an additional 12mm on the inner pipe (**BB**). Cut the inner pipe at this mark. Take care to keep the cut parallel with that of the outer pipe.
4. Ensure all burrs and swarf are removed from all cut ends.

## Cutting Components for a Wall Penetration



1. Measure and mark off the outer pipe at a point flush with the surface of the wall penetrated (**CC**) plus an additional 50mm (**DD**).



The minimum length (**ZZ**) of LSDFDK01 when measured from the back plate of the casting **MUST NOT** be less than 300mm when joining to other components.

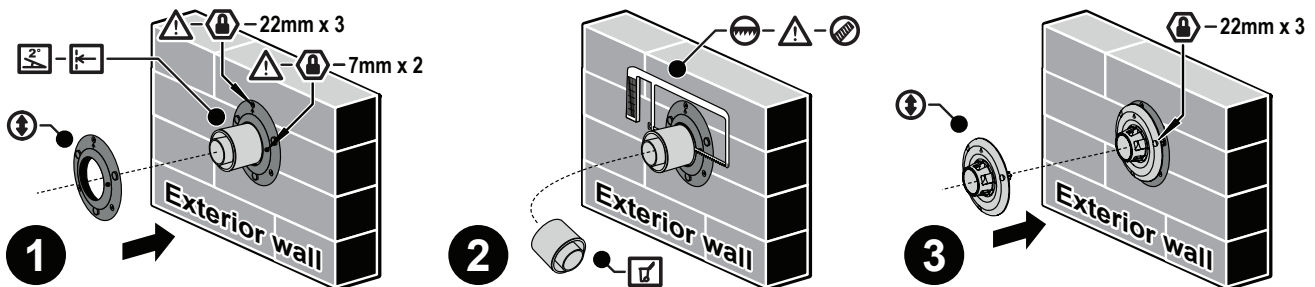
2. Cut the outer pipe to the required length. Take care **NOT** to cut the inner pipe.
3. From the 'new' end of the outer pipe (cut in Step 2), measure and mark off an additional 12mm on the inner pipe (**EE**). Cut the inner pipe at this mark. Take care to keep the cut parallel with that of the outer pipe.
4. Ensure all burrs and swarf are removed from all cut ends.

## WALL TERMINAL ASSEMBLY



Flue **MUST** terminate in accordance with AS/NZS 5601 Figure 6.2. Especially relevant is the requirement to have a minimum of 300mm clearance between the flue terminal and the finished ground level. It is **NOT** permissible to excavate a hole to obtain the required 300mm clearance, unless there is sufficient drainage provision.

**ONLY** the direct flue kit (LSFDFK01), Flue Extension Pipe LSFEXTKIT01 and the Co-axial flue pipe (ESPIPE900) can be modified to create a wall terminal.

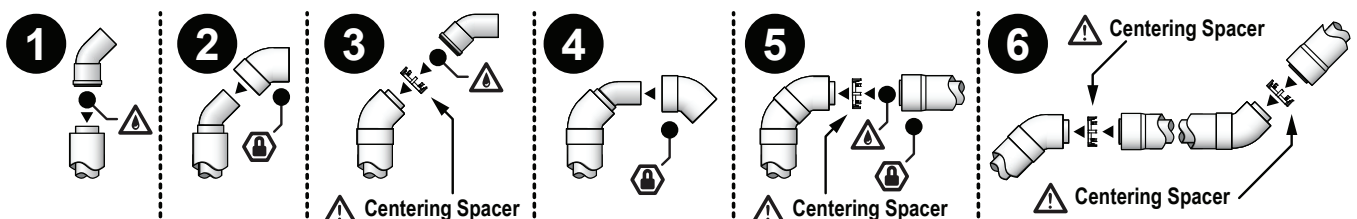


- Fit the supplied external wall plate over the outer pipe of the flue protrusion.
 

As an installation aid the wall plate has a 2° offset. As such the orientation of the wall plate will set the flue system with either a 2° fall or rise as required. Set the flue system with a 2° fall away from the heater by aligning the arrow symbol so that it is upper most.

Once the external wall plate is in the correct position secure it to the wall using the three 22mm screws into the holes provided. The wall plate is then secured to the outer pipe of the flue protrusion using the two horizontal holes and the two 7mm screws provided.
- Carefully cut through the outer and inner pipes of the flue protrusion as close to the external wall plate as possible. Take care to avoid cutting the external wall plate and keep the cuts of both internal and external pipes as parallel as possible. All burrs and swarf are to be removed from all cut ends.
- Align the arrows of the metal mushroom flue terminal and the wall plate to point in the same direction and screw the terminal to the external wall plate using the 22mm screws into the holes provided.

## CONNECTING ESBEND



- Lubricate an ESBEND inner pipe 'O-Ring' and fit to the inner pipe of the nominated component. Use **ONLY** the supplied silicone based "O Ring" seal lubricant. **DO NOT** use petroleum based lubricants such as petroleum jelly.
- Fit an ESBEND outer pipe to the outer pipe of the same nominated component.
- Insert one of the plastic centring spacers provided with ESBEND, then lubricate the second ESBEND inner pipe 'O-Ring' and fit to the previously fitted inner component.



The centring spacer is a **MANDATORY** component, that is required for the correct alignment of Co-axial components when ESBEND kits are used. When fitted correctly the inner and outer pipes of ESBEND will be self centring.

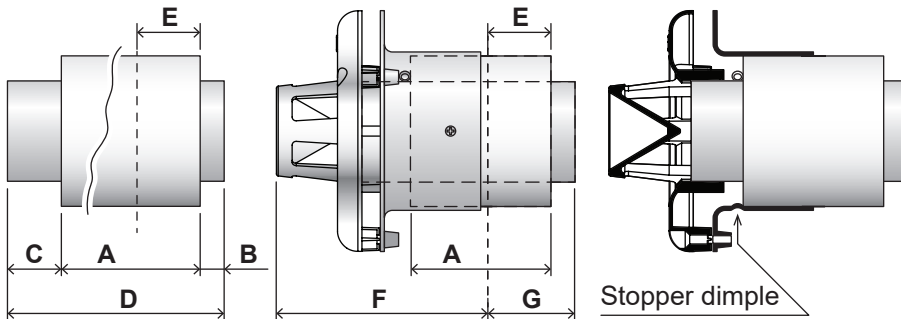
- Fit a second ESBEND outer pipe to the previously fitted outer component.
- Insert the remaining plastic centring spacer provided with ESBEND, before connecting further components.
- For extended offset installations use the same procedure ensuring the centring spacers are inserted as shown.



## ON-WALL TERMINAL ASSEMBLY ESWTKIT2



To terminate an ON-Wall terminal a connecting pipe is required, this component is created from sections of ESPIPE900 outer and inner pipes which is then attached to ESBEND and or ESPIPE900 flue components. Use the diagram & table below when creating the connecting pipe sections.



	Dimension (mm)	Min. Dimension (mm)
A	70	70
B	12	-
C	27	-
D	A + B + C	109
E	31	-
F	103	103
G	43 (B + E)	-

- In accordance with the measurements provided above, measure off and cut the outer pipe to required length **A** (minimum length is 70mm). Ensure that burrs and swarf are removed from all cut ends.
- In accordance with the measurements provided above, measure off and cut the inner pipe to required length **A + B + C** (minimum length is 109mm). Ensure that burrs and swarf are removed from all cut ends.
- Lubricate the 'O-Ring' of the inner pipe of the preceding component, this should be either an ESBEND or an ESPIPE900.



**ONLY** use non-acidic silicone sealant between the joints of PVC flue pipe and any mating aluminium components (such as those of ESROOFCOWL) to secure and seal these joints against ingress of dust and water.

Silicone containing acetic acid, (characteristically having a vinegar odour), as the curing agent or other acids may cause corrosion of aluminium components and **MUST NOT** be used.

Insert the cut section of inner pipe into the female socket of the preceding component, ensuring that it is fully home. Then insert the cut section of outer pipe into the female socket of the preceding component, ensuring it is also fully home. There should **ONLY** be 27mm of inner pipe section protruding when both inner and outer are fitted correctly.



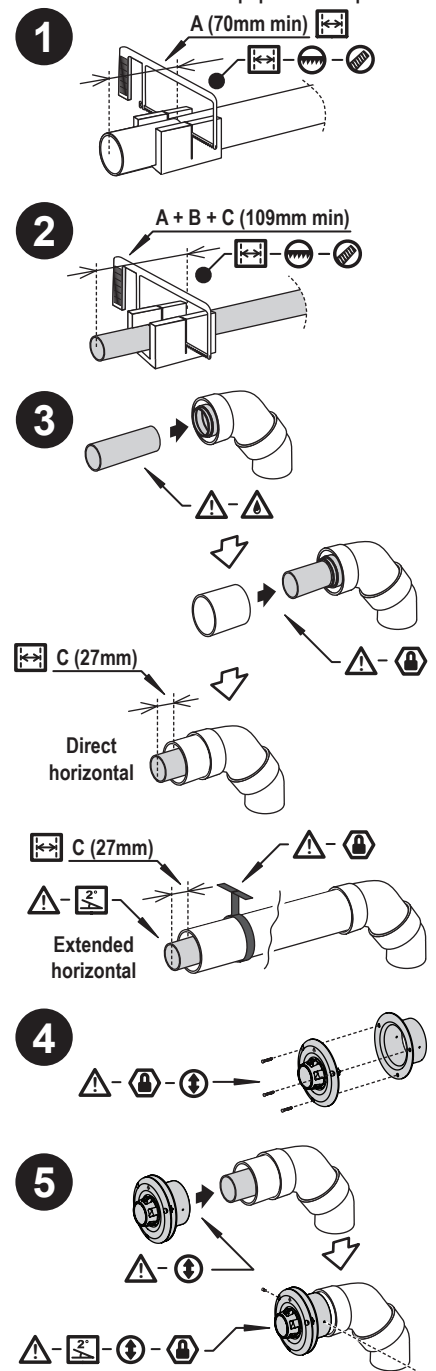
When preparing an on wall terminal ensure a continuous 2° fall from the flue termination point back towards the heater (condensate trap). This is especially important when an ESPIPE900 is used to horizontally extend the terminal location for the clearance considerations.

Additional supports may also be required.

- Attach the flue terminal to the flue adapter using the three m4 screws supplied.
- With the orientation arrow is pointing vertically upwards, attach the above terminal assembly to the connecting pipes, ensuring that the outer pipe hits the stopper dimples of the flue adapter. Then secure the terminal in place with the two 8g screws supplied.



For the on wall terminal it is **CRITICAL** that the joints of PVC outer pipes are sealed with an appropriate PVC solvent.



# DIRECT - USING LSFDFK01


Follow the engine and flue installation instructions detailed in the Installation manual provided with appliance.

The direct flue kit LSFDFK01 is suitable for walls up to 385mm thick.

Components can be cut to length to suit wall thickness's less than 385mm thick. For wall thickness's greater than specified above refer to "Direct Extended" on page 22.

With heater engine installed into the support framing:

1. Create the wall penetration(s).

 The minimum diameter required for wall the penetration for a DIRECT flue installation is 80mm to non-combustible surfaces such as brick and 100mm to combustible surfaces such as plaster.



**Ensure that a continuous 2° fall from the heater connection point to the wall terminal is maintained.**

2. Slide the internal wall plate over the terminal end of the pipe until it is nested on the raised ring of the flue transition.
3. Pass the flue transition through the internal wall penetration.
4. Make heater connections in accordance with "Exhaust & Air Connections" on page 15.



**Air hose and heater exhaust connections MUST be made and checked in accordance with "Exhaust & Air Connections" on page 15. Improper connections may result in dangerous situations, for example, the dispersion of combustion products in the space being heated and living areas.**

5. Slide the internal wall plate so that it is flush with the wall.
6. Create the wall terminal in accordance with "Wall Terminal Assembly" on page 18
7. Refer to Installation Manual provided with appliance to finalise installation and commissioning of the heater.

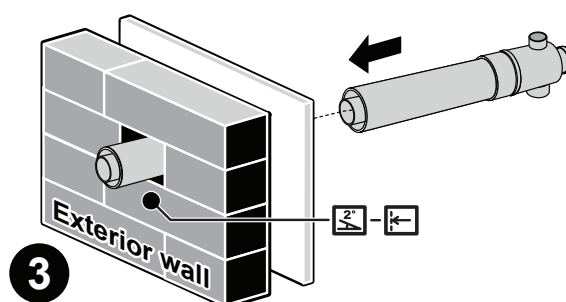
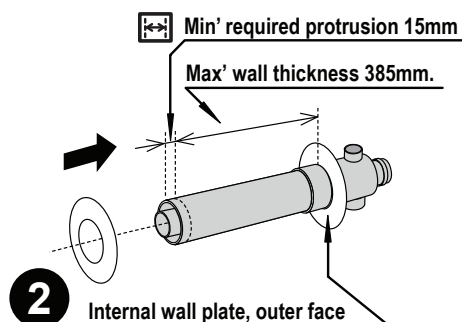
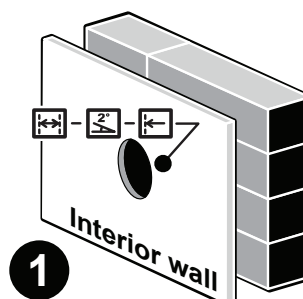
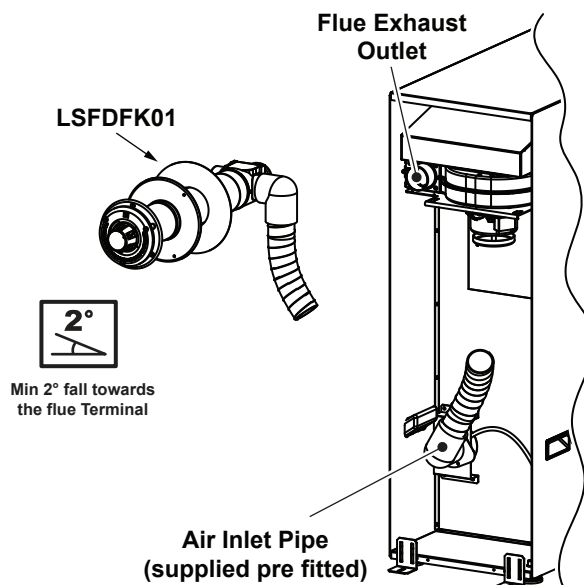


**Use ONLY the supplied silicone based "O Ring" seal lubricant. DO NOT use petroleum based lubricants such as petroleum jelly. The use of petroleum jelly, Vaseline® or similar petroleum based lubricants will cause rapid deterioration of the 'O Ring' seals.**



**For non-condensing heaters a 2° fall of the flue away from the heater helps prevent rainwater or sprinkler water etc from entering the flue system.**

**To obtain the desired amount of protrusion for termination, the ESPIPE900 may need to cut. Do this in accordance with "Cutting Components" on page 17**





## DIRECT - USING LSFKIT01

Follow the engine and flue installation instructions detailed in the Installation manual provided with appliance.

The flue kit LSFKIT01 is suitable for walls up to ???mm thick.

Direct flue installation using LSFKIT01 will require the addition of a wall terminal kit ESWTERM to complete.



The transition extension pipe **MUST** be fitted directly to the flue transition before any other components. Extension pipe connections are the same at each end.

Components can be cut to length to suit wall thickness's less than 385mm thick. For wall thickness's greater than specified above refer to "Direct Extended" on page 22.

With heater engine installed into the support framing:

1. Create the wall penetration(s).

The minimum diameter required for wall the penetration for a DIRECT flue installation is 80mm to non-combustible surfaces such as brick and 100mm to combustible surfaces such as plaster.



Ensure that a continuous 2° fall from the heater connection point to the wall terminal is maintained.

2. Join the transition extension pipe to the flue transition.
3. Pass the assembled flue transition through the internal wall penetration.
4. Make heater connections in accordance with "Exhaust & Air Connections" on page 15.



Air hose and heater exhaust connections **MUST** be made and checked in accordance with "Exhaust & Air Connections" on page 15. Improper connections may result in dangerous situations, for example, the dispersion of combustion products in the space being heated and living areas.

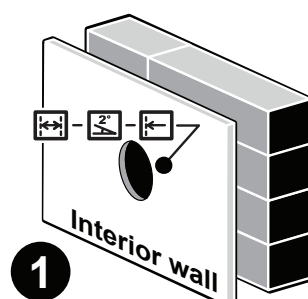
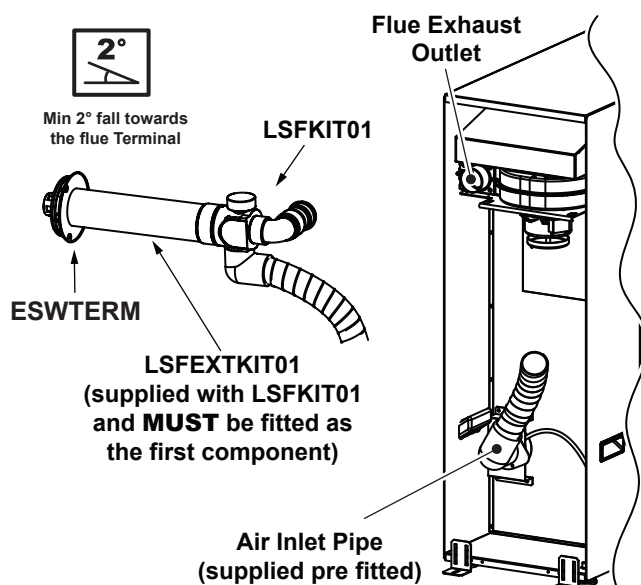
5. Create the wall terminal in accordance with "Wall Terminal Assembly" on page 18
6. Refer to Installation Manual provided with appliance to finalise installation and commissioning of the heater.



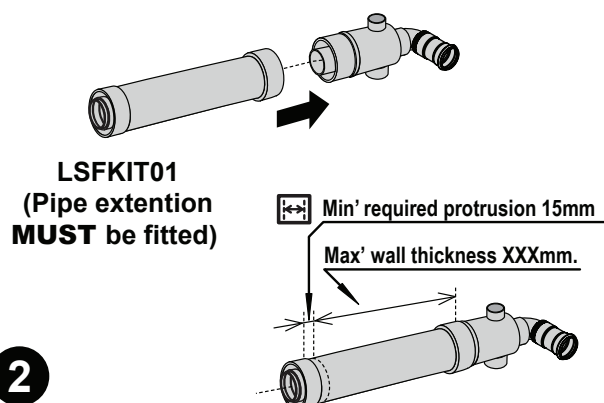
⚠ Use **ONLY** the supplied silicone based "O Ring" seal lubricant. **DO NOT** use petroleum based lubricants such as petroleum jelly. The use of petroleum jelly, Vaseline® or similar petroleum based lubricants will cause rapid deterioration of the 'O Ring' seals.



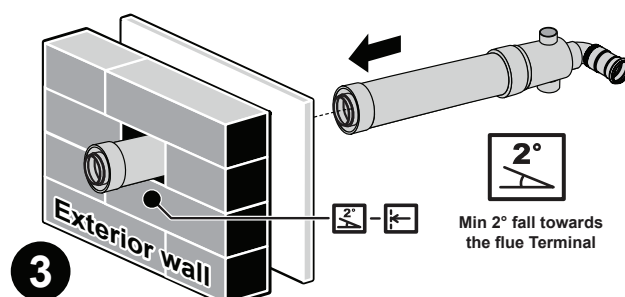
For non-condensing heaters a 2° fall of the flue away from the heater helps prevent rainwater or sprinkler water etc from entering the flue system.



1



2



3

# DIRECT EXTENDED

Follow the engine and flue installation instructions detailed in the Installation manual provided with appliance.

To create a DIRECT EXTENDED flue, follow the steps for creating a DIRECT flue installation. Then use Co-axial Pipe(s) (ESPIPE900) to extend the flue to the termination point.

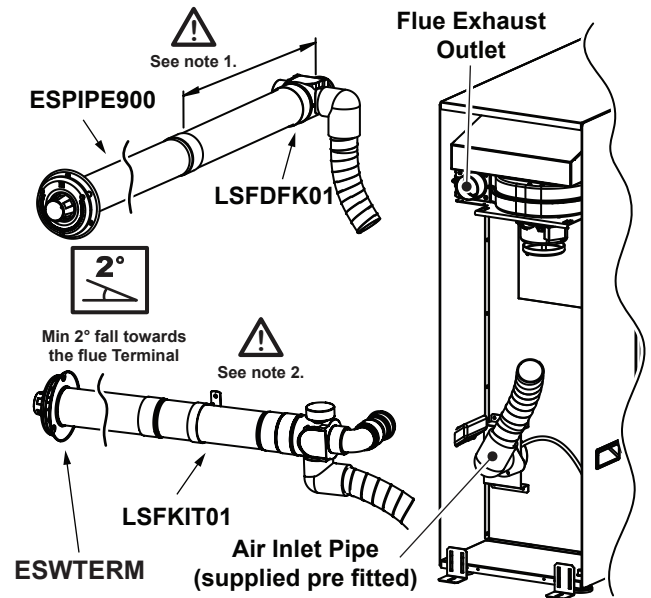
DIRECT EXTENDED flue installations using LSFKIT01 will require the addition of a wall terminal kit ESWTERM to complete.



The maximum flue length is 8.5m



The transition extension pipe **MUST** be fitted directly to the flue transition before any other components. Extension pipe connections are the same at each end.



⚠ Use **ONLY** the supplied silicone based “O Ring” seal lubricant. **DO NOT** use petroleum based lubricants such as petroleum jelly. The use of petroleum jelly, Vaseline® or similar petroleum based lubricants will cause rapid deterioration of the ‘O Ring’ seals.

🔒 **ONLY** use PVC cement between externally located joints of PVC pipes to secure and seal these joints against ingress of dust and water.

⚠ **ONLY** use non-acidic silicone sealant between externally located joints of PVC flue pipe and any mating aluminium components (such as the condensate trap) to secure and seal these joints against ingress of dust and water. Silicone containing acetic acid, (characteristically having a vinegar odour), as the curing agent or other acids may cause corrosion of aluminium components and **MUST NOT** be used.

🔒 Secure the vertical flue sections to the wall using the clips provided to prevent accidental dislodgement.



**Note 1.** When cutting the flue transition for joining to other components the minimum total length is **NOT** to be less than 300mm!




**Note 2.** When using LSFKIT01 the aluminium transition extension pipe **MUST** be fitted at this point.






**Note 3.**  Where stipulated a Minimum 2° fall towards the terminal is required to ensure correct drainage of condensation formed in the discharge flue.



**Note 4.**  Where stipulated a Minimum 2° fall towards the appliance is required to ensure correct drainage of condensation formed in the discharge flue.

With heater engine installed into the support framing.

1. Create the wall penetration(s).

   The minimum diameter required for wall the penetration for a DIRECT flue installation is 80mm to non-combustible surfaces such as brick and 100mm to combustible surfaces such as plaster.




**Ensure that a continuous 2° fall from the heater connection point to the wall terminal is maintained.**

2. Join ESPIPE900 to LSFDFK01 or LSFKIT01 (with the transition extension pipe attached). In accordance with "Connecting ESPIPE900" on page 16.

Fitting additional lengths of ESPIPE900 as required.

For LSFDFK01 slide the internal wall plate over the terminal end of the LSFDFK01 pipe until it is nested on the raised ring of the flue transition.



 Internally located joints between LSFDFK01 / LSFKIT01 (with the transition extension pipe attached) and ESPIPE900 and any additional ESPIPE900 lengths **MUST** be secured by a pop rivet or screw through the outer Co-axial pipes to prevent accidental or erroneous dislodgement.

**LSFDFK01, LSFKIT01 and ESPIPE900 DO NOT** require cutting to be joined.

3. Pass the assembled components through the internal wall penetration.
4. Make heater connections in accordance with "Exhaust & Air Connections" on page 15.



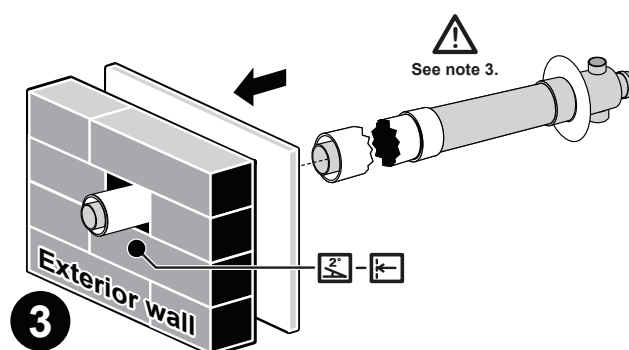
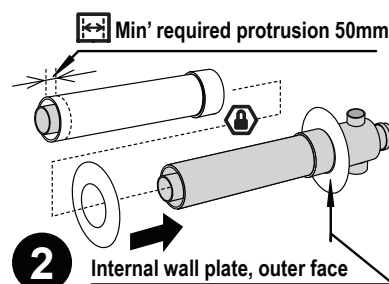
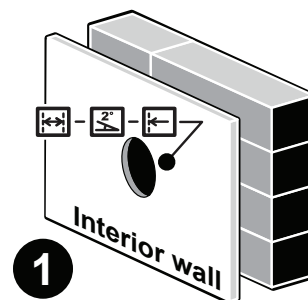
**Air hose and heater exhaust connections MUST** be made and checked in accordance with "Exhaust & Air Connections" on page 15. Improper connections may result in dangerous situations, for example, the dispersion of combustion products in the space being heated.

5. For LSFDFK01 slide the internal wall plate so that it is flush with the wall.
6. Create the wall terminal in accordance with "Wall Terminal Assembly" on page 18



**To obtain the desired amount of protrusion for termination, the ESPIPE900 may need to cut. Do this in accordance with "Connecting ESPIPE900" on page 16**

7. Refer to Installation Manual provided with appliance to finalise installation and commissioning of the heater.



## OFFSET / UP & OVER

Follow the engine installation instructions detailed in the Installation manual provided with appliance.

An OFFSET flue installation is similar to the DIRECT EXTENDED installation, however the flue is offset with the use of ESBEND <sup>(1) (2)</sup> either horizontally or vertically to reach the termination point.

Similarly for an UP & OVER the same applies, the difference being that the flue is directed back over the heater engine to the termination point.

 A 2° fall is required see **Note 3.** and **Note 4.** below.

When considering the location of the heater due care **MUST** be taken to ensure that the flue path is free of obstructions such as studs, noggins, joists, braces, and electricals etc.



The maximum flue length is 8.5m <sup>(1)</sup> and the maximum number of 90° bends is 3 <sup>(2)</sup>.

(1) For every 90° bend, the overall flue length **MUST** be reduced by 1m.

(2) The 90° bend of the flue transition piece is **NOT** counted as a 90° bend.




**Note 1.** When cutting the flue transition for joining to other components the minimum total length is **NOT** to be less than 300mm!




**Note 2.** When using LSFKIT01 the aluminium transition extension pipe **MUST** be fitted at this point.



**Note 3.**  Where stipulated a Minimum 2° fall towards the terminal is required to ensure correct drainage of condensation formed in the discharge flue.



**Note 4.**  Where stipulated a Minimum 2° fall towards the appliance is required to ensure correct drainage of condensation formed in the discharge flue.





The transition extension pipe **MUST** be fitted directly to the flue transition before any other components. Extension pipe connections are the same at each end.



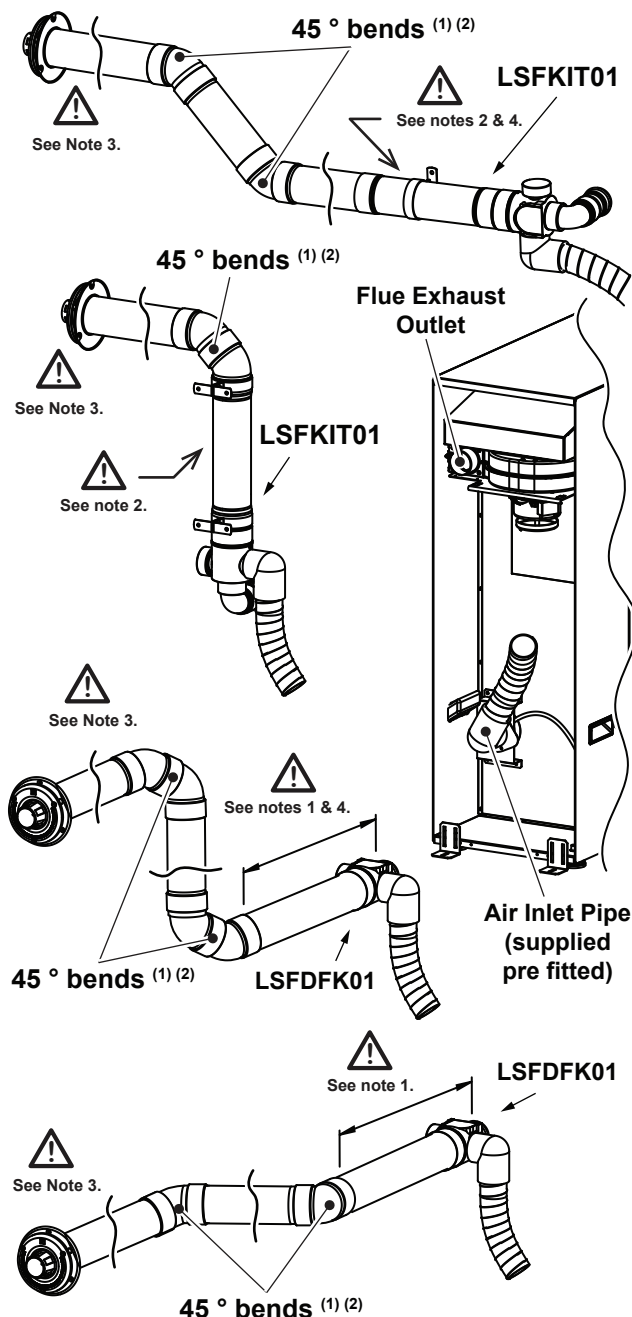
All flue installations that use LSFKIT01/02 **MUST** be fitted with Transition Extension Pipe.


 Use **ONLY** the supplied silicone based “O Ring” seal lubricant.

 **DO NOT** use petroleum based lubricants such as petroleum jelly. The use of petroleum jelly, Vaseline® or similar petroleum based lubricants will cause rapid deterioration of the ‘O Ring’ seals.

 The join between the flue transition and flue transition extension **MUST** be secured by a pop rivet or screw through the outer Co-axial pipes to prevent accidental or erroneous dislodgement. The assembled LSFKIT01/02 is to be clipped to the structure using the stand off clips supplied or other suitable method.

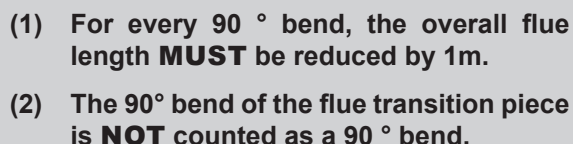
LSFKIT01/02 components and ESPIPE900 **DO NOT** require cutting to be joined.




1. Create the wall penetration(s).  
 The minimum diameter required for wall penetration(s) for an OFFSET flue installation is 80mm to non-combustible surfaces such as brick and 100mm to combustible surfaces such as plaster. Allow for a continuous 2° fall as specified in **Notes 3 & 4** on page 24.
2. Join either ESPIPE900 <sup>(A)</sup> or ESBEND <sup>(1) (2) (B)</sup> to LSFDFK01 or LSFKIT01 (with the transition extension pipe attached).  

(A) In accordance with "Connecting ESPIPE900" on page 16.


(B) Where necessary use ESBEND components to offset the flue run in accordance with "Connecting ESBEND" on page 18.



 **CAUTION**

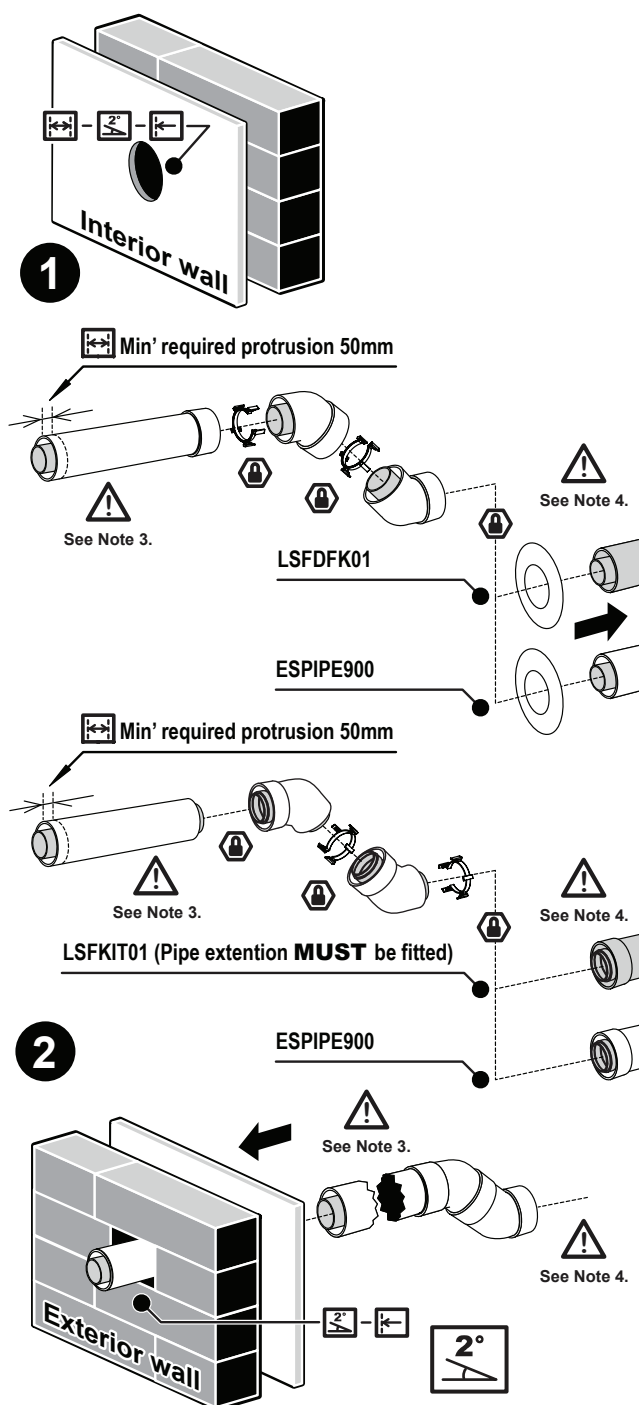
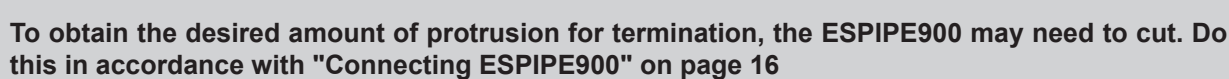
Internally located joints between LSFDFK01 / LSFKIT01 (with the transition extension pipe attached) and ESPIPE900 or ESBEND and any additional ESPIPE900 or ESBEND components **MUST** be secured by a pop rivet or screw through the outer Co-axial pipes to prevent accidental or erroneous dislodgement.

LSFDFK01, LSFKIT01, ESPIPE900 and ESBEND **DO NOT** require cutting to be joined.

-  Air hose and heater exhaust connections **MUST** be made and checked in accordance with "Exhaust & Air Connections" on page 15. Improper connections may result in dangerous situations, for example, the dispersion of combustion products in the space being heated.



-  To obtain the desired amount of protrusion for termination, the ESPIPE900 may need to cut. Do this in accordance with "Connecting ESPIPE900" on page 16



**BEFORE** and **WITHIN** any vertical rise the Min 2° fall **MUST** be towards the appliance.

Horizontal components **AFTER** the vertical rise **MUST** then fall towards the flue Terminal at a Min 2°.



# VERTICAL - ROOF TERMINATION

Follow the engine and flue installation instructions detailed in the Installation manual provided with appliance.

A vertical roof termination utilises components installed vertically from the flue connection point to a ESROOFCOWL.

Offsets using ESBEND <sup>(1)</sup> <sup>(2)</sup> components can be used to avoid obstructions in the flue path.

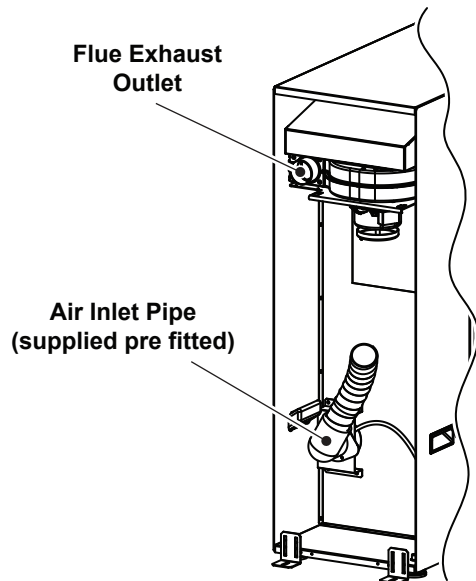
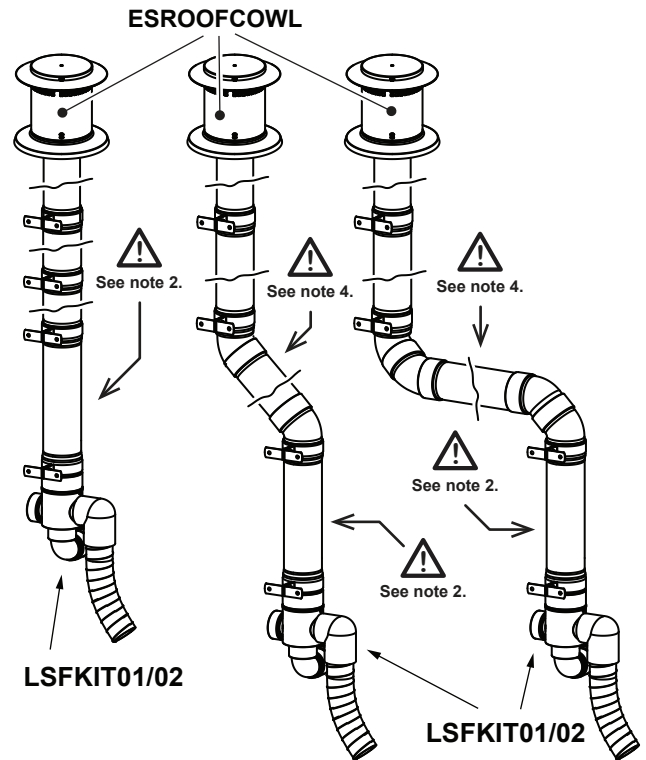
An offset may also be used to allow the vertical flue to exit an external wall enabling termination through an eave.

When considering the location of the heater due care **MUST** be taken to ensure that the flue path is free of obstructions such as studs, noggins, joists, braces, and electricals etc.

LSFKIT01 in conjunction with sections of ESPIPE900 and an ESROOFCOWL is best suited for a direct vertical termination.

While ESLSFKIT02 provides enough component to complete an offset vertical termination.

Use of addition ESBEND <sup>(1)</sup> <sup>(2)</sup> components will allow for longer horizontal diversions.



The maximum flue length is 8.5m <sup>(1)</sup> and the maximum number of 90° bends is 3 <sup>(2)</sup>.


(1) For every 90 ° bend, the overall flue length **MUST** be reduced by 1m.

(2) The 90° bend of the flue transition piece is **NOT** counted as a 90 ° bend.




**Note 2.** When using LSFKIT01 the aluminium transition extension pipe **MUST** be fitted at this point.



**Note 3.**  Where stipulated a Minimum 2° fall towards the terminal is required to ensure correct drainage of condensation formed in the discharge flue.



**Note 4.**  Where stipulated a Minimum 2° fall towards the appliance is required to ensure correct drainage of condensation formed in the discharge flue.





The transition extension pipe **MUST** be fitted directly to the flue transition before any other components. Extension pipe connections are the same at each end.



All flue installations that use LSFKIT01/02 **MUST** be fitted with Transition Extension Pipe.

 Use **ONLY** the supplied silicone based “O Ring” seal lubricant.

 **DO NOT** use petroleum based lubricants such as petroleum jelly. The use of petroleum jelly, Vaseline® or similar petroleum based lubricants will cause rapid deterioration of ‘O Ring’ seals.

 The join between the flue transition and flue transition extension **MUST** be secured by a pop rivet or screw through the outer Co-axial pipes to prevent accidental or erroneous dislodgement. The assembled LSFKIT01/02 is to be clipped to the structure using the stand off clips supplied or other suitable method.

LSFKIT01/02 components and ESPIPE900 **DO NOT** require cutting to be joined.


## VERTICAL - ON WALL TERMINATION

Follow the engine and flue installation instructions detailed in the Installation manual provided with appliance.

The creation of the horizontal section of flue installation is the same as creating a DIRECT, DIRECT EXTENDED flue installations with the following exceptions:

Where roof / eave penetration or direct wall terminations are not viable, due to clearance issue etc, an external wall terminal ESWTKIT2 will allow for a vertically offset horizontal termination on an exterior wall.

Refer to "On-Wall Terminal Assembly ESWTKIT2" on page 19 for further details.

 The direction of horizontal fall of the flue pipe is reversed. For Wall External flue installations, a 2° fall is required from the wall penetration towards the heater.

An ESBEND rather than the ESWTERM flue terminal is fitted at the end of the horizontal flue run.



The maximum flue length is 8.5m\* and the maximum number of 90° bends is 3\*\*.


\* For every 90 ° bend, the overall flue length **MUST** be reduced by 1m.

\*\* The 90° bend of the flue transition piece is **NOT** counted as a 90 ° bend.




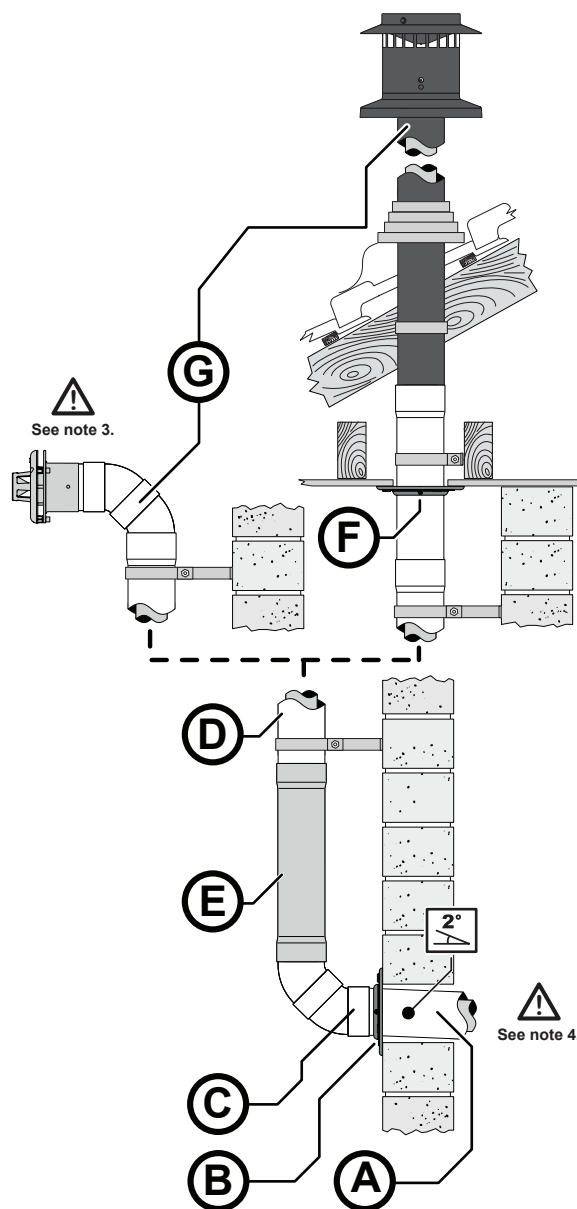
**Note 2.** When using LSFKIT01 the aluminium transition extension pipe **MUST** be fitted at this point.



**Note 3.**  Where stipulated a Minimum 2° fall towards the terminal is required to ensure correct drainage of condensation formed in the discharge flue.



**Note 4.**  Where stipulated a Minimum 2° fall towards the appliance is required to ensure correct drainage of condensation formed in the discharge flue.



Possible kits and components required for creating VERTICAL EXTERNAL WALL installations:

- (A) LSFDFK01 (LSFKIT01/02 may also be used)
- (B) ESPLATE#
- (C) ESBEND#
- (D) ESPIPE900#
- (E) LSFEXTKIT01# (require for change of connection direction when terminating with an ESROOFCOWL)
- (F) ESPLATE#
- (G) ESROOFCOWL or ESWTKIT2

# Available separately or as part of kit see "Flue Kits & components" on page 11 for kit contents.

## VERTICAL - ON WALL TERMINATION

- Follow the installation method for a "" on page 20 or for a "Direct Extended" on page 22 to the completion of step 4. However ensure that a 2° fall is maintained from the wall penetration point back towards the heater.



If required, components of LSFKIT01 and LSFKIT02 may be utilised as an alternative to using the LSFDFK01 kit to create a DIRECT or DIRECT EXTENDED installation to reach the point of the external wall penetration.

When using LSFKIT01 and LSFKIT02 a sideways configuration will be required to reach the point of the external wall penetration.

For details on creating a sideways flue configuration refer to "Offset / Up & Over" on page 24.

- Slide the external wall plate over the outer pipe protruding through the exterior wall. Ensure a 2° fall of the horizontal section of flue pipe towards the appliance as required.

⚠ Once the external wall plate is in the correct position secure it to the wall using the three 22mm screws into the holes provided.

The wall plate is then secured to the outer pipe of the flue protrusion using the two horizontal holes and the two 7mm screws provided.

- ✂ Cut the flue pipe end protruding through the exterior wall in accordance with "Connecting ESPIPE900" on page 16.



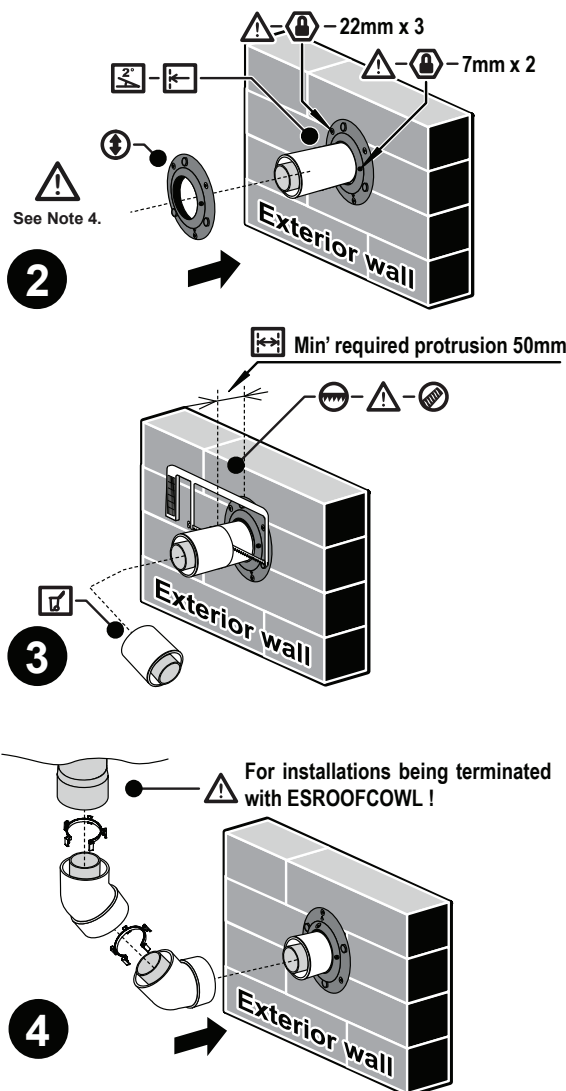
⚠ Use **ONLY** the supplied silicone based "O Ring" seal lubricant.

⊘ **DO NOT** use petroleum based lubricants such as petroleum jelly. The use of petroleum jelly, Vaseline® or similar petroleum based lubricants will cause rapid deterioration of the 'O Ring' seals.

⚠ **ONLY** use PVC cement between externally located joints of PVC pipes to secure and seal these joints against ingress of dust and water.

⚠ **ONLY** use non-acidic silicone sealant between externally located joints of PVC flue pipe and any mating aluminium components (such as the condensate trap) to secure and seal these joints against ingress of dust and water. Silicone containing acetic acid, (characteristically having a vinegar odour), as the curing agent or other acids may cause corrosion of aluminium components and **MUST NOT** be used.

⚠ Secure the vertical flue sections to the wall using the clips provided to prevent accidental dislodgement.



- Prepare the vertical section of the flue system by assembling, connecting and securing ESBEND <sup>(1)</sup> <sup>(2)</sup> and subsequent ESPIPE900 lengths as required in accordance with the relevant sections under "Connecting ESBEND" on page 18, "Transition Extension Pipe LSFEXTKIT01" on page 16 and "Connecting ESPIPE900" on page 16.





For installations being terminated with ESROOFCOWL a Transition Extension Pipe (LSFEXTKIT01)\* will need to be installed at this point.

This is required to enable the change of connection direction necessary when fitting the ESROOFCOWL.

**\* All flue installations that use LSFKIT01/02 *MUST* be fitted with Transition Extension Pipe.**

5. If a vertical roof terminal is used cut in accordance with "Cutting Components" on page 17 and assemble and connect in accordance with "Connecting ESPIPE900" on page 16 and "Connecting ESROOFCOWL" on page 16.

All "External Wall", "Internal Wall", "Sideways" and "Under Floor" flue installations **MUST** be fitted with Transition Extension Pipe when using LSFKIT01/02." on page 23.

If a horizontal terminal is used cut in accordance with "Cutting Components" on page 17 and assemble and connect in accordance with "On-Wall Terminal Assembly ESWTKIT2" on page 19.

6. Refer to Installation Manual provided with appliance to finalise installation and commissioning of the heater.

## DOWN & UNDER / OUT

The UNDER FLOOR FLUE flue installation allows for a Flue Adaptation Kit (LSFKIT01/02) to face downwards to pass the flue run vertically through a hole in the floor.

It can then be run horizontally to a suitable external termination point, located outside.



**DO NOT** flue into under floor spaces.

Ensure that a continuous 2° fall to the wall terminal is maintained.

When considering the location of the heater due care **MUST** be taken to ensure that the flue path under the floor is free of obstructions such as studs, noggins, joists, braces, and electricals etc.



The maximum flue length is 8.5m <sup>(1)</sup> and the maximum number of 90° bends is 3 <sup>(2)</sup>.


(1) For every 90 ° bend, the overall flue length **MUST** be reduced by 1m.

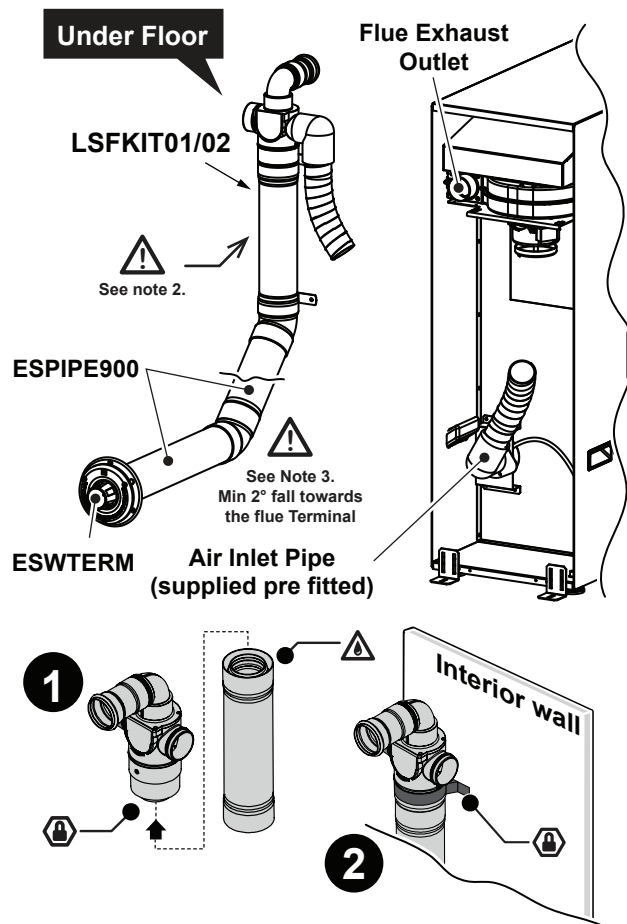
(2) The 90° bend of the flue transition piece is **NOT** counted as a 90 ° bend.



**Note 2.** When using LSFKIT01 the aluminium transition extension pipe **MUST** be fitted at this point.



**Note 3.**  Where stipulated a Minimum 2° fall towards the terminal is required to ensure correct drainage of condensation formed in the discharge flue.




With heater engine installed into the support framing complete the following:


1. Assemble the components of the Flue Adaptation Kit (LSFKIT01/02), by joining the flue transition and the transition extension pipe components together.

The transition extension pipe connections are the same at each end, so either end may be connected.



All flue installations that use LSFKIT01/02 **MUST** be fitted with Transition Extension Pipe.

 Use **ONLY** the supplied silicone based "O Ring" seal lubricant.

 **DO NOT** use petroleum based lubricants such as petroleum jelly. The use of petroleum jelly, Vaseline® or similar petroleum based lubricants will cause rapid deterioration of the 'O Ring' seals.

 The joint between the flue transition and flue transition extension **MUST** be secured by a pop rivet or screw through the outer Co-axial pipes to prevent accidental or erroneous dislodgement.

The assembled LSFKIT01/02 is to be clipped to the structure using the stand off clips supplied or other suitable method.

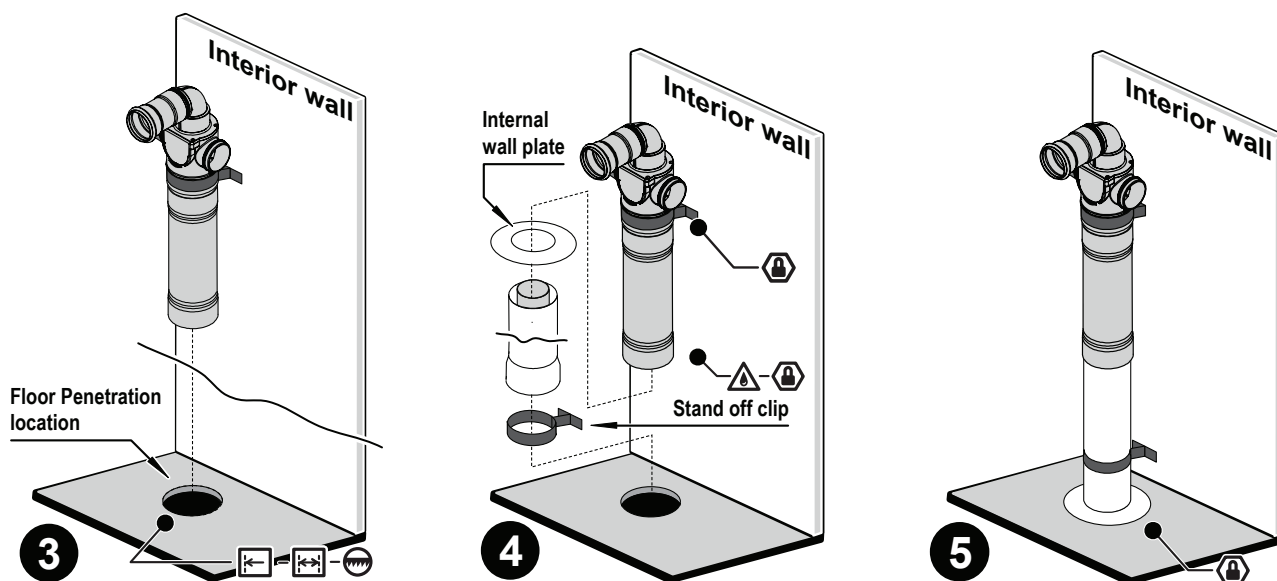
LSFKIT01/02 components and ESPIPE900 **DO NOT** require cutting to be joined.

2. Make the heater exhaust and combustion air hose connections in accordance with "Exhaust & Air Connections" on page 15.

 Then secure LSFKIT01/02 in place with the provided wall bracket.



Air hose and heater exhaust connections **MUST** be made and checked in accordance with "Exhaust & Air Connections" on page 15. Improper connections may result in dangerous situations, for example, the dispersion of combustion products in the space being heated.



3. Create the floor penetration(s).

Mark off the penetration point through the floor and cut the hole through the floor at this point. Ensure the hole edges are smooth. The minimum diameter required for a floor penetration is 80mm to non-combustible surfaces such as brick and 100mm to combustible surfaces such as plaster, floor boards, etc.

4. Pass ESPIPE900 through the internal wall plate and through the floor penetration. Then lift ESPIPE900 up and secure it to LSFKIT01/02 in accordance with "Connecting ESPIPE900" on page 16.

5. Secure internal wall plate in place to seal the floor.

6. Fit combinations of ESPIPE900 and ESBEND <sup>(1) (2)</sup> to LSFKIT01/02 as required to reach the termination point in accordance with "Connecting ESPIPE900" on page 16 and "Connecting ESBEND" on page 18.

Allow for a continuous 2° fall from the heater connection point to the wall terminal.

7. Create the wall terminal in accordance with "Wall Terminal Assembly" on page 18.

8. Refer to Installation Manual provided with appliance to finalise installation and commissioning of the heater.

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With our policy of continuous improvement, we reserve the right to change, or discontinue at any time, specifications or designs without notice.