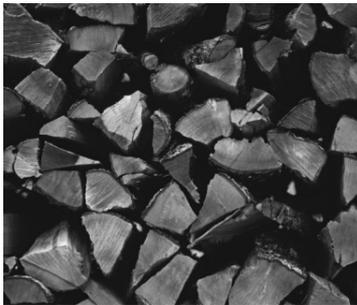


ECO Flue Kits Installation Manual



metrofires

ECO Flue Kits

Freestanding Flue Systems

ECO Flue Kit Installation Options	2
ECO Flue Kit / ECO Option Kit	3
ECO Flue Kit Installation	4-5
ECO Option Kit Installation.....	5-6

Insert Flue Systems

ECO Insert Kit Installation.....	7
ECO Flue Kit Minimum Heights	8



19 Oropuriri Road // New Plymouth 4312
info@metrofires.co.nz // www.metrofires.co.nz

⚠ WARNING! Important Information

- Metro ECO Flue Systems must be installed to allow unrestricted air supply from either the ceiling cavity for an ECO Flue Kit, or above the roof line if the ECO Flue & ECO Option Kits are both installed. Please read these instructions and familiarise yourself with the installation options and various components of the ECO Flue Systems
- Metro ECO Flue Systems have been tested to and complies with AS/NZS 2918 Appendix 'B' and 'F'. Metro ECO Flue Systems shall be installed in accordance with AS/NZS 2918 and the appropriate requirements of the relevant building codes
- The ECO Flue Kit must be installed into a 'vented' flat ceiling cavity, or have an ECO Option Kit added to the flue system to provide an external air supply
- Any modification to this flue system that has not been approved in writing by the testing authority is considered to be in breach of all approvals granted

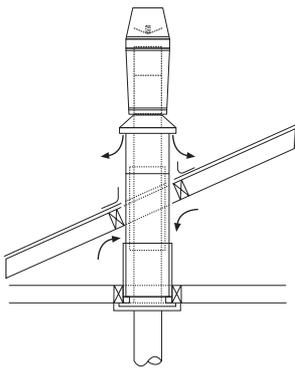
⚠ CAUTION! Important Information

- Mixing of flue system components from different sources or modifying the dimensional specification or components may result in hazardous conditions. Where such action is considered, the manufacturer should be consulted
- Prior to installing the assembled flue pipe into a masonry chimney cavity, take careful note to ensure there are no overhead power lines in close proximity.

ECO Flue Systems Installation Options

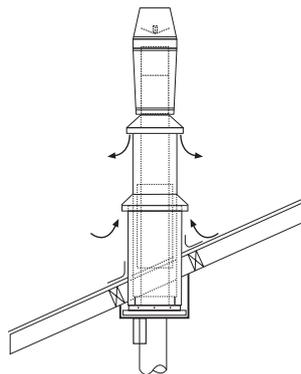
Detailed below are the more common installation methods for installing Metro ECO Flue Systems. To ensure a safe and efficient installation, this flue system must be installed as detailed below by either a registered installer, or someone competent in installing solid fuel appliances.

Single Storey Installations



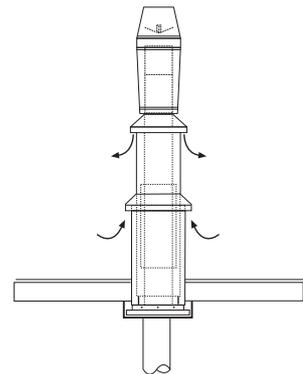
Flat Cavity Ceiling

ECO Flue Kit only required as air is drawn into the flue system direct from the ceiling cavity.



Sloping Ceiling

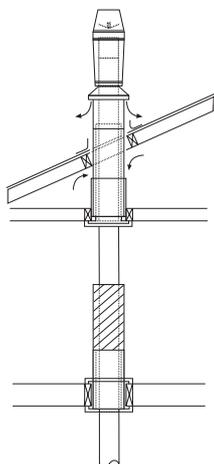
Both the ECO Flue Kit and ECO Option Kit are required to enable air to be drawn from outside the home.



Flat Ceiling/Roof

Requires both ECO Flue Kit and ECO Option Kit as per sloping ceiling unless a vented ceiling cavity exists.

Two Storey Installations



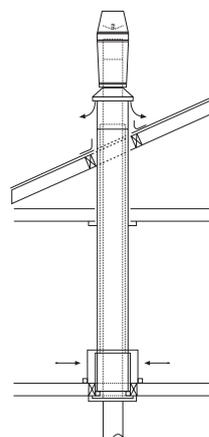
2nd Floor - Exposed Flue pipe

Requires an ECO Flue Kit only with additional lengths of flue pipe.

Additional components below are not supplied by Metrofires but are also required for this installation*

- A floor penetration kit
- 1x 1200mm long mesh/screen

*In accordance with AS/NZS 2918



2nd Floor - Enclosed Flue pipe

Requires an ECO Flue Kit only with additional lengths of flue pipe.

Additional components below are not supplied by Metrofires but are also required for this installation*

- 200mm & 250mm inner/outer combination liners.
- 2nd floor vent cover and an additional ceiling plate with a 250mm diameter hole

*In accordance with AS/NZS 2918

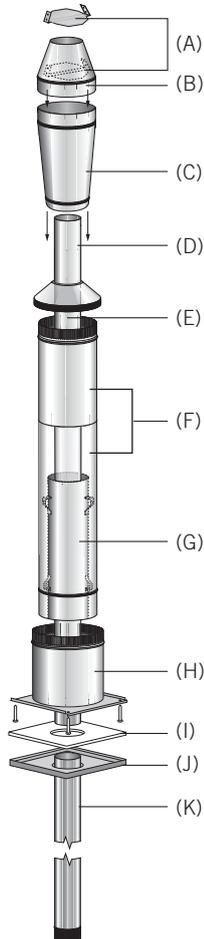
ECO Flue Kit & ECO Option Kit Component Checklist

ECO Flue Kit

The ECO Flue Kit is designed for installation into a building that has a 'ceiling cavity' with unrestricted air supply as is the case with conventional homes. A vented ceiling cavity is required as the ECO Flue Kit draws its cooling air from within the ceiling cavity.

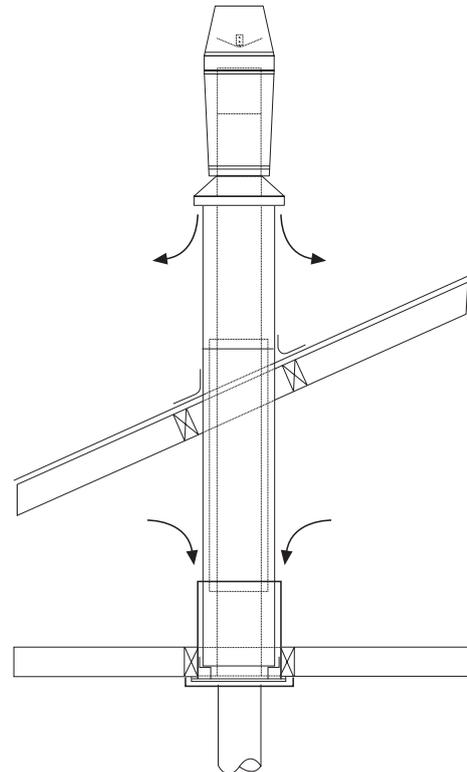
ECO Flue Kit components

- (A) 1 x Stainless steel weather butterfly
- (B) 1 x Stainless steel ECO Cowl top
- (C) 1 x 420mm x 240mm diameter stainless steel ECO Cowl housing
- (D) 1 x 480mm long stainless steel flue pipe extension with flashing cone
- (E) 1 x 1200mm x 150mm diameter stainless steel flue pipe
- (F) 1 x 1200mm x 250mm diameter galvanised outer casing with 750mm long slip section
- (G) 1 x 800mm x 200mm diameter galvanised inner casing
- (H) 1 x Galvanised mounting plate with brackets and 300mm long x 300mm diameter casing attached
- (I) 1 x insulation gasket
- (J) 1 x black clip-on ceiling plate
- (K) 2 x 1200mm lengths of 150mm diameter stainless steel flue pipe painted metallic black
- (+) 1 x Plastic bag of assembly bolts



Metro offers both the ECO Flue Kit, which is designed to be installed on its own and the ECO Option Kit which is designed to be installed in conjunction with the ECO Flue Kit. The specific application for each of these two options is detailed below with installation instructions overleaf.

ECO Flue Kit assembled

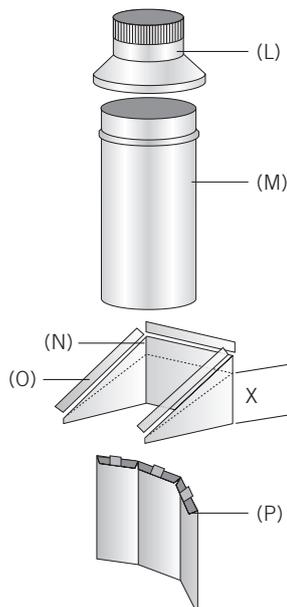


ECO Option Kit

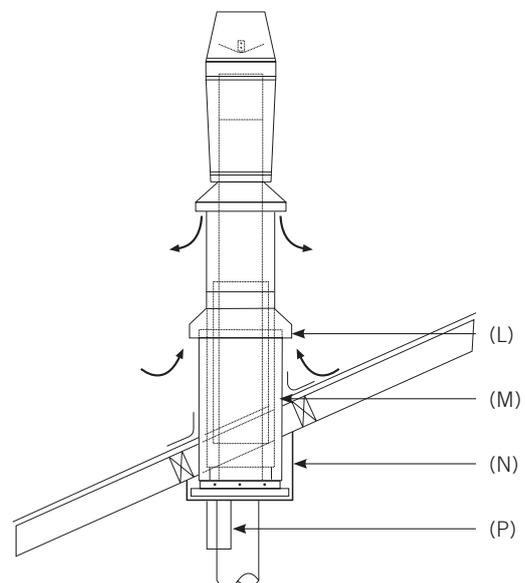
The ECO Option Kit is designed to be 'added to' the ECO Flue Kit for installations that do not have a vented ceiling cavity and require the flue systems cooling air to be drawn in from above the roofline (outside the building).

ECO Option Kit components

- (L) External intake flashing cone
- (M) 1x 780mm x 300mm diameter outer liner extension
- (N) Drop box infill panel
- (O) Drop box edge covers
- (P) Ceiling plate mounted heat shield



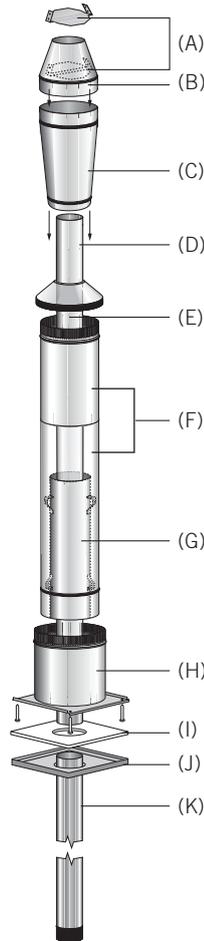
ECO Flue Kit & ECO Option Kit assembled



ECO Flue Kit Installation Instructions

ECO Flue Kit components

- (A) 1 x Stainless steel weather butterfly
- (B) 1 x Stainless steel ECO Cowl top
- (C) 1 x 420mm x 240mm diameter stainless steel ECO Cowl housing
- (D) 1 x 480mm long stainless steel flue pipe extension with flashing cone
- (E) 1 x 1200mm x 150mm diameter stainless steel flue pipe
- (F) 1 x 1200mm x 250mm diameter galvanised outer casing with 750mm long slip section
- (G) 1 x 800mm x 200mm diameter galvanised inner casing
- (H) 1 x Galvanised mounting plate with brackets and 300mm long x 300mm diameter casing attached
- (I) 1 x insulation gasket
- (J) 1 x black clip-on ceiling plate
- (K) 2 x 1200mm lengths of 150mm diameter stainless steel flue pipe painted metallic black
- (+) 1 x Plastic bag of assembly bolts



Having positioned the wood fire in the desired location, check to ensure the wood fire and floor protector have adequate clearances/projections, and that the flue system is clear of ceiling joists, trusses etc. (refer to the Wood Fire Installation and Operation Manual).

Note: ECO Flue Systems use stainless steel brackets enabling movement due to expansion, while centralising flue pipes and casings. These brackets may require resetting after transport, if they are too loose or tight during assembly;

1. At a point directly above the wood fires flue centre, cut a 300mm square hole through the ceiling and a 250mm diameter hole through the outer roof lining providing it is non combustible (iron, tiles etc) otherwise cut a 250mm square hole through the roof lining. 'Trim out' the top face of the ceiling using timber nog's creating a square aperture measuring 300mm internally.

Note: Certain flashing manufacturers detail specific size and shape of the aperture to be cut for their flashing, which must be adhered to.

2. Fit mounting plate (H) into the ceiling by sliding the 300mm diameter casing attached to the mounting plate up into the ceiling until the two upturned edges rest against the under side of the ceiling. Square the mounting plate to the wall and secure it in location with the four coach screws supplied, into the nogs just fitted. To further improve the rigidity of the installation, nail through the 300mm diameter casing at 4 points into the timber nogs.
3. Moving onto the roof with the 1200mm x 250mm diameter galvanised outer casing (F) with 750mm long slip section fitted, lower the slotted end of this casing (F) into the roof cavity until it locates inside the

brackets on the top face of the mounting plate. Return back into the room and using the 3 x 6mm bolts and washers supplied, securely bolt the base of the 250mm diameter outer casing into the rivet nuts pre-fitted into the mounting plate brackets.

Note: As there are three bolts, the outer casing can be rotated to ensure the lock-form seam is sheltered as much as possible from the prevailing weather direction.

4. Return back onto the roof and using a suitable flashing, weather proof the joint where the 250mm diameter outer casing penetrates the roof. Ensure the flashing used is compatible with the roofing material, and if fitting instructions are supplied with the flashing, these must be adhered to. Prior to fitting the flashing, by fitting stays securing the outer casing (F) to the roof material will further improve rigidity of the installation.
5. While on the roof fit the 800mm x 200mm diameter galvanised inner casing (G).

Note: This inner casing has a top and bottom, the bottom end has both internal and external brackets while the top end has external only. Fit the bottom end of this inner casing (G) down into the 250mm diameter outer casing (F) until the casings lower external brackets locate on the internal swadge of the outer casing.

⚠ WARNING! Important Information

- If there is timber or combustibles within 25mm of the outer casing (F) in a zone 'above the top end of the inner casing (G) and below the roof line' an additional 200mm inner casing must be fitted.
6. Moving back into the home, remove the plastic film from the ceiling plate (J) and place it black side down over the flue outlet of the wood fire. Using a high temperature black aerosol, spray around the hole in the centre of the white insulation gasket, and when dry lay this centrally on the ceiling plate.
 7. Unwrap the two painted flue pipes (K) taking care not to mark the painted surface (use a metallic black Pioneer aerosol for touch ups) and proceed to assemble the three flue pipe sections as described below;
 - Smear an adequate amount of Pioneer fire cement inside the 'top/un-crimped' end of both painted flue pipes (K).
 - Taking the unpainted stainless steel flue pipe (E) insert its top 'un-crimped' end up through the mounting plate (H) and up into the casings until its bottom 'crimped' end is 1250mm above the top of the wood fire.
 - Take one of the two painted stainless steel flue pipes (K) and fit its lower 'crimped' end into the Metro wood fires flue outlet. Now lower the unpainted stainless steel flue (E) which is protruding down from the mounting plate so that it fully connects into the lower painted flue pipe (K). Ensure these two flue pipe sections are firmly connected and aligned, then secure with three stainless steel or monel rivets spaced equally around the joint.
 - Lift the two assembled flue pipe sections so the bottom of the lower section is 1250mm above the top of the wood fire, and repeat the above procedure to fit the remaining painted flue pipe (K).

ECO Flue Kit Installation Instructions - continued

- With all three flue pipe sections securely joined, lift this three section assembly out of the wood fires flue outlet, then move it slightly off centre and lower the flue pipe assembly 'on top' of the wood fires flue outlet. Smear an adequate amount of Pioneer fire cement inside the wood fires flue outlet (move the flue pipe assembly as required to ensure the entire flue outlet is coated in fire cement) then lower the flue pipe back into the wood fires flue outlet, with the vertical flue seam facing the rear.
- 8. Taking the ceiling plate (J) with insulation gasket (I) fitted which are laying on top of the wood fire, with the flue pipe passing through them. Carefully lift them up the flue pipe trying not to mark the painted flue, and clip the ceiling plate onto the mounting plate.
- 9. While still on the ground, assemble the ECO Cowl as follows;
 - Take the stainless steel weather butterfly (A) so the angled sections are facing up.
 - With both arms and angled sections of the stainless steel weather butterfly (A) facing up, fit it into the stainless steel ECO Cowl top (B), and secure in position through the holes provided with stainless steel rivets.

NOTE – Once fitted the weather butterfly will be slightly angled within the cowl housing.

- Fit the ECO Cowl top (B) into the ECO Cowl housing (C). Push both sections together until the swage ring on (B) rests completely on the open end of the cowl housing (C). Drill through the two pre-punched holes in the ECO Cowl housing and secure these two sections together with stainless steel rivets.
- The removable section of the ECO Cowl is now fully assembled.
10. Making your way back onto the roof, slide the 750mm long slip section of the outer casing (F) until the top of this slip section is 'level' (+0mm -10mm) with the top of the 150mm stainless steel flue pipe, then secure this slip section of the outer casing with rivets.
 11. Fit the 480mm long flue pipe extension/flashing cone (D), with the flashing cone at the bottom, fit its short flue section inside the top of the already installed 150mm diameter flue pipe. Ensure the three brackets extended below the flashing cone fit 'outside' the outer casing slip section. Drill through the pre-punched hole in all three brackets into the outer casing slip and secure with rivets.
 12. Taking the removable section of the ECO Cowl, position it over the top of the stainless steel flue pipe extension, and slide it down fully. This removable section does not require riveting and enables easy removal for future flue cleaning.

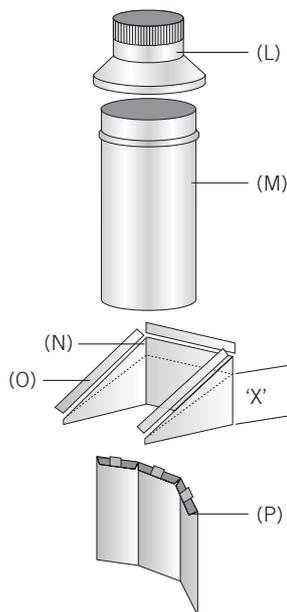
Installation Instructions with the ECO Option Kit

ECO Option Kit

The ECO Option Kit is designed to be 'added to' the ECO Flue Kit for installations that do not have a vented ceiling cavity and require the flue systems cooling air to be drawn in from above the roofline (outside the building).

ECO Option Kit components

- (L) External intake flashing cone
- (M) 1x 780mm x 300mm diameter outer liner extension
- (N) Drop box infill panel
- (O) Drop box edge covers
- (P) Ceiling plate mounted heat shield



Dependent on whether you are installing into a flat roof/ ceiling or sloping ceiling situation as detailed on page 2, will determine if you require all the components of the ECO Option Kit. If installing into a flat ceiling/roof you will not require the drop box or drop box edge covers.

1. Slip the 300mm outer extension liner supplied with the ECO Option Kit over the 300mm outer liner 'stub' attached to the mounting plate (H) supplied with the ECO Flue Kit. Permanently secure these two components together by drilling four evenly spaced holes around the circumference and rivet with stainless steel rivets.

2. At a point directly above the wood fires flue centre, cut a 300mm square hole through the ceiling and a 300mm diameter hole through the outer roof lining providing it is non combustible (iron, tiles etc) otherwise cut a 300mm square hole through the roof lining. 'Trim out' the top face of the ceiling using timber nog's creating a square aperture measuring 300mm internally.

Note: Certain flashing manufacturers detail specific size and shape of the aperture to be cut for their flashing, which must be adhered to.

3. Fit mounting plate (H) into the ceiling by sliding the 300mm diameter casing attached to the mounting plate up into the ceiling until the two upturned edges rest against the under side of the ceiling. Square the mounting plate to the wall and secure it in location with the four coach screws supplied, into the nogs just fitted. To further improve the rigidity of the installation, nail through the 300mm diameter casing at 4 points into the timber nogs.
- **If the ceiling is angled**, it is critical that the mounting plate is correctly positioned so the drop box in-fill panel can be fitted. Ensure the two 'upturned folds' on the mounting plate are aligned parallel to the roof joists, i.e pointing towards the apex.

You will only be able to use two of the securing holes provided in the mounting plate. To give additional support to the installation nail through the 300mm diameter outer liner into the timber framing, access is through the 200mm hole in the base of the mounting plate.

4. Moving onto the roof with the 1200mm x 250mm diameter galvanised outer casing (F) with 750mm long slip section fitted, lower the slotted end of this casing (F) into the roof cavity until it locates inside the brackets on the top face of the mounting plate. Return back into the room and using the 3 x 6mm bolts and washers supplied, securely

Installation Instructions with ECO Option Kit - continued

bolt the base of the 250mm diameter outer casing into the rivet nuts pre-fitted into the mounting plate brackets. Return back onto the roof and using a suitable flashing, weather proof the joint where the 300mm diameter outer casing penetrates the roof. Ensure the flashing used is compatible with the roofing material, and if fitting instructions are supplied with the flashing, these must be adhered to.

Prior to fitting the flashing, by fitting brackets securing the outer casing (F) to the roof material will further improve rigidity of the installation.

Note: As there are three bolts, the outer casing can be rotated to ensure the lock-form seam is sheltered as much as possible from the prevailing weather direction.

5. Fit the external 'intake' flashing cone supplied with the Option Kit as illustrated, and secure it to the top of the 300mm diameter extension liner through the 4 x brackets which protrude below the base of the external 'intake' flashing cone.
6. While on the roof fit the 800mm x 200mm diameter galvanised inner casing (G).

Note: This inner casing has a top and bottom, the bottom end has both internal and external brackets while the top end has external only. Fit the bottom end of this inner casing (G) down into the 250mm diameter outer casing (F) until the casings lower external brackets locate on the internal swadge of the outer casing.

WARNING! Important Information

- If there is timber or combustibles within 25mm of the outer casing (F) in a zone 'above the top end of the inner casing (G) and below the roof line' an additional 200mm inner casing must be fitted.

7. Moving back into the home, remove the plastic film from the ceiling plate (J) and place it black side down over the flue outlet of the wood fire. Using a high temperature black aerosol, spray around the hole in the centre of the white insulation gasket, and when dry lay this centrally on the ceiling plate.
8. Unwrap the two painted flue pipes (K) taking care not to mark the painted surface (use a metallic black Pioneer aerosol for touch ups) and proceed to assemble the three flue pipe sections as described below;
 - Smear an adequate amount of Pioneer fire cement inside the 'top/un-crimped' end of both painted flue pipes (K).
 - Taking the unpainted stainless steel flue pipe (E) insert its top 'un-crimped' end up through the mounting plate (H) and up into the casings until its bottom 'crimped' end is 1250mm above the top of the wood fire.
 - Take one of the two painted stainless steel flue pipes (K) and fit its lower 'crimped' end into the Metro wood fires flue outlet. Now lower the unpainted stainless steel flue (E) which is protruding down from the mounting plate so that it fully connects into the lower painted flue pipe (K). Ensure these two flue pipe sections are firmly connected and aligned, then secure with three stainless steel or monel rivets spaced equally around the joint.

- Lift the two assembled flue pipe sections so the bottom of the lower section is 1250mm above the top of the wood fire, and repeat the above procedure to fit the remaining painted flue pipe (K).
 - With all three flue pipe sections securely joined, lift this three section assembly out of the wood fires flue outlet, then move it slightly off centre and lower the flue pipe assembly 'on top' of the wood fires flue outlet. Smear an adequate amount of Pioneer fire cement inside the wood fires flue outlet (move the flue pipe assembly as required to ensure the entire flue outlet is coated in fire cement) then lower the flue pipe back into the wood fires flue outlet, with the vertical flue seam facing the rear.
9. Taking the ceiling plate (J) with insulation gasket (I) fitted which are laying on top of the wood fire, with the flue pipe passing through them. Carefully lift them up the flue pipe trying not to mark the painted flue, and clip the ceiling plate onto the mounting plate.

10. While still on the ground, assemble the ECO Cowl as follows;

- Take the stainless steel weather butterfly (A) so the angled sections are facing up.
- With both arms and angled sections of the stainless steel weather butterfly (A) facing up, fit it into the stainless steel ECO Cowl top (B), and secure in position through the holes provided with stainless steel rivets.

NOTE – Once fitted the weather butterfly will be slightly angled within the cowl housing.

- Fit the ECO Cowl top (B) into the ECO Cowl housing (C). Push both sections together until the swage ring on (B) rests completely on the open end of the cowl housing (C). Drill through the two pre-punched holes in the ECO Cowl housing and secure these two sections together with stainless steel rivets.

The removable section of the ECO Cowl is now fully assembled.

11. Measure dimension 'X' as shown on page 3 and transfer this measurement to the drop box in-fill panel as shown.
 - Cut the in-fill panel to the correct size and fit the 3 x edge covers.

Note: The side edge covers will require trimming on the ends to suit the angle of the ceiling.
 - Secure the in-fill panel in position by fitting three rivets to each side through the holes provided.
12. Back in the room, lift the ceiling plate then attach the 'ceiling plate mounted heat shield' to the lower face of the ceiling plate so that it acts as a deflector shield between the flue pipe and the lower side of the ceiling (refer assembled diagram on page 3). This heat shield has three tabs on its top face enabling it to be 'clipped' into the 160mm diameter hole in the ceiling plate. Attach the ceiling plate by clipping it onto the mount plate and the installation is now complete.

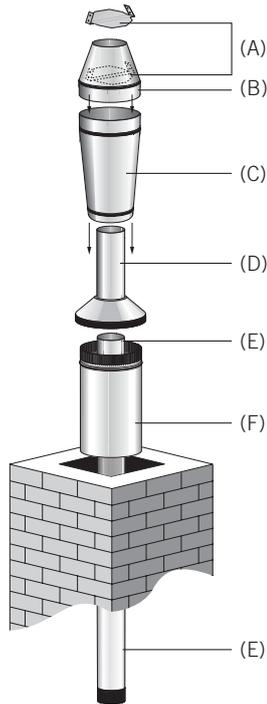
ECO Insert Kit Installation Instructions & Component Checklist

Please read these instructions fully prior to installation of the ECO Insert Kit and familiarise yourself with all the various components illustrated right and listed below.

Note: Rivets, fire cement and chimney cap or flashing plate are not included as they are supplied by the installer.

ECO Insert Kit components

- (A) 1 x Stainless steel weather butterfly
- (B) 1 x Stainless steel ECO Cowl top
- (C) 1 x 420mm x 240mm diameter stainless steel ECO Cowl housing
- (D) 1 x 480mm long stainless steel flue pipe extension with flashing cone
- (E) 3 x 1200mm x 150mm diameter stainless steel flue pipe
- (F) 1 x 600mm x 250mm diameter galvanised outer casing



This flue kit has been manufactured and complies with AS/NZS 2918. To ensure a safe and efficient installation, this flue kit must be installed as detailed below by either a registered installer, or someone competent in installing solid fuel appliances.

1. Check the masonry chimney for structural soundness and make any repairs that are necessary.
Note: Most councils require the masonry chimney to be inspected prior to installation. The masonry chimney cavity must also be swept prior to installation.
2. Once the fireplace insert has been installed correctly as per the manufacturers instructions, look directly down the chimney to ensure the wood fire flue spigot is in line with the masonry chimney. (A torch will be required).
3. If you cannot see the flue spigot, a flue pipe offset will be required. If so, install the flue pipe offset so the top of it can be clearly seen from the top of the masonry chimney.
4. If an offset is required, an adjustable telescopic type is recommended. Measure the amount of offset required and adjust the telescopic offset to suit, after smearing an adequate amount of Pioneer fire cement onto the slip section of the offset to ensure a good seal, then rivet the offset in three locations around its circumference. (If the offset is used in its fully compressed form, it will be necessary to modify the end of the female slip section otherwise it will restrict the internal diameter) Apply a liberal amount of Pioneer fire cement into the flue outlet of the fireplace insert, and fit the lower crimped end of the offset into position inside the flue outlet, and bolt into position.

Note: In some installations where it is not possible to fit offsets or rigid flue pipe due to the shape of the masonry chimney cavity, 'Flexi flue' may be used.

5. Secure the flue pipes together and ensure the flue seams are in line. Flue pipe joints must be fully compressed with a considerable amount of fire cement to ensure a good seal, and then riveted together at three even points around the flue join. Prior to installing the assembled flue pipe into the masonry chimney cavity, take careful note to ensure there are no overhead power lines in close proximity.
6. Lower the flue pipe into the masonry chimney, with the crimped end fitting into the fireplace insert flue outlet/offset, and securely attach with three rivets (offset/bend must be riveted to the flue pipe). For installations where extra lengths of flue pipe are required, or when the weather is poor, it will be easier to assemble the flue pipe lengths as they are lowered into the masonry chimney.
7. Secure the outer casing to the masonry chimney with suitable fasteners. A masonry chimney flashing plate will be required to weatherproof/seal the masonry chimney top. *Note: The top of the outer casing must be 'level' (+0mm -10mm) with the top of the 150mm stainless steel flue pipe.*
8. Assemble the ECO Cowl as follows;
 - Take the stainless steel weather butterfly (A) so the angled sections are facing up.
 - With both arms and angled sections of the stainless steel weather butterfly (A) facing up, fit it into the stainless steel ECO Cowl top (B), and secure in position through the holes provided with stainless steel rivets.
NOTE – Once fitted the weather butterfly will be slightly angled within the cowl housing.
 - Fit the ECO Cowl top (B) into the ECO Cowl housing (C). Push both sections together until the swage ring on (B) rests completely on the open end of the cowl housing (C). Drill through the two pre-punched holes in the ECO Cowl housing and secure these two sections together with stainless steel rivets.

The removable section of the ECO Cowl is now fully assembled.
9. Making your way back onto the roof, fit the 480mm long flue pipe extension/flashing cone (D), with the flashing cone at the bottom. Fit the short flue section inside the top of the already installed 150mm diameter flue pipe. Ensure the three brackets extended below the flashing cone fit 'outside' the outer casing slip section. Drill through the pre-punched hole in all three brackets into the outer casing slip and secure with rivets.
10. Taking the 'removable section of the ECO Cowl' assembled in section (8) above, position it over the top of the stainless steel flue pipe extension, and slide it down fully. This removable section does not require riveting and therefore enables easy removal for future flue cleaning.

Minimum Heights for all Metro Flue Systems In compliance with AS/NZS 2918

The Metro ECO Flue Systems comply with AS/NZS 2918 and its 4.6 metre height requirement (4.6 metre minimum from the top of the floor protector to the top of the flue pipe). However as external structures and the proximity of other buildings will differ for every installation, some situations will require additional flue height to comply with the standard. Refer to

Diagrams 3 and 4 below. (All measurements in mm).

Note: AS/NZS 2918 Section 4, details flue system installation requirements in full.

Diagram 3

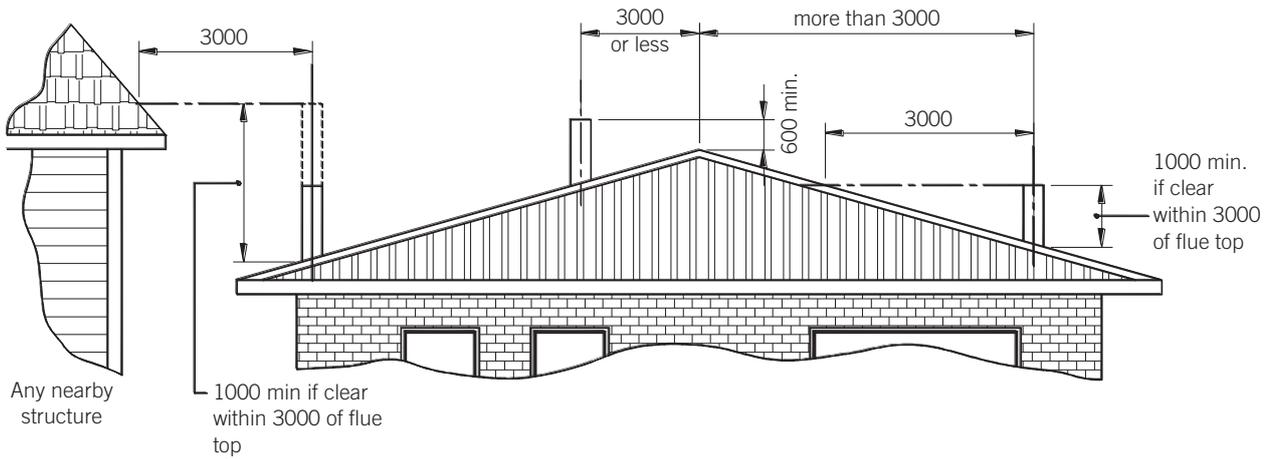


Diagram 4

