



# SmartVent

better air = better health

## HOME VENTILATION SYSTEMS



## Product Guide

The experts' guide to specifying a healthier home



## Leading Brands

As a leading supplier to the Australian and New Zealand Electrical and HVAC industry for over 30 years, Simx is committed to the development of high quality products with features demanded by the market.

Simx has evolved from its beginnings in security products to healthy home solutions and commercial ventilation products and is even more committed to innovation and excellence than ever before. Trusted by electricians and HVAC industry professionals, our product range spans many markets including domestic, commercial and HVAC, with market leading brands such as Manrose, Vent-Axia, Simx, Alaskon and SmartVent denoting quality, service and reliability.

## SmartVent Home Ventilation systems are recommended and installed by qualified Electrical and HVAC contractors across the country.

SmartVent is proud to be a member of the CCCA (Climate Control Companies Association). The purpose of the organisation is to promote high standards of business competence and industry conduct for companies engaged in climate-controlled environments.

SmartVent is a proud partner with Future Proof building working with consumer to help homeowners create a quiet, safe and comfortable home, reducing energy costs and using sustainable products.

Market feedback from these groups and consumers, along with ongoing investment in research and development has led to SmartVent having the most flexible, future-proofed home ventilation systems in the New Zealand market.



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**BRANZ Bulletin 508. February 2009.**

- 1.0.1 Daily household activities such as cooking, washing and even breathing release moisture and pollutants into the air. Air needs to be regularly refreshed to maintain its purity. Houses of the past were cold & draughty, but provided adequate ventilation through leakage around window and doors.
- 1.0.2 Modern homes are more insulated and airtight. While this makes them more energy efficient it also results in reduced airflow in and out. If polluted air and moisture remain trapped inside, indoor air quality is reduced. New Zealand has a comparatively high rate of asthma and moisture can cause both cosmetic & structural damage to the building.
- 1.0.3 NZ Building Code clause G4 Ventilation requires that 'spaces within buildings shall have a means of ventilation with outdoor air that will provide an adequate number of air changes to maintain air purity'.
- 1.0.4 The minimum number of air changes per hour (ACH) deemed to be adequate for living areas is 0.35, which means approximately one-third of the total volume of air must be changed every hour.
- 1.0.5 Opening windows provides passive ventilation (acceptable under G4), but heat can be lost and security can be compromised.

**“The average NZ family produces over 100 litres\* per week of moisture while carrying out normal everyday activities”**

*\* Source: EECA (Energy Efficiency and Conservation Authority)*

### **Over 30 years' experience in the ventilation market**

Simx, the manufacturers and distributors of SmartVent Home Ventilation systems, have been in operation for over 30 years in the ventilation industry. We are the choice of the professional trade market. 8 out of 10 electricians recommend SmartVent.

### **Unique product offering with NZ first technology**

Only SmartVent has temperature and humidity sensing systems, as well as traditional and economy solutions to control indoor air quality, control condensation and protect your investment.

### **Acoustic insulated duct for quieter performance**

Our unique acoustic insulated duct lessens air noise travelling down the duct and entering the room the outlets are placed in.

### **F7 class air filtration**

The SmartVent systems use F7 class filters which capture on average up to 90% of 0.4 micron particles over the lifetime of the filter.

### **SmartVent grows with the family**

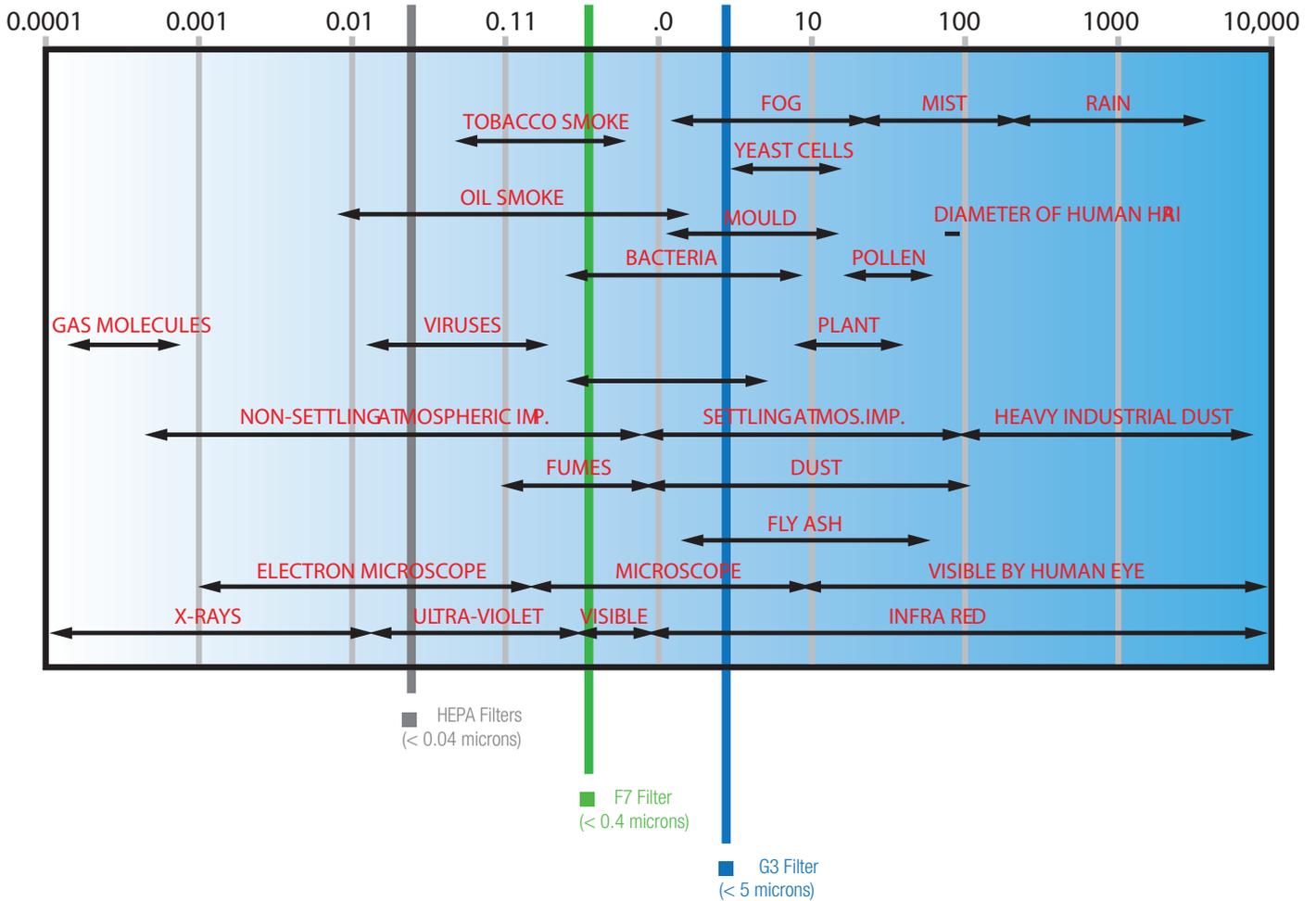
All SmartVent systems can be easily upgraded as a family grows, with smart affordable features. With most SmartVent systems consumers can start with a standard system and add upgrades at a later stage.

### **Five year warranty**

Simx source only the highest quality componentry and as such all SmartVent systems are supported by a 5 year warranty.

All SmartVent systems feature high grade F7 filters that capture up to 90% of 0.4 micron particles such as fine pollens, dusts and allergen from the air making the air cleaner to breathe. A high quality HEPA filter option is a must for homes with asthma and allergy sufferers.

## Filter Classification of Common Air Contaminants *(shown in micrometres)*



# better air = better health

The SmartVent family is comprised of five unique products designed to improve the air quality and comfort in your home.

## Positive Pressure Systems



## Energy Recovery Systems



Feature	Positive Pressure			Energy Recovery	
	Lite	Positive	Evolve2	Balance	Synergy2
Full system control by owner	☑	☑	☑	☑	☑
Backward curved motor	☒	☒	☒	☑	☒
Able to be switched off by users	☒	☑	☑	☑	☑
Expandable	☑	☑	☑	☑	☑
Low to no-noise operation	☑	☑	☑	☑	☑
Fresh filtered air from roof cavity	☑	☑	☑	☒	☑
Fresh filtered air from outside	☒	☒	☒	☑	☑
Seasonal upgrades available	☒	☑	☑	☒	☑
Fresh filtered air from roof cavity (+ <i>Flexibility</i> upgrade)	☒	☒	☒	☒	☑
Fresh filtered air from outside (+ <i>Cool</i> upgrade)	☒	☑	☑	☒	☑
Heat transfer from lounge to bedrooms (+ <i>Heat</i> upgrade)	☒	☑	☑	☒	☑
Core Bypass	☒	☒	☒	☑	☑*
Tempering Heater (upgrade)	☒	☑	☑	☒	☑
Temperature and moisture	☒	☒	☑	☒	☑

\* Selected models



### Overview

SmartVent Lite is an economical ventilation system that monitors temperature conditions to ensure that you are protecting your home or rental property with quality air always circulating.

As a positive pressure system, SmartVent Lite draws in fresher air from the roof cavity and filters it before distributing the clean air into, and around, your home via a network of ceiling diffusers. The air movement created forces the moist, stale air that causes condensation, mould and mildew out of the building.

### SmartVent Lite Range

#### **Home ventilation system best suited for rental properties**

SV01L - 1 system outlet (expandable to 3 max.) for homes up to 80m<sup>2</sup>

SV02L - 2 system outlets (expandable to 3 max.) for homes up to 80m<sup>2</sup>

SV04L - 4 system outlets (expandable to 6 max.) for homes up to 200m<sup>2</sup>

SV06L - 6 system outlets (expandable to 10 max.) for homes up to 400m<sup>2</sup>

Extension Kits can be used to add further system outlets up to the maximum shown above for each model.

### Seasonal Add-on Options

Upgrades not available

### Controllers

SmartVent Lite systems use proprietary sensor controls designed for New Zealand conditions.

The SmartVent Lite system consists of:

- quality German EBM fans
- high quality F7 grade filters
- wall mounted touch screen controller
- nude, insulated and acoustic insulated ducting
- ceiling mounted diffusers



*The touch screen controller is easy-to-use and once the preferred operating temperature is set, the fan speed is automatically controlled.*

*The fan speed can be manually adjusted if required.*

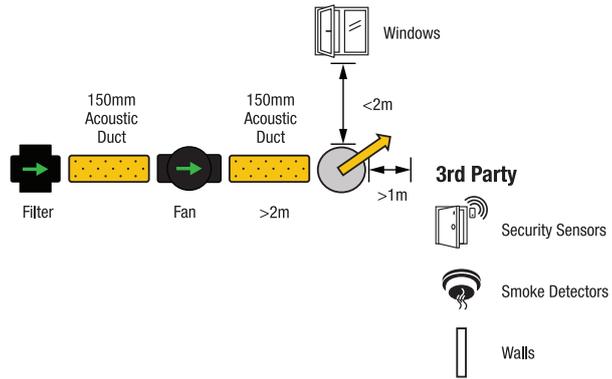
*SmartVent Lite has an added feature to allow property owners to lock the system preventing users from ON/OFF it off, while still allowing them to adjust the fan speed.*

**Protect your investment**  
Reduce moisture, mould and mildew

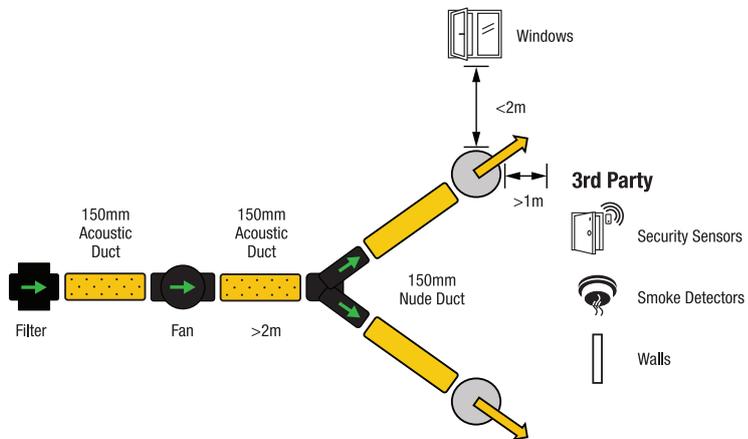




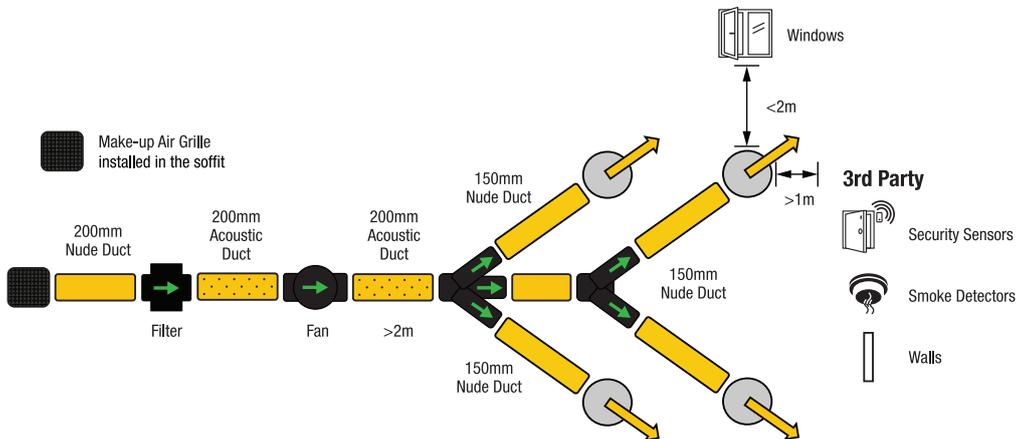
**SV01L**



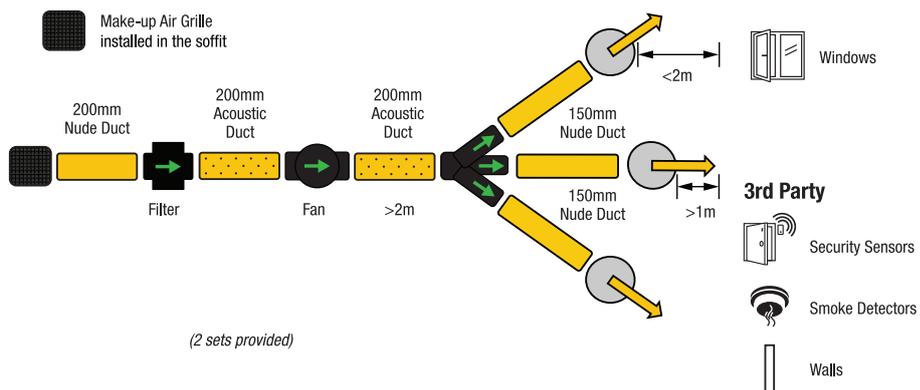
**SV02L**



**SV04L**



**SV06L**





### Overview

The SmartVent Positive system is a positive pressure system with a digital keypad wall controller that senses, via an RJ45 cable to the ceiling control box, the temperatures of the room it is located in and the roof cavity. This proven SmartVent Positive technology has been used reliably in thousands of NZ homes over many years.

SmartVent Positive is a classic ventilation system that monitors temperature conditions to ensure that you are benefiting from improved air quality always circulating around your home.

As a positive pressure system, SmartVent Positive draws in fresher air from the roof cavity and filters it before distributing the clean air into, and around, your home via a network of ceiling diffusers as required. Air from the outside can also be sourced if the seasonal add-on option is part of your SmartVent Positive ventilation system. Whichever the air source option, the air movement created forces the moist, stale air that causes condensation, mould and mildew, out of your home giving you better air for a healthier home.

### SmartVent Positive Range

**Home ventilation system suitable for most types of homes.**

- SV01P - 1 system outlet (expandable to 3 max.) for homes up to 100m<sup>2</sup>
- SV02P - 2 system outlets (expandable to 3 max.) for homes up to 100m<sup>2</sup>
- SV04P - 4 system outlets (expandable to 6 max.) for homes up to 280m<sup>2</sup>
- SV06P - 6 system outlets (expandable to 12 max.) for homes up to 560m<sup>2</sup>

Extension Kits can be used to add further system outlets up to the maximum shown above for each model.

### Seasonal Add-on Options

- + *Cool* For continued quality ventilation in warmer months supplying outdoor air when the roof cavity temperature exceeds the set maximum temperature.
- + *Heat* To draw excess heat from the heated lounge and transfer it to the bedrooms. Includes a recycle function where inside air can be recirculated if the outside air temperature is too cold to bring in as part of the primary ventilation process.
- Tempering Heater* For situations where air source temperatures are too cool.

### Controllers

SmartVent Positive systems use proprietary sensor controls designed for New Zealand conditions.

The SmartVent Positive system consists of:

- quality German EBM fans
- high quality F7 grade filters
- wall mounted keypad
- nude, insulated and acoustic insulated ducting
- ceiling mounted diffusers



*Simple to navigate and set... yet smart enough to handle a variety of smart upgrades.*

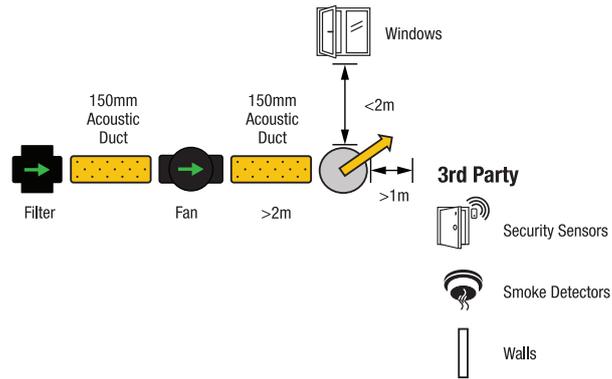
*Set your operating temperatures and the system does the rest.*

**Control condensation**  
Reduce moisture, mould and mildew

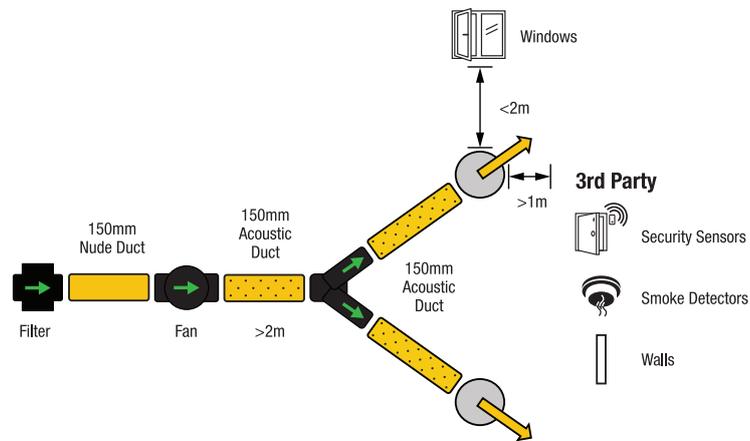




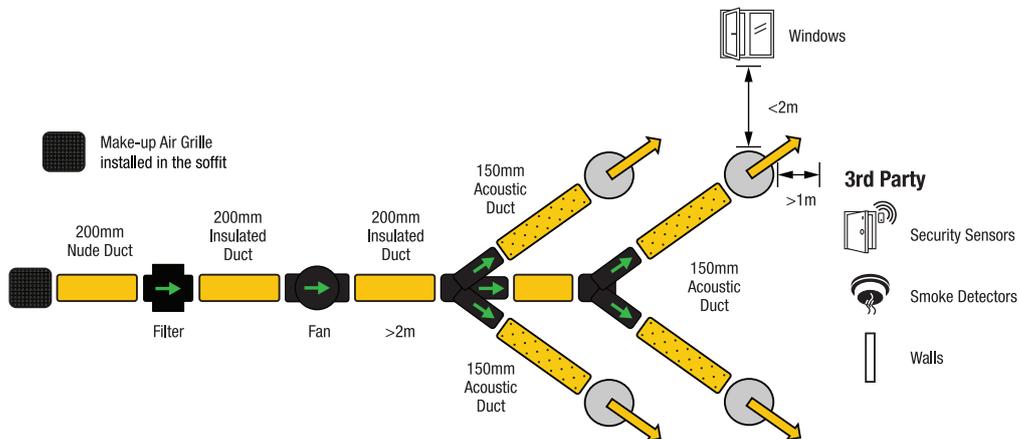
### SV01P



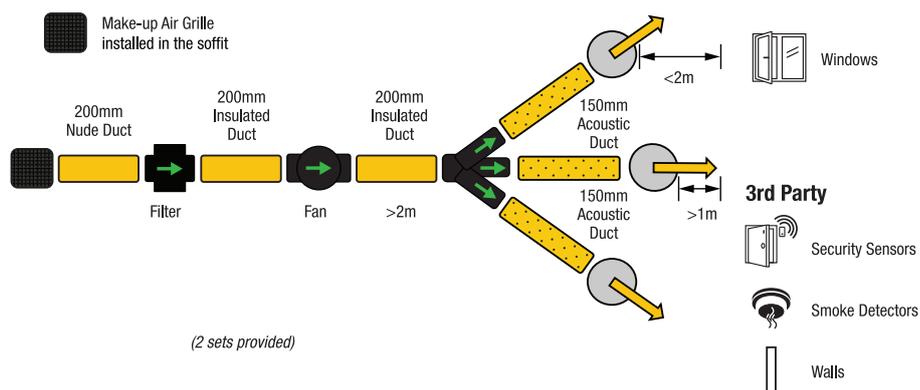
### SV02P



### SV04P



### SV06P





### Overview

The SmartVent Evolve2 system is a positive pressure system with an all-new colour touch screen wall controller, temperature and humidity sensing technology. The all-new SmartVent Evolve2 system builds on the technology developed for our market leading ventilation control system, Evolve, that incorporates temperature and humidity sensors throughout the home, in the roof cavity and outside. The new control interface is now connected via a RJ45 cable to new generation sensors and hard-wired to the control box housed in the roof cavity.

SmartVent Evolve2 is a unique ventilation system that monitors temperature and humidity conditions. This ensures that you are benefiting from the driest possible air circulating around your home.

As a positive pressure system, SmartVent Evolve2 draws in fresher, drier air from the roof cavity and filters it before distributing the clean air into, and around, your home via a network of ceiling diffusers. Air from the outside can also be sourced if the seasonal add-on option is part of your SmartVent Evolve2 ventilation system. Whichever the air source option, the air movement created forces the moist, stale air and unwanted pollutants that cause condensation, mould, mildew and health problems, out of your home giving you better air for a healthier home.

### SmartVent Evolve2 Range

**Home ventilation system suitable for most types of homes.**

- SV02E2 - 2 system outlets (expandable to 3 max.) for homes up to 100m<sup>2</sup>
- SV04E2 - 4 system outlets (expandable to 6 max.) for homes up to 280m<sup>2</sup>
- SV06E2 - 6 system outlets (expandable to 12 max.) for homes up to 560m<sup>2</sup>

Extension Kits can be used to add further system outlets up to the maximum shown above for each model.

### Seasonal Add-on Options

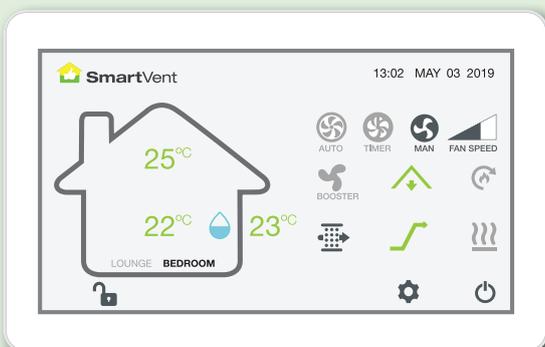
- + *Cool* For continued quality ventilation in warmer months supplying outdoor air when the roof cavity temperature exceeds that of the outside air.
- + *Heat Tempering Heater* To draw excess heat from the heated lounge and transfer it to bedrooms. For situations where roof cavity temperatures are too cool.

### Controllers

SmartVent Evolve2 systems use proprietary sensor controls designed for New Zealand conditions.

The SmartVent Evolve2 system consists of:

- quality German EBM fans
- high quality F7 grade filters
- wall mounted colour touch screen controller
- nude, insulated and acoustic insulated ducting
- ceiling mounted diffusers
- four temperature and humidity sensors



*The touch screen controller incorporates an easy-to-use daily scheduler for specific ventilation requirements.*

*On-screen information confirms current temperatures, moisture levels and system status. Once you have selected your preferred temperature, the system operates automatically.*

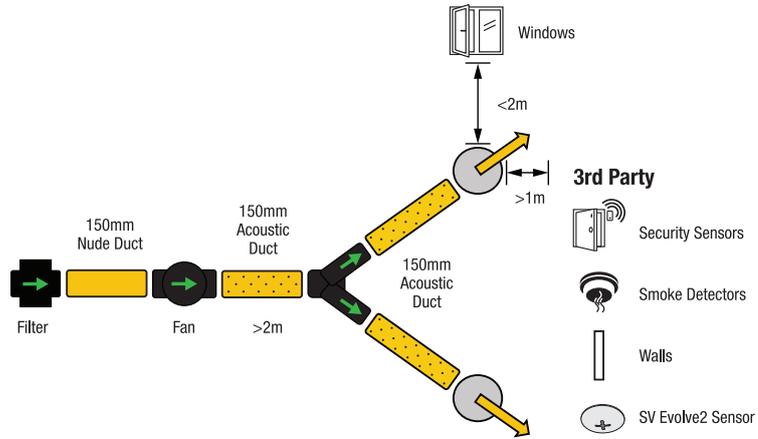
*The touch screen controller can also be used for setting seasonal add-on option requirements.*

**Control indoor climate**  
Reduce moisture, mould and mildew

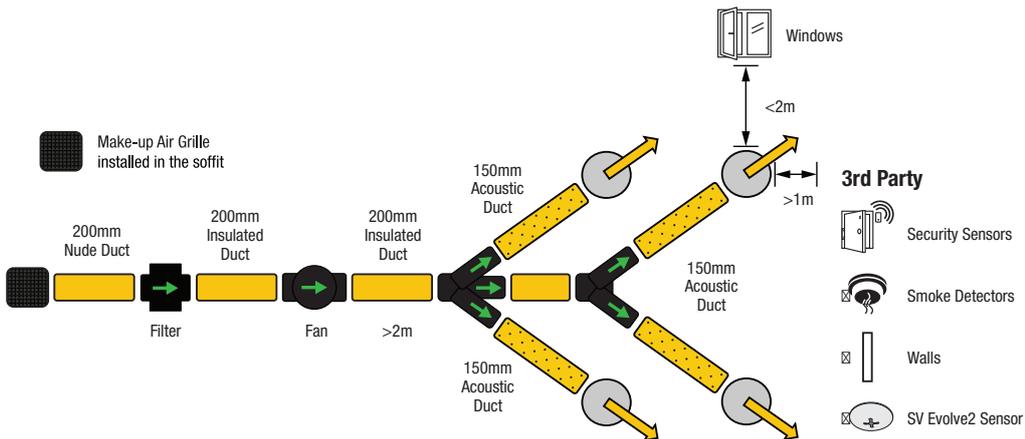




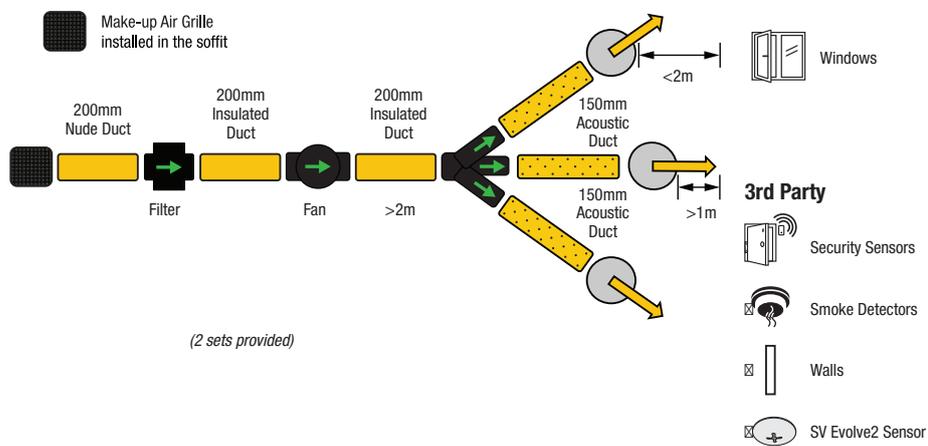
### SV02E2



### SV04E2



### SV06E2





### Overview

SmartVent Balance is an energy efficient ventilation system. It is a completely balanced heat recovery system that simultaneously draws in fresher, drier air while extracting the moist, stale air that causes condensation, mould and mildew, out of your home.

SmartVent Balance is specifically designed to recover the wasted heat produced from everyday activities (achieving up to 92% by using the warmth from the extracted air to temper the incoming air. As the two airflows pass by each other through the superior counterflow core, the clean incoming air is tempered without being polluted. The clean air is then distributed into, and around, the home via ceiling diffusers giving you better air for a healthier home while maximising energy efficiency.

The SmartVent Balance range includes two sizes of counterflow polymer core Heat Recovery systems. Manufactured in Europe, using the latest curved impellor design SmartVent Balance comes with both an onboard controller and a separate wired remote controller. The all-new SmartVent Balance range is vertical mounting, lightweight for easy installation and include a horizontal duct option for space-saving installation requirements. The compact BAL225 is small enough to comfortably fit into a 290mm deep kitchen cupboard and both models offer the luxury of quick and easy filter changing.

### SmartVent Balance Range

#### **Home ventilation system best suited to homes built to modern standards**

- BAL225 - 3 supply outlets/1 extract (expandable to 4 outlets/2 extracts max.) for homes up to 150m<sup>2</sup>
- BAL405 - 4 supply outlets/2 extract (expandable to 6 outlets/3 extracts max.) for homes up to 350m<sup>2</sup>

Extension Kits can be used to add further system outlets up to the maximum shown above for each model.

The SmartVent Balance system consists of:

- nude, insulated and acoustic insulated ducting
- high quality F7 grade filters
- ceiling mounted diffusers
- wall mounted digital controller and controller on unit
- a European designed and manufactured counterflow polymer core
- backward curved impellor designed for quiet operation and energy efficient operation



BAL225



BAL405



***Integrated digital controller for simple and accurate commissioning***

***Self-diagnosis for simplified fault-finding***

***Adjustable delay ON/OFF timer***

***Programmable core bypass for summer conditions***

## Control condensation

Reduce moisture, mould and mildew while maximising energy efficiency







### Overview

The SmartVent Synergy2 range includes one heat recovery model (HRV) and three energy recovery models (ERV) it comes with an all-new colour touch screen wall controller, temperature and humidity sensing technology. The all-new SmartVent Synergy2 system builds on the technology developed for our market leading ventilation control system, Synergy Evolve, that incorporates temperature and humidity sensors throughout the home, in the roof cavity and outside. The new control interface is now connected via a RJ45 cable to new generation sensors and hard-wired to the control box housed in the roof cavity.

SmartVent Synergy2 is different from most other home ventilation systems. It is a completely balanced system, capable of extracting stale, moisture-laden air from inside your home and bringing in fresh, drier air simultaneously. Best of all, Synergy2 is an energy recovery system that recovers and re-uses energy from the air extracted from the home and it comes standard with the advanced features for monitoring both temperature, and humidity.

SmartVent Synergy2 is specifically designed to recover the wasted heat produced from everyday activities by using the warmth from the extracted air to temper the incoming air. As the two airflows pass by each other, the clean incoming air is able to be tempered without being polluted. The clean air is then distributed into, and around, the home via ceiling diffusers giving you better air for a healthier home.

### SmartVent Synergy2 Range

#### Home ventilation system best suited to homes built to modern standards

- SYN190E2 - 3 supply outlets/1 extract (expandable to 4 outlets/2 extracts max.) for homes up to 150m<sup>2</sup>
- SYN1015E2 - 3 supply outlets/1 extract (expandable to 4 outlets/2 extracts max.) for homes up to 150m<sup>2</sup>
- SYN2025E2 - 3 supply outlets/1 extract (expandable to 4 outlets/2 extracts max.) for homes up to 250m<sup>2</sup>
- SYN3035E2 - 3 supply outlets/1 extract (expandable to 4 outlets/2 extracts max.) for homes up to 350m<sup>2</sup>

Extension Kits can be used to add further system outlets up to the maximum shown above for each model

### Seasonal Add-on Options

- + Flexibility Enables system to draw air from the roof cavity.
- + Heat To draw excess heat from the heated lounge and transfer it to bedrooms.
- Tempering Heater For situations where air source temperatures are too cool.
- + Bypass Core bypass option for SYN190E2

### Controllers

SmartVent Synergy2 systems use proprietary sensor controls designed for New Zealand conditions.

The SmartVent Synergy2 system consists of:

- HRV or ERV core and fans
- primary G3 filters
- ceiling mounted diffusers
- four temperature and humidity sensors
- nude, insulated and acoustic insulated ducting
- high quality F7 grade filters
- wall mounted colour touch screen controller



*The touch screen controller incorporates an easy-to-use daily scheduler for specific ventilation requirements.*

*On-screen information confirms current temperatures, moisture levels and system status. Once you have selected your preferred temperature, the system operates automatically.*

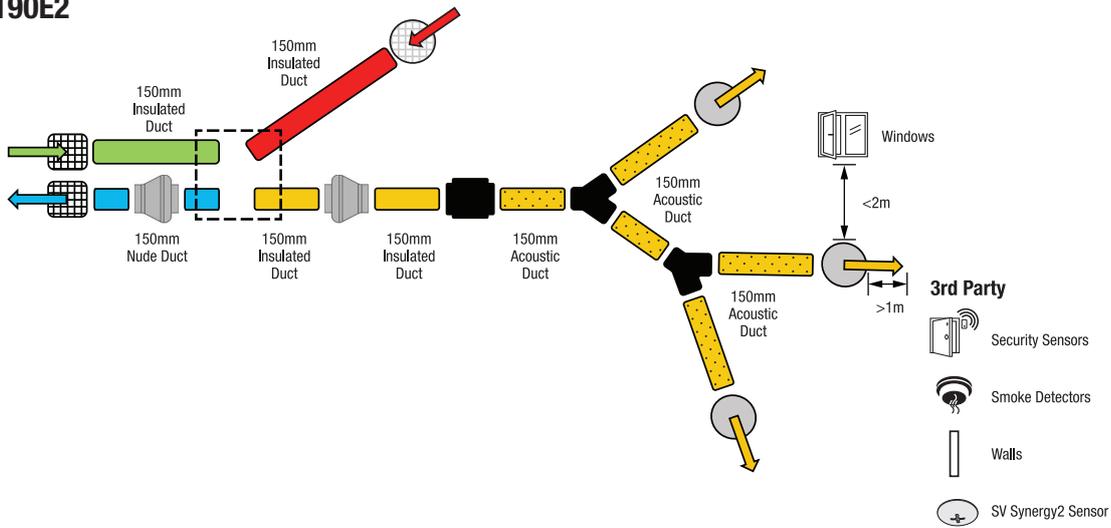
*The touch screen controller can also be used for setting seasonal add-on option requirements.*

## Control indoor climate

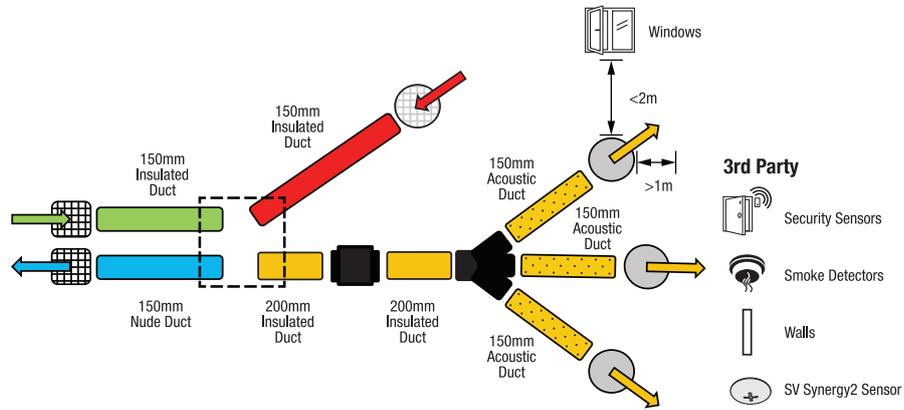
Reduce moisture, mould and mildew



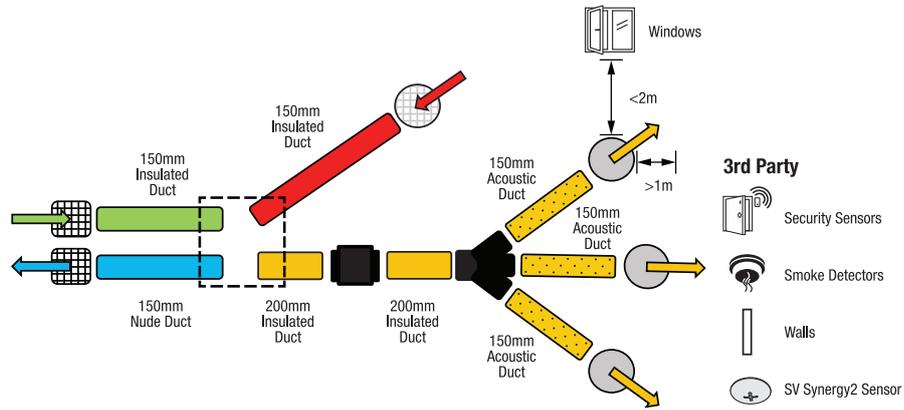
**SYN190E2**



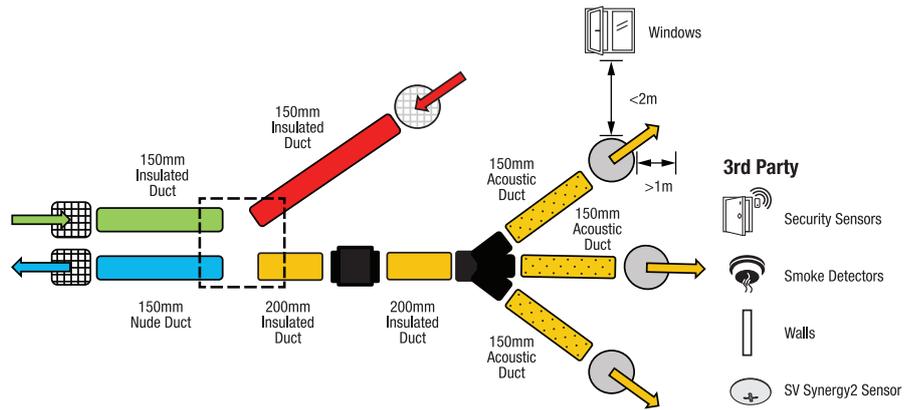
**SYN1015E2**



**SYN2025E2**



**SYN3035E2**



What is the size of your home (m2)?	Range selection	How many rooms do you wish to distribute to?	Model	Order Codes
Up to 80m <sup>2</sup>	SmartVent Lite	1	SV01L	FAN6803
		2	SV02L	FAN6804
		3	Extension Kit	DCT4276
Up to 100m <sup>2</sup>	SmartVent Positive SmartVent Evolve2	1	SV01P	FAN2023
		2	SV02P	FAN0939
			SV02E2	FAN6910
3	Extension Kit	DCT2276		
Up to 200m <sup>2</sup>	SmartVent Lite	4	SV04L	FAN6805
		5 - 6	Extension Kit	DCT4276
Up to 280m <sup>2</sup>	SmartVent Positive SmartVent Evolve2	4	SV04P	FAN1057
			SV04E2	FAN6911
		5 - 6	Extension Kit	DCT2276
Up to 400m <sup>2</sup>	SmartVent Lite	6	SV06L	FAN6806
		7 - 10	Extension Kit	DCT4276
Up to 560m <sup>2</sup>	SmartVent Positive SmartVent Evolve2	6	SV06P	FAN1064
			SV06E2	FAN6912
		7 - 12	Extension Kit	DCT2276

### IMPORTANT

- If you exceed the number of rooms listed in the selection guide above, the performance of the system will not work as designed.
- Maximum outlets are listed above, do not exceed the number listed.
- For the SV06 systems do not exceed 3 additional extension kits per branch of the system.

Kits		SV01L	SV01P	SV02L	SV02P	SV02E2	SV04L	SV04P	SV04E2	SV06L	SV06P	SV06E2	
+ Cool: Summer Feature		-	DCT2134	-	DCT2134		-	DCT2128		-	DCT2135		
Outdoor Air Supply		FAN6264					-	-	-	-	-	-	-
+ Heat: Heat Transfer		-	FAN2027	-	FAN2027		-	FAN2028		-	FAN2028 (1 branch) FAN4438 (both branches)		
Tempering Heater	1 kW	-	DCT1226	-	DCT1226	DCT3478	-	DCT1483	DCT3231	-	DCT1483	DCT3231	
	2 x 1 kW	-	-	-	-		-	-		-	DCT1491*	DCT3418*	
	2 kW	-	-	-	-		-	DCT1484	DCT3230	-	DCT1484	DCT3230	
Additional Fan Kit	150mm	-	FAN5836	-	FAN5836		-	FAN5836		-	-	FAN5836	
	200mm	-	FAN5837	-	FAN5837		-	FAN5837		-	-	FAN5837	

\* DCT1491/DCT3418 consist of 2 x 1kW units for installation into each branch of an SV06P/SV06E2 system.

**Note:** Exceeding the number of rooms listed in the Selection Guide (by product) may affect the performance of the system and should be reviewed with SmartVent prior to purchase and installation.

Kits	SV01L	SV01P	SV02L	SV02P	SV02E2	SV04L	SV04P	SV04E2	SV06L	SV06P	SV06E2
Touch Screen	FAN6803	-	FAN6804	-	-	FAN6805	-	-	FAN6806	-	-
Keypad Controller	-	FAN2023	-	FAN0939	-	-	FAN1057	-	-	FAN1064	-
Colour Touch Controller	-	-	-	-	FAN6910	-	-	FAN6911	-	-	FAN6912

Kit Contents	SV01L	SV01P	SV02L	SV02P	SV02E2	SV04L	SV04P	SV04E2	SV06L	SV06P	SV06E2
150mm Supply Diffuser	1			2			4			6	
150mm Fixed Grille	1			1			1			-	
200mm Fixed Grille	-			-			1			3	
F7 Filter	1			1			1			2	
150mm 3 Speed Fan	1			1			-			-	
200mm 3 Speed Fan	-			-			1			2	
150mm x 6m Nude Ducting	-		1	-		3	-		4	-	
150mm x 3m Acoustic Insulated Ducting	1		1	-			-			-	
150mm x 6m Acoustic Insulated Ducting	-		-	1		-	3		-	4	
150mm x 3m Insulated Ducting	-		-	1			-			-	
200mm x 3m Nude Ducting	-			-			1			-	
200mm x 6m Nude Ducting	-			-			-			1	
200mm x 3m Acoustic Insulated Ducting	-			-		1	-			-	
200mm x 6m Acoustic Insulated Ducting	-			-			-		1	-	
200mm x 3m Insulated Ducting	-			-		-	1			-	
200mm x 6m Insulated Ducting	-			-			-		-	1	
150/150/150mm Y-Branch	-			1			1			-	
200/150/150/150mm Double-Branch	-			-			1			2	
150mm Duct Joiner	-			-			1			2	

These recommendations are based on the standard components in the system.

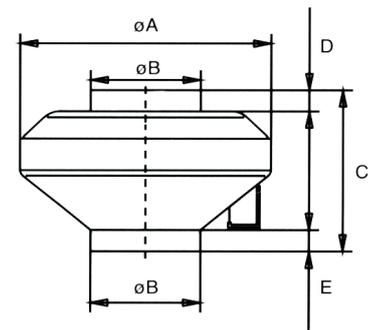
- This selection guide assumes 2.4m stud height, if greater please increase the square metre size by 4% for every 0.1 metre. For example for a 2.8m stud height, increase your house size by 16%.
- If you choose to exceed the number of rooms listed in the selection guide above, the performance of the system will be affected.
- By adding additional outlets to the system the available air is being divided amongst more rooms.
- Extra duct may be required depending on the size and layout of the home (*see accessories on page 36*).
- For larger homes please contact SmartVent for technical advice on 0800 140 150.

Specifications	SV01L	SV01P <sup>1)</sup>	SV02L	SV02P <sup>1)</sup>	SV02E2 <sup>2)</sup>	SV04L	SV04P <sup>1)</sup>	SV04E2 <sup>2)</sup>	SV06L	SV06P <sup>1)</sup>	SV06E2 <sup>2)</sup>
House Size	up to 80m <sup>2</sup>	up to 100m <sup>2</sup>	up to 80m <sup>2</sup>	up to 100m <sup>2</sup>	up to 100m <sup>2</sup>	up to 200m <sup>2</sup>	up to 280m <sup>2</sup>	up to 280m <sup>2</sup>	up to 400m <sup>2</sup>	up to 560m <sup>2</sup>	up to 560m <sup>2</sup>
Fan Type	AC Centrifugal					AC Centrifugal					
Spigot Size	150mm					200mm					
Fan Speeds	3					3					
Max. Air Flow per Fan @ 0 Pa	175 l/s, 630m <sup>3</sup> /hr					296 l/s, 1066m <sup>3</sup> /hr					
Max. Air Flow per Fan @ 150 Pa	107 l/s, 385m <sup>3</sup> /hr					211 l/s, 760m <sup>3</sup> /hr					
Max. Static Pressure per Fan	320 Pa					440 Pa					
Power Supply	220-240V AC 50 Hz					220-240V AC 50 Hz					
Input Power per Fan	57W					105W					
Current (A) per Fan	0.26A					0.47A					
Operating Temp	-25°C to 50°C					-25°C to 50°C					
Protection Rating	IP44					IP44					

- 1) The SmartVent Positive controller can operate a maximum of two (2) fans.
- 2) The SmartVent Evolve2 controller can operate a maximum of four (4) fans.

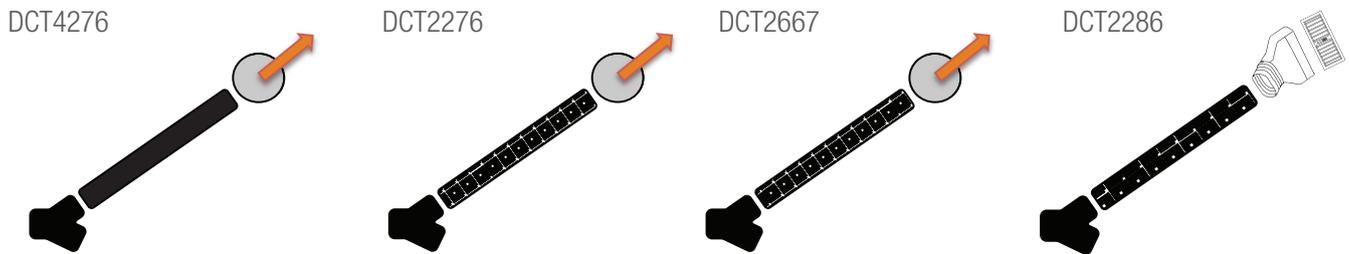


Fan Dimensions (mm)	A	B	C	D	E
Spigot Size - 150mm	340	150	280	50	60
Spigot Size - 200mm	340	200	280	50	60



### Additional Outlets

Kit	SV01L	SV01P	SV02L	SV02P	SV02E2	SV04L	SV04P	SV04E2	SV06L	SV06P	SV06E2
Additional Outlet	3m Duct	DCT4276	DCT2276	DCT4276	DCT2276		DCT4276	DCT2276	DCT4276	DCT2276	
	6m Duct	-	DCT2667	-	DCT2667		-	DCT2667	-	DCT2667	
	Thru Wall	-	DCT2286	-	DCT2286		-	DCT2286	-	DCT2286	



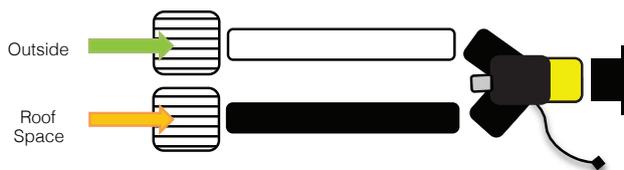
### + Cool Summer Feature

Kit	SV01L	SV01P	SV02L	SV02P	SV02E2	SV04L	SV04P	SV04E2	SV06L	SV06P	SV06E2
Summer Feature	-	DCT2134	-	DCT2134		-	DCT2128		-	DCT2135	

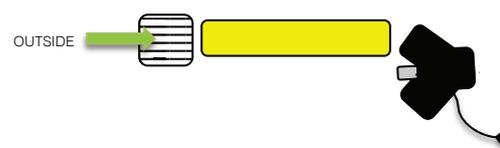
The + *Cool* Summer Feature kit is an optional second air intake located under the eaves or at the gable end of the home (weatherproof grille maybe required). This feature provides an alternative air supply for use during summer months.

- When installed on the south side of the house it ensures the coolest possible air is used.
- SmartVent Evolve2 uses the + *Cool* Summer Feature kit to manage the temperature and moisture conditions in the home.
- If the house design prevents the installation of a + *Cool* Summer Feature kit, there are alternative options for a second air source such as through roof kits. SmartVent have a full range of accessories available to assist.

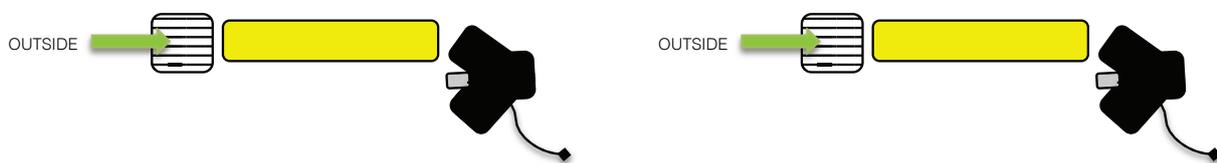
DCT2134



DCT2128



DCT2135 (for both branches of an SV06P/SV06F system)

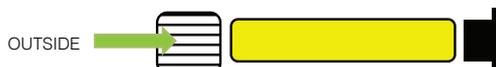


### Outdoor Air Supply

Kit	SV01L	SV01P	SV02L	SV02P	SV02E2	SV04L	SV04P	SV04E2	SV06L	SV06P	SV06E2
Outdoor Air Supply	FAN6264					-					

The outdoor supply kit is designed specifically for SV01 & SV02 systems when roof cavity air is not desirable. The kit contains a fixed grille, duct and filter spigots.\*

FAN6264



\* All other systems include these parts in the standard kit.

### + Heat Heat Transfer

Kit	SV01L	SV01P	SV02L	SV02P	SV02E2	SV04L	SV04P	SV04E2	SV06L	SV06P	SV06E2
Heat Transfer	-	FAN2027	-	FAN2027		-	FAN2028		-	FAN2028 (1 branch) FAN4438 (both branches)	

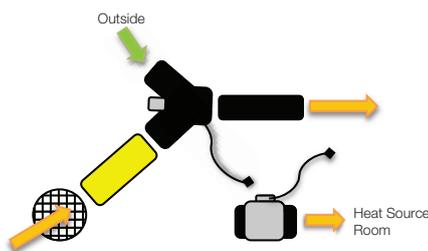
+ Heat Heat Transfer has a motorised damper that operates to switch the air drawing from either the outside or roof cavity to instead draw air from the room where there is a heat source (usually a lounge) and transfer it to the bedrooms. This feature can also provide internal air circulation when roof cavity and/or outside temperatures are too cold. When installing a + Heat Heat Transfer feature, an adequate heat source is required that is capable of delivering enough excess heat to adequately warm all areas heat is transferred to, while remaining effective in the source room.

- It is important to point out that when + Heat Heat Transfer is activated, the system is not bringing in fresh air, therefore not ventilating the home - however the home is getting the benefit of transferring heat around the house (e.g. cold winter nights). It also shuts off the air supply back into the heat source room.
- + Heat Heat Transfer can also be used to manage the preferred temperature and moisture conditions in the home when added to a SmartVent Evolve2 system.

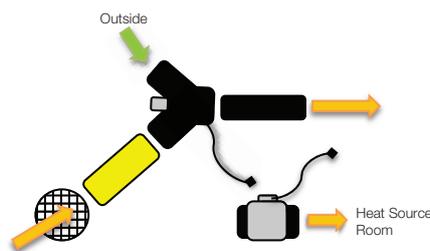
#### Note:

- + Heat Heat Transfer is recommended when there is a heat source that creates excess heat (i.e. wood fire or similar).
- A heat pump sized for the room it occupies may not be suitable for + Heat Heat Transfer.
- If planning to use a heat pump with + Heat Heat Transfer, first consult the heat pump installer/manufacturer.

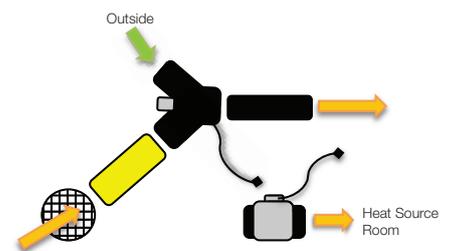
FAN2027



FAN2028



FAN4438



(Includes two sets for each branches of an SV06P/SV06E2 system)

### Recycle

The Recycle function will recycle inside air around the home when other air sources are not suitable. The recycle function for SmartVent Positive and SmartVent Evolve2 systems is a feature of the + Heat Heat Transfer upgrade.

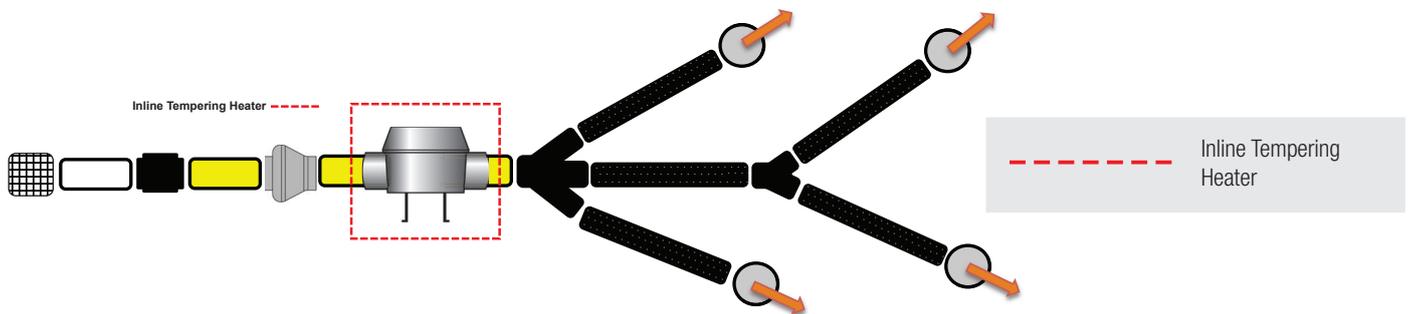
## Tempering Heaters

Kit		SV01L	SV01P	SV02L	SV02P	SV02E2	SV04L	SV04P	SV04E2	SV06L	SV06P	SV06E2
Tempering Heater	1kW	-	DCT1226	-	DCT1226	DCT3478	-	DCT1483	DCT3231	-	DCT1483	DCT3231
	2 x 1kW	-	-	-	-	-	-	-	-	-	DCT1491*	DCT3418*
	1kW	-	-	-	-	-	-	-	-	-	-	-
	2kW	-	-	-	-	-	-	DCT1484	DCT3230	-	DCT1484	DCT3230

\* DCT1491/DCT3418 consist of 2 x 1kW units for installation into each branch of an SV06P /SV06E2 system.

A Tempering Heater is a 1kW or 2kW element inline heater designed to temper the incoming air.

- Specified when the ability to temper the delivered air to a more comfortable temperature is required.
- Tempering heaters will not provide a home heating solution.
- The temperature of the introduced air will be raised by up to 8°C. The temperature of the home will not increase by this much.
- A SmartVent system with an inline tempering heater is not intended to be a substitute for an effective heating system in the home.

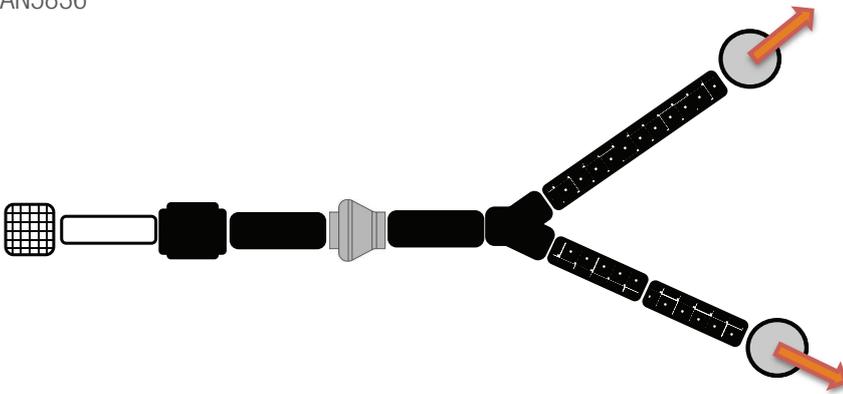


### Additional Fans

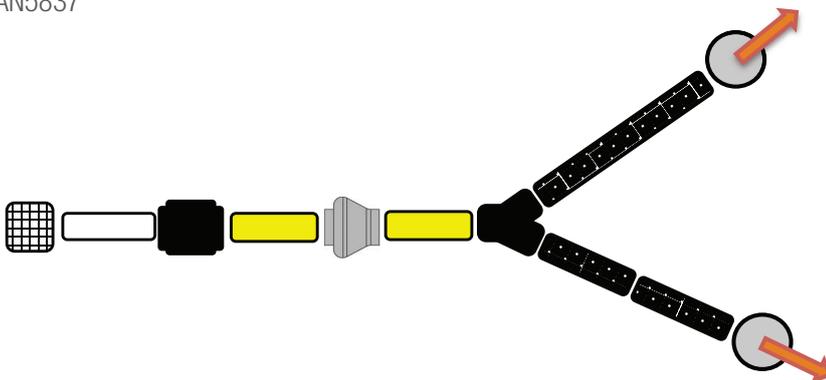
Kit		SV01L	SV01P	SV02L	SV02P	SV02E2	SV04L	SV04P	SV04E2	SV06L	SV06P	SV06E2
Additional Fan	150mm	-	FAN5836	-	FAN5836		-	FAN5836		-	-	FAN5836
	200mm	-	FAN5837	-	FAN5837		-	FAN5837		-	-	FAN5837

An additional fan kit allows an additional branch with fan, filter and outlet to be fitted to the system. The additional fan kits enable a single controller to operate two systems where longer duct runs or between floor configurations would normally be required.

FAN5836



FAN5837



What is the size of your home (m2)?	Range selection	How many rooms do you wish to supply to?	How many rooms do you wish to extract from?	Model	Order Codes
Up to 150m <sup>2</sup>	SmartVent Synergy2	3	1	SYN190E2	FAN6913
		4	2		DCT2276 Supply DCT2289 Extract
		3	1	SYN1015E2	FAN6914
		4	2		DCT4015 Supply DCT4016 Extract
	SmartVent Balance	3	1	BAL225	FAN6838
		4	2		DCT4363 Supply DCT4362 Extract
Up to 250m <sup>2</sup>	SmartVent Synergy2	3	1	SYN2025E2	FAN6915
		4	2		DCT4015 Supply DCT4016 Extract
Up to 350m <sup>2</sup>	SmartVent Synergy2	3	1	SYN3035E2	FAN6916
		4	2		DCT4015 Supply DCT4016 Extract
	SmartVent Balance	5	2	BAL405	FAN6839
		6	3		DCT2334 Supply DCT2335 Extract

### IMPORTANT

- The information listed above is a guide only. If there is any doubt, please use our design service <http://smartvent.co.nz/plan-design-service/>

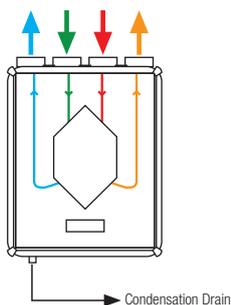
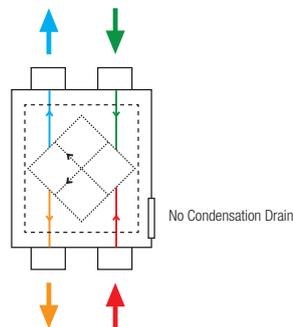
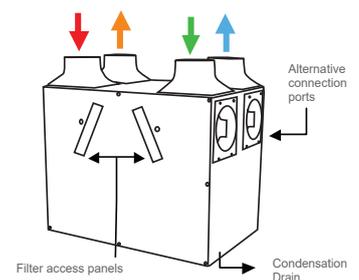
Kits		SYN190E2	SYN1015E2	BAL225	SYN2025E2	SYN3035E2	BAL405
+ Flexibility: Second Air Source		DCT4361		-	DCT4361		-
Heat Transfer		FAN6905		-	FAN6905		-
Tempering Heater	1 kW	DCT3478	DCT3231	-	DCT3231		-
	2 kW	-	DCT3230	-	DCT3230		-
+ Bypass: Core Bypass		FAN2172	-	integrated	-		integrated

These recommendations are based on the standard components in the system.

- This selection guide assumes 2.4m stud height, if greater please increase the square metre size by 4% for every 0.1 metre. For example, for a 2.8m stud height, increase your house size by 16%.
- If you choose to exceed the number of rooms listed in the selection guide above, the performance of the system will be affected.
- Ensure that there is sufficient ceiling space to install all componentry.
- By adding additional outlets to the system the air is being divided amongst more rooms.
- Extra duct may be required depending on the size and layout of the home (*see accessories on page 36*).
- For larger homes please contact SmartVent for technical advice on 0800 140 150.

Kits	SYN190E2	SYN1015E2	BAL225	SYN2025E2	SYN3035E2	BAL405
Touch Screen	FAN6913	FAN6914	-	FAN6915	FAN6916	-
Keypad Controller	-	-	FAN6838	-	-	FAN6839

Kit Contents	SYN190E2	SYN1015E2	BAL225	SYN2025E2	SYN3035E2	BAL405
150mm Supply Diffuser	3			5		
125mm Extract Diffuser	-	1	-			
150mm Extract Diffuser	1	-	1	2	-	
150mm Fixed Grille	2			-		
200mm Fixed Grille	-			2		
F7 Filter	1			-		
G3 Filter	2			-		
High Performance Fans	2	Integrated				
Energy Recovery Core	-	1	-	1	-	
Heat Recovery Core	1	-	1	-	1	
150mm x 6m Acoustic Insulated Ducting	2	3				
125mm x 6m Insulated Ducting	-		2	-		
150mm x 3m Insulated Ducting	1	-				
150mm x 6m Insulated Ducting	1	-	1	2	-	
200mm x 3m Insulated Ducting	-		1	2	-	
125mm x 6m Nude Ducting	-		2	-		
150mm x 3m Nude Ducting	1	-				
150mm x 6m Nude Ducting	-	1			-	
200mm x 6m Nude Ducting	-			1		
150/150/150mm Y-Branch	2	-	1	-		
200/150/150mm Y-Branch	-			2		
200/200/200mm Y-Branch	-			1		
200/150/150/150mm Double-Branch	-	1	-	1		
150mm Duct Joiner	1			-		
200mm Duct Joiner	-			1		
Condensation Drain	3m x 19mm	-	3m x 19mm	-	3m x 19mm	
150mm : 125mm Reducer	1	-	1	-		
200mm : 150mm Reducer	-	1	-	1	-	
150/150/150mm Branch Take Off	-		1	-		
200/150/150mm Branch Take Off	-		1	-		

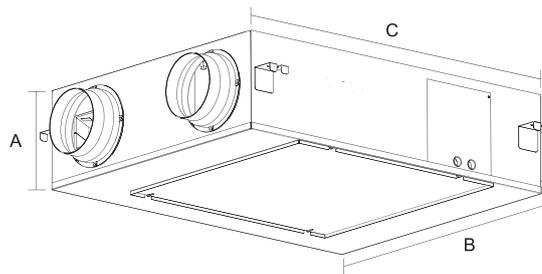
**Heat Recovery Core  
SYN190E2**

**Energy Recovery Core  
SYN1015E2/SYN2025E2/SYN3035E2**

**Heat Recovery Core  
BAL225/BAL405**


Extracted moist/stale air exits the home
Fresh drier air supplied from the roof cavity or outside  
Moist, humid air is extracted from the home
Warm supply air enters the home

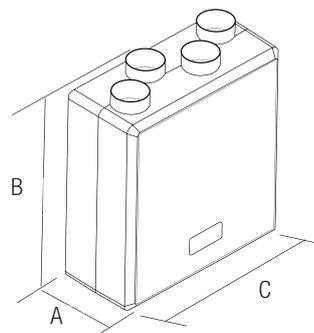
Specifications	SYN190E2	SYN1015E2 <sup>1)</sup>	BAL225	SYN2025E2 <sup>1)</sup>	SYN3035E2 <sup>1)</sup>	BAL405
Fan Type	AC Centrifugal	AC Centrifugal	EC Centrifugal	AC Centrifugal	AC Centrifugal	EC Centrifugal
Spigot Size	150mm	150mm	125mm	150mm	150mm	150mm
Fan Speeds	3	3	10	3	3	10
Max. Air Flow per Fan @ 0 Pa	175 l/s, 630m <sup>3</sup> /hr	55 l/s, 198m <sup>3</sup> /hr	76 l/s, 275m <sup>3</sup> /hr	84 l/s, 301m <sup>3</sup> /hr	122 l/s, 440m <sup>3</sup> /hr	136 l/s, 490m <sup>3</sup> /hr
Max. Air Flow per Fan @ 150 Pa	107 l/s, 385m <sup>3</sup> /hr	29 l/s, 106m <sup>3</sup> /hr	62 l/s, 223m <sup>3</sup> /hr	51 l/s, 183m <sup>3</sup> /hr	93 l/s, 333m <sup>3</sup> /hr	110 l/s, 395m <sup>3</sup> /hr
Max. Static Pressure per Fan	356 Pa	263 Pa	380 Pa	308 Pa	401 Pa	600 Pa
Power Supply	220-240V AC 50 Hz	220-240V AC 50 Hz	220-240V AC 50 Hz	220-240V AC 50 Hz	220-240V AC 50 Hz	220-240V AC 50 Hz
Total Input Power	114W	95W	128W	136W	215W	173W
Current (A)	0.52A	0.45A	0.58A	0.66A	1.03A	0.79A
Operating Temp	-25°C to 50°C	-10°C to 40°C	-20°C to 45°C	-10°C to 40°C	-10°C to 40°C	-20°C to 45°C
Protection Rating	IP44	IPX2	IP22	IPX2	IPX2	IP22

1) The SmartVent Synergy2 controller can operate up to two (2) ERV cores. For more information contact Simx on +64 9 259 1662.

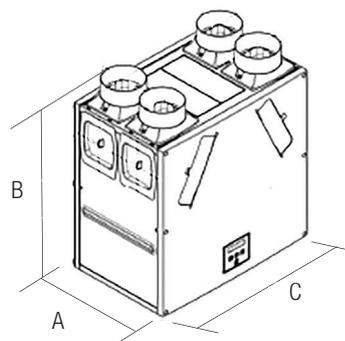
Energy Recovery Core Dimensions (mm)	A	B	C
SYN1015E2	220	625	750
SYN2025E2	220	650	820
SYN3035E2	230	770	960



Heat Recovery Core Dimensions (mm)	A	B	C
SYN190E2	260	645	560



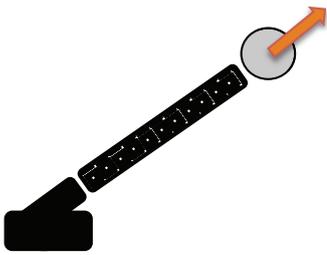
Heat Recovery Core Dimensions (mm)	A	B	C
BAL225	550	285	550
BAL405	745	524	776



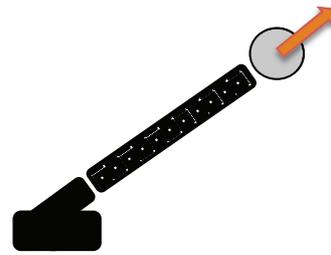
### Additional Outlets and Extracts

Kits	SYN190E2	SYN1015E2	BAL225	SYN2025E2	SYN3035E2	BAL405
Additional Outlet	DCT2276	DCT4015	DCT4363	DCT4015		DCT2334
Additional Extract	DCT2289	DCT4016	DCT4362	DCT4016		DCT2335

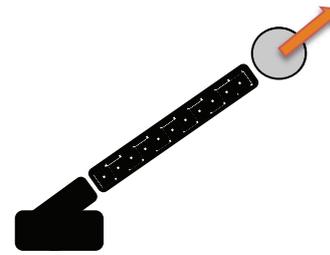
DCT2276



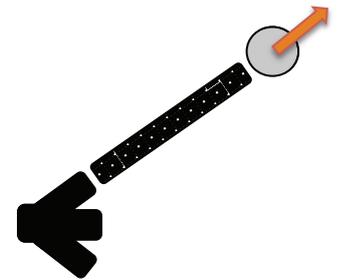
DCT4015



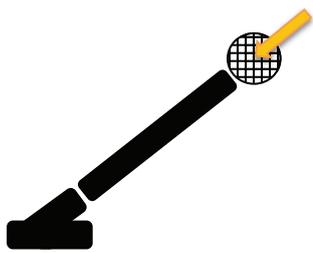
DCT4363



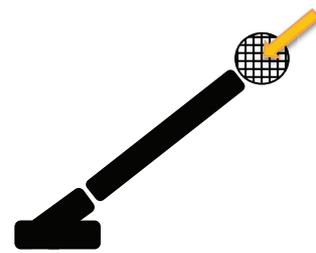
DCT2334



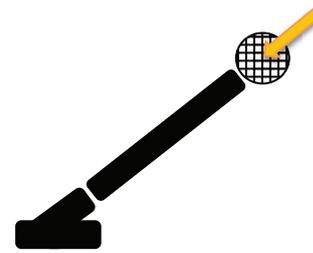
DCT2289



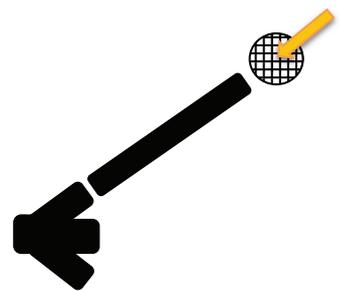
DCT4016



DCT4362



DCT2335

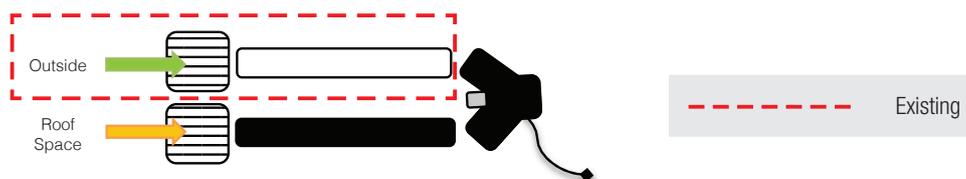


### + Flexibility: Second Air Source

Kits	SYN190E2	SYN1015E2	BAL225	SYN2025E2	SYN3035E2	BAL405
Second Air Source	DCT4361		-	DCT4361		-

+ Flexibility Second Air Source is an optional second air intake located in the roof cavity. This feature allows the system to utilise the roof cavity temperature for increased air source flexibility.

DCT4361



+ *Heat* Heat Transfer

Kits	SYN190E2	SYN1015E2	BAL225	SYN2025E2	SYN3035E2	BAL405
Heat Transfer	FAN6905			FAN6905		

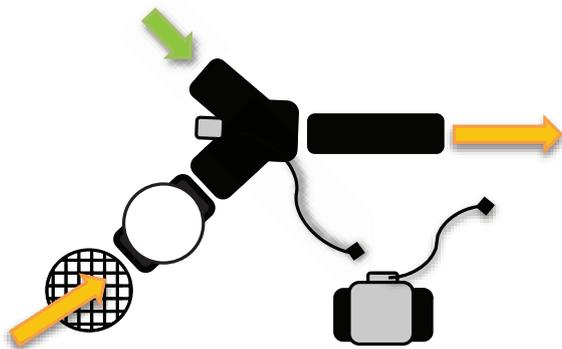
+ *Heat* Heat Transfer has a motorised damper and external fan that operates to switch the air drawing from either the outside or roof cavity to instead draw air from the room where there is a heat source (usually a lounge) and transfer it to the bedrooms. This feature can also provide an alternative air supply. When installing a + *Heat* Heat Transfer feature, an adequate heat source is required that is capable of delivering enough excess heat to adequately warm all areas heat is transferred to, while remaining effective in the source room.

- It is important to point out that when + *Heat* Heat Transfer is activated, the system is not bringing in fresh air, or extracting stale air, therefore not ventilating the home - however the home is getting the benefit of transferring heat around the house (e.g. cold winter nights). It also shuts off any supply back into the heat source room.

**Note:**

- + *Heat* Heat Transfer is recommended when there is a heat source that creates excess heat (i.e. wood fire or similar).
- + *Heat* Heat Transfer can also be used to manage the preferred temperature and moisture conditions in the home when added to a SmartVent Synergy2 system.
- A heat pump sized for the room it occupies may not be suitable for + *Heat* Heat Transfer.
- If planning to use a heat pump with + *Heat* Heat Transfer, first consult the heat pump installer/manufacturer.

FAN6905



**Recycle**

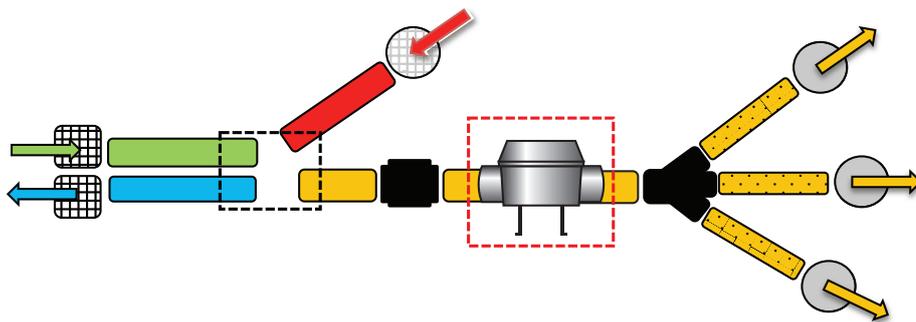
The Recycle function will recycle inside air around the home when other air sources are not suitable. The recycle function for SmartVent Synergy2 systems is a feature of the + *Heat* Heat Transfer upgrade.

## Tempering Heater

Kits		SYN190E2	SYN1015E2	BAL225	SYN2025E2	SYN3035E2	BAL405
Tempering Heater	1kW	DCT3478	DCT3231	-	DCT3231		-
	2kW	-	DCT3230	-	DCT3230		-

A Tempering Heater is an element in line heater designed to temper the incoming air.

- Specified when the ability to temper the delivered air to a more comfortable temperature is required.
- Tempering heaters will not provide a home heating solution.
- The temperature of the introduced air will be raised by up to 8°C. The temperature of the home will not increase by this much.
- A SmartVent system with an inline tempering heater is not intended to be a substitute for an effective heating system in the home.



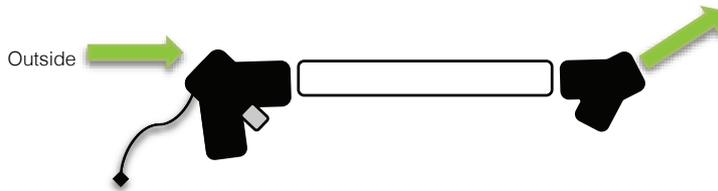
### + Bypass Core Bypass

Kits	SYN190E2	SYN1015E2	BAL225	SYN2025E2	SYN3035E2	BAL405
Core By-pass	FAN2172	-	integrated	-	-	integrated

This feature diverts fresh filtered air around the core. This is useful in summer when the outside temperature is assumed to be lower than the inside and you do not want to warm the incoming air with the air you are extracting from the home. A + *Bypass Core Bypass* is included as standard in Balance BAL225 and BAL405. It is available as an optional extra for Synergy2 SYN190E2.

- The + *Bypass Core Bypass* enables the system to bypass the core in the summer when heat recovery is not desirable. In the summer, + *Bypass Core Bypass* ensures the coolest possible air is used to ventilate the home.

FAN2172



### SmartVent Lite

- Q. Is SmartVent Lite the same as SmartVent Positive?**
- A. No. SmartVent Positive allows upgrades such as Summer Feature, Heat Transfer and Tempering Heaters and incorporates greater functionality that is not available for SmartVent Lite.
- Q. Are the duct components in SmartVent Lite the same as SmartVent Positive?**
- A. No. The duct used in SmartVent Lite is the same high-quality duct, however, there is more nude duct in the system as it is not necessary to insulate duct in systems without upgrade potential.

### SmartVent Evolve2

- Q. What will happen to the existing SmartVent Evolve positive pressure range?**
- A. The existing SmartVent Evolve range will continue to be available for a limited period, demand dependent.
- Q. Can existing SmartVent Positive Pressure systems be upgraded to SmartVent Evolve2?**
- A. Yes. We are developing an upgrade kit for this purpose, available Q1 2019 (or earlier). We will issue a new product release notification when complete.
- Q. What are the main differences between the existing SmartVent Evolve positive pressure systems and the new SmartVent Evolve2?**
- A. The existing SmartVent Evolve is operated by a tablet (supplied) or customers own wireless device that is connected to the ceiling control box via either the supplied router or the customers own internal Wi-Fi. The new SmartVent Evolve2 comes with a new touch screen wall controller, connected via an RJ45 cable to the new generation sensors and hard-wired to the control box housed in the roof cavity. The new control system also has increased functionality, giving more control than ever before to end users.
- Q. Why does the new system come with a wall controller and not the Wi-Fi control?**
- A. Feedback from installers and end users regarding the wireless technology has confirmed preference for a wired solution.
- Q. Is there any difference to the duct and grilles, or generic kit contents for SmartVent Evolve2?**
- A. SmartVent Evolve2 models have the same base components that are available in other SmartVent models of the same series, i.e. the base components for SV04P (quantity and quality of duct, grilles, branch take-offs, diffusers etc.) are the same for SV04E2.

### SmartVent Balance

- Q. What will happen to the existing SmartVent 405 system (FAN2191)?**
- A. The existing SmartVent 405 range is no longer available, please remove this SKU from your inventory system.
- Q. Can existing SmartVent 405 systems be upgraded to SmartVent Balance?**
- A. Please contact Simx for technical advice.
- Q. What are the main differences between the existing SmartVent 405 systems and the new SmartVent Balance?**
- A. The existing SmartVent 405 is operated by a colour touch screen controller and included features such as heat boost and dual air source. These features do not make up part of the new SmartVent Balance range. The new SmartVent Balance system comes in two sizes with the very latest control to maximise energy efficiency and includes an integrated core bypass for use in the summer months.
- Q. Is there any difference to the duct and grilles, or generic kit contents for SmartVent 405?**
- A. No. SmartVent 405 models do have similar base components that are available in other SmartVent systems, but we recommend referring to page 14 to confirm product components details.
- Q. When should I recommend SmartVent Balance systems?**
- A. SmartVent Balance is best installed into homes built to modern building standards. It is not recommended to install HRV systems into homes built prior to the year 2002.
- Q. Can I install SmartVent Balance in spaces other than the roof cavity?**
- A. SmartVent Balance is installed vertically and can be installed into either cupboard space in utility rooms or in a roof cavity.

The new control interface is now connected via a RJ45 cable to new generation sensors and hard-wired to the control box housed in the roof cavity.

**SmartVent Synergy2**

- Q. *What will happen to the existing SmartVent Synergy Evolve ERV range?***
- A. The existing SmartVent Synergy Evolve range will be discontinued.
- Q. *Can existing SmartVent Synergy or Synergy Evolve systems be upgraded to SmartVent Synergy2?***
- A. Yes. We are developing an upgrade kit for this purpose, available Q1 2019 (or earlier). We will issue a new product release notification when complete.
- Q. *What are the main differences between the existing SmartVent Synergy Evolve systems and the new SmartVent Synergy2?***
- A. The existing SmartVent Synergy Evolve is operated by a customer's own wireless device that is connected to the ceiling control box via either the supplied router or the customer's own internal Wi-Fi. The new SmartVent Synergy2 comes with a new touch screen wall controller, connected via an RJ45 cable to the new generation sensors and hard-wired to the control box housed in the roof cavity. The new control system also has increased functionality, giving more control than ever before to end users.
- Q. *Why does the new system come with a wall controller and not the Wi-Fi control?***
- A. Feedback from installers and end users regarding the wireless technology has confirmed preference for a wired solution.
- Q. *Is there any difference to the duct and grilles, or generic kit contents for SmartVent Synergy2?***
- A. No. SmartVent Synergy2 models have the same base components that are available in other SmartVent models of the same series, i.e. the base components for Synergy Evolve 1015E (quantity and quality of duct, grilles, branch take-offs, diffusers etc.) is the same for SYN1015E2.
- Q. *Is there a Heat Transfer upgrade available for SmartVent Synergy2?***
- A. Yes. We have redesigned the heat transfer upgrade for this release. We will issue a new product release notification for FAN6905 Heat Transfer upgrade for SmartVent Synergy2 when complete.
- Q. *When should I recommend SmartVent Synergy2?***
- A. SmartVent Synergy2 is best installed into homes built to modern building standards. It is not recommended to install ERV or HRV systems into homes built prior to the year 2002.

### Air Changes per Hour (ACH)

The New Zealand Building Code recommends a minimum of 0.35 air changes per hour.

Our positive pressure systems are designed to deliver 1 air change per hour. Our energy recovery systems are designed to deliver 0.5 air changes per hour.

**Note:** The number of ACH required will vary from house to house.

### Bathroom Extraction **MANROSE**

We recommend a Manrose fan ducted to the outside of the house extracting at a rate of 10 -15 air changes per hour be placed in every bathroom. Visit [www.simx.co.nz](http://www.simx.co.nz) and download the Manrose Extraction Selection Guide.

**Note:** Section G4 Ventilation of the NZ Building Code states all buildings shall have a way of removing, among others, steam from bathing and showering to the outside of the home.

### Filters

#### ✓ **F7 Filters**

SmartVent high grade F7 filters capture 80 -90% of fine pollens, dusts and allergens from the air are included with all systems, making the air cleaner to breathe. All SmartVent systems come standard with an F7 filter.

#### ✓ **Carbon Filters**

If there is concern about smell from the roof cavity, outside, or from the fire if heat transfer is installed. Carbon filters remove odours. F7 with carbon.

**Note:** Carbon filters will reduce the air flow through the system.

#### ✓ **HEPA Filters**

A high quality HEPA filter is available if required, for families with asthma and allergy sufferers.

**Note:** HEPA filters will reduce the air flow through the system.

#### ✓ **G3 Filters**

SmartVent Synergy2 and Balance systems have two G3 filters installed, as standard, to protect the core from debris build-up. Periodically, these filters will need to be maintained/cleaned. Replacement G3 filters are available as a spare part. Contact SmartVent on 0800 140 150 for assistance.

### Diffusers

The diffusers are flat so therefore distribute the air across the ceiling and down the walls and windows to help reduce condensation. As a result the air is distributed further around the room.

**Note:** Diffusers are adjustable to allow balancing of airflow delivery for each room.

### Heating Systems

- ✓ Pellet fires, wood fires, electric heaters or heat pumps
- ✗ Portable LPG gas heaters or un-flued fixed gas appliances

Un-flued gas appliances of both kinds release large volumes of moisture into the air the entire time they operate. This can result in condensation levels being higher and also make the moisture content in the air difficult to treat with a ventilation system. We recommend homeowners use different forms of heating. Gas appliances with a flue are acceptable because they expel moisture externally.

#### **Note:**

- Heat transfer should only be specified when there is a heat source that creates excess heat i.e. wood fire or similar.
- A heat pump sized for the room it occupies is not suitable for heat transfer.
- If planning to use a heat pump with heat transfer, first consult your heat pump installer/manufacture.

### Heat Trans Systems **HeatTrans**

If the home already has a Simx HeatTrans system installed you have three options:

- Re-use the duct and diffusers and install a SmartVent Positive Pressure system with a + *Heat* Heat Transfer upgrade incorporated.
- Re-use the duct and diffusers and install a SmartVent Synergy2 system to replace a HeatTrans system
- Upgrade older models of HeatTrans with a touchscreen controller (FAN5555) and a HeatTrans Summer Upgrade Kit (DCT1481).

## House Size

The first step when specifying a SmartVent system is how many square metres the home is excluding the garage.

A secondary (but just as important) factor is the stud height. The square metre (m<sup>2</sup>) used in the selection charts is based on a stud height of 2.4m.

## House Layout

The layout and orientation of the home, the way it is heated, as well as the construction all have an influence on the system to specify.

**Note:** Use page 37 to map your layout. Plan where the outlets will be placed in each room.

## Two Storey Houses

Access to lower floors can be achieved through cupboards, wardrobes and other voids.

Consider increasing the size of the kit specified if there is more than one duct run required to a lower floor.

It is better to specify a larger or two-fan system particularly if the ground floor is concrete block with aluminium joinery and/or a large area. See Page 24 for additional fan options.

## Open Cavity Walls

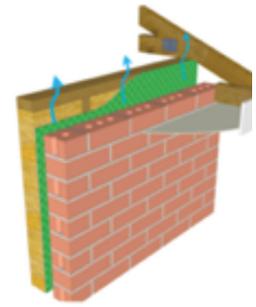
There are three general classifications for wall cavity systems. A drained and ventilated cavity separates the cladding from the wall by a cavity that is vented at the top and bottom and detailed to allow water to drain from the base of the wall. Open rainscreen walls follow a similar design, but without deliberate openings at the top of the cavity. A drainage plane separates the cladding from the inner wall by a narrow cavity of only a few millimetres thickness that is only intended to drain water from the back of the cladding.

Brick veneer is the most widely used drained and ventilated wall type in New Zealand, with a sound history of managing water leakage. Recommendations for cavity depth and ventilation opening sizes vary little between standards and the practical literature on design and construction, with minimal change to the systems underlying principles.

A typical eave detail allows the wall cavity to open into the roof cavity (see below). Considering the purpose of the wall cavity is to remove moisture by using air to transport it away, it stands that air vented into the roof cavity increases the risk of moisture-related issues in roof spaces.

Large amounts of moisture can enter the roof space, particularly when the wall cavity is subject to excessive wetting from poor window flashings or non-sealed façade materials. Protecting the structure from moisture has always been one of the primary goals of product manufacturers, builders and practitioners. Buildings are not perfect, leaks still occur, and the role of drying is very important to the moisture balance.

Moisture ventilated into roof cavity increases the risk of condensation in the roof cavity



## Typical examples of NZ homes with open-wall cavities

Usually described as a 1950 or 1960's brick home (some examples overleaf) these types of homes are very common throughout New Zealand. A quick on-site check is all it takes to identify whether this is the case.

1. Identify whether the home is on piles.
2. Yes – its open-wall cavity – you need to assist your customer to understand the next steps
3. No – its on a concrete base – usually you are ok to specify a standard system

If the home is on piles it is unlikely a positive pressure system operating on temperature alone and drawing air from the roof cavity will be a practical addition to the property. You have the following options:

1. Install a vapour barrier to cover the ground under the home (regardless of other recommendations you make, this is critical to moisture control).
2. Install a SmartVent Positive system drawing directly from under the eave (no roof cavity intake) or,
3. Install a SmartVent Evolve or Evolve2 system with an optional roof space air intake (for when conditions are suitably dry) and an air intake from outside usually under the eave i.e. an Evolve or Evolve2 system with a summer upgrade. Both Evolve and Evolve2 have temperature and humidity sensors as part of the system and will choose the correct air source based on the conditions in the roof cavity and outside.



## Unvented Appliances

- ✘ Unvented range-hoods, bathroom extraction fans and clothes dryers not only fill the roof cavity or home with moisture, they may not be compliant with current building regulations. If you are installing any ventilation system into your customer's home, you should also recommend the homeowner duct these appliances to the outside.

## Roof Cavity and Access

Ensure you have enough room to install the system and access it for maintenance. Note any areas you may not be able to access (i.e. flat roof, lower floor rooms), and be aware of any potential problem areas.

- ✘ A minimum of 500mm is recommend to fit SmartVent positive pressure systems.
- ✘ **Note:** Check the dimensions of the product to ensure access to the roof space is available.

## Outlets

- ✔ SmartVent outlets should be placed in your living areas and bedrooms, ideally in a central position. If necessary to offset do so on the window side of centre.

SmartVent Synergy2 and SmartVent Balance return air should be placed in the hallway.

Place the outlets at least one metre from any vertical surface (wall) and away from the entrance to an ensuite or bathroom. In a living room try to install an outlet near the centre of the room.

A centrally placed outlet in the hall is not recommended as there is no guarantee the occupants of the home will keep the bedroom doors open overnight or that sufficient amounts of air would enter the bedroom, which are areas where condensation is often a problem.

## Ducting Runs

Once you have decided the outlet locations, connect ducting to the back of the diffuser, then work towards the centre of the home to ascertain a central position for the fan, preferably above a utility room, bathroom or similar. Positioning fan above bedrooms is not recommended.

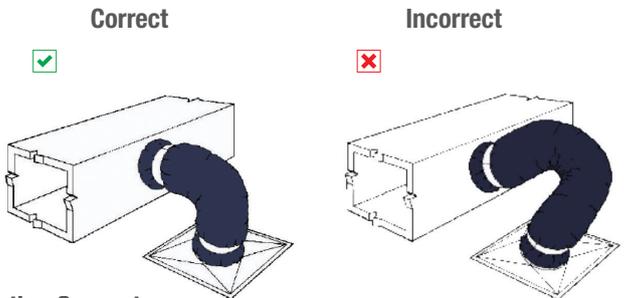
**Note:** Avoid long duct runs by placing the fan centrally.

- Longer duct runs should have fewer outlets.
- The highest percentage of air should go through the longest duct run - adjust diffusers to suit.
- Two duct runs in parallel will move more air than one long run.
- The more duct and bends, the less air that will be delivered into spaces.
- The longer the duct run the more resistance against the fan and the less air will be delivered to the home.
- Install duct fully extended, do not install in the compressed state or use excess lengths.
- Cut out excess duct and avoid unnecessary bends.

## Ducting Joins

Double tape every join in the duct and use a duct joiner.

**Note:** If you do not use a duct joiner the duct may collapse over time and the join may separate. This is one of the most common faults in installation and the most simple to get right. Be sure to correctly pull down the blanket insulation and double tape a join.



## Ducting Support

Hanger or saddle material in contact with the flexible duct shall be of sufficient width to prevent any restriction of the internal diameter of the duct when the weight of the supported section rests on the hanger or saddle material.

Flexible duct may rest on ceiling joists or truss supports. Maximum spacing between supports should not exceed 1.5m.

## Ducting Branches

- Y-branches will split the air 50/50.
- DBTO (Double Branch Take Off) will split the air relative to the outlet sizes. If a DBTO is used, ensure the central take-off is used to where the most air is required.

**Note:** When you add branches or extension kits to the system try to ensure duct runs are of similar lengths.

## Extract – Heat Transfer

Place the Heat Transfer intake across the room from the heat source to ensure heat travels across the room prior to being extracted.

## SmartVent Positive Systems

The wall controller must be in the heat source room.

## SmartVent Evolve2 Systems

One of the sensors must be in the heat source room

Do not place the intake less than 2 metres away from a fireplace, this is to protect the fan motor from high heat.

- ✘ The wall controller does not need to be located in the heat source room.

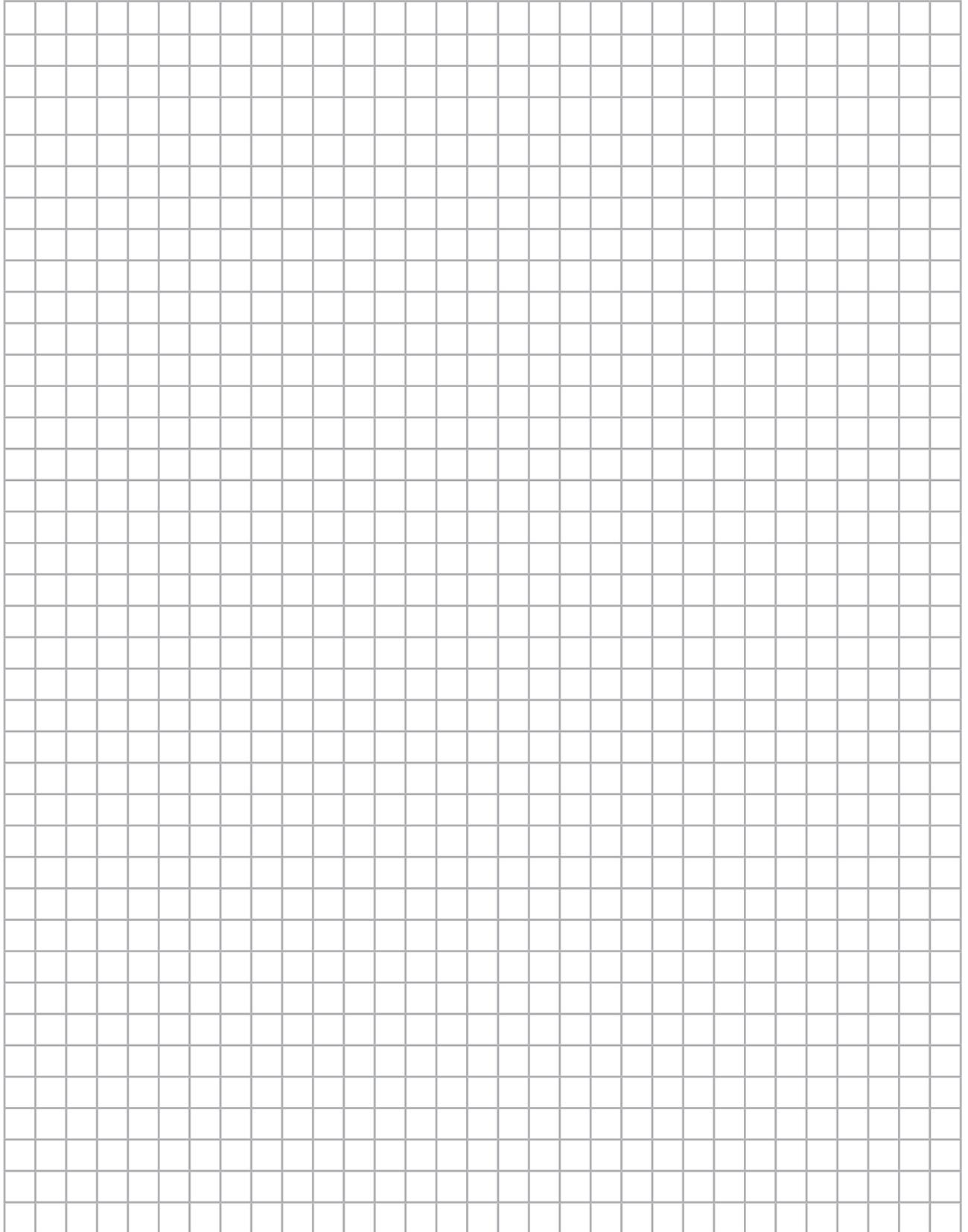
## Return Air – Synergy2 & Balance

Under ideal conditions, supply air to the perimeter of the home and extract from the centre. Consider the overall airflow pattern.

## Non-Standard installations

SmartVent can recommend solutions (e.g. roof kits, low profile ducting) for unusual installations.

A useful onsite tool. Use this graph to sketch a plan of the home and intended layout.



	<b>Acoustic Insulated Ducting</b>	
	150mm diameter x 3m	DCT0633
	150mm diameter x 6m	DCT0634
	200mm diameter x 3m	DCT0635
	200mm diameter x 6m	DCT0636

	<b>Insulated Ducting</b>	
	150mm diameter x 3m	DCT0583
	150mm diameter x 6m	DCT0584
	200mm diameter x 3m	DCT0585
	200mm diameter x 6m	DCT0586

	<b>Nude Ducting</b>	
	150mm diameter x 3m	DCT0561
	150mm diameter x 6m	DCT0562
	200mm diameter x 3m	DCT0563
	200mm diameter x 6m	DCT0564

	<b>Duct Fasteners</b>	
	Hanging strap	DCT2299
	Duct tape 48mm x 5m	DCT0173
	Duct tape 48mm x 30m	DCT0807

	<b>Duct Connectors</b>	
	150mm metal	DCT0723
	200mm metal	DCT0724

	<b>Y Branch</b>	
	150-150-150	DCT1233
	200-150-150	DCT0379
	200-200-200	DCT0376
	250-200-200	DCT0471

	<b>Branch Take Off</b>	
	200-200-150 (Single)	DCT0877
	250-250-150 (Single)	DCT0880
	200-150-150-150 (Double)	DCT0889
	250-200-150-150 (Double)	DCT0891

	<b>Fixed Louvre Grilles</b>	
	125mm white	DCT0041
	150mm white	DCT0063
	200mm white	DCT0340

	<b>Ceiling Diffuser</b>	
	150mm Flat ceiling diffuser	DCT2208

	<b>Extract Diffuser</b>	
	150mm Unijet Diffuser ice white	DCT2610
	200mm Unijet Diffuser ice white	DCT2611

	<b>Noise Reduction Fan Housing</b>	
	150/200 Centrifugal fan	DCT2297
	150/200 Mix flow fan	DCT2298

	<b>Replacement Filters</b>	
	G4 Sock	DCT1411
	G4 Filter	DCT2221
	F7 Filter/EU 7	DCT2093
	F7 with carbon filter	DCT2277
	HEPA with carbon filter	DCT2278
	G3 Filter for BAL225	DCT4338
	G3 Filter for BAL405	DCT2573
	G3 Filter for SYN190E2	DCT2328
	G3 Filter for SYN1015/SYN1015E2	FAN6017
G3 Filter for SYN2025/SYN2025E2	FAN6018	
G3 Filter for SYN3035/SYN3035E2	FAN6019	

	<b>Extension Leads</b>	
	3m Fan lead (4 wire)	FAN2190
	3m Heater or damper lead (3 wire)	FAN2194

	<b>Other Accessories</b>	
	SmartVent is able to offer a full range of ducting accessories. Contact us to discuss any specific ducting requirements you may have.	





0800 140 150

[www.smartvent.co.nz](http://www.smartvent.co.nz)

Technical support ph: 09 259 1662 | [enquiry@smartvent.co.nz](mailto:enquiry@smartvent.co.nz)

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