

Sound Attenuating Ventilation

Improved Product Solutions

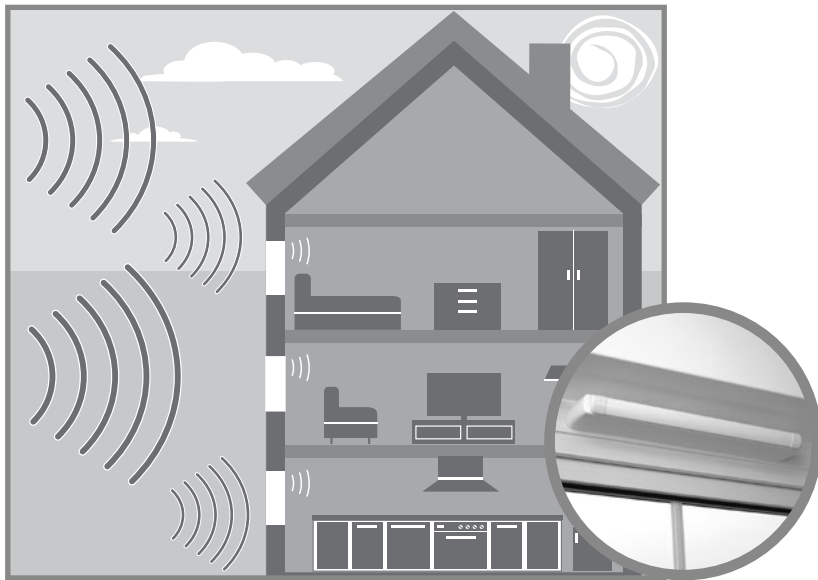
Cutting down on noise entering a property is very difficult whilst attempting to achieve required ventilation levels. The very fact that ventilation requires making a hole, or holes, in the building fabric means that external noise is liable to reach the dwelling occupants more easily.

There are a number of products on the market that claim to achieve high sound reduction figures however it is important all are checked with acoustic consultants. This is because the quoted sound reduction level for a trickle ventilator isn't measured in the same way as a window. For instance, a window with a sound reduction of 35dB used with a background ventilator giving a sound reduction of 35dB will result in somewhat less than 35dB. If more than one vent is required, the attenuation level becomes progressively worse.



At Titon we have worked hard to develop products which perform to the highest sound attenuation levels possible, but we appreciate we cannot change the laws of physics and acoustics. We always try to make people aware of the pitfalls rather than claim that our sound attenuation products are going to solve every problem.

We have a range of products, from basic slot vents, which could perform satisfactorily in certain situations (all of our main ranges have been tested for sound attenuation), through dedicated sound attenuating vents, to mechanical products with much higher sound attenuating properties. Some products are suitable for retrofitting.

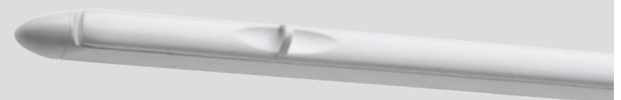


Below is a list of the main products in our ventilation portfolio, including their sound attenuating capabilities.

Trimvent Select XS13

Fits on the window, passive.
 Sizes: 4400EA or 5000EA.

Ventilation Strategy:
 System 1 (extract fans and background ventilators) or
 System 3 (central mechanical extract with background ventilators)



Sound Attenuation level:

	Open	Closed
4400EA version (vent and canopy)	Dn,e,w (C;Ctr) 32 (0;1)dB	Dn,e,w (C;Ctr) 41 (0;-1)dB
5000EA version (vent and canopy)	Dn,e,w (C;Ctr) 32 (-1;0)dB	Dn,e,w (C;Ctr) 35 (0;0)dB

SF Xtra Sound Attenuator - Improved Sound Attenuation Performance

Fits on the window, passive.

Sizes: All combinations below offer 2500EA.

Ventilation Strategy:

System 1 (extract fans and background ventilators) or

System 3 (central mechanical extract with background ventilators).

This product can also be retrofitted to a property in place of standard background ventilators subject to space being available. Acoustic and ventilation performance will vary according to the size of the pre-existing slot in the window.



Sound Attenuation level:

	Open	Closed
V75 + C75	Dn,e,w (C;Ctr) = 44 (-2;-3)dB	Dn,e,w (C;Ctr) = 55 (-1;-5)dB
V75 + C50	Dn,e,w (C;Ctr) = 42 (-1;-2)dB	Dn,e,w (C;Ctr) = 55 (-2;-5)dB
V75 + standard canopy	Dn,e,w (C;Ctr) = 40 (-1;-2)dB	Dn,e,w (C;Ctr) = 53 (-1;-4)dB
V50 + C25	Dn,e,w (C;Ctr) = 39 (-1;-2)dB	Dn,e,w (C;Ctr) = 55 (-2;-5)dB
V50 + standard canopy	Dn,e,w (C;Ctr) = 38 (-1;-2)dB	Dn,e,w (C;Ctr) = 55 (-2;-5)dB
V25 + C25	Dn,e,w (C;Ctr) = 36 (-0;-2)dB	Dn,e,w (C;Ctr) = 55 (-1;-5)dB
V25 + standard canopy	Dn,e,w (C;Ctr) = 35 (-0;-1)dB	Dn,e,w (C;Ctr) = 54 (-1;-4)dB
Standard vent + C25	Dn,e,w (C;Ctr) = 35 (-0;-1)dB	Dn,e,w (C;Ctr) = 55 (-1;-5)dB
Standard vent + standard SF canopy	Dn,e,w (C;Ctr) = 32 (-1;-0)dB	Dn,e,w (C;Ctr) = 52 (-2;-4)dB

Sonair

Fits through the wall, mechanical supply with filter.

Ventilation Strategy:

System 1 (extract fans and background ventilators) or

System 3 (central mechanical extract with background ventilators).

This product can also form part of a Sonair system, approved to comply with Part F of the building regulations.



Sound Attenuation level:

	Open
Sonair A+	Dn,e,w 52 (-1;-3)dB G2 or F6
Sonair F+	Dn,e,w 55 (-2;-4)dB F6 Dn,e,w 56 (-2;-6)dB G6

Sometimes the best way to achieve the best acoustic performance in new build applications is to upgrade from a traditional ventilation strategy, e.g. Extract fans in bathrooms and trickle vents in windows, to a central extract system, mechanical extract with fewer - sound attenuating – vents, or all the way to mechanical ventilation with heat recovery. The latter system means there are no direct apertures to the outside in living areas of the property.

Circular Silencer

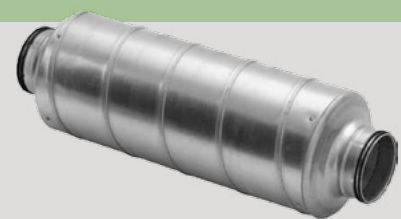
Fits to the ducting to reduce noise levels generated by whole house systems.

For sizes, please see the table below.

Ventilation Strategy:

System 3 (central mechanical extract with background ventilators) or

System 4 (mechanical extract with heat recovery).



Sound Attenuation level:

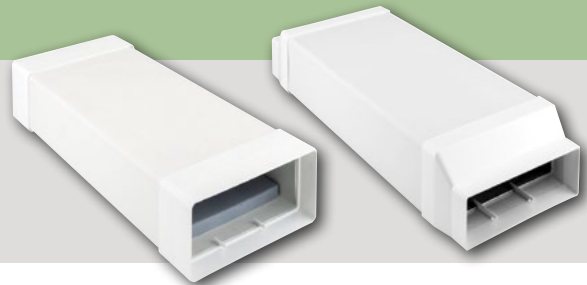
Part No.	Connection Ø mm	Silencer Ø mm	Length mm	Frequency Hz							
				63	125	250	500	1k	2k	4k	8k
CA100600	100	200	600	1	7	12	25	43	48	35	20
CA125600	125	224	600	1	5	10	22	39	37	26	16
CA125900	125	224	900	1	7	14	30	50	50	37	21
CA1251200	125	224	1200	2	9	18	39	50	50	47	26
CA150600	150	260	600	1	4	8	19	37	28	17	11

Rectangular Silencer

Fits to the ducting to reduce noise levels generated by whole house systems.
For sizes, please see the table below.

Ventilation Strategy:

System 3 (central mechanical extract with background ventilators) or
System 4 (mechanical extract with heat recovery).



Sound Attenuation level:

Material	Static Insertion Loss - dB							
	63	125	250	500	1k	2k	4k	8k
204x60mm x 0.5m Long Duct Silencer	-1	-3	5	6	12	18	12	9
204x60mm x 1.0m Long Duct Silencer	-1	0	11	12	13	37	23	15
204x60mm x 1.5m Long Duct Silencer	5	6	16	20	32	47	35	20
204x60mm x 0.5m Long Hi-Flow Duct Silencer	1.1	1.4	2.4	6	10.9	17.9	22.9	24.9
204x60mm x 1.0m Long Hi-Flow Duct Silencer	1.8	0.3	3.3	11.1	21.4	33.9	35.9	25.2
204x60mm x 1.5m Long Hi-Flow Duct Silencer	3.6	2.4	7	16	28.6	39.8	37.2	25.8
220x90mm x 0.5m Long Duct Silencer	1.9	2.7	3	6.5	9.8	18.6	25.4	26.7
220x90mm x 1.0m Long Duct Silencer	1.4	4.6	4.1	13	18.2	34.5	43.1	34
220x90mm x 1.5m Long Duct Silencer	0.1	1.8	3.1	18.1	26.6	43.7	46.1	34.3

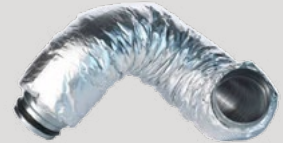
Sound Attenuators - Semi Flexible (for use with Titon HRV Q Plus Range)

Designed for Titon's MVHR range.

Reduces both duct and breakout sound levels.

Provides both acoustic and thermal insulation.

Isolates unit to ducting to help prevent noise transmission through vibrations.



Inline attenuation figures - Length 500mm

Dn (mm)	L (mm)	Attenuation, dB - Mid-frequency, Hz							
		63	125	250	500	1000	2000	4000	8000
125	500	6.3	7.1	15.2	19.9	20.3	26.1	17.1	12.9
150	500	8.3	9.3	18.8	19.4	16.7	25	19.8	13.8

Inline attenuation figures - Length 1000mm

Dn (mm)	L (mm)	Attenuation, dB - Mid-frequency, Hz							
		63	125	250	500	1000	2000	4000	8000
125	1000	12.4	20.1	33.6	29.8	29.5	33.6	32.1	23.6
150	1000	11.1	11.8	34.2	28.5	26.3	34.9	27.2	21.8

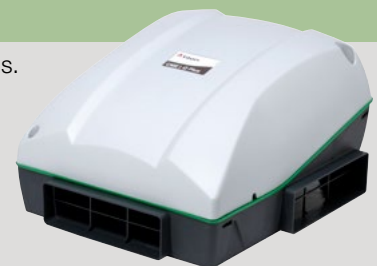
CME2 Q Plus

Fits whole house ducted system (with background ventilators), extracting from the wet rooms.

Sizes: One model, SAP Appendix Q Best Practise performance.

Ventilation Strategy:

System 3 (central mechanical extract with background ventilators) or
System 4 (mechanical extract with heat recovery). This system can also form part of a Sonair system, approved to comply with Part F of the Building Regulations.



Sound Attenuation level:

	Induct Inlet	Standard running speed casing breakout
CME 2 Q Plus	30dB(A) @3m	33dB(A) @ 3m

HRV Q Plus

Fits whole house ducted system (with background ventilators), extracting from the wet rooms and recovering the heat from the extracted air. This heat is then re-distributed to the habitable rooms. Sizes: Six models, SAP Appendix Q Best Practise performance.

Ventilation Strategy: System 4 (mechanical extract with heat recovery).



Sound Attenuation level:

Product	% of Max flow	Airflow	dB(A) @ 3m Hemispherical			dB(A) @ 3m Spherical
			Induct Inlet	Induct Outlet	Casing Breakout	Casing Breakout
HRV1.25 Q Plus Eco	40%	22l/s @ 10Pa	28	41	20	17
	61%	34l/s @ 23Pa	36	49	28	25
	100%	56l/s @ 50Pa	43	57	36	33
HRV1.35 Q Plus Eco	37%	22l/s @ 12Pa	28	39	19	16
	65%	39l/s @ 38Pa	40	52	29	26
	100%	60l/s @ 100Pa	47	61	36	33
HRV1.75 Q Plus Eco	39%	30l/s @ 18Pa	26	36	22	19
	60%	47l/s @ 47Pa	31	46	22	19
	100%	78l/s @ 100Pa	40	54	30	27
HRV2 Q Plus Eco	33%	27l/s @ 8Pa	20	33	16	13
	70%	57l/s @ 56Pa	35	51	32	29
	100%	81l/s @ 100Pa	41	56	37	34
HRV2.85 Q Plus Eco	31%	29l/s @ 7Pa	22	33	14	11
	66%	61l/s @ 40Pa	34	47	24	21
	100%	93l/s @ 100Pa	42	56	34	31
HRV3 Q Plus Eco	33%	36l/s @ 10Pa	25	35	21	18
	68%	73l/s @ 48Pa	36	49	29	26
	100%	108l/s @ 100Pa	45	57	37	34
HRV10 Q Plus Eco	41%	44l/s @ 22Pa	27	38	27	24
	69%	75l/s @ 51Pa	36	48	37	34
	100%	108l/s @ 100Pa	43	57	51	48
HRV10M Q Plus Eco	41%	44l/s @ 22Pa	27	38	23	20
	69%	75l/s @ 51Pa	36	48	33	30
	100%	108l/s @ 100Pa	43	57	46	43
HRV10.25 Q Plus Eco	39%	56l/s @ 12Pa	32	47	35	32
	66%	95l/s @ 44Pa	43	62	45	42
	100%	144l/s @ 100Pa	48	70	54	51
HRV10.25M Q Plus Eco	39%	56l/s @ 12Pa	32	47	30	27
	66%	95l/s @ 44Pa	43	62	39	36
	100%	144l/s @ 100Pa	48	70	49	46
H200 Q Plus Eco	47%	39l/s @ 20Pa	25	37	25	22
	64%	53l/s @ 37Pa	30	21	31	28
	100%	83l/s @ 100Pa	39	54	41	38

Trimbox NO₂ Filter

Effective in reducing pollutants in the home, improving Indoor Air Quality (IAQ) and reducing the risk of Toxic Home Syndrome. Compatible with Titon's range of MVHR units. Sizes: 2 models (with 3 or 4 carbon filters)

Ventilation Strategy: System 4 (mechanical extract with heat recovery).



Sound Attenuation level:

	Octave Band (Hz) Static Insertion Loss, dB							
	63	125	250	500	1000	2000	4000	8000
Trimbox NO ₂ (3 filter) unit	7	8	5	9	16	27	33	36
Trimbox NO ₂ (4 filter) unit	6	7	6	10	19	35	35	40

Inlet and outlet levels are Induct (BS EN 13141-7 clause 6.4.2 requirement), casing breakout is hemispherical - for spherical subtract 3dB. Titon acoustic data is independently tested at Sound Research Laboratories. Data is specifically tested for the Eco unit (100% bypass) - non bypass variants with deeper heat exchangers will offer lower acoustic levels. The full acoustic results at various speed settings are available on request, or visit www.titon.co.uk