





What is Heat Recovery Ventilation

Heat Recovery Ventilation (or HRV) is a system designed for the continuous and constant exchange of air inside buildings in order to improve air quality.

Ventilation units are equipped with two fans to supply and extract air at the same time. A cross-flow counterflow heat exchanger recovers the energy contained in the extracted air and transfers it to the supplied air, guaranteeing efficiencies of over 90%. This reduces the building energy consumption, while at the same time purifying the air from pollutants and moisture.

This system allows improving the energy characteristics of the buildings, complying with current regulations, while maintaining a high level of living comfort.







HRV SYSTEM FEATURES



Air renewal

Every person takes on average more than 20,000 breaths per day: this happens more and more often inside closed environments, where the concentration of pollutants is up to 5 times higher than outside.

HRV allows the dilution and elimination of carbon dioxide, formaldehyde, Radon gas and other substances which can have harmful effects on health if present in high concentrations.

Constant air renewal also reduces the humidity produced in the home, which is often the cause of mould formation, condensation and increased perceived heat during the summer period.

Sick Building Syndrome

The consequences of a lack of proper ventilation can lead to the so-called "Sick Building Syndrome", which occurs when an environment does not adequately meet certain health requirements.

The "Sick Building Syndrome" manifests itself through a range of symptoms related to being indoors: burning eyes, watery eyes, mild allergylike symptoms, asthenia, headache, inability to concentrate and irritation of the respiratory system, mucous membranes and skin surface.

According to WHO (World Health Organisation) estimates, 20% of the western population is affected by sick building syndrome.

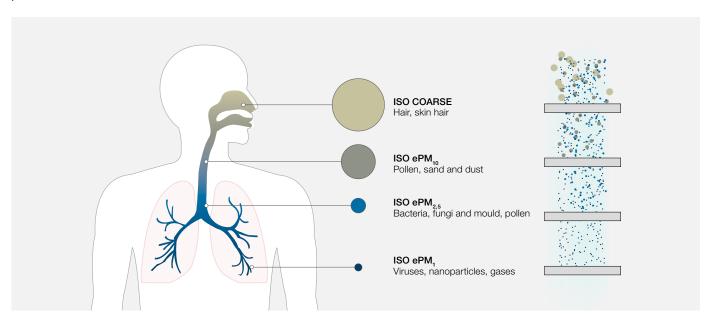




Filtration

Mechanical ventilation prevents the entry of dust, pollutants and pollen by means of the unit high-performance filters.

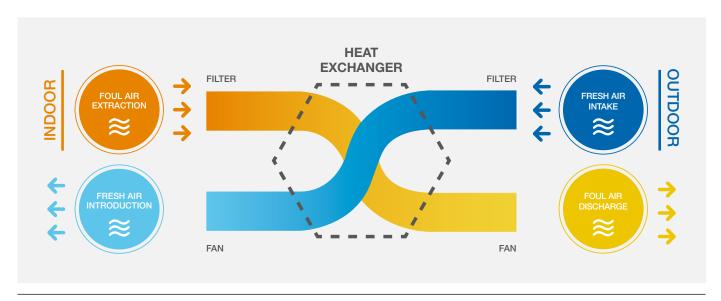
Blocking the entry of these substances can limit the occurrence of respiratory diseases and allergies.



Energy recovery

The Valsir mechanical ventilation units allow for a very high level of heat recovery, exchanging thermal energy between the inlet and outlet air flows.

This allows reducing the impact of the costs of the heating and air conditioning system, improving the efficiency of the building in accordance with the most innovative standards of sustainability in construction.

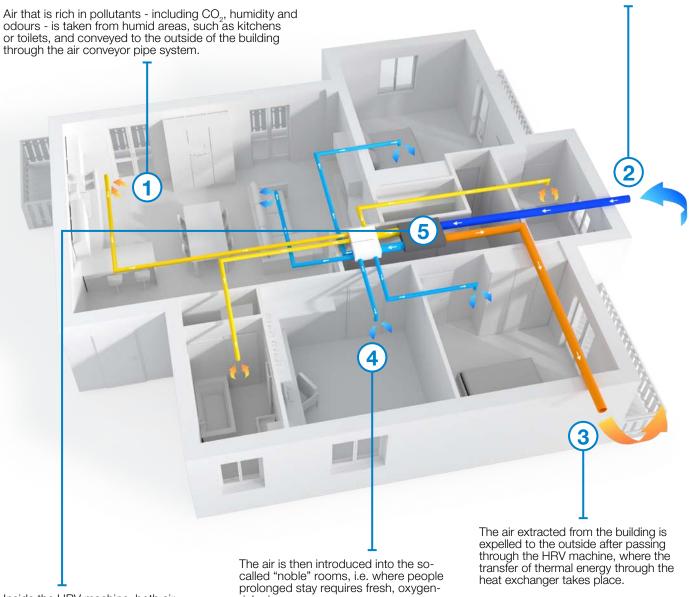






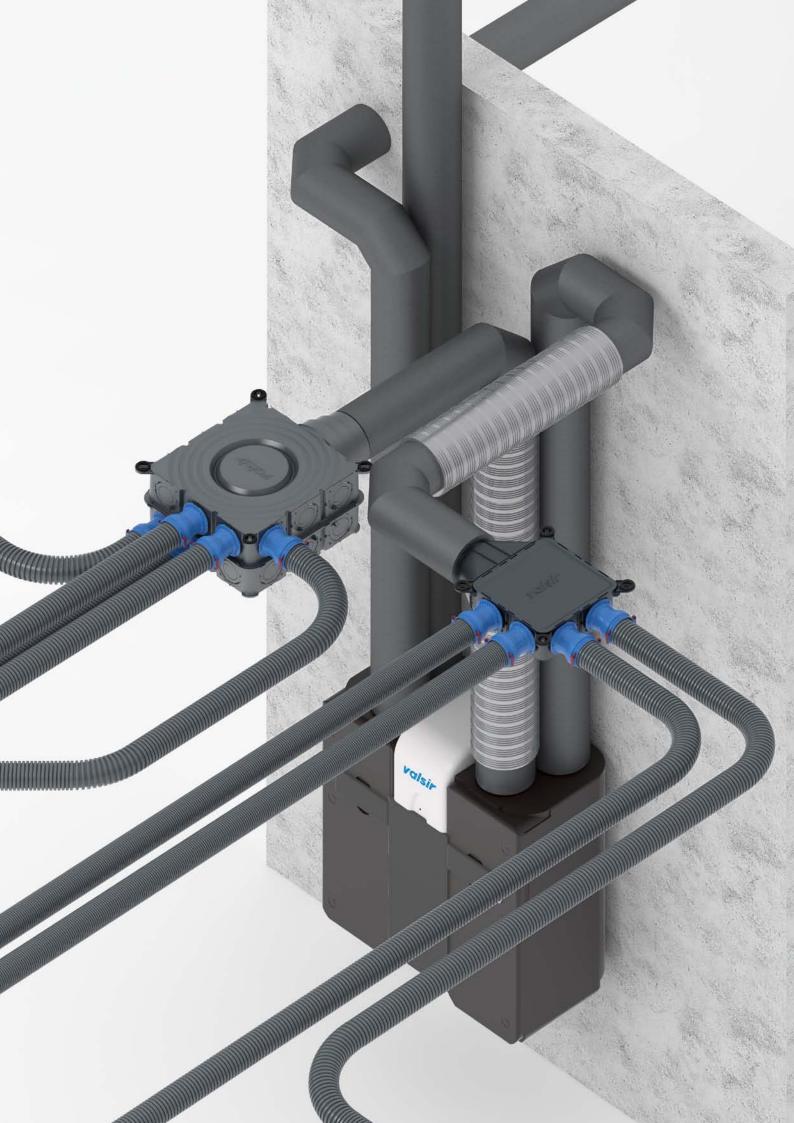
HOW THE HRV SYSTEM WORKS

Oxygen-rich outside air is drawn in through intake grilles and led to the HRV machine, where it is filtered to remove dust, pollen and impurities. Even in this case there is an exchange of thermal energy with the expulsion flow before air is supplied.



Inside the HRV machine, both air flows are filtered, eliminating airborne substances and improving living comfort. From an energy point of view, the heat exchanger enables the transfer of thermal energy from the flow with the higher temperature to the one with the lower temperature, with a substantial reduction in the building energy consumption.





ADVANTAGES AND BENEFITS OF THE HRV SYSTEM



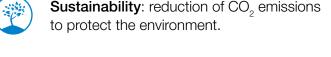
Improved health and hygiene: constant air exchange, monitoring of indoor pollutants, non-proliferation of mould and reduction of pollutants from outside.



Room air renewal: the AriaSilent HRV system allows for a constant and continuous exchange of air inside the buildings, thus allowing an important increase in comfort conditions for the people living in these environments. The exchange process allows a continuous elimination of pollutants such as CO₂ and humidity, which are produced during the daily activities carried out in the house.



Economic savings: less energy consumption thanks to heat recovery up to values over 90%.





Preservation of the building: the elimination and control of humidity in the environment eliminates the problem of condensation and mould formation on the internal walls of the building, thus improving its state of preservation and keeping its value high over time.



Innovative air conveyor system.

Valsir's innovative AriaSilent range allows simple and quick installation with just a few components for the entire air distribution system.



Energy efficiency: the presence of the high-efficiency heat exchanger on board the Valsir's HRV units allows recovering thermal energy in both winter and summer, thus reducing the energy consumption due to the minimisation of the air exchange process.

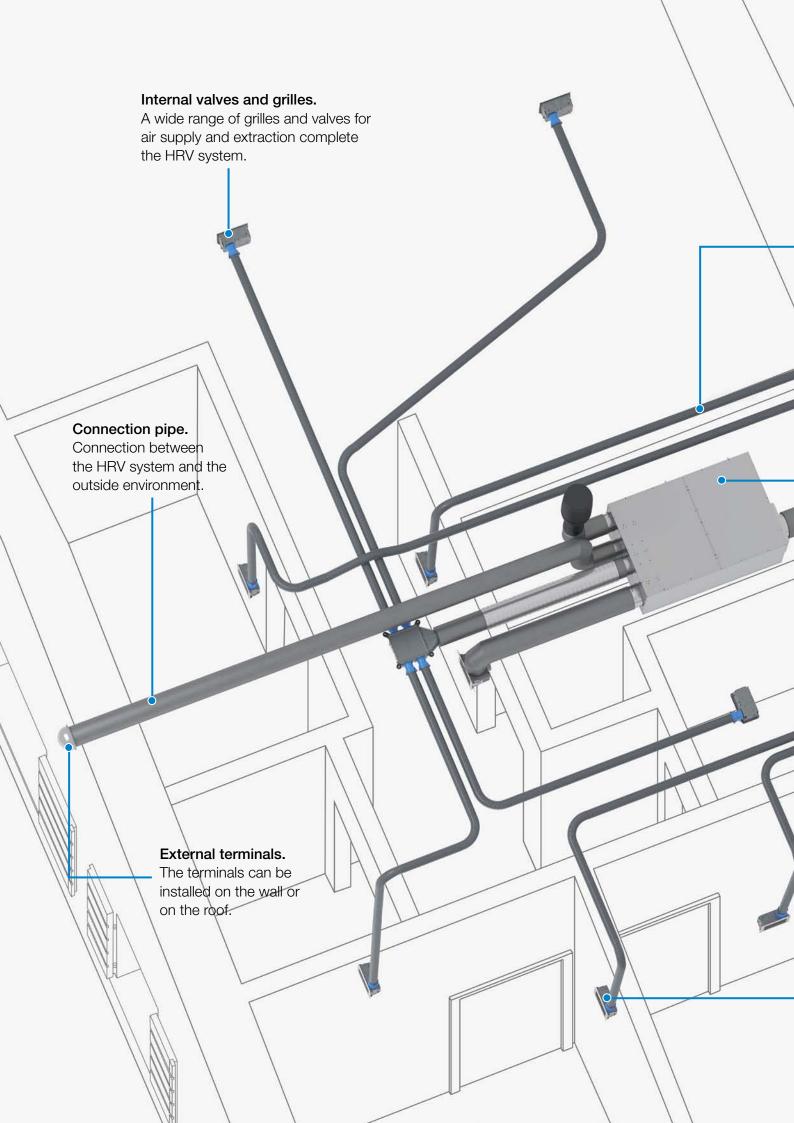


Filtration: the filtration system that Valsir's HRV units are equipped with allows effective elimination of dust, smog, pollen and other airborne substances by preventing them from entering into the building. The elimination of these airborne particles and pollen reduces the occurrence of allergies especially during the spring and summer months.



Radiant system combination: state-of-the-art solutions guaranteed by the Valsir's HRV systems allow the combination and management of the radiant system directly from the electronics on board the Maxima, Isoterma and Idronica HRV units. In this way, the combined control is efficient with the management of air renewal, heating and cooling according to the season and control of the ambient humidity levels.







Distribution pipes.

The distribution pipes are used for air intake and distribution into the room. Thanks to antistatic and antibacterial treatment, high air quality is always guaranteed.

Heat recovery units.

High-efficiency heat recovery unit with air-to-air counterflow heat exchanger with efficiencies \geq 90%.

Silencers.

The silencers guarantee better acoustic comfort.

Distribution boxes.

The distribution boxes are used to correctly distribute the flow rate of the air supplied to or extracted from the individual rooms, allowing the flows to be balanced.

Grille holder adapters.

The adapters are compatible with different types of grilles and valves, both the standard and the design ones.

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VALSIR'S HRV MACHINES

		Installation	Air flow rate	Room surface	Radiant system management	Water supply
ARIA EVO V		Vertical	150 m ³ /h	111 m²		
A		-	250 m³/h	185 m²		
		-	350 m³/h	259 m²	-	-
		-	500 m ³ /h	370 m²		
		-	600 m ³ /h	444 m²		
ARIA EVO H/V		Horizontal	170 m³/h	126 m²		
A	10,0	and vertical	260 m³/h	193 m²	· -	-
DRONICA	a a comp	Horizontal	130 m³/h	100 m ²		7.4000
Α	10 4001 m	and vertical	260 m ³ /h	200 m ²	•	7-10°C
 SOTERMA	and	Horizontal	130 m³/h	100 m ²		
ISOTERMA A	arara	Horizontal and vertical	130 m³/h	100 m ²		15-20°C
			260 m ³ /h	200 m ²		
	- 6000					
MAXIMA	D'O'D'	Horizontal and vertical	130 m³/h	100 m ²		1E 00°C
A	44 VOOI		260 m³/h	200 m ²	•	15-20°C
BREZZA60		Horizontal	60 m³/h	22 m²	-	-



ARIA AND ARIA EVO



Valsir's Aria Evo HRV system offers a wide range of high-efficiency double flow heat recovery units for all types of installation.

The Aria Evo range consists of two models, with different flow rates, that can be installed in false ceilings or on walls, and five models of different sizes that can be installed on the floor, with upper air connections for surfaces from 40 m² to 450 m² (suitable for flats, villas and small businesses).

All Aria Evo units are equipped with by-pass for automatic summer free cooling and remote panel with multifunctional control.

Available accessories include: electrical resistances and water coils for pre- and post-heating, humidity probes and CO₂ probes for monitoring and diluting pollutants.

All Aria Evo units allow the use of ePM_{10} (former G4) filters or ePM_1 (former F7) fine mesh filters to further improve the purity of the supplied air.

The Aria Evo distribution system is quick and easy to install and consists of components suitable for all types of system.



VERY HIGH-EFFICIENCY HEAT RECOVERY UNITS

Aria Evo H/V

- 2 models with flow rates of 170 and 260 m³/h.
- Polypropylene foam casing for improved thermal and acoustic insulation.
- Vertical and horizontal installation.
- Automatic by-pass as standard.
- Remote controls and probes with radio frequency communication.
- Plug & Play system.

Aria Evo V

- 5 models with flow rates of 150 and 600 m³/h.
- Polypropylene foam casing for improved thermal and acoustic insulation.
- Vertical floor or wall-mounted installation.
- Automatic by-pass as standard.
- Remote controls and probes with radio frequency communication.
- Plug & Play system.
- Left or right configuration installation.

	Model	Power input	Radiated sound power	Filter class
ARIA EVO V A	150	136 W	49 dB(A)	
	250	136 W	52 dB(A)	
	350	196 W	54 dB(A)	ISO 16890 ePM ₁₀ > 50% (extraction) ISO 16890 ePM ₁ > 70% (supply)
	500	196 W	55 dB(A)	1 ()
	600	340 W	55 dB(A)	
ARIA EVO H/V	170	54 W	51 dB(A)	ISO 16890 ePM ₁₀ > 50% (extraction)
	260	170 W	55 dB(A)	ISO 16890 ePM ₁ > 70% (supply)

Sanif-ox improves air quality

- Sanif-ox reduces the occurrence of airborne viral and bacterial diseases and the causes of many allergies.
- Thanks to the oxidising power of Sanif-ox, moulds, spores, fungi and pollen are inactivated, improving room comfort.
- The oxygen molecules activated by Sanif-ox attack odours by breaking down the substances that cause them into simple compounds.





IDRONICA, ISOTERMA AND MAXIMA



The HRV system with dehumidification consists of a range of three models equipped with very highefficiency dual-flow heat recovery units, for horizontal or vertical installation.

All the units are available in versions with internal cooling circuit (with cooling integration or only isothermal dehumidification) or with water coil, and are equipped with remote panel with multifunctional control.

The main accessories include: humidity probes, VOC probes and CO₂ probes for monitoring and diluting pollutants.

Possibility of operating in HRV only mode or HRV mode with dehumidification with partial recirculation.

Fresh air flow rate from 80 to 260 m³/h. Total handled air flow rate from 260 to 520 m³/h. Dehumidification from 27 to 63 l/h (up to 84 l/h for the Idronica version).

The advanced electronic components also allow the joint management of the mechanical ventilation system and radiant heating/cooling.



HEAT RECOVERY UNITS WITH DEHUMIDIFICATION

Air handling units: Idronica, Isoterma and Maxima

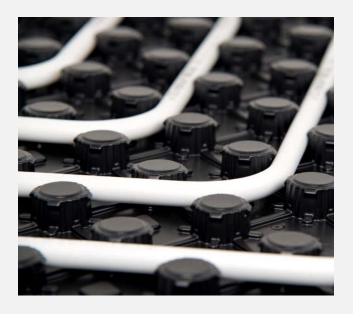
- Fans with low consumption EC motor.
- Very high-efficiency heat recovery unit (up to 90%).
- 20 mm thick sandwich panel support structure with sound-absorbing and heat-insulating insulation.
- Filters of class ISO Coarse ≥65% (former G4).
- Air dehumidification via recirculation circuit with compressor (Maxima and Isoterma) or hydronic coil (Idronica).
- Heat integration in both hot and cold mode (Maxima and Idronica).

- Interface with building automation management system.
- Possibility of independent management of the unit and the radiant system with control of the mixing valve, dew point alarm, opening and closing of the radiant areas (through additional thermostats for each area).
- Horizontal ceiling installation or vertical wall installation.

	Model	Dehumidification	On-board compressor	Summer thermal integration	Winter thermal integration	Radiated sound power	Filter class
IDRONICA	130	_ •		_	_	46 dB(A)	- ISO 16890 Coarse ≥ 65%
Α	260		-	•		51 dB(A)	
ISOTERMA	130		47 dB(A)				
A	260	-	•	-	•	52 dB(A)	- ISO 16890 Coarse ≥ 65%
MAXIMA	130	_ •	•	_	_	47 dB(A)	- ISO 16890 Coarse ≥ 65%
A	260	_ •	•	•	•	52 dB(A)	

Combination with radiating system

In the construction of new buildings the combination of a radiant system and a heat recovery ventilation system is increasingly requested. This is because the systems integrate perfectly in buildings with high energy performance. On the one hand, they provide heat recovery from the air exchanged with the outside and on the other hand, they optimise consumption thanks to the possibility of supplying the radiant system with water at lower temperatures than other heating systems, thus optimising the efficiency of heat pumps or boilers of the latest generation.







THE INNOVATIVE ARIASILENT DISTRIBUTION SYSTEM

Innovation, optimisation and simplification are three aspects that distinguish the AriaSilent HRV system distribution range.

A number of patented features, such as the tear-off openings, the flow divider and the grille attachment make the new system revolutionary and innovative.

The plastic components with antibacterial masters ensure a healthy environment by killing germs and bacteria in the air.

The reduced number of components, suitable for all sections of the system, makes AriaSilent a practical and simple solution. Accessories are designed so that they can be used in all applications, from new buildings to renovations with limited space available for new installations.

Developed in compliance with the most up-to-date regulations, AriaSilent can guarantee a perfect airtightness thanks to the presence of gaskets preinstalled on the fittings, and compliance with all the requirements of the UNI EN 17192:2019 standard.







ARIASILENT PIPE AND FLEX



AriaSilent Pipe

Insulated polyethylene foam pipe ideal for HRV systems for connections between ventilation unit, box and outside environment (diameters available: 125, 160 and 200 mm).

The insulation reduces heat loss and prevents condensation.



Bare AriaSilent Flex

Flexible duct made from polyolefin resin film mixed with additives, anti-bacterial and anti-mould master with a spring steel wire coil (diameters available: 127, 160, 180 and 203 mm).

Suitable for heat recovery ventilation and air conditioning systems.



Insulated AriaSilent Flex

Flexible duct made from polyolefin resin film mixed with additives, anti-bacterial and anti-mould master with a spring steel wire coil and heat insulating coating to prevent condensation and heat loss (Ø 127, 160, 180 and 203 mm).

Solution suitable for heat recovery ventilation and air conditioning systems.



Alufonic insulated AriaSilent Flex

Flexible duct with an AL/PET/AL (aluminium/polyester/aluminium) wall, micro-perforated for noise reduction, with steel wire coil and heat insulating coating to prevent condensation and heat loss (Ø 127, 160, 180 and 203 mm). System ideal for heat recovery ventilation and air conditioning systems.





ARIASILENT BOX

The AriaSilent Box, available in four versions, allows optimal management of air distribution in HRV systems with or without dehumidification and thermal integration treatments.

The practical tear-off opening featured in all models allows only the necessary connections to be used with no need of closing plugs.



AriaSilent Box 6 Compact AriaSilent Box 8 Compact

Compact boxes allow the connection of up to 6 or 8 corrugated pipes, with a maximum air flow rate of 250 m³/h.

The limited thickness - only 11 cm - makes this solution suitable for applications where there is little space available for installation.



AriaSilent Box 18

With up to 18 connections and full compatibility with all corrugated systems - round or oval - this box allows for maximum installation flexibility and a maximum air flow rate of 650 m³/h.

A patented baffle inside the box allows for an optimal distribution of the air flow in each duct.



AriaSilent Box 18 Therm

Equipped with thermal insulation, AriaSilent Box 18 Therm is the optimal solution for systems that combine dehumidification and thermal integration treatments, avoiding the formation of condensation and energy waste.

A patented baffle inside the box allows for an optimal distribution of the air flow in each duct.





THE ARIASILENT TUBE SYSTEMS

The AriaSilent Tube, in its round and oval versions, is the ideal solution for conveying air.

Made of double wall and very flexible, they are easy to install.

They also avoid internal turbulence thanks to their extremely smooth surface. In addition, the antibacterial treatment improves the salubrity of the environment by killing germs and bacteria.



AriaSilent Tube

The different diameters available (63-75-90 mm) allow for great flexibility in the installation.

The low pressure drop due to the internal design improves the acoustic performance of the system and the conveying of air.

The inner layer with antibacterial masters ensures high hygiene of the system and consequently of the building.









AriaSilent Tube Compact

The compact 50x102 and 55x126 versions are suitable for installation in the most confined spaces, while maintaining high air flow rates and low pressure drops.

Flexibility and high resistance allow AriaSilent Tube Compact to be easily installed in any building context; safety is guaranteed by the antibacterial treatment of the inner layer.









ARIASILENT LINK UNIVERSAL FITTINGS

One of the cornerstones of this innovative solution for HRV systems is the AriaSilent Link universal fitting, which is available in 5 versions - one for each section of corrugated pipe - and which allows you to connect the pipes to any accessory in the system.

The airtightness of the system is guaranteed by gaskets pre-installed on the fittings, while the perfect connection to the corrugated pipes is ensured by the presence of anti-slip clips.



AriaSilent Link 63, 75 and 90

AriaSilent Link fittings allow connecting corrugated round pipes with diameters 63, 75 and 90 mm to all system accessories such as distribution boxes, grille holders, elbows and sleeves.



AriaSilent Link Compact

The AriaSilent Link Compact fittings are dedicated to the two oval pipe sizes and allow connecting to the system accessories in three different positions: straight, 45° or 90°.



AriaSilent Link Bend and Linear

Compatible with all AriaSilent Link fittings, they allow bends or linear connections between systems of the same cross-section, or with a change of geometry or corrugated pipe size, making system installation extremely flexible.





ARIASILENT POINT GRILLE AND VALVE HOLDERS



AriaSilent Point 70 Compact

Compact at 70 mm, this grille holder can be combined with the AriaSilent Tube 50 Compact using one or both connections. Ideal for installation in confined spaces.



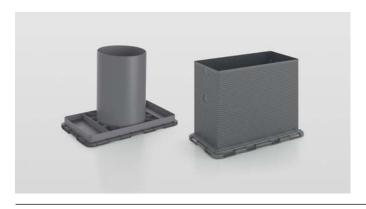
AriaSilent Point 100

Compatible with all universal AriaSilent Link fittings, it is only 100 mm thick and allows connecting to the air intake or supply system.



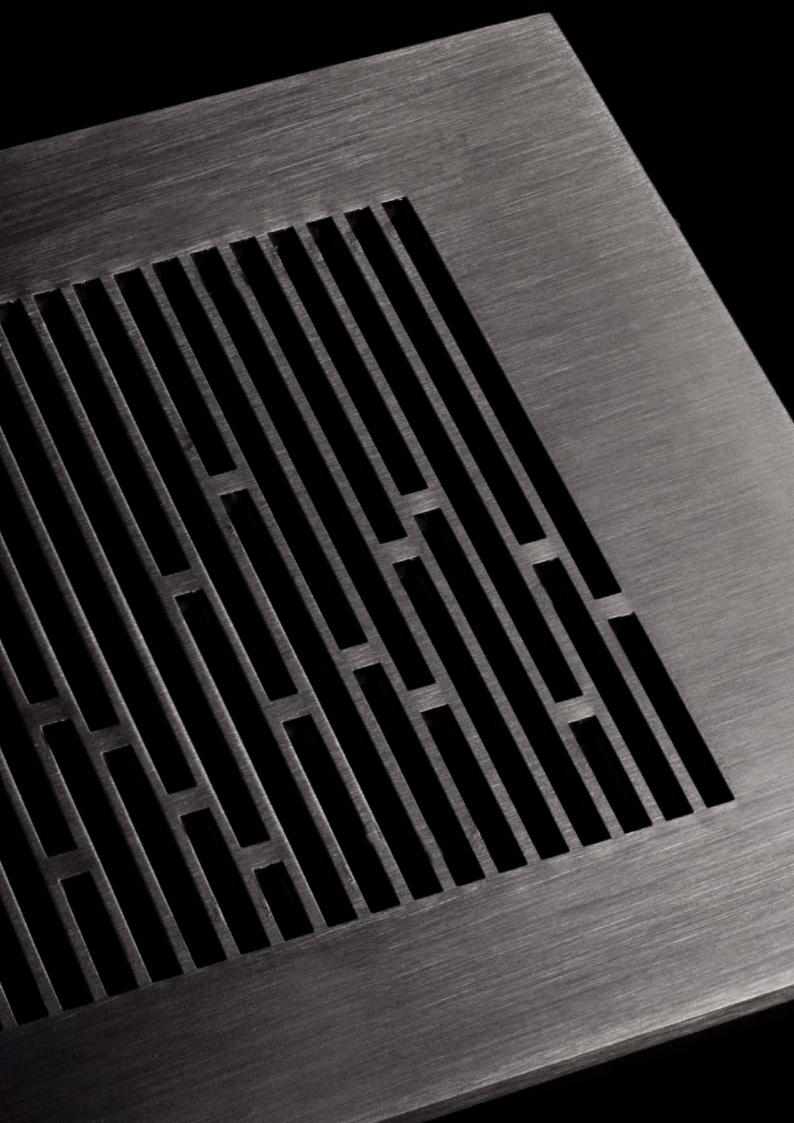
AriaSilent Point 200

This grille holder is suitable for the connection of branch distribution systems or with the indoor air recirculation systems of the Maxima, Isoterma and Idronica units with the possibility of side or rear connection with 125 mm diameter ducts.



Different installation possibilities are guaranteed by the standard versions, equipped with a 125 mm round valve holder, or by the combination of the extension - compatible with all AriaSilent Points useful for bridging any gaps between the grille holder and the wall, ceiling or floor surface.





GRILLES AND VALVES

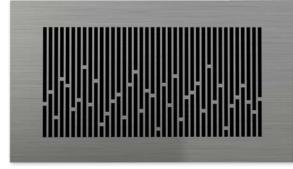
The only components that remain visible in a HRV system are the grilles dedicated to supplying and extracting air from the building.

The AriaSilent range includes grilles and valves with modern design to best fit to different building contexts.



AriaSilent Diamond - 280x160 mm Finishes: white steel - brushed stainless steel





AriaSilent Urban - 280x160 mm Finishes: white steel - brushed stainless steel



Extraction and supply valves - Ø 125

The patented grille holder adapter allows the connection of grilles to AriaSilent Point adapters in order to avoid accidental detachment of the grille.





BREZZA60: DECENTRALIZED HEAT RECOVERY UNIT

Excellent air quality in every room

Brezza60 is the ideal solution for a heat recovery ventilation system that manages a constant exchange of air in individual rooms with no heat loss and energy waste.

- Aerator with ceramic heat recovery with efficiencies of up to 93%.
- Alternating supply and extraction ventilation system with cycles of 70 seconds.
- Flow rate up to 60 m³/h.
- Visual indicator for functions and alarms.
- Standard humidity sensor with 3 set levels.

- Ideal solution for renovation work due to the ease and speed of installation.
- Equipped with an internal and invisible automatic closing damper to prevent unwanted air from entering again when the product is switched off.
- Twilight sensor for speed reduction in the evening and night hours.
- Equipped with an electronically switching (brushless) low consumption motor.
- Adjustable airflow speed via remote control or remote panel.





ENERGY EFFICIENCY FOR RESIDENTIAL VENTILATION

A large share of natural resources is used by energy consuming devices.

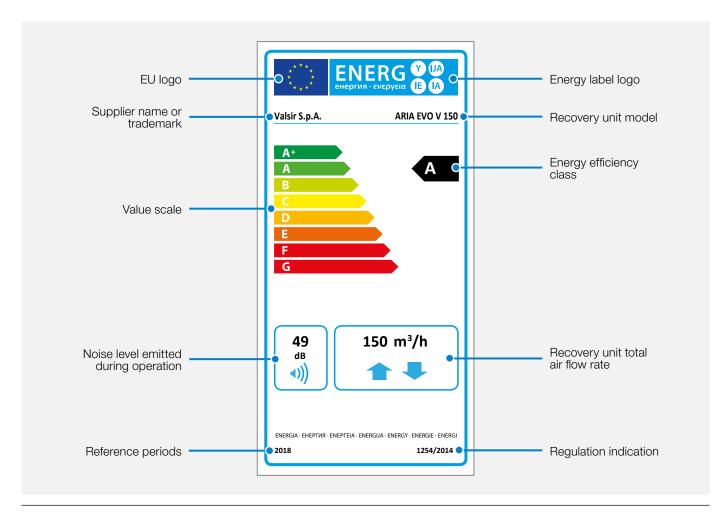
In order to limit their consumption, the European Union has issued directives and regulations including delegated regulation 1254/2014, which regulates the labelling of the energy consumption of residential ventilation units.

The energy label allows the user to easily compare products by assessing their energy efficiency.

Unlike other electrical components, the energy classes on residential ventilation labels are determined by a specific parameter: the specific energy consumption, or SEC.

This value shows the energy saving potential of the unit, expressed in kWh per m² per year.

SEC class	SEC [kWh/a·m²]			
A+ (high efficiency)	SEC < -42			
A	-42 ≤ SEC < -34			
В	-34 ≤ SEC < -26			
С	-26 ≤ SEC < -23			
D	-23 ≤ SEC < -20			
E	-20 ≤ SEC < -10			
F	-10 ≤ SEC < 0			
G (low efficiency))	0 ≤ SEC			







CUSTOMER SERVICE

Technical support

Valsir provides complete support during design and on site, thanks to a high-level technical department that consists of a team of engineers with international experience that are capable of providing solutions to all installation needs.



Valsir Academy

Valsir has an important training facility - Valsir Academy - dedicated to clients, distributors, plumbers and planners that provides perfectly equipped courses, both theoretical and practical on the use and the design of plumbing and heating systems. Courses are provided both inside the training facility and on customers' premises.

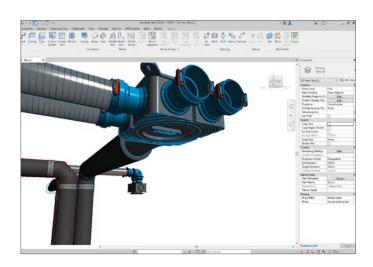


VALSIR IS BIM-READY

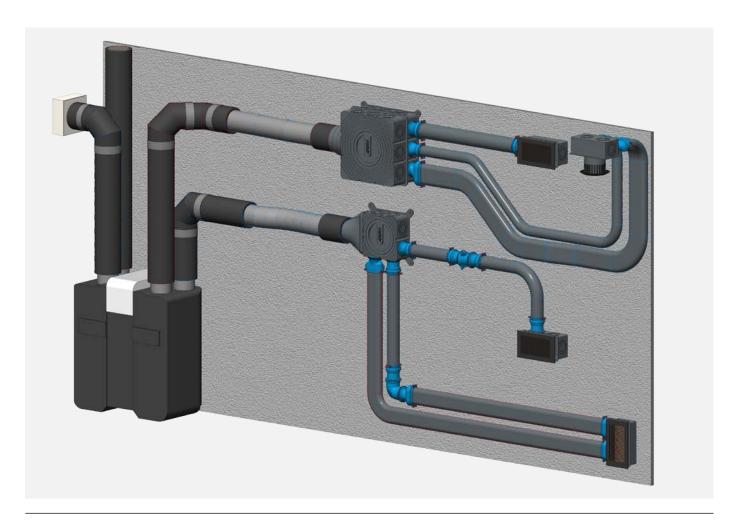
Valsir has adopted the BIM philosophy, the modelling process that allows to improve planning, design, construction and management of buildings, aligning with the industry transition to digital building modelling.

A "BIM-oriented" design offers outstanding competitive advantages: more efficiency and productivity, less errors, less downtime, less costs, greater interoperability, maximum information sharing, more timely and consistent project control.

Valsir captures the essence of this system with a set of Revit models and applications designed for quick and easy use.









QUALITY AND ENVIRONMENT

Quality

The constant commitment of Valsir in the production of quality products is attested by over 200 product approvals obtained throughout the world by the most stringent certification bodies (data updated to 01/02/2022), by a Management System of the Quality (QMS) certified in compliance with the UNI EN ISO 9001:2015 standard and the Energy Management System (SGE) certified according to the international standard UNI EN ISO 50001:2018. Valsir S.p.A. has further demonstrated its commitment to the environment by obtaining certification ISO 14001:2015 on the Vestone production site.

Since 2019 an innovative and modern plant has also been built that, integrated with the already installed photovoltaic park, will be able to produce over 30% of the electricity needed for all Valsir plants. This is a Trigenerator powered by methane gas capable of producing electricity, steam and cooling energy.



Sustainability

Efficient processes and reliable products are no longer the only parameters used to perform an assessment of the quality of a company's conduct: the capacity of the company and its management to design and implement production process that are sustainable from an environmental point of view is of equal importance.

Valsir has started a project of Corporate Social Responsibility and has published its 3th Sustainability Report that gathers facts and figures relating to the daily commitment of Valsir in terms of social, economic and environmental responsibility.



Download valsir.it/u/sostenibilita-en







WASTE SYSTEMS



SUPPLY SYSTEMS



GAS SYSTEMS



FLUSHING SYSTEMS



BATHROOM SYSTEMS



TRAPS



RADIANT SYSTEMS



DRAINAGE SYSTEMS



HRV SYSTEM



ACADEMY



SEWER SYSTEMS



WATER TREATMENT







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