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WELCOME TO THE VENTS WORLD!







VENTS company was founded in the nineties of the XXth century.

Dynamic development of the enterprise and ongoing study of the consumer demand enabled rapid international leadership of the company in the ventilation industry.

VENTS is a powerful research and development enterprise with 2500 professionals working as a single team to ensure a full production cycle from idea to end product. The production base of the company is located at more than 60 000 m² area. It includes 16 workshops equipped under the latest international standards and each of them is comparable to a separate plant.

Modern equipment, active implementation of advanced technologies and highly automated production are the characteristic features of VENTS company.

The company undergoes rapid dynamic development; fundamental researches and effective designs in climatic equipment industry are in the focus of the company's business strategy.

The joint cooperation of the corporate design department, test laboratories and production workshops let us introduce high quality products to the market.

Special attention is paid to the manufacturing of the goods during all manufacturing stages including monitoring of the technological conditions. Technical characteristics of supplied raw materials are thoroughly checked. Quality control system which meets international standard requirements ISO 9001:2000 was implemented at the enterprise.

Environmental protection is one of the basic components of the corporate development. The technological process at the enterprise is arranged in such a way as to exclude any negative impact to the environment. To solve the global energy saving problem we develop a special climatic equipment that provides comfortable conditions for people and reduces the energy demand significantly.

Perfect quality, competitive prices, high production potential, technical capabilities and the wide product range stimulate long-term partrnership and product promotion all over the world.

The VENTS ventilation products are exported to more than 90 countries and are sold through the distribution network of 120 companies worldwide. Share of the VENTS products globally is above 10%.

VENTS is a member of high-rank international organizations, the leading HVAC experts.

Since 2008 VENTS has been a fully-featured member of HARDI Association (Heating, Air-conditioning and Refrigeration Distributors International, USA).

Since 2010 VENTS has been a participant of AMCA Association (the Air Movement and Control Association (AMCA) International, Inc.). In 2011 VENTS successfully passed tests for compliance with AMCA standards and the VENTS products were certified for the USA market.

In 2011 VENTS joined HVI (Home Ventilation Institute, USA) Association.



Metal processing workshop



Spiral air ducts workshop



Flexible air ducts workshop



Aluminium grilles and diffusers workshop



Powder coating workshop



Wet coating workshop



Extrusion workshop



Injection moulding workshop



Residential fans workshop



Ventilation grilles workshop



Electric motors workshop



Industrial fans workshop



Air handling units workshop



AirVents air handling unit workshop



Electrical accessories workshop



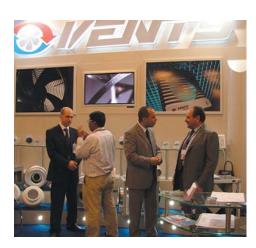
Extruded grilles workshop

Powerful production facilities, high automation level, active implementation of innovative technologies in the production process made VENTS a worldwide ventilation leader.

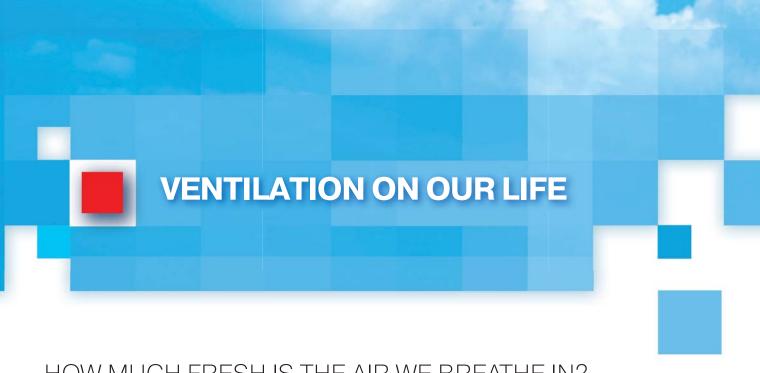
We manufacture our products with respect to unique geographical, climatic, technical features of each country and do our best to fulfill the client's wishes anywhere anytime.







Get benefit from cooperation with VENTSTM and enjoy the maximum range of products of the top quality from one manufacturer.



HOW MUCH FRESH IS THE AIR WE BREATHE IN?

In everyday life, we do not think a lot about how much time we spend

in closed spaces - houses, offices, office buildings, hospitals, etc. All this time we share limited volume of air of doubtful purity and freshness with our people in the same rooms. Unwellness, weariness, headache and other unpleasant symptoms are the first signs of negative impact of polluted stale air on human health. Still, we rarely associate these conditions with poor air quality.

For human organism, the surrounding air quality has vital importance because metabolism is possible only due to oxidation, i.e. connection of chemical substances with oxygen contained in blood. In case of no oxygen supply, the oxidation process interrupts, and life of the organism stops. Therefore it is vital for us to take ongoing care of purity and freshness of the air we breathe.

The air that fills modern apartment and rooms contains a large number of bacteria and dust particles, all kinds of vapours,

gases and other municipal waste particles of big city and human organisms that results in high pollution concentration. No need to say, breathing such air in, we rather bring harm to our health than consume vitally important oxygen.



IN CAPTIVITY OF OUR OWN HOUSES ...

Any residential premise is always filled with air containing micro particles and various polluting components thus creating a certain air pollution degree inside. Well arranged ventilation and permanent air exchange keep indoor concentration of harmful substances within permissible limits that is not dangerous for human health. But the situation changes drastically when some inhabitants driven by their desire to insulate their houses as much as possible thoughtlessly isolate all possible sources of natural air exchange by glazing balconies, insulating facades, sealing the window frames, doorways, blocking all the cracks and ventilation ducts. As a result, the modern houses made of brick and concrete. equipped with double-glazed windows, metal doors, additional outer insulation, etc., are practically hermetic structures. Striving to minimize heat losses and energy costs has resulted in almost perfect insulation of buildings and blocked any possibility of natural air motion and air exchange. Under such circumstances, the natural ventilation does not provide sufficient air supply, consequently, a tightly closed house just "does not breathe" The rooms or premises that are thermally well insulated and sealed in plastic windows cannot avoid excessive moisture which provokes various bad smells, including foul smell, feeling of stale air, various pollutants, even mould. Microclimate in this house becomes harmful for its inhabitants and for the house structure, too.

THE AIR IN YOUR HOUSE - A CLOSER LOOK UNDER THE MICROSCOPE

There are at least two sources of air pollution in any building. The first one includes the construction materials used for the building that produce more than 50% of overall pollution. People and their life activity form the second source of pollution.

Various suspended solid particles and microorganisms which are brought inside a house by people, animals or penetrate through improperly maintained vents and ducts are always found in indoor air. In poorly ventilated areas, these microorganisms can cause unpleasant smell, sense of discomfort, lung ailments displayed by sneezing attacks and even give rise to a variety of bacterial infections.

Emissions of various chemical substances used in cosmetics and detergents as well as dust, vapours, tobacco smoke, formaldehyde that is vapored into atmosphere from synthetic carpets, polyurethane foam

insulation, finishing materials, furniture, harmful chemicals emitted from household electric devices, concentrated carbon dioxide and radon are only few pollutants.

As a result, we feel stuffy air in a house

with closed windows, air becomes stale, temperature and humidity increase, and finally that causes feeling of weakness, weariness, poor sleep and other symptoms.





THE VENTLIGHT IS NOT A GOOD SOLUTION

Partially the polluted air problem can be solved be creating natural ventilation through window opening. But even that solution has some drawbacks. Ventilation through open windows brings to uncontrolled excessive air flow and creates unsafe draughts. By opening windows you fill the room not with clean air but with a mixture of pollens, poplar stuff, dust and exhaust fumes. Moreover, thermal losses rise together with high energy costs.

Furthermore, noise level from outside may be a catastrophe. That refers in particular to inhabitants of houses located near main city highways and entertainment places, intersection of basic routes and transfer transport points. Thus, we hardly make such ventilation useful but we let extra irritants and pollutants enter our rooms. Even worse, we do not solve the problem of polluted stale air removal.



In order to eliminate the problems associated with health risks, the wet, polluted air must be regularly removed outside and replaced with fresh air. Fresh air must always be supplied into all rooms of the house or apartment to ensure full and effective ventilation. Therefore, arrangement of the effective forced supply and exhaust ventilation in the rooms or premises is the only correct and rational solution of this problem.

HOW CAN LARRANGE EFFECTIVE VENTILATION IN MY HOUSE?



OCST-SAVING

The single room air handling units with heat recovery **MICRA** are the fully-featured ready to use ventilation solutions that provide supply of fresh air to the premise, air filtration and extract of polluted air outside and supply air warming up if required (Micra 150 E).

MICRA units create an effective and fully-fledged ventilation in your house!

INSTALL ONE OF MODERN SINGLE ROOM AIR HANDLING UNITS WITH HEAT RECOVERY MICRA!

THE SINGLE ROOM AIR HANDLING UNIT WITH HEAT RECOVERY MICRA IS THE BEST COST-SAVING SOLUTION FOR CREATING OF ENERGY SAVING VENTILATION OF SEPARATE ROOMS IN APARTMENTS, COTTAGES, SOCIAL AND COMMERCIAL PREMISES.







ENERGY SAVING AND EFFICIENCY

The great advantage of the **MICRA** single-room air handling units is their ability to recover heat to the premises (up to 92%) due to a specially designed aluminium recuperator.

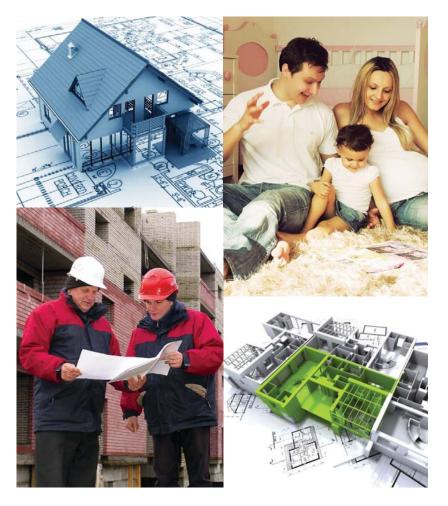
Heat recovery is based on use of extract air heat energy for heating of intake fresh air from outside. In view of permanent heat losses in the room use of heat recovery is the most useful technology for cost and energy saving.



Basement - up to 15%
Outer walls - up to 15%
Windows, doors - up to 17%
Ventilation system - up to 50%
Roof - up to 10%



MICRA UNITS WILL SUPPLY FRESH AIR WITH MINIMUM ENERGY DEMAND AND SURPRISE YOU WITH THEIR SILENT OPERATION.





The MICRA single room air handling units with heat recovery are applicable at any project stage and suitable for installation in any room where installation of centralized ventilation devices is unfeasible:

- O complex ventilation system for brand new construction;
- O reconstruction of existing buildings and premises;
- O ordinary scheduled repair in ready-made premises.

SIMPLE AND EASY TO USE

The single room air handling units with heat recovery **MICRA** have compact sizes and are designed for mounting on outer wall from inside. Two Ø 125 mm through-the-wall openings in the wall is everything you need for mounting. After mounting they are covered with the decorative unit casing. Install a double outer hood on outer side of the wall to prevent direct water ingress and foreign objects inside the unit.

SINGLE-ROOM AIR HANDLING UNITS MICRA - EFFICIENT, RELIABLE, ENERGY SAVING VENTILATION:

- CLEAN FRESH AIR SUPPLY TO THE PREMISES
- STALE EXTRACT AIR REMOVAL FROM THE PREMISE
- CLEAN AIR FREE OF DUSTAND INSECTS
- NO EXCESSIVE HUMIDITY AND MOULD
- SILENT OPERATION
- HEAT REGENERATION
- AIR WARMING UP TO SET TEMPERATURE (MICRA 150 E)
- REDUCING HEATING COSTS IN WINTER AND AIR CONDITIONING COSTS IN SUMMER
- LOW ENERGY DEMAND
- NON-STOP OPERATION

MICRA 60



Micra 60 is the single room air handling unit with heat recovery for balanced energy saving single room ventilation of flats, cottages, social and commercial premises. No need to connect air ducts. The best solution for simple and efficient ventilation in refurbished premises.

FEATURES

- Efficient heat recovery ventilation for separate rooms (premises)
- Plate counter flow plastic heat exchanger with recuperating efficiency up to 79%
- C EC fans with low energy demand and electrical safe voltage 12 V
- Integrated automatics with three operation modes
- Silent operation (22-29 dBA)
- Air cleaning with two G4 built-in filters
- Easy mounting
- O Suitable for continuous operation
- Pulser power supply unit for wide range of power supply voltage 100-240 V and frequency 50-60 Hz.



Polymer coated metal casing decorated with mirror stainless steel. 15 mm penophole thermal and sound insulating layer. Modern unit design makes it match well with any interior. Removable front panel provides easy access for the unit servicing, i.e. for filter cleaning or replacement. Air is supplied to the room and exhausted outside through two Ø 125 mm air ducts.



AIR FILTRATION

Two G4 built-in filters provide cleaning of supply and extract air. The filters serve to ensure supply of fresh air free of dust, pollen, insects and protect the unit from soiling.



AIR SUPPLY AND AIR EXTRACT

Axial EC fans provide air supply and air extract. Due to EC technologies the single room air handling unit with heat recovery is featured with low energy demand. The fans are powered by electric safe low voltage 12 V. The fan motors are equipped with built-in thermal overheating protection and ball bearings for longer service life.



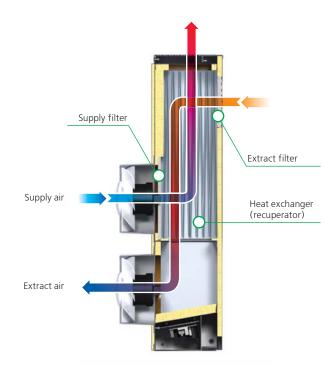
CONTROL UNIT

The unit is powered through an integrated pulser unit with a wide range of supply voltage from 100 V to 240 V and frequency from 50 to 60 Hz. The power unit has integrated protection circuit for various emergencies including short circuit, overload, voltage jumps, reverse polarity in output circuits. The versatile characteristics of the power unit enable the product use in various countries and ensure its stable operation in power grid with wide tolerances of electricity standard.



OPERATING LOGIC

Fresh intake air from outside moves through the filter and the heat exchanger and is supplied to the premise with a supply exhaust fan. Warm stale air from the room moves through the filter and recuperator and then is exhausted outside with an exhaust axial fan. Heat energy of warm stale extract air is transferred to cold intake air flow from outside in the heat exchanger. Heat energy utilization results in reducing heat energy losses and operating costs for heating in cold season. The intake and extract air flows are fully separated and pollutants, odours and microbes contained in extract air are not transmitted to supply air.





🚺 HEAT EXCHANGER (RECUPERATOR)

The unit is equipped with a high-tech plate counter-flow plastic heat exchanger. The heat exchanger utilizes heat energy of extract air flow to warm up cold air flow. Recuperating efficiency reaches 79%. Joint operation of the single room air handling unit with heat recovery MICRA 60 with air conditioners is not only the most efficient way to arrange desirable indoor microclimate but considerable cost saving because the recuperator saves heat in winter and cool in summer.



FREEZING PROTECTION

The single room air handling unit with heat recovery has integrated freeze protection system. In cold season the recuperator serves to transfer heat energy of warm extract air to cold intake air. During cooling of extract air some condensate can appear in the unit. It is drained outside though the exhaust air duct. If exhaust air temperature at outlet from the heat exchanger is below the set threshold value the condensate may freeze inside the recuperator. To prevent recuperator freezing the unit is equipped with electronic freezing thermostats that switch supply fan off in case of freezing danger. After that warm stale air warms the recuperator up to required temperature. When the freezing danger is off the supply fan is turned on and the unit reverts to previous operation mode.



CONTROL AND OPERATION MODES

The unit is equipped with a sensor speed switch or a three-position speed switch. Automatic system enables three operation modes:

- 1. Supply and exhaust ventilation at minimum air capacity 30 m³/h and minimum noise level 22 dBA.
- 2. Supply and exhaust ventilation at medium air capacity 45 m³/h and minimum noise level 25 dBA.
- 3. Supply and exhaust ventilation at medium air capacity 60 m³/h and minimum noise level 29 dBA





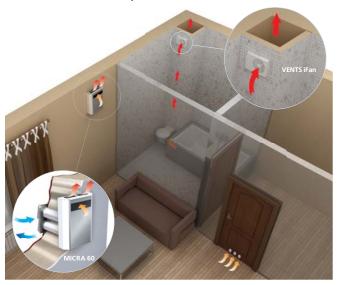


(Micra 60 A4)

MICRA 60 VENTILATION SYSTEM ARRANGEMENT EXAMPLE

Install **MICRA 60** unit in any room where ventilation is required. One unit provides efficient ventilation for the area up to $24 \, \text{m}^2$. Ventilation system based on the single room air handling unit with heat recovery **MICRA 60** is able to provide nonstop air exchange, save heat in winter and cool in summer.

To arrange the most energy efficient ventilation based on MICRA 60 units we recommend to install the intelligent VENTS iFan fans in the kitchen or in the bathroom that extract stale air on a signal from the activated motion or humidity sensor.



Mount the single room air handling unit with heat recovery **MICRA** on the front wall from inside. The minimum wall thickness is 100 mm.

First mark the through-the-wallholes on the wall for the air ducts with the paper master plate (included into standard delivery set or into MK1 and MK2 set (page 11). After drilling the holes fix the master plate to the wall with a mounting tape.

Insert the air ducts (included into MK1 and MK2 set (page 11) into the holes. The master plate is used to place the air ducts in a required position and to align the unit spigots with the air ducts.

Install the outer hood (included into the MK2 set or purchased separately outer box NB) on outer side of the wall to prevent ingress of water and foreign objects inside the unit.

Install the air ducts slightly sloped down to outside to ensure condensate drainage from the unit.

After the air ducts are fixed in required position between the outer box and the master plate, fill the gaps between the air ducts and the wall with a mounting foam through special slots in the master plate.

After the mounting foam hardens, remove the master plate and cut protruding parts of the air ducts to be flush with wall surface. Remove the decorative plate and the heat exchanger prior to fastening the unit casing.

While mounting the unit direct its spigots to the plastic air ducts and fix the unit to the wall with dowels and screws.

The unit is supplied with a pre-wired power cable and a plug. The unit may be connected to the fixed wiring system through the terminal leads. For doing that disconnect the power cable from the terminal box and connect the leaded outside power cables. After completing the casing mounting and electric connection re-install the heat exchanger and close the front panel.









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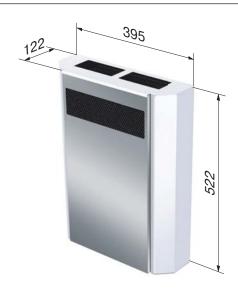
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TECHNICAL DATA

Model	Speed	Voltage [V/50-60 Hz]	Power [W]	Current [A]	Air capacity [m³/h]	Heat recovery efficiency, %	Rotation per minute [min ⁻¹]	Sound pressure level at 3 m [dBA]	Ingress Protection
	1	100-240	4,2	0,02	30	79	1165	22	
MICRA 60	2		9,6	0,04	45	74	1720	25	IP22
	3		15,4	0,07	60	70	2685	29	

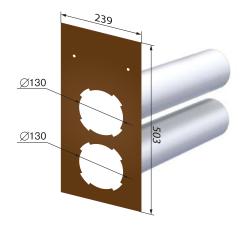
OVERALL DIMENSIONS [MM]







ACCESSORIES



MK1 Micra 60:

used to facilitate mounting and ensure correct alignment of the unit branch pipes with the air ducts:

two plastic air duct 125 mm 500 mm long;

O two paper master plate.



NB Micra 60 outer ventilation kit:

Odouble outer metal hood.



MK2 Micra 60 mounting kit:

O two plastic air duct 125 mm 500 mm long;

opaper master plate, 1 pc;

Outer ventilation kit NB Micra 60.

MICRA 150 E



MICRA 150 E is a single-room air handing unit with air warming up function. It is designed to provide the ideal single-room ventilation of social and commercial premises, flats and cottages. MICRA 150 E is the most suitable solution for arrangement of ready-made and refurbished premises. It has easy mounting without air ducts.

🚺 FEATURES

- Efficient supply and exhaust ventilation of separate premises (rooms)
- O Posistor 350 W air heater with overheating protection
- O Polystyrene plate counter-flow heat exchanger with recuperation efficiency 82-92%
- O EC fans with low energy demand (9 to 40 W)
- O Integrated automation with 3 operation modes (from 60 up to 150 m³/h)
- O Silent operation (30-38 dBA)
- Air cleaning with two built-in G4 filters
- Easy mounting
- Compact sizes



CASING

Metal polymer coated casing decorated with mirror-polished stainless steel. 10 mm foamed synthetic rubber layer provides heat- and sound-insulation. The modern unit design let it match well with any interior type. The front panel is easily opened for the unit servicing (e.g. for filter cleaning or replacement) and fitted with a protecting opening sensor that cuts power supply off if the panel is opened. Air is supplied to the unit and exhausted from the premise through two \varnothing 125 mm air ducts.



AIR FILTRATION

Supply and exhaust air flows are cleaned with two built-in G4 filters. The filters serve to provide supply of fresh air free of dust, pollen, insects and prevent the unit components from soiling.



AIR SUPPLY AND EXHAUST

High-efficient EC motors with external rotor and forward curved blades are designed for air supply and exhaust. The fan motors have built-in overheating protection and ball bearings for longer service life. Due to EC technologies Micra 150 E is featured with low energy demand and reliable operation.



CONDENSATE DRAIN PAN

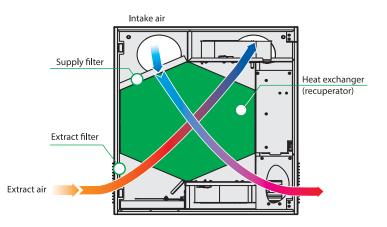
Some condensate that may be generated during heat recovery process is collected in a special drain pan. As the drain pan is filled with condensate, the unit switches automatically off which is confirmed by a light indicator on the control panel. Remove condensate from the drain pan and restart the unit to continue the unit operation.





OPERATING LOGIC

The intake air from outside flows through the filter and the heat exchanger and is supplied to the room with the supply centrifugal fan. Warm stale air from the room flows through the filter and the heat exchanger and is exhausted outside through the wall by the exhaust centrifugal fan. In the heat exchanger heat energy of warm extract air from the room is transferred to clean cold air flow from outside. Heat exchange results in minimization of heat losses and lower heating costs. The extract and supply air flows are fully separated, so no contaminations, odours and microbes come to supply air flow.





HEAT EXCHANGER

The unit incorporates a high-tech plate counter-flow polystyrene heat exchanger with heat exchange efficiency 82-92%. In winter period the heat exchanger utilizes heat energy of extract air to warm up intake air and decrease the operating load on the heating system. In summer period supply air is cooled down by colder intake air.







HEATER

The unit is equipped with a semiconductor posistor heater which is used to warm up supply air up to the comfortable air temperature and has a number of advantages compared to standard tubular electric heaters - maintaining of rated operating temperature combined with operational economy, fire safety (no overheating), environmental friendliness, self-regulation, high electric durability, high specific power, low infrared radiation, easy and reliable maintenance. The heater efficiency is in direct proportion to the air flow that goes through the heater and reaches 90-95%.



FREEZING PROTECTION

The air handling unit **MICRA 150 E** is equipped with a built-in freezing protection. During heat recovery in cold season thermal energy of warm extract energy is transferred to cold intake air. If some condensate is produced in the heat exchanger, it is collected in a specially designed drain pan. The electronic freeze protection is applied to prevent condensate freezing during cold outside temperatures. If exhaust air temperature drops down below the set point, the supply fan is stopped. Warm extract air warms the heat exchanger up and the exhaust air temperature rises. After that the supply fan is turned on and the unit reverts to the previous operation mode.



CONTROL AND OPERATION MODES

The unit is equipped with a control panel. The delivery set includes a remote control panel. The control system supports the following 3 operation modes:

- 1 speed air capacity 60 m³/h and air warming up function;
- 2 speed air capacity 105 m³/h and air warming up function;
- 3 speed air capacity 150 m³/h and air warming up function.

The following functions are available:

- O Extra heating of supply air; O High speed activation timer adjustable from 20 to 60 minutes;
- O Fan speed adjustment; O Week-scheduled operation;
- O Filter replacement and alarm indication.



MICRA 60 VENTILATION SYSTEM ARRANGEMENT EXAMPLE

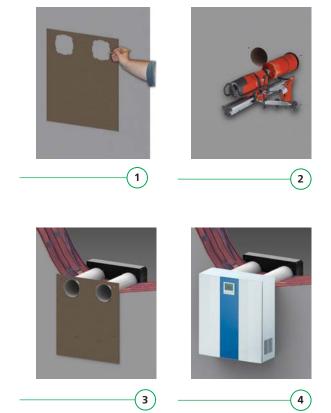
Install one or several **MICRA 150 E** unit in each premise to be ventilated. One unit is capable to provide efficient ventilation of up to 60 m² area. Ventilation system based on the single room air handling unit with heat recovery **MICRA 150 E** provides permanent air exchange in a premise, saves heat in winter and cold in summer.



The air handling unit **MICRA 150 E** is mounted on a face wall from inside. The wall thickness must be no less than 100 mm. First mark the holes for the air ducts with a cardboard master plate included into the delivery set. Drill the holes and fix the cardboard master plate to the wall with dowels and screws.

Insert the air ducts into the holes. Use the metal master plate to fix the air ducts in a required position and to align the pipes and the air ducts. Mount a double metal hood on outer wall side to protect the unit from water ingress and outer objects. After positioning of the air ducts between the outer hood and the metal plate fill the gaps between the air ducts and the wall with a mounting foam through special slots in the metal plate. After foam hardens remove the metal master plate and cut protruding parts of the air ducts to be flush with wall surfaces. For mounting of the unit casing open the decorative panel and remove the heat exchanger. While mounting the unit direct the branch pipes to the plastic air ducts and fix it to the wall with dowels and screws. The unit is supplied with a pre-wired power cable and a socket. The unit may be connected to the fixed wiring system through terminal leads. For doing that disconnect the power cable from the terminal box and connect the leaded outside power cables. After completing the casing mounting and wireworks re-install the heat exchanger and close the front panel. The unit is ready for operation.

To arrange the most optimal ventilation system supplement the **Micra 150 E** unit with the extract fan **VENTS VN** in the bathroom.



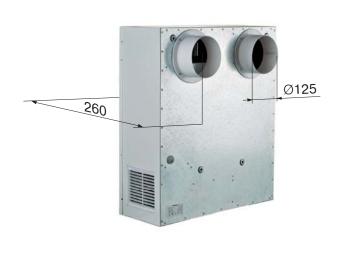


TECHNICAL DATA

Model	MICRA 150 E				
Ventilation mode	1	2	3		
Voltage [V/50 Hz]	230				
Maximum fan power [W]	9	16	40		
Heater power [W]	350				
Maximum unit current (including heater operation) [A]	1,68				
Air capacity [m³/h]	60	105	150		
RPM [min-1]	450	780	2000		
Noise level at 3 m distance [dB(A)]	30	35	38		
Heat recovery efficiency [%]	92	87	82		
Maximum transported air temperature [°C]	-25+50				
Pipe diameter [mm]	125				
Heat insulation thickness [mm]	10				
Weight [kg]	20				

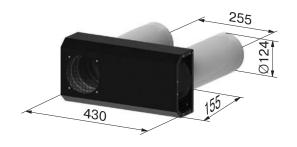
OVERALL DIMENSIONS [MM]





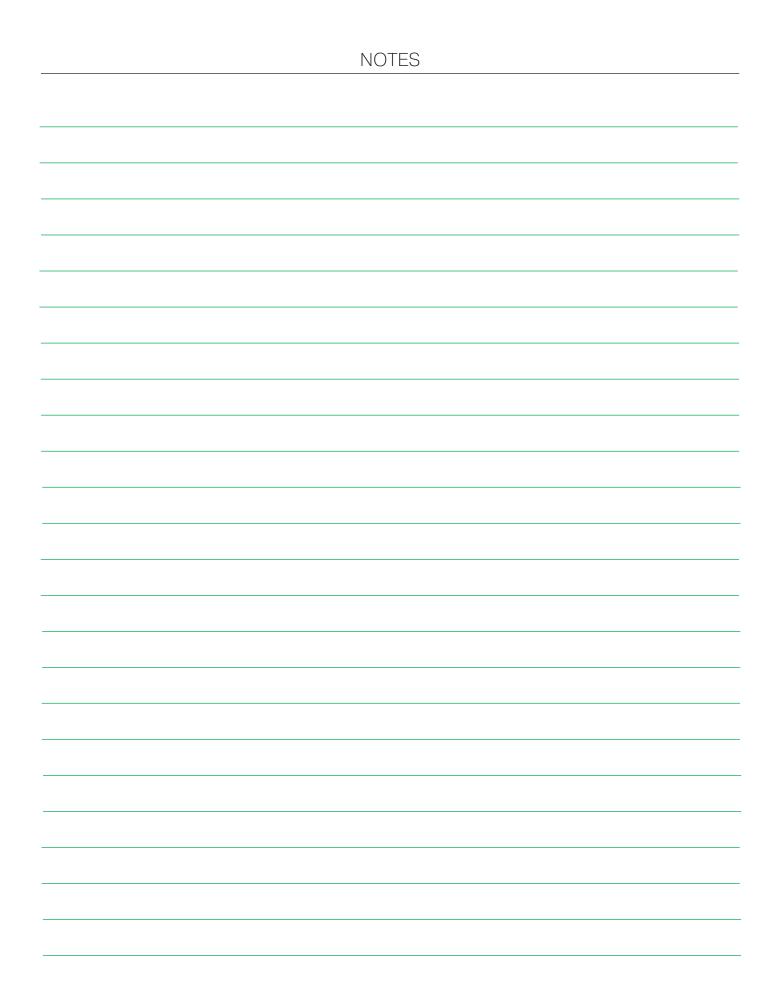


ACCESSORIES



Mounting kit MK MICRA 150:

- O two plastic air ducts (Ø 125 mm, length 500 mm); O double outer metal hood.





VENTILATION SYSTEM

www.ventilation-system.com



MICRA single room air handling units heat recovery

VENTS reserves the rights to modify any of its products' features, designs, components and specifications at any time and without notice to maintain the development and quality of manufactured goods. 09/2014







