Vers. 02 - 29/01/2016

USER MANUAL

pico HP2

HP2 30 - HP2 55 - HP2 80

WALL-INSTALLED, REVERSIBLE-FLOW VENTILATION UNIT WITH HEAT RECOVERY AND REMOTE CONTROL

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Macchine & Accessori V.M.C.

by Tecnosystemi® group

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INTRODUCTION

This manual includes the technical description, operation, installation and assembly instructions, technical data for the PICO HP2 ventilation unit with energy regeneration, referred in this document as the "ventilation unit".

USE

The ventilation unit is designed to ensure air exchange in apartments, houses, hotels, bars and other domestic and public buildings. The ventilation unit comes equipped with a ceramic heat exchanger that allows air circulation due to the regeneration of energy with the heat of inflowing air.
The ventilation unit is designed for mounting inside a wall. The telescopic design of the ventilation unit allows it to be installed in walls from 300 mm to 500 mm thick.
The ventilation unit has been tested for continuous operation always connected to power mains.
The transported air must not contain flammable or explosive mixtures, chemical vapours, coarse dust, soot and oil particles, sticky substances, fibrous materials, pathogenic organisms or other harmful substances.

THE FAN IS NOT INTENDED FOR USE BY CHILDREN, PEOPLE WITH PHYSICAL OR MENTAL DISABILITIES, THOSE WITH SENSORY DISORDERS, AND/OR ANYONE WITHOUT SUITABLE CAPABILITY.
THE OPERATIONS OF INSTALLATION AND CONNECTION MUST BE CARRIED OUT BY QUALIFIED PERSONNEL AFTER RECEIVING PROPER SAFETY TRAINING.
THE SITES FOR INSTALLING THE UNIT SHOULD PREVENT ACCESS TO NON-SUPERVISED CHILDREN.

MAIN TECHNICAL PARAMETERS

The ventilation unit is designed for installation indoors with the environment temperature ranging from -20°C to +50°C and relative humidity up to 80%.

The ventilation unit design is regularly improved and some models may be slightly different to the one described in this manual

TROUBLESHOOTING

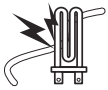
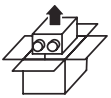
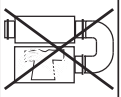
Issue	Possible causes	Fault management
When switching on the unit, its fan does not start.	Power supply.	Check that the unit is correctly connected to the mains, and make any adjustments necessary.
	The motor is blocked, the impeller is clogged.	Turn off the unit. Solving the engine block and fan clogging. Clean the blades. Restart the unit.
After powering on, circuit breaker triggers stop.	Excess voltage from electrical short-circuit.	Switch off the unit. Contact customer service.
Poor air flow	Speed set to "slow".	Set to higher speed.
	Dirty filter, fan or exchanger.	Clean or replace the filter, clean the fan and regenerator. For regenerator and filter maintenance, see page 18.

SAFETY REQUIREMENTS

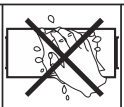
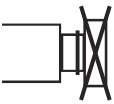
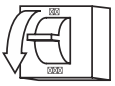
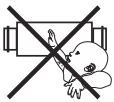
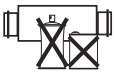
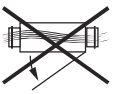
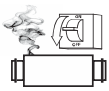
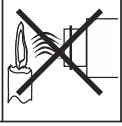
Read the user's manual carefully before using and installing the single-chamber reversible-flow ventilation unit with energy recovery, referred to below as "ventilation unit" or "unit".
The installation and operation of this unit must be carried out in accordance with the user's manual, and the provisions of applicable local and national laws and applicable technical and electrical standards. The warnings in the user manual must be considered carefully as they contain information that is vital for personal safety.
Failure to follow the safety instructions can cause injury or damage to the ventilation unit.
Read the manual carefully and keep it for as long as you use the ventilation unit.
When transferring the command of the unit, the user manual must be handed over to the receiving user. Symbols used in the manual:

	AVVERTENZA!
	DIVIETO!

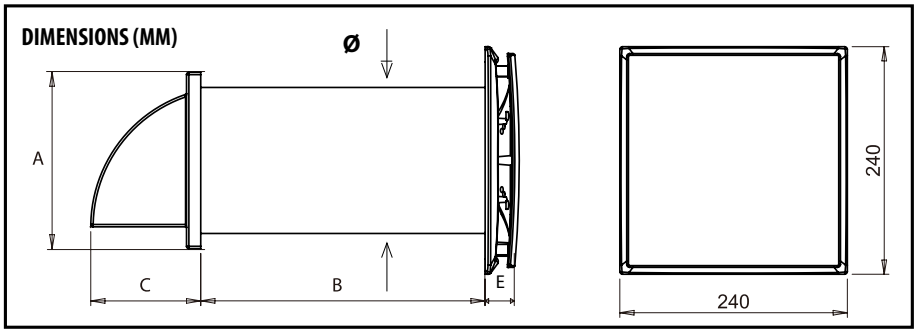
PRECAUTIONS DURING ASSEMBLY

	The unit must be disconnected from the power supply before every installation or repair.		Do not use the unit outside the temperature range given in the user manual, or in atmospheres that are aggressive or at risk of explosion.
	Do not place heaters or other devices in the vicinity of the power cable of the ventilation unit.		Do not use damaged equipment or wires to connect the unit to the mains.
	When installing the unit, follow the specific safety requirements for electrical equipment.		Remove the unit from the packaging carefully.
	Do not change the length of the power cable at your discretion. Do not bend the power cable. Do not damage the power cable.		Use the ventilation unit only according to the manufacturer's specifications.

OPERATIVE SAFETY PRECAUTIONS

	Do not touch the controls or remote control with wet hands. Do not perform maintenance on the ventilation unit with wet hands.		Do not wash the ventilation unit with water. Protect the electrical parts of the ventilation unit from water.
	Do not block the air duct when the ventilation unit is on		Before maintenance, unplug the ventilation unit from the mains.
	Do not allow children to use the ventilation unit.		Do not damage the power cable with the ventilation unit in use. Do not place any objects on the power cable.
	Keep explosives and flammable products away from the ventilation		Do not open the ventilation unit when on.
	Should the ventilation unit give out unusual noises or smoke, unplug it from the mains and contact customer service.		Do not let the air exiting the ventilation unit point towards open flames, candles, etc.

VENTILATION UNIT OVERALL EXTERNAL DIMENSIONS



CODE	A	B	C	Ø	E
11104038A	154	500	86	100	35
11104038C	186	500	101	125	35
11104038E	186	500	101	150	35

VENTILATION UNIT TECHNICAL SPECIFICATIONS

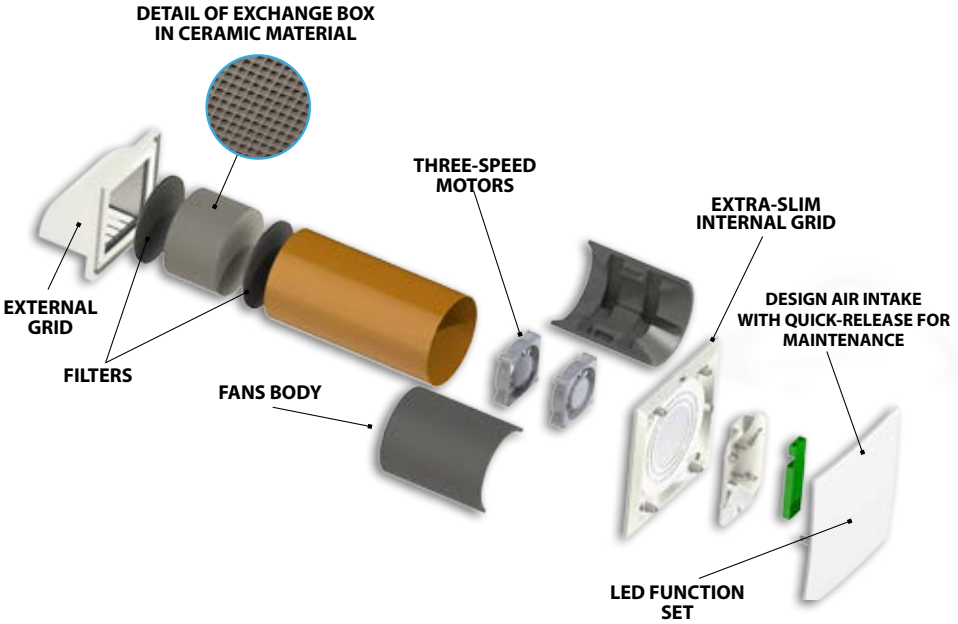
MODEL:	PICO HP2 - 30			PICO HP2 - 55			PICO HP2 - 80		
SPEED	1	2	3	1	2	3	1	2	3
SUPPLY VOLTAGE	12VDC			12VDC			12VDC		
OUTPUT (W)	0.46	0.51	0.57	0.85	0.9	1.1	1.9	2	2.3
MAX. CURRENT CONSUMPTION (mA)	38	42	47	65.5	73	81	154	171	190
MAX. AIR CAPACITY (m^3/h)	26	28.5	32	40	45	50	65	72	80
RPM (min-1)	1863	2070	2300	2106	2340	2600	2754	3060	3400
SOUND PRESSURE AT 1m (dB(A))	17	19	21	21	23	25	24	26	28
ACOUSTIC PRESSURE AT 3 m (dB(A))	15	17	19	19	21	23	22	24	26
MAX. AIR TEMPERATURE (°C)	FROM -10°C to +50			FROM -10°C to +50			FROM -10°C to +50		
REGENERATOR EFFICIENCY	≤90%			≤90%			≤90%		
EXCHANGE-BOX MATERIAL	CERAMIC			CERAMIC			CERAMIC		
TUBE DIMENSIONS (mm)	Ø 100			Ø 125			Ø 150		
PROTECTION	IP 24			IP 24			IP 24		

OPERATION OF THE PICO HP2

The ventilation unit consists of a fixed-length circular air duct, a ventilation unit, and an outdoor grill.

The two motors, two filters and the exchanger are located within the inner duct.
The filters are designed to purify the intake air and prevent the entry of objects foreign to the exchanger and fans.
The ventilation unit generates an audible alarm to remind you to clean or replace the filter every 1,500 hours of operation.
The ceramic heat exchanger uses the heat energy in the extracted air to heat the incoming air flow.
The exchanger is equipped with a pull-cord inside to facilitate its extraction from the ventilator. The heat exchanger is installed on an insulating material, used also as a sealant.
The ventilation unit must be installed on the inner side of the wall.
The outside grill must be installed on the wall exterior, to prevent water and other objects from entering the ventilation unit.

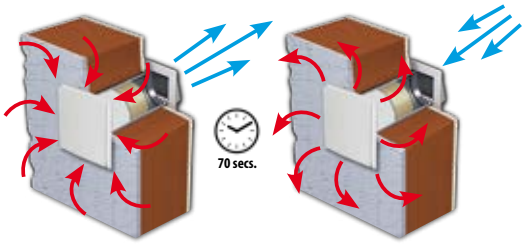
CONSTRUCTION DETAIL



OPERATING MODE

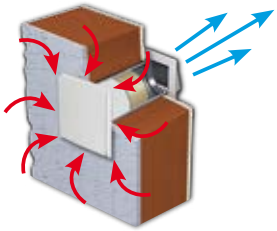
RECOVERY UNIT

THE UNIT RUNS FOR 70 SECONDS IN EXTRACTION MODE AND FOR 70 SECONDS IN INTAKE MODE, WITH THREE-SPEED CONTROL



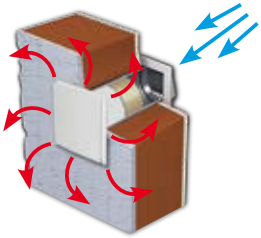
EXTRACTION

THE UNIT WORKS IN ONLY EXTRACTING THE AIR FROM THE INTERIORS, WITH THREE-SPEED CONTROL



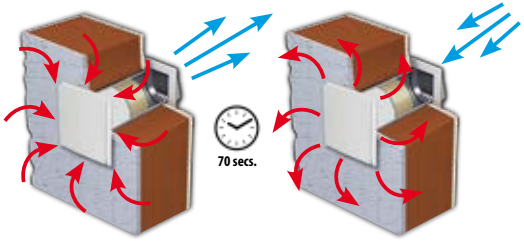
INTAKE

THE UNIT WORKS ONLY IN INTAKE MODE BY EXTRACTING AIR TO THE OUTSIDE AND SUCKING IT INSIDE, WITH 3-SPEED CONTROL



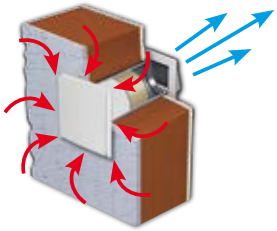
AUTO1

THE UNIT IS IN STAND-BY MODE. THE UNIT IS IN STAND-BY MODE. WHEN THE ENVIRONMENT AIR EXCEEDS THE PRE-SET HUMIDITY LEVEL, THE UNIT STARTS TO OPERATE IN HEAT-RECOVERY MODE UNTIL THE HUMIDITY RETURNS TO THE SET LEVEL

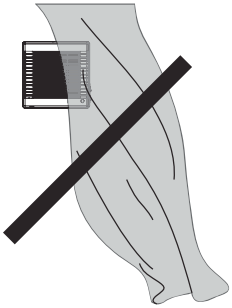


AUTO2

THE UNIT IS IN STAND-BY MODE. WHEN THE ENVIRONMENT AIR EXCEEDS THE PRE-SET HUMIDITY LEVEL, THE UNIT STARTS TO OPERATE IN EXTRACTION MODE ONLY UNTIL HUMIDITY RETURNS TO THE SET LEVEL



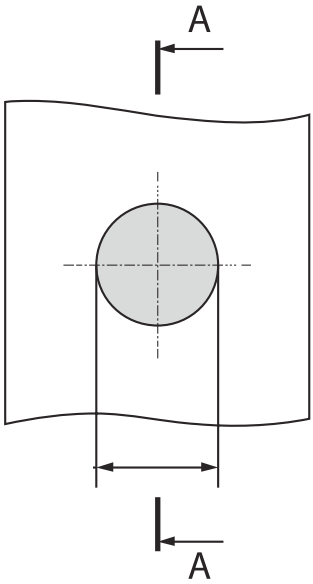
INSTALLATION AND SETUP

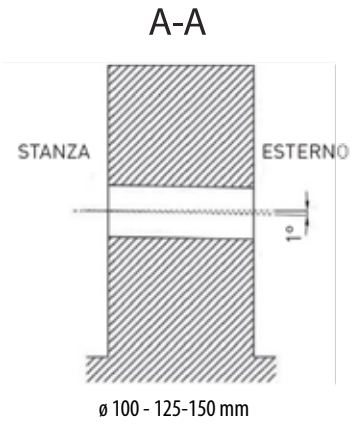


WARNING!
THE VENTILATION UNIT MUST NOT BE INSTALLED WHERE THE AIR DUCT CAN BE BLOCKED BY SHUTTERS, BLINDS, ETC. TO PREVENT DUST DEPOSITING AND ACCUMULATING. ALSO CURTAINS MAY BLOCK THE NORMAL FLOW OF AIR IN THE ROOM, MAKING THE UNIT'S OPERATION INEFFECTIVE.

1. To mount the ventilation unit, prepare a round through-hole in the wall depending in the "Pico HP2 model" you have purchased, having a 1° inclination downwards towards the outside.

The size of the hole is shown in the figure below.

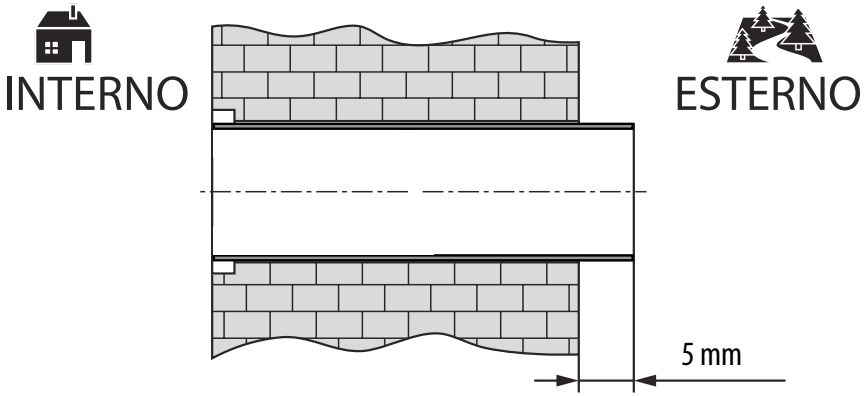




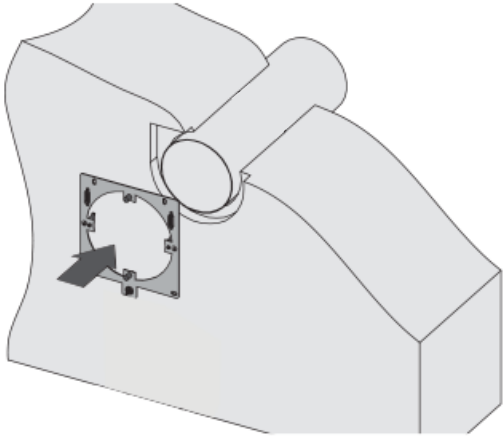
ø 100 - 125-150 mm

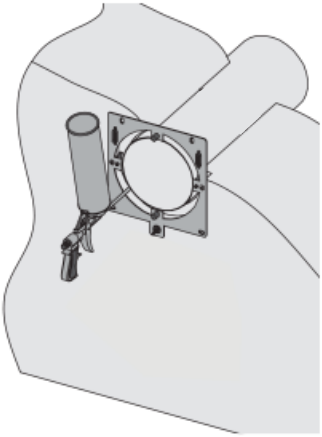
WARNING!
DO NOT INSTALL THE UNIT ABOVE DELICATE FURNITURE OR PICTURES/PAINTINGS.
DO NOT PLACE THE DEVICE ABOVE OR NEAR THERMOSTATS .

3. Insert the pipe into the wall. The air duct must protrude by the distance indicated below:

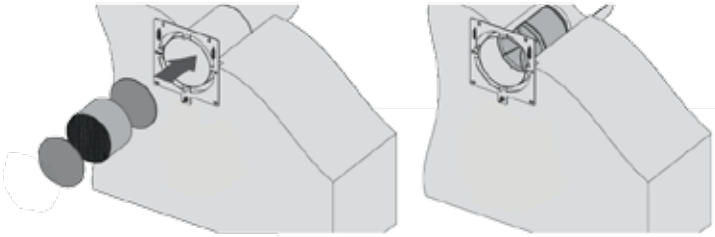


4. Attach the mounting plate by following the diagram on page 12.
Prepare the four mounting holes and secure the mounting plate onto the part with four 4x40 screws, and four raw-plugs 6x40 (included).
Align the air duct with respect to the mounting plate; now fill in the spaces between the wall and the duct with silicone. The air duct does not protrude from the surface of the mounting plate.

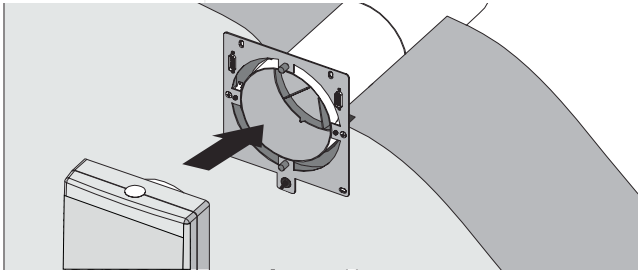




5. Insert the filter, the ceramic exchanger, and another filter in consecutive order, into the air-duct.



6. Fit the ventilation unit onto the mounting plate.



6. Fit the ventilation unit onto the mounting plate.

INSTALLING THE INTAKE GRID

1. Mark the fixing holes for the external ventilation grid and drill them. For convenience, use the back of the grid.

Model	Dimensions, [mm]						Fig. no.
	□B	□H	L	L1	L2	Flange (D)	
PICO HP2 30	154	110	15	45	87	100	1, 2
PICO HP2 55	186	142	15	45	101	125	1, 2
PICO HP2 80	186	142	15	50	101	150	1,2

Fig. 1

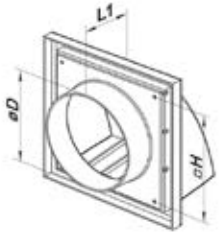
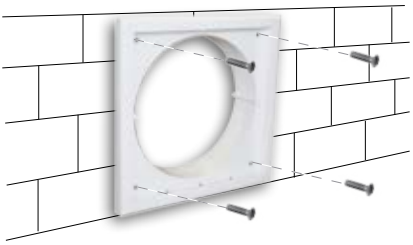


Fig. 2

2. Insert the 6x40 raw-plugs (included) into the holes.

3. Now remove the external grid to allow access to the fixing holes. Remove the upper part of the external ventilation grid.

4. Secure the back of the grid to the wall with the 4x40 screws included.



5. Fit the upper part of the grid.

CONNECTING TO THE MAINS

DISCONNECT THE VENTILATION UNIT FROM THE POWER SUPPLY BEFORE ANY ELECTRICAL INSTALLATION OPERATION. CONNECT THE VENTILATION UNIT TO AN OUTLET PROPERLY INSTALLED WITH TERMINAL GROUND. DO NOT MAKE ANY CHANGE TO THE INTERNAL CONNECTIONS: IT WOULD CAUSE THE LOSS OF WARRANTY

The ventilation unit is calibrated for connection to single-phase AC mains supply 230 V/50 Hz with a 12 VDC transformer (supplied). To facilitate cable routing, the unit comes with a pre-wired power cable.

CONNECTION OF THE UNIT IN SERIES

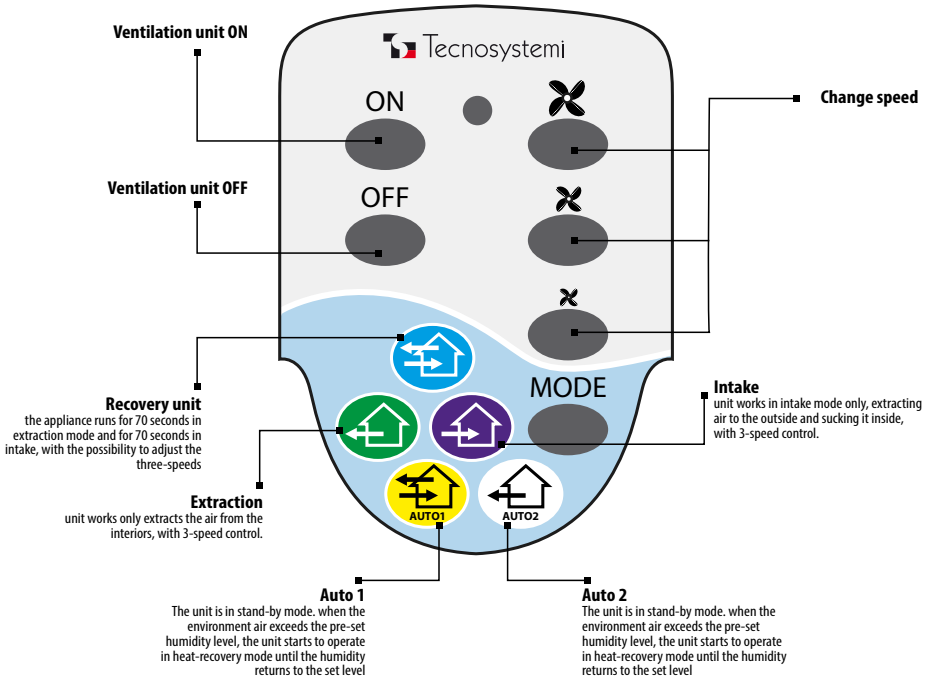
When the ventilation units are connected in series, all the connected units are controlled to the first unit and a common remote control. To connect the ventilation units in series, connect the output contact of the first unit to the outlet of the input contact of the second one.
Now connect the second unit to the third unit in the same way; up to 10 ventilation units can be connected in series.
Unplug the power cable while connecting the second, third, etc. units.

CONNECTING SEVERAL UNITS IN SERIES (REAR VIEW)

USING REMOTE CONTROL

The ventilation unit is controlled by a remote control. The remote control has the capacity for more commands.

REMOTE CONTROL DEVICE



REMOTE CONTROL DEVICE

DESCRIPTION OF REMOTE-CONTROL BUTTONS	
1. Switching on	
ON 	ON
2. Switching off	
OFF 	OFF
3. Speed setting	
	First speed.
	Second speed.
	Third speed.
4. Operating mode	
MODE 	**MODE** Allows you to select the following modes
	**Recovery unit** The unit runs for 70 seconds in extraction mode and for 70 seconds in intake mode, with 3-speed control.
	**Extraction** The unit works in only extracting the air from the interiors, with three-speed control.
	**Intake** Unit works in intake mode only, extracting air to the outside and sucking it inside, with 3-speed control.
	**Auto1** The unit is in stand-by mode. when the environment air exceeds the pre-set humidity level, the unit starts to operate in heat-recovery mode until the humidity returns to the set level
	**Auto2** the unit is in stand-by mode. When the environment air exceeds the pre-set humidity level, the unit starts to operate in extraction only mode only until the humidity level return to the level required.

Vers. 01 - 29/01/2016

USER MANUAL

pico Reco 100

WALL-MOUNTED STATIC EXTRACTION UNIT WITH MECHANICAL CROSS-FLOW AND HEAT RECOVERY

Apply.co® Macchine & Accessori V.M.C.

by Tecnosystemi® group

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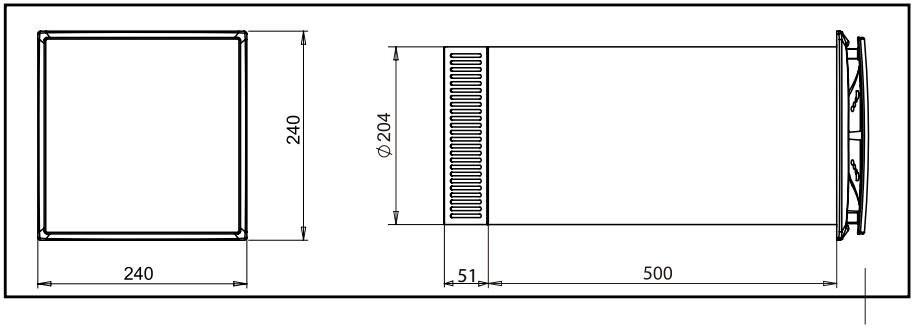
VENTILATION UNIT OVERALL EXTERNAL DIMENSIONS



VENTILATION UNIT TECHNICAL SPECIFICATIONS

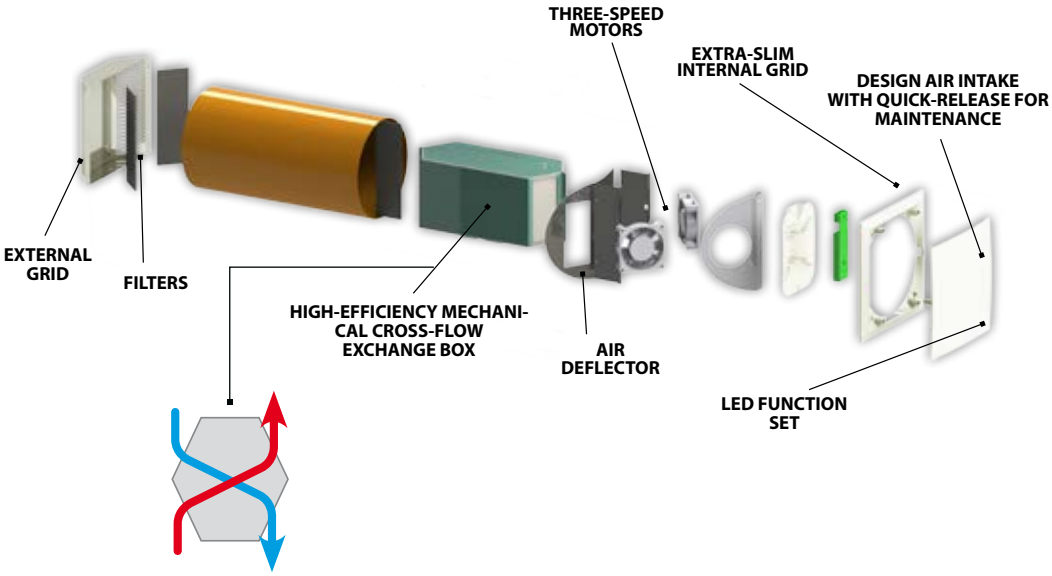
SPEED	MIN. 1	MED. 2	MAX. 3
SUPPLY VOLTAGE	12Vdc		
POWER (W)	3.7	4.1	4.6
MAX. POWER CONSUMPTION (A)	308	342	380
MAX. AIR CAPACITY (m^3/h)	75	87	93
RPM (min-1)	2754	3060	3400
SOUND PRESSURE AT 1m (dB(A))	31	33	35
ACOUSTIC PRESSURE AT 3 m (dB(A))	29	31	33
MAX. AIR TEMPERATURE (°C)	FROM -10°C TO +50°C		
REGENERATOR EFFICIENCY	≤95%		
EXCHANGE-BOX MATERIAL	POLYESTER		
TUBE DIMENSIONS (mm)	Ø 200		
PROTECTION	IP 24		

PICO RECO 100 OPERATION

The ventilation unit consists of a fixed-length circular air duct, a ventilation unit, and an outdoor grill.

The two motors, two filters and the exchanger are located within the inner duct.
The filters are designed to purify the intake air and prevent the entry of objects foreign to the exchanger and fans.
The ventilation unit generates an audible alarm to remind you to clean or replace the filter every 90 hours of operation.
The high efficiency polyester cross-flow exchanger exploits thermal energy of the air extracted from outside to warm up the air inside.
The heat exchanger is installed on an insulating material, used also as a sealant.
The ventilation unit must be installed on the inner side of the wall.
The external grill must be installed on the wall exterior, to prevent water and other objects from entering the ventilation unit.

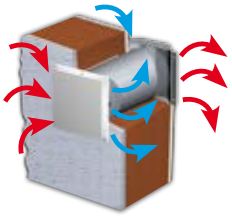
CONSTRUCTION DETAIL



OPERATING MODE

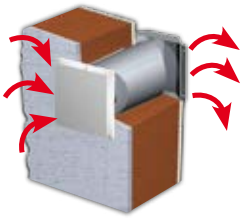
RECOVERY UNIT

THE UNIT RECOVERS HEAT (BY SIMULTANEOUS EXTRACTION AND INTAKE) AND HAS 3-SPEED CONTROL



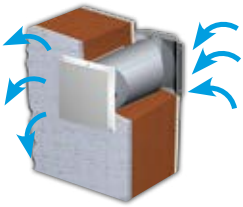
EXTRACTION

THE UNIT WORKS IN ONLY EXTRACTING THE AIR FROM THE INTERIORS, WITH THREE-SPEED CONTROL



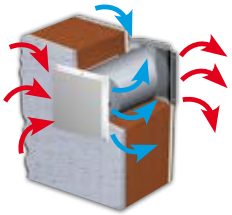
INTAKE

THE UNIT WORKS ONLY IN INTAKE MODE BY EXTRACTING AIR TO THE OUTSIDE AND SUCKING IT INSIDE, WITH 3-SPEED CONTROL



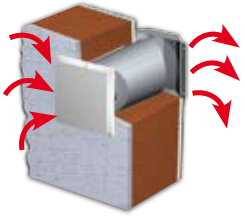
AUTO1

THE UNIT IS IN STAND-BY MODE. WHEN THE ENVIRONMENT AIR EXCEEDS THE PRE-SET HUMIDITY LEVEL, THE UNIT STARTS TO OPERATE IN HEAT-RECOVERY MODE UNTIL THE HUMIDITY RETURNS TO THE SET LEVEL

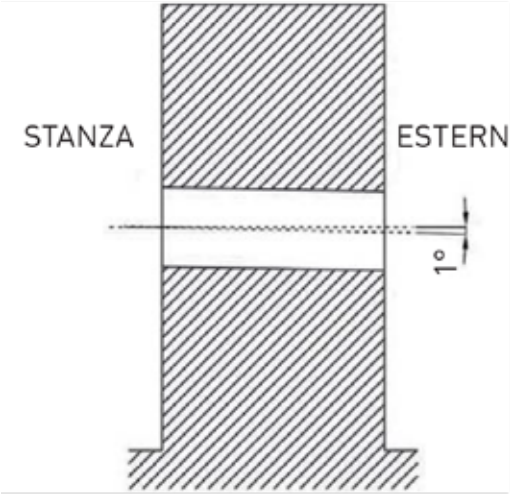


AUTO2

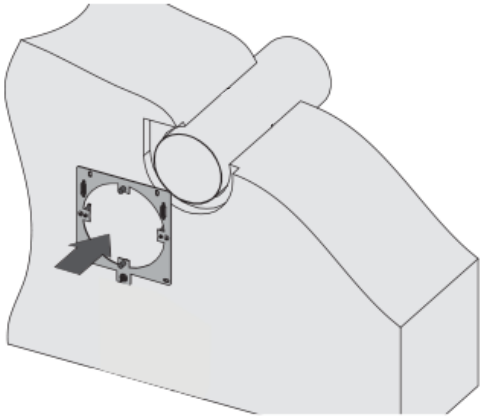
THE UNIT IS IN STAND-BY MODE. WHEN THE ENVIRONMENT AIR EXCEEDS THE PRE-SET HUMIDITY LEVEL, THE UNIT STARTS TO OPERATE IN EXTRACTION-ONLY MODE UNTIL HUMIDITY RETURNS TO THE SET LEVEL.

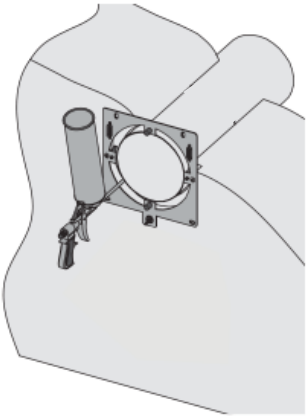


3. Install the duct through the wall with an inclination of 1 ° to the outside environment.

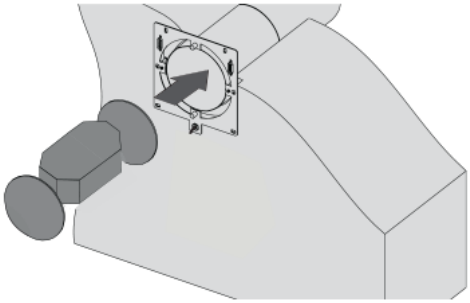


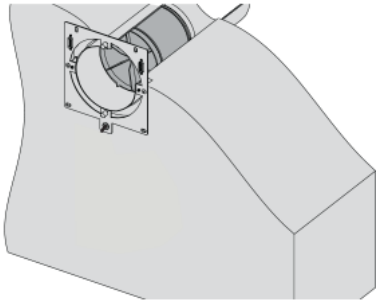
4. Attach the mounting plate by following the diagram on page 12.
Prepare the four mounting holes and secure the mounting plate onto the part with four 4x40 screws, and four raw-plugs 6x40 (included).
Align the air duct with respect to the mounting plate; now fill in the spaces between the wall and the duct with silicone. The air duct does not protrude from the surface of the mounting plate.



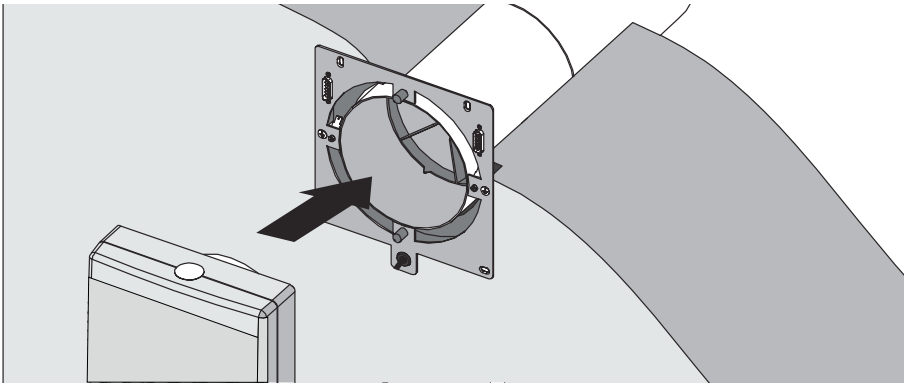


5. Insert the filter, the ceramic exchanger, and another filter in consecutive order, into the air-duct.





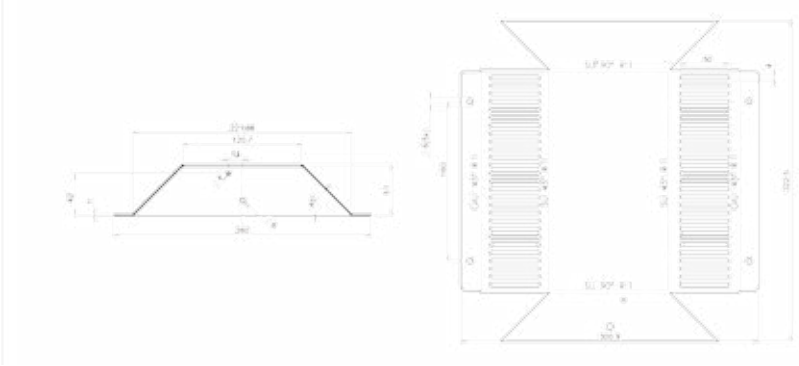
6. Fit the ventilation unit onto the mounting plate.



6. Fit the ventilation unit onto the mounting plate.

INSTALLING THE INTAKE GRID

1. Mark the fixing holes for the external ventilation grid and drill for 6x40 plug. For convenience, use the back of the grid.



2. Insert the 6x40 raw-plugs (included) into the holes.

3. Now remove the external grid to allow access to the fixing holes.
Remove the upper part of the external ventilation grid.

4. Secure the back of the grid to the wall with the 4x40 screws included.

5. Fit the upper part of the grid.

CONNECTING TO THE MAINS

DISCONNECT THE VENTILATION UNIT FROM THE POWER SUPPLY BEFORE ANY ELECTRICAL INSTALLATION OPERATION. CONNECT THE VENTILATION UNIT TO AN OUTLET PROPERLY INSTALLED WITH TERMINAL GROUND. DO NOT MAKE ANY CHANGE TO THE INTERNAL CONNECTIONS: IT WOULD CAUSE THE LOSS OF WARRANTY

The ventilation unit is calibrated for connection to the single-phase AC mains supply 230 V / 50 Hz using 12 VDC transformer. To facilitate cable routing, the ventilation unit comes with a pre-wired power cord and a plug. Connect the ventilation unit to the mains through the circuit breaker with integrated magnetic stripe in the wiring system.

CONNECTION OF THE UNIT IN SERIES

When the ventilation units are connected in series, all the connected units are controlled to the first unit and a common remote control. To connect the ventilation units in series, connect the socket of the mounting plate output contact of the first ventilation unit with the outlet of the input contact of the second plate of the ventilation unit assembly.
Now connect the second unit to the third unit in the same way; up to 10 ventilation units can be connected in series.

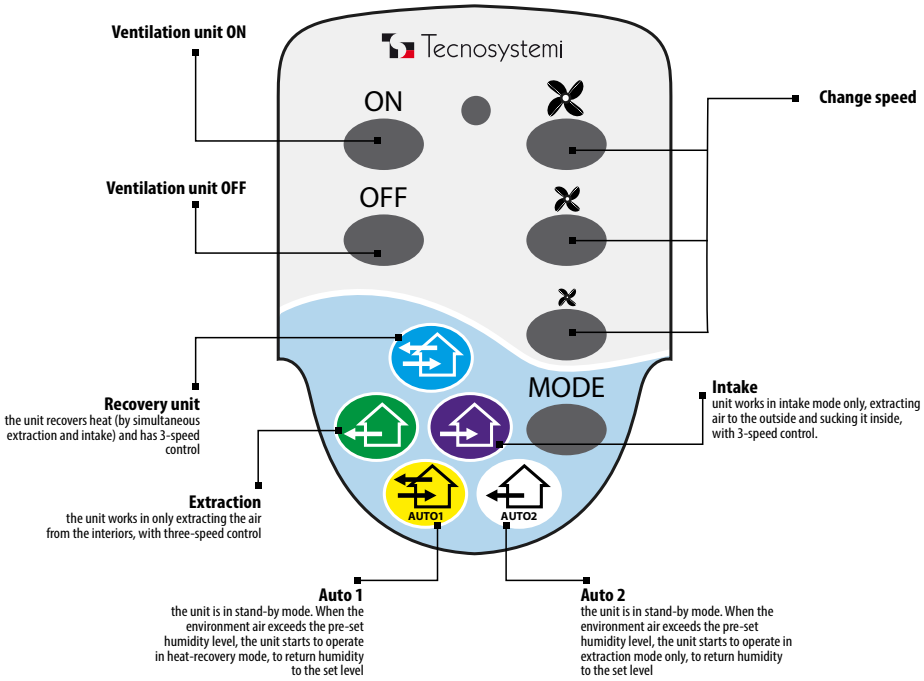
Unplug the power cable while connecting the second, third, etc. units.

CONNECTING SEVERAL UNITS IN SERIES (REAR VIEW)

USING REMOTE CONTROL

The ventilation unit is controlled by a remote control. The remote control has the capacity for more commands.

REMOTE CONTROL DEVICE



REMOTE CONTROL DEVICE

DESCRIPTION OF REMOTE-CONTROL BUTTONS	
1. Switching on	
ON 	ON
2. Switching off	
OFF 	OFF
3. Speed settings	
	First speed.
	Second speed.
	Third speed.
4. Operating mode	
MODE 	**MODE** Allows you to select the following modes
	**Recovery unit** The unit recovers heat (by simultaneous extraction and intake) and has 3-speed control
	**Extraction** The unit works in only extracting the air from the interiors, with three-speed adjustment
	**Intake** Unit works in intake mode only, extracting air to the outsideand sucking it inside, with 3-speed control.
	**Auto1** the unit is in stand-by mode. When the environment air exceeds the pre-set humidity level, the unit starts to operate in recovery mode, to return humidity to the set level
	**Auto2** the unit is in stand-by mode. When the environment air exceeds the pre-set humidity level, the unit starts to operate in extraction mode only, to return humidity to the set level

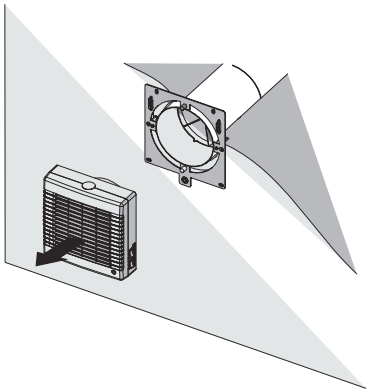
MAINTENANCE

UNPLUG THE UNIT FROM THE MAINS BEFORE STARTING MAINTENANCE.

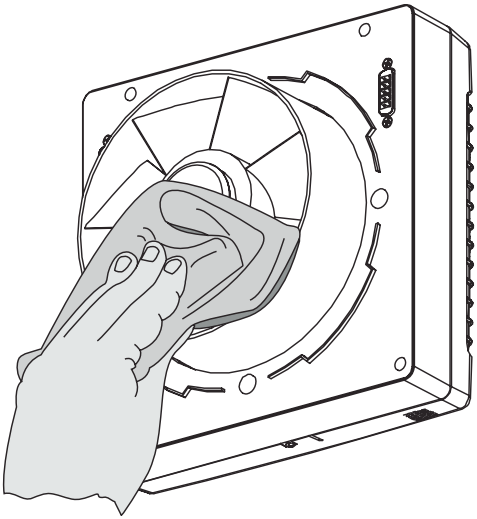
Maintenance of the ventilation unit means regular cleaning of its surfaces from dust and clean, and the replacement of its filters.

1. Fan maintenance (once a year).

Pull on the ventilation unit to remove.

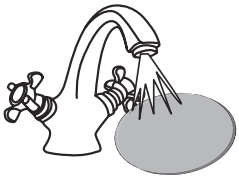


Clean the impeller blades. To dust,
use a soft brush, cloth or vacuum cleaner.
Do not use water, abrasive cleaners, solvents or sharp objects. The impeller blades must be cleaned once a year.

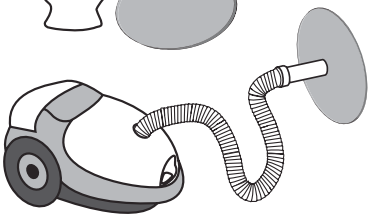


2. Regenerator and filter maintenance (every 1,500 hours).

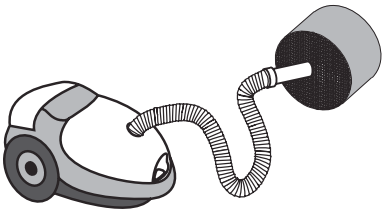
Remove the air-flow rectifier.
Remove the filter in front of the regenerator.
Pull the regenerator cord to remove the air duct from the regenerator.
Be careful when removing the regenerator, to avoid damage. Remove the regenerator first, then the filter.
Clean the filter when it gets dirty (every 1,500 hours).
After about 1,500 hours of operation, the unit emits a red light signal as a reminder of the need to replace or clean the filter. The signal continues until maintenance is completed.



Clean the filters, dry them and insert the dry filters into the duct.
Aspiration is permitted.
The duration of the filter is approximately three years.
Contact the seller for replacement filters.



Even technical maintenance cannot completely prevent the accumulation of dirt on the regenerator unit.
Have the regenerator cleaned regularly to ensure high heat-transfer efficiency.
Clean the regenerator with a vacuum cleaner at least once a year.



To reset the operating-time counter, insert the filters and regenerator into the ventilation unit, then hold the **ON/OFF** button pressed for 10 secs. until you hear a long tone; then release.

3. Outdoor-grill maintenance (once a year).

The external ventilation grid can become clogged with leaves or other objects that impede the smooth operation of the unit. Check the ventilation grid twice a year, and clean it as often as necessary.
To clean the ventilation grid, remove and clean the ventilation cap and air duct.

TRANSPORTATION AND STORAGE

The unit should be stored in its original packaging in a ventilated area at a temperature of +10°C to +40 ° C.

The air must not contain any aggressive vapours or chemical mixtures that can corrode, or compromise the integrity of, the connections.
For handling, only use suitable lifting equipment to prevent damage to the unit (dropping or excessive swing). Follow the applicable regulations regarding transport, according to the type of load.
The units can be transported by any means as long as adequate protection is provided against weather and mechanical damage. Avoid bumps and collisions during transport and handling operations.

WARRANTY

The warranty lasts for two (2) years from the date of delivery, and covers material defects with the exception of goods not manufactured by the supplier. The warranty does not apply to defects caused by:
• unsuitable transport;
• the negligent or improper use of the product, or any use thereof that fails to comply with the instructions and/or manuals of installation, use and maintenance;
• non-observance of the product's technical specifications
• repairs or modifications carried out by the client or by third parties without the supplier's prior written authorization
• lack of, or unsuitability of, maintenance
• anything else not relating to original material or manufacturing defects.
• provided that the customer's complaint is covered by the warranty and notified in the terms and conditions requested by the supplier, the latter will, at its discretion, replace or repair each product or parts thereof that present flaws or e or repair each faulty product or part/s thereof
• the warranty does not cover damage and/or defects of products arising from anomalies caused by, or related to, parts that have been assembled/added directly by the customer or by the end consumer.

DISPOSAL

At the end of its life, the product must not be disposed of together with normal domestic waste. It may be disposed of by delivering
it to an appropriate state-run recycling centre or to an approved private service
provider. To underline the duty to properly dispose of household appliances, the product indicates the symbol of the mobile waste bin as crossed (not to be used to dispose of the product).