AERMEC

la prima per il clima

MANUALE TECNICO
TECHNICAL MANUAL

Unità di recupero calore con scambiatore entalpico
Heat recovery unit with enthalpy exchanger

TRS

MODELLI / MODELS:

TRS15
TRS25
TRS35
TRS50
TRS80
TRS100

AERMEC
COMPANY QUALITY SYSTEM
ICIM
ISO 9001:2008 - Cert. n° 0128
CISQ IQNet
AERMEC S.P.A.

CE

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ITRSTY 1203- 5979200_00

English

INDEX

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TRS

English

DECLARATION OF CONFORMITY CE We, the signatories of the present document, declare under our own exclusive responsibility that this assembly called:

NAME	**TRS Series**
TYPE	**HEAT RECOVERY UNIT WITH ENTHALPY EXCHANGER**
MODEL	**TRS15 , TRS25 , TRS35 , TRS50 , TRS80, TRS100**
Combined with the following accessories	**TRSCP** or **TRSCPR**

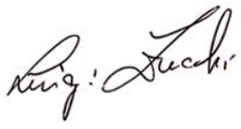
Are compliant with the essential requirements of the following directives:

- Machinery Directive 2006/42/EC
- Electromagnetic Compatibility Directive EMC 2004/108/EC
- Low Voltage Directive LVD 2006/95/EC
- Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment
- Directive 2002/96/EC on waste electrical and electronic equipment (WEEE)

The person authorised to constitute the technical file is: Pierpaolo Cavallo - 37040 Bevilacqua (VR) Italia – Via Roma, 996

Bevilacqua 01/03/2012

La Direzione Commerciale – Sales and Marketing Director
Luigi Zucchi



GENERAL WARNINGS

This manual is an integral part of the apparatus and then it must be preserved with care and it ALWAYS must accompany the machine, even in the case of cession to another owner or user or in the case of a transfer on another system. In the case of its damage or losing, ask another copy to AERMEC S.p.A.

The installation and the electrical connections of the units and of their accessories have to be carried out only by persons who have the qualifying technical and professional prerequisites for installation, transformation, enlargement and maintenance of the plants, and who are able to verify the same plants in terms of safety and functionality. In this manual, they will be referred to generically as “Staff endowed with specific technical expertise”. Don’t modify or tamper with the machine because it can create dangerous situations and AERMEC S.p.A. does not answer to possible damages.

Check the perfect integrity of all TRS components. Check that in the packing all the accessories for the installation and the relevant documentation, are included. In the case of not conformity turn to seller company.

The installation of the TRS units must be carried out by qualified Company (according to the current regulation) which, at the end of the work, must give to the owner, the declaration of conformity of installation workmanlike, that is in compliance with the regulations in force and with the indications of this handbook.

AERMEC S.p.A. does not answer to possible damages to people, animals or things, due to wrong installation, regulations and maintenance or due to illegitimate use.

WARNING: before carrying out any intervention, make sure that the power supply is disconnected.

WARNING: before carrying out any intervention, make sure of being equipped with proper individual protection devices.

WARNING: the unit has to be installed according to the national installation rules.

Remember that in the use of products that use electrical energy and water, some fundamental rules of security must be observed. In particular:

Children and handicapped people without assistance must not use the machine.

Don’t touch the machine if you are barefoot and if you are wet.

Do not proceed with cleaning or maintenance operations, before switching off the electric power supply.

Do not modify security or adjustement devices without permission and indications of AERMEC S.p.A.

Do not pull, remove, twist electrical cables coming out from machine, iven if these is disconnected from power supply network.

Do not walk up, sit down and/or place any objects on the machine.

Do not spurt water directly on the machine.

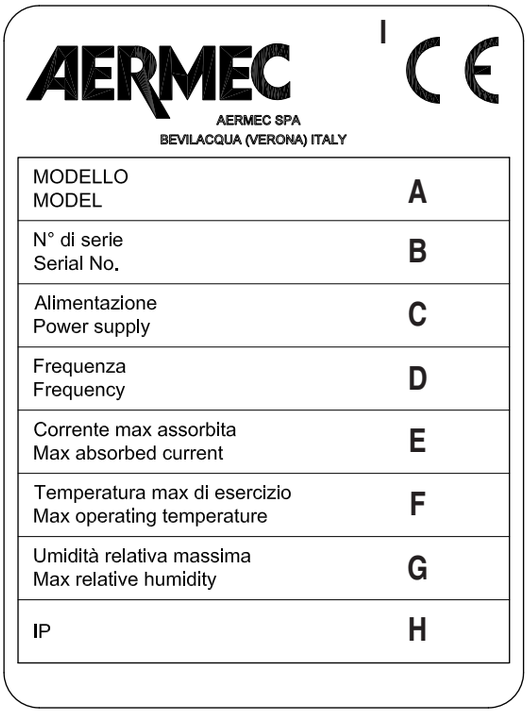
Do not open access doors of the machine, without positioning general switch of the system on "off" .

Do not scatter, leave close by children packing material because it could be dangerous.

SYMBOLS USED

	**WARNING**
	**DANGER**
	**DANGER OF ELECTRICAL SHOCK**
	**QUALIFIED STAFF ONLY**
	**PROHIBITION**

IDENTIFICATION OF THE UNIT



A Model
B Serial number
C Voltage [V]
D Frequency [Hz]
E Maximum absorbed current [A]
F Max. operating temperature [°C]
G Max. relative humidity [%]
H IP Index Protection
I CE mark

CE Identification
The Heat Recovering Unit is CE marked in accordance with European Community, with the following directives: 2006/42/EC, 2004/108/EC, 2006/95/EC, 2002/95/CE, 2002/96/CE and following modifications.

IMPORTANT NOTES:

THE HEAT RECOVERY UNITS OF TRS SERIES ARE ONLY SUITABLE FOR INTERNAL INSTALLATION

The heat recovery unit is a machine designed and built exclusively to change air in the civil environments, incompatible with toxic and inflammable gases. Therefore it cannot be used in those environments where the air is mixed and/or altered by other gaseous composites and/or solid particles.
The use of the same for different purposes from those envisioned, not conform to that described in this manual, will make any direct and/or indirect liability of the Manufacturer automatically become null and void.

English

INTRODUCTION

The TRS heat recovery units feature compact dimensions and easy assembly.
The TRS heat recovery units combine maximum room comfort with certain energy savings.
Current air-conditioning and air handling systems require forced ventilation, which consequently involves the discharge of the conditioned air and as a result means significant energy consumption and an increase in running costs.
The TRS series has been designed to resolve these probles by the use of static exchangers.
The TRS series adopts an heat recovery made of plane sheets of special paper. These exchangers are also called tatal heat recoveries: infact, they can recover both sensible and latent heat (humidity), with temperature efficiency between 60-80% and enthalpy efficiency tbetween 50-70%. Thanks to this high efficiency, the fresh air in winter conditions can be directly introduced in air-conditioned rooms, without installing post-heating sections.
The drain pan collector is not present because the humidity contained in one of air flows is partially absorbed by the porous surface but then completely transferred to the opposite flow: therefore the humidity condensation is avoided.
The high static pressure values available allow the use of ducting for the extraction or distribution of air in a series of rooms.

SECTION 1 - GENERAL CHARACTERISTICS

1.1 Presentation of the manual

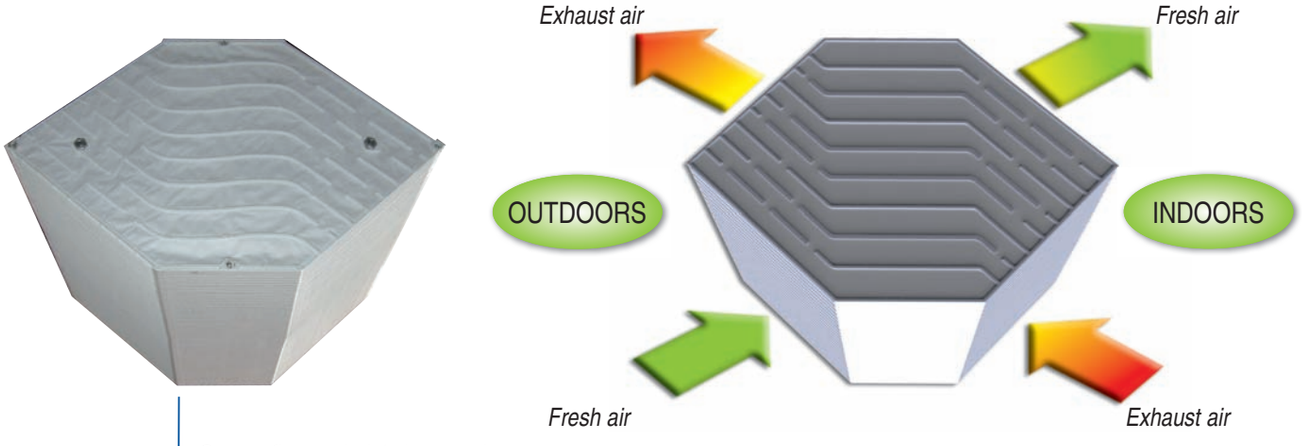
This manual describes the rules for the transportation, the installation, the use and the maintenance of the heat recovery. The user will find everything that is normally useful to know for a correct and safe installation of the TRS unit.
The non-observance of what is described in this handbook and an inadequate installation of the TRS unit may cause the cancellation of the guarantee that AERMEC S.p.A. grants on the same one. AERMEC S.p.A., moreover, does not answer to possible direct and/or indirect damages due to wrong installation carried out by inexpert and/or non-authorised staff. At the moment of the purchase, check that the machine is integral and complete. Claims will have to be produced within 8 days from the reception of the goods.

1.2 General characteristics

- Static, counterflow heat exchanger, made of plane sheets of special paper. These exchangers are also called “total heat exchangers”: infact, they can recover both sensible and latent heat, with temperature efficiency up to 77% and enthalpy efficiency up to 63% and therefore they are particularly suitable for summer recuperation.
  The air flows are separated by proper seal.
- Thanks to the accuracy of engineering, the units are very compact, and the periodical maintenance is very easy for the heat exchanger and the filters, both removable from the side.
- Very noiseless running, thanks to high quality of materials and components.
- Automatic free-cooling function, useful during the between season.
- High efficient air filtration (G4 efficiency)
- The fans of "TRS" units feature **“brushless DC”** motors which allow to obtain higher efficiency than the standard motors

ACCESSORIES:

- TRSCP: LCD wired control panel featuring the on/off function, speed switching, daily programming clock.
  IR receiver for functioning in combination with the accessory IR remote controller. It is suitable for wall mounting, in electric boxes type “502” (2 modules).
- TRSCPR: IR remote controller and LCD wired control panel (available as optional) featuring the on/off function, speed switching, daily programming clock. It is suitable for wall mounting, in electric boxes type “502” (2 modules).



Counterflow enthalpic heat exchanger

1.3 TRS series technical data

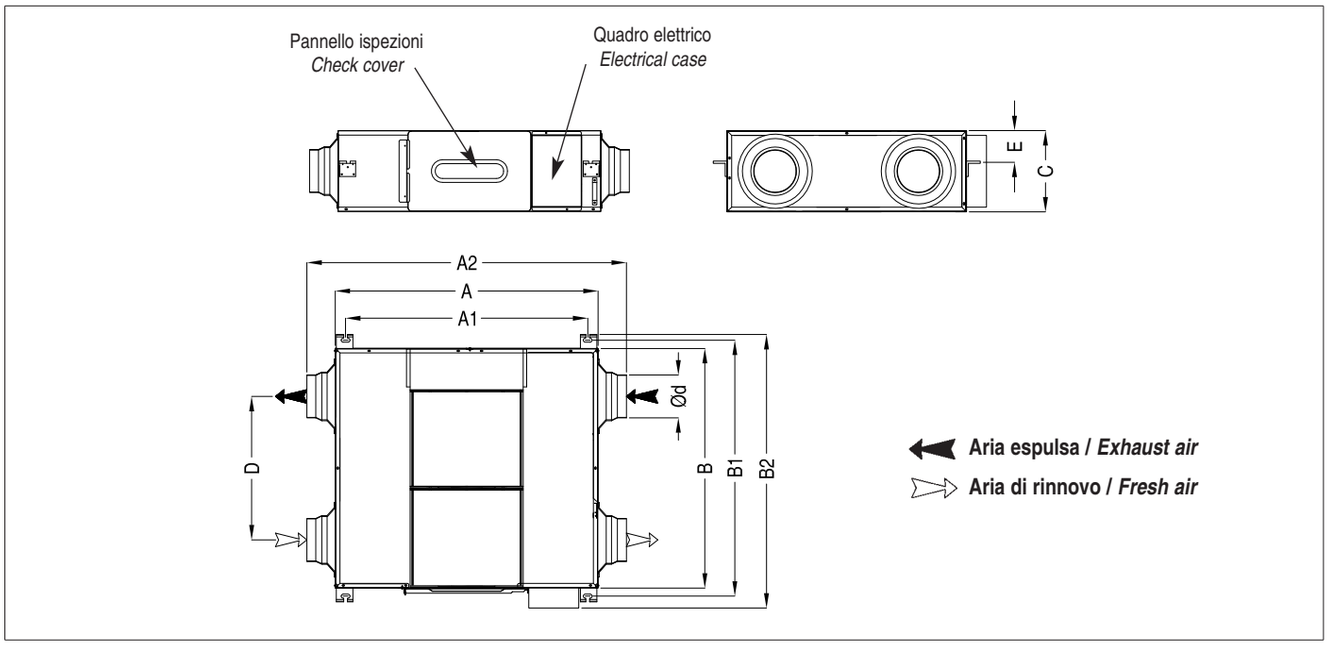
HEAT RECOVERY UNIT			TRS15	TRS25	TRS35	TRS50	TRS80	TRS100
Winter functioning								
Efficiency	Temperature	%	77	76	77	76,5	73	73,5
	Enthalpy		62	62	63	62,3	59	59,5
	Transferred power at the maximum speed	kW	1,3	2,2	3,1	4,3	6,5	8,2
Summer funtioning								
Efficiency	Temperatura	%	63	62	63	62,5	59	59,5
	Entalpia		60	60	61	60	57	57,5
	Transferred power at the maximum speed	kW	0,5	0,8	1,2	1,7	2,5	3,2
Nominal air flow	Maximum	m^3/h	150	250	350	500	800	1000
	Medium	m^3/h	150	250	350	500	800	780
	Minimum	m^3/h	100	160	270	360	625	650
External static pressure (*)	Maximum	Pa	85	85	90	100	150	150
	Medium	Pa	70	65	60	60	100	100
	Minimum	Pa	50	30	30	30	40	40
Power input	Maximum	W	80	90	120	135	300	310
	Medium	W	55	60	80	110	190	200
	Minimum	W	30	35	45	60	110	125
♫ Sound pressure level	Maximum	dB(A)	26	27	31	33	38	39
	Medium	dB(A)	24	26	29	31	36	37
	Minimum	dB(A)	22	22	25	27	32	33
Electrical supply		V/ph/Hz	230/1/50					

The performances are referred to the following conditions:
(*) Referred to the nominal air flow after filter and plate heat exchanger.
♫ Sound pressure level: data referred to 1,5 meters from inlet in free field. The actual operation noise level generally differs from the values shown in the table, depending on the operation conditions, on the reflected noise and on the surrounding noise.
Winter functioning:
outside air: -5°C DB, RH 80%
ambient air: 20°C DB, RH 50%
Summer functioning:
outside air: 32°C DB, RH 50%
ambient air: 26°C DB, RH 50%

English

1.4 Dimensions and weight

Model	Dimension [mm]										Weight net / gross [kg]	Packing dimensions [mm]
	A	A1	A2	B	B1	B2	C	D	E	Ød		
TRS15	885	815	1074	666	720	779	272	342	110	100	27 / 32	1125x830x345
TRS25	885	815	1074	666	720	779	272	342	110	150	27 / 32	1125x830x345
TRS35	885	815	1074	806	860	919	272	482	110	150	32 / 38	1125x985x345
TRS50	970	910	1130	997	1053	1112	312	728	38	200	42 / 49	1190x1150x386
TRS80	1322	1252	1486	882	936	994	390	431	169	250	63 / 70	1545x1030x470
TRS100	1322	1252	1486	1132	1186	1244	390	681	169	250	76 / 86	1545x1280x470



1.5 Heat recovery unit performance

1.5.1 Performance, heat recovery unit model TRS15

Air flow	Room air		Fresh air		Supply air		Efficiency %		Transferred power
m³/h	°C	R.H.%	°C	R.H.%	°C	R.H.%	Temperature	Enthalpy	kW
150	20	50	-10	80	13,4	34,9	78	63	1,4
150	**20**	**50**	**-5**	**80**	**14,3**	**37,8**	**77**	**62**	**1,3**
150	20	50	0	70	15,2	39,9	76	61	1,0
150	20	50	5	60	16,1	41,5	74	59	0,7
150	20	50	10	50	17,1	43,1	71	57	0,5
150	26	50	28	50	26,8	50,2	62	59	0,2
150	26	50	30	50	27,5	50,8	62,5	59,5	0,3
150	**26**	**50**	**32**	**50**	**28,2**	**51,5**	**63**	**60**	**0,5**
150	26	50	34	50	28,9	52,3	63,5	60,5	0,7

1.5.2 Performance, heat recovery unit model TRS25

Air flow	Room air		Fresh air		Supply air		Efficiency %		Transferred power
m³/h	°C	R.H.%	°C	R.H.%	°C	R.H.%	Temperature	Enthalpy	kW
250	20	50	-10	80	13,1	36,9	77	63	2,4
250	**20**	**50**	**-5**	**80**	**14,0**	**39,5**	**76**	**62**	**2,2**
250	20	50	0	70	15,0	41,2	75	61	1,6
250	20	50	5	60	16,0	41,5	73	58	1,2
250	20	50	10	50	17,0	43,1	70	56	0,9
250	26	50	28	50	26,8	50,1	61	59	0,3
250	26	50	30	50	27,5	50,7	61,5	59,5	0,6
250	**26**	**50**	**32**	**50**	**28,3**	**51,1**	**62**	**60**	**0,8**
250	26	50	34	50	29,0	51,3	62,5	60,5	1,2

1.5.3 Performance, heat recovery unit model TRS35

Air flow	Room air		Fresh air		Supply air		Efficiency %		Transferred power
m³/h	°C	R.H.%	°C	R.H.%	°C	R.H.%	Temperature	Enthalpy	kW
350	20	50	-10	80	13,4	36,8	78	64	3,4
350	**20**	**50**	**-5**	**80**	**14,3**	**39,2**	**77**	**63**	**3,1**
350	20	50	0	70	15,2	41,1	76	62	2,3
350	20	50	5	60	16,1	41,5	74	59	1,7
350	20	50	10	50	17,1	43,1	71	57	1,3
350	26	50	28	50	26,8	50,1	61,5	59,5	0,4
350	26	50	30	50	27,5	50,7	62	60	0,8
350	**26**	**50**	**32**	**50**	**28,2**	**51,3**	**63**	**61**	**1,2**
350	26	50	34	50	28,9	51,8	63,5	62	1,8

1.5.4 Performance, heat recovery unit model TRS50

Air flow	Room air		Fresh air		Supply air		Efficiency %		Transferred power
m³/h	°C	R.H.%	°C	R.H.%	°C	R.H.%	Temperature	Enthalpy	kW
500	20	50	-10	80	13,3	36,7	77,5	63,5	4,8
500	**20**	**50**	**-5**	**80**	**14,1**	**39,4**	**76,5**	**62,5**	**4,3**
500	20	50	0	70	15,1	41,1	75,5	61,5	3,3
500	20	50	5	60	16,0	41,6	73,5	58,5	2,5
500	20	50	10	50	17,1	42,9	70,5	56,5	1,8
500	26	50	28	50	26,8	50,1	61	59	0,5
500	26	50	30	50	27,5	50,7	61,5	59,5	1,1
500	**26**	**50**	**32**	**50**	**28,3**	**51,2**	**62,5**	**60**	**1,**
500	26	50	34	50	29,0	53,1	63	61,5	2,5

1.5.5 Performance, heat recovery unit model TRS80

Air flow	Room air		Fresh air		Supply air		Efficiency %		Transferred power
m³/h	°C	R.H.%	°C	R.H.%	°C	R.H.%	Temperature	Enthalpy	kW
800	20	50	-10	80	12,2	37,1	74	60	7,2
800	**20**	**50**	**-5**	**80**	**13,3**	**39,7**	**73**	**59**	**6,5**
800	20	50	0	70	14,4	41,4	72	58	4,9
800	20	50	5	60	15,7	42,9	71	57,5	3,9
800	20	50	10	50	17,0	43,3	69,5	56	2,8
800	26	50	28	50	26,9	50,2	57	54	0,8
800	26	50	30	50	27,7	50,6	58	56	1,7
800	**26**	**50**	**32**	**50**	**28,5**	**51,1**	**59**	**57**	**2,5**
800	26	50	34	50	29,2	52,1	60	57,5	3,7

1.5.6 Performance, heat recovery unit model TRS100

Air flow	Room air		Fresh air		Supply air		Efficiency %		Transferred power
m³/h	°C	R.H.%	°C	R.H.%	°C	R.H.%	Temperature	Enthalpy	kW
1000	20	50	-10	80	12,4	36,9	74,5	60,5	9,1
1000	**20**	**50**	**-5**	**80**	**13,4**	**39,7**	**73,5**	**59,5**	**8,2**
1000	20	50	0	70	14,5	41,4	72,5	58,5	6,2
1000	20	50	5	60	15,7	43,1	71,5	58	4,9
1000	20	50	10	50	17,0	43,4	70	56,5	3,5
1000	26	50	28	50	26,9	50,2	57,5	54,5	1,0
1000	26	50	30	50	27,7	50,5	58,5	56,5	2,1
1000	**26**	**50**	**32**	**50**	**28,4**	**51,3**	**59,5**	**57,5**	**3,2**
1000	26	50	34	50	29,2	52,0	60,5	58	4,7

English

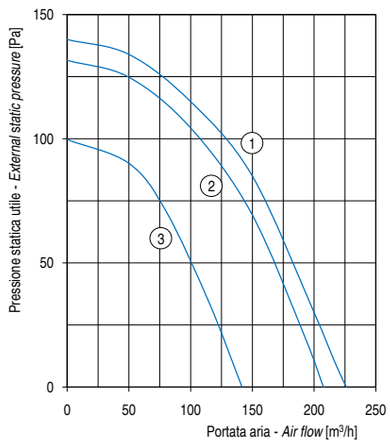
English

1.6 Characteristic curves

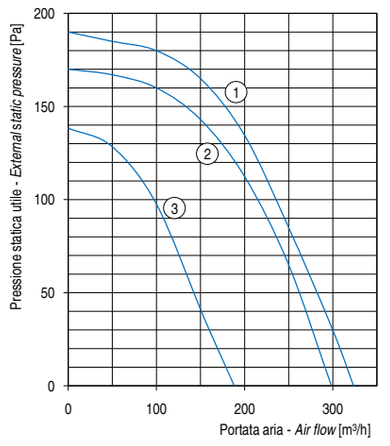
The curves shown below indicate the residual static pressure values at the various flow-rates. The graphs already consider the air-side pressure drop in the heat recovery unit and the filters.

1 - High speed
2 - Medium speed
3 - Low speed

MOD. TRS15



MOD. TRS25



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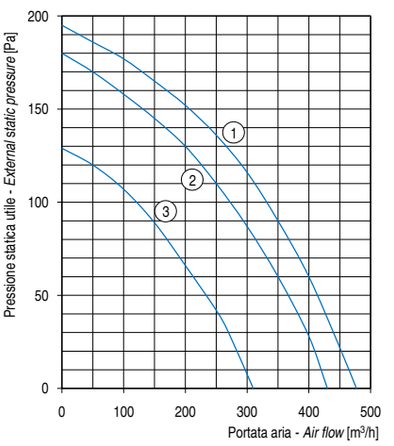
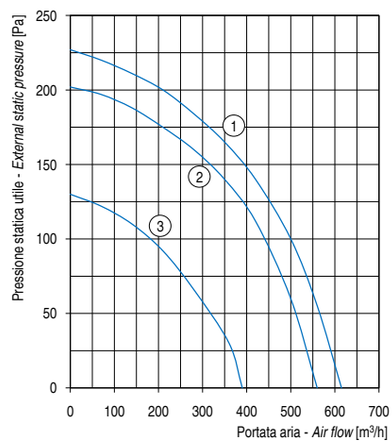
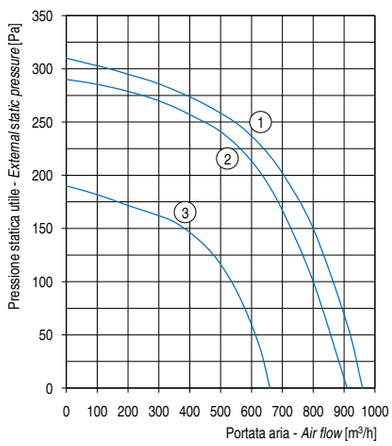


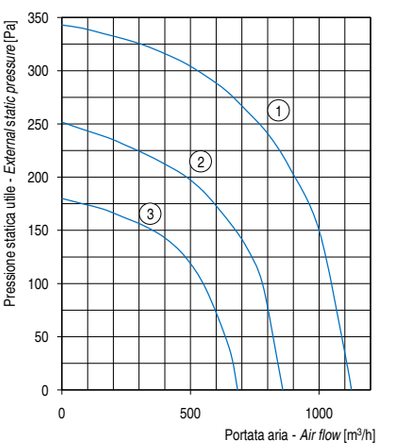
MOD. TRS50



MOD. TRS80



MOD. TRS100



1.7 Fans speed setting

The nominal performances and the curves that are shown in paragraph 1.6 are referred to the factory default settings of the fan speeds.
It is possible to change the factory settings through the 4 dip switches that are placed on the electronic board.
In the following table the different possible combinations are shown, row by row, with the corresponding fan speeds.

Switch 1	Switch 2	Switch 3	Switch 4	High Fan Speed [rpm]	Middle Fan Speed [rpm]	Low Fan Speed [rpm]	Factory default setting
ON	ON	ON	ON	1550	1350	1150	
ON	ON	ON	OFF	1500	1300	1100	
ON	ON	OFF	ON	1450	1250	1050	
ON	ON	OFF	OFF	1400	1200	1000	**TRS35 / TRS100**
ON	OFF	ON	ON	1350	1150	950	
ON	OFF	ON	OFF	1300	1100	900	**TRS25 / TRS50**
ON	OFF	OFF	ON	1250	1050	850	
ON	OFF	OFF	OFF	1200	1000	800	**TRS15 / TRS50**
OFF	ON	ON	ON	1150	950	750	
OFF	ON	ON	OFF	1100	900	700	
OFF	ON	OFF	ON	1050	850	650	
OFF	ON	OFF	OFF	1000	800	600	
OFF	OFF	ON	ON	950	750	550	
OFF	OFF	ON	OFF	900	700	500	
OFF	OFF	OFF	ON	850	650	450	
OFF	OFF	OFF	OFF	800	600	400	

SECTION 2 - TRANSPORT

2.1 Packing

- The heat recovery units and their accessories are inserted in cardboard boxes that will have to remain integral until the moment of the assembly.
- The components that, due to technical requirements, are not assembled, are supplied packed in a suitable covering and fixed to the inside or outside of the unit.

2.2 Handling and transport

- For the handling, in function of the weight, use adequate means in conformity to the current regulation.
- The weight of every single machine is shown on the attached technical data sheet.
- Avoid rotations without control.
- Take utmost care during loading operations: all the machines must be loaded and stored in the truck interposing opportune spacers to safeguard all protruding parts like water couplings, handles, hinges.

2.3 Control upon reception

Upon reception of the goods, please carry out a control of all the parts, verifying that the transport has not caused damages. All damages must be communicated to the carrier, putting a reserve clause on the delivery note and specifying the type of damage.

2.4 Storage

In case of long term storage, keep the machines protected from dust and from all sources of vibrations and heat.

AERMEC S.p.A. declines every responsability for damages due to uncorrect unloading or not sufficient protection against atmospheric agents.

SEZIONE 3 - INSTALLATION AND START UP

3.1 Definitions

CUSTOMER - The customer is the person, the agency or the company, that has acquired or rented the unit and that uses it for the conceived purpose.
USER / OPERATOR - The operator or user is the physical person who has been authorised from the customer to operate with the machine
STAFF ENDOWED WITH SPECIFIC TECHNICAL EXPERTISE - The installation and the electrical connections of the units and of their accessories have to be carried out only by persons who have the qualifying technical and professional prerequisites for installation, transformation, enlargement and maintenance of the plants, and who are able to verify the same plants in terms of safety and functionality. In this manual, they will be referred to generically as “Staff endowed with specific technical expertise”.

3.2 Safety Standards

AERMEC S.p.A. declines whichever responsability for the non observance of the emergency and prevention norms described below.
It declines furthermore responsibility for damages caused by an improper use of the unit and/or by modifications carried out without authorization.

- The installation must be carried out by staff endowed with specific technical expertise.
- During installation operations, use suitable accident-prevention clothing, as an example: glasses, gloves, etc as indicated by the 686/89/EEC and successive norms.
- During installation, operate in absolute safety, in clean surrounding and free from impediments.
- Respect the laws in force in the Country in which the unit is installed, concerning the use and the disposal of the packings and the products used for cleaning and maintainig the machine and follow the manufacturer instructions of such products.
- Before putting the unit in function, check the perfect integrity and safety of all components and of the entire system.
- Avoid at all cost to touch the parts in motion or to intefere with the same ones.
- Do not proceed with cleaning or maintenance operations, before switching off the electric power supply.
- The maintenance and the substitution of damaged or worn out parts of the unit must be carried out by staff endowed with specific technical expertise only and following the indications contained in this handbook.

- Spare parts must correspond to the requirements defined by AERMEC S.p.A.
- In case of dismantling of the unit, follow the relevant antipollution norms.

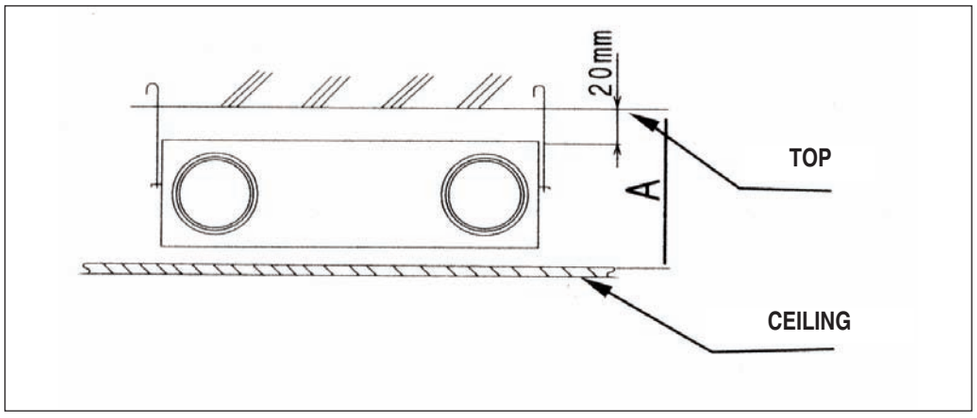
N.B. When using the unit, the installer and the user must take into account and place remedy to all the other types of risk connected with the sistem. As an axample risks deriving from entry of foreign bodies, or risks deriving from the conveying of dangerous gases that are inflammable or toxic at high temperature.

3.3 Preliminary operations

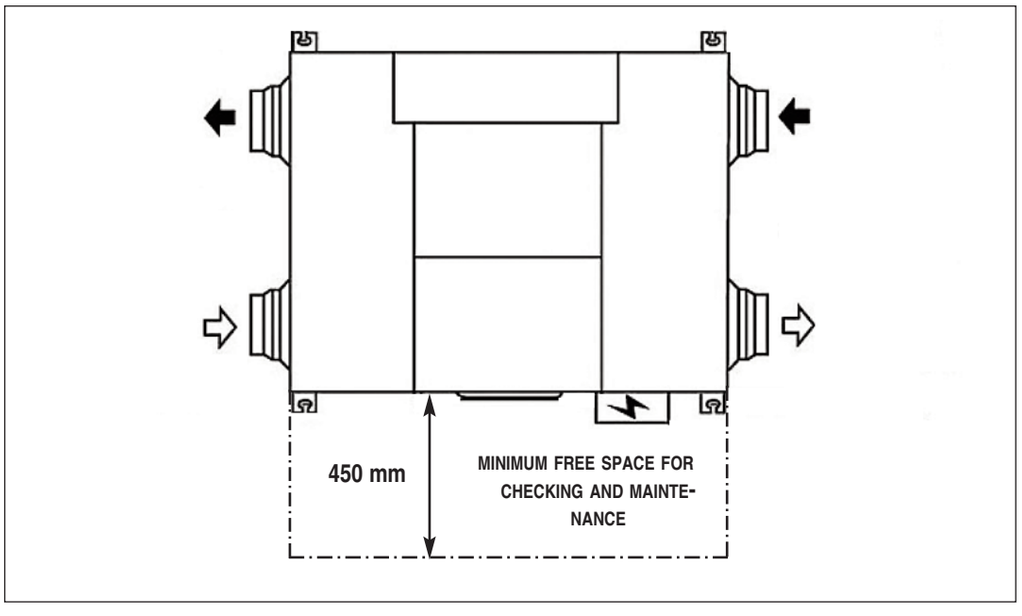
- Check the perfect integrity of all components.
- Check that in the packing all the accessories for the installation and the relevant documentation, are included.
- Transport the packed section as close as possible to the installation place.
- Do not put tools or weights over the packed unit.

3.4 Choice of the installation place

- Place the unit on a solid structure that shall not causes vibrations and that is solid enough to support the weight of the machine.
- Do not place the unit in rooms where inflammable gases, acids or aggressive and corrosive substances may be present. These could damage the different components in an irreparable way.
- Foresee a minimum free space as shown on the figure, to make possible the carrying of the ordinary and extraordinary maintenance.

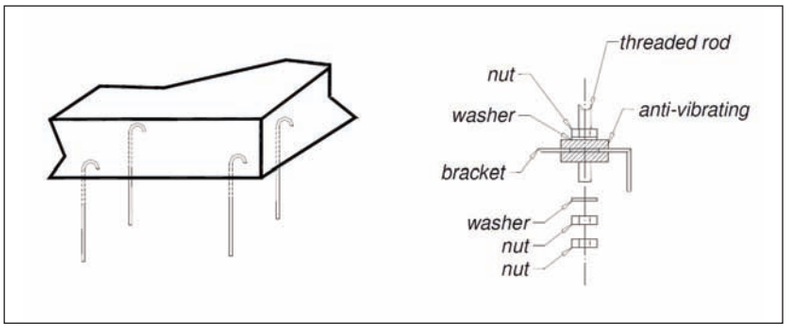


Model TRS	15	25	35	50	80	100
A (mm)	320	320	320	400	450	450



3.5 Positioning of the machine

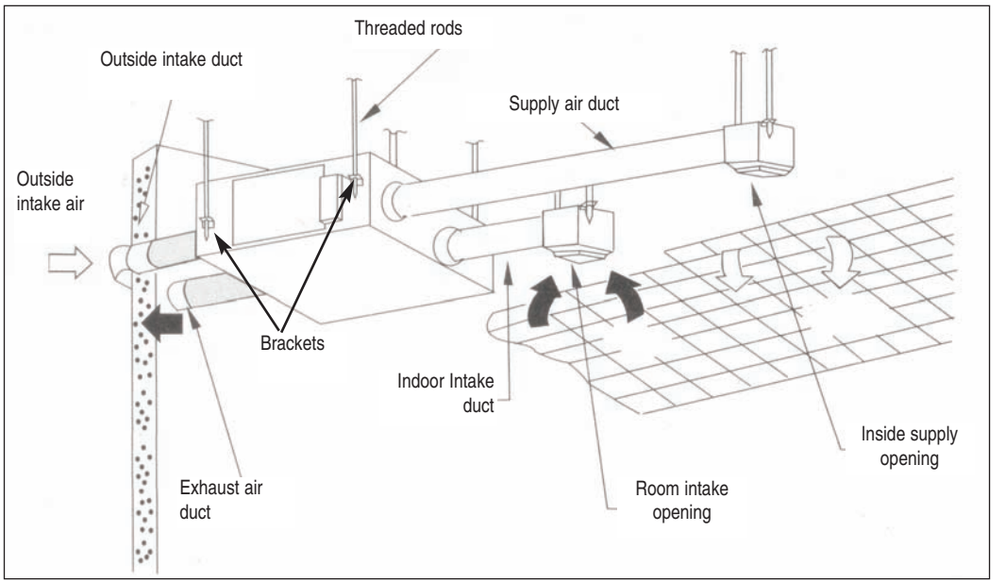
In the continuation are illustrated some sequences of the assembly:
1. Carry out the drilling on the ceiling and fix four M8 threaded rods as shown in the figure.
2. Position the unit on the four threaded rods.
3. Block the unit by locking the bolts.

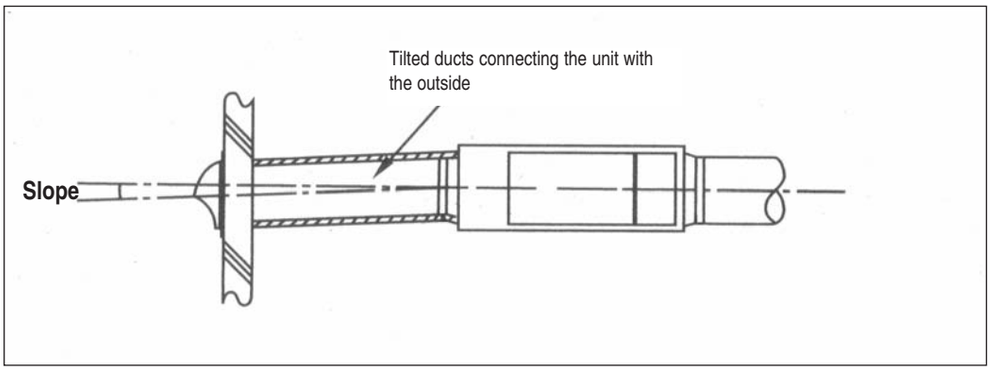


3.6 Connection to the ducts

IMPORTANT: IT IS PROHIBITED TO START UP THE TRS UNIT, IF THE FANS OUTLETS ARE NOT CANALIZED OR PROTECT WITH AN ACCIDENT-PREVENTION NET AS PER CURRENT REGULATION

- The ducts must be dimensioned in function of the system and of the air flow characteristics of the unit ventilators. A wrong calculation of the ducts may cause loss of power or the possible activation of devices fitted on the unit.
- Severe bending, several bending and diameter reductions of the ducts should be avoided to minimize the pressure loss.
- In order to prevent the formation of condense and to reduce the noise level it is advised to use insulated ducts.
- If rigid ducts are used, to avoid the transmission of possible vibrations of the machine in the atmosphere, it is advised to interpose an antivibrating joint between the air outlets and yhe ducts. The electrical continuity between duct and machine must however be guaranteed through a earth cable.
- The distance between indoor inlet port and indoor intake port should be as far as possible
- In order to prevent the penetrations of rains, the ducts connecting the unit with the outside should be protected by grilles. Moreover the ducts should be a little tilted





English

SECTION 4 - ELECTRICAL CONNECTIONS

Before beginning whichever operation make sure that the voltage supply is cut off.

- The electrical connections to the control cabinets must be carried out by Staff endowed with specific technical expertise, following the supplied wiring diagrams.
- Make sure that the voltage and the frequency specified on the nameplate correspond to those of the power supply line.
- For the main supply of the heat recovey unit is not allowed to use adapters, multiple sockets and/or cable extensions.

Carry out the connection with cables of a section which is adapted to the engaged power and in the respect of the local norms. Their dimension must however allow to realize a voltage drop of less than 3% during the starting phase.

- **The installer must foresee the installation of the cut-off switch and of everything that is necessary for the protection of the electrical components, as close as possible to the unit.**
- Connect the unit to an effective earth, using the appropriate screw fitted on the unit.

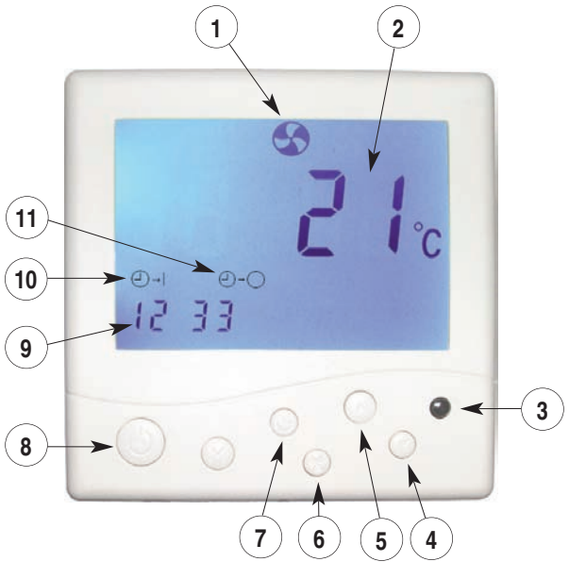
4.1 Wired control panel installation and working (the wired control panel is included in the TRSCP and TRSCPR accessories)

4.1.1 Installation of the wired control panel

- The dimensions of the wired control panel are suitable for the positioning in electric boxes type “502” (2 modules)
- To fasten the control to the electric box:
  - remove the front plate of the control pressing the plastic tooth located in the lower slots
  - fasten the basis of the control to the electric box with 2 screws
  - position again the front plate

4.1.2 User interface chart of the wired control panel

1 - Fan speed symbol
2 - Room temperature
3 - “Unit ON” LED / Infrared remote controller receiver
4 - “Decreasing” key
5 - “Increasing” key
6 - “Speed selection” key
7 - “Clock” key
8 - “ON/OFF” key
9 - Clock
10 - “Timer ON” symbol
11 - “Timer OFF” symbol



4.1.3 Technical data

Power supply	230 V ac -15 / +10% Vac; 50/60Hz
Absorbed current	< 1,5 W
Operating conditions	0°C - 50°C U.R./R.H.: 5 ÷ 90 %
Dimension	86 x 86 x15

4.1.4 Basic functions

- Unit On-Off
- Fan speed selection Min/Med/Max
- Clock
- Daily timing function (Automatic functioning mode)
- Light Source

4.1.5 Keyboard functioning

a) “ON/OFF” key : press this key to turn manually the unit on or off

NOTE:

- when the unit is turned on, the “Unit ON” red led will be shining
- turning off the unit by pressing the “ON/OFF” key, the daily settings will be reset. Then if the “Automatic functioning mode” is required, the unit must be always turned ON.

b) “Speed selection” key : pressing this key, the three fan speeds Low, Medium and High would be interchanged

c) “Clock” key : this key allows to adjust the clock and the daily timer.

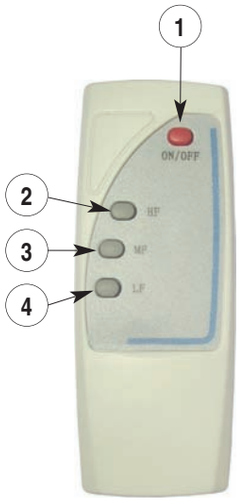
- clock adjusting: press the Clock key once, the clock symbol on LCD display will be shining, then adjust the clock through pressing the increasing key or the decreasing key . Press and hold the increasing key or the decreasing key more than 6 seconds to fast forward/backward the clock setting.
  To save this setting, wait for 6 seconds without any operation.
- daily timer setting: press the Clock key twice, the “Timer ON” symbol on LCD display will shine, adjust the time of turning on the unit through pressing the increasing key or the Decreasing key . Press and hold the increasing key or the decreasing key more than 6 seconds to fast forward/backward the clock setting. To save this setting wait for 6 seconds without any operation.
  Re-pressing the “Clock” key while the “Timer ON” symbol is still shining (or pressing the “Clock” key three times) the “Timing OFF” symbol will shine; adjust the time of turning off the unit in the same way as before for the timing on.
  To save this setting wait for 6 seconds without any operation.

  NOTE:
  - Turning off the unit by pressing the “ON/OFF” key, the daily settings will be reset. Then if the “Automatic functioning mode” is required, the unit must be always turned ON.

4.2 Infrared remote controller functioning (the infrared remote controller is included in the TRSCPR accessory)

4.2.1 Infrared remote controller

The infrared remote controller has to be used in combination with the wired control panel.
The accessory kit TRSCPR is composed of the wired control panel and the infrared remote controller.



4.2.2 TRSRC Functioning

1 - “ON/OFF” button: press this key to turn the unit on or off.
2 - “HF” button: select the maximum fan speed.
3 - “MF” button: select the medium fan speed
4 - “LF” button: select the minimum fan speed

NOTE:

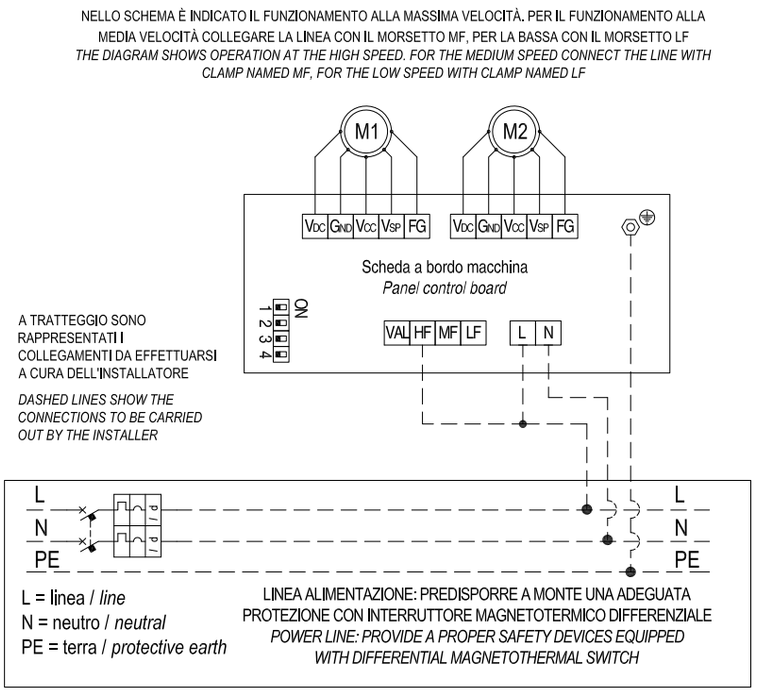
- the remote controller must point at the wired control panel without any obstacles in the way and at a distance inferior than 5 meters.
- turning off the unit by pressing the “ON/OFF” key, the daily settings will be reset; then if the “Automatic functioning mode” is required, the unit must be always turned ON.

English

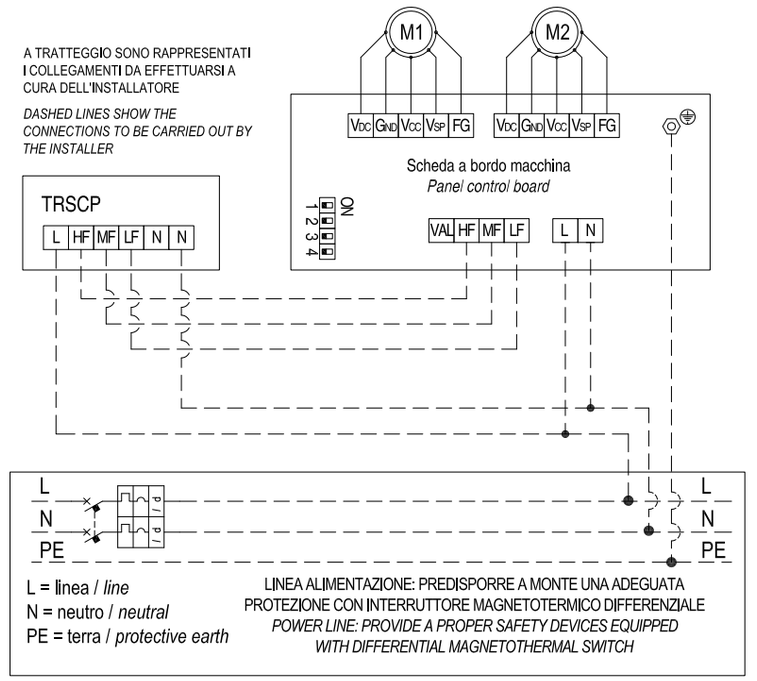
English

TRS WIRING DIAGRAM

TRS
DIRECT WIRING DIAGRAM



WIRING DIAGRAM
TRS
with
WIRED CONTROL PANEL



SECTION 5 - START UP CONTROLS

Before starting the unit check the following:
- Anchorage of the unit to the ceiling.
- Connection of the air ducts.
- Connection of the earth cable.
- Fixing of all the electric terminals.

SECTION 6 - ORDINARY MAINTENANCE

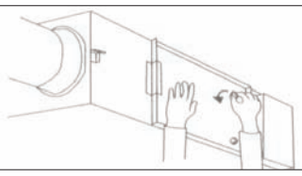
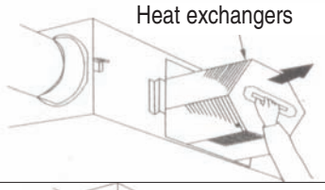
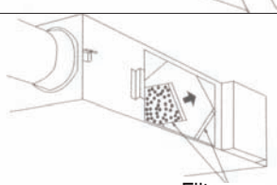
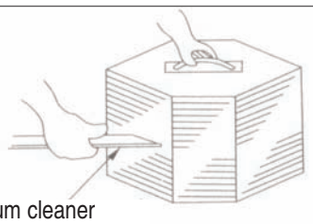
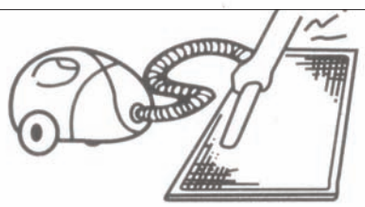
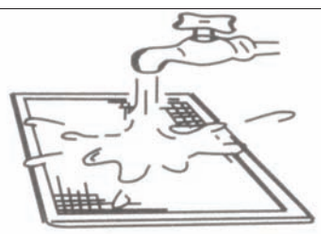
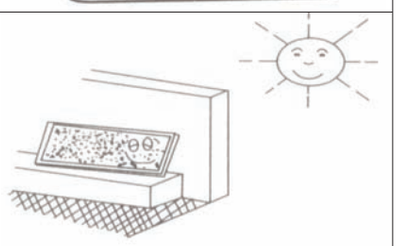
6.1 Warnings

BEFORE UNDERTAKING WHICHEVER MAINTENANCE OPERATION MAKE SURE THAT THE MACHINE IS SWITCH OFF AND THAT IT CAN NOT BE ACCIDENTALLY CONNECTED TO THE POWER. IT IS THEREFORE NECESSARY TO CUT OFF THE ELECTRIC SUPPLY DURING ALL MAINTENANCE OPERATIONS.

- It is a duty of the user to commit a staff endowed with specific technical expertise to do all the maintenance operations on the heat recovery unit.
- Only a staff endowed with specific technical expertise can carry out maintenance operations.
- WARNING: before carrying out any intervention, make sure of being equipped with proper individual protection devices

6.2 Monthly controls

6.2.1 Checking and cleaning of heat exchangers and filters

Release the 2 screws of the inspection panel with the proper handle.	
Take the hexagonal heat exchangers out through the proper handles	Heat exchangers 
Remove the 2 filter by making them scroll on the slides	 Filters
CLEANING OF THE HEAT EXCHANGERS **Remove with the vacuum cleaner the dust that can be present inside the heat exchangers and verify that there are no foreign objects.** **ATTENTION: <u>you must not wash the heat exchangers.</u> If they are excessively dirty or damaged, they have to be replaced.**	 Vacuum cleaner
WASHING OF THE FILTERS **Remove the dust on the filters using a vacuum cleaner.**	
If the filters are excessively dirty, you can wash them with water and a neutral detergent at a temperature lower than 60°.	
Make the filters dry completely before installing them again in the unit. Do not use fire to dry the filters. **<u>Do not use fire to dry the filters.</u>**	
Una volta eseguita la pulizia ripetere le operazioni in ordine inverso. **<u>Ricordarsi sempre di rimontare i filtri e i recuperatori prima dell'avviamento dell'unità.</u>**	

English

6.3 Yearly controls

- Verification of the whole electrical installation and in particular the tightening of the cable connections.
- Verification of the tightening of all bolts, nuts, flanges and water connections that could be loose because of vibrations.

SECTION 7 - BREAKDOWN DIAGNOSTIC

English

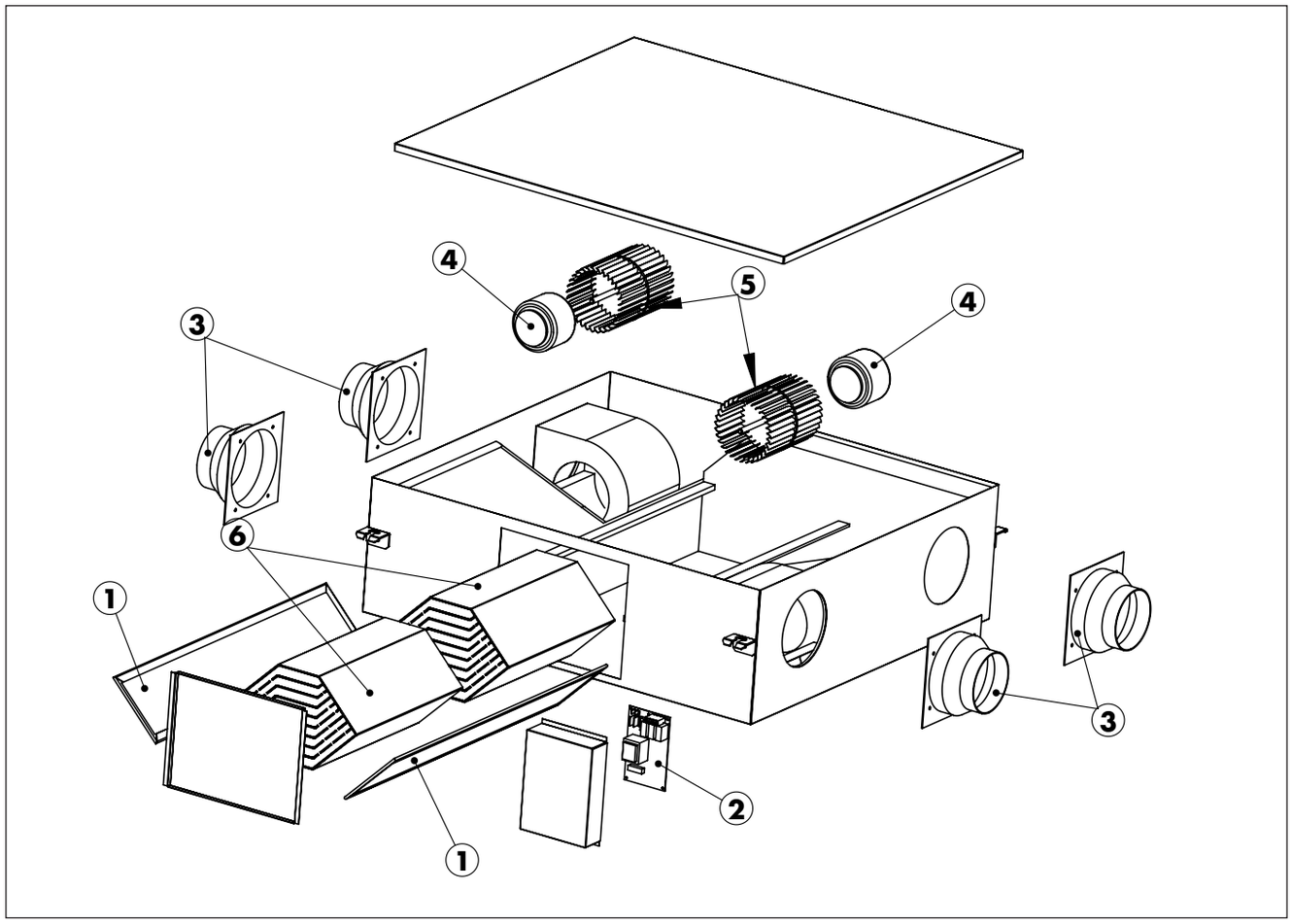
SYMPTOMS	POSSIBLE CAUSE
Fans doesn't work:	No power supply. The switches of the thermostat are not in the right position of working. There are foreign bodies that block the rotors. Electrical connections are released.
Motor out of the absorption:	Pression is low than what is required and then the air flow is excessive. It mustincrease pressure drops with dampers and regulators. Excessive density of the fluid. Rotation speed too high.
Excessive air flow	Pressure drop of the system are overvalued.
Insufficient air flow:	Pressure drop of the system are underestimated. Cloggings in the air ducts. Rotation speed too low: verify on the terminal board of the motor that the connection is correct and that the voltage correspond to that of the nameplate. The rotor turn backwards.
Noise:	Excessive air flow. Wear or crack in the pads. Unbalanced fan. Foreign bodies in the case.
Strong vibrations:	Unbalanced impeller because of wear or of dust deposit. Sliding of the impeller on the case due to deformations. Cloggings in the air ducts

When the failure cannot be easily solved, you have to disconnect the equipment from electrical power and contact the manufacturer or an authorized technical assistance centre, having care of quoting the identification data of the unit that you can find on the correspondent label.

SECTION 8 - DISMANTLING

At the end of their use the units will be disposed of, in observance of the norms in force.
In particular, the European Directive 2002/96/CE about the electric and electronic equipments wastes, prescribes the waste disposal outside the normal waste flow. The materials of the dismantled units have to be separately picked up to optimise the recycling of the materials that constitute them and prevent possible damages for health and environment.
The materials that compose the units are:

- Galvanized plate
- EPS (expanded polystyrene)
- Polyethylene
- ABS plastic (acrylonitrile butadiene styrene)
- NBR (nitrile butadiene rubber NBR)



	KEY and SPARE PARTS CODES					
	1	2	3	4	5	6
Model	FILTER	PANEL CONTROL BOARD	AIR INLET	FAN MOTOR	FAN WHEEL	HEAT EXCHANGER
TRS 15	9117950	9117956	9117957	9117963	9117969	9117975
TRS 25	9117951		9117958	9117964	9117970	9117976
TRS 35	9117952		9117959	9117965	9117971	9117977
TRS 50	9117953		9117960	9117966	9117972	9117978
TRS 80	9117954		9117961	9117967	9117973	9117979
TRS 100	9117955		9117962	9117968	9117974	9117980

Please, contact the service department for more information about the updated list of spare parts codes.

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