TUBO®
the advanced
vacuum system.

USER, INSTALLATION AND MAINTENANCE MANUAL

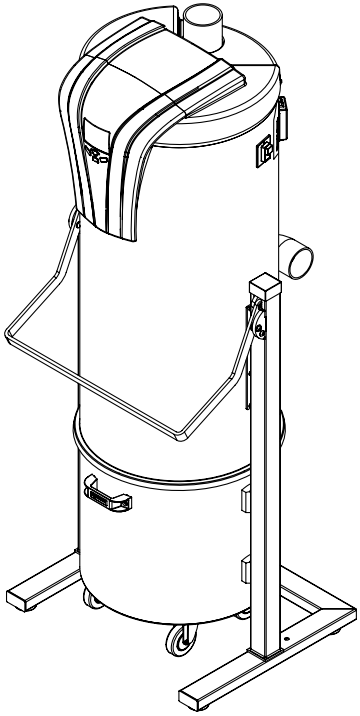
CE

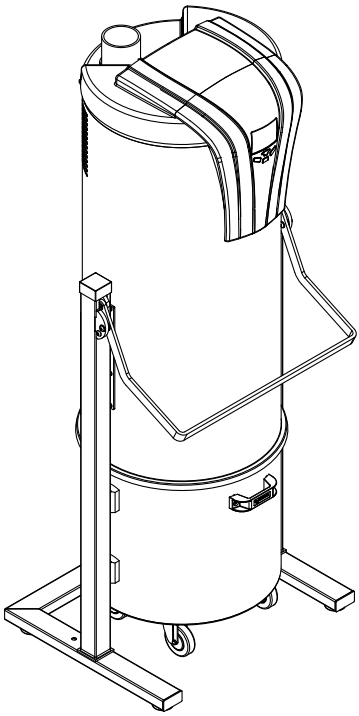
CENTRAL POWER UNIT X-PERT RT

MODELS: RT1A

RT2MA

RT2A





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CONTENTS

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EC CONFORMITY DECLARATION OF A MACHINE

CE

The manufacturer AERTECNICA. S.P.A with registered office in Via Cerchia di Sant'Egidio 760, 47521 (FC) - ITALY

With reference to: **CENTRAL POWER UNIT**
Series: **X-PERT RT**
Models: **RT1A RT2MA RT2A**

DECLARES THAT THE CENTRAL POWER UNIT

in the state in which it was placed on the market, with the exception of added components and/or operations carried out subsequently by the final user

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COMPLIES WITH

The **DIRECTIVE 2006/42/EC (Machinery directive)** and subsequent amendments and additions.
The **Directive 2014/30/UE (Electromagnetic Compatibility Directive)** and subsequent amendments and additions.

APPLIED HARMONIZED STANDARDS:

EN ISO 12100- General principles for design
EN 60335-1:2013 - Safety of Household and Similar Appliances
IEC 60204-1:2016 - Safety of machinery - Electrical equipment of machines

The Technical File of the central power unit, made by Aertecnica S.p.A., is filed in the SERVER unit of AERTECNICA S.P.A.

The person responsible for the Technical File
Balbo Maurizio

Cesena, 12/01/2017

Declarant
Golinucci Daniele

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CAREFULLY READ THE MANUAL
The installation, user and maintenance manual is an integral and essential part of the central power unit and must be read carefully – BEFORE USING THE PRODUCT – as it contains important information concerning operator safety, foreseen operation and the correct maintenance of the central power unit.

WARRANTY

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Warranty conditions for the European Union
Aertecnica ensures the correct operation of the purchased central power unit for a period of 24 months from the documented date of purchase.
If there is no documentation that proves the purchase date (invoice or tax receipt), the 24-month period will refer to the date it was sold by AERTECNICA.
The warranty conditions are in compliance with the EU legislation, and in any case, the following are not included in the warranty:

Faults, damage or breakage caused by incorrect power connection during or after installation
Faults, damage or breakage caused by the malfunctioning of other components in the system, e.g., vacuum sockets, if these components are not from AERTECNICA.
Faults, damage or breakage caused by pipe clogging.
Damage or breakages owing to carelessness, negligence, inability or associated with prohibited or unauthorised uses.
Materials, components and accessories, including electric and electronic items, when the damage is not related to original manufacturing defects or when the damage is due to component wear.
The manufacturer shall not accept any contractual and non-contractual liability due to damage caused by errors in using and installing the central power unit or due to failure to observe the instructions provided by the manufacturer.

The warranty will lapse in the event of tampering or repairs carried out by unauthorised individuals. AERTECNICA declines any responsibility regarding any performance degradation due to damages caused by the use of non-original spare parts for the central power unit.

Any additional warranty conditions will be exclusively charged to those who offer them.
For any dispute, the Court of Forlì-Cesena (ITALY) shall have exclusive jurisdiction and Italian law will apply.

Warranty conditions outside the European Union
For countries outside of the European Union **the guarantee shall be borne by the importing company** and the warranty conditions are those provided by the law of the country where the product is imported to.

ATTENTION

AERTECNICA reserves the right to modify the product and the related technical documentation without incurring any obligation towards third parties.

SAFETY

The operator must accurately comply with the operating instructions shown by the pictograms in order to guarantee the safety of persons and correct operation of the central power unit.

DANGER: this indicates that attention must be paid in order to prevent events that could cause serious accidents that may harm people or their health.

ELECTRICAL DANGER: make sure that the central power unit is connected with the relative cable to a standard compliant earthing system.
The electricity mains and relevant socket must be appropriate to the rated power of the central power unit. For outdoor installations, the power socket must have an appropriate proper IP protection.

RISK OF CRUSHING: during handling and installation phases of the central power unit, we recommend the use of suitable means for lifting and carrying out the installation as described, in order to avoid the unit accidentally falling.

DANGER OF DAMAGING THE UNIT: follow the use instructions in order to avoid consequences which may lead to damage of the unit.

INHALATION OF HARMFUL ELEMENTS AND DUST: protect respiratory organs by using protective masks when emptying the dust containers and when replacing the filter cartridge so the collected dust is not inhaled.

SENSIVITY TO DUST: this means that hand protection must be used to prevent any harm to operators who are sensitive to the collected dust.

CERTIFICATIONS

Aertecnica S.p.A is a company certified with:

Quality system
UNI EN ISO 9001
Environmental management system
UNI EN ISO 14001

IDENTIFICATION

This user and maintenance manual refers to the following models of the Central power unit

LINE: X-PERT RT
MOD: RT1A
RT2MA
RT2A

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MANUFACTURER

AERTECNICA S.p.A.
Via Cerchia di Sant'Egidio, 760
47521 Cesena (FC) ITALY
Tel. +39 0547/637311
Fax +39 0547/631388
info@aertecnica.com
www.aertecnica.com

Technical service

The Aertecnica Technical Service Centre can be contacted for all technical problems and if spare parts are needed. For all communications concerning the central power unit, the user should always provide the following data:
model of the central power unit
serial number
year of manufacture
purchase date and detailed information about the issues found.

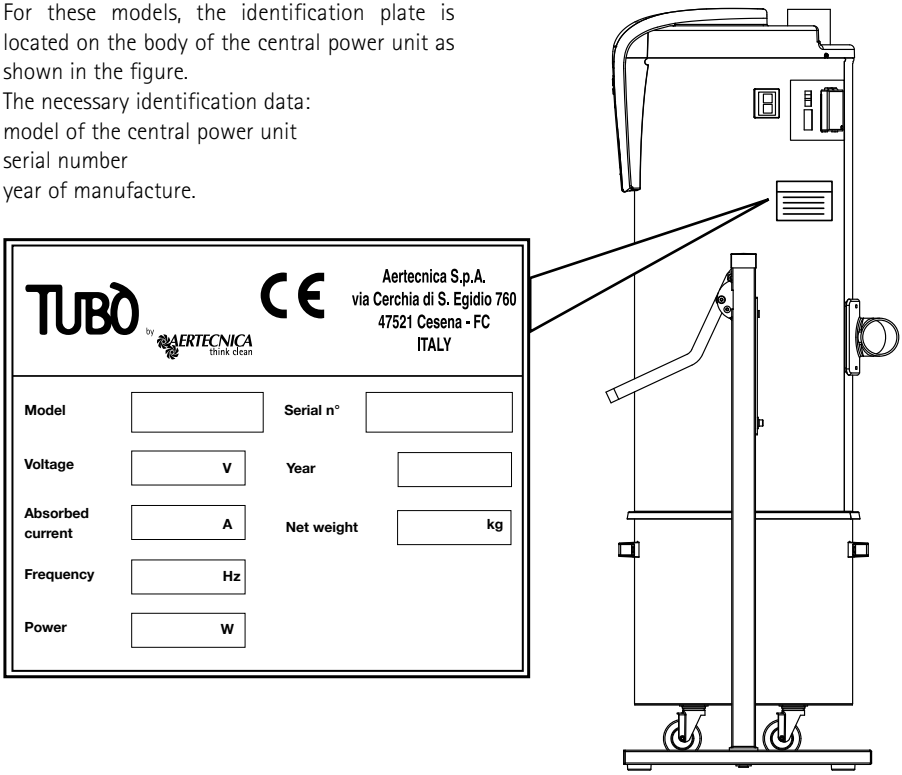
USE ONLY
AERTECNICA SPARE PARTS

SPARE PARTS REQUEST

To ask for Aertecnica genuine spare parts:
www.aertecnica.com

IDENTIFICATION PLATE

For these models, the identification plate is located on the body of the central power unit as shown in the figure.
The necessary identification data:
model of the central power unit
serial number
year of manufacture.



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DESCRIPTION OF THE TUBÒ VACUUM SYSTEM

The purchased central power unit is the main element of TUBÒ, the centralised vacuum cleaner of Aertecnica.

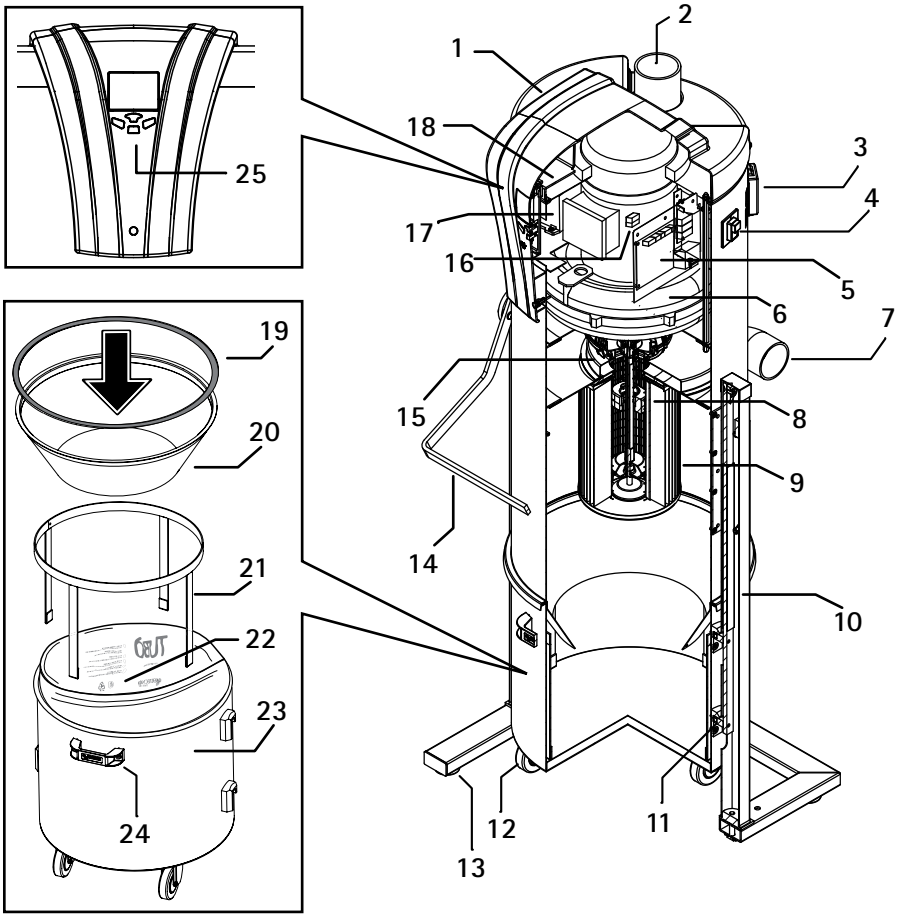
The X-PERT RT power unit is built for professional use.
The system can be used by one or two operators at the same time according to the chosen model of the central power unit.

The central vacuum system consists of pipes on the floor or in false-ceilings, masonry or plasterboard-wall sockets, and a power unit located in a separate room, towards which the dust is conveyed, avoiding recirculation of bacteria and fine dusts in the air - the main cause of allergies and breathing disorders.

The hose, lightweight and easy to handle, ensures maximum functionality and easily reaches every corner of the building thanks to the presence of the vacuum sockets.

TECHNICAL CHARACTERISTICS

CENTRAL POWER UNIT X-PERT RT				
Model		RT1A	RT2MA	RT2A
Trade code		CIRT10A	CIRT20MA	CIRT20A
No. of operators at the same time		1	2	2
Self-cleaning system (APF System)		YES	YES	YES
Inverter		NO	YES	YES
Power supply	Volt (V)	380-400	220-240	380-400
Motor power	Watts (W)	2,200	2,600	2,600
Frequency	Hz	50-60	50-60	50-60
Maximum absorption:	A	6.5	11.2	6.5
Motor rpm	rpm	2,900	3,500	3,500
Soft Start		NO	YES	YES
Vacuum Sockets power supply voltage	Volt (V)	12	12	12
Air flow rate	m^3/h	300	360	360
Maximum vacuum	mbar	392	392	392
Filtering surface	cm^2	20,000	20,000	20,000
Filter cartridge material		POLYESTER	POLYESTER	POLYESTER
Dust container capacity	litres	66	66	66
Dust inlet diameter	mm	80	80	80
Air exhaustion diam.	mm	80	80	80
Compensation Valve		supplied	NO	NO
Height	cm	161	161	161
Diameter	cm	46	46	46
Mass	kg	99	100	100
Noise	dB	<70	<70	<70
Compatibility with CMT800 Panel (in Modbus mode)		YES	YES	YES



Legend

1 - dome in thermoplastic material
2 - air expulsion
3 - power supply terminal
4 - ON/OFF switch
5 - electronic card
6 - side channel blower (motor)
7 - reversible dust inlet right/left
8 - beater for self-cleaning cartridge
9 - polyester filter cartridge
10 - support frame
11 - coupling system for dust container
12 - wheels of the dust container (4)
13 - anti-vibration device
14 - dust container opening/closing handle
15 - self-cleaning APF System
16 - temperature sensor
17 - inverter (only for RT2MA and RT2A models)
18 - air flow division plate
19 - cone sealing
20 - deflector cone
21 - bag tensioner
22 - dust collection bag
23 - dust container QUICK SCROLL
24 - carrying handle for dust container
25 - control panel with AVI display

INTENDED USE

The X-PERT RT power unit is built for professional use.

The user uses the hose and the cleaning accessories connected to the Aertecnica vacuum sockets to remove only dust or tiny solid objects.

The system can be used by one or two operators at the same time according to the model of the central power unit.

The dust collection bag must be replaced with a new one every time it fills.

The filter cartridge can be regenerated periodically, and should be changed at least every 2-3 years or immediately in the event of breakage.

Wear personal protective garments before emptying the dust container or replacing/cleaning the filter cartridge.

PROHIBITED USE

- Do not vacuum lit cigarettes, embers or burning material: these materials may cause a fire, damaging the pipes or the power unit.
- Do not vacuum cloths, rags or other textile material: these may occlude the pipes or damage the power unit.
- Do not allow children to play with the vacuum sockets, opening and closing them continuously or inserting toys or solid items of unsuitable dimensions.
- Do not use the system with the central power unit turned on without the filter cartridge inserted.
- Do not block the air exhaust line.
- Do not block the air sockets used to cool the electric motor
- Do not use cleaning accessories to vacuum over body parts of people.
- Do not install the power unit in an ATEX classified space according to the European Union regulations.

UNAUTHORISED USE

Do not vacuum liquids or wet materials: these materials can cause short circuits to the electrical system, prevent the smooth passage of dust or damage both vacuum sockets and the power unit.

- Never leave the hose and cleaning accessories unattended when connected to the system whilst the central power unit is on.

USER

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The user must be in good physical and psychological condition.

The user must always be alert during use of the system in order not to trip on the hose or cleaning accessories connected to the system, and must adopt the same safety measures for the persons present in the room with him.

The user must be over the age of 14 years.

USE ONLY AERTECNICA SPARE PARTS

SPARE PARTS REQUEST

To ask for Aertecnica genuine spare parts: www.aertecnica.com

TRANSPORT

Check the overall mass of the central power unit shown on the identification plate and use the described means for proper handling.
We recommend that you do not remove the packaging until installation so as to prevent any knocks and damage.

Use personal protective equipment during transportation and installation of the unit.

RISK OF CRUSHING

Use a forklift truck during the transport and movement of the central power unit.
Proceed at reduced speed, keeping the load at a low level to avoid risks of overturning.

ATTENTION

Packaging parts of the central power unit are inert solid waste that must be disposed of according to current applicable regulations.

MATERIALS	DISPOSAL
ecological cardboard packaging	paper
fir wood ecological pallets	wood
metal carpentry	iron

INSTALLATION LOCATION

The central power unit must be installed in service areas (for example technical compartment, engine room) which are well ventilated and protected from significant temperature changes.
The power supply line of the correct voltage indicated on the unit identification plate, and also the vacuum socket consent line for the activation of the vacuum system, must be set up close to the central power unit.

The installation room must be sufficiently large to allow maintenance work.

The temperature of the installation room must be 0°≤ room temperature ≥35°

The installation room must be sufficiently illuminated (minimum 200 lux) to allow maintenance work.

The installation room must have an air exchange rate per hour ≥ 0.5 v/room (volume/room)

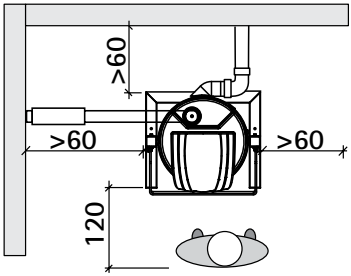
The central power unit must not be placed in an environment classified as ATEX.

POSITIONING

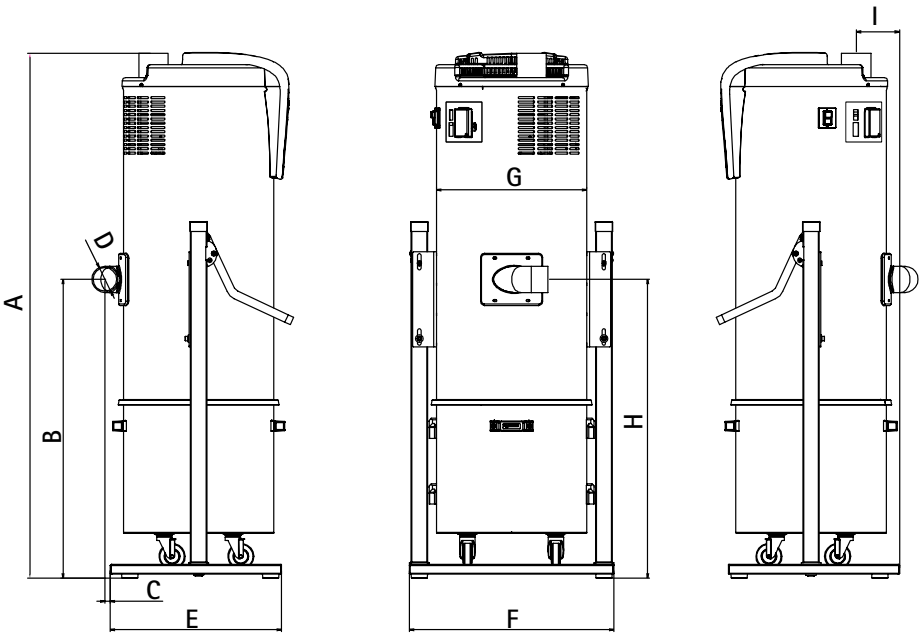
Ensure that the levelling of the floor on which the base of the unit rests is optimal.
The floor must have adequate structural strength to support the weight of the unit as shown on the identification plate.

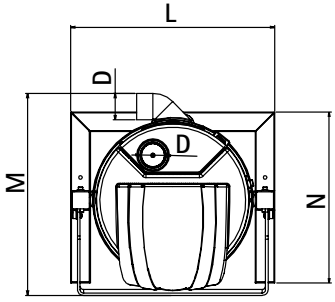
Leave the indicated free space (in cm) around the unit, to allow cleaning and maintenance by the operator.

plan view



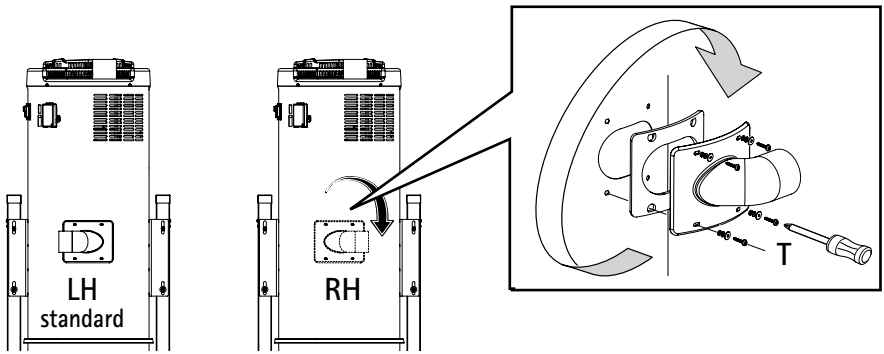
UNIT INSTALLATION MEASUREMENTS





dimensions in mm.	RT1A	RT2MA	RT2A
A	1604	1604	1604
B	913	913	913
C	16.5	16.5	16.5
D	Ø80	Ø80	Ø80
E	523	523	523
F	624	624	624
G	460	460	460
H	913	913	913
I	132	132	132
L	624	624	624
M	616	616	616
N	523	523	523

DUST INLET LINE CONNECTION



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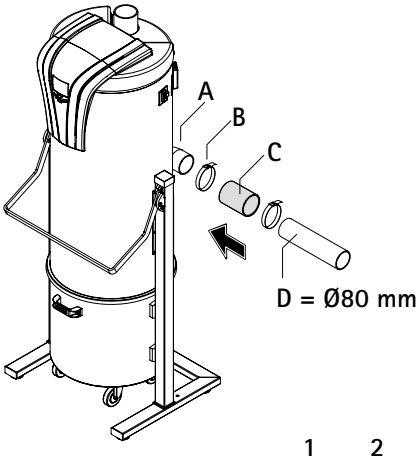
The connection of the central power unit with the dust line is facilitated by the possibility of orienting the inlet opening in two opposite directions, by unscrewing the screws and washers (T) and after rotating the opening putting them back the same way, as indicated on the side.

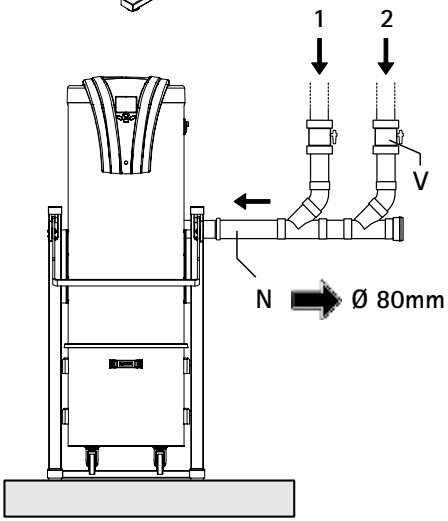


CONNECTION WITH SLEEVE AND CLAMPS
A - dust inlet opening
B - clamps
C - sleeve
D - dust input pipe line Ø80

DUST COLLECTOR
The power unit (especially the one for two operators) can be connected with more than one dust input line.
In this case we recommend that you install a dust collector (N)

EXAMPLE OF DUST COLLECTOR
The collector (N) receives the different dust lines coming from the power unit.

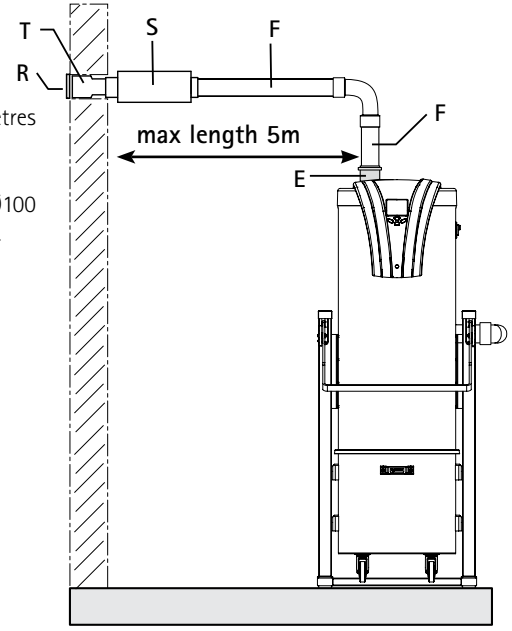
At the base of each dust line, we recommend that you install a special ball valve (V) by means of which you can exclude the line from the whole vacuum system of the building.



AIR EXHAUST LINE CONNECTION

An exhaust hose that is no longer than 5 metres must be installed.

If the exhaust line is longer, use diameter Ø100 and mount the silencer of the same diameter.



CONNECTION WITH SLEEVE AND CLAMPS
E - air exhaust outlet opening
F - air exhaust line pipe Ø80
S - silencer Ø80 (not supplied)
T - extension Ø82/100
R - exhaust grill Ø100

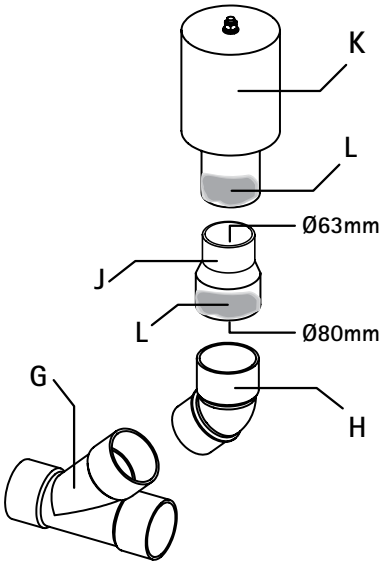
COMPENSATION VALVE INSTALLATION

ONLY FOR RT1A MODEL

The compensation valve has the function of regulating the working pressure, and also has a safety function.

In the RT1A model, the compensation valve is supplied with the unit, and is calibrated by the manufacturer to the correct pressure.

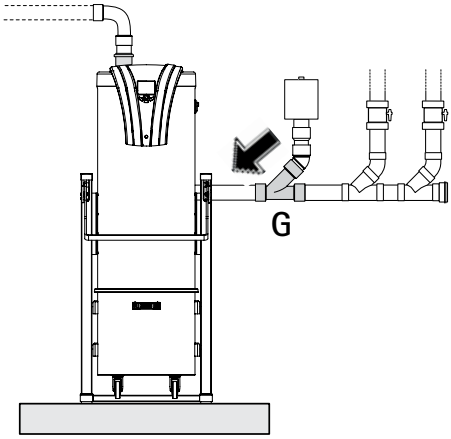
In the RT2A and RT2MA models the valve is not present because the pressure is adjusted automatically by the inverter.

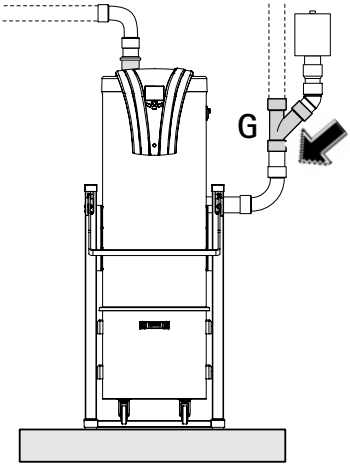


COMPENSATION VALVE CONNECTION
K - compensation valve Ø63M
J - reduction Ø80M/Ø63F
H - curve M/F Ø80
G - junction box on dust input line
L - glue for fixing

VALVE ORIENTATION

The compensation valve must be installed on the input dust line, which must always be oriented vertically.





ADJUSTMENT OF THE COMPENSATION VALVE

On the RT1A model, the valve regulation must respect the value indicated in the table

pressure value	250 mbar

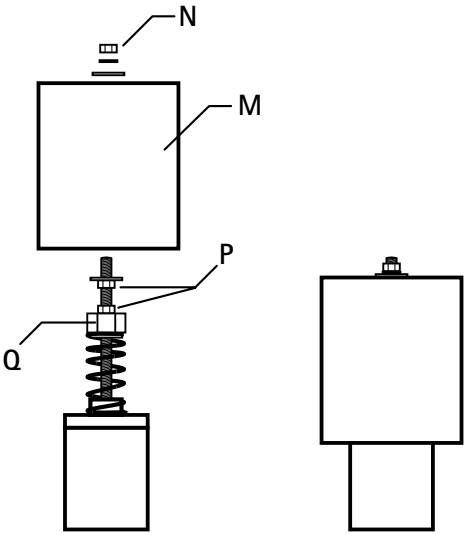
M - valve protective cover
N - external fixing nut
P - internal locknuts
Q - adjusting nut

1 - unscrew the N nut and remove the M cover.

2 - press the START button and activate the central power unit with all the vacuum sockets closed; check that the value indicated on the display does not exceed 250 mbar.
If the value matches, the valve is calibrated correctly.

- If the value is greater than the one on the table, rotate the adjustment nut (Q) counter-clockwise until the value on the table is reached.
- If the value is less than the one on the table, rotate the adjustment nut (Q) clockwise until the value on the table is reached.

3 - after making the adjustment, fix the position with the locknuts (P).
Put the protective cover of the valve back on.



ATTENTION
After finishing the adjustment of the valve, verify that when the central power unit is in operation with all the vacuum sockets closed, the absorption of the central motor does not exceed the maximum value of 6.5 A.

ELECTRICAL CONNECTION

The electrical system of the central power unit must be made by qualified professionals and in accordance with applicable regulations.
The manufacturer assumes no responsibility for malfunction or damage to persons and/or property resulting from the incorrect connection to the electrical system.

POWER SUPPLY LINE
Make sure that the electric line is dimensioned to support the central power unit electrical power and check that the mains network corresponds to the voltage specified on the identification plate.

CIRCUIT BREAKER
The power supply line of the unit must be sectioned by a circuit breaker.

DIFFERENTIAL FOR MOD. RT2MA and RT2A
You must connect the power unit to a differential for Inverter, not less than 100 mA.

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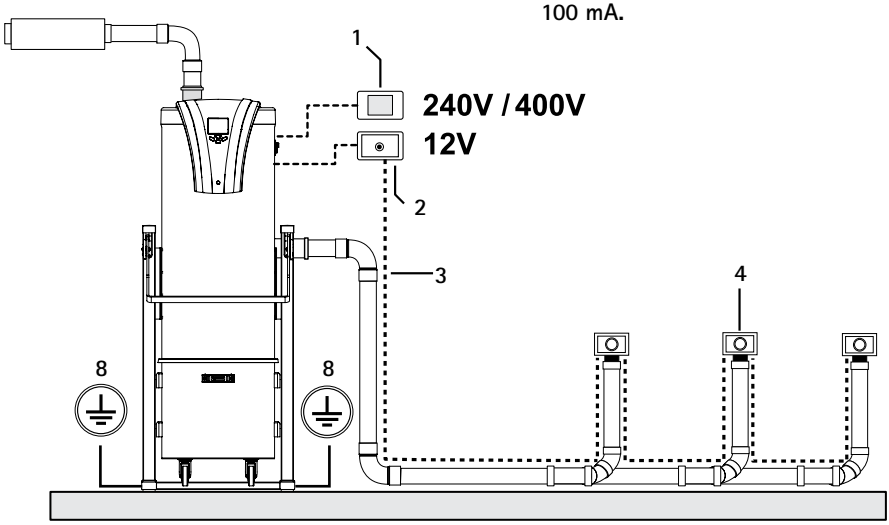
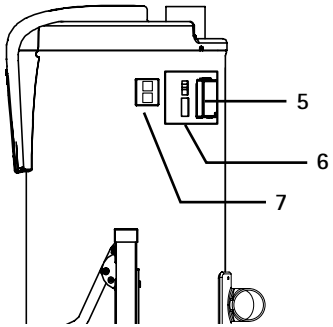
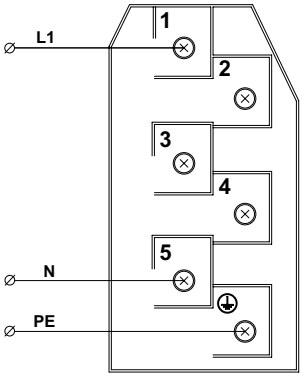


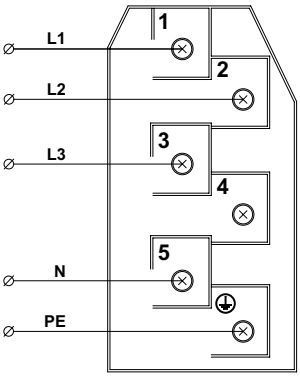


1- main power supply
2- 12V socket line for the activation of the unit
3- pre-wired sheathing 2x1 ø16 for socket line
4 - inlet frames / vacuum sockets
5 - power supply terminal
6 - LP (line sockets) and LS (serial line) terminals
7 - ON/OFF general switch
8 - earth

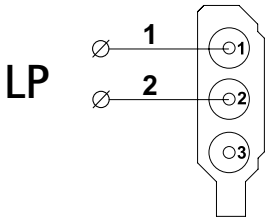
RT2MA
TERMINAL CONNECTION DIAGRAM
WITH 240V POWER SUPPLY



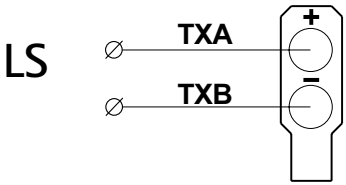
RT1A – RT2A
TERMINAL CONNECTION DIAGRAM
WITH 400V POWER SUPPLY



CONNECTION TO VACUUM SOCKETS LINE



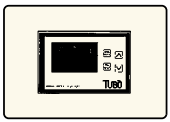
CONNECTION TO SERIAL LINE



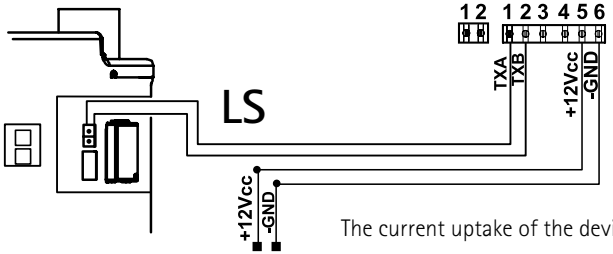
CMT800 - Remote Control Panel (optional)

The CMT800 communicates with the X-PERT central power unit in Modbus mode, already set by default by the manufacturer.

For the connection between the X-PERT central power unit and the CMT800 control panel, you require a power line cable with a section of not less than 2 x 0.25 mm.



CMT800



The current uptake of the device is 50 mA.

CONTROL PANEL

The central power unit has a control panel that includes an AVI display (immediate display) and a built-in keyboard to navigate and control the various central power unit operating parameters.

AVI DISPLAY

The alpha-numeric display is controlled by the electronic card and is used to control the following parameters:

CLEAN BAG FILLING

This detects the filling level of the dust container and displays 4 different levels.

FILTER CARTRIDGE SATURATION

This detects the saturation level of the filter cartridge and displays 5 different levels.

OPERATING VACUUM RANGE

This displays the vacuum level at which the central power unit is operating: LO (low) - OK (correct) - HI (High)

OPERATING VACUUM

This displays the operating vacuum level of the central power unit

MOTOR POWER PERCENTAGE

This displays the motor power percentage that is adjusted on the hose with the speed variator.

TOTAL MOTOR HOURS

This displays the total hours of use of the central power unit.

MOTOR TEMPERATURE

Displays the motor temperature.

MOTOR TEMPERATURE ANOMALY/LOCK

Displays an anomaly/lock due to the engine temperature exceeding 90°C.

MAXIMUM USE TIME ANOMALY/LOCK

Displays an anomaly/lock due to continuous use of the central power unit for 30 minutes.

UNIT ANOMALY

Reports generically a malfunction of the central power unit

english translated by original

KEYBOARD

The keyboard has 4 buttons that are used to perform the following functions:

START BUTTON / △

The START button activates the central power unit. The arrow △ is used to navigate the upper menu in the programme.

STOP BUTTON / ▽

The STOP button turns off the unit. The arrow ▽ is used to navigate the upper menu in the programme.

RESET/ESC BUTTON

If the button is pressed, the central power unit is reset after a lock or anomaly (see ANOMALY AND LOCK section).

When you enter the programming mode, press ESC to exit the parameter.

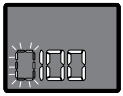
MENU/OK BUTTON

If the button is pressed, it displays the central power unit's maintenance cycles.

When you enter programming mode the OK button allows you to enter the parameter.

WITH CENTRAL POWER UNIT ON
the following operating parameters will appear:

OPERATING VACUUM
the screen displays the operating vacuum level of the central power unit



MOTOR POWER PERCENTAGE
the screen displays the percentage of the engine power

MOTOR ABSORPTION
the screen displays the instantaneous operating absorption of the motor

MOTOR FREQUENCY
the screen displays the instantaneous operating frequency of the motor

TOTAL MOTOR HOURS
the screen displays the total hours of use of the central power unit

MOTOR TEMPERATURE
the screen displays the value of the engine temperature

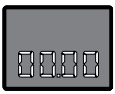
After the vacuum suction phase is over
WITH CENTRAL POWER UNIT IN STAND BY
the following operating parameters will appear:

STAND BY
The display shows three LEDs flashing continuously. By pressing any key, the central power unit exits STAND BY status and displays the total hours of central power unit use.

TOTAL MOTOR HOURS
the screen displays the total hours of use of the central power unit

FILTER SATURATION
the screen displays the degree of saturation of the filter cartridge expressed in mbar according to this scale:
0 mbar = filter clean
10 mbar = filter saturated at 50%
20 mbar = filter saturated at 100%

BAG FILLING
the screen displays the elapsed time, in hours, from the last maintenance of the bag



CLOCK SETTING OF THE UNIT
The clock inside the central power unit is set by default to the Italian time that is current at the time of the electronic programming of the unit.

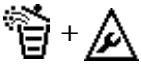
FILLING LEVEL OF THE DUST CONTAINER

Through 4 progressive stages it calculates the presumed filling level of dust container

filling level 25-49 %

filling level 50-74 %

filling level 75-99%



100% filling level
the bag is completely full and must be replaced
(see ANOMALY AND LOCK TABLE)

SATURATION LEVEL OF THE FILTER CARTRIDGE

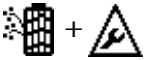
Through 5 progressive stages it indicates the saturation level of the filter cartridge.

saturation 20 - 39 %

saturation 40 - 59 %

saturation 60 - 79 %

saturation 80 - 99 %



saturation 100 %
the central control unit stops due to filter saturation lock.
(see ANOMALY AND LOCK TABLE)

OPERATING VACUUM RANGE

Indicates the vacuuming power at which the system is operating. 3 different states are shown on the display:

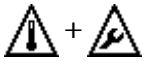
LO	OK	HI
vacuum low	vacuum correct	vacuum high

HI If the system operates at a vacuum level greater than 240 mbar, the wording will flash and the central power unit will be locked after 15 seconds due to excessive operating vacuum.
(see ANOMALY AND LOCK TABLE)

english translated by original

MOTOR TEMPERATURE ANOMALY/LOCK

Displays an anomaly/lock due to the engine temperature exceeding 90°C.



The temperature flashing warning light will appear with the maintenance still warning light indicating the block of the central power unit due to motor overheating.
(see ANOMALY AND LOCK TABLE)

MAXIMUM USE TIME ANOMALY/LOCK

Displays an anomaly/lock due to continuous use of the system for 120 minutes.

After 119 minutes of continuous system use, a flashing clock appears that indicates the maximum use time.
(see ANOMALY AND LOCK TABLE)

The central power unit is locked due to continuous system use for 120 minutes.
(see ANOMALY AND LOCK TABLE)

UNIT ANOMALY

displays a generic anomaly due to a malfunction of the central unit

The maintenance warning light appears
(see ANOMALY AND LOCK TABLE)

APF SELF-CLEANING SYSTEM

The central power unit is equipped with a self-cleaning system (Aertecnica patent) which allows the dust removal through vibration filter. This extends the regeneration/replacement time of the filter cartridge.

APF SELF-CLEANING ACTIVATION MODE

The daily self-cleaning process can be set according to one of the procedures below:

0 - APF disabled
1 - Activation of a daily APF cycle
2 - Activation of two daily APF cycles
3 - Activation of three daily APF cycles
4 - 60 minutes after turning off the central power unit the APF cycle will automatically start.
5 - 60 minutes after turning off the central power unit the APF cycle will automatically start only if the 30% of filter saturation is exceeded.
6 - Manual activation of the APF cycle from the keyboard.

english translated by original

ATTENTION

By default, the APF is set in mode 4.

By default, the duration of each APF cycle is 5 minutes.

By default the manual APF mode is always active.

When you turn on the central power unit during the self-cleaning cycle, the APF is interrupted and after about 30 seconds, the central will start performing normally.

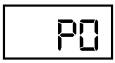
While the central power unit is operating, the APF function cannot be activated.

During the self-cleaning process, the display will show the APF text followed by the number corresponding to the activated mode

example of activation of the second APF cycle

APF SELF-CLEANING PROGRAMMING

To set one of the self-cleaning modes it is necessary to programme the P0 PARAMETER.
To access the P0 parameter, press the OK button to display the OPERATION HOURS of the central power unit, then hold the RESET/ESC button until the display shows P0. Confirm with the OK button.



You are now inside the P0 parameter: with the START button, set one of the activation modes of the APF and press ESC.

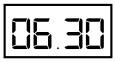
If you have set the 0, 4, 5 modes, press ESC to exit programming.

If you have set the 1, 2, 3 modes you must set the starting time of the APF cycles via the following parameters:
P1 parameter sets the start of the first cycle
P2 parameter sets the start of the second cycle
P3 parameter sets the start of the third cycle

SELF-CLEANING CYCLES SETTING

To activate the first cycle of daily APF select P1 with the START button and press OK. You are now inside the P1 parameter: 4 zeros appear on the display indicating the hours and minutes of activation of the first self-cleaning daily cycle.

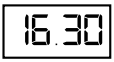
Using the START and STOP buttons set the first number on the right and press OK. Repeat the setting for the remaining three numbers. The APF cycle will be activated at the scheduled time (for example 6:30 am)



self-cleaning FIRST CYCLE activation time

Once you have set the first time slot, press ESC to exit the P1 parameter and continue programming. Press ESC if you want to exit the programming.

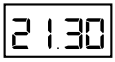
To set the start of the second APF cycle, enter the P2 parameter by pressing the START button and press OK. Program the chosen time by using the START, STOP and OK buttons as indicated in the previous sequence (example of second cycle time 16.30).



self-cleaning SECOND CYCLE activation time

Once you have set the second time slot, press ESC to exit the P2 parameter.

To set the start of the third APF cycle, enter the P3 parameter by pressing the START button and press OK. Program the chosen time by using the START, STOP and OK buttons as indicated in the previous sequence (example of third cycle time 21.30)



self-cleaning THIRD CYCLE activation time

Once you have set the third time slot, press 2 times ESC to exit the programming.

MODE 4 - AUTOMATIC APF BY DEFAULT AFTER 60 MINUTES

Once you have set the mode 4 with the P0 parameter, the self-cleaning cycle will start automatically after 60 minutes form the last operation of the central power unit and the duration of the cycle will be 5 minutes.

MODE 5 - AUTOMATIC APF BY DEFAULT AFTER 60 MINUTES WHEN THE FILTER IS 30% DIRTY

Once you have set mode 5 using the P0 parameter, the self-cleaning cycle will start automatically after 60 minutes from the last operation of the central power unit only if the filter has exceeded the 30% of its saturation. The duration of the cycle will be 5 minutes.

MODE 6 - MANUAL APF ACTIVATION

The user in front of the central power unit must hold the MENU/OK button pressed for a few seconds.
This will activate a self-cleaning cycle that will end automatically.

MODE 0 - APF DISABLED

Once you have set the mode 0 using the P0 parameter, the APF will not start under any circumstances.

CLOCK SETTING OF THE UNIT
P4 PARAMETER

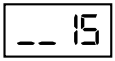
The clock inside the central power unit is set by default to the Italian time that is current at the time of the electronic programming of the unit.

To change the clock in case of different time zones, summertime, etc.. enter the P4 parameter as follows:
Press the OK button to display the OPERATION HOURS of the unit, then hold the RESET/ESC button until P0 appears.
Select P4 with the START button. Confirm with the OK button.
The time of the internal clock of the central power unit will appear (hours and minutes).
Using the START and STOP buttons set the first number on the right and press OK. Repeat the procedure for the remaining three numbers.
Once you have set the new time, press ESC 2 times to exit the programming.

SETTING THE DURATION OF THE APF SELF-CLEANING P5 PARAMETER

By default, the duration of each APF cycle is 5 minutes.

To change the duration of the APF cycle, access the P5 parameter as follows:
Press the OK button to display the OPERATION HOURS of the unit, then hold the RESET/ESC button until P0 appears.
Select P5 with the START button. Confirm with the OK button.
The APF cycle duration minutes will appear on the display: set the first number on the right with the START and STOP buttons. To set the second number, press OK.



example of a self-cleaning cycle duration

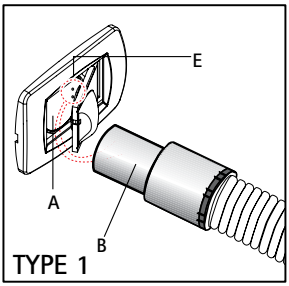
Once you have set the duration press ESC.
To exit the programming, press ESC again.

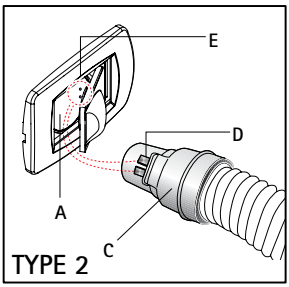
STARTING/STOPPING

The central power unit turns on when you insert the hose into the vacuum socket.
The standard hose comes in two types:

TYPE 1: hose with activator union: the central power unit will start when you insert the joint (B) in the vacuum socket (A).

TYPE 2: hose with switch: the central power unit will start by pressing the switch on the tube.
Insert the hose-socket union with the special plates (D) in correspondence of the contacts (E) inside the socket.





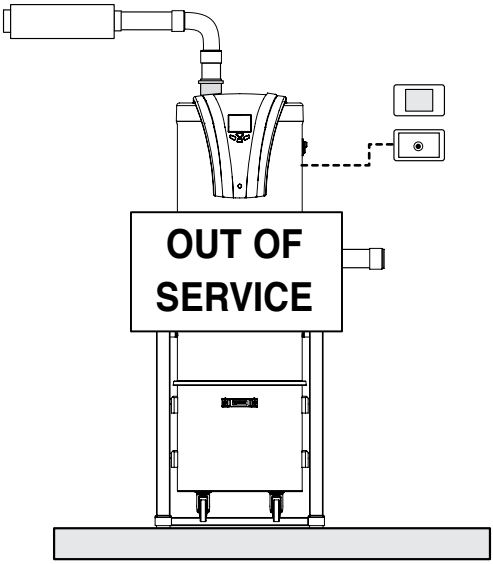
To turn off the central power unit:
with the hose TYPE 1, remove the hose from the vacuum socket (A);
with the TYPE 2 hose, move the switch to the OFF position

ATTENTION

With the RT2A and RT2MA models and two operators using the unit with TYPE 2 hose, the central power unit will switch off only with the removal of the hose joint from the vacuum socket and not by using the OFF switch.

PLACING THE UNIT OUT OF SERVICE

If the power unit is out of service due to failure, repair or for an extended period of inactivity, isolate it from the general power supply, and report the condition OUT OF SERVICE with a notice on the machine.



TEST OF THE CENTRAL POWER UNIT **RT1A**

The general centralised vacuum system test must be done after the final assembly of all vacuum sockets and compensation valve.

1 - Activate the central power unit **with all the sockets closed** and verify that the pressure on the display does not exceed 250 mbar
If the value is greater, regulate the compensation valve so as not to exceed 250mbar.
If the pressure on the display is too low (below 220 mbar), check the system for leaks. If there are no leaks, regulate the valve until the pressure is 250mbar.

2 - Insert the hose **in the nearest vacuum socket** to the central power unit. Check the suction value on the display of the unit: the value must be between 90 and 160 mbar. If the value is within the range continue with step 3.

If the value is lower than the range check for leaks in the system.
If the value is greater than the range check for any blocks in the system.
If the problem is not solved, contact the Aertecnica Service Centre.

3 - Insert the hose **in the furthest vacuum socket** from the central power unit. Check the suction value on the display of the unit: the value must be between 90 and 160 mbar: if the value is within the range, the test of the RT1A central power unit has ended positively.

If the value is lower than the range check for leaks in the system.
If the value is greater than the range check for any blocks in the system.
If the problem is not solved, contact the Aertecnica Service Centre.

NOTE: To verify that the electrical connection of the vacuum sockets is operating properly, activate the vacuum system from each outlet.

TEST OF THE CENTRAL POWER UNITS **RT2A - RT2MA**

The general test for the centralised vacuum system must be done after the final assembly of all the vacuum sockets.

1 - Activate the central power unit **with all sockets closed** and wait a few seconds: check that the pressure on the display is equal to 160 mbar (for RT2A) and 140 mbar (for RT2MA)
If the value is lower check for leaks in the system.
If the value is higher contact the Aertecnica Service Centre.

2 - Insert the hose **in the nearest vacuum socket** and subsequently **in the furthest from the central**. Verify on the display of the unit that in both cases the value of the intake is not lower than 140 mbar. If the value is higher, continue with step 3.
If the value is lower than 140 mbar check for any leaks in the system.

3 - insert two hoses simultaneously in two vacuum sockets placed in different areas of the building. Verify on the display of the unit that the value of the intake is not lower than 100 mbar. If the value is higher, the test is successfully completed.
If the value is lower than 100 mbar check for any leaks in the system.

NOTE: To verify that the electrical connection of the vacuum sockets is operating properly, activate the vacuum system from each outlet.

ORDINARY MAINTENANCE

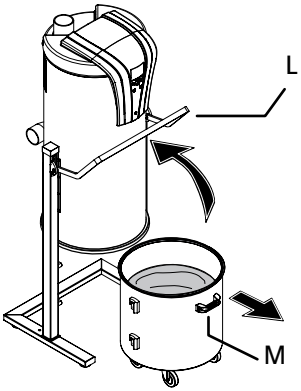
Careful maintenance prolongs the life-time of the central power unit and guarantees better performance.

BEFORE STARTING ANY MAINTENANCE OPERATION, DISCONNECT THE CENTRAL POWER UNIT FROM THE POWER SUPPLY.

OPENING/CLOSING OF THE DUST CONTAINER

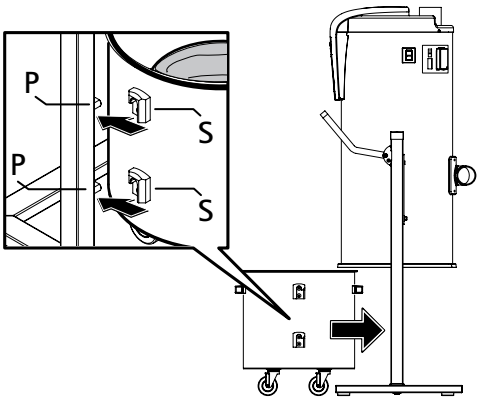
OPENING

Turn the special handle (L) upwards and remove the QUICK SCROLL dust container using the carrying handle (M).



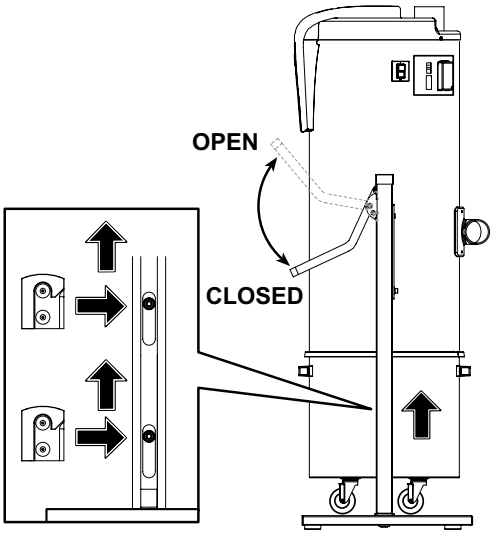
CLOSURE

Put the container inside the frame so that the two hooks (S) of the container are flush on the two pins (P) on the left and right side of the frame.



Turn the handle (L) downwards at the end of use. The coupling mechanism raises and closes the dust container.

DO NOT INSERT YOUR UPPER LIMBS INSIDE THE UNHOOKING/HOOKING MECHANISM OF THE DUST CONTAINER.

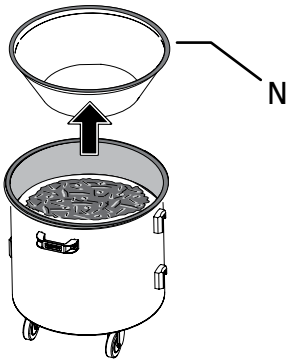


EMPTYING THE CONTAINER

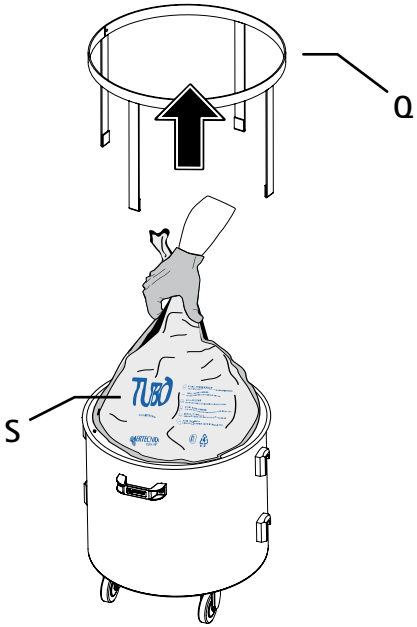
We recommend that you replace the bag before it reaches its maximum capacity.

1 - open the power unit by turning the handle (L) upwards and remove the dust container by sliding it on the 4 wheels.

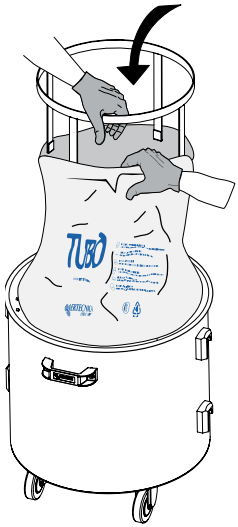
2 - remove the conveyor cone (N)



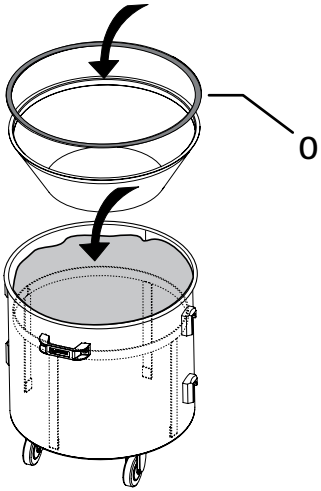
3 - Remove the bag tensioner (Q), remove the full bag (S), close it and throw it in the waste according to current environmental regulations.



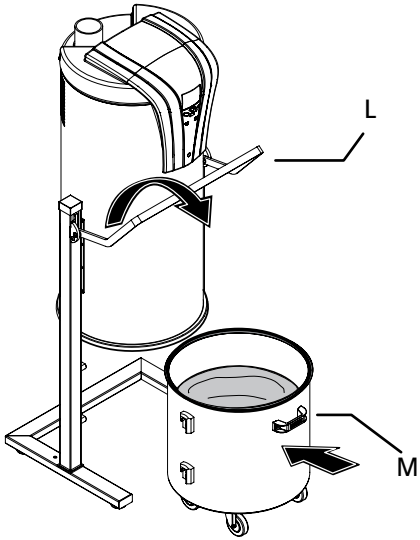
4 – insert a new dust bag into the container and insert the bag tensioner inside the bag.



5 - reinsert the conveyor cone making sure that the rubber seal (O) is in the correct position.



6 - reinsert the dust container using the carrying handle (M) and close the unit by turning the handle (L) to the bottom.



FILTER CARTRIDGE REPLACEMENT

Before starting with any maintenance operation, disconnect the central power unit from the power supply.

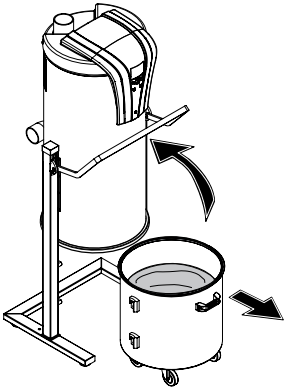
We recommend that you replace the filter cartridge every 2-3 years.
This period may change depending on the degree of system use.

ATTENTION
When replacing the filter cartridge, it is easy to come into contact with the dust collected by the unit. Before removing the filter cartridge, we recommend that you put on personal protective garments.

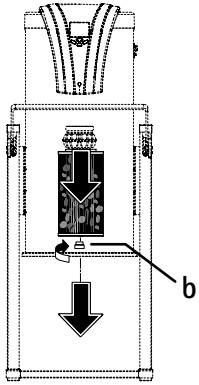
The unit display indicates the percentage of saturation of the filter cartridge. Periodically check on the unit's control panel, the degree of saturation of the filter cartridge.

The central power unit must not be put into operation without a filter cartridge placed inside it. Failure to observe this rule could cause damage to the motor that is not covered by the warranty.

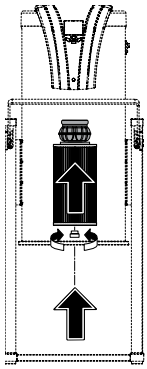
1 - Open the central power unit and remove the dust container.



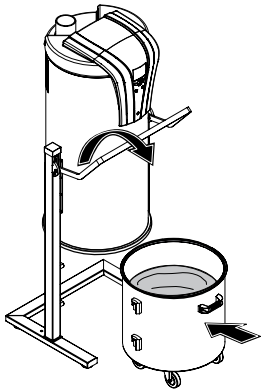
2 - Unscrew the knob (b) that fastens the cartridge and remove it from its housing.



3 - Insert a new cartridge and tighten the knob completely.



4 - Put the dust container back and close the unit.



FILTERCARTRIDGEREGENERATION

ATTENTION

To effectively regenerate the saturated cartridge and keep the centralised vacuum system operating, we recommend that you insert a new filter cartridge immediately, restart the system and vacuum the largest dust particles from the saturated cartridge using the system itself.

Periodic filter cartridge regeneration improves overall centralised vacuum system productivity.

The unit display indicates the percentage of saturation of the filter cartridge. With normal use of the system it is a good idea to check the cartridge every 4 months.

ATTENTION

When regenerating the filter cartridge, it is easy to come into contact with the dust collected by the unit. Before removing the filter cartridge, we recommend that you put on personal protective garments.

ATTENTION

CARTRIDGE GASKET CHECK

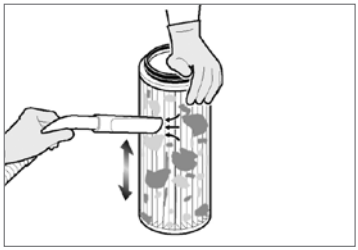
Check the gasket condition (G) of the filter cartridge. Replace if damaged.

USE ONLY
AERTECNICA SPARE PARTS

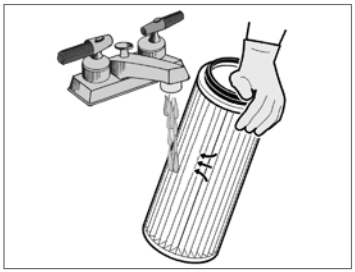
SPARE PARTS REQUEST

To ask for Aertecnica genuine spare parts:
www.aertecnica.com

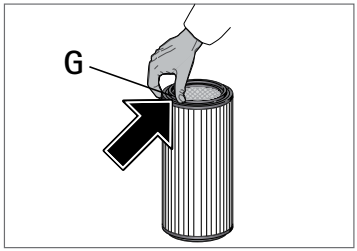
1 - Vacuum the dust collected on the saturated cartridge walls using the system itself.



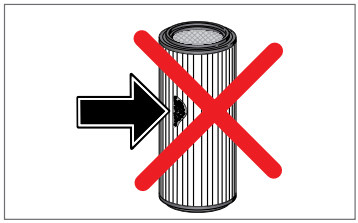
2 - After an initial brief cleaning, wash the filter cartridge with a jet of water that is not too strong and remove the dust that has penetrated between the walls.



3 - Allow the cartridge to dry completely and check the gasket condition (G)



4 - Make sure that there are no tears or cuts on the cartridge walls. If there are, the damaged cartridge must be replaced with a new one.



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UNIT DISPOSAL

At the end of its life cycle, the machine must be disposed of in compliance with current applicable regulations.
The following table specifies the material with which the central power unit is built.

IMPORTANT
The materials listed below must be divided and stored to be recycled or disposed of in compliance with the environmental regulations valid in the country of use.

TYPE OF MATERIAL	PRESENCE IN THE CENTRAL UNIT	SPECIFICATION	FOR DISPOSAL
Plastic and rubber	Cone seals and cables	PVC 73 - DM - EPM	**The regulations that govern the disposal and demolition of the central power unit, its components and the possible polluting material and substances change depending on the country of final use.** **We recommend that you contact the authorised organisations and agencies and respect the current applicable legal regulations**
	cable gland	polyamide fibre	
	openings	polypropylene	
	rubber sleeves	SBR/NR rubber	
	filter cartridge	polyester/metal	
	filter knob	polyamide fibre	
	stickers	PVC	
	container handle	nylon	
	feet of frame stand	megol synthetic rubber	
	dust bag	polyethylene	
	caps for frame columns	PVC	
	dome	polypropylene	
	self-cleaning	nylon and rubber metal	
Galvanised components	screws and rivets	steel/stainless steel/brass	
Windings	wiring	copper	
Electronic components	electronic card	electric parts	
	motor	electric parts	
	AVI Panel	electric parts	
Sheet metal	main body, conveyor cone, dust bag tensioner, frame, opening lever, compartment separation plates, brackets	painted steel, stainless steel, galvanised steel	
Packaging	box	cardboard	
	pallet	wood	
	bags	polyethylene	
	fixing screws	galvanized steel	

TABLE OF ANOMALIES AND LOCKS

The program uses icons or warning lights on the power unit display to report any anomalies or machine operating locks. Follow the instructions in the table.

MAINTENANCE	USE LEVEL	ANOMALY	LOCK	INTERVENTION
DUST BAG FILLING	the symbols appear 1 - filling 25-49% 2 - filling 50-74% 3 - filling 75-99% the system works properly	the symbols appear 4 - filling 100%	--	Dust bag replacement necessary After replacing the bag: press MENU 3 times. The C wording will appear with the hours of use of the bag. Press RESET to reset use. Press OK to exit the procedure.
FILTER CARTRIDGE SATURATION	the symbols appear 1 - saturation 20-39 % 2 - saturation 40-59 % 3 - saturation 60-79 % the system works properly	the symbol flashes 4 - saturation 80 - 99 %	the symbols appear appears PRESS RESET appears 5 - saturation 100%	If the cartridge replacement or regeneration occurs before the lock, the warning light will automatically reset during the next start-up of the unit. If the central power unit is locked, replace or regenerate the filter cartridge. Press RESET to reset use.
UNIT ANOMALY	--	the symbol turns on it indicates a generic malfunctioning anomaly	--	Make sure that the dust container is in the correct position. Verify that the seal of the conveyor cone is intact.. Check for any leak in the system. Call the technical service centre.

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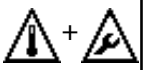
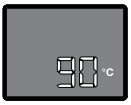
MAINTENANCE	USE LEVEL	ANOMALY	LOCK	INTERVENTION
MAXIMUM CONTINUOUS OPERATION TIME	--	the symbol flashes  119 consecutive minutes of continuous operation	the symbol flashes  appears  appears PRESS RESET	If the central power unit has an anomaly, turn off the system to avoid locking. The central power unit resets itself for use. If the central power unit is locked, press RESET or remove and reinsert the hose or turn off and then restart the system with the on/off switch on the hose.
MAXIMUM VACUUM	--	the symbol flashes HI the operating vacuum has exceeded 240 mbar	the symbol flashes HI appears  appears PRESS RESET	If the central power unit has an anomaly, reduce the air intake within 15 seconds to avoid locking. If the central power unit is locked, press RESET to restore operation or remove and reinsert the hose or turn off and then restart the system with the on/off switch on the hose.
EXCEEDING TEMPERATURE IN THE MOTOR CHAMBER		the symbol appears  The motor temperature has exceeded 90°C.	the symbols appear  appears 	If the central power unit has an anomaly, turn it off within 15 seconds to avoid locking. If the central power unit is locked wait for the motor to cool down to a temperature of 55°C. When the motor has cooled down, press the RESET button to restore operation.

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The table shows the various malfunction or failure signals that may appear on the display during normal operation.
IF THESE CASES OF FAILURE OCCUR, YOU NEED TO SEEK ASSISTANCE FROM A SPECIALISED TECHNICIAN.

UNIT FAULT REPORTS **RT2A**

SIGNAL	CAUSE
E.I. 02	motor overcurrent
E.I. 04	motor thermal overload
E.I. 05	fault on the motor power supply line
E.I. 06	motor overvoltage
E.I. 08	inverter thermal overload
E.I. 09	ambient temperature too low
E.I. 10	the manufacturer's setting has been re-loaded
E.I. 11	central unit anomaly
E.I. 12	error on data line
E.I. 16	inverter anomaly
E.I. 17	inverter internal memory faulty
E.I. 18	inverter analogue signal fault

UNIT FAULT REPORTS **RT2MA**

SIGNAL	CAUSE
E.I. 01	motor overcurrent when braking
E.I. 02	motor overload when braking
E.I. 03	motor overcurrent
E.I. 04	motor thermal overload
E.I. 05	fault on the motor power supply line
E.I. 06	motor overvoltage
E.I. 07	sottotensione del motore
E.I. 08	inverter thermal overload
E.I. 09	ambient temperature too low
E.I. 10	the manufacturer's setting has been re-loaded
E.I. 11	central unit anomaly
E.I. 12	error on data line
E.I. 14	one or more phases missing on power line
E.I. 15	motor speed control error
E.I. 16	inverter anomaly
E.I. 17	inverter internal memory faulty
E.I. 18	inverter analogue signal fault

TROUBLESHOOTING

The table shows generic cases of malfunctions or failures that may occur during the normal life-cycle of the vacuum cleaner unit. Follow the instructions shown.

PROBLEM	CAUSE	ACTION
There is no air intake from all the sockets	Power supply cable disconnected	Connect the power supply cable
	12V socket cable line not connected or incorrectly connected	Connect the 12V socket cable line or check the wiring
	The maximum amount of time of continuous central power use has been exceeded	The microswitch of one of the vacuum sockets is damaged. Call a specialised technician.
		The system remained on inadvertently for 30 consecutive minutes. Press RESET or turn the system off and on to reset operation
		Check the electric connection of the 12V socket cable line. Call a specialised technician.
	The motor overheated. The motor temperature exceeded 90 °C.	Check if the air exhaust line is free or if the two air exhaust openings are blocked. Wait for the motor to cool down. Press RESET to reset operation
		Make sure the filter cartridge is not saturated. In this case, perform maintenance. Wait for the motor to cool down. Press RESET to reset operation
	The vacuum exceeded 240 mbar for more than 15 seconds	The hose inlet is obstructed. Free the hose, turn the system on and off and press RESET
	The dust container is not correctly hooked	Rehook the container correctly.
There is no air intake from one of the sockets	The microswitch or the electric contacts of one of the vacuum sockets is damaged.	Call a specialised technician.
	There is clogging in the system	Call a specialised technician.

PROBLEM	CAUSE	ACTION
Low amount of air intake	There is clogging in the system	Call a specialised technician.
	The filter cartridge is saturated	Perform cartridge maintenance. Press RESET to reset operation.
	A greater number of hoses have been connected to the system compared to the characteristics of the power unit.	The control unit can be used at the most, by the number of operators indicated in the table
	The dust container gasket is damaged or out of position	Check the gasket position of the dust container.
	The air exhaust line is clogged	Verify that the air exhaust line is free
	The hose is partially obstructed.	Free the obstruction from the hose.
The central power unit always remains activated even with the sockets closed	The microswitch or the electric contacts of one of the vacuum sockets is damaged.	Call a specialised technician.
The display stays off	The main switch of the building is turned off	Turn the main switch back on
	The control unit switch is turned off	Press the green button on the control unit
	The electronic card is defective.	Call a specialised technician.
Call a specialised technician for other causes that are not covered in this manual		

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The descriptions and illustrations may change. Aertecnica SpA reserves the right to modify the product and the related technical documentation without incurring any obligation to third parties.

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cod.9000556_rev. 22