



# SISTEM-AIR

CENTRAL VACUUM SYSTEMS

By Tecnoplus s.r.l.

www.sistemair.com

## *TECHNICAL MANUAL*



# TECNO Star

★ ★ Dual Power





- Type: domestic vacuum cleaner
- Model: Tecno Star Dual Power
- Revision 2.0.0

# INDEX

<b>1</b>	<b>HOW TO USE THE MANUAL</b>	<b>4</b>
<b>2</b>	<b>DESCRIPTION OF THE CENTRAL VACUUM CLEANER</b>	<b>4</b>
	2.1 Distinctive product features	5
<b>3</b>	<b>TECHNICAL FEATURES</b>	<b>6</b>
<b>4</b>	<b>CONSTRUCTION FEATURES</b>	<b>8</b>
<b>5</b>	<b>SAFETY FEATURES</b>	<b>9</b>
	5.1 IP protection degree	10
	5.2 Electric insulation degree	10
	5.3 Declaration of absence of dangerous substances	10
	5.4 Fixed closure safety guards	10
	5.5 Movable closure safety guards	11
	5.6 Identification plate	11
<b>6</b>	<b>AUTHORIZED USE OF THE VACUUM CLEANER</b>	<b>12</b>
<b>7</b>	<b>UNAUTHORIZED USE OF THE VACUUM CLEANER</b>	<b>12</b>
<b>8</b>	<b>EQUIPMENT AND ACCESSORIES</b>	<b>13</b>
<b>9</b>	<b>INSTALLATION</b>	<b>14</b>
	9.1 Preliminary operations	14
	9.2 Recommended Installation	14
	9.3 Transport and unpacking	15
	9.4 Positioning of the vacuum cleaner	17
	9.5 Transforming DX version (outlet pipes fitted on the right) into SX version (outlet pipes fitted on the left)	17
	9.6 Fixing the system to the wall	19
	9.6.1 Connection to the piping network	19
<b>10</b>	<b>STARTING THE VACUUM CLEANER</b>	<b>19</b>
	10.1 Control board	19
	10.2 Electric connection	20
	10.2.1 Auxiliary connection signal	21
<b>11</b>	<b>USE OF THE VACUUM CLEANER</b>	<b>22</b>
	11.1 Switching on the vacuum cleaner	22
	11.2 Using the vacuum cleaner	22
	11.3 Programming and use of the computer for controlling the central unit	23
	11.3.1 Programming the start up	24
	11.3.2 Settings menu	27
	11.4 Menu	27
	11.4.1 Menu timer of the dust container	27

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# INDEX

11.4.2 Menu suction stop	28
11.4.3 Menu maintenance	28
11.4.4 Menu info	28
11.4.5 Menu date and time	30
11.5 Set up	30
11.5.1 Setup turbo function	30
11.5.2 Setup autocleaner	31
11.5.3 Setup turbo function	31
11.5.4 Set up reset parameters	32
11.5.5 Set up language	33
11.5.6 Set up unit model	33
11.6 Autocleaner system management	34
11.6.1 Activation Autocleaner	34
11.6.2 Changing parameters Autocleaner	34
<b>12 MAINTENANCE</b>	36
12.1 Programmed routine maintenance	36
12.2 Extraordinary maintenance	36
12.3 Cleaning the vacuum cleaner body (cylinder)	37
12.4 Emptying the dust bin	37
12.5 Replacing the filter cartridge	39
12.6 Regeneration of the filter cartridge	41
12.7 Cleaning of the external body	41
<b>13 REPAIRS AND SPARE PARTS</b>	41
13.1 Intervention criteria	41
13.2 Recommended spare parts	42
13.3 Putting the vacuum cleaner out of service	42
<b>14 SOUND EMISSION</b>	42
<b>15 IDEAL LOCATION OF THE VACUUM CLEANER TO REDUCE SOUND EMISSION</b>	42
<b>16 VIBRATIONS</b>	42
<b>17 TROUBLESHOOTING</b>	43
<b>APPENDIX A - CONNECTION TO THE AUTOCLEANER APPLIANCE</b>	45
A.1 Positioning of the Autocleaner	45
A.2 Pneumatic connection	46
A.3 Electric connection	46

## INTRODUCTION

Dear Customer,

TECNOPLUS S.r.l., owner of the SISTEM AIR Trademark would first of all like to thank you for having chosen to buy the new vacuum cleaner of the TECNO Star Dual Power. We are sure that the characteristics described in this manual will satisfy your needs.

TECNO Star Dual Power has been designed and produced in strict compliance with the Machinery Directive 2006/42/CE (transposed into Italian Legislation by Decree Law 17/10), Low Tension Directive 2006/95/ CE, and Electromagnetic Compatibility Directive 2004/108/CE. The system has been manufactured with top quality materials and with particular care paid to reducing as much as possible the risk of injury.

We have therefore written this manual in order to provide adequate instructions for the correct use and maintenance of the system which are crucial to ensure the user's safety, the correct functioning and the long working life of the vacuum cleaning unit.

**Read the entire manual carefully, follow the instructions precisely, and above all, for safety reasons, do not intervene in any way if not specifically indicated.**

For the best results, we suggest to use SISTEM AIR original accessories and materials. The SISTEM AIR Trademark is a registered trademark and is property of TECNOPLUS S.r.l.

## 1 - GENERAL INFORMATION

### 1. HOW TO USE THE MANUAL

The instruction manual has been written by the manufacturer and is an integral part of the vacuum cleaner. If the system is resold, given or hired out to others, the manual must be handed over to the new user or owner.

We recommend using and storing it carefully for the entire working life of the vacuum cleaner.

This manual explains how to use the equipment correctly in order to obtain the best performance while maintaining optimal working and safety conditions.

It is strictly forbidden to reproduce, copy or disclose any part of this document by any means without prior written consent of TECNOPLUS s.r.l. which is the owner of the SISTEM AIR Trademark.

TECNOPLUS s.r.l. reserves the right to upgrade or modify this manual or the vacuum cleaner itself at anytime without giving any prior notice to third parties.

### 2. DESCRIPTION OF THE VACUUM CLEANER

Constant research applied to central vacuum cleaners and advanced electronic technology have allowed TECNOPLUS S.r.l. to create TECNO Star Dual Power.

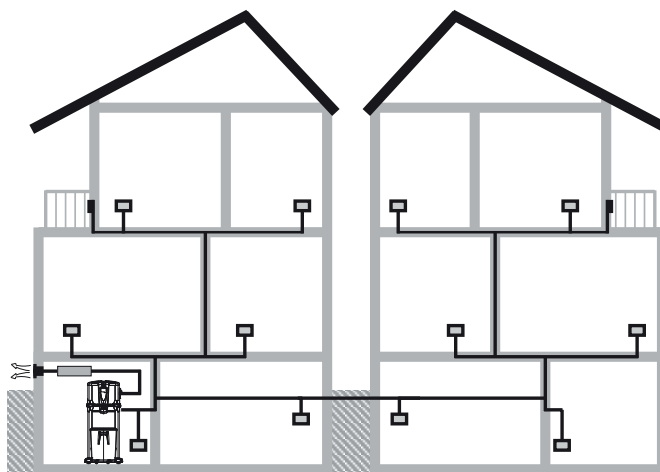
The central vacuum cleaner, suitable for any type of residential building (private houses, offices, hotels, service sector), consists of a network of PVC trace pipes, housed in walls or in false ceilings running through the various rooms; at the end of the pipes are positioned the suction sockets.

The SISTEM AIR vacuum cleaner is usually placed in a utility room, garage or other storeroom and connected to the suction pipes network.

The system is switched on by inserting the sleeve coupling of the flexible vacuum cleaning hose in any of the suction sockets.

If the pipe network doesn't feature any electrical power supply, the system can be switched on and off by means of a remote control device (optional accessory).

The Tecno Star Dual Power vacuum cleaner, yet equipped with brush motors, features innovative characteristics which make it more suitable for professional applications. The Tecno Star Dual Power vacuum cleaner is run by a second-generation electronic system that Sistem Air applies to its vacuum cleaners to allow a simplified management of the cleaning unit.



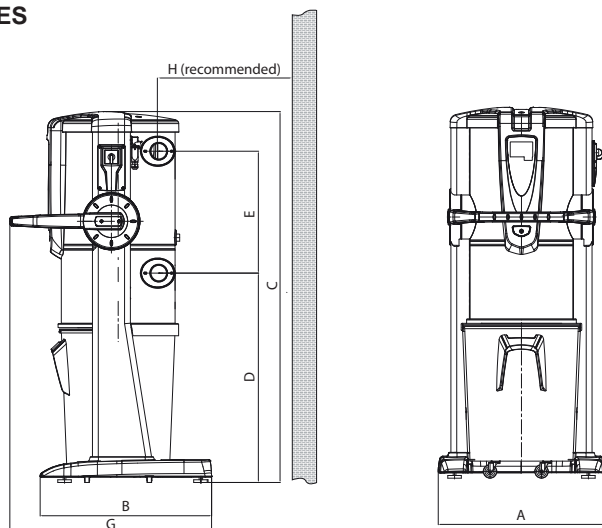
**Main features of the TECNO Star Dual Power vacuum cleaner:**

- Possibility of contemporary use by two operators either with two separate micro lines or with one single micro line.
- The Tecno Star Dual Power vacuum cleaner by Sistem Air adopts an innovative control and maintenance system based on an electronic control board with microchip connected to pressure sensors and programmed to easily and immediately interact with the user. Maintenance can be individually programmed by the user who will receive messages about the machine status directly on a user-friendly graphic display, as well as suggestions about actions to be taken in case of malfunctioning. Thanks to the pressure sensor, the indications shown are not mere approximations but indicate the real conditions of the system.
- With Tecno Star Dual Power, Sistem Air has obtained a 10% consumption decrease, with no reduction of the available vacuum cleaning power.

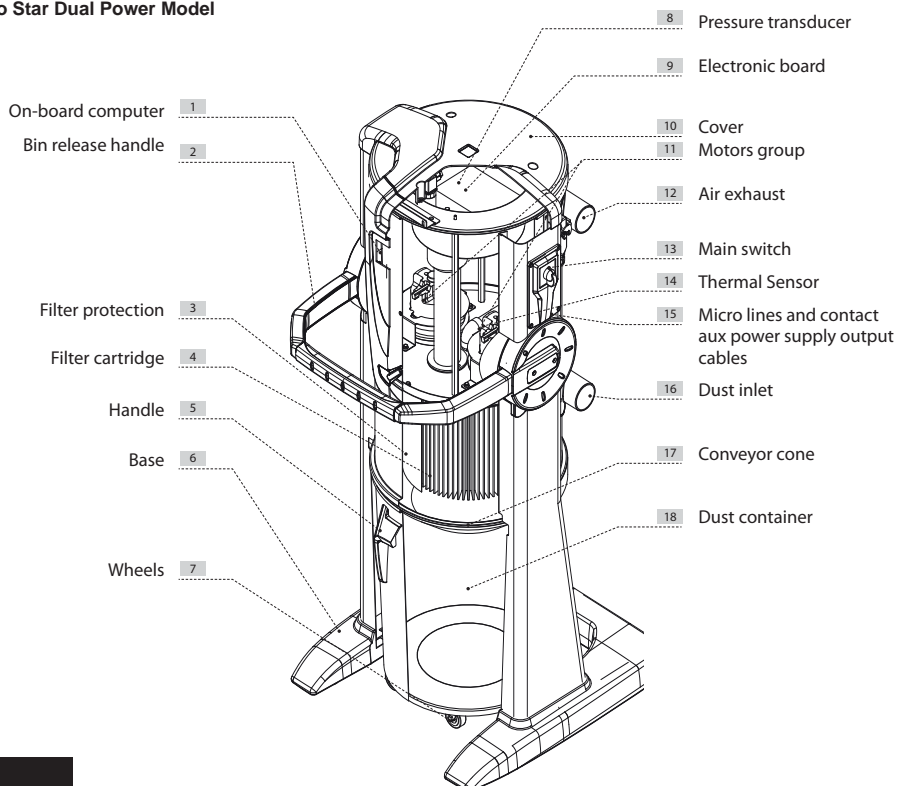
**2.1 Distinctive product features**

- "TURBO" function by means two motors on a single micro line.
- Safety thermal sensor to protect the motor.
- Vacuum breaker valve to ensure the motor is not operating in critical conditions.
- Soft Start system to reduce the electric absorption during the starting phase of the vacuum suction.
- Control and routine maintenance system based on an electronic control board with microchip connected to pressure sensors and programmed to easily and immediately interact with the user.
- Polyester L-Class filter cartridge, washable in water.
- Double protection electronic control board with fuse-holders and disconnecting switches both on the primary and auxiliary circuit.
- Pressure transducer
- Class 1 isolation.
- Left or right connection to the pipe dust inlet and to the air exhaust.
- Wheeled machine body coated with epoxy-powders with large-capacity dustbin.
- Fastening and release of the dust bin with Soft-Touch-grip handle, reducing the effort when opening the bin.
- Base coated with anti-choc material to protect the appliance.
- High-grade noiselessness thanks to the soundproofed motor housing.
- Further optional coupling of Autocleaner self-clean system (see page 45).

### 3- TECHNICAL FEATURES



#### Tecno Star Dual Power Model



**TECNO Star Dual Power Line**

<b>Model Item</b>	<b>TECNO Star Dual Power</b>	
	<b>3116.2TS</b>	
Maintenance Computer		YES
Dust inlet	Ø mm	63
Air exhaust	Ø mm	63
Protection degree	IP	20
Power supply	V ac	220/240
Frequency	Hz	50/60
Motor power	kW	1,3x2
Absorption	A	12
Socket power supply	V dc	12
Maximum air flow	m <sup>3</sup> /h	390
Filtering surface	cm <sup>2</sup>	17000
Dust bin capacity	l	62
Air exhaust		YES
Air exhaust silencer		YES
Weight	kg	55
A Size	mm	615
B Size	mm	633
C Size	mm	1369
D Size	mm	773
E Size	mm	450
G Size	mm	745
H Size	mm	500
Sound level with 1 motor	dB(A)	64
Sound level with 2 motors	dB(A)	69

**N.B.:** Nominal sound level values. The values can vary depending on the speed of use, on the installation environment of the vacuum unit, as well as on the installation type.

## 4 - CONSTRUCTION FEATURES

TECNO Star Dual Power Line vacuum cleaners feature two motors with intervention modes depending on the use of the vacuum cleaner itself and on the number of independent micro lines which have been connected and started. It is actually possible to connect 2 micro lines to the unit to manage two separate parts of the vacuum system (i.e. two areas of the same system, two floors or two individual flats). In fact, the user can select through the on-board computer to vacuum clean with or without greater power a single area covered by a single micro line (single operator) or share the maximum power to simultaneously vacuum clean two areas covered by two separate micro lines (with two operators), in civil or small-size advanced civil applications.

**IMPORTANT: Two operators cannot be considered when the maximum total surface exceeds 350 m<sup>2</sup> and when the piping network has not been suitably set up.**

Maximum Surface	Model	Item	Max suction inlets	Max Operators	Computer programmable maintenance	Dustbin Capacity (l)	Filtering surface (cm <sup>2</sup> )	Power supply (Volt ac)	Motor power (kW)	Max air flow (m <sup>3</sup> /h)
*Max 350 m <sup>2</sup> **Max 450 m <sup>2</sup>	TECNO STAR Dual Power	<b>3116.2TS</b>	16	1+1	YES	62	17000	220/240	1,3x2	390

(\*) for two separate micro lines. (\*\*) for one single micro line.

The vacuum systems of the Tecno Star Dual Power Line have been designed and manufactured in compliance with all the criteria imposed by the current regulations and European directives while carefully paying attention to crucial elements like performance, power and operating capacity.

### The main technical features are as follows:

- Cylindrical body made of metal coated with epoxy powder.
- Base coated with anti-choc material to protect the unit.
- Metal bin for dust collection (62 litres capacity) equipped with wheels for handling.
- Dust bag and bag-stretcher for dust collection, to ensure quick and healthy disposal operations of the material collected.
- Soundproofed motor compartment (unit sound level; 64 dB A with one operating motor, 69 dB A with two operating motors)
- Optional left or right connection to the pipes.
- Motor-rotors group, equipped with direct-cooling single-phase electric brush motors
- Vacuum breaker valve to ensure the motor is not operating in critical conditions.
- Soft Start system to reduce the electric absorption during the start phase of the vacuum cleaning system.
- Safety thermal switch to protect the motor group with automatic cut-off and reset.
- Double-protection electronic control board with disconnecting fuse-holders on the primary and auxiliary circuit.
- Suction sockets supplied with 12 V dc voltage.
- Polyester L-Class filter cartridge, washable in water (filtering surface: 17000 cm<sup>2</sup>).
- Metal filter protection to prevent accidental breakage.
- On-board computer to control the maintenance cycles with warnings for full dust bag replacement, filter cartridge cleaning, motor maintenance.
- Set up of the connection to a remote auxiliary maintenance warning signal (optional).
- Possibility to control two separate micro lines.
- "Turbo" function for a more powerful vacuum cleaning when activating a single micro line / operator.

- Vacuum cleaning of liquids by means of optional accessory.
- Electrostatic material can be vacuumed if the piping network was made with metal pipes duly earthed and appropriate cleaning accessories.
- Further optional installation of the Autocleaner selfcleaning system.

**N.B.: when replacing the fuse, check the correct fuse amperage and be sure to assemble a motor-delay fuse. During installation procedures strictly follow regulations established by CEI and by the national energy supplier.**

## 5 - SAFETY FEATURES

In compliance with safety regulations detailed in the Machinery Directive 2006/42/CE (transposed into the Italian Legislation by Decree Law 17/10), in the Low Voltage Directive 2006/95/CE, and in the Electromagnetic Compatibility Directive 2004/108/CE, the Tecno Star Dual Power vacuum cleaner complies with the standard established for electrical appliances for household and similar purposes EN 60335-1 (2008) and with the Regulation C EN 60335-2-2 (2011), specially conceived for vacuum cleaners for household and similar purposes with rated voltage not exceeding 250 V.

**It is recommended to carefully read all the installation, use and maintenance instructions detailed in this manual.**

Furthermore, the following WARNINGS should always be observed:

- Never use the machine for unauthorized purposes.
- Keep children away from the vacuum cleaner when functioning. Children should not play with the machine nor with the suction sockets
- This equipment should not be used by persons (including children) with reduced psychic, sensory or mental capacities or by persons with no experience or knowledge of the system, unless under the guidance or instructed to use the machine by persons responsible for their safety.
- Children must always be supervised to ensure they do not play with the machine.
- Immediately disconnect from power supply if:
  - the electric cable is damaged or worn.
  - the vacuum cleaner has been exposed to rain or excessive humidity.
  - the vacuum cleaner has been knocked or the outer body has been in any way damaged.
  - you think the system requires maintenance or repair.
- Wear protective gloves and mask to carry out maintenance, to empty the dust bin or replace and clean the filter.
- Only use original spare parts and accessories.
- Do not suction clean fabrics, heavy materials, ashes or hot embers.
- Never suction clean liquids.
- Do not use the system without a filter cartridge.
- Do not block the exhaust air pipes or the motor cooling intakes.
- No part of the body should come into contact with the suction accessories.
- Do not leave the system switched on when not using it and disconnect it from power supply when the system is not to be used for a long period of time.
- Do not suction clean building materials (concrete, lime wastes, plaster dust, etc.) once the installation is completed. This will quickly clog the filter cartridge.
- **Do not vacuum any material which may cause electrostatic charges in the piping system, if not previously communicated to the constructor.**

Finally, remind that pictograms of danger and warning signals can be found on those parts of the equipment where, if not strictly followed, potential risky situations may occur.

**WARNING:** TECNOPLUS S.R.L. declines any form of responsibility or guarantee if the purchaser, or anyone in his stead, makes even the slightest modification or adjustment to the purchased product. The unit has been designed to satisfy at best the present needs of the domestic central vacuum cleaners market, both in terms of quality and operating capacity.

All materials and components used to manufacture this product comply with CE safety regulations. All relevant certifications are held at TECNOPLUS S.R.L. headquarters.

### 5.1 IP Protection Degree

IP 20: The appliance features a protection against solid objects having a size exceeding 12 mm. The appliance is not protected against water penetration.

IP20

### 5.2 Electric insulation degree

CLASS I: the appliance features basic electric insulation.

It must be connected to the grounding circuit through the main electric wiring.



### 5.3 Declaration of absence of dangerous substances

TECNOPLUS S.r.l. declares that its products and appliances have been manufactured with materials which comply with the restrictions established by the health and environment protection regulations in force and do not contain SVHC-classified substances (Substance of Very High Concern) in compliance with CE regulation 1907/2006 (REACH: i.e. Registration, Evaluation, Authorization and Restriction of Chemical Substances). Although these substances have not been used during the processing cycles of raw materials and during the manufacturing cycles of our products, their presence in p.p.m. (parts per million) cannot be completely excluded due to micro-pollution of raw materials.

### 5.4 Fixed closure guards safety

The vacuum cleaner is delivered to the Customer with its main body completely assembled. Moving parts (suction motor turbine blades) are protected by a protection grid directly assembled on the inlet of the suction motor compartment. This protection grid cannot be accessed by the operator. The operator also does not have access to the electrically-operated parts of the appliance which are protected by a cover which can only be removed by unscrewing the Torsen screws used to fix the soundproofing dome of the housing where the suction motors are assembled.

Every intervention on the control board and on the motors must be carried out by qualified personnel only after disconnecting the electrical power supply and by removing the electric plug from the electric socket.

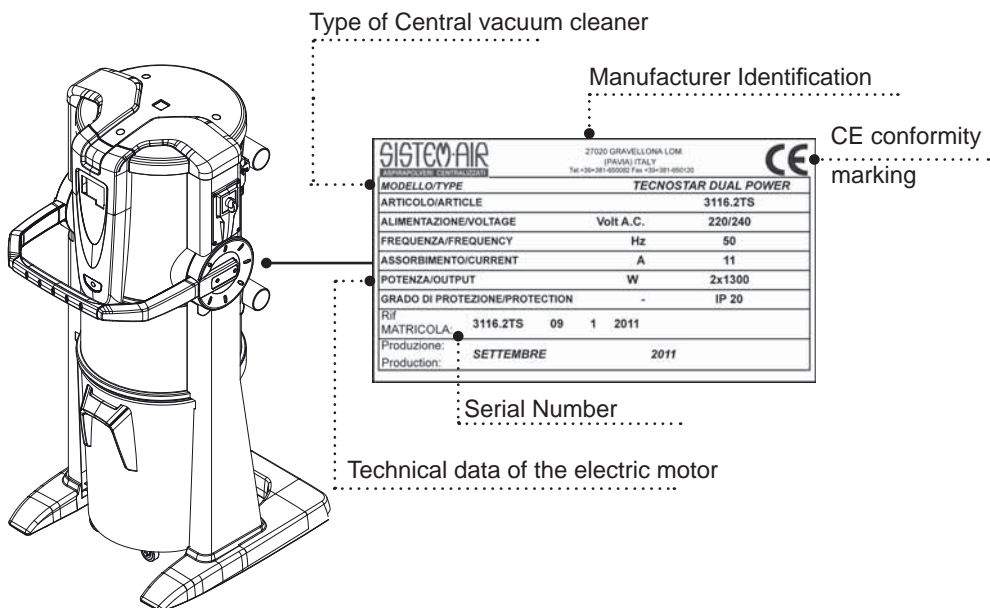
## 5.5 Movable closure guards safety

There are no movable closure guards assembled on the appliance. Every guard assembled is considered a fixed guard and is fastened with special screws. TECNOPLUS s.r.l. reminds you that it is absolutely forbidden to replace the screws used to design and manufacture the appliances with screws that feature different characteristics.

TECNOPLUS s.r.l. will immediately suspend the product guarantee in case of machine tampering carried out by the Customer.

## 5.6 Identification plate

The CE identification plate is assembled on the side of the connection to the piping network. This should not be removed or damaged.



## 6 - AUTHORIZED USE OF THE VACUUM CLEANER

The TECNO Star Dual Power vacuum cleaner has been designed exclusively to vacuum clean dust, very small-size solids and dry materials.

The use of the central vacuum cleaner is authorized for household and civil uses, and connected to a PVC wall traced piping network and to a standard home electric wiring.

The **Tecno Star Dual Power** vacuum cleaner is the ideal choice to work out and meet the most demanding needs; it is recommended for residential dwelling units with the characteristics detailed below:

- recommended surface to be cleaned ranging from 100 and 450 m<sup>2</sup>
- pipe network set up with pipes with 50 mm diameter (1 operator) and 63 mm diameter (2 operators) and Ø 63 mm inlet coupling to the vacuum cleaner
- 220/240 V ac single-phase power supply
- air exhaust conveyed to the outside through a 63 mm diameter pipe
- the system can be used simultaneously by 2 operators (only if it has been suitably dimensioned).

## 7 - UNAUTHORIZED USE OF THE VACUUM CLEANER

**It is extremely important NOT to use the system in the following circumstances which are considered to be inappropriate and dangerous:**

- The system must not be used to vacuum clean fabrics, heavy or hot/burning materials.
- The system must not be used to vacuum clean liquids.
- Do not suction cement, flour or similar materials, which may cause the reduction of the vacuumed air with a consequent damage of the motor.

**Furthermore the system has not been designed for use in environments with risk of explosion, and therefore:**

- it is forbidden to suction clean materials with high explosion risk (gunpowder) or materials which are individually inert but that, once collected and mixed in the dust bin, could provoke dangerous chemical reactions.
- It is absolutely forbidden to use the vacuum cleaner in explosive atmosphere or outside the standard temperature, pressure and humidity levels.
- **Do not vacuum any material which may cause electrostatic charges in the piping system, if not previously communicated to the constructor.**

**Any use of the appliance other than those specified above is forbidden.**

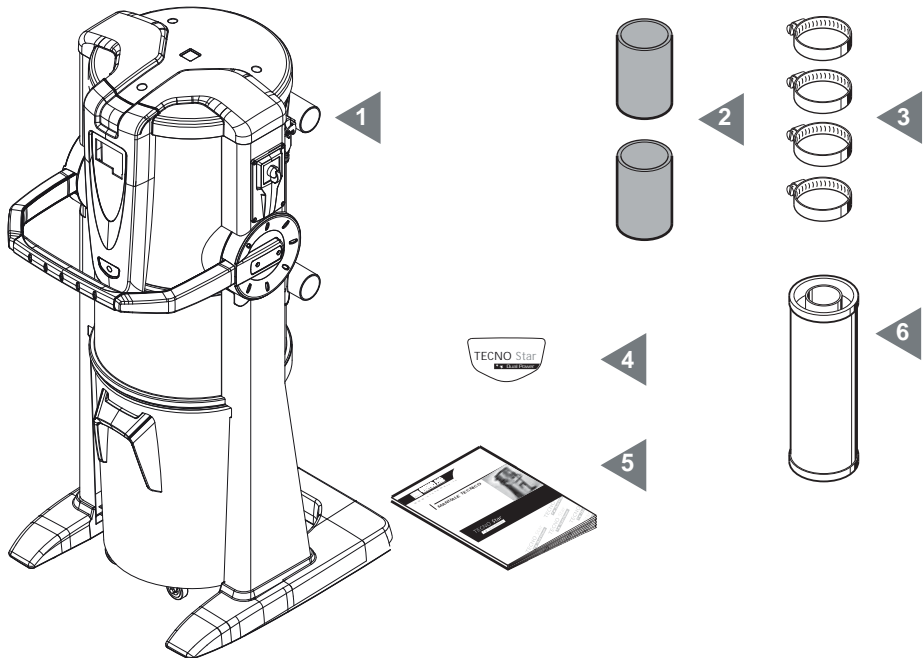
**Any change or modification made to the system in order to suction clean a particular type of material must obtain the prior written approval of the manufacturer.**

**The use of the system for purposes other than those for which it was manufactured, represents an irregular condition which can cause damage to the product and seriously compromise the operator's safety.**

## 8 - EQUIPMENT AND ACCESSORIES

The packaging of the vacuum cleaner also includes a series of accessories as detailed below:

- 1) N°1 TECNO Star Dual Power vacuum cleaner
- 2) N°2 rubber sleeves for the connection to the suction pipe network
- 3) N°4 metal clamps to fix the sleeves
- 4) N°1 adhesive label detailing the system model
- 5) N°1 installation, use and maintenance manual
- 6) N°1 silencer



Check that the system, the accessories and the kit correspond to the products ordered and that they have not been evidently damaged during transport.  
In case of problems contact your Retailer immediately.

## 9 - INSTALLATION



**- WARNING -  
THESE PROCEDURES MUST BE CARRIED OUT  
BY QUALIFIED STAFF**

### 9.1 Preliminary operations

The suction system is shipped to the customer completely assembled and packed

Before switching the machine on, the following checks are advisable:

- Check that the packaging is intact.
- Check that the appliance has not been damaged in any way and in particular check that all the protruding parts are intact.
- Verify the correct tightening of the filter cartridge.
- Using the equipment list and the kit and accessories list, check that the equipment and the kit have been exactly and completely delivered.
- Check that the Guarantee Certificate has been provided.

If any damage or irregularity is found or if any accessory is missing, do not install the appliance and contact your Retailer.

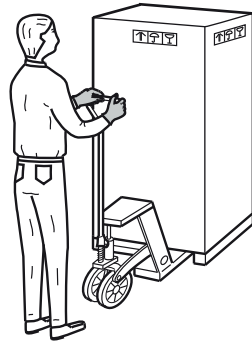
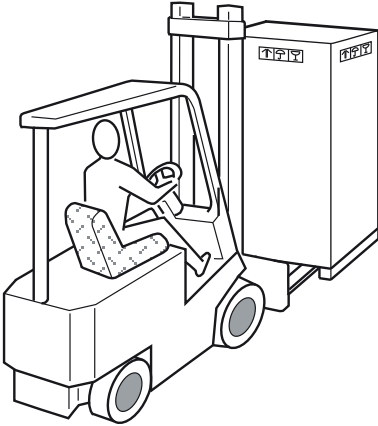
### 9.2 Recommended installation

The Tecno Star Dual Power vacuum cleaner must be connected to an exhaust air pipe, crucial for discharging outside the micropowders that the filter cartridge cannot retain. The vacuum cleaner must be installed in service rooms (e.g. garage, store room etc) protected from bad weather, dampness and excessive temperature variations. Install the unit in a place far from heat sources such as stoves and radiators. (N.B: the unit features IP 20 protection degree).

During the set up phase, we suggest to always carefully check that the unit is positioned in the most suitable location selected for the system. Check also that sufficient space has been allowed for installation, use and maintenance purposes and for an optimal recirculation of the air around the vacuum cleaner.

Construction features allow the vacuum cleaners to be connected to the pipe system with pipes coming either from right or left sides. In case of multi-storey vacuum cleaning system, we suggest you to install the unit on the lowest available floor.

### 9.3 Transport and unpacking

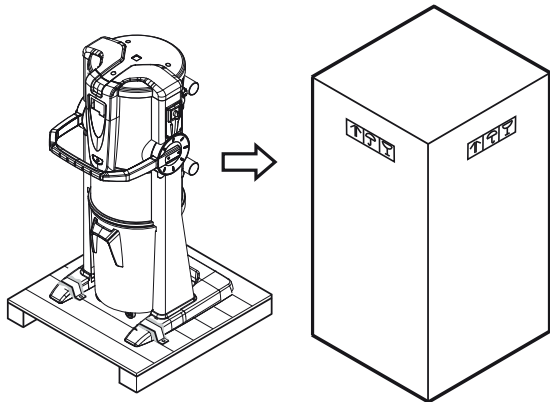


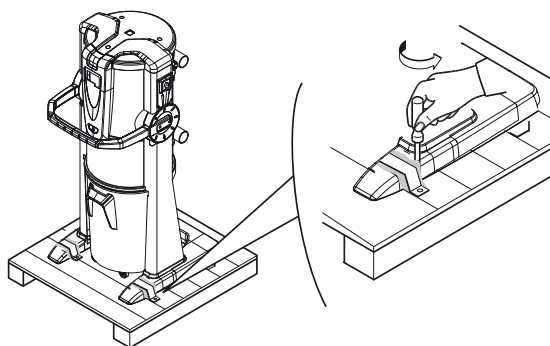
1

Use a transpallet or a fork-lift truck for transport and handling; always maintain the system inside its own packaging until it reaches the place of installation.

Remove the protective  
cardboard box.

2



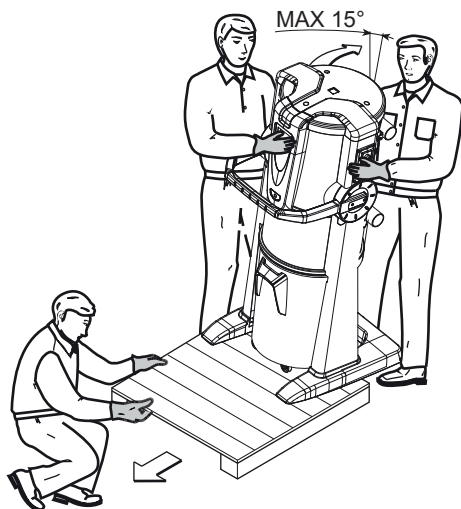
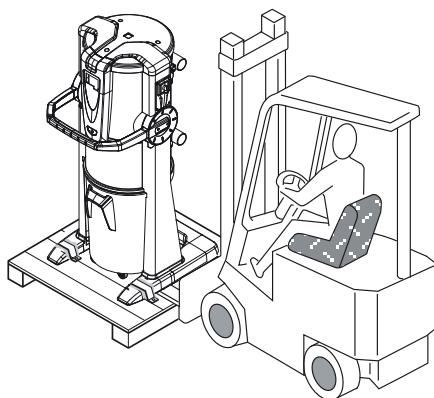


3

Remove the brackets that fix the unit to the pallet.

Remove the unit from the pallet.

4



5

If no suitable fork-lifts are available, remove manually the unit from the pallet (see picture).

In this case, at least two strong persons are needed to slide the unit while a third person removes the pallet.

**WARNING:** do not tilt the unit more than 15° so as to avoid dangerous unbalances.

Remove all the accessories and dispose the cardboard box according to the regulations in force.

6

### 9.4 Positioning of the vacuum cleaner

For a correct use and to facilitate maintenance it is advisable to keep a minimum distance of 60 cm on three sides around the appliance (excluding the side on which it is fixed to the wall).

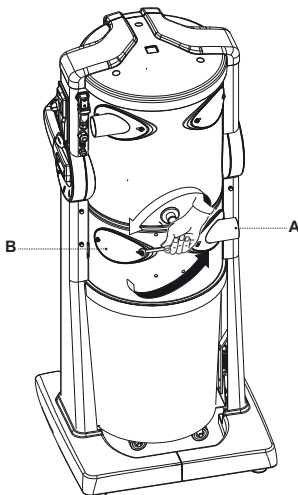
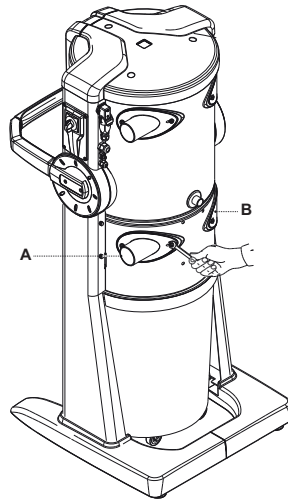
### 9.5 Transforming DX version (outlet pipes fitted on the right) into SX version (outlet pipes fitted on the left)

Vacuum cleaners are generally supplied with suction and exhaust pipes on the right side (RIGHT version). If needed, the system can be transformed so as to have both suction and exhaust pipe connections on the left side (LEFT version).

To do this:

Disassemble the intake of the "A" suction pipe and the "B" closing plate by removing the screws.

1



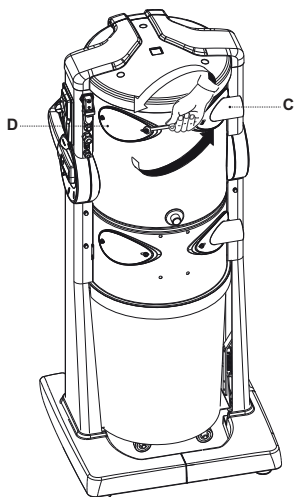
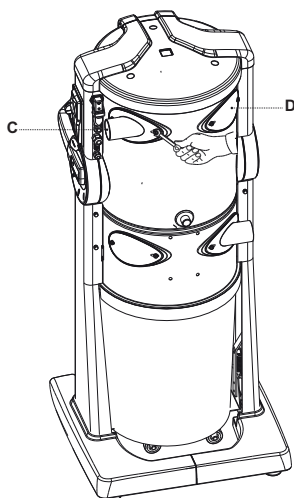
2

After exchanging their housings, reassemble the intake of the "A" suction pipe and the "B" closing plate by fastening the screws.

Now rotate by 180° the intake of the suction pipe as shown in the picture.

Disassemble the intake of the "C" exhaust pipe and the "D" closing sheet by removing the screws.

3



4

After exchanging their housings, reassemble the intake of the "C" exhaust pipe and the "D" closing sheet by fastening the screws. Now rotate by 180° the intake of the exhaust pipe as shown in the picture.

## 9.6 Fixing the vacuum cleaner

The unit does not need any special fixing device. For a correct and safe positioning, it is however necessary to check that the location selected for installing the unit features the following min. requirements:

- a solid, perfectly flat and horizontal bearing surface;
- the surface must not vibrate. Furthermore it is of utmost importance to avoid any unevenness of the bearing surface that could make the unit unstable.

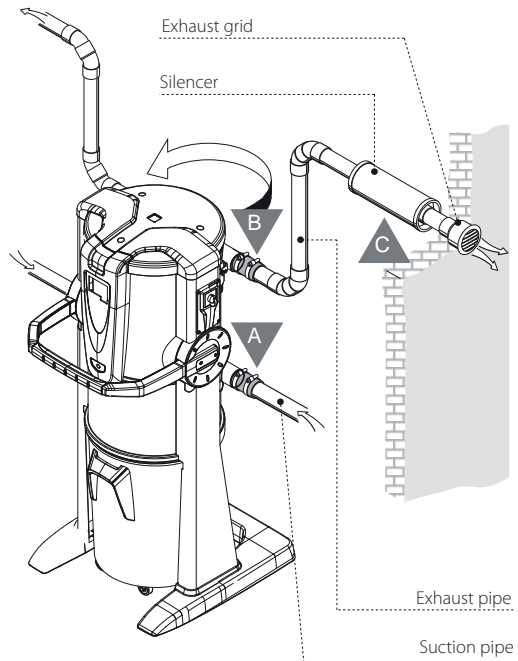
### 9.6.1 Connection to the pipe network (see picture)

The intakes for the connection to the suction pipes network and to the pipes exhausting the air outside can be assembled either on the right or left side of the unit.

**A** Using the sleeve and the metal clamps delivered with the vacuum cleaner, connect the unit to the air suction pipe.

**B** Using the sleeve and the metal clamps delivered with vacuum cleaner, connect the unit to the exhaust pipe.

**C** Assemble a silencer on the exhaust pipe; position the silencer near the exhaust grid. Use glue for pipes to fix it.



## 10 STARTING THE VACUUM CLEANER

### 10.1 Control board

The TECNO Star Dual Power vacuum cleaner features a control board from which the appliance functions can be programmed by means of a simple operator's interface display with 6 function keys.

From the control board (display) it is possible to control and set the routine maintenance operations; the vacuum-cleaning sockets are distributed in the various rooms and connected through the piping network.

For this reason, the operator is never directly in contact with the appliance while the system is working, apart from starting operations (see paragraph 11.3.1) and use of the vacuum cleaner (see paragraph 11).

## 10.2 Electric connection



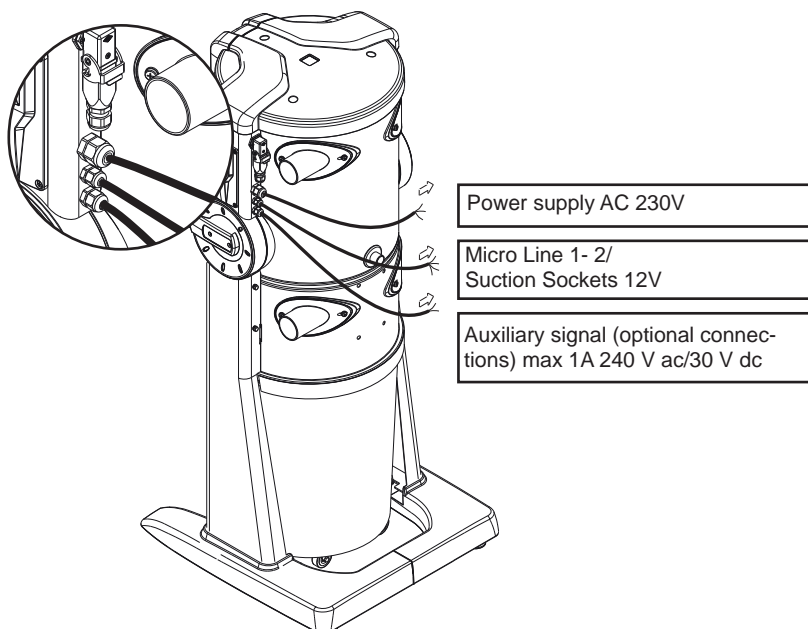
**WARNING: the electric connection must be carried out ONLY by qualified personnel**

Before connecting the system to the electrical power supply check that the supply voltage corresponds to that required by the vacuum cleaner (see the identification plate).

The manufacturer declines any responsibility for damages to persons and/or objects due to a connection to a non-complying electric wiring.

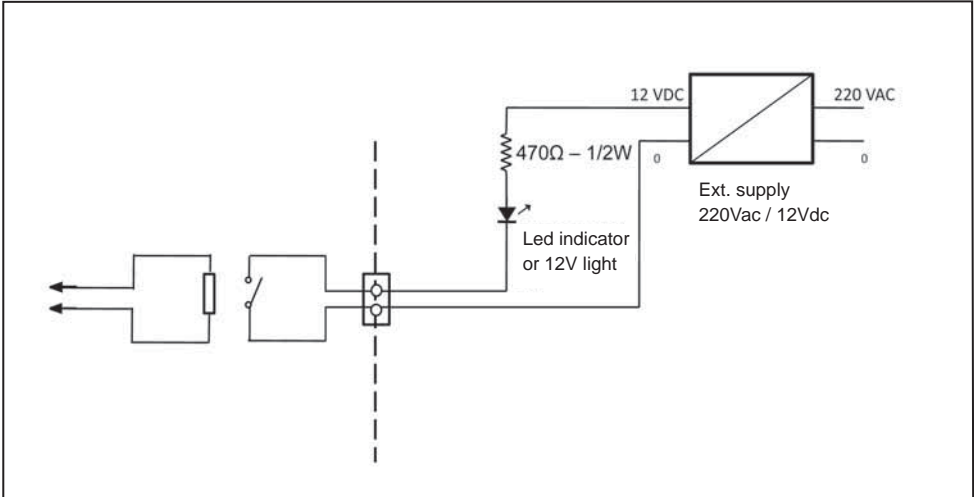
Follow the instructions (see picture) detailed below to carry out the operation:

- Connect the input signal cable (MICRO LINE) to the suction socket.
- Connect the output cable for the auxiliary maintenance warning signal. The use of this signal is OPTIONAL. N.B.: This signal is a normally open contact
- Insert the plug of the power supply cable from the central system in the electric socket.
- Check that the electric wiring of the house has been set up in compliance with the electrical regulations in force
- Do not supply the system with voltage from provisional or temporary switchboards (for example construction sites switchboards) to avoid possible damages to the electronic parts.



### 10.2.1 Auxiliary connection signal

Example of connection of the auxiliary contact, normally open, which closes in case of alarms on the display.



## 11 USE OF THE VACUUM CLEANER

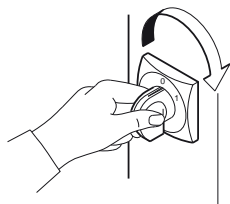
Once the **TECNO Star Dual Power** vacuum cleaner has been connected to the power supply, it can be started every time a flexible hose is plugged into any of the suction sockets installed in the different rooms.

The vacuum cleaning is started thanks to an electrical contact assembled directly in the socket which, once activated, allows the start of the suction motor of the vacuum cleaning unit.

The specifically-designed electronics applied to **TECNO Star Dual Power** vacuum cleaners is based on a sophisticated software designed exclusively for Sistem Air, which alerts the operator, by means of a dedicated messaging package, when routine maintenance should be carried out.

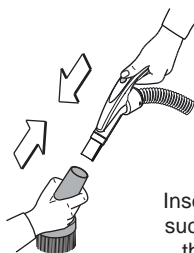
Such maintenance involves the dust bin to be emptied and the filter cartridge to be regularly cleaned.

### 11.1 Switching on the vacuum cleaner



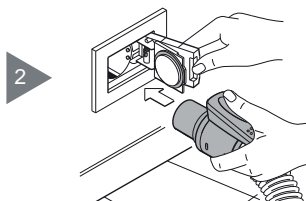
- 1 Position the main switch assembled on the right side on the appliance on «I-ON» position. The display will switch on to indicate the unit is connected to the power supply.

### 11.2 Using the vacuum cleaner



- 1 Fix the cleaning accessory most suitable for the desired task to the grip handle of the flexible hose. Select the accessories according to the required use, to the type of dirt and area to be cleaned, etc.

Insert the other end of the flexible hose in the suction socket on the wall. This will switch on the system suction motors by activating the electric signal in the suction socket.



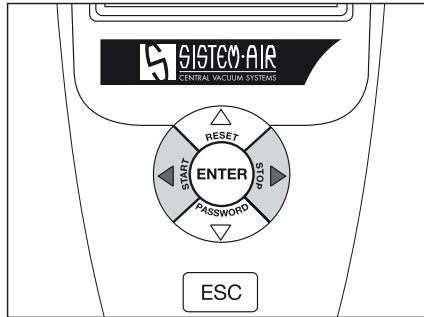
Once you have carried out the cleaning operations, remove the flexible hose from the suction socket by gently accompanying the closing flap until it reaches its housing. If the flap is left to close by itself, it will violently hit the suction socket because the suction system is still working and the vacuum will pull the flap powerfully against the suction frame.

The vacuum cleaner is programmed to take a few seconds before switching off to ensure that the suction action has been completed throughout the pipe network.







### 11.3 Programming and use of the computer for controlling the central unit

The TECNO Star Dual Power vacuum cleaner is provided with a practical display with membrane keyboard as shown below.

The use of this display and of the membrane keyboard allows the operator to send the inputs to the computer of the central unit in order to select the various functions, programme the routine maintenance and upload specific data.



The data uploading is carried out as follows:

- Press the up  and down arrows  to scroll in the menu on the display and modify the value on the display.
- Press ENTER  to save data or confirm the selection
- Press the Right (dx)  and Left (sx)  arrows to change the values on the display
- Press ESC  to exit the display screen

### 11.3.1 Programming the start up

Here are the main Menu screens for the start up



**1** Screen display which appears when first switching the system.

Press **ENTER** to move onto the next screen display.

LANGUAGE SELECTION	
English	<input checked="" type="checkbox"/>
Italiano	<input type="checkbox"/>
Deutsche	<input type="checkbox"/>
Francais	<input type="checkbox"/>
Espanol	<input type="checkbox"/>

**2** Select the language by pressing the arrows **Up** and **Down**.

Press **Enter** to select the language. Press **Esc** to confirm the selected language and go to the next screen.

☒ Selection is active

☐ Selection is not active

MODEL	
Revolution 150	<input type="checkbox"/>
Revolution 250	<input type="checkbox"/>
Revolution 350	<input type="checkbox"/>
Revolution 450	<input type="checkbox"/>
Dual Power	<input checked="" type="checkbox"/>

**3** Select the model of the installed central vacuum unit by pressing the **Up** and **Down** arrows.

Press **Enter** to activate the model of central vacuum unit. Press **Esc** to confirm the selection and go to the next screen.

☒ Selection is active

☐ Selection is not active


DATE/TIME
<div style="text-align: center;">             ▲              01/01/2013 12:00              ▼           </div>

**4** Set the date and time using the **Up**, **Down**, **Left** and **Right** arrows.

Press **Esc** to confirm the changes and go to the next screen.

INFO INSTALLER	
	
▲	* * * * *
▼	

- 5 On this screen you will be able to save some information about the installation. Write the telephone number by pressing the **Up**, **Down**, **Left** and **Right** arrows. Press **Esc** to confirm the changes and go to the next screen.

INFO SERVICE	
	
▲	* * * * *
▼	

- 6 On this screen you will be able to save the details of the Service. Write the telephone number by pressing the **Up**, **Down**, **Left** and **Right** arrows. Press **Esc** to confirm the changes and go to the next screen.

FILTER CLEANING	
Autocleaner	<input checked="" type="checkbox"/>

- 7 Activation of the control relating to the Autocleaner System (optional device). Press **Enter** to communicate to the central vacuum unit that Autocleaner is connected.

☒ Selection is active  
☐ Selection is not active

01/04/2013	10:00
Suction:	OFF
Depression:	mbar 000
Press ENTER	

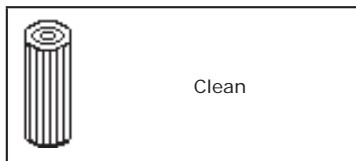
- 8 **Main Screen Display**  
 Press **ENTER** to pass onto the **Main Menu**.

More precisely:

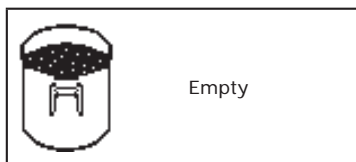
**Suction:** Shows whether suction has been activated or not  
**Vacuum:** Shows the vacuum gauged inside the unit

## Alarms

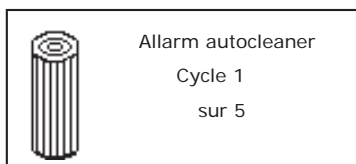
Below you will find the screens relating to the alarms which may appear on the display. Press RESET to cancel the alarm and restore the suction if you activated the "Suction stop" option (see par. 11.4.2).



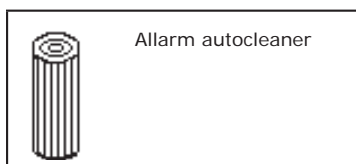
- 1 FILTER ALARM**  
Filter efficiency 0%, clean the filter cartridge, see par. 12.7



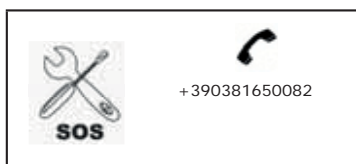
- 2 DUST ALARM (BIN)**  
Dust container level 100%, empty the dust container, see par. 12.4



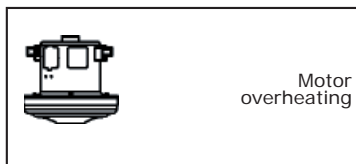
- 3 AUTOCLEANER**  
Automatic filter self-cleaning system, see par. 11.6



- 4 ALLARM AUTOCLEANER**  
Malfunction of the automatic filter self-cleaning system, call Service



- 5 SERVICE ALARM 1/2**  
Extraordinary maintenance needed, see par. 12.2



- 6 MOTOR TEMPERATURE ALARM**  
The motor's safety thermal switch intervened, call Service

### 11.3.2 Setting menu

01/04/2013	10:00
Suction:	OFF
Depression:	mbar 000
Premere ENTER	

1 By pressing **Enter** when on the main screen, you go to the Setting menu

SETTINGS
Menu
Setup

2 Press the **Up** and **Down** arrows to scroll in the menu.  
Press **Enter** to access the selected sub-menu.  
Press **Esc** to exit.

### 11.4 Menu


In this menu you can change the default parameters and display the information about the product (in case Autocleaner was installed, see par. 11.6)

MENU
Timer dust container
Suction stop
Maintenance
Info
Date/time

1 Press the **Up** and **Down** arrows to scroll in the menu.  
Press **Enter** to access the selected sub-menu.  
Press **Esc** to exit.

#### 11.4.1 Menu timer of the dust container

In this menu you can modify the parameter relating to the Dust Alarm which refers to the dust container (bin) selected during the installation phase. The unit of measurement is expressed in hours.

TIMER DUST CONTAINER

<div style="text-align: center;">             ▲              10 (h)              ▼           </div>

1 Press the **Up** and **Down** arrows to modify the parameter.  
Press **Esc** to confirm the change and exit the menu

### 11.4.2 Menu suction stop

In this menu you can activate/deactivate the suction stop for the filter alarm, dust alarm and service alarm 1 and 2, each of them separately .

If this function is activated, the suction will stop within 15 minutes from the alarm.

**CAUTION:** To avoid malfunctions of the central vacuum unit it is advisable to always activate the suction stop when the unit displays an alarm.

SUCTION STOP	
Allarm Filter	<input checked="" type="checkbox"/>
Allarm Dust	<input checked="" type="checkbox"/>
Allarm Service 1	<input checked="" type="checkbox"/>
Allarm Service 2	<input checked="" type="checkbox"/>

1 Press the **Up** and **Down** arrows to select the kind of alarm.

Press **ENTER** to activate/deactivate the suction stop.

Press **Esc** to confirm your choice and exit the menu.

- ☒ Selection is active  
☐ Selection is not active

### 11.4.3 Maintenance menu

In this menu you can find all information regarding the filter efficiency, the level of dust in the dust container (bin), the time to the next extraordinary maintenance operations level 1 (Service 1) and 2 (Service 2).

MAINTENANCE	
Filer efficinecy	%100
Dust level	%000
Allarm Service 1	(h) 200
Allarm Service 2	(h) 400

1 Press **ESC** to exit the menu.

### 11.4.4 Menu info

In this menu you can find all information relating to the installation date, the operating hours, the energy consumption, the installer and the service, the alarm history and the maintenance operations performed by qualified personnel.

INFO	
Central unit	
Installer	
Service	
Last alarms	
Statistics Alarms	
Statistics Service	

1 Press the **Up** and **Down** arrows to scroll in the menu.

Press **Enter** to access the selected sub menu.

Press **ESC** to exit.

## INFO CENTRAL UNIT

Installation date	01/04/2013
Hours central unit	999999 (h)
Hours motor 1:	999999 (h)
Hours motor 1:	999999 (h)
Absorption 1:	0.00 (A)
Absorption 2:	0.00 (A)

In detail:

**Hours central unit:** Measure in hours during which the central vacuum unit is under tension.

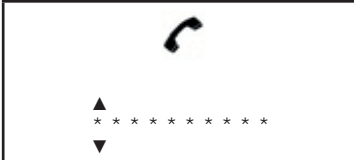
**Hours motor 1:** Information about how many hours motor 1 was vacuuming

**Hours motor 2:** Information about how many hours motor 2 was vacuuming

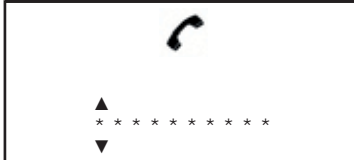
**Absorption 1:** Information about the current absorption of motor 1 in Amperes

**Absorption 2:** Information about the current absorption of motor 2 in Amperes

## INFO INSTALLER



## INFO SERVICE



In detail:

**Installer:** Telephone number of the installer of the central vacuum system.

**Service:** Telephone number of the authorized Service Center.

## LAST ALARMS

01/04/2013:	Filter
01/07/2013:	Dust
01/10/2013:	Service 1
01/10/2014:	Service 2
01/10/2014:	Motor
01/10/2014:	Autocleaner

## STATISTICS ALARMS

Motor	999
Dust	999
Filter	999
Service 1	999
Service 2	999
Autocleaner	999

2

Press the **Up** and **Down** arrows to scroll in the menu.

Press **ESC** to exit.

3

Press the **Up**, **Down**, **Right** and **Left** arrows to put the telephone number in.

Press **Esc** to confirm the change and exit the menu.

4

List of the last alarms detected by the electronic control system with the reference of day, month and year.

Press the **Up** and **Down** arrows to scroll in the menu.

Press **ESC** to exit.

5

List of the kind of alarms with an indication about the number of occurrences on the display.

Press the **Up** and **Down** arrows to scroll in the menu.

Press **ESC** to exit.

### STATISTICS SERVICE

01/04/2013: Display PLC board  
01/07/2013: Motor PLC board  
01/10/2013: Motor  
01/10/2014: Brushes  
01/10/2014: Filter

6

List of the service operations (extraordinary maintenance) performed by qualified personnel, with the kind or repair.  
Press the **Up** and **Down** arrows to scroll in the menu.  
Press **ESC** to exit.

## 11.4.5 Menu date and time

In this menu you can modify the date and time.

### DATE/TIME

▲  
01/01/2013 12:00  
▼

1

Set the date and time using the **Up**, **Down**, **Left** and **Right** arrows.  
Press **Esc** to confirm the modification and exit the menu.

## 11.5 Setup

In this menu you can modify all parameters programmed during the installation phase and the parameters relating to the alarm functions.

### SETUP

Turbo function ☐  
Autocleaner ☐  
Parameters  
Reset parameters  
Language  
Model

1

Press the **Up** and **Down** arrows to select the sub menus.  
Press **Enter** to access the selected menu.  
Press **Esc** to exit the menu.  
☒ **Selection is active**  
☐ **Selection is not active**

### 11.5.1 Setup turbo function

With this function you have the possibility to increase the suction power by activating the second engine with a single user.

### SETUP

Turbo function ☒  
Autocleaner ☐  
Parameters  
Reset parameters  
Language  
Model

1

Press **Enter** to activate/deactivate the function.  
Press **Esc** to confirm the choice and exit the menu.  
☒ **Selection is active**  
☐ **Selection is not active**

### 11.5.2 Setup autocleaner

With this function you can communicate to the central vacuum system that the automatic filter self-cleaning system Autocleaner is connected (see Appendix A).

SETUP	
Turbo function	<input type="checkbox"/>
Autocleaner	<input checked="" type="checkbox"/>
Parameters	
Reset parameters	
Language	
Model	

1 Press **Enter** to activate/deactivate the function.  
Press **Esc** to confirm the choice and exit the menu.

- ☒ Selection is active  
☐ Selection is not active

### 11.5.3 Setup parameters

In this menu you can modify the parameters relating to the functioning of the central vacuum unit set by the construction company.

**CAUTION:** These modifications may alter the correct functioning of the product. Therefore it is advisable to contact the construction company before modifying any parameter.

PARAMETERS	
Alarm filter 1	<085> mbar
Alarm filter 2	<130> mbar
Alarm filter 3	<065> mbar

PARAMETERS	
Timer Dust max	<032> (h)
Display stand by	<005> min

1 Press the **Up** and **Down** arrows to select the parameter.  
Press the **Left** and **Right** arrows to modify the parameter.  
Press **Esc** to confirm the modification and exit the menu.

In detail:

PARAMETER	REFERENCE
Alarm filter 1	Depression set point filter alarm: 1 engine / 1 user
Alarm filter 2	Depression set point filter alarm: 2 engines / 1 user (turbo function enabled))
Alarm filter 3	Depression set point filter alarm: 2 engines / 2 users
Timer dust max	Set point timer max alarm dust container (bin)
Standby display	Set point timer activation display standby

### 11.5.4 Set up reset parameters

In this menu you can reset all changes made on the parameters.

By activating this function all parameters will be brought back to the default values.

RESET PARAMETERS

Reset parameters ☒

1 Press **ENTER** to activate the function. This way it is possible to restore all changes made to the default settings. Press **Esc** to confirm and exit the menu.

- ☒ Selection is active
- ☐ Selection is not active

### 11.5.5 Set up language

In this menu you can modify the language chosen during the installation phase.

LANGUAGE SELECTION	
English	<input checked="" type="checkbox"/>
Italiano	<input type="checkbox"/>
Deutsche	<input type="checkbox"/>
Francais	<input type="checkbox"/>
Espanol	<input type="checkbox"/>

1

Press the **Up** and **Down** arrows to select the language

Press **Enter** to activate the language

Press **Esc** to confirm your choice and go back to the previous menu

☒ **Selection is active**

☐ **Selection is not active**

### 11.5.6 Set up unit model

In this menu you can modify the model of central vacuum unit selected during the installation phase.

MODEL	
Revolution 150	<input type="checkbox"/>
Revolution 250	<input type="checkbox"/>
Revolution 350	<input type="checkbox"/>
Revolution 450	<input type="checkbox"/>
Dual Power	<input checked="" type="checkbox"/>

1

Press the **Up** and **Down** arrows to select the language

Press **Enter** to activate the chosen language

Press **Esc** to confirm your choice and go back to the previous menu

☒ **Selection is active**

☐ **Selection is not active**

## 11.6 AUTOCLEANER SYSTEM MANAGEMENT

### 11.6.1 Activation Autocleaner

Through this procedure you communicated to the vacuum unit that automatic filter self-cleaning system Autocleaner is connected (see Appendix A).

01/04/2013	10:00
Suction:	OFF
Depression:	mbar 000
PressENTER	

**1** From the main screen, press **Enter**

SETTINGS
Menu
Setup

**2** Use the **Up** and **Down** keys to select Setup  
Press the **Enter** key to access the selected sub-menu

SETUP
Turbo function <input type="checkbox"/>
Autocleaner <input checked="" type="checkbox"/>
Parameters
Language
Model

**3** Press **Enter** to activate the Autocleaner .  
Press the **Esc** key to confirm the selection and return to the main screen

- ☒ **Selection is active**
- ☐ **Selection is not active**

### 11.6.2 Changing parameters Autocleaner

With this procedure it is possible to modify the default parameters of the filter self-cleaning system Autocleaner

01/04/2013	10:00
Suction:	OFF
Depression:	mbar 000
PressENTER	

**1** From the main screen, press **Enter**

SETTINGS
Menu Setup

MENU
Timer dust container
Autocleaner
Suction stop
Maintenance
Info
Date/time

AUTOCLEANER	
Cycles number	05
Start	00:00
Stop	23:59

AUTOCLEANER	
Cycles number	▲ 05 ▼

AUTOCLEANER	
Start	▲ 00:00 ▼

AUTOCLEANER	
Stop	▲ 23:59 ▼

2 Use the **Up** and **Down** to select Menu  
Press the **Enter** key to access the pre-selected sub-menu.

3 Use the **Up** and **Down** keys to select Autocleaner  
Press the **Enter** key to access the selected menu

4 Use the **Up** and **Down** keys to select the parameter to be changed  
Press **Enter** to access the selected menu.  
Use the **Up** and **Down** keys to change the parameter  
Press **ESC** to save the new setting and return to the main screen

5 Parameter to set the number of consecutive cycles of the Autocleaner system.

6 Parameter to set the start time of the time frame in which the automatic activation of the Autocleaner system is allowed.

7 Parameter to set the end time of the time frame in which the automatic activation of the Autocleaner system is allowed.

## 12 - MAINTENANCE



**BEFORE CARRYING OUT ANY MAINTENANCE OPERATION, IT IS MANDATORY TO UNPLUG THE POWER SUPPLY CABLE FROM THE POWER SUPPLY SOCKET. PROTECTIVE MASK AND GLOVES MUST ABSOLUTELY BE WORN**

### 12.1 Programmed routine maintenance

Maintenance should be carried out according to the effective running time of the system so to ensure efficient performance and avoid serious mechanical damages.

The TECNO Star Dual Power vacuum cleaners are controlled by a computer which also checks the routine maintenance cycles:

- Emptying the dust collection bin
- Manual/automatic cleaning of the filter (Autocleaner system)

On the dust-level gauge of the dust collection bin the user can choose to keep the maintenance parameters set by the manufacturer in the computer or change them to better suit to specific needs.

It is also possible to save telephone numbers to be dialled in case technical assistance is needed.

Furthermore, when the alarm signals the need for routine maintenance (dirty filter, full dust bag, and full dust bin) the operator can decide whether to switch off the system immediately and satisfy maintenance requirements or finish his job.

The unit can gauge:

- the level of filter efficiency (i.e. dirty filter alarm)
- the vacuum level in the system
- the need to carry out extraordinary maintenance (two levels)

### 12.2 Extraordinary Maintenance

The unit features a special display which signals the need for extraordinary maintenance, to be carried out with the help of qualified and/or authorized staff.

Two levels of extraordinary maintenance have been programmed:

#### **Level 1/Maintenance 1 Alarm:**

- check of filter wear and/or relevant replacement
- blockage of the air exhaust

**Level 2/Maintenance 2 Alarm:**

- check of the wear of the suction motor carbons
- replacement of the suction motor carbons
- everything indicated in level 1

Also in this case the operator can decide whether to switch off the system immediately and satisfy maintenance requirements or finish his job.

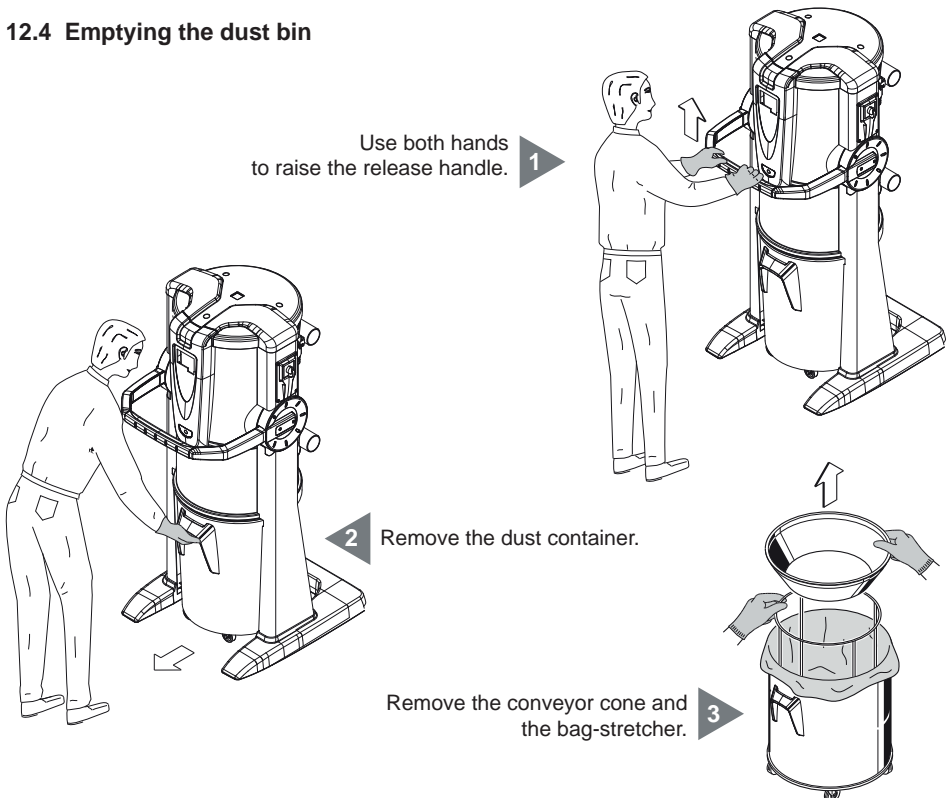
**12.3 Cleaning the vacuum cleaner body (cylinder)**

Periodically clean the outside casing of the appliance using a soft damp cloth with water and neutral soap.

**Important: only use water or neutral soap and water to clean the appliance. The use of other solvents or alcohol can entail damages.**

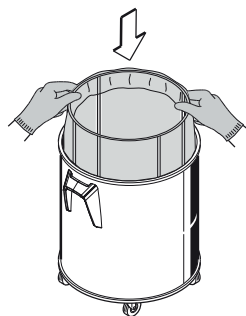
**Check the system surface is completely dry before switching it back on.**

Always use a suitable mask to protect against airborne dust and wear latex gloves to protect the skin of your hands.

**12.4 Emptying the dust bin**

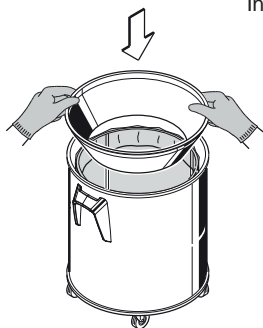


4 Tie up the dust bag and remove it from the container.



Introduce a new dust bag and the bag-stretcher.

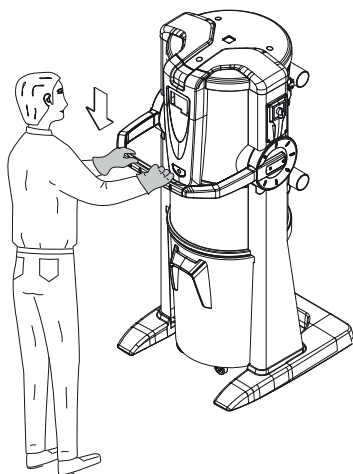
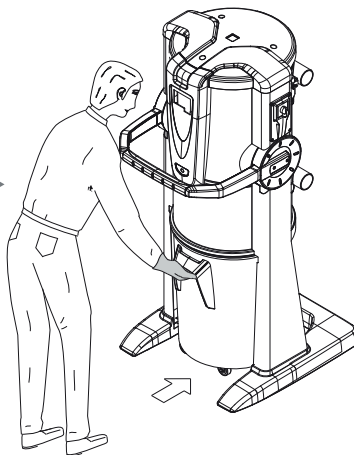
5



6 Assemble the conveyor cone.

Put the dust container back in its position.

7

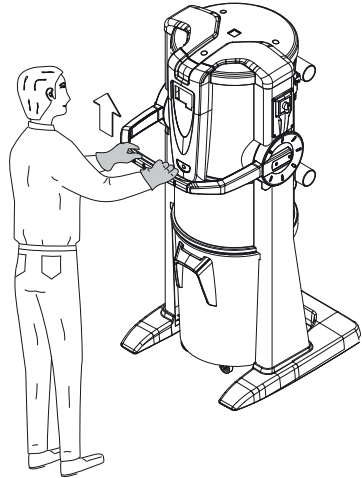


8 Use both hands to lower the clip handle.

## 12.5 Replacing the filter cartridge

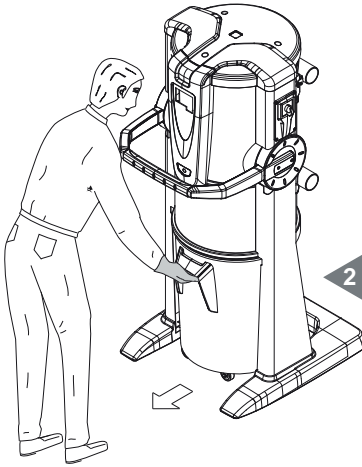
Lift the release handle using both hands.

1



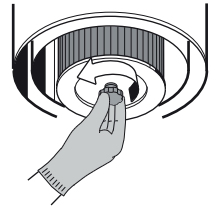
2

Remove the dust container.



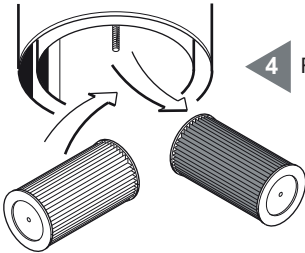
Unscrew the blocking knob.

3



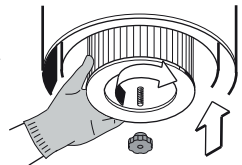
4

Replace the filter cartridge.



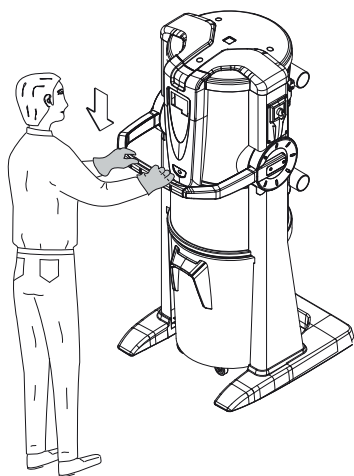
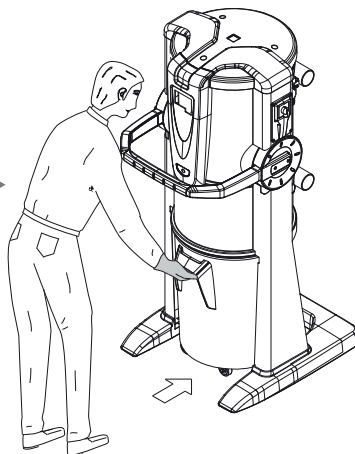
Screw the blocking knob.

5



Reassemble the dust container in its position.

6



7

Use both hands to lower the clip handle.

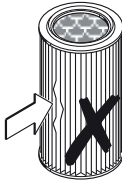
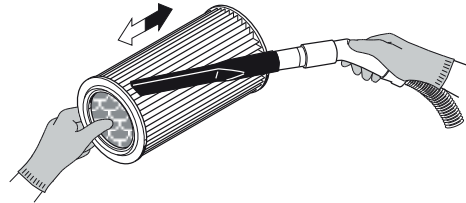
## 12.6 Regeneration of the filter cartridge



**ATTENTION**  
 YOU SHALL ALWAYS CHECK THE RIGHT POSITIONING AND TIGHTENING OF THE FILTER CARTRIDGE. A WRONG POSITIONING OR A LOOSE FILTER CARTRIDGE MAY CAUSE A SERIOUS DAMAGE OF THE PRODUCT.  
 DO NOT USE THE VACUUM CLEANER WITHOUT THE FILTER CARTRIDGE.  
 ENSURE YOU HAVE REPLACED A SPARE FILTER CARTRIDGE BEFORE CARRYING OUT THIS OPERATION.

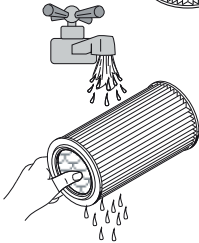
The filter cartridge can be regenerated several times by vacuum cleaning the dirt on the filtering surface; use the vacuum cleaner and the straight nozzle.

1



2

Check the filter surface is not cut. If this is the case, the cartridge should not be used again.



3

The filter cartridge can be washed under running water  
**ATTENTION: Ensure the filter cartridge has completely dried before reassembling it.**

## 12.7 Cleaning of the external body

Periodically clean the outside casing of the vacuum cleaner using a soft damp cloth with water and neutral soap and let it completely dry.

Important: only use water or neutral soap and water to clean the vacuum cleaner. The use of other solvents or alcohol can entail damages. Ensure the system surface is completely dry before switching it back on.

## 13 - REPAIRS AND SPARE PARTS

### 13.1 Intervention Criteria

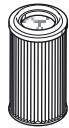

Any intervention on the vacuum cleaner for repairs and/or maintenance which are not expressly authorized in this manual is absolutely forbidden.

Any repair for breakage or malfunctioning must be carried out by qualified Technical Assistance personnel. Any intervention of non-authorized personnel will result in the invalidation of any guarantee of the product and the manufacturer will not be held responsible for any eventual damage to persons and/or objects due to such interventions.

### 13.2 Recommended spare parts

It is advisable to order in time those spare parts which need to be replaced most often.

In order to guarantee the optimal and long working life of the vacuum cleaner it is recommended to use only original SISTEM-AIR spare parts, as detailed below.

DESCRIPTION	SPARE PARTS CODE	VACUUM CLEANER MODEL	
Filter cartridge	1610.7	ALL MODELS	
Dust bag for dust collection in the bin	1614.2	ALL MODELS	

### 13.3 Putting the vacuum cleaner out of service (general rules)

Should you decide to put the suction system out of service, this should be done with the utmost attention to everyone's health and environment.

You can get information about spaces and/or persons duly authorised for the collection and disposal of this product.

The disposal and/or recycling of any part of the system must be carried out in strict compliance with the regulations in force.

## 14 - SOUND EMISSION

A sound level measurement has been gauged by measuring the acoustic pressure and the sound level of the vacuum cleaner.

The test report is held at TECNOPLUS S.r.l. headquarters.

## 15 - IDEAL LOCATION OF THE VACUUM CLEANER TO REDUCE SOUND EMISSION

The following suggestions and measures will help reducing the sound emissions of the vacuum cleaner:

- You can use sound-absorbing materials on the two side walls if these are very close to each other; this will interrupt the sound wave and avoid resonance phenomena between the two waves which could reflect on the two opposite walls
- You can possibly soundproof the ceiling.

## 16 - VIBRATIONS

There is no contact between the hand, arm or body of the operator and the machine when vacuum cleaning using the flexible hose.

For this reason there is no risk related to vibrations.

## 17 - TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
There is no suction from any of the suction sockets	Alarm signalled on the computer	RESET the alarm and carry out recommended maintenance
	The power cable is unplugged	Connect the power cable
	The micro line cable is not connected	Connect the microline cable to the suction inlets
	The thermal protection of the motor has intervened	Allow a few minutes for the motor to cool down
There is no air suction from just one suction socket	The electric contacts are interrupted or the micro switch of suction socket is out of order	Call the Technical Assistance Service
Filter alarm with clean filter cartridge	Depression of the central vacuum system equal to or less than the limits set in the Setup menu (see par.11.5.3)	Check possible losses in the system
		Reduce the time of opening of the vacpan inlet valve (if present)
		Call the Technical Service
The air suction is weak	More than one socket is being used at the same time	When a single motor is working use only one suction socket at a time
	The flexible hose or the accessories are broken	Check the flexible hose and the accessory are not damaged (replace them if needed)
	Filter cartridge is dirty	Clean the filter cartridge
	The gasket of the dust bin is damaged	Check if it is damaged
	The suction pipes of the pipe network are clogged	Call the Technical Service
	The air exhaust is clogged	Call the Technical Service
	Dust container is full	Empty the dust container
The vacuum cleaner still works even if the suction inlets are closed	Malfunctioning of the electronic board	Call the Technical Service

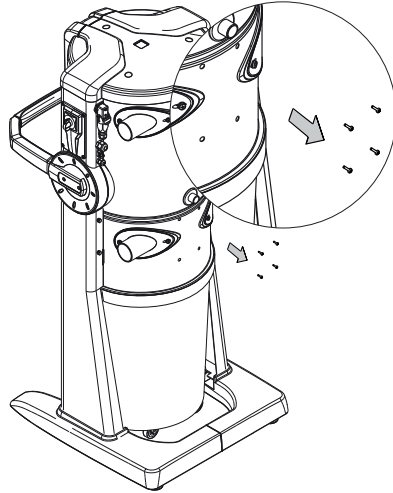


## APPENDIX A - CONNECTION TO THE AUTOCLEANER APPLIANCE (OPTIONAL) See Auto-cleaner Manual

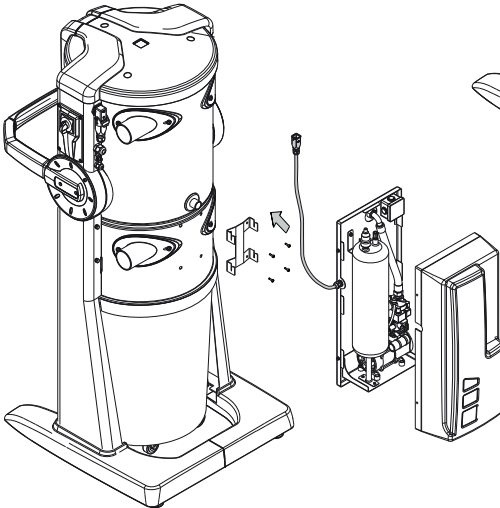
### A.1 Positioning of the Autocleaner

Disassemble the 4 screws on the rear side of the cylinder and use them to fix the anchoring bracket provided with the Autocleaner system. Loosen the Torsen screws to remove the cover made of thermoformed material.

1



English

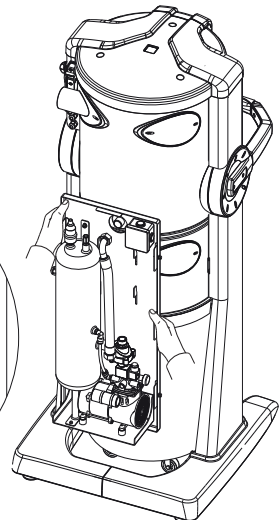
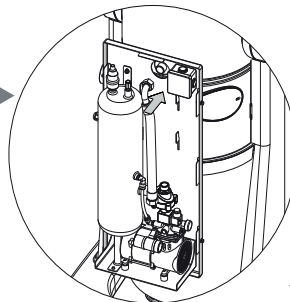


2

Fix the bracket to the appliance by means of the screws previously disassembled.

Hook the autocleaner frame to the anchoring bracket and slide the centering strips in the slotted holes on the frame.

3

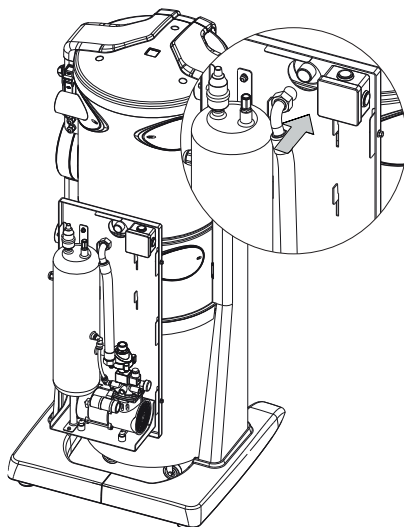


## A.2 Pneumatic connection

Approach the pipe connection of the vacuum system to the inlet on the rear side of the appliance.

**N.B.:** check that the sealing gasket provided is correctly positioned between the suction socket and the suction plug.

1

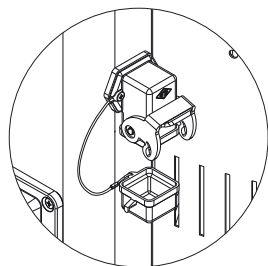


2

Screw the suction socket on the suction plug; check it has been firmly tightened.

Close the cover made of thermoformed material.

## A.3 Electric connection

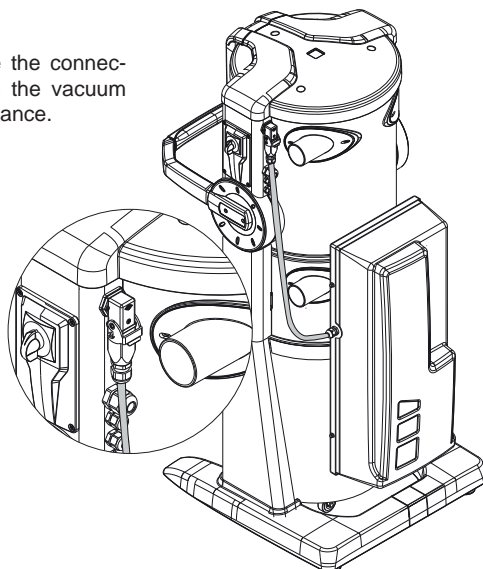


1

Disassemble the connector cover on the vacuum cleaner appliance.

Connect the multipolar connector of the Autocleaner system to the corresponding socket positioned on the appliance and lock the safety retainer to connect them.

2





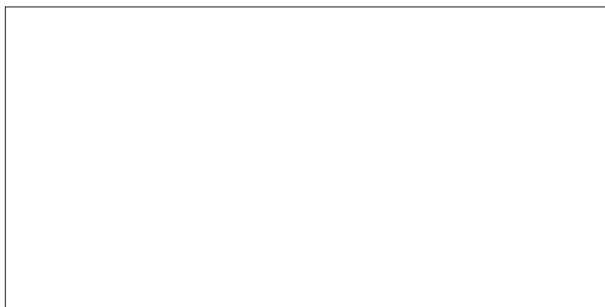


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