



ETC Group Srl

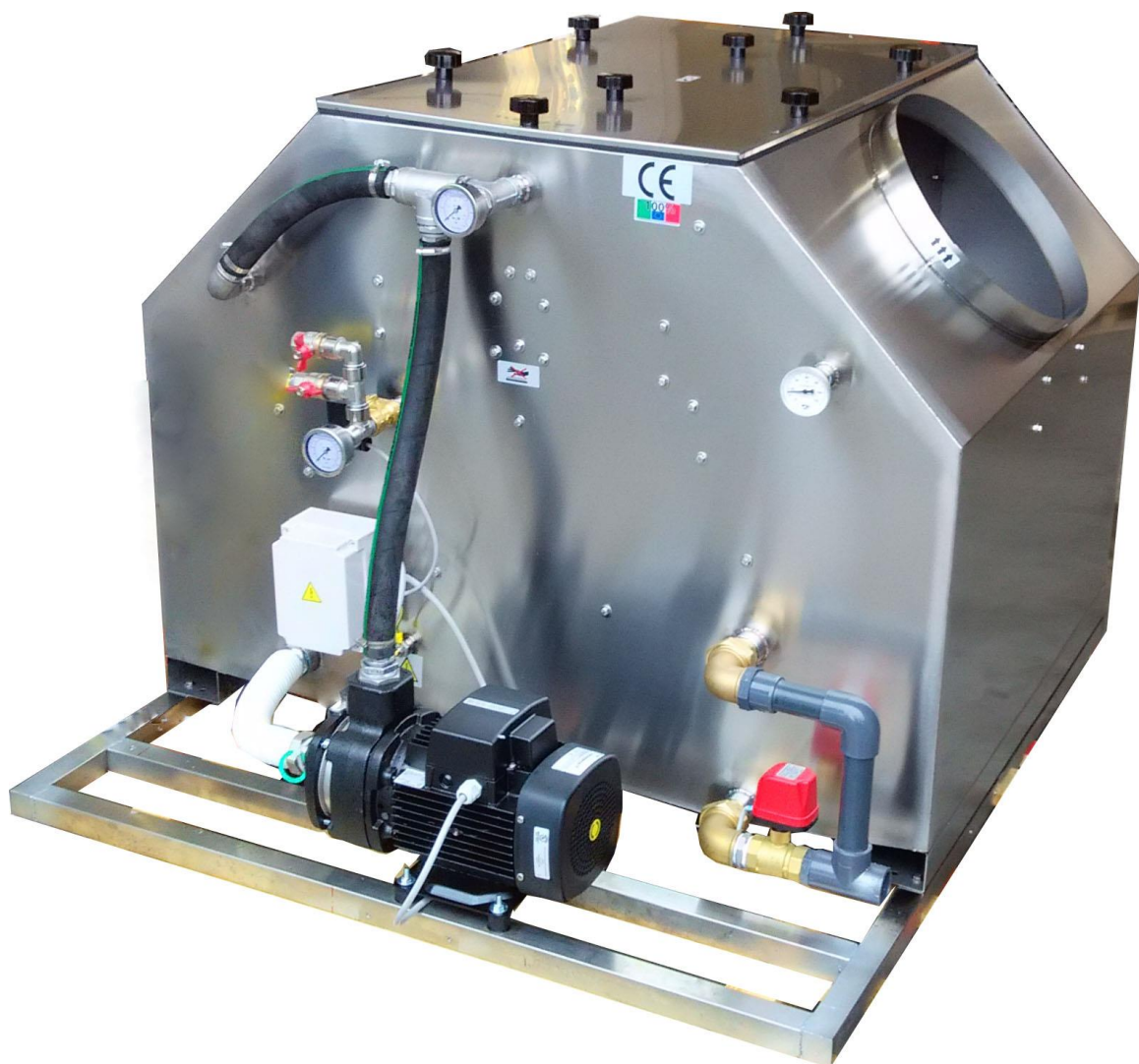


Via Case Nuove 135/A10 San Giovanni in Marignano (RN)

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USE AND MAINTENANCE BOOK



Summary

1. Technical data
2. Intended use of the machine
3. Principle of Operation
4. Description of the machine
5. Installation
6. aspirator
7. Maintenance
8. Warnings

1. Specifications

Overall height (LXPXH) 1250x1350x950h

Weight approx. Empty 100 kg, 250 kg full

Material stainless steel 316

Pump capacity 200 l / m 2 bar

Power 1.1 Kw

Absorption 4.6A 230V

Flue flow up to 4000 m³ / h (with fan)

Temp. Output 50 degrees around

2. Intended use of the machine

The machine is designed to remove carbon particles (soot) and various impurities typically from combustion fumes, and is used where it is necessary to be purified from non-toxic waste exhaust smoke before placing them in the environment ; is the main application in the treatment of the fumes of large charcoal grills, ovens and other combustors with carbonaceous residues and particulates, or combinations of more combustors. It can also be used for mixed fumes from wood stoves and range hoods. The described model has a dual washing system. The wash water can be disposed of in the sewer system. It comes out from the machine air saturated with steam, at a temperature of about 50 degrees, of the carbonaceous particulate-free and suspended impurities. Odors are killed by 60-70%.

CAUTION.

The machine is not designed to treat impurities or toxic fumes, corrosive or harmful to the environment.

The operating fluid must be water; It is not provided for the use of different substances and / or additives such as salt, antifreeze, alcohol, etc.

Installation requires a flue 316 stainless steel watertight, free of concealing elements (Chinese hats, etc.).

The chiller must be installed on a flat surface, not slippery and able to bear the weight of the operational machine and the operators / maintainers workers. If the appliance is placed on a mezzanine, this must be fixed to the wall and / or ceiling with chains, and the machine must be fixed to the loft itself;

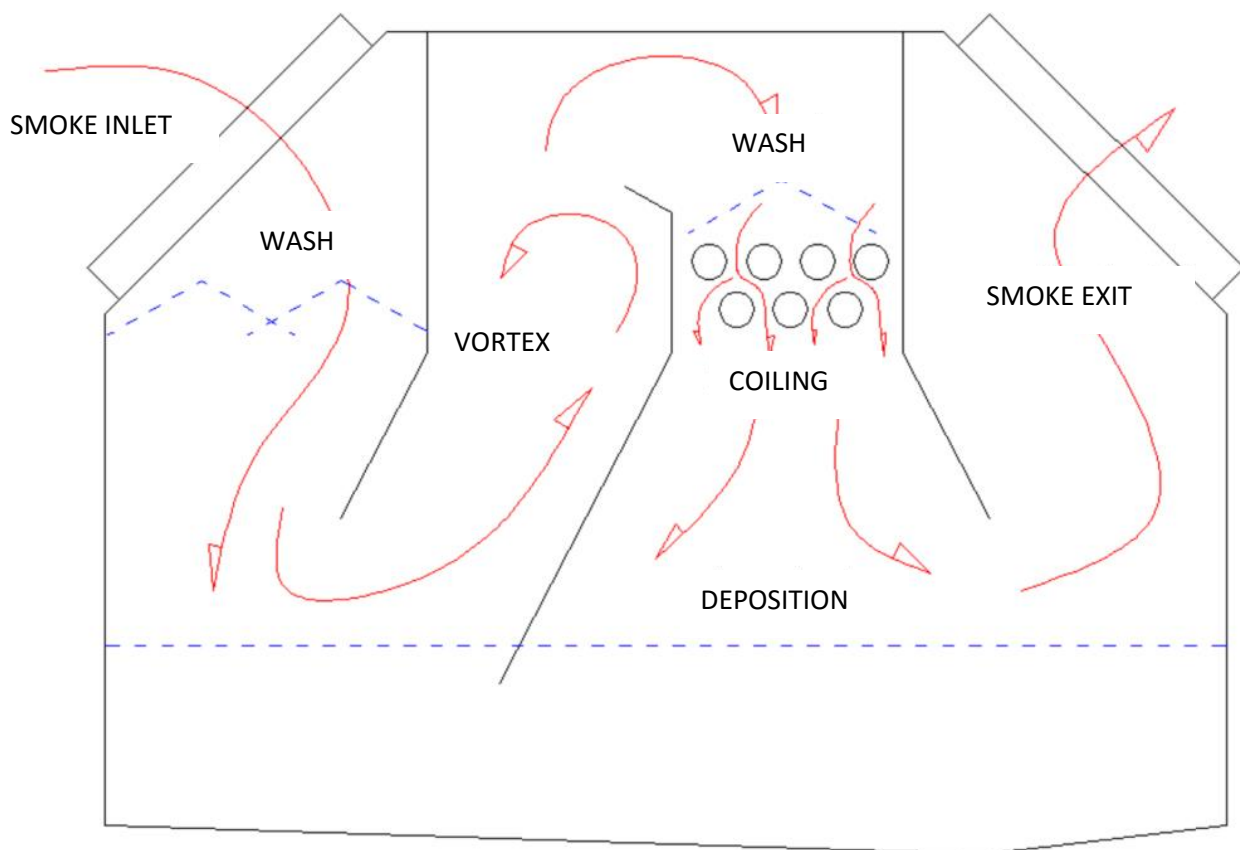
The machine can be adapted, after consulting with the technicians of the manufacturer, to flues of different diameter from that of input-output of the machine itself.

It 'should not be used in the chimney curved portions greater in number than what is strictly necessary, and never with stretches down after the machine.

3. Principle of Operation

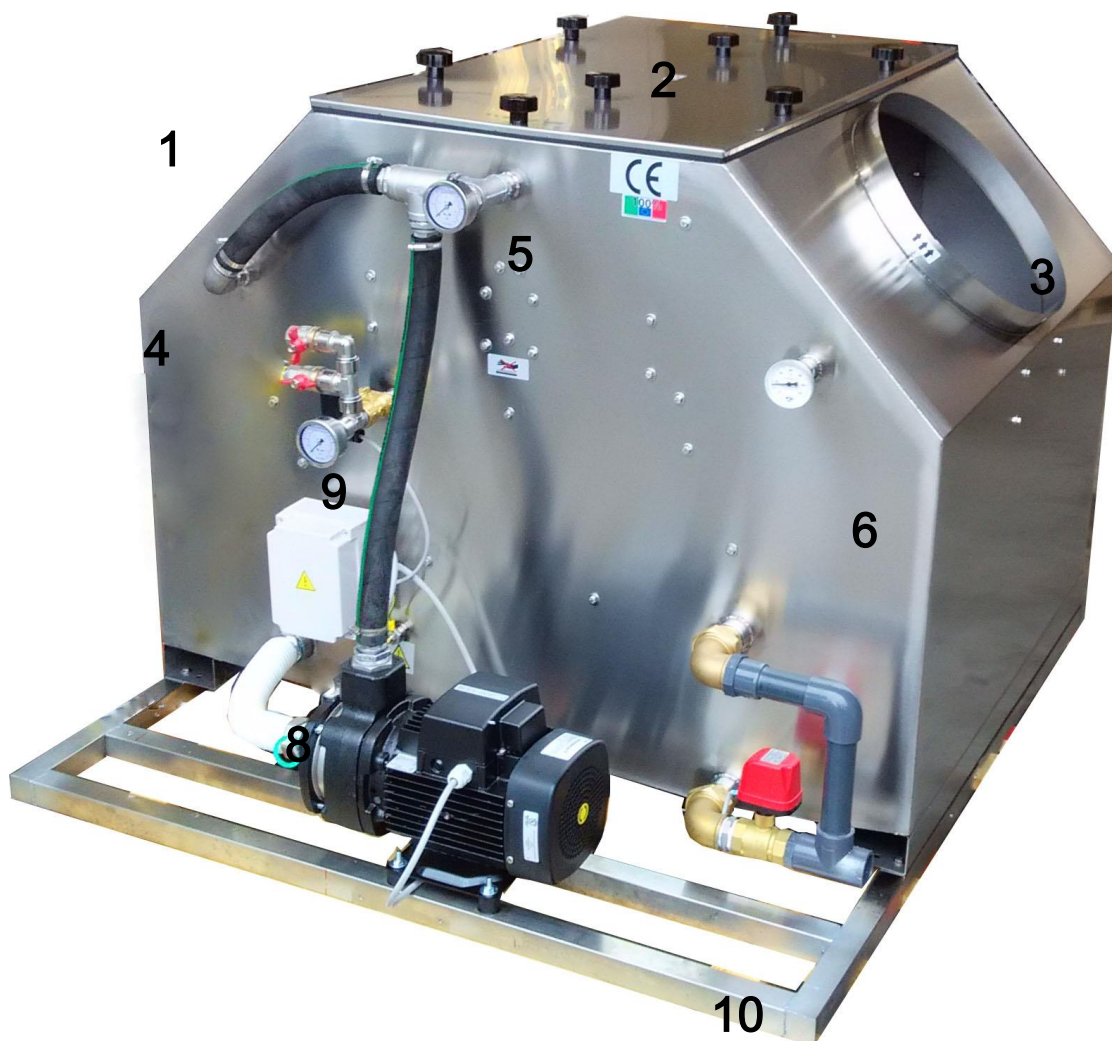
The smoke is passed through pipelines, from the car ignition source. The flue gas speed slows down owing to enlargement of the section, and the nebulized water present within the system incorporates the impurities and lowers down. The internal structure of the chiller is constructed in such a way as to allow an effective abatement of the heavier particles in the first half of the machine, while in the second part the obligatory path through a series of wet tubes allows the capture of the more volatile particles.

INTERNAL FLOWS

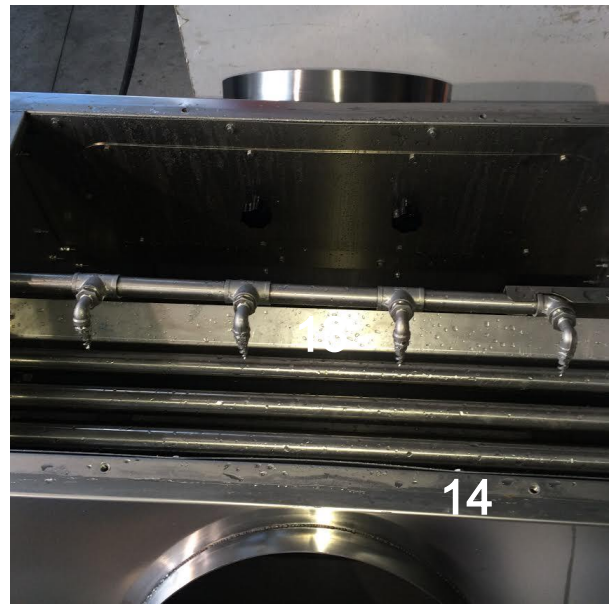


4. Machine description

5. The plant has three main parts:
6. .the casing of stainless steel, closed by welding, which are internally fixed in the inlet tube, the internal bulkheads and the flanges;
7. .The Electric pump, the water dispensers, fitted with nozzles, and the hydraulic tuberie that connect the same to the pump, the float system and solenoid valve that regulates the intake of water from the mains. There are also:
8. .a drain pipe with a valve, which also includes the overflow; at the discretion of the customer, the valve can be manually or remotely operated;
9. .a pressure gauge for the water-input and one to control the pressure generated by the pump;
10. .a brass bar as a function of the sacrificial anode, connected to earth ground.



- 1: inlet plate
- 2: Inspection hatch
- 3: smoke outlet
- 4: Water inlet to the first nozzles
- 5: Water inlet to the central nozzles
- 6: Termomentro
- 7: Pump
- 8: Float Electrical box
- 9: water feed solenoid valve
- 10: Drain with overflow and solenoid valve



11: first row of nozzles

12: baffles

13: second row of nozzles

14: arrays of tubes

15: Float tube wash

16: Float

17: Pump water intake



Float circuit diagram



White: neutral load solenoid valve (5).

Blue, blue: neutral pump and power

Brown at the center: stage pump

Brown on the sides: Phase power and load solenoid.

The float determines the ignition of the pump once reached a minimum water level, and blocks the flow of mains water once the level reaches the maximum set. You can intervene on the setting of the float with the two screws on the side.

It 'installed a floating car wash system (15) that, by firing the reloading of water on the float, it keeps the seat clean from soot, always allowing the movement.

CAUTION

In models equipped with electric valve, keep in mind the form attached to the instructions for the electrical connection of the control pad.

The calibration of the float is such as to optimize the operation of the machine, while guaranteeing sufficient water reserve. Do not intervene on the setting without consulting the manufacturer.

Diagram of the exhaust framework and remote control

It shows the wiring diagram of this circuit in the control box, for models equipped with remote-controlled drain valve. The framework requires a main switch upstream.

FUNCTION

Position I: closed discharge valve, the machine in operation.

Fume scrubbers, green light.

Position II: solenoid open drain, the machine switched off. Water discharge, red light.

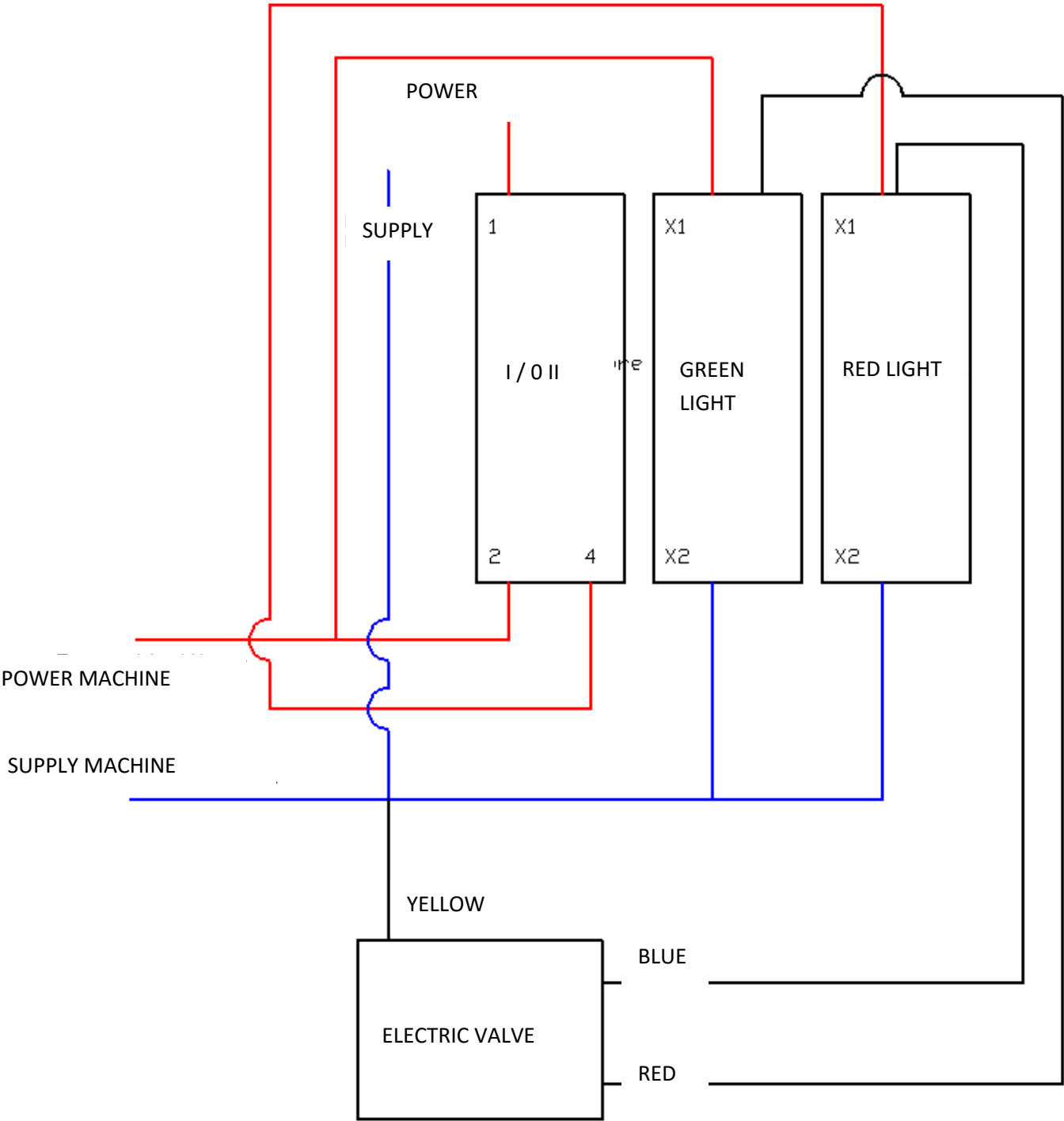
Position 0: No function, interrupted power supply.

During the transitional opening and closing the solenoid valve, both lights are on.

CAUTION

To install and connect the facility, it must be used by qualified personnel. There is the danger of electrocution. Observe the color scheme to the connections to the machine. The dotted lines indicate that the power of the picture goes to the machine. If in doubt in the link, contact the manufacturer.

Wiring diagram of the remote control panel



5. Installation

The machine must be installed in a location covered and protected from atmospheric agents: in the case of outdoor installation, is provided by the manufacturer of a metallic cover box.

The environment in which the machine operates must remain between 5 and 50 degrees of temperature. They must be guaranteed under such conditions as to prevent water to freeze or exceed 80 degrees.

The installation location should not take place in areas with presence of dusty atmosphere, potentially harmful, toxic or explosive.

The installation of the machine requires:

.a flat surface and not slippery, in degrees to bear the full weight of the machine and operator; if the mail car on a loft, this must be fixed to the wall and the machine must be fixed to a loft; each accommodation must be accessible by the operators.

.a electric network connection 230 V;

.an attack on mains water;

.one drains.

.l'allaccio incoming pipes (from the oven) and out (the chimney).

PLUMBING

Connect with free attack rigid pipe in point 10 (input unit with solenoid valve) to the water supply.

ATTENTION:

We recommend using pipe and fittings such as those represented in the images, and to do the job by a competent plumber.



SEWER CONNECTION

Connect permanently and so the pond the facility to the existing drainage system, using pipe diameters between 40 and 68mm. The connection to the sewer must be made through a siphon, to avoid the release of fumes from the exhaust of the overflow.

ATTENTION

If particular local regulations require it, you may need to build a settling tank. Normally, you can download directly into the sewer, but you should inquire ASL of competence.

Use PVC pipes as show.



ELECTRICITY:

Connect the machine to the power supply 230 V, and ground according to the CE regulations.

In the case of the machine with the exhaust solenoid valve, follow the following circuit diagram for the installation, taking into account the colors of the wires of the solenoid.

If the machine is fitted with a vacuum cleaner, it must be provided a three-phase socket. Through the inverter supplied with the vacuum cleaner will ensure the control of the motor speed.

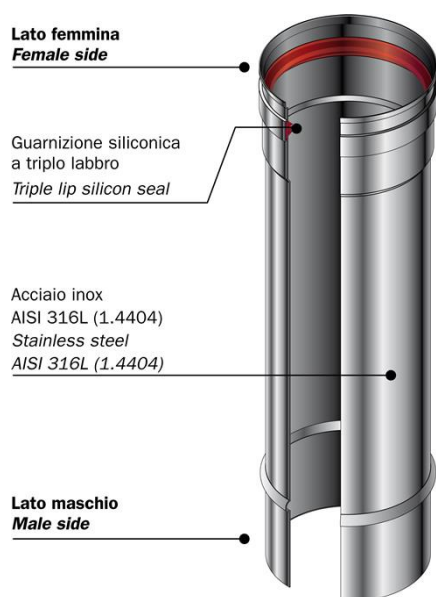
The inverter is supplied with the directions of the connections to be made to the engine, for a correct rotation. Follow the indications expressed by the color of the wires.

WARNING:

There are residual risks involved in working with electricity near water streams and sources of heat. To avoid the possibility of leaks, use extreme care in the perfection of connections, not to leave discovered copper and do not run cables near heat sources. E 'should be installed to all units (inverter and automated valve) in non-affected locations from heat, dirt and water. Use the aim behind closed electrical boxes. And 'necessary that the electrical connections of the motor, inverter and solenoid valve are carried out by a competent electrician.

CONNECTION TO THE CHIMNEY

The connection must be made using steel pipes and watertight; is not allowed the use of the machine on non-tight rods or masonry, as the air humidity output would corrupt the masonry itself. Below are shown the tubes suitable for the purpose.



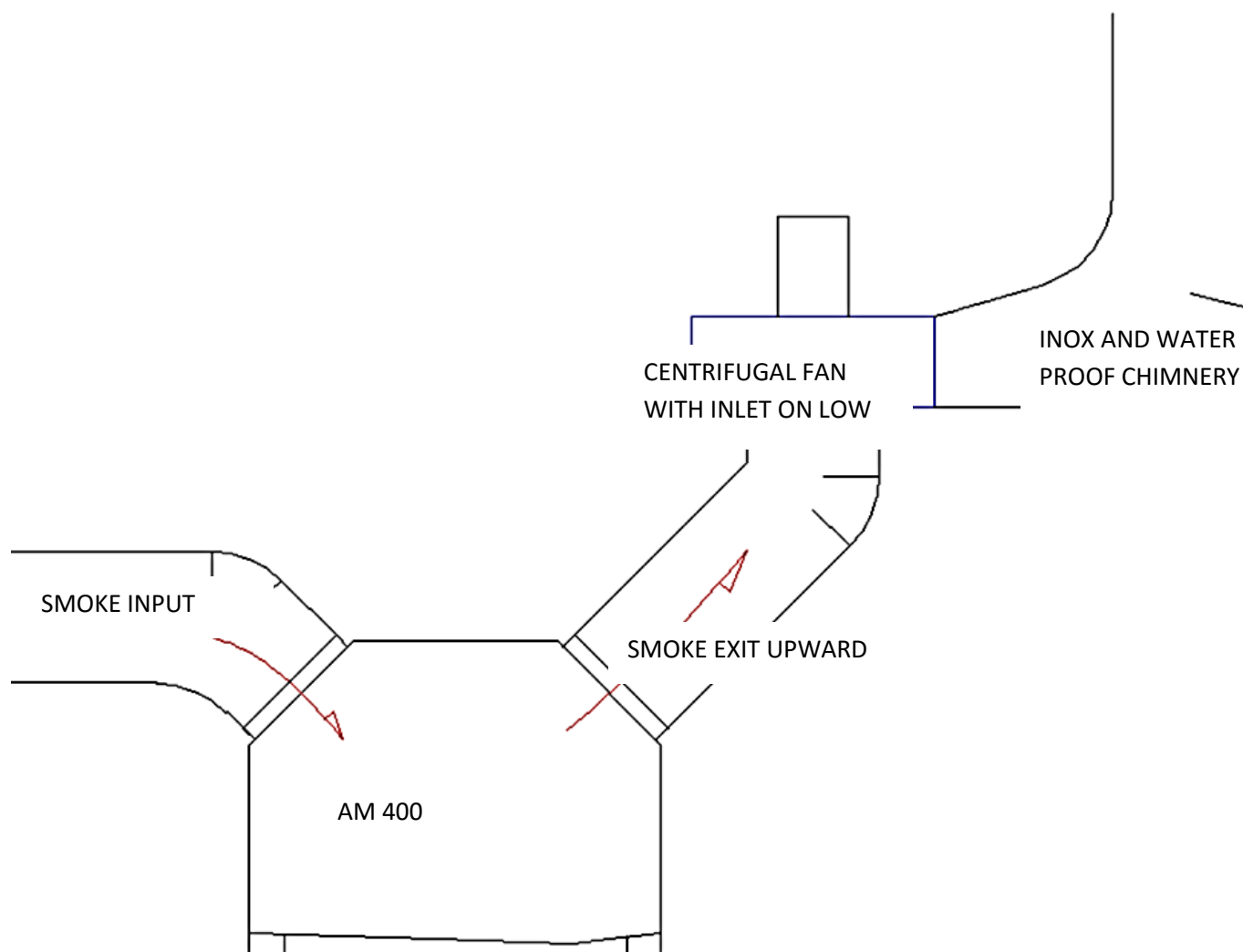
Located downstream of the machine the pipes are installed with the female from the higher side, so as to prevent condensate deposits in the joints.

It should be scrupulously avoided any downslope or curve that can trap moisture, and must be kept a minimum of 5 degrees upward angle.

At the top of the chimney must not put Chinese hats, wind or storm hats, not to create obstacles to the dispersion of the condensate. They are only allowed conical terminals like the one in the picture.



INSTALLATION SAMPLE



It shows the recommended setup, with the scrubber connected to the chimney, which is present on the route of the vacuum cleaner. The power of suction inevitably sucks water, for which it is appropriate to:

- 1) Tinning the tubes downstream of the machine with silicon, and tin in the same way the fan itself;
- 2) Place the fan as high (> 1m) compared all'abbattitore, for limiting the backwash water;
- 3) Install the fan with inlet down, so that sucked the water falls in the blast;
- 4) Proceed always uphill with the chimney, to avoid the formation of water or condensate deposits.

In an external arrangement, the machine should be positioned under a protective box.

NOTE

The fan can also be installed away from the filter, for example with the in the combustor level filter and the fan on the top of the chimney. The important thing is that the fan, centrifugal type, with both the bottom inlet, so as not to become a 'trap' for the water possibly sucked.

CAUTION

In a possible external setup, make sure that inside the box Protective temperatures drop below 5 degrees and is not greater than 80. In the case, contact the manufacturer to discuss the possibility of changes to the body.

6. fan

The machine DOES NOT HAVE ITS OWN INTAKE, and to process volumes above 1000 mc / h has necessarily need a vacuum cleaner. The manufacturer provides the chiller if requested / needed the vacuum cleaner, for which please refer to the instruction book of its own. By way of warning if you proceed in an autonomous way, please note that:

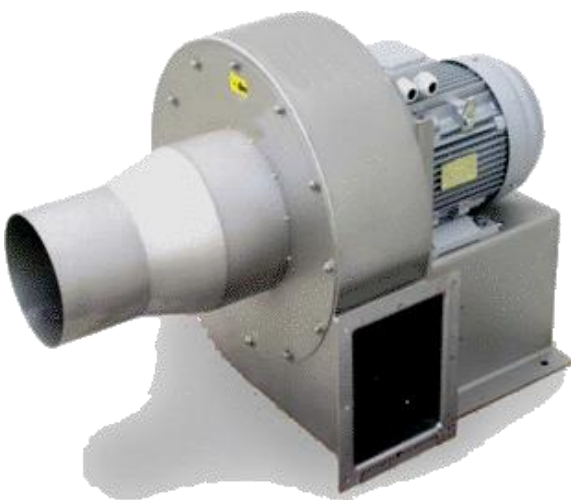
.The producer uses centrifugal air similar to that in the figure, stainless steel, with external motor and completely silicone in the housing and flange, placing the same downstream of the machine, where they treat purified fumes.

. The producer not use in this case aspirators with engine exposed to the flow of incoming flue gas, or purified air, full of moisture, o the output of machine.

.The extractor fan is mounted above the air outlet purified. In this configuration, the condensate is collected inside the chiller, and is not strictly need a condensate drain. In the event of a vacuum cleaner in a different position, consult the manufacturer of the chiller before proceeding.

.The fan Has its outlet, 230 or 380 V, and the respective inverter for adjustment, independent from that of the machine.

.the Choice vacuum dramatically influence the qualities of the machine, so it is recommended, even if the independent choice of the vacuum from the customer, prior to consult the manufacturer.



7. Maintenance

OPERATION PRE-maintenance

. disconnect the blast from the power supply, ensuring that it is impossible for third parties to restore the connection without the knowledge of those who are servicing. . completely extinguish the fire and ensure that there are no residues in it that they continue to burn.

ORDINARY MAINTENANCE

- . reciprocate every 1-2 days the water machine;
- . Clean every 15 days inside the debris deposited by means of clean water jet, and verify that no foreign bodies;
- . check every 15 days cleaning of the chimney from the combustion source to the machine;
- . weekly check for the absence of dust residues in the motor of the pump, and that the same has possibility to cool down;
- . verify the integrity of the exposed rubber tubes and the absence of leakages from plumbing fittings.
- . check to see the state of the electric power cable, grounding and, monthly, of the electrical connections in the float box.
- . check to view the integrity of the tubes and the absence of losses from the flue.
- . through the removable lid, monthly check the status of the zinc bar that acts as a sacrificial anode, the state of the float and the fact that it is free to move.
- . In case of external installation, check that the temperature never drops below freezing and does not exceed 50 degrees; Moreover, in case of rain, the blast does not receive water.

About the fan:

- . visually check the state of the spiral, the absence of leaks and sealing the joints;
- . visually check the state of the electrical connections and the power cables.

CAUTION

If even just one of the parties does not show intact, worn or inefficient, contact the manufacturer for spare parts and technical assistance.

Internal cleaning of the machine is permitted only with water. Do not use or introduce various additives (detergent, soap, acid, ammonia, etc.)

NOTE TO USER:

THE MANUFACTURING COMPANY DISCLAIMS ANY RESPONSIBILITY 'RESULTING FROM AN INCORRECT, WANTED OR ROUGH MACHINE INSTALLATION OR USE FOR WATER CONNECTIONS / ELECTRICAL MATERIAL NOT SUITABLE OR LABOR NOT QUALIFIED. ALSO DECLINES 'ALL RESPONSIBILITY' IN THE FACE OF DAMAGES ARISING FROM FAILURE OR MALFUNCTION OR NEGLIGENT manutenzione OR CLEANING, OR ARBITRARY CHANGE MACHINE, COUPLING THE SAME TO PLANTS NOT SUITABLE OR DAMAGED, OR USE OF THE SAME OUTSIDE THE PARAMETERS EXPRESSED IN THIS INSTRUCTION MANUAL. ANY WORK REQUIRED AND SHOULD NOT IMPLY THE PAYMENT OF EXPENSES OF POSTING, LABOR AND MATERIALS USED FOR RESTORING THE MACHINE IN PROPER OPERATION suop. It is therefore recommended, in the face of doubt, contact the manufacturer without hesitation.

8. Warnings

The pump has to work under the head, not to get into cavitation, so must remain below the level of water contained in the machine. It is therefore appropriate that

.the machine is level;

.the Float is free to move.

For related reasons as set out above, DO NOT tamper with the float.

The machine is guaranteed for the intended use indicated by the manufacturer, and for installation compatible with its characteristics. If the need arises to change anything in the installation or in the volume of gases to be treated, consult the manufacturer before acting. The hydraulic systems, electrical and electro is designed specifically for the intended use of the machine; any change would affect the performance, reliability and security that are guaranteed to delivery. In this case, the manufacturer declines any responsibility for damage or malfunction. The work to make the work must be performed by qualified and experienced personnel. Any doubts should be clarified with direct interview with the technicians of the manufacturer. The car reaches temperatures of 50-60 degrees once it is operational. Be careful not to burn yourself.

Appendice: elenco dei simboli di pericolo presenti sulla macchina



PERICOLO DI FOLGORAZIONE

Present on the electrical box, it indicates application of the mains voltage. Ensure the parts are dry and clean; not intervene without first having disconnected so the current stable; Periodically treat the status of contacts; in case of malfunction, to intervene specialized personnel. The indication is valid for every part of the subject to tension machine (pump, vacuum cleaner, inverter, remote controls).



DISPERSIONE DI TERRA

Present in the vicinity sacrificial anode, it indicates the dispersion of the machine ground.

To install the ground by qualified personnel during the installation of the machinery; visually inspect the cable was: if oxidized or damaged, have them replaced.



PERICOLO DI USTIONE

Present on the machine body, indicates the possibility of sunburn due to temperature (50-60 degrees) of the operational machine.

Do not put the leased machine where you may accidentally come into contact with.

There is also present on the flanges of the machine, input and output directions of the fumes to be treated. These directions should be strictly respected for the good operation of the machine.

Declaration of conformity with CE marking purposes

The machine built by

ETC Group Ltd.

Via Case new 135 / A10 San Giovanni in Marignano (RN)

e-mail: etc47842@gmail.com

generic function blast filter soot and fumes with plywood spray attachment.

Type Model am 400, serial number (see machine nameplate)

It complies with the directives

Machinery Directive 2006/42, as amended

2004/108 Electromagnetic Compatibility Directive

The machine has been subjected to type examination at IMQ Via Quintilian 43 20138 Milano

Which it has issued an EC type certificate no.

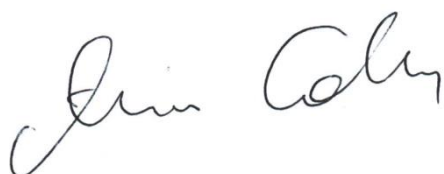
IMQ 242

ETC Group Ltd.

Via Case new 135 / A10 San Giovanni in Marignano (RN)

It is authorized to compile the technical file, who must be established in the Community

The legal representative Mr.

A handwritten signature in black ink, appearing to read 'Jim Colby', is written over the text 'The legal representative Mr.'.

CERTIFICATO DI ESAME DI TIPO

TYPE EXAMINATION CERTIFICATE

No. IMQ 242

VISTO L'ESITO DELLE VERIFICHE CONDOTTE IN CONFORMITÀ AI REQUISITI ESSENZIALI,
DELLA DIRETTIVA 2006/42/CE,

SILICIAMO CHE I SEGUENTI PRODOTTI (MODELLO/TIPO):

*On the basis of our assessment carried out according to Essential Requirements of the Directive
2006/42/EC, we hereby certify that the following products (modeling):*

**Abbattitore di fuliggine e fumi con sistema
di nebulizzazione in multistrato**

Marca: Ecology and Technology Companies

**Modd.: Clinear MINI 35 ; Clinear 400 ; Clinear 500 ; Clinear 600 ;
Clinear Blackout 200 ; Clinear Blackout 250**

Costruttore da:
Manufacturer by:

**ECOLOGY AND TECHNOLOGY COMPANIES S.r.l.
VIA BELLUNO 25
47838 RICCIONE RN**

SODDISFANO LE DISPOSIZIONI DELLA DIRETTIVA SU MENZURA.
Meet the requirements of the metrological Directive

2012/05/13

IMQ

P. Fumari

IMQ
Via Quintano 8 - 20146 Milano

Data scadenza rinnovo
Certificato: 2017/05/13

Il presente CERTIFICATO ANNULLA E SOSTITUISCE IL PRECEDENTE DEL
This Certificate cancels and replaces the previous one of

II

A questo certificato è allegato alla richiesta di omologazione del IMQ nella procedura per il rilascio di Dichiarazione di Conformità al Regolamento (UE) 2016/42/CE.
This Certificate is attached to the application for homologation of IMQ in the procedure for the issuing of Declaration of Conformity to Regulation (EU) 2016/42/CE.

WARRANTY

The guarantee the chiller AM 400 is one year, as state law for machinery and equipment sold to entities with VAT;

The year starts from the date of DDT. Within one year from that date, the customer can make a warranty claim by calling the service center.

For the defective parts, the shipping cost and the installation will be charged to the customer. The members declared by the customer do not work will be invoiced if the same parts will not be sent to ETC GRUOP SRL within 15 days from the date the customer receives the pieces in place. Service is free only for manufacturing defects of the components that make up the blast.

The guarantee shall not cover cases in which the failure or bad operation of the chiller is caused by wear and tear, installation and / or mishandling, do not follow instructions, or accidents, mistreatment, blows, breakage, improper disassembly of machinery, accidents or failures produced from any cause not attributable to manufacturing, misuse of equipment, lack of or improper maintenance (maintenance should be performed every 30 days by qualified personnel). It is also specified that the periodicity of maintenance interventions is subject to the type of use and therefore is almost 'impossible to determine with accuracy the timing. The technical service of the service center of the ETC GRUOP SRL and 'sole competence to determine which pieces need to be replaced. Defective parts replaced during the warranty period will remain the property of ETC GRUOP SRL

In the event that a product deemed defective by the customer did not really such a fault or defect was caused by improper installation, location or wrong conjugation of the product, the service center will charge all repair costs, detection and transport to the customer. The customer must specify in detail by fax, the problems related to non-functioning machines. All components under warranty must be paid by the customer prior to shipment and only after the verification of the service center of the ETC GRUOP SRL of the existence of the manufacturing defects the customer will be refunded.

in faith

Artur Cokaj