








**Interpretation of the symbols placed on the unit**

<p>BEFORE USING THE STEAM GENERATOR, READ AND FOLLOW THIS INSTRUCTION MANUAL.                  IT IS RECOMMENDED TO KEEP THIS INSTRUCTION MANUAL TO CONSULT IT LATER OR TO GIVE IT TO THE FOLLOWING OWNERS.                  PLEASE READ THE SAFETY INSTRUCTIONS ON THIS HANDBOOK BEFORE PROCEEDING ON THE FIRST USE.                  EVENTUAL DAMAGES DUE TO THE CARRIAGE MUST BE COMMUNICATED AS SOON AS POSSIBLE TO YOUR OWN RETAILER.</p>	
	<p>ATTENTION!!                  STEAM.... BURNING DANGER</p>
	<p>ATTENTION !</p>
	<p>READ THE OPERATING MANUAL</p>
	<p>OPRATING MANUAL;                  ISTRUZIONI PER IL FUNZIONAMENTO</p>

**ENVIRONMENT PROTECTION**

	<p>ALL THE PACKINGS ARE RECYCLABLE, PACKINGS DO NOT HAVE TO BE THROWN IN THE DOMESTIC WASTE BUT THEY HAVE TO BE DELIVERED TO THE CENTERS SPECIALIZED FOR THE DISPOSING OF THE WASTE.</p>
	<p>ALL DEVICES NOT USED ANYMORE CONTAIN PRECIOUS RECYCLABLE MATERIALS THAT SHOULD BE DELIVERED TO THE CENTERS SUITABLE FOR THE DISPOSING OF THE WASTE. ELECTRIC AND ELECTRONIC EQUIPMENT, BATTERIES, OIL AND SIMILAR SUBSTANCES MUST BE RECYCLED IN THE PROPER RECYCLING CENTERS AND MUST NOT BE LEFT IN THE ENVIRONMENT.</p>
	<p>SUBSTANCES SUCH AS OIL FOR MOTORS, DIESEL OIL, PETROL MUST NOT BE LEFT IN THE ENVIRONMENT AND MUST BE RECYCLED IN THE PROPER RECYCLING CENTERS ACCORDING TO THE ENVIRONMENTAL REGULATIONS.</p>

## 1. SUMMARY

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## 2. SAFETY REGULATIONS

- The electric supply connection shall be made by a qualified electrician and comply with IEC 60364-1.
- It is recommended that the electric supply to this machine should include either a residual current device that will interrupt the supply if the leakage current to earth exceeds 30ma for 30ms or a device, which will prove the earth circuit.
- **SAFETY VALVE** This machine is equipped with two safety valves, able to ensure the safety of the machine itself in case other primary control devices are inefficient (due to a failure). Due to the extreme importance of these components and as not to compromise the safety of the machine, it is recommended to provide to check them and to substitute them through an authorized service center every 2 years starting from the purchasing date.
- **PRESSURE SWITCH** This machine is equipped with a pressure switch able to check and to maintain the pressure under certain preset limits (ref. "rated pressure" on the technical label underneath the machine). In case there would be a steam leakage on the lower side of the machine, it means that the functioning of this device has been compromised and the safety valve has been involved as to limit the boiler's internal pressure. **It is recommended not to use the machine, immediately unplug the machine from the power feeding and call the service center.**
- **MUD DRAIN FROM THE BOILER**. If you are not acquainted with the hardness level of the used water, it is recommended to proceed with the boiler cleaning (according to the procedure indicated in the proper section) after 24 hours of usage. On the contrary, if you know the hardness level and it is between 0 and 4 french degrees , the boiler cleaning can be carried out after 100 hours of usage.
- **ATTENTION.** Do not use the appliance within the range of persons unless they wear protective clothing.
- **ATTENTION.** The high pressure jets can be dangerous if not used properly. The jet does not have to be directed against persons, electrical devices under tension or the unit itself.
- Do not direct the jet against yourself or others in order to clean clothes or footwear.
- Disconnect power before effectuating maintenance on user's responsibility.

- This device is not intended to be used by persons (including children) with a reduced physical, mental or sensorial ability or with insufficient experience and/or competence, unless they are not supervised by a person responsible for their safety and they are not instructed by that person on how to use the device.
- Monitor the children so they cannot play with the machine.
- To ensure the machine's safety, use only original spare parts from the manufacturer or spare parts approved by the manufacturer.
- **ATTENTION.** Pressure hoses, fitting and couplings are important for the safety of the machine. Use only those recommended by the manufacturer.
- Do not use the machine if the power cord or other important parts of the machine are damaged, i.e. safety devices, pressure hoses and trigger gun.
- If an extension cord is used, the plug and socket must be of a watertight construction.
- **ATTENTION.** Inadequate extension cords can be dangerous.
- The user must not leave the iron (optional) unattended when it is connected to the power supply.
- The hand-arm vibration data, referred to this device, are not mentioned as they are below 2.5 m / s <sup>2</sup>.

## 3. TECHNICAL CHARACTERISTICS

- To verify the technical data of your model, consult the plate under the appliance.

## 4. PREFACE

Dear client,

we would congratulate you on your choice for this TECNOVAP model.

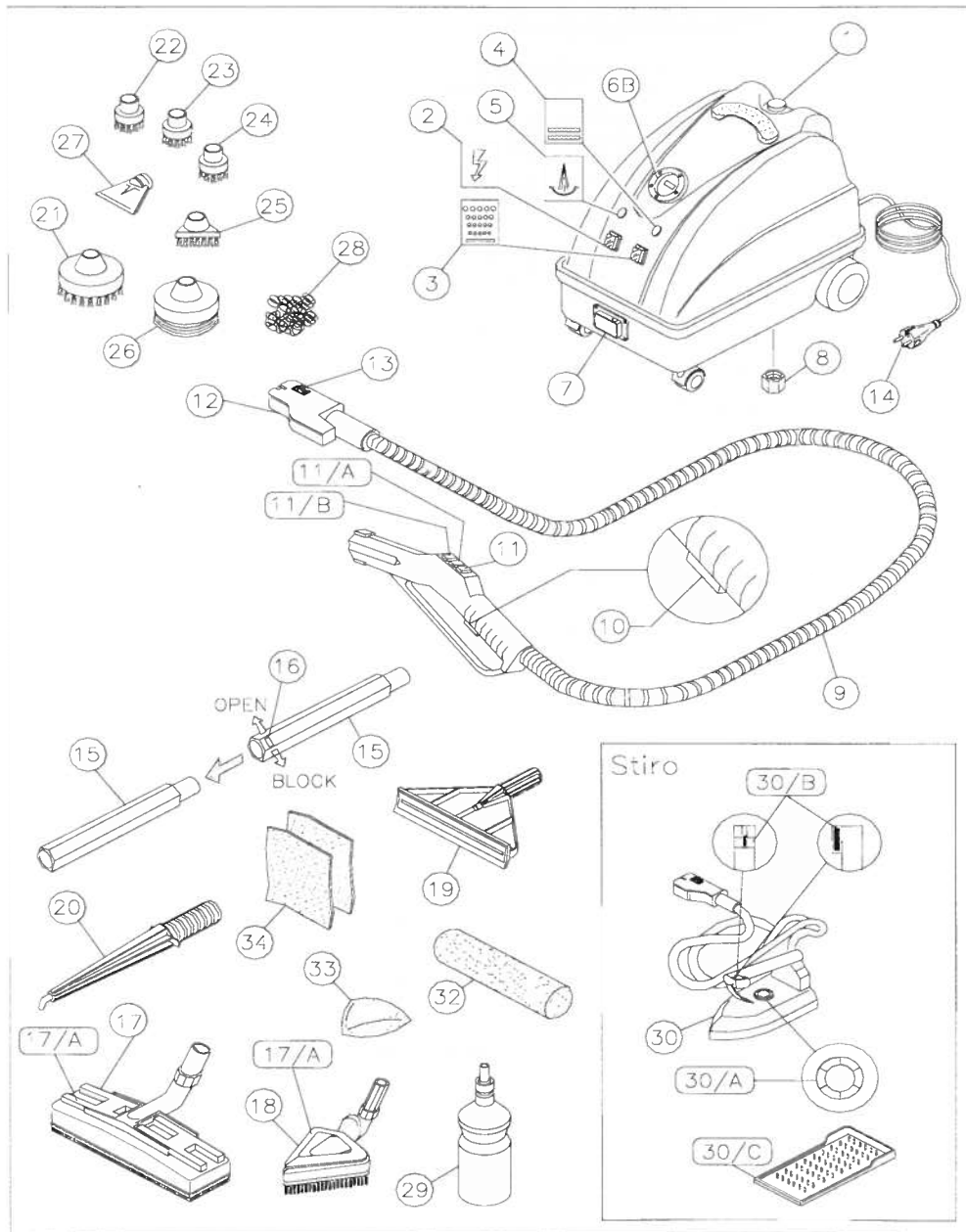
Please consider that the machine before leaving our factory has been tested and tweaked by qualified and specialized personnel.

In order to improve and to update its production, as well as to always offer new technological models, TECNOVAP has projected and realized GAL steam generator.

Both model have a reliable stainless steel boiler which allows to obtain a powerful and steady a stem flow due to the automatic refilling system.

Please consider that the cart shown on the cover is an **OPTIONAL** tool.

## 5. TECHNICAL DRAWING



## 6. NOMENCLATURE

- |   |  |
|---|--|
| 1) Cap for water tank                   | 18) Triangular brush                             |
| 2) Main power switch                    | 19) Window cleaner                               |
| 3) Boiler switch                        | 20) Steam lance                                  |
| 4) "Low Water" Indicator                | 21) Nylon brush $\varnothing$ 60                 |
| 5) "Ready Steam" Indicator              | 22) Small nylon brush $\varnothing$ 28           |
| 6B) Digital pressure gauge (hour meter) | 23) Small brass brush $\varnothing$ 28           |
| 7) Steam outlet + Electric contacts     | 24) Small stainless steel brush $\varnothing$ 28 |
| 8) Boiler drain cap                     | 25) Small triangular brush                       |
| 9) Steam hose                           | 26) Steam plunger                                |
| 10) Steam command switch                | 27) Steam scraper                                |
| 11) Hot water switch                    | 28) Steel wool pad                               |
| 11A) Minimum steam control switch       | 29) Filling bottle (optional)                    |
| 11B) Medium steam control switch        | 30) Iron (optional)                              |
| 12) Steam plug + electric contacts      | 30A) Thermostat                                  |
| 13) Plug clamping hook                  | 30B) Steam command switch                        |
| 14) Power cord with plug                | 30C) Rubber rest pad for iron                    |
| 15) Extension tubes                     | 32) Rectangular steam buffer (optional)          |
| 16) Clamping unit - block/open          | 33) Triangular steam buffer (optional)           |
| 17) Rectangular brush                   | 34) Microfiber cloths (optional)                 |
| 17A) Cloth holder                       |  |

## 7. USING INSTRUCTIONS

- Open the box and eventually block the unit on its cart (optional)
- Remove the tank cup and add water, **it is recommended to add only water, all others liquids can damage the generator permanently.**
- Insert the plug (14) into an electrical outlet, making sure that the voltage and the amperage correspond with those printed on the plate located under the machine.

## ATTENTION

ONCE THE TANK IS EMPTY, THE RED INDICATOR LIGHT "END OF WATER" (4) SWITCHES ON AND THE STEAM EXIT IS DISABLED UNTIL THE WATER IS REFILLED IN THE APPROPRIATE TANK (1), THIS PROCEDURE CAN BE MADE WITHOUT TURNING OFF THE UNIT.

## TOOLS USAGE

Insert the steam plug (12) into the tools connection socket (7) placed on the unit.

Press well as the block switch (13) has to guarantee the fixing of the tool. Activate the general switch (2) and the boiler switch (3) then wait for about 5 minutes until the green indicator light switches on. The green light indicates that the boiler has reached the correct working pressure.

The switches (10,11,11A and 11b) placed on the hose must be turned off.

Once the indicator (5) is turned on select the steam exit using the switches 11a and 11b (11a minimum steam, 11b = medium steam, 11a +11b = maximum steam) then press the security button (10) for the steam exit.

The button (11) allows the hot water exit besides the steam exit. The hot water button has to be used at short intervals of a few seconds to avoid the generator to be discharged quickly.

### Attention!!

**Using the switch (11) you will get hot water under pressure which, according to the model of the machine, can reach a temperature of 170°C; please pay attention that the switch has not to be pressed accidentally and that the jet has not to be directed toward people or animals.**

To use the combined cleaning, steam and hot water injection, choose the most suitable tools as follow:

Insert the brush into the hose or into the extensions tubes and fix them by moving the block buttons (16) on the "block" position. Remind that the switches on the hose (10-11-11a-11b) have to be turned off during the fixing process.

**Steam Lance (20)** : to be used singularly or together with the supplied brushes or with the steam plunger (26) and the steam scraper (27), according to the type of usage needed.

To use this tools, please follow the above instructions for the brush mounting.

The Kit July brushes can be covered by a tissue hold by its appropriate fixing tools ( 17A). The usage of the tissue is normally required to clean delicate surfaces (like i.e. parquet) or vertical surfaces ( like i.e. tiles)...In such cases the tissue can catch the dirt better.

## PRACTICAL TIPS

### STEAM LANCE

Direct the strong steam flow towards cracks, hidden areas, joints, kitchen tops, carpets, carpeted floors, armchairs, sofas, tapestries, car upholstery, car engines etc. You will be able to remove easily and completely grime, grease and dirt in general as well as to achieve a secure disinfecting and sanitation: after this operation it will be indispensable to pass over with a dry cloth.

### IN THE KITCHEN

We suggest the use of the steam lance (20) with a small brush (22-23-24). These brushes help remove the most obstinate dirt from baking surfaces, suction hoods, frying appliances etc.... It is possible to clean dishwashers by applying steam directly with the lance (20). In case the incrustation is consistent we suggest the use of the nylon brush (22).

### IN THE BATHROOM

For all areas difficult to reach, we suggest applying to the steam hose hand grip (9) the steam lance (20) and a small brush (22). This accessory allows cleaning radiator crevices and all difficult points. In case of washbasin clogging, attach the steam plunger (26) to the steam lance (20) and direct the steam into the drain.

### WARNING

**BY USING THE SMALL BRUSHES ON PORCELAIN EXERT THE LEAST POSSIBLE PRESSURE BECAUSE YOU MIGHT SCRATCH THE SURFACE.**

### WINDOW CLEANER (On glass or plastic surfaces)

We suggest using the window cleaner (19) by inserting it directly on the steam hose handgrip (9) and applying steam several times on the surface. Then use the squeegee blade provided on the window cleaner to remove the dirt and water using vertical movements bringing the dirty water to the base of the surface. Use a dry cloth to dry the base of the surface.

### TRIANGULAR BRUSH

Adapted for the cleaning of armchairs, sofas, and mattresses we suggest to use the triangular brush with a cloth fastened with the special clamp.

### RECTANGULAR BRUSH (For tiled floors)

To carry out specific grout cleaning we suggest that you use the steam lance (20) with a small brush (22 or 23 according to the need). This way it will be possible to dislodge the most difficult dirt and remove it from the grouts using the applied pressure. To remove the dirt from the floor use the rectangular brush (17) wrapped in a cloth, which will work as an "extractor" when fastened with the special clamps. We suggest applying steam also while picking up the dirty water. To get a good result, work with surface areas not larger than 5 m<sup>2</sup> at one time thus preventing dirt from drying and adhering on the floor again. We suggest that you use the brush (17) without the cloth when the dirt to be dislodged is considerable; and when the dirt is not considerable, it is enough to work with the brush (17) wrapped in a cloth.

When confronted with solid objects while cleaning the floor (i.e. chewing-gum) use the special scraper (27) which can be attached to the steam lance (20) and is able to remove stubborn objects without scratching the work surface.

To remove wax from the floor use a cloth fastened to the rectangular brush (17). The steam helps loosen the wax so that its removal will be easier. To spread the wax on the floor use as mentioned above with a clean cloth fastened on the brush. Put the wax on the cloth, the heat of the steam will help spread the wax evenly so that its penetration will be easier in also this case. When the wax is dry proceed with normal buffing methods. Only the power of steam is able to replace all types of chemical product.

**WARNING**

**THE GENERATOR PRODUCES STEAM WITH A TEMPERATURE OVER 100°C. BEFORE STARTING THE CLEANING TASK WE SUGGEST TO TRY ON A SMALL AREA TO AVOID DAMAGES.**

**ON MARBLE AND PARQUET FLOORS**

We suggest adding a cotton cloth (32) wrapped on the brush (17) to avoid scratching the surface. To continue the cleaning it is necessary to change the cloth according to the quantity of dirt to be collected on the floor.

**WARNING**

**THE STEAM SHOULD NOT BE IN DIRECT CONTACT WITH THE FLOOR FOR AN EXTENDED PERIOD OF TIME! SUCH SURFACES MAY BE DAMAGED IN CASE OF COMBINED USE OF EXCESSIVE HEAT, HUMIDITY AND BRISTLES. THEREFORE CARRY OUT THE TASK IN THE SHORTEST POSSIBLE TIME.**

**ON CARPETED FLOORS**

Before carrying out the cleaning task we suggest that you clean the carpeted area with a vacuum cleaner. Then use the rectangular (17) or triangular brush (18) with a cloth. Also in this case, do not forget that the cloth works as an "extractor". Therefore it should be replaced if the quantity of dirt is considerable.

**CAR INTERIORS**

To clean car interiors (upholstery, carpets and seats) follow the cleaning instructions as for the carpeted floors. To clean a dashboard it is enough to steam the surface and wipe off with a dry cloth.

**Steam Iron****Mod. Tulipano:**

To iron with steam the iron thermostat (30A) should be positioned on "Lana" (wool) or between the symbol "\*\*" (wool) and the symbol "\*\*\*" cotton. Wait few minutes so as to allow the iron to reach its ideal temperature. The steam flow from the iron is obtained by activating at short intervals the red switch located on the handgrip of the iron.

For dry ironing do not press the red button (30B). In this case position the thermostat according to the type of cloth being ironed.

**Mod. Dublo:**

To iron with steam the iron thermostat (30A) should be positioned on "Lana" (wool) or between the symbol "\*\*" (wool) and the symbol "\*\*\*" cotton. Wait few minutes so as to allow the iron to reach its ideal temperature and once ready, the signal on the iron will switch on. The red button on the hose (30B) can be now pressed to allow the steam exit.

For dry ironing do not press the red button (30B). In this case position the thermostat according to the type of cloth being ironed.

To remove the shine from clothes, brighten up wool tissue, curtains etc.... use the iron vertically, directing the steam flow onto the object.

**8. MAINTENANCE****WARNING**

SWITCH OFF THE ELECTRIC SUPPLY BEFORE PROCEEDING TO THE USER'S MAINTENANCE. WE SUGGEST CLEANING THE BOILER ONLY WHEN THE MACHINE HAS COOLED DOWN (SWITCHED OFF FOR AT LEAST 5 HOURS).

**MAINTENANCE OF THE STEAM GENERATOR****ELIMINATION OF SCALE DEPOSITS FROM THE BOILER**

If you are not acquainted with the hardness level of the used water, it is recommended to proceed with the boiler cleaning after 24 hours of usage. On the contrary, if you know the hardness level and it is between 0 and 4 french degrees, the boiler cleaning can be carried out after 100 hours of usage.

fill the water tank, and put a basin under the unit and remove the lower drainage cup. Afterwards turn on the unit activating the general switch (2) and remove the power cable (14) from the light socket, hence insert again the drainage cup (8). The cleaning process has finished, insert again the power cable (14) into the light socket and activate the general switch (2). It is recommended to activate also the switch placed on the hose, pressing the security button (10) to allow the residual air to get out of the empty boiler. Wait 3 minutes until the refill process has been completed.

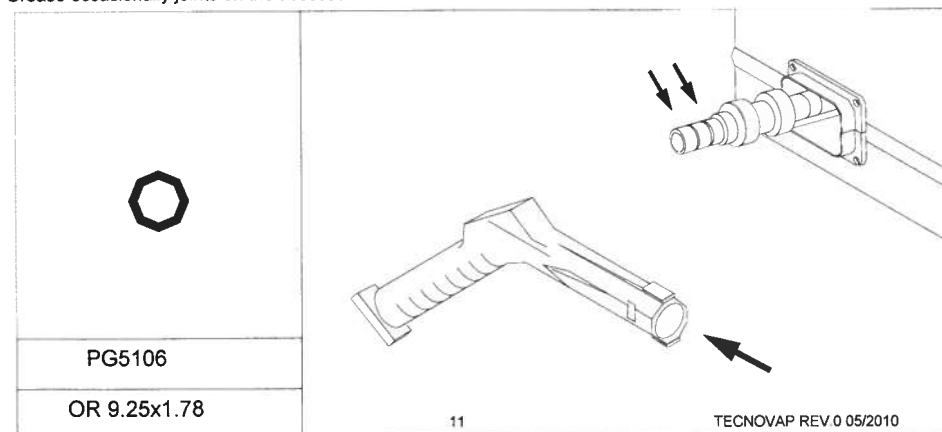
The maintenance of the boiler is finished; proceed following the instructions described in the chapter no. 7. This unit is equipped with a digital manometer and hour meter as to be able to always verify the hours of usage of the generator and consequently to proceed with the boiler cleaning.

In the last pages of the manual, there is a section where it is possible to note the maintenance interventions; please remember to write down the hour of usage displayed on the hour meter every time you do the cleaning of the boiler to have a better monitoring for future interventions

P.N. When the general switch is turned on (2), the digital device displays for 5 seconds the hours of usage and afterwards it indicates the pressure in the boiler.

**MAINTENANCE OF THE ACCESSORIES**

Grease occasionally joints on the accessories and hose extensions.



## 9. BEFORE CALLING FOR SERVICE

PROBLEM	POSSIBLE CAUSE	REMEDY
Machine does not produce steam and vacuum does not work.	Lack of power.	Make sure plug (21) is well inserted and that there is main power to the outlets.
The red "low water" indicator (15) lights up.	All the water from the water tank (9) has been consumed.	Refill the water tank (9) with clean water.
There is no injection of detergent.	All the detergent from the detergent tank (8) could have been consumed.	Control the level in the detergent tank (8) by lifting the vacuum drum (4). if necessary, refill the detergent tank (8) as described in the instructions.
Suction power is missing.	<p>A. Lack of power to the vacuum cleaner.</p> <p>B. The vacuum tube is obstructed.</p> <p>C. The vacuum drum (4) is full of water.</p>	<p>A. Make sure the switch (2) is on and the plug (7) is well inserted</p> <p>B. Clean tube and accessory used.</p> <p>C. Empty the vacuum drum (4)</p>
Water leaks through the connections of the accessories.	Check the wear of the o-ring.	Clean and lubricate the o-ring with grease. if necessary, replace with one spare supplied.
Steam does not come out.	<p>A. Boiler has not reached yet the operational pressure (green light (14) is off).</p> <p>B. Steam command switches (36-37) are off.</p> <p>C. Steam command switch (34) has not been used.</p>	<p>A. Wait a few minutes.</p> <p>B. Switch on the steam command switches (36-37).</p> <p>C. Use the steam command switch (34) to activate steam flow.</p>
Drops of water come out of the accessories.	At beginning of work water condenses in the tubes and accessories due to the difference in temperature.	After a few minutes of use this problem will cease. If it continues, proceed to the cleaning of the boiler.
Noise inside the generator	The boiler getting cold, after about 6-7 hours creates an internal depression which, at each ignition, provokes some vibrations.	Wait the pressure stabilization (about 2-3 minutes), the noise disappears.
Accessories do not fit perfectly.	There is dirt build up in the joints and lock/release latches (40).	Clean and lubricate the joints.

## 10. EC DECLARATION OF CONFORMITY



### **DICHIARAZIONE DI CONFORMITA' CE** (EC DECLARATION OF CONFORMITY)

TECNOVAP S.R.L. con la presente dichiara che:  
le macchine per pulizia a vapore modello:  
(Certifies that the steam cleaning machine model):  
**Chattanooga Gal**

**Risultano conformi alle specifiche delle direttive**  
(conforms to the specifications of directives)  
**2006/95/CE 2004/108/CE 2006/42/CE 2002/95/CE**

Per il controllo della conformità alle sopraindicate direttive, sono stati seguiti i seguenti standard :  
(For the checking of conformity to the above directives, the following standards have been used):

Riferimento alle norme armonizzate:  
(Reference to harmonized standards):

**EN 60335-1**  
**EN 60335-2-79**  
**EN 60335-2-3**  
**EN 55014-1**  
**EN 55014-2**  
**EN 61000-3-2**  
**EN 61000-3-3**

*PESCANTINA - VERONA (ITALY)02-02-2010*

**FRANCHINI Giuliano**  
(Managing Director)

