INSTRUCTION MANUAL
OF THE STEAM GENERATOR
MOD. TOROVAP

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MADE IN ITALY

AIR CLEAN
& SERVICE
s.r.l.

INDEX

1. WARNINGS

WEEE - ROHS
European Directives 2002/95/EC - 2002/96/EC - 2003/108/EC

The symbol above means that this equipment is subject to separate collection and cannot be disposed of as urban waste.

This equipment, which is subject to separate collection, can be returned free of charge to the retailer when purchasing equivalent new equipment. For information on alternative disposal systems, you can contact your retailer, any appliance retailer, or the competent offices of the public administration.

The TOROVAP equipment has been designed and built in accordance with the best reliability and safety techniques; however, the equipment is not suitable for use by minors.

Do not leave the machine unattended during operation.

Use only potable tap water: do not use distilled water. Do not introduce other

liquids and/or foreign bodies into the tank.

When using accessories, do not touch the metal terminal parts: risk of burns.

Do not spray water on the device.

Avoid moving the equipment with jolts when it is on (this could distort the water level signals in the tank and in the boiler).

Before opening the drain cap of the boiler, ensure that the equipment is not under pressure (see ordinary maintenance) and always operate with maximum caution.

Do not direct the steam jet towards electrical and electronic equipment, people, or animals.

The water replenishment pump operates at intervals producing a "buzz" that is to be considered perfectly normal.

The machine is equipped with a series of safety devices that make the use of TOROVAP reliable and safe. In this regard, we particularly note that in the event of the safety valve intervening, steam will be released from the base of the machine for a few seconds accompanied by a loud hissing sound: all this occurs within the limits of maximum safety and should not cause any concern to the user.

Do not pull the machine by the flexible hose or power cord; use the designated handle.

Connect the machine to power outlets with proper grounding.

Do not disconnect the steam hose and accessories while the equipment is delivering steam; to avoid burns.

In the injection model, do NOT introduce into the external tank other liquids that are not detergents or disinfectants. Also, ensure that such products do not become toxic upon contact with steam and at temperatures above 90°C.

AIR CLEAN & SERVICE s.r.l.

2. INTRODUCTION

TOROVAP is a revolutionary "continuous charge" steam dispenser designed, produced, and marketed by AIR CLEAN SERVICE SRL.

TOROVAP, equipped with a wide range of accessories, is used in industrial environments for the cleaning and sterilization of surfaces and objects.

TOROVAP is suitable to meet the most demanding requirements in the field of environmental hygiene.

IT IS RECOMMENDED TO READ THIS MANUAL CAREFULLY BEFORE OPERATING THE EQUIPMENT.

3. TECHNICAL SPECIFICATIONS

MODEL: TOROVAP IS AVAILABLE IN VARIOUS VERSIONS, FOR SPECIFIC DETAILS SEE THE NAMEPLATE DATA ON THE EQUIPMENT.

MAXIMUM PRESSURE: FROM 6 TO 8.5 Bar. (*)
ELECTRICAL SUPPLY: SEE NAMEPLATE DATA ON THE EQUIPMENT. (*)
INSTALLED POWER: FROM 3.4 KW SINGLE PHASE TO 6 KW THREE PHASE. (*)
BASE CONSTRUCTION MATERIALS: AISI 304 STEEL (boiler, casing) INCOLOY (resistance).
AUTONOMY: UNLIMITED
STEAM TEMPERATURE (in boiler): FROM ABOUT 150°C TO ABOUT 170°C.

(*) depending on the model.

4. CERTIFICATIONS

TOROVAP is a certified product. CE

AIR CLEAN SERVICE Srl THANKS IN ADVANCE ANYONE WHO WANTS TO CONTRIBUTE TO THE IMPROVEMENT OF THE MACHINE WITH PROPOSALS, OPINIONS, SUGGESTIONS TO BE REPORTED TO OUR TECHNICAL SERVICE.

N.B. Some models of machines may slightly differ from the indications contained in this manual both in terms of technical/construction characteristics and for the accessories provided.

5. TECHNICAL DESCRIPTION OF THE EQUIPMENT

The equipment consists of a water steam generator and a flexible connection pipe between the dispenser and accessories.

The steam generator is composed of a stainless steel vaporization boiler with electric resistances, an external tank for holding the feed water, an electric pump for supplying water to the boiler, and a set of auxiliary equipment (electronic board, pressure switches, thermostats, solenoid valves, safety valve, liquid level control systems, etc.) designed for automatic, continuous, and safe operation. All components (except the atmospheric pressure feed water tank) are enclosed in a stainless steel casing.

The flexible pipe is made of a rubber tube covered and inserted into a PVC sheath with a steel spiral. The ends of the flexible pipe are equipped with fittings to connect the dispenser to the accessories.

6. LIGHT SIGNALS AND CONTROLS

Fig. 1

The light signals (fig. 1), as well as the control buttons, are located on the front panel of the machine: they provide the following indications.

Light signals

Orange light: Steady on indicates operation in economy mode (active only in single-phase models), in single-phase models with suction, the activation of the vacuum cleaner automatically switches to economy mode; flashing indicates that the resistances are off and not powered.

Red light: Water Replace indicates an anomaly state:

flashing, machine in lock for reaching predetermined operating hours for which it is necessary to change the water in the boiler (see instructions below); to exit the lock state, it is necessary to simultaneously press the economizer and steam delivery buttons located on the handle of the hose; perform the required water change in the boiler.

steady on, machine in lock, indicates the need for a water change in the boiler. If the water in the boiler has been changed but the signal persists, it indicates a malfunction of the replenishment system: jammed pump, dirty filter, clogged fittings or tubes, etc. To exit the lock, it is sufficient to turn off and then turn on the machine.

When the indicator is on or flashing, all functions are disabled.

Green light: OK indicates the status of the heating elements:

flashing, heating elements are on during heating phase;

steady on, heating elements are off after reaching the calibration pressure in the boiler;

off, heating elements are off and not powered: it is possible to depressurize the boiler by releasing steam from the supplied hose.

Yellow light: Water Refill indicates the lack of water in the external tank and interrupts the steam supply.

Manometer: indicates the steam pressure in the boiler.

Controls

On/off switch: turns the machine on and off.

Pump injection switch: positioned on I, red light on, enables the control of the cleaning pump which must be activated by pressing the appropriate button on the hose. Positioned on 0 indicates that the cleaning pump cannot be activated (function available only in models with a cleaning injection circuit).

Knob: adjusts the steam flow.

Economizer Button:

Single-phase models: determines the operating status of the heating elements: pressing once allows you to turn off the lower power resistance, pressing a second time turns off all the resistances allowing the depressurization of the boiler, pressing again activates the resistances again.

Three-phase models: determines the operating status of the heating elements: pressing once turns on the orange light but does not activate any command, pressing a second time turns off the resistances of the three-phase group allowing the depressurization of the boiler, pressing again activates the resistances again. Furthermore, if pressed simultaneously with the steam delivery command button located on the handle of the flexible steam accessory, it allows you to unlock the machine following the flashing of the red light (see "light signals").

Economy (only for single-phase powered models)

The Economy function allows you to turn off one of the heating elements reducing the power absorbed by 25% to 50% depending on the models. If the vacuum cleaner is connected to the device and turned on, the electronic board automatically switches from normal operating mode to Economy mode.

7. COMMISSIONING

Positioning

Place the machine on a horizontal surface to avoid distorting the reading of the water level in the boiler.

Filling

Fill the large external tank (approximately 5 liters) with potable tap water and carefully reposition the cap connected with probes and tubes on the tank (see water replenishment in the tank).

Note: if the probes of the connected cap are not submerged in water, the machine will not start the heating phase, solid yellow light on.

Connection to the electrical power supply

Connect TOROVAP to a power outlet connected to the grounding system and suitable to support the power of the device (see data plate on the device itself).

Start and heating
Turn on TOROVAP by pressing the ON/OFF button in position I (Fig. 1).
In this phase, the electronic board checks the water levels in the tank and boiler and supplements the water level in the boiler as needed. Heating will only begin when this level is reached. During the heating phase, with the green light flashing, the only enabled command is the steam delivery. After the necessary time has passed since turning on, the heating phase ends. The machine is ready for use, and the green "OK" light stops flashing and remains steady.

Connecting the flexible hose with handle and accessories
The flexible hose with handle is connected to the machine by inserting the steam connector into the corresponding steam socket located at the base of the casing (fig. 2).
The accessories are connected to the handle and extensions by rotating the red ring clockwise, inserting the piece, and turning the ring on the opposite side to lock it.

Steam delivery
Steam only models, steam suction: On the handle of the flexible hose (fig. 3) there is a trigger button. Hold it down to activate the steam delivery command, release to stop.

Steam models with detergent injection, steam suction with detergent injection: On the handle of the flexible hose (fig. 3), in addition to the trigger button, there is a three-position selector to enable steam delivery, detergent pump command, and steam delivery + detergent pump respectively. The command for the three different functions is obtained by holding down the trigger button.

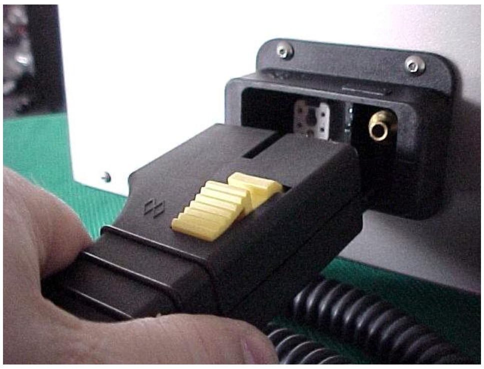


Fig. 2

Fig. 3

When the fixed green light "OK" is on, TOROVAP is ready for steam delivery. However, at the beginning, it is advisable to vent the air present in the ducts by holding down the steam control button for a few seconds.
It is recommended never to use the hose without accessories to avoid the formation of annoying condensation droplets.
Note: the delivery of steam is preceded by some water splashes; this is due to the normal formation of condensation in the still cold ducts, therefore it is advisable to direct the first jet of steam onto a cloth to avoid unintentionally wetting what is not desired.

IMPORTANT: During the use of the machine with steam delivery on, an abnormal drop in pressure in the boiler occurs, recognizable by the reading of the manometer, the green light is flashing. The drop in pressure is directly proportional to the amount of steam used (adjustable via the appropriate tap) and to the installed power of the machine.

Steam flow adjustment
To make the most of TOROVAP's cleaning power, it is advisable to adjust the steam flow according to the accessory being used at the moment and the type of surface to be cleaned; this is achieved by turning the appropriate knob located on the front panel (fig. 1).

Refilling water in the external tank
When the water in the large external tank is exhausted, TOROVAP stops steam delivery, signaling the lack of water with the yellow indicator light. A new water supply is necessary. Remove the connected cap from the tank, being careful of the probes connected to it (fig. 4), fill the water tank, and reposition the cap. After 4 seconds, the machine will resume operation.

Fig. 4

WARNING
To perform this operation, avoid lifting the cap by grabbing the flexible hose; instead, it is recommended to hold the rubber cap.
Do not place the probes of the connected cap on metal surfaces to avoid the electronic board incorrectly detecting the presence of water level.

8. ORDINARY MAINTENANCE

Changing the water in the boiler
Why change the water
For every 100 liters of water consumed, it is advisable to change the water in the boiler. This operation is necessary to eliminate the impurities deposited in the boiler (lime/solid suspensions present in the feed water).
The frequency of water changes depends, of course, on the amount of impurities contained in the water used and the amount of water consumed.

How to understand if it is time to change the water
The activation of the fixed or flashing red light during normal use indicates primarily that it is necessary to change the water in the boiler as it is saturated with lime; however, it is advisable to carry out periodic water changes (even in case of low usage or prolonged machine downtime) thus avoiding entering a critical phase.

How to change the water in the boiler

Make sure the machine is disconnected from the power supply.
Ensure that the boiler is not under pressure (TOROVAP not used for at least 5 hours) or completely depressurize the boiler using the steam hose and with the resistors off (specific economizer command pressed 2 times - orange light flashing -)
Unscrew the cap located under the base of the machine using the hex key provided, taking maximum care in case there is still hot water present.
Drain all the water contained in the boiler.
Screw the cap back on, ensuring it is tightened well, also replacing the gasket attached to the cap if necessary.
Turn on the machine, the electronic board will automatically fill the boiler.

Note: In some cases, even with a new machine, it may be necessary to change the water. This is normal and depends on any impurities accumulated in the water during testing and processing residues.

WARNING
During the automatic filling phase of the boiler, the red light "WATERREPLACE" lights up steadily and the machine goes into lock. This is NORMAL: more charging cycles are required for the replenishment of the necessary water in the boiler, interspersed with the steady red light. To start the next charging cycle, turn off and turn on the device using the ON/Off button.

Cleaning accessories and tools

The accessories are cleaned with... TOROVAP! At the end of use, it is sufficient to use a of the lance provided to clean brushes and small brushes.

Descaling of the boiler

The cleaning of the boiler will be required more or less frequently depending on the concentration of limescale in the water used. Approximately every 1-2 years it is advisable to descale the boiler. To carry out this operation, it is recommended to contact the Service Center.

Replacement of the "OR" steam inlet seal (fig. 2)

Disconnect the machine from the power outlet; disconnect the steam inlet by unscrewing the four front screws, open the box, replace the "OR" seals and reassemble everything.
The "OR" seals (in Viton) should be replaced when steam leakage is noticed from the flexible hose connection.

Replacement of the water supply filter

The water filter must be replaced if it is dirty or clogged. The filter is located at the beginning of the water suction tube of the refill tank. To replace it, simply lift the connected cap from the tank and pull out the filter (when inserting the new one, pay attention to the arrow indication on the filter itself that shows the direction of flow).

Ingravings

All steam fittings of the accessories must be lubricated periodically and at least every 2 / 4 months, in particular the steam fitting located inside the steam inlet of the machine (fig. 2).

9. WHAT TO DO IN CASE OF....

The time required for heating has significantly increased (more than 8-10 min.)
Possible causes:
- *Steam is coming from the accessories: stop the steam flow.*
- The electric resistances are encrusted: descale the boiler.
- *Fault in the electric resistors: replace the resistors.*
- Check if the machine is in economy mode (orange light is on steadily)
- Check if the machine is in "resistances off" mode (flashing orange light)

TOROVAP does not emit steam.
The machine is not under pressure: turn it on and wait.
There is a lack of water in the refill tank (yellow light on): add water to the tank.
The flexible connector is not properly inserted into the steam outlet of the machine: check the insertion.
The red light has turned on (steady or flashing) and the machine enters a lock phase (see instructions above).
The steam adjustment tap is fully closed: open it.
Ensure that the connection to the electrical power supply has been made correctly.

Steam is coming out of the safety valve
The safety valve has activated. (see warnings).

The machine does not reach pressure
The safety thermostat has activated: reset the thermostat (to be done by the Service Center).

The resistors are out of service: replace them (by the Assistance Center).
Incorrect connection to the electrical power supply system: check.
Lack of water in the external refill tank: ensure there is water.

The differential or the main switch of the electrical power supply network trips.
Check the suitability of the socket to which the machine is connected and ensure that protective devices are installed on the electrical system. Always keep in mind the power of the equipment (see nameplate data).
Check that there are no other appliances (oven, freezers, etc.) connected to the same network that are not compatible with the load of the general electrical system.
Fault in the electrical part of the machine: contact the Assistance Center.

Steam is leaking from the accessory outlets.
Check that the "O-rings" on the steam connector of the machine's accessory outlet are intact and in their place.
Lubricate the steam outlet connections and/or replace the "O-rings."

10. WARRANTY

Each TOROVAP is individually and carefully tested before delivery.
The warranty does not cover components subject to normal wear: O-rings, seals, accessory bristles, filters, etc.
The warranty is void in case of tampering or opening of the machine by the customer, in case of proven misuse, and in case of use not in accordance with this manual. The warranty starts from the date indicated on the invoice.
The transportation costs for the repair of the machine at the Service Centers or at the AIR CLEAN SERVICE headquarters are the responsibility and at the risk of the customer.

11. TOROVAP VERSION WITH CLEANING INJECTION and DOSING PUMP

The TOROVAP steam dispenser is also available in versions with a detergent/disinfectant/water injection pump. With this model, it is possible to mix a product into the steam that is placed in the appropriate container attached to the rear basket of the machine.

Before starting to operate in "injection" mode, ensure that the container (2 lt. tank) for the liquid is completely full and that it is positioned in the housing to be attached to the rear basket.
The activation of the injection pump is obtained by pressing the "INJECTION PUMP" light switch located on the front panel of the TOROVAP. Then, by holding down the steam control button located on the handle, the product is mixed during the steam delivery.

Do not use foaming, acidic, or flammable detergents.
Ensure the suitability of the products (only placed in the small tank) before using steam at the specified operating temperatures (160°C), to avoid inhaling toxic and harmful gases. It is recommended to use the machine in well-ventilated areas. Therefore, the use of detergents that produce gas during handling is discouraged.

It is also necessary, during spraying, to equip the operator with the appropriate PPE (mask, goggles, gloves, and suit).

The injection pump used in the TOROVAP is specifically designed for dosing detergents, disinfectants, and water, with characteristics suitable to not harm the operator or the presence of people in the surrounding environment. Any other use is considered improper and therefore dangerous. The manufacturer is not responsible for any damage resulting from improper uses.

If the pump should jam (meaning you can hear the pump pulsating without the product coming out), turn the steam adjustment knob on the TOROVAP control panel clockwise (to close) until the product starts to recirculate in the detergent tank. Wait about a minute (you will notice a change in the tone of the pump's noise from high-pitched to more "rounded") after which turn the knob back to the desired setting.

Note: At the end of the work, it is advisable to clean the connections and tubes in contact with the detergent/sanitizer: turn off the detergent command by pressing the "INJECTION PUMP" switch to Off and let steam flow for a couple of minutes.

The accessories used still require periodic inspection/replacement depending on usage.

When the injection pump is in operation, to ensure its proper functioning and avoid burning out, make sure that there is always liquid in the external 2 lt. plastic tank.

MATERIAL USED IN CONTACT WITH THE DETERGENT:
Suction tube: PVC or silicone.
Delivery tube: Teflon.
Fittings: polypropylene, nickel-plated brass, stainless steel.

12. TOROVAP VERSION WITH SUCTION

Assembly

Overlap the suction motor onto the TOROVAP by engaging the four fixing pins of the suction motor into the four cylinders located at the top of the machine.

N.B. this operation may require slight force to facilitate the engagement of the four pins into their respective housings.

Connect the electric cable of the suction motor to the appropriate socket located slightly to the left on the back wall of the TOROVAP (Fig. 5). N.B.: The rear electric socket is only intended to power the vacuum, so different devices should not be connected to the vacuum itself.

Fig. 5

Connect the supplied suction/steam hose as follows: insert the tube into the central hole located on the front of the vacuum, then insert the connection of the smaller tube into the appropriate steam accessory socket located on the front wall of the TOROVAP. Connect the suction accessories of your choice to the handle of the hose.

Usage

Fill the large external tank of the TOROVAP (located in the small basket behind the machine), then connect to the power supply: wait 5 minutes to reach the optimal pressure temperature and operate (green OK light on).

At this point, you can choose to use the TOROVAP with either steam only or steam + suction: to dispense steam, press the appropriate button located under the handle. To also or only activate the suction, turn on the MOTOR button located on the vacuum motor and press the appropriate button located on the handle (ensure the door is perfectly closed); press the button a second time to stop the suction.

Removal of dirty suction water

Disconnect the TOROVAP from the power supply

Disconnect the suction accessories from the suction motor.

Unhook the two lever hooks located on the sides of the suction motor.

Grasp the handle located above the suction motor and lift.

Empty the dirty water and reposition everything to continue the activity.

Technical characteristics of the vacuum cleaner

Power 850 W.

Noise level 72 DB.

Suction pressure (closed mouth) – 1900 mm water.

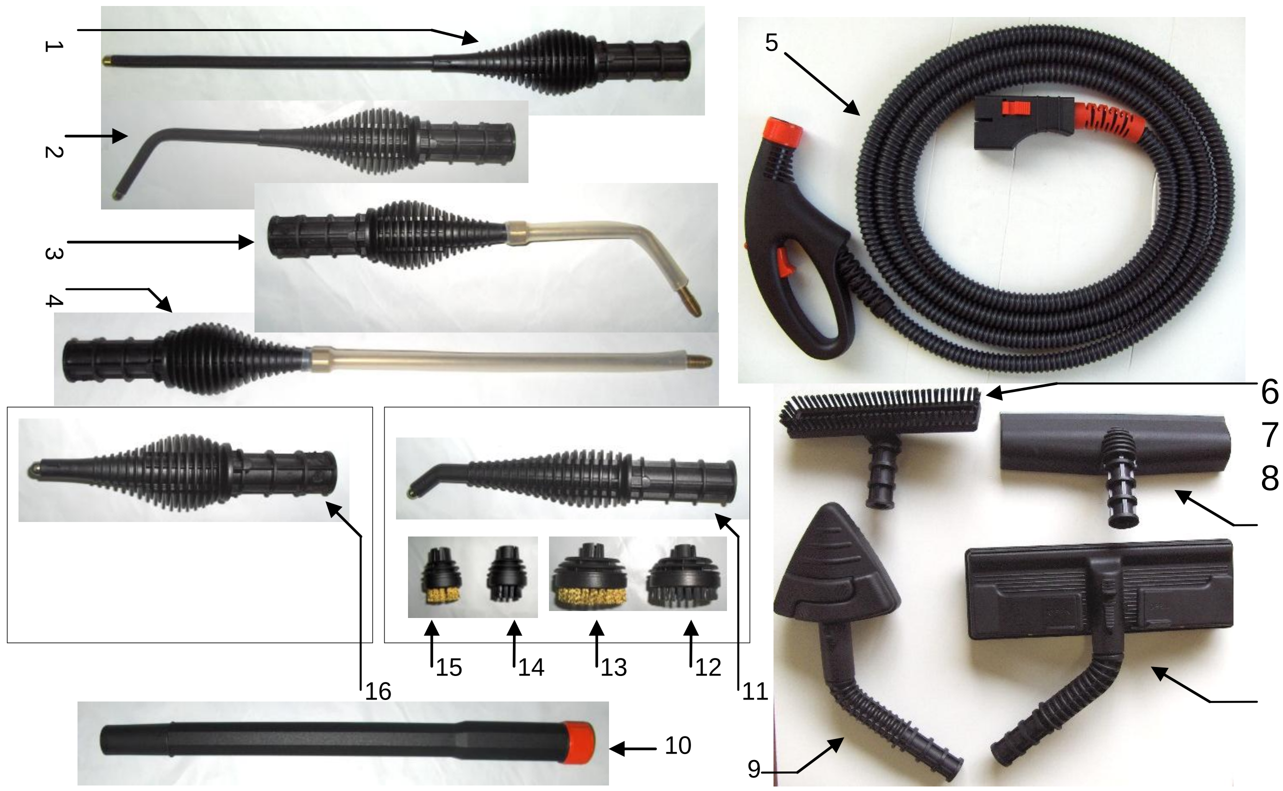
Dirty water tank capacity lt.12.

TOROVAP is also available in the Injection/Suction version. For use see instructions TOROVAP Injection combined with TOROVAP Suction.

13. LIST OF AVAILABLE STEAM ACCESSORIES

(The standard equipment provided may vary depending on the models)

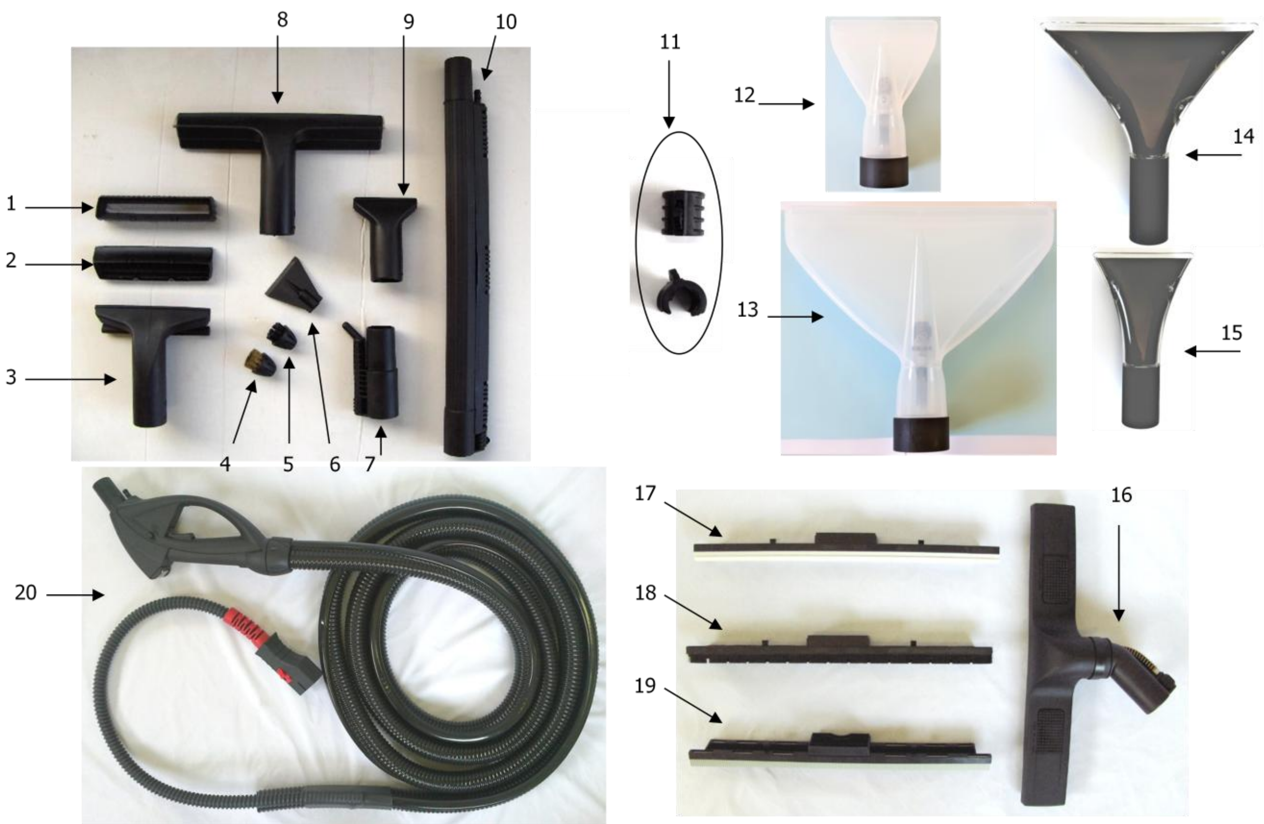
POS.	DESCRIPTION	CODE
1	STRAIGHT EXTENSION STEAM LANCE	A004C500
2	CURVED EXTENSION STEAM LANCE	A004C502
3	"JOLLY" CURVED EXTENSION STEAM LANCE	A001C647
4	"JOLLY" STRAIGHT EXTENSION STEAM LANCE	A036C2019
5	FLEXIBLE. STEAM. IMP. 04mt MONOPULSE. TUBE 120° (TOROVAP steam version only)	A030C1479
5-	FLEXIBLE. STEAM. IMP. 04mt DOUBLE PULSE TUBE 120° (TOROVAP Injection. Det.)	A042C9134
6	LUX FABRIC BRUSH (POL. PBT BLACK 0.60)	A004C510
7	WINDOW WIPER - STEAMER	A004C496
8	LUX RECTANGULAR BRUSH 180 BLACK	A004C492
9	BLACK TRIANGULAR BRUSH (NEW MODEL)	A004C494
10	STEAM EXTENSION WITH RED RING	A004C490
11	STEAM GUN WITH INS. - CURVED TIP	A000C128
12	STRAIGHT SNAP BRUSH D55 SET. PBT	A000C129
13	STRAIGHT SNAP BRUSH D55 SET. BRASS	A000C131
14	STRAIGHT SNAP BRUSH D32 SET. PBT	A000C124
15	STRAIGHT SNAP BRUSH D32 SET. BRASS	A000C126
16	STEAM LANCE WITH INSERT	A004C498



14. ACCESSORI ASP. VAPORE DISPONIBILI

(Il corredo fornito di serie può variare a seconda dei modelli)

POS.	DESCRIZIONE	CODICE
1	TELAIO SETOLATO mm. 150	A004C2031
2	TELAIO TERGIVETRO mm. 150	A004C2033
3	BOCCHETTINA ASPIRA VAPORE mm. 150	A004C2029
4	SPAZZOLINO TONDO D.30 OTTONE PER LANCIA ASP-VAP	A001C1812
5	SPAZZOLINO TONDO D.30 SETOL. PER LANCIA ASP-VAP	A004C2041
6	RASCHIETTO VAPORE	A036C3577
7	LANCIA ASP-VAP PORTACC. UNIVERSALE	A004C2037
8	TERGIVETRO ASPIRA VAPORE mm. 250	A004C2035
9	BOCCHETTINA mm. 80	A004C2039
10	PROLUNGA INTEGR. VAP. D.35 PER ASP. VAPORE	A000C408
11	GHIERA DI BLOCCAGGIO ACC. ASP. VAP. con leva di fermo	A036C581
12	BOCCHETTA TRASP. D.35 - 100mm ASP. VAP. White	A000C418
13	BOCCHETTA TRASP. D.35 - 230mm ASP. VAP. White	A000C409
14	BOCCHETTA TRASP. D.35 - 230mm ASP. VAP. Black	A003C181
15	BOCCHETTA TRASP. D.35 - 100mm ASP. VAP. Black	A003C172
16	BOCCHETTA D.12 ASPIRA VAPORE L=400 mm	A001C1804
16-	BOCCHETTA D.13 ASPIRA VAPORE L=300 mm	A004C2021
17	TELAIO D.12 PATTINI PER TAPPETI	A001C1807
17-	TELAIO D.13 PATTINI PER TAPPETI	A004C2027
18	TELAIO D.12 SETOLATO PER PAVIMENTI	A032C247
18-	TELAIO D.13 SETOLATO PER PAVIMENTI	A004C2023
19	TELAIO D.12 IN GOMMA PER LIQUIDI	A001C1805
19-	TELAIO D.13 IN GOMMA PER LIQUIDI	A004C2025
20	FLESS. ASP-VAP IMP. 05mt TRIPULS. CABL. LG. (TOROVAP con aspiratore LM12)	A042C2591
20-	FLESS. ASP-VAP IMP. 05mt TRIPULS. CABL. WG (TOROVAP Ecoline con asp. Yes)	A042C8349



15. SAFETY VALVE - Model 14A.7 (directive P.E.D. 97/23/EC)

USER MANUAL

1. MARKED INFORMATION ON THE VALVE

− Above the cap:

1. Marking "CE" + Category (see Annex II of the Directive): CE CAT. I
2. Distinctive mark of the manufacturer: NA
3. Size of the fixing thread DN "Gas". DN1/8
4. Set pressure: 8.5 BAR
5. Minimum and maximum allowable temperature: TS-10° + 250°C
6. Type (model) of the valve MOD. 14A

− On the body:

7. Series (lot identification number)
8. Year of manufacture

2. GENERAL SAFETY INFORMATION

− It is absolutely forbidden to tamper with the cap as it constitutes the seal of the valve and the guarantee of its calibration.
− It is forbidden to press the pin against the seat of the gasket.
– LA NOSTRALI SRL disclaims all responsibility for the improper use of the safety valve and for damages caused as a result of operations not covered in this manual.

N.B. Any intervention that modifies the structure and operation of the safety valve must be expressly authorized in writing by NOSTRALI ARNALDO SRL; therefore, if the Customer modifies or has the safety valve modified by third parties, the validity of the "CE Declaration of conformity" issued by NOSTRALI ARNALDO S.r.l. and the warranty defined contractually will be void.

3. INTENDED USES AND UNINTENDED USES

− Intended uses

The safety valve can be used for fluids classified in group 2 according to Article 9, point 2.2 of Directive 97/23/EC (various gases, steam, etc.).

– Unexpected uses:

The safety valve cannot be used for corrosive, for fluids classified in group 1 according to Article 9, point 2.1 of Directive 97/23/EC (gas explosive, etc. fluids.

4. INSTALLATION

− Using a key that engages the existing hexagon between the thread and the fluid discharge, screw the male thread into its seat without interposing any material between the two parts.
– If it is deemed appropriate to interpose material, use Teflon tape, taking care not to block the flow hole.

N.B. It is prohibited to use glue for fixing in its seat as it may penetrate the valve body and cause the closure to jam.

− The valve must be positioned so that when it operates due to excess pressure, the discharged fluid does not hit or damage people, animals, or things.

5. USE

– At the start-up of the pressure Equipment, it is necessary to perform:

- a valve opening test as described in the section "Inspections during use";
- a valve opening test at the calibration pressure; this is to assess the functionality and efficiency of the valve.

– The temperature Ts must not be lower than or exceed the minimum and maximum marked on the valve cap and declared in the "CE Declaration of Conformity", pursuant to Annex VII of Directive 97/23/EC.

6. INSPECTIONS DURING USE

− Every 6 months, perform some tests (at least 2) of valve opening to avoid the risk of "sticking" of the seal to its seat.
– Note: Perform the test with the equipment under pressure.
– The tests are carried out in the manner described below:
– valves without a ring (N.B. take maximum care not to be hit by the fluid that comes out of the valve). Increase the pressure of the Equipment in order to lift the shutter and allow the pressurized fluid to escape, then return the pressure to the initial (operating) value so that the shutter closes.

– valves with a needle with a ring for opening (N.B. take maximum care not to be hit by the fluid that comes out of the valve). Using the ring, lift the needle with the shutter to allow the pressurized fluid contained in the pressurized equipment to escape, then release the needle so that the shutter closes.

7. MAINTENANCE

– no maintenance is provided for the valve; when it is deteriorated, it must be absolutely replaced with a new safety valve.

8. DISPOSAL

− The valve must be disposed of as metal waste without being disassembled.
− In case of a failure of the safety valve, contact NOSTRALI ARNALDO SRL citing the data listed below:

- type (model) of the valve (e.g. MOD.14A)
- series + year of manufacture (e.g. 01-2002)

– which will define the type and methods of the intervention to be carried out.
− The lack of compliance with the above description and what is written in this Manual will relieve NOSTRALI ARNALDO SRL of any responsibility in case of accidents and anomalies in the proper functioning of the safety valve.

9. TECHNICAL CHARACTERISTICS OF THE SAFETY VALVE

- Set pressure PS in bar: 8.5 bar tolerance; from -0 to +10%
- Maximum allowable temperature TS in °C: 250°C
- Minimum allowable temperature T in °C: -10°C
- Size of the mounting thread DN: 1/8 gas
- Operating fluid: fluids classified in group 2 – art. 9 point 2.2
- Discharge port: 250 L/min.
- Back pressure: atmospheric
- Flow coefficient: K= 0.1

BODY	BRASS CW614N UNI EN 12164
VALVE:GASKET:P	NBR RUBBER 50 SH OR FKM ISO 1629
IN:RUBBER	STEEL C4 EN ISO 10263-2
HOLDER:SPRING	BRASS CW614N UNI EN 12164
:	STEEL C98 UNI 3823 OR INOX DIN 17224 EN 10270-3
COUNTER NUT (NO	BRASS CW614N UNI EN 12164
ICS):Regulator (no	Brass CW614N UNI EN 12164
ICS):Cap (no 14E,	Brass CW614N UNI EN 12164
14F):Plate (only ICS):	Ottone CW614N UNI EN 12164