



FORTADOR

Pro Electra

**INDUSTRIAL STEAM CLEANER
OPERATING MANUAL**



NOTE

Before starting the machine, read this operating manual carefully to avoid improper use or situations that may be dangerous for people, animals or objects. The manufacturer shall bear no responsibility and shall exclude the possibility to apply guarantee terms in the following cases: any misuse or use in improper conditions, any damage resulting from normal wear-out or aging, inappropriate application, neglect, improper operation or storage, exposure to moisture, arbitrary modification or repair, improper installation, using wrong power supply source, operator errors, failure to follow this operating manual, or any other events that are not the manufacturer 's fault, including any loss or damage in transport.



CONTENTS

Note.....	2
Contents.....	3
Introduction.....	5
Technical specification	6
Description of the machine.....	7
Safety requirements	8
Unpacking.....	10
Before each start-up	11
How to install and use the machine for the first time	12
Cleaning	14
Control panel functions.....	16
Switch-off procedure.....	18
Maintenance plan	20
Service screens	21
FAQ.....	23
CE Declaration of Conformity	28
Transport.....	29
Final remarks.....	29

INTRODUCTION

Thank you for purchasing FORTADOR PRO Electra industrial steam cleaner. The FORTADOR brand is an effect of our long-standing experience, and a response to our Customers' needs.

The technology confined in the state-of-the-art enclosure provides for higher capacity and performance as well as lower failure rate than ever before.

The solutions used, found only in FORTADOR steam cleaner, will surely make machine operation more comfortable and faster. The 7-inch touch display keeps the user informed about the status of fluids in the machine (water, detergent) and of the running pressure of the boiler. The heart of the machine is the boiler. By adjusting the wattage from 16.6 to 36.6 kW, we were able to obtain working pressures in the 12-16 bar range.


TECHNICAL SPECIFICATION


Technical data

Voltage	400 V, 50/60
Wattage	11,5 Kw / 15,5Kw
Protection class	IPX 4
Steam working pressure	12 - 16 bar
Working pressure of water (optional)	160 bar
Max. steam pressure	20 bar
Max. water pressure (optional)	160 bar
Steam temperature max.	140 °C
Boiler temperature max.	260 °C
Boiler capacity	14,5 litra
Water tank capacity	25
Detergent tank capacity	10
Noise level	79 dB
Dimensions (W x L x H)	(W x L x H) 50 x 86 x 91 cm
Weight	95 kg (without fluids and accessories)

Technical data are placed at the rating plate at the rear wall of the cover in the area marked with the red frame. When contacting our Service Dept., please always refer to your machine's serial no. from the rating plate.

Producent:	Fortador Sp.j.
Model:	Fortador Pro Electra
Zasilanie:	400V AC 50-60 Hz
Moc:	11,5Kw / 15,5Kw
Ciśnienie robocze:	1,60 Mpa
Ciśnienie maks.:	2,0 Mpa
Ciśnienie pompy wody:	160 Bar
Maks. temperatura:	260 °C
Waga netto:	95 kg
Numer seryjny:	C010001
Rok produkcji:	2022
Przed użyciem należy dokładnie przeczytać instrukcję! Wyprodukowano w Polsce	

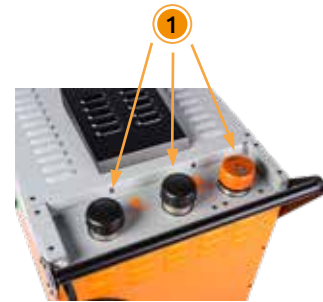

FORTADOR™
powered by Lamborghini





DESCRIPTION OF THE MACHINE

1. Tanks of water and detergent



2. Boiler

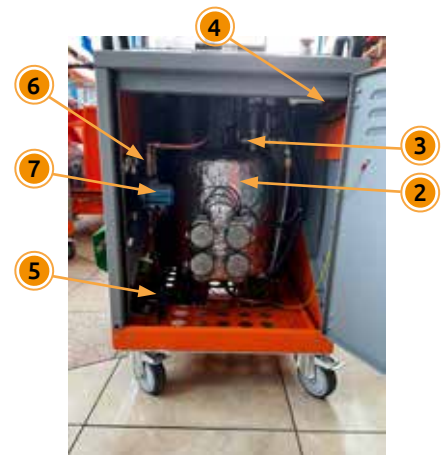
3. Hydraulic braid, washing – wet steam sensor, oblique filter

4. Pressure sensor (pressure switch)

5. Water pump

6. Wet steam and detergent pumps

7. Water filter



8. Washing hose connection - safety quick coupling, valve

9. Washing hose connection - safety quick coupling, valve

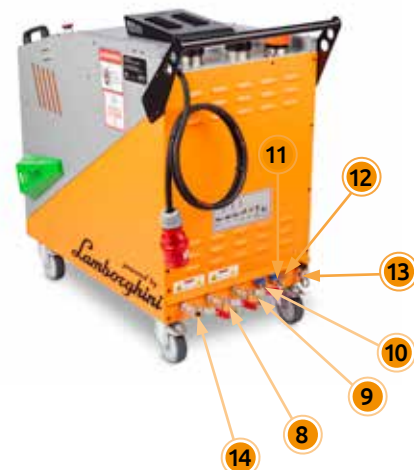
10. Water drain - valve

11. Detergent drain - valve

12. Fixed water connection - valve - water pump (optional)

13. Fixed water connection - valve

14. Boiler steam drain – quick coupling, valve



SAFETY REQUIREMENTS

The FORTADOR steam cleaner is an industrial machine that must not be operated by persons who are unaware of the hazards associated therewith. The guidelines and recommendations contained in this manual must be properly understood and followed, for proper and safe operation of the device.

As with most mechanical equipment, appropriate safety precautions must be observed when operating and servicing the machine. Failure to observe this Operating Manual and recommendations contained in it may result in personal injury or damage to the device itself or other objects situated nearby. At the same time, it should be noted that it is not possible to provide exhaustive guidelines or recommendations, which would make it possible to completely eliminate risks during the operation and maintenance of this equipment, and while handling or using chemical products that this machine has been designed to process. For specific applications and working conditions, some additional safety measures may be necessary, not covered in this document. In such cases, which may not be addressed here, user should follow generally adopted safety rules.

Please read this operating manual thoroughly before starting and operating this machine. The manual should be kept for further reference or for use by next device owner.



USE PROTECTIVE
GLOVES



USE HEARING
PROTECTION



USE PROTECTIVE
GOGGLES



USE PROTECTIVE
BOOTS

NOTE:

The machine heats up to high temperatures! It is required to use protective gloves and goggles while operating the machine.

During operation, it is required to use hearing protectors!

Never use the machine without wearing protective boots.

- Operating pressure can be dangerous to humans and animals.
- Operator should be sober, of legal age and trained in machine operation and maintenance.
- Spare parts must not be different from those recommended and manufactured by the manufacturer.
- The power supply cable, if damaged, must be replaced by authorized service-provider under pain of loss of guarantee.
- The water tank must be filled with tap water only.
- Do not add any detergents, chemicals or descaling agents to the water tank.
- Do not use distilled water!
- Before starting the machine, check if its operational openings are free of dirt.
- Only factory-made hoses and pistols are allowed.
- Do not run the machine, if the electrical cable or any other part is damaged.
- Do not operate the machine during rain or when it is wet.
- Never tilt the machine or tip it over when it is switched on.
- Always switch off the machine before cleaning.
- Children absolutely must not be allowed to come into contact with the machine.
- Use caution when working near children or animals.
- Do not use the machine when damaged or when its power cord shows any signs of damage. If the machine is not working as it should, if it fell, got damaged, was left outdoors or was flooded, contact
- Service department: help@fortador.com.
- Do not pull or lift the machine by the power cord or hoses.
- Watch out for hoses, pistols, filters and seals. As consumable parts, they are covered by limited time guarantee.
- Never direct the steam toward people or animals.
- Keep the machine away from open flames, radiators, ovens or other heat sources.
- Do not operate the machine in an environment with very high humidity and/or highly dusted areas.
- The device should not be moved during operation.
- The machine should be connected to electrical installation with reliable earthing. It is forbidden to operate the machine connected to electrical installation with no earthing, as it may pose a threat of electric shock!

- Do not immerse the machine or any of its components in water or other liquids.
- It is strictly forbidden to use the machine in explosive areas.



- Never use the machine in close proximity to toxic / hazardous substances.
- Never place the machine on temperature-sensitive surface.
- Do not leave the machine in areas exposed to the forces of nature.
- Do not use excessive force when operating buttons / valves on the machine



- The machine should be installed on stable level ground. Make sure the front wheels are secured during operation.
- Never block the trigger of the pistol.
- Never leave working machine unattended.
- Do not direct the steam jet towards electronic devices.
- When washing your car, make sure the nozzle is more than 10 cm away from the surface.
- When not in use, the machine should be switched off and emptied.
- Remember that the hose bending radius should never be lower than 10 cm. Bending hose at a smaller radius causes the Teflon to break and consequently leads to hose damage.
- Working with a damaged hose is strictly prohibited!



- Before each machine activation, check the operation of the residual current circuit breaker according to the procedure described in the section "Before each start-up". Operating the device with faulty residual current circuit breaker is prohibited and can cause an electric shock!

UNPACKING

1. Carefully remove the machine from its packaging.
2. Inspect the device for damage during delivery.
3. Check for missing standard equipment.

We recommend that you keep the packaging.

Packaging dimensions



STANDARD ACCESSORIES



Washing hose 2 pcs.



Short lance, 1 piece



Repair kit



Briefcase



(optional)

BEFORE EACH START-UP

This procedure should be carried out before starting the machine to ensure its proper and safe operation.

1. Check if your hoses have been properly connected.
2. Make sure your valves work properly.
3. Refill the water tank.
4. Make sure that hoses and pistols are not damaged.
5. Do not place any heavy objects on the hoses or run over them with your car.
6. Make sure the steam supply valves are closed if you do not use the pistols for a longer period of time (10 minutes).
7. Check the operation of the residual current circuit breaker by pressing the "Test" button marked with a red square (the device should switch off). Operating the machine with faulty residual current circuit breaker is strictly prohibited.
8. Before starting the machine, the operator always must make sure that it's clean, and tighten the water filter glass.



HOW TO INSTALL AND USE THE MACHINE FOR THE FIRST TIME

Startup procedure for the FORTADOR PRO Electra device



- 1 Fill up the water and detergent tank, for the option with water pump, connect the fixed water connection to the valve number 12.



Wrong



Right

- 2 Connect hoses to quick couplings. Make sure that quick coupling is properly mounted.



- 3 Fill up the WATER tank or connect the machine to a fixed water connection. Use only pure tap water

(max. 20 l) or water with Lamborghini softener (this will extend the lifetime of your boiler and of all hydraulic assemblies).

Note:

Make sure not to switch the machine on before pouring in the water.



- 4 Plug the device into a 3-phase 400V socket and turn the emergency stop ring clockwise.



- 5** Touch the button on the display to start the machine.
The machine will automatically start filling the boiler with water, while when the minimum water level is reached, the heaters will turn on.



- 6** After 2-7 minutes, the pressure will reach 16 bar. This information will be displayed on the screen.



Open valve



Valve closed

- 7** Make sure the hoses are connected correctly. Start the steam supply valves from the boiler to the hoses. Hold trigger of the pistols pressed until steam starts to come out. Pressure will drop temporarily. When the pressure again reaches 16 bar, the machine is ready to work

CLEANING



- 1 Holding the pistol with both hands, press the trigger. Note: high pressure causes the pistol to kickback when the trigger is pressed. Exercise caution! Work with both hands. Pull on the hose, not the pistol! Don't pull the pistol by the hose!



- 2 When moving around, never pull on the pistol, as this may damage the hose connection with the pistol or damage the pistol itself.

- 3 Direct the steam jet towards the surface to be cleaned, while making sure to keep a safe distance of 10 cm between the pistol nozzle and the surface to be cleaned.



- 4 In case of severe soiling, use the "wet steam" function that is activated by the button marked with orange arrow. Steam fed with washing pistol will additionally contain water mist.



- 5** Removing severe soiling may also require the application of detergent with steam jet. Before activating this function, the DETERGENT tank must be refilled with detergent diluted with water in the proportion described on the detergent label. NOTE: Failure to follow the steps in the right sequence may result in damage to the detergent pump!

High-foaming and acidic preparations are not recommended.



- 6** On the screen, activate Detergent feeding with the button marked by orange arrow.



- 7** When you are finished, shut the valves feeding steam to hoses, remove steam left inside hoses by pressing pistol trigger, then disconnect the hoses from the machine and follow the instructions in the "Switch-Off procedure" section.



- 8** To start the high-pressure pump and begin washing with water, press the "Boost Eco Jet" button (optional).

CONTROL PANEL FUNCTIONS

Main screen



The white color of the water indicator and the orange color of the detergent 1 indicator indicates sufficient liquid level.



A white & red background of indicators indicates lack of liquids; they must be replenished to continue operation.



When the water pump or heater is running, a corresponding indicator will be illuminated.

Main screen

Button that activates the service screen

Detergent 1 level indicator

Water level indicator



Button that activates the information screen

Button to start detergent feeding

Button to start wet steam feeding

Machine STOP button

Main screen

Button that activates the service screen (function is not available for water wash mode)

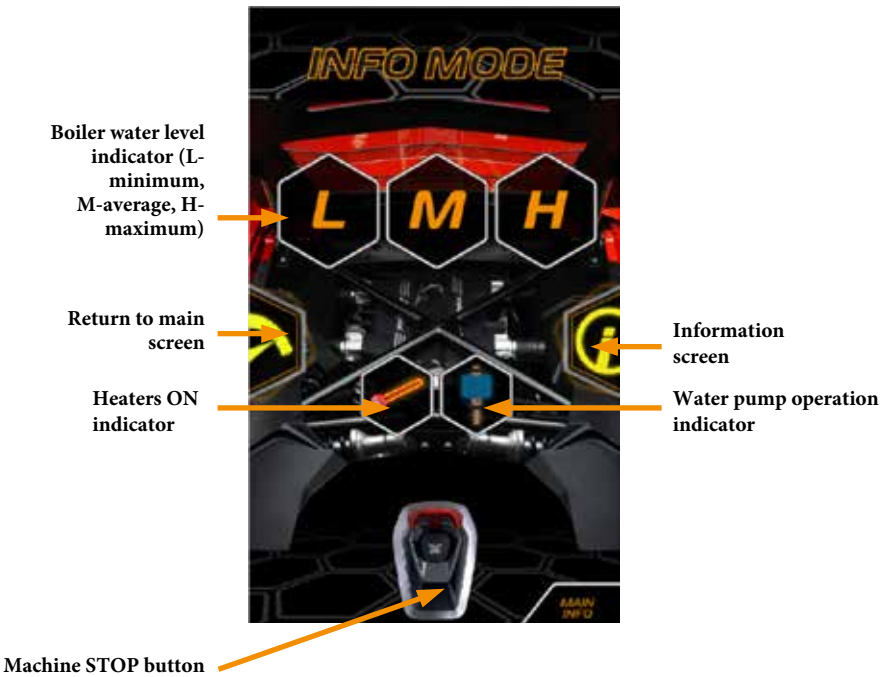
Button that activates the information screen (function is not available for water wash mode)

Machine STOP button



Service screen

Boiler water level indicator shows current water level
(H - high, M - medium, L - low) ,by highlighting the corresponding indication in yellow.



Information screen

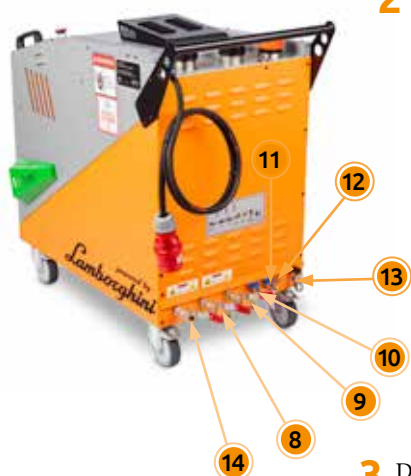


SWITCH-OFF PROCEDURE

To ensure the longest possible life of your FORTADOR machine, take care of the device and follow the shut-down procedure outlined.



- 1 Switch the machine off using the touch screen button, then disconnect it from its power supply. NOTE: failure to observe this sequence may cause damage to the machine controller.



- 2 Close the valves feeding steam to the hoses (no. 8 and 9), press the trigger of the pistol to release the steam remaining inside hoses.

- 3 Disconnect hoses, clean them and roll them up making sure the tolerable bending radius is not exceeded (min. 10cm); NOTE: bending the hose to any radius that is tighter than allowed will result in its damage!

- 4 If the machine was connected to an external water supply, disconnect the supply hose from valve 13 and the hose from the valve 12 (optional).

- 5 Position the machine so that the boiler draining outlet faces an open space. Carefully open valve 14, paying special attention to the steam coming out of the outlet. High-pressure steam jet can lead to serious burns!

- 6 Empty the boiler completely, leaving valve 14 in the open position. It can be closed just before you start your work.

- 7 Clean the machine from dirt, if any. Cleaning the machine each time after operation ends will keep it in very good technical condition for a long period of time.
- 8 Leave the machine in a dry, warm and dust-free place.
- 9 Storing the machine in room with temperature below 0°C (32 F) requires emptying the machine of all liquids (water, detergent,) using valves 10, 11 and 12. Then, pump out the water from the water system, entering the maintenance mode by pressing the "Maintenance mode" button that appears for a few seconds when the machine is switched on at the top of the display.



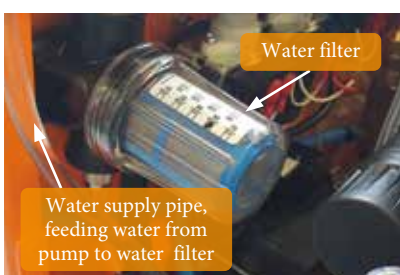
Button to start maintenance mode



Button to start the detergent pump in maintenance mode

- 10 Then pressing the button marked with orange arrow will activate the water pump for 5 seconds, which will pump the remaining water from the water system into the boiler. The operation should be repeated several times, observing whether water is still in the water supply pipe feeding it to the water filter, and whether it is in the filter itself. If you can no longer see any water, do not switch the water pump on any more to avoid running dry.

- 11 The last step will be to remove the water from the water filter, by unscrewing its plastic dome and removing the rest of water. After drying, the dome should be screwed back onto the water filter.



MAINTENANCE PLAN

The FORTADOR steam cleaner is made of the best materials and to keep it in perfect condition, it requires periodic maintenance, according to the following maintenance schedule.

MAINTENANCE TASKS	TIME INTERVAL (NO. OF MOTO-HOURS)
Cleaning the water filter	100
Sensor control (water, detergent)	150
Descaling	50 - 200 (depending on the hardness of water)
Replacing the ball and spring in the wash pistol	200
Inspection of the high-pressure pump (optional)	According to the high- pressure pump manual.

During the guarantee period, inspections must be performed by the Guarantor or an authorized dealer. Failure to observe this condition will result in loss of guarantee.

SERVICE SCREENS

After reaching a relevant number of moto-hours, in line with the maintenance schedule, the FORTADOR Pro Electra steam cleaner will automatically report the need to check the relevant components by displaying a given service screen, as appropriate.



1 Water filter cleaning required



2 Required inspection of water and detergent sensors



3 Vacuum cleaner operation control required

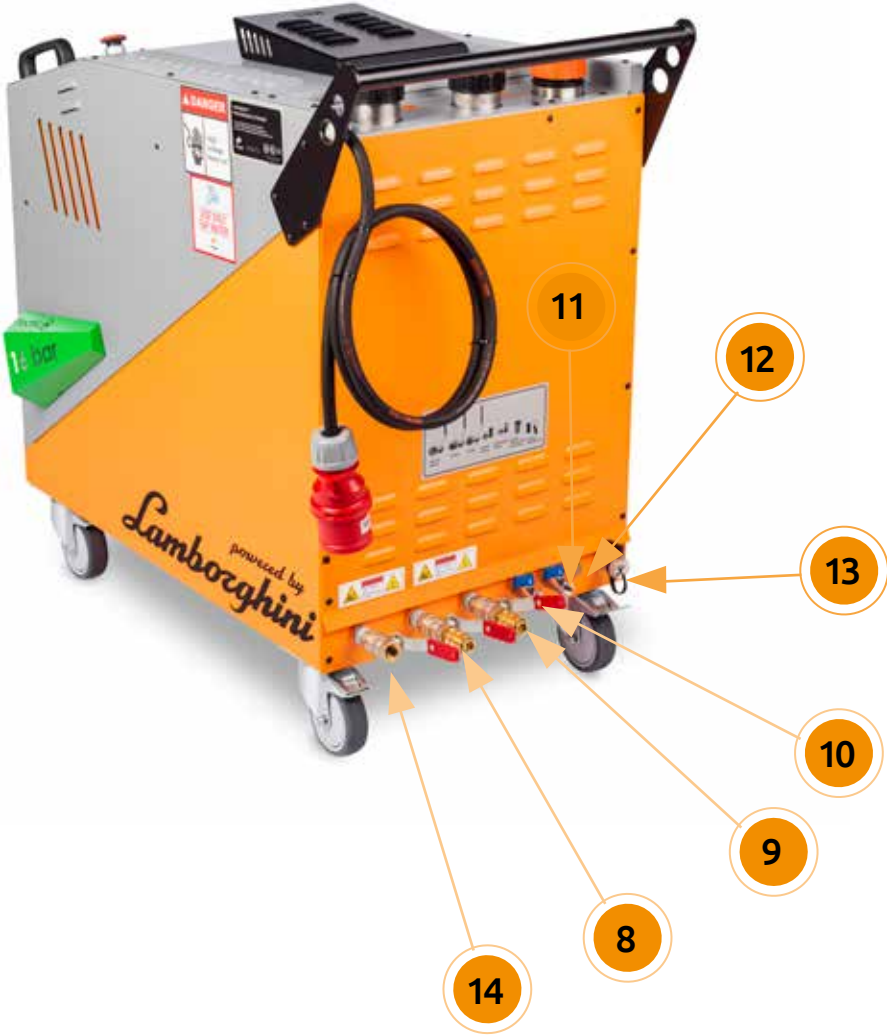


4 Required descaling of the device



5 Required technical inspection

FAQ



1 problem

Freezing pipes in the boiler supply path during the winter season, bubbles in the water path pipes, a broken water filter, a damaged water pump.

Diagnosis

This indicates that the machine was left to "freeze" at temperatures below 0 centigrade without emptying the boiler and water transport track.

Prevention

Immobilize the machine by switching it off with the red button. Please empty the boiler by opening the water drain valve and letting go the steam and residual water according to the procedure described in the section "Switch-off procedure" par. 10-12.

Solution

Replace the water filter with a working one, replace the water pump with one that works

2 problem

Damaged detergent tanks, damaged water tank.

Diagnosis

This indicates that the machine was left to "freeze" at temperatures below 0 centigrade without emptying the detergent and water tanks.

Prevention

Open the drain valves of the water and detergent tanks. Empty the water and detergent tanks at below 0 centigrade temperatures.

Solution

Replacement of tanks and level probes in liquid tanks.

3 problem

No pressure in the boiler, or just the opposite, the display shows there is pressure, and yet there is little steam at the hose outlets, boiler heats up poorly and for a long time.

Diagnosis

Scaled boiler, scaled steam outlet system and / or washing hoses.

Please carry out the procedure for descaling the boiler with Limescale Remover. Switch the machine off, connect all washing and cleaning hoses to the quick couplings. Empty the boiler and water tank by opening the drain valves. On disconnected and emptied machine, unscrew the cap connecting the cross-piece to the copper pipe Fig. 2 element. Using a syringe, pour Limescale Remover into the copper tube - wait until it begins to flow out and slowly add a small dose to thoroughly dissolve the mineral deposit inside the tube. After about 20 minutes, screw the cap back onto the cross-piece. Shut the boiler drain valve and the water tank drain valve. Pour in approx. 1-2 liters of Limescale Remover into the water tank. Start the machine and wait for the water pump to suck out all the Limescale



Remover from the water tank - when the machine stops and starts to squeak, add water to the tank, and keep adding water until the machine starts the heaters and boiler completely. After heating the boiler (16 bar), leave the machine for approx. 5-30 minutes, depending on the extent of scale in the system, to completely dissolve the scale. When the scale dissolving process is over, let off steam a few times by pressing trigger on following hoses in order to flush the silicone / Teflon steam track and couplings from residual scale deposits. Empty the boiler using the drain valve completely. Start the machine 2-3 times by filling the boiler with the heating process and emptying it through the individual cleaning and washing hoses. Machine is descaled. Of course, depending on the capacity of the hydraulic system, i.e. scale deposition in the hydraulic system, scale may also occur in the Fig. 2 elements, item 1-13 - which should also be cleaned in the descaling process, depending on the situation. Particularly noteworthy is the element of the steam presence sensor, Fig. 2 element 11, that should be disassembled / assembled with special care and delicacy.

4 problem

Steam floating from quick-couplings area.

Diagnosis

Improper insertion of the washing hose spigot into the safety quick-coupling .

Solution

Replacement of silicone O-rings in quick-couplings. After replacement, slightly moisten the area around the O-ring and quick-coupling with silicone lubricant spray.

5 problem

The machine is not active after starting, it does not take water to the level L of the boiler necessary to start the Lamborghini heaters.

Diagnosis

Worn ET3000 water pump (check return valve being a part of the pump or seals inside the pump), possibly an air-locked water transport unit from the water tank to the boiler.

Prevention

Regular descaling and protection against freezing of the water path of the FORTADOR cleaner, not allowing the water pump to run dry.

Solution

Fill the water tank "up to the cap" so that the water level in the tank is higher than the height of the water filter. Loosen "glass" of the water filter so that the filter is freely filled with water, then remove the transparent tube from the inlet to the water pump and let the tube fill completely, with a vigorous movement put it back in its original place. Now the water pump should easily suck in the water. When starting the machine, open the valve for a while until the water pump overcomes the boiler pressure and the water pump check valve opens (the sound of the water pump operation will change from "clacking" to a regular muffled sound).

NOTE : Prolonged operation of the water pump "dry" will cause permanent damage to the pump unit !!!

6 problem

Steam floating from:

- (a) washing pistols
- (b) washing hose quick couplings
- (c) under the machine
- (d) the area of the handles of the washing pistols

Diagnosis and Solution

(a) - replacing the pistol with a new one (or trying to repair the pistol by replacing the spring and ball in the pistol valve and descaling the valve, 50% chance of success in case of washing hose or replacing the solenoid valve in case of cleaning hose).

(b) - replacement of O-rings in quick-couplings with efficient ones and the use of silicone grease ensuring the necessary slip of the friction elements of the joint.

(c) - replacement of the safety valve (it is worn out and does not close completely).

(d) - replacement of the swivel couplings connecting the pistol to the washing hose (worn out silicone-Teflon sealant).

7 problem

Touching the machine or hose causes a slight tingling sensation.

Diagnosis

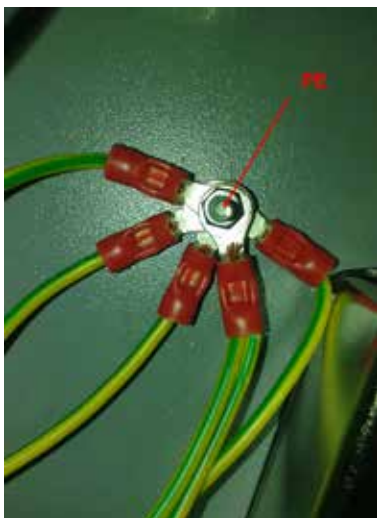
- Accumulation of electrostatic charge
- on the device surface (flow of liquids and gases in plastic or Teflon hoses).
- High humidity in the workplace of the machine, especially in Asian countries or rooms with poor ventilation.
- Possible "puncture" in the cleaning pistol due to significant moisture in the installation / switches
- in the cleaning pistol.
- Possible "puncture" due to damage to the control wires in the cleaning hose (damage to the silicone insulation of the wires).

Prevention

Ensure good and sufficient ventilation of the room in which the device works. Do not forcefully pull the cleaning hose (this will damage the cable that limits the length of the cleaning hose and damage to / abrasion of the insulation of the control wires in the cleaning hose). Regular inspection and control of the state of insulation and grounding of the electrical installation (especially of the grounding wire). Periodically check the temporary electrical installation - any type of extension cords or splitters; it is unacceptable to use so-called two-wire or garden extension cords. Use only extension cords with double rubber insulation designed for outdoor use.

Solution

Use of additional grounding of the machine in the form of a grounding post driven into the ground with low resistance and connected by a copper wire of at least 4 mm² to the body of the machine in order to dissipate the accumulated electrostatic charge. The place of connection of the ground wire in the machine as shown in the figures below.



We are protected against touch voltages and leakages by a residual current protection with an overcurrent element.

It is absolutely necessary to test if it operates correctly according to the procedure described in the section

"Before each start-up" by pressing the "test" button during normal operation of the device

- protection after pressing the "test" button should be activated by disconnecting the power circuit. Positioning of the "test" button in the residual current protection in various devices is as follows.



The prerequisite for proper protection against electric shock is periodic inspection of electrical installations by authorized entities. Please use extreme caution when repairing and adjusting the machine, as most of the elements are very hot and direct contact may result in serious burns. Due to the fact that the device is a pressure device, please be especially careful when operating or adjusting the device, if the pressure system is unsealed during operation, you may be seriously burned by high temperature steam. The staff dealing with the service / adjustment of the machine should have the appropriate permits and authorizations allowing for the operation / service of thermal pressure equipment (Energy license group G2) and electrical equipment (Energy license group G1).

CE DECLARATION OF CONFORMITY

Manufacturer	Fortador K.A. Traczyńscy S.K.A. Aleja Krakowska 108 05-090 Sękocin Stary, Poland
Product designation	Steam car wash
Trade name	Fortador
Model name	Pro Elektra
Directive No.	89 / 336 / EEC
Voltage during test	AC 230 V / 50 Hz
Technical standards	EN 55014-1 EN 55014-2 EN 60335-1 EN 60335-2-79 EN 61000-3-2 EN 61000-3-3
Date of test	11-14.07.2017

This CE-Attestation of Conformity is issued according to the Directive 89/336/EEC relating to electromagnetic compatibility of devices. The declaration confirms that the listed device complies with the essential requirements of the directive and refers to the sample and technical documentation submitted to TÜV SÜD Product Service GmbH for testing and certification.



After preparation of the necessary technical documentation as well as the conformity directives have to be observed.

TRANSPORT

The machine can be transported by any means of transport, provided that it is properly fastened (e.g. using straps) and secured against damage in its original box delivered together with the machine.

Make sure that the machine's front wheels are correctly secured, and that straps are properly tightened to avoid the machine moving.

During transport, the machine cannot be filled with steam, and it must be drained from all fluids. In case it is planned to be transported in temperatures below zero, its water system must be drained as described in Section "Switch-Off Procedure", par. 10-12.

FINAL REMARKS

When properly operated and maintained, this FORTADOR steam cleaner can provide long years of reliable operation. Problems that may occur when using the machine should be solved before it is started. While operating any machine, it is necessary to know its normal operation in order to be able to identify its improper operation. Observe all generally adopted precautions while operating any electrical or hydraulic equipment. This manual has been written in order to thoroughly explain the operations that can be performed using this machine. Its operators must read and understand this manual before they can begin solving any problems. Any self-repairs performed by the user within the guarantee period are prohibited, and shall result in loss of guarantee. Therefore, in case of any problem or doubt, please contact our Service Dept.

e-mail: help@fortador.com
tel. +48 791 400 166





FORTADOR™
powered by Lamborghini

www.fortador.com