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OPERATION AND MAINTENANCE MANUAL
BOOT SOLE WASHER WITH ADDITIONAL HAND BRUSH
No. 550202/SR

Bydgoszcz 2017

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1. Important notes

1. Important notes

1.1. Explanation of pictograms

It is essential to follow the safety instructions and warnings contained in this manual!



Danger!

Threat to human life and health



Warning!

Possible damage to the machine



Tip!

Draws attention to the use, eg. during startup and other useful information.



Low shoes washing



Medium shoes washing



High shoes washing



Place on a canister of liquid cleaning agent / disinfectant



It indicates the direction of rotation of the brushes



Warning!

Warning of electric shock

NIE DOTYKAĆ!
URZĄDZENIE
ELEKTRYCZNE!



Warning!

Rotating components

1. Important notes



1.2. General remarks

Before beginning operations related to transport, installation, commissioning, cleaning, maintenance and repair of the device, read this instruction manual. All persons involved in the execution of these tasks, must observe this manual. To protect the people and things you should follow all safety rules contained in this document.

Compliance with the information and recommendations contained in this document, safety rules and instructions for startup and any other instruction is necessary in order to avoid hazards and damage.

It is required that all work related to transportation, assembly, installation (connection to the electricity grid, connection to water and sewage networks), commissioning, cleaning, maintenance and repairs performed by qualified personnel with the appropriate permissions. Qualified personnel are persons who, because of their education, experience and training as well as knowledge of relevant standards, accident prevention regulations and operating conditions are authorized to perform the tasks required for mobilization of equipment hygiene.

In carrying out the above mentioned operations should be observed first of all technical data and information about permissible use, assembly, connected, ambient conditions and operation described in the product documentation.

In order to avoid malfunctions, the recommended maintenance and inspections should be performed by trained personnel.

1.3. Packaging, transportation, storage

PACKAGING

The manufacturer sends the device protected by two layers of foil:

- outer layer - foil stretch,
- inner layer - foil technology,

Before installation steps should be removed from the machine stretch foil and check if the device has not been damaged during transport.



WARNING!

It is prohibited to install and run devices damaged.

If in doubt, contact the service.

If not detected any damage to the device, you can remove the foil technology.

TRANSPORTATION

During transport device should be prevented from slipping, falling over, strong shocks and other mechanical damage.

1. Important notes

Internal transport should be means of transport adapted to the dimensions and weight of the device. When transporting large devices with large weight manufacturer suggests the use of a pallet truck or forklift.

STORAGE

Before installing and operating the device should be stored in a closed, dry place, protected from mechanical damage.

2. Boot sole washer with additional hand brush

2. Boot sole washer with additional hand brush



2.1. Intended use

Washer used for mechanical cleaning and disinfection of working low-heeled shoes.

In accordance with the *Regulation of the European Parliament and EC Council no. 852/2004 of 29.04.2004 in hygiene of foodstuffs* food market entrepreneur shall ensure proper hygienic conditions in order to prevent contamination of foodstuffs.

2.2. Technical details

No.	Length, mm	Width, mm	Height, mm
550202/SR	600	680	1120

Drive unit:	0.25 / 0.37 kW * detailed data according to nameplate
Power supply:	400 V, 50 ÷ 60 Hz
Water supply:	G ½"
Water discharge:	PVC Ø 50 mm
Number of rotary brushes:	1 rotating brush and 1 hand brush
Actuation:	switch button (M)
Type of liquid	- cleaner - disinfectant cleaner - disinfectant
Installation water pressure:	5 ÷ 6 bar
Temp. of water connected to washer:	max. 40 ° C
Security level:	IP 65
Weight:	~ 32 kg

2.3. Design

Washer body are made of stainless steel 1.4301, brushes of plastic, while shaft support bearings of self-lubricating polyethylene.

The main element of the washer is the body with built-in remaining elements of the device. A handle in the form of a properly shaped pipe with a switch (M) at the end is adapted to the side wall of the body. The working element of the washer comprises one rotating brush (brush is driven by a gear motor) and one hand brush.

Mixed water is supplied to the washer working area (sprayed onto the brushes) by means of spray tubes. Water flow during washer operation is controlled by a solenoid valve. Water used

2. Boot sole washer with additional hand brush

during the washing process is discharged into the sewage system through a bottom outlet. The cleaner / disinfectant cleaner / disinfectant is supplied from the container by means of an injector built into the plumbing system. The washer electrical system is built-in inside the body, while the controller box is placed in a safe housing. The device is delivered with a power supply cable L = 4 metre with a 16 A / 400 V plug with five pins.



2.4. Installation

The washer should be installed as per site's separate technological design.

The washer installation involves:

- connection to the electrical system, from a 400 V socket – **FIVE-WIRE SUPPLY LINE, SOCKET SECURED WITH RESIDUAL-CURRENT DEVICE**
connection to the electrical system should ensure appropriate direction of brush rotary motion
- connection to the plumbing system via a hose ending with a shut-off valve with strainer filter, connection diameter G ½",
- connection to the sewage system, ensuring water tightness of connections (Ø 50 mm).



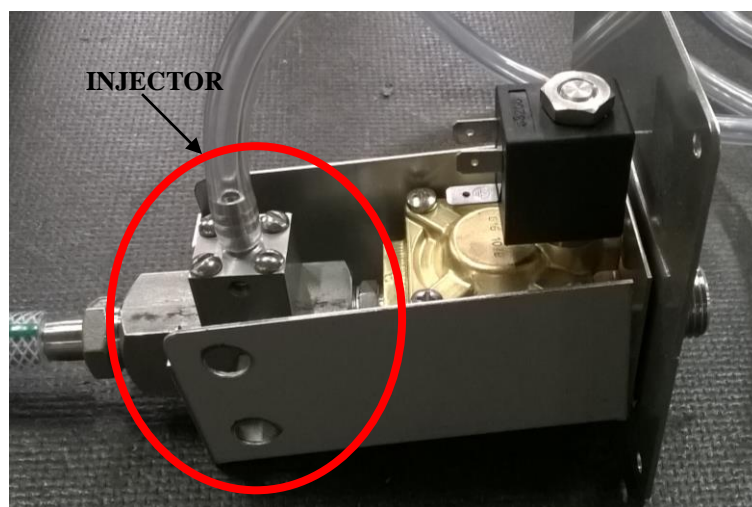
2.5. Device personalization

- 1) Setting cleaner / disinfectant - cleaner / disinfectant feeding amount

The amount of liquid fed to the brush is controlled via the injector knobs (see photo 2.). In order to control amount of the fed liquid, unscrew the metal plate on the side wall of the body and slide-mounted system in which is arranged an injector (see photo 1).

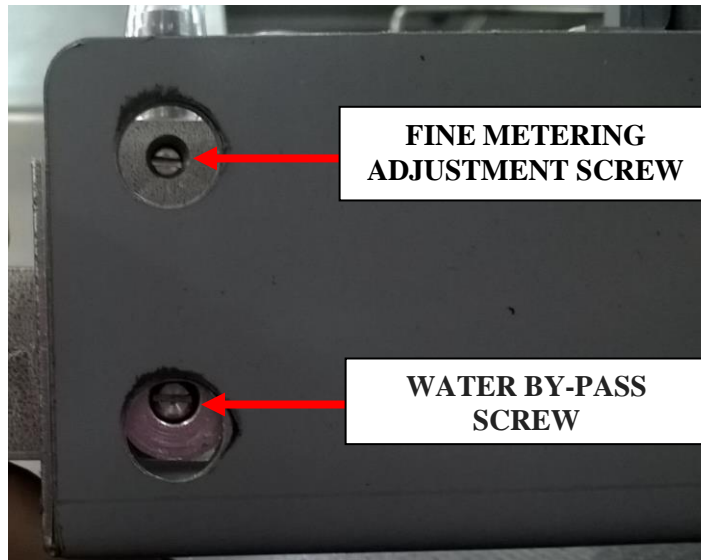
Detailed manual injector was connected to the OMM (Appendix 2).

Photo 1.



2. Boot sole washer with additional hand brush

Photo 2.



2.6. Operation

ROTATING BRUSH

In order to wash footwear, the worker should put the foot with the shoe in the washer (put it on the brush). Then, pressing the switch. Brush is started by the control system, as a result of control circuit closure by photocell. Brush is started simultaneously with opening of the solenoid valve. It enables supply of water to the spray tube. Water flow activates the injector which sucks in the cleaner / disinfectant - cleaner / disinfectant from the container. The necessary condition for the intake of liquid to occur is water intake. The amount of the obtained liquid is directly proportionate to the amount of collected water but it also depends on the installation water pressure value and personal settings of the device. The water sprayed on the brush supports the cleaning process and facilitates drainage of removed contamination.

Brush will rotate as long as you hold (press) button (switch).

HAND BRUSH

In order to wash footwear, the worker should put the foot with the shoe in the washer (put it on the rotating brush). Then, pressing the switch. Press the switch to open the water and liquid flow onto the brush. Wash the upper and shoe sides using a reciprocating motion. Put the brush back to the holder.

Repeat the above steps for the other shoe

2. Boot sole washer with additional hand brush



2.7. Cleaning and maintenance

2.7.1. Cleaning

Due to hygienic reasons, daily cleaning of the washer is necessary. The washer structure enables simple and not requiring the use of additional tools removal of brushes and their preparation for cleaning.

Procedure for cleaning the device:

- 1) Close the water supply and switch off the main power supply.
- 2) Remove the rotating brush by lifting them up.
- 3) Unscrew the hand brush.
- 4) Larger contamination needs to be manually removed from the washer bath.
- 5) Wash all brushes with high pressure washing equipment using a suitable cleaner and rinse them thoroughly afterwards.

NOTE! Follow the instructions of the cleaning agent manufacturer.

- 6) Spray the entire device with a suitable cleaning agent.

NOTE! Follow the instructions of the cleaning agent manufacturer.

- 7) After a specified time rinse agent used for cleaning the surface of the device.
- 8) Wipe the photocell with a soft cloth without the use of cleaning agents.
- 9) Place the washed rotating brush back in the washer bath and fix the hand brush.
- 10) Switch on the main power supply and water connection.
- 11) Check whether the device is functioning properly.

The device may be cleaned with a pressure device at the following pressure settings ≤ 14 bar.

DO NOT:

- use chloric detergents for washing the device.

Detailed rules of stainless steel maintenance and cleaning have been attached to this OMM (Appendix 2).



2.7.2. Maintenance

Each time after cleaning the device, check all metal parts in terms of their functioning, material wear and tear as well as device tightness.

In order to effectively clean footwear soles and uppers, brush should have bristle of appropriate length.

Depending on the brush wear, it is possible to replace its the entire brush. **In order to replace used up brush, contact the service.**

Repairs and maintenance inspections may be performed only by one trained and authorized person.

2. Boot sole washer with additional hand brush

Periodical inspections should be performed every 1000 hours after disconnecting the washer from the mains. Inspection should include:

- checking the oil level in the gear motor transmission (according to the instruction of the gear motor),
- checking solenoid valve operation (if necessary, disassemble the valve head and remove the accumulated deposit),
- check the water tightness of connections (if necessary, replace the gaskets).

In case of hard or iron-containing water, perform the valve inspection every 500 h.

Periodically (as per relevant regulations), inspect the condition and resistance of wiring insulation, as well as the effectiveness of neutral grounding.

3. OHS rules; 4. Utilization; 5. Final remarks; 6. Guarantee; 7. Manufacturer

3. **OHS rules**

General Industrial Safety regulations apply.

4. **Utilization**

The device must be disposed according to its properties and applicable regulations.

5. **Final remarks**

The manufacturer reserves the right to any construction changes.

6. **Guarantee**

Statutory guarantee period for this type of devices applies. Failing to comply with the rules herein may result in losing the guarantee rights.

7. **Manufacturer**

AWE POLAND, Sp. z o.o.

ul. Inwalidów 3

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tel. 052/345-24-44



WARNING!

The manufacturer is not liable in the event of improper use of the machine and non-use of the manual.

STAINLESS STEEL MAINTENANCE AND CLEANING

1. INTRODUCTION

The products of our company are made of 304 grade stainless steel.

304 grade stainless steel is austenitic chrome-nickel low carbon steel. It is used in food and chemical industry equipment, etc. This steel is corrosion-resistant in the atmospheric environment, natural water, alkali solutions and some organic and inorganic acids.

Chemical composition of 304 grade stainless steel:

C < 0.03%;

Si < 1.0%;

Mn < 2.0%;

P < 0.045%;

S < 0.015%;

N < 0.011%;

Cr = 18.0%-20.0%;

Ni = 10.0%-12.0%

2. PASSIVE LAYER

In stainless steels, oxygen reacts with chrome atoms contained in steel. Chrome atoms and oxygen form a layer of chromium oxide which provides a natural protection against corrosion factors. The above phenomenon is called a surface passivation reaction, hence the resulting protective layer is referred to as a passive layer.

3. CORROSION

Although, the passive layer is formed on stainless steel surfaces, **there are cases when it corrodes due to the following conditions:**

- influence of hydrochloric acid and chlorine,
- no ongoing maintenance which leads to the formation of strong acid solutions on steel walls (water evaporates and an acid solution remains),
- an environment more aggressive than steel provided for it;
- contamination during installation and manufacture (lime, cement, foreign metallic inclusions as a result of using angle grinders nearby or unsuitable assembly tools),
- contact with normal carbon steel (scratching with black steel during transportation or storage),
- insufficient room ventilation or even their absence in aggressive environments (there must always be an air flow in ventilation ducts).

STAINLESS STEEL MAINTENANCE AND CLEANING

Symptoms of stainless steel corrosion are different. One can notice that corrosion appears usually on various types of internal (non-metallic inclusions, separations, deformations) and external (edges, scratches, dents, residues of scale, sediments, etc.) surfaces, while smooth and homogenous surfaces are much more resistant to corrosion. Therefore, it is necessary to ensure proper pickling and passivation of a surface.

The mechanism of destruction and the type of corrosion depend on a specific environment and steel affected by it. The following types of corrosion may occur depending on the environment and stainless steel:

- surface (uniform),
- pitting,
- intergranular,
- stress,
- crevice.

Pitting corrosion is the most frequently occurring corrosion caused by inappropriate stainless steel maintenance, more specifically due to the use of chlorinated cleaning agents.

Pitting corrosion is a form of a localised environmental attack leading to local losses (pits) in material. It is caused by the influence of galvanic cells formed between a passivated steel surface and clearly localised non-passivation areas laying on it. Oxygen or oxidising substances in a cathodic cell areas (passivated) are required for pitting corrosion to occur. If they are absent, cathodic areas polarize and the cell stops functioning.

Solutions which cause pitting corrosion of stainless steels most frequently are chlorine solutions. For this type of corrosion, condition of a steel surface is very important. The smoother and cleaner the surface, the smaller the intensity of the said corrosion.

A quality assessment of the effects of this type corrosion is difficult since damage can be very serious at a minor weight loss. It is assumed that an average number of pits per area unit and their greatest depth can serve as some indicators.

4. MAINTENANCE AND CLEANING

When using stainless steel furniture and equipment, a layer of chromium oxide present on the steel surface must be taken care of. Compounds used in food industry which disturb the passive layer (chromium oxide) include compounds containing chlorides – salt, disinfectants and acids (water from sauerkraut, cucumbers, acid juices, vinegar, etc.). Water is the most effective neutraliser of chlorides and weak acids.

Of course, each material requires to be kept clean. Stainless steel is not an exception to this rule and each user must be aware that regular cleaning and maintenance of stainless products is required.

Cleaning should remove dirt and sediments, which left for too long on a stainless steel surface may initiate corrosion and tarnishing of the surface. In a highly contaminated or aggressive environment (seaside towns, rooms of increased humidity and temperature, rooms requiring frequent use of disinfectants, in particular

STAINLESS STEEL MAINTENANCE AND CLEANING

containing chloride compounds), cleaning should be done more frequently. The frequency of cleaning should be empirically determined.

In order to prevent a surface of stainless steel equipment from being destroyed due to inappropriate maintenance, the following guidelines should be complied with:

- The following should not be used: agents containing chlorides and bleach or – under no circumstances - silver cleaners.
- Steel wool, sand paper, rough cleaners, scouring, grinding and polishing powders, etc. shall not be used as they scratch the surface.
- Steel pads for scouring or wire brushes shall not be used – they can leave sediments of carbon steel on the surface which will eventually lead to material rusting.
- First discolouration and dusts appearing during material use can be removed with a regular piece of cloth, chamois leather or a nylon sponge in case of higher contaminations.
- If iron particles generated during installation, etc. appear on stainless steel components, they should be immediately removed. Such particles corrode, thus they can break the passive layer protecting stainless steel, leading to corrosion as a result. Such sediments should be removed mechanically or with stainless steel cleaning agents.
- If there are pits on a component, they should be pickled with acid or removed mechanically.
- Local discolouration, grease marks – if small, they can be removed with soap water.
- **Products for cleaning stainless steel and alcohol-based preparations can be used for cleaning – they do not pose a threat to the corrosion properties of stainless steel.**
- After cleaning, it is always recommended to polish the surface with a dry piece of cloth.

The table below presents the most frequent types of contaminations and methods of handling:

Contaminations	Cleaners
Finger marks	Water with soap and detergent Glass cleaning agents without chlorides
Lime sediment	Vinegar-water solution
Oils and greases	Alcohol-based agents (only with methyl alcohol, isopropyl alcohol) Solvents, e.g. acetone
Paints	Agents for removing paint coating, based on alkaline compounds or solvents
Cement and mortar	Solvent containing a small amount of phosphoric acid, then water
Iron particles – from tools and after contact with structural steel	At an early stage – mechanically If pits appear – with pickling and passivating pastes

STAINLESS STEEL MAINTENANCE AND CLEANING

The frequency of cleaning components made of stainless steel is individual – it all depends on the degree of wear and contamination. It should be done in such intervals so as to reduce the risk of stainless steel component rusting. The frequency of cleaning of stainless steel devices is analogous to the frequency of cleaning household sinks, stainless steel.

5. OHS RULES

Prior to proceeding with cleaning, it is absolutely required to read data sheets of products applied for cleaning and follow manufacturers' guidelines. It is necessary to use personal protective equipment, ensure adequate ventilation and pay attention to fire hazards.

ADJUSTABLE SINGLE INJECTOR INSTALLATION INSTRUCTION

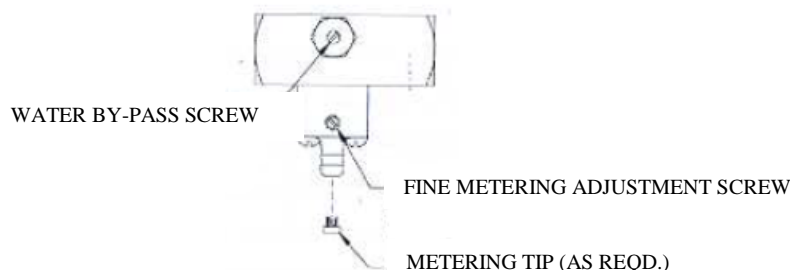


FIGURE 1.

1. INSTALLATION

The injector may be installed in any position in the water line with the arrow in the director of flow. Drop end of plastic tubing with strainer into fluid product container. Cut tubing to convenient length, and slip open end over injector fitting.

2. OPERATION

Warning: Use care when handling hazardous chemicals.

Note: The injector will not operate if the input water temperature exceeds 70 ° C.

See Fig. 1 for location of water bypass screw and fine metering adjustment screw. Turn on water supply valve. The injector may draw momentarily as the system is filling but normally will stop as the system builds up to full pressure. To actuate injector, turn the bypass screw clockwise until product begins to be drawn from the container. After the fluid reaches the injector, the feed rate may be adjusted to the desired rate by turning the bypass screw. The maximum injection rates are shown in Table 2. For low injection rates, it is advisable to set the bypass screw for more injection than required; then turn the fine metering screw clockwise to reduce injection to the desired rate. Table 1 shows the operation range of the injector. If the injector will not draw with the bypass screw full in, then the water flow is below the range of the injector. If the injector draws with the screw full out but pressure lose is excessive, then flow is above the range of the injector.



ADJUSTABLE SINGLE INJECTOR

TABELE 1

Water Pressure (bar)	Operating Range (Liter per Minute)
0,7	1,9 – 13,2
1,4	2,1 – 16,6
2,8	2,7 – 20,4
4,1	3,0 – 24,2
6,9	3,8 – 30,2
13,8	5,3 – 41,6
27,6	7,2 – 56,7
34,5	7,9 – 64,3
* 48,3	9,5 – 75,6
* 68,9	11,2 – 86,9
* 103,4	13,2 – 105,8
* 137,9	17,8 – 139,9
* 206,8	18,9 – 170,1

*SPECIFY – S Stainless Steel Knob – Part No. 24-32S or Part No. 24-32ST (for tips) for pressure exceeding 48,3 bar.

TABELA 2

Fluid Viscosity (cps)	Maximum Injection (l/min.)
1	0,5
75	0,25
200	0,12

3. SERVICING

CAUTION: Turn off water supply before servicing.

The check valve parts are in the metering knob and can be cleaned by removing the four screws. The knob may be rotated if it is more convenient to have the adjusting screw on another side of the injector. As with any injector, if spray jets become clogged or downstream restriction increases in any manner, the injector will stop drawing fluid. If it is inconvenient to remove the restriction immediately, the injector may be put back into operation by turning the water bypass screw further clockwise; this adjusts the injector to the lower flow rate. The bypass screw should be reset once the restriction is removed.

CAUTION: When servicing, make sure that replacement parts have been installed according to drawing. Be certain to check valve parts are in place.



ADJUSTABLE SINGLE INJECTOR

4. SPARE PARTS

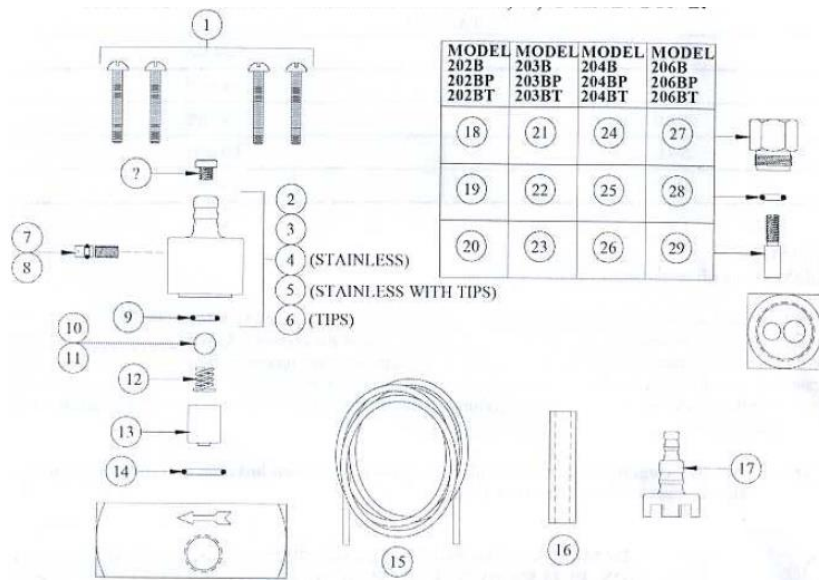
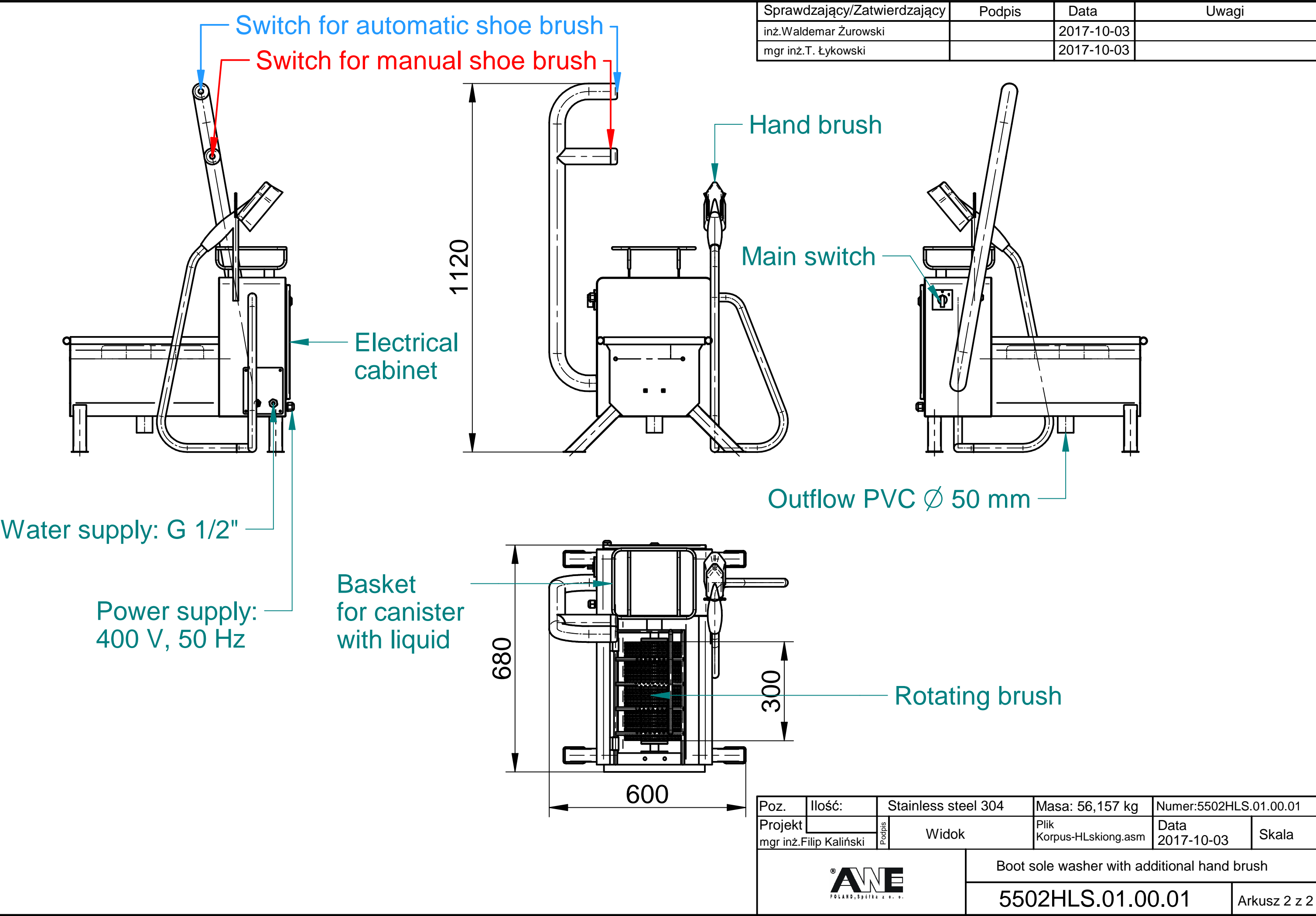


FIGURE 2.

NO.	PART NO.	DESCRIPTION
1	24-33	Screw #8 - 32 x 7/8 Lg. (4 Reqd.)
2	24032	Metering Knob Assy.
3	24032PS	Metering Knob Assy.
4	24-32S	Metering Knob Assy. (Stainless)
5	24-32ST	Metering Knob Assy. (Stainless Steel with Tips)
6	24-32T	Metering Knob Assy. (Tips)
7	100-24	Metering Screw
8	100—24PS	Metering Screw (-BP Injectors)
9	24-25	Check Valve O-Ring (EP)
10	24-24P	Check Valve Ball (Teflon)
11	24-24S	Check Valve Ball (Stainless)
12	24-23	Check Valve Spring
13	24-34-	Check Valve Core (Specify Model No.)
14	25-29	O-ring (EP)
15	100-12	Vinyl Tubing (3/8" OD x 8' Lg.)
16	61-107-2	Ceramic Weight (1/4" ID, 3/8" OD Tubing)
17	24-11MP	Foot Strainer
21	24-36	By-pass Screw Retainer
22	24-25	O-Ring (EP) (7/32 x 11/32 x 1/16)
23	24-35	By-pass Screw





DECLARATION OF CONFIRMITY WE

No 8/2017

PRODUCER: AWE Poland Sp. z o.o.

ADDRESS: 85-749 Bydgoszcz, ul. Inwalidów 3

Hereby declares, that the product:

Boot sole washer

TYPE: 5502-

It complies with the requirements of the Directives:

- Machinery Directive 2006/42/WE
- Low Voltage Directive 2014/35/UE
- Electromagnetic Compatibility Directive 2014/30/UE

And that the following harmonized standards:

PN – EN 349 + A1 : 2010	Safety of machinery. Minimum gaps to avoid crushing of parts of the human body
PN – EN 1672 – 2 + A1 : 2009	Food processing machinery. Basic concepts. Hygiene requirements
PN - EN 60204 – 1 : 2010 / AC : 2011	Safety of machinery - Electrical equipment of machines -- Part 1: General requirements
PN - EN 61310 – 1 : 2009	Safety of machinery. Indication, marking and actuation. Requirements for visual, acoustic and tactile signals
PN - EN 61310 – 2 : 2010	Safety of machinery. Indication, marking and actuation. Requirements for marking
PN - EN 61310 – 3 : 2010	Safety of machinery. Indication, marking and actuation. Requirements for the location and operation of actuators
PN – EN ISO 12100 : 2012	Safety of machinery -- General principles for design -- Risk assessment and risk reduction
PN – EN ISO 13849 – 1 : 2016-02	Safety of machinery. Safety-related parts of control systems. General principles for design
PN – EN ISO 13850 : 2016-03	Safety of machinery. Emergency stop. Principles for design
PN – EN 61293 : 2000	Marking of electrical equipment with ratings related to electrical supply - Safety requirements
PN - EN 61000 – 3 – 2 : 2014 – 10	Electromagnetic compatibility (EMC). Limits. Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)
PN - EN 61000 – 3 – 3 : 2013 – 10	Electromagnetic compatibility (EMC). Limits. Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current < or = 16 A per phase and not subject to conditional connection
PN - EN 61000 – 6 – 2 : 2008	Electromagnetic compatibility (EMC). Generic standards. Immunity for industrial environments
PN - EN 61000 – 6 – 3 : 2008 / A1 :2012	Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments

The last two digits of the year, which was applied marking CE:17



17

PREZES

mgr inż. Janusz Głowiński

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Place and date of issue

.....
Name of authorized person