









Duplex Cleaning Machines

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# JET VAC ULTIMA









## Interpretation of the symbols placed on the unit

BEFORE USING THE STEAM GENERATOR, READ AND FOLLOW THIS INSTRUCTION MANUAL.

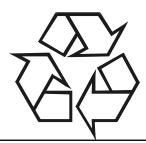
IT IS RECOMMENDED TO KEEP THIS INSTRUCTION MANUAL TO CONSULT IT LATER OR TO GIVE IT TO THE FOLLOWING OWNERS.

PLEASE READ THE SAFETY INSTRUCTIONS ON THIS HANDBOOK BEFORE PROCEEDING WITH THE FIRST USE.

DAMAGE DUE TO THE CARRIAGE/SHIPPING MUST BE COMUNICATED AS SOON AS POSSIBLE TO YOUR OWN RETAILER.

	ATTENTION!! STEAM DANGER HOT SURFACES/TOOLS
	ATTENTION!!
	READ THE OPERATING MANUAL
i	OPERATING MANUAL; OPERATING INSTRUCTIONS

#### **ENVIRONMENT PROTECTION**



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.



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.

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.

The user might return the unit for disposal also to the retailer when purchasing a new equivalent device on a one to one ratio.

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#### 2. SAFETY REGULATIONS

- The electric supply connection shall be made by a qualified electrician and comply with IEC 60364-1.
- If the power cable is damaged, it has to be replaced by the manufacturer or by an authorized technical service or by a qualified person in order to prevent any risk.
- 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.
- DRAINING CALCIUM/SCALE FROM THE BOILER The unit automatically indicates when the boiler needs flushing to remove calcium/scale from the boiler; it will display the notice C A L C on the panel. (Refer to the chapter 8 maintenance).

The boiler's drain cap must be opened with the machine OFF (power supply plug removed) for at least 5 hours.

- 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 must not be directed at people, live electrical devices or the unit itself.
- **ATTENTION.** Do not direct the jet at yourself or others in order to clean clothes or footwear.
- **ATTENTION**. Disconnect the power supply before starting any maintenance.
- **ATTENTION.** This unit is not intended to be used by children or by unqualified persons.
- **ATTENTION.** 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 hoses, fitting and couplings recommended by the manufacturer.
- ATTENTION. 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.
- ATTENTION. If an extension cord is used, the plug and socket must be IP65 or above.
- ATTENTION. Under rated extension cords can be dangerous.
- The hand-arm vibration data referred to this device are not mentioned as they are below 2,5 m/s<sup>2</sup>.
- ATTENTION. This appliance has been designed for a use with cleaning agents supplied or recommended by the manufacturer. The use of other cleaning agents or chemicals may adversely affect the safety of the user and of the appliance itself.
- ATTENTION. The detergent injection of this appliance can't be used continuously but intermittently (20 seconds ON - 20 seconds OFF). The detergent can be continuously used for no longer than two minutes.
- ATTENTION. When using detergent (make sure it's non-foaming) please follow the specific instructions: 1 litre of detergent for every 10 litres of water (detergent percentage about 10%), making sure to fill in first the detergent to obtain a better mixing. Please be careful with the detergent to be used as some available in commerce will emanate highly toxic gases when heated above 100°C. Always consult the MSDS datasheet from the manufacturer.
- ATTENTION. In case of accidental contact with the detergent, strictly follow the instructions indicated
  on its packaging or in its MSDS.

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#### 3. PREFACE

Dear Client,

We would like to congratulate you on your choice of Duplex Cleaning Machines.

With the goal of improving and continually updating production by always offering innovative products, DUPLEX has studied, designed and created the **JET VAC ULTIMA**, a combined model for cleaning which brings together the power of steam and the force of vacuuming.

This product, with its steel body, is equipped with a dependable stainless steel boiler with automatic refilling system which allows it to produce a powerful and continuous supply of steam (24/24 hours).

**JET VAC ULTIMA** is also equipped with a separate detergent tank which allows the injection of detergent at 90-125°C.

With the power of steam, meaning ecological cleaning power, DUPLEX has combined a powerful vacuum able to pick up solids and liquids.

JET VAC ULTIMA is the ideal solution when it comes to cleaning and disinfecting.

Pay careful attention to the following instructions which will be helpful in operating your **JET VAC ULTIMA**.

## 4. TECHNICAL CHARACTERISTICS

FACTORY: DUPLEX SRL VIA DEI SASSI 1A 37026 PESCANTINA VERONA ITALY

Model		Jet Vac Ultima
Code		Stainless Steel
Code		P03006I – PW3006I
Rated Voltage	V	230
Hertz	Hz	50/60
Rated Power Boiler	kW	3.6
Max Rated Power	kW	3.65
Rated Steam Pressure	kPa	600
Rated Steam Flessure	bar	6
Permissible Steam Pressure	kPa	1200
remissible Steam riessure	bar	12
Max. Steam Rated Flow	g/min	97
Max. Steam Rated Flow	Kg/h	5.9
Max temperature	°C	165
May inlet water proceure	KPa	600
Max. inlet water pressure	bar	6
Min. inlet water pressure	KPa	50
	bar	0,5
Kickback forces	N	< 20
Vibration hand-arm	m/s²	< 2,5
Weight	kg	33

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#### 5. PARTS LIST

- 01) Vacuum cleaner motor head
- 02) Vacuum cleaner power switch
- 03) Catches for vacuum drum
- 04) Vacuum drum (5,5-7,5 litres)
- 05) Locking latch vacuum outlet
- 06) Vacuum hose outlet
- 07) Vacuum cleaner power cord
- 08) General power switch
- 09) Control panel
- 10) "Power / Stand-by" button
- 11) "Power / Stand-by" indicator
- 12) "Boiler" button
- 13) "Boiler on" indicator
- 14) "Steam Ready" indicator
- 15) "Low Water" indicator
- 16) Small basket for trolley
- 17) Large basket for trolley
- 18) Trolley main handle
- 19) Detergent tank
- 20) Water tank
- 21) Detergent tank cap (yellow)
- 22) Water tank cap (blue)
- 23) Drain tube: detergent tank
- 24) Drain tube: water tank
- 25) Electric socket for vacuum cleaner
- 26) Power cord
- 27) Steam outlet
- 28) Boiler drain cap

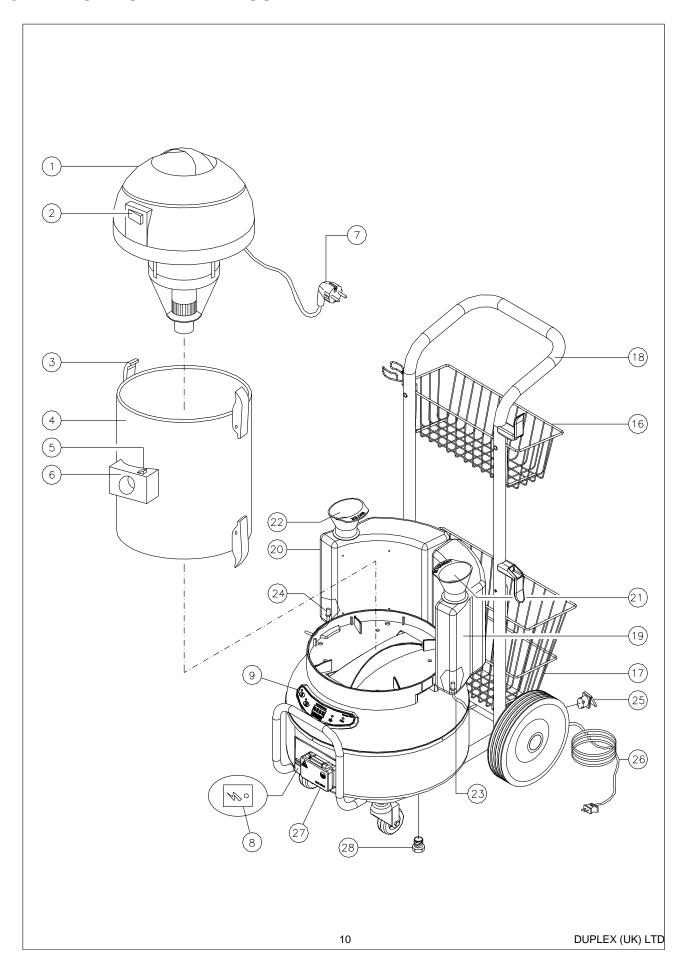
#### Kit July/Radames/Star

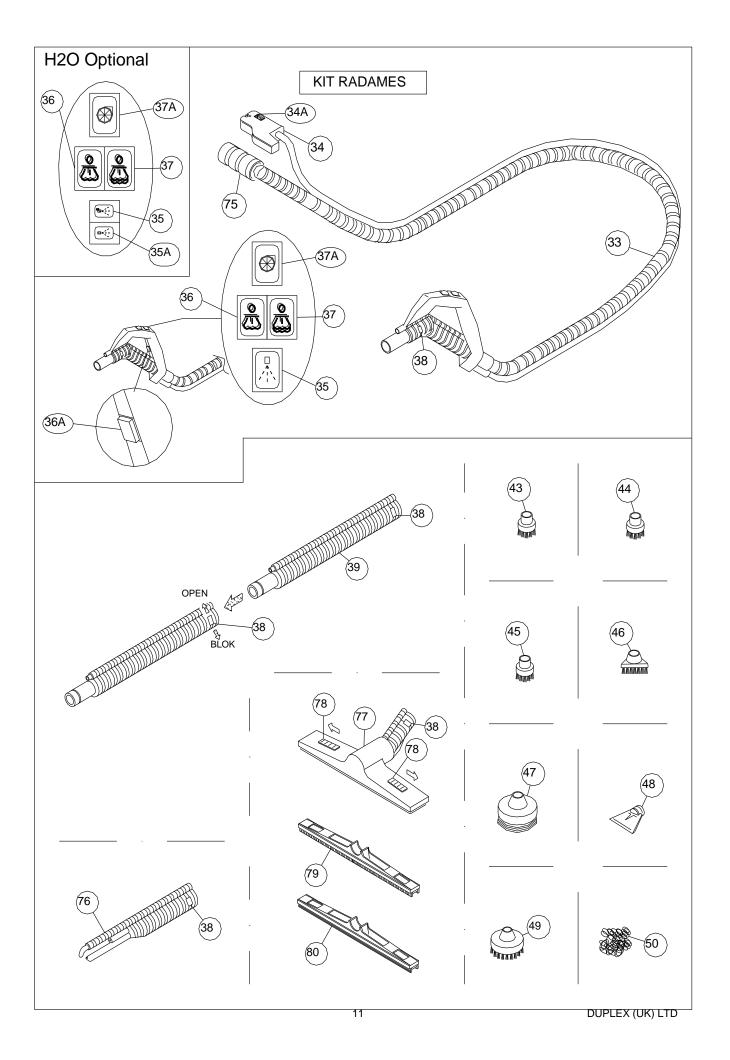
- 33) Steam / steam & vacuum hose
- 34) Steam plug
- 34A) Locking catch steam plug
- 34B) Steel safety cable

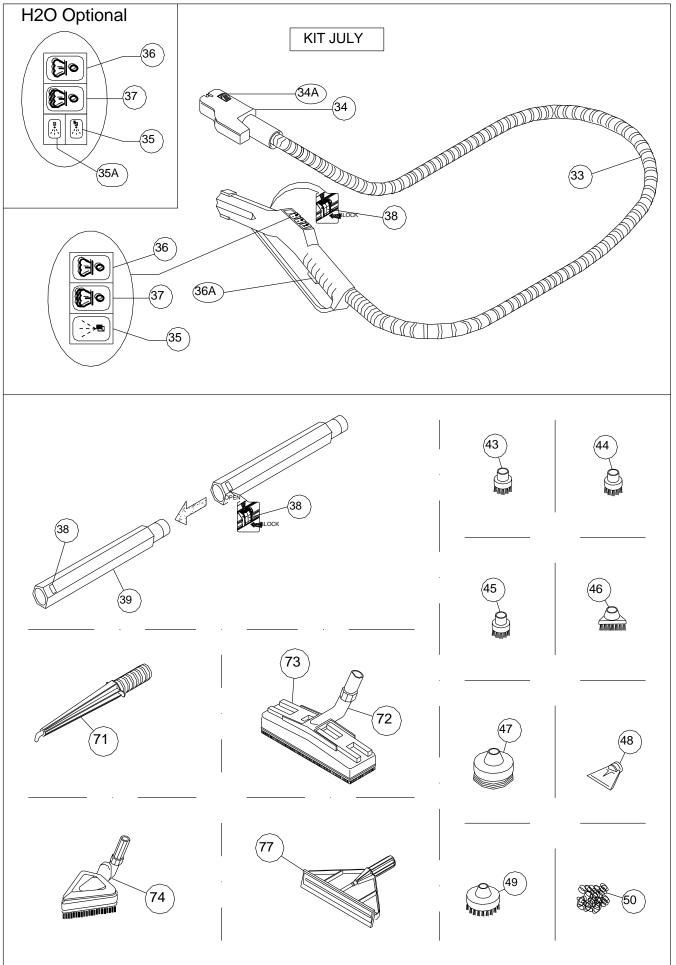
- 35) Detergent switch
- 35A) Hot water switch (optional)
- 35B) Detergent/hot water switch (optional)
- 36) Steam adjustment switch minimum
- 36A) Steam command switch / lever
- 37) Steam adjustment switch medium
- 37A) Vacuum switch
- 38) Locking catches for accessories
- 39) Extension tube
- 43) Nylon brush (Ø 28mm)
- 44) Brass brush (Ø 28mm)
- 45) Stainless steel brush (Ø 28mm)
- 46) Triangular brush
- 47) Steam plunger
- 48) Steam scraper
- 49) Nylon brush (Ø 60mm)
- 50) Stainless steel wool pad
- 71) Steam lance
- 72) Rectangular brush
- 73) Cloth holder
- 74) Triangular brush
- 75) Vacuum hose
- 76) Steam/vacuum lance
- 77) Floor tool for inserts
- 78) Locking catches for inserts
- 79) Insert squeegee/brush
- 80) Insert squeegee/squeegee
- 83) Floor tool for inserts
- 84) Inserts 300 mm brush / squeegee / for carpet
- 85) Steam/vacuum nozzle
- 86) Inserts 145 mm brush / squeegee
- 87) Steam / vacuum window cleaner 250 mm
- 88) Steam lance
- 89) Vacuum nozzle

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## 6. TECHNICAL DRAWINGS



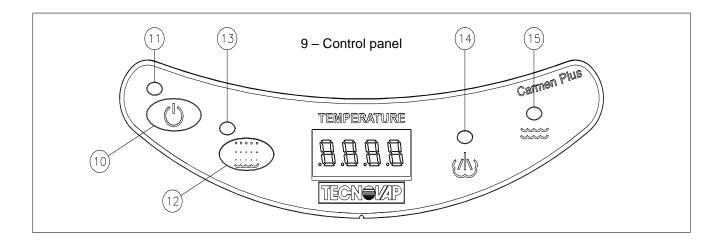




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## **CONTROL PANEL**



10: "Power / stand-by" button

11: "Power / stand-by" indicator

12: "Boiler" button

13: "Boiler on" indicator

14: "Steam ready" indicator

15: "Low water" indicator

#### 7. OPERATING INSTRUCTIONS

- (a) After opening the packaging box, insert the main handle (18) onto the trolley base and lock into place by inserting the large basket (17) into the bottom holes of the main handle. Then insert the small basket (16) into the top holes of the main handle.
- (b) Insert the plug (7) into the outlet (25) located behind the machine, and verify that the vacuum power switch (2) on the vacuum head is in ON position.
- (c) Remove the tanks caps (21 and 22), fill in water (max 3 litres) in the water tank (blue funnel) and fill in the appropriately diluted detergent (max 3 litres) in the detergent tank (yellow funnel). It is recommended to be very careful during this process because putting detergent into the water tank causes a steam generator fault that must be repaired by a technician
- (d) When using detergent (non-foaming MUST be used), please follow the specific instructions reported on original packaging: normally 1 litre detergent for every 10 litres water (percentage detergent about 10%), making sure to fill in first the detergent to obtain a better mixing. Please be aware that some commercial detergents can emit noxious gas if heated above 100°C, check the technical data sheet and consult the supplier.

The detergent tank has to be filled only with detergent diluted with water, **not with water only**, unless you are not using demineralized water.

The usage of water only (not demineralized) instead of detergent causes faults to the mixing circuit.

- (e) Insert the plug (26) into an electrical socket, making sure that the voltage and the amperage correspond with the data printed on the plate located near the main handle on the machine.
- (f) Switch the unit on by using the main switch (8) and activate the "Power / Stand-by" (10) and the "Boiler" (12) switches.
- (g) The machine is equipped with a protective system against thermal damage.
  - If there is no water in the boiler, the system automatically switches off the heating elements. This is indicated by the "Low Water" indicator (15). This can also happen after refilling the boiler when draining the calcium/lime scale from the boiler during maintenance; it will last for 30 seconds and is normal.

Note: Switch off the machine before refilling if the machine is not switched off and on again then the boiler will not refill.

#### **Hour counters**

The device is equipped with two hour counters, one resettable by the user and one non resettable. To see the hours, switch the device off by using the button (10), then press button (12), every time you press this button you can read the partial hour counter and total hour counter.

#### Reset of the partial hour counter

Switch the device off by using the main switch (8) located in the front of machine, press both "Power / Stand-by" (10) and "Boiler" (12) switches and hold them, switch the device on by using the main switch (8), once finished the LED lights sequence, release the switches and the hour counter C2 will be reset to 0000.

#### Indication of boiler cleaning operation (C A L C)

The machine has been programmed to warn the user about the maintenance period; the system has been programmed in order to remind the user after 30 working hours (steam solenoid valve on). Proceed as described in the section 8 "Maintenance of the boiler" in order to drain the boiler and remove any calcium/limescale build-up.

#### Reminder indication (C A L C) restoration

After having performed the maintenance, switch the machine off by using the "Power / Stand-by" switch (10), press and hold for 10 seconds the "Boiler" switch (12). The C A L C reminder will be reset.

#### Power save mode

The power save mode switches the machine to `stand-by` after 1 hour of inactivity, to activate the machine press and hold the "Power / Stand-by" switch (10) for 10 seconds.

#### Refilling of detergent:

Once the detergent tank is empty, proceed as follows:

- 1. Add diluted detergent into the tank (19).
- 2. Switch the device on, by pressing the "Power / Stand-by" switch (10) and the "Boiler" switch (12).
- 3. Activate the detergent switch (35), press and hold the steam command switch (36A) until detergent starts coming out from the tool.

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4. Detergent has been started and the machine is now ready for use.

#### 7.1. OPERATING OF JET VAC ULTIMA WITH KIT RADAMES

#### Attention!!

It is recommended to switch the steam generator off before connecting the steam hose to the steam outlet.

Insert the vacuum hose (75) into the vacuum hose outlet (6) and the steam plug (34) into the steam outlet (27) on the machine. Push until the latches (5 and 34A) lock into place.

Activate the general power switch (8), the "Power / Stand-by" switch (10) and the "Boiler" switch (12) for the production of steam and wait approx. 4 minutes until the indicator (14) lights up indicating the presence of steam inside the boiler.

The switches (36, 37 and 37A) on the handle have to be switched off (in OFF position).

Activate the switches (36 and 37) on the handgrip to regulate the steam flow as follows: switch (36): minimum steam, switch (37): medium switch, switches (36 and 37): maximum steam. Use the steam command switch (36A) to activate steam flow.

The vacuum switch (37A) activates the vacuum cleaner and can be used simultaneously with steam.

The switch (35) enables you to inject detergent with the steam by activating it for a few seconds at a time to avoid excess liquid with the steam; to spray hot water (for models with the function of hot water injection) please refer to what above indicated activating the switch (35A).

Both detergent and hot water injection functions have to be activated at intermittence (for ex. 20 seconds ON - 20 seconds OFF); both functions have not to be used in continuous duty.

Detergent injection or hot water injection (optional) is possible only if at least one steam command switch is activated and if "Steam Ready" indicator (14) is on.

#### Attention!!

Using the switch (35A) you will get hot water under pressure which, depending on the model of the machine, can reach a temperature of 180°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 clean with the combination of steam, injection of detergent or of hot water and vacuum suction, choose the accessory best suited for the job:

<u>The multi-purpose floor tool</u> (77): with appropriate inserts (79 and 80). Inserts are locked into place by sliding the latches (78) toward the internal side (OPEN position), pressing them upwards, then sliding the latches toward the external side (BLOCK position). Remember that the command switches on the handle (36-37-37A) must be in OFF position when doing this procedure.

<u>Steam/vac lance</u> (76): to be used by itself, or with the small round brushes (43-46, 49), or with steam plunger (47), or with steam scraper (48) according to the cleaning job to be done.

If necessary, attach the extension tubes (39) and lock them into place using the clamping units (38) in BLOCK position. Only one tube may be used if desired.

Once the cleaning is finished it is recommended to vacuum approx. 3-5 litres of clean water to rinse the inside of the hose (33) and the suction conduits. Wash and dry all accessories used. Remove the vacuum drum (4) and, after emptying and rinsing it, let it dry before storing it away.

#### 7.2. OPERATING OF JET VAC ULTIMA WITH KIT JULY

#### Attention!!

It is recommended to switch the steam generator off before connecting the steam hose to the steam outlet.

Insert the steam plug (34) into the steam outlet (27) on the machine. Push until the latches (34A) lock into place.

Activate the general power switch (8), the "Power / Stand-by" switch (10) and the "Boiler" switch (12) for the production of steam and wait approx. 4 minutes until the indicator (14) lights up indicating the presence of steam inside the boiler.

The switches (36, 37) on the handle have to be switched off (in OFF position).

Activate the switches (36 and 37) on the handgrip to regulate the steam flow as follows: switch (36): minimum steam, switch (37): medium switch, switches (36 and 37): maximum steam. Use the steam command switch (36A) to activate steam flow.

The switch (35) enables you to inject detergent with the steam by activating it for a few seconds at a time to avoid excess liquid with the steam; to spray hot water (for models with the function of hot water injection) please refer to what above indicated activating the switch (35A).

Both detergent and hot water injection functions have to be activated at intermittence (for ex. 20 seconds ON - 20 seconds OFF); both functions have not to be used continuously.

Detergent injection or hot water injection (optional) is possible only if at least one steam command switch is activated and if "Steam Ready" indicator (14) is on.

#### Attention!!

Using the switch (35A) you will get hot water under pressure which, according to the machine model, can reach a temperature of 180°C; please pay attention that the switch is not pressed accidentally and that the jet is not to be directed toward people or animals.

Insert the steam lance (71) directly onto the hose (33) or on extension tubes (39) by sliding the latch (38) to the OPEN position, lock into place and then slide the latch into the BLOCK position.

Follow the same procedure in attaching the rectangular brush (72) or the triangular brush (74) which can be covered with a microfibre cloth by using the clamps to hold the cloth in place. This is recommended use to clean delicate surfaces (such us precious wood etc.) or vertical surfaces (tiles etc). In this case the cloth is acting as dirt "extractor".

#### 8. MAINTENANCE

#### 8.1. Maintenance of the boiler

#### **ATTENTION**

# DESCONNECT THE UNIT FROM THE ELECTRICAL POWER SUPPLY BEFORE CARRYING OUT USER MAINTENANCE.

#### **ATTENTION. DANGER OF HOT STEAM**

The boiler cleaning must be carried out when the equipment has cooled down (i.e. switched off for at least 5 hours) – failure to do this may result in the boiler still containing hot pressurized steam, please ensure at least 5 hours have passed. Please proceed as follows:

The device is equipped with a maintenance reminder system, after 30 working hours the display shows "C A L C" to warn the user to proceed with the boiler cleaning.

When this reminder appears on the display it is still possible to use the unit until the end of the cleaning process; then, it will be necessary to switch the unit off by using the main switch (8) and unplugging the power cable (26). The boiler cleaning must be carried out when the equipment has cooled down (i.e. switched off for at least 5 hours)

Place a container under the machine or make sure the water draining from the machine can drain away safely and not damage the floor surface, remove the boiler drain cap (28) and wait until the boiler is completely empty.

Clean any calcium residual from the cap with running water, check the efficiency of the gasket located on the bottom of the cap and, if necessary, replace it (please contact your supplier for the spare parts); refit the drain cap.

Using water with hardness higher than 10 French degrees, (according to the usage of the unit, > 2 hours / day) it is necessary to use water treated with a proper water softener system, which can reduce the calcium carbonate up to less than 4 French degrees, increasing by consequence the liability of the steam generator. (for any further details or to buy Duplex Hydroscale, contact <a href="mailto:lnfo@duplex-cleaning.com">lnfo@duplex-cleaning.com</a>).

The cleaning of the boiler is completed, insert the power cable (26) into a suitable plug and activate the main switch (8), the "Power / Stand-by" switch (10) and the "Boiler" switch (12). It is recommended to activate the minimum steam switch (36) on the handgrip, and press the safety switch (36A) to allow the air remaining in the boiler to be released. Wait until the refilling system has finished (approx. 2 minutes).

The maintenance of the boiler is completed; proceed with the user instructions as described in paragraph (f) of the chapter 7.

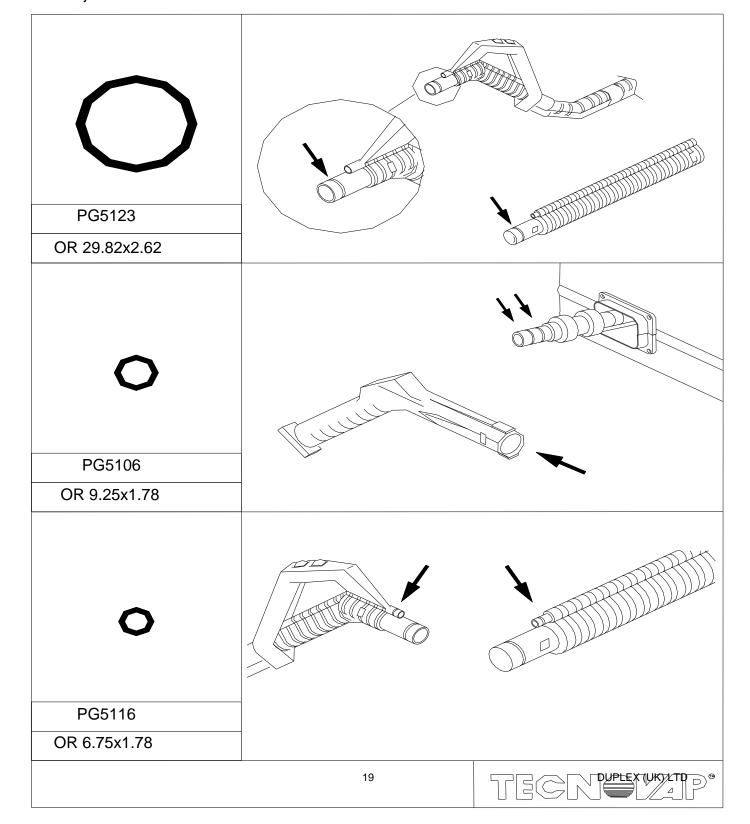
We suggest to empty the water tank (20) completely if the machine will not be used for a long period of time.

### 8.2. Maintenance of the vacuum cleaner

The vacuum cleaner of JET VAC ULTIMA models does not require any specific maintenance, but it must be kept clean and the filter under the motor hosing kept free of debris. Make sure that clean water is used in water filter vacuums this acts as the clean air filter.

#### 8.3. Maintenance of the tools

Grease joints on the extension tubes and on the accessories.



## 9. BEFORE GETTING TECHNICAL ADVICE

PROBLEM	POSSIBLE CAUSE	REMEDY
Machine does not produce steam and vacuum does not work.	Lack of electrical power.	Make sure that the plug (26) is correctly inserted into the wall socket and that the main switch is on.
The red "Low Water" indicator (15) lights up.	All the water from the water tank (20) has been consumed.	Refill the water tank (20) with clean water.
There is no injection of detergent.	All the detergent from the detergent tank (19) has been consumed.	Check the level in the detergent tank (19).  If necessary, refill the detergent tank (19).
Suction power is low or vacuum is not working	<ul><li>A) Lack of power to the vacuum cleaner.</li><li>B) The vacuum tube is obstructed.</li><li>C) The vacuum drum (4) is full of water.</li></ul>	A) Make sure that the switch (2) is in ON position and that the plug (7) is well inserted into the socket (25).  B) Clean the vacuum tube and the accessory in use.  C) Empty the vacuum drum (4).
Steam does not come out of the tools	<ul> <li>A) Boiler has not reached the correct operational pressure (light (10) is off).</li> <li>B) Steam command switches (36-37) are off.</li> <li>C) Steam command switch (36A) has not been activated.</li> </ul>	A) Wait a few more minutes.     B) Switch on the steam command switches (36-37).     C) Use the steam command switch (36A) to activate the steam flow.
Steam leaks through the connections of the accessories.	Check the wear of the o-rings.	Clean and lubricate the o-rings.  If necessary, replace them with the spares supplied.
Visualization of "ALL2" on the display.	Temperature exceeded the threshold, drain cap not inserted, boiler under pressure after draining the boiler and re-filling after maintenance.	Insert the drain cap, discharge the air inside the boiler by activating the steam switch on the handgrip.
Drops of water come out of the accessories.	At beginning of work water condenses in the tubes and tools due to the difference in temperature between steam and accessories.	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 low pressure in the boiler and can cause vibration in the boiler when heating up.	Wait the pressure stabilization (about 2-3 minutes), the noise will disappear.
Accessories do not fit perfectly.	There is dirt build up in the joints and locking latches (38).	Clean and lubricate the joints.

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#### 10. DECLARATION OF CONFORMITY



### DICHIARAZIONE DI CONFORMITA' CE

(EC DECLARATION OF CONFORMITY)

**DUPLEX S.R.L.** con la presente dichiara che:

la macchina per pulizia a vapore modello:

(Certifies that the steam cleaning machine model:)

Chattanooga Jet Vac Ultima

#### Risulta conforme 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

EN60335-2-79

EN 60335-2-2

EN 55014-1

EN55014-2

EN 61000-3-2

EN 61000-3-3

PESCANTINA – VERONA (ITALY) 21-03-2016

## Ordinary maintenance procedures

Generator working	Service	Notes
hours	intervals	

## **Extraordinary maintenance procedures**

Generator working hours	Date of service	Description of work carried out, components used etc.

## **NOTES**

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THE MANUFACTURER RESERVES THE RIGHT TO BRING TECHNICAL AND STRUCTURAL IMPROVEMENTS

AND CHANGES WITHOUT PRIOR NOTICE.