SDR-80 Ride On Scrubber Dryer

INSTRUCTION MANUAL

Contact Information:
IIC Products Ltd T/A Victor Floorcare
Lancaster Court
Lancaster Road
Shrewsbury
SY1 3LG
United Kingdom

Sales@Victorfloorcare.com
+44 (0)121 706 5771

TABLE OF CONTENTS

1. PRESENTATION

Dear Customer,

Victor would like first of all to thank you for choosing to purchase a Victor SDR-80, the new Ride-on Scrubber-Dryer.

The Victor SDR-80 has been entirely designed and constructed in total alignment with the Machinery Directive 2006/42/EC (implemented with Italian Legislative Decree 17/10), the Low Voltage Directive 2014/35/CE, Electromagnetic Compatibility 2014/30/CE, with a core focus on sustainability and ease of use.

We have therefore drawn up this manual in order to provide you with adequate instructions on the correct use and correct maintenance, which are essential for the operator's safety, for correct operation and consequently long machine duration.

Please carefully read this manual in its entirety, strictly comply with the instructions it contains and above all - for safety reasons - do not perform any type of procedure that is not specifically mentioned herein.

The following symbols are used in the guide for the purposes outlined by the following descriptions:

WARNING	WARNING - Hazardous or unsafe procedures that might cause severe personal injury or even be fatal.
CAUTION	CAUTION - Hazardous or unsafe procedures that might cause non-severe personal injury or damage to the machine or surrounding objects.
FOR SAFETY	Used to identify actions to be undertaken for safe machine operation.
	Before using the device for the first time, read these original instructions, follow them and store them for future use or in case of resale of the device.

.

.

2. MACHINE DESCRIPTION

The Victor SDR-80 Scrubber-Dryer, is intended to driven by an operator seated on board, to wash and dry hard floors, battery powered, intended for commercial use.

The main systems of the machine are as follows:

- The detergent solution tank and relevant circuit,
- The washing brushes plate
- The dirty water recovery tank and relevant circuit
- The electrical system and relevant control panel, the steering and speed device.

The function of the detergent solution tank is to store water (with dilution of any detergent), supplying it to the washing system.
The relevant system includes the tank, filter, proportional valve to adjust flow rate and controls.

The tank contains the detergent solution (water and detergent) and supplies it to the washing system when required. The filter protects the solenoid valve from debris contained into the water. The proportional solenoid valve controls detergent solution supply to the washing system. The valve automatically prevents the flow of the detergent solution. The control selector of the solution flow - by controlling opening duration and section of the solenoid valve - regulates the amount of detergent solution conveyed to the washing system.

The disc washing device includes: two counter-rotating disc brushes, the electric motor, the actuator to lift the entire brush unit, the manual cam for lifting the wiper only and the controls. The brushes wash the floor while the motor and the pair of gears, solidly attached to the brushes, actuate their motion. The side band, in bristles, lets the detergent solution remain in the brushes' working area.
The wiper (or squeegee) is the water collecting device.
The water flow is regulated by a proportional solenoid valve (from 0 to 3.5 litres/minute), there is also the option of mixing the water with the chemical detergent, contained in the relevant bottle. The mixture

percentage is set by a peristaltic pump which regulates the detergent flow, conveying it and mixing it downstream of the proportional solenoid valve (in the version with pre fitted dosing device).

The function of the recovery device (wiper or squeegee) is to suck the dirty water and convey it to the recovery tank.
The recovery system includes: the wiper, the vacuum turbine, the filter, the recovery tank and the controls. The wiper collects the dirty detergent solution from the floor as the machine moves forward. The vacuum turbine assures the necessary vacuum to suck the dirty detergent solution from the floor and convey it to the recovery tank. The filter protects the turbine against the debris and foam. The recovery tank stores the dirty detergent solution.

The maximum recovery water level is controlled by a level sensor connected to the control unit and acting on the suction motor; therefore the turbine will stop sucking water as it reaches the max level in the collection tank.

The function of the control devices and steering wheel (steering and speed devices) is to control the direction and speed of the machine. The steering control system includes: the speed pedal, the steering wheel, the brake pedal. The speed pedal is unidirectional. Depending on the setting of the running direction via the suitable panel selector, the machine moves forwards or backwards. With the steering wheel the operator steers the driving wheel in the desired direction.

Both models are equipped with a brake that will stop the machine while moving both forward and backward. Furthermore, this brake also acts as parking brake, stopping the rotation of the wheels of the rear axle, each time the machine is turned off or left by the operator.

Large space available for the operator

Wiper and rain flap

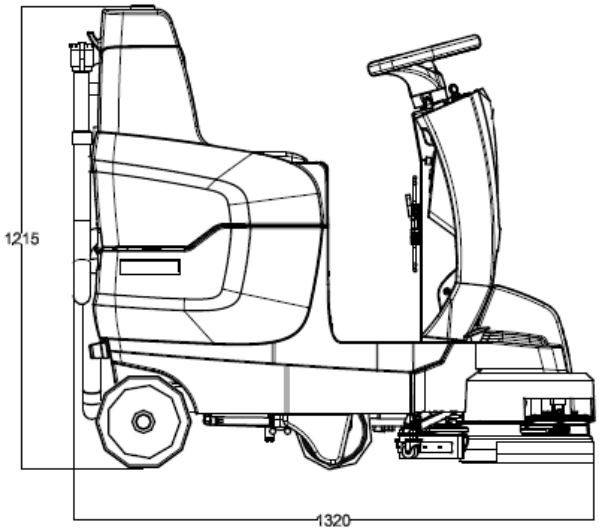
Brake pedal

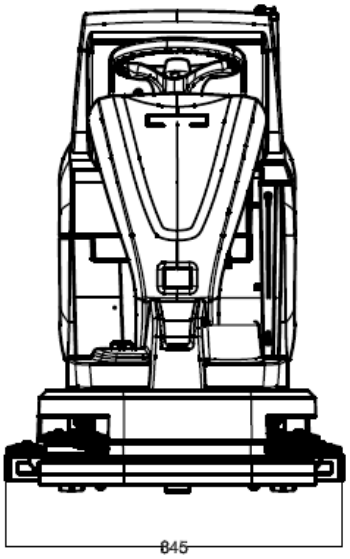
3. TECHNICAL FEATURES

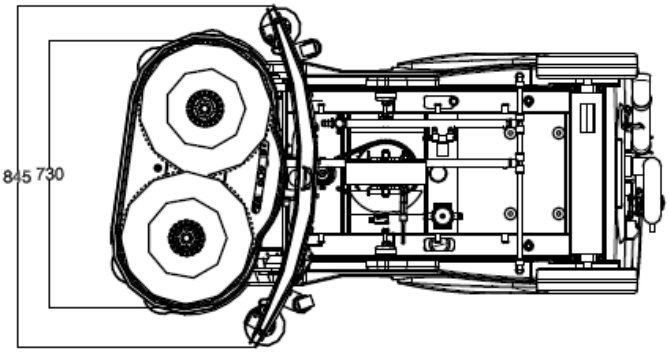
Ride-on scrubber-dyer technical features		
Features		**Technical Data**
Washing Function		
Washed lane width		650 mm
Solution tank		80 l
Hourly yield	Theoretical	3,900 m2
	Practical	2,000 m2
Brushes motor		0.55 kW
Brush rotation speed		220 RPM
Weight on brushes		0-41 kg
Pressure on brushes		0 - 30 gr/cm2
Brushes		2x330 mm
Brush water flow rate	adjustable	0-3.5 l/min
Brush set lifting motor		0.03 kW
Recovery Function		
Recovery tank		80 l
Silenced suction turbine	3 stages	0.52 kW
Suction vacuum		160 mbars
Power drive		
Moving speed		0-6 km/h (0-4 km/h Operation)
Forwarding motor (motor/drive unit)		0.3 kW
Type of drive		rear-wheel with differential
Max climbing ability		16% (Ramp)-7% (continuous)
Minimum steering corridor		1,880 mm
Power supply		
Power supply		24 V
Number of Batteries		2
Recommended gel batteries (optional)		105Ah (C5) -140Ah (C20)
Battery compartment size (lxlxh)		380 mm X 380 mm X 325 mm
Battery charger (on demand)		external - 13A
Overall power and operative life		
Installed power		1,4 Kw
Range		up to 4 hrs
Energy consumption		
Theoretical		0.35 W/m2
Operative minimum - maximum		0.25 - 0.75 W/m2
Dimensions / Weights and Noise level		
Machine dimensions (L x W x H)	Inclined wiper	1320 x 730 x 1215 mm
Machine packaging dimensions (L x W x H)	Inclined wiper	1560 x 800 x 1360 mm

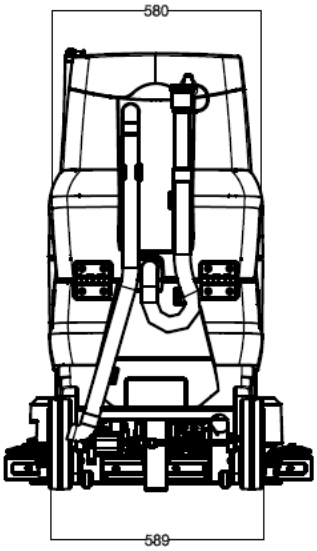
Unladen weight (without batteries) /with package		130 / 160 kg
Unladen weight/with package		215/245 kg
Noise level		66.3 dB (A)

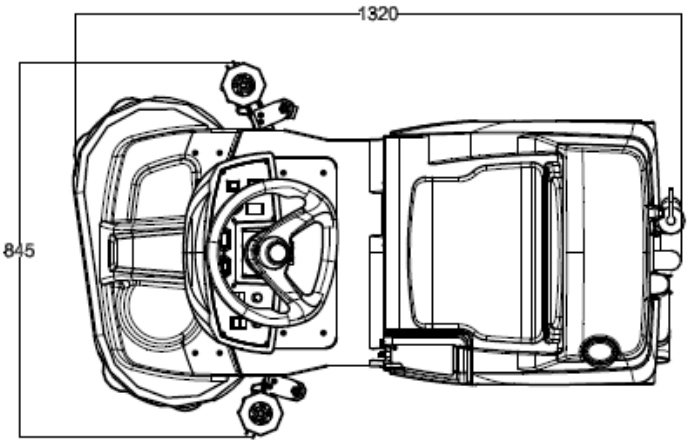
3.1. Dimensions



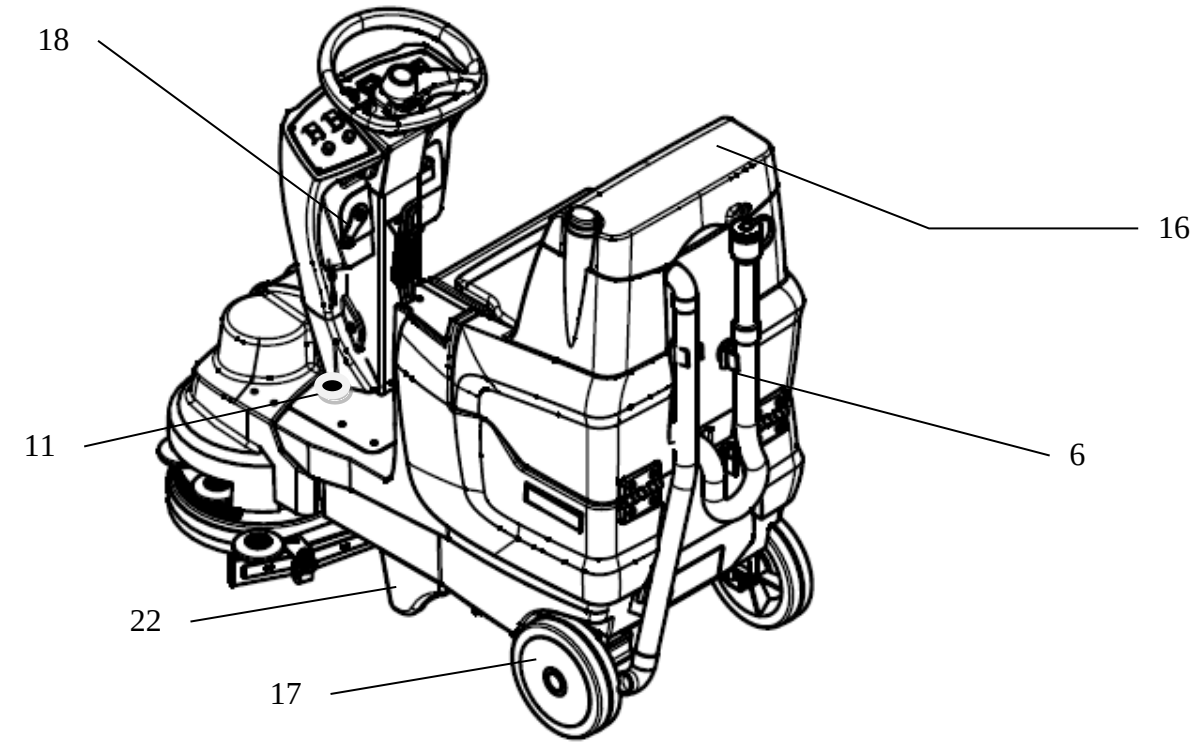


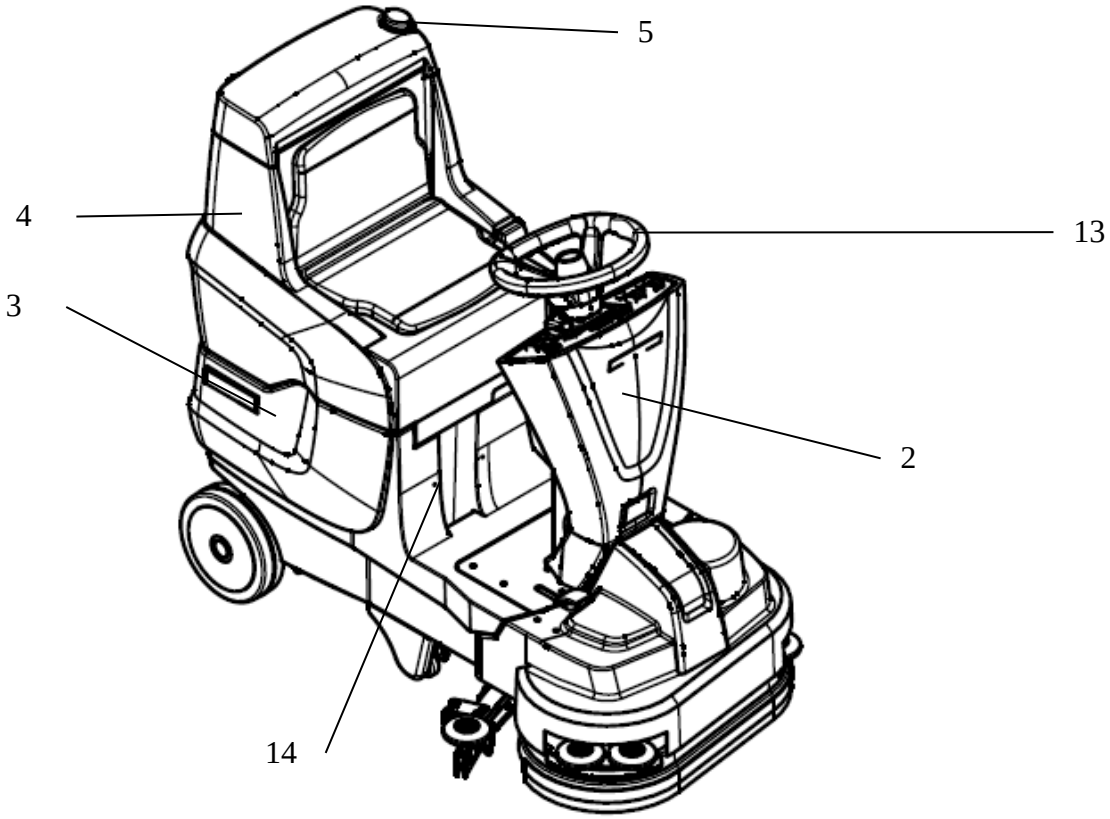


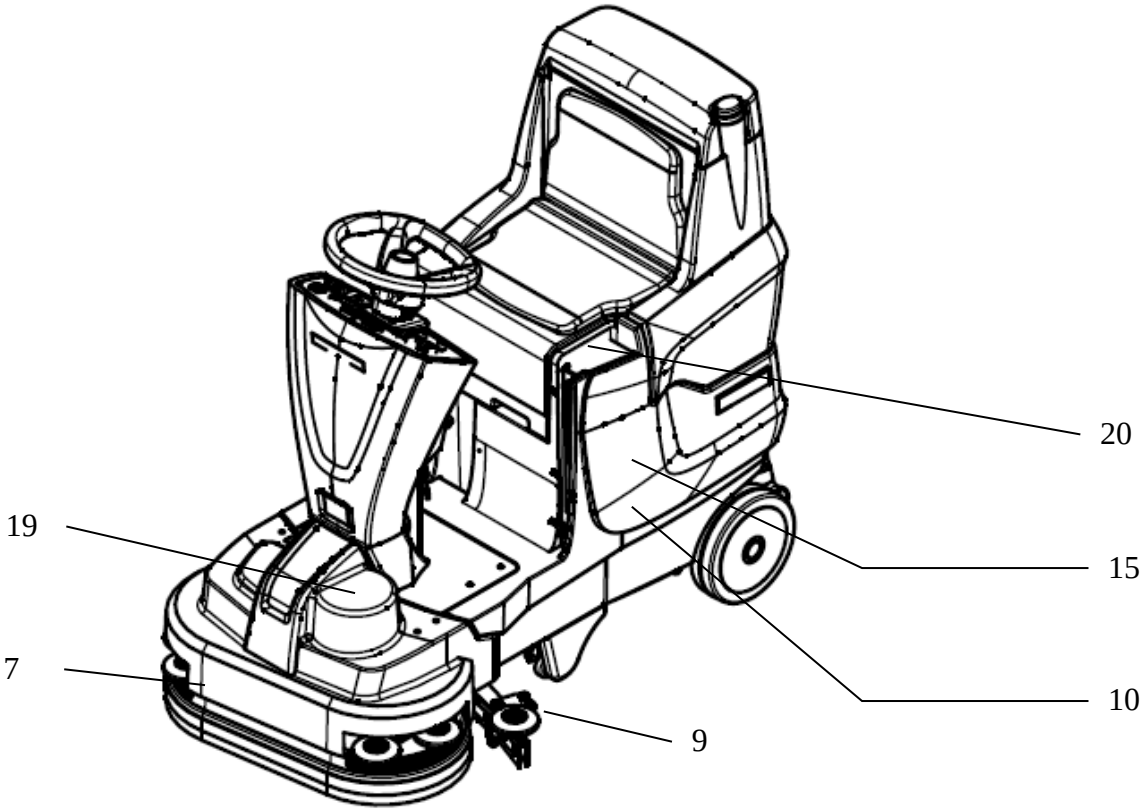


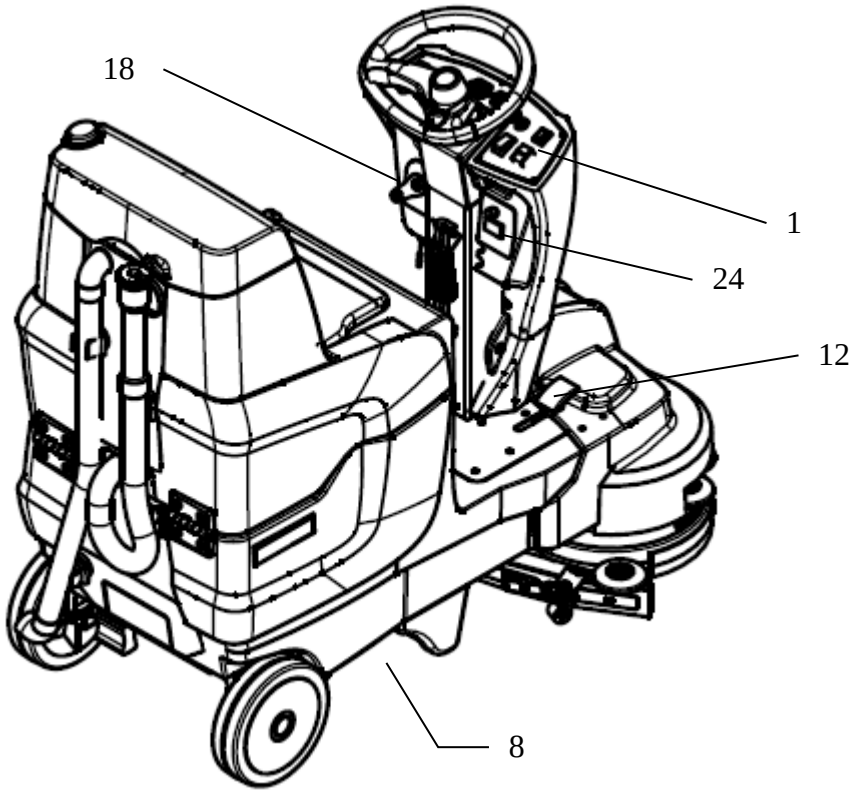


3.2. Functional units

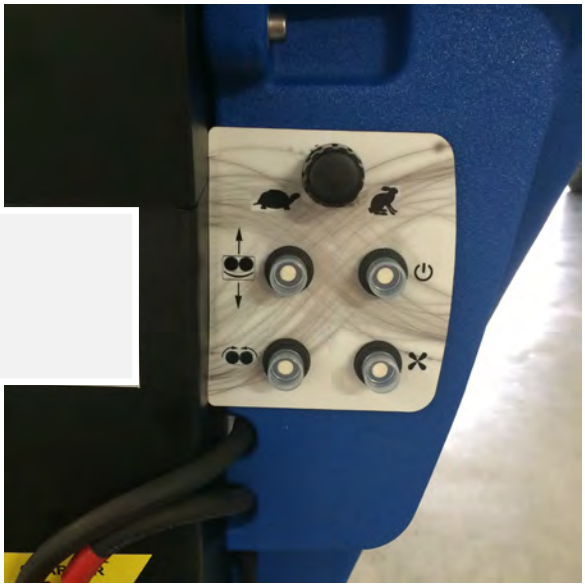





20
19
15
7
10
9


18
1
24
12
8

1. Control panel
2. Front nose
3. Solution tank
4. Recovery tank
5. Recovery tank lid complete with flashing lamp
6. Recovery tank discharge flexible hose
7. Brush head
8. Detergent solution discharge flexible hose
9. Wiper
10. Vacuum engine (turbine)
11. Brake pedal
12. Speed adjustment pedal
13. Steering wheel
14. Chemical detergent tank compartment
15. Battery compartment
16. Suction turbine air filter
17. Motor/drive with electric brake
18. Wiper lifting manual lever
19. Brush rotation motor
20. Water loading spout
21. Speed stabilizer during operation *(not enabled during transfer)*
22. Anti-tip device
24. Resettable thermal cut-off switches (if fitted)



Thermal cut-off switches

4. SAFETY FEATURES

In view of the safety standards of the unified text of the Machine Directive 2006/42/CE (implemented with Italian Legislative Decree 17/10), of the Low Voltage Directive 2014/35/CE, of Electromagnetic Compatibility 2014/30/CE.

WARNING

- To reduce the risk of fire, electrical shocks or personal injury, comply with the following instructions
- Only use the machine indoors. Do not use the machine outdoors and do not expose it to rain.
- Exclusively use the machine complying with the instructions described in this manual.
- Only use the components and accessories recommended by the manufacturer.
- If the machine does not work correctly, or it has been dropped, has been damaged, has been left outside or has fallen in water, hand it to an authorised service centre.
- Do not use the machine if one of the openings is obstructed. Keep the openings clear from debris which might reduce the air flow.
- The machine has not been designed to collect hazardous powders.
- If it is operated near flammable vapours or materials, the machine may cause fires.
- Do not operate the machine near flammable liquids, powders or vapours.
- The machine is designed for commercial use, e.g. to be used inside supermarkets, hotels, schools, hospitals, factories, warehouses, thus for more complex applications than simple domestic cleaning operations.
- The use of the machine must be exclusively entrusted to personnel trained and informed on correct use.
- Maintenance and repair operations must be performed exclusively by qualified personnel.
- Should any foam or liquids escape the machine, immediately turn it off.
- Before performing cleaning or maintenance operations, disconnect the battery.

- Before handing the machine to a waste collection centre, the battery must be removed and correctly disposed of.
- Ensure all warning labels are legible and correctly applied to the machine.
- During operation, pay the utmost attention to other people, especially children.
- Before using the machine ensure all covers and doors are in the positions specified in the instructions.
- When the machine is left unattended, adopt all necessary measures to prevent any unintentional movement of the same.
- The machine must be exclusively operated by trained and authorised personnel.
- When the machine is left unattended, disable or lock the power supply switch to prevent unauthorised use.
- Exclusively use the chemicals recommended by the manufacturer.
- The machine is designed to be used with the brushes specified by the manufacturer. The use of other types of brushes may affect the machine's safety.

WARNING

- Lead batteries emit hydrogen. These emissions give rise to fire or explosion hazard.
- Do not use the machine near sparks or naked flames.
- Keep the solution tank lifted during recharge.
- Keep the batteries away from sparks or naked flames.
- Do not smoke near the batteries.

WARNING

- Disconnect the batteries before performing any kind of procedure on the machine.
- Every procedure on the machine must exclusively be performed by skilled personnel. Always wear protective clothing and glasses in case of operations on the batteries or near them.
- Avoid contact of the acid contained in the batteries with the skin.

WARNING

- Never place any metal objects on the top part of the batteries.

- Strictly do not wash the floor scrubber dryer with pressure washers and electrical parts with water.

FOR SAFETY

- Immediately report any machine damage or malfunctioning.
- Do not use the machine unless it is in perfect operating conditions. Carefully read the information.
- Identify all the machine's safety devices.
- Assure adequate training of the personnel in charge of operating the machine.
- DO NOT OPERATE THE MACHINE IN THE FOLLOWING CASES:
- You have not been trained and authorised.
- The operating Guide has not been read.
- You are in an area under risk of fire or explosions.
- You are in an area where there is a falling objects hazard.
- DURING MAINTENANCE OPERATIONS:
- Avoid moving parts. Do not wear wide clothing, such as jackets, shirts in general, necklaces or hanging objects
- clothes with wide sleeves when using the machine.
- Use Victor approved spare parts.

4.1. Declaration of absence of harmful substances

We hereby declare that our products, used in the process of assembling the machine, are produced with materials that comply with the limits established by the regulations in force on the protection of health and the environment and do not contain substances classified as SVHC (Substance of Very High Concern) in accordance with CE 1907/2006 regulation (REACH, i.e. ***R****egistration,* ***E****valuation,* ***A****uthorisation and Restriction of* ***Ch****emical substances).*

Although the above mentioned substances are not employed in processing cycles of raw materials and our products, their presence cannot however be ruled out in the order of p.p.m. (parts per million), due to micro-pollution of raw materials.

4.2. Safety devices of fixed closing guards

The components that protect some areas that contain moving parts or live equipment are considered fixed closing guards.
The brush plate is fitted with fixed closing guard, consisting in the plastic material protection casing.
The steering column contains moving parts (levers for lifting the brush plate) and live equipment (electrical panel, motors wiring). This

column is protected by a plastic material nose, that entirely encloses the head, assembled with screws.

WARNING

Do not remove the fixed closing guards. In the event of maintenance, ensure the same are reassembled before turning on the machine and starting to work.

4.3. Safety devices relevant to mobile guards

There are no mobile guards on the machine.

The battery compartment is housed under the upper dirty water recovery tank. In order to access it the tank, which is hinged at the top, must be tilted over.

5. CE PLATE POSITION

The technical specifications plate bearing the CE marking is attached on the steering upright, it is adhesive and must not be removed for any reason.

6. MACHINE TRANSPORT AND LIFTING

Lift the brush plate before proceeding with transport. Place the machine on a pallet, taking care to lock the wheels to prevent the machine from moving.
Transport and any lifting must be done with the machine on a pallet.

It is recommended to empty the solution recovery tanks.

If the rubber-dryer **SDR-80** is loaded on a vehicle, with ramp, or in any case every time it is required to drive it on a steep ramp, it is recommended to lift the brush plate and take down the splash-guards and brushes.

7. INTENDED USE OF THE MACHINE (washing and drying phase)

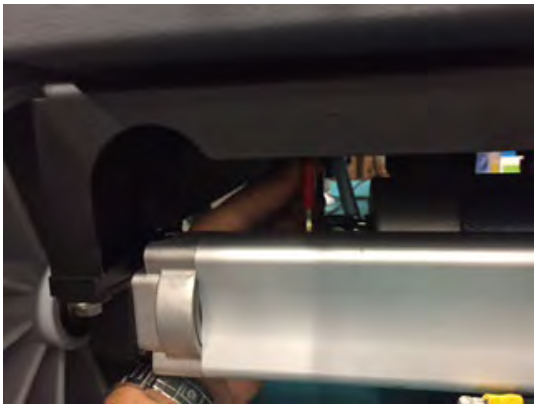
SDR-80 is a Scrubber-Dryer machine, driven by an operator seated on board, to wash and dry hard floors, battery powered, intended for commercial use.
The machinery applies a detergent solution to the hard floor, a solution that is collected in the solution tank and is conveyed through

suitable piping to the brush plate, with solenoid valve adjustable flow, it scrubs the floor by the combined action of two counter-rotating brushes and then draws the dirty water into the recovery tank.
It is also possible to spray the floor with water, actuating the brushes only for scrubbing and cleaning, without drying.
Finally, when a floor is already wet, it might be required to permanently lift the brush plate without actuating its rotation and pass with activated suction only, in order to suck the water from the floor and draw it into the recovery tank.

Other operations are not intended for the **SDR-80**.
Any other operation should therefore be considered as improper.

8. INTENDED USE OF THE MACHINE (machine being moved without washing or drying)

The SDR-80 can be handled without brush plate lowered and brushes in contact with the floor, or with the drying turbine turned off. This can happen during transfer from one room to another, at the end of the cleaning or for other reasons. It is just required to set the appropriate controls to raise the brush plate and drive the machine with brake and accelerator. At this stage the maximum speed adjustment system is not activated, but the speed is controlled exclusively via the accelerator pedal.
When moving the machine when the operator is not on board, needing to push or pull the washer-dryer, with traction motor then turned off, it is needed to turn the red lever on the axle of the rear gear reducer by pulling it towards the rear of the machine.
Thus the gears of the motor reducers are at idle and the machine can be moved easily.
Remember to rotate the red lever toward the front of the machine if you want to activate the motor-reducer and then again activate the drive system of the machine.

.  

9. REASONABLY FORESEEABLE INCORRECT USE OF THE MACHINE

WARNING

The machine is not intended for outdoors use.
Do not wash and extract corrosive, flammable, explosive liquids, even if diluted.
It is strictly forbidden to use the machine in environments with explosion hazard where there are flammable and explosive gases, vapours, liquids and powders.

FOR SAFETY

Do not wash the floors with water hotter than 50°C;
Do not use diesel fuel/benzene or corrosive detergents for washing floors;

WARNING

The machine has been designed for being used on flat surfaces and small slopes.
The maximum slope allowed, feasible uphill both during the operating and the transfer phases, is equal to 7% (corresponding to a ramp with an inclination of about 4°).
To cover the same ramp downhill, you need to shift into reverse, as indicated in the following pictures, where the proper use is shown (downhill shifted into reverse) and the misuse (downhill covered in the normal direction of travel).
The above-mentioned incorrect behaviour, because of possible surface condition (wet, bumpy or made of low-friction material), can lead to dangerous slipping or prolonged stopping distances, even more

evident and risky in the transfer phase when the machine is moving and the disk brush is raised from the floor.

For the same reason, the parking brake must be always engaged when you want to leave the machine stopped on a ramp, with the same placed as in the following picture.

10. SUPPLIED KIT

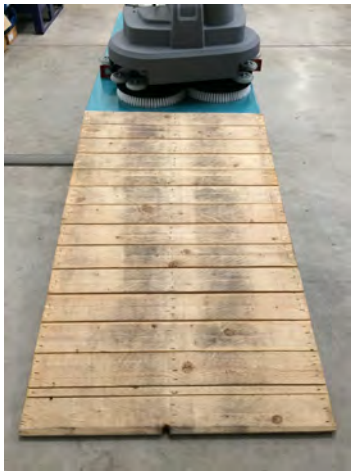
In addition to this instruction manual, the machine is supplied with a kit containing:

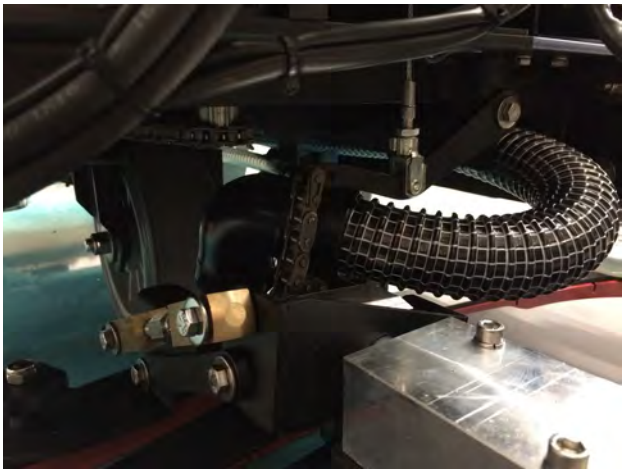
1 clean water tank filling pipe

INSTALLATION

10.1. Preliminary operations

The machine is shipped completely assembled and packed on a pallet. To load the machine from the pallet, resting it on the floor, use the special slide platform. It is recommended not to push the machine from the pallet in the absence of a suitable slide, but remove the batteries (if present) and unload it by hand, 4 people required (approx. 30 kg per person max).





Before use perform the following operations:

1. Perform a preliminary inspection to identify any problems that might cause malfunctioning or breakdowns.
Visually ensure there is no external damage, leaks and the wheels are not damaged.
3. Ensure the wiper is correctly adjusted.
4. Check that the drain hose, the cap, the hose from the wiper are installed properly, taking care to insert the hose into a sharp bend with a suitable curve as shown in figure above.
5. Check battery conditions and if necessary recharge.
6. Ensure the brakes and steering wheel operate correctly.

Should any damage, fault or missing parts be detected, do not commission the machine and contact your Dealer or directly Victor.

11. MACHINE PREPARATION AND COMMISSIONING

11.1. MACHINE START UP

NOTE: Before operating the machine, perform preliminary inspection.

FOR SAFETY

Before starting the machine, ensure all safety devices work correctly.

1. The operator must be on the drive seat and keep his left foot on the brake pedal. To avoid any unintentional movement, the accelerator pedal must not be pressed.

NOTE: To move the machine in the desired direction, the operator must be seated in the driving seat, since a safety device that detects the seated operator is installed under the seat.

2. Turn the ignition key clockwise in the “ON” position.
3. Check the set travel direction, and select it on the Forward or Backward selector.
4. With operator seated and key ON the parking brake is automatically released. Now slightly press the accelerator pedal and move the vehicle into the filling area, by turning the steering wheel.

11.2. MACHINE FILLING

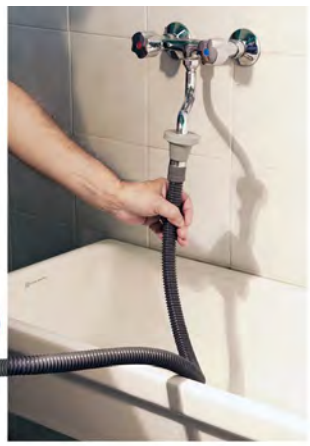
FOR SAFETY

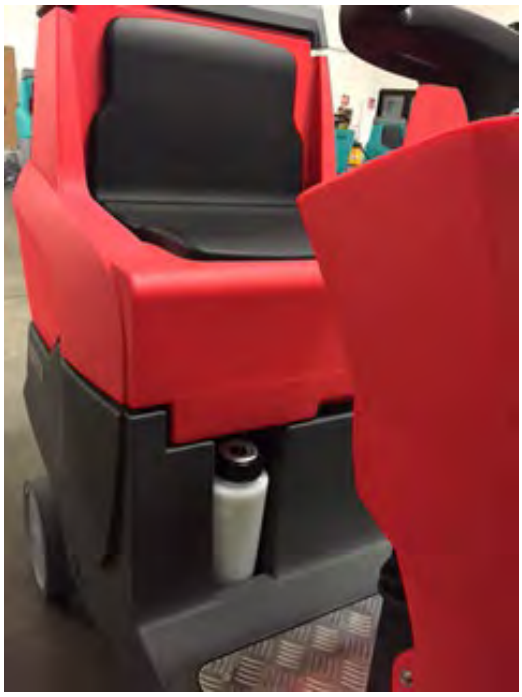
Before leaving the machine unattended or performing any maintenance operation, ensure it is on a flat surface, turn off the machine and remove the key.

1. Lift the entire brush plate and turn the start key OFF anticlockwise to turn off the machine.
2. Rotate the solution tank cover.

3. The solution tank may be filled to maximum filling capacity (80 litres), paying attention to the level shown in the small gauge pipe located on the side of the tank, under the filling spout.

Leave a sufficient volume for the detergent.
To avoid damaging the tank, the water temperature must not exceed 50°C.
Measure the amount of chemical in the solution tank after filling it with water. Before adding not-liquid chemicals into the tank of the solution, dissolve them completely. The machine can be equipped with automatic chemical dispenser, adjustable from control panel (for version Ki-Do -optional-).

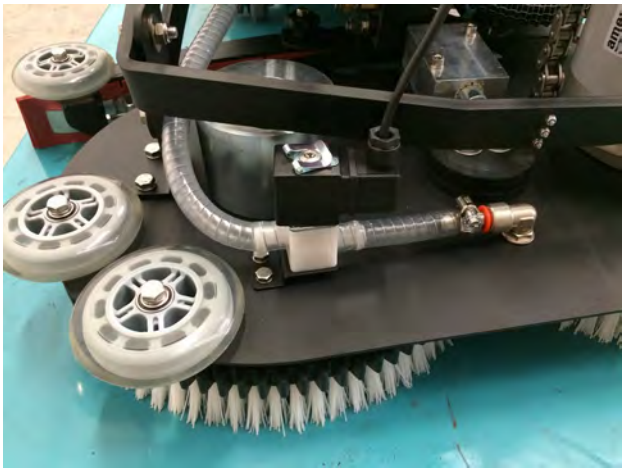




12. USE OF THE MACHINE

12.1. FLOOR WASHING AND DRYING

Plan the washing and drying route in advance. The longest route follows the perimeter of the area to be treated. The ideal route has the least turns, stops or brush plate lifting and lowering (to manoeuvre).
To obtain the best results, the area to be cleaned must be accurately swept prior. Remove large debris, ropes and cables, to prevent them from coming into contact with the brushes or wiper.
If the machine is left on but not moving, with lowered working brushes, the flow of solution and the brush rotation stop, the machine is equipped with a solenoid valve mounted directly on the brushes plate, so that when it is turned off water is feeding is stopped, without unwanted dripping.



Water flow adjustment solenoid valve

water flow manual stopping

The machine is also equipped with a manual valve that stops the flow of water thus emptying the tank of the solution, if necessary operate under maintenance to manually close the water flow.

12.2. START OF WASHING AND DRYING

When the machine is used in the presence of people, pay the utmost attention to

unexpected movement. Pay even more attention in the presence of children.

1. The parking brake is always engaged automatically, with machine off with selector OFF and no operator on the driving seat.

2. Ensure the accelerator pedal is not pressed and turn the ignition key “ON”; the parking brake is automatically released.
3. Select the desired travelling direction (forward or backward)
4. Operate the switch (progressive) to adjust the load of brushes on the ground, possibly adjusting (+/- loaded) the position with respect to the floor.
5. Press the brush start switch on the control panel. The brush motor is ready to be started. The brushes will only start turning when the operator starts pressing the speed pedal,
6. Turn the knob on the panel to adjust solution water opening,
7. Press the vacuum turbine switch on to start the extraction system.
8. Adjust the machine speed, through the accelerator pedal, after setting the maximum attainable speed, turn the speed control knob, located on the fuse panel.

NOTE: Brush rotation and solution flow are automatically interrupted when the operator decides to stop the machine and no longer presses on the accelerator pedal. Brush motion and flow automatically resume when the accelerator pedal is pressed again.

12.3. INTERRUPTION OF BRUSH MOTION AND WASHING

1. Press the switch that controls brush rotation on the control panel. The brush motor is de-activated.
2. Lifting one's foot off the accelerator is also enough to stop brush rotation, the machine stops and the brushes stop
3. Press the switch that controls complete brush plate lifting, it is lifted in parking position. After 5 seconds the extraction motor is stopped. This delay is to allow for complete emptying of the recovered solution which is still present in the extraction pipe.
4. Brake until the machine stops.
5. Turn the ignition key “OFF” or get off the machine.
5. The parking brake is automatically engaged.

12.4. DOUBLE WASHING and SINGLE DRYING

Particularly dirty floors may not be sufficiently cleaned with one pass. In these cases double brushing must be performed.
To perform double brushing and washing, carry out a first pass with the wiper lifted by acting on the manual cam located on the side of the steering column, solution flow activated and brushes lowered. In this way the solution is in contact with the floor while the brushes work to reduce the layer of dirt. Leave a reasonable length of time elapse so that the solution is sufficiently in contact with the floor. The length of time elapsed between the

first and second pass depends on the amount of dirt and type of chemical used.
A second pass with wiper and brushes lowered and activated solution further reduces the layer of dirt. A further application of solution contributes to making a hard cleaning operation mush easier.
When double washing passes are performed, it is recommended to maintain a particularly low driving speed due to the wet floor and in order to allow the detergent to chemically act on the dirt.

In the case of a double pass move the lever on UP.

12.5. EMPTYING AND CLEANING THE RECOVERY TANK

1. Press the switch on the control panel to lift the brush plate, stop the motor and flow of solution and de-activate the extraction turbine.
2. Place the vehicle near a floor drain. The discharge pipe is at the rear of the machine.
3. Turn the ignition key to “OFF”, the parking brake is engaged.
4. Remove the drain hose from the hook. Unscrew the cap and lower the discharge pipe towards the floor drain. Stay behind the end of the pipe. Lock the filthy water by pressing the rubber; remove the cap

from the drain hose slowly. The recovered solution escapes with adjustable pressure from the rubber hose above mentioned.
5. Remove the upper tank cover.
6. Wash the recovery tank with clean water. Repeat washing until clean water issues from the discharge pipe. Do not use water at temperature higher than 50°C as it might damage the tank.
7. Replace the cap and the discharge pipe.
8. If the machine must be left inactive for a long period of time do not reassemble the recovery tank upper cover and the drain hose cap, to allow air to circulate inside it.

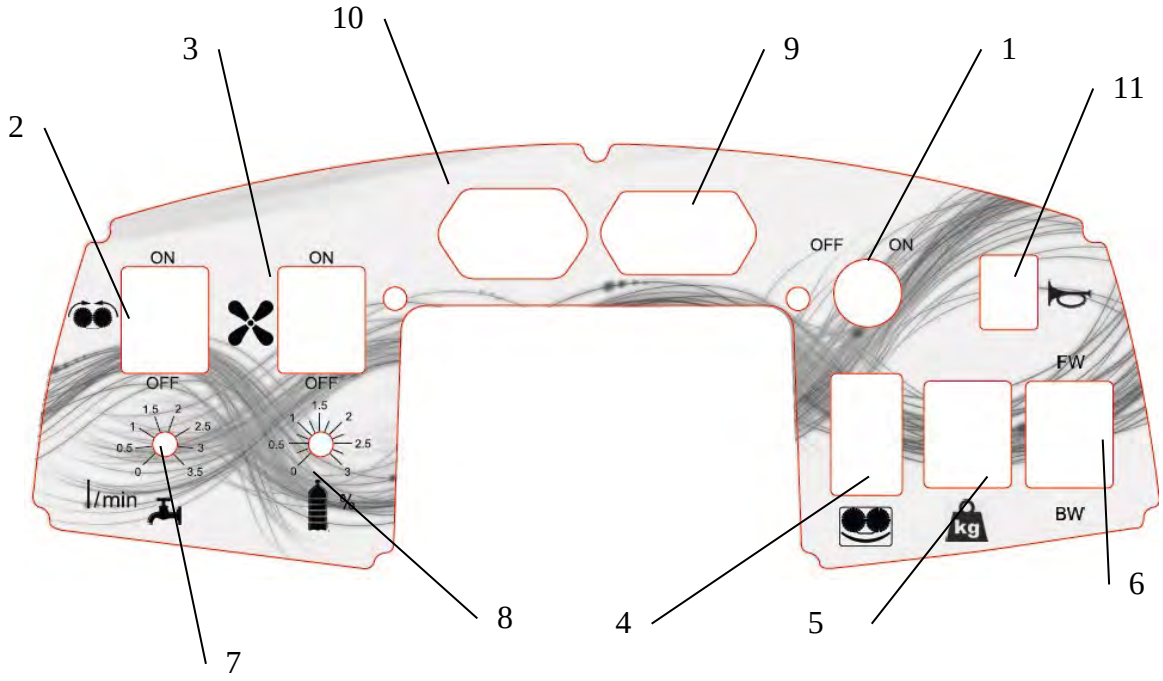
Dirty water drain hose with flow control (flow control)

12.6. EMPTYING AND CLEANING THE SOLUTION TANK

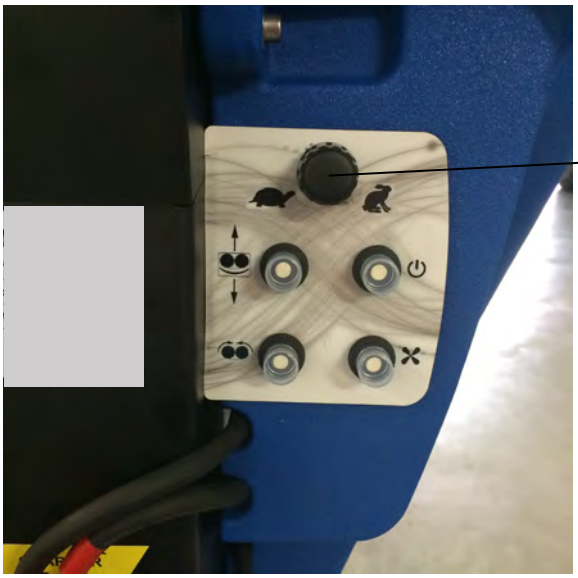
1. Place the vehicle near a floor drain. The discharge pipe is in the left front corner of the machine, under the tank.
2. Turn the ignition key to “OFF”, the parking brake is engaged.
3. Remove the clip from the small discharge pipe connected to the solution tank.
The pipe is underneath the machine, on the left side. Lower the pipe towards the drain, turn on the cock.
4. Wash the tank with clean water and run clean water into the system, until reaching tank capacity (80 litres). Do not use water at temperature higher than 50° to clean the tank as it might be damaged.
NOTE: Never leave the solution inside the tank as it might damage the tank, the seal gaskets and the solenoid valves.
6. Replace the discharge pipe.

13. CONTROL STATION

13.1. SDR-80 CONTROL STATION



SDR-80 control panel



SDR-80 circuit breakers panel
adjustment knob for maximum working speed

13.2. DESCRIPTION OF CONTROLS

13.2.1. ON/OFF KEY SWITCH (1)

It controls electrical power supply to the machine's functions. To switch on the machine, turn the key to the ON symbol. When it is switched on with the key, the machine has electrical system energised, flashing light on, the possibility to lift and lower the brush plate.

13.2.2.BRUSH ROTATION ACTIVATION SWITCH (2)

This switch controls brush rotation.
To start rotation, press the switch. The brush motor is powered and to start rotation just press the accelerator pedal.
If the speed control pedal is at idle, the brushes and solution flow are stopped.

13.2.3.EXTRACTION ACTIVATION SWITCH (3)

This switch controls activation of the extraction turbine.
To start extraction, press the switch.
If the brush plate is lifted, or the machine stops, the solution flow is interrupted and the vacuum turbine is automatically disabled with a 5 second delay. This delay is to allow the water recovered from the floor, contained in the extraction pipe, to be eliminated.

13.2.4. BRUSH PLATE LIFTING SWITCH (4)

The switch controls the ascent or the descent of the whole brushes plate, including the wiper, in a variety of different positions, thus offering the possibility to adjust the brush pressure on the floor according to the position chosen.

13.2.5.BRUSH PRESSURE INDICATOR

On scrubber-dryer, the switch, described in the previous point, checks the pressure exerted on the floor by the brushes. To decrease pressure, press the top of the switch. To increase pressure, press the bottom of the switch.

The indicator beside the switch indicates the pressure value of the brushes. Once the brushes plate is lowered on the floor, at the end stroke and while operating, this indicator will signal with a red colour (more pressure) to green (less pressure) the force exerted on the floor by the brushes (and the corresponding electric motor absorption).
It is recommended, depending on the state of dirt of the floor or on the floor type, to lift the brush plate until the machine is operated with green light on, so to have a longer battery service life. In case of very dirty floor, where it is necessary to have a high brush pressure, the machine should be operated with the indicator turned red.
The flashing red indicator means the maximum pressure allowed for brushes has been reached.
The load that can be exerted on the floor by brushes is adjustable from a minimum of 0 kg, up to a maximum of 41 kg

13.2.6. TRAVEL DIRECTION SELECTOR (6)

The selector lets you choose the travel direction. Setting it to FW (FORWARD), the machine moves FORWARD when the speed pedal is pressed. Setting it to BW (BACKWARD), motion will be in reverse as soon as the pedal is pressed.

13.2.7. WATER-DETERGENT SOLUTION FLOW CONTROL KNOB (7)

The knob controls the flow in litres/minute of the solution to the brush plate.
To increase the flow, turn the solution control knob clockwise.
To decrease flow, turn anticlockwise.
Adjustment ranges from 0 litres/minute to 3.5 litres/minute.
If the brush motor is de-activated or if the speed control pedal is in the idle position the solution flow is automatically interrupted until the brush motor and machine motion are resumed. This function prevents unintentional discharging of the solution tank and allows the operator to adjust the solution flow without needing to adjust it again each time.

13.2.8. CHEMICAL METERING CONTROL KNOB, only for Ki-Do supplied version (8)

The knob controls the flow of the chemical detergent which is going to be mixed with the water poured in the clean water tank to form the detergent solution.
To increase the chemical detergent percentage in the aqueous solution, turn the control knob clockwise.
To decrease the flow, turn anticlockwise.
The solution percentage that may be created ranges from 0% (no chemical detergent added to the duct that feeds directly the brushes) to 3% of detergent volume, with respect to the volume of water conveyed to the brushes).

13.2.9. BATTERY CHARGE STATUS INDICATOR (9)

The LED display signals the battery charge status.

FOR SAFETY

Do not charge the batteries before using the machine for at least 60 minutes, in order not to damage charging cycles. Pay attention to the battery charging operation, as explained in the relevant paragraph 14.2.

13.2.10. HOUR COUNTER (10)

The display indicates the machine's operation hours since control unit activation when the washer dryer was constructed. The hour counter activates at the start of brush rotation and de-activates when they stop. Therefore machine movement hours are actually measured.

13.2.11. ACOUSTIC SIGNAL (11)

The button activates the beeper.

13.2.1. STABILIZING KNOB FOR MAXIMUM WORKING SPEED (12)

The knob controls the maximum forward speed of the machine. The recommended speed is 4 km/h, which corresponds to the intermediate position of the control, but it can be changed by the operator by turning the rotating knob (12) counter-clockwise to decrease and clockwise to increase. Obviously the speed is the same, adjustable through the accelerator pedal itself.

13.3. CONTROLS

13.3.1. SPEED CONTROL PEDAL

It is located to the right of the steering column.
It controls the machine's speed. The motion speed is increased by lightly pressing the pedal.
The motion direction (forward gear or reverse) is controlled by the panel selector.
The maximum speed is still settable, only during operation and then when the brushes are working, through the knob on the control panel, next to the steering column.

13.3.2.CONTROL AND PARKING BRAKE

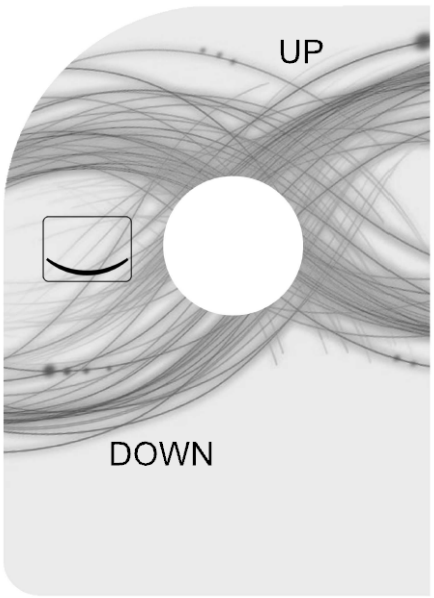
The machine is equipped with parking and control brake, of the electric brake type, built into the motor axle.
The brake is always engaged every time the machine selector is OFF and the operator is not seated on the driving seat.
The brake is automatically disengaged with selector ON and operator seated (there is a safety micro-switch under the seat).

There is the possibility to activate the brake, to reduce the speed or stop the machine while in motion.

Engaging the parking brake is necessary in special conditions, such as on slightly sloping paths, if the operator needs to temporarily stop the machine.

13.3.3.WIPER LIFT LEVER

The brush plate is built into the wiper and the it lifts jointly with it.
The wiper may also be lifted independently, by means of the manual lever located to the left of the steering column.
Turn the hand wheel clockwise in the UP position and the wiper only lifts by means of a cam.
To replace it on the floor, turn the hand wheel in the opposite direction until it is on the DOWN symbol.
The use of this lever is indicated only in case of double cleaning processing, i.e.:
1st pass: only wash and therefore wiper lever manually lifted
2nd step: washing and vacuum, therefore with wiper lever lowered.



13.3.4. STEERING WHEEL

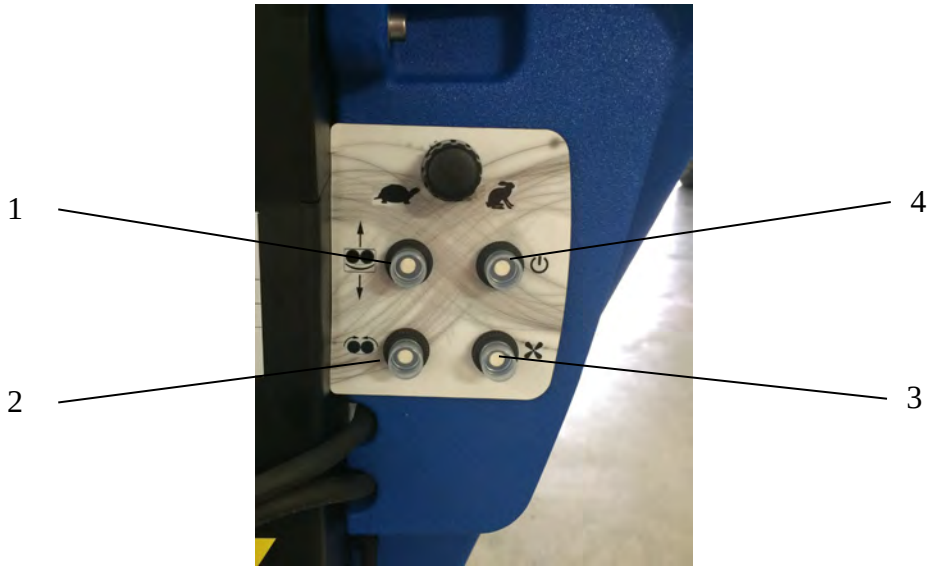
It is used to turn the front wheel to change the direction of travel of the machine.

Both versions have a double steering axle referral that allows it to rotate in a particularly soft way and a high number of steering wheel turns (greater manoeuvrability and precision, similar to a power steering).

13.3.5.ACOUSTIC SIGNAL BUTTON

There is a beeper button on the control panel. Press the suitable button to start the beeper.

13.4. ELECTRICAL CONTROL DEVICES



13.4.1. PLATE OF RESETTABLE THERMAL CIRCUIT BREAKERS OF THE MOTOR

It is located to the right of the steering column.
There are buttons to release the circuit breakers of motors, which trigger following overheating deriving from an increase in electricity consumption.
The picture shows the functions that are protected by these devices.
In detail:

position 1 = brush lifting motor thermal protection (5 Ampere)
position 2 = brush rotation motor thermal protection (30 Ampere)
position 3 = extraction motor thermal protection (30 Ampere)
position 4 = main thermal protection (5 Ampere)

13.4.2. ANDERSON BATTERY CHARGER SOCKET

It is located directly on the steering column.
When the machine is powered by its own batteries, the socket must be engaged.
In the event of recharging the batteries, the top socket must be detached and the battery charger plug must be inserted into the lower socket.
The sticker shown in the picture indicates the direction of insertion of the battery charger plug.

14. MAINTENANCE

14.1. BATTERIES

The batteries supply the power to operate the machine. For the batteries to always assure peak performance, some maintenance operations must be regularly carried out.
For the batteries to last as long as possible, recharge them every time the charge indicator reaches the first red mark, shown by the display on the control panel.
Do not let the batteries run completely down. Never expose spent batteries to temperatures lower than freezing point, as when the liquid inside them has frozen might lead to cracking of the outer plastic casing (lead acid battery versions).
Do not start the machine unless the batteries are in good condition or if the charge status is lower than 25%.
Never place metal objects on top of the battery, as they might cause a short circuit. Replace damaged or worn cables or terminals.
Check the electrolyte level in each battery element before and after charging. Never add acid to the batteries, only use distilled water.
Never let the water level go below the battery plates. The parts of the plates exposed to air would be damaged. Do not excessively fill the battery. Always securely insert all caps.

When performing maintenance operations, avoid contact with the acid.
The batteries emit hydrogen. Risk of fire and explosions.
Keep the batteries away from sparks and naked flames.
Remove all caps before charging the batteries.
Exclusively charge Pb batteries in dedicated areas.
Always wear protective gloves and glasses to perform battery maintenance.
Charge the batteries in a well-ventilated area.
When charging the batteries, lift the recovery tank as shown in the photo.

14.2. CHARGING THE BATTERIES

1. Place the machine in a clean and well-ventilated area, near a battery charger.
2. Lift the upper tank to access the battery compartment.

FOR SAFETY

Before leaving the machine unattended or performing any maintenance operation, ensure it is on a flat surface, engage the parking brake, turn off the machine and remove the key.

3. Tilt the upper tank, after ensuring it does not contain any water.
4. Check electrolyte level in every battery element. Before charging the battery, add a sufficient amount of water to cover the plates. After completing recharge, add a sufficient amount of water to bring the water level to the gauge level. If the water level is too high before charging, the normal electrolyte expansion may cause it to leak which causes loss of acid balancing and machine damage.
5. Replace battery caps.
6. Disconnect the battery connector form the machine. Disconnect the battery charger form the power outlet.

FOR SAFETY

When charging the batteries, connect the battery charger to the batteries before connecting it to the power outlet. Never connect the battery charger to the power outlet first as sparks might be generated.

7. To charge the battery pack, use a DC 24 V battery charger that automatically switches off as soon as the batteries are completely charged.

8. Connect the battery charger to the battery connector. Connect the battery charger cable to the power outlet. The charge indicator shows that the batteries are under charge.
9. When the batteries are completely charged, disconnect the battery charger from the batteries.
10. Connect the batteries to the machine connector.
11. Check electrolyte level. The level must reach the gauge. If necessary, add distilled water.
12. Lower the upper recovery tank into its position.

14.3. BRUSH PLATE ADJUSTMENT

The brush plate is pre-shaped for optimal adherence to the floor. There is the option of adjusting the brush plate pressure on the ground, to have a more or less effective scrubbing action. Use the panel button to do that.
The switch controls the pressure exerted on the floor by the brushes. To decrease pressure, press the top of the switch. To increase the pressure, press the bottom part of the switch and check the led display that indicates the pressure exerted by the brushes on the floor.

14.4. BRUSH REPLACEMENT

This is done as follows.

1. With the brush plate lifted, turn the ignition key to OFF, the parking brake is engaged.
2. Press on the top of the brush, so to remove the it from its rim hub and let it drop on the floor.

3. To insert the new brush, place it under the brush plate, roughly aligned with the hub, then lift it with your hands and push it against the hub until it engages the closing tabs (you should hear the snap).
In order to avoid brush or pad warping in case of no use, it is recommended to always lift the wiper when the machine is idle.

14.5. WIPER ASSEMBLY

The machine is packed, shipped and delivered with the disassembled wiper.
We recommend that you mount the wiper providing its rotation to the right, so to have the most amount of clear hose that facilitates assembly.
To do this turn the mounting arm to the right, move the wiper closer and fix it with the suitable screws. Connect the hose to the wiper connection itself.

14.6. WIPER ADJUSTMENT

Two wiper adjustments are possible:
1. longitudinal tilt: the wiper may be tilted more forward or backward by tightening or loosening the threaded adjusting screw.

2. height from ground: using the clamping nut of the support wheel to move vertically the wheel itself, by screwing or unscrewing it from its mounting plate.

The ride height adjustment and tilt are needed when you work on different floors:

for smooth floors or ceramics: lower and tilt the wiper, until you have about 5 mm of the drying blade edge smoothly folded on the floor.

for concrete or rough floor: lower and tilt the wiper, until you have about 10mm of the drying blade edge smoothly folded on the floor.

It is recommended to lower the wiper evenly, raising or lowering to the same value both the right and left wheels.

14.7. WIPER DRYING BLADE REPLACEMENT

Two blades are assembled: one on the front and one rear, different form one each other. They are built so as to avoid installation errors.
The wiper has the purpose of picking up the water from the floor through a vacuum chamber that generates inside it.
In order to achieve maximum vacuum, plastic material drying blades (various types) are fitted that allow it to perfectly adhere to the floor with no vacuum losses. Blade replacement is therefore required to prevent decrease of water extraction properties by the wiper.
To replace the blades:
1. Loosen the two knobs, on the right and left, that lock the wiper and aim it outwards in order to make access easy.
Remove the wiper and place it on a work bench.
2. Loosen and remove the hand wheels that fasten the blade.
3. Remove the fastening strap and the blade, then rotate upside down or completely replace the blade.
4. The same blade can be used for 4 times, causing it to work, every time, on a different edge (you should turn them every 20 working hours as a maximum).
5. Fit the blade and fastening strap on the reference pins, then screw the hand-wheels again.
6. Replace the wiper.
Normally the rear blade has an average service life halved compared to the front one.

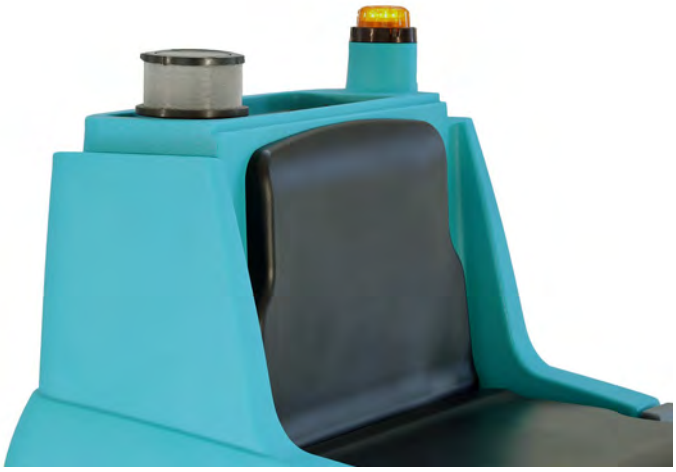
14.8. CLEAN WATER FILTER CLEANING

The clean water filter is fitted under the machine's floor, on the right side. Its position is also indicated by the wording on the right side of the solution tank. The filter has the purpose of preserving the solenoid valve controlling solution flow rate from any debris or sediment there might be in the solution tank.
It is recommended to clean the filter **weekly**.
In order to clean it unscrew the cup, remove the filter inside it and wash it under running water. Replace it and fit the cup back in.
The filter used also acts as a shut-off valve on the solution tank, that is by unscrewing the cup the flow automatically stops

.

14.9. EXTRACTION FILTER CLEANING

The mesh filter is fitted inside the recovery tank, directly fitted onto the end of the vacuum turbine suction cone. The purpose of the filter is to protect the turbine from foreign matter which might enter through the extraction cone, mainly during dry extraction.
It is recommended to clean the filter **daily**.
To clean the filter, just remove it and wash it under running water. Fit it back onto the cone, taking care to fit it securely onto it.



14.10. MAINTENANCE SCHEDULE

maintenance action	daily	every 50 hours	every 200 hours
Check the battery water level when charged; If necessary, add distilled water (only for version with lead acid battery). Gel batteries are maintenance-free.	x		
Check seal of recovery tank cover.	x		
Visually check integrity (damage or wear) of the tyres.		x	
Ensure the brushes are correctly mounted.		x	
Check connections of vacuum flexible hoses.	x		
Check correct operation of brakes and steering wheel.		x	
Inspect the vacuum filter for any debris.	x		
Clean the detergent solution filter and tank. Check flow.	x		
Clean brushes and check them for wear.		x	
Clean wiper rubbers and check them for wear. It is recommended to turn them every 20 working hours	x		
Clean the recovery tank and vacuum filter.	x		
Clean the outer part of the tank. Check integrity.	x		
Charge batteries.	x		
Clean the top of batteries.		x	
Clean detergent solution filters.	x		
Check effectiveness of parking brake.		x	
Check all motors to ensure the carbon brushes are not worn.			x

14.11. SUMMARY FOR GOOD MAINTENANCE OF THE MACHINE

1. Unloading from pallet: always use a wooden base to slide down the machine
2. On loading or unloading the truck: lift the head, always remove brushes, wiper and splash guard. Rest the the hose of the wiper on the support bracket
3. End cleaning: always lift the head
4. End cleaning: it is recommended to always turn off the switches of brushes and turbine before turning the key
5. End cleaning: always clean the recovery tank/dirty water
6. End cleaning: always clean the drying blades
7. Wiper lever: you must operate only in the case of washing without drying. In all other situations, never use it.
8. Suction blades: it is recommended to turn them when necessary, bearing in mind that there are 4 useful positions.
9. Brushes: check for wear and replace them when requires and in any case at least once a year.
10. Stainless steel air intake filter: inspect it regularly and clean when dirty (dry suction)
11. Water filter: inspect it and wash it regularly.
12. Batteries: charge for at least 8 hours

14.12. TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Machinery without power supply	Disconnected batteries	Check connections of all battery cables.
	Corroded battery cables	Clean connections.
	Main thermal cut-out tripped	Reset the thermal cut-out
	Faulty key switch	Replace the switch.
No thrust forward or poor thrust backward.	Flat battery	
	Machinery on with pedal not activated	Press accelerator pedal
	Skidding	Reduce brush pressure
	Loosened motor connection	Check wires and connections from circuit board to motor.
	Loosened accelerator connections or faulty accelerator potentiometer	Check wires and connections that go from accelerator to panel and to potentiometer resistor.
	Loosened seat switch connection or faulty seat switch	Check connections and continuity of the switch.
Poor water collection or no water collection	Wiper not adjusted	Adjust the wiper
	Wiper clogged by debris	Remove debris
	Worn wiper blades	Rotate or replace the blades
	Water collection flexible hose clogged	Release the vacuum flexible hose
	Water collection flexible hose not correctly inserted in the recovery tank	Reconnect the vacuum flexible hose.
	Water collection flexible hose damaged	Replace the flexible hose.
	Vacuum motor inlet filter dirty	Clean or replace the inlet filter
	Recovery tank not hermetic.	Replace damaged seals (gaskets)
	Recovery tank full of foam	Empty the recovery tank, use less detergent or a different detergent. Use an anti-foaming agent.
Failed lifting / lowering of the brush plate	Faulty actuator	Repair or replace the actuator
The vacuum turbine motor does not	Recovery tank full	Discharge the recovery tank.

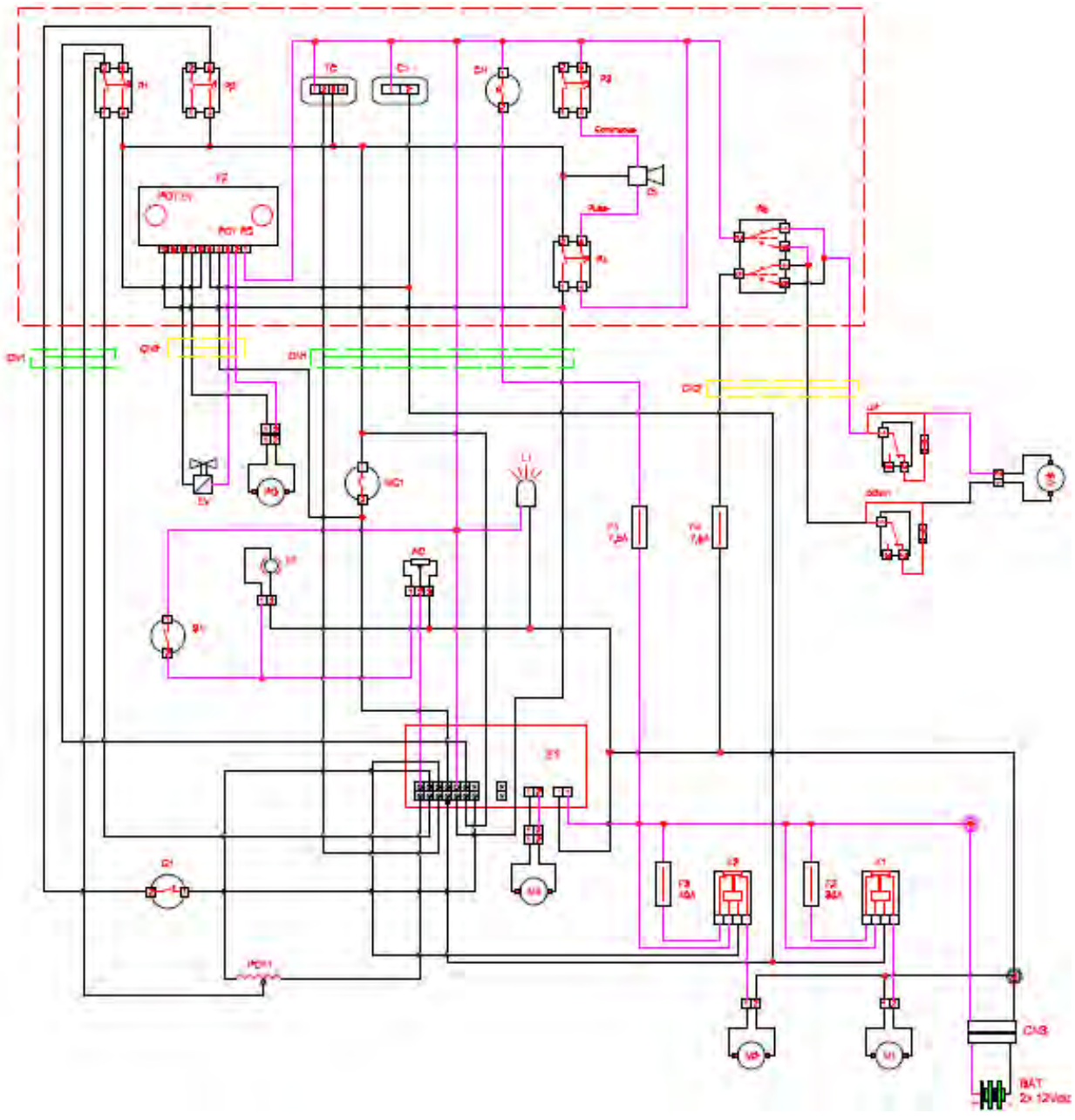
work or works slowly.	Loosened motor connection	Check motor wires and connections.
	Vacuum fan motor brushes worn	Replace brushes.
Poor washing performance	Washing brushes clogged by debris, worn brushes	Remove debris. Replace brushes
	Unsuitable detergent, worn brush or worn pad.	Contact the experts of the application or fitting.
	Insufficient washing pressure	Increase the washing pressure.
	Flat batteries	Charge batteries
Detergent solution flow to the floor is poor or absent	Detergent solution tank empty	Fill the detergent solution tank.
	Detergent solution flow de-activated or adjusted too low	Activate detergent solution flow or increase the flow adjustment
	Detergent solution filter obstructed	Clean the detergent solution filter.
	Obstructed piping of the detergent solution system	Clear the piping.
	Detergent solution solenoid valve obstructed or jammed	Clean or replace the solenoid valve

15. SOUND EMISSION

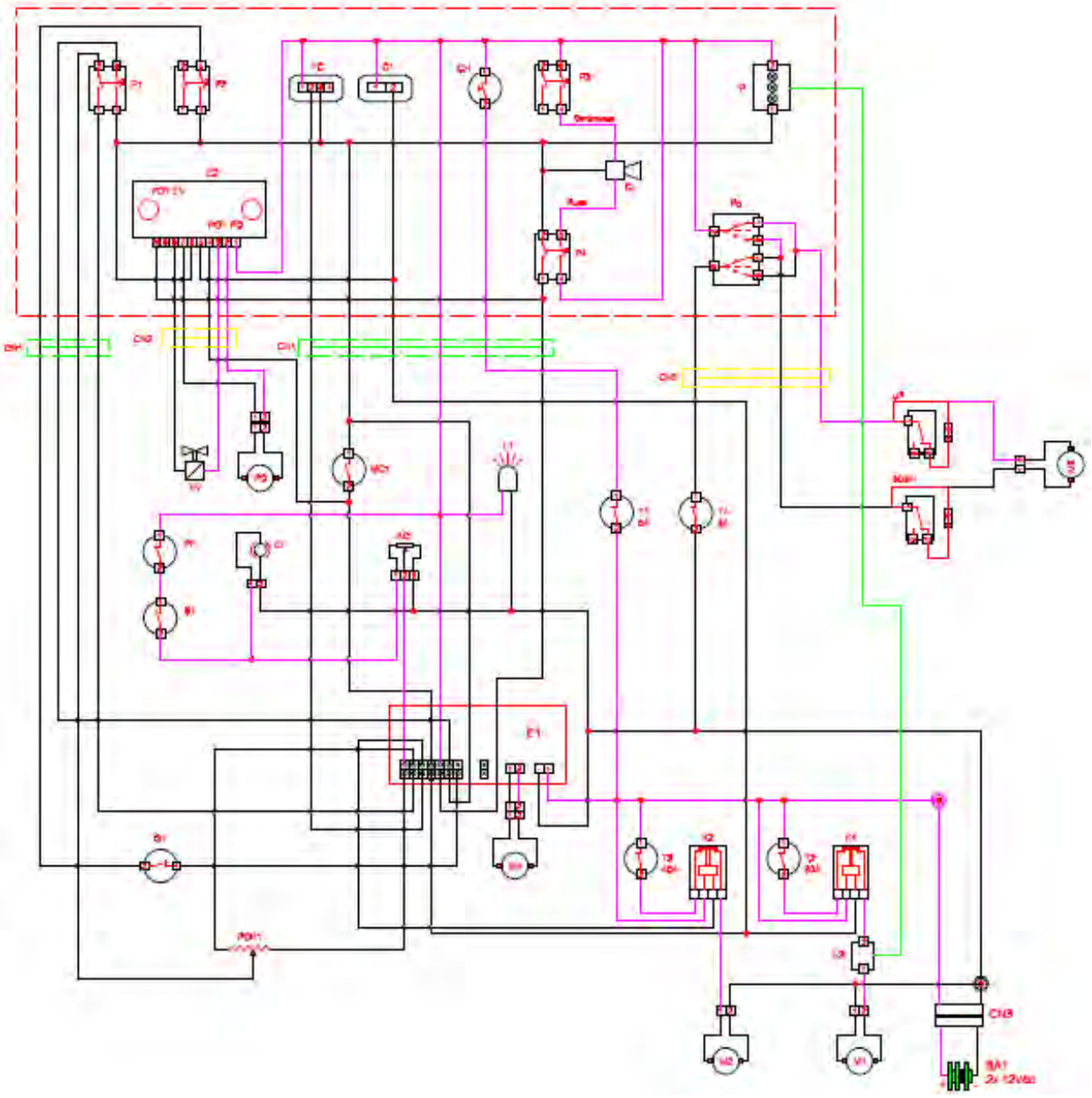
The Leq equivalent level averaged over multiple processing cycles was detected with Class 1 precision sound level meter as set out in IEC standards with constant fast-slow reading, both from the position where the operator is located, and in positions surrounding the machine being considered.

The measured value of the sound pressure at the level of the operator, is equal to Leq(A) = 66 dB(A).

16. WIRING DIAGRAM



Legenda		
AC	Acceleratore	Throttle
BAT	Batterie 2x	Batteries 2x
C1	Conta ore	Hour meter
CL	Clacson	Horn
CN1	Connettore comandi	Connector, main device
CN2	Connettore servizi	Connector, service
CN3	Connettore SB120	Connector, SB120
CH	Chiave	Main switch, key
E1	Scheda I-Drive 45A	Main board I-Drive 45A
E2	Scheda EV1 + PD	Main board for EV1 + PD
EF	Elettrofreno	Electromagnetic brake
EV	Elettrovalvola proporzionale	Proportional Solenoid valve
G1	Galleggiante	Floating
L1	Lampeggiante	Warning beacon
K1	Teleruttore mot. spazzola	Brush motor teleruptor
K2	Teleruttore mot. aspirazione	Vacuum motor teleruptor
MC1	Micro rallentamento	Speed reduction micro
M1	Motore spazzola	Brush motor
M2	Motore aspirazione	Vacuum motor
M3	Motore soll. spazzole	Brushes lifting motor
M4	Motore trazione	Traction motor
P1	Interruttore spazzola	Brushes switch
P2	Interruttore aspiratore	Vacuum switch
P3	Pulsante clacson	Horn push button
P4	Interruttore senso marcia	Direction controll selector
P5	Pulsante soll. spazzole	Lifting motor push button
POT1	Potenziometro velocità	Speed potentiometer settings
PD	Pompa dosatore (optional)	Dosing pump (optional)
S1	Sensore presenza operatore	Seat micro switch
TC	Stato batterie + diagnostica	Battery indicator + diagnostic
F1	Fusibile generale	Main fuse
F2	Fusibile motore spazzola	Brush motor fuse
F3	Fusibile motore aspirazione	Vacuum motor fuse
F4	Fusibile motore sollevamento	Lifting motor fuse



Legenda		
AC	Acceleratore	Throttle
BAT	Batterie 2x	Batteries 2x
C1	Conta ore	Hour meter
CL	Clacson	Horn
CN1	Connettore comandi	Connector, main device
CN2	Connettore servizi	Connector, service
CN3	Connettore SB120	Connector, SB120
CH	Chiave	Main switch, key
E1	Scheda I-Drive 45A	Main board I-Drive 45A
E2	Scheda EV1 + PD	Main board for EV1 + PD
E3	Scheda pressione spazzola	Main board for pressure indicator
EF	Elettrofreno	Electromagnetic brake
EV	Elettrovalvola proporzionale	Proportional Solenoid valve
G1	Galleggiante	Floating
IP	Indicatore pressione spazzole	Brush pressure indicator
L1	Lampeggiante	Warning beacon
K1	Teleruttore mot. spazzola	Brush motor teleruptor
K2	Teleruttore mot. aspirazione	Vacuum motor teleruptor
MC1	Micro rallentamento	Speed reduction micro
M1	Motore spazzola	Brush motor
M2	Motore aspirazione	Vacuum motor
M3	Motore soll. spazzole	Brushes lifting motor
M4	Motore trazione	Traction motor
P1	Interruttore spazzola	Brushes switch
P2	Interruttore aspiratore	Vacuum switch
P3	Pulsante clacson	Horn push button
P4	Interruttore senso marcia	Direction controll selector
P5	Pulsante soll. spazzole	Lifting motor push button
POT1	Potenziometro velocità	Speed potentiometer settings
PF	Pedale elettrofreno	Electrobrake pedal
PD	Pompa dosatore (optional)	Dosing pump (optional)
S1	Sensore presenza operatore	Seat micro switch
TC	Stato batterie + diagnostica	Battery indicator + diagnostic
F1	Termica generale	Main thermal switch
F2	Termica motore spazzola	Brush motor thermal switch
F3	Termica motore aspirazione	Vacuum motor thermal switch
F4	Termica motore sollevamento	Lifting motor thermal switch

17. CE Conformity

EU DECLARATION OF CONFORMITY

Machine Type:	***Rotary Floor Cleaning Machines Series***
Machine Model:	*Contractor, Europa, Lynx, Multispeed, Pro, Sprite, Tomcat, Handy, Trojan, Wolf, LM40, Battery Burnisher, Battery Sprite, Battery Lynx*
Machine Type:	***Vacuums Series***
Machine Model:	*V9, WD30, WD60, WV35/35N, Woody, V-9B Tub Vacuum, CX7, Mist Pro 360, UCS, Exhauster, SL8000 Steam Vac*
Machine Type:	***Scrubber Drier Series***
Machine Model:	*SD40, SX15, SD15, V-SD7C, V-SD7-R, V-SD9/500, Hyperglide*

This declaration of conformity is issued under the sole responsibility of the manufacturer; the equipment listed above fulfills all relevant provisions of the following EU directives:

Machinery Directive	2006/42/EC
Low Voltage Directive	2014/35/EU
EMC Directive	2014/30/EU
ROHS Directive	2011/65/EU

Ecodesign requirements for Vacuum Cleaners (EU) 666/2013 (implementing directive 2009/125/EC)

Applicable Harmonised European Standards and technical specifications:

BS EN 60335-1:2012, BS EN 60335-2-2:2010+A11:2012, BS EN 60335-2-67:2012, BS EN60335-2-68-2012, BS EN 60335-2-69:2012, BS EN55014-1:2006 + A1:2009, BS EN 55014:2:1997 + A2:2008, BS EN 60335-1:2002+A14:201, EN 61000-3-2

The technical documentation relevant to the above equipment will be held at the address above.

E. J. Blackledge

Edward Blackledge

Managing Director

Date of Issue: October 2020

Contact Information:
IIC Products Ltd T/A Victor Floorcare
Lancaster Court
Lancaster Road
Shrewsbury
SY1 3LG
United Kingdom
Sales@Victorfloorcare.com
sales@victorfloorcare.com
+44 (0)121 706 5771