INSTRUCTION MANUAL
BULL 200 HDK

EN

Instruction manual
(Original instruction)

Attention: Read the instruction before use the machine

EUREKA
FLOOR CLEANING MACHINES

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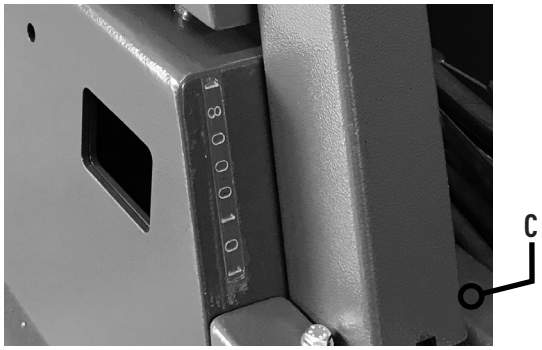
INTRODUCTION

Our company, a leader in the production of industrial cleaning machines, is delighted to have you among the owners of this sweeper and is sure you will be fully satisfied with it. We are sure that during its use, you will see the quality, robustness and possibilities of use it has to offer. This sweeper is suitable for private, industrial or public use. This manual describes the various installation operations, controls and maintenance interventions necessary to maintain perfect efficiency of your sweeper. These are normal maintenance operations that any operator can carry out using devices normally available in a company. For particular works, please contact specialist staff.

OUR COMPANY AIMS TO CONSTANTLY IMPROVE ITS PRODUCTS AND RESERVES THE RIGHT TO MAKE CHANGES AND IMPROVEMENTS WHEN NECESSARY WITHOUT ANY OBLIGATION TO UPGRADE PREVIOUSLY SOLD MACHINES.

IDENTIFICATION OF THE MACHINE

The machine and the manufacturer are identified using plates on the machine (**A**, **B** and **C**).



REFER TO THESE DETAILS TO ORDER SPARE PARTS OR WHEN SENDING ANY REQUEST TO THE MANUFACTURER.

The sweepers comply with EEC directives and display the CE logo.

ATTENTION!

THE MACHINE IS NOT CERTIFIED FOR ON-ROAD USE

BEFORE USING THE MACHINE OR CARRYING OUT ANY OPERATION ON IT, ALL THE PROCEDURES AND WARNINGS DESCRIBED IN THIS MANUAL MUST BE READ AND UNDERSTOOD. STRICT COMPLIANCE WITH THE REGULATIONS AND THE INSTRUCTIONS CONTAINED IN THIS MANUAL, COMBINED WITH THE OPERATOR'S ATTENTION AND CAUTION, WILL BE THE BEST GUARANTEE AGAINST ACCIDENTS THAT CAN OCCUR IN THE WORKPLACE.
SWEEPERS ARE DESIGNED TO PROVIDE UTMOST SAFETY IF USED ACCORDING TO INSTRUCTIONS. THIS MACHINE IS INTENDED FOR COMMERCIAL USE, FOR EXAMPLE IN HOTELS, IN SCHOOLS, IN HOSPITALS, IN FACTORIES, IN SHOPS, IN OFFICES AND IN BUSINESSES.

THIS MACHINE IS NOT INTENDED FOR USE BY PEOPLE (INCLUDING CHILDREN) WITH REDUCED PHYSICAL, SENSORY OR PSYCHOLOGICAL CAPACITY, OR WITH LACK OF EXPERIENCE AND KNOW-HOW. CHILDREN SHOULD BE MONITORED TO ENSURE THEY DO NOT USE THE EQUIPMENT TO PLAY ON.

THE USER MANUAL IS AN INTEGRAL PART OF THE SWEEPER AND MUST ACCOMPANY IT UP TO ITS DEMOLITION.

PURSUANT TO DIRECTIVE 2006/42 EC, AND DPR 459 ON 24/07/1996 AND SUBSEQUENT UPDATES, IT IS MADE KNOWN THAT: OPERATOR IS INTENDED AS THE PERSON OR PEOPLE RESPONSIBLE FOR INSTALLING, OPERATING, ADJUSTING, CARRYING OUT ROUTINE MAINTENANCE, CLEANING, REPAIRING AND TRANSPORTING THE MACHINE.

THIS COMPANY CANNOT BE HELD LIABLE FOR PROBLEMS, BREAKAGES, ACCIDENTS OR OTHER ISSUES DUE TO LACK OF KNOW-HOW OR NON-APPLICATION OF THE PROCEDURES CONTAINED IN THIS MANUAL, OR DUE TO IMPROPER USE OF THE MACHINE.
THIS COMPANY ALSO CANNOT BE HELD LIABLE FOR CHANGES, INSTALLATION OF PARTS AND/OR ACCESSORIES WITHOUT PRIOR AUTHORISATION.

EMERGENCY SITUATIONS
IN THE EVENT OF FIRE, ONLY USE POWDER EXTINGUISHERS

GENERAL WARNINGS AND ADVICE
DANGER - ATTENTION SIGNS

THIS SYMBOL HIGHLIGHTS ALL THE OPERATIONS THAT REPRESENT A SITUATION OF POTENTIAL DANGER FOR THE OPERATOR.
THEREFORE, PROCEED IN COMPLIANCE WITH THE CONDITIONS HIGHLIGHTED BY THIS SYMBOL

DANGER OF BURNS DUE TO HOT SURFACES

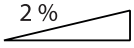
COMPULSORY USE OF ACOUSTIC PROTECTION
IN PARTICULAR ENVIRONMENTS OR WORKING CONDITIONS, CERTAIN SWEEPER MODELS COULD PRODUCE AN ACOUSTIC EFFECT THAT WOULD ADVISE USE OF PROTECTIVE GUARDS

USE OF GLOVES COMPULSORY

USE OF GOGGLES COMPULSORY

ATTENTION: MOVING PARTS, RISK OF TRAPPING HANDS

ATTENTION: DO NOT WET
THE DEVICES MARKED WITH THIS INDICATION MUST NOT GET WET
(THEY ARE NORMALLY ELECTRICAL COMPONENTS)



WARNING: DO NOT USE TO CLEAN SURFACES WITH GRADIENTS OVER THAT INDICATED ON THE MACHINE

BEFORE ACCESSING THE DANGER ZONE, FASTEN THE SAFETY ROD ON THE DIRT CONTAINER LIFTING CYLINDER

REMAIN AT A SAFE DISTANCE FROM THE RAISED DIRT CONTAINER IF THE SAFETY ROD IS NOT INSERTED IN THE CYLINDER

FOR CENTRAL BRUSH OR DUST-SEAL RUBBER REPLACEMENT OPERATIONS, INSERT THE SAFETY PIN INTO THE DESIGNATED SEAT.

CLEANING AND MAINTENANCE

Machine cleaning must be carried out by staff correctly trained for the purpose, who know the controls to bypass energy sources and are familiar with the characteristics of the machine to avoid dangerous situations.
Clean the coverings of the machine, the panels and the controls with a cloth soaked in water or detergent solution.
No solvents must be used such as petrol, alcohol, etc.
Have specialist staff clean the electrical components who should use non-corrosive products, suitable for electrical circuits.

Maintenance of the machine must be carried out by specialist staff with in-depth knowledge of the machine and its components.

Any maintenance and cleaning must be carried out with the machine off, with all the mechanisms stopped, the hot parts cooled and the battery disconnected.

When using compressed air guns for cleaning, protect eyes and ears.

STORAGE OF THE MACHINE

- If the machine is unused for long periods of time, it is essential to:
- Store the machine in a protected location
- Clean the machine inside and out
- Keep the brushes raised to avoid the bristles getting damaged
- Keep the dirt container lowered
- Secure the machine with the parking brake
- Remove the key
- Disconnect the battery clamps

SAFETY PRECAUTIONS FOR OPERATORS AND TECHNICIANS

- The use of the machine is forbidden by staff who are unauthorised and untrained in operation and people who are under the influence of substances that can alter reflexes (alcohol, medicine, drugs, etc.).
- **To avoid unpermitted use of the machine, the power supply must be interrupted, to do this remove the ignition key.**
- Do not use the machine in flammable areas or where there is danger of explosion;
- With the dirt container raised, move the machine very slowly;
- Do not collect burning material or other material that could cause a fire;
- Do not remove the safety devices and the guards when the machine is running;
- Start the machine from the driver's seat;
- Do not use the machine to clean objects;
- During the maintenance phase, avoid wearing loose or unbuttoned clothing;
- For any maintenance operation with the dirt container raised, it is compulsory to place the safety rod in the lifting cylinder.
- Do not proceed with maintenance phases when parts are in motion;
- Protect eyes and ears when using compressed air or water guns to clean the machine;
- To lift the machine, use devices suitable for the weight of the machine;
- Do not generate flames or sparks near the machine;
- Disconnect the battery cables before intervening on the electrical circuit;
- Avoid contact with battery acid, pay attention to hot parts, wait for them to cool before intervening;
- Drive slowly on broken or slippery floors and on slopes.
- Do not exceed gradients of 21 % in the direction of movement and gradients of 10% transverse to the direction of movement.
- Pay attention when changing direction and/or direction of travel, moderate speed on bends as there is a danger of tipping over.
- Pay attention when raising the dirt container for emptying: this operation should be carried out on flat and intact ground, avoiding sudden movements.

OPERATOR RESPONSIBILITIES

- The operator is responsible for daily maintenance of the machine;
- They must take care of the machine and maintain it in good working condition;
- They must inform the manager or service technician when scheduled maintenance is required, and in the event of damage or breakages;
- Do not transport people, animals or objects on the machine;
- For transfers, comply with the safety standards for circulation;
- The machine cannot be used to clean toxic-harmful materials;
- Do not allow people to approach the manoeuvring area of the machine;
- Never leave the sweeper unguarded with the key inserted;
- Apply the parking brake;
- Never leave the dirt container raised without the safety rod inserted in the cylinder;
- In the event of a machine malfunction, check the procedures outlined in the various chapters;
- Never collect parts of rope, iron wire or other items that could wrap around the brushes and damage them;
- Do not remove or alter the plates affixed to the machine;

UPDATING THE USER MANUAL

If significant changes are made to the machine or new parts installed, the updated documentation will be sent to the dealer together with the part purchased or as an update of the manual.

DUTIES OF THE EMPLOYER OR OWNER OF THE MACHINE

The employer or owner of the machine is responsible for distributing the user manual to all employees who will use the machine.
The employer or owner of the machine is also committed to updating the manual with the documentation the manufacturer will send in the event of changes to the machine.

DISPOSAL

All packaging is recyclable. The packaging should not be thrown away with domestic waste, but sent to the relevant collection centres.

EXHAUSTED OIL

Exhausted oil must never be disposed of in the environment.
It must be sent to authorised collection companies, in compliance with legislation in force.

Temporary storage must be in airtight containers, fitted with a sealed lid, to avoid contact with the environment and rainwater.
Filters should also be delivered to authorised collection companies and temporarily stored following the same procedures applied to the storage of oil.

EXHAUSTED LEAD-ACID BATTERIES

Exhausted batteries are considered harmful toxic waste and therefore should be exclusively given to collection companies with specific authorisation (ascertain on hand-over).

MATERIAL COLLECTED FROM THE MACHINE

The waste collected by the machine must be given to the relevant urban cleaning company since it is considered urban waste or similar.
The machine cannot be used to collect toxic-harmful materials.

SCRAPPING THE MACHINE

On scrapping, proceed with the correct disposal of the materials that make up the machine. It is compulsory to give the machine to authorised collection companies which will correctly dispose of oil, filters, plastic, metal, electric motors, electric boards, etc. in compliance with legislation in force. Decommissioned equipment contains precious recyclable materials and therefore should be given to the relevant collection centres. Please dispose of decommissioned equipment through differentiated collection systems.

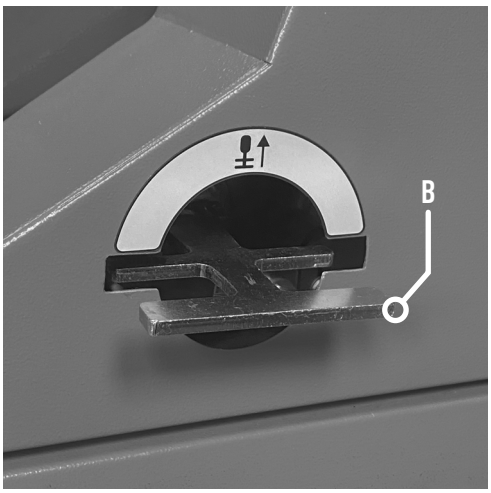
DISPOSAL OF ELECTRICAL EQUIPMENT AND ELECTRONICS

ANCHOR POINTS

For anchor the machine use the points [A, B, C e D] indicated in the photo.
Near each anchor point there is the appropriate symbol [E].

To get on and off the car you must reach point [F] with your foot.

SAFETY DEVICES



There are safety devices to protect the operator during operations that require the waste container to be lifted:

- the lateral safety lever [A], to be inserted when the container is fully lifted;
- the safety pin [B] for brush replacement, to be inserted into the designated slot before replacing the central brush or the dust protection rubbers of the container;

DESCRIPTION OF THE MACHINE

1. FLASHING LIGHT
2. FUEL TANK CAP
3. LEFT REAR MIRROR
4. MAIN BRUSH COMPARTMENT DOOR
5. AUXIILARY BRUSH
6. RIGHT SIDE BRUSH
7. DRIVER'S SEAT
8. STARTER BATTERY COMPARTMENT
9. ENGINE HOOD OPENING
10. ELECTRIC BOARD

11. MAIN BRUSH ADJUSTMENT
12. DUST FILTER COVER
13. DIRT CONTAINER
14. DUST SKIRTS
15. ENGINE LEFT SIDE
16. WATER TANK CAP WET DUST CONTROL (OPT.)
17. LEFT SIDE BRUSH (OPT.)
18. DIRT CONTAINER DOOR

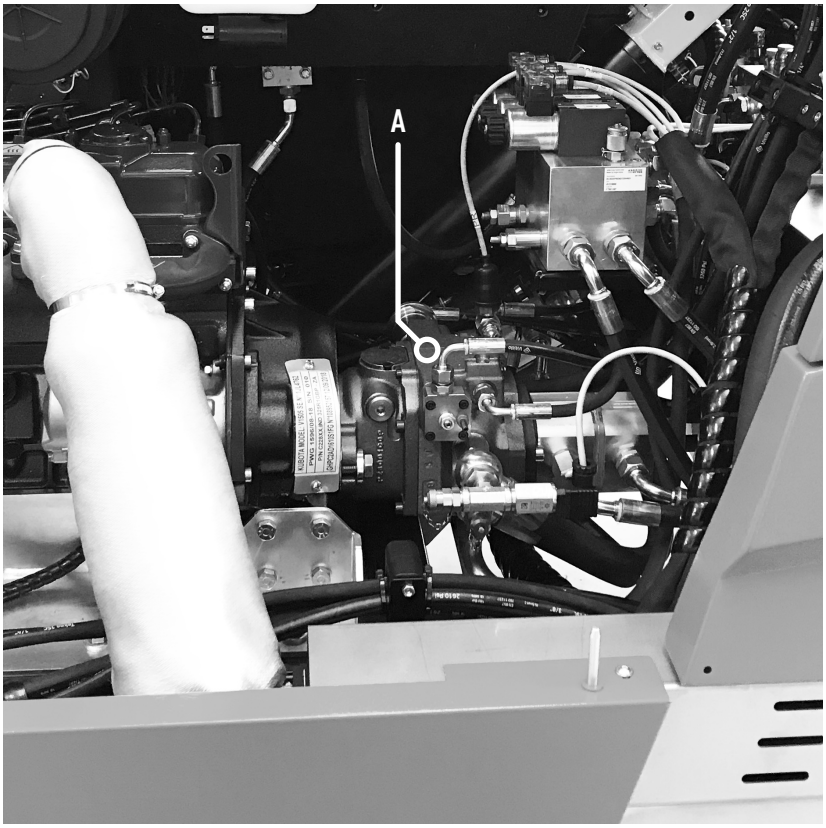
19. MAIN BRUSH
20. DIRT CONTAINER DOOR PISTON
21. DIRT CONTAINER PISTON
22. HYDRAULIC OIL FILTER
23. HYDRAULIC OIL TANK
24. HYDRUALIC OIL RADIATOR
25. HOPPER VACUUM

27. FUEL FILTER
28. ENGINE OIL LEVEL ROD
29. DIESEL ENGINE AIR FILTER
30. HYDRAULIC OIL LEVEL ROD
31. ENGINE COOLANT TANK
32. ELECTRIC PUMP
33. DIESEL PRE-FILTER

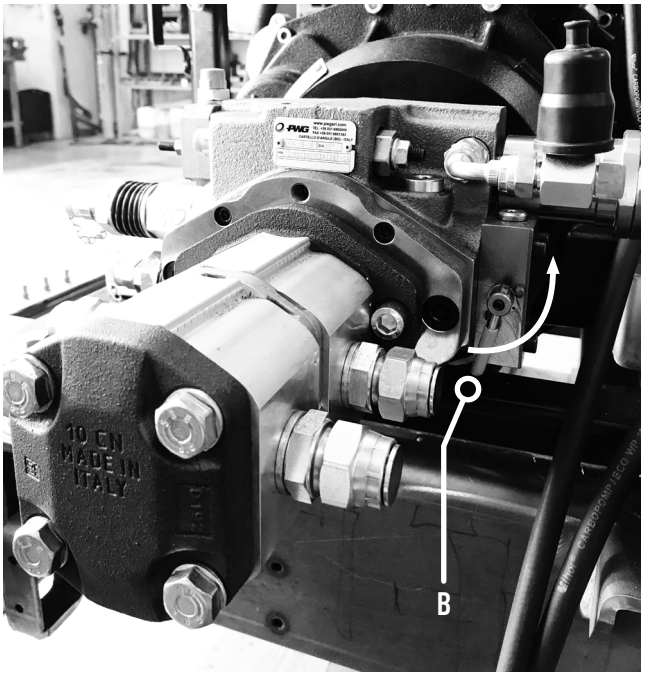
PROCEDURE TO MOVE OR TOW MACHINE WITH ENGINE OFF

PROCEDURE TO MOVE THE SWEEPER BY PUSHING WITH ENGINE OFF OR IN THE PRESENCE OF FAULT

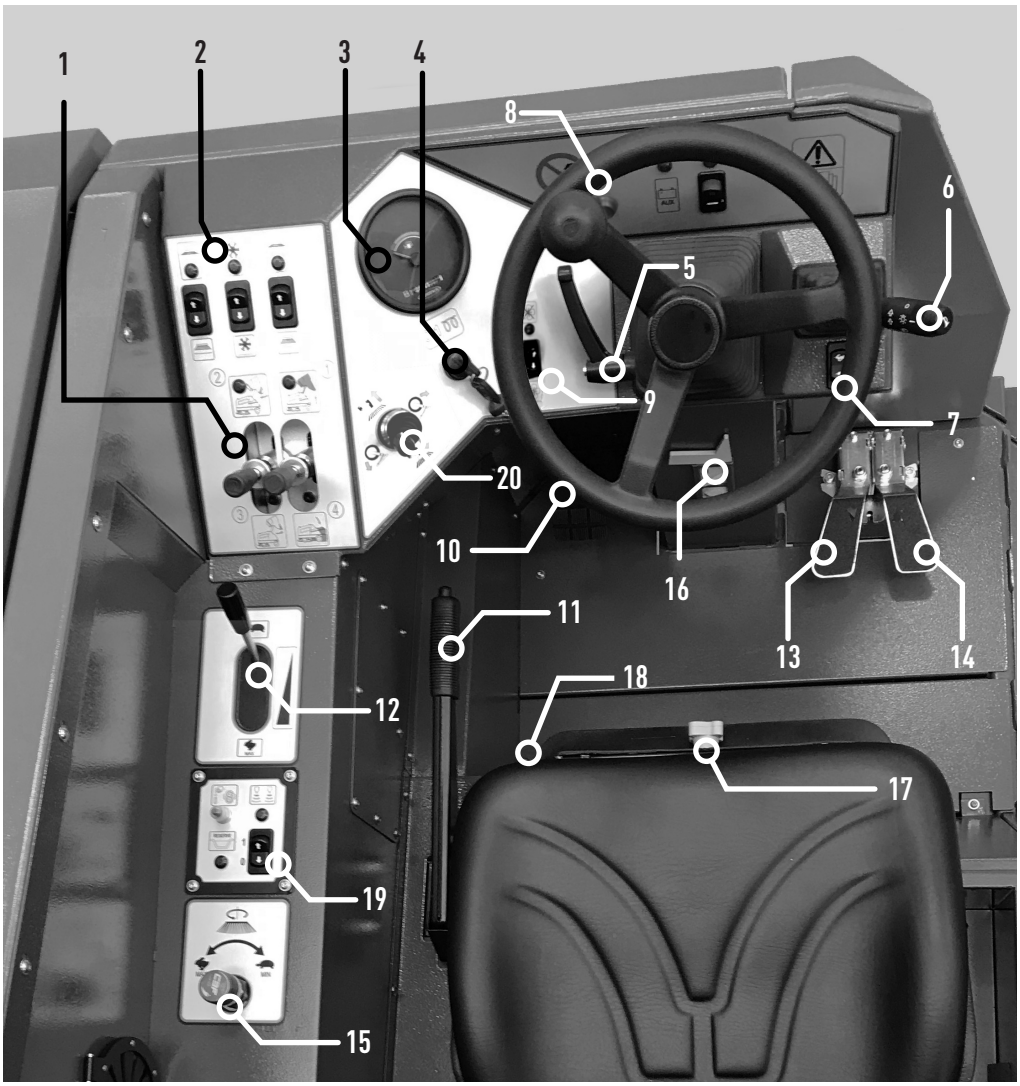
- Apply the parking brake
- Lift the engine hood
- Remove the left side
- Identify the traction pump (A)



- Identify the pump release lever (B)
- Turn the lever (B) anti-clockwise, as indicated by the arrow
- Disengage the handbrake and move the machine
- Once movement of the machine is complete, return the lever to its original position, applying force until it is not possible to push the lever any further.



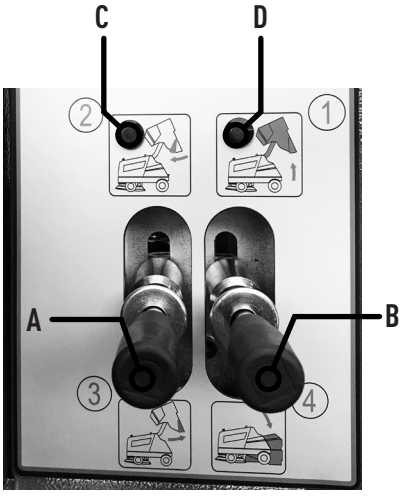
PRIMARY FUNCTIONS AND CONTROLS



1. HYDRAULIC CONTROLS

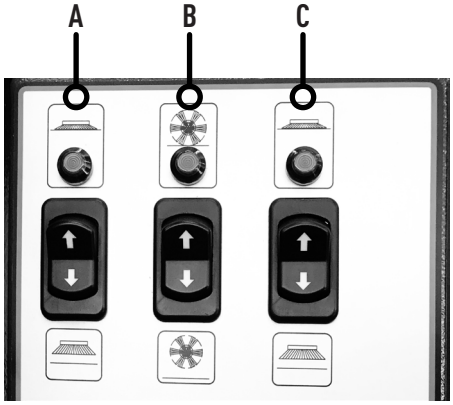
With the left lever (A), control closure and opening of the dirt container door to unload the materials collected in the dirt container. During the cleaning phase, the door must be in the closed position (light C off).

With the right lever (B), control lifting and lowering of the dirt container. During the cleaning phase, the dirt container must be lowered (light D off)



2. BRUSH CONTROLS

The brushes are activated using the switches represented in the figure. To activate the brushes, push the respective switch forward. The corresponding brush will lower and begin to rotate. As a result, the corresponding green light switches on.



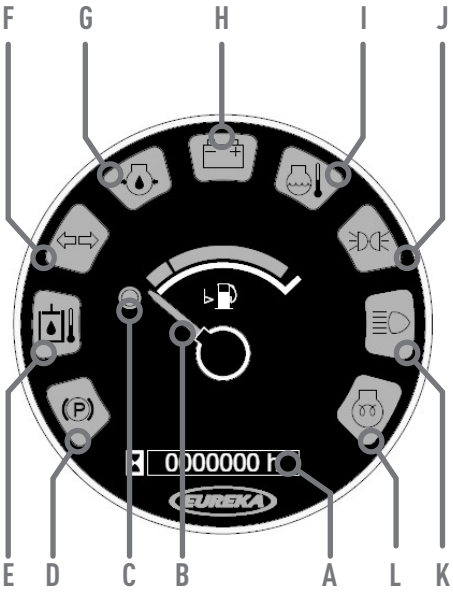
[A] LEFT SIDE BRUSH (OPTIONAL)
[B] MAIN BRUSH
[C] RIGHT SIDE BRUSHES

N.B.: - The side brushes cannot be activated if the main brush was not activated first
- The DIESEL engine of the sweeper will not start if the switches of the brushes are on. Switch off all the switches and start the engine.

3. MULTIFUNCTION INDICATOR

The multifunction indicator provides indications about many of the machines parameters, in particular:

A. HOURMETER
B. FUEL LEVEL INDICATOR
C. FUEL LEVEL LIGHT
D. PARKING BRAKE INDICATOR
E. HYDRAULIC OIL TEMPERATURE
F. DIRECTION INDICATOR
G. ENGINE OIL PRESSURE
H. ALTERNATOR
I. ENGINE COOLANT LIQUID TEMPERATURE: When the temperature of the liquid is correct, the light must be off.
J. POSITION LIGHTS INDICATOR
K. HEADLIGHTS INDICATOR
L. SPARK PLUGS PREHEATING LIGHT



4. KEY SWITCH

Turning anti-clockwise with a click, the position lights activate
Turning clockwise with a click, the lights switch on.
Continuing to rotate, the spark plugs heating light switches on, followed by ignition of the starter motor.

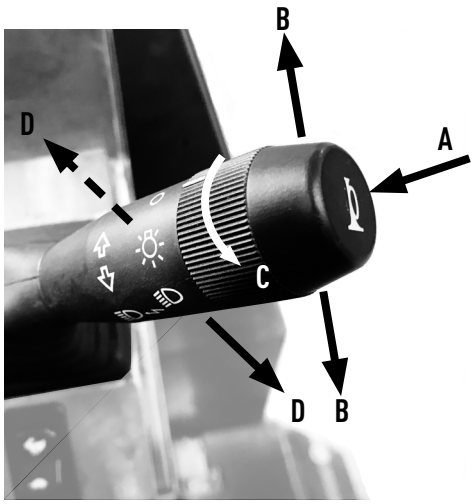
WAIT UNTIL THE SPARK PLUGS LIGHT SWITCHES OFF BEFORE STARTING THE STARTER MOTOR

5. STEERING WHEEL UNLOCKING LEVER

Turning the lever in the direction [A] the steering wheel column unlocks and you can adjust the inclination of the steering wheel as you wish.
Once the desired position is reached, lock the steering wheel by turning the lever in the direction [B].
Do not use the machine with the steering wheel column unlocked.

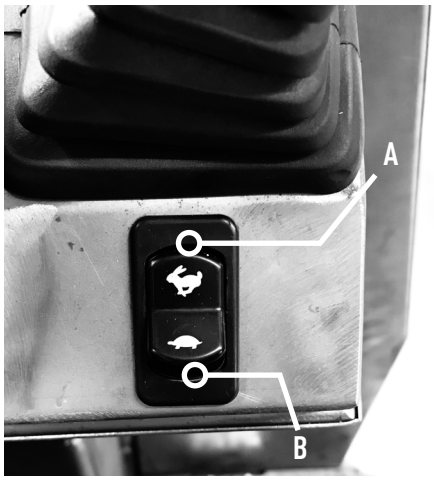
6. STEERING COLUMN SWITCH LEVER

A. Pressing the lever along its axis, the acoustic warning activates.
B. Pushing the lever forward, the left direction indicator activates, pulling it back the lever activates the right direction indicator. Bringing the lever to the centre, the direction indicators disable.
C. Turning the ring nut in the direction indicated, on the first click the position lights activate, on the second click the dipped headlights activate.
D. To temporarily activate the headlights, lift the lever. To keep the headlights on, lower the lever until it clicks. To change again to the dipped headlights, lift the lever to the rest position.



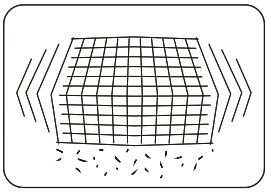
7. SPEED SELECTOR

Pressing the position selector A (HARE) selects the transfer speed. Pressing the forward pedal completely down and with the diesel engine at maximum rotations, the sweeper will reach the maximum speed.
Pressing the position selector B (TORTOISE) selects the working speed. Pressing the forward pedal completely down and with the diesel engine at maximum rotations, the sweeper will reach a speed equal to half the maximum speed. This speed is optimal for cleaning operations and allows steeper gradients to be more easily overcome.



8. FILTER SHAKER BUTTON

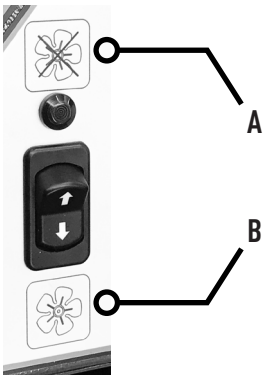
Pressing it shakes the filter to clean it. This operation must be carried out intermittently for 5 seconds 3-4 times.
N.B. the filter can only be shaken if the dirt container is lowered.
The filter will however automatically shake each time the sweeper is switched off.



9. VACUUM CLOSURE

A. Pressing the button forward, the vacuum is CLOSED and the corresponding red light switches on.
B. Pressing the button backward, the vacuum is OPENED and the red light is off.

N.B. The vacuum must be closed when passing over wet floors or through areas with puddles.

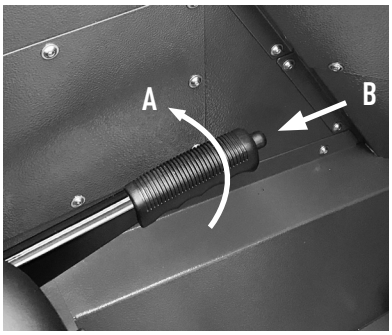


10. SERVICE BRAKE

Pressing the brake pedal, it is possible to stop the sweeper on gradients of up to 25%.

11. PARKING BRAKE

Holding the lever, firmly pull in direction [A] to activate the brake, this will stop the sweeper from rolling forwards or backwards. To take off the parking brake, hold the lever and pull it slightly upwards, press the button [B] and lower the lever until it can not be lowered further. The sweeper is now unblocked.



12. ACCELERATOR

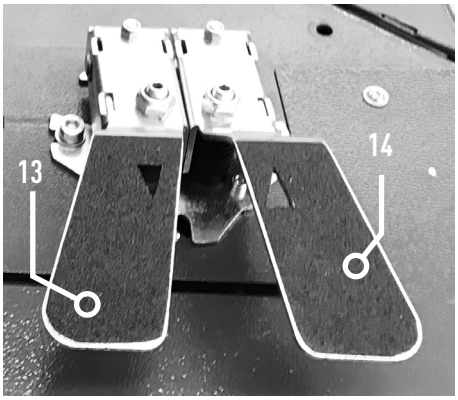
Pulling the control lever upward brings the diesel engine from idle speed [A] to operating speed [B].
To return the engine to idle, unlock the lever by pulling the release tab and push it downward to position [A].

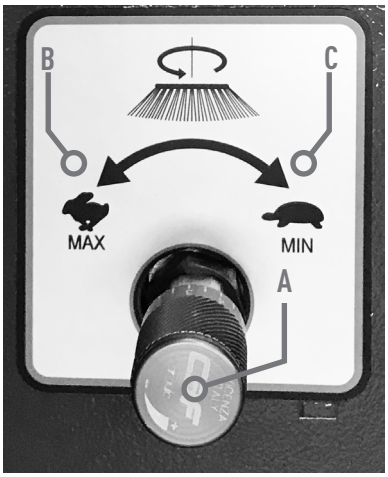
13. REVERSE PEDAL

Pressing the pedal, the machine moves in reverse

14. FORWARD PEDAL

Pressing the pedal, the machine moves forward





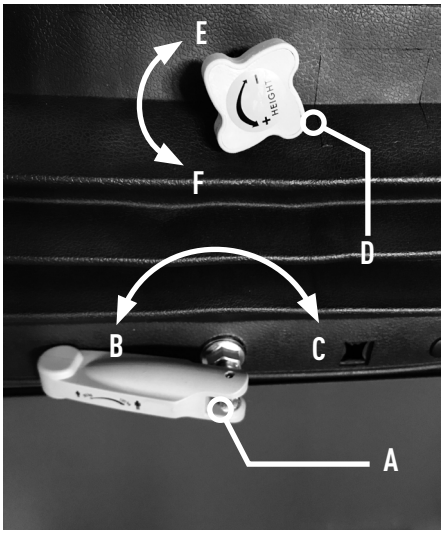
15. ADJUSTING SIDE BRUSH SPEED

Turning the knob [A] clockwise, reduces the speed of the side brushes [C]. Turning the knob [A] anti-clockwise, increases the speed of the side brushes [B] .

16. MULTIFUNCTION KEY

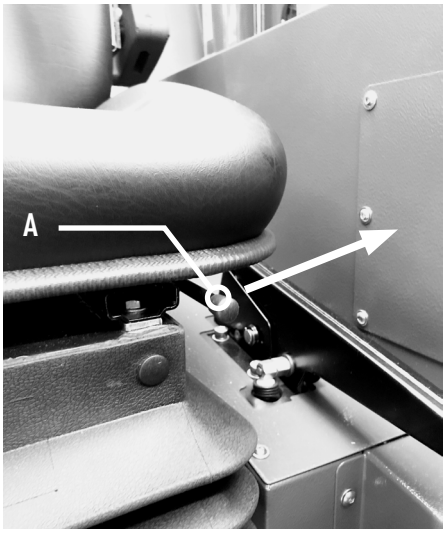
Use the multifunction key [A] for the following operations:

- Adjusting the height of the side brushes
- Opening the door of the main brush compartment
- Dismantling the main brush locking nut



17. ADJUSTING THE SUSPENSION SEAT

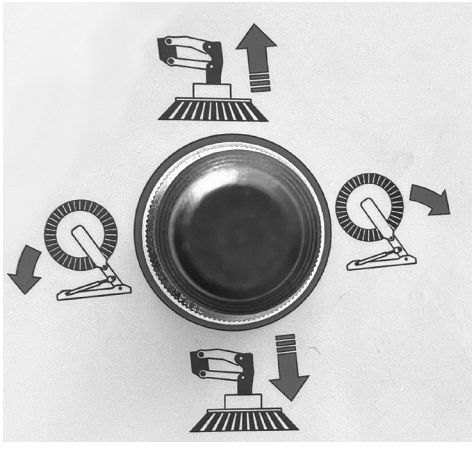
Turning the lever [A] adjusts the action of the suspension.
Turning clockwise (direction [C]) hardens the suspension, turning it anti-clockwise (direction [B]) softens the suspension.
Use the knob [D] to adjust the height. Turning in direction E lowers the seat, while turning in direction F raises it.



18. LONGITUDINAL ADJUSTMENT OF THE SEAT

Moving the lever [A] in the direction of the arrow allows you to move the seat forwards and backwards.

19. WET DUST CONTROL DASHBOARD (OPT.)



20. JOYSTICK FOR EXTENSIBLE BRUSH (OPT.)

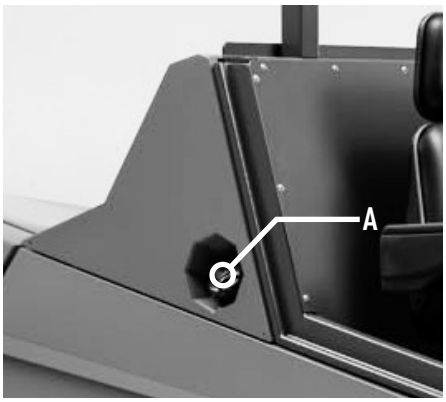
PREPARATION OF THE MACHINE

CONNECTING THE BATTERY

- Open the panel under the seat by unscrewing the screws holding it in place.
- Connect the system clamps to the battery according to the correct polarity
- Fasten the battery in its compartment using the stops present
- Reclose the panel

FILLING THE DIESEL TANK

Open the diesel tank cap [A] using the key supplied and fill the tank.
The diesel tank can hold approx. 47 litres. Check that the fuel level shown by the multifunction indicator on the dashboard corresponds with the quantity of fuel inserted.

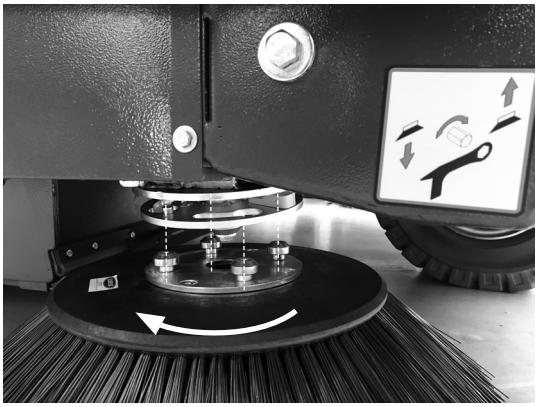


ASSEMBLING THE RIGHT SIDE BRUSH

- Lift the knob [A] and open the yellow guard
- Lift the brush, and guide the heads into the widest part of the slots on the flange, then turn the brush in the direction of the arrow until the coupling mechanism clicks.
- Close the two yellow protective casings by clicking the knob
- If necessary, adjust the height of the brush with the nut [B], using the multifunction key

ASSEMBLING THE AUXILIARY BRUSH

Lift the brush and guide the heads into the widest part of the slots on the flange, then turn the brush in the direction of the arrow until the coupling mechanism clicks. Check coupling took place by turning the brush in the opposite direction to the arrow. If necessary, adjust the height of the brush with the nut [A], using the multifunction key



ASSEMBLING THE LEFT SIDE BRUSH (OPTIONAL)

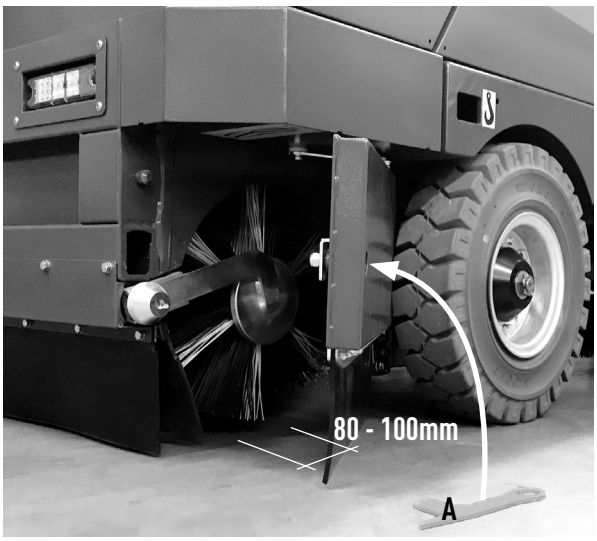
- Lift the knob [A] and open the yellow guard
- Lift the brush and guide the heads into the widest part of the slots on the flange, then turn the brush in the direction of the arrow until the coupling mechanism clicks.
- Close the two yellow protective casings by clicking the knob.
- If necessary, adjust the height of the brush with the nut [A], using the multifunction key

ADJUSTING THE MAIN BRUSH TRACE

- Secure the machine using the parking brake
- Start the machine
- Lower the main brush using the specific button
- **ATTENTION: only operate the central brush. Operating the side brushes results in an incorrect indication on the pressure gauge.**
- A pressure between 50 and 60 bar [C] helps to obtain the recommended brush sweeping pattern of 80÷100 mm under standard conditions.
- **A smoother or rougher floor may need a different brush pressure to obtain the recommended sweeping pattern.**

Check the floor on which the sweeper will be used and if necessary, identify the optimum pressure to be used as follows.

- Open the main brush door with the specific multifunction key
- Check the trace is approx 80 - 100 mm
- If necessary, adjust the height of the brush with the knob on the rear left of the machine [B] following the instructions on the label [D].
- Reclose the door of the brush compartment ensuring it is locked.
- Check the pressure on the pressure gauge [C]. It is advisable to monitor this value and to always check it before starting to use the machine. If the pressure has changed, reset it to the ideal pressure identified for that floor by turning the knob [B].



USE OF THE MACHINE

OUR SWEEPERS MUST BE USED BY SUITABLY TRAINED AND AUTHORISED STAFF.
SWEEPERS WHICH ARE NOT WORKING PERFECTLY MUST IMMEDIATELY BE REMOVED FROM SERVICE.

CHECKS BEFORE USE

Before using the machine, check the following:

- Check that the brushes are assembled correctly and that they are working properly
- Check that the rubber dust skirts are in good condition
- Check the level of diesel
- Check the engine oil level

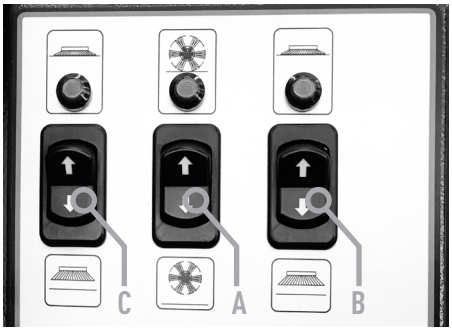
CLEANING OPERATIONS

- Sit in the driver's seat, correctly adjust the seat, put on your seat belt.

N.B.: THE SEAT IS FITTED WITH A MICROSWITCH THAT PREVENTS MOVEMENT OF THE MACHINE WHEN THE OPERATOR IS NOT SEATED

- Insert the key

- Check the brush switches are ALL in the rest position (brushes raised) [A] - [B] - [C]



- Start the diesel engine

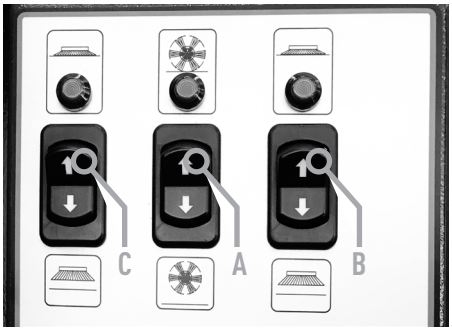
- Close the door of the dirt container if open (red light off) [A]
- Lower the dirt container if raised (red light off) [B]

- Check the vacuum is open via the specific switch

- Increase the engine revolutions to the maximum using the accelerator

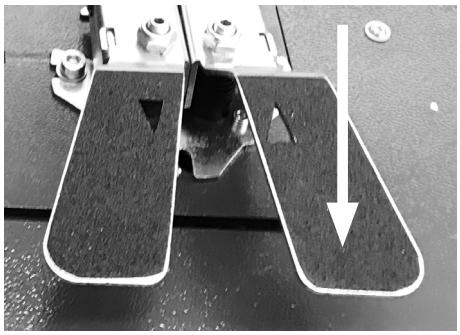
- Lower the main brush [A]
- Lower the side brushes [B] - [C]

N.B.: TO ACTIVATE THE BRUSHES, THE DIRT CONT. DOOR MUST BE CLOSED AND THE DIRT CONT. LOWERED.
TO ACTIVATE THE SIDE BRUSHES, THE MAIN BRUSH MUST BE WORKING



- Select the WORKING speed with the specific switch [A]

- Lower the right pedal to move forward



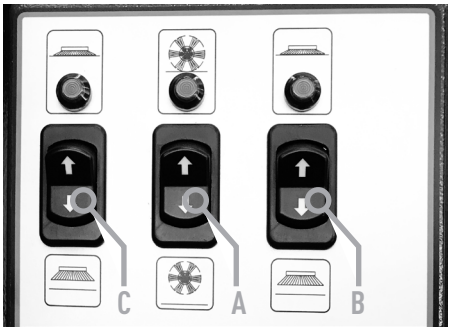
- During cleaning, adjust the rotation speed of the side brushes
- Close the vacuum on damp or wet surfaces to avoid damaging the filter.

- Activate the wet dust control (OPTIONAL) as required.

UNLOADING COLLECTED MATERIAL

ATTENTION: THE DIRT CONTAINER CAN CONTAIN UP TO 500KG AND/OR 500 LITRES OF MATERIAL.

- Raise all the brushes [A] - [B] - [C]



- Switch off the vacuum and shake the filter. Raise the dirt container by pushing the hydraulic lever [1] forward. With the dirt container raised, the machine proceeds at reduced speed for safety reasons.

- Go to the unloading area. The dirt container raises up to a height of 1580 mm off the ground. Evaluate this height if unloading inside a waste bin.
- Once the unloading zone has been reached, open the door of the dirt container using the specific hydraulic lever [2] and unload the collected material

- Having completely unloaded the material collected, close the door of the dirt container [3]. Move slightly away from the unloading zone and lower the dirt container [4]. Once both the hydraulic distributor lights [A] - [B] are off, it is possible to continue cleaning operations.

IMPORTANT ADVICE

- Reduce speed throughout curves
- Shake the filter before unloading debris
- Do not collect ropes, iron wire or similar materials that could get wrapped around the brushes
- Frequently check the dust skirts
- Pay attention to footpaths and other obstacles or projecting objects on the ground
- If possible, unload dirt container waste into a container rather than on the ground
- Do not unload dirt if the machine is not level
- Having completed operations, park the machine in a protected area with the brushes raised, the dirt container lowered and the door of the container closed.

MAINTENANCE

Regular and periodic maintenance of your sweeper guarantees the best performance and optimum life span of the machine.
The following pages contain information to help plan maintenance and carry out the necessary care of the machine.

ATTENTION: DO NOT TAMPER WITH THE SAFETY UNITS.

THESE CAN ONLY BE REMOVED WHEN THE AUTHORISED SUPPORT CENTRE (ASC) IS CARRYING OUT MAINTENANCE OPERATIONS

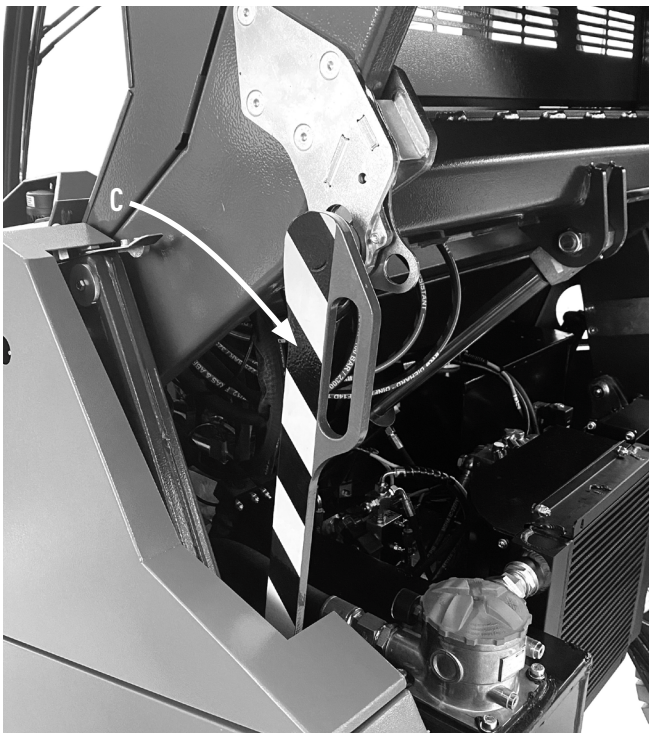
To carry out certain maintenance operations and access the required mechanical units, it may be necessary to open the hood [A] and/or remove the left side of the machine [B]

- Open the hood [A]

- Lift and remove the left side of the machine [B]

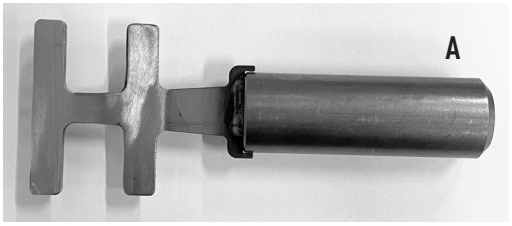
- Lift the dirt container

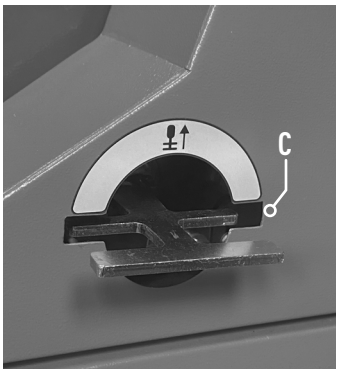
- Insert the safety in the dirt container piston [C]



MAIN BRUSH

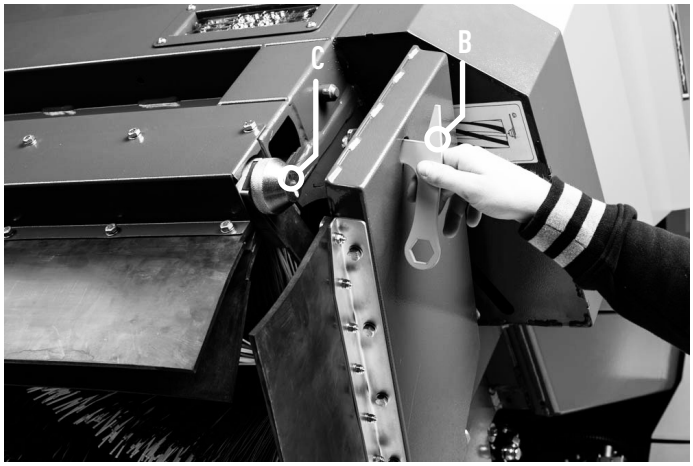
The main brush is situated at the rear of the machine. To access the main brush, open the door on the rear right corner of the machine using the multifunction key supplied.





Before any checks or replacements on the main brush, lift the debris container at least 1250mm from the brush centre to the floor.
Take the brush change safety [A] in the document compartment and place it in the designated hole [B], following the insertion notches [C] while turning it 90° to prevent disengagement. When finished, remove the safety device before lowering the container.

To check the condition of the main brush, raise the dirt container to half of the high dump height, as indicated in the photo. If the bristles of the brush are the same length as the wear indicator [A], replace the main brush.

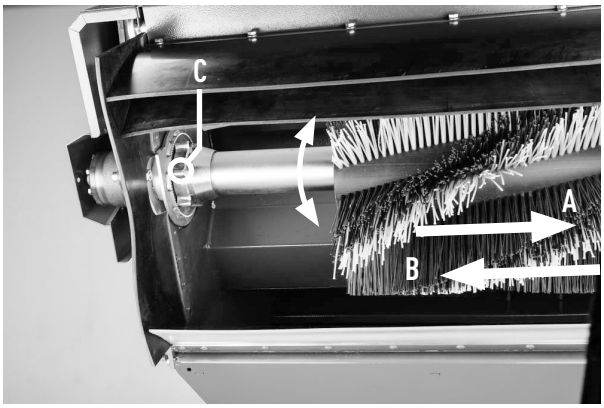


If it is necessary to replace the main brush, follow the steps below:

- Open the brush door with the specific multifunction key [B]
- Unscrew the ring nut using the multifunction key [C]

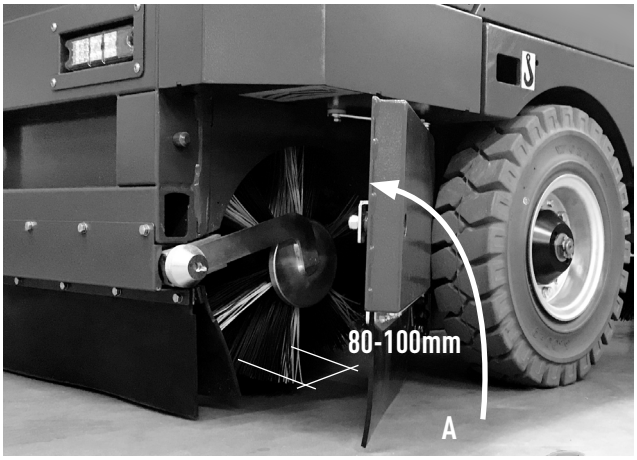
- Having removed the ring nut, remove the hub [A] from the right side of the machine.

- Remove the worn brush in the direction of the arrow [A]
- Insert the new brush in the direction of the arrow [B] until the brush rests on the hood [C].
- Turn the brush on its axis so the measurements of the hub [C] correspond to the brush milling. At this point, insert the brush fully into the hub. PAY ATTENTION TO THE DIRECTION OF THE CHEVRON PATTERN TO CORRECTLY POSITION THE BRUSH (SEE LABEL)

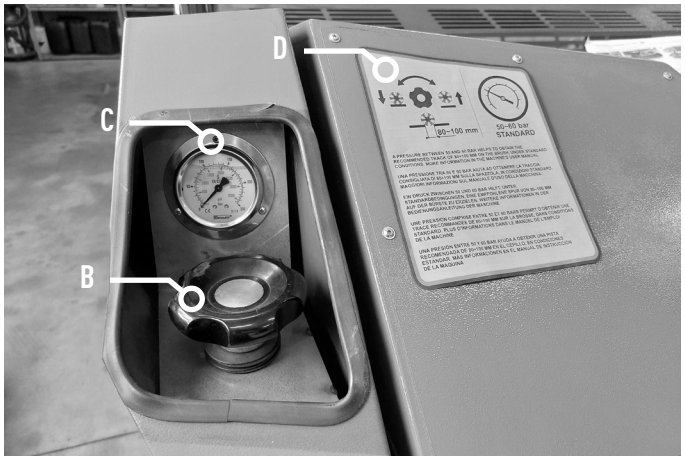


- Once the brush is completely inserted in the left hub, insert the right hub, also paying attention on this side to the alignment between the hub teeth [A] and milling of the brush on the right side of the machine.
- Once the right hub is assembled on its screw [B], screw back in the ring nut completely and tighten it using the multifunction key.
- Close the brush door using the multifunction key [B]

- Having assembled the new main brush, lower the dirt container and proceed with adjusting the trace, following the steps here below
- Secure the machine using the parking brake
- Start the machine
- Lower the main brush using the specific button
- A pressure between 50 and 60 bar [C] helps to obtain the recommended brush sweeping pattern of 80÷100 mm under standard conditions.
- **A smoother or rougher floor may need a different brush pressure to obtain the recommended sweeping pattern. Check the floor on which the sweeper will be used and if necessary, identify the optimum pressure to be used as follows.**
- Open the main brush door with the specific multifunction key [A].



- Check the trace is approx 10 cm.
- If necessary, adjust the height of the brush with the knob on the rear left of the machine [B] following the instructions on the label [D].
- Reclose the main brush door ensuring it is locked
- Check the pressure on the pressure gauge [C]. It is advisable to monitor this value and to always check it before starting to use the machine. If the pressure has changed, reset it to the ideal pressure identified for that floor by turning the knob [B].



RIGHT SIDE BRUSH

The right side brush is situated at the front of the machine. The right side brush starts to work by pressing the button [A]. At the same time, the auxiliary brush also activates.

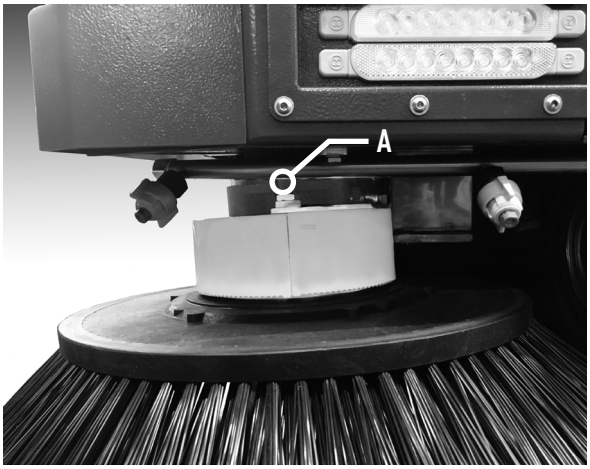
N.B.: TO ACTIVATE THE SIDE BRUSHES, THE MAIN BRUSH MUST BE RUNNING

To check the condition of the right side brush:

- Apply the parking brake
- Start the machine
- Activate the main brush
- Activate the right brush and the auxiliary brush
- Check the bristles are in contact with the ground without being too bent
- If necessary, adjust the height of the brush with the nut [A], using the multifunction key
- If the brush is too worn, replace it

To replace the right side brush, proceed as follows:

- Lift the knob [A] and open the yellow guard
- Move the yellow stop [B] in the direction indicated and simultaneously rotate the brush in the direction [C]. The brush is now free and can be removed.
- To assemble the new brush, lift the brush, and guide the heads into the widest part of the slots on the flange, then turn the brush in the direction of the arrow [D] until the coupling mechanism clicks.
- Close the two yellow protective casings by clicking the knob



AUXILIARY SIDE BRUSH

The auxiliary side brush is situated on the right side of the machine, towards the center. The auxiliary side brush starts to work by pressing button [A]. At the same time, the right side brush also activates.

N.B.: TO ACTIVATE THE SIDE BRUSHES, THE MAIN BRUSH MUST BE RUNNING

To check the the condition of the auxiliary brush:

- Apply the parking brake
- Start the machine
- Activate the main brush
- Activate the right brush and the auxiliary brush
- Check the bristles are in contact with the ground without being too bent
- If necessary, adjust the height of the brush with the nut [A], using the multifunction key
- If the brush is too worn, replace it

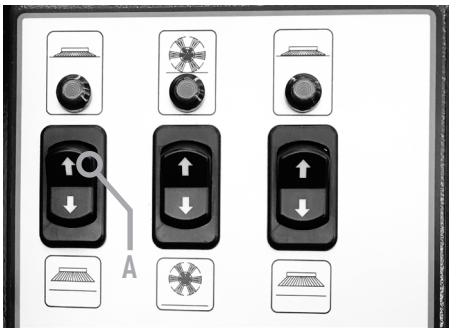
To replace the auxiliary brush, proceed as follows:

- Move the yellow stop [A] in the direction indicated and simultaneously rotate the brush in the direction [B]. The brush is now free and can be removed.
- To assemble the new brush, lift the brush, and guide the heads into the widest part of the slots on the flange, then turn the brush in the direction of the arrow [C] until the coupling mechanism clicks.

LEFT SIDE BRUSH (OPTIONAL)

The left side brush is situated on the front left side of the machine. The left side brush starts to work by pressing button [A].

N.B.: TO ACTIVATE THE SIDE BRUSHES, THE MAIN BRUSH MUST BE RUNNING

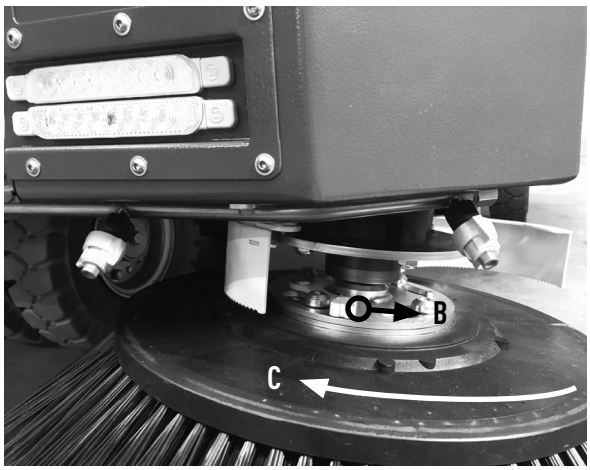


To check the condition of the left side brush:

- Apply the parking brake
- Start the machine
- Activate the main brush
- Activate the left brush
- Check the bristles are in contact with the ground without being too bent
- If necessary, adjust the height of the brush with the nut [A], using the multifunction key
- If the brush is too worn, replace it

To replace the left side brush, proceed as follows:

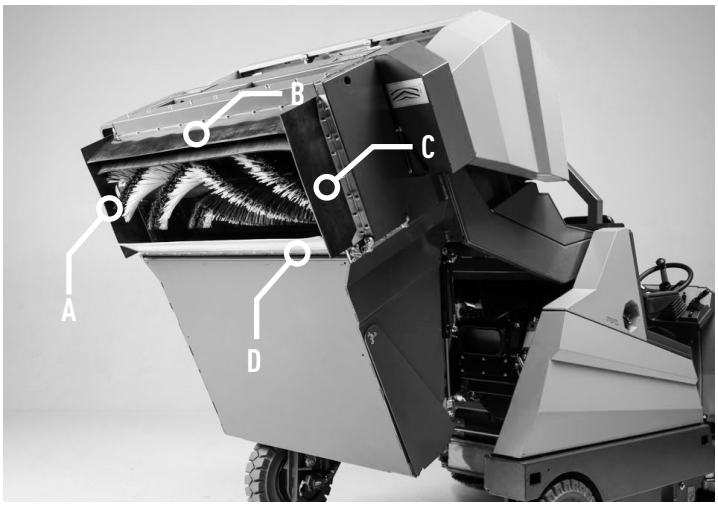
- Lift the knob [A] and open the yellow guard
- Move the yellow stop [B] in the direction indicated and simultaneously rotate the brush in the direction [C]. The brush is now free and can be removed.
- To assemble the new brush, lift the brush, and guide the heads into the widest part of the slots on the flange, then turn the brush in the direction of the arrow [D] until the coupling mechanism clicks.
- Close the two yellow protective casings by clicking the knob



DUST SKIRTS

To check the condition of the dust skirts, proceed as follows:

- Position the machine in a flat location.
- Apply the parking brake
- Start the diesel engine
- Raise the dirt container using the hydraulic lever half way and turn off the engine.
- Get out of the machine and inspect the dust skirts.



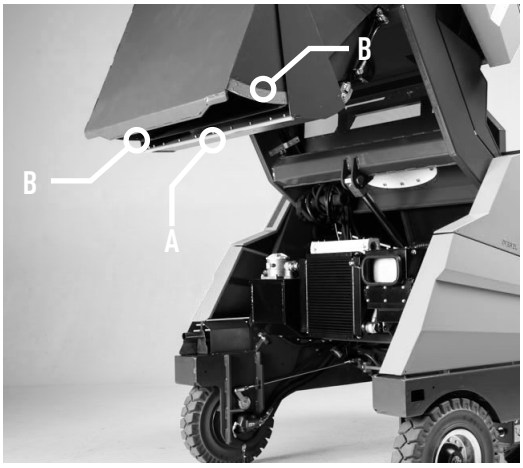
A. Left dust skirt
B. Rear dust skirts
C. Right dust skirt (door)
D. Flap

To replace, remove the screws which secure the dust skirt to its metal plate, replace the skirt and fasten it to the metal plate.
For the right dust skirt, open the door with the multifunction key before proceeding to replacement

DIRT CONTAINER DOOR GASKETS

To check the condition of the gaskets, proceed as follows:

- With the machine running, lift the container and empty it completely in the area prepared for debris collection.
- Apply the parking brake.
- Insert the yellow piston safety [C] on the piston rod.
- Lift the dirt container and check the wear status of the gaskets on the dirt container door



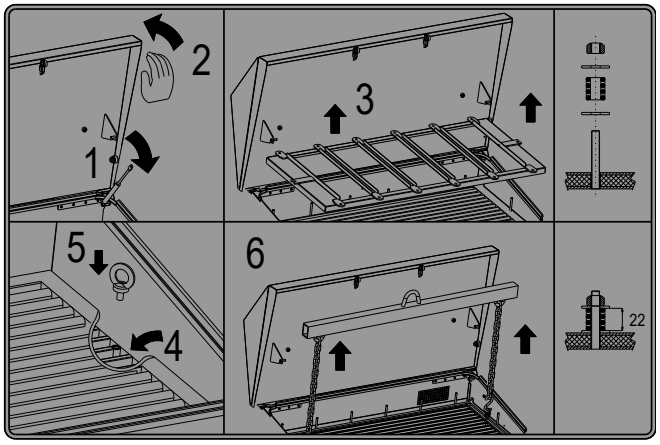
A. Dirt container door gasket
B. Dirt container door guides
C. Piston safety

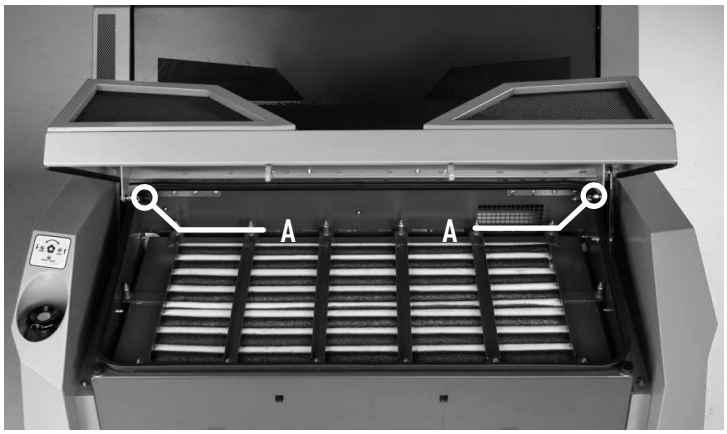
To replace the gasket [A], remove the screws which secure the dust skirt to its metal plate, replace the gasket and fasten it to the metal plate.
To replace the guides of the door, remove the screws fastening the guides to the dirt container, replace the guides and fasten them to the dirt container.

FIRE EXTINGUISHER

For the fire extinguisher control and maintenance, follow the UNI 9994, which provides:
- periodic check every 6 months;
- revision or replacement after 3 years;
Refer on the date stamped on the fire extinguisher.
For this operation contact specialist staff.

MULTIPOCKET FILTER



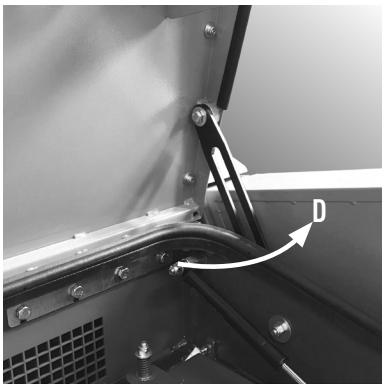


REPLACING THE MULTIPOCKET FILTER:

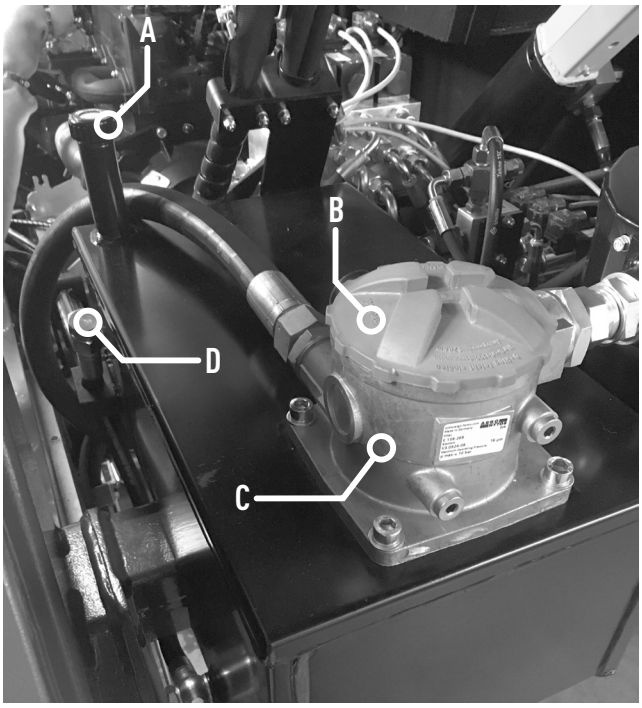
- Open the dirt container cover

FOLLOW THE INSTRUCTIONS ON THE LABEL AFFIXED UNDER THE DIRT CONTAINER COVER

- Remove the screws fastening the gas springs to the dirt container cover [A]
- Lift the cover further until it clicks.
- Unscrew the 12 nuts fastening the filter cover, remove the nuts, washers and springs. [B]
- Unscrew the eyebolts under the dirt container cover and having raised the filter slightly from the sides, screw in the eyebolts firmly on the frame of the filter [C]
- Couple a lifting system to the eyebolts
- Remove the filter
- Move the new filter onto the frame
- Assemble the new filter with the frame of the dirt container.
- Unscrew the eyebolts and screw them onto the container cover.
- Fasten the filter cover by inserting the washers, springs and nuts and respecting a height of 22mm between the washers, as indicated on the label
- Free the container cover stop rods and lower the cover until it is possible to fasten the gas springs [D]
- Screw in the gas springs on the dirt container cover brackets.
- Close the dirt container cover



HYDRAULIC CIRCUIT MAINTENANCE



CHECKING THE HYDRAULIC OIL LEVEL

- Completely lower the dirt container
- Switch off the machine and remove the key
- Remove the left side of the machine
- Remove the rod [A] and check the oil level is between the indent on the rod
- If the level is low, it must be topped up

N.B.: DO NOT USE A DIFFERENT TYPE OF OIL TO THOSE INDICATED

REPLACING THE HYDRAULIC OIL FILTER

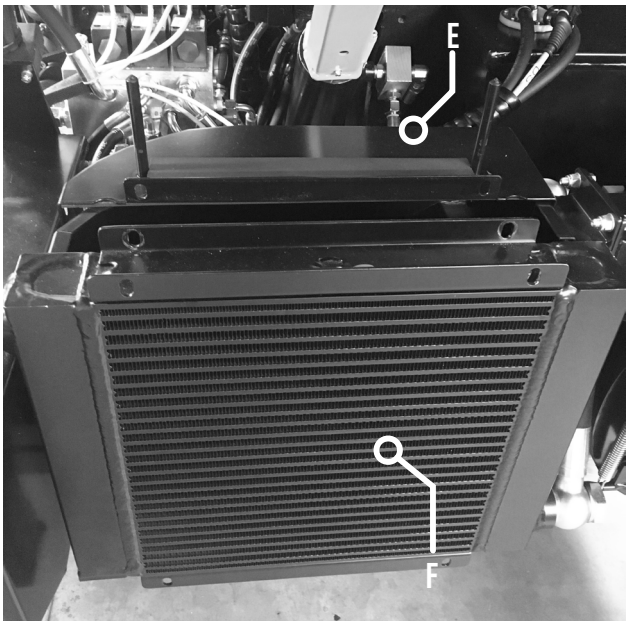
- Lift the dirt container and insert the stop
- Switch off the machine and remove the key
- Unscrew the cap [B]
- Slowly lift the filter cartridge [C], wait for all the oil to drain out and proceed with replacement
- Check the hydraulic oil level

N.B.: DO NOT DISPOSE OF FILTERS AND EXHAUSTED OIL IN THE ENVIRONMENT

REPLACING THE HYDRAULIC OIL AFTER 2000 HOURS

- Lift the dirt container and insert the stop
- Switch off the machine and remove the key
- Remove the oil level rod [A]
- Get an adequate container and position it under the tank drain
- Remove the collar fastening the drainage tube [D] and remove the plug to drain the oil in the indicated container (tank quantity = 31 litres). Then, insert the plug back in the tube and reposition the drainage tube in the collar.
- Fill the tank up to the medium level indicated on the rod [A]
- Insert the level rod
- Start the engine
- Raise the dirt container and open and close it, activate the main brush, move the machine forwards and backwards and lower the dirt container. Complete each action a few times.
- Switch off the engine
- Check the oil level again and reclose everything

N.B.: DO NOT USE A DIFFERENT TYPE OF OIL TO THOSE INDICATED



CLEANING THE HYDRAULIC OIL HEAT EXCHANGER

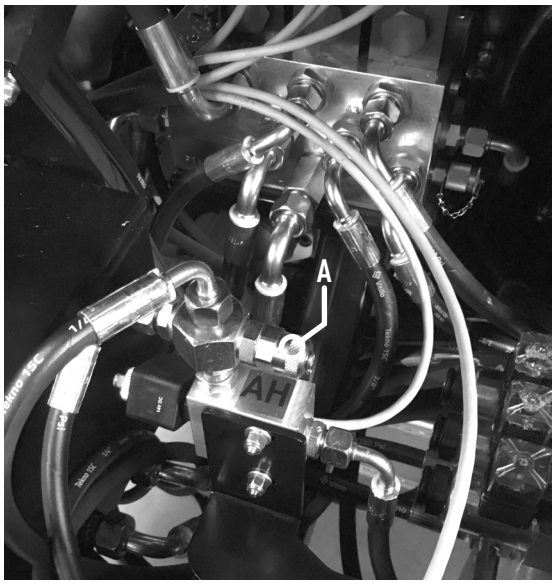
- Every 100 hours, remove the cover on the conveyor [E] and using compressed air, blow outwards, keeping a due distance from its fins to avoid bending them.

PRESSURE MEASUREMENT POINTS ON THE HYDRAULIC CIRCUIT

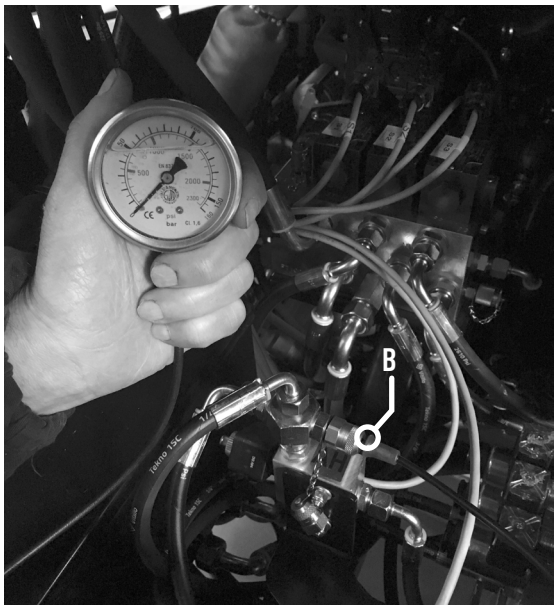
To measure the pressure of the various components, we can use the pressure taps (PT) on the control points of the machine.

- For correct measurement, use a gauge with a range greater than that of the pressure you expect to obtain, and with appropriate accuracy for the value.

- Connect the gauge tube (code 680184) to the pressure tap you want to measure [A]. Before connecting the tube to the tap, ensure the machine is off.

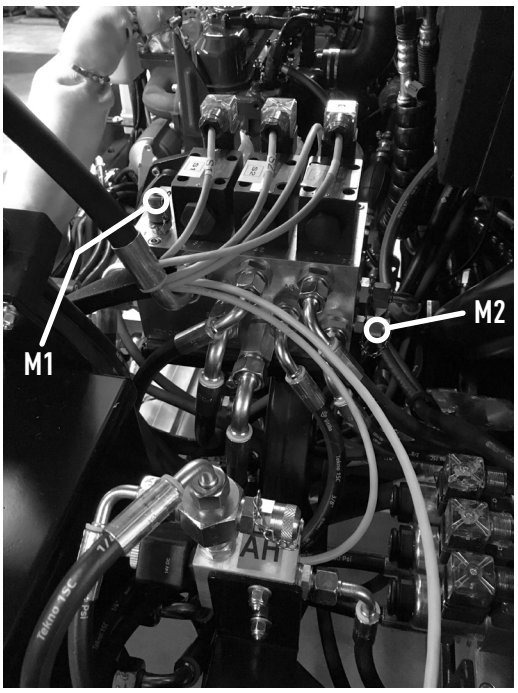


- Once the tube is connected in the correct position [B], the gauge will indicate the pressure relating to that point of the circuit.

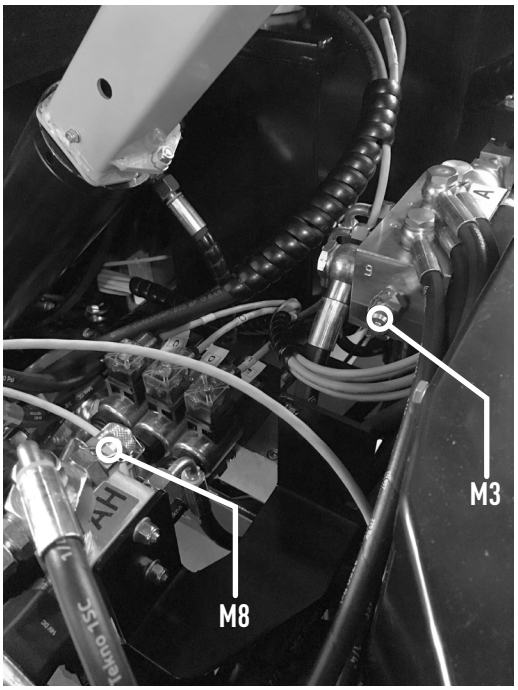


These photos indicate the location of the pressure taps (PT).

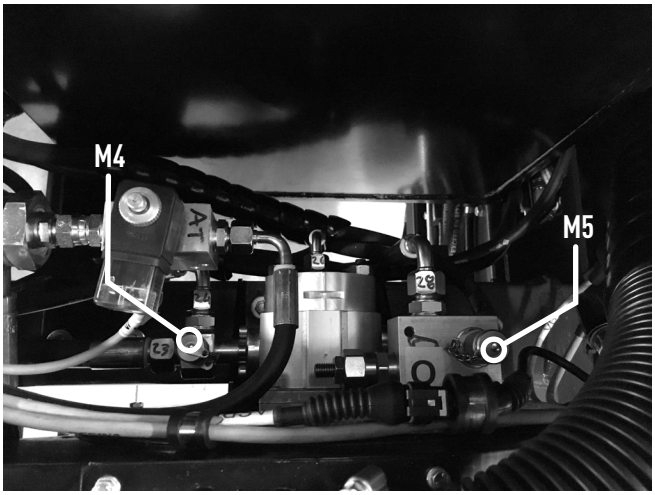
- At PT M1 it is possible to measure the pressure that arrives to the distributor of the brush motors. To measure the pressure at PT M1, remove the left side of the machine or lift the dirt container. With the engine revolutions at the maximum and the main brush working, the pressure should be between 80 and 100 bar. If the main brush is raised the pressure will be 15 bar. If the dirt container is rasied, read the pressure of the lifting cylinder. With the piston extended to the maximum and the dirt container completely raised, the pressure should be 140/145 bar.
- At PT M2 it is possible to measure the pressure that arrives to the distributor of the side brush motors. To measure the pressure at M2, raise the dirt container. With the engine revolutions at the maximum and the right and auxiliary brushes working, the pressure should read 55 bar; with only the left brush working the pressure will be 25 bar; with all side brushes working, the pressure will be 80 bar.



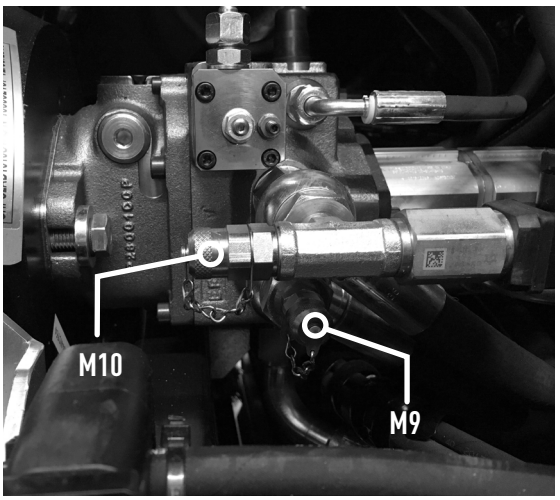
- At PT M3 it is possible to measure the pressure that arrives at the oil drainage collector. To measure the pressure at M3, raise the dirt container. With the engine revolutions at the maximum the pressure should read 1.5-2 bar.
- At PT M8 it is possible to measure the pressure that arrives at the seat safety valve. To measure the pressure at M8, raise the dirt container. With the engine revolutions at the maximum the pressure should read 20 bar.



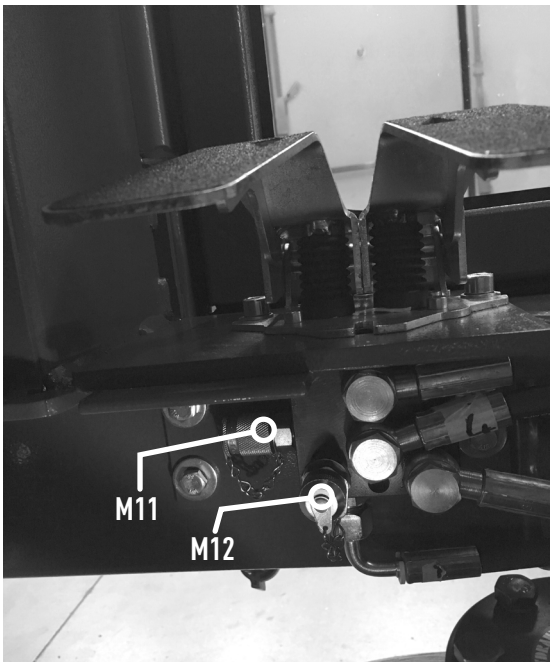
- At PT M4 it is possible to read the pressure that arrives at the relief valve of the power steering. To carry out the measurement at M4, lift the waste container. With the engine running at maximum speed and the steering wheel turned to full lock, a pressure of 70 bar is measured
- At PT M5 it is possible to measure the pressure that arrives at the turbine motor. To measure the pressure at M5, raise the dirt container. With the engine revolutions at the maximum and the steeling wheel on full lock, the pressure should read 120 bar. If the steering wheel is not on full lock the pressure will be 55 bar.



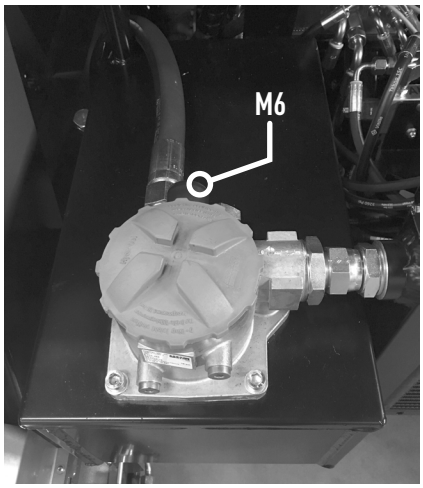
- At M9 it is possible to measure the pressure that is sent to the to the reverse traction wheel motor. To measure the pressure at M9, remove the left side of the machine. With the engine revolutions at the maximum and the reverse pedal pressed down, the pressure should read at maximum of 45-55 bar.
- At PT M10 it is possible to measure the pressure sent to the forward traction wheel motor. To measure the pressure at M10, remove the left side of the machine and raise the dirt container. With the engine revolutions and the maximum and the forward pedal pressed down, the pressure measured should be a maximum of 45-55 bar.

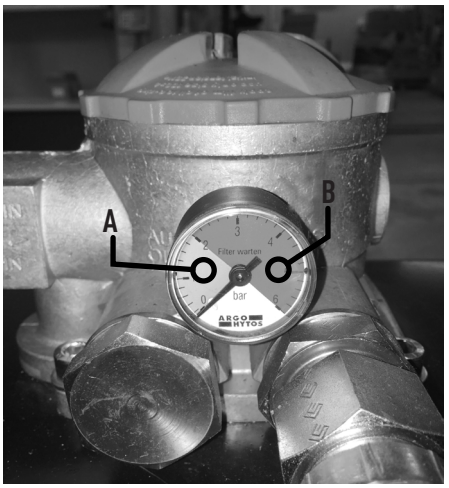


- At PT M11 it is possible to measure the pressure that arrives at the pedal controls. To measure the pressure at M11, remove the footboards at the base of the driver's seat. With the engine revolutions at the maximum and the operator on board the pressure measured should be 20 bar. If the person is not on board the pressure will be 0 bar.
- At PT M12 it is possible to measure the pressure that arrives at the pedal controls. To measure the pressure at M12, remove the footboards at the base of the driver's seat. With the reverse pedal pressed down and the operator on board, the pressure measured should be 20 bar. If the person is not on board the pressure will be 0 bar.

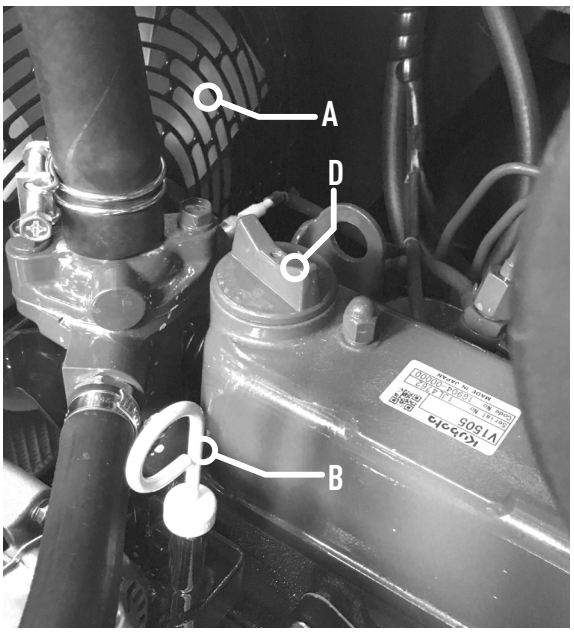


- To measure the pressure that arrives at the hydraulic oil filter, use the indicator on the filter [M6]. To see the pressure on the indicator, remove the left side of the machine and raise the dirt container. With the engine revolutions at the maximum, the pressure should measure 0.6 bar. When the gauge is in the green zone [A] (max 2 bar) the filter is in a safe condition, when the gauge is in the red zone [B] (greater than 2 bar) replace the cartridge of the hydraulic oil filter.





DIESEL ENGINE MAINTENANCE



CLEANING THE ENGINE RADIATOR

- Switch off the machine and remove the key
- Remove the left side of the machine
- Periodically (every 50 hours) clean the radiator grill [A] with compressed air, blowing from inside the engine compartment towards the outside. Keep a safe distance from the radiator fins to avoid bending them.

REPLACING THE ENGINE OIL

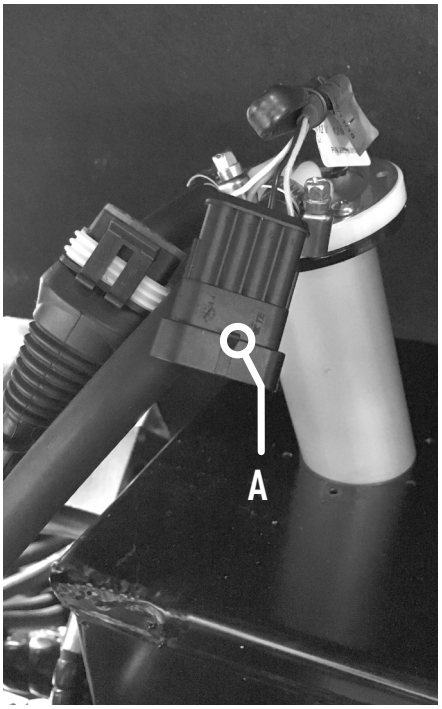
- Bring the machine to the maintenance zone
- Apply the handbrake
- Switch off the machine and remove the key
- Remove the left side of the machine
- Remove the oil level rod [B]
- Use a suitable container to collect the exhausted oil and position it under the machine under the oil cap [C]
- Remove the cap and allow all the oil to flow out. Drainage is easier and more complete if carried out when the engine is hot and the upper cap [D] is removed.
- Put the cap back on the drain
- Remove (if not previously done) the upper cap [D] and add new oil (quantity = 6 litres) until the maximum level of the rod [B] is reached.

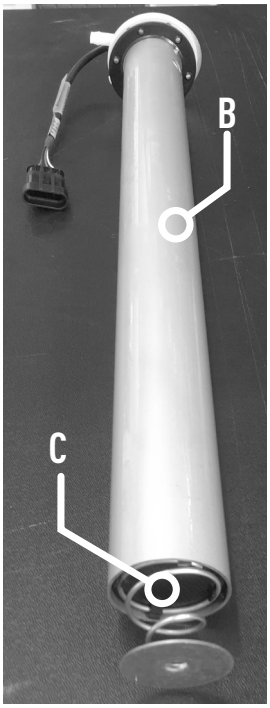
N.B.: USE THE TYPE OF OIL INDICATED IN THE INSTRUCTION MANUAL OF THE ENGINE. DO NOT DISPOSE OF FILTERS AND EXHAUSTED OIL IN THE ENVIRONMENT

REPLACING THE OIL FILTER

- Bring the machine to the maintenance zone
- Apply the handbrake
- Switch off the machine and remove the key
- Remove the left side of the machine
- Remove the oil level rod [A]
- Use a suitable container to collect the exhausted oil and position it under the machine under the oil cap [C]
- Remove the cap and allow all the oil to flow out. Drainage is easier and more complete if carried out when the engine is hot and the upper cap [D] is removed.
- Remove the oil filter [E] using the specific key.
- Replace the filter and lubricate the gaskets of the new filter
- Put the cap back on the drain
- Start the engine and wait for the oil pressure light to switch off.
- Switch off the engine and check the oil level.

N.B.: USE THE TYPE OF OIL INDICATED IN THE INSTRUCTION MANUAL OF THE ENGINE. DO NOT DISPOSE OF FILTERS AND EXHAUSTED OIL IN THE ENVIRONMENT

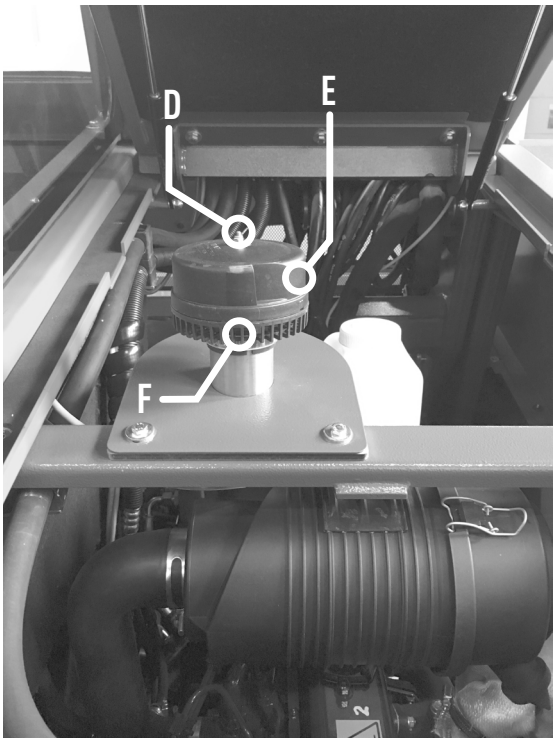




CLEANING THE FILTER ON THE DIESEL LEVEL INDICATOR

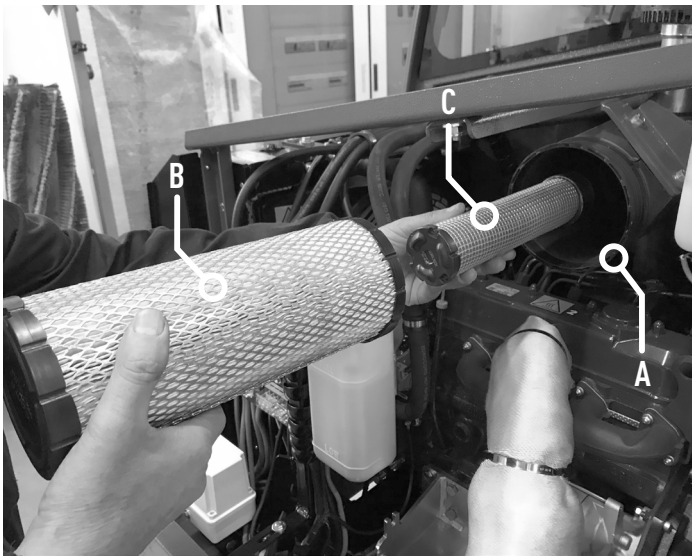
If heavy dirt incorrectly entered the diesel tank and the machine is not working despite the diesel filter and pre-filter being clean, check the filter on the diesel level indicator, proceeding as follows:

- Apply the handbrake
- Switch off the machine and remove the key
- Raise the dirt container
- Disconnect the 2 tubes
- Detach the electrical connector [A]
- Remove the 6 fastening screws
- Lift the level indicator [B] and clean the filter [C]
- Replace everything



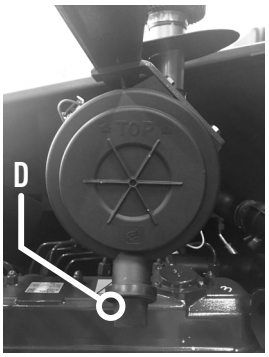
CLEANING THE AIR PRE-FILTER (VORTEX) ON THE ENGINE

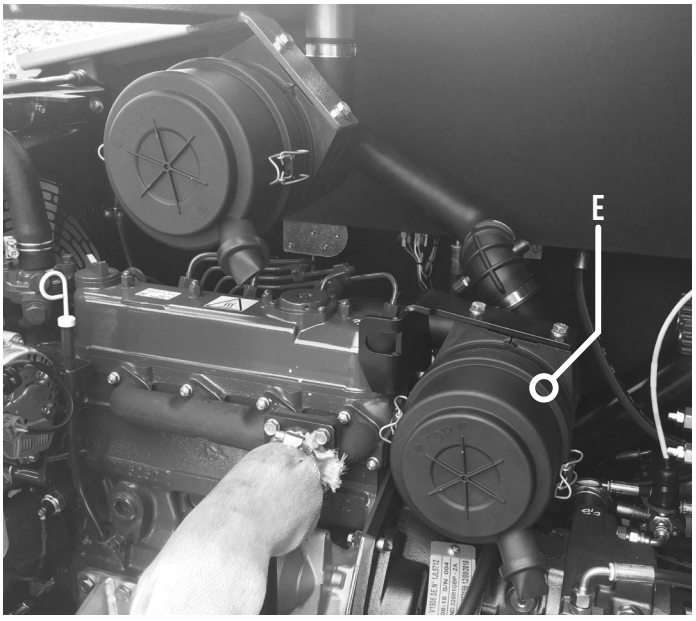
- Apply the handbrake
- Switch off the machine and remove the key
- Lift the machine hood
- Remove the screw over the pre-filter [D]
- Remove the pre-filter cover [E]
- Clean the fan [F] and inside the pre-filter and check it rotates freely
- Replace everything



REPLACING/CLEANING THE MAIN AIR FILTER CARTRIDGE

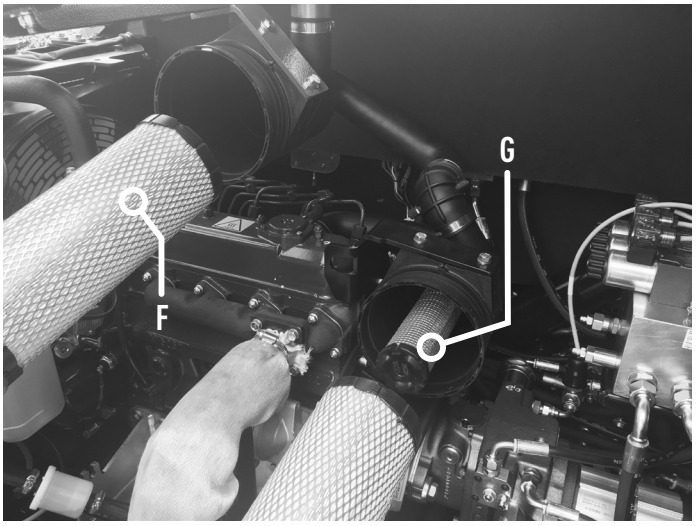
- Apply the handbrake
- Switch off the machine and remove the key
- Lift the hood and remove the left side of the machine
- Remove the air filter cover [A]
- Remove the filter cartridge [B] and clean it/replace it
- Replace the cartridge [C] or clean it by blowing with compressed air, paying utmost attention not to damage the filtering element
- Re-assemble everything (position the filter cover correctly) [D]





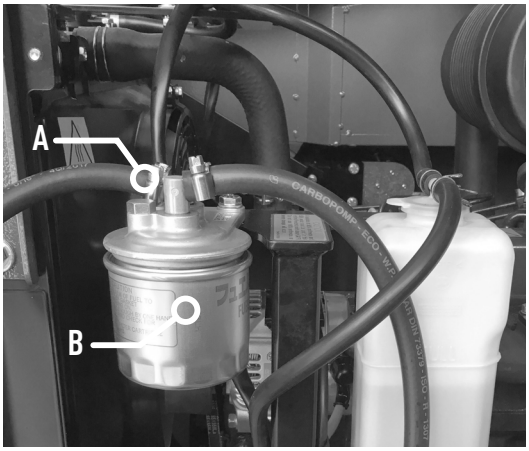
REPLACING/CLEANING THE SECONDARY AIR FILTER CARTRIDGE (OPTIONAL)

- Apply the handbrake
- Switch off the machine and remove the key
- Lift the hood and remove the left side of the machine
- Remove the secondary air filter cover [E]
- Carry out the same operations for cleaning/replacement of the main air filter cartridge, as indicated in the previous paragraph.



ATTENTION!

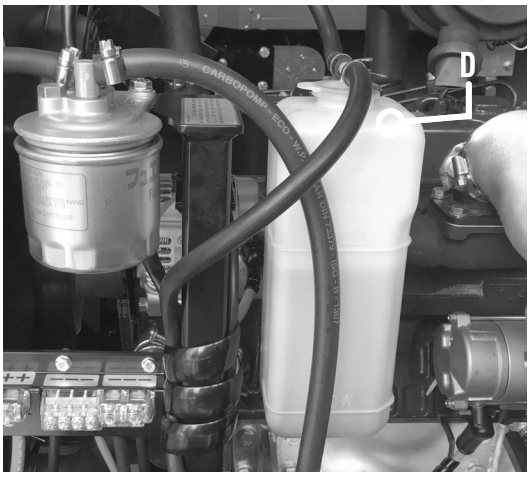
If there is a double filter, the main filter will only have one filter cartridge [F], and not two as standard. The double cartridge will only be present in the secondary filter positioned further down [G].
Therefore pay attention if simultaneously replacing the filter cartridges, to reposition the double cartridge in the correct filter.
A safety ring will be present in the main filter that will prevent incorrect assembly of the double cartridge.



REPLACING THE DIESEL FILTER CARTRIDGE

With the engine cold:

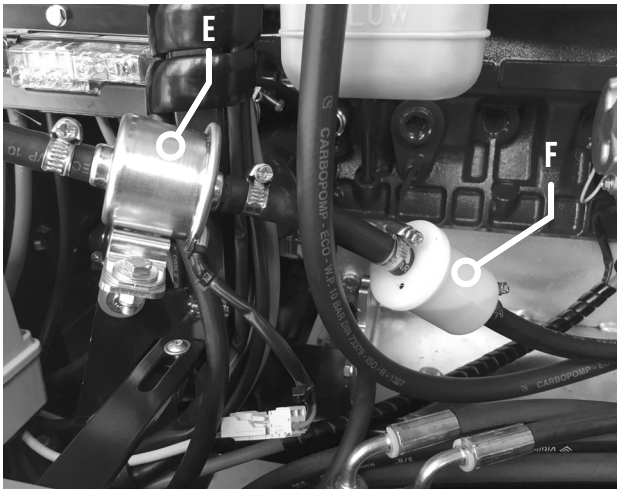
- Apply the handbrake
- Switch off the machine
- Lift the hood and remove the left side of the machine
- Loosen the vent screw of the filter [A]
- Remove the filter [B]
- Lubricate the gasket of the new filter and install it
- Loosen the vent screw of the injection pump [C]
- Turn the key to pos.1 to start the electric pump [E] and let all the air exit the fitting.
- Close the vent screw of the filter [A] and of the injection pump [C]
- Turn the key to start the engine. Check there are no leaks



CHECKING LIQUID LEVEL IN THE RADIATOR

With the engine cold:

- Apply the handbrake
- Switch off the machine and remove the key
- Lift the hood and remove the left side of the machine
- Periodically check (every 50 hours) that the liquid level in the expansion tank [D] is within the limits indicated
- If necessary, top up with a solution of water and 50% anti-freeze. To top up, remove the plug from the expansion tank and add the liquid using a funnel



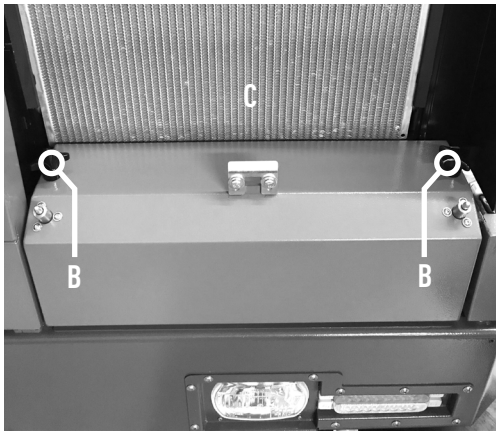
REPLACING THE DIESEL PRE-FILTER

- Apply the handbrake
- Switch off the machine
- Lift the hood and remove the left side of the machine
- Loosen the two clamps fastening the pre-filter [F]
- Replace the pre-filter [F] checking the correct position
- Loosen the vent screw of the filter [A] and that of the injection pump [C] and carry out the same purge procedure of the system as indicated in the previous paragraph (diesel filter cartridge replacement)

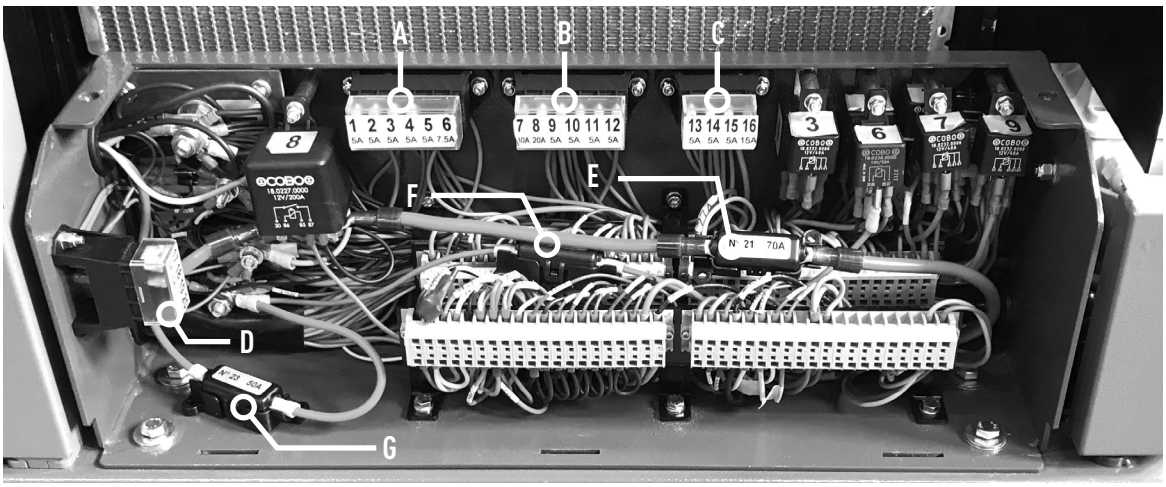
REPLACING THE FUSES

The electrical system of the sweeper is protected by a series of fuses. To locate the fuses, their function and their ampere value, consult this section.

ATTENTION!
- BEFORE REPLACING THE FUSES, ALWAYS TAKE THE KEY OUT
- REPLACE THE BLOWN FUSES WITH FUSES OF THE SAME AMPERE



The sweeper fuses are located on the front of the machine. To access the electric board, open the engine hood [A] and unscrew the two lobe screws closing the cover [B].
Then, lift the cover in the direction of the arrow [C].



UNIT FUSES (A)

1.	SPEED REDUCTION SOLENOID VALVE	5 Amperes
2.	SEAT SAFETY SOLENOID VALVE	5 Amperes
3.	STOP LIGHTS	5 Amperes
4.	HORN AND REVERSE LIGHTS	5 Amperes
5.	FLASHING LIGHT	10 Amperes
6.	VACUUM CLOSURE ACTUATOR	7.5 Amperes

UNIT FUSES (B)

7.	KEY BLOCK	30 Amperes
8.	STEERING COLUMN SWITCH	20 Amperes
9.	SOLENOID V. BRUSH CYLINDER LEFT OR EXTENS. (OPT.)	5 Amperes
10.	SOLENOID V. BRUSH CYLINDER RIGHT	5 Amperes
11.	SOLENOID V. BRUSH CYLINDER CENTRE	5 Amperes
12.	SOLENOID V. BRUSH MOTOR LEFT OR EXTENS. (OPT.)	5 Amperes

UNIT FUSES (C)

13.	FLASHING INDICATORS	5 Amperes
14.	SOLENOID V. BRUSH MOTOR CENTRE	5 Amperes
15.	SOLENOID V. BRUSH MOTOR RIGHT	5 Amperes
16.	WET DUST CONTROL PUMP (OPT.)	15 Amperes

UNIT FUSES (D)

17.	SOLENOID V. SPRAY NOZZLES EXT. BRUSH (OPT.)	5 Amperes
18.	WIPERS (OPT.)	10 Amperes
19.	----------	
20.	ELECTRIC FUEL PUMP	5 Amperes

FUSE (E)

21.	GENERAL UTILITIES	70 Amperes

FUSE (F)

22.	MULTIPOCKET FILTER SHAKER	50 Amperes

FUSE (G)

23.	GENERAL AIR CON. (OPT)	50 Amperes

FUSE INSIDE THE AIR CONDITIONING UNIT

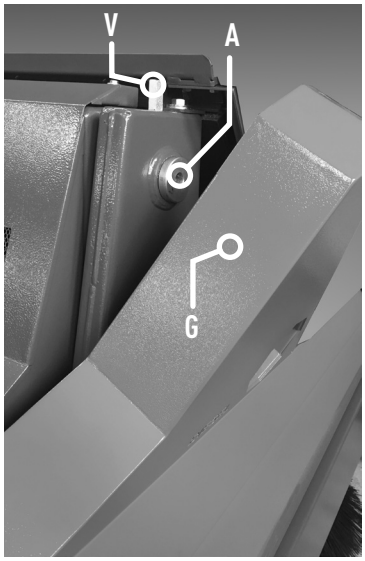
CENTRIFUGAL FAN MOTOR	20 Amperes
CONDENSER ELECTROFAN	30 Amperes

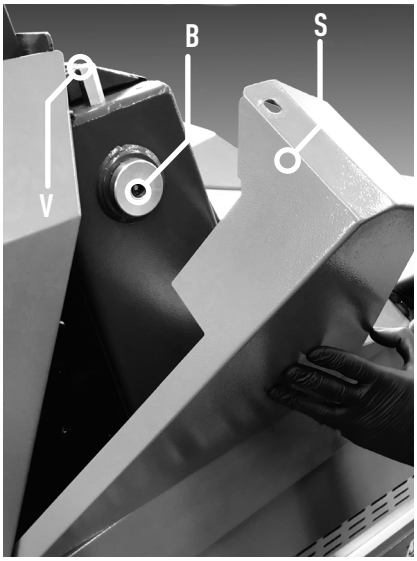
GREASING POINTS

The following greasing points should be periodically greased
(EVERY 200 HOURS)

A. Left container pin
B. Right container pin
C. Left brake bushing
D. Right brake bushing
E. Lifting piston bushing

To access the greasing points of the pins of the dirt container [A] and [B], unscrew the screw [V] and remove the sides [S] and [G]. For the right side [G], before unscrewing the screw [V], firstly remove the diesel cap [M] and loosen (do not remove) the 3 screws with an Allen key.





To access the greasing points of the brake bushing [C] and [D] and the lifting piston bushing [E], completely lift the dirt container and insert the PISTON SAFETY (YELLOW) on the piston rod

DUST SUPPRESSION SYSTEM (OPTIONAL)

1. DUST SUPPRESSION WATER TANK
2. NOZZLES

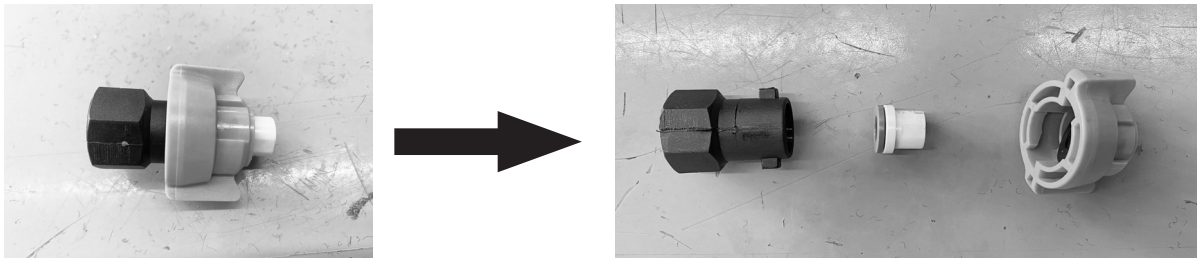
OPERATION OF THE DUST SUPPRESSION SYSTEM

Fill the water tank via the steel cap (E). The water tank's capacity is around 66 liters. Once full, use the button (B) to activate the system, select the quantity of water required by pushing the button up or down. The corresponding light will turn on (A). The pump activates simultaneously with the forward movement of the sweeper, with the main brush working. Should the pump exceed the expected power consumption the resettable fuse will trip. To reactivate the pump, wait 1 or 2 minutes and then press the fuse button (C). If the fuse trips multiple times check the cause of the pump's abnormal power consumption. When the water in the tank runs out, the light (D) will turn on and the pump disactivates. Once the water level is restored the light (D) will turn off and the system will start to work again.

MAINTAINING THE DUST SUPPRESSION SYSTEM

To check for wear on the nozzle filter:

- Unscrew the nozzle a half turn to unblock the safety
- Check that the filter is not clogged
- If necessary, change the filter
- Refit the nozzle, rotating a half turn



COMPLETE CABIN (OPTIONAL)

1. AIR CONDITIONING UNIT
2. WINDSHIELD WIPER/WASHER
3. CONDENSER UNIT
4. AIR FILTER

USE OF THE WINDSHIELD WIPER/WASHER

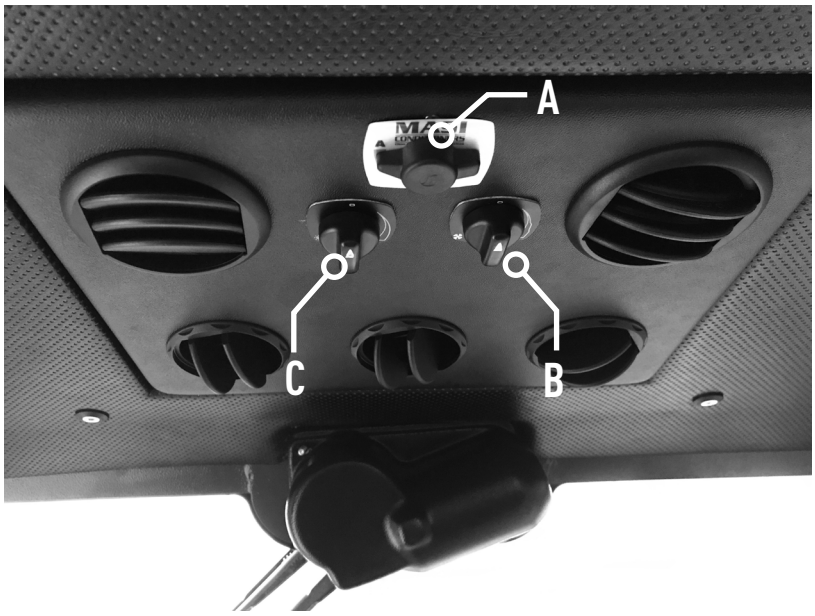
- To use the windscreen wiper, press the button [A] located in front of the steering wheel until the first click.
- To operate the washer pump, keep button [A] pressed
- To stop the windscreen wiper, return the button [A] to the rest position.

WINDSHIELD WIPER/WASHER MAINT

USE OF THE AIR CONDITIONER

TURNING ON THE HEATING SYSTEM

- Start the engine of the machine and wait until it is at temperature
- Act on the ventilation control [B] and select the desired speed.
- Act on the heating tap [A] by opening it clockwise



TURNING ON THE AIR CONDITIONER SYSTEM

- Start the engine of the machine.
- Act on the ventilation control [B] and select the desired speed
- Turn the thermostat control [C] clockwise to obtain maximum cold

PRACTICAL ADVICE

- To optimize the use of the air conditioning system, it is recommended to always keep the windows and doors of the cabin well closed. Maximum efficiency is obtained by keeping the fan speed at 80/90% of the speed, and internal recirculation always open.
- Prolonged use of ventilation and A / C thermostat in the maximum cold position, can cause the evaporating unit to freeze, depending on the environmental conditions, with a consequent reduction in efficiency and water leaking from it. If this happens, slightly open the heating tap, leaving the ventilation switched on for maximum 3 minutes.

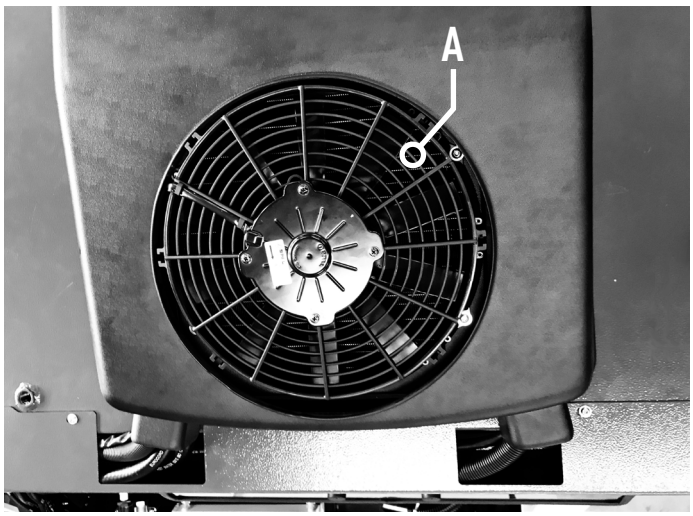
AIR CONDITIONING MAINTENANCE

ANNUAL MAINTENANCE (AT THE BEGINNING OF THE SEASON)

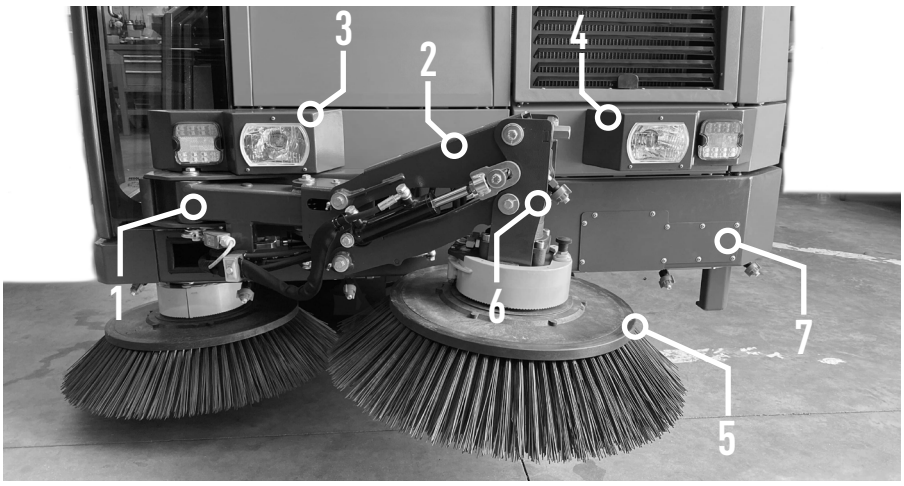
- For maximum performance from the air conditioner, charge with **R1234YF** gas refrigerant at the beginning of the hot season.
- Full charge includes 1000g of gas + 20cc of PAG oil + 5cc of tracer
- Perform a general system check and a control of the operating pressures.

PERIODIC MAINTENANCE (EVERY 40 HOURS OF USE)

- Clean the condenser [A] using only compressed air **[DO NOT USE A PRESSURE WASHER]**
- Clean the paper air filter [B] with compressed air. If the filter is worn, replace it **(EVERY 200 HOURS)**



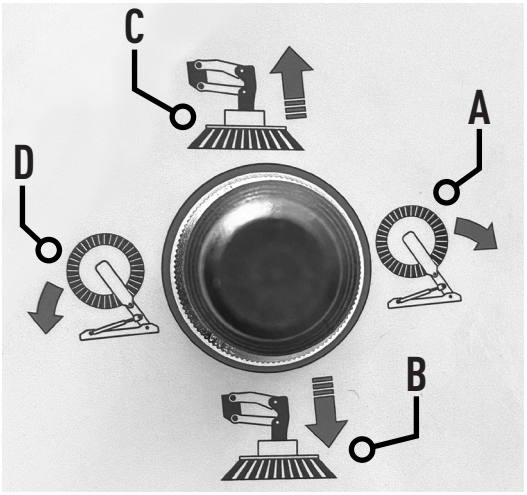
EXTENDIBLE BRUSH ARM (OPTIONAL)

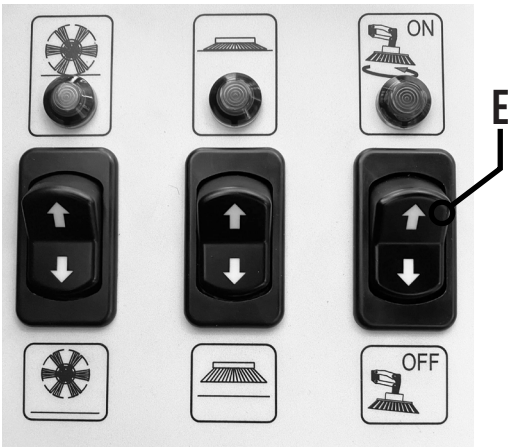


1. EXTENDIBLE BRUSH ARM SUPPORT
2. EXTENDIBLE BRUSH ARM
3. RIGHT HEADLIGHT SUPPORT
4. LEFT HEADLIGHT SUPPORT
5. EXTENDIBLE BRUSH
6. EXTENDIBLE BRUSH SPRAYERS
7. HEADLIGHT COVER

OPERATION OF THE EXTENDIBLE BRUSH

The extendible brush can only be used when both the main brush and side brush are working. To activate the brush, move the joystick to position (A), this places the brush in the working position, then move the joystick to position (B), this lowers the brush so that it can start to rotate. Press button (E) to activate the extendible brush. Once you have finished using the extendible brush, move the joystick to position (C) to raise the brush and then move the joystick to position (D) to place the brush in the resting position. If the brush is closed before raising it, it will lift automatically as it closes.

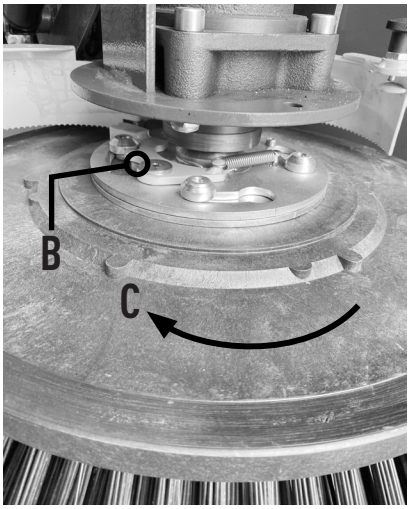




MAINTAINING THE EXTENDIBLE BRUSH

To check for wear on the extendible brush:

- Activate the hand brake
- Turn on the sweeper's engine
- Activate the main brush
- Activate the side brush
- Check that the bristles are in contact with the ground, without being too bent
- If necessary, adjust the height of the brush via the joystick
- If the brush is too worn, replace it



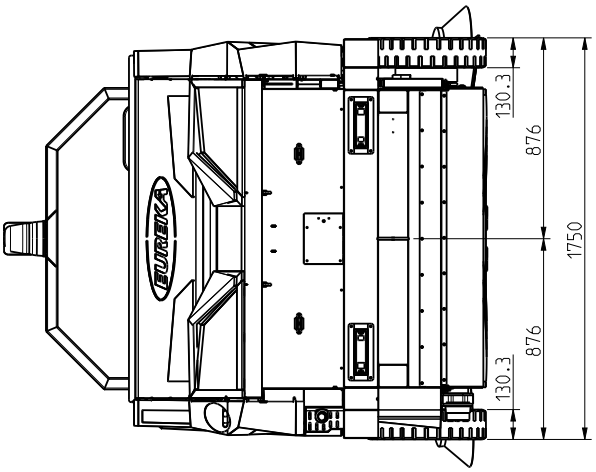
To change the extendible brush, proceed as follows:

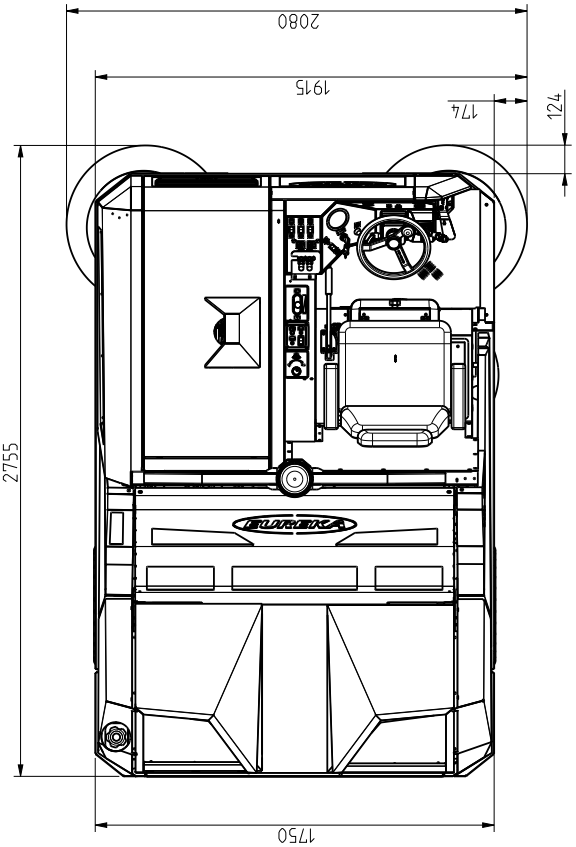
- Lift the handle (A) and open the yellow protection
- Move the yellow block (B) in the direction indicated and at the same time rotate the brush in direction (C). The brush should now be free and can be removed.
- To fit the new brush, raise the brush and align the heads with widest part of the slots in the hub, then rotate the brush until the locking mechanism is triggered.
- Close the two yellow, protective covers which will trigger the handle.

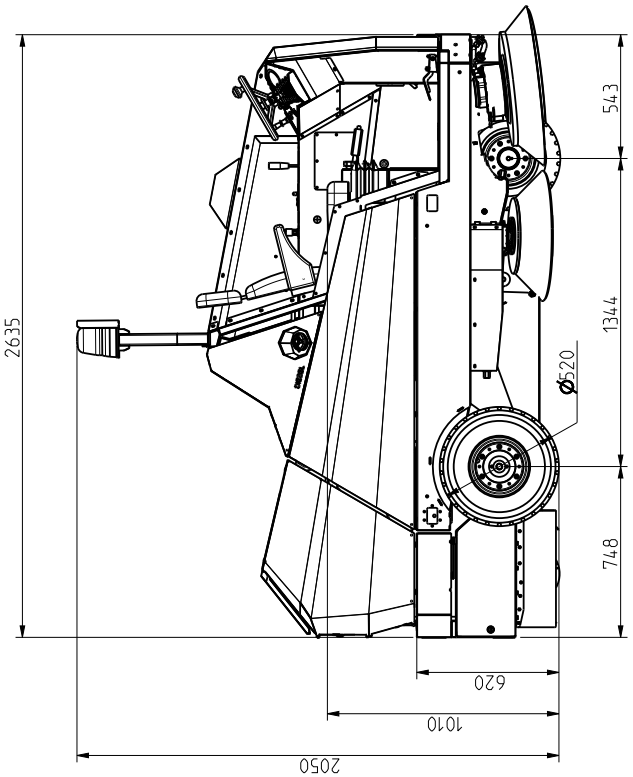
GREASING POINTS FOR THE EXTENDIBLE BRUSH

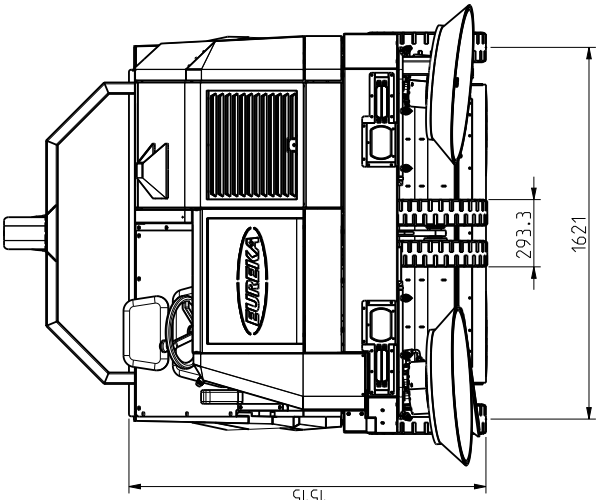
Periodically (every 200 hours) grease the four points of rotation on the brush arm, as indicated in the image.

DIMENSIONAL TECHNICAL DRAWINGS

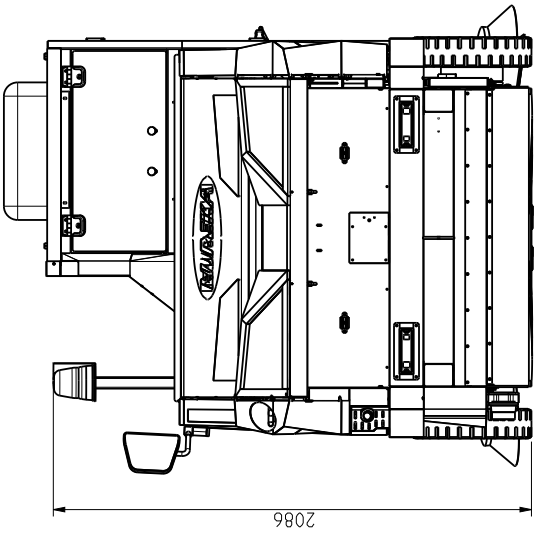


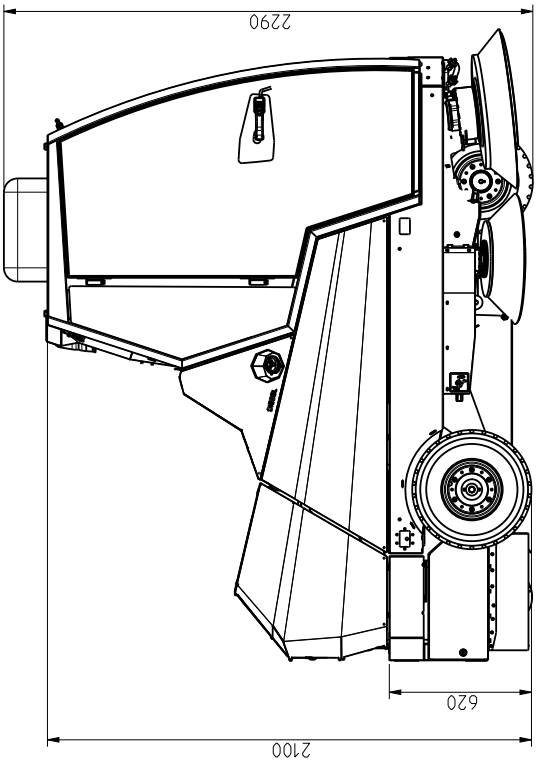


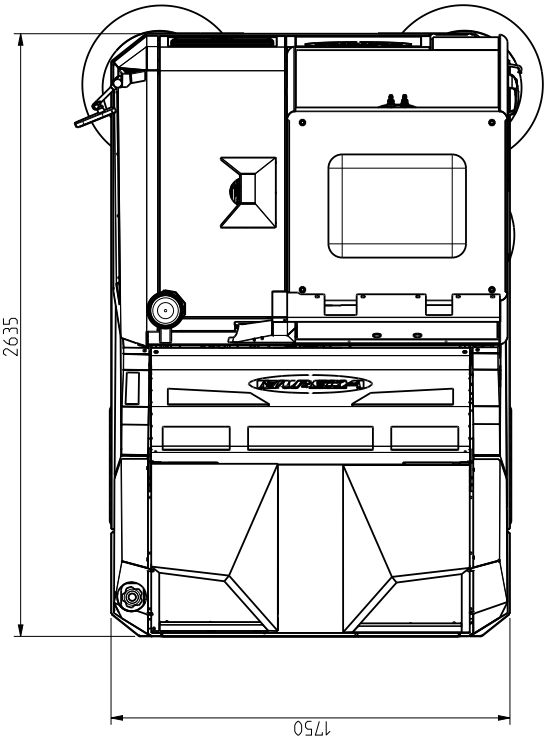


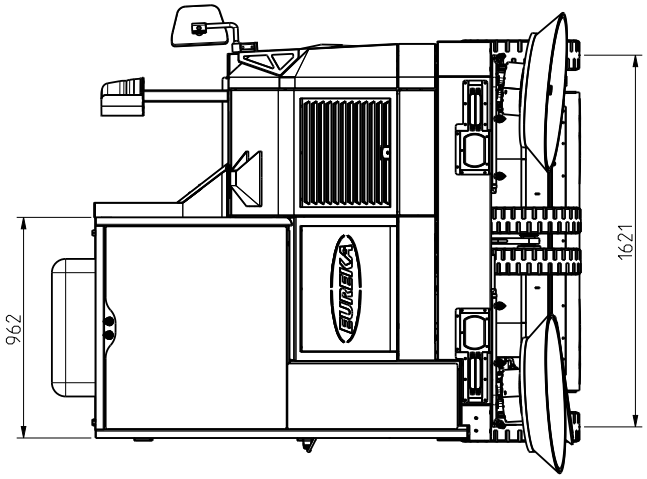


DIMENSIONAL TECHNICAL DRAWINGS









TECHNICAL DATA SHEET (UP TO FRAME 180000137)

MAIN SPECIFICATIONS		NOTES
Cleaning path with main brush	1270 mm	
Cleaning path with main brush and main brush	1700 mm	
Cleaning path with two side brushes and main brush	2100 mm	
Forward speed	14.2 km/h	
Hourly performance	29.820 mq/h	
Dirt container capacity	500 lt.	
High dump height	1580 mm	
Maximum working gradient	17%	at full load (500 kg)
Maximum gradient	21%	
Side brush diameter	700 mm	
Auxiliary side brush diameter	580 mm	
MACHINE DIMENSIONS		
Width with side brushes	2080 mm	
Width without side brushes	1750 mm	
Length with side brushes	2755 mm	
Length without side brushes	2635 mm	
Maximum height without flashing light	1515 mm	
Maximum height with flashing light	2050 mm	
Maximum height with cabin	2100 mm	
Maximum height with cabin and air conditioning	2290 mm	
MACHINE WEIGHT		
No load	2054 kg	BASIC version
	2102 kg	Version with left brush
	2270 kg	Version with cabin and left brush
	2297 kg	Version with cabin, left brush and wet dust control system on side brushes

SUPER ELASTIC FRONT WHEELS		
Model	5.00-8	
Diameter	452 mm	
PNEUMATIC FRONT WHEELS		**OPTIONAL**
Inflation pressure	8-10 bar	
SUPER ELASTIC REAR WHEELS		
Model	6.00-9	
Diameter	520 mm	
PNEUMATIC REAR WHEELS		**OPTIONAL**
Inflation pressure	8-10 bar	
BRAKES		
Type	drum	steering on front wheels with power steering
ENGINE		
Brand	Kubota	
No. cylinders	4	
Model	V1505	diesel with liquid cooling
Power	36 Hp	
Hourly fuel consumption	6.5 l/h	
Fuel tank capacity	47 lt.	
HYDRAULIC OIL		
Hydraulic oil type	MOBIL HYDRO HV 46	
Total hydraulic system capacity	37,3 L	
WET DUST CONTROL SYSTEM		
Water tank capacity	66 lt.	
Number of nozzles	6	
System supply tank	1	

TECHNICAL DATA SHEET (FROM FRAME 180000138)

MAIN SPECIFICATIONS		NOTES
Cleaning path with main brush	1270 mm	
Cleaning path with main brush and main brush	1700 mm	
Cleaning path with two side brushes and main brush	2100 mm	
Forward speed	14.2 km/h	
Hourly performance	29.820 mq/h	
Dirt container capacity	500 lt.	
High dump height	1580 mm	
Maximum working gradient	15%	at full load (500 kg)
Maximum gradient	21%	
Side brush diameter	700 mm	
Auxiliary side brush diameter	580 mm	
MACHINE DIMENSIONS		
Width with side brushes	2080 mm	
Width without side brushes	1750 mm	
Length with side brushes	2755 mm	
Length without side brushes	2635 mm	
Maximum height without flashing light	1515 mm	
Maximum height with flashing light	2050 mm	
Maximum height with cabin	2100 mm	
Maximum height with cabin and air conditioning	2290 mm	
MACHINE WEIGHT		
No load	2054 kg	BASIC version
	2102 kg	Version with left brush
	2270 kg	Version with cabin and left brush
	2297 kg	Version with cabin, left brush and wet dust control system on side brushes

SUPER ELASTIC FRONT WHEELS		
Model	5.00-8	
Diameter	452 mm	
PNEUMATIC FRONT WHEELS		**OPTIONAL**
Inflation pressure	8-10 bar	
SUPER ELASTIC REAR WHEELS		
Model	6.00-9	
Diameter	520 mm	
PNEUMATIC REAR WHEELS		**OPTIONAL**
Inflation pressure	8-10 bar	
BRAKES		
Type	drum	steering on front wheels with power steering
ENGINE		
Brand	Kubota	
No. cylinders	4	
Model	V1505 E4B	diesel with liquid cooling
Power	24.8 Hp	
Hourly fuel consumption	6.5 l/h	
Fuel tank capacity	47 lt.	
HYDRAULIC OIL		
Hydraulic oil type	MOBIL HYDRO HV 46	
Total hydraulic system capacity	37,3 L	
WET DUST CONTROL SYSTEM		
Water tank capacity	66 lt.	
Number of nozzles	6	
System supply tank	1	

SERVICE AND MAINTENANCE RECORDS

1°

SERVICE AND MAINTENANCE RECORD

TO 50 HOURS **DATE**

DAY	MONTH	YEAR	WORKING HOURS

Before starting work, walk around the machine and carefully check for leaks: fuel, oil, coolant liquid. Then, open the hood and check for the same on the engine.

KUBOTA V1505 ENGINE

- ☐ Change engine oil SAE 15W40 quantity 6 l.
- ☐ Change oil filter
- ☐ Change diesel filter cartridge
- ☐ Check and, if necessary, replace the diesel pre-filter
- ☐ Clean air filter primary cartridge
- ☐ Clean air filter secondary cartridge (safety)
- ☐ Check VORTEX pre-filter fan rotation
- ☐ Check fan belt tension
- ☐ Check fuel tubes and tighten clamps
- ☐ Check radiator liquid level
- ☐ Check radiator hoses
- ☐ Check engine air intake tube is in good condition (between air filter and engine)
- ☐ Check the radiator is not blocked and clean, if necessary

MACHINE

- ☐ Check wear status and trace of the brushes
- ☐ Check dust skirts and flap
- ☐ Check dirt container gaskets
- ☐ Check dust filter efficiency
- ☐ Check hydraulic system tubing
- ☐ Check all tools and control levers are working
- ☐ Check braking system is working properly
- ☐ Check hydraulic oil level
- ☐ Clean hydraulic oil heat exchanger
- ☐ Test all functions of the machine

THE SERVICE WAS CARRIED OUT ON:

NAME:

SURNAME:

SIGNATURE:

STAMP OF DEALER WHO CARRIED OUT SERVICE

NOTES

2°

SERVICE AND MAINTENANCE RECORD

TO 100 HOURS **DATE**

DAY	MONTH	YEAR	WORKING HOURS

Before starting work, walk around the machine and carefully check for leaks: fuel, oil, coolant liquid. Then, open the hood and check for the same on the engine.

KUBOTA V1505 ENGINE

- □ Check engine oil SAE 15W40 quantity 6 l.
- □ Change diesel filter cartridge
- □ Check and, if necessary, replace the diesel pre-filter
- □ Change air filter primary cartridge
- □ Clean air filter secondary cartridge (safety)
- □ Check VORTEX pre-filter fan rotation
- □ Check fan belt tension
- □ Check fuel tubes and tighten clamps
- □ Check radiator liquid level
- □ Check radiator hoses
- □ Check engine air intake tube is in good condition (between air filter and engine)
- □ Check the radiator is not blocked and clean, if necessary

MACHINE

- □ Check wear status and trace of the brushes
- □ Check dust skirts and flap
- □ Check dirt container gaskets
- □ Check dust filter efficiency
- □ Check hydraulic system tubing
- □ Check all tools and control levers are working
- □ Check braking system is working properly
- □ Check hydraulic oil level
- □ Clean hydraulic oil heat exchanger
- □ Test all functions of the machine

THE SERVICE WAS CARRIED OUT ON:

NAME:

SURNAME:

SIGNATURE:

STAMP OF DEALER WHO CARRIED OUT SERVICE

NOTES

3° SERVICE AND MAINTENANCE RECORD

TO 200 HOURS **DATE**

DAY	MONTH	YEAR	WORKING HOURS

Before starting work, walk around the machine and carefully check for leaks: fuel, oil, coolant liquid. Then, open the hood and check for the same on the engine.

KUBOTA V1505 ENGINE

- □ Change engine oil SAE 15W40 quantity 6 l.
- □ Change oil filter
- □ Change diesel filter cartridge
- □ Check and, if necessary, replace the diesel pre-filter
- □ Change air filter primary cartridge
- □ Change air filter secondary cartridge (safety)
- □ Check VORTEX pre-filter fan rotation
- □ Check fan belt tension
- □ Check fuel tubes and tighten clamps
- □ Check radiator liquid level
- □ Check radiator hoses
- □ Check good condition of
- □ Check engine air intake tube is in good condition (between air filter and engine)
- □ Check the radiator is not blocked and clean, if necessary

MACHINE

- □ Check wear status and trace of the brushes
- □ Check dust skirts and flap
- □ Check dirt container gaskets
- □ Check dust filter efficiency
- □ Check the status of all tubing
- □ Check all tools and control levers are working
- □ Check braking system is working properly
- □ Grease all the planned points
- □ Check hydraulic oil level
- □ Clean hydraulic oil heat exchanger
- □ Test all functions of the machine

THE SERVICE WAS CARRIED OUT ON:

NAME:

SURNAME:

SIGNATURE:

STAMP OF DEALER WHO CARRIED OUT SERVICE

NOTES

4° SERVICE AND MAINTENANCE RECORD

TO 300 HOURS **DATE**

DAY	MONTH	YEAR	WORKING HOURS

Before starting work, walk around the machine and carefully check for leaks: fuel, oil, coolant liquid. Then, open the hood and check for the same on the engine.

KUBOTA V1505 ENGINE

- □ Check engine oil SAE 15W40 quantity 6 l.
- □ Change diesel filter cartridge
- □ Check and, if necessary, replace the diesel pre-filter
- □ Change air filter primary cartridge
- □ Clean air filter secondary cartridge (safety)
- □ Check VORTEX pre-filter fan rotation
- □ Check fan belt tension
- □ Check fuel tubes and tighten clamps
- □ Check radiator liquid level
- □ Check radiator hoses
- □ Check engine air intake tube is in good condition (between air filter and engine)
- □ Check the radiator is not blocked and clean, if necessary

MACHINE

- □ Check wear status and trace of the brushes
- □ Check dust skirts and flap
- □ Check dirt container gaskets
- □ Check dust filter efficiency
- □ Check all tools and control levers are working
- □ Check braking system is working properly
- □ Check hydraulic oil level
- □ Clean hydraulic oil heat exchanger
- □ Test all functions of the machine

THE SERVICE WAS CARRIED OUT ON:

NAME:

SURNAME:

SIGNATURE:

STAMP OF DEALER WHO CARRIED OUT SERVICE

NOTES

5° SERVICE AND MAINTENANCE RECORD

TO 400 HOURS **DATE**

DAY	MONTH	YEAR	WORKING HOURS

Before starting work, walk around the machine and carefully check for leaks: fuel, oil, coolant liquid. Then, open the hood and check for the same on the engine.

KUBOTA V1505 ENGINE

- □ Change engine oil SAE 15W40 quantity 6 l.
- □ Change oil filter
- □ Change diesel filter cartridge
- □ Check and, if necessary, replace the diesel pre-filter
- □ Change air filter primary cartridge
- □ Change air filter secondary cartridge (safety)
- □ Check VORTEX pre-filter fan rotation
- □ Check fan belt tension
- □ Check fuel tubes and tighten clamps
- □ Check radiator liquid level
- □ Check radiator hoses
- □ Check engine air intake tube is in good condition (between air filter and engine)
- □ Check the radiator is not blocked and clean, if necessary

MACHINE

- □ Check wear status and trace of the brushes
- □ Check dust skirts and flap
- □ Check dirt container gaskets
- □ Check dust filter efficiency
- □ Check the condition of all tubing
- □ Check all tools and control levers are working
- □ Check braking system is working properly
- □ Grease all the planned points
- □ Check hydraulic oil level
- □ Clean hydraulic oil heat exchanger
- □ Test all functions of the machine

THE SERVICE WAS CARRIED OUT ON:

NAME:

SURNAME:

SIGNATURE:

STAMP OF DEALER WHO CARRIED OUT SERVICE

NOTES

6° SERVICE AND MAINTENANCE RECORD

TO 500 HOURS **DATE**

DAY	MONTH	YEAR	WORKING HOURS

Before starting work, walk around the machine and carefully check for leaks: fuel, oil, coolant liquid. Then, open the hood and check for the same on the engine.

KUBOTA V1505 ENGINE

- □ Check engine oil SAE 15W40 quantity 6 l.
- □ Change diesel filter cartridge
- □ Check and, if necessary, replace the diesel pre-filter
- □ Change air filter primary cartridge
- □ Clean air filter secondary cartridge (safety)
- □ Check VORTEX pre-filter fan rotation
- □ Change fan belt tension
- □ Check fuel tubes and tighten clamps
- □ Check radiator liquid level
- □ Check radiator hoses
- □ Check engine air intake tube is in good condition (between air filter and engine)
- □ Eliminate any scale from fuel tank
- □ Clean water jacket on radiator inner side
- □ Check the radiator is not blocked and clean, if necessary

MACHINE

- □ Check wear status and trace of the brushes
- □ Check dust skirts and flap
- □ Check dirt container gaskets
- □ Check dust filter efficiency
- □ Check all tools and control levers are working
- □ Check braking system is working properly
- □ Change hydraulic oil filter
- □ Check hydraulic oil level
- □ Clean hydraulic oil heat exchanger
- □ Test all functions of the machine

THE SERVICE WAS CARRIED OUT ON:

NAME:

SURNAME:

SIGNATURE:

STAMP OF DEALER WHO CARRIED OUT SERVICE

NOTES

SERVICE AND MAINTENANCE RECORDS

UP TO 600 HOURS AS FOR 100 HOURS DATE	DAY	MONTH	YEAR	WORKING HOURS
THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE			

UP TO 700 HOURS AS FOR 200 HOURS DATE	DAY	MONTH	YEAR	WORKING HOURS
THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE			

UP TO 800 HOURS AS FOR 300 HOURS DATE	DAY	MONTH	YEAR	WORKING HOURS
□ Also, check valves clearance				
THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE			

UP TO 900 HOURS AS FOR 400 HOURS DATE	DAY	MONTH	YEAR	WORKING HOURS
THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE			

UP TO 1000 HOURS AS FOR 500 HOURS DATE	DAY	MONTH	YEAR	WORKING HOURS
THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE			

NOTES

SERVICE AND MAINTENANCE RECORDS

UP TO 1100 HOURS AS FOR 600 HOURS DATE	DAY	MONTH	YEAR	WORKING HOURS
THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE			

UP TO 1200 HOURS AS FOR 700 HOURS DATE	DAY	MONTH	YEAR	WORKING HOURS
THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE			

UP TO 1300 HOURS AS FOR 800 HOURS DATE	DAY	MONTH	YEAR	WORKING HOURS
THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE			

UP TO 1400 HOURS AS FOR 900 HOURS DATE	DAY	MONTH	YEAR	WORKING HOURS
THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE			

UP TO 1500 HOURS AS FOR 1000 H. DATE	DAY	MONTH	YEAR	WORKING HOURS

☐ Also, check the injection pressure of the fuel injection nozzle

THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE

NOTES

SERVICE AND MAINTENANCE RECORDS

UP TO 1600 HOURS AS FOR 1100 H. DATE	DAY	MONTH	YEAR	WORKING HOURS

□ Also, check valves clearance

THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE

UP TO 1700 HOURS AS FOR 1200 H. DATE	DAY	MONTH	YEAR	WORKING HOURS

THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE

UP TO 1800 HOURS AS FOR 1300 H. DATE	DAY	MONTH	YEAR	WORKING HOURS

THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE

UP TO 1900 HOURS AS FOR 1400 H. DATE	DAY	MONTH	YEAR	WORKING HOURS

THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE

UP TO 2000 HOURS AS FOR 1500 H. DATE	DAY	MONTH	YEAR	WORKING HOURS

□ Also, replace hydraulic oil;

THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE

NOTES

SERVICE AND MAINTENANCE RECORDS

UP TO 2100 HOURS AS FOR 1600 H. DATE	DAY	MONTH	YEAR	WORKING HOURS
THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE			

UP TO 2200 HOURS AS FOR 1700 H. DATE	DAY	MONTH	YEAR	WORKING HOURS
THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE			

UP TO 2300 HOURS AS FOR 1800 H. DATE	DAY	MONTH	YEAR	WORKING HOURS
THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE			

UP TO 2400 HOURS AS FOR 1900 H. DATE	DAY	MONTH	YEAR	WORKING HOURS

□ Also, check valves clearance

THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE

UP TO 2500 HOURS AS FOR 2000 H. DATE	DAY	MONTH	YEAR	WORKING HOURS
THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE			

NOTES

SERVICE AND MAINTENANCE RECORDS

UP TO 2600 HOURS AS FOR 2100 H. DATE	DAY	MONTH	YEAR	WORKING HOURS
THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE			

UP TO 2700 HOURS AS FOR 2200 H. DATE	DAY	MONTH	YEAR	WORKING HOURS
THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE			

UP TO 2800 HOURS AS FOR 2300 H. DATE	DAY	MONTH	YEAR	WORKING HOURS
THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE			

UP TO 2900 HOURS AS FOR 2400 H. DATE	DAY	MONTH	YEAR	WORKING HOURS
THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE			

UP TO 3000 HOURS AS FOR 2500 H. DATE	DAY	MONTH	YEAR	WORKING HOURS

- ☐ Check the injection pressure of the fuel injection nozzle
- ☐ Check the injection pump
- ☐ Check the fuel injection timer

THE SERVICE WAS CARRIED OUT ON: NAME: SURNAME: SIGNATURE:	STAMP OF DEALER WHO CARRIED OUT SERVICE

NOTES

SERVICE AND MAINTENANCE RECORDS

Each year:

- □ Change the engine air vacuum elements
- □ Check if there is any damage on the electrical connections or loose connections

Every two years:

- □ Check the radiator coolant (L.L.C.)
- □ Change the radiator tubes and the relevant clamps
- □ Change the fuel tubes and the relevant clamps
- □ Change the engine air vacuum system

NOTES

TROUBLESHOOTING TABLE

ATTENTION!

ANY TYPE OF SERVICE OR TESTING, WITH THE EXCEPTION OF THOSE DESCRIBED IN THE ENGINE OR BATTERY MANUAL, MUST ONLY BE CARRIED OUT BY AN AUTHORISED SUPPORT CENTRE (ASC)

FAULT	CAUSE	SOLUTION
Turning the key, no light switches on	Flat battery	Recharge the battery and/or have alternator operation checked
	Faulty switch	Replace the switch
	Disconnected battery	Connect the battery
	Faulty battery	Replace the battery
	Ignition switch fuse blown	Replace fuse
	General fuse for services blown	Replace fuse
Turning the key, the starter motor does not rotate and the engine won't turn on	Brush switches in working position	Bring the switches to the rest position and try again
	Flat or faulty battery	Charge or replace it
	Faulty starter motor	Have it replaced
	Faulty key switch	Have it replaced
	Faulty starter contactor	Have it replaced
	Faulty battery	Replace the battery
	Fuse blown	Replace fuse
The engine won't switch on, even if the starter motor is rotating	Diesel heating spark plugs faulty	Bring the switches to the rest position and try again
	Electromagnet for engine shut down faulty or blocked	Have it replaced
	Empty diesel tank	Fill the tank with diesel and fill the self-priming diesel pump circuit
	Diesel filters clogged	Have them replaced
	Air filters clogged	Have them replaced
	Air vacuum in diesel system	Have it checked
	Accelerator at minimum	Accelerate
With the engine running, pressing the forward pedal, the sweeper won't move	The operator is not seated	Sit down
	Faulty seat micro-switch	Have it replaced
	Blown fuse	Replace fuse
	Pump release lever open	Close the pump release lever (B)
	Safety solenoid valve reducing nipple blocked	Have solenoid valve reducing nipple cleaned
	Faulty or blocked safety solenoid valve	Have solenoid valve replaced or repaired
	Faulty forward pedal	Have the advancement pedal replaced or repaired
	Faulty piston traction pump	Have the pump replaced or repaired
Engine makes more smoke and noise than usual	Faulty carburation	Have engine carburated again
	Faulty muffler	Have the muffler replaced
The main brush is not evenly cleaning	Worn brush	Replace brush
	Raised brush	Lower the brush
	Various material around brush	Remove the material around the brush
	Little pressure on floor	Increase brush pressure

FAULT	CAUSE	SOLUTION
Dust inside dirt container hood	Bag filter broken or worn	Replace bag filter
	Gasket under filter worn	Have gasket under filter replaced
Material or dust exiting towards the front	Worn flap rubber	Replace flap rubber
	Worn dirt container door gasket	Replace dirt container door gasket
Absence of vacuum with sweeper in motion	Vacuum closure switch activated	Open vacuum
	Bag filter clogged	Clean bag filter
	Vacuum hydraulic motor faulty	Have the hydraulic motor repaired or replaced
	Main brush right door open	Close main brush door
	Turbine not working	Blow the exchanger with compressed air
	Fan broken	Have fan replaced
	Faulty vacuum box	Have vacuum box replaced
The filter vibrator is not working	Faulty fuse	Replace fuse
	Faulty vibrator motor	Replace motor
	Raised dirt container	Lower the dirt container
	Dirt container door open	Close dirt container door
	Faulty (relay) micro-contactor	Replace micro-contactor
	Faulty button switch	Replace switch
	Dirt container lift consent micro-switch faulty	Replace micro-switch
The main brush is not rotating	Main brush switch not enabled	Activate switch
	Faulty button switch	Have switch replaced
	Brush blocked by dirt	Free and clean brush
	Raised dirt container	Lower the dirt container
	Dirt container door open	Close dirt container door
	Faulty main brush control solenoid valve	Have solenoid valve replaced
	Dirt container micro-switch faulty	Replace micro-switch
	Dirt container door micro-switch faulty	Replace micro-switch
	Hydraulic motor blocked	Have the hydraulic motor repaired or replaced
	Faulty gear pump	Replace gear pump
	Faulty relief valve	Have relief valve replaced
	Faulty main brush micro-switch	Replace micro-switch
	Main brush motor solenoid valve fuse faulty	Replace fuse
	Low hydraulic oil level	Top up hydraulic oil level
The side brush is not rotating	Main brush switch not enabled	Activate switch
	Side brush switch not enabled	Activate switch
	Faulty button switch	Have switch replaced
	Side brush control solenoid valve faulty	Have solenoid valve replaced
	Hydraulic motor blocked	Have hydraulic motor repaired or replaced
	Faulty gear pump	Replace gear pump
	Faulty relief valve	Have relief valve replaced
	Low hydraulic oil level	Top up hydraulic oil level

FAULT	CAUSE	SOLUTION
Hydraulic oil temperature light on	Turbine not working	Blow the exchanger with compressed air
	Low hydraulic oil level in tank	Top up hydraulic oil level
	Multipocket filter clogged	Clean or replace filter
Dirt container will not raise	Dirt container too full	Unload material
	Blocked flow limiter cartridge	Have cartridge replaced
	Faulty distributor	Have distributor checked
	Faulty gear pump	Have gear pump replaced
	Faulty piston	Have the piston replaced
	Faulty relief valve	Have relief valve replaced
	Low oil level in tank	Top up oil level
	Main brush working	Disable main brush
Dirt container will not lower	Piston safety inserted	Remove piston safety
	Faulty piston	Have the piston replaced
	Faulty flow limiter cartridge	Have cartridge replaced
	Distributor relief valve faulty	Have relief valve replaced
	Faulty distributor	Have distributor checked
Dirt container door won't close	Material between door and dirt container	Remove material
	Faulty distributor	Have distributor checked
	Reducing nipples blocked	Have reducing nipples cleaned
	Low oil level in tank	Top up oil level
	Faulty gear pump	Have gear pump replaced
	Distributor relief valve faulty	Have relief valve replaced
	Faulty door pistons	Have the pistons replaced
	Faulty door locking valve	Have locking valve replaced
Dirt container door won't open	Material between door and dirt container	Remove material
	Faulty distributor	Have distributor checked
	Reducing nipples blocked	Have reducing nipples cleaned
	Low oil level in tank	Top up oil level
	Faulty gear pump	Have gear pump replaced
	Distributor relief valve faulty	Have relief valve replaced
	Faulty door pistons	Have the pistons replaced
	Faulty door locking valve	Have locking valve replaced
Leaking material and dust around the machine	Vacuum closure switch activated	Open vacuum
	Bag filter clogged	Clean bag filter
	Vacuum hydraulic motor faulty	Have the hydraulic motor repaired or replaced
	Main brush right door open	Close main brush door
	Fan broken	Have fan replaced
	Faulty vacuum box	Have vacuum box replaced

FAULT	CAUSE	SOLUTION
Front lights and position lights not working	Faulty lamps	Replace lamps
	Faulty fuse	Replace fuse
	Fault steering column switch lever	Have steering column switch lever replaced
	Connection cables disconnected	Have cables connected
Stop lights not working	Faulty lamps	Replace lamps
	Faulty fuse	Replace fuse
	Faulty micro-switch	Have micro-switch replaced
	Connection cables disconnected	Have cables connected
Front and rear indicator lights not working	Faulty lamps	Replace lamps
	Faulty fuse	Replace fuse
	Faulty steering column switch lever	Have steering column switch lever replaced
	Faulty blinker	Have blinker replaced
	Connection cables disconnected	Have cables connected
Pressing the brake pedal, the machine won't stop	Pedal blocked	Have pedal checked
	Brake shoes blocked	Have brake shoes checked
	Brake shoes worn	Have brake shoes checked
	Operating mechanisms uncoupled	Have mechanisms checked
Flashing light not working	Faulty lamps	Replace lamps
	Faulty fuse	Replace fuse
	Connection cables disconnected	Have cables connected
With the dirt container raised the machine won't slow down	Dirt container micro-switch faulty	Have micro-switch checked
	Speed reduction solenoid valve faulty	Have solenoid valve checked
With the engine running at maximum and the dirt container lowered, pressing down the forward pedal the machine is very slow	Pump release lever not closed correctly	Close release lever correctly
	Speed reduction solenoid valve faulty (open)	Have solenoid valve checked
	Rear wheel hydraulic motor faulty	Replace faulty motor
	Faulty traction pump	Have traction pump replaced
	Reduction nipples blocked	Clean nipples
	Seat safety solenoid valve faulty	Have solenoid valve checked
	Faulty pedal controls	Have pedal controls replaced
	Low hydraulic oil tank level	Top up oil level
	Hydraulic oil filter cartridge clogged	Replace filter cartridge
	Speed selector fuse blown	Replace fuse

EUREKA
FLOOR CLEANING MACHINES

Industrial floor cleaning machines made in Italy

EU DECLARATION OF CONFORMITY

according to Annex II A of the Machinery Directive 2006/42/CE

The manufacturer that places this product on the market:

EUREKA S.p.A. Unipersonale
VIALE DELL'ARTIGIANATO 30/32, 35013 CITTADELLA (PD) - ITALY

formally declares that the product:

Sweeper BULL 200 HDK

complies with the following EU Directives:

2006 / 42 / CE	Machinery Directive, Annex 1
2014 / 30 / UE	Electromagnetic Compatibility (EMC) Directive
2014 / 35 / UE	Low Voltage Directive
2011/ 65 / UE + 2015 / 863	RoHS 3 Directive
2016/1628	Regolamento sull'emissione di inquinanti gassosi e particolato inquinante prodotti da motori a combustione interna destinati alle macchine mobili non stradali

The following harmonised and technical standards have been applied:

EN ISO 12100:2010	Safety of machinery - General principles for design - Risk assessment and risk reduction.
EN 60335-1:2013	Household and similar electrical appliances - Safety - Part 1: General requirements.
EN 60335-2-72:2016	Household and similar electrical appliances - Safety - Part 2: Particular requirements for floor treatment machines with or without traction drive, for commercial use.
EN 55014-1:2019	Electromagnetic compatibility - Requirements for household appliances - electric tools and similar apparatus – Part 1: Emission.
EN 55014-2:2015	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 2: Immunity - Product family standard.
EN 61000-6-2:2016	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments.
EN 61000-6-4:2018	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments.
EN 62233:2008	Measurement methods for electromagnetic fields of household appliances and similar apparatus with regard to human exposure.

Legal representative and person authorized to compile the technical file: Antonio Barile

Cittadella, 15/12/2023

EUREKA S.p.A
(Legal representative)