



E86014-00



FOREMAN™ AS20B

20" Automatic Scrubber



Operator's Manual Parts Schematic



Receiving the machine

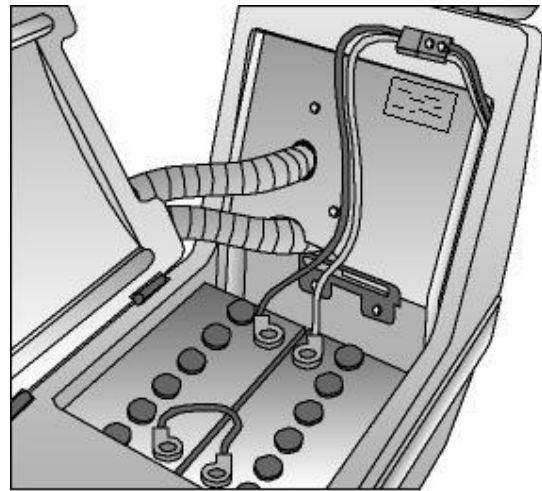
Immediately check, when receiving the machine, that all the material indicated on delivery documents has been received and also that the machine has not been damaged in transit. If it has been damaged, this damage must be immediately reported to the shipper and also to our customer service department. Only acting promptly in this manner will make it possible to receive missing material and to be compensated for damage.

Identification plate

Foreword

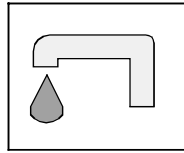
This is a floor scrubbing machine that is able to clean any type of floor by using the mechanical action of the rotating brush and the chemical action of a water-detergent solution. As it moves forward it also gathers up the dirt removed and the detergent solution that has not been absorbed by the floor.

The machine must only be used for this function. Even the best machines will only operate efficiently and work with profit if they are used properly and kept in perfect operating order. Read this instruction booklet carefully and consult it every time problems arise with machine operation. Remember that, if necessary, our service organization, in collaboration with our dealers, is always available for helpful hints or direct intervention.

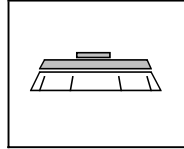




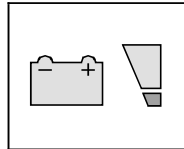
SYMBOLS USED ON THE MACHINE



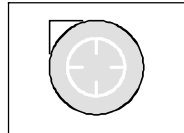
Cock symbol
Used to indicate the cock opening solenoid valve switch



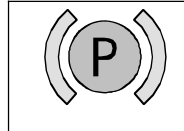
Brush symbol
Used to indicate the main/brush motor switch



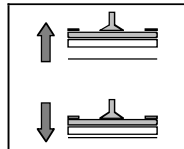
Battery charge level symbol.



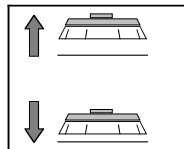
Aspiration motor symbol.
Indicates the aspiration motor switch.



Brake symbol.
Indicates the hand brake engaged signal lamp. Used over the emergency brake lever.



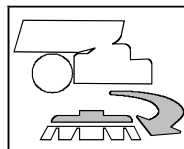
Squeegee lift/lower symbol. Indicates the squeegee lift lever.



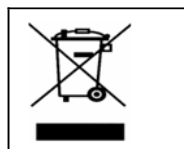
Brush base lift/lower symbol. Indicates the base lift lever.



Brake symbol.
Indicates the parking brake disengaged position.
MODIFICARE SIMBOLO



Automatic brush uncoupling symbol. Indicates the switch for automatic removal of brush.



This symbol [the crossed-out wheeled bin/PICTURE] means that the product should be brought to the return and/or separate collection systems available to end-users, when the product has reached the end of its lifetime. This symbol applies only to the countries within the EEA (*).
(* EEA = European Economic Area, which comprises the EU Member States plus Norway, Iceland and Liechtenstein.



GENERAL RULES OF SECURITY

The rules below have to be followed carefully in order to avoid damages to the operator and to the machine.

- Read the labels carefully on the machine. Do not cover them for any reason and replace them immediately if damaged
- The machine must be used exclusively by authorized staff that has been instructed for its use
- During the working of the machine, pay attention to other people and especially to the children
- Do not mix different detergents, avoiding harmful odours
- Do not place any liquid containers onto the machine
- The storage temperature has to be between - 25° C and + 55° C
- Operating conditions: room temperature between 0°C and 40°C with respective humidity between 30 and 95%
- Do not use the machine in explosive atmosphere
- Do not use the machine as a means of transport
- Do not use acid solutions which could damage the machine and/or the persons
- Avoid working with the brush when the machine stands still, in order to prevent floor damages
- Do not vacuum inflammable liquids
- This appliance is not suitable for picking up hazardous dust
- In case of fire, use a powder extinguisher. Do not use water
- Do not strike shelvings or scaffoldings, where there is danger of falling objects
- Adapt the utilization speed to the adhesion conditions
- ATTENTION! Do not use the machine on areas having a higher gradient than the one stated on the number plate
- When the machine is in parking position, take off the key and insert the parking brake
- The machine has to carry out simultaneously the operations of washing and drying. Different operations have to be carried out in areas which are not permitted for the passage of non employed staff. Signal the areas of moist floors with suitable signs
- If the machine does not work properly, check by conducting simple maintenance procedures. Otherwise, it is better to ask for **FIMAP** technical service
- Where parts are required, ask for ORIGINAL spare parts to an agent and/or to an authorized **FIMAP** dealer
- Use only original **FIMAP** brushes indicated in the paragraph "CHOICE AND USE OF BRUSHES"
- In case of danger act immediately upon the emergency brake
- For any cleaning and maintenance operation take off the power supply from the machine
- Do not take off the pieces which require the use of tools to be removed
- To restore all the connections electrical workers after whichever maintenance operation
- Do not wash the machine with direct water jets or with high water pressure nor with corrosive material
- Every 200 working hours have a machine check through a **FIMAP** service department
- In order to avoid scales on the solution tank filter, do not fill the detergent solution many hours before the machines' use
- Before using the machine, check that all doors and coverings are in their position as indicated in this use and maintenance catalogue
- Be sure the recovery tank is empty before removing it
- Provide for the scrapping of the material of normal wear following strictly the respective rules
- When, after years of precious work, your **FIMAP** machine has to be abandoned, provide for the scrapping in appropriate centres, because of the presence of toxic-harmful materials, especially oils, batteries and electronic components, and considering that the machine itself has been constructed using materials integrally recyclable.



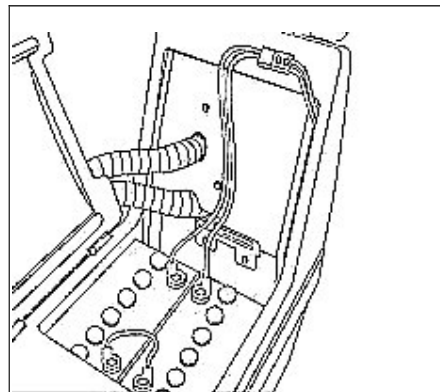
MACHINE PREPARATION

3. INSTALLATION OF THE BATTERIES INTO THE MACHINE

The batteries must be housed in the battery compartment below the recovery tank. They must be handled using special hoisting equipment with suitable grasping systems and designed to support the weight of the batteries. The batteries must also conform to the requirements given in CEI 21-5 standards.



ATTENTION! Comply scrupulously with the instructions given by the manufacturer or his retailer for daily battery charging and maintenance. All installation and maintenance procedures must be done by expert personnel. Danger of inhalation of gases and leakage of corrosive fluids. Danger of fire: do not approach with open flames.



4. CONNECTING THE DRIVE MOTOR CABLE



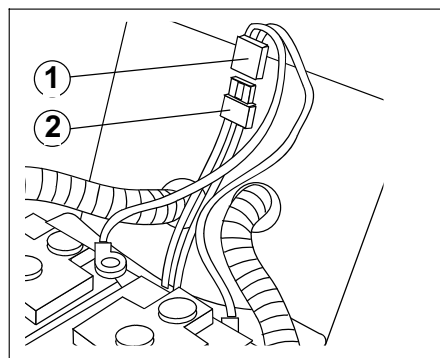
ATTENTION! This job must be done by a Fimap Service Center technician.

5. CONNECTING THE BATTERY CHARGER

The battery connector (1) must fit into the corresponding connector on the battery charger. The battery charger connector is delivered inside the bag that contains this instruction booklet. It must be fitted to the battery charger cables according to instructions.



ATTENTION! This operation must be completed from qualified staff. A wrong or imperfect connection of cables to the connector can cause to serious damages to persons or things.



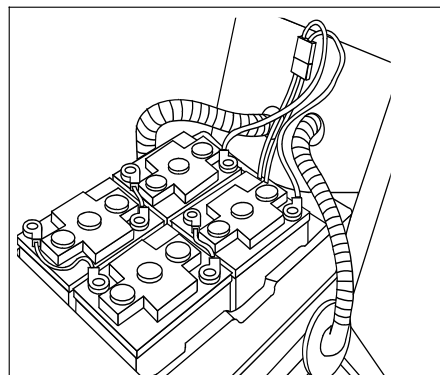
6. RECHARGE OF THE BATTERIES

Batteries, to avoid permanent harm to them, should never be totally discharged. They should be recharged within a few minutes after the battery discharged signal starts to flash.



ATTENTION! Never leave the batteries completely discharged, even if the machine is not being used. When recharging the batteries, keep the recovery tank lifted supporting it with the prop as indicated in figure. Make sure that the battery charger is suitable for the used batteries capacity and type.

ATTENTION! Danger of gas exhalations and emission of corrosive liquids
ATTENTION! Fire danger Do not approach with free flames

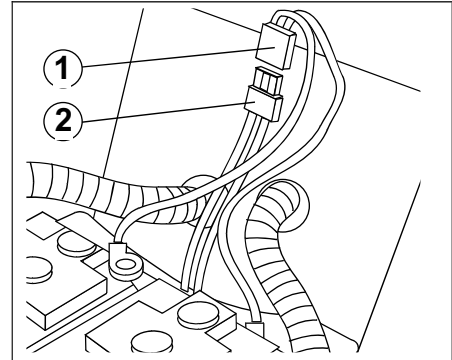




MACHINE PREPARATION

7. CONNECTION OF THE BATTERY CONNECTOR

The battery connector (2) has to be connected to the connector of the machine (1)



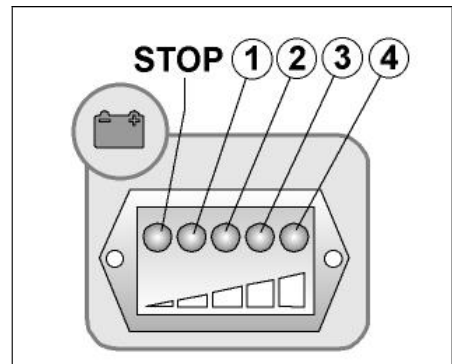
8. BATTERIES' INDICATOR (machines with traction)

The batteries' indicator is digital with 4 fixed positions and a blinking one. The numbers, which appear on the display, show the approximate charge level.

4 = maximum charge, 3 = charge 3/4, 2 = charge 2/4, 1 = charge 1/4,
0 = (blinking) discharged batteries)

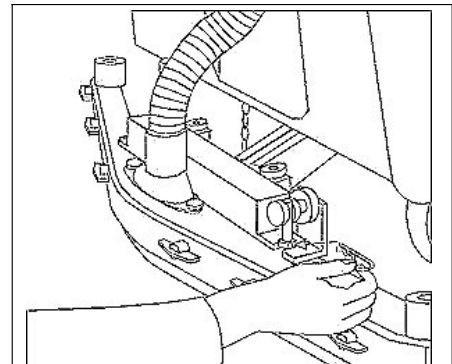


ATTENTION! Some seconds after that "0" blinks, the brush motor automatically switches off. Anyway, the machine can finish to dry before recharging the batteries.



9. SQUEEGEE ASSEMBLY

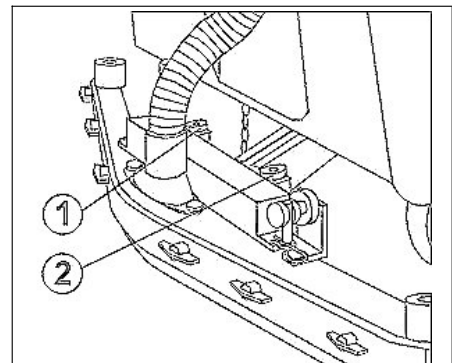
The squeegee is supplied separately, dismantled from the machine, for packing reasons. It must be installed as illustrated, threading the retaining pin into the squeegee column. Put the aspiration tube into its sleeve.



10. ADJUSTMENT SQUEEGEE HEIGHT

The squeegee has to be regulated depending on the wearing of the rubbers. To adjust this, rotate the knob (2) counterclockwise to lift the squeegee and clockwise to lower it.

Note: The right and left wheels must be adjusted at the same amount so that the squeegee works in parallel to the floor.

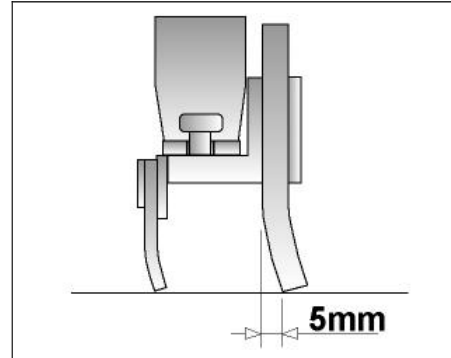




MACHINE PREPARATION

11. ADJUSTMENT SQUEEGEE INCLINATION

During working operation, the rear rubber has to work slightly tilted backwards and this equally in its whole length for about 5mm. Should it be necessary to increase the rubber bending in the central part, then tilt the squeegee body backwards and turn the adjuster (1) counterclockwise. If the rubber bending is to be noticeable at the sides of the squeegee, turn the adjuster clockwise. At the end of the adjustment, block the adjuster nut.

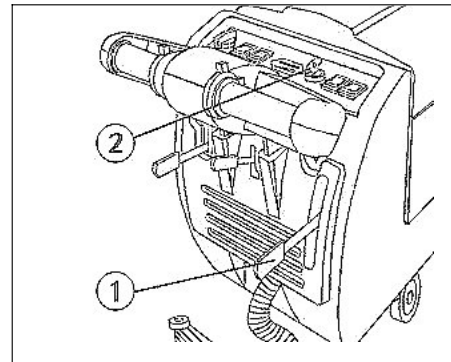


12. MANUAL BRUSHES ASSEMBLY

1. Use lever (1) to lift the base (lever downwards).
2. Turn key (2) to OFF and remove it from the control panel.



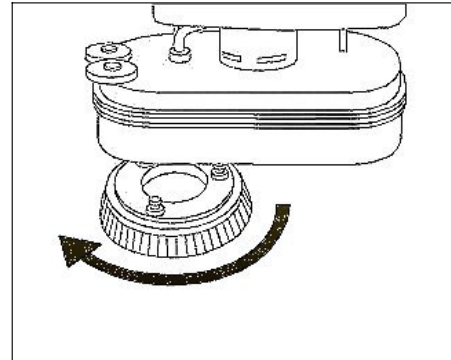
ATTENTION! installing the brushes with power on may cause injury to the hands



1. With the base raised thread the brushes into the seat on the plate below the base, turning them until the three buttons enter the holes on the plate. Turn them abruptly to push the button towards the retaining spring so that the brush locks in place.

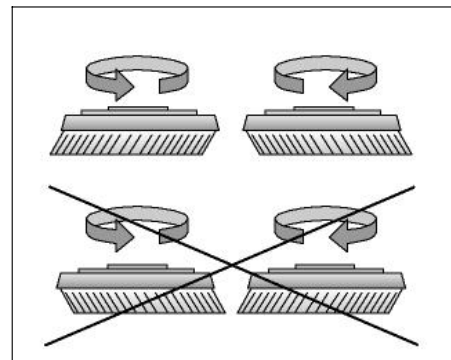
The photo shows the direction of rotation for installing the right brush. Rotate the opposite direction to install the left brush.

For the single brush models the procedure is the same and the rotation direction for the brush coupling is the opposite of what indicated on the picture.



- (Only for double brush machines)

We recommend inverting right and left brushes every day and vice versa. If brushes are not new and have distorted bristles then it is best to install them always in the same position (the right brush on the right side and the left brush on the left side) to prevent bristles with a different slope from overloading the brush motor and causing excess vibrations.





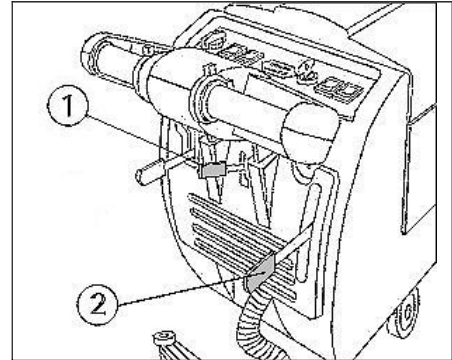
MACHINE PREPARATION

13. ASSEMBLY CYLINDRICAL BRUSHES

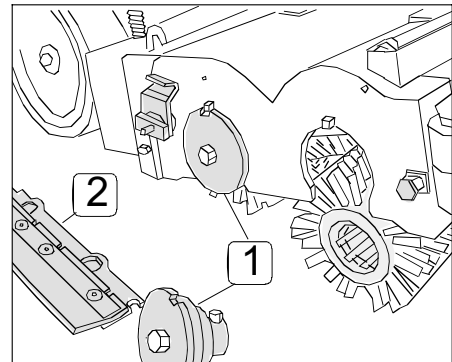
1. Brake the machine acting upon the lever (1)
2. Lift the brush base acting upon the lever (2)
3. Turn the key (1) into position "0" and take it of
4. Remove the lateral right splash guard (see DISASSEMBLY AND CLEANING OF THE BRUSH UNIT)



ATTENTION! Use gloves for this operation in order to protect your hands



1. Insert the brush in the tunnel (Side with 5 teeth) until it is coupled with the traction hub
2. Insert the free hub (1) of the mobile support into the brush (side with 6 teeth)
3. Repeat the operation for the second brush
4. Assemble the lateral splash guards (2)

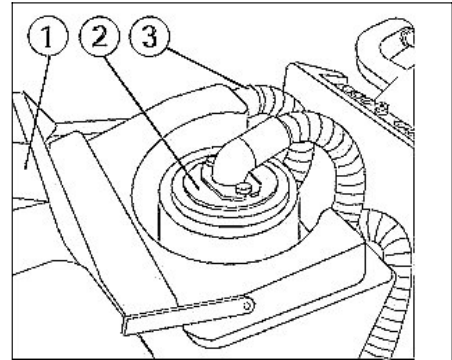


14. RECOVERY TANK

Open hood (1).

Check:

1. that plug (2) is properly anchored (it must not pull out when it is lifted, otherwise turn it clockwise);
2. that aspiration tube (3) is inserted in its seat.

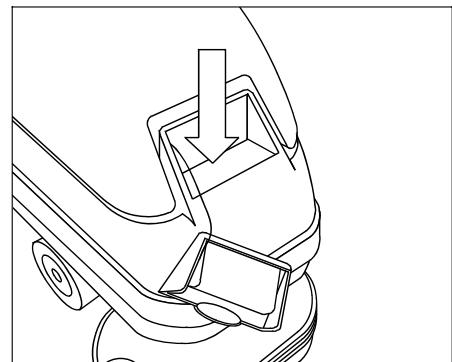


15. SOLUTION TANK

Fill the solution tank with clean water at a temperature not in excess of 50°C. Add liquid detergent in the amounts and using the procedures recommended by the detergent manufacturer. Use only a minimal percentage of detergent to prevent formation of an excess quantity of foam since too much foam may damage the aspiration motor.



ATTENTION! Always use low-foam detergent. Introduce a small amount of anti-foam detergent in the recovery tank before starting to work to be sure to prevent foam from being generated.
Never use pure acids.

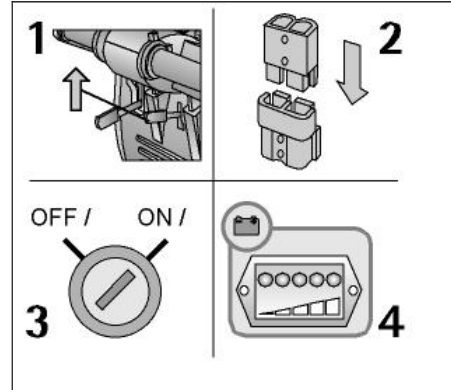




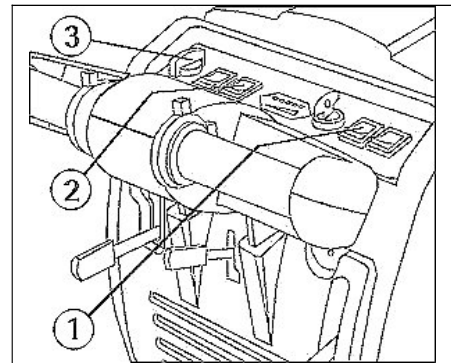
PERFORMANCE

1. SETTING FOR WORK

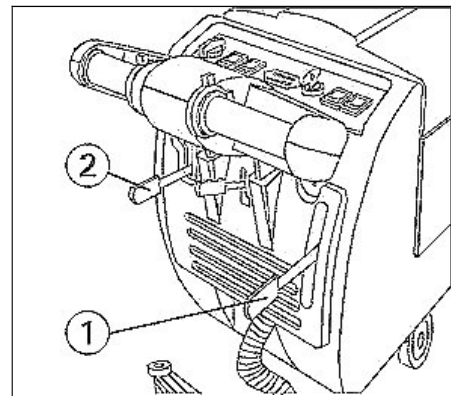
1. Set the machine up for operation.
2. Check that the parking brake is released (1).
3. Connect the connector to the batteries (2).
4. Turn the main switch key (3) a quarter turn clockwise. The battery led display immediately comes on.



5. Press brush switch (1).
6. Press aspiration switch (2).
7. Use knob (3) to adjust water flow.



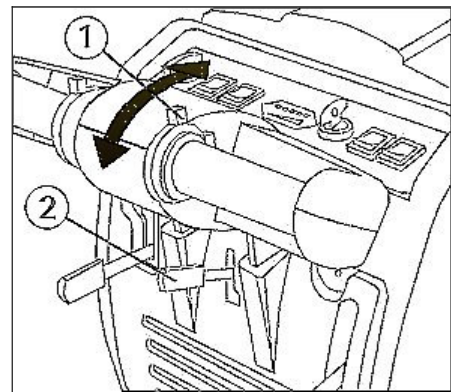
8. Push the lever (1) to lower the base.
9. Pushing the lever, lower the squeegee assembly (2).



9. (Only machines with traction motor)

The machine will start to move when deadman lever (1) is pushed forward. Check, during the first few meters of wash, that brush pressure is adequate (see "BRUSH PRESSURE" below), that the amount of water is sufficient and that the squeegee dries the floor perfectly.

The machine will now start to work at full efficiency until the solution water is finished. Immediately apply emergency brake (2) on the left side of the machine whenever problems arise during operation. This control stops forward movement by the machine. To start to work again, after solving the problem, just raise level (2) and push deadman lever (1) forward.





PERFORMANCE

2. OVERFLOW DEVICE

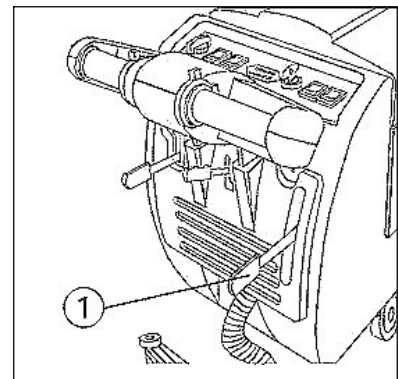
The machine is equipped with a float, which intervenes when the recovery tank is full causing the closure of the suction hose. In this case, it is necessary to proceed with the emptying of the recovery tank taking off the plug of the exhaust pipe.



ATTENTION! This operation has to be carried out using gloves to protect from contact with dangerous solutions.

3. BRUSH PRESSURE

Use lever (1) to adjust brush pressure. There are three preset positions. The greatest pressure is when the lever is in its highest position. Pressure should be selected depending on the type of floor and the amount of dirt. Too much pressure causes increased brush wear and greater energy consumption.



4. MOVEMENT (machines with traction)

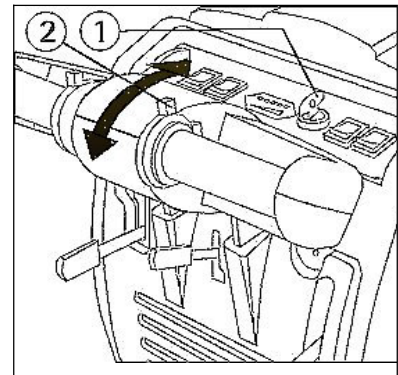
These machines are equipped with electronically commanded traction, with two speeds forwards and one backwards.

To move the machine, it is necessary to act upon the key (1), wait for three seconds and then rotate forward (forward movement) or backward (rear movement) the lever (2) on the handle bar. Pushing forward the lever a few millimetres, the first speed is available, pushing the lever forward completely, the second speed is obtained.

In reverse motion, the speed movement is reduced.

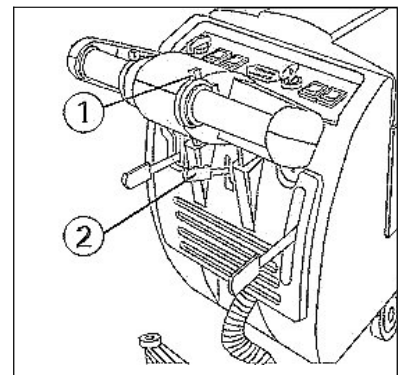


WARNING! When carrying out even short backward movements, make sure that the squeegee is lifted.



5. BRAKES (machines with traction)

The machine has two braking systems: a working electronic brake integrated in the drive system (1) and an emergency brake which works by pushing downwards the lever (2), which works also as parking brake when it is fixed in the proper hooking down on the right.

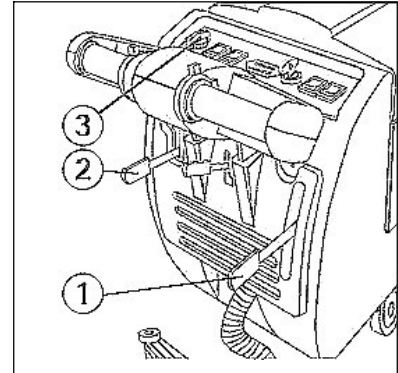




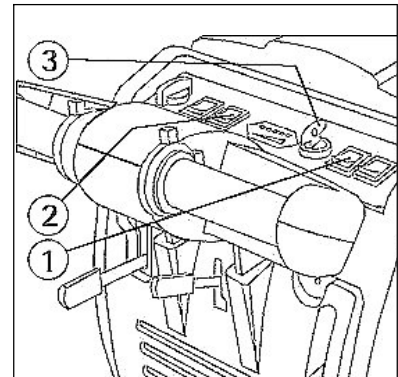
ON COMPLETION OF THE WORK

At the end of the work day, before performing any type of maintenance:

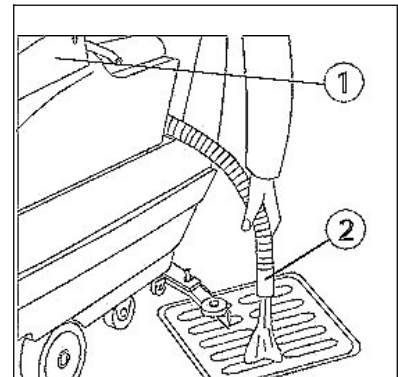
1. Close cock (3).
2. Raise base (1).
3. Raise squeegee (2)



4. Turn off brush switch 1).
5. Turn off aspiration motor switch (2).
6. Move the machine to the water disposal point.
7. Turn key (3) to turn the machine off.



8. Lift hood (1). This frees recovery tank drain tube (2).
9. Remove the drain tube from its seat, unscrew the drain plug and empty the recovery tank (Lift the left side of the tank a few centimeters to accelerate final emptying phases). These operations must be performed wearing rubber gloves to protect against contact with dangerous solutions.
10. The squeegee should be raised when the machine is not in use to prevent permanent distortion of the rubber strips.
11. Remove the brushes and clean them with a jet of water (see "BRUSH REMOVAL" below).



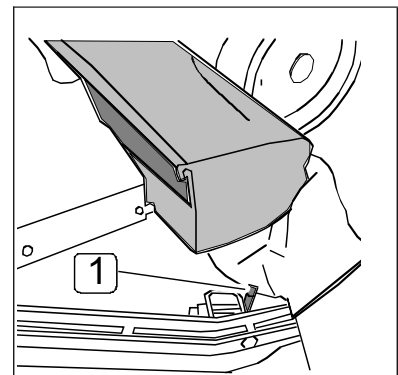
ATTENTION! This operation has to be carried out using gloves to protect from contact with dangerous solutions.

12. Push the knob (1) toward the rearpart of the machine and unhook the splash guard.
13. Extract the hopper and clean it thoroughly.



ATTENTION! This operation has to be carried out using gloves to protect from contact with dangerous solutions.

14. Lift the sweeping group on completion of the work to avoid brushes deformation.





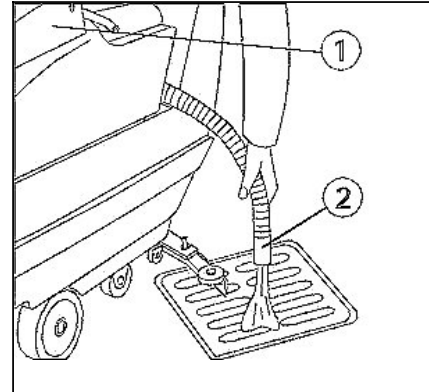
DAILY MAINTENANCE

1. CLEANING RECOVERY TANK

1. Open the hood (1).
2. Remove the drain tube (2) from its seat.
3. Empty the tank through the drain tube by turning the knob a few turns and then pulling out the plug.



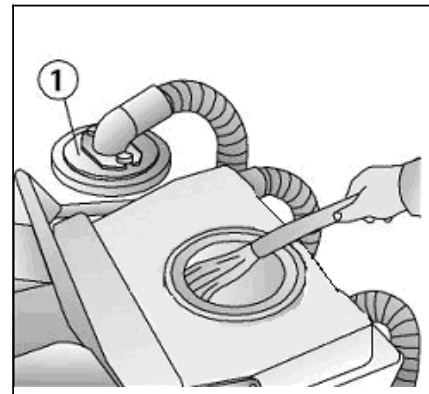
ATTENTION! This operation has to be carried out using gloves to protect from contact with dangerous solutions.



1. Remove plug (1) from the recovery tank..
2. Pull out the filter with its foam-protection unit.
3. Rinse the inside of the tank thoroughly with a jet of water. Slightly lift the tank, using its handle, to improve dirt removal.
4. Put the tank back in the machine and put the plug back on the drain tube.

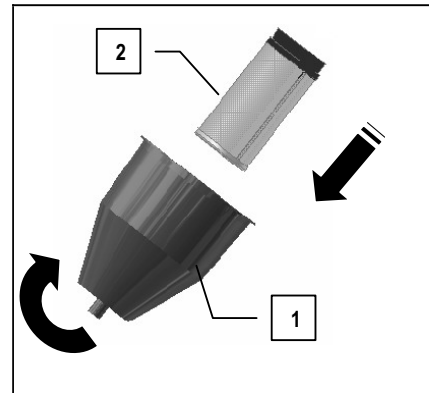


ATTENTION! This operation has to be carried out using gloves to protect from contact with dangerous solutions.



2. CLEANING THE SUCTION FILTER

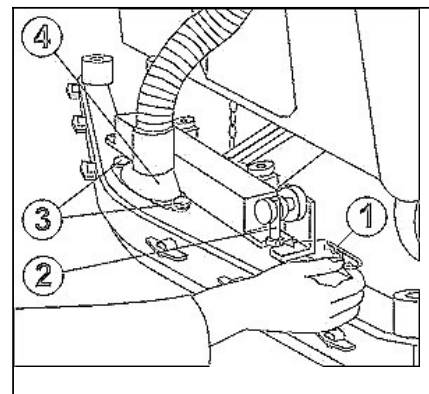
1. Remove the suction unit from the tank.
2. Remove the black guard by making a circular movement (1).
3. Detach filter (2) and clean it carefully with a jet of water.
4. Reinstall everything by performing these procedures in reverse order



3. CLEANING THE SQUEEGEE

The squeegee must be in perfect working condition to achieve a good drying process: it must be clean and its rubbers must be in good condition. Proceed as follows to clean the squeegee:

1. Remove it from the machine by pulling pin (1) out from column (2). Clean the interior with a jet of water.
2. Loosen knobs (3), remove block (4) and check that there is no dirt inside.
3. Check the condition of the rubbers and replace them as necessary.
4. Replace everything on the machine.



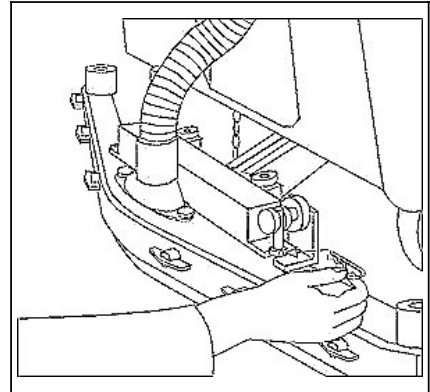


DAILY MAINTENANCE

4. REPLACEMENT OF THE SQUEEGEE RUBBERS

Check the squeegee rubber wear and if necessary, change them. To replace them:

1. Take off the suction hose from its coupling.
2. Take off the the pin from the stud bolt.
3. Remove the squeegee from its support.
4. Remove the wing nuts which block the rubber blades and take them off.
5. Replace the rubbers.
6. To reassemble the squeegee repeat the abovementioned operations.

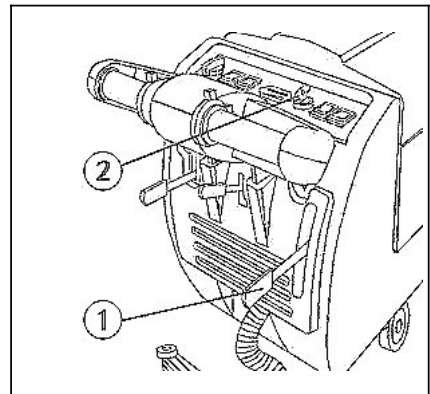


5. MANUAL BRUSHES REMOVAL

7. Push lever (1) down to raise the base.
8. Turn key (2) to OFF and remove it from the control panel (removing the brushes with power on may cause injury to the hands).



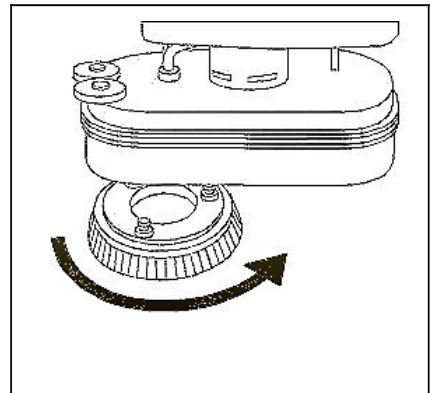
ATTENTION! During this operation make sure that, there are not any objects or persons close to the brush.



1. Rotate the brush, with the base raised, until it exits from the brush-bearing plate as illustrated. The picture shows the direction of rotation for releasing the right brush. Rotate in the opposite direction for the left brush
2. For single brush versions the procedure is the same and the rotation direction for brush release is the opposite of what indicated on the picture.



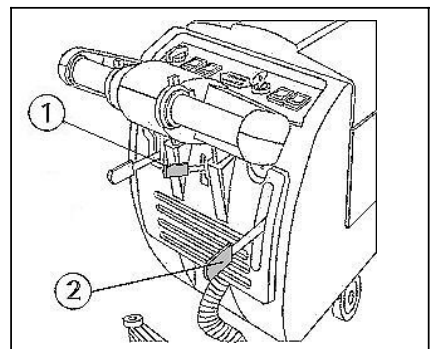
ATTENTION! During this operation make sure that, there are not any objects or persons close to the brush.



6. DISASSEMBLY OF BRUSHES (Only scrubbing-sweeping models)

To take off the brooms:

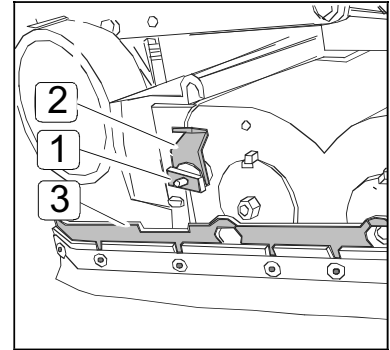
1. Lift the brush base acting upon the lever (2)
2. Brake the machine acting upon the lever (1)





DAILY MAINTENANCE

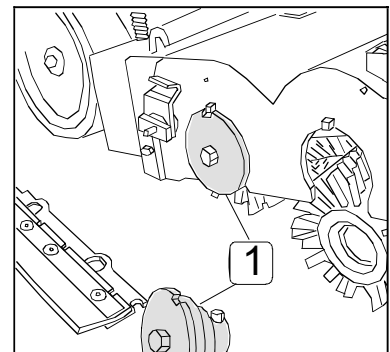
3. Clean the hopper as under item 13, paragraph "ON COMPLETION OF THE WORK"
4. Make sure that, at the brushes ends nothing is coiled up like wires, plastic or anything else which does not allow the free brushes rotation. Otherwise:
 1. Unscrew the wing nut (1)
 2. Take off the plate (2)
 3. Remove the splash guard (3)



4. Take off the plugs (1)
5. Extract and clean the brushes .

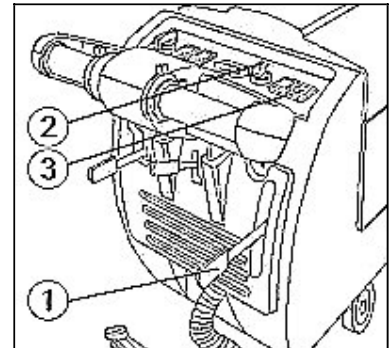


ATTENTION! Make sure that, during this operation the general key is turned into position "0"



7. BRUSH REMOVAL WITH AUTOMATIC COUPLING-RELEASE (Optional)

Turn the brushes switch off and press the brushes/brush release button until the brushes release.





WEEKLY MAINTENANCE

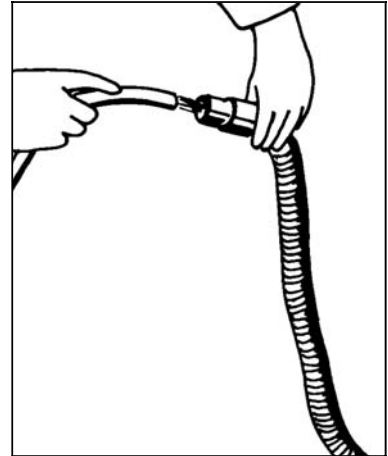
1. CLEANING OF THE SQUEEGEE HOSE

Weekly or whenever suction seems to be unsatisfactory check that the squeegee hose is not obstructed. Eventually, clean it proceeding as follows:

5. Take off the hose from its coupling on the squeegee
6. Take off the other end from the recovery tank.
7. Wash the inner part of the hose with a water jet introduced from the side where it is being connected to the tank.
8. To reassemble the hose repeat the above-mentioned operations inversely.



ATTENTION! Do not wash the hose, which goes from the suction motor to the suction plug.

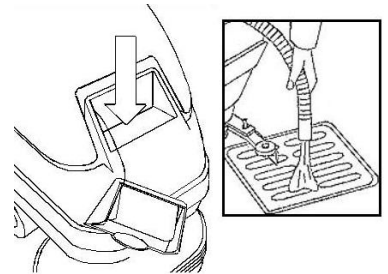


2. CLEANING SOLUTION TANK

1. Unscrew the plug on the solution tank
2. Rinse with a water jet
3. Unscrew the exhaust plug (1) and empty the tank



ATTENTION! This operation has to be carried out using gloves to protect from contact with dangerous solutions.

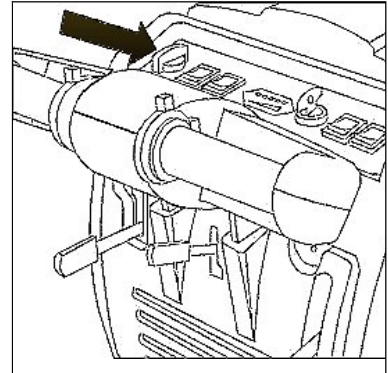




TROUBLE SHOOTING GUIDE

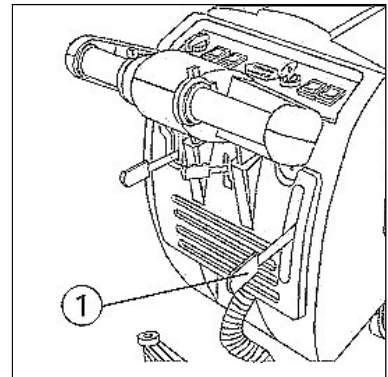
1. INSUFFICIENT WATER ON TO THE BRUSH

4. Check that the cock is open (signal lamp on).
5. Check that there is water in the solution tank.



2. MACHINE DOES NOT CLEAN WELL

6. Check the condition of the brushes and replace if necessary (brushes must be replaced when bristles are 15 mm. high).
7. Check that brush pressure is sufficient. Increase as necessary using lever (1).
8. Use another type of brush rather than the standard brush. We recommend, to clean floors with exceptionally difficult dirt, the use of special brushes that are supplied on request and according to your specific needs (see "BRUSH SELECTION AND USE" below).

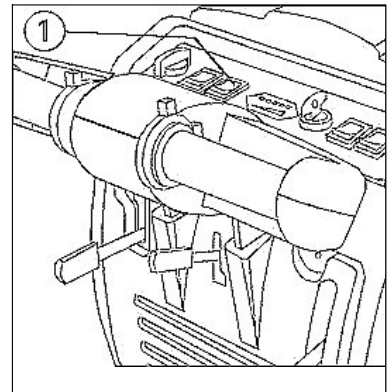


3. SQUEEGEE DOES NOT DRY PERFECTLY

1. Check that the squeegee is clean.
2. Check all adjustments (see "PREPARING THE MACHINE").
3. Clean the entire aspiration unit (see "DAILY MAINTENANCE").
4. Replace worn rubbers.

4. SUCTION MOTOR DOES NOT WORK

1. Check if the suction motor switch (1) is ON. Check if the main key switch is ON.
2. Check if the recovery tank is full.



5. TOO MUCH FOAM FORMATION

1. Check that low-foam detergent is used. Add, if necessary, a small quantity of anti-foam liquid to the recovery tank.

Remember that more foam is generated when the floor to be cleaned is not very dirty. In this case use a more diluted detergent solution



SMALTIMENTO



ATTENZIONE: Il prodotto, giunto a fine vita, deve essere conferito ai punti di raccolta differenziata messi a disposizione dell'utente finale.





CHOICE AND USE OF BRUSHES

POLYPROPYLENE BRUSH (PPL)

It is used on all types of floors which are hot water resistant (not more than 60°C). The Polypropylene brush is nonhygroscopic and therefore conserves its characteristics even if working in the wet conditions.

NYLON BRUSH

It is used on all types of floors with excellent wear and hot water resistance (more than 60°C). The nylon is hygroscopic and so, over time, loses its characteristics working on the wet.

ABRASIVE BRUSH

The brush bristles are charged with very aggressive abrasives. It is used to clean very dirty floors. To avoid floor damages, work strictly only with the necessary pressure.

STEEL BRUSH

The bristles are made of steel wires; it is used to descale floors which are anyhow resistant to the abrasion, very uneven or with wide joints.

THICKNESS OF THE BRISTLES

The thicker the bristles are, the more rigid they will be. These ones are therefore used on smooth floors or with small joints. On uneven floors with deep joints it is recommended that, softer bristles, which enter more easily in depth, are used.

Please bear in mind that, when the bristles are worn out and get too short, they will get rigid and cannot penetrate anymore. As well as for thick bristles, the brush will begin to jump.

PAD HOLDER

The pad holder is recommended to clean glossy areas.

There are two types of pad holders:

1. The traditional pad holder is equipped with anchor points, which allow the abrasive pad to be held and dragged during the work process.
2. The pad holder is of the CENTER LOCK type, apart from the anchor points, is equipped with a central blocking release system made in plastic. This allows a perfect match with the abrasive pad and to hold it without the risk of falling down. This type of pad holder is recommended especially for machines with more brushes, where the centering of the pads is difficult.

LIST FOR THE CHOICE OF THE BRUSHES

Machine	Q.ty	Code	Bristles type	Thick Ø	Brush	Notes
MAXIMA 450	1	404645	PPL	0.4	455	Pad blocking
		404644	PPL	0.6	455	
		404643	PPL	0.8	455	
		404646	ABRASIVE	1	455	
		405523	Pad holder Center Lock	-	455	
MAXIMA 500	1	414266	PPL	0.4	500	Pad blocking
		414267	PPL	0.6	500	
		414268	PPL	0.8	500	
		414269	ABRASIVE	1	500	
		405527	Pad holder Center Lock	-	500	
MAXIMA 452	2	405578	PPL	0.3	210	
		405579	PPL	0.6	210	
		405580	PPL	0.8	210	
		414274	ABRASIVE	1	210	
		405510	Pad holder	-	210	
MAXIMA 502	2	405601	PPL	0.3	255	
		405604	PPL	0.6	255	
		405602	PPL	0.8	255	
		405603	ABRASIVE	1	255	
		405513	Pad holder	-	255	
MAXIMA 650	2	422189	PPL	0.3	340	Pad blocking
		422971	PPL	0.6	340	
		422972	PPL	0.9	340	
		422981	ABRASIVE	1	340	
		422973	Pad holder	-	330	
MAXIMA 50BS-BTS	1	405639	PPL WHITE	0.5	110x500	Front brush more rigid
	1	405640	PPL LIGHT BLUE	0.3	110x500	Rear brush
	1	405641	ABRASIVE GREY	0.6	110x500	Front brush



CE STATEMENT OF COMPLIANCE model Maxima 450/500/452/502/650/50

The undersigned company:

FIMAP S.p.A.

Via Invalidi del Lavoro n.1
37050 Santa Maria di Zevio (VR)

states under its own exclusive responsibility that the product

FLOOR SCRUBBING MACHINE model Maxima 450/500/452/502/650/50

complies with the provisions of Directives:

- 98/37/EEC: Machine directive.
- 89/336/EEC: Electromagnetic compatibility directive and following modifications 91/263/EEC, 92/31/EEC and 93/68/EEC.

Inoltre è conforme alle seguenti norme:

- EN 60335-1: Safety of electric home appliances and the like – Safety. Part 1: General regulations.
- EN 60335-2-72: Safety of electric home appliances and the like. Part 2: Special regulations for automatic machines for processing industrial and community-use floors.
- EN 12100-1: Machine safety – Basic concepts, general design principles – Part 1: Base terminology and methodology.
- EN 12100-2: Machine safety – Basic concepts, general design principles – Part 2: Technical principles.
- EN 61000-6-3: Electromagnetic compatibility (EMC) - Part 6-3: General standards – Emission for residential, commercial and light industrial environments.
- EN 61000-6-1: Electromagnetic compatibility (EMC) - Part 6-1: General standards – Immunity for residential, commercial and light industrial environments.
- EN 50366: Appliances for home use and the like – Electromagnetic fields – Evaluation and measurement methods.

Santa Maria di Zevio, 05/02/2007

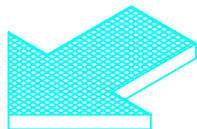
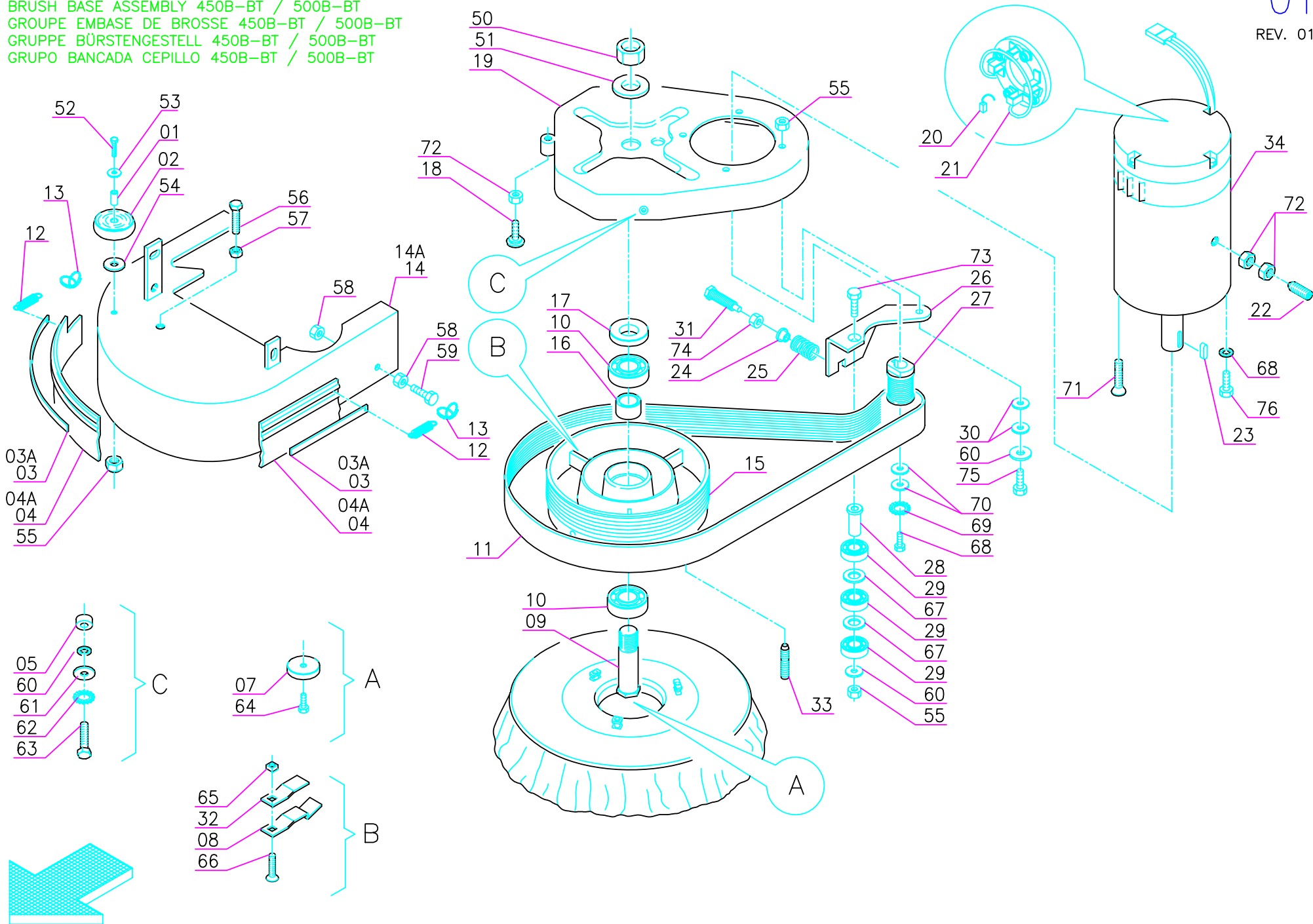
FIMAP S.p.A.
Legal Representative

Giancarlo Ruffo

FIMAP spa
Via Invalidi del Lavoro, 1 - 37050 S.Maria di Zevio (Verona) Italy
Tel. +39 045 6060411 r.a. - Fax +39 045 6060417 - E-mail: fimap@fimap.com - www.fimap.com

GRUPPO BASAMENTO SPAZZOLA 450B-BT / 500B-BT
 BRUSH BASE ASSEMBLY 450B-BT / 500B-BT
 GROUPE EMBASE DE BROSSE 450B-BT / 500B-BT
 GRUPPE BÜRSTENGESTELL 450B-BT / 500B-BT
 GRUPO BANCADA CEPILLO 450B-BT / 500B-BT

01
 REV. 01

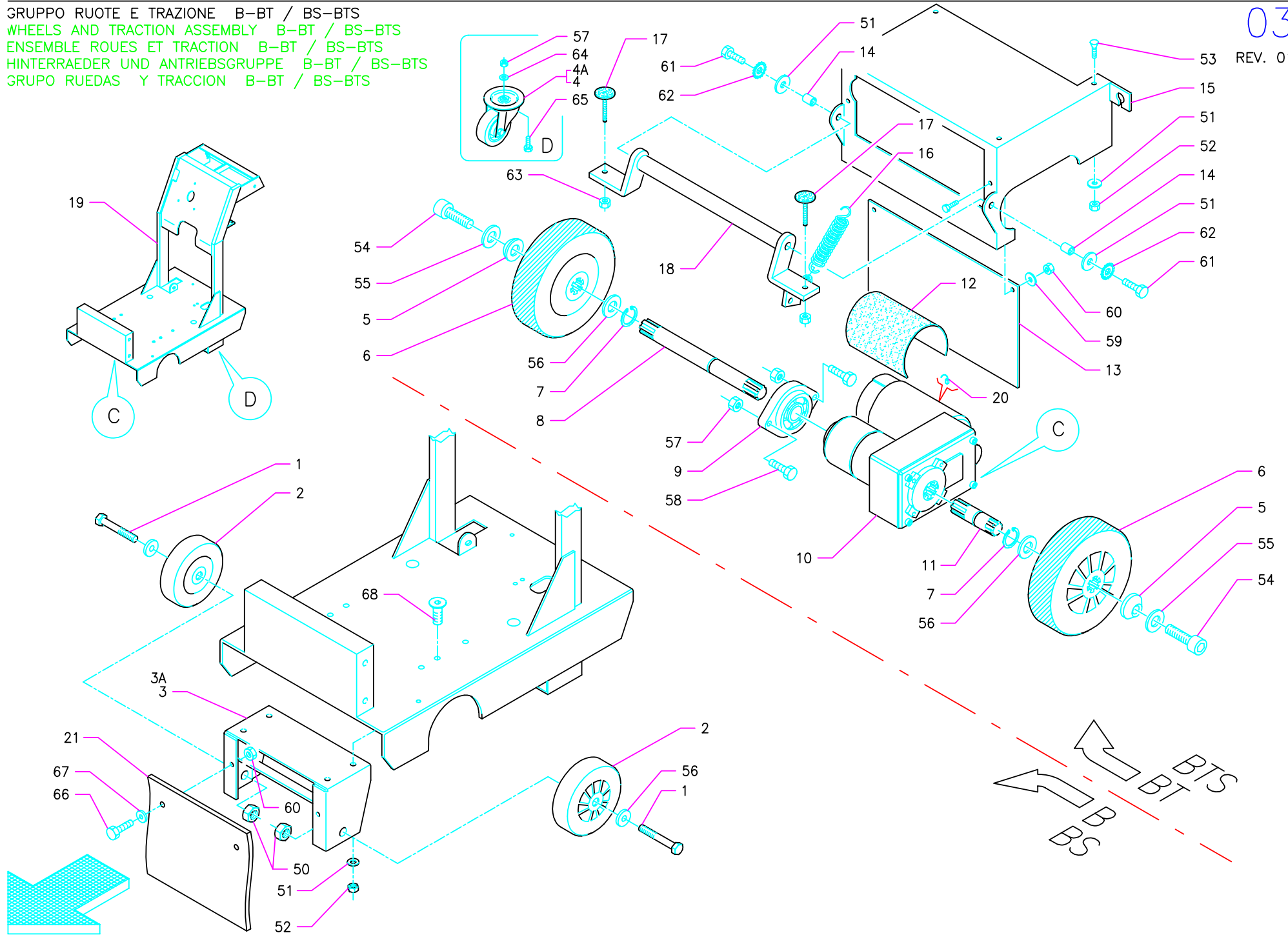


Item	Applies To	SKU	Description	QTY
1		E83524	Bushing	1
2		E83895	Wheel	1
3	450 B-BT	415131	BLADE	1
3A	500 B-BT	E86169	Band Clamp	1
4	450 B-BT	E83653	Splash guard	1
4A	500 B-BT	E86197	Skirt, Brush Rubber	1
5		E82312	Bushing	2
7		E81772	Special Washer	1
8		E81659	Spring	1
9		E81769	Shaft	1
10		E81771	Bearing, 6205 2RS	2
11		E82667	Belt	1
12		E83491	Spring,	2
13		E83489	Rings	2
14	450 B-BT	412447	SUPPORT	1
14A	500 B-BT	412448	SUPPORT	2
15		E82411	Pulley, Simpla	1
16		E83496	Cord strain relief	1
17		E86273	Spacer	1
18		408624	SCREW	1
19		202554	BASE	1
20		E82260	Carbon Brush	4
21		412435	CARBON BRUSH HOLDER	1
22		411962	DOWEL	1
23		E83700	Shaft Key 5x5x20mm	1
24		E81822	Cable,	1
25		E83698	Tension Spring	1
26		203490	BRACKET	1
27		E82424	Pulley,	1
28		204365	BUSHING	1
29		E83277	Bearing, 6202 2RS	3
30		409186	CUPPED WASHER	2
31		203285	REGISTER	1
32		E81660	Spring	1
33		E88043	Dowel M6 x 10	1
34		E82738	Brush Motor 24VDC 560W	1
50		-	NUT M24 UNI 5588	-
51		-	WASHER M24 UNI 6592	-
52		-	SCREW M8X40 UNI 5739	-
53		-	WASHER M8 UNI 6592	-
54		-	WASHER M8 D.32 UNI 6593	-
55		-	LOCK NUT M8 UNI 7474	-
56		-	SCREW M6X30 UNI 5739	-
57		-	NUT M6 UNI 5588	-
58		-	NUT M5 SERPRESS	-
59		-	SCREW M5X20 UNI 5739 A2	-
60		-	LOCK WASHER M8 D.24 UNI 6593	-
61		-	LOCK WASHER M8 DIN 6798/A	-
62		-	LOCK WASHER M8 SCHNORR	-
63		-	SCREW M8X20 UNI 5739	-
64		-	SCREW M6X35 UNI 5739	-
65		E86701	NUT M6 A GABBIA	-
66		E83831	SCREW M6X20 UNI 5933 A2	-
67		-	WASHER M14 UNI 6592 OTTONE	-
68		-	SCREW M6X18 UNI 5739	-
69		-	LOCK WASHER M6 DIN 6798/A	-
70		-	WASHER M6 D.18 UNI 6593	-
71		-	SCREW M6X16 UNI 5933	-
72		-	NUT M8 UNI 5588	-
73		-	SCREW M8X55 UNI 5933	-
74		-	NUT M12X1.25 UNI 5588	-
75		-	SCREW M8X25 UNI 5739	-
76		-	SCREW M6X18 UNI 5739	-

GRUPPO RUOTE E TRAZIONE B-BT / BS-BTS
 WHEELS AND TRACTION ASSEMBLY B-BT / BS-BTS
 ENSEMBLE ROUES ET TRACTION B-BT / BS-BTS
 HINTERRAEDER UND ANTRIEBSGRUPPE B-BT / BS-BTS
 GRUPO RUEDAS Y TRACCION B-BT / BS-BTS

03

REV. 01



ITEM	Applies To	SKU	Description	QTY
1	B-BS	E81737	Axle	2
2	B-BS	414314	WHEEL	2
3	B	E86175	Support	1
3A	BS	203541	SUPPORT	1
4		E82529	Caster, Rear Abila	2
4A	45 BS-BTS	414332	WHEEL	2
5	BT-BTS	E82395	Washer	2
6	BT-BTS	E82542	Drive Wheel 175 OD x 45 W	2
7	BT-BTS	E82736	Washer	2
8	BT-BTS	415135	AXLE-SHAFT	1
9	BT-BTS	E88191	Flange Bearing	1
10	BT-BTS	414603	GEARMOTOR	1
11	BT-BTS	415136	AXLE-SHAFT	1
12	BT-BTS	E82375	Shroud cover, motor	1
13	BT-BTS	405975	SPLASH GUARD	1
14	BT-BTS	200325	BUSHING	2
15	BT-BTS	203500	SUPPORT	1
16	BT-BTS	E81778	Spring	1
17	BT-BTS	204371	PAD	2
18	BT-BTS	203504	SHAFT	1
19		202566	FRAME	1
20		415982	CARBON BRUSH MOTOR	2
21		405975	SPLASH GUARD	1

ITEM			Description
50	-	-	NUT M16x1,5 UNI 7474
51	-	-	WASHER M8 UNI 6592
52	-	-	NUT M8 UNI 7474
53	-	-	SCREW M8x16 UNI 5933
54	-	-	SCREW M8x18 UNI 5931
55	-	-	WASHER M8 SCHNORR
56	-	-	WASHER M20 UNI 6592
57	-	-	NUT M10 UNI 7474
58	-	-	SCREW M10x25 UNI 5739
59	-	-	WASHER M6 UNI 6592
60	-	-	NUT M6 UNI 7474
61	-	-	SCREW M8x20 UNI 5739
62	-	-	WASHER M8 DIN 6798/A
63	-	-	NUT M8 UNI 7474
64	-	-	WASHER M10 UNI 6592
65	-	-	SCREW M10X35 UNI 5739
66	-	-	SCREW M6X16 UNI 5739
67	-	-	WASHER M6 D.18 UNI 6593
68	-	-	SCREW M8X22 UNI 5933

GRUPPO TERGIPAVIMENTO B-BT / BS-BTS

SQUEEGEE ASSEMBLY B-BT / BS-BTS

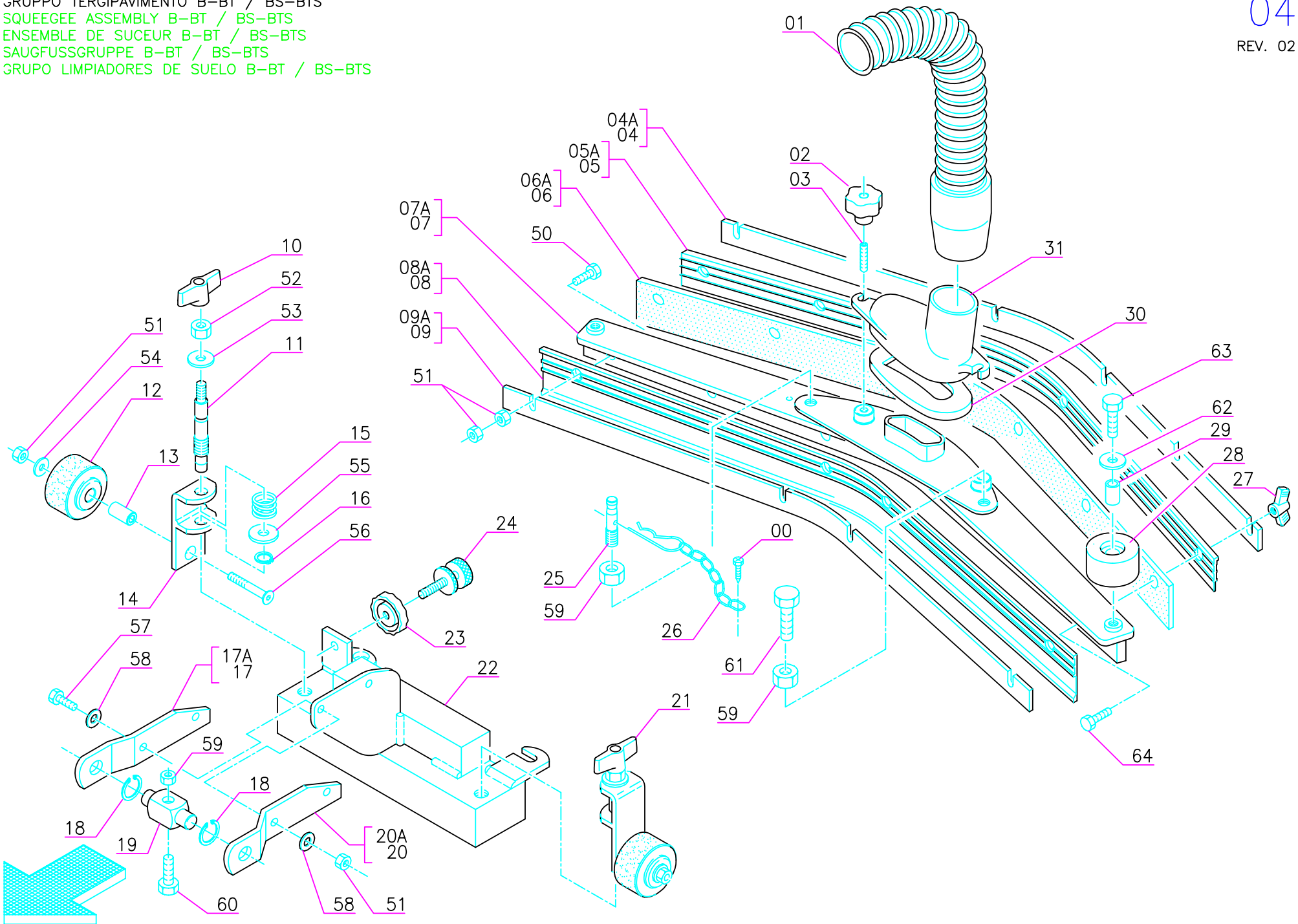
ENSEMBLE DE SUCEUR B-BT / BS-BTS

SAUGFUSSGRUPPE B-BT / BS-BTS

GRUPO LIMPIADORES DE SUELO B-BT / BS-BTS

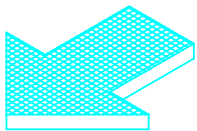
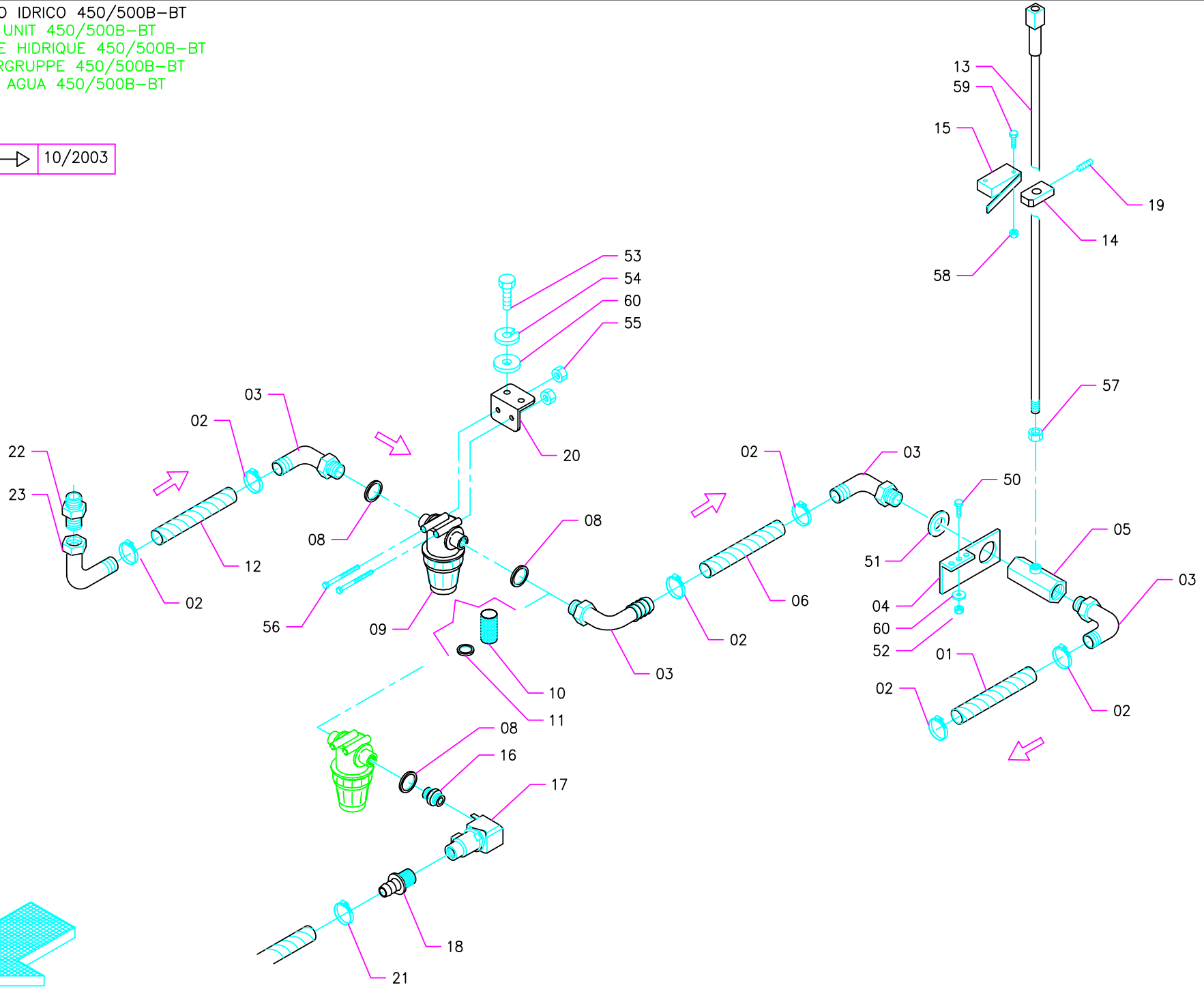
04

REV. 02



ITEM	SKU	DESCRIPTION	QTY
1	E81935	Hose	1
2	E83810	Knob	2
3	E82707	Set Screw Hex	2
4A	E82676	Band Clamp 31 1/4" x 7/8" x 1/8"	1
5A	E12560	Squeegee Blade, Polyurethane	1
6A	E12686	Squeegee Blade, Gum Rubber	1
7A	E88240	Squeegee Body	1
8A	E83909	Squeegee Blade, Polyurethane	1
9A	E82608	Band Clamp 29 1/2" x 7/8" x 1/8"	1
10	E83531	Knob	2
11	E82329	Threaded Pin	2
12	E82428	Wheel 52 OD x 28 W	2
13	E82273	Bushing	2
14	E85497	Weldment, Squeegee Wheel Supp	2
15	E81634	Spring Compression	2
16	E85498	E Style Circlip	1
17A	203538	BLADE	1
18	E83862	Seeger Ring, Media	2
19	E82377	Joint	1
20A	203539	BLADE	1
21	203067	WHEEL ASSEMBLY	-
22	203275	COUPLING	1
23	E83331	Knob, M8 Round Nylon Female	1
24	E83655	Adjuster Knob	1
25	E83911	Stud Bolt M10x46 Custom	1
26	E83590	Chain	1
27	E83591	Knob, M6 2-Arm Nylon Female	2
28	E82451	Wheel 45 OD x 25 W	2
29	E82253	Bushing, Brass	2
30	E83971	Gasket	1
31	E82307	Squeegee Vacuum Adapter	1
	E81858	Squeegee ASM, 30" Parabolic	
50	-	SCREW M6X20 UNI 5739 A2	-
51	-	LOCK NUT M6 UNI 7474	-
52	-	NUT M6 UNI 5588 A2	-
53	-	WASHER M6 UNI 6592 OTTONI	-
54	-	WASHER M6 D.18 UNI 6593	-
55	-	WASHER M12 UNI 6592	-
56	-	SCREW M6X50 UNI 5933	-
57	-	SCREW M6X25 UNI 5739	-
58	-	WASHER M6 UNI 6592	-
59	-	NUT M10 UNI 5588	-
60	-	SCREW M10X50 UNI 5739	-
61	-	SCREW M10X25 UNI 5739	-
62	-	WASHER M8 UNI 6592	-
63	-	SCREW M8X30 UNI 5739	-
64	-	SCREW M6X25 UNI 5933 A2	-



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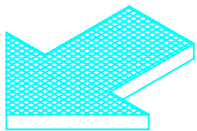
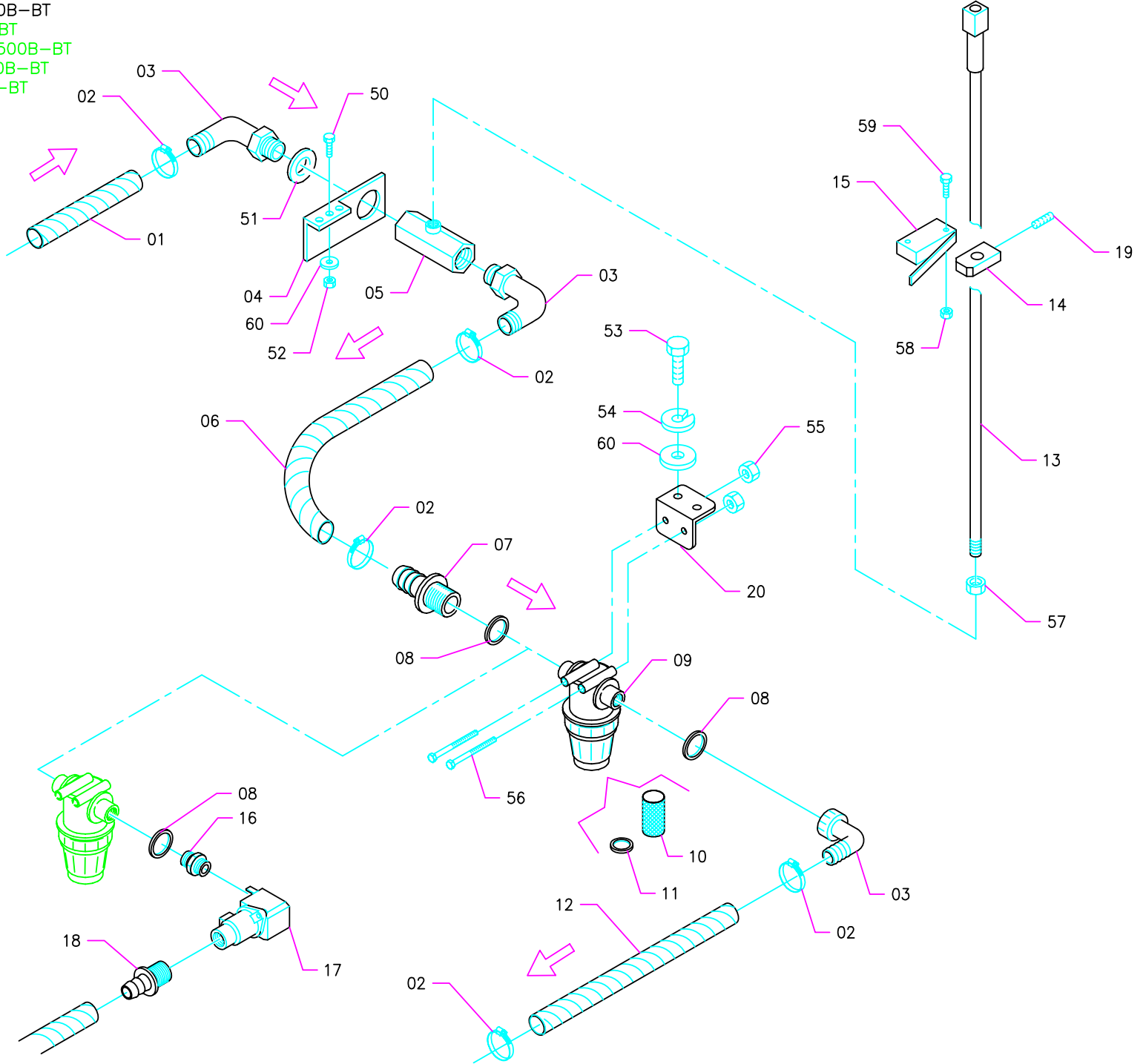


ITEM	SKU	DESCRIPTION	QTY
1	202176	TUBE	1
2	416172	CLAMP	7
3	E81454	Barbed Elbow	3
4	203391	SUPPORT	1
5	E82366	Valve	1
6	202188	TUBE	1
7	E88400	Fitting	1
8	E86178	O-Ring	2
9	E83118	Solution Housing Assembly	1
10	E83119	solution supply filter	1
11	E82341	Gasket	1
12	202172	TUBE	1
13	E87297	Valve Shaft	1
14	203486	CLAMP	1
15	E83164	Micro Switch	1
16	E88085	Fitting 1/2 x 3/8	1
17	E81035	Solenoid Valve	1
18	E82269	Barbed Fitting, 3/8 in.	1
19	415808	DOWEL	1
20	203520	SUPPORT	1
21	E85762	Hose Clamp	1
22	E86251	Nipple	1
23	E85760	Gromment	1
50	-	SCREW M6X16 UNI 5933	-
51	-	WASHER M20 UNI 6592	-
52	-	NUT M6 UNI 5588	-
53	-	SCREW M6X20 UNI 5739	-
54	-	LOCK WASHER M6 UNI 1751	-
55	-	LOCK NUT M8 UNI 7474	-
56	-	SCREW M8X70 UNI 5737	-
57	-	NUT M5 UNI 5588	-
58	-	LOCK NUT M3 UNI 7474	-
59	-	SCREW M3X20 UNI 5739 A2	-
60	-	WASHER M6 UNI 6592	-

GRUPPO IDRICO 450/500B-BT
 WATER UNIT 450/500B-BT
 GROUPE HIDRIQUE 450/500B-BT
 WASSERGRUPPE 450/500B-BT
 GRUPO AGUA 450/500B-BT

05A
 REV. 02

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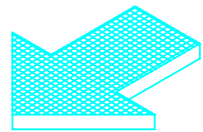
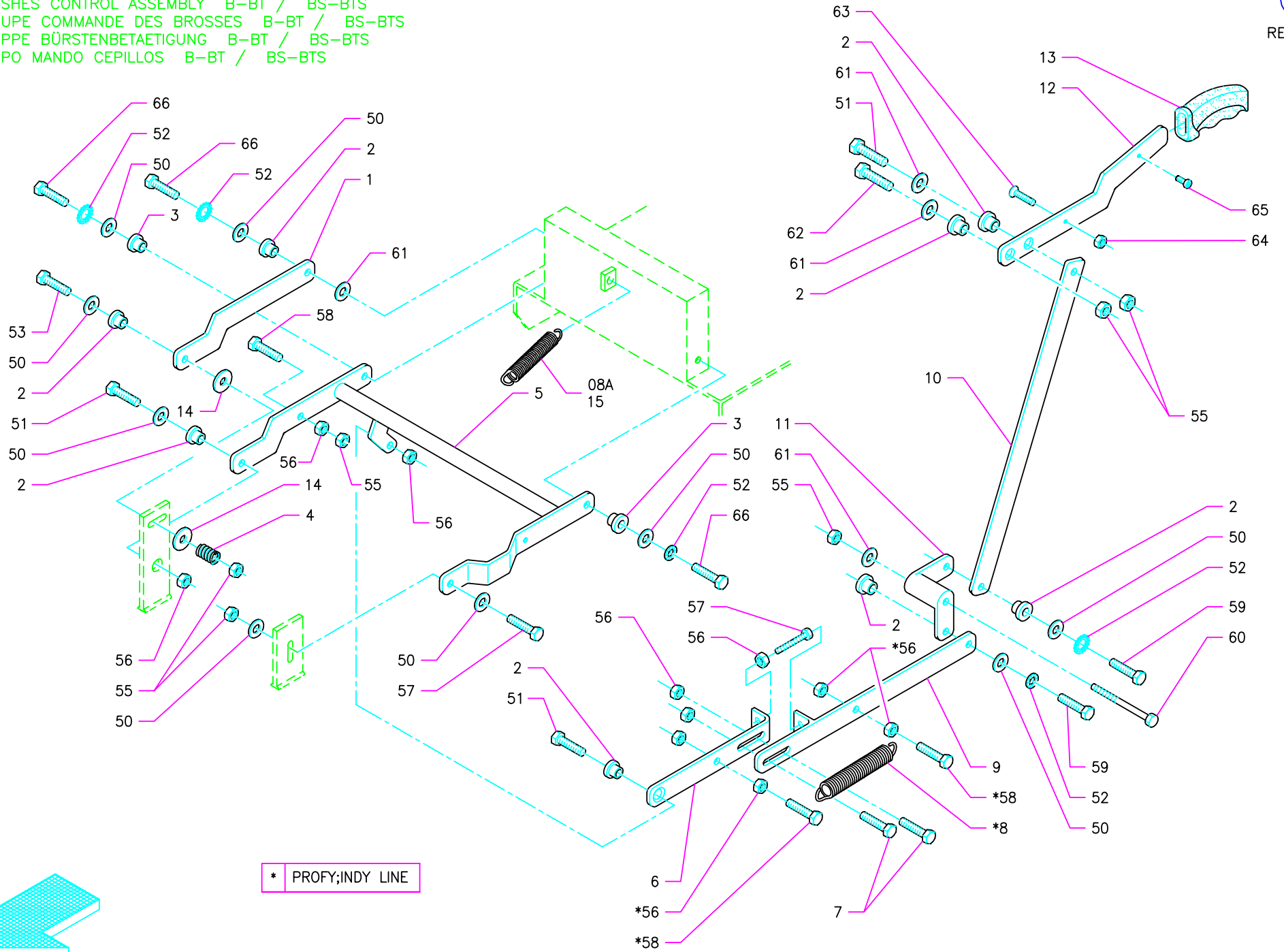


ITEM	QTY	DESCRIPTION	QTY
1	202176	TUBE	1
2	416172	CLAMP	6
3	E81454	Barbed Elbow	3
4	203391	SUPPORT	1
5	E82366	Valve	1
6	202152	TUBE	1
7	E88400	Fitting	1
8	E86178	O-Ring	2
9	E83118	Solution Filter Assembly	1
10	E83119	solution supply filter	1
11	E82341	Gasket	1
12	202158	TUBE	1
13	E87297	Valve Shaft Foreman	1
14	203486	CLAMP	1
15	E83164	Micro Switch	1
16	E88085	Fitting 1/2 x 3/8	1
17	E81035	Solenoid Valve	1
18	E82269	Barbed Fitting, 3/8 in.	1
19	415808	DOWEL	1
20	203520	SUPPORT	1
50	-	SCREW M6X16 UNI 5933	-
51	-	WASHER M20 UNI 6592	-
52	-	NUT M6 UNI 5588	-
53	-	SCREW M6X20 UNI 5739	-
54	-	LOCK WASHER M6 UNI 1751	-
55	-	LOCK NUT M8 UNI 7474	-
56	-	SCREW M8X70 UNI 5737	-
57	-	NUT M5 UNI 5588	-
58	-	LOCK NUT M3 UNI 7474	-
59	-	SCREW M3X20 UNI 5739 A2	-
60	-	WASHER M6 UNI 6592	-

GRUPPO COMANDO SPAZZOLE B-BT / BS-BTS
 BRUSHES CONTROL ASSEMBLY B-BT / BS-BTS
 GROUPE COMMANDE DES BROSSES B-BT / BS-BTS
 GRUPPE BÜRSTENBETAETIGUNG B-BT / BS-BTS
 GRUPO MANDO CEPILLOS B-BT / BS-BTS

08

REV. 01



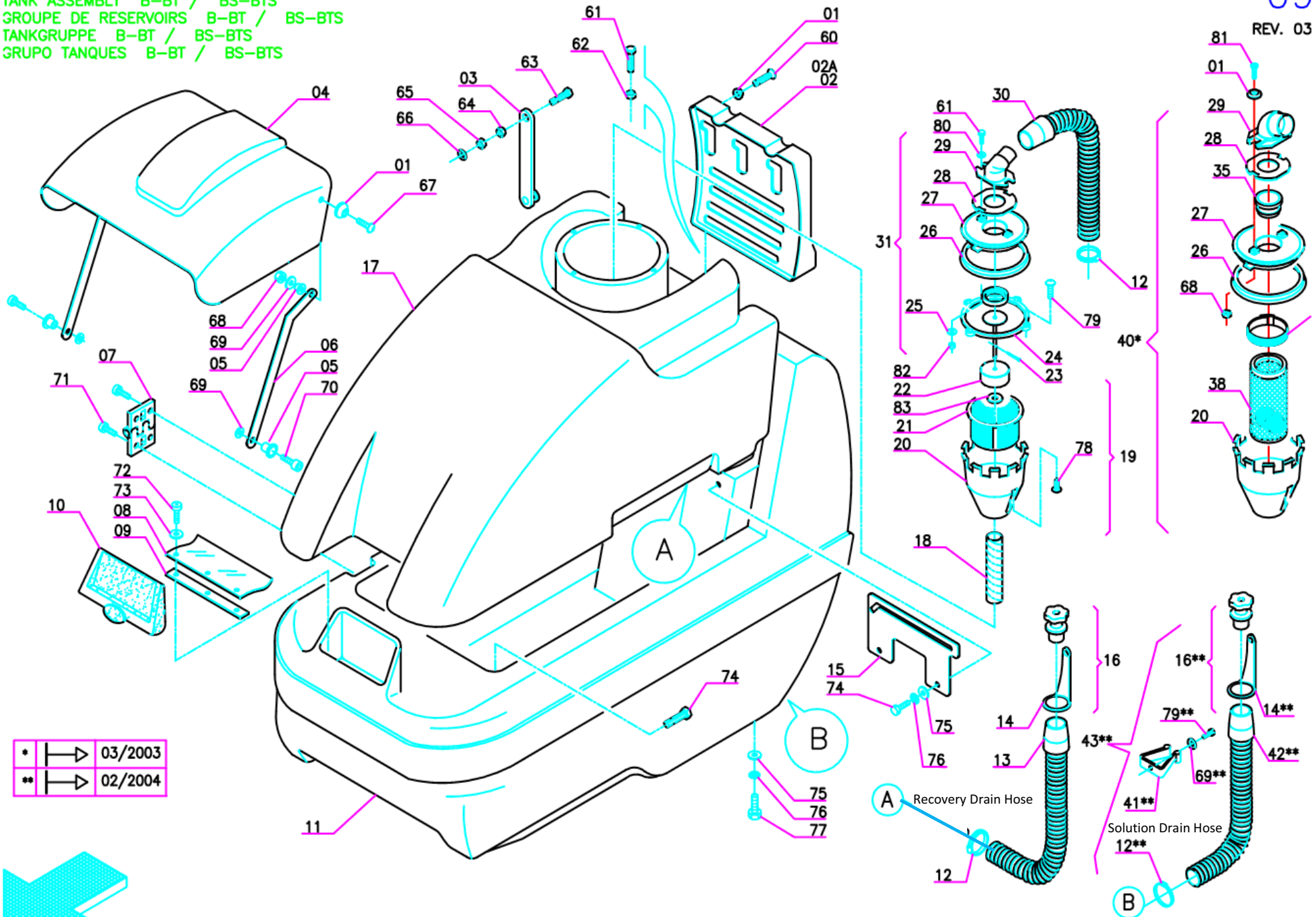
* PROFY;INDY LINE

ITEM	SKU	DESCRIPTION	QTY
1	203491	ARM	1
2	E83932	Bushing	9
3	E85767	Bushing	2
4	E82309	Spring, 11.8x1.2x15mm	1
5	412449	ARM	1
6	203496	KNIFE	1
7	203495	STUD BOLT	2
8	E82837	Spring	1
8A	E82837	Spring	1
9	203494	KNIFE	1
10	203493	TIE ROD	1
11	412450	RETURN	1
12	203492	HANDLE	1
13	E81318	Knob	1
14	E83832	Flat Washer M8.5x30x3	2
15	E81714	Spring	1
50	-	WASHER M8 D.24 UNI 6593	-
51	-	SCREW M8X25 UNI 5739	-
52	-	WASHER M8 DIN 6798/A	-
53	-	SCREW M8X40 UNI 5739	-
55	--	NUT M8 UNI 7474	-
56	-	NUT M8 UNI 5588	-
57	-	SCREW M8X30 UNI 5739	-
58	-	SCREW M8X45 UNI 5739	-
59	-	SCREW M8X20 UNI 5739	-
60	-	SCREW M8X90 UNI 5737	-
61	-	WASHER M8 UNI 6592	-
62	-	SCREW M8X25 UNI 5933	-
63	-	SCREW M6X20 UNI 5933	-
64	-	NUT M6 UNI 5588	-
65	-	SCREW Ø 4,8X13 UNI 6954	-
66	-	SCREW M8X35 UNI 5739	-

GRUPPO SERBATOI B-BT / BS-BTS
 TANK ASSEMBLY B-BT / BS-BTS
 GROUPE DE RESERVOIRS B-BT / BS-BTS
 TANKGRUPPE B-BT / BS-BTS
 GRUPO TANQUES B-BT / BS-BTS

09

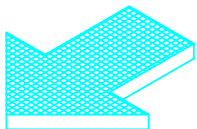
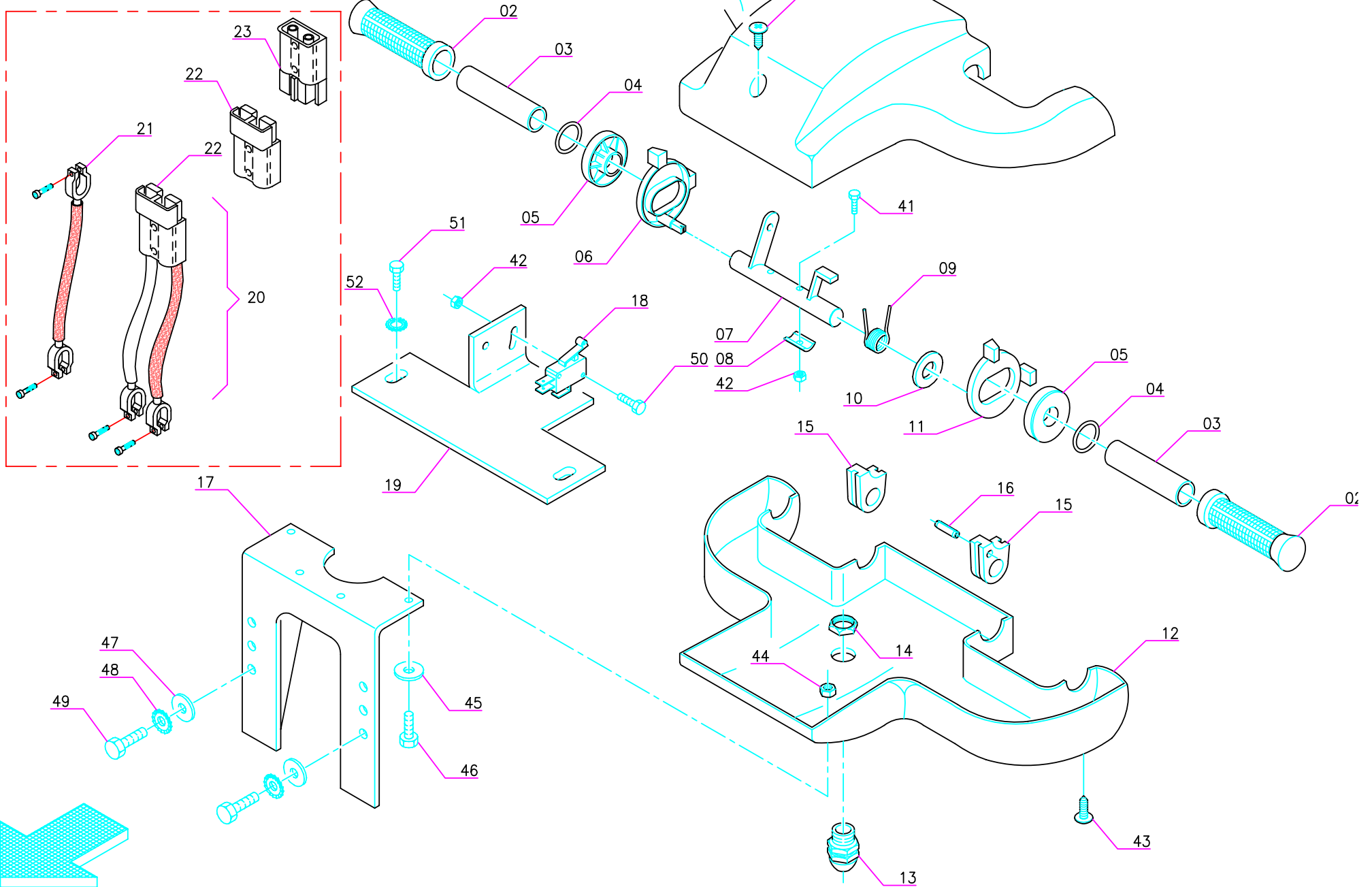
REV. 03



ITEM	SKU	DESCRIPTION	QTY
1	E83850	Flat Washer M5x20 SS	6
2	415147	COVER	1
2A	415148	COVER	1
3	415144	PANEL	1
4	E86195	Cover, Bonnet Gray	1
5	E88125	Bushing Foreman	4
6	E88126	Bracket Foreman	2
7	E81029	Hinge	2
8	415095	SPLASH GUARD	1
9	415096	BLADE	1
10	415094	COVER	1
11	414817	TANKS	1
12	420512	CLAMP	2
13	E86108	Drain Hose w/ Cap	1
14	420678	CLAMP	1
15	203517	BRACKET	1
16	E81887	Exhaust Plug	1
17	414818	TANKS	1
18	E87295	Tube (Pipe) Foreman	1
19	203163	Filter Assembly	1
20	E81006	Vacuum Splash Guard	1
21	E83696	Filter CRS/DRS	1
22	E83338	Float WS17	1
23	E83605	Split pin	1
24	E83995	Ring	1
25	E88284	Washer 4 x 8 x 3 Nylon	4
26	E82381	Gasket Ring	1
27	E82450	Cover	1
28	E83994	Gasket	1
29	E82267	Coupling	1
30	E20462	Hose, Vacuum	1
31	E85756	Recovery Tank Lid Assembly	1

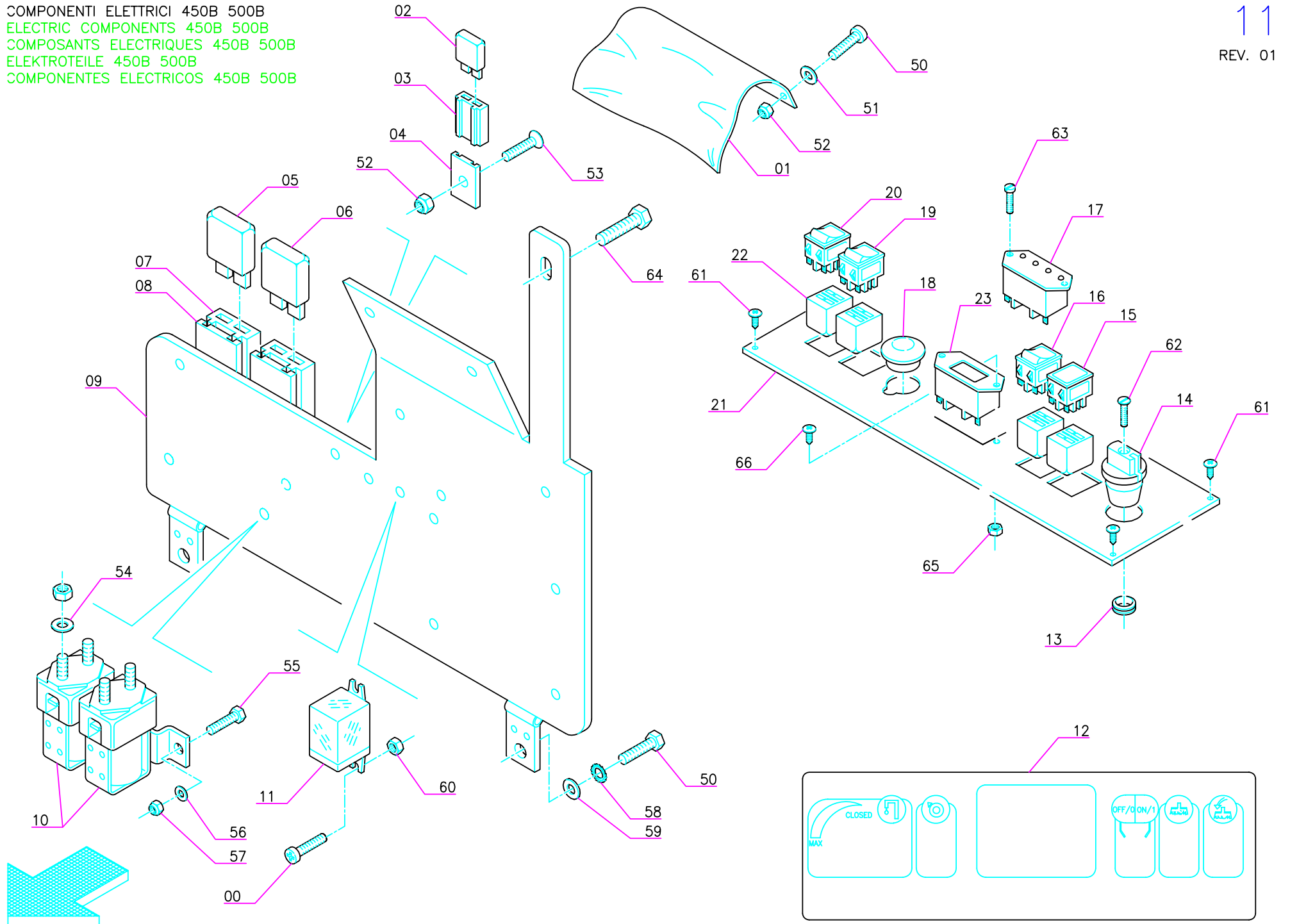
ITEM	SKU	DESCRIPTION	QTY
32	E81710	Hose Clamp	1
35	E88384	Fitting, Recovery Tank Hose	1
38	E82790	Air Filter/Shutoff	1
40	E88102	Recovery Filter Assembly	1
41	E81786	Hose Clip	1
42	E86290	Drain Hose	1
	202887	EXHAUST PIPE	-
43		ASSEMBLY/WATER LEVEL	
60	-	SCREW M5X16 UNI 7688	-
61	-	SCREW M4X25 UNI 5739 A2	-
62	-	LOCK NUT M4 UNI 7474	-
63	-	SCREW M8X45 UNI 5739	-
64	-	LOCK NUT M8 UNI 7474	-
65	-	NUT M8 UNI 5588	-
66	-	WASHER M8 UNI 6592	-
67	-	SCREW M5X20 UNI 7687	-
68	-	LOCK NUT M5 UNI 7474	-
69	-	WASHER M5 D.15 UNI 6593	-
70	-	SCREW M5X16 UNI 7380	-
71	-	SCREW M6X14 UNI 5931	-
72	-	SCREW M5X20 UNI 7687 A2	-
73	-	WASHER M5 UNI 6592 A2	-
74	-	SCREW M6X16 UNI 5739	-
75	-	WASHER M6 D.18 UNI 6593	-
76	-	WASHER DIN 6798/A	-
77	-	SCREW M6X35 UNI 5933	-
78	-	SCREW Ø 3.9X13 UNI 6954	-
79	-	SCREW Ø 4.2X16 UNI 6954	-
80	-	WASHER M5 D.20 UNI 6593	-
81	-	SCREW M5X25 UNI 7688	-
82	-	NUT M4	-
83	-	WASHER M6 D.24	-

GRUPPO MANUBRIO B / BS
HANDLE BAR ASSEMBLY B / BS
GROUPE DE TIMON B / BS
FÜHRUNGSHOLMGRUPPE B / BS
GRUPO MANILLAR B / BS



ITEM	SKU	DESCRIPTION	QTY
1	203511	COVER	1
2	E82493	Grips, Handle	2
3	415140	PIPE	2
4	E81019	O-Ring	2
5	E82782	Washer	2
6	E85751	Trigger Lever for Simpla 50	1
7	415141	SHAFT	1
8	400648	SUPPORT PLATE	2
9	E82304	Spring, 20.2x1.3x20.8mm Steel Torsion	1
10	203513	WASHER	1
11	E82284	Lever	1
12	203510	HANDLE BAR BODY	1
13	E81663	Fair Lead	1
14	E88192	Nut	1
15	415142	SUPPORT PLATE	2
16	E83701	Spring pin	1
17	203508	BRACKET	1
18	E82794	Microswitch	1
19	203514	BRACKET	1
20	414545	CABLE	1
21	E83584	Battery jumper cable D/CRS	1
22	E83254	Female connector lug (Fr.)	1
23	E86208	SB50 Red Electrical Connector	1
40	-	SCREW Ø 4.8X32 UNI 6954	-
41	-	SCREW M3X20	-
42	-	LOCK NUT M3 UNI 7474	-
43	-	SCREW Ø 4.8X25	-
44	-	LOCK NUT M6 UNI 7474	-
45	-	WASHER M6 UNI 6592	-
46	-	SCREW M6X20 UNI 5739	-
47	-	WASHER M8 UNI 6592	-
48	-	LOCK WASHER M8	-
49	-	SCREW M8X20 UNI 5739	-
50	-	SCREW M3X20 UNI 5739	-
51	-	SCREW Ø 4.8X13	-
52	-	LOCK WASHER M5	-

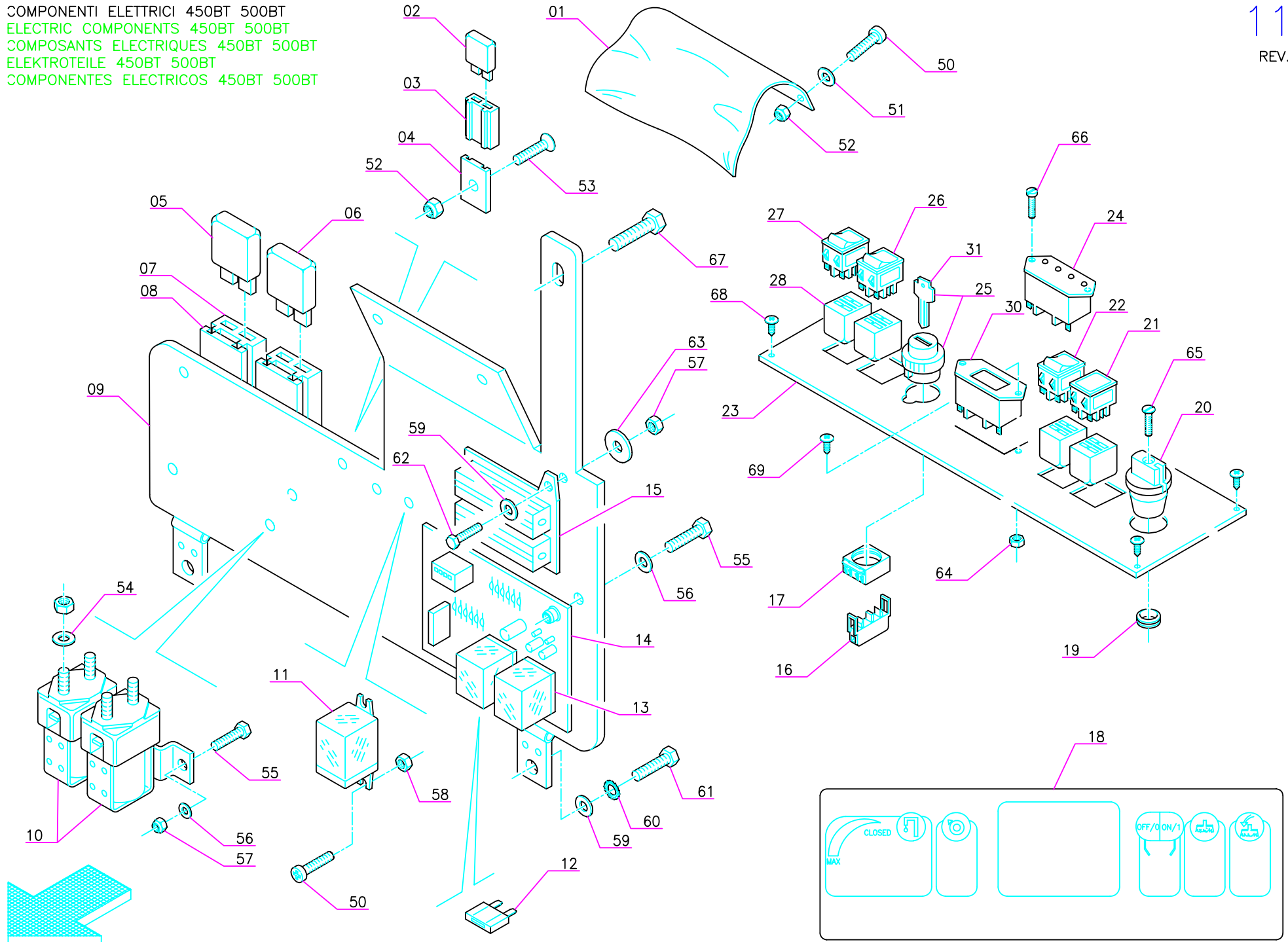
COMPONENTI ELETTRICI 450B 500B
 ELECTRIC COMPONENTS 450B 500B
 COMPOSANTS ELECTRIQUES 450B 500B
 ELEKTROTEILE 450B 500B
 COMPONENTES ELECTRICOS 450B 500B



ITEM	SKU	DESCRIPTION	QTY
1	415152	PROTECTION	2
2	E83168	Fuse, 3 amp	1
3	E88244	Fuse Holder for Crewman AS20B	1
4	409869	SUPPORT PLATE	1
5	E83926	Fuse 30A faston suction motor	1
6	E86196	Fuse, 60 amp	1
7	E81642	Fuseholder	2
8	E88497	Fuse Block End Cap	2
9	203526	PANEL	1
10	E82403	Double remote control SW 24V	2
11	E83160	Relay 24VDC 30A	1
12	413967	LABEL	1
13	E87975	Stud Bolt Tripla	1
14	E86145	Knob	1
15	E81706	Signal Lamp Green	1
16	E83328	Vacuum switch	1
17	E88022	Battery Check Card 24 Volt	1
18	409843	PLUG	1
19	E82379	Switch	1
20	415991	GREEN PUSH BUTTON	1

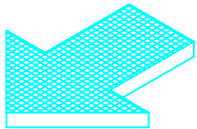
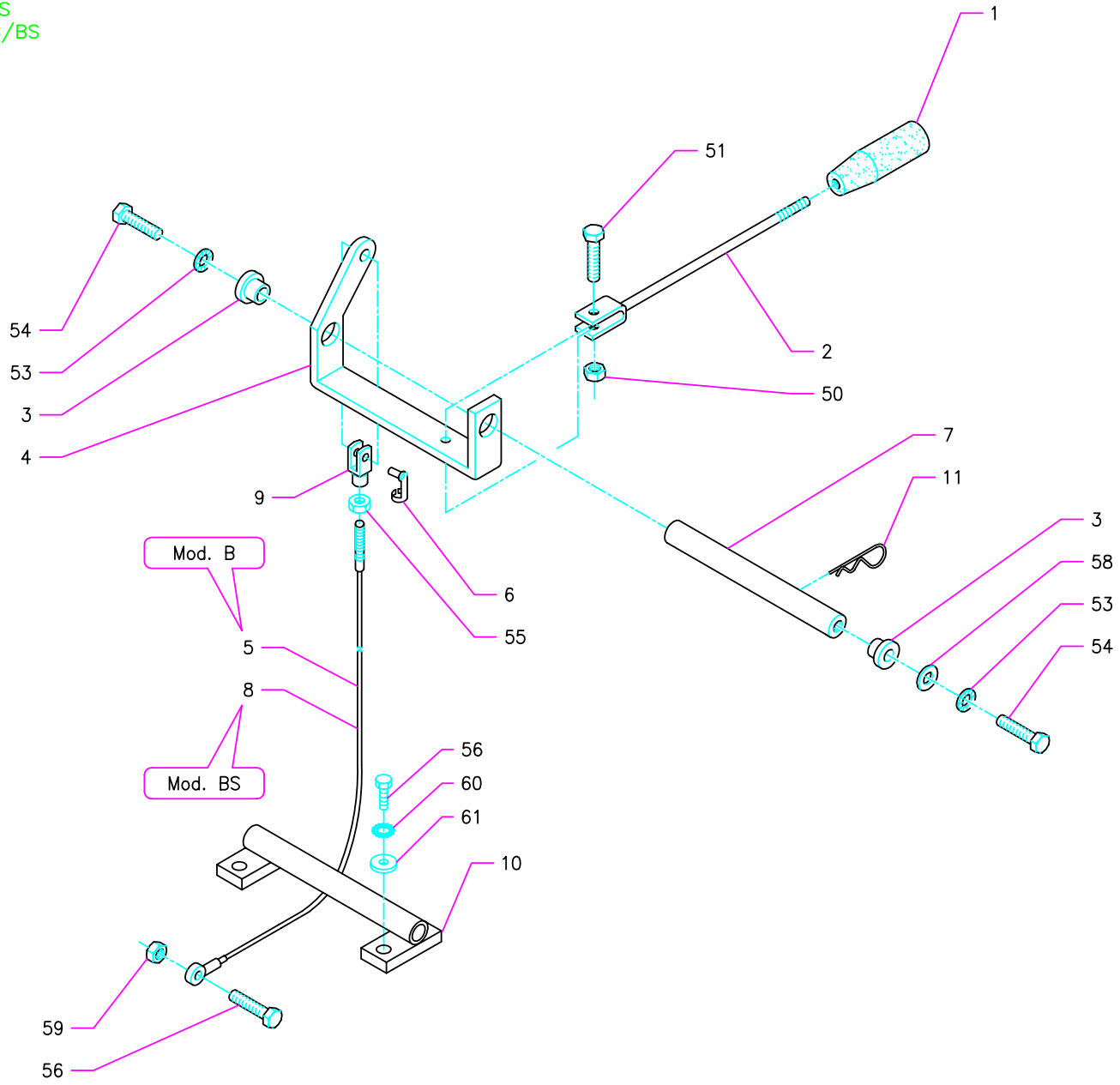
ITEM	SKU	DESCRIPTION	QTY
21	203524	INSTRUMENT BOARD	1
22	409296	BASE	4
23	E83495	Hour Meter	1
50	-	SCREW M4X10 UNI 7687	-
51	-	WASHER M4 D.12 UNI 6593	-
52	-	NUT M4 AUTOBL. UNI 7474	-
53	-	SCREW M4X12 UNI 7688	-
54	-	WASHER M8 UNI 6592	-
55	-	SCREW M5X12 UNI 5739	-
56	-	WASHER M5 UNI 6592	-
57	-	NUT M5 AUTOBL. UNI 7474	-
58	-	WASHER M5 DIN 6798/A	-
59	-	WASHER M5 D.15 UNI 6593	-
60	-	NUT M4 UNI 5588	-
61	-	SCREW 4.8X13 UNI 6954	-
62	-	SCREW M4X8 UNI 7688	-
63	-	SCREW M3X16 UNI 7687 A2	-
64	-	SCREW 5.5X10 UNI 6954	-
65	-	NUT M3 AUTOBL. UNI 7474	-
66	-	SCREW 4.2X13 UNI 6954	-

COMPONENTI ELETTRICI 450BT 500BT
ELECTRIC COMPONENTS 450BT 500BT
COMPOSANTS ELECTRIQUES 450BT 500BT
ELEKTROTEILE 450BT 500BT
COMPONENTES ELECTRICOS 450BT 500BT

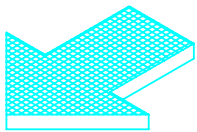
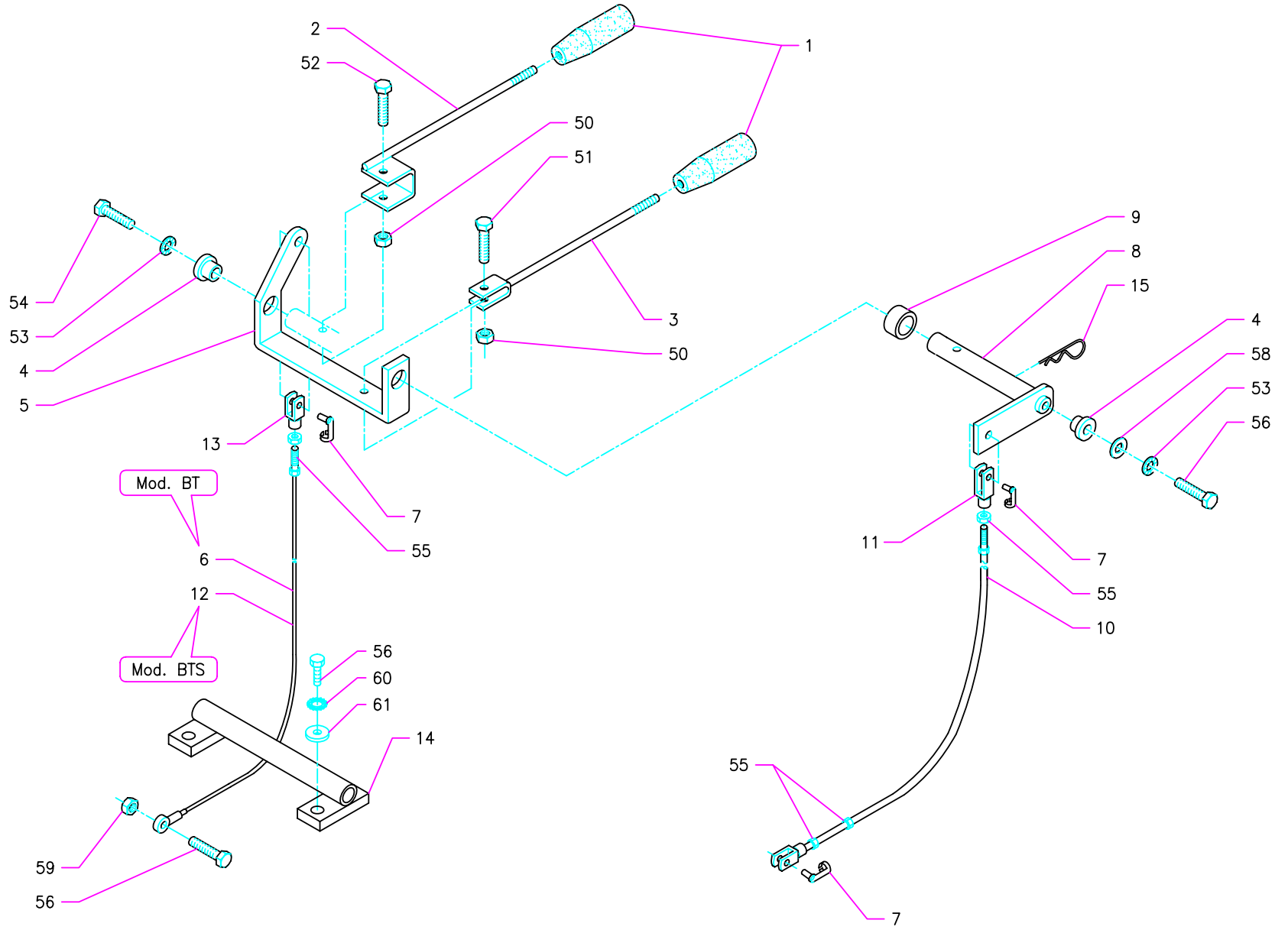


ITEM	SKU	DESCRIPTION	QTY
1	415152	PROTECTION	2
2	E83168	Fuse, 3 amp	1
3	E88244	Fuse Holder	1
4	409869	SUPPORT PLATE	1
5	E83926	Fuse 30A faston	1
6	E86196	Fuse, 60 amp	1
7	E81642	Fuseholder	2
8	E88497	Fuse Block End Cap	2
9	203526	ELETTRICO PANEL	1
10	E82403	Double remote control SW 24V	1
11	E83160	Relay 24VDC 30A	1
12	E83972	Fuse 30A fasten	1
13	E83159	Relay 24VDC 20A	2
14	E20646	Chopper Card	1
15	416025	BRAKING Resistor	2
16	E83173	Contact, Key Switch	1
17	E81358	Switch Flange	1
18	413967	Label	1
19	E87975	Stud Bolt	1
20	E86145	Knob	1
21	E81706	Signal Lamp Green	1
22	E83328	Vacuum switch	1
23	203524	INSTRUMENT BOARD	1
24	E88022	Battery Check Card 24 Volt	1
25	E83316	Key Switch	1

ITEM	SKU	DESCRIPTION	QTY
26	E82379	Switch	1
27	415991	GREEN PUSH BUTTON	1
28	409296	BASE	4
29	E83495	Hour Meter	1
30	E83495	Hour Meter	1
31	E83315	Switch Key	1
50	-	SCREW M4X10 UNI 7687	-
51	-	WASHER M4 D.12 UNI 6593	-
52	-	LOCK NUT M4	-
53	-	SCREW M4X12 UNI 7688	-
54	-	WASHER M8 UNI 6592	-
55	-	SCREW M5X12 UNI 5739	-
56	-	WASHER M5 UNI 6592	-
57	-	LOCK NUT M5	-
58	-	NUT M4 UNI 5588	-
59	-	WASHER M5 D.15 UNI 6593	-
60	-	LOCK WASHER M5	-
61	-	SCREW M5X16 UNI 5739	-
62	-	SCREW M5X30 UNI 5739	-
63	-	WASHER M5 D.20 UNI 6593	-
64	-	LOCK NUT M3	-
65	-	SCREW M4X8 UNI 7688	-
66	-	SCREW M3X16 UNI 7687	-
67	-	SCREW 5.5X10 UNI 6954	-
68	-	SCREW 4.8X13 UNI 6954	-
69	-	SCREW 4.2X13 UNI 6954	-

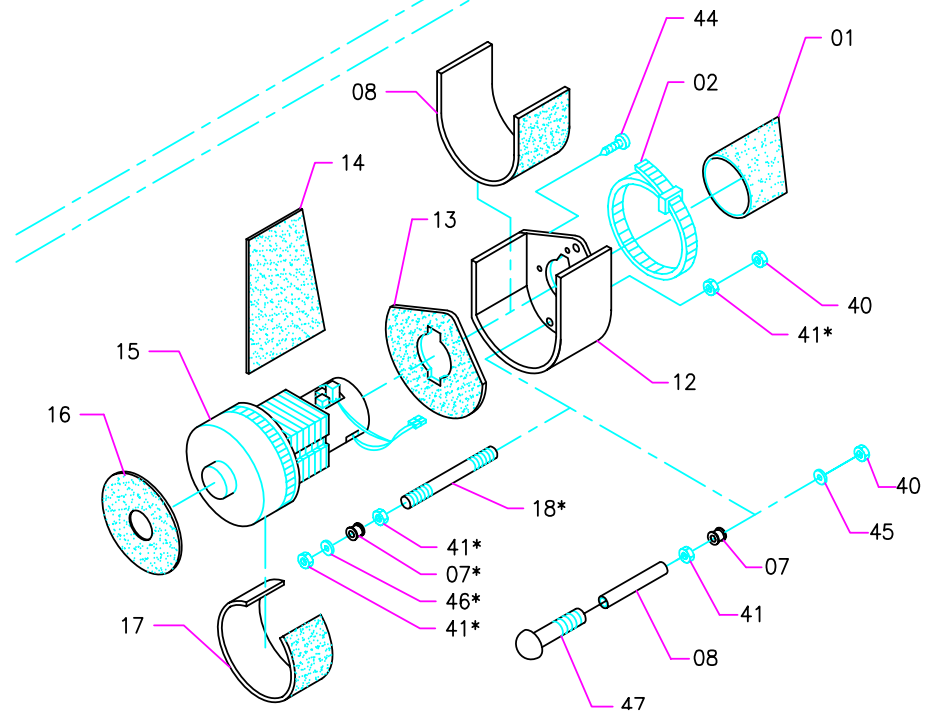
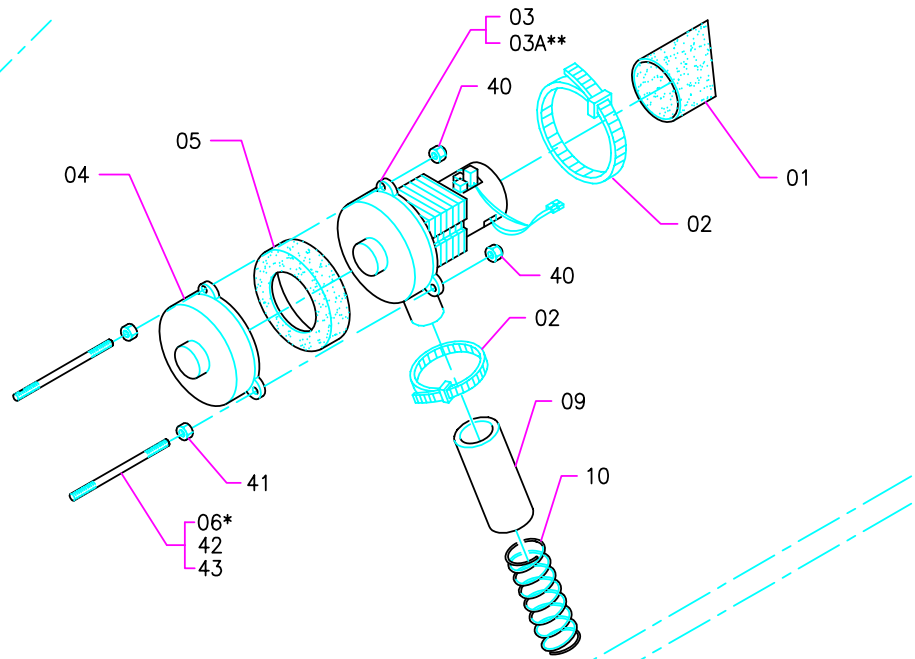
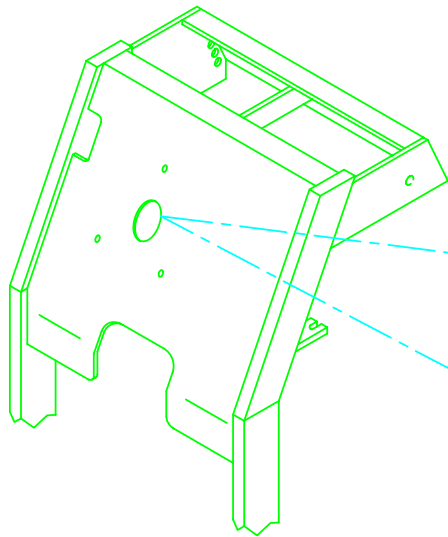


ITEM	SKU	DESCRIPTION	QTY
1	E81477	Knob 25X50 M8	1
2	E82550	Handle - Lever S42	1
3	414726	BUSHING	2
4	203497	LEVER	1
5	E85768	Squeegee Cable	1
6	E81907	Pin	1
7	203498	SHAFT	1
8	415154	CABLE	1
9	E86154	Fork	1
10	203499	BRACKET	1
11	409392	PIN	1
50	-	LOCK NUT M6 UNI 7474	-
51	-	SCREW M6X16 UNI 5739	-
53	-	LOCK WASHER M6	-
54	-	SCREW M6X20 UNI 5739	-
55	-	NUT M6 UNI 5588	-
56	-	SCREW M5X16 UNI 5739	-
58	-	WASHER M6 D.18 UNI 6593	-
59	-	NUT M5 UNI 5589	-
60	-	LOCK WASHER M5	-
61	-	WASHER M5 D.15 UNI 6593	-

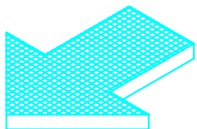


ITEM	SKU	DESCRIPTION	QTY
1	E81477	Knob 25X50 M8	2
2	203506	HANDLE	1
3	E82550	Handle - Lever S42	1
4	414726	BUSHING	2
5	203497	LEVER	1
6	E85768	Squeegee Cable	1
7	E81907	Pin	3
8	203505	SHAFT	1
9	202458	SPACER	1
10	415138	CABLE	1
11	E86154	Fork	1
12	415154	CABLE	1
13	E86154	Fork	1
14	203499	BRACKET	1
15	409392	PIN	1
50	-	LOCK NUT M6 UNI 7474	-
51	-	SCREW M6X16 UNI 5739	-
52	-	SCREW M6X30 UNI 5739	-
53	-	WASHER M6 DIN 6798/A	-
54	-	SCREW M6X20 UNI 5739	-
55	-	NUT M6 UNI 5588	-
56	-	SCREW M6X20 UNI 5739	-
58	-	WASHER M6 D.18 UNI 6593	-
59	-	NUT M5 UNI 5589	-
60	-	LOCK WASHER M5	-
61	-	WASHER M5 D.15 UNI 6593	-

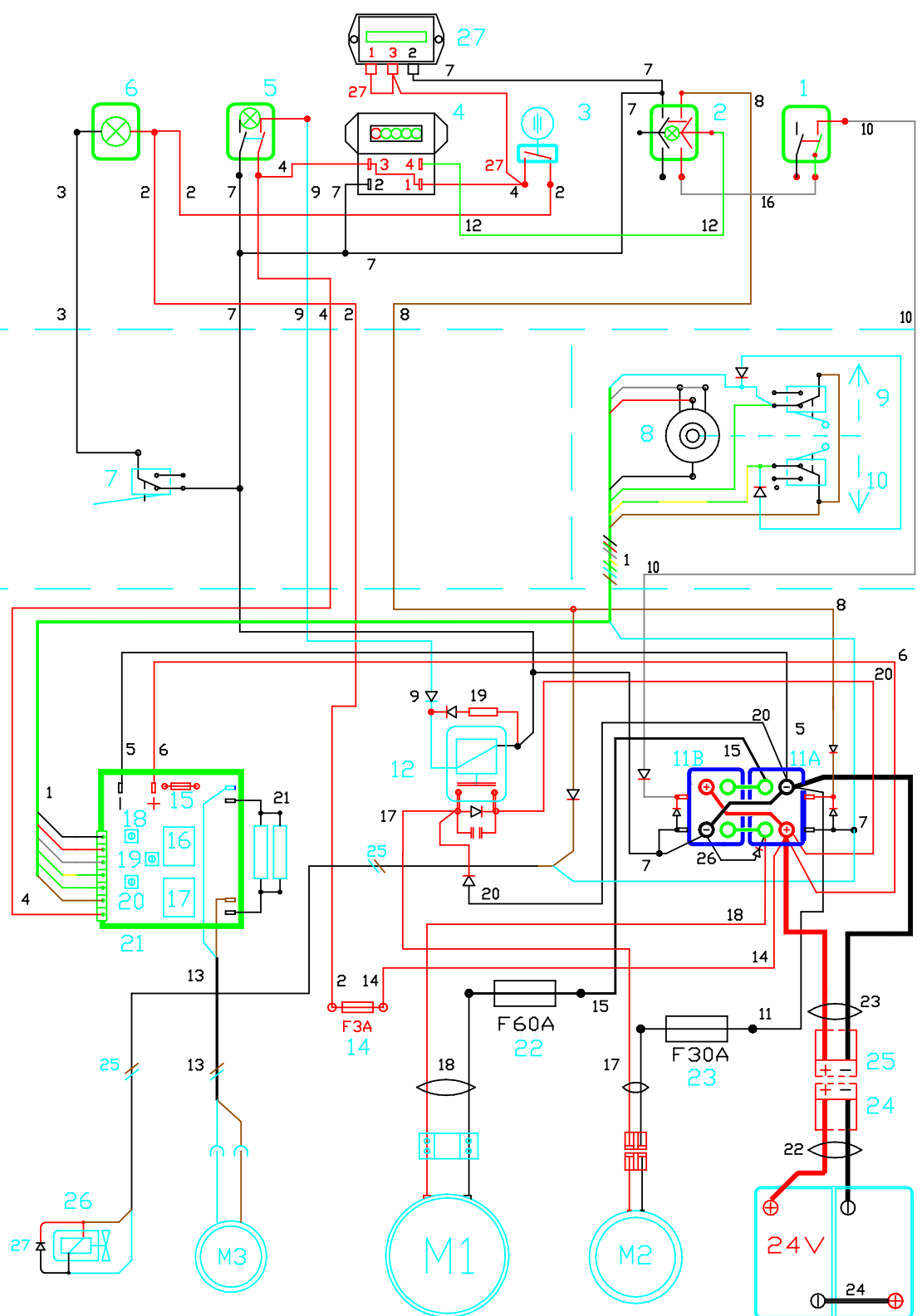
GRUPPO MOTORE ASPIRAZIONE B-BT / BS-BTS
 SUCTION MOTOR ASSEMBLY B-BT / BS-BTS
 GROUPE DE MOTEUR D'ASPIRATION B-BT / BS-BTS
 SAUGMOTORGRUPPE B-BT / BS-BTS
 GRUPE DE MOTOR DE ASPIRACION B-BT / BS-BTS




*	→	10/2002
**	→	06/2003

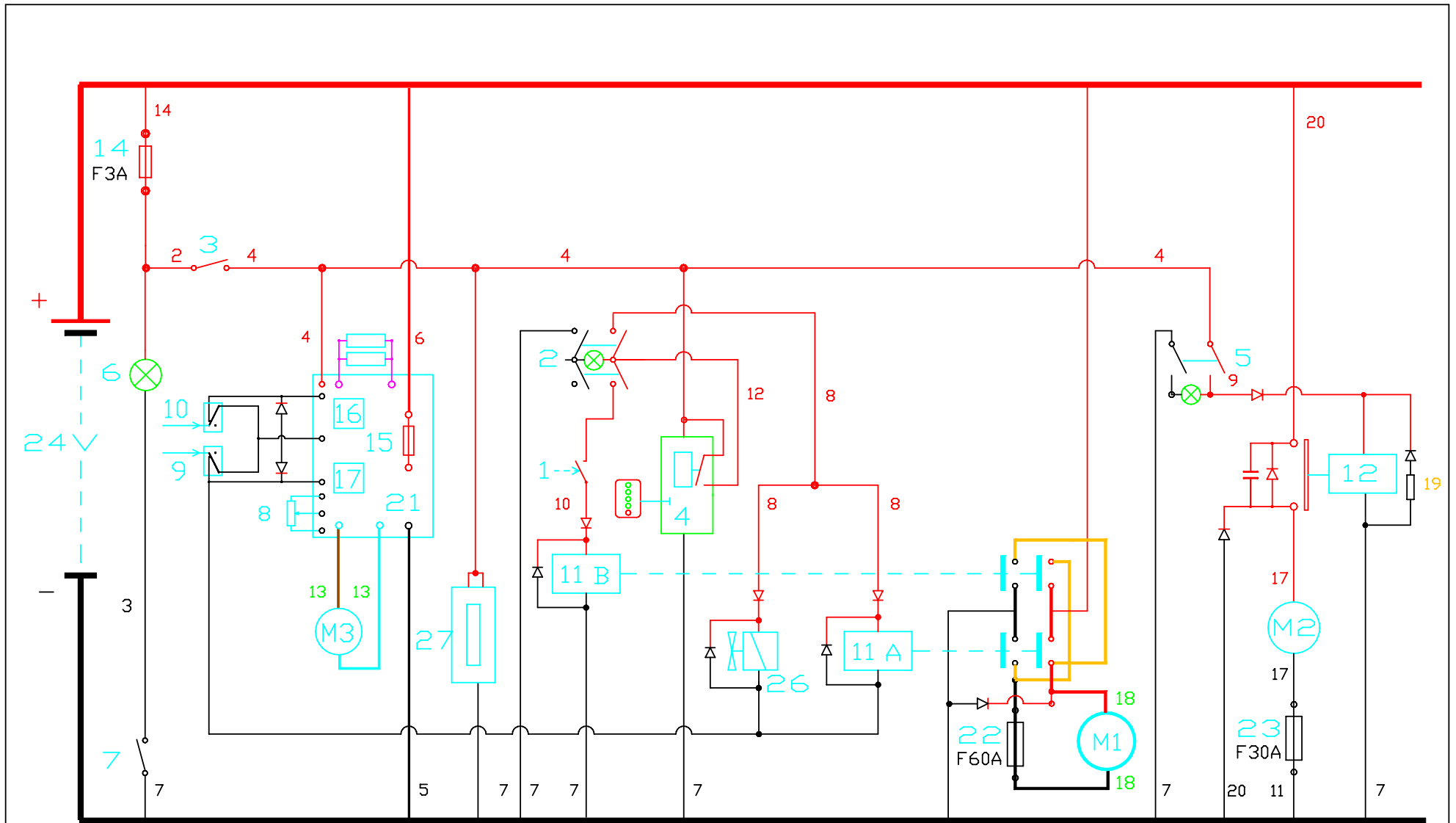


ITEM	SKU	DESCRIPTION	QTY
1	202243	DEADENING HOSE	1
2	E83920	Clamp 9x300 4,8x360 black	1
3	E83949	Motor, Vacuum	1
3A	E82631	Motor, Vacuum 36v 720w 2-Stage	1
4	414960	SUPPORT	1
5	E83944	Sound Deadening Foam	1
6	415134	STUD BOLT	3
7	E87975	Stud Bolt Tripla	3
8	414686	SPACER	3
9	E83244	deadenng hose	1
10	E83871	Compression spring 55x2x200	1
11	414350	DEADENING HOSE	1
12	203523	COVER	1
13	414352	DEADENING HOSE	1
14	414351	DEADENING HOSE	1
15	E88291	Vacuum Motor 36VDC 550W	1
16	E83944	Sound Deadening Foam	1
17	E82282	Sound Deadening Foam	1
18	206225	STUD BOLT	3
40	-	LOCK NUT M6	-
41	-	NUT M6 UNI 5588	-
42	-	SCREW M6X80 UNI 5732	-
43	-	SCREW M6X120 UNI 5732	-
44	-	SCREW Ø 4,8X13	-
45	-	WASHER M6 D.18 UNI 6593	-
46	-	WASHER M6 UNI 6592	-
47	-	SCREW M6x90 UNI 5732	-



 FIMAP S.p.A. Viale del Lavoro, 56 S.Martino B.A. (VR)			
DISEGNATO MACCHINA CODICE MAC.	ABELLI MAXIMA 450/500 BT G24	VERIFICATO DATA REV. 00	DA ROIT 15/06/1999
APPROVATO TURRINI		DATA 20/02/04	
OGGETTO REVISIONE	SCHEMA IMPIANTO ELETTRICO 04	REVISIONATO TURRINI	DATA 20/02/04

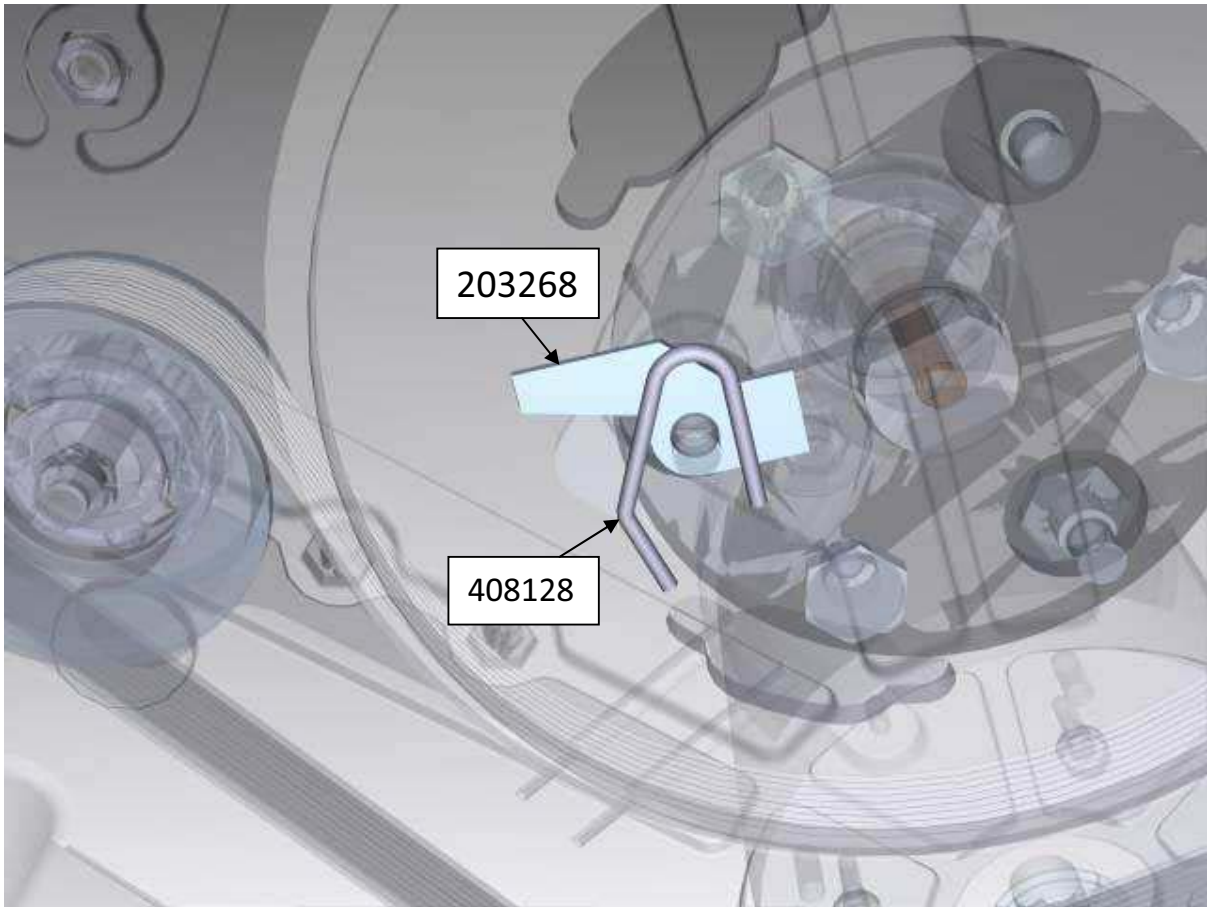
ITEM	SKU	DESCRIPTION
1	415991	BUTTON - BRUSH- COUPLING
2	E82379	Switch
3	E83316	Key Switch
	E81358	Switch Flange
	E83173	Contact, Key Switch
4	E88022	Battery Check Card 24 Volt
5	E83328	Vacuum switch
6	E81706	Signal Lamp Green
7	E83164	Micro Switch
8	E82520	Potentiometer
9	E82794	Microswitch
10	E82794	Microswitch
11A	E82403	Double remote control SW 24V
11B		
12	E83160	Relay 24VDC 30A
14	E83168	Fuse, 3 amp
15	E83972	Fuse 30A fasten
16	E83159	Relay 24VDC 20A
17	E83159	Relay 24VDC 20A
18		TRIMMER REGULATION MIN.SPEED
19		TRIMMER REGULATION ACCELERATION
20		TRIMMER REGULATION MAX. SPEED
21	E20646	Chopper Card
22	E86196	Fuse, 60 amp
23	E83926	Fuse 30A faston suction motor
24	E86208	SB50 Red Electrical Connector
25	E86208	SB50 Red Electrical Connector
26	407885	SOLENOID VALVE (OPT.)
27	E83495	Hour Meter
M1	E82738	Brush Motor 24VDC 560W
M2	E83949	Motor, Vacuum
M2	E82631	Motor, Vacuum 36v 720w 2-Stage
M3	414603	TRACTION MOTOR 24V



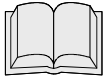
	MACCHINA MAXIMA 450-500BT 24Vcc	CODICE	DATA EMISS. 22.01.2004	REVIS. 0	DATA REVIS.	PAGINA 1/1
	OGGETTO SCHEMA FUNZIONALE	DISEGNATO OLIVO	VERIFICATO DE BON	APPROVATO TURRINI		

Dear Jim,

in the image below I wrote you the codes you need.



ADJUSTMENTS AND INSPECTIONS / ALL MODELS



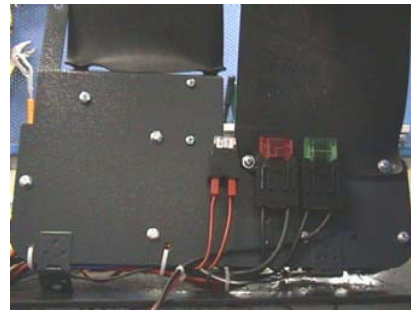
READ THE OPERATING AND MAINTENANCE MANUAL

Inspection Electrical Equipment

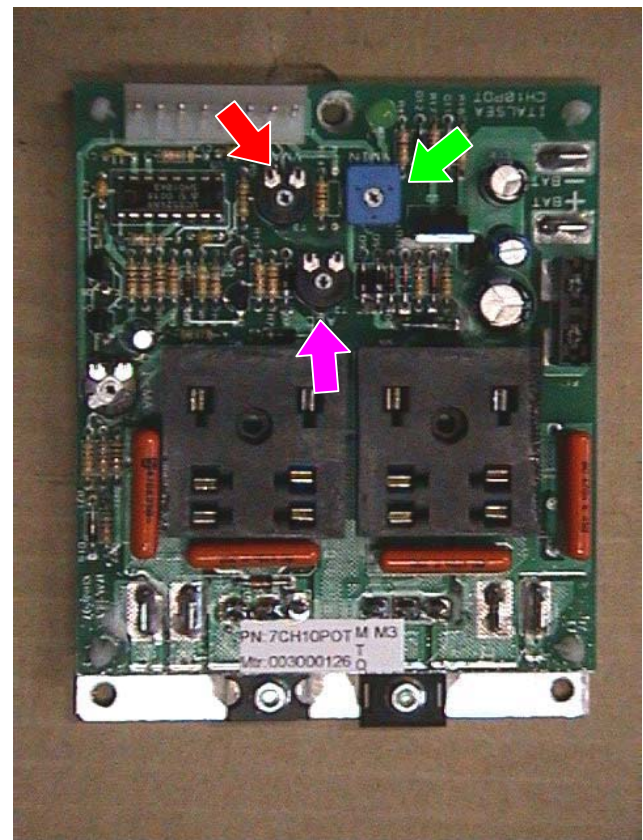
1. Check functionality electrical equipment: switches, motors, solenoid valve.
2. Check functionality control coupling-uncoupling brush, where this is assembled.



3. Check the condition of the fuses placed behind the rear grey panel



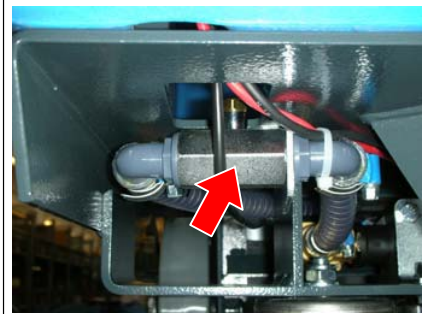
4. Check functionality **chopper** (traction machine)
5. If necessary set the **chopper card** proceeding as follows:
 - Lift the machine (traction wheels must be free)
 - Take off the rear screws to open the panel; take off the fixing screw and lower the complete electric group
 - Insert the tester prods (V-DC) onto the faston **M+** and **M-** of the chopper card
 - Switch on through the general key
 - Adjust **trimmer "ACC"** (acceleration) rotating the left screw up to the end, then position it on **45°**
6. Press onto the lever placed on the handle bar in forward movement, until the release of the drive relay is heard, then stop.
7. Adjust the **trimmer Vmin (minimum)** until the value on the tester is read, which is between **3-5 V**.



8. Push the lever on the handle bar completely forward, read on the tester the tension value: this should be equal to the battery tension, otherwise act upon the **trimmer Vmax (maximum voltage)**, until the tester indicates the correct value.
9. Recheck the minimum values with the **trimmer Vmin**. Bring the lever back to try the drive: check that the measured tension is less than the maximum value.
10. Check the motor braking releasing the drive: the machine must stop within 1 metre.

Inspection Water Supply

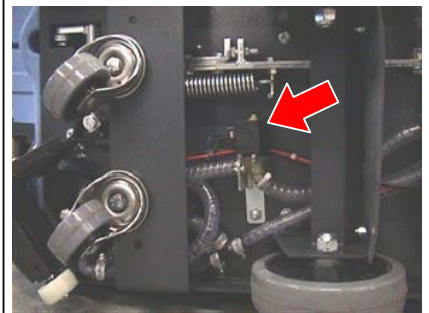
1. Check the cleanness of the transparent **solution filter**. Check also eventual water leakages.
2. Fill completely with water the solution tank.



3. Check the tightness of the hoses, the **solenoid valve*** and the complete opening and closing of the water cock.

* THE SOLENOID VALVE IS AVAILABLE ONLY ON MACHINES WITH KIT

4. Check that the detergent solution, when the cock is open, arrives with continuity onto the floor.
5. With the closed cock, check that there are not any solution leakages



Inspection Suction

1. Check the cleanliness and functionality of the **filter float**.
2. Check the air seal of the **cover** on the recovery tank.
3. Check the connections and their tightness of the **suction hoses** and the **squeegee hose**.
4. Check the tightness of the **hose** and of the **exhaust plug**.

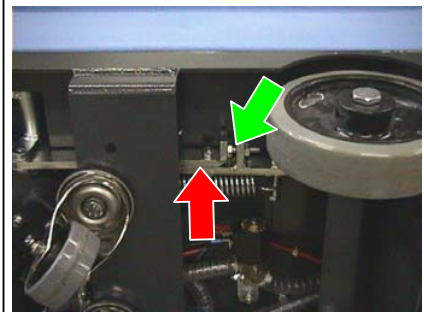


Adjustment brush – SINGLE BRUSH 450-500 B-BT / MOVEMENT SEMI-AUTOMATIC B

1. Adjust the **spring belt tightener** at a length of **27mm** (1,06 inches) in compression.



2. The **adjustment lever for the height** of the brush base placed under the machine, has to be adjusted always **with the brush base lowered onto the floor, without the brush**. Check that the lifting lever is in the highest point of the sliding slit, without hitting or forcing onto the frame. Furthermore, check that it slides to the right and to the left, with the lever stop being free.

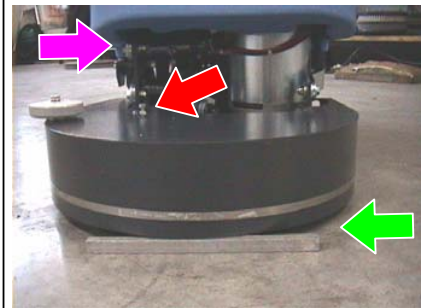


3. To get the correct functioning, act upon the screw **M8** placed on the lever under the machine, by screwing down or unscrewing until the **rear lever** is brought into its correct position, then block the lock nut M8.



4. The brush adjustment for the machines without traction and therefore with a movement depending on the brush rotation, has to be carried out as follows:

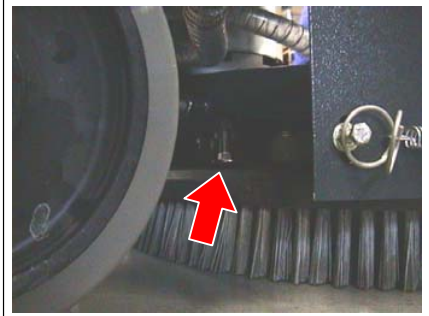
- Lower the brush base, applying in the front part of the cover a **metal bar of 15mm** between the cover and the floor, and unscrew the **screw M6 on top of the cover**.
- Unscrew the **screw M8** of the brush inclination, push the complete base downwards and block the screw previously unscrewed, screw down the screw M6 until it touches lightly the base.



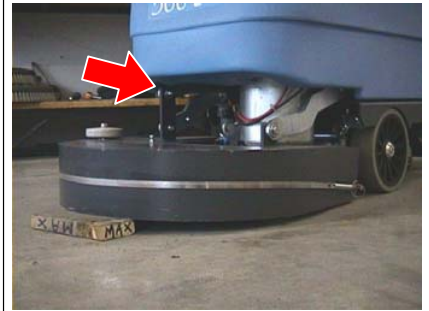
- Couple the brush, always with the brush base in working position, and unscrew the **screw M8** for the brush inclination, then block the screw as soon as the brush base fixing is obtained.
- Adjust the traction effect on hand of the **screw M6**, then block the lock nut.



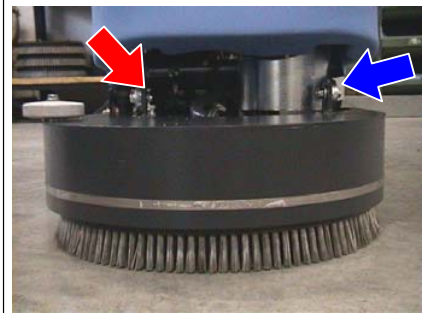
- Adjust the **cup head screw brush rest** until the head just touches the even part of the brush on which it rests. The allowance between the head of the screw and the brush must be at most 1mm-2mm, when the brush is coupled and lowered.



- For the models with automatic traction apply the metal bar which should be brought to **25mm** in the front part, loosen the **screw M8** of the base inclination and after having noticed the correct base adjustment, block the screw again.



- Take off the metal bar and couple the brush, loosen the **screw M8** of the brush base inclination, after having noticed its correct adjustment, then block the screw. Adjust the **screw M6** placed on top of the brush cover, with the brush functioning, in order that the **machine does not move**.

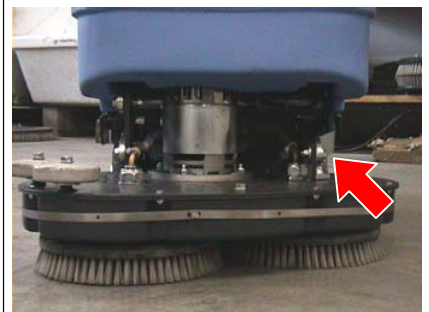


- Block the lock nut **M6**.

Adjustment brush and base - G452-502 B-BT / MOVEMENT SEMI-AUTOMATIC B

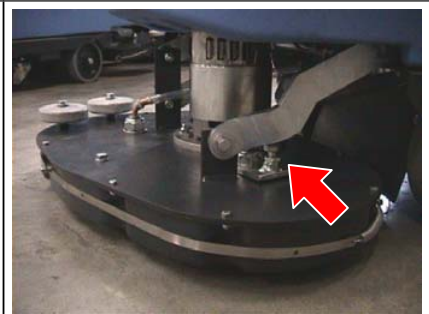
For the machines B, that means with a semi-automatic movement, which depends on the brushes rotation, in case the machine should not have a straight movement, or should this be insufficient, carry out the following operations:

- With brush base lowered, complete with its brushes, unscrew the **screw M8** on the right (**screw brush base inclination**), and block it as soon as the correct base adjustment is noticed. This operation is necessary to eliminate eventual defects of the machine movement.

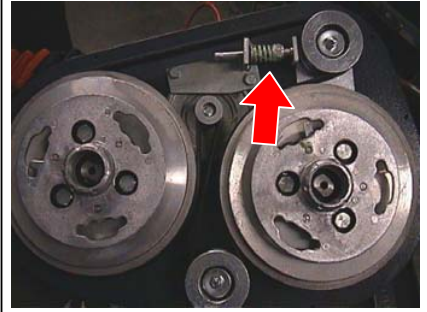


- If the traction has been increased or reduced, operate on the **plaque** on top of the brush base, loosening the nut M10. Unscrewing the screw a reduction of the traction is obtained, while screwing down more an increase of the traction is given.

PS: DO NOT MODIFY EXCESSIVELY THE TRACTION CHARACTERISTICS, OTHERWISE THE BRUSHES DO NOT FUNCTION CORRECTLY.



3. The dimension of the **spring belt tightener** should be always of 27mm in compression.



The models equipped with automatic traction, that means BT, carry out the same operation what the brushes inclination concerns.

PS: As the brushes are assembled on flexible couplings, with automatic traction, these models do not need other adjustments regarding the brushes group.



Adjustment sweeping system 50BS – BTS semiautomatic drive BS

For the BS types (semiautomatic drive) in case there isn't an uniform adherence of the brushes on the floor so a incomplete cleaning function act as:

- lower the sweeping system
- Unscrew the right **M8** screw
- Let the cylinders adhere equally to the floor
- Block the M8 screw



Adjust the traction power, put the inclination lightly in the front part the deck and block the **M8 screw**.

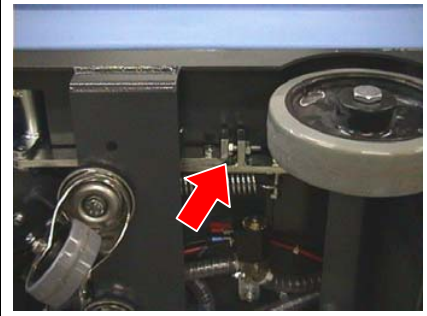


For the automatic traction types (BTS) make the same adjustment for a complete equal cylinder adherence, then check the work surface of both cylinders.

- Wet a little the cylinders (with water)
- Bring the machine on a dry levelled surface
- Lower the sweeping system until the cylinder touch the floor. Rise the cylinders and check the imprint left. It has to be a rectangle and uniform on both sides
- In case you have to modify the set up of the system, **unscrew the M8** at the left of the sweeping system, adjust the deck in the parallel position, so block the screw

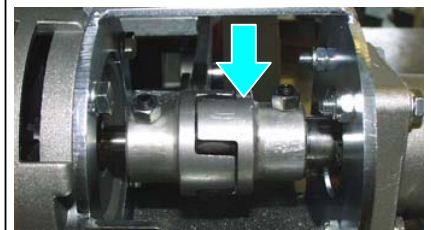


To help the disassembly of the cylindrical brushes, unscrew the **screw** until the lever is at the first hole of the pressure adjustment.

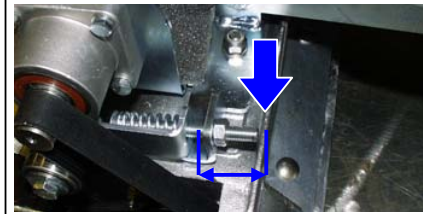


Adjustment brushes base

1. Assemble the joint chain of transmission so that a distance of 2 mm. between two hubs is obtained and tyre toothed star is between two hubs, works correctly, avoiding vibration and shift.
2. Fix dowels and adjuster nuts.

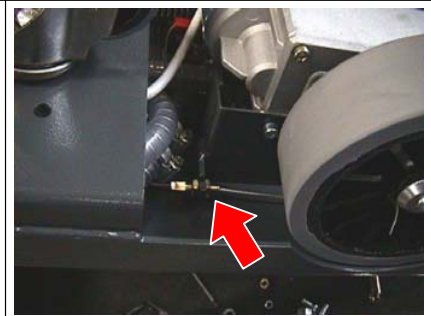


3. Check tension of transmission belt working of screw M8, so that the thread goes out from support of about 28-29 mm.



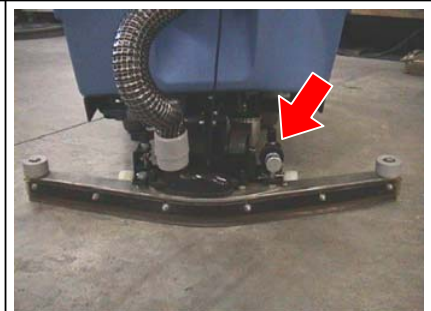
Adjustment of the brake

1. Adjustment brake pads: check the braking uniformity, with the brake inserted, trying to rotate the machine both right and left, checking that the wheels remain blocked in the same way.
2. Adjust the range of the brake handle acting upon the two **adjusters** of the brake cable, one placed under the frame and the other one behind the electric panel.

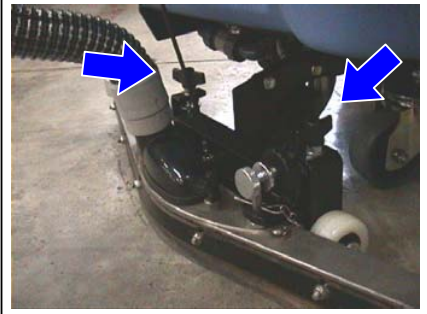


Adjustment Squeegee

1. Adjust the inclination **register** of the rear squeegee rubber when the squeegee is in function, so that this has an even bending. Block through the **adjuster nut**.



2. Adjust the height of the wheels with the suitable **hand wheels** checking that the rubber has an inclination of around 30°-45° and that it is not too much pressed down onto the floor nor too much lifted.
3. Check that the wheels of the squeegee support are in working position, that is to say that they touch the floor.



Final inspection

Check all the functions: washing, drying, forward and backward movement

BETCO US WARRANTY POLICY

10 year coverage

Subject to the conditions stated below, Betco warrants parts and labor on rotationally molded polyethylene tanks/housings and injection molded vacuum head assemblies to be free from defects in materials and workmanship for a period of ten years to the original purchaser.

3 Year Coverage

Subject to the conditions stated below, Betco warrants parts and labor on all other Betco components to be free from defects in materials and workmanship for a period of three years to the original purchaser.

1 Year Coverage

Subject to the conditions stated below, Betco offers a limited warranty on parts and labor on the following equipment: parts and accessories to be free from defects in materials and workmanship for a period of one year to the original purchaser.

- DM Series Vacuums: #85506-00, #85507-00
- Bac Pac Lite Vacuum: #85903-00
- FiberPRO® Floor Dryer: #85507-00
- WORKMAN™ Series Vacuums: #85024-00, #85025-00, #85026-00, #85027-00
- CV100T Vacuum: #85023-00
- All Tools and Accessories
- All Battery Chargers
- All Batteries are pro-rated for 1 year

Allowable Travel Time Warranty Reimbursement:

Eligible equipment: All battery and propane powered equipment products. Warranty period: 90 days from date of sale to the original purchaser. A maximum 60 mile round trip at 44 cents per mile will be allowed for warranty consideration.

Propane Machine Warranty:

Honda engines are warranted by Honda for a period of 2 years against manufacturer defects. Kawasaki engines are warranted by Kawasaki for a period of 2 years against manufacturer defects. All other components (except wear items)* are warranted by Betco for a period of 3 years.

***Wear Items exempt from Warranty consideration include but may not be limited to: power cords, transport wheels, vacuum bags, belts, squeegee blades, pad drivers, clutch plates, handle grips, filters, screens, throttle cables, brushes and carbon brushes.**

Subject to the conditions and exceptions stated in this warranty, Betco warrants the Betco products to be free from defects in material and workmanship, under normal use and service, for the periods listed under the warranty policy to the original purchaser. At any time during the warranty period, Betco will furnish replacement parts for the Betco parts to the original purchaser. Such parts will be furnished and charged including transportation costs, to the original owner through any Betco authorized Service Distributor. If the original part is returned within the warranty policy period from date of delivery for inspection by Betco and is found to be defective the owner will be credited for the cost of replacement parts plus shipping and handling. Replacement parts that have become defective through wear or abuse are not included in this warranty.

This warranty does not apply to damage or defect caused by accident, misuse, negligence, fire, or to any Betco product which has been serviced or repaired by other than an authorized Betco Service Distributor or Betco factory personnel. This warranty is void if products are used for any purpose other than that which was intended. There are no other warranties expressed or implied. In no event shall Betco be liable for incidental or consequential damages or any damage to person or property. (Please note some states do not allow the exclusion or limitations for incidental and consequential damages)

