

**NOTE**

This manual is related to the following Equipment:

# Suction Pump F-31



CE<sub>0123</sub>

**All equipment and accessories should be in good working order prior to use.**

It is the responsibility of each facility's engineering department to test equipments and "routine basis" to determine if the devices are functioning within specifications.

**No device or accessory should be used if a malfunction is suspected.**

The installation, operation, search for breakdowns and the repair of equipment must only be performed by trained personnel<sup>(1)</sup> who have sufficient knowledge about the equipment, spare parts, and the information supplied.



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**CAUTIONS**

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**BEFORE STARTING TO INSPECT THE DEVICE, MAKE SURE IT IS NOT CONNECTED TO THE ELECTRIC POWER SUPPLY NETWORK.**

**DO NOT USE THE APPLIANCE IN THE PRESENCE OF INFLAMMABLE AND/OR EXPLOSIVE LIQUIDS, GASES OR MIXTURES.**

**DO NOT LEAVE THE APPLIANCE EXPOSED TO ATMOSPHERIC AGENTS OR HEAT SOURCES.**

**USING THE APPLIANCE UNDER DIFFERENT CONDITIONS THAN THOSE SPECIFIED IN THIS HANDBOOK MAY PREJUDICE ITS SAFETY AND ITS TECHNICAL PARAMETERS**

#### **DELIVERY AND UNCRATING OF UNIT**

Inspect equipment and shipping crate immediately upon receipt. If any damage is apparent, you should both report it to the trucking delivery person and contact the transportation company immediately.

Make notes of any damage on the Bill Of Lading. Retain all shipping materials for inspection. Any claims for damage must start at the receiving point. Do not return goods without written authorization.

When submitting a claim for shipping damage, request that the carrier inspect the shipping container and equipment.

Check packing slip carefully and make sure all materials have been received as indicated on the packing ticket.

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<sup>1.</sup> An educated (qualified) person has sufficient knowledge or experience to allow him to avoid the dangers presented by electricity, whereas an informed (trained) person is sufficiently informed or works supervised by qualified persons, so as to allow him to avoid the dangers presented by electricity (e.g. operators or maintenance staff).

**TECHNICAL SPECIFICATIONS**

LENGTH	mm	450
WIDTH	mm	150
HEIGHT	mm	280
WEIGHT	kg	4,00
POWER SUPPLY		12V or 110-230V – 50/60 Hz
MAX VACUUM	bar	-0,70
MAX FLOW – WITH FILTER	l/mins	10
MAX FLOW –DIRECT MEASUREMENT ON ASPIRATION VENT	l/mins	18
BATTERY – code 05.0040		12V - 3,3AH
FUSES	A	2x1,25

**ACCESSORIES INCLUDED**

CODE N°  
**05.0001 OR 05.0002**  
**05.00552**  
**05.0010**  
**05.0016**

DESCRIPTION  
**JAR 1000 ML OR 2000 ML**  
**SET OF TUBES**  
**ASPIRATION PROBE CH 14 (DISPOSABLE)**  
**ANTIBACTERIAL/HYDROPHOBIC FILTER (DISPOSABLE)**

## BATTERY

The units must be recharged when not in use.

The appliance can be recharged with the appropriate external cable or by placing the appliance on the relevant recharge stirrup.

**BEFORE USING IT FOR THE FIRST TIME, IT IS NECESSARY TO KEEP BATTERIES UNDER CHARGE FOR 24 HOURS NON-STOP.**

A battery that is constantly under charge lasts about 2 or 3 years.

After this period of time it is recommended to replace it.

If the appliance cannot be put under continuous recharge, recharge it for 24 hours every 15 days.

When finished using it, the device must always be recharged.

**ATTENTION, THE BATTERY MAY BE DAMAGED IF NOT RECHARGED AFTER USE**

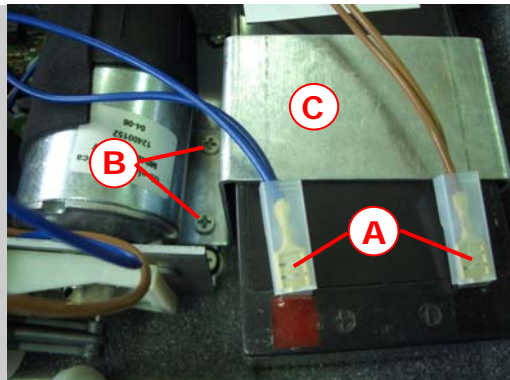
The battery that is completely flat and is not immediately recharged after use must be replaced by the authorized technical assistance.

When recharging, always make sure the warning light on the front panel is on.

- 1) **WHEN ON THE DEVICE'S DISPLAY ONLY THE RED LED IS ON, WHILE THE GREEN LED AND THE TWO YELLOW LED ARE OFF, IT IS NECESSARY TO DISCONTINUE OPERATIONS AND RECHARGE THE DEVICE.**
- 2) **TO CHARGE THE DEVICE, KEEP TO THE FOLLOWING INSTRUCTIONS: CONNECT THE 230/110V PLUG ON THE BACK OF THE DEVICE, THE BLINKING LED SHALL TURN ON. SET THE SWITCH ON "CHARGE" AND KEEP CHARGING FOR AT LEAST 12 HOURS.**

**THE DEVICE CAN OPERATE ON AN EXTERNAL 12 V BATTERY USING THE APPROPRIATE CABLE WITH CAR PLUG**

### *Battery change*



- 1) Detach the connections (A) on the blue and brown wires
- 2) Unscrew the screws (B)
- 3) Raise the slab (C)
- 4) Replace the battery



- 5) Fix the slab (C) with the screws (B)
- 6) Connect the threads verifying the correspondence of the colors :
  - Blue on positive pole
  - Brown on negative pole

## OPERATING

The appliance is a portable **SUCTION UNIT FOR EMERGENCY USE, MINOR SURGERY AND** aimed at freeing the airways from organic secretions.

OPERATIONAL TEMPERATURE: BETWEEN 0° AND 50°

RECOMMENDED RECHARGE TEMPERATURE: BETWEEN 15° AND 30°

OPERATIONAL HUMIDITY: BETWEEN 20 AND 90% RU

**BEYOND 2500 METERS OF HEIGHT, THE ASPIRATION FLOW MAY DECREASE.**

THE FOLLOWING STEPS ARE POSSIBLE ONLY IF THE APPLIANCE IS COMPLETELY RECHARGED

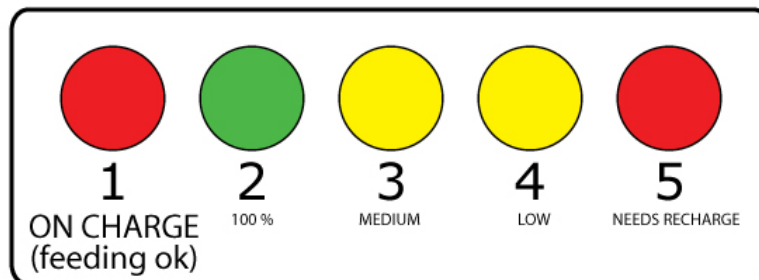
1. TIGHTLY SCREW THE LID ON THE JAR TO GUARANTEE A PERFECT SEAL
2. CONNECT THE SHORT TUBE TO FILTER 1 ON THE "ASPIRATION" 2 VENT
3. CONNECT THE OTHER END OF THE TUBE TO THE "VACUUM" 3 VENT WITH THE FLOAT ON THE JAR'S LID
4. CONNECT THE LONG TUBE 4 TO THE OTHER "PATIENT" 5 VENT ON THE JAR'S LID (VENT WITHOUT FLOAT)
5. CONNECT THE OTHER END OF THE LONG TUBE 4 TO THE PROBE CONNECTOR 6 AND EVENTUALLY THE SUPPLIED PROBE
7. PRESS THE **ON/OFF** SWITCH 7
8. ASPIRATION INTENSITY CAN BE VARIED WITH THE RELEVANT CONTROL ON THE FRONT PANEL OF THE APPLIANCE 8 AND CAN BE CHECKED ON THE APPLIANCE FRONT PANEL 9 VACUOMETER.
9. IT IS RECOMMENDED TO CARRY OUT A FIRST ASPIRATION CYCLE WITH AT LEAST 500 ML OF WATER ONLY.
10. THE ASPIRATED FLUID WILL FLOW IN THE RELEVANT JAR. SHOULD THE AMOUNT OF FLUID EXCEED THE JAR'S CAPACITY, THE OVERFLOW VALVE WILL STOP ASPIRATION.
11. IMMEDIATELY SWITCH OFF THE APPLIANCE BY SETTING THE **ON/OFF** 7 SWITCH ON THE "OFF" POSITION.

**INDICATORS (LED)**

The suction unit **F-31.XX** is equipped with light indicators (led) signaling the battery use, because using the appliance on a low battery may damage the appliance itself, while continuously recharging it does not cause any damage.

**It is recommended to always check the battery's recharge level**

LIGHT INDICATOR	DESCRIPTION OF THE BATTERY LEVEL
LED ON GREEN	MAXIMUM CHARGE (2)
LED ON YELLOW	MEDIUM CHARGE (3)
LED ON YELLOW	LOW CHARGE (4)
LED ON RED	NEEDS RECHARGE (5)
LED NEXT TO THE BATTERY'S CHARGE LEVEL INDICATORS RED	WHEN THIS LED IS ON, IT SHOWS THAT RECHARGE IS UNDERWAY (1)



#### **PERIODIC MAINTENANCE CHECK**

SUCTION UNIT WAS DESIGNED TO KEEP MAINTENANCE TO A MINIMUM. NEVERTHELESS IT IS NECESSARY TO CARRY OUT A DAILY CHECK BEFORE USING THE APPLIANCE.

BEFORE CARRYING OUT ANY CHECK DUE TO MALFUNCTIONING OR ANOMALIES, CALL THE FAZZINI S.R.L. TECHNICAL SERVICE OR PERSONNEL QUALIFIED BY FAZZINI S.R.L.

BATTERY CAN BE CHANGED ONLY BY TRAINED PEOPLE

FAZZINI S.R.L. DOES NOT OFFER ANY WARRANTY ON APPLIANCE THAT UPON INSPECTION BY THE TECHNICAL SERVICE SHOWS SIGNS OF TAMPERING.

THE OPERATOR MUST EXCLUSIVELY REPLACE THE SUPPLIED ACCESSORIES IF NECESSARY IN LINE WITH THE APPLIANCE'S USE INTENSITY

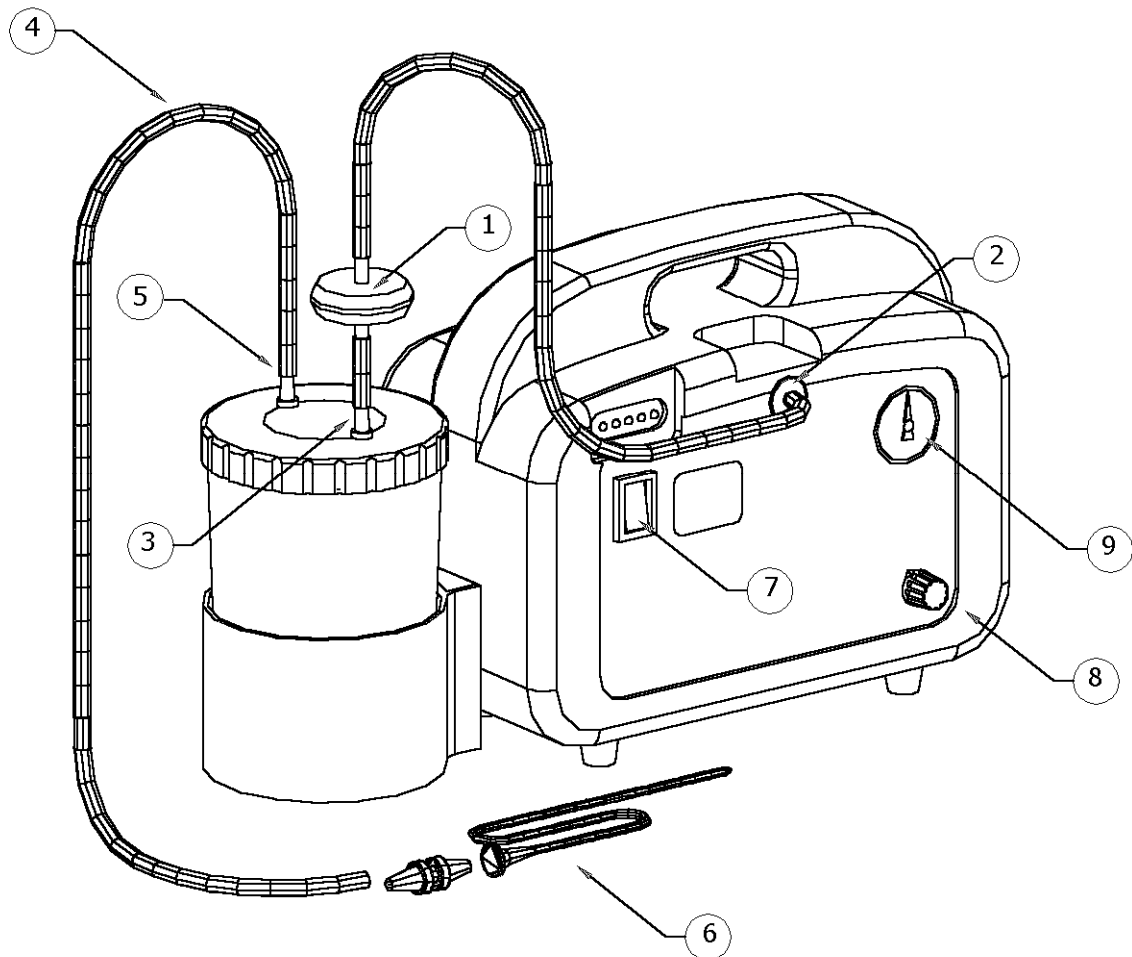
ASPIRATION TUBES SHOULD BE STERILIZED AFTER EACH USE. IN CASE OF REPAIR, THE USER SHOULD CALL FAZZINI S.R.L. TRANSPORTATION COSTS MUST ALWAYS BE AGREED WITH FAZZINI S.R.L. BEFORE SHIPPING FAILED PIECES.

**SHOULD ANY FLUID LEAK IN THE APPLIANCE, CALL THE TECHNICAL SERVICE OF FAZZINI S.R.L. FOR MAINTENANCE. DO NOT OPEN THE UNIT.**

#### **STORAGE**

THE SUCTION UNIT MUST BE STORED IN A DRY LOCATION, PROTECTED FROM ATMOSPHERIC AGENTS  
STORAGE TEMPERATURE: BETWEEN -10° AND + 55°  
RELATIVE HUMIDITY BETWEEN 20 AND 80%

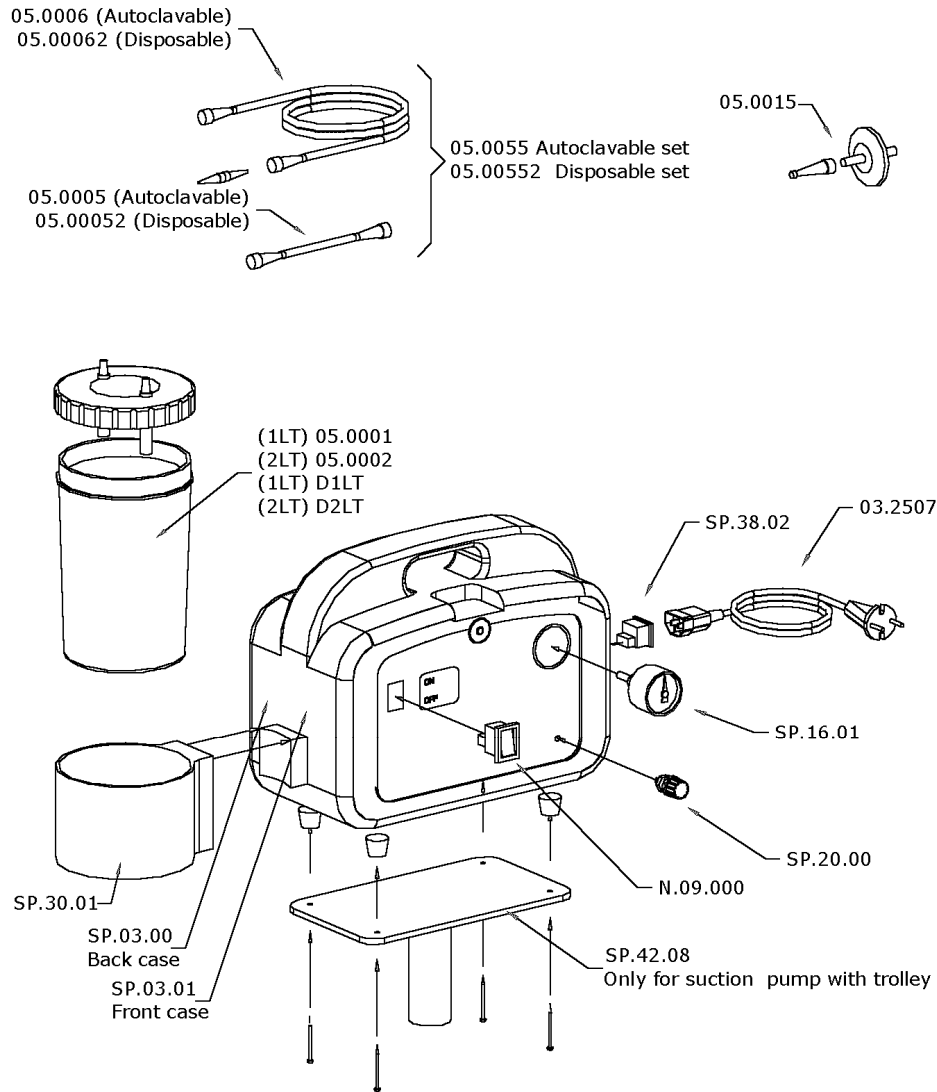
Legenda F-31.xx



1	Filter
2	Vacuum drive
3	Jar drive to the filter
4	Disposable tube to the patient
5	Jar drive to the patient
6	Suction catheter CH 14
7	Main switch
8	Vacuum regulator
9	Vacuum gauge

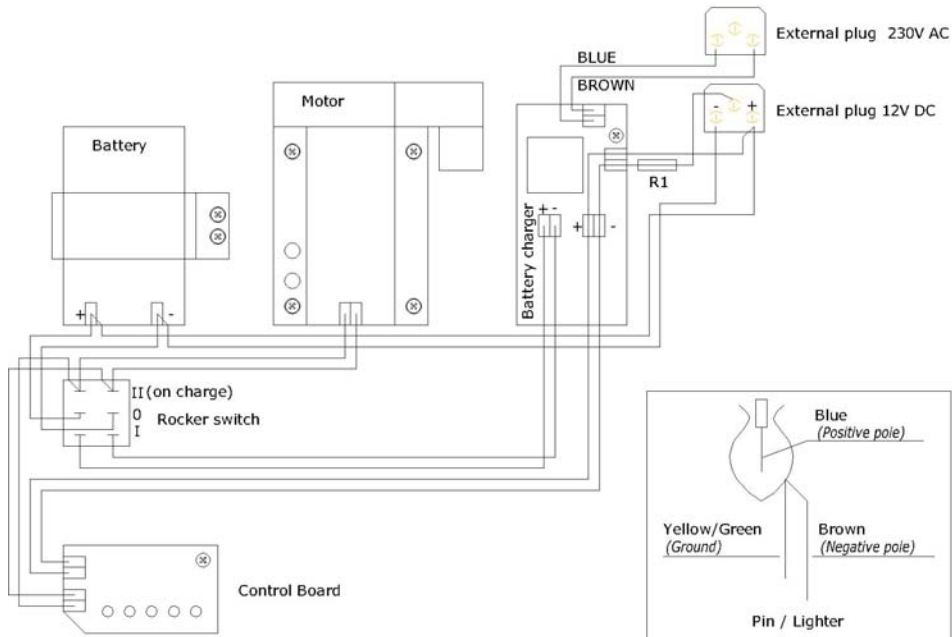


**General assembly – F-31.xx**



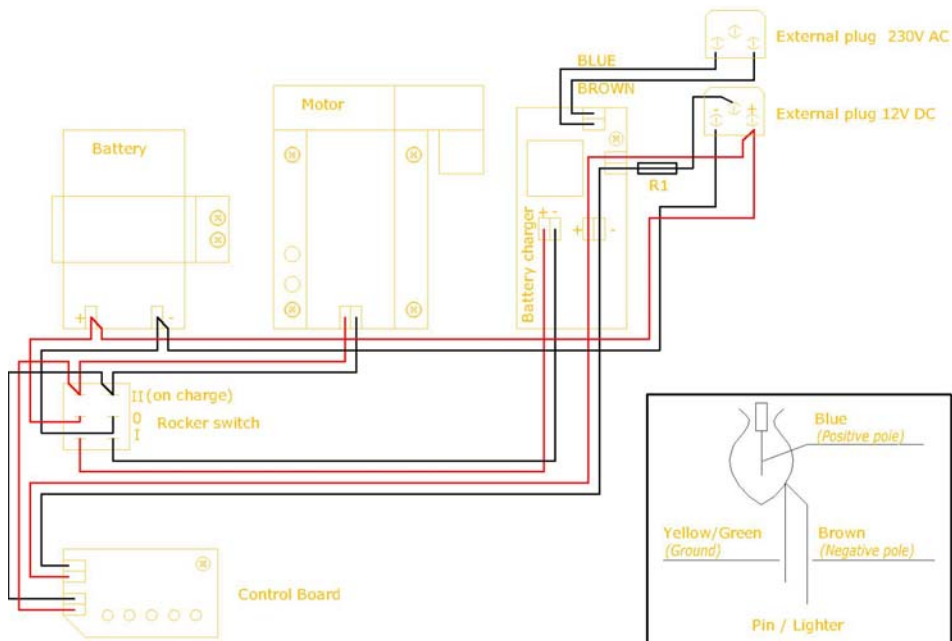
**Functional layout**

*Main*



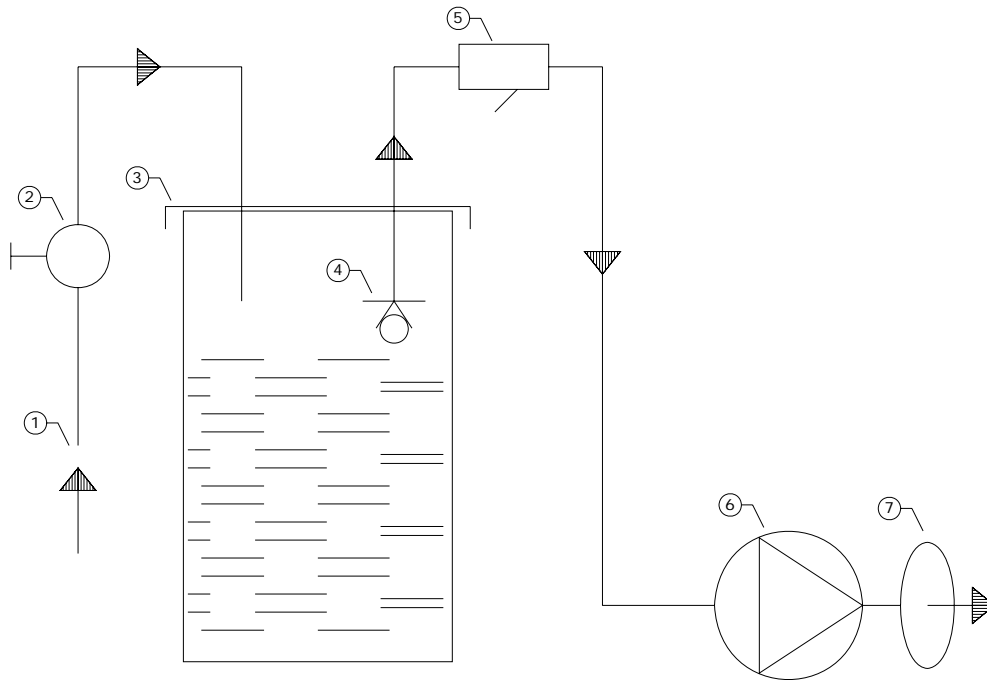
Schema elettrico F-31\_1.dwg

*Wiring*



Schema elettrico F-31\_1.dwg

**Pneumatic circuit**



1	Catheter to the patient
2	Suction regulator
3	Jar
4	Non rebeathing valve
5	Filter
6	Pump / Motor
7	Vent

**Troobleshooting**

	Situation		Possible Cause	Solution
1	Equipment will not turn on	a	Disconnected or loose cord	Check connections and reconnect unit
		b	Faulty wall outlet	Use another wall outlet
		c	Fuses are damaged	Check the fuses inside SP.38.02 If fuses are damaged check the electrical insulation on the electrical apparatus
		d	Main rocker switch is damaged	In ON position, check the presence of the light ; if no light is detected replace with a spare switch
		e	Internal wiring connection are not completed	Open the equipment and verify internal electrical wiring (see functional layout)
		f	Battery low or battery fault	Charge the battery for 12 hours and check (see indicators paragraph)  With a multimeter check the voltage between the positive and negative pole, if the voltage value is not around 10V dc replace the battery (see battery paragraph)
	Situation		Possible Cause	Solution
2	Suction fault	a	Vacuum regulator do not work properly	Turn the manifold SP.21
		b	Internal tubing are not properly connected	Open the equipment and verify internal tubing connection
		c	Internal tubing are choked	Open the equipment and verify internal tubing bends
		d	Pump fault	Open the equipment ,disconnect the tubing and check the pump
	Situation		Possible Cause	Solution
3	The red light flashes in the on/off/charge positions	a	The power cable is inserted in the main feeding	The red light normally flashes in order to signal the presence of the main feeding
	Situation		Possible Cause	Solution
4	The red light is off with SW in the off positions	a	The power cable is disconnected to the main feeding	The red light normally is off when the cable is disconnected to the main feeding