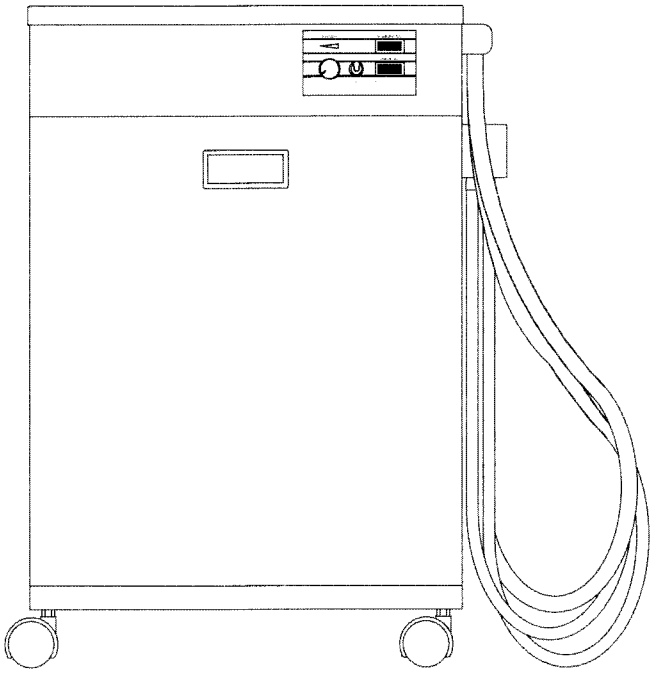
ASPIRETTE ASPIRATOR

Part No. 23-1004

CE 0120

OPERATING MANUAL



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CONTENTS

SECTION	TOPIC	PAGE
1)	**GENERAL NOTES**	1
1.1)	General safety notes	1
1.2)	Intended environment of use	1
1.3)	Electromagnetic environment	1
1.4	Disposal	2
1.5	Symbols and Warnings	2
1.6)	Servicing and Repairs	3
2)	**SPECIFICATIONS AND RATINGS**	3
3)	**DESCRIPTION**	4
4)	**FUNCTIONAL DESCRIPTION**	4
4.1)	Basic opperation	4
5)	**INSTALLATION**	4
5.1	Floor box services	4
5.2)	Services	4
5.3)	Assembling	5
6)	**TESTING**	5
7)	**OPERATING INSTRUCTIONS**	5
7.1)	Precautions	5
7.2)	Inentification of parts	6
7.2.1)	Swiching ON	6
7.3)	Mains fuses	7
7.4)	Attachment of Accesories	7
7.5)	Aspiration	7
7.5.1)	Spittoon funnel	7
7.6)	Solids filter	8
7.7)	Thermal protection	8
7.8)	Rinsing	8
8)	**HYGIENE, DISINFECTION & CLEANING**	8
8.1)	Caution	8
8.2)	Cleaning materials	8
8.2.1)	Surface cleaning	8
8.2.2)	Aspirator tips	9
8.2.3)	Suction hoses	9
8.3)	Daily care	9
8.3.1)	Flushing	9
8.3.2)	Suction canister	10
8.3.3)	Operating hoses	10
8.4)	Weekly care	10
8.5)	Monthly care	11
9)	**REPAIRS & SERVICING**	11
9.1)	General	11
9.2)	Electronic Contro boardsl	11
9.3)	Motor	11
9.4)	Top removal	11
9.5)	Replacing mains cable	12
10)	**TROUBLESHOOTING**	12
	POPULAR SPARE PARTS	12
	PARTS DIAGRAM	15
	WIRING DIAGRAM	18
	ANNEX 1	
	Electromagnetic environment	19

ASPIRETTE DENTAL ASPIRATOR

1.) GENERAL NOTES

These operating instructions form an integral part of the unit. They must be kept close to the unit at all times. Precise observance of these instructions is a precondition for use of the unit for the intended purpose and for its correct operation.
New personnel must be made aware of the contents, and they should be passed on to future operating staff.

1.1) GENERAL SAFETY NOTES

The Tridac ASPIRETTE aspirator unit intended for use only in the practice of dentistry and for use only by trained dental personnel. Please note the following:

The suction tips are 'APPLIED PARTS' i.e they necessarily come into contact with the patient during normal use. The suction hoses could also come into contact with the patient during normal use, but are not considered as applied parts..

ALTERATION OR MODIFICATION OF THIS UNIT MAY IMPACT UPON IT'S SAFETY AND AFFECT ITS CONFORMITY TO THE STANDARDS TO WHICH IT IS BUILT.
WARNING:If this equipment is modified, appropriate inspection and testing must be conducted to ensure continued safe use of the equipment.

If any part of the enclosure(s) is dented or cracked following an impact, servicing is required before continued use.

DO NOT stand, sit or climb on this equipment. DO NOT lean against it.

Check all cables and connectors for damage before use and arrange repair of any defects before proceeding. Do not touch accessible electrical contacts or parts when the patient is present e.g. contacts of connectors, or the pins on the separator probe lead.

WARNING : to avoid the risk of electric shock, this equipment must only be connected to a supply mains with protective earth.

1.2) INTENDED ENVIRONMENT OF USE

The units are intended to be installed in dental surgeries in domestic, commercial, and light industrial premises, clinics and hospital dental departments. These premises must be able to maintain an ambient temperature not exceeding 35C and relative humidity of 30% to 70%.
It must be confirmed that the floor of the installation site is capable of safely supporting the weight of the unit and any other dental equipment in the area.

The ASPIRETTE is a mobile dental aspirator designed to remove secretions from the oral cavity during general dental treatment and to reduce stray spray from dental instruments.

1.3) ELECTROMAGNETIC ENVIRONMENT

The ASPIRETTE aspirator has been designed to satisfy the electromagnetic compatibility (EMC) requirements of international standard EN 60601-1-2. This means that it should operate within its intended environment of use without causing unacceptable deterioration in the performance of other electrical apparatus or appliances and that it should operate without unacceptable deterioration in its own performance as a result of the operation of such apparatus or appliances. Also see APPENDIX 1.

The dentist and/or dental nurse will always be present and the aspirator under their control when the patient is being treated. In the unlikely event of any change in performance of the aspirator they will be able to take appropriate action e.g. stop using the suction, or sit the patient up if suction has failed.

Should adverse effects be noted in the operation of the aspirator, or should it be suspected that operation of the unit is causing adverse effects in other electrical equipment as a result of EMC performance, try separating the affected equipment further, or plugging the other equipment into a different mains electrical outlet. If the situation cannot be remedied users should contact Tridac for guidance and advice.
Examples of adverse effects in the operation of the unit are uninvoked starting/stopping of the suction.

Examples of adverse effects caused by electromagnetic emissions might be sound interference on radio reception or visible disturbances to picture quality of T.V., or video monitors. If such interference is suspected, it may be investigated by alternately stopping and restarting use of the aspirator and noting whether there is a direct relationship between the interference and its operation.

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Do not stack other electronic equipment on top of the aspirator, for example, electro-surgery units, computer peripherals, as there is a risk of reciprocal interference. Similarly, avoid bringing other electrical equipment closely adjacent to the Aspirette.

Portable and mobile high frequency communications equipment (e.g mobile phones) may interfere with electro-medical equipment. To reduce the possibility, avoid using mobile devices in the vicinity of the aspirator unit. Ideally, do not use mobile devices in the dental treatment room.

The aspirator does not have electrical operating hoses, so these do not effect EMC performance. However, do not lengthen any umbilical or internal cables. Failure to observe this advice could result in an increase in electromagnetic emissions or a decrease in immunity.

1.4) DISPOSAL

Waste amalgam from the use of the treatment centre must be separated from waste water by an amalgam separator conforming to the current edition of BS EN ISO 11143. Collected waste must be disposed of via a registered hazardous waste collection service.

A hazardous waste service must also be used for the disposal of clinical waste, including used cleaning cloths/wipes.

At the end of this products life it will be classified as **W**aste **E**lectrical and **E**lectronic **E**quipment and should be disposed of as such, separately from normal waste.
The equipment should be cleaned and disinfected before disposal.
To dispose of this equipment, you should contact your dealer in the first instance, who will normally take away the old product when installing new. Where this is not the case please contact Tridac for details and costs of direct take back arrangements. Tel 01923 242398, Fax 01923 250864, www.tridac.co.uk

1.5) SYMBOLS and WARNINGS

Used on the equipment.

CE mark according to EU Directive 93/43 for medical devices


Equipment: Class 1 Type B


Important information. MUST read user manual


Mandatory Action


Safety symbol used for CAUTION, WARNING or DANGER


Instruction Manual


Pushing Prohibited


Protective Earth


Waste Electrical and Electronic Equipment

1.6) SERVICING AND REPAIRS

Repairs and servicing should be entrusted to the supplier of the equipment who will have the appropriately qualified personnel to carry out such tasks. Should any difficulty be experienced in obtaining satisfactory service, users should contact Tridac for advice.

Circuit diagrams and component part identification can be found in the rear of this manual for use by suitably qualified personnel. Repairers requiring assistance or guidance and advice on the repair of those parts deemed repairable.may contact Tridac by telephone on +44 (0)1923 242398, or write to the address given in the specifications section.

ONLY USE TRIDAC REPLACEMENT PARTS.

2) SPECIFICATION AND RATINGS

Manufacturer Tridac Ltd. Unit 13, The Wenta Business Centre, Colne Way, Watford, WD24 7ND ~~Unit 1A Rectory Farm, Gade Valley Close, Kings Langley, Herts. WD4 8HG England~~

Model Reference	ASPIRETTE aspirator
Part Number	23 1004
Year of Manufacture	This is identified by the last two digits of the units serial
Weight	Gross 36kg Net 29kg
Transport and Storage	Unit and packaging may be transported and stored at 0 to 50 deg.C and relative humidity 30% to 95% and pressure of 500hPa to 1060hPa
Installation Type	Portable
Classification (EN 60601-1)	Class 1. To avoid risk of electric shock this equipment must only be connected to a mains supply with protective earth.
Equipment type (EN 60601-1)	Type B
Anaesthetic Category	Not intended for use in an oxygen rich atmosphere. Not intended for use with flammable anaesthetics
Classification under Directive 93/42/EEC (Medical Devices):	Class IIa
Electricity Supply :	230 Volts
Phase	Single Phase
Frequency	50 Hz.
Electrical Ratings:-	
Total	5 Amps. Max.
Fuses :	
Mains input fuse (Plug)	5 Amps 250volts, 1" x 1/4" HBC to BS 1362
Vacuum motor fuses	T5AH. 250V. 20 x 5mm ceramic. to IEC 60127-2
Electronic Control Module (7)	T100mAL 250V. 20 x 5 mm, to IEC 60127-2 (Internal fuse)
Auxiliary outlet :	2.0 Amps. Max. (intended for light loads, such as amalgamators)
Mode of operation :	Continuous, with intermittent loading. Note : intermittent loading applies when the suction hoses are occluded.
Suction :	Conditions: Operating hoses closed. Suction control at max.
Max. Vacuum	-190 hPa.

ACCESSORIES

Suction tips	Designed to accept suction tips of 16 mm and 11 mm diameter.

3) DESCRIPTION

The Aspirette is a self contained aspiration unit intended for use in a dental surgery. It is designed to remove secretions from the oral cavity during general dental treatment and to reduce stray spray from dental instruments.

The aspirator is suitable for use on either side of the dental chair, provided that the lead is of sufficient length.

4) FUNCTIONAL DESCRIPTION (Refer to fig 1)

4.1) Basic operation

The suction manifold provides 3 operating hoses, one large and two small, they are intended for use with 16 mm and 11 mm suction tips. An adaptor converting the large hose to the 11 mm size can be used to maximise air flow through medium sized tips (8 mm bore).
When any of the operating hoses (1) are lifted from its' hanger, a corresponding microswitch incorporated in the hanger block (see fig 2 item 9) is activated so as to cause the vacuum motor (6) to start up. This results in a partial vacuum being created in the separator (9).

The working ends of the operating hoses are subjected to normal atmospheric pressure in the surgery and so a flow of air is induced in the direction shown, due to the depression in the separator. Thus spray and secretions from the oral cavity are conveyed to the separator by this movement of air.

The separator (9) has a large cross sectional area relative to the manifold vacuum hose (3). Consequently, air flow speed is reduced on entry. However, due to the greater mass (and therefore momentum) of any liquid content in the incoming secretions, this continues to travel downwards and accumulates in the base of the separator. The remaining air content of the incoming flow is sucked through the vacuum motor, so as to maintain a constant depression. Any solids in the incoming air stream are separated out by the inlet filter (10)

To further prevent liquid carry over into the vacuum motor, the incoming secretions are introduced to the separator at a lower point than the vacuum motor connection (5) and the surface of accumulated liquids is maintained at a lower level by a level detector (11). The large gap between the surface of accumulated aspirate and the vacuum motor connection prevents unwanted pick-up.

Air flowing through the system ultimately passes through the vacuum motor, after which it is filtered by the exhaust filter (7). This prevents recirculation of any particles which have not been separated out and is effective down to 5 microns. Alternatively, an option for a ducted exhaust is offered, whereby exhaust emissions are conveyed by tubing to a suitable, externally venting, terminal in the surgery.

The separator includes a liquid level sensor to prevent over filling. If the maximum safe level is reached during operation, the vacuum motor will be shut down and the 'Separator lamp will become lit.
In normal use, replacing the hoses in their hanger at the end of a procedure will shut down the motor and the lamp will become lit

5.) INSTALLATION

5.1) Note

Installation must be carried out by the supplier of the equipment who will have the necessary qualified and trained staff.
When the equipment is being installed in a surgery that may produce waste amalgam, an amalgam separator conforming to the current edition of BS EN ISO 11143 must be used to treat the waste that is collected in the separator canister.
Collected waste must be disposed of via a registered hazardous waste collection service.

5.2) Services

Services required:

Electrical supply	230 volts 50 Hz. 13 amp. Supplied via a three pin socket.

Note: Isolation of the Aspirette from the electrical supply relies on unplugging from the mains supply socket. Access to the socket/plug must not be hindered by the aspirator when in it's working position.

When choosing or installing a suitable electrical socket, ascertain that it is close enough that no undue strain is put upon the Aspirette mains lead when the aspirator is at its maximum extended working position.

5.3) Assembling

The casters are packed inside the machine to prevent damage in transit, and need fitting to the base.
Remove all loose parts within the aspirator, including the separator canister and lid.
Using some suitable protection, lay the machine on its side and fit the casters in the threaded holes provided. It is important that the caster studs are tightened with a spanner to prevent damage occurring in use.

Stand the Aspirator back in the upright position.
Replace the separator canister and lid, connecting the hoses from the manifold and motor.

Continue with the general installation as follows.

Unpack the set of operating hoses and insert the connector into the manifold, a little silicone grease on the connector will ease assembly, and hang the tip adaptors in their respective holders.

The motor is left disconnected as the cartridge has to be removed in order to take out the transit plugs. Undo the two screws holding the motor compartment cover in place and remove it together with the foam insert.

Pull out the motor cartridge and remove the transit plugs fitted top and bottom. Replace the motor cartridge in its housing making sure that its the right way up. Insert the three pin plug into the top left hand corner of the motor cartridge, replace the foam and refit the cover, retain with the two screws.

6) TESTING THE ASPIRATOR

Connect the three pin plug to the designated socket and switch on the supply.
Switch on the aspirator by means of the on/off switch located on the control panel, both indicator lights will light up.
Check that the removal and replacement of any one hose from its holder will start and stop the motor, and that the vacuum is variable by the knob on the control panel.

The water level cut-out device must be checked on installation to see that it is working correctly. This can be done by placing the probes in a tumbler of water with the motor running and removing them when the motor switches off.

SPECIAL NOTE: Before leaving the surgery, make sure that the operator has the instruction manual and that they have had a full demonstration of the unit and fully understands it. Please also hand the registration of purchase form to the purchaser for their completion.

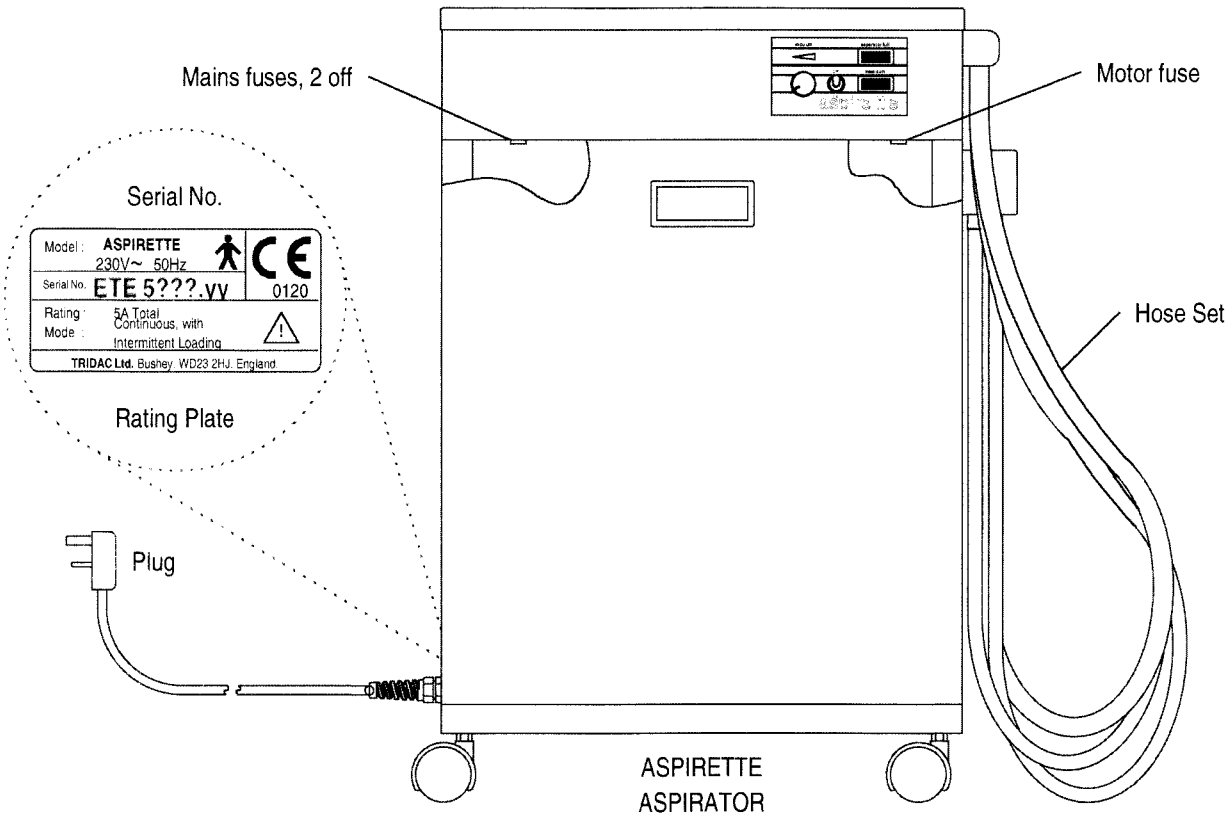
7) OPERATING INSTRUCTIONS

7.1) PRECAUTIONS

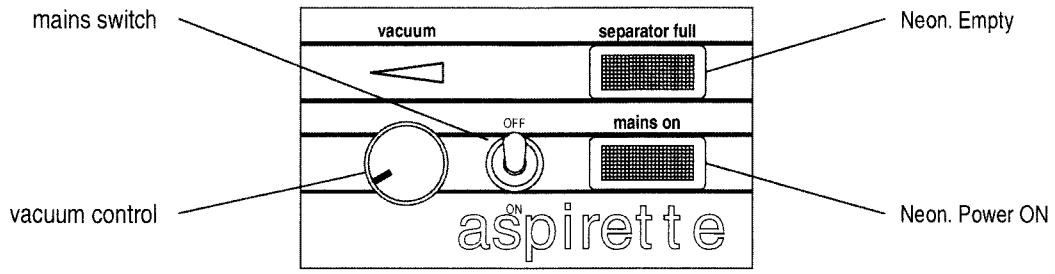
For the safety of staff and patients and to obtain the best performance and reliability from your Aspirette, these operating instructions should be read and observed. Some of the salient precautions are repeated below, with reference to the relevant section of the manual. To prevent unwanted movement of the aspirator, the casters are provided with brakes. Press down on the tabs of at least two casters to lock them and prevent movement.

ENSURE THE MOTOR CARTRIDGE AND CASTORS ARE INSTALLED CORRECTLY (5.3)
WEAR PROTECTIVE CLOTHING DURING CLEANING AND MAINTENANCE (8.1)
DISCONNECT THE ELECTRICAL SUPPLY BEFORE CLEANING AND MAINTENANCE (8.1)
DISCONNECT THE ELECTRICAL SUPPLY OVERNIGHT OR IF UNATTENDED (7.1)
DO NOT BLOCK OFF OPERATING HOSES (7.5)
DO NOT UNDULY RESTRICT OPERATING HOSES (7.5)
MAINTAIN THE SOLIDS FILTER FREQUENTLY (7.6) (8.3.4)
KEEP ALL AIRWAYS CLEAR (7.7)
DO NOT USE FOAMING CLEANSERS (8.3.1)
DO NOT USE WHERE FLAMMABLE GASES OR ANAESTHETICS ARE IN USE (4.1)
DO NOT USE THE MACHINE WITHOUT THE PROBE LEAD CONNECTED (7.5)
THE USE OF SPITTOON FUNNELS SHOULD BE SUPERVISED BY TRAINED STAFF (7.5.1)

7.2) Identification of parts



CONTROL PANEL



7.2.1) Switching on the equipment

Switch on the equipment by means of the on/off mains switch located on the control panel.

Immediately after switching on, the two neons on the aspirator control panel will be illuminated giving the following information:

GREEN When illuminated indicates that the mains supply is ON

AMBER When illuminated indicates that the separator is draining or has been drained and will extinguish on selection of a hose from the hanger block.

Note: When leaving the surgery always unplug the equipment from the mains electrical socket

7.3) Mains fuses

Caution: Isolate the mains electrical supply before attempting to change a fuse.

To change the mains fuse located in the plug, use a suitable screwdriver and unscrew the cover. Pull out the fuse and replace it using a 5 Amp. 250 V 1" x 1/4" HBC fuse to BS 1362. Part No. 10-1067, then refit the cover. This should only be done by a competent person.

To change the mains fuses located above the separator canister, use a suitable flat bladed screwdriver and unscrew the fuse carrier. Pull out the fuse carrier and replace the fuse using a T5AH.250volts.5 x 20mm Ceramic fuse, part number 10-1368. There is also a third fuse above the motor section. Note, these are the only user changeable fuses on the equipment.

7.4) Attachment of accessories

The aspirator is provided with one large and two small operating hoses. The desired tips and spittoon funnel should be attached to these with the motor switched off.

The operating hoses are intended for the following size accessories :

a) Large : to accept suction cannula (tips) and spittoon cups of 16 mm diameter connection shank.
b) Small : to accept suction cannula (tips) of 11 mm diameter connection shank.

The suction tips are simply a push fit into the cannula connectors.

Tip adaptor, part number 22 1231, allows 11 mm cannulas to fit the 16 mm hose. This can usefully increase flow through medium sized tips (8 mm). Furthermore, the larger suction hose is less prone to obstruction by solid particles like lumps of amalgam.

Tip adaptor, part number 60 1038, allows small diameter (6.0 mm to 1/4") disposable saliva ejector tips to be used on the small hoses, a sample of each adaptor is supplied with the Aspirette.

7.5) Aspiration

Removal of any hose from the holder will cause the motor to start, suction will be present at all three hoses at all times. This is necessary to give adequate cooling to the motor. The hoses are intentionally open ended and should **not be blocked off**, even when unused, or the suction motor may overheat. See (7.7)
If the large hose is throttled down with a 16 mm to 11 mm adaptor, the bore of at least one of the remaining small hoses should be maintained at not less than 8 mm, and the other not below 6 mm.

Replacing the hose or hoses will switch off the motor, removing the vacuum from the separator and allowing it to be emptied.
If the aspirator is used for any length of time or a large volume of water is used, the level in the separator will rise until it reaches the level sensing probes, these will automatically switch the motor off which will be indicated by the amber neon on the control panel. The motor will remain switched off until the separator has been emptied. Separator capacity is 1.5 litres and so suction is unlikely to stop frequently when only small quantities of spray and saliva are being aspirated.

NEVER use the aspirator without the probe lead connected and in working order.
The aspiration speed may be varied by means of the knob on the control panel via a solid state speed control.

7.5.1) Spittoon funnel

The hand spittoon (spit cup) supplied with the Aspirette, in common with other manufacturer's products, has a diameter of approximately 100 mm (4 inches). This makes it comparable in size to the mouth and jaw area of a patient and if it was brought into contact with the skin it could get sucked onto the face.

Therefore the use of the hand spittoon should be SUPERVISED by trained staff

The maximum vacuum attainable by the Aspirette is well below the value deemed to be safe in International Standard BS EN ISO 10637:2000. Nevertheless an incident would be most unpleasant for the patient.

Patients should be instructed to spit towards the near side of the funnel - if brought too close the bridge of the nose will prevent a seal - and not towards the far side, in a manner which could present a path of soft tissue around the chin and top lip.

Should an incident arise the quickest way to remove vacuum is to:

PULL THE OPERATING HOSE FROM THE HAND SPITTOON.

Vacuum can also be stopped by switching off the Aspirette mains switch or operating the hanger block microswitches (all three must be operated). However, removing electrical power results in a slow decay of vacuum as the motor runs down.

7.6) Solids filter

A filter is included at the inlet port of the separator cover, to collect solid waste, such as amalgam and dentine particles. It is easily extracted for emptying and cleaning by pulling from the filter tube. It should be regularly checked and occasionally replaced, see section (8.3.4). A clogged filter will strangle the air flow to the motor.

7.7) Thermal protection

The suction motor cartridge is fitted with a thermal cut-out which will operate if the motor windings exceed their allowable temperature rise. Once operated, the motor will not restart until the winding temperature has fallen to the reset value. Because the motor has a large thermal mass, this could take tens of minutes.
Given a serviceable motor cartridge, shut down is only likely to occur if the aspirator air flow is unduly restricted. To prevent this, ensure that the separator inlet filter is regularly maintained, that the manifold and all hoses are clear and clean and that the precautions regarding restriction of the operating hoses are adhered to.

7.8) Rinsing

In normal use, it is frequently the case that only small quantities of secretions, such as spray and saliva, are aspirated. These secretions tend to be sticky and often contain fine particles of solids from drilling operations. When fanned by the high air flow rates occurring inside the suction tubings, the secretions tend to dry out, leaving stubborn deposits.
The internal condition of hoses and other parts contacted by aspirated secretions can be improved by keeping the internal bores rinsed. To do this, we recommend flushing used operating hoses after each patient, by aspirating a tumbler of water. See section (8.3.1) for hints on flushing.

8) HYGIENE, DISINFECTION & CLEANING

8.1) Caution.

Always isolate the electrical supply to the unit when cleaning is undertaken, unless flushing of the suction is being carried out.

8.2) Cleaning materials.

Recommended Detergent: Near neutral washing-up liquid, diluted. e.g." Fairy liquid".
Approved disinfectants:

1 "FD 366 sensitive' by Durr Dental AG
2 'Mikrozid AF' surface disinfectant, by Schulke & Mayr.
3) 'Mikrozid' alcohol free, by Schulke & Mayr.
4) 'Oratol plus' by Dürr Dental.(Please observe the distinction from standard Oratol)

When cleaning dental equipment, wear suitable protective clothing. This would include a face mask, eye protection and strong rubber gloves, household rather than surgical, as there is a danger that the latter could be easily split or punctured.
Keep water/solutions away from electrical devices
Use disposable, soft cloths for cleaning.

After carrying out any of the following, dispose of all used contaminated materials, i.e, cleaning cloths, barrier film etc as clinical waste.

8.2.1) Surface Cleaning: After each patient.

Cleaning of the unit's surfaces may be accomplished safely by wiping with a soft cloth, dampened with a mild detergent solution. Ensure that the cloth is squeezed out. DO NOT soak the unit. Dry the unit after cleaning.

Aggressive detergent based products, such as proprietary / domestic floor cleaners may damage the surfaces and must be avoided. Also avoid abrasive cleaners, which will dull, and eventually thin, the surface coating.

The approved disinfectants may be used after cleaning. Use liquid products applied to a cloth - do not use spray application directly on to the unit. Do not use alcohol based cleaners on stainless steel.

8.2.2) Aspirator tips (cannulae). After each patient.

Reusable tips should be cleaned and sterilised after each patient.
Metal tips, if used, are normally chromium plated and may be sterilised many times without deterioration. The plastic spray interceptor (16 mm fitting) P/No. 60 1101 is also autoclavable but must be expected to deteriorate after fewer cycles.
Tips should be washed in a bowl of detergent and the bores brushed (see section 7.1). Use the size of brush, 70 1005 or 70 1006, appropriate to the bore of the tip. Reserve these brushes for tip cleaning only : do not use them for other jobs. Rinse the tips thoroughly after cleaning.
Once cleaned the tips can be autoclaved at temperatures up to 135C.

8.2.3) Suction Hoses After each patient.

The suction tubing and tip connector may be cleaned with a cloth dampened with detergent, then dried.
Once cleaned they may be wiped with approved disinfectants.

8.3) Daily Care

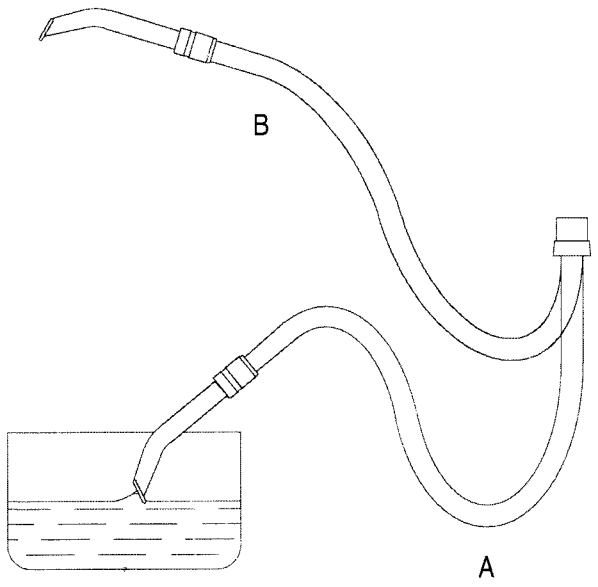
8.3.1) Flushing.

Aspiration equipment should be flushed at least once a day with a specialist NON FOAMING disinfectant cleaner as recommended in (8.2).

DO NOT USE DETTOL, TOILET CLEANSER or any CLEANERS that do NOT CONTAIN AN ANTI-FOAMING AGENT. These WILL DAMAGE your Aspirator. Also avoid bleach and cleaners based on aldehydes.
BEWARE: Not all non foaming cleaners live up to that claim!

Since freshly deposited secretions are easier to shift and disinfectants are less effective, or ineffective, on heavily soiled parts, we recommend carrying out a first flush with plain water. This is also much cheaper than specialist aspirator cleaners! Follow up with with the disinfectant product.

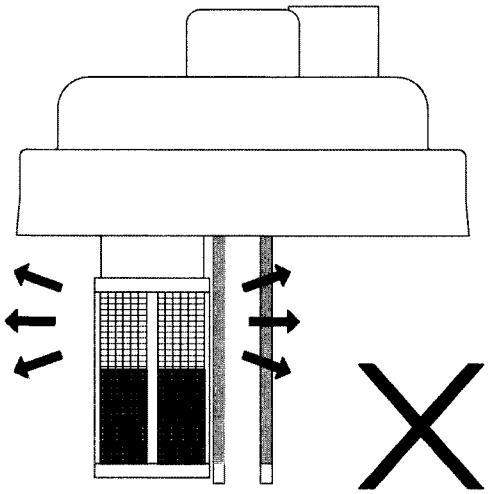
Make up 1.0 litre of the aspirator cleaner to the manufacturer's recommended dilution.
Suck the solution in equal quantity through each of the operating hoses that has been used. Do so by holding the suction tip only partially submerged, as indicated in the diagram. This allows a turbulent mixture of liquid and air to enter the tube, which gives a greater cleaning effect and longer exposure time.
Lift the hose occasionally to position B. This helps heavy sediments, like amalgam, to be flushed through. These might otherwise fail to be lifted from deep droops in the hose such as A.
Stop the suction as soon as the flushing solution has been used up, so that internal parts are wetted for 10 minutes or so to allow disinfectant action, without the drying effect of air flow. Then restart suction and briefly lift the hoses, as at B, to dispose of any remaining sediments. Now leave the suction on for a minute or so, to reduce any remaining liquid inside the manifold.



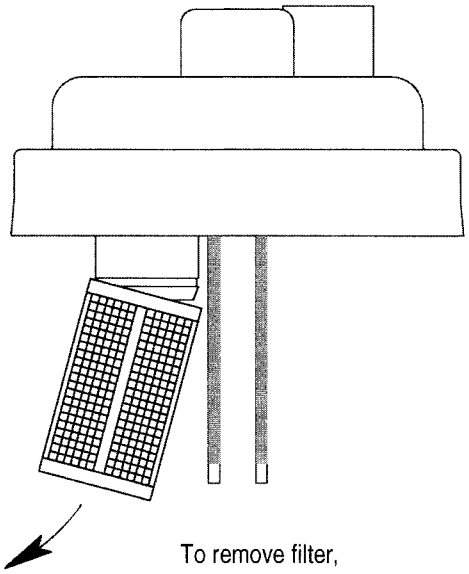
8.3.2) Suction Canister and filter.

Lift out the separator canister from the aspirator for cleaning. Remove the anti turbulence baffles from inside and clean all parts.
The filter at the inlet port of the separator cover, is easily extracted for emptying and cleaning by pulling sideways from the filter tube, tip the contents into your contaminated waste receptacle and clean before replacing.Trapped debris can be shifted from the mesh by brushing from the outside.
It should be regularly checked and occasionally replaced, a clogged filter will strangle the air flow to the motor.

Clean the separator cover and wipe over the probe rods with a cloth.



A clogged filter will divert the incoming stream sideways with the danger of it being sucked into the motor.



To remove filter, pull sideways and downwards

8.3.3) Operating hoses.

These should be cleaned daily to maintain clean external and internal surface and free bores.

The operating hoses are supplied as combined hoses which are easily detached from the manifold. The manifold is fitted with an 'O' ring seal inside that grips the hose connector. The hoses are detached by pulling on the connector. Do not pull on the hose.
The hose connector and the manifold must be kept clean to ensure a seal when the hoses are refitted.

Hoses should be cleaned after the flushing operation described in section (8.3.1). They may be immersed in detergent solution for cleaning and should be cleared of debris at the tip connectors and manifold connector by using the brushes provided.
Subsequently they can be soaked in aspirator cleaner / disinfectant(4), if desired.
After cleaning, the hose connector should be smeared with a little silicone grease on the surface which enters the manifold, this will lubricate the 'O' ring that is located within the manifold. Do not over lubricate or the 'O' ring may lose its grip. Wipe off excess from both parts if this occurs.

The other end of the hoses are fitted with tip connectors. These incorporate 'O' ring seals that grip attached suction tips and prevent leakage. Ensure that the bores are kept clear of deposits. If the 'O' rings become worn and lose their grip they should by replaced.

8.4) Weekly Care

i) Clean out the hose manifold with the brushes supplied after removing the hoses.

ii) Remove separator canister and clean. Do not use an abrasive cleaner.

iii) Clean the separator cover (particularly around the probe rods) and its sealing ring.

8.5) Monthly Care in addition to the above.

i) Remove convoluted hose from separator to Manifold, remove any build up of deposits and clean.

ii) Remove the bacteriological filter situated below the motor, and wash in warm soapy water,rinse, then leave to dry overnight and replace. The arrow on the filter should point downwards.

9.) REPAIRS AND SERVICING

9.1) General

Provided the maintenance instructions described in section (8) are followed by the user, there is little need for third party routine servicing of the aspirator.
Note: Before presuming an electrical fault ensure that it does not exist purely due to a blown fuse

Repairs and servicing should be entrusted to the supplier of the equipment or appropriately qualified personnel to carry out such tasks. Should any difficulty be experienced in obtaining satisfactory service, users should contact Tridac for advice.

Circuit diagrams and component part identification can be found in the rear of this manual for use by suitably qualified personnel. Repairers requiring assistance or guidance and advice on the repair of those parts deemed repairable.may contact Tridac by telephone on +44 (0)1923 242398, or write to the address given in the specifications section.

ONLY USE TRIDAC REPLACEMENT PARTS.

Replacement of the following 'O' rings annually will prevent problems arising from loss of seal :

Suction Manifold 'O' rings
Tip connector 'O' rings
Internal hoses 'O' rings

The suction motor is of a commutator type and must be serviced annually. Electrical safety must also be checked annually. It is often possible to include this as part of the normal Health and Safety checks which are required to be carried out on all the practice electrical equipment. Earth integrity should be confirmed and wiring inspected for physical condition, particularly where the mains cable exits the Aspirette side panel.

9.2) Electronic Control Boards

The speed control and probe cut out boards, are located under the stainless steel top, remove the four screws to remove. Both boards are held in place by two screws on each, disconnect the necessary wires and remove.

9.3) Aspirator Motor: Pt. No: 20-1030.

WARNING. This could be hot, allow to cool before handling.

Should it be necessary to replace the motor, then this is a very simple operation and can be done easily as follows:
1. Switch off the power supply.
2. Remove the two screws holding the motor compartment cover3. Remove the front sound proofing insulation insert.
4. Remove the three pin plug from the motor cartridge.
5. Pull on the handle and remove the motor cartridge by drawing it towards you.
6. Replace with a new cartridge following the instructions that are supplied with it. In particular, make sure that both transit plugs are removed before fitting. Ensure that the cartridge is pushed firmly back into position with the connector located in the top left hand corner.

9.4) Top Cover Removal:

To remove the stainless steel top, remove the four screws and lift off.

9.5) Replacing Mains cable:

Should it be required to replace the mains electrical cable within the aspirator, the following procedure should be followed.
Isolate the electrical supply to the aspirator by unpluging from the mains socket socket. Remove the top as above (9.4) and remove the clamp securing the cable Undo the clamping screws at the terminal block and disconnect the wires.
Undo the screw holding the cable clamp to the motor section, located behind the separator, and remove from cable.

Unscrew the spiral part of the cable gland, on the outside of the cabinet and slide down the cable.
You should now be able to pull the cable through the gland and remove it completely.
After replacing, reconnect the cable at the terminal block, securing with the cable clamps as before. Replace or refit the three pin plug at the free end.
Note. Leave the earth conductor longer than the live and neutral wires so that it can not disconnect before them.
Refit all items removed and test for function and safety.

Refit all items removed, pay particular attention to the cable gland, making sure that the rubber sleeve is correctly located before refitting the spiral part.
Test for function and safety before using the aspirator.

Note. Use certified cable of harmonised specification H05VV-F or better and conductor cross sectional area of 1.0 mm^2. Do not fit a cable longer than the original. If in any doubt, purchase the cable from Tridac.

10) TROUBLESHOOTING

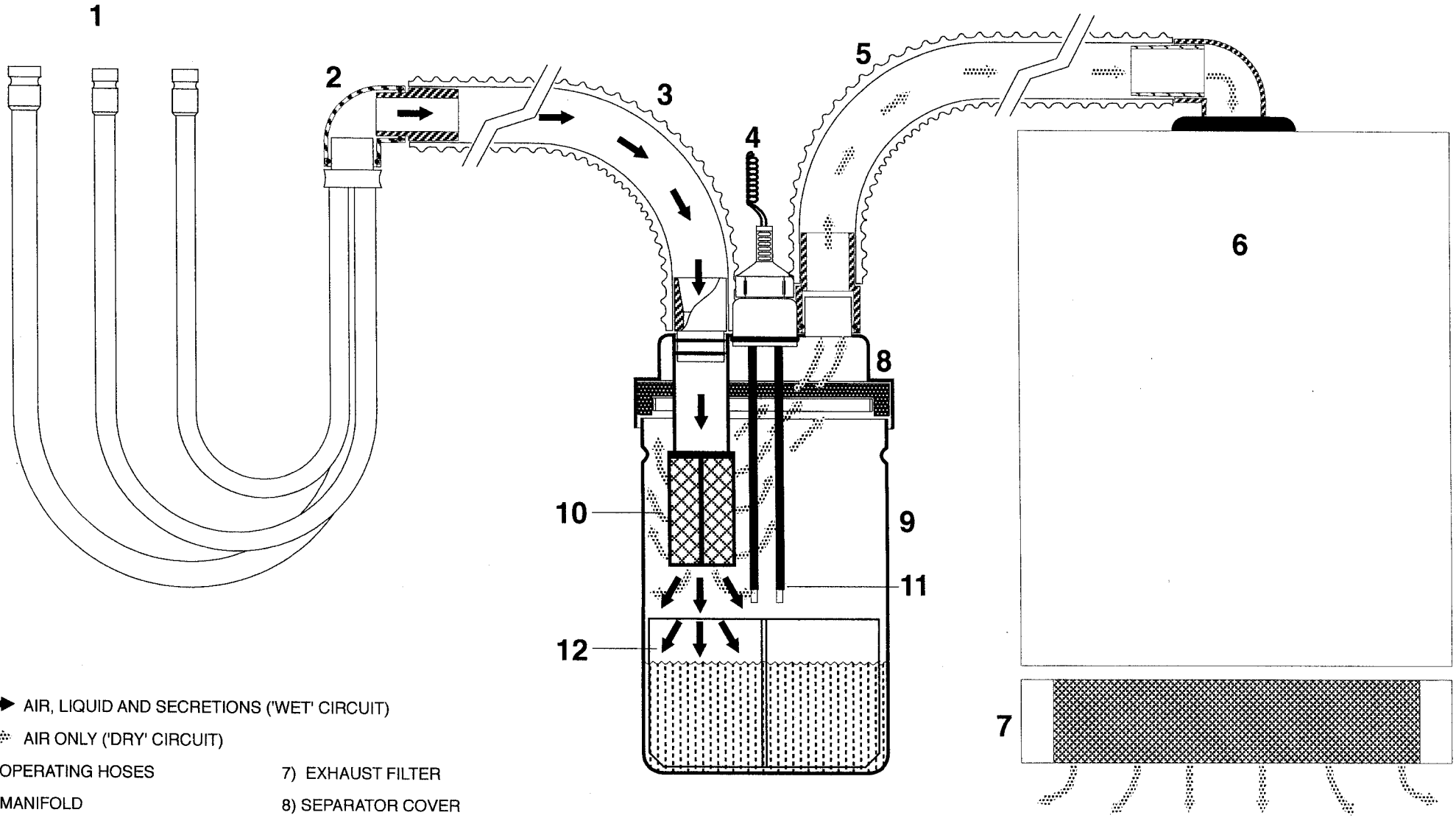
Reminder: Servicing should be entrusted to suitably qualified personnel.

The aspirator is a fairly simple product with few problems arising. The cause of any that do is usually evident.

POPULAR SPARE PARTS

Part No.	Description	Qty. used	Comments
10-1057	Fuse, T100mAL. 250volts. 5 x 20mm	1	Fitted P.C.B. inside
10-1067	Fuse. 5amp.250volts. 6.3 x 25.4mm Ceramic	1	Fitted to plug
10-1368	Fuse, T5amp.H.250volts.5 x 20mm Ceramic	3	Mains power fuse
20-1030	Motor cartridge	1	
22-1004	Hose assy. Vacuum	1	Motor to Canister
22-1291	Operating hoses, set of 3	1	Includes manifold connector
22-1292	Hose assy. Vacuum	1	Manifold to Canister
30-1001	O ring	1	Upper ring on Canister valve
30-1002	O ring	1	Lower ring on Canister valve
30-1007	O ring	1	For large tip connector
30-1008	O ring	2	For small tip connector
30-1086	O ring	2	On hose to Canister
30-1110	O ring	3	For suction manifold elbow
35-1150	Foam filter element	1	Located under motor
70-1095	Replacement filters	1 pkt	For Canister
ANCILLARY PARTS			
22-1231	Tip adaptor reducer	A/R	To reduce large hose to small
22-1232	Tip adaptor enlarger	A/R	To increase small hose to large
60-1038	Tip adaptor for disposable tips	A/R	Fits small hose
60-1101	Spraysceptor	A/R	Large plastic tip
70-1005	Cleaning brush 16mm diameter	A/R	
70-1006	Cleaning brush 6mm diameter	A/R	
70-1138	Cleaning brush 25mm diameter	A/R	
60-1017	Hand spittoon	A/R	Fits large hose or tip enlarger

A/R = As required



AIR, LIQUID AND SECRETIONS ('WET' CIRCUIT)

AIR ONLY ('DRY' CIRCUIT)

1) OPERATING HOSES
2) MANIFOLD
3) VACUUM HOSE (MANIFOLD)
4) PROBE CONNECTOR
5) VACUUM HOSE (MOTOR)
6) VACUUM MOTOR/HOUSING
7) EXHAUST FILTER
8) SEPARATOR COVER
9) SEPARATOR
10) SEPARATOR INLET FILTER
11) LEVEL DETECTOR RODS (PROBE RODS)
12) ANTI-TURBULENCE BAFFLES

Fig. 1 VACUUM CIRCUIT

Issue 2 06 99

ITEMS LIST FOR THE TRIDAC ASPIRETTE

(Refer to Fig. 4)

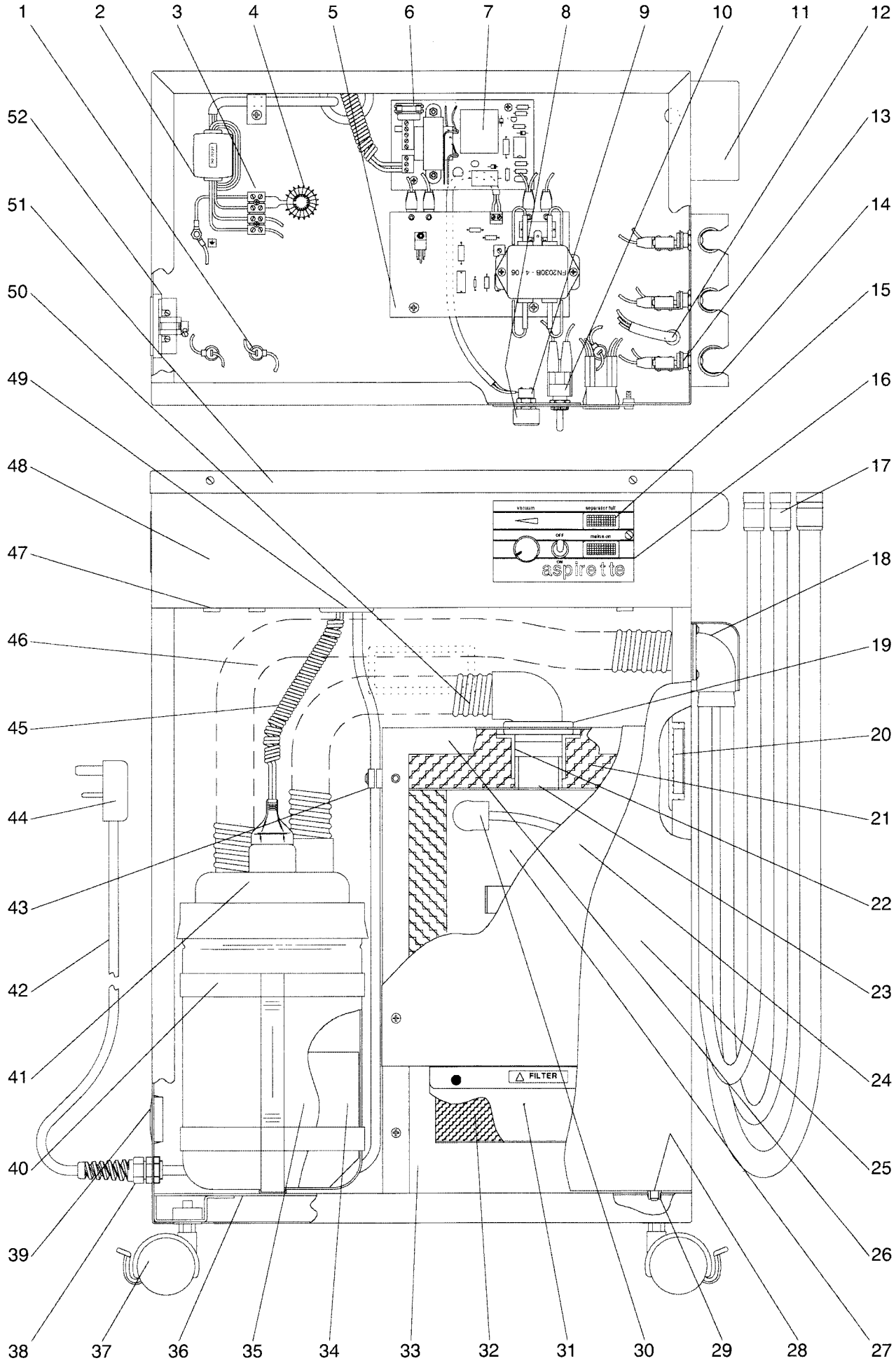
Item	Description	Part No.	Item	Description	Part No.
1	Fuse Holder (x3)	10 1123	26	Motor box section	40 1094
2	Ferrite core (Suppression)	10 1372	27	Motor Cartridge	20 1030
3	Terminal Block	10 1167	28	Door Peg (x2)	35 1035
4	Earth Inductor	12 1109	29	Plastic Bush (x2)	35 1384
5	PC4 Speed Control PCB	20 1002	30	Plug. 3 Pin (motor)	10 1050
6	Fuse, PC6, T100mAL 250V, 20mm x 5 mm	10 1057	31	Filter draw	40 2116
7	PC6 Cut Out PCB	20 1003	32	Air Filter, Foam Element	35 1150
8	Knob. (Speed Control)	10 1064	33	Filter Support	40 1096
9	Speed Control Potentiometer	10 1055	34	Anti Turbulence Baffle	35 1061
10	Mains Switch	10 1188	35	Separator	45 1115
11	Manifold Cover	40 1101	36	Base Plate	40 1093
12	Wiring Loom	22 1109	37	Castors (Set of 4)	50 1045
13	Micro Switch (x3)	10 1036	38	Strain Relief Bush	15 1186
14	Hanger Block	45 1101	39	Blanking Plug	35 1182
15	Neon.240 volt (Green Colour)	10 1324	40	Separator Cradle	40 1123
	Neon.240 volt (Amber Colour)	10 1326	41	Separator Cover Assembly	22 1112
16	Control Panel Label	75 1015	42	Mains Cable. 3 Core (9ft/2.75mtr.)	15 1151
17	Operating Hose Set (plug in)	22 1291	43	Clip (x2)	15 1085
18	Manifold Assembly	22 1280	44	3 pin mains plug	10 1263
19	Grommet, 1.75"	30 1035	45	Plug and Lead. 2 Pin	10 1054
20	Door Catch. Magnetic (x2)	70 1012	46	Vacuum Hose, to Manifold	22 1292
21	Sound Insulation (foam set)	35 1016	47	Fuse T 5AH 250V. 20 mm x 5 mm (x 3)	10 1368
22	Sealing Sleeve, Silicone	30 1046	48	Cabinet	40 1874
23	Motor Compartment Liners (x2)	35 1018	49	Grommet, 1"	30 1034
24	Motor Compartment Cover	40 1095	50	Vacuum Hose, from Motor	22 1004
25	Door	40 1875	51	Stainless Steel Top	40 1102
	Door handle	70 1145	52	Flush socket outlet	10 1008

ASSEMBLIES PARTS LIST

(Refer to Fig. 5)

Item	Description	Part No.	Item	Description	Part
1	Large tip connector assy., with 'O' ring	22 1026	14	Separator cover seal	30 1042
2	Small tip connector assy., with 'O' ring	22 1025	15	Filter basket (pack of 5)	70 1095
3	Large suction tubing, silver grey	32 1007	16	'O' ring	30 1107
4	Small suction tubing, silver grey	32 1006	17	Retaining band (Separator cover seal)	25 1061
5	Manifold connector	35 1233	18	Manifold adaptor	35 1236
6	'O' ring, small tip connector	30 1008	19	Vacuum hose, 1.25" Ø (per foot)	32 1012
7	'O' ring, large tip connector	30 1007	20	Separator cover bush	35 1034
8	Tip connector body, small	35 1231	21	'O' ring	30 1086
9	Tip connector body, large	35 1232	22	Elbow, 1" x 90 degree	55 1044
10	'O' ring	30 1110	23	Elbow adaptor	35 1015
11	Probe rod assembly (c/w 30 1107)	22 1289	24	Hose connector, female	35 1240
12	Filter tube	35 1028	25	'O' ring	30 1001
13	Separator cover (spinning only)	45 1067			

Fig. 4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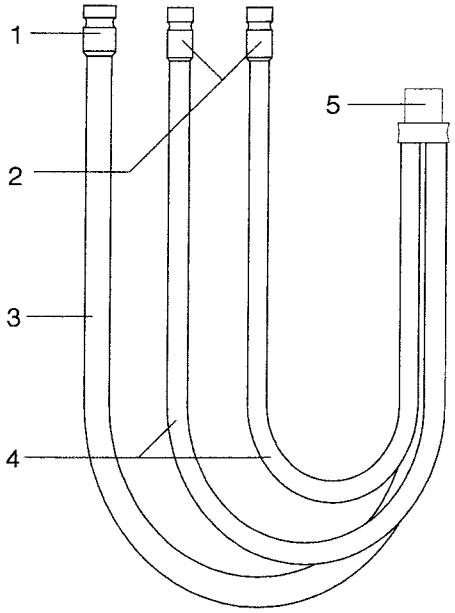
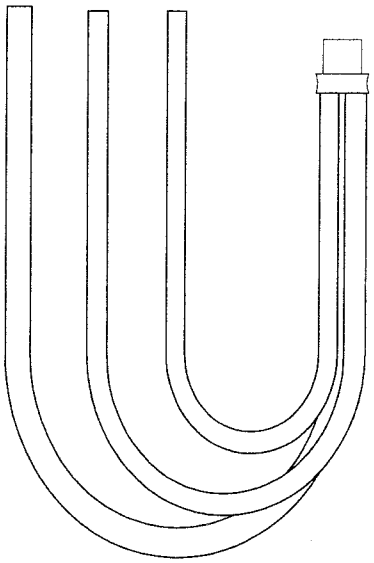
52
vacuum
separator full
off
motor on
on
aspirette
FILTER

FIG. 5 : ASSEMBLIES FOR TRIDAC ASPIRETTE

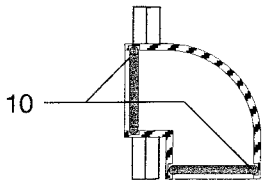
22 1291 OPERATING HOSE SET, WITH TIP CONNECTORS



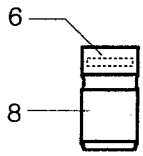
22 1446 OPERATING HOSE SET, WITHOUT TIP CONNECTORS



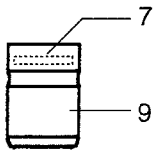
22 1280 MANIFOLD ASSEMBLY



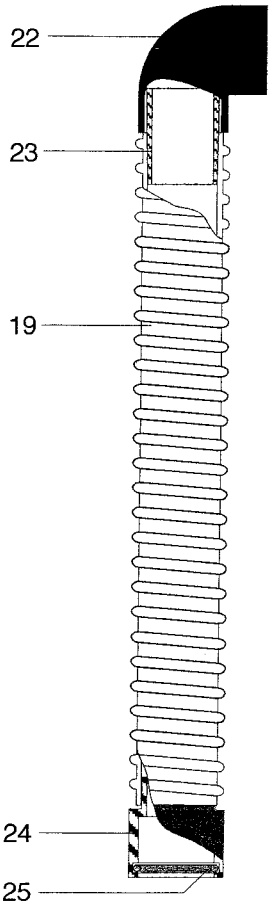
22 1025 SMALL TIP CONNECTOR ASSY.



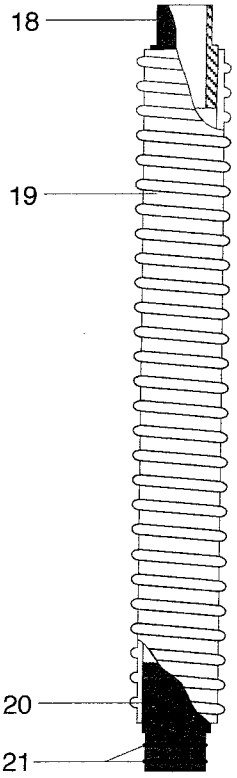
22 1026 LARGE TIP CONNECTOR ASSY.



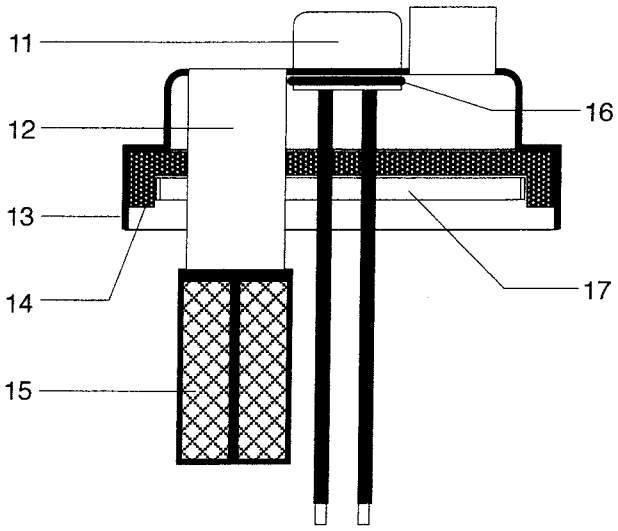
22 1004 VACUUM HOSE ASSEMBLY, MOTOR



22 1292 VACUUM HOSE ASSEMBLY, MANIFOLD

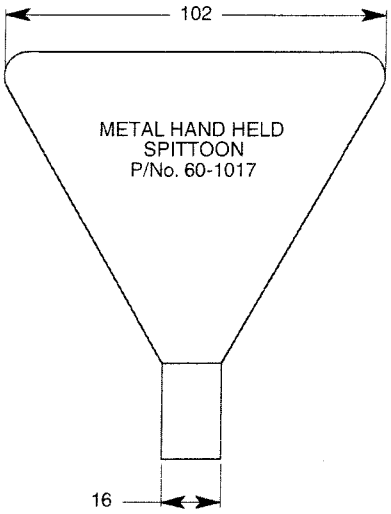


22 1112 SEPARATOR COVER ASSEMBLY



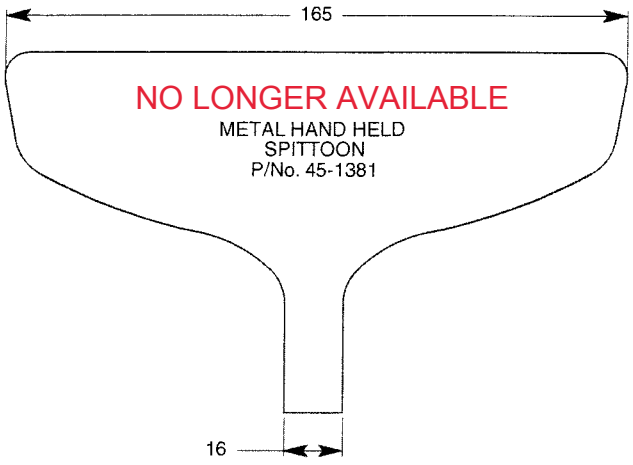
Issue 1 May 1999

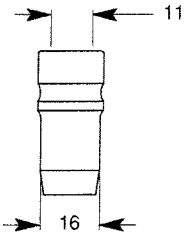
OPTIONAL HAND SPITTOONS, ASPIRATION TIPS AND ADAPTORS for use with the TRIDAC VARIDENT 80 aspirator or any EUROPEAN SIZED SUCTION SYSTEMS



TIP ENLARGER.
P/No. 22-1232

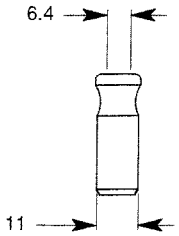
Use to adapt spittoons to small hoses





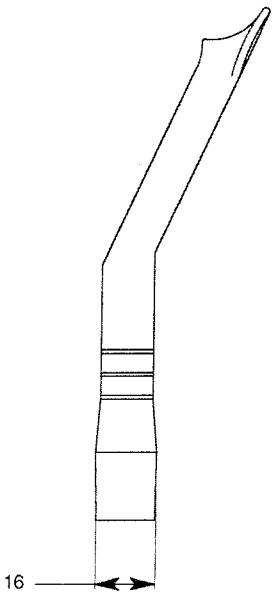
TIP REDUCER.
P/No. 22-1231

Use to allow smaller tips to fit large hose (more efficient)

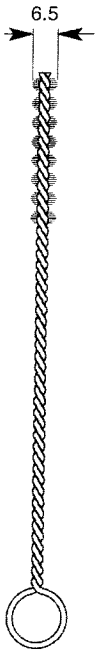


TIP ADAPTOR.
P/No. 60-1038

Use to fit saliva ejector tips to small hoses

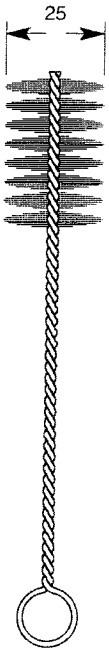


60-1101



70-1006

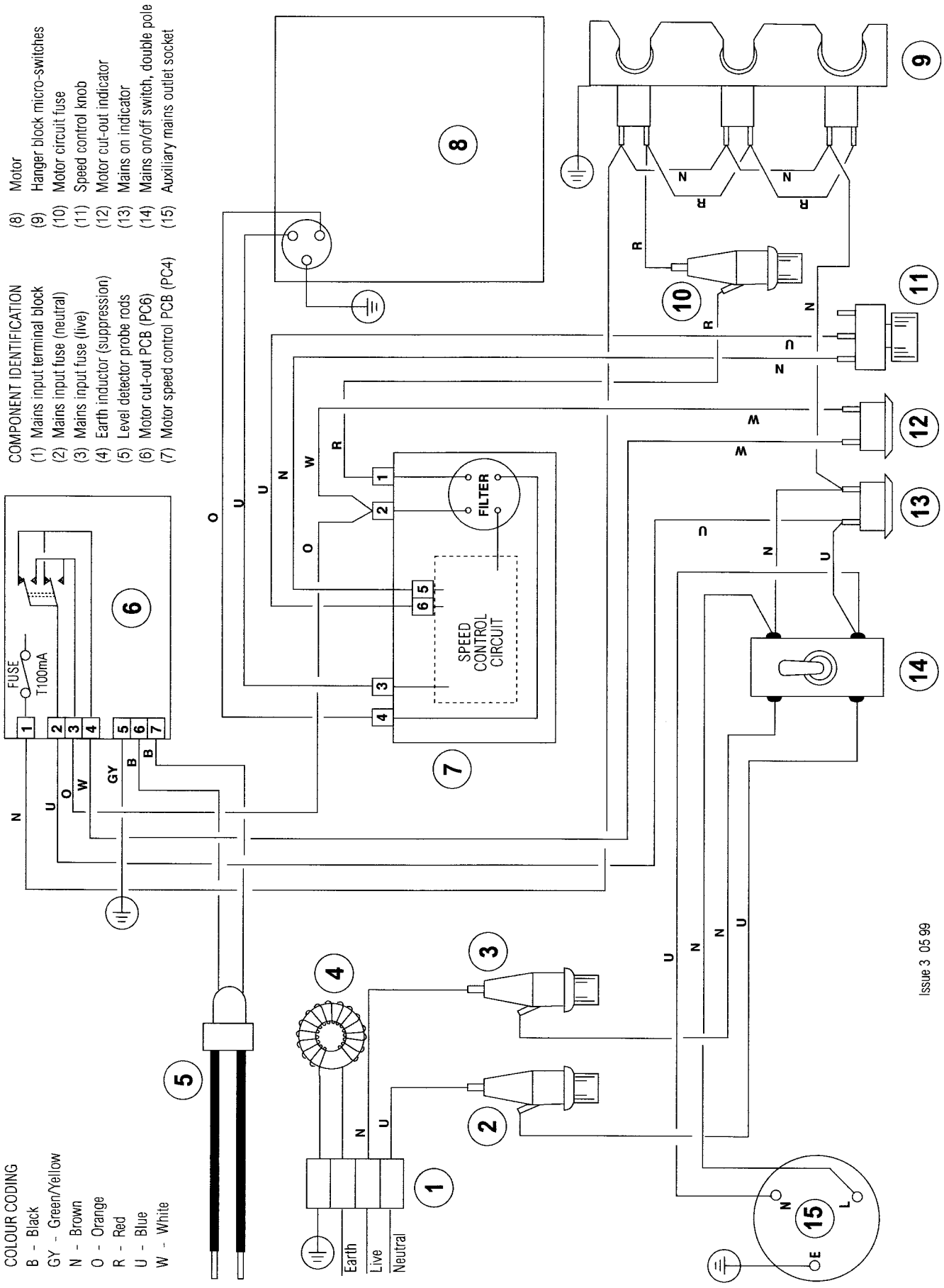
70-1005



70-1138

FIG.2 : - ASPIRETTE WIRING DIAGRAM

FROM SERIAL No. 2909



Annex 1

Aspirette Electromagnetic environment

The Aspirette is intended for use in the electromagnetic environment specified below. The customer or the user of the Aspirette should ensure that it is used in suh an environment.		
RF emissions CISPR 11	Group 1	The Aspirette uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment
RF emissions CISPR 11	Class B	The Aspirette is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies	

The Aspirette does not have Essential Performance and has not been tested for immunity to electromagnetic disturbances.