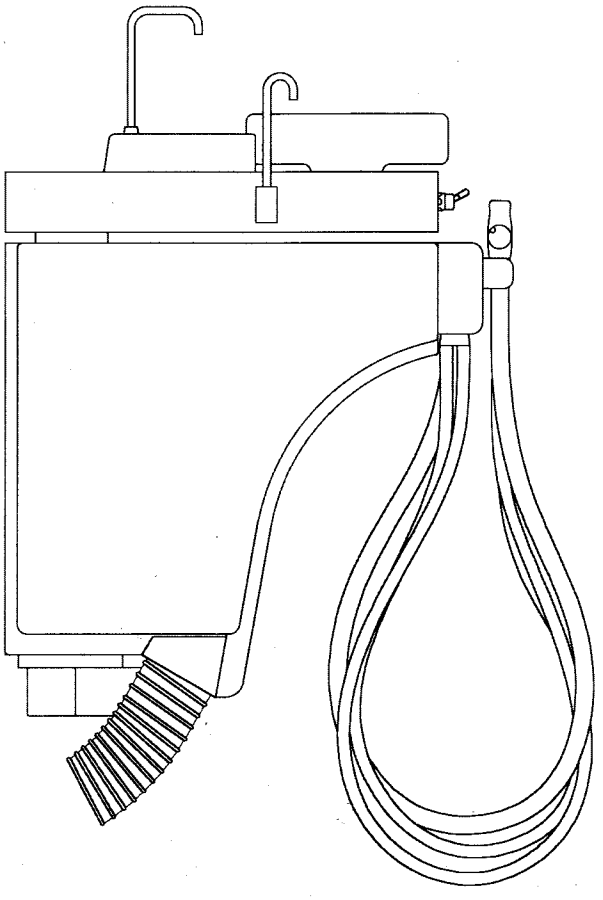
CS-90

SPITTOON

Part No. 23-1114

CE

OPERATING MANUAL



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Manual part No. 86-1050 issue 4 Rev 2

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IMPORTANT SAFETY NOTE

As this spittoon is usually attached to a dental chair, please take note of the following.

CHAIR MOVEMENTS

Before any chair movements are undertaken, make sure that the surrounding area is clear of obstructions, such as stools and cabinets, that may come into contact with the chair or any equipment attached to it and cause damage.

Whenever chair movements are instigated, whether MANUAL or AUTO, the operator must remain vigilant and in control until all chair movements have ceased.

NOTE: The following is applicable to Tridac chairs but may apply to others.

At anytime the chair is performing a AUTO movement, pressing ANY chair function button will STOP all movements INSTANTLY.

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THE CS90 DENTAL SPITTOON

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 CS90 Spittoon units are dental treatment centres and intended for use only in the practice of dentistry and for use only by trained dental personnel.

Before moving the arm of the spittoon or pivoting the spittoon body, if aplicable, make sure it is safe to do so without causing injury to either the patient, yourself or other members of staff.

Please note the following:
The suction tips and/or 3in1 Syringe are 'APPLIED PARTS', the hoses of these instruments could also come into CONTACT WITH THE PATIENT.

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

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.

1.2) ELECTRICAL SAFETY NOTES

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, lampholders.

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

1.3) INTENDED USE

This is a dental spittoon for use by the patient when rincing their mouth after treatment and by the dental assistant to provide suction in the oral cavity of the patient and it be used only in the practice of dentistry and for use only by trained dental personnel.
The operator will be held liable for any damage caused due to any incorrect use of this equipment.

1.3.1) 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.

1.4) ELECTROMAGNETIC ENVIRONMENT

The CS90 Spittoon unit 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 also that it should operate without unacceptable deterioration in its' own performance as a result of the operation of such apparatus or appliances.
Should adverse effects be noted in the operation of the CS90 unit or should it be suspected that operation of the unit is causing adverse effects in other electrical equipment as a result of EMC performance, users should contact Tridac for guidance and advice.

Examples of adverse effects in the operation of the unit are uninvoked starting/stopping of suction or changes of electrical control settings, not attributable to intended modes of operation.

Examples of adverse effects caused by electromagnetic emissions might be sound interference on radio reception or audio equipment, or visible disturbances to picture quality of T.V., computer or video monitors. If such interference is suspected, it may be easily investigated by alternately stopping and restarting use of the CS90 and noting whether there is a direct relationship between the interference and operation of the unit.

Do not stack other electronic equipment on top of the CS90 Spittoon, for example, electro-surgey units, computer peripherals, as there is a risk of reciprocal interference. Similarly, avoid using the unit adjacent to other equipment.

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 CS90 Spittoon unit. Ideally, do not use mobile devices in the dental treatment room.

The CS90 spittoon does not have electrical operating hoses, so these do not effect EMC performance. However, do not lengthen any umbilcal or internal cables. Failure to observe this advice could result in an increase in electromagnetic emissions or a decrease in immunity.

1.4.1) SUCTION SWITCHING.

Versions 904, 908, 90CS and 90CAS of the spittoon provide switches in the hose hangers of the suction manifold. These are intended for for use on Safety Extra Low Voltage only, but may be used by your installer to switch on and off a mains operated suction pump via an intervening relay or contactor with a low voltage coil. This is likely to be an existing device when the spittoon is being installed as an addition to a central suction system. The installed EMC performance will depend on the characteristics of the contactor and is thus outside the control of Tridac. However, problems (e.g. switch clicks) in the coil side of the circuit are unlikely to occur if the recommendations in the ratings are adhered to and good engineering practice is followed. Performance of the mains side of the circuit will not be influenced by the suction manifold switches.

1.5) 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.

Also the hazardous waste service must be used for disposal of detritus from the spittoon bowl filter ("gold trap") and the suction solids filter.Similarly, waste cleaning cloths/wipes must be diposed of with clinical waste..

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 separately from normal waste. 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

1.6) SYMBOLS and WARNINGS

The equipment and or operating instructions use the following symbols.


CE mark according to EU Directive 93/42/EEC for medical devices.


Equipment: Class 1 Type B


Safety symbol used for CAUTION, WARNING or DANGER


Important information. MUST read user manual


Protective Earth


Waste Electrical and Electronic Equipment

2) SPECIFICATIONS AND RATINGS

Manufacturer	Unit 13, The Wenta Business Centre, Colne Way, Watford, WD24 7ND Tridac Ltd. ~~Unit 1A Rectory Farm, Gade Valley Close~~. ~~Kings Langley. Herts. WD4 8HG England~~
Model Reference	CS90 Spittoon
Part Number	23 1114
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	Permanently installed
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):

Model 900, 909, 90CA	Not a medical device under Directive rules
Model 904, 908, 90CS, 90CAS	Class I (passive suction device)
Any, with 3in1 syringe	Class IIa
Electricity Supply :	230 Volts
Phase	Single Phase
Frequency	50 Hz.
Electrical Ratings:- **Mains**	5 Amps. Max. (total)
Low voltage transformer (908 and 909 only)	12 VA Max. Note: the transformer is internally thermally protected and separately fused.
Low voltage transformer (90CA, 90CS and 90CAS only)	120 VA Max. Note: the transformer is internally thermally protected and separately fused.
Low voltage switching :	Safety Extra Low Voltage to EN 60601-1 must be ensured.
Suction manifolds (Models 904, 908, 90CS, 90CAS)	24 volts ac/dc @ 2 Amps max, resistive load. **Note :** Derate for inductive loads e.g. contactor/relay coils. Suppress D.C. coils e.g. use a catch diode across the coil. If possible, use coils with ratings not exceeding 10VA ac/dc
Fuses :	
Mains input fuse (floor box)	5.0 Amps. 250 volts 1" x 1/4" HBC to BS 1362 Part No. 10-1067
Transformer primary fuse (908 & 908)	T 125 mAL 250 V 20 x 5 mm to IEC 127 Part No. 10-1182 (Mounted on transformer terminal block, in floor box)
Transformer primary fuse (90CA, 90CS & 90CAS)	T 1 AL 250 V 20 x 5 mm to IEC 127 Part No. 10-1309 (Mounted on transformer terminal block, in floor box)
Mode of operation :	Continuous with intermittent loading.
Water Supply :	Minimum 2.1 bar (30 PSI) Maximum 6.9 bar (100 PSI) Note : Water Bye Laws may require an anti siphon valve between the unit and supply.
Bowl flush air gap	Type A, >20 mm, within 15 deg. of vertical.
Regulator pressure	Factory set to 2.1 bar (30 PSI)

Air Supply	Only required on models 908 and 909, or if a syringe is fitted. Minimum 2.5 bar (35 PSI) Maximum 6.9 bar (100 PSI)
Vacuum :	
90CS, 90CAS:-	Intended for connection to existing suction sources. Final performance is determined by pump characteristics and thus outside the control of Tridac. Maximum vacuum should not exceed -250 hPa
904, 908, 909, 90CA:-	As above. Note: units for wet-line suction will withstand higher vacuum. However draft International Standards suggest safe vacuum levels should not exceed -250 hPa.
Max. Vacuum	-250 hPa.
Vacuum connection	To 32 mm plastic pipe, to BS 5255.
Waste connection	To 32 mm plastic pipe, to BS 5255. Note: ABS material is NOT suitable for vacuum/waste pipes.
ACCESSORIES	
Suction tips	CS90 versions incorporating suction are designed to accept suction tips of 16 mm and 11.0 mm diameter.
3in1 Syringe :	If fitted, the D C I autoclavable type is used, replacing one of the small suction hoses.
Air supply	Minimum 2.5 bar (35 PSI) Maximum 6.9 bar (100 PSI)

3) DESCRIPTION

3.1) BASE MODEL. The CS90 is a dental spittoon unit intended for attachment to the dental chair. It provides a rinsed spittoon bowl and a tumbler holder and filler. Operation of these is by toggle valves, acting directly on the water and incorporating devices to control water flow. The tumbler filler is intended to provide a conveniently accessible mouthwash for the patient's use after treatment.

Mouthwash water is regulated, to reduce splashing.

The spittoon bowl and tumbler facility of the unit are mounted on a movable arm. Provided that it is safe to do so without risk from moving parts of the chair (e.g. arms) the spittoon arm may be swung to a position in front of the patient. This can be useful in cases where patients are infirmed or have mobility problems.Stops on the arm can be set to allow or deny this feature, according to the circumstances of the particular surgery/chair.

Established mounting brackets are available allowing the spittoon to be attached to a wide range of dental chairs, past and present. An optional pivot adaptor can be installed with the mounting bracket, to allow the whole spittoon to swing away from the chair. This allows improved side access to the patient, from the nurses side of the chair. Mounting brackets which include a mounting boss for a light post are also available, as are a range of posts and adaptor bushes to assist in the installation of chair attached operating lights.

The CS90 is suitable for use in left handed surgeries provided that an appropriate chair mounting bracket is available - a number of such brackets are established but the range is more limited.

3.2) VERSIONS. The CS90 provides a convenient location for the suction operating hoses and so a number of versions with fitted suction have been developed. These are listed below :

Model	Description
900	Base model, without suction. Fitted with a tissue holder on front panel.
904	CS 90 fitted with **Tridac CVS plus** manifold assembly on the body end panel. Suitable for connection to any dental suction system that only require a suction manifold. Available for Wet-Line, Dry-Line or semi-wet suction systems. Vacuum pipe and switch wiring extend to the floor box.

908 As 904 above, and additionally fitted with a Dürr Spittoon Valve. Suitable for connection to any dental suction system where gravity drainage is not available, or when amalgam separation is provided at suction source.

908P As 908 above, and additionally fitted with a Dürr place selection valve. Use when the suction source is suppling more than one surgery.

909 As 900 but fitted with a Dürr Spittoon Valve. Suitable for connection to any dental suction system where gravity drainage is not available, or when amalgam separation is provided at suction source.

90CA As 900 but fitted with a Dürr Amalgam separator. Suitable for connection to any dental suction system.

90CS As 904 but fitted with a Dürr CS1 Air/Water separator. Complete with cut-off valve. For use with DRY-line suction source

90CAS As 904 above, but additionally fitted with a Dürr CAS1, providing Air/Water and intergral amalgam separation, inludes vacuum cut-off valve. For use with DRY-line suction systems only.

3.2.1) FUNCTIONAL DESCRIPTION - MODEL 900

The model 900, is the 'Basic' spittoon, the following functions are common to all versions.
Water is brought to the spittoon through the service hose via the floor box. Some of the water is then regulated by means of a adjustable pressure regulator before passing to the tumbler control valve. The unregulated water goes directly to the bowl flush valve. Operating either of these valves will provide water to the tumbler or bowl flush.

The spittoon arm assembly is free to pivot around its mounting point allowing the spittoon to swing away and provide improved side access to the patient from the nurses side of the chair. If a dental operating light is fitted to the spittoon it has no effect on the operation or function of the spittoon.

3.2.2) FUNCTIONAL DESCRIPTION - MODEL 90CS

This model is fitted with a suction manifold and air/water separator. It is intended for use with an existing dry line suction pump, which may be an individual one or a central one serving a number of surgeries.

The Tridac CVS suction manifold provides 3 operating hoses, one large one small and a saliva ejector, 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). The tip connectors incorporate manual control valves, which use a rotary motion, in order to vary the suction flow rate by restricting the orifice.

The set of three hoses are detachable from the suction manifold for cleaning. A removable filter is incorporated into the manifold to separate solid particles from the air and liquid flow and prevent them from entering the system.
Microswitches are fitted in each of the hose holders, intended to operate on Safety Extra Low Voltage and to give automatic start up of suction. When a hose is lifted a switch operates causing the separator to start and the cut off valve to open allowing suction through to the tips. At the same time a relay is operated that signals the suction pump to start. In the case of a pump serving several surgeries, it will usually be arranged to have a parallel effect, often via a relay, so that the motor will run provided there is demand from at least one surgery.

Control wires and the suction supply line are fed through the spittoon body and umbilical to the floor connection box, where they will connect up with under floor pipelines and extension wiring.

The Dürr air/water separator fitted inside the spittoon is a type CS1. The air and liquid mixture is fed into a cyclonic separator driven by an electric motor. The centrfugal force spins the particals to the outside thus separating liquid and fine solids from the suction air. Therefore only dry air enters the vacuum supply line to the pump.
For further details of the CS1 separator please refer to the individual Dürr manual.

3.2.3) FUNCTIONAL DESCRIPTION - MODEL 90CA

This model is a basic spittoon without suction but fitted with the Dürr CA1 amalgam separator. The waste water and particals from the spittoon bowl are continuously fed to a motor driven centrifuge where the amalgam particals are separated and collected in a replaceable container. The level of particals are monitored and a signal given when the container needs replacing, after further continuous use the system will shut down completely for safety reasons. A wet or Semi-wet suction line is all that is required for this model.
Refer to the Dürr instruction manual for full operating details on the CA1.

3.2.4) FUNCTIONAL DESCRIPTION - MODEL 90CAS

This model is the same as the 90CS and functions in the same way but with the addition of amalgam separation by means of the Dürr CAS1 Combi separator. The waste from the Air/Water separator and from the spittoon, addtionally pass into a motor driven centrifuge where the amalgam particals are separated and collected in a replaceable container. The level of particals are monitored and a signal given when the container needs replacing, after further continuous use the system will shut down completely for safety reasons.
Refer to the Dürr instruction manual for full operating details on the CAS1.

3.2.5) FUNCTIONAL DESCRIPTION - MODEL 904

This model is provided with a Tridac CVS suction manifold only. It does not have an air/water separator built in. It is available in two variations, intended for use with either

a) Wet-line suction systems, or
b) Dry-line & semi dry-line systems.
For variations a) and b), the suction manifold incorporates single microswitches in each of the hose holders, designed to operate on Safety Extra Low Voltage of 24 volts a.c. The switches may be used to 'signal' demand for the suction pump (typically operating a motor start relay) or to operate a magnetic valve in systems with a continuously running pump. In the latter case, the switches need not be used, each surgery shutting off vacuum by means of the tip rotary valve instead.
The suction supply line running through the spittoon and umbilical is a smaller diameter and less flexible than that used for dry-line systems, because of the higher vacuum levels associated with wet-line pumps.

For variations b), The suction supply line running through the spittoon and umbilical is a larger diameter and more flexible than that used for wet-line systems, in order to maintain high flow rates at the lower vacuum levels associated with dry-line pumps.

Either variant on request, can be supplied with a small relay assembly, part number 22-1521. This will allow the hanger switch to operate a cut-off valve, and the relay to 'signal' demand for the suction pump, in exactly the same way as in the 90CS described above.
Control wires and the suction supply line are fed through the spittoon body to the floor connection box, /where they are intended to connect up with under floor pipelines and extension wiring.

3.2.6) FUNCTIONAL DESCRIPTION - MODEL 908

The model 908 is basically a model 904 but with the addition of a Dürr Spittoon Valve. The function of the valve is to allow the waste from the spittoon bowl to be disposed of via the suction line instead of separate waste.
Waste water from the spittoon bowl flows into the device causing it to open by means of a solenoid and air operated valve, the water drains away without any suction noises at the spittoon bowl.
When waste water stops flowing, the valve closes, and the rundown time for the suction pump, when switched, is then approximately 20 seconds.
When the suction system is in operation, the bowl will still drain away without any suction noises at the spittoon bowl. Otherwise the model functions the same as model 904.
Refer to the Dürr instruction manual for full operating details.

3.2.7) FUNCTIONAL DESCRIPTION - MODEL 909

Model 909 functions in the same way as model 908 but without suction available to the assistant.
Refer to the Dürr instruction manual for full operating details.

4.) INSTALLATION

Installation must be carried out by the supplier of the equipment who will have the necessary qualified and trained staff.
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.

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 incorporated within the equipment or the waste water/suction line from it.
Collected waste must be disposed of via a registered hazardous waste collection service.

4.1) Services

Ensure that the required services are available in accordance with the model chosen and the specifications above.

Refer to the floor plan, 85 1030 supplied, for positions and sizes of supply pipes. When choosing a suitable site for the services box, ascertain that the spittoon service hose is of sufficient length, so that no undue strain is put upon it with the chair in its maximum extended position/height.

The electrical supply to the service box must conform to the standards required by the local electricity supply authority. Although the spittoon is rated at 5 Amps, the supply wiring must be rated at 13 Amps 230 V 50 Hz.

Electrical connection of the live and neutral wires of the supply cable must be made to the vacant 'IN' terminals of the switched connection unit in the services box, the live to the terminal marked 'L' and the neutral to the terminal marked 'N'. Connect the earth wiring to the terminal marked with the symbol. ⏚

Suction lines should enter the floor services box where indicated on floor plan 85 1030. Any necessary switch wiring should also enter the floor box, where a terminal block is available to facilitate connection with the spittoon. Where provided, the switch wires from the suction manifold, available in the floor box, are intended for Safety Extra Low Voltage (see section 4, specifications) : **Avoid the use of connecting cables which could be mistaken for mains wiring**. Observe the ratings and recommendations on low voltage switching. Ensure that the low voltage circuit of the host system is fused at the lowest appropriate rating and that motor control gear of the host system does comply. Also note the comments on EMC in section 1.3).

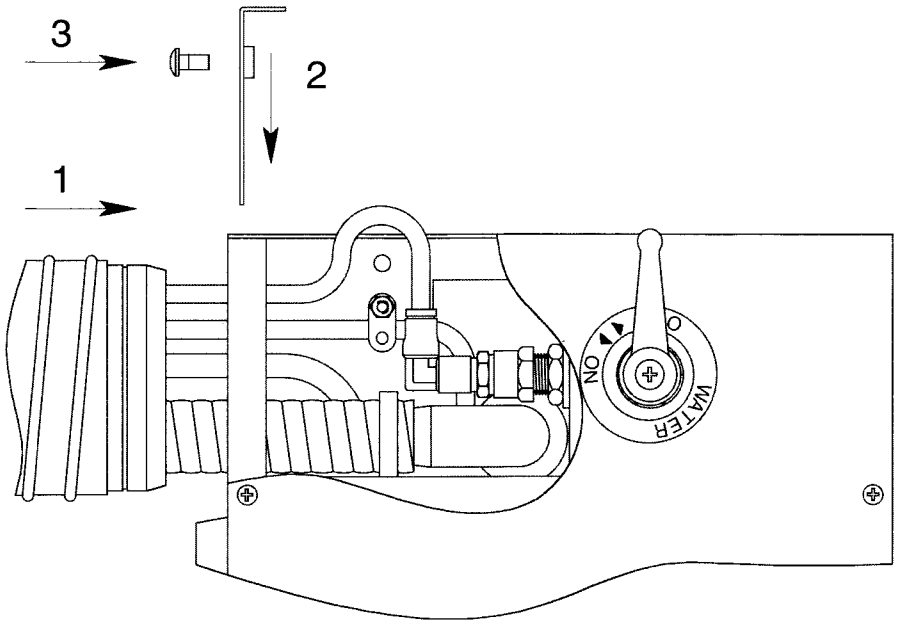
Tie wires together where they enter the terminal block to ensure that if a wire comes free, it is held in place by the adjacent wires and cannot contact other wires or parts.

CAUTION: Clear any debris from supply pipes before connecting the spittoon: Flush water supply pipes at the service box.

4.2) INSTALLING THE SPITTOON.

The relevant spittoon mounting bracket should now be fitted to the chair.
Each bracket kit comes complete with suitable bolts. The mounting holes in the bracket will line up with the corresponding fixing points intended to be used for the mounting of accessories by the chair manufacturer. If in doubt, contact Tridac for advice.
The CS90 spittoon is attached to the bracket with four M8 bolts. If a pivot adaptor, P/No. 22-1325 was ordered with the spittoon, it will have already been fitted. It is placed between the spittoon body and the bracket

The end of the service hose should be fed into the service box through the large hole, the 'O' ring supplied can then be fitted to the groove in the connector in order to hold the hose in place.



Connect up the services using the fittings supplied, do not use the small grey waste elbow to connect Dry-line suction hose as this will restrict the air flow.
The GREEN nylon tube connects to the water valve by means of a Push-in fitting, the YELLOW tube likewise to the air valve, if required. It is a good idea to leave a neat loop of tubing rather than cutting them very short, as this can make future servicing difficult.
Low voltage and switch wires should be connected to the terminal block provided. Tie wires together where they enter the terminal block to ensure that if a wire comes free, it is held in place by adjacent wires and cannot contact other wires or parts.

Fit the operating hoses to the manifold by simply pushing onto the socket on the underside of the suction manifold
Place the bowl trap and deflector in the spittoon bowl
Place the bowl seal into the bowl socket and nsert the bowl, rotate clockwise to lock it in place.
Insert the bowl flush and tumbler nozzles into their respective sockets.
Place the cup grill and it's locator into the cup holder recess.

4.3) OPERATIONAL CHECKS

AFTER INSTALLATION follow the procedure below to avoid problems. Refer to the section on operation for information on the position and action of controls.

Turn on the water supply at the service box, operate the bowl flush valve and adjust the flow rate by use of the concentric knob.

Place a tumbler under the filler spout, then operate the tumbler filler valve, adjusting flow as necessary. Clear air from the tumbler circuit by holding the toggle down until a smooth stream of water is emitted.

Check the unit over for water leaks and rectify, if necessary.

Once the air has been cleared from the tumbler circuit and water soundness assured, the electricity may be turned on.

5) OPERATING INSTRUCTIONS

5.1)PRECAUTIONS

For the safety of staff and patients and to obtain the best performance and reliability from your equipment, these operating instructions should be read and observed, by all staff likely to use this equipment.

Before moving the arm of the spittoon or pivoting the spittoon body, if aplicable, make sure it is safe to do so without causing damage to equipment or injury to either the patient, yourself or other members of staff.

IMPORTANT: At the end of the working day, ISOLATE ALL SERVICES, especially the WATER SUPPLY so as to prevent flooding should a leak occour.

Some salient precautions are repeated below, with reference to the relevant section of the manual.

WEAR PROTECTIVE CLOTHING DURING CLEANING AND MAINTENANCE (6.1)

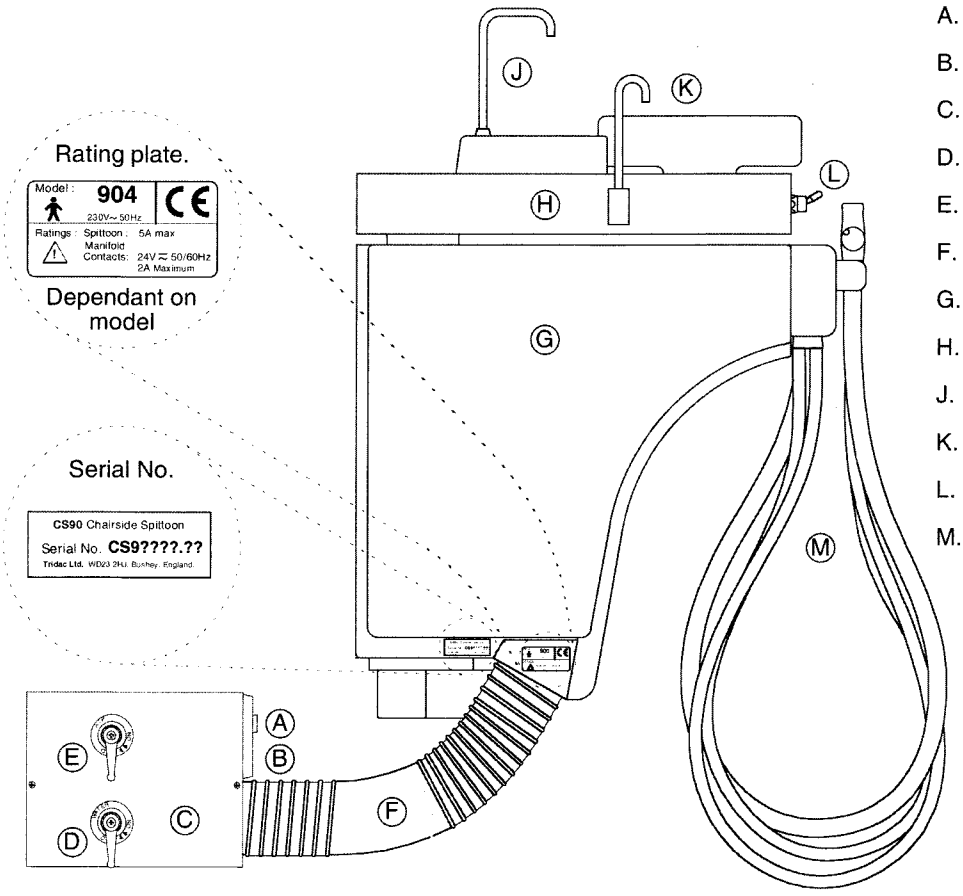
DISCONNECT THE ELECTRICAL SUPPLY BEFORE CLEANING AND MAINTENANCE (6.1)

MAINTAIN THE SOLIDS FILTER FREQUENTLY (6.7.3)

DO NOT USE FOAMING CLEANSERS (6.7.2)

DO NOT USE WHERE FLAMMABLE GASES OR ANAESTHETICS ARE IN USE (4)

5.2) Identification of parts



A. Mains ON/OFF switch
B. Mains input fuse
C. Floor box
D. Water valve
E. Air valve (if fitted)
F. Service hose (umbilical)
G. Spittoon body
H. Spittoon arm
J. Cup holder and filler
K. Bowl and flush nozzle
L. Cup / bowl flush valves
M. Suction hoses if fitted

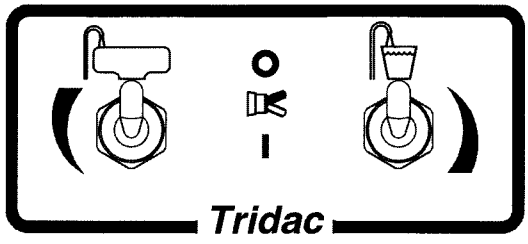
5.3) Basic Spittoon. Refer to the diagram below for the position and operation of controls.

Bowl flush valve

To start, flick toggle down

To stop, flick toggle up

To adjust flow,rotate collar clockwise to increase, anticlockwise to reduce



Tumbler filler valve

To start, hold toggle down

To stop, release hold

To adjust flow, rotate collar clockwise to increase, anticlockwise to reduce

Bowl flush. The bowl flush is started by moving the lever of the left hand toggle valve to its downward position. The toggle will stay down until returned. Flow is adjusted by rotating the concentric collar through which the lever protrudes, as indicated.

Tumbler filler. The tumbler filler will flow when the lever of the right hand toggle valve is moved down. To maintain flow it must be held down. Again, flow is adjusted by rotation of the concentric collar.

5.4) SPITTOONS WITHOUT SUCTION

Model 909. This model is fitted with a Dürr Spittoon Valve only. The spittoon valve comes into operation automatically on flushing the spittoon bowl.

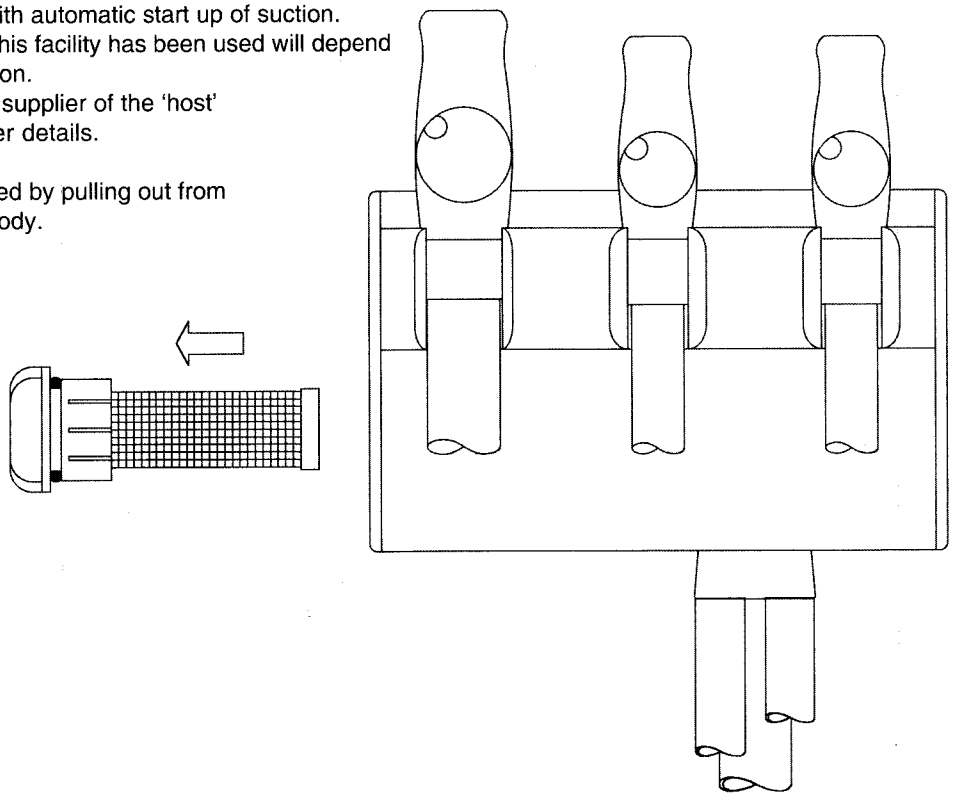
Model 90CA. This model is fitted with a Dürr CA1. The amalgam separator comes into operation automatically on flushing the spittoon bowl.

5.5) SPITTOONS WITH SUCTION

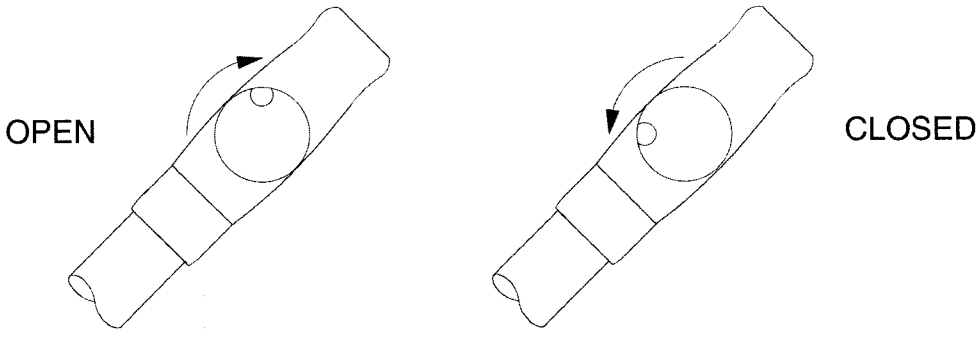
Models 90CS, 90CAS.

The suction manifold includes switches in the operating hose holders, which allow installation with automatic start up of suction. However,whether or not this facility has been used will depend on the particular installation.
Users should consult the supplier of the 'host' vacuum system for further details.

The solids filter is extracted by pulling out from the side of the spittoon body.



Lifting one of the hoses from its holder will result in automatic start up of suction. The degree of suction is varied by rotary action valves incorporated in the cannula connectors, as shown below. Moving the valve anti-clockwise, as indicated by the the arrow, results in a reduction of suction. When the nodule is at its lowest position, suction is virtually shut-off.



Since the control of vacuum is by occluding the suction bores, the equipment is only suitable for use with motors/suction pumps which are safe to run 'shut-off' or which incorporate vacuum relief devices.

The Dürr separator is designed for continuous suction, and unless the input flow is too great, or the waste outlet restricted or blocked, the suction will not stop in general use.
Please read the Dürr booklets supplied with the unit for detailed information.

Model 904. The suction manifold includes switches in the operating hose holders, which allow installation with automatic start up of suction. However, whether or not this facility has been used will depend on the particular installation. Users should consult the supplier of the 'host' vacuum system for further details.

Model 908. This model is fitted with a suction manifold and a Dürr Spittoon Valve. The operation of the manifold is as previously described for the 90CS model. The spittoon valve automatically starts on lifting any one hose from its holder, it also comes into operation automatically on flushing the spittoon bowl.

5.6) Attachment of accessories

All of the suction options include at least one operating hoses of each size :

a) Large : to accept suction cannula (tips) of 16 mm diameter.

b) Small : to accept suction cannula (tips) of 11 mm diameter.

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

An adaptor, part number 22 1231, is available from Tridac, to allow 11 mm cannulas to fit the 16 mm hose. This can usefully increase flow rate through medium sized cannulas. Furthermore, the larger suction hose is less prone to obstruction by solids particles e.g. lumps of amalgam. The adaptor is a push fit into the hose cannula connector and the cannula a push fit into it. The adaptor is intended for use with cannulas of minimum 8.0 mm bore.

6) ROUTINE CLEANING AND MAINTENANCE

6.1) GENERAL.

Always switch off the electrical supply to the unit when cleaning is undertaken.

When cleaning dental equipment, it is recommended to 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.

If cleaning items by brush, do so, wherever possible, in a bowl or sink filled with the chosen cleaning solution. Keep items submerged while brushing, to eliminate splashing.

Where this is not possible, polythene bags can be used to contain spatter. Inexpensive quality, domestic food bags are quite suitable.

The bag may be pierced to allow the handle of the brush through, then wrapped tightly around it. Alternatively, the brush may be placed
inside and the handle gripped through the bag.

Soiled brushes may be cleaned in a bowl of detergent and may be soaked in disinfectants suitable for use with metal. We suggest using a little of the aspirator cleaner made up for the treatment of units with suction.

Use disposable cloths or wipes for cleaning. Dispose of used items with the clinical waste.
Use of the approved cleaners below will avoid damage to the unit's surfaces provided they are used in accordance with their manufacturers directions. An important one for surface disinfection is drying surfaces after treatment.
Apply cleaning and disinfectant products to the cloth, then to the surfaces. Do not spray solutioins directly onto the spittoon, particularly painted surfaces.

1) Mild detergent: "Fairy" liquid washing up liquid.
2) Sensitive disinfectant/cleaner: Durr FD 366 (preferred disinfectant)
3) Disinfectant/cleaner: Schulke Mikrozid AF liquid
4) Suction cleaner: Durr Oratol Plus

6.2) ACCESS

The bowl flush nozzle, tumbler filler nozzle and spittoon bowl of the CS 90 have been designed to be easily removable in order to assist cleaning of the bowl and provide improved access to the top arm.

To remove the bowl flush nozzle B, simply pull vertically upwards. Holding a finger over its outlet spout while doing so will hydraulically lock the water remaining in the nozzle and prevent it spilling. Then, hold the nozzle over the bowl, remove the finger and allow the water to drain.

The spittoon bowl is held in its waste socket by a bayonet type fitting. To remove it, grip both sides of the bowl, twist in the direction shown by the arrow, then lift squarely upwards.

The tumbler nozzle is extracted by a straight upward pull. Note that the nozzle has a flat on its end, to locate it in the bulkhead socket. DO NOT twist the nozzle.

The tumbler holder grating and the plastic location ring beneath it may be lifted from the holder platform. Handle the plastic ring carefully.
Replacement is a reversal of the disassembly process, but please note the following:

The nozzles should be lubricated with a smear of silicone grease before they are reinserted : this allows an easy fit into the 'O' ring incorporated in the bulkhead sockets and promotes a long lasting seal.

Ensure that the large 'O' ring seal is in good condition and in place in the bowl waste socket before replacing the bowl and ensure that the bowl is twisted to its locked position.

6.3) BASIC SPITTOON

Cleaning of the unit's surfaces may safely be accomplished by wiping with a soft cloth, dampened with a detergent solution, as recommended in BDA guidelines(1). Ensure that the cloth is squeezed out. DO NOT soak the unit.
Aggressive detergent based products, such as proprietary/domestic floor cleaners, should be avoided. Also avoid abrasive cleaners, which will dull, and eventually thin, the surface coating. Avoid bleach, too, as parts of the unit are fabricated from aluminium.
Disinfection may be carried out, after cleaning, with suitable surface disinfectants (2) (3). Wipe on with a cloth.

6.4) SPITTOON BOWL FILTER.

The filter should be emptied at least once a day. Lift the filter from the bowl, remove the deflector dome and tip the contents into your contaminated waste receptacle.
The filter and deflector should be washed in detergent. Trapped debris can be shifted from the mesh part by brushing from the outside.

6.5) SPITTOON BOWL.

The spittoon bowl should be detached as described in 6.2 and may then be cleaned in a sink or washing up bowl. It is manufactured from ceramic and therefore has a highly durable surface which may be cleaned using common domestic detergents. Avoid the use of abrasive cleansers which could eventually dull the surface. Rinse the bowl thoroughly after cleaning to remove all traces of detergent (the spittoon waste may be connected to other equipment, like suction apparatus, which is sensitive to foaming!)
Wipe the bowl dry after rinsing to achieve a lustrous finish.

Any build up of lime scale may be treated with gentle domestic scale removers, be sure to observe the precautions and follow the manufacturer's directions.

6.6) NOZZLES.

The bowl flush and tumbler nozzles are finished in chromium plate and are therefore highly durable. They may be cleaned by wiping or washing in detergent, then rinsing thoroughly and wiping dry. Washing may be carried out in an ultrasonic bath.

Lime scale can be treated as for the spittoon bowl. However, take care not to allow descaler to enter inside the nozzles. Pay particular attention to this with the tumbler nozzle. Rinse very thoroughly and flush water through the nozzle to ensure all residues are removed.

The nozzle construction allows autoclaving, after cleaning, if desired. They will withstand a 3 minute exposure at 134 to 138 degrees C. This may be pertinent if the tumbler nozzle becomes contaminated bearing in mind that the component is used to fill a mouthwash vessel.

6.7) SUCTION.

IMPORTANT : For information regarding the overall maintenance of the suction system used with your spittoon, please refer to the appropriate manufacturer's separate booklets. DO NOT NEGLECT to do so : Instructions regarding routine attention MUST be observed to ensure safe and reliable operation.
Instructions and notes regarding maintenance of the operating part of the suction equipment, i.e. suction manifold and operating hoses, are given below :

6.7.1) GENERAL.

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 below, for hints on flushing.

6.7.2) FLUSHING.

Aspiration equipment should be flushed daily with a specialist NON FOAMING disinfectant cleaner(4).

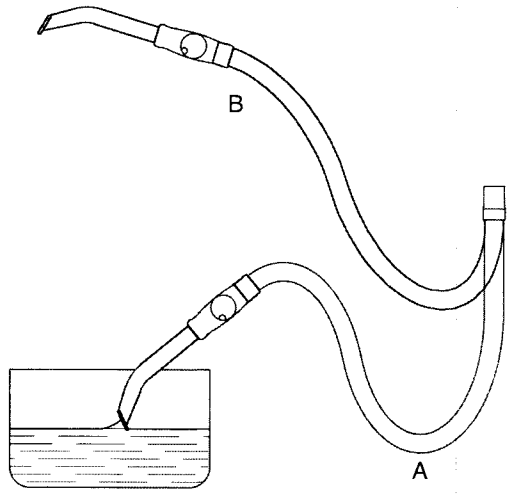
BEWARE: Not all non foaming cleaners live up to that claim! Also avoid bleach and cleaners based on aldehydes.

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. Remove, empty and replace the solids filter. (see section 6.7.3).

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 droops in the hose such as A.

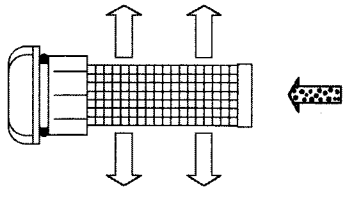
Stop the suction as soon as the flushing solution has been used up, so that internal parts are wetted for 10 minutes or so to allow disinfectant action, without the drying effect of air flow. Then restart suction and briefly lift the hoses, as at B, to dispose of any remaining sediments. Now leave the suction on for a minute or so, to reduce any remaining liquid inside the manifold.



6.7.3) Solids filter.

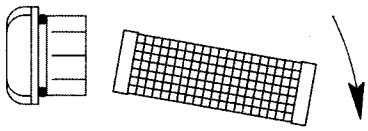
Solids filters should be checked regularly. The frequency of emptying will depend on the type of use the suction has been put to. We suggest checking the filter in the middle of and at the end of the working day. A full or clogged filter will reduce suction flow rates and put additional strain on the suction pump and should not be neglected.

On units fitted with suction, the filter is a stainless steel sleeve of 0.8 mm mesh and is carried by a plastic holder, which avoids direct handling. Pull the filter from the side of the manifold and empty it by tipping the accumulated contents into your contaminated waste receptacle.



Ensure that the the 'O' ring seal, filter holder and bore of the manifold (see section 6.7.5) are clear of deposits to ensure a seal when the filter is replaced. Clean the filter in a bowl (see section 6.1) if the mesh pores become clogged.

Note that air flow is in to the open end and out through the surface as indicated by the arrows. Thus brushing the mesh from the outside will displace trapped debris. After cleaning, the 'O' ring seal should be lubricated with a little silicone grease.



Remove the sleeve by tilting gently to the side and pulling. Use only moderate force to avoid damaging the holder.

The filter mesh, **but NOT the holder**, may be autoclaved after cleaning, if required.

6.7.4) OPERATING HOSES.

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

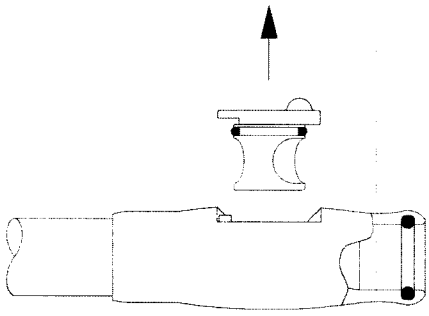
The operating hoses on Tridac suction manifolds are supplied as a plug in set which is easily detached from the manifold. The 'manifold connector' is gripped by an 'O' ring seal fitted inside the manifold. The hose set is detached by a straight downward pull on the connector. Do not pull on the hoses.

The manifold connector and the bore of the manifold itself must be kept clean to ensure a seal when the hose set is refitted.

Hose sets should be cleaned after the flushing operation described in section 6.7.2. 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 manifold connector should be smeared with a little silicone grease on the surface which enters the manifold. This will lubricate the manifold fitted 'O' ring. Do not over lubricate or the 'O' ring may lose its grip. Wipe off excess from both parts if this occurs.

The ends of the hoses are fitted with rotary shut-off tip connectors. These incorprate 'O' ring seals that grip the 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. Rotary valves and their sealing 'O' rings must also be maintained regularly. Silted valves will soon become stiff and difficult to rotate. The valves are a snap fit into the body parts, see diagram, and are simply pulled from the body.

The valves are a close fit in the body and both parts must be kept thoroughly clean to assist reassembly and smooth operation. Lubricate the 'O' rings before reassembly. Introduce the valve to the body as squarely as possible to allow entry. To complete assembly, align the recess over the stop screw and press the centre of the valve with the thumb until it is felt to 'snap' back into place.



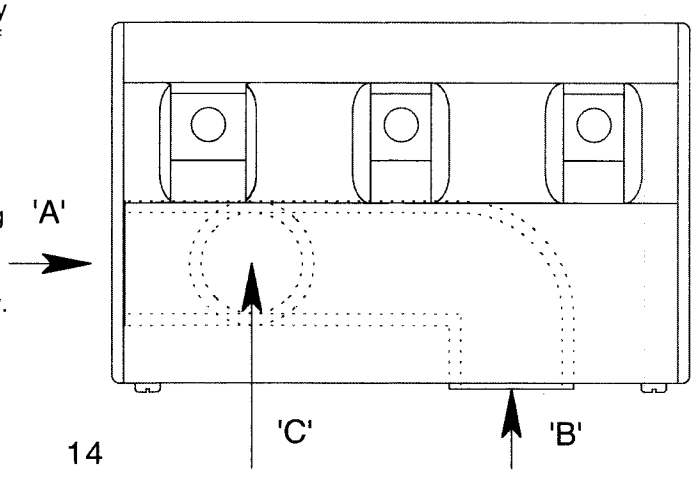
6.7.5) MANIFOLD AIR WAYS.

The manifold air ways should be kept clean and clear of blockages. Blocked air ways will reduce suction performance and place extra strain on the suction pump. This could lead to the pump over heating.

The manifold have been designed to provide easy access to the manifold air ways. A high degree of access is created when the hose set and solids filter are removed for daily cleaning and it is recommended that the opportunity is taken to clear the manifold bores at these times. Use the cleaning brush provided to clean bores A and B daily. Ensure that the bores, including the 'O' ring at the entry B, are wiped clean.

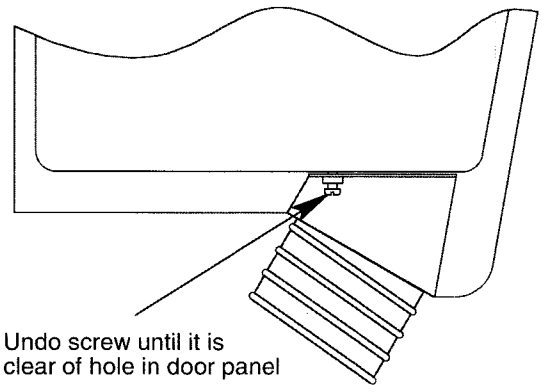
Access to bore C is from inside the spittoon body.

Remember to switch off the electrical supply before attempting access.



To gain access, the spittoon door panel will need to be removed. Undo the screw at the base of the spittoon, as indicated below, until it clears the hole in the door panel. Move the bottom of the panel slightly outwards, then remove by pulling downwards.

Bore C should be cleaned at least once a week. Pull the plastic hose coupling from the bore and again use the large cleaning brush to clear debris. Ensure that the internal surface and 'O' ring inside entry C are clean before refitting. Smearing the coupling with silicone grease before reinsertion will ensure that the 'O' ring gets lubricated.



Undo screw until it is clear of hole in door panel

6.7.6) ASPIRATOR TIPS (CANNULAS).

Reusable tips should be cleaned and sterilised after each patient.

Metal tips, if supplied, are 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 6.1). Use the size of brush, appropriate to the bore of the tip, P/No's 70 1005 or 70 1006. 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 134 to 138 degrees C for 3 minutes.

7) ROUTINE SERVICING

Provided the maintenance instructions described in section 6.) are followed by the user, there is little need for third party routine servicing of the CS90.

The water pressure regulator should be checked annually and if it is not holding pressure your technician should replace the diaphragm and seating, using the appropriate repair kit. Tubing and fittings should be visually inspected for condition and leaks. Any faults should be rectified.

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

Nozzle socket 'O' rings (tumbler and spittoon)
Bowl socket 'O' ring.
Manifold 'O' rings (at B & C, 6.7.5)
Filter holder 'O' ring
Tip connector 'O' rings
Rotary valve 'O' rings, if applicable.

Electrical safety should 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 umbilical leaves the floor box and where it enters the spittoon body.

If your spittoon was purchased with a suction system, check the requirements for servicing in the relevant instruction booklet.

9.) SERVICING AND REPAIRS

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.

9) TROUBLESHOOTING

If your spittoon is fitted with suction, please refer to details in the relevant instruction booklet for the type of suction fitted.

Reminder: Servicing should be entrusted to suitably qualified personnel.

Base Spittoon

The spittoon is a simple product with few problems arising. The cause of any that do is usually evident. However, the following should be noted as the symptom can be misleading :

Symptom: Continuous trickle or drip of water from the bowl flush nozzle

Cause: 1) Bowl flush toggle valve seating worn or obstructed.

Diagnosis: Make sure that the adjusting collar is unscrewed and not causing the toggle to be partially operated.

Rectification: If the fault still persists, the toggle valve should be changed.

Symptom: Bowl flush water is no longer a smooth stream and is hitting the side of the flush tube.

Cause: This could be due to a build up of lime scale on the nozzle jet.

Rectification: Descale the nozzle, you should then have a smooth flow of water.

Other versions:

If your spittoon is fitted with a suction selection valve or separator, please refer to details in the relevant instruction booklet for the device fitted.

10) SPARE PARTS REFERENCES

Condensed list of common spare parts

The following list of parts references refer to the base model spittoon and those fitted with Tridac parts. Please refer to the Durr Dental booklet for spittoons fitted with Durr products.

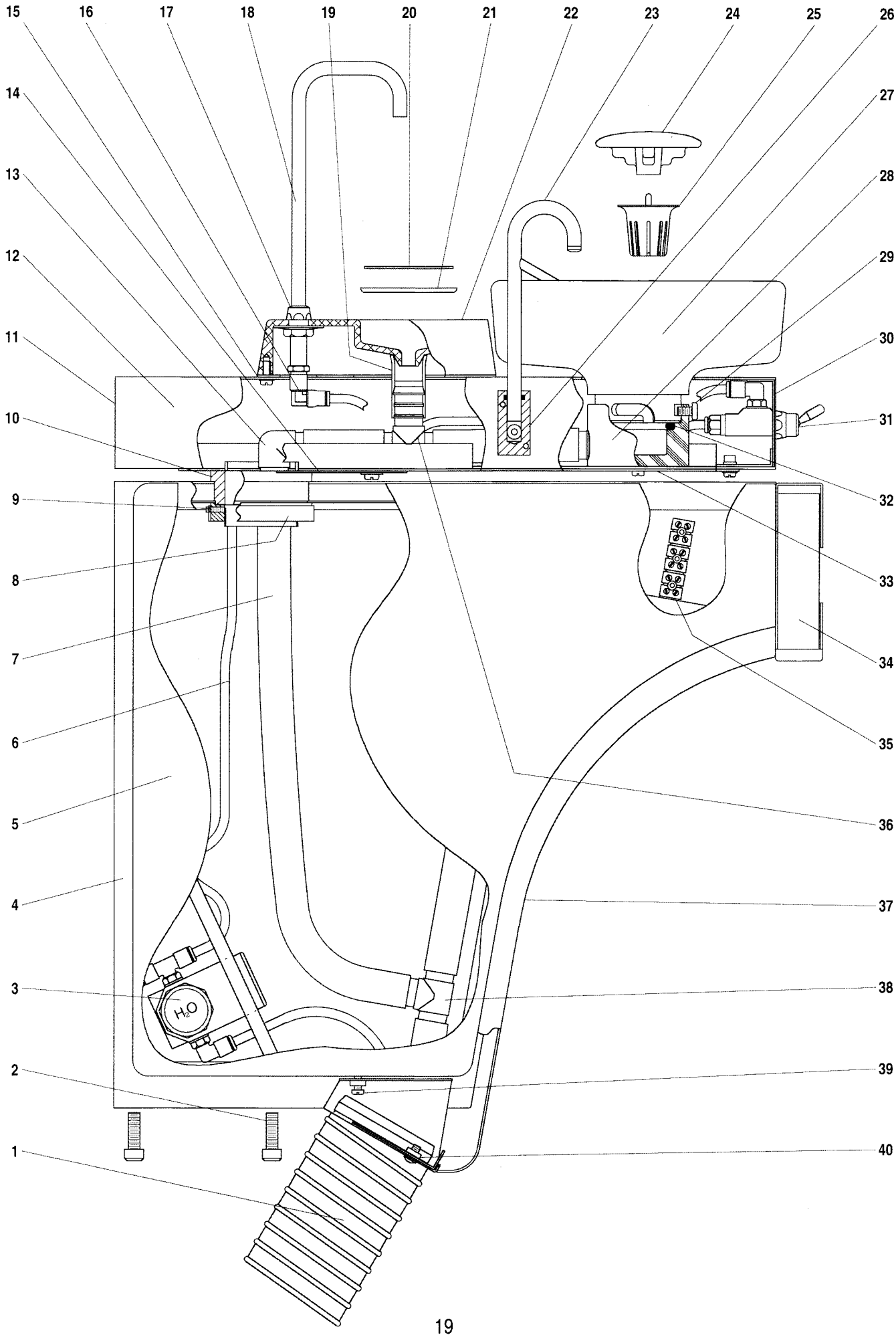
Part No.	Description/Comment
10 1067	Mains input fuse. 5 amp ceramic HBC, 1 inch x 1/4 inch
10 1182	Transformer primary fuse. T125mAL250v
22 1186	Ceramic spittoon bowl assembly
22 1231	Tip connector reducer, 16 mm to 11 mm
22 1284	Rotary tip connector assembly, large
22 1285	Rotary tip connector assembly, small
22 1302	Operating hose set with manifold connector and three rotary tip connectors
22 1338	Operating hose set with manifold connector but NO rotary tip connectors
22-1340	Replacement pressure regulator assembly
30 1007	Tip seal 'O' ring, large rotary tip connector
30 1008	Tip seal 'O' ring, small rotary tip connector
30 1085	Bowl seal 'O' ring
30 1110	Manifold 'O' ring, entries B & C
30 1123	Filter holder 'O' ring
30 1125	Nozzle socket 'O' ring
35 1250	Filter holder
35 1303	Grating locator ring (tumbler holder)
35 1460	Bowl trap (filter)
60 1101	Spray interceptor tip, plastic
70 1005	5/8" Cleaning brush
70 1006	1/4" Cleaning brush
70 1137	Sleeve filter, suction manifold
70 1138	1" Cleaning brush
70 1184	Spittoon Bowl deflector (ceramic)

LEGEND FOR CS90 SPITTOON PARTS DIAGRAM ~~see opposite~~ see below

Item	Part No.	Description
1	22-1445	Service hose assy
		Comprised of
	32-1071	3" Ø Grey hose x 4ft
	35-1297	Hose retainer x 2
	32-1064	Waste hose x 5ft
	15-1151	Mains cable x 8ft
	32-1068	Nylon tube x 8ft
2	65-1430	M8 x 25 cap screw
3	22-1340	Regulator assy. comprisses
	50-1077	regulator
	50-1003	gauge
	55-1136	elbow fitting
	55-1137	tee fitting
4	40-1757	Spittoon body
5	22-1543	Door panel, L/H. shown
	22-1544	Door panel, R/H
6	32-1068	6mm Nylon tube
7	32-1008	Waste tubing, clear
8	35-1295	Pivot nut
9	65-1915	Grub screw
10	35-1296	Arm spacer
11	75-1109	Facia label
12	40-1756	Arm cover
13	55-1133	Elbow, 19mm
14	40-1760	Stop plate
15	30-1126	Gasket
16	55-1136	Elbow, 6mm
17	45-1518	Nozzle socket
	30-1125	'O' Ring
	25-1056	Disc spring
	65-1013	Lock nut. 1/4" B.S.P.

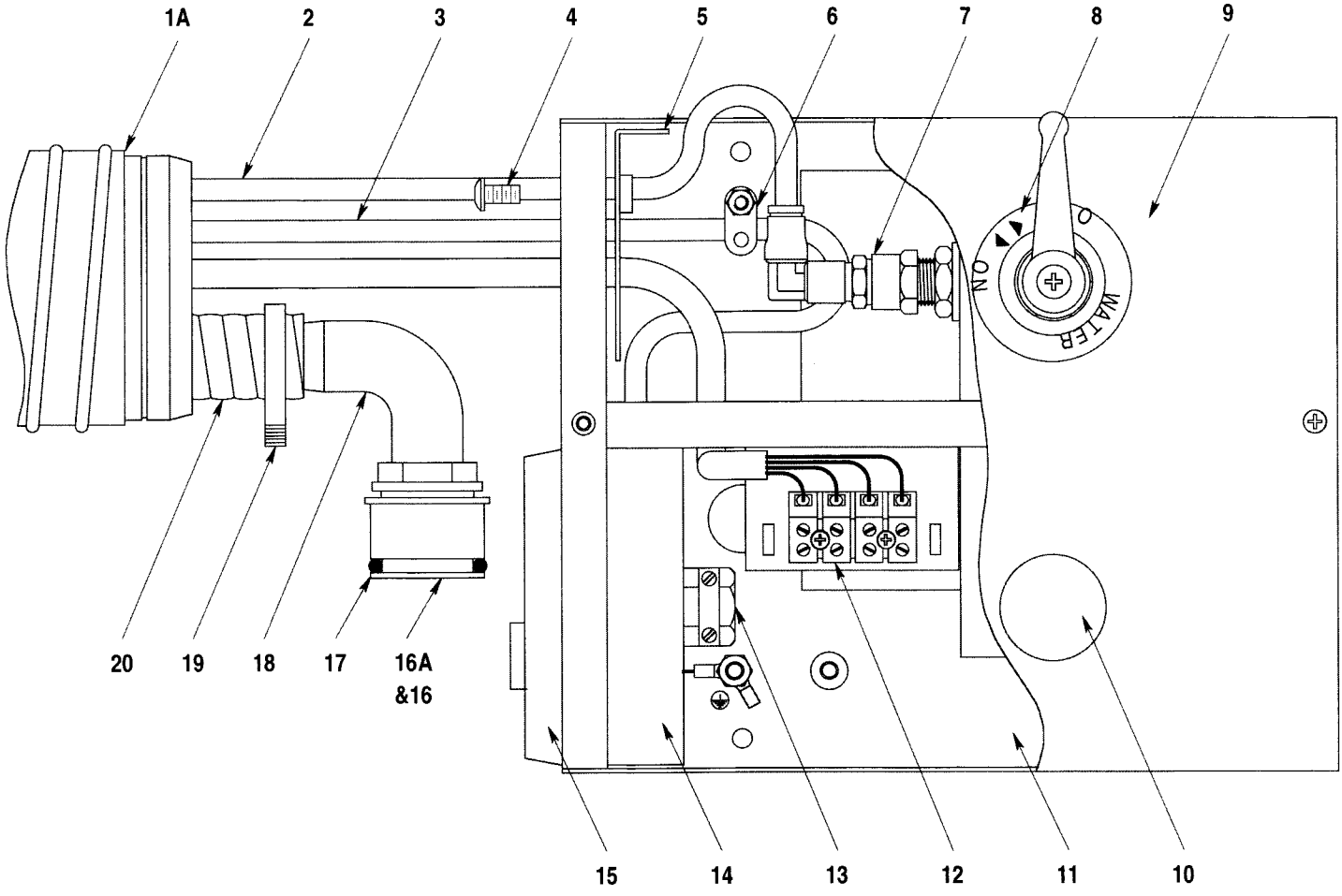
Item	Part No.	Description
18	45-1521	Tumbler filler nozzle
19	32-1016	Silicone sleeve. 19mm
20	40-1767	Cup grill
21	35-1303	Grill locator
22	45-1517	Tumbler holder
23	22-1326	Bowl flush nozzle
24	70-1184	Bowl deflector. ceramic
25	35-1507	bowl filter
26	45-1519	bowl flush socket
	30-1125	'O' ring
27	22-1186	Spittoon bowl
28	22-1518	Bowl socket assy
29	65-1361	M6 x 10 Nylon screw
30	75-1110	Controls label
31	22-1327	Bowl flush valve
	22-1328	Tumbler filler valve
32	30-1085	'O' Ring (bowl seal)
33	40-1755	Arm base
34	22-1283	Tissue holder
35	10-1167	Terminal block
36	55-1132	Waste Tee. 19mm
37	35-1293	Front cover
38	55-1132	Waste Tee. 19mm
39	65-1326	M5 x 16 s/s Screw
40	40-2121	S/Hose retainer

PARTS DIAGRAM for CS90 BASIC SPITTOON. P/No. 23-1114



PARTS DIAGRAM for CS90 standard FLOOR BOX. 22-1217

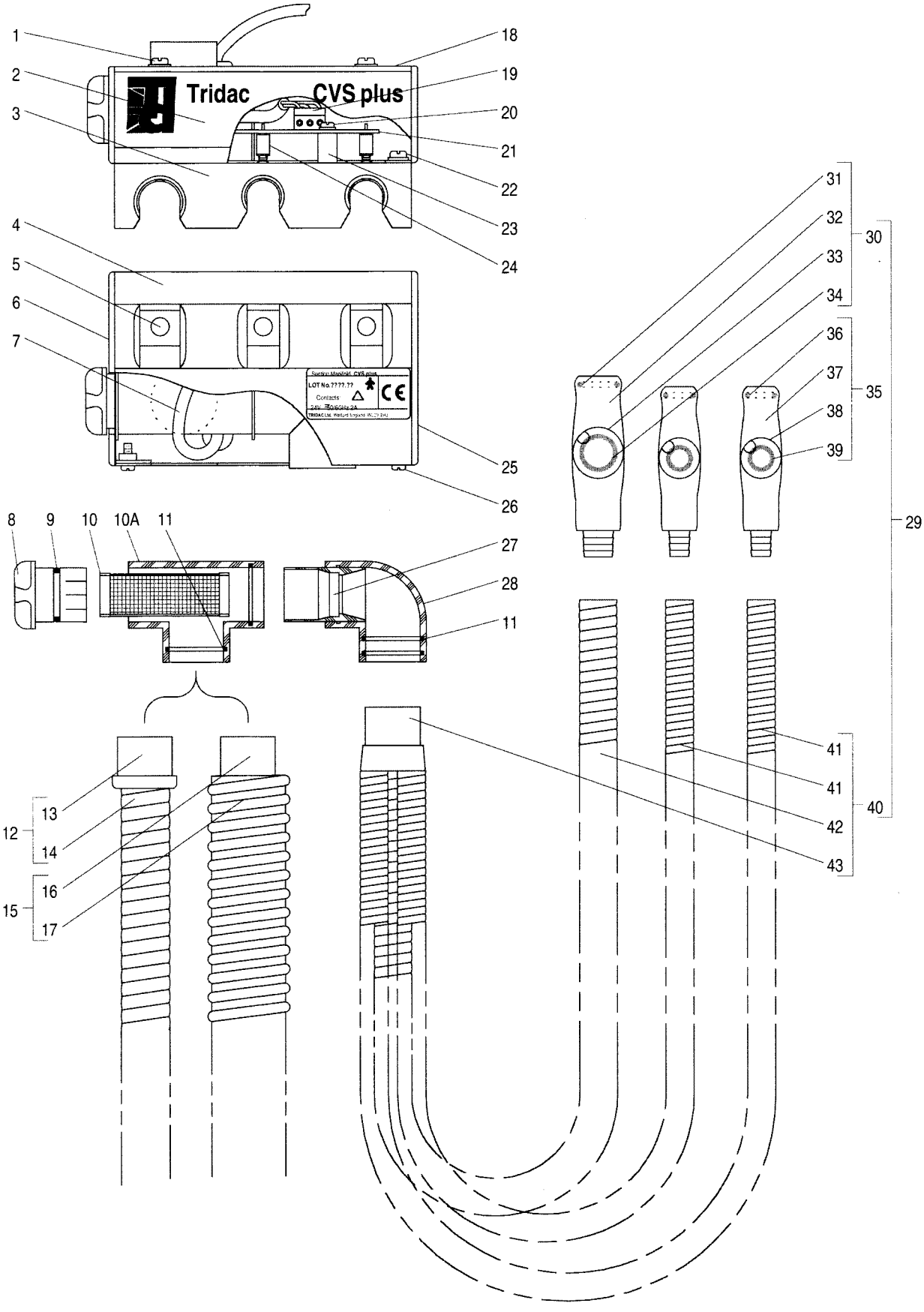
From serial number CS93679.14



Item	Part No.	Description
1A	22 1445	Service hose assy.
	(Comprissed of Items 1, 2, 3 and 20)	
1	32 1071	3" Ø hose x 4ft fitted with
	35 1297	Hose retainer x 2
2	32 1068	6mm Ø Nylon tube x 7ft
3	15 1151	Mains cable x 7ft
4	65-1310	S/hose retainer screws x 2
5	40-2121	Service hose retainer
6	15 1058	Cable clamp
7	22 1213	Ball valve assy
	(Includes, but not only, the following Items)	
	50 1036	Ball valve. Less fittings
	55 1136	Elbow fitting. 6mm
8	75 1096	Water ON/OFF label
	75 1097	Air ON/OFF label
9	40 1701	Service box cover

Item	Part No.	Description
10	35 1101	Blanking plug
11	40 1700	Service box base
12	10 1167	Terminal block. 4way
13	10 1275	Cord grip
	10 1276	Nut for cord grip
14	10 1007	Connection box
15	10 1009	Switched connection unit
	10 1065	Fuse. 5amp ceramic
16A	22 1293	Waste elbow assy
	(Comprissed of items 16, 17, 18 & 19)	
16	35 1304	Waste adaptor
17	30 1107	'O' Ring
18	55 1140	Elbow. 19/32mm
19	35 1288	Hose clamp
20	32 1064	Waste hose x 4.5ft

PARTS DIAGRAM for CVS Suction manifold fitted to CS90 Spittoons

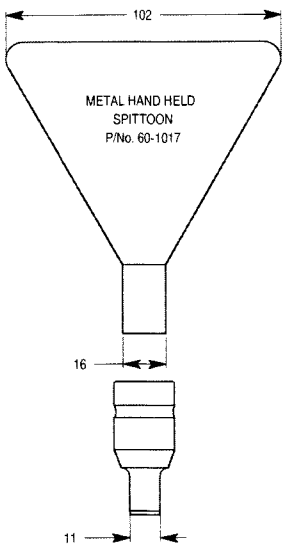


LEGEND FOR SUCTION MANIFOLD PARTS DIAGRAM

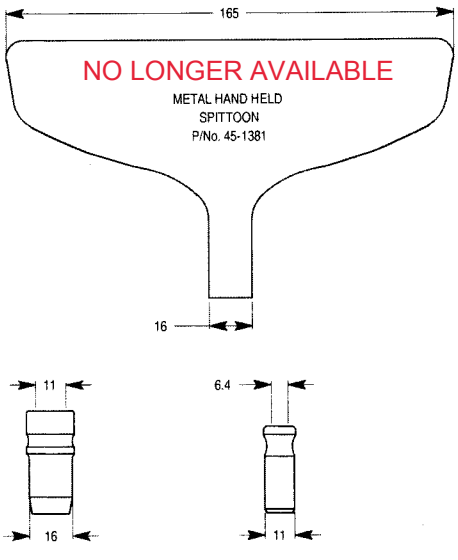
Item	Part No.	Description
1	65-1310	M5 x 10 Pan head screw
	65-2708	M5 Shakeproof Washer
2	75-1106	Facia Label
3	22-1321	Hanger Block assy. S/P
		Comprissed of
	45-1487	Hanger Block + items 20,21,23 & 24
4	40-1708	Front Cover (Items 2, 6 & 25 also req'd)
5	35-1074	Actuating ball
6	35-1245	End Plate
7	15-1136	4 Core Cable
8	35-1250	Filter Holder
9	30-1123	'O' Ring
10	70-1137	Sleeve Filter
10A	35-1248	Manifold TEE Fitting
11	30-1110	'O' Ring x 2
12	22-1495	Hose assembly. Wetline 19mmØ
13	35-1257	Hose Adaptor
14	32-1064	Hose. 19mm ID
15	22-1496	Hose Assembly. Dryline 32mmØ
16	35-1236	Hose Adaptor
17	32-1012	Hose. 32mm ID
18	40-1707	Back Plate
19	10-1256	3 way Connector
20	65-1292	M4 x 20 Pan head screw
	65-2739	M4 Nylon washer

Item	Part No.	Description
21	20-1032	P.C.B. Assembly, S/Pole switches
22	65-1310	M5 x 10 Pan head screw
	65-2708	M5 Shakeproof Washer
23	35-1290	Spacer
24	10-1258	MicroSwitch
25	35-1246	End Plate
26	65-1274	M4 x 10 Pan head screw
27	35-1249	Filter Locator } Supplied together
28	35-1234	Elbow
29	22-1302	Hose Set, complete with valves
30	22-1284	Large Rotary Valve Assembly
31	30-1007	'O' Ring
32	35-1241	Large Valve Body
33	35-1243	Large Valve
34	30-1113	'O' ring
35	22-1285	Small Rotary Valve Assembly
36	30-1008	'O' Ring
37	35-1242	Small Valve Body
38	35-1244	Small Valve
39	30-1114	'O' Ring
40	22-1338	Hose Set, Replacement
41	32-1062	Small Hose. Std length 1.5m
42	32-1063	Large hose. std length 1.5m
43	35-1233	Manifold Connector

OPTIONAL HAND SPITTOONS, ASPIRATION TIPS AND ADAPTORS for use with the TRIDAC CVS Plus MANIFOLD or any EUROPEAN SIZED SUCTION SYSTEMS

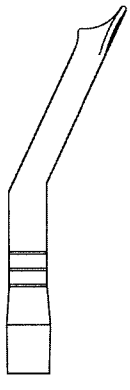


TIP ENLARGER.
P/No. 22-1232
Use to adapt spittoons to small hoses

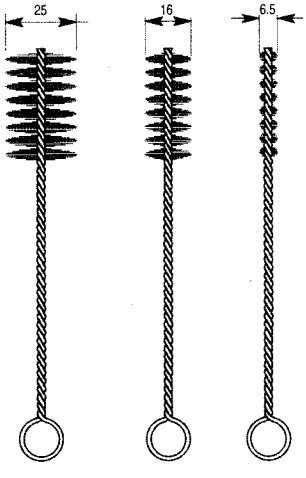


TIP REDUCER.
P/No. 22-1231
Use to allow smaller tips to fit large hose (more efficient)

TIP ADAPTOR.
P/No. 60-1038
Use to fit saliva ejector tips to small hoses



60-1101

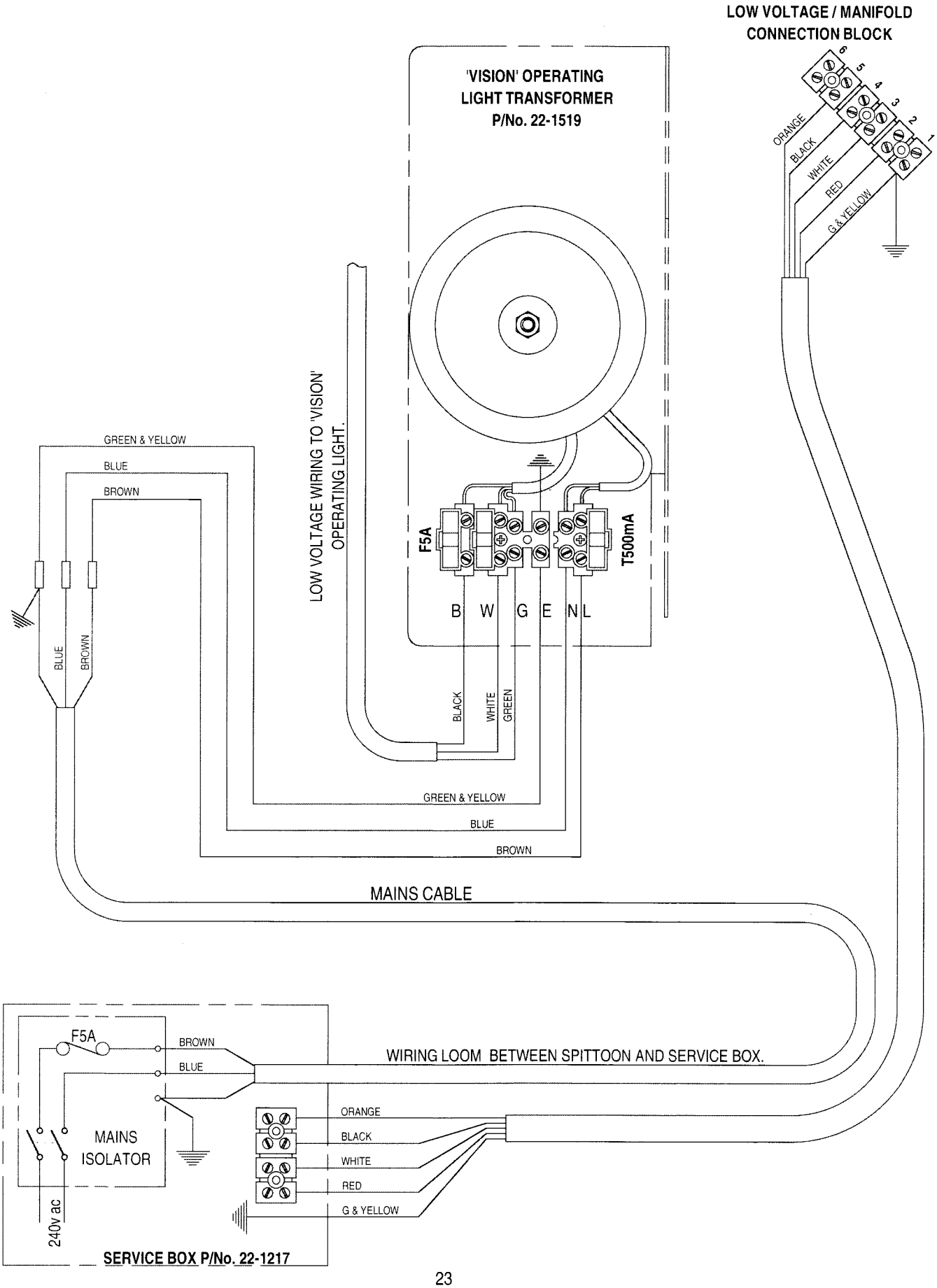


70-1138 70-1005 70-1006

WIRING CONNECTIONS FOR CS 90 SPITTOON, Model 900.

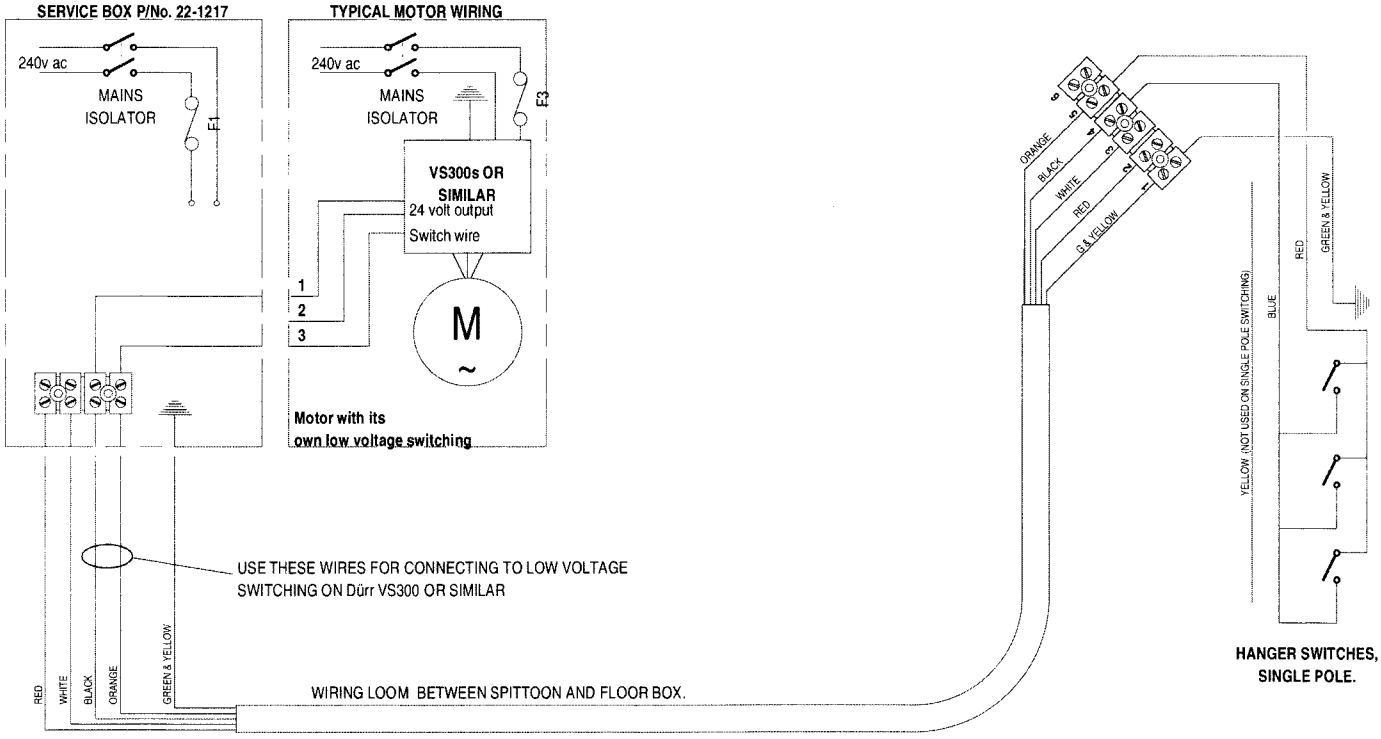
Basic spittoon wiring shown, together with 'Visions' light transformer when fitted.

For other variants, see the appropriate additional diagram.



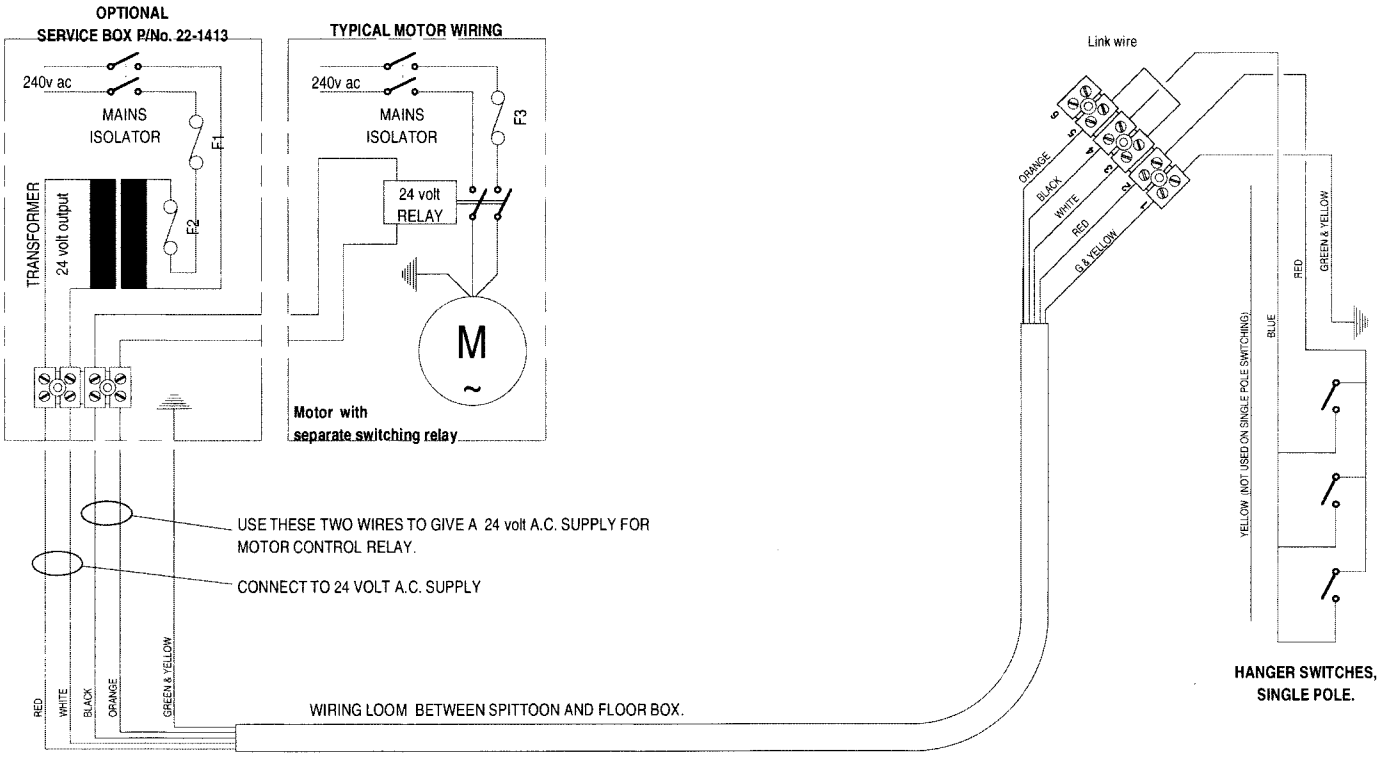
WIRING CONNECTIONS FOR CS 90 SPITTOON, Model 904.
Fitted with Single Pole Switches. Suitable for wet or dryline.

Use this wiring layout when the suction source has its own low voltage switching wires, such as a Dürr VS300.
Tridac spittoons are normally wired in this manner at the factory.



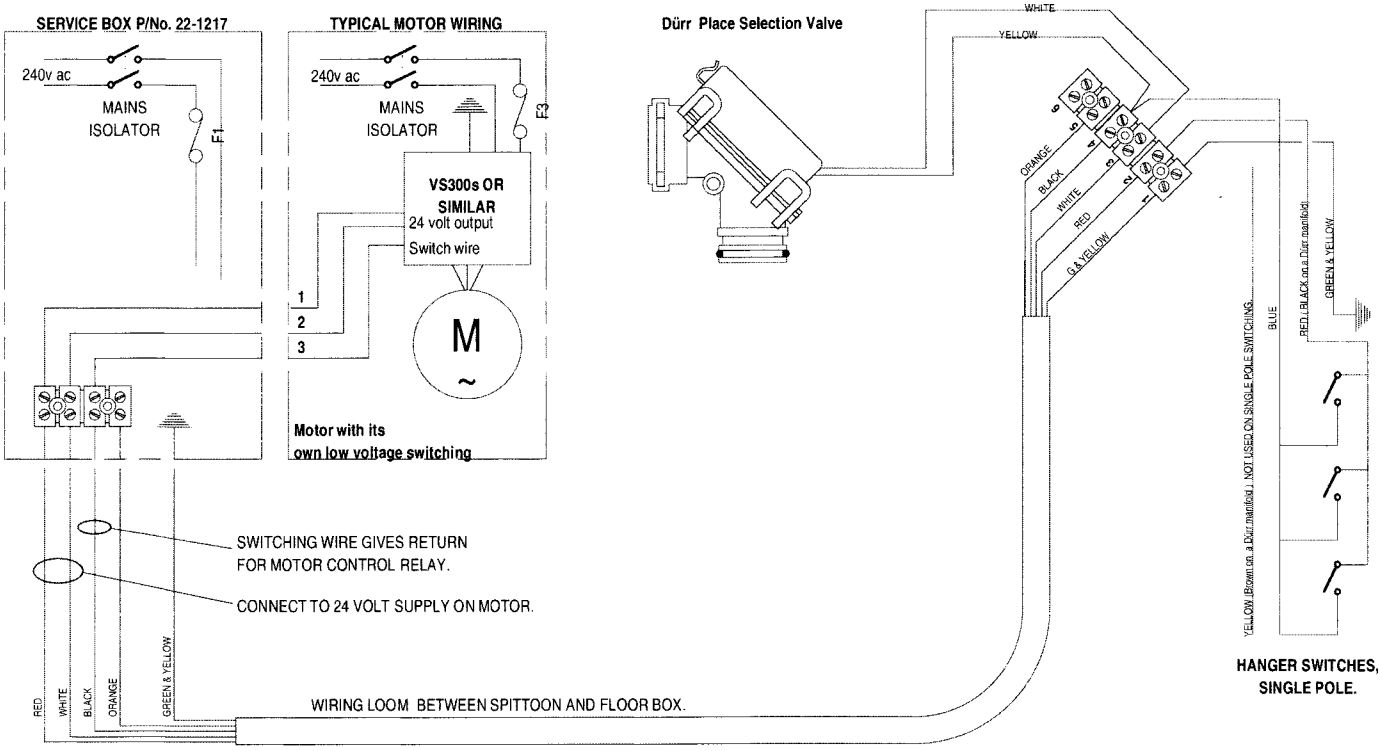
ALTERNATIVE WIRING LAYOUT

Use this motor wiring layout when the suction source does not have its own low voltage switching.
Note, a separate 24 v A.C. relay rated to suit the motor will be required, it is NOT supplied by Tridac.



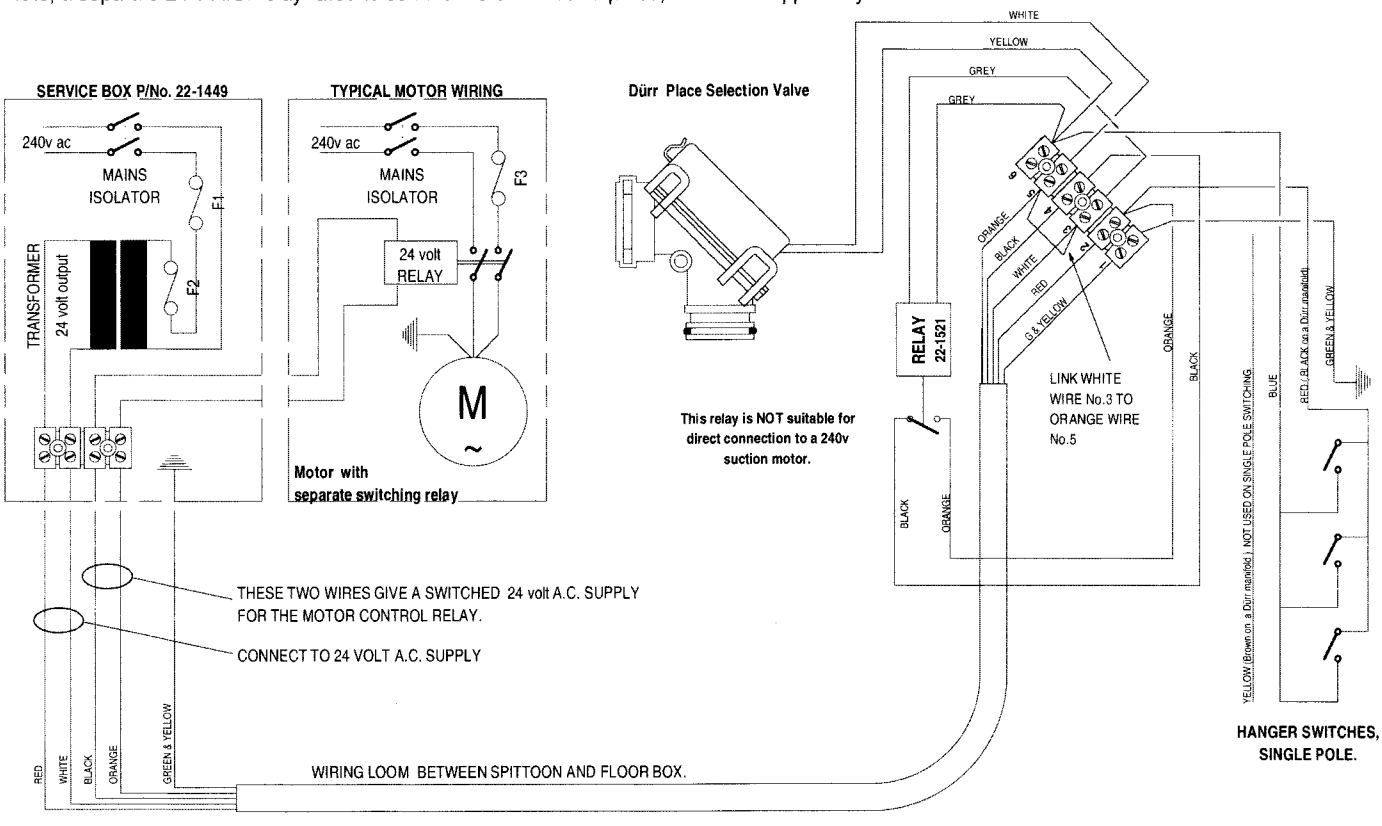
WIRING CONNECTIONS FOR CS 90 SPITTOON, model 904 P
Fitted with Dürr Place Selection valve. Suitable for wet or dryline.

Use this wiring layout when the suction source has its own low voltage switching wires, such as a Dürr VS300.
Tridac spittoons fitted with Dürr valves at the factory, are normally wired in this manner.



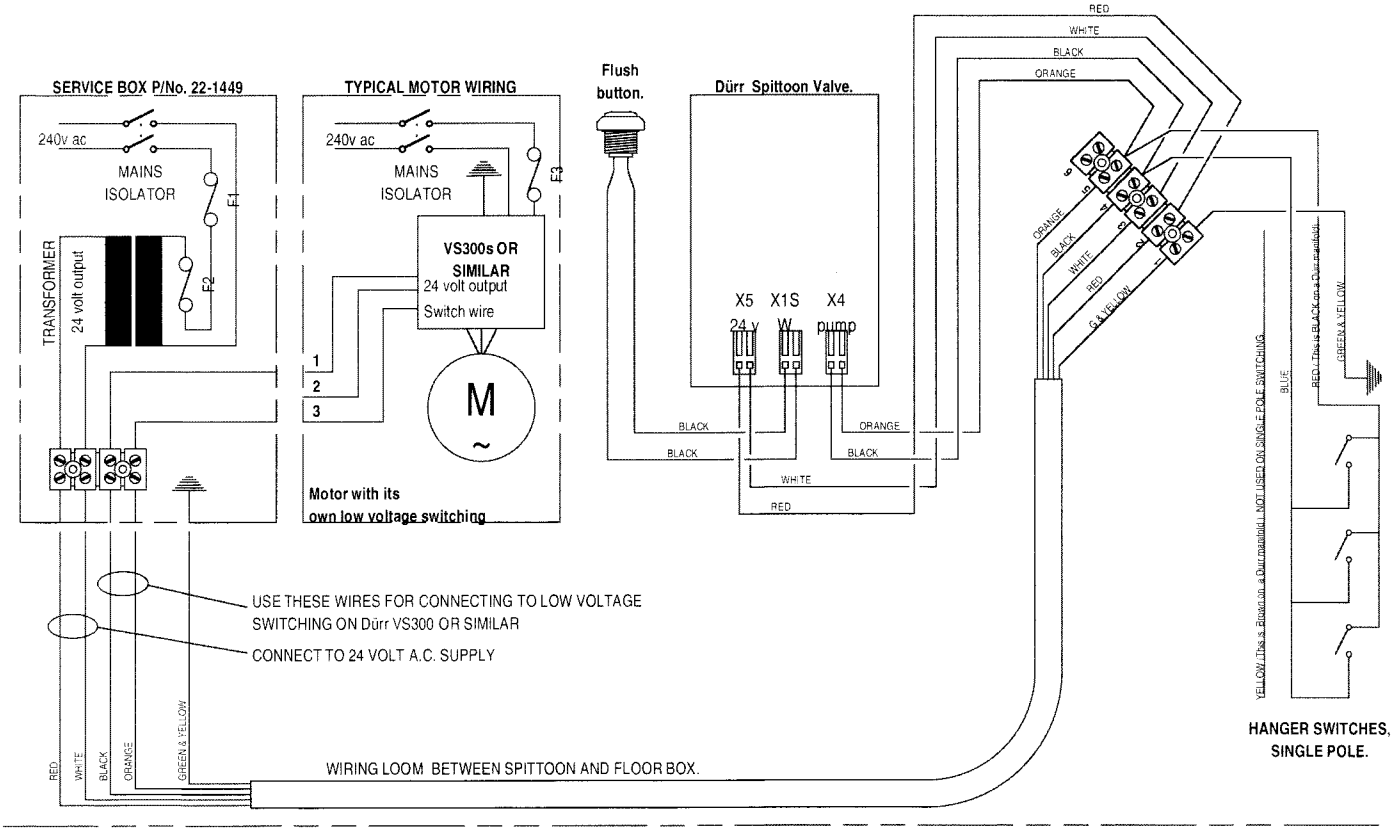
ALTERNATIVE WIRING LAYOUT

Use this motor wiring layout when the suction source does not have its own low voltage switching.
Note, a separate 24 v A.C. relay rated to suit the motor will be required, it is NOT supplied by Tridac.



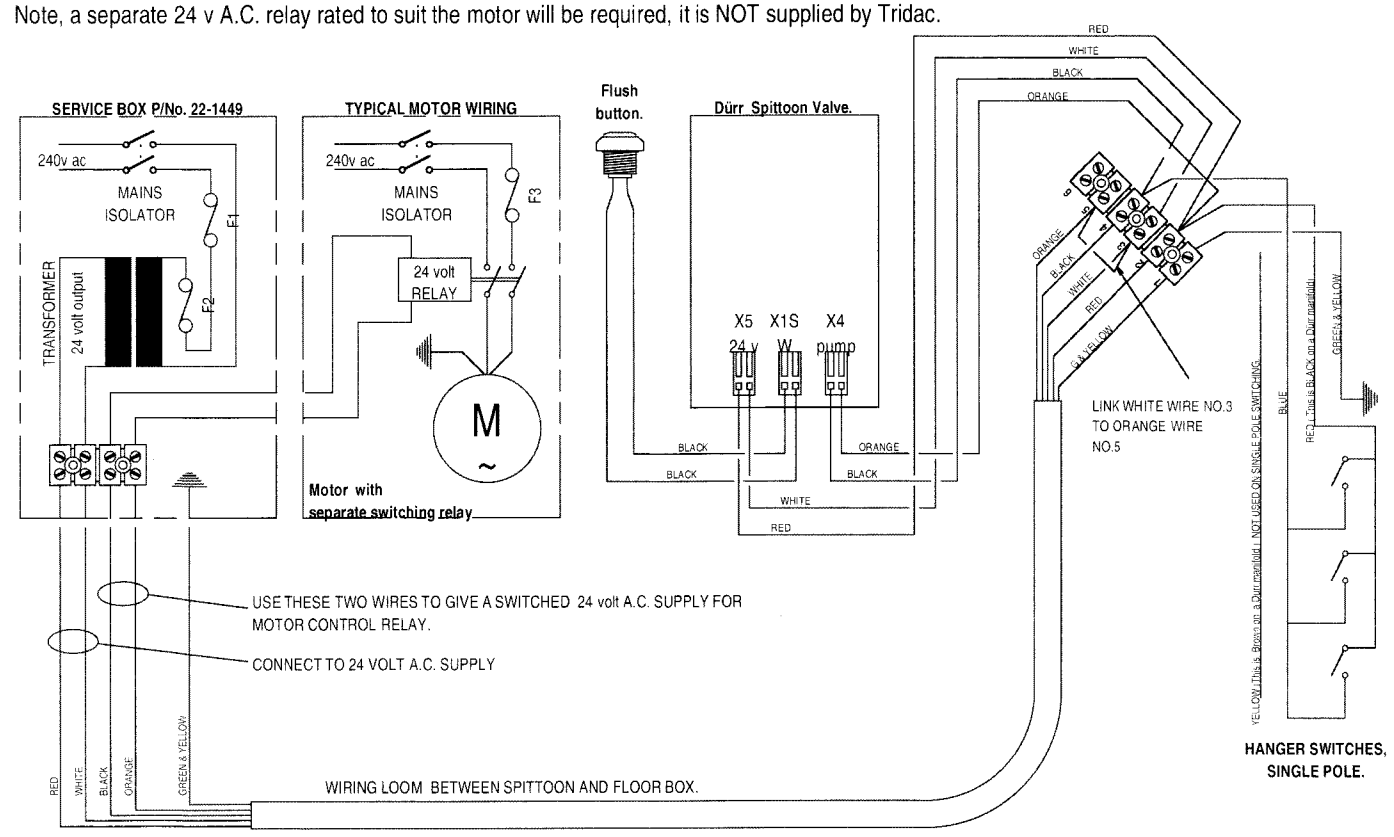
WIRING CONNECTIONS FOR CS 90 SPITTOON, model 908
Fitted with Dürr Spittoon Valve. Suitable for wet or dryline.

Use this wiring layout when the suction source has its own low voltage switching wires, such as a Dürr VS300.
Tridac spittoons fitted with Dürr Spittoon valves at the factory, are normally wired in this manner.



ALTERNATIVE WIRING LAYOUT

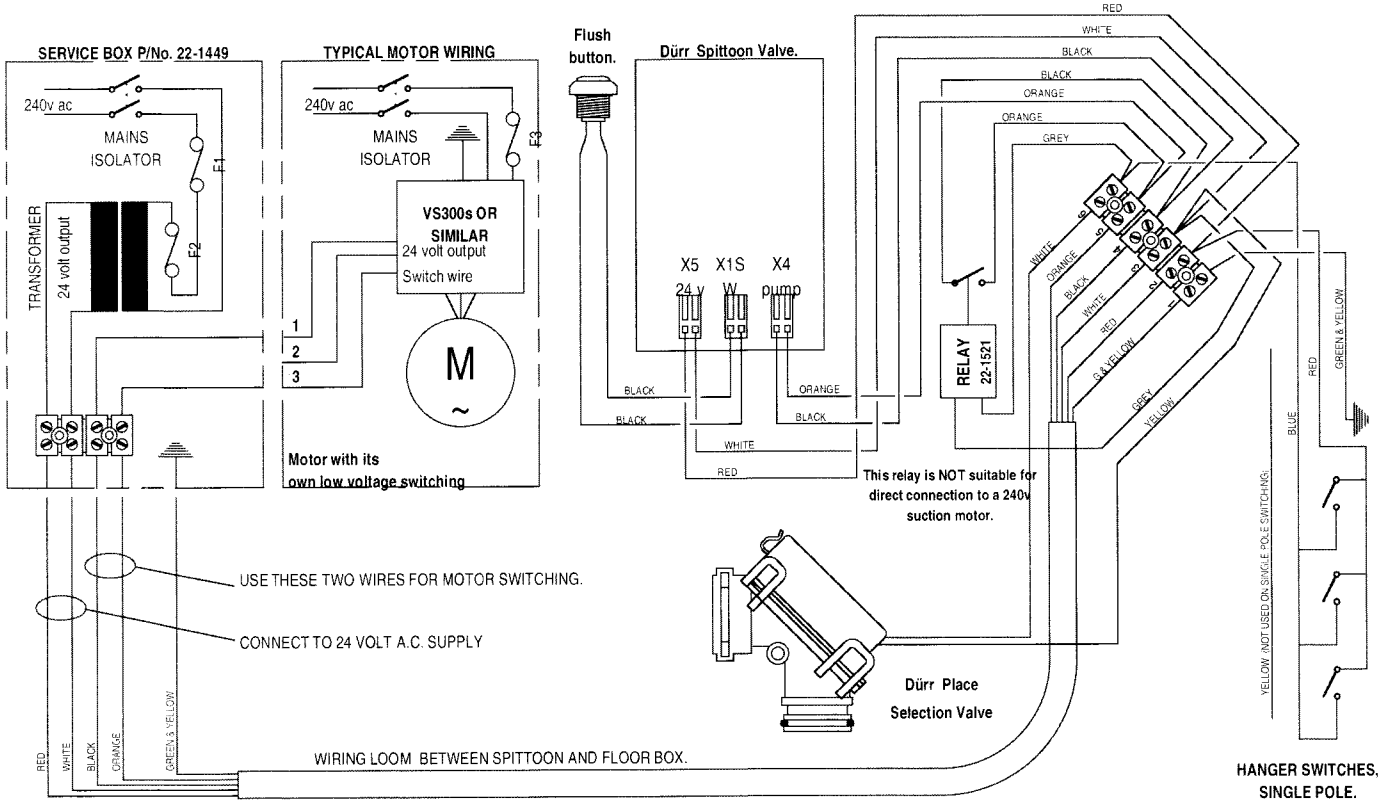
Use this motor wiring layout when the suction source does not have its own low voltage switching.
Note, a separate 24 v A.C. relay rated to suit the motor will be required, it is NOT supplied by Tridac.



WIRING CONNECTIONS FOR CS 90 SPITTOON, model 908 P

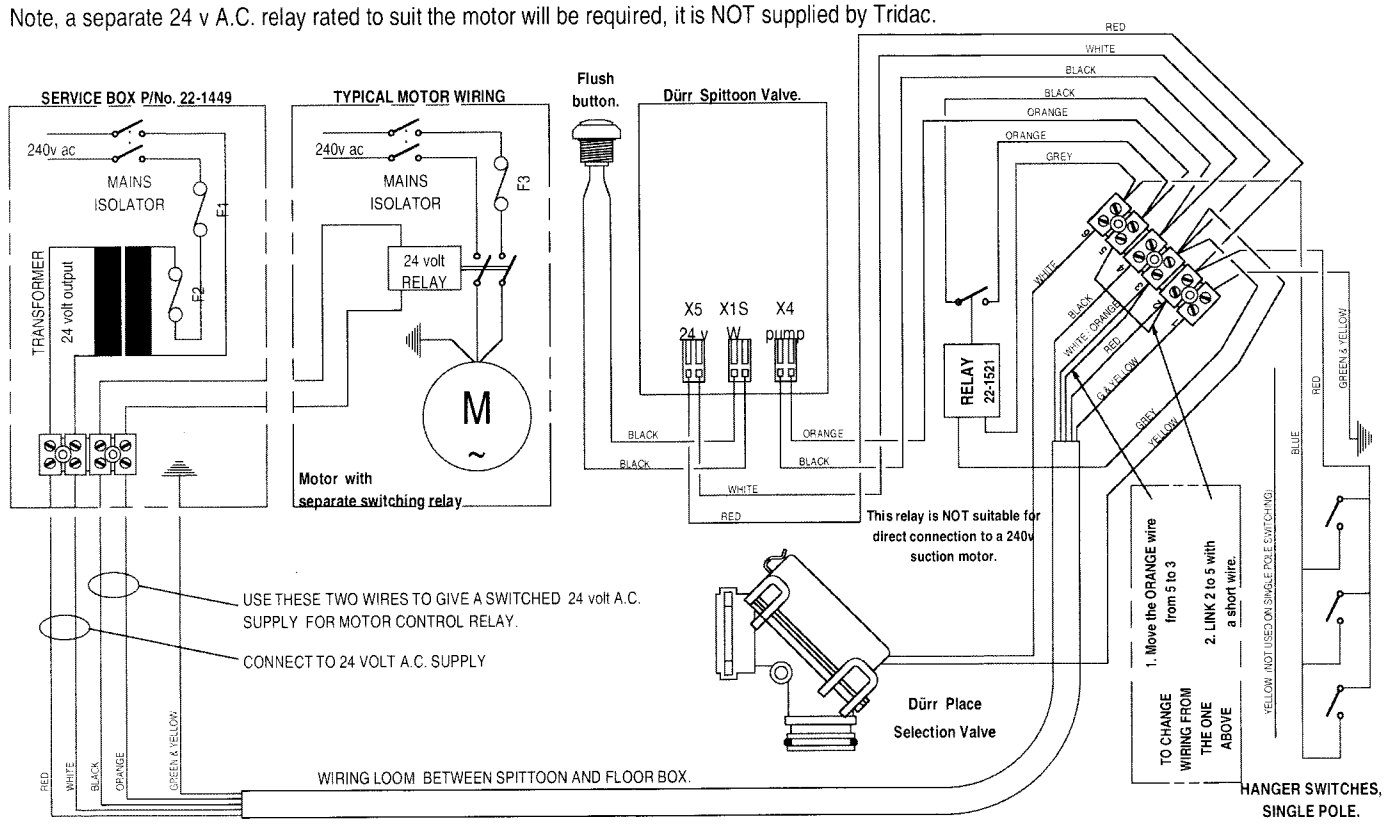
Fitted with Dürr Spittoon Valve and Place Selection valve. Suitable for wet or dryline.

Use this wiring layout when the suction source has its own low voltage switching wires, such as a Dürr VS300.
Tridac spittoons fitted with Dürr Spittoon valves at the factory, are normally wired in this manner.



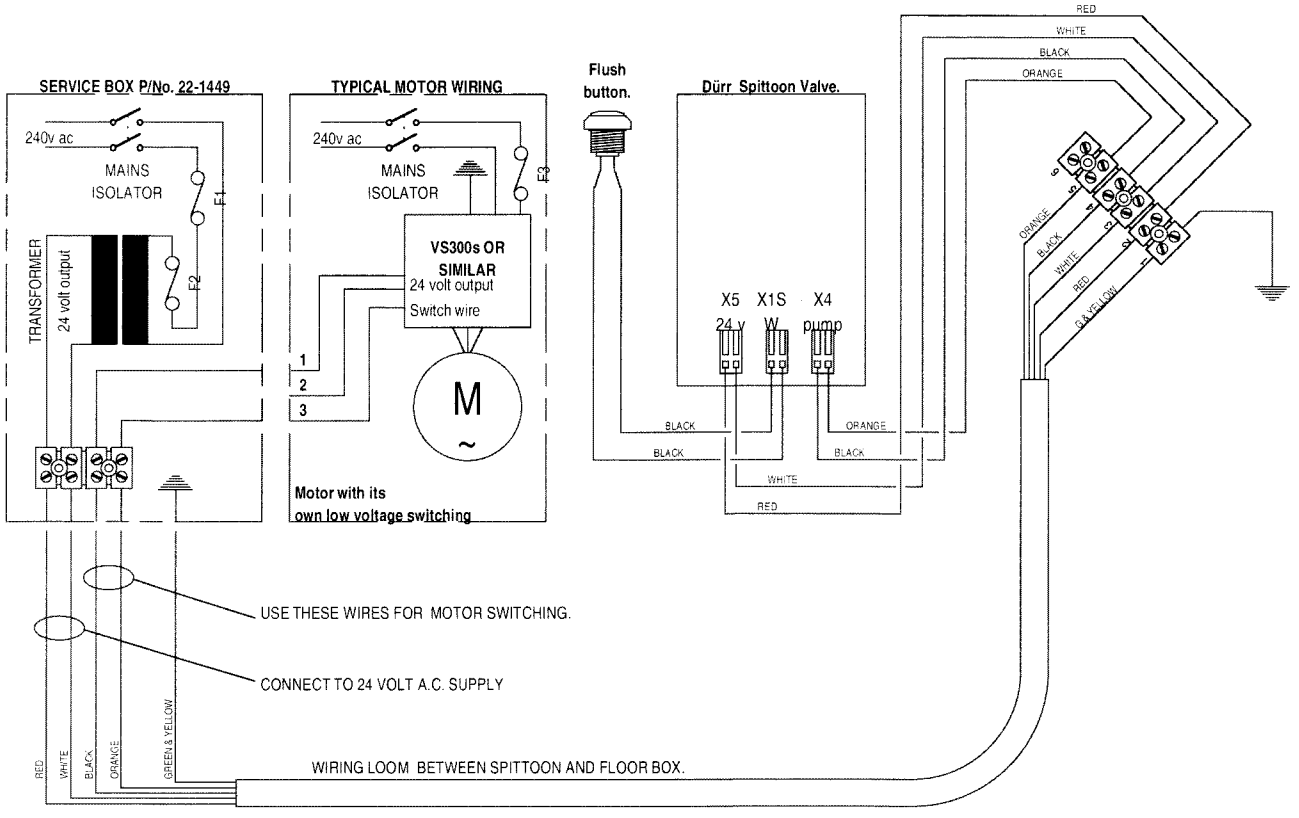
ALTERNATIVE WIRING LAYOUT

Use this motor wiring layout when the suction source does not have its own low voltage switching.
Note, a separate 24 v A.C. relay rated to suit the motor will be required, it is NOT supplied by Tridac.



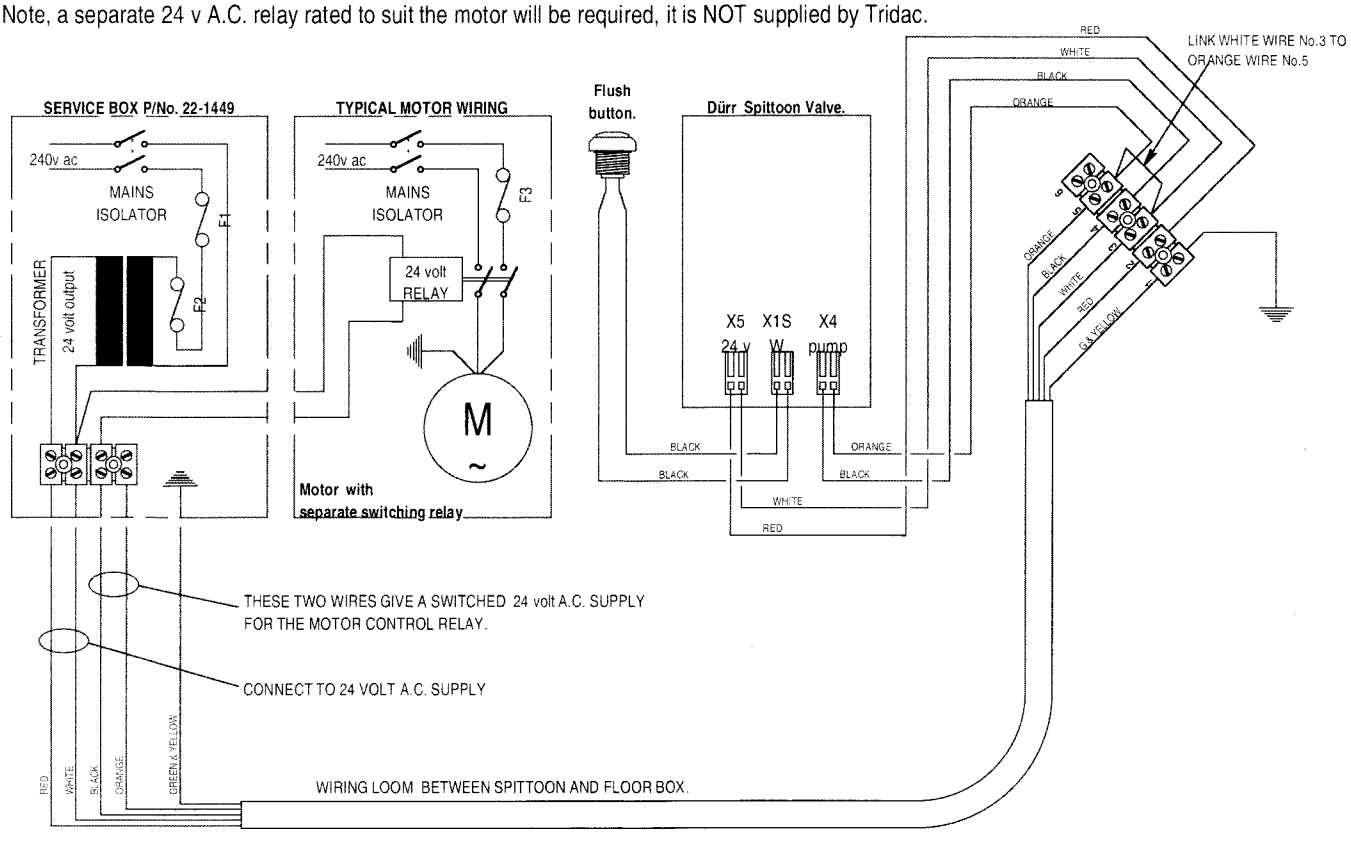
WIRING CONNECTIONS FOR CS 90 SPITTOON, Model 909
Fitted with Dürr Spittoon Valve but without suction manifold.

Use this wiring layout when the suction source has its own low voltage switching wires, such as a Dürr VS300.
Tridac spittoons fitted with Dürr Spittoon valves at the factory, are normally wired in this manner.



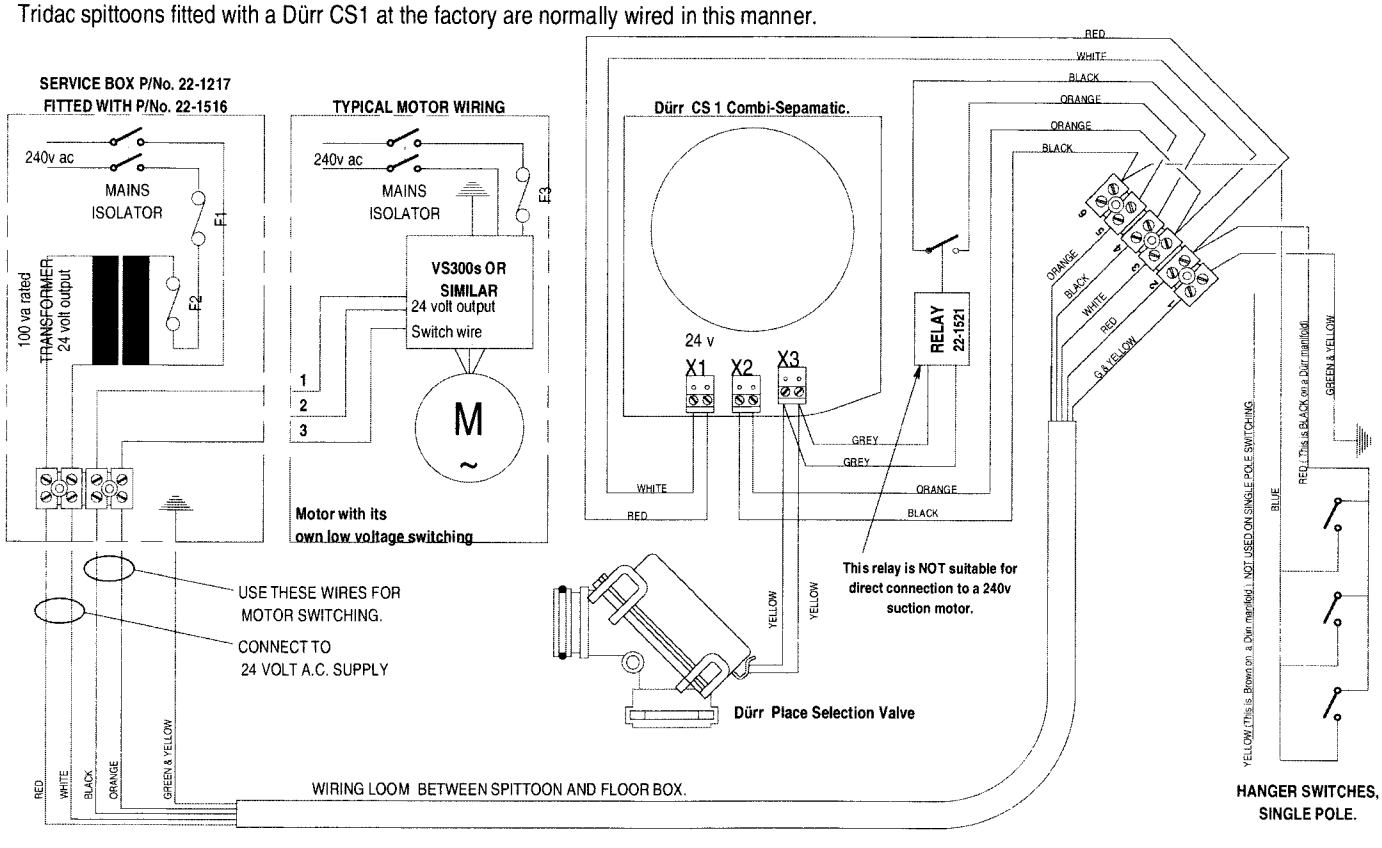
ALTERNATIVE WIRING LAYOUT

Use this motor wiring layout when the suction source does not have its own low voltage switching.
Note, a separate 24 v A.C. relay rated to suit the motor will be required, it is NOT supplied by Tridac.



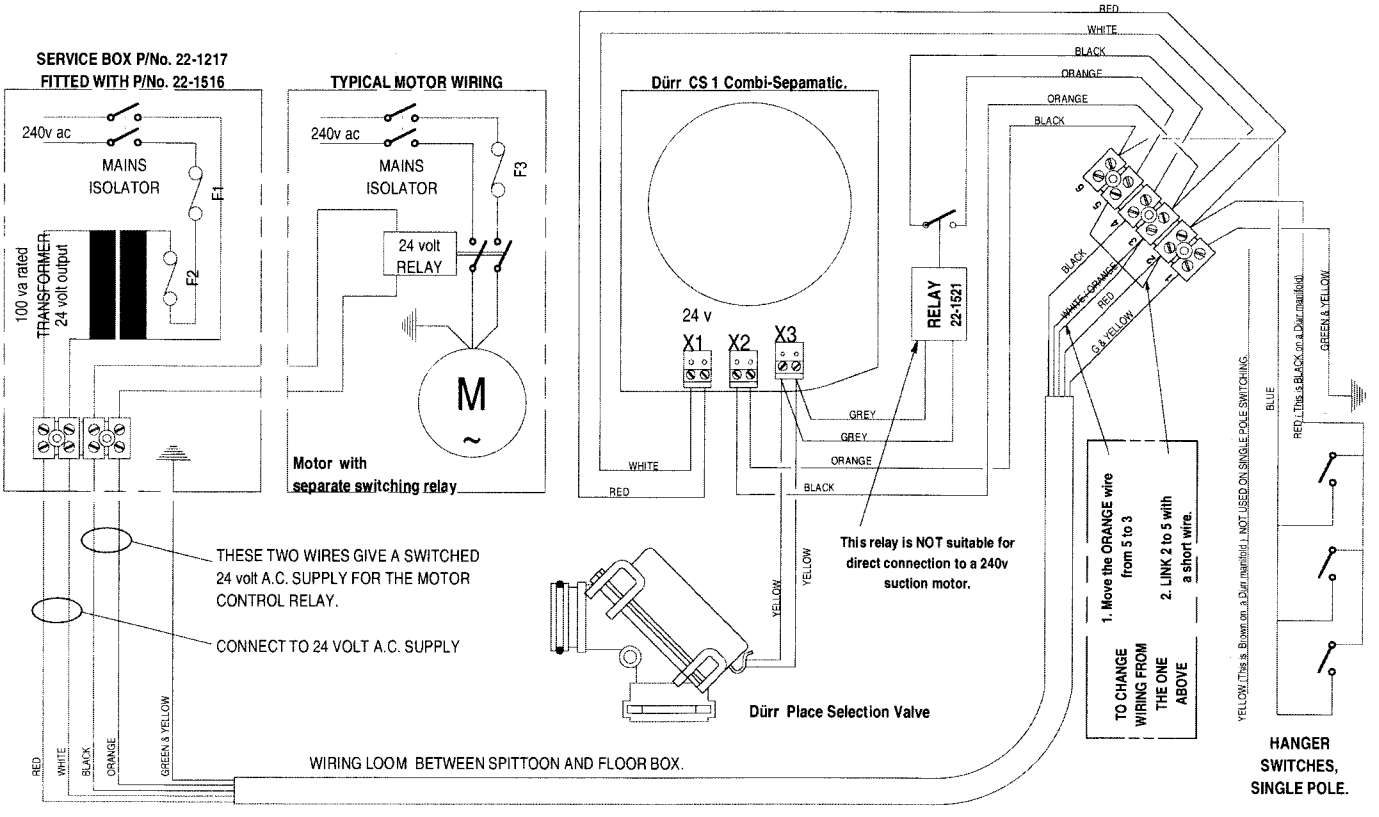
WIRING CONNECTIONS FOR CS 90 SPITTOON, model 904 CS
Fitted with Dürr CS 1 COMBI-SEPAMATIC. Suitable for dryline Suction.

Use this wiring layout when the suction source has its own low voltage switching wires, such as a Dürr VS300.
Tridac spittoons fitted with a Dürr CS1 at the factory are normally wired in this manner.

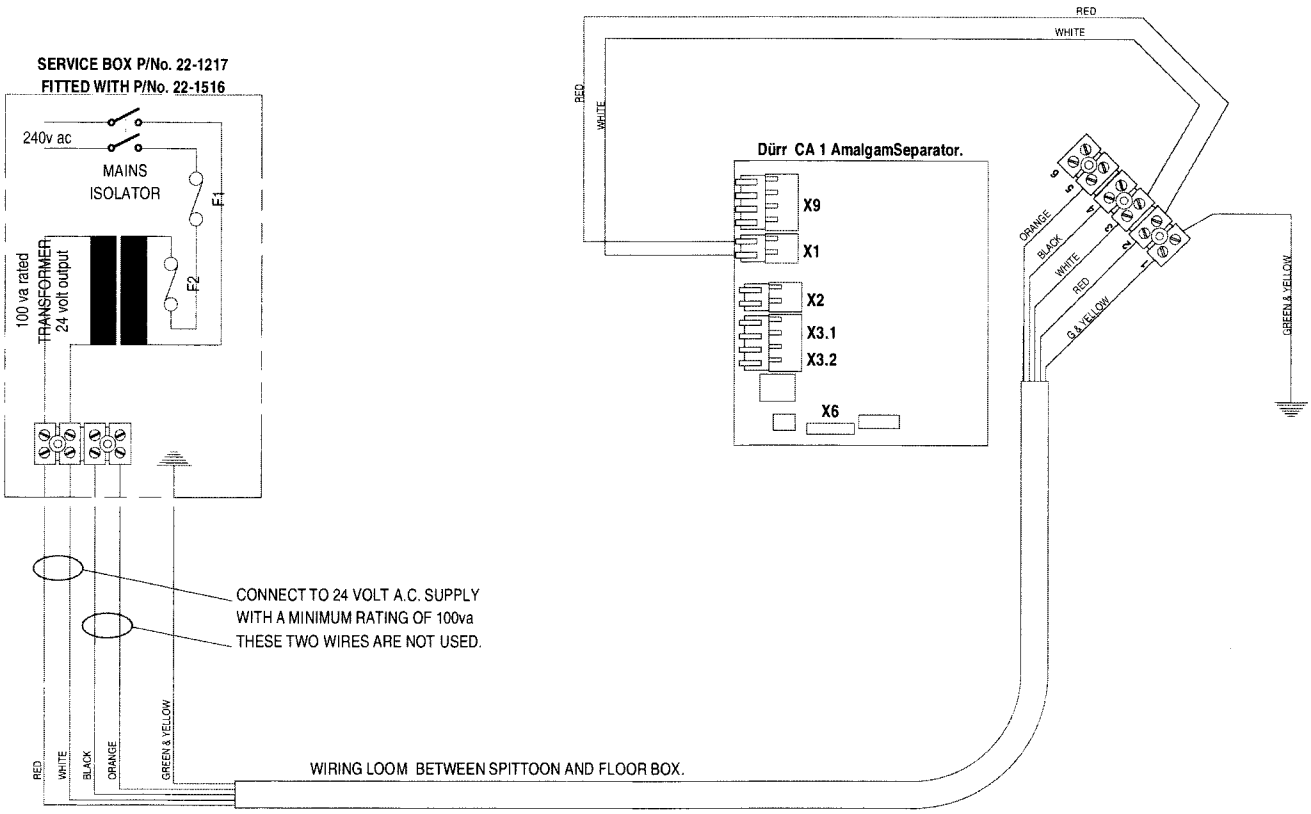


ALTERNATIVE WIRING LAYOUT

Use this motor wiring layout when the suction source does not have its own low voltage switching.
Note, a separate 24 v A.C. relay rated to suit the motor will be required, it is NOT supplied by Tridac.



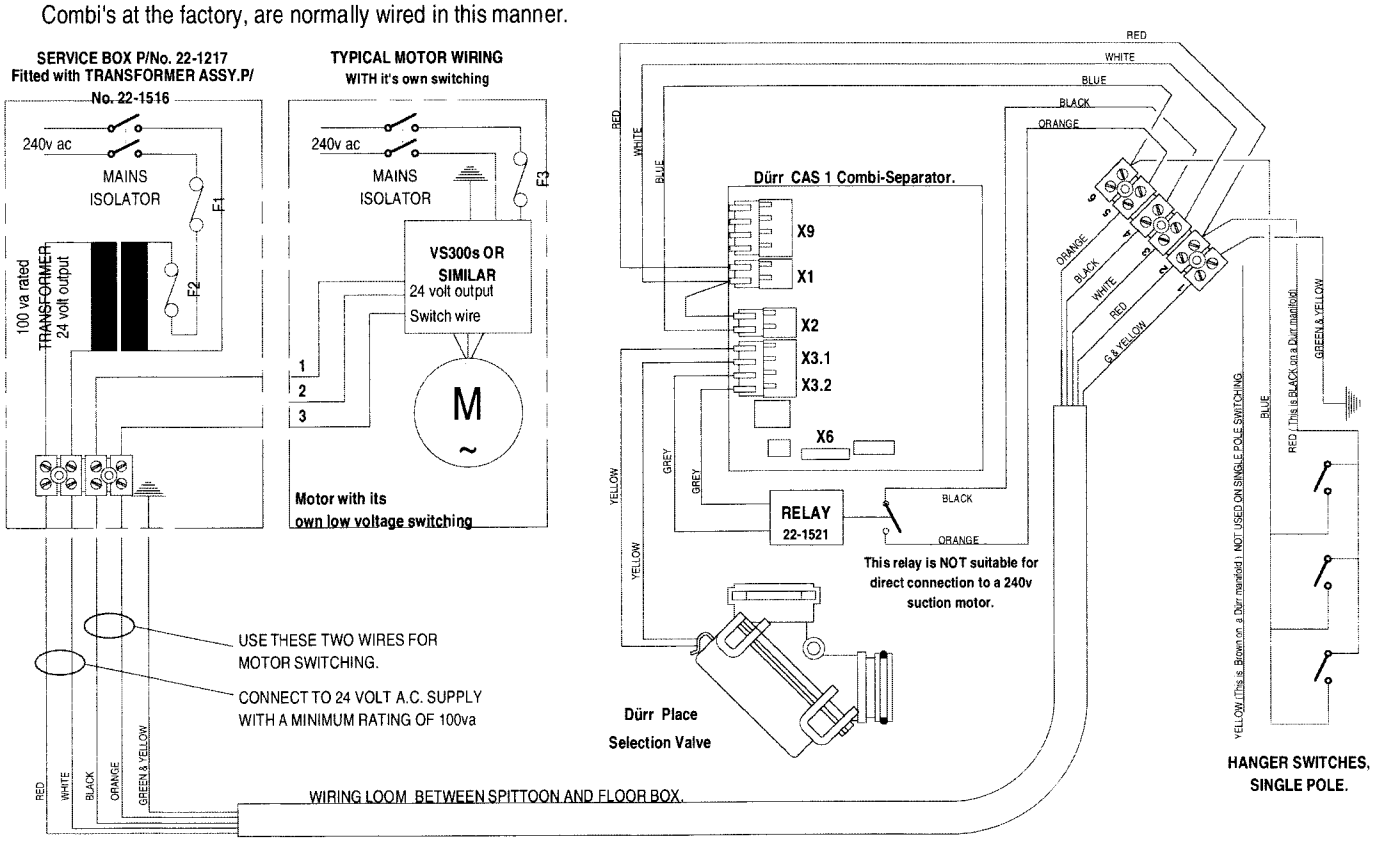
WIRING CONNECTIONS FOR CS 90 SPITTOON, model 90CA
Fitted with Dürr CA 1 AMALGAM-SEPARATOR.



WIRING CONNECTIONS FOR CS 90 SPITTOON, model 90CAS

Fitted with Dürr CAS 1 COMBI-SEPARATOR. Suitable for dryline Suction.

The COMBI Separator provides a 24 volt dc switched output at X3.2 that is used to operate a relay that switches on the motor.Use this wiring layout when the suction source has its own low voltage switching wires, such as a Dürr VS300.Tridac spittoons fitted with Dürr Combi's at the factory, are normally wired in this manner.



ALTERNATIVE WIRING LAYOUT

Use this motor wiring layout when the suction source does not have its own low voltage switching.
Note, a separate 24 v A.C. relay rated to suit the motor will be required, it is NOT supplied by Tridac.