Purair 80 User Manual

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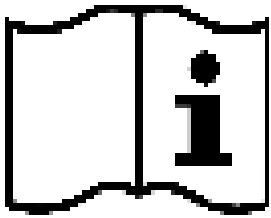
Read the Manual



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Introduction

The Purair 80 contains all the pneumatic circuitry, required to remove anaesthetic gases from an anaesthesia system fitted with an appropriate air break receiving unit system and dispose of them diluted with air to a safe appropriate place of discharge.

The Purair80 machine is designed to comply with:

BS EN ISO 7396-2 2007, Medical gas pipeline systems Part 2: Anaesthetic gas scavenging disposal systems

BS EN 60601-1-2:2015, Medical electrical equipment. General requirements for basic safety and essential performance. Collateral standard. Electromagnetic compatibility. Requirements and tests

BS EN 60601-1:2006+A12:2014 Medical electrical equipment. General requirements for basic safety and essential performance

Product Improvement

MEC Medical Ltd. has a policy of continued product improvement and therefore reserves the right to make changes which may affect the information contained in the manual without giving prior notice.

Responsibilities of the User

The Purair 80 conforms to the specifications and operating procedures described in this manual and any accompanying notices and labels only if it has been installed, used, and maintained in accordance with the instructions. MEC Medical can only guarantee the safe function of the machine if it is regularly checked and serviced at or above the standards specified in this manual.

If you suspect that any component of the machine is worn, defective or otherwise unfit for use, do not use the machine under any circumstances.

Replace any broken, worn or contaminated component(s) immediately. Contact the MEC Medical distributor from whom the machine was obtained for further service.

Responsibilities of the Manufacturer

The manufacturer accepts responsibility for the effects on safety, reliability, and performance of the equipment only if assembly operations, extensions, adjustments, modifications, and repairs are carried out by persons with written authorization from the manufacturer, and the equipment is used in accordance with the instructions for use and the electrical installation of the relevant room complies with the 'Regulations for the Electrical Equipment of Buildings'.

If during the warranty period the equipment is serviced by an unauthorized party, the warranty will be void.

Note to Service Personnel

The Purair80 must only be serviced by Qualified Service Personnel.

The contents of this manual are not binding. If any significant difference is found between the product and this manual please contact MEC Medical Ltd. for further information.

To ensure correct functioning, the equipment must be serviced at regular intervals.

MEC Medical Ltd. recommends that the machine should be serviced at intervals not exceeding one year. Qualified Service Personnel and genuine spare parts should be used for all servicing and repairs. MEC Medical Ltd. will not otherwise assume responsibility for the materials used, the work performed or any possible consequences of the same.

In communication with MEC Medical Ltd., quote the model and serial number of the equipment, with the approximate date of purchase. If the unit is being returned for repair, indicate the nature of the fault or the work you require to be carried out.

General Cautions and Warnings

Table 1 :-

	The user *must* be familiar with the machine and its various functions before using it on a patient.
	Federal law restricts this device for sale by or on the order of a physician.
	Incorrect use of the equipment described herein may result in injury to the patient. Read this manual before operating the machine. You must be familiar with the machine and its functions before using it on a patient.
	Keep this manual with the system to refer to and to answer any questions that arise about the system's operation, maintenance or, if necessary, repair.
	The Purair 80 is latex free, note that any replacement parts must not use latex.
	Warning HAZARDS can result from unauthorized modification of this ME EQUIPMENT
	WARNING: To avoid the risk of electric shock, this equipment must only be connected to supply mains with protective earth.
	Warning: A potential for electromagnetic or other interference between this EQUIPMENT and other devices
	This MEC Equipment is rated to over voltage category I according to IEC 60664-1

Contact Information

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Abbreviations Used in this Manual

Table 3

ESD	Electrostatic Discharge
hPa	Gauge pressure expressed in hecto Pascal
kPa	Gauge pressure expressed in Kilo Pascal's
PSI	Gauge pressure expressed in Pounds per Square
Bar	A Pressure of 1 Atmosphere or 100 kPa or 14.5 PSI

The Purair 80 System Overview

The Purair 80 Active Gas Scavenging System

In large hospitals the AGSS system is powered by a central plant that has outlets at all places in the building that anaesthesia systems are used.
In a number of smaller establishments and isolated places in general hospitals no such outlet exists.
The use of the MEC Purair 80 is to provide the same facility and is installed in the room where that anaesthesia system is to be used and the exhaust taken to a safe outside disposal location.
Simplistically the PA80 system can be broken down into three component areas:

Plant (main fan)
Exhaust pipe work plumbed to the rear of the unit
Terminal outlet is provided on the front panel

The purpose of the system is to provide the extraction flow rates to remove waste anaesthetic gases from the receiving unit reservoir. The role of the receiving unit is to provide a safe interface between the patient and the extraction flow rates.

Standard / Measurement	ISO 7396-2 (2007)
Extraction Flow Rate	75 - 130 L/min

The extraction flow rate ensures that waste anaesthetic gases are adequately removed from the system. The importance of this flow rate is that if it falls too low it may not be sufficient for waste gas removal. This would lead to the waste gases spilling out from the base of the receiving unit reservoir into the immediate working environment; if too high it may lead to an increase of the induced flow at the patient connection port.

The PA80 is fitted with a Fan Failure warning device. Should the fan fail during use an alarm will sound for at least 10 seconds regardless of the mains supply being the cause of failure. If the supply is still available a red LED will be illuminated on the front panel.

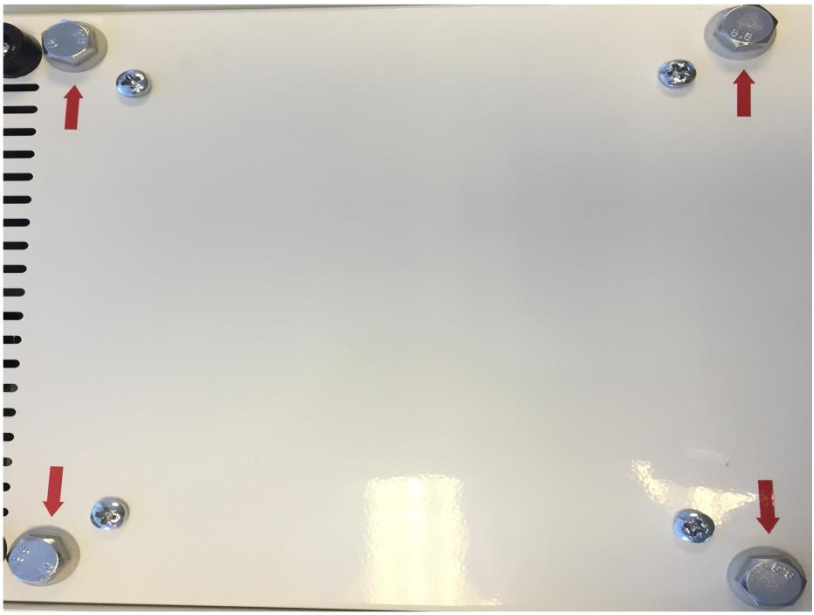
The MANUFACTURER MEC Medical will make circuit diagrams available on request.

Prior to Use

- Remove the unit carefully from the packaging
- Carefully place the unit upside down on a clean flat surface
- * Remove the 4 x Transit bolts indicated by the red arrows on the bottom of the unit.

  Use the supplied spanner in order to do so.
- Remove red arrow labels
- Gently rotate the unit upright
- Remove warning label from the top of the unit.

*It is recommended that the transit bolts and spanner are retained for any potential transportation needs.



Installation

Table 4 - Fixed Installation Bill of Material for the Purair 80 Scavenging System

Product Description	Part Number	Quantity
Push fit Waste Pipe 32mm x 2m White	113833	12 meters
Purair 80 Pipe Fixing Kit	131812	1
Exit Kit	131811	1

A typical installation should follow *diagram 1* on page 12 using the material shown in *table 4* above.
Ensure that when installed the air vents on the case are free from obstruction and free movement of air is provided.

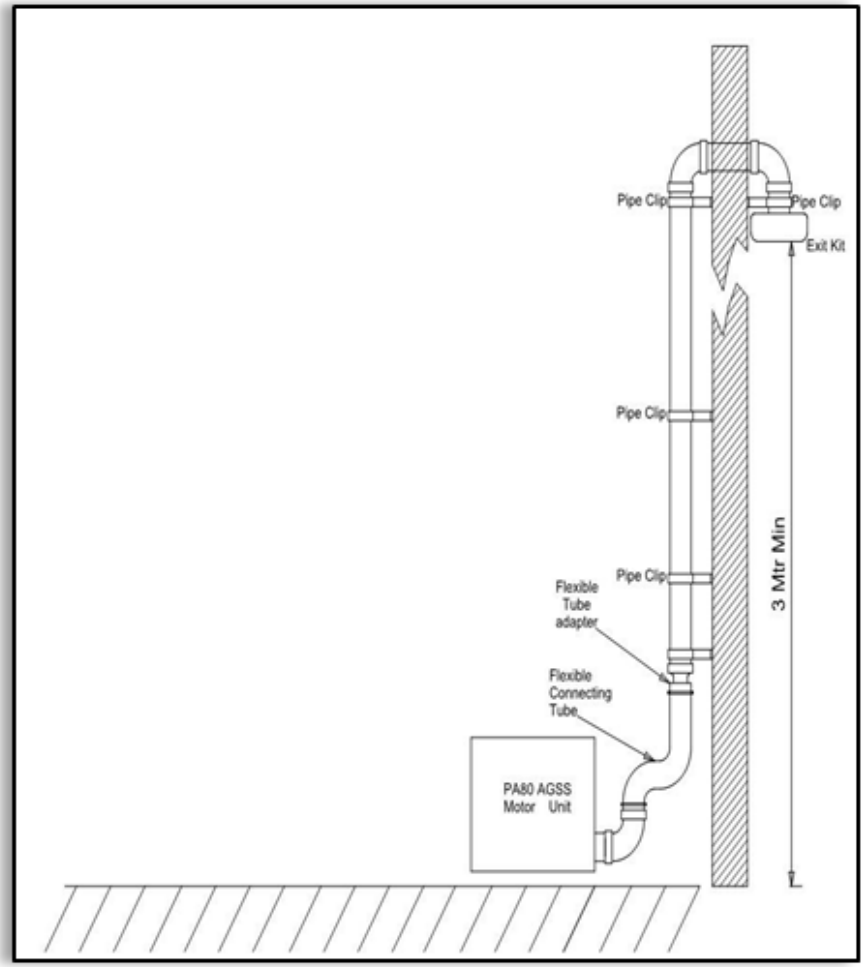
The pipe work should be installed with clips to the wall with approximately 600mm between them

The pipe work should pass through the outer wall and turn downwards and the outlet vent attached as shown in diagram 1 the vent outlet should be at least 3 meters above the outside ground.

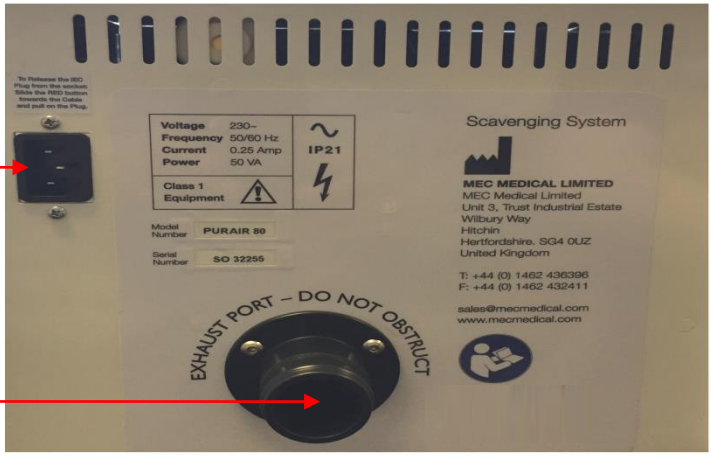
- Connect the IEC power lead in to the back of the unit
- Connect the elbow end on the flexible tubing to the exhaust port on the back of the unit. Ensure the elbow is fully pushed on to the unit
- Once the flexible tube is connected, place the unit in its intended place of use
- Install exit pipe work from the open end of the flexible tube to the required exit point
- When installing this equipment position it such that the Electrical supply can be turned off and the plug disconnected
- The unit is not to be floor mounted and is to be sheltered from liquid splashing in a cupboard or similar location.

Diagram 1 – Installation

This is a typical installation and may be varied to suit the local environment.



System Controls



To release IEC plug from the socket. Slide the red button on the plug towards the cable and remove the plug from the unit.

Operations

- Plug in the power lead from the unit to the mains
- The power indicator will illuminate
- Switch on the unit
- Suction will be initiated at the suction port
- Pump occlusion indicator will be illuminated green
- Switch off the unit
- Connect your device to the inlet port
- To use the complete system switch the unit on
- When not in use switch the unit off.
- The audible alarm will sound for more than 8 seconds which is normal
- When the use of the system is over please Switch off on the front panel"

Alarm System

The alarm system uses a Bi colour LED and audible alarm signal to indicate the various states of the system an alarm signal will sound in any failure mode:

Table 5 -

LED Colour Code	Status	Audible Alarm Signal
Green	Running Normally	
Amber	Inlet Occlusion	Alarm triggered
Red	Fan Failure	Alarm triggered

When the unit is switched off or disconnected from the mains the alarm will sound for more than 8 seconds.

Specifications

Electrical

Table 6 -

Voltage	230V 50Hz
Operating Current	0.4 amps
Power	100VA
Fuse rating	2 Amps in Plug
The ON/OFF switch is a circuit breaker set to 3 amps	
The system is for use in an environment <25^{oc} & 90% RH	

Dimensions and weight

Table 7 -

Length	325 mm
Width	250 mm
Height	240 mm
Weight	<10Kg

Flow at Inlet

80 LPM

Cleaning

The PA80 is not a sterile system but require periodic cleaning of all outer surfaces with commonly used disinfectants, cleaning agents and methods.

Do not use caustic substances such as trichloroethylene for cleaning as it may damage the surfaces.

The components and materials of the PA80 are not compatible with autoclaving and Ethylene Oxide sterilization processes.

When cleaning surfaces do not allow water ingress into the cabinet, it could damage the electrical components and cause a fire risk

Maintenance

Scheduled

Electrical safety checks should be performed at least every 12 months by trained service representative.

The Filter inside the motor housing should be changed annually.
Examination and Cleaning of the exhaust piping and the outside vent and insect guard should be performed at least every 12 months by a trained service representative.
Inspect all labels for legibility and adhesion least every 12 months by a trained service representative.

For help in maintaining the equipment please contact MEC Medical Ltd see page 5 and a trained service representative will be allocated.

Training of hospital service staff can be provided by MEC Medical Ltd.

 Isolate from electrical supply before removal of the cover by disconnecting the plug.
Parts used in service or repair must be recognised MEC parts to avoid any potential system malfunction.