



VAPOMATIC ANESTHETIC VAPORIZER

INSTRUCTION MANUAL



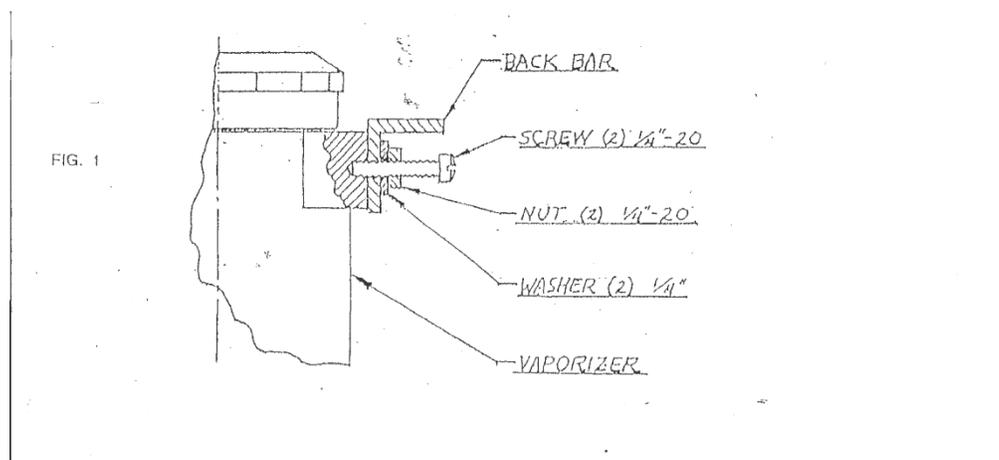
SOLD FOR VETERINARY USE ONLY BY:
A.M. BICKFORD, INC.
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WALES CENTER, NY 14169

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VAPOMATIC ANESTHETIC VAPORIZER

INSTALLATION:

The Vapomatic is normally mounted on the back bar of an anesthetic machine or in any case it should be solidly mounted to a rigid structure in an upright position. Two tapped holes in the rear mounting face (1/4"-20) are provided for mounting. Since these are "blind" holes of 5/16" depth, screws of a proper length must be used so that they may be tightened before bottoming. A suggested mounting arrangement which allows flexibility in coping with various structure thicknesses is shown in Fig. 1



In some cases it may be desirable to mount the Vapomatic on a table or horizontal surface. A 1/4" -20 tapped mounting hole is provided for this purpose in the center bolt at the bottom of the vaporizer.

CONNECTIONS:

Standard connections are (facing the front of the Vapomatic) left side, inlet, cage mount/23mm Male standard taper, and right side, outlet, cage mount/23mm Female standard taper. Normally, in veterinary use, mating connectors having tubing adapters are used, so that rubber tubing can be connected to the gas supply, either the flow meter common outlet, or the outlet terminal of the gas machine.

CAUTION: The vaporizer inlet should **not** be connected downstream of the flush valve, otherwise excessive back pressure may be reflected back into the flow meters and other parts of the circuit when the flush valve is activated, possibly causing bursting of tubing or other components.

The vaporizer outlet must be connected to the patient via the outlet of the gas machine or directly to the breathing circuit which would be, to the CO₂ absorber, or to the non-rebreathing patient circuit.

CAUTION: Always check that the connection to the vaporizer and to the gas supply and patient are secure when using the equipment. Remember, the only way your patient can get life giving oxygen is through these connections.

After installation, turn on the oxygen supply and check for leaks at the vaporizer connections by partly blocking the outlet of the machine and painting the joints with soap solution.

INSTRUCTIONS FOR USE:

CONTROLS:

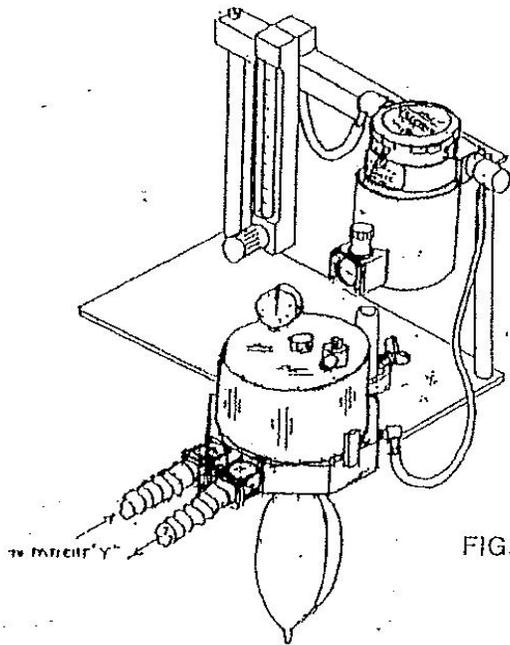
The dial knob on the top of the vaporizer is marked in % of volume of the anesthetic for which the vaporizer is calibrated. In the off or “0” position, the dial locks to prevent accidental turn on. To turn on the vaporizer, press down the locking key while rotating the dial counter clockwise. A resistance to turning will be noted during the first few degrees of rotation as a cam operated by-pass valve is activated. This portion of the dial scale is marked and should not be used. When in the “0” position, gas entering the vaporizer is by-passed to the outlet and the vaporizing chamber is sealed off – no anesthetic is entering the gas stream. As the dial is rotated counter clockwise, the output concentration gradually increased in accordance with the calibration marked.

FILLING AND DRAINING;

To fill the vaporizer, turn the dial to “0” if the vaporizer is in an active situation (it is not then necessary to turn off the gas supply), unscrew the filler cap and fill the vaporizer with the appropriate anesthetic. The liquid level indicator is uncalibrated, but it is only necessary that the liquid level be seen to be acceptable for operation. A dry vaporizer will accept approximately 200 ml of liquid and approximately 150 ml when the wicks are wet. The top of the filler is lower than the working parts of the vaporizer so that it is not possible to overfill the vaporizer when in a level position. Replace the filler cap snugly so that it is leak tight but still can be removed by hand.

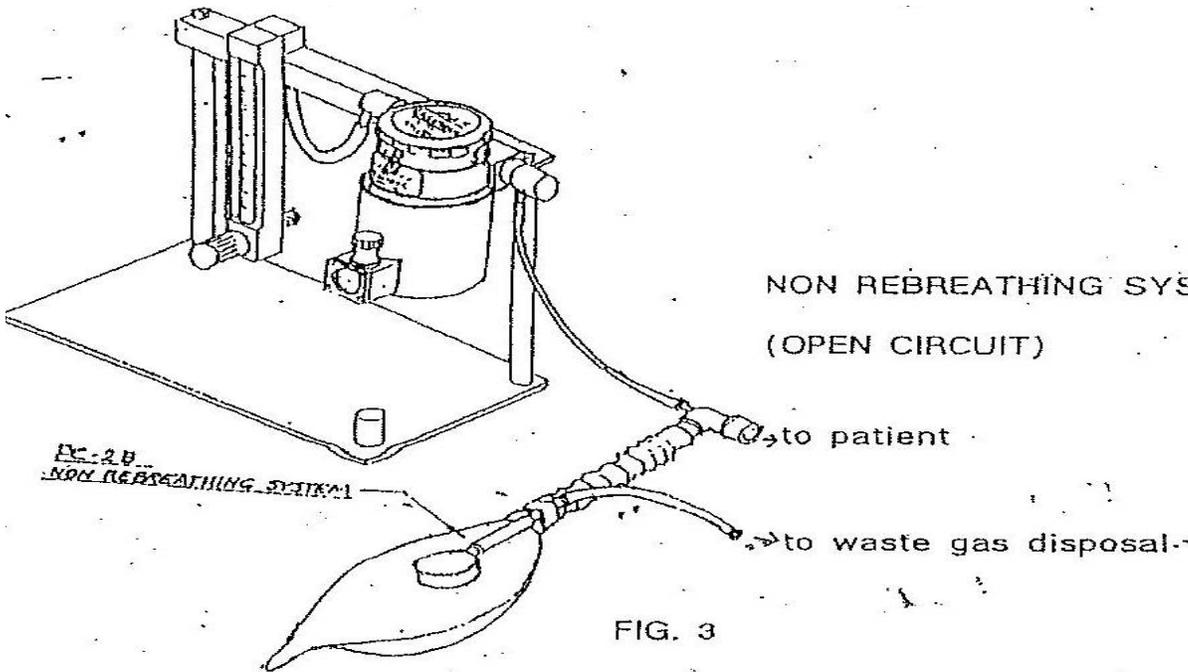
To drain the vaporizer, remove the filler cap exposing the head of the drain screw. Position a collecting bottle under the drain spout and then loosen the drain screw a turn or two. After draining, secure the drain screw and replace the cap. It is advisable to drain the vaporizer when it is to be moved, transported, or shipped, to prevent draining, should be done to reduce the concentration of Thymol, a preservative, from collecting in the liquid.

TYPICAL VAPORIZER APPLICATIONS
(ON A BASIC ANESTHESIA MACHINE)



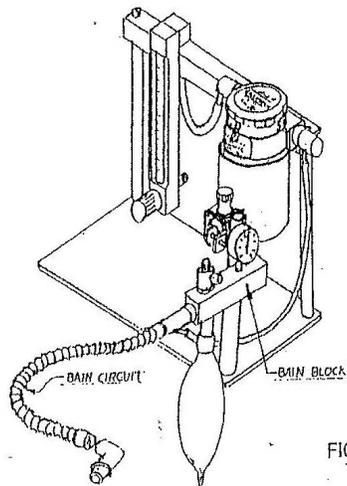
CIRCLE BREATHING SYSTEM
WITH CO₂ ABSORBER
(SEMI CLOSED OR CLOSED CIRCUIT)

FIG. 2



NON REBREATHING SYSTEM
(OPEN CIRCUIT)

FIG. 3



NON REBREATHING SYSTEM "BAIN"
(OPEN CIRCUIT)

FIG. 4

CAUTION: Do not connect the vaporizer within breathing circuit. The vaporizer is of the high resistance to flow type, and will present excessive back pressure to the inlet circuit and to the vaporizer sump. Note that calibration is given for the normal flow rate of 0-10 liters/min. Direct connection to a ventilator is not recommended since the vaporizer will offer excessive resistance and develop abnormal back pressure which may cause connections to blow off or damage the vaporizer. These same precautions are relevant to all vaporizers of this type.

MAINTENANCE AND SERVICE:

Vaporizers used with halothane are particularly liable to suffer from the effect of accumulation of non-volatile additives in the vaporizing chamber. Similar effects may also occur with other anesthetics although more slowly. Anytime the performance of a vaporizer is suspect, or as a periodic routine, it may be shipped to the manufacturer, A.M. Bickford, Inc., for service and calibration. If the vaporizer is damaged by dropping or other abuse, it should be returned for service and repair before being used again. A yearly service and calibration is recommended.

CALIBRATION:

Vapomatic vaporizers are calibrated for the specific agent marked on the labeling. Only the specified anesthetic should be used.

Each vaporizer is individually calibrated by means of a Riken interference refractometer at a flow rate of 3 liters/min. and a room temperature of 72 degrees F using oxygen as a carrier gas. Calibration tolerances are met over flow rates of 100 ml/min. through 10 liters/min. with a substantially linear output, in ambient temperature range of 60-90 degrees F.

RETURNING VAPORIZERS:

For routine repair or service: Very carefully tightly pack the vaporizer to prevent damage in shipping. Preferred: Ship by United Parcel Service.

Address:
A.M. Bickford, Inc.
Service Department
12318 Big Tree Rd.
Wales Center, NY 14169

We will perform the necessary work to restore the vaporizer to specifications, bill you our flat service charge plus replacement parts, if any, and return it to you promptly by UPS.

LIMITED WARRANTY:

Vapomatic Anesthetic Vaporizers are warranted against defective parts and materials for 1 year beyond the shipping date to the original customer. Such claims should be communicated to A.M. Bickford, Inc., and return authorization obtained prior to return of vaporizer. Choice of action by A.M. Bickford, Inc., will be limited to repair or replacement and return of the vaporizer at no cost if A.M. Bickford, Inc. concurs that inspection of the unit indicates such defects.

FOR WARRANTY CLAIMS: Call or write describing the condition, give the serial number and other pertinent details. If the situation appears to be warranty related, we will authorize you to return the vaporizer for our further evaluation.