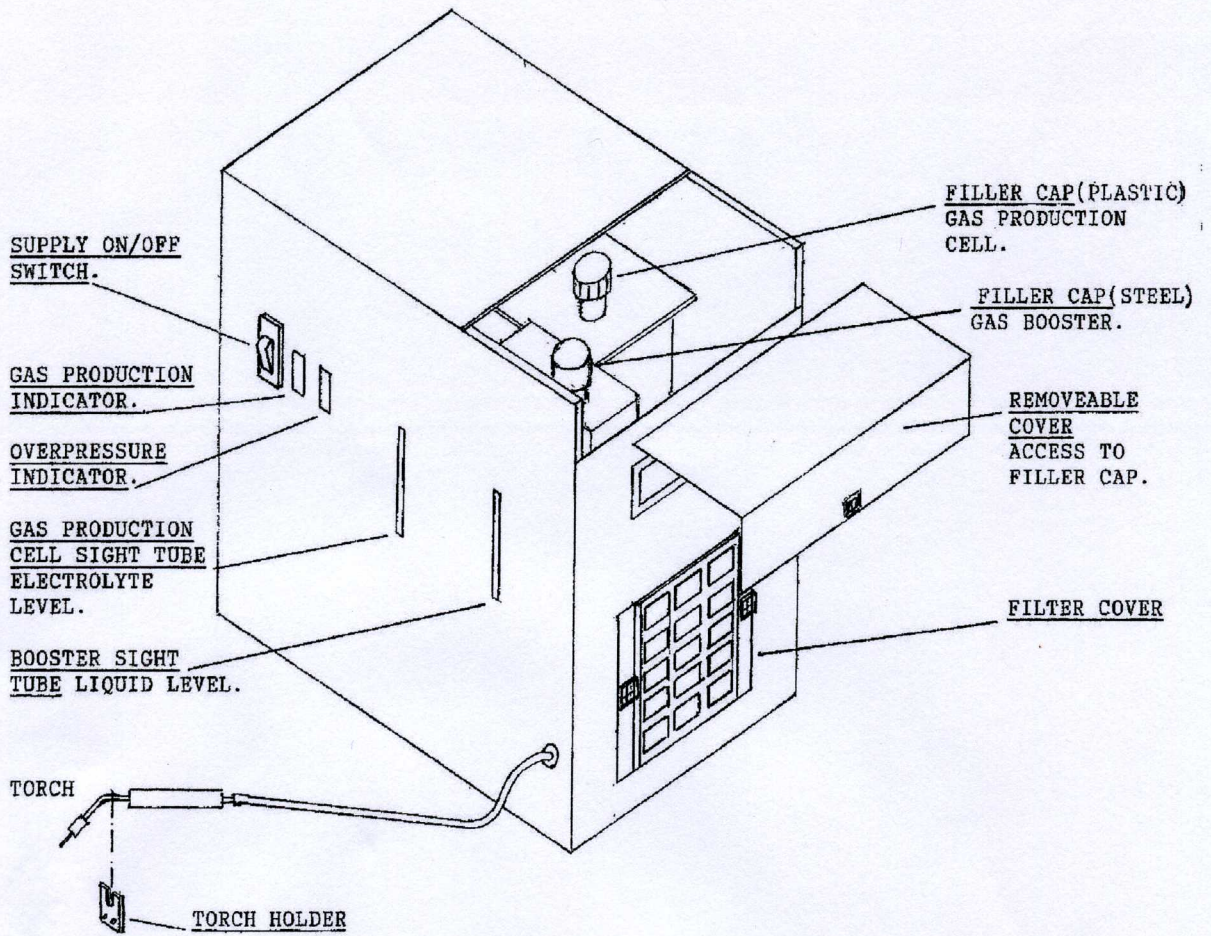


**OPERATION AND MAINTENANCE MANUAL**

**MICROFLAME GAS GENERATOR**

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DIAGRAM OF MICROFLAME MACHINE



## 1. INTRODUCTION

All the MICROFLAME gas generators in the range are of a similar layout and operate on the same principle; therefore these instructions apply to all the machines. Where there is any difference this is mentioned.

### 1.1 WARNING

The MICROFLAME is a safe and reliable machine providing it is correctly operated and maintained. It's method of operation depends on the use of CAUSTIC CHEMICALS and INFLAMMABLE GAS. It is therefore essential that when using and servicing the machine the following precautions are taken.

**ALLWAYS ISOLATE MAINS VOLTAGE SUPPLY TO THE MACHINE BEFORE REMOVAL OF THE TOP RIGHT HAND COVER.**

- a. Whenever the gas production cell is filled with distilled water great care should be taken not to splash caustic from the machine into the eyes or onto the hands. It is therefore recommended that SAFETY GLASSES and RUBBER GLOVES are worn when the cell is being filled.

**NEVER ATTEMPT TO SYPHON LIQUID FROM THE CELL BY SUCKING. IT IS HIGHLY CAUSTIC AND CAN CAUSE SERIOUS BURNS TO THE MOUTH.**

If caustic is splashed onto the skin or clothes wash the affected part thoroughly under a running tap and seek medical advice as soon as possible. Remove all contaminated clothing.

- b. The liquid used in the GAS BOOSTER is inflammable. Therefore always fill it away from naked flames and preferably in a well ventilated area. NEVER store the liquid for the Booster in the work area.
- c. The gases produced by the MICROFLAME are Hydrogen and Oxygen which make an explosive mixture, therefore read section 2.3 of this manual carefully and follow the instructions so that the MICROFLAME is used safely.
- d. NEVER switch off the machine without first extinguishing the flame. If the gas pressure to the torch is allowed to decay away in this manner a blow back can happen.

### 1.2 DESCRIPTION

The MICROFLAME generates Hydrogen and Oxygen by electrolysis of distilled water in the gas production cell. The gas pressure generated is less than 1 psi and the gas is used up as it is produced, so there is no gas storage involved thus making the machine inherently safe as there is no danger of a high explosion. The gas burns to give a flame temperature of between 1200 and 3300°C which is controlled by adding small quantities of M.E.K. (Methyl Ethyl Ketone), Acetone or Methyl Alcohol when the gas passes through the Booster. The flame size is controlled by fitting the appropriate sized torch tip.

