

### 3a. TIMER CONTROLLED OPERATIONS:

- Check that the continuous run switch is in the timer position
- Switch the unit on using the on/off switch located on the rear of the unit.

#### **NOTE: NO MICROWAVES ARE BEING GENERATED ALTHOUGH THE POWER IS ON!**

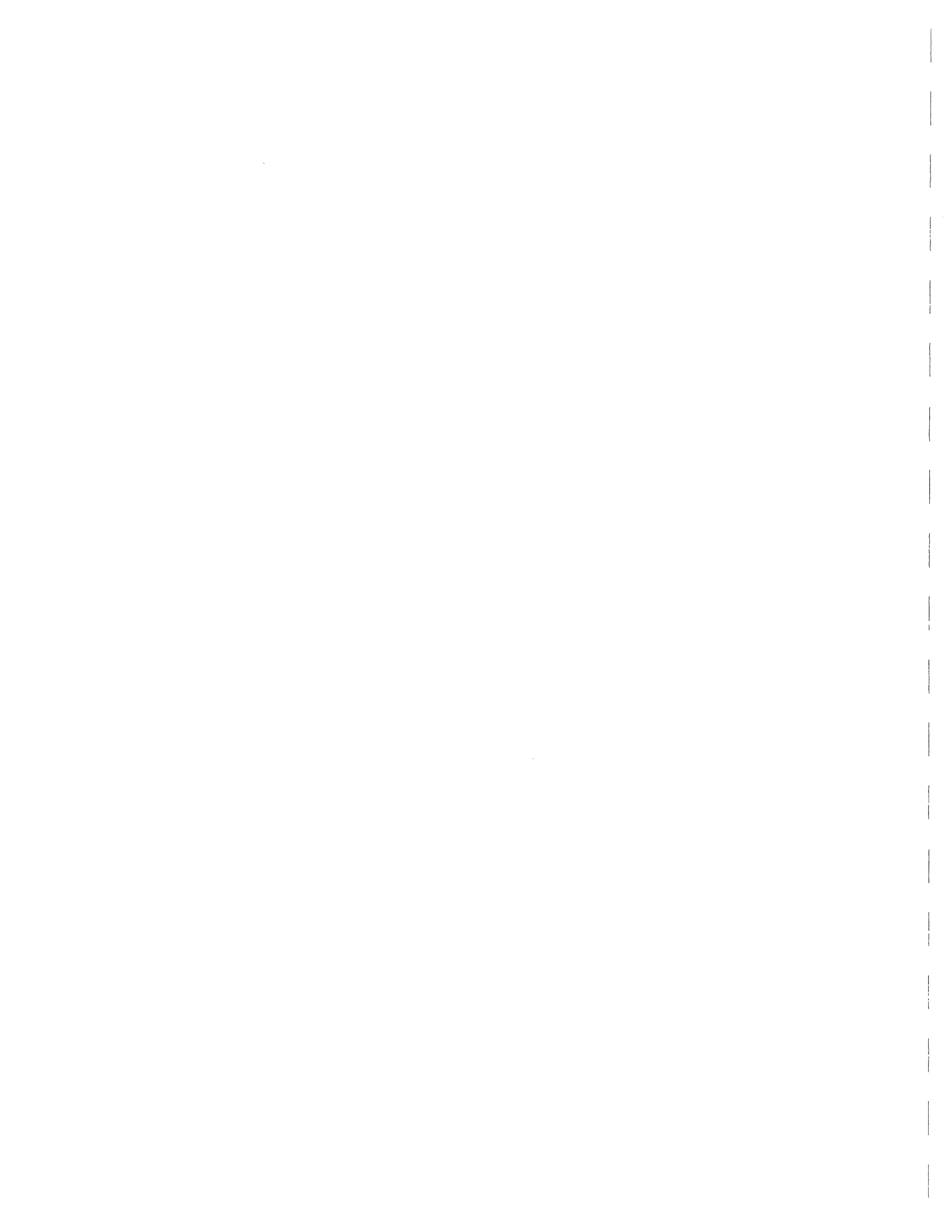
- Place the temperature probe in the container to be regulated Make sure that the probe is 5-10mm from the bottom of the container.(See figure 6)
- Set the temperature that is desired. Press the switch for ACTUAL/SET temperature and hold it in place.
- Watch the TEMPERATURE DISPLAY and adjust the TEMPERATURE SETTING KNOB to the desired value.
- Turn "on" the toggle switch next to the agitator adjust.
- Set the mixing by using the AGITATOR ADJUST knob so that a moderate amount of bubbles appear.(The mixing can now be switched on or off).
- Set the effect by dialing EFFECT 0-100%. Start with 40% and lock with lever on the effect dial. The ideal setting(balanced effect) will depend on the total microwave load.
- Set the run time by adjusting the timer selector.
- Begin the run by pressing the START button.
- To cancel an operation press stop.
- The microwave oven should now run. When the preset time has elapsed a signal will be sounded. Open the door and you are done.
- If additional time is required, close door, reset time to desired duration, and push the start button.

**NOTE: THE EMS-820 HAS A VERY EFFICIENT REFLECTOR FOR EVEN DISTRIBUTION OF THE MICROWAVE RADIATION. FOR VERY SMALLSAMPLES VOLUMES, HOWEVER, ONE CAN USE THE ROTATOR FOR ADDED PROTECTION.**

### 3b. Quick-Start"

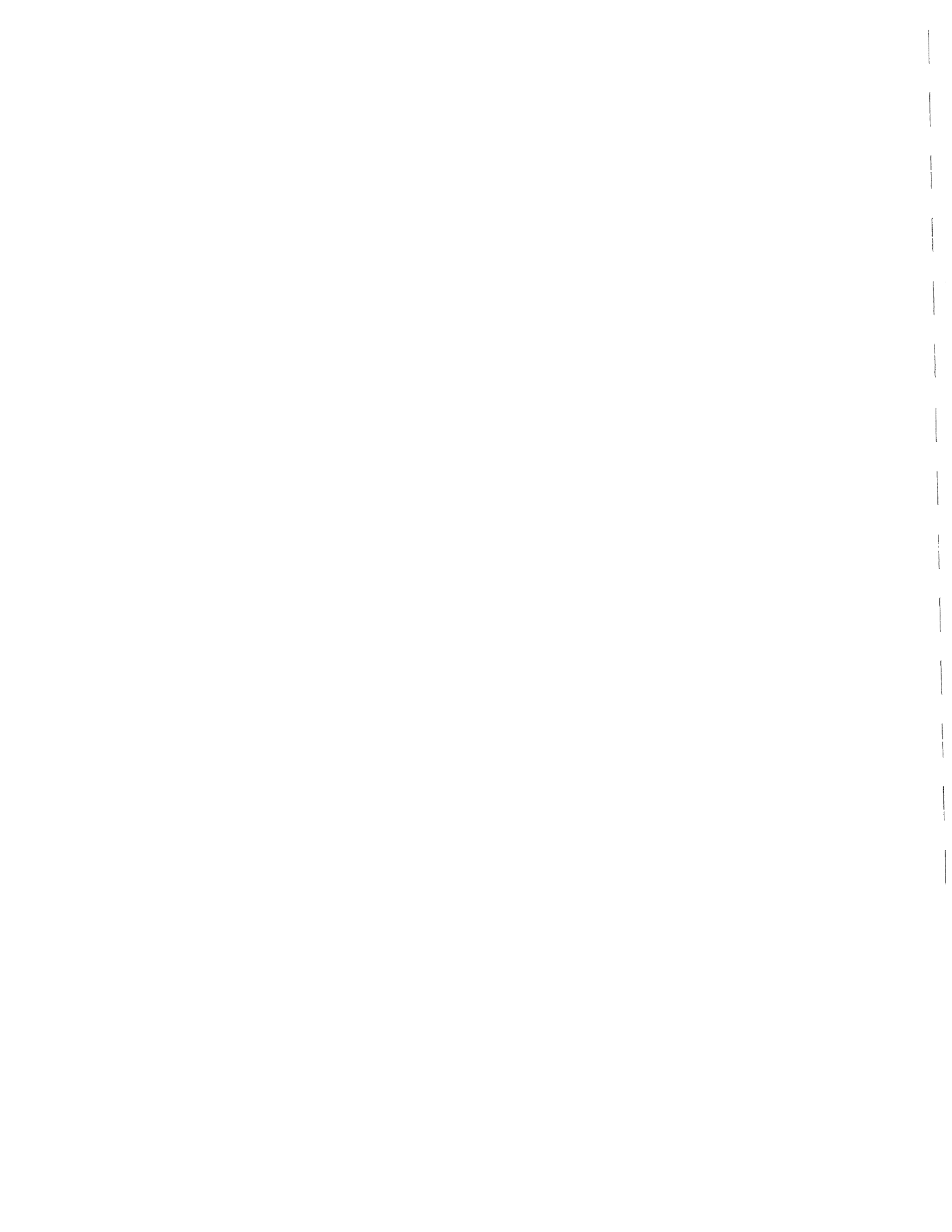
- Pressing the start button will start the Microwave operating on maximum power. Three set times are stored into memory.
  - 30 seconds: Press start once.
  - 1 minute: Press start twice.
  - 2 minutes: Press start three times.

**NOTE: The turntable function starts automatically when the microwave is started. You can turn it off by pressing the rotation button.**



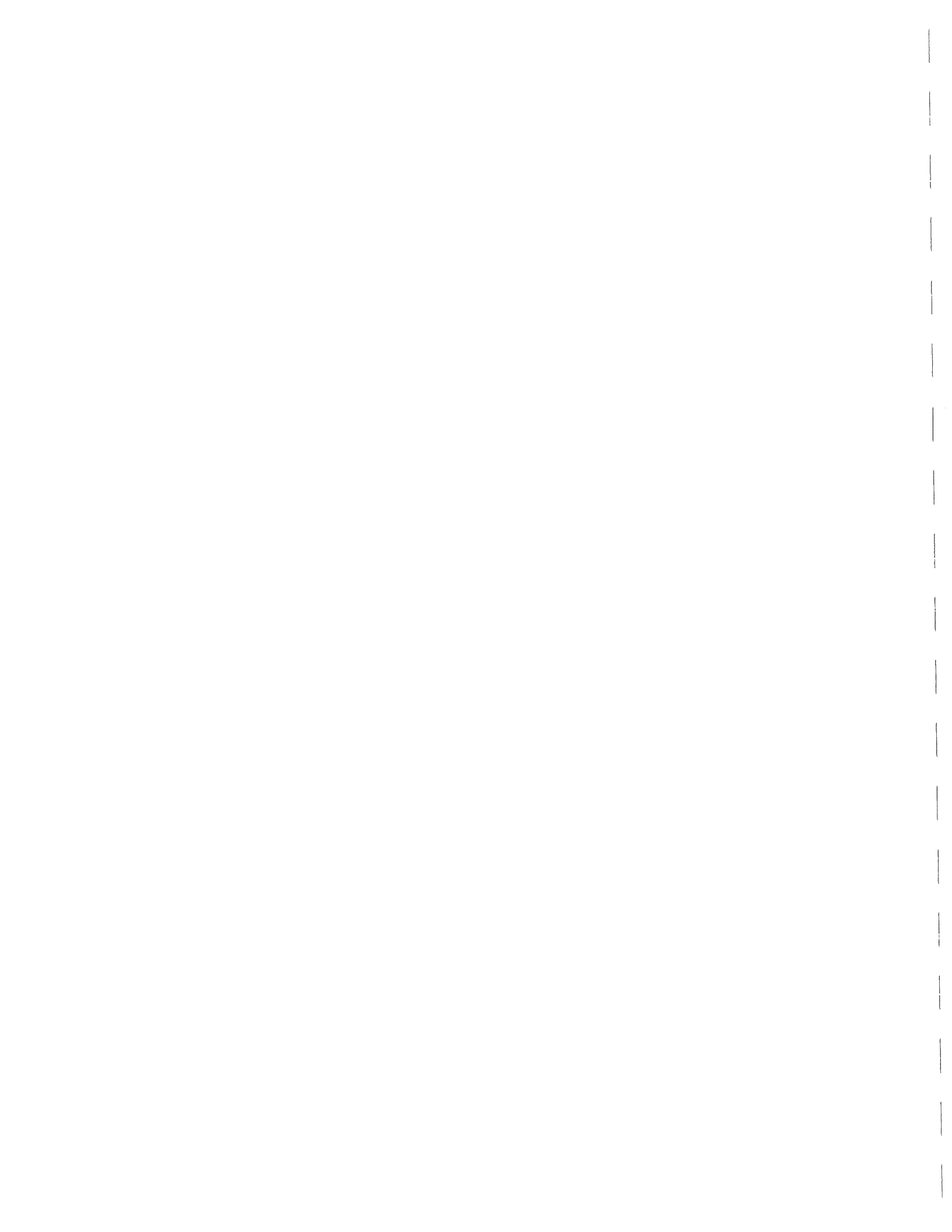
## 5. SAFETY TIPS

- The unit must be connected to a grounded outlet.
- The EMS-820 is a laboratory microwave oven and should not be used for heating food.
- Be sure that the chimney outlet is always connected to a fume hood or other exhaust system.
- Never use metallic material in the chamber.
- Never open the oven casing-DANGER HIGH VOLTAGE!!!!
- Use only microwavable suitable containers.
- Use a glass rod when liquid is required to be heated to boiling point. This will prevent any boiling over due to pressure changes in the chamber when the door is opened.
- Keep the thermo probe clean and free from any deposits.
- Never use an empty oven. The microwaves will be reflected by the metal and may cause damage to the magnetron.
- Never use the mixing tubes in viscous liquids (melted wax).
- Be sure that the thermo probe does not come in contact with the metallic parts of the inner chamber. It can cause damage to the thermo control circuits.



## **6. MAINTENANCE**

- 1. Keep the chamber of the EMS-820 clean.**
- 2. Always rinse the thermo probe in water and wipe it dry after every run. Clean the probe socket with Alcohol or Acetone and avoid touching the socket with your hands.**
- 3. Clean the rotator roller regularly to prevent uneven functioning.**



## 7. TROUBLE SHOOTING

- SYMPTOM:** The temperature control does not function.

Does the probe indicate the temperature of the medium that it is placed in? If it is hanging freely in the chamber atmosphere you should be able to read the chamber temperature on the display. Remove the probe connector that is located on the right hand inner wall. Now you should be able to read roughly  $-1^{\circ}\text{C}$  on the thermo display. If the figures that you are able to read differ from these values it is likely that your thermo probe is either dirty or faulty.

Please contact us immediately.

- SYMPTOM:** The EMS-820 will not start.

The main fuse may be blown. The fuse is located under the small cover beside the main cable inlet. Pull out the main cable from the socket. Open the fuse cover and change to a new fuse.

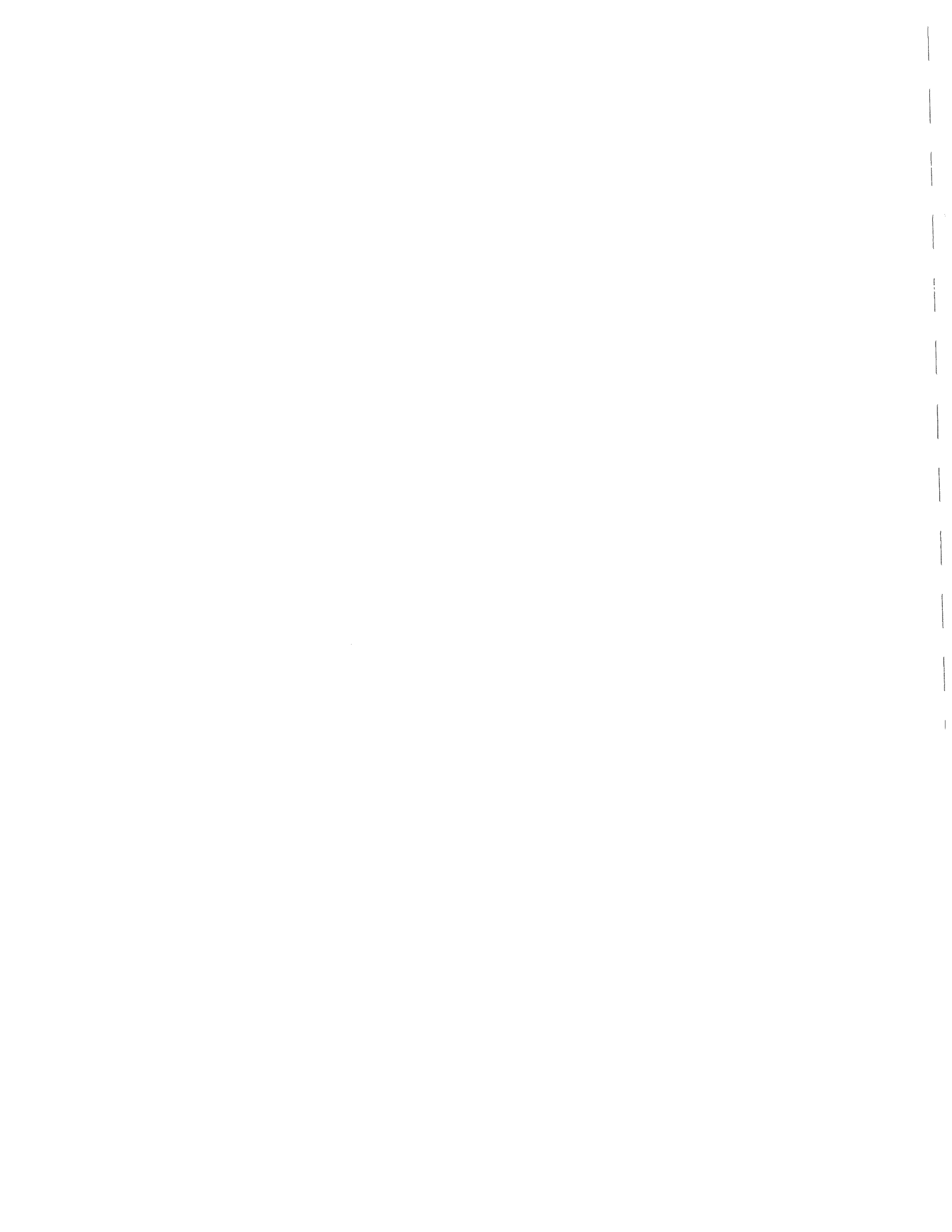
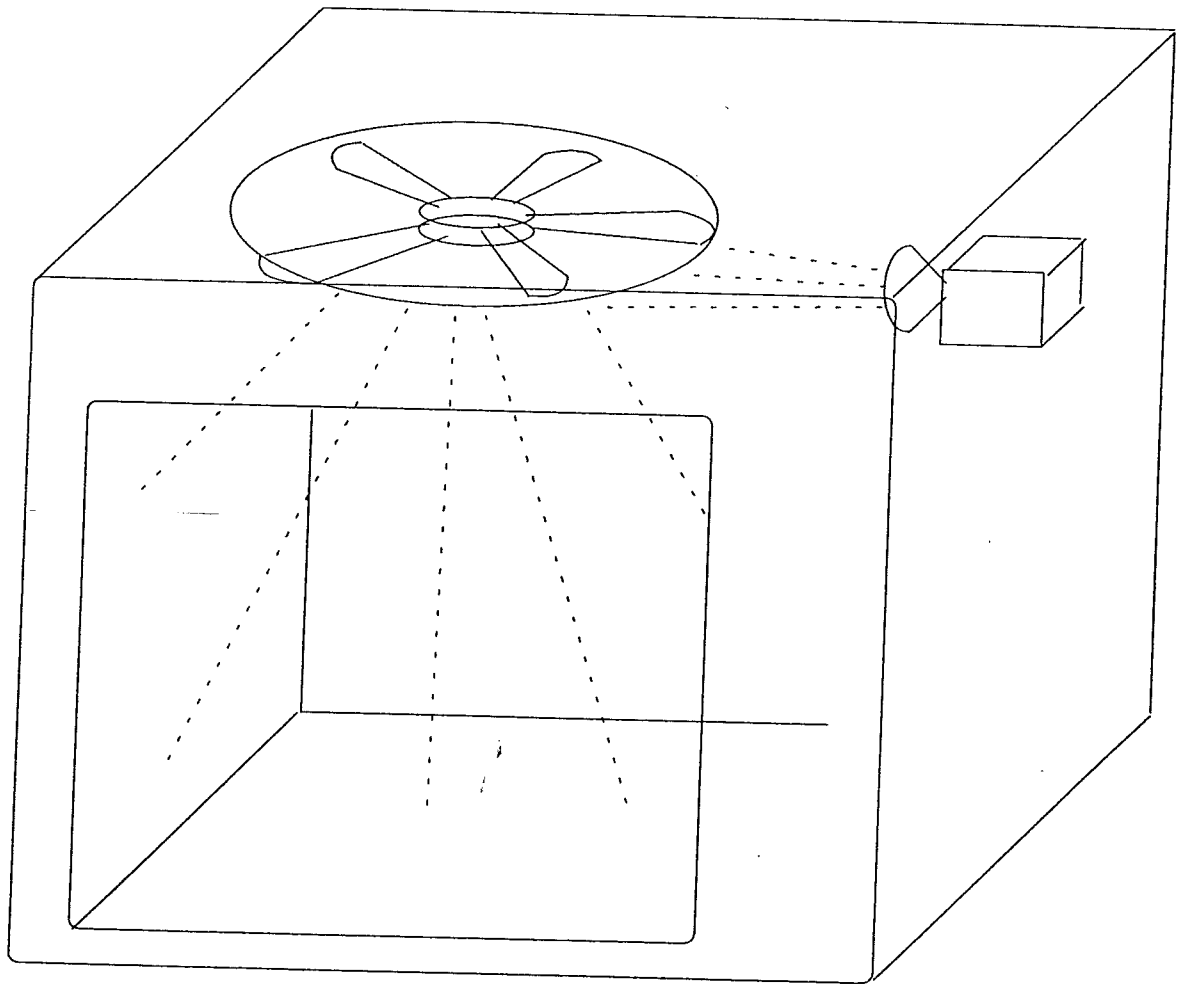
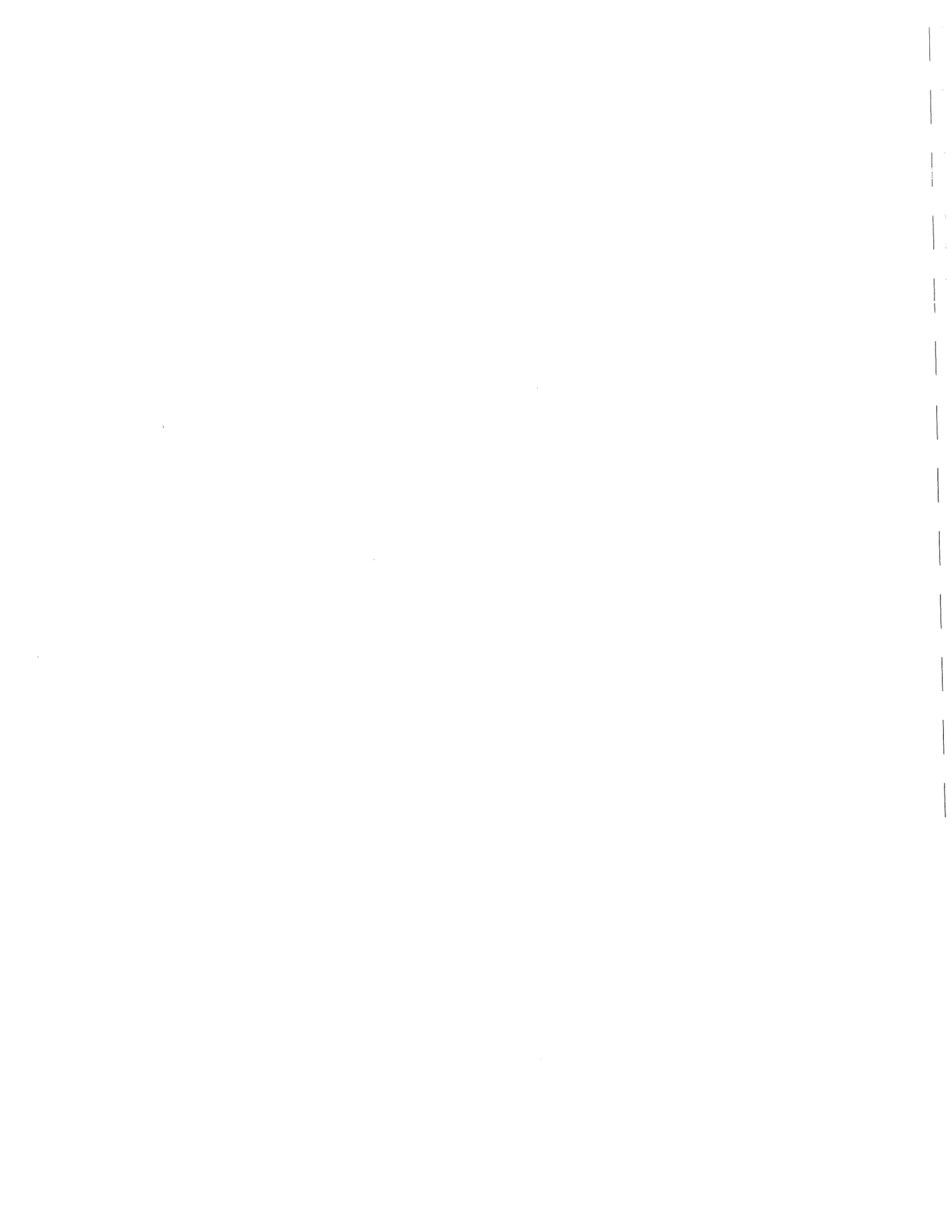




Figure # 1





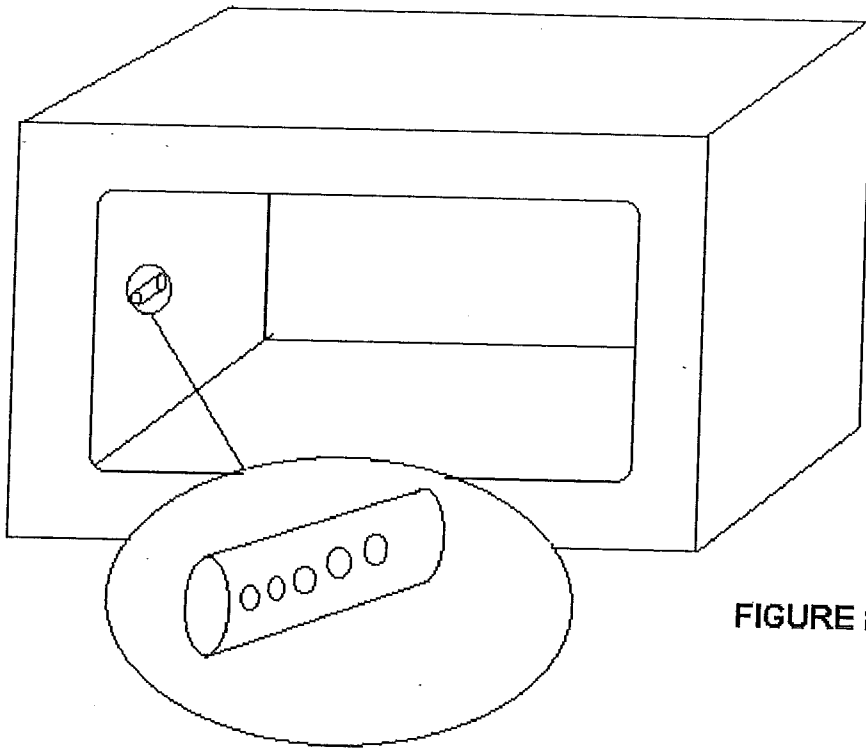


FIGURE #2 AIR SUPPLY

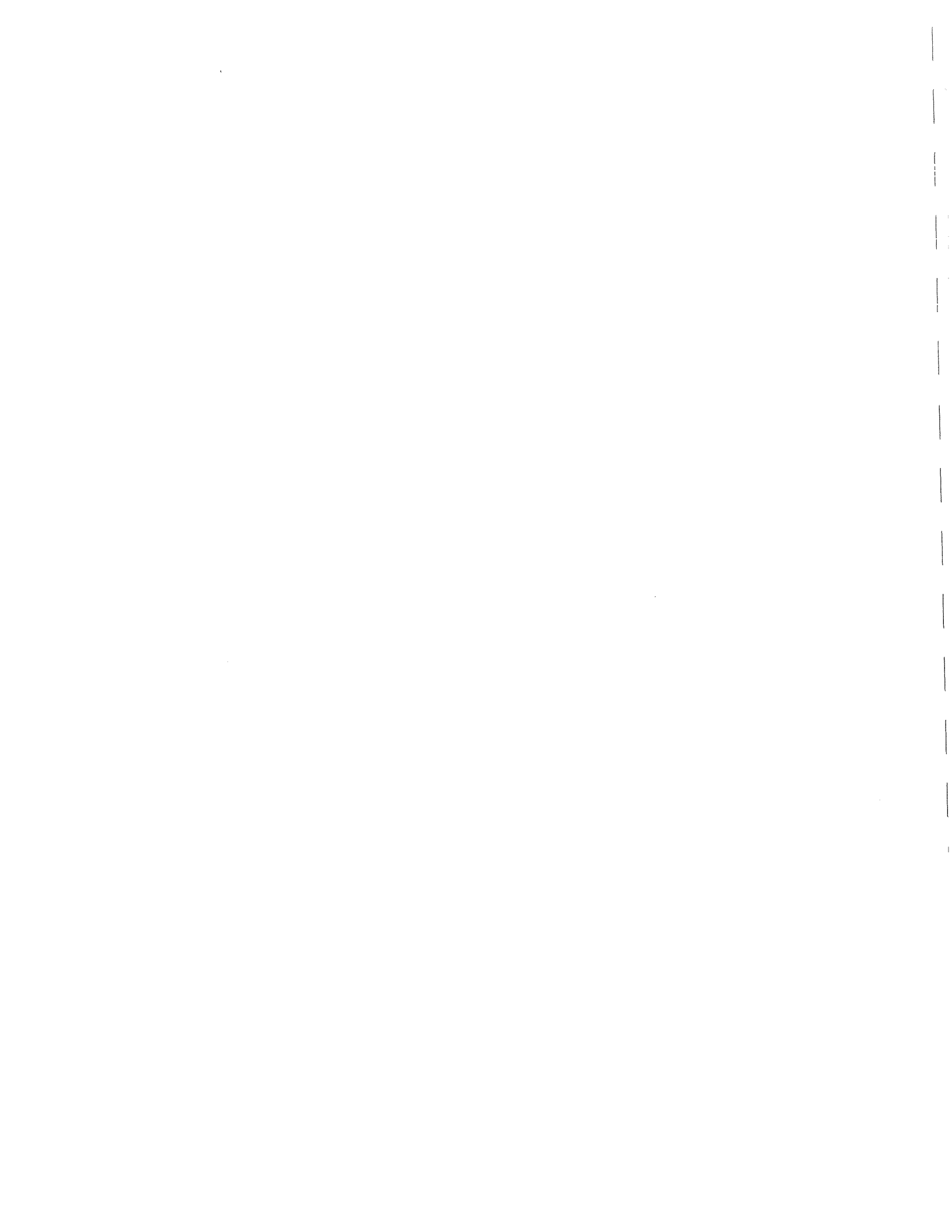
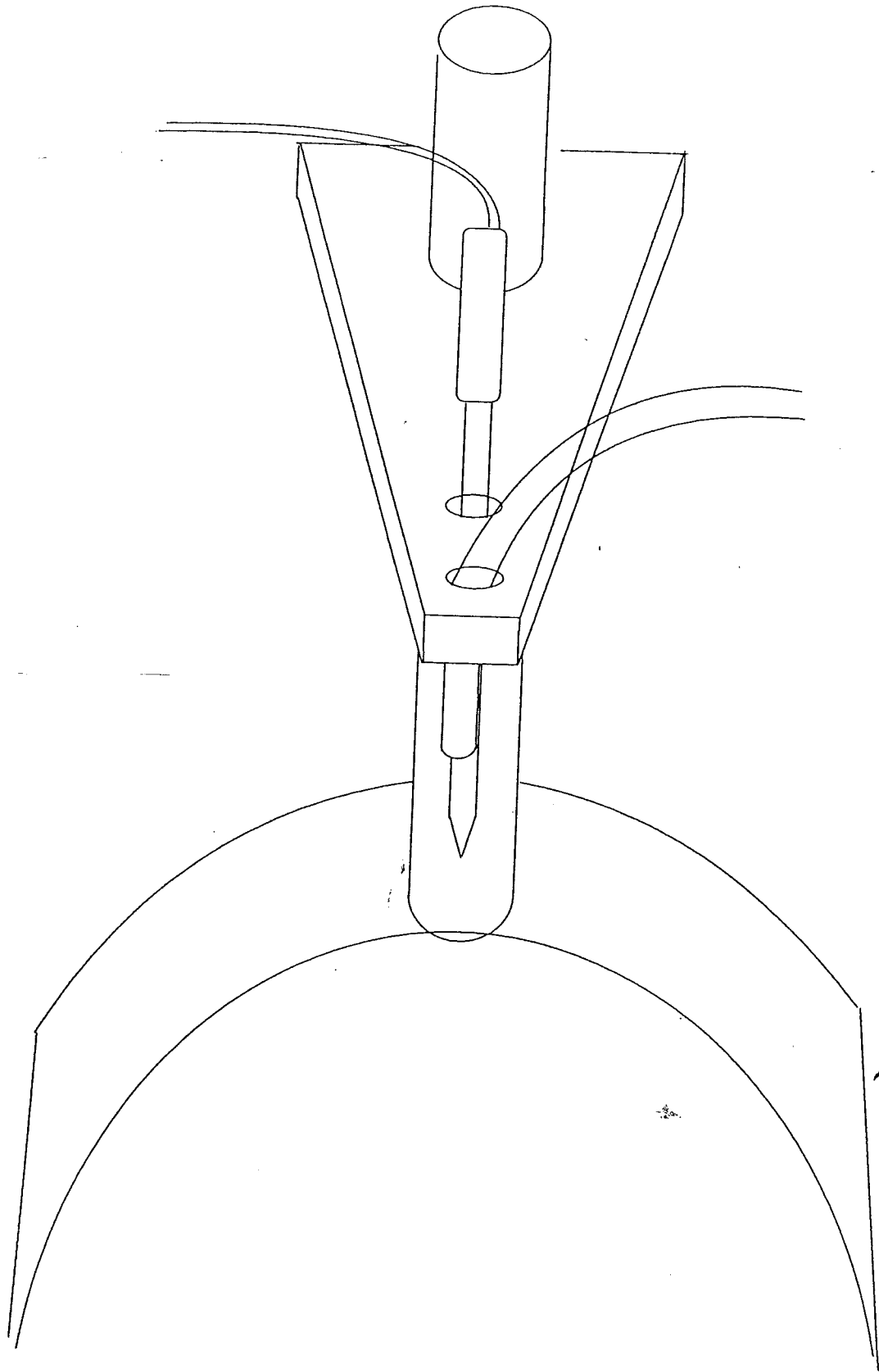


Figure # 3



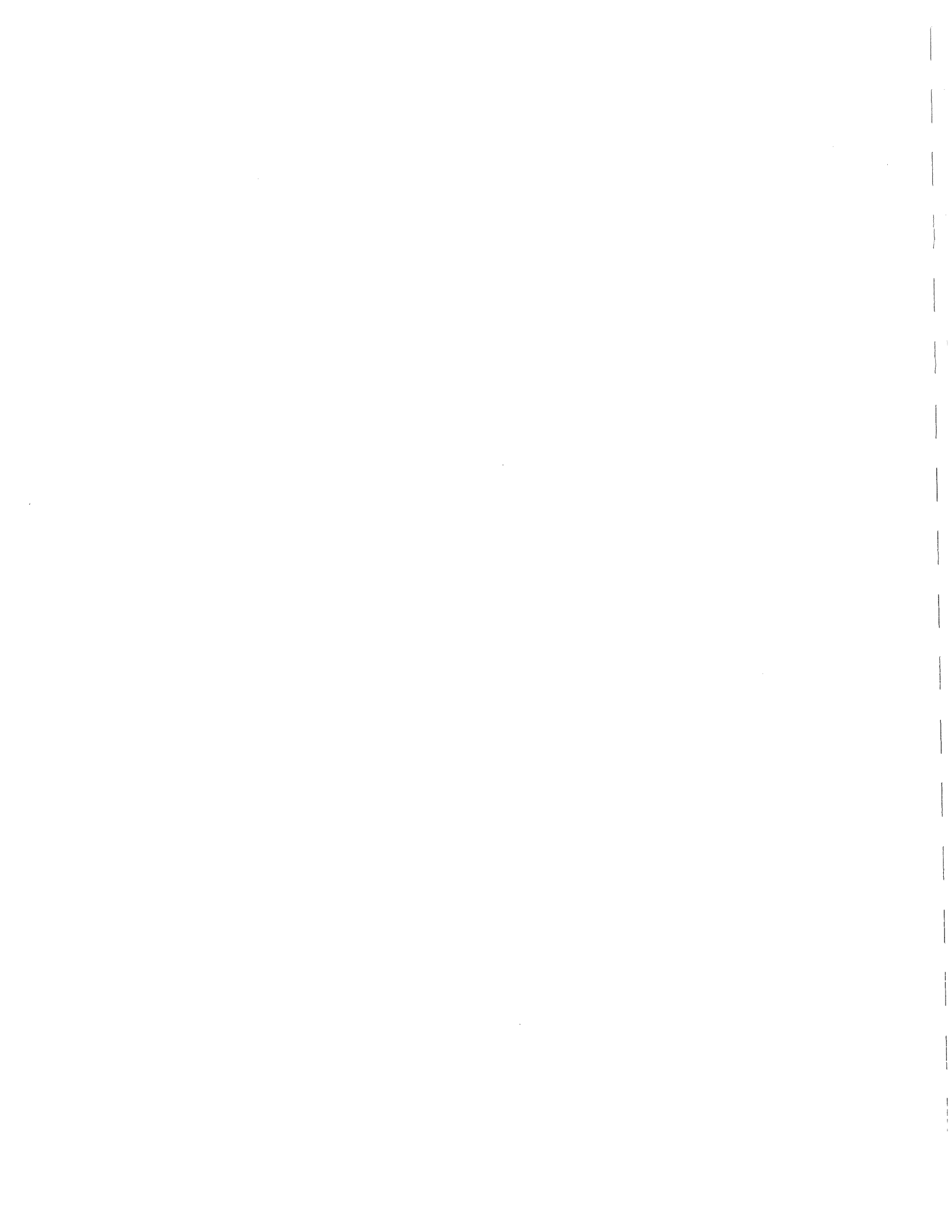
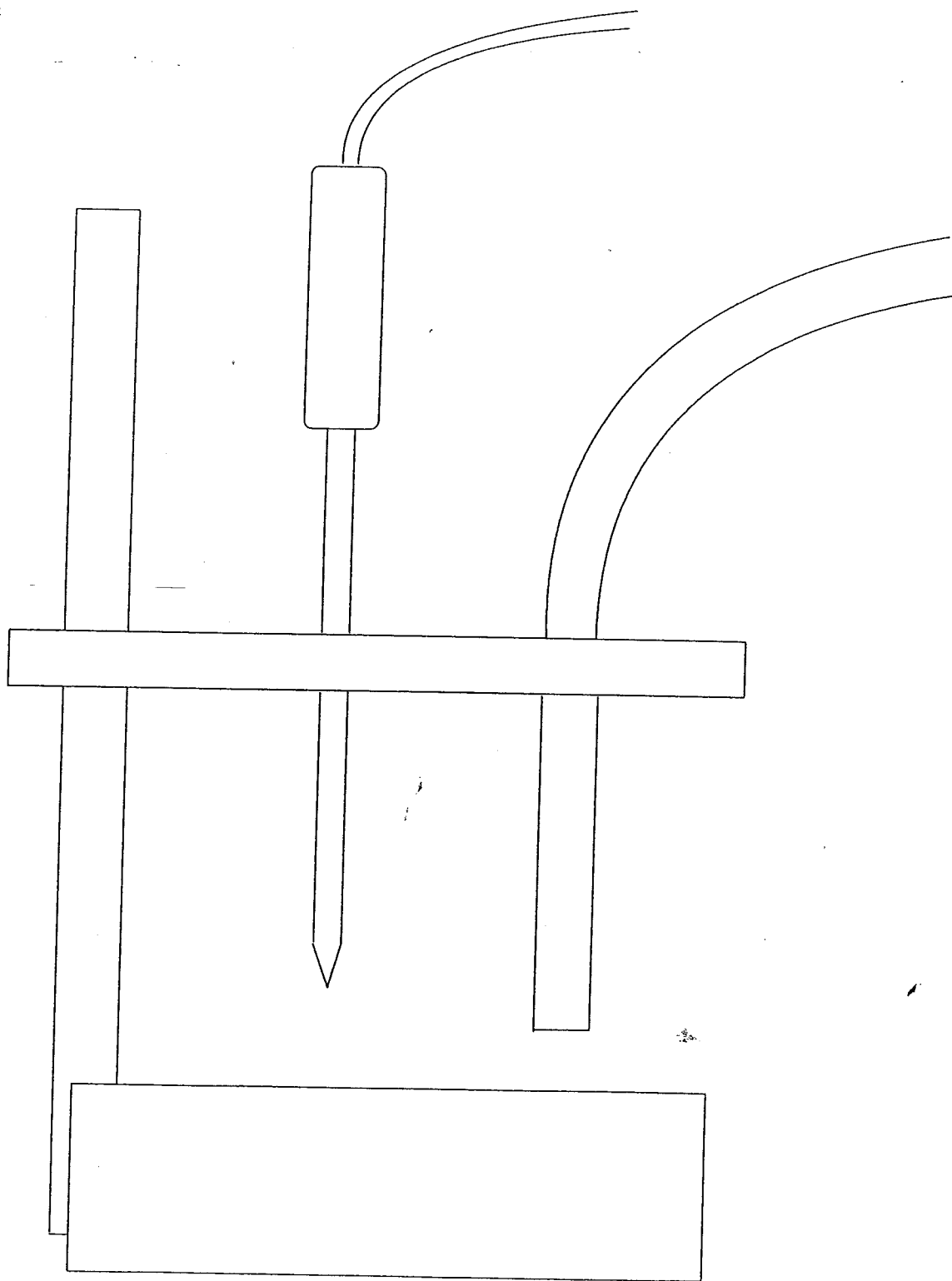
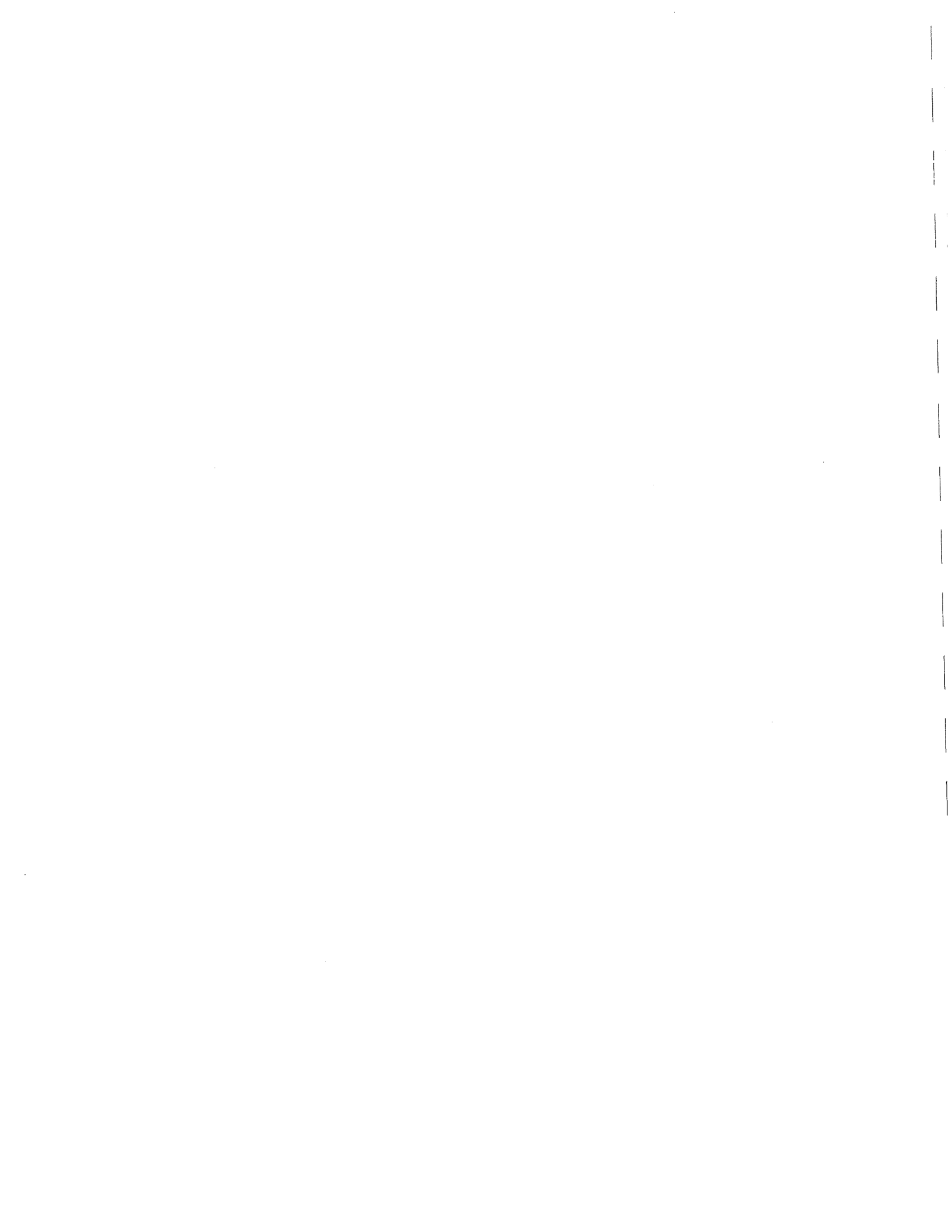
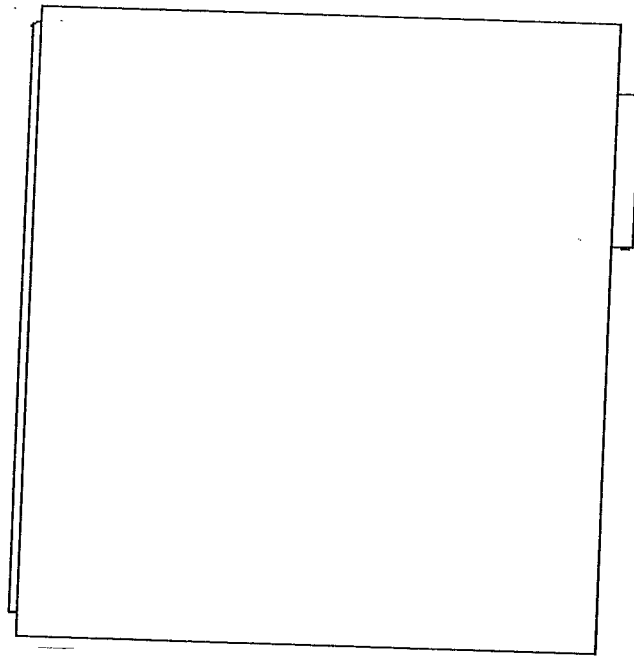


Figure # 4









ATTACH VENTING  
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FIGURE #5

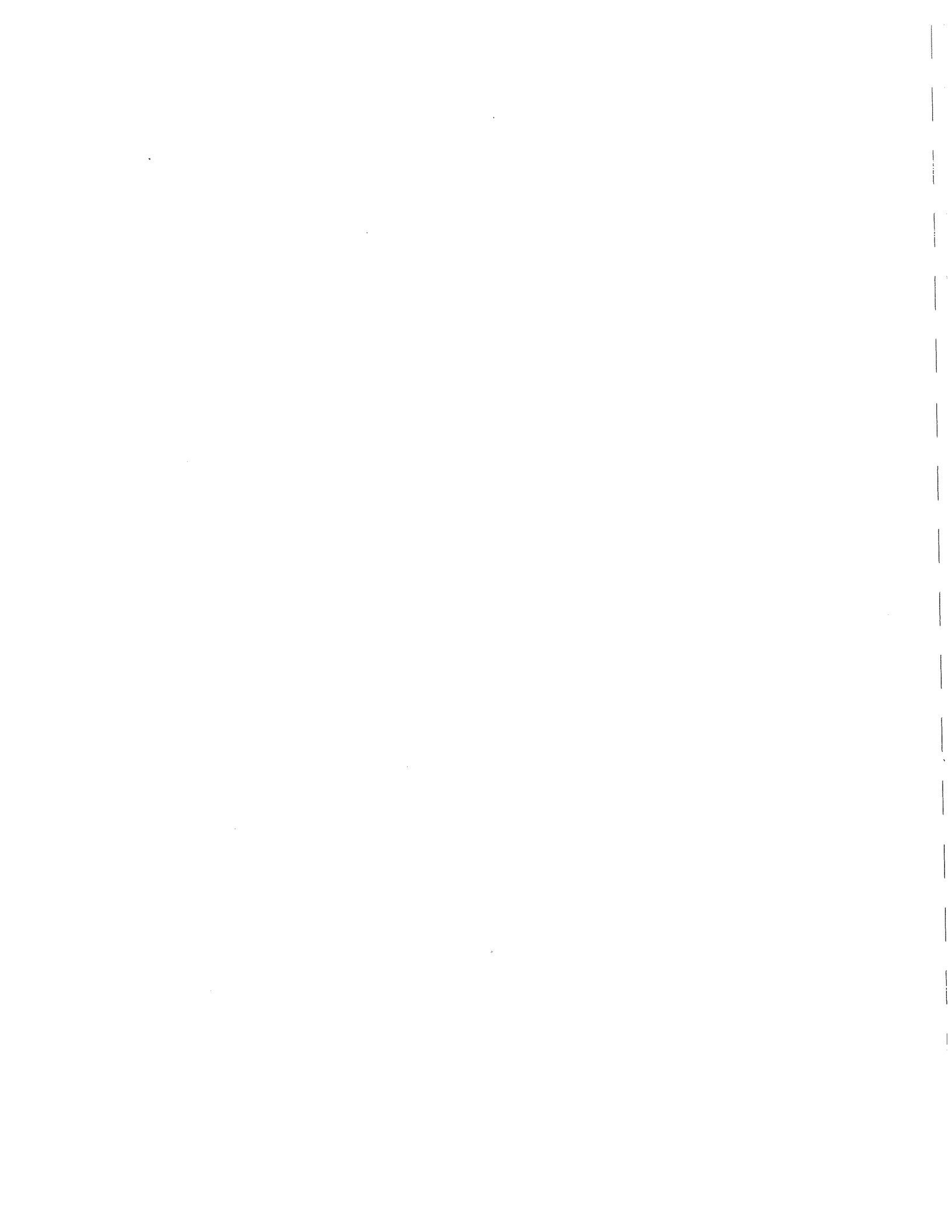


Figure # 6

