

## PACE MAKER

### 1. INTRODUCTION

Pace maker is one of the important development in the field of electro medical instruments. There are two types, one is implantable type and other is external type. The important biological application of pace maker is to assist or replace the natural electrical stimulus which regulates the heart beating at the determined rate. In case of a heart block or failure of atrioventricular conductive paths, it helps in restoring temporary electrical pacing of the heart. There is a good demand for this product.

### 2. RAW MATERIALS

Hybrid circuits, through hole printed circuit boards, generator, electrodes, special plastics, integrated circuits, transistors, resistors, capacitors, lamination, super enamelled wire etc.

### 3. MANUFACTURING PROCESS

Various components such as transistors, capacitors and resistors are soldered on a through hole printed circuit board. The generator unit is a special chargable mercury battery. The oscillator is so designed so as to generate 30 - 70 beats per minute. This is encapsulated by a special plastic material. The output is taken out by the electrodes. These electrodes are planted inside the heart. The equipment is tested for months together for frequency response and reliability.

### 4. MANPOWER REQUIREMENT : 6

### 5. PROJECT COST

#### A. Fixed Capital

	Rs.
Land & Building	Rental
Plant & Machinery	1,00,000

#### B. Working Capital ( per month)

Raw Material & Packing	55,000
Salary & wages	12,000
Other expenses	8,000
Working capital (per month)	75,000
Working capital (3 months)	2,25,000

<b>Total (A+B)</b>	<b>3,25,000</b>
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**6. COST OF PRODUCTION / ANNUM**

	<b>(Rs.)</b>
Total recurring cost per year	9,00,000
Depreciation on machinery	8,000
Interest on investment	13,000
	<b>9,21,000</b>

**7. PROFITABILITY**

Sales turnover	11,50,000
Annual cost of production	9,21,000
Annual profit	2,29,000
Return on investment	71 %

**Annual Production capacity : Rs.11,70,000/-**

**List of Plant, Machinery & equipment :**

- 1 High speed drilling machine
- 2 Gas stabilizer
- 3 Low frequency oscilloscope
- 4 Digital voltmeter
- 5 Milli volt recorder
- 6 Electrodes
- 7 Instrument lathe
- 8 Drilling machine
- 9 Stamping machine
- 10 Mould drilling machine
- 11 Grinder
- 12 Injection moulding machine
- 13 Pantograph engraver