

**Commissioner of Industries  
Hyderabad  
Andhra Pradesh**

## **Solid State Chokes**

### **I. Introduction**

The solid state choke, also known as electronic ballast or electronic choke, is the electronic version of the conventional choke for use with fluorescent lights for improved power efficiency and to get uniform performance from the fluorescent light during voltage fluctuations also. When compared to conventional chokes, the solid state choke consumes less power by about 40% and gives energy saving bringing down the power bills. When the voltage is too low or too high, the choke adjusts itself for compensating the fluctuations to keep the lighting system on with uniform light output. In fact, the solid state choke is one of essential appliances required in energy conservation and in places wherein voltage fluctuations are very severe and frequent.

### **II. Market Status and Scope**

There are about 50 manufacturers in the country manufacturing solid state chokes. With an estimated average installed capacity of 12,000 nos, there is an installed capacity of about 6.0 lakh nos in the country. The marketability of the product depends on price, saving of power bills and period of cost recovery and servicing facility. If these aspects are maintained to suit the market, the product will find good market potential creating demand in large quantities.

### **III. Installed Capacity**

The proposed unit is with an installed capacity of 1.0 lakh nos annually on one shift basis to operate at 60% producing 60,000 nos in I Yr, at 70% producing 70,000 nos in II Yr and at 80% producing 80,000 nos from III Yr onwards.

### **IV. Manufacturing Process**

The process is a simple assembly oriented process. The raw materials are tested, assembled on PCB and tested for performance with tubelight fittings against voltage fluctuations with the help of a variac. The chokes are further tested for continuous performance at high voltage for about 2 hrs.

### **V. Land & Building**

The unit can be located in leased premises of about 700 square feet. A rent of Rs.1500/- per month is considered in working out the economics.

### **VI. Plant & Machinery**

The required machinery & equipment totally cost Rs.1.37 lakhs the details of which are as follows:

#### **Machinery & Equipment Required**

S.No.	Details	No.	Price	Total
I.	Manufacturing equipment			
1.	Multimeters	7	3000	21,000

	2. Soldering irons	20	100	2,000
	3. Dimmerstats (single phase)	4	3500	14,000
	4. Test Jigs (tube light fittings on table with power connections)	120	150	15,000
	5. I C testers	2	9000	18,000
II	Miscellaneous. Assets			
	1. Tables & chairs	LS		40,000
	2. Office equipment & almairahs for material storage	LS		20,000
	Sub total			1,30,000
	Contingencies @ 10% on equipment			7,000
Total				1,37,000

All the items of machinery & equipment are available indigenously.

#### VII. Raw Materials

The required raw materials are ICS, diodes, transistors, LEDs, capacitors, PCBs, cabinets, hardware, wires & solder. All the raw materials are available indigenously and the bill of materials per choke works out to about Rs.130/-, if bought in bulk.

The annual bill of materials works out to Rs.104.0 lakhs in III Yr onwards at 80% capacity.

#### VIII. Utilities

The project requires 2.0 HP of power and drinking water. The utilities cost about Rs.0.07 lakh from III year onwards.

#### IX. Manpower Requirement

The project provides employment to 14 persons including one supervisor, ten skilled workers, two semiskilled workers and one unskilled worker.

The details of wages & salaries in III year of operation are as follows :

S.No.	Details	Number	Salary per month in I year Rs. lakhs	Total
1.	Supervisor	1	2000	0.24
2.	Skilled workers	10	1500	1.80
3.	Semiskilled workers	2	1200	0.29
4.	Watchman	1	1000	0.12
Fringe benefit @ 20% + 5% annual rise				2.45
				0.76
Total				3.21

#### X. Working Capital Requirement

The project requires one month each of raw materials, packing material, utilities, salaries & wages, bills receivable and half a month's requirement of finished goods.

The working capital requirement works out to Rs-23.75 lakhs from III year onwards.

#### XI. Preliminary & Preoperative Expenses

The total Preliminary & preoperative expenses including costs towards project report preparation, acquiring loan, travelling, salaries, interest, trial production, deposit and contingencies amount of Rs.0.43 lakh.

#### XII. Project Cost & Means of Finance

Rs. lakhs	
I. Project Cost	
a) Land	Rented
b) Building	
c) Machinery & equipment	0.73
d) Miscellaneous fixed assets	0.60
e) Preliminary & preoperative expenses including deposit Total fixed capital	0.43
f) Working capital margin (III yr)	6.14
Total project cost	7.90
II. Means of Finance	
Promoter's contribution	6.82
Term loan	1.08

#### XIII. Annual Operating Results (at 80 % capacity utilisation in III year)

Rs.lakhs	
A. Cost of Production	
a. Rent/lease	0.18
b. Raw materials	104.00
c. Utilities	0.07
d. Salaries	3.21
e. Packing materials	1.26
f. Repairs, maintenance, insurance	0.05
g. Depreciation	0.05
h. Telephone & post	0.63
i. Selling expenses	4.20

j. Preliminary & preoperative expenses written off	0.04
k. Interest	3.38
l. Administrative overheads	2.66
Total	119.73
B. Net sales	126.00
C. Profit before tax	6.27
D. Break even point (% of installed capacity)	45.0%
E. DSCR	12.20
F. Cumulative cash surplus (by the end of V yr.)	34.5
G. Rate of returns on promoters contribution before taxes	92%

#### XIV. List of some of Raw Material Suppliers:

1. Electronics Corpn of India Ltd.  
ECIL Post Office, Cherlapalli  
Hyderabad 500 762
2. Bharat Electronics Ltd.  
Jalahalli Post, Bangalore 560 013
3. Khandelwal Herrmann Electronics Ltd.  
No.2, Rehman Mansion  
44, Colaba Causeway, Bombay 400 039
4. Kerala State Electronics  
Devpt Corpn Ltd. (Keltron)  
Keltron House, Vallayambalam  
Trivandrum 695 033

#### XV. List of Machinery Suppliers

1. Motwane Manufacturing Co Pvt Ltd.  
Gyan Ghar, 14th Road, Khar West  
Bombay 400 052
2. Applied Electricals & Electronics  
4. Ansari Road, Darya Ganj  
New Delhi 110 002
3. Instruments Techniques Pvt Ltd.  
B-2, Cooperative Industrial Estate  
Balanagar, Hyderabad