

V - Belts and Fan Belts

PRODUCT CODE	: 41135 (V-BELTS)
	: 41447 (FAN BELTS)
QUALITY AND STANDARDS	: IS 2494 :1993
PRODUCTION CAPACITY	: V- Belts and Fan Belts 11,500 of various sizes, (per annum) worth Rs. 37,37,500
MONTH AND YEAR OF PREPARATION	: January, 2003
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INTRODUCTION

With the rapid industrial growth in India, the demand for V-Belts and Fan Belts is increasing day by day. V-Belts are largely used in single or multiple form for automobiles, domestic and commercial equipment and in industrial drives for a wide range of horse power extending upward from a fractional value.

MARKET POTENTIAL

There is a good scope for starting new units in this line. V-Belts drives are becoming increasingly popular because of the trend towards individual drives which are efficient and easy to maintain.

BASIS AND PRESUMPTIONS

- i. The estimates are drawn for a production capacity generally considered techno-economically viable for a model type of manufacturing activity.

- ii. The information supplied is based on the standard type of manufacturing activities utilizing conventional techniques of production.
- iii. The cost of land and building, machinery and equipment, raw-materials and selling price of the finished products etc. are those generally obtained at the time of preparation of project profile and may vary depending upon various factors.
- iv. Whereas some names of suppliers of machinery and equipment, raw-materials are indicated at the end of the profile, these are by no means exclusive or exhaustive.

IMPLEMENTATION SCHEDULE

In the project, land and building has been taken as rented and as such there is no problem of acquisition of land and

other formalities. The entire plant and machinery and other equipments have to be purchased and installed. It may take about 3 to 6 months on an average for a unit to go into regular production.

TECHNICAL ASPECTS

Process of Manufacture

Rubber along with other chemicals and fillers is compounded on a mixing mill. The compound is taken in a sheet form in varying thickness based on the type of V-Belts. Tyre cords are dipped in a dipping tank. Canvas is coated with rubber solution on a spreading machine and cut into sizes. Then the rubber compound sheet is taken on a forming machine. The rotating former round in shape comes in various sizes of diameter. The rubber sheet thus formed is followed by cord winding, rubber sheet, and so on as per specifications. When the forming is completed, it is cut into V-belts. These V-belts are removed from the former and each belt is wrapped with the coated canvas on a wrapping machine. These belts are mounted on split pulley and thus a number of pulleys are stacked on each other and firmly bolted. The bolted pulleys are wrapped tightly with a canvas. Then these are placed in a vulcaniser with a boiler attached to it. The belts are then marked and packed for marketing.

FINANCIAL ASPECTS

A. Fixed Capital

(i) Land and building

Total Area	2000 sq. mtrs.
Built-up Area	1000 sq. mtrs.
Rent	Rs. 10,000 per month

(ii) Machinery and Equipment

Description	No.	Value (Rs.)
a. Rubber Mixing Mill 12 inches × 30 inches, with 25 H.P. motor and reduction gear	1	2,00,000
b. Vulcanising Chamber	1	30,000
c. Hydraulic Presses with pump motor and other accessories	1	1,50,000
d. Spreading machine 28 inches width	1	30,000
e. Churning Mill 100 Lit. capacity	1	15,000
f. Boiler 100 Kgs. Evp. Capacity	1	1,00,000
g. Belt Building unit	2	15,000
h. Testing equipments and Electrification		25,000
i. Installation charges		50,000
Total		6,15,000
Cost of Moulds/fixtures		10,000
Cost of office equipment and Working Tables etc.		25,000
Total		6,50,000

(iii) Pre-operative Expenses	Rs. 10,000
Total Fixed Capital	Rs. 6,60,000

B. Working Capital (per month)

(i) Personnel

Sl. No.	Designation	No.	Salary (Rs.)	Value (Rs.)
1.	Manager	1	5,000	5,000
2.	Accountant-cum-Cashier	1	3,000	3,000
3.	Storekeeper	1	2,500	2,500
4.	Clerk-cum-Typist	1	2,500	2,500
5.	Peon	1	1,000	1,000
6.	Chemist	1	4000	4,000
7.	Skilled Worker	5	2000	10,000
8.	Unskilled Worker	5	1500	7,500
	Total			35,500
	Prequisites @ 15% of salaries			5,000
	Total			40,500

(ii) Raw Materials (per month) (Rs.)	
i. Natural Rubber 1500 Kg. @ Rs. 50 per kg.	75,000
ii. Stearic Acid 30 kg. @ Rs. 38 per kg.	1,140
iii. Zinc Oxide 450 kg. @ Rs. 60 per kg.	27,000
iv. Carbon Black 135 kg. @ Rs. 40 per kg.	5,400
v. Anti-oxidant/accelerator 60 kg. @ Rs. 250 per kg.	15,000
vi. Sulphur 75 kg. @ Rs. 8 per kg.	600
vii. Processing aids like Paraffin Wax, Spindle Oil etc. 50 kg. @ Rs. 40 per kg.	2,000
viii. Canvas 1000 metres @ Rs. 40 per kg.	40,000
ix. Packing material	4,000
Total	1,70,140

(iii) Utilities (per month) (Rs.)	
i. Power	4,000
ii. Fuel	7,000
iii. Water	3,000
Total	14,000

(iv) Other Contingent Expenses (per month) (Rs.)	
Rent	10,000
Postage, stationery	2,000
Telephone	2,000
Consumables	1,000
Repair, maintenance	1,000
Transport charges	2,000
Advertisement and publicity	4,000
Insurance	1,000
Sales Expenses	1,000
Taxes	1,000
Miscellaneous expenses	1,000
Total	26,000

(v) Total Recurring Expenditure (per month) (Rs.)	
a. Salary and Wages	40,500
b. Raw-materials	1,70,140
c. Utilities	14,000
d. Other contingent expenses	26,000
Total	2,50,640

C. Total Capital Investment

(i) Fixed Capital	Rs. 6,60,000 lakhs
(ii) Working Capital (for 3 Months)	Rs. 7,51,920 lakhs
Total	Rs. 14,11,920 lakhs

Machinery Utilisation

The proposed project under reference is based on a single shift basis with 8 hours working per day. But effective working hours will be 6 hours per day on single shift basis for calculation purposes i.e. on an average working at 75% utilization of machinery.

FINANCIAL ANALYSIS

1. Cost of Production (per year) (Rs.)	
Total recurring cost	30,07,680
Depreciation on machinery and equipment @ 10%	61,000
Depreciation on moulds and fixtures @ 25%	2,500
Depreciation on office equipment @ 20%	5,000
Interest on total investment @ 14%	1,97,670
Total	32,73,850

2. Turnover (per year) (Rs.)	
By sale of V-Belt and 11,500 metres fan Belt of @ Rs. 325 assorted sizes per metre	37,37,500

3. Net Profit (per year)

$$\begin{aligned} & \text{Rs. } 37,37,500 - 32,73,850 \\ & = \text{Rs. } 4,63,650 \end{aligned}$$

4. Rate of Return

$$\begin{aligned} & = \frac{\text{Net profit} \times 100}{\text{Turnover per year}} \\ & = \frac{463650 \times 100}{14,11,920} \\ & = 33\% \end{aligned}$$

5. Net Profit Ratio

$$= \frac{4,63,650 \times 100}{37,37,500}$$

$$= 12\%$$

6. Break-even Point

Fixed Cost	(Rs.)
a) Depreciation on machinery and equipment, tools, Fixtures and office equipment	68,500
b) Rent	1,20,000
c) Interest on total capital investment	1,97,670
d) Insurance	12,000
e) 40% of salary and wages	1,94,400
Other contingents excluding rent and insurance	72,000
Total	6,64,570

$$\text{B.E.P.} = \frac{6,64,570 \times 100}{6,64,570 + 4,63,650}$$

$$= 58\%$$

Addresses of Machinery and Equipment Suppliers

1. M/s. Premier Industry
Station Road, Sirhind,
(Punjab)
2. M/s. Anant Industries
Bassi Road, Sirhind.
(Punjab)
3. M/s. Sunrise Industries
Railway Road, Srihind.
(Punjab)

4. M/s. Modern Tyre Moulds India Pvt. Ltd.
Bhagat Singh Street,
Paharganj,
New Delhi-55.

Addresses of Raw Material Suppliers

1. M/s. ICI India Limited
Post Box No. 310,
Crescent House, Ballard Estate,
Mumbai-1 10001.
2. M/s. Bayer India Limited
Nagin Mahal,
Veer Nariman Road,
Mumbai.
3. M/s. Monsanto Chemicals of India Ltd.
318, Asaf Ali Road,
New Delhi.
4. M/s. United Carbon India Limited
133, Mahatma Gandhi Road,
Mumbai-1 10001.
5. M/s. Kamani Metallic Oxide Limited
Nicols Road, Kamani Chamber,
Mumbai-1 10001.
6. M/s. Kilachand Devachand Co. Pvt. Ltd.
Rubber Dvn. 7,
Jamshedji Tata Road,
Mumbai-1 10020.