

PROJECT PROFILE

ON

Automotive Chain (Motorcycle Chain)

PART-I

NAME OF THE PRODUCT : **Automotive Chain (Motorcycle Chain)**

QUALITY & STANDARD : IS: 11740:1986.

PRODUCTION CAPACITY : The production capacity of the unit at 75% capacity utilisation.

Item	Quantity	Amount (In Rs.)
Automotive Chain (Motorcycle Chain)	342000 Nos. (Excluding 5% provision made for stage rejections)	5,47,20,000/-

MONTH & YEAR OF PREPARATION : February, 2014.

PREPARED BY : **Mechanical Division**
MSME - Development Institute,
Ministry of Micro, Small & Medium Enterprises,
Government of India
107, Industrial Estate, Kalpi Road,
Kanpur-208012.

Tele. 2295070, 2295071 & 2295073 (EPBAX)
Tele. No. 2295072 (SENET & TRC)
Tele/Fax No.: 0512- 2240143
email: dcdi-kanpur@dcmsme.gov.in
Website: msmedikanpur.gov.in

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PART-II

A) INTRODUCTION

Chain is an important link to transfer power from engine of a motorcycle to the rear driving wheel through sprockets. Automotive chains are of different sizes based upon the power to be transmitted. The size employed upon the most popular motorcycle in the Indian market is of 12.7 mm X 8 mm dia X 7.85 mm width rollers. The lengths of the chain for such models of motorcycles are either of 120 links or 118 links. This scheme is based on 120 links.

B) MARKET POTENTIAL

Motorcycle has become a common mode of conveyance as a result of modern life style. As the population is rapidly increasing day by day, the demand of motorcycles is also increasing. As such, there is a demand for motorcycle chains to meet the replacement market as well as for supply to the O.E.M. units.

Therefore, there is a great potential for this item and considerable scope to set up new units in this line.

C) BASIS & PRESUMPTIONS

1. The project Profile has been prepared on the basis of single shift of 8 hours each day, 25 days in a month and at 75% efficiency.
2. It is presumed that in the first year the capacity utilization will be 60% followed by 70% in the next year and 80% in the subsequent years.
3. The rates of salaries and wages for skilled workers and others are the minimum rates in the State/Neighbouring States.
4. Interest rate for fixed and working capital has been taken on an average rate of 13% whether financed by bankers or by Financial Corporations.
5. Margin money required is minimum 30% of the project investment.
6. The rental value of the workshed and other built up /covered area has been taken at the rate of more than Rs. 50.00 per sq. mtr.
7. The rates quoted in respect of machines, equipment and raw materials are those, prevailing at the time of preparation of this Project Profile and are likely to vary from supplier to supplier and place to place. When a tailor made project profile is prepared necessary changes are to be made.

D) IMPLEMENTATION SCHEDULE:

Sl. No.	Activity	Period
i.	Preparation of project report after calling quotations	
	a) Calling quotations	1 month
	b) Preparation	2 weeks
ii.	Provisional Registration as SSI.	1 week
iii.	Financial arrangement	3 months
iv.	Purchase and procurement of machines and equipments	2 months
v.	Installation of Machines	1 month
vi.	Electrification	1 month
vii.	Recruitment of Staff and Workers	1 month

E) TECHNICAL ASPECTS:

(i) Process of Manufacture:

- i) Outer and inner link blank are cut from cold rolled steel strips on S.P.M. with progressive die sets.
- ii) Rollers are drawn into cups on compound die sets from CR steel strips and then pierced on an automatic S.P.M.
- iii) Bushes are manufactured by curling process on a S.P.M. from cold rolled strip with rounded edges.
- iv) Pins are cut on an automatic Header Machine to required length.
- v) Barrelling
- vi) Heat Treatment
- vii) Barreling
- viii) Colouring
- ix) Block Assembly on automatic machine.
- x) Chain assembly on automatic machine.
- xi) Rivetting
- xii) Greasing
- xiii) Packing

(ii) Quality Control and Standards

BIS has prepared a standard specification No. IS:11740:1986 on chains for motorcycle and the quality should conform to the same.

(iii) Production Capacity:

Item	Quantity	Amount (In Rs.)
Automotive Chain (Motorcycle Chain)	342000 Nos. (Excluding 5% provision made for stage rejections)	5,47,20,000/-

(iv) Motive Power:

160K.W.

(v) Pollution Control:

The building/workshed, specially heat treatment section is to be provided with exhaust fans. Provision has also been made for neutralizing of the cyanide salts. Necessary permission from Pollution Control Department/Board is required.

(vi) Energy Conservation:

- i) Machine Shop should be well ventilated and should have transparent roof sheets to get sufficient light during day time.
- ii) The periodic maintenance of Machines should be carried out.
- iii) Shunt capacitors should be used to improve the power factor.

F) FINANCIAL ASPECTS:**A) Fixed Capital:****(i) Land & Building:*****Built up area/covered area: (Rented)***

a) Store and Office	50 sq. mtrs.
b) Working Shed	300 sq. mtrs.
c) Heat Treatment Section	75 Sq. mtrs.
d) Packing Section	25 sq. mtrs.

Total: 450 sq. mtrs.
Total Rent Rs. 22,500 (Per Month)

(ii) Machinery & Equipment:**Production Unit:**

Sl. No	Item	Qty. (Nos.)	HP	Amount (In Rs.)
1.	Single action power press cap. 75 tonnes complete with automatic feeding system and electricals etc.	2	15	7,50,000/-
2.	Single action power press cap. 10 ton complete with electricals.	1	2	1,40,000/-
3.	Single action power press cap. 50 tonnes complete with automatic feeding system and electricals etc.	1	5	3,00,000/-
4.	Special purpose roller cups Punching Machine complete with automatic feeding systems and electricals etc.	2	2	2,10,000/-
5.	Special purpose curling and cutting machine complete with automatic feeding system and electrical etc.	2	4	3,50,000/-
6.	Special purpose bush making and sizing machine complete with automatic feeding system and electricals.	2	3	2,50,000/-
7.	Automatic header machine for cutting of riveting pins complete with electricals etc.	1	2	1,00,000/-

8.	Automatic special purpose lock pin turning machine complete with electricals etc.	1	1	80,000/-
9.	Tumbling barrels complete with gear box motor and electricals etc.	4	8	2,90,000/-
10.	30 KW electric rotary retort type gas carburising furnace 30 Kg Cap. Complete with electricals etc.	2	10	10,00,000/-
11.	15 KW salt bath furnace electrically operated charge cap. 30 Kg.	2	40	3,00,000/-
12.	Automatic chain block assembly machine complete with electricals and feeding system.	2	4	6,00,000/-
13.	Automatic chain assembly machine complete with electricals etc.	2	4	5,00,000/-
14.	Pneumatic chain stretching machine complete with 1 HP Compressor and electricals.	1	2	1,30,000/-
Total:				50,00,000/-
<u>Testing Section:</u>				
15.	Hardness Testing machine with spare set of diamonds and steel balls and standard test samples.	1	-	1,50,000/-
16.	Chain fatigue testing machine	1	2	1,00,000/-
Total:				2,50,000/-
17.	1500 mm Bed sliding surfacing and screw cutting centre lathe machine complete with electric motor, starter etc.	1	2	2,00,000/-
18.	500 mm X 200 mm traverse Horizontal spindle surface grinding machine complete with electricals etc.	1	1.5	1,50,000/-
19.	12 mm cap. Precision drilling machine complete with electricals etc.	1	0.5	35,000/-
20.	Double ended bench grinder 200 mm wheel dia with motor.	1	0.5	15,000/-
21.	24" stroke shaping machine complete with electric motor and other electricals etc.	1	3	2,00,000/-
22.	Universal milling machine size No.2 alongwith and dividing head complete with electricals.	1	5	3,00,000/-
23.	Pollution Control Equipment		3	1,00,000/-
24.	Marking and Measuring Instruments.		-	50,000/-
25.	Special purpose toolings and other petty equipments		-	1,00,000/-
Total:				11,50,000/-
<u>Electrification and Installation</u>				
	Charges including cost of power connection and security deposit @ 10% of cost of machinery and equipment.			6,40,000/-
Total Cost of Machinery and Equipments				70,40,000/-
(iii)	Cost of Office Equipment, Furniture etc.			1,00,000/-
(iv)	Pre-operative Expenses			60,000/-
Total Fixed Capital (I + ii + iii + iv)				72,00,000/-

B) Working Capital (Per Month):**(i) Personnel:**

Sl. No.	Designation	No.	Salary	Total (Rs.)
	<u>Administrative</u>			
1.	Manager	1	16000	16,000/-
2.	Engineer	1	15000	15,000/-
3.	Accountant	1	5000	5,000/-
4.	Clerk/Typist/Store Keeper	3	4000	12,000/-
	<u>Technical</u>			
5.	Foreman	2	10000	20,000/-
6.	Heat Treater	1	6000	6,000/-
7.	Skilled Workers	14	5000	70,000/-
8.	Semi-skilled Workers	6	4000	24,000/-
9.	Peon/Chowkidar	2	3500	7,000/-
10.	Sweeper	1	3000	3,000/-
	Total:			1,78,000/-
	Add Perquisites @ 15% of salary			27,000/-
	Total:			2,05,000/-

(ii) Raw Materials including Packaging Requirements:

Sl. No.	Particulars	Qty. MT	Rate/MT	Amount (In Rs.)
1.	Medium carbon steel sheet 19 SWG	27	38000	10,26,000/-
2.	CRCA, DD Grade steel strips 19 SWG	8.20	36000	2,95,200/-
3.	Cr. Steel strip 11 mm X 1 mm thick with Rounded edges (rolled from wire)	5.5	50000	2,75,000/-
4.	Low Carbon 4.5 mm dia steel wire	8.5	50000	4,25,000/-
5.	Liquid carburizing materials	4000 Ltrs.	35/Ltr	1,40,000/-
6.	Ammonia Gas	25 Cylinders	4000	1,00,000/-
7.	Packaging cartons etc.	30000 Nos.	1.20 each	36,000/-
8.	Misc. O/B items		LS	1,00,000/-
	Total:			23,97,200/-
	R/O			23,97,000/-

(iii) Utilities:

1.	Power 19200 units @ Rs. 5.00 / unit	96,000/-
2.	Water	200/-
	Total:	96,200/-

(iv) Other Contingent Expenses (P.M.):

1	Rent	22,500/-
2	Stationery & Postage	1,000/-
3	Consumable stores	10,000/-
4	Telephone charges	1,000/-
5	Repair & maintenance	8,000/-
6	Transport charges	6,000/-
7	Advertisement & Publicity	6,000/-
8	Insurance	5,000/-
9	Taxes	5,000/-
10	Sales Expenses	10,000/-
11	Miscellaneous Expenses	8,000/-
	Total:	82,500/-

(v) Working Capital / Total Recurring Expenditure (P.M.):

1.	Personnel	2,05,000/-
2.	Raw Materials	23,97,000/-
3.	Utilities	96,200/-
4.	Other Contingent Expenses	82,500/-
	Total:	27,80,700/-
	R/O	27,81,000/-

(vi) Total working capital for 3 months 27,81,000 X 3 = Rs.83,43,000/-

C) TOTAL CAPITAL INVESTMENT:

I.	Fixed Capital	72,00,000/-
II.	Working Capital for 3 months	83,43,000/-
Total:		1,55,43,000/-

G) FINANCIAL ANALYSIS:**i) Cost of Production (Per annum)**

Sl. No.	Particulars	Value(Rs.)
1.	Total Recurring Expenditure /Cost	3,33,72,000/-
2.	Depreciation on machinery and equipment @ 10%	6,40,000/-
3.	Depreciation on Dies/Tools/Measuring Instruments etc. @ 20%	1,00,000/-
4.	Depreciation on office equipments @ 20%	20,000/-
5.	Interest on Total Capital Investment @ 15%	23,31,500/-
Total: -		3,64,63,500/-
R/O		3,64,64,000/-

ii) Turnover (Per Annum)

Sl. No.	Item	Quantity	Rate (Rs.)	Value (Rs.)
1.	Motorcycle Chain	342000 Nos.	160/Chain	5,47,20,000/-

iii) NET PROFIT (Per annum) Before Taxation:

Turn Over	(-)	Cost of Production	=	1,82,56,000/-
5,47,20,000/-	(-)	3,64,64,000/-		

iv) PROFIT RATIO ON SALES (Per Annum):

$\frac{\text{Profit/annum} \times 100}{\text{Turnover/Annum}}$	$\frac{1,82,56,000/- \times 100}{5,47,20,000/-}$	=	33.36%

v) RATE OF RETURN (Per Annum):

$\frac{\text{Net Profit/annum} \times 100}{\text{Total Capital Investment}}$	$\frac{1,82,56,000/- \times 100}{1,55,43,000/-}$	=	117.45%

BREAK EVEN POINT**Fixed Cost:**

1.	Total Depreciation	Rs.	7,60,000/-
2.	Rent	Rs.	2,43,000/-
3.	Interest	Rs.	23,32,000/-
4.	Insurance	Rs.	60,000/-
5.	40% of Salary & Wages	Rs.	9,84,000/-
6.	40% of other contingent expenses (excluding rent & insurance)	Rs.	2,88,000/-
	Total:-	Rs.	46,67,000/-

B.E.P.

Fixed Cost X 100	46,67,000/- X 100	=	20.35%
Fixed Cost + Profit	46,67,000/- + 1,82,56,000/-		

Names & Address of Machinery & Equipment Suppliers:

1. M/s Milton Machine Tools. P. B. No. 30, Sonapat (Haryana).
2. M/s Godly Machine Tools (P Ltd.,
C-190, Phase-VI, Focal Point, Ludhiana.
3. M/s Research and Development Centre for Bicycle and Sewing Machines,
Focal Point, Ludhiana.
4. M/s Vishkarma Electric Furnaces,
St. No.2, Pratap Nagar, Ludhiana – 141 003.
5. M/s Kalsi Machien Tools,
Gill Road, Ludhiana – 141003.
6. M/s Simplicity Furnaces Ltd.,
55-B, Phase-II, Mayapuri, New Delhi.
7. M/s Sant Machine Tools,
G. T. Road, Near Dholewal Chowk, Ludhiana.
8. M/s Basant Mechanical Works, (Regd.),
720-722, Basant Road, Industrial Area-B, Ludhiana.
9. M/s Deep Industries,
Oswal Street No.1, Industrial Area-B, Ludhiana.

Address of Raw Material Suppliers:

1. M/s Rolled Strips and Profiles Ltd.,
Karur (Kerala).
2. M/s Avon Cycles Ltd.,
Ludhiana.
3. M/s Special Steels Ltd.,
Mumbai and Bhagwan Chowk, Ludhiana.
4. M/s Steel Strips Ltd.,
Industrial Area-B, Ludhiana – 141 003.
5. State Small Industries and Export Corporations.
6. M/s Steel Authority of India Ltd.
7. Open Market.

Technology Available – Association of Automobile Engineers, Mumbai.