PROJECT PROFILE ON LINK CHAIN

PRODUCT	:	**LINK CHAIN**
PRODUCTION CAPACITY	:	Link Chain of 8, 10 & 12 mm dia - 300 MT/Year Value: Rs. 1,50.00 Lakhs.
QUALITY & STANDARDS	:	IS: 226 – 1975, 2439, 2429 Part II – 1970, 3109, 3109 Part II – 1982, 6216 – 1982
MONTH & YEAR OF PREPARATION	:	October 2010
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INTRODUCTION

M. S. Link Chain is a series of links made from mild steel wire / rod with electric butt-welding on each link. These link chains are generally of three types namely large link / semi long link and short link depending on the size of the link and safe working load. These are also made from alloy steels depending upon the working requirements. The diameter of the wire/rod varies from 4 to 12 mm. The size of the link varies according to its diameter.

MARKET

M S Link Chain is a very vital part of material handling equipments. As stated it is mainly used in handling activities and used in Cranes, Chain Drives, Conveyor Systems, Road Transport and Railways etc. These are also used in Fishing and Shipping Activities, Dairy and Agro farming activities, Manual Weighing Systems etc. As per the available information, there are very few units in the country manufacturing butt-welded link chains. These are located at Dewas (MP), Indore (MP), Raipur [CG], Ghaziabad [UP], Nasik, Mumbai [MS] & Kolkata [WB].

BASIS OF PRESUMPTIONS

1. This project profiles has been prepared on single shift working of 8 hrs. per day at 75 % efficiency and 300 working days in a year.
2. A period of 3 years after commercial production has been considered for achieving full/envisaged capacity.
3. Arrangement for labour wages has been made as per the prevailing market rates, which may vary from place to place and the minimum wages fixed by the concerned authorized from time to time.
4. Interest on fixed capital and working capital has been calculated at an average rate of 14 % per annum.
5. A provision of 30 % of project cost/investment has to be made by the entrepreneurs for margin money.
6. The rental value of the workshop shed and other built up/covered areas has been taken as per the prevailing market rates, which may vary from place to place and time to time.
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.
8. This project profile is prepared for guidance, hence, entrepreneurs are advised to check all the parameters while intending to put up such unit.

IMPLEMENTATION SCHEDULE

Selection of Industrial Site	2 weeks
Provisional Registration	2 days
Preparation of Project Report	5 days
Arrangements for finance and obtaining loans etc.	2 weeks
Recruitment of man power	1 week
Purchase and installation of machinery	4 weeks
Trail run	1 week
Total	**11 weeks**

TECHNICAL ASPECT

[1] Process of Manufacturing: Mild Steel dram wire in coils is set on the de-coiler of wire bending machine. Then wire is fed to automatic wire bending machine where during the feeding wire get straightened then cut to the required link size and bent to form link. The process repeats and chain is formed with bent links. The chains are pickled and cleaned with acid and water. Now chains [one by one] fed on to the electro mechanical butt-welding machine, where open ends of the chains automatically welded and deburred. The welded chains are now inspected and tested as per the specifications laid down in the respective Indian Standards, after this welded chains are generally packed in wooden cases. The weight of packed chain is approximately 50 kgs. The defective chain links may be salvaged by gas welding.

[2] Quality Specifications: The chain should be inspected and tested as per the specifications laid down in the respective Indian Standards. The drawn wire should be of tested quality as per the IS Specifications. The following Indian Standards may also be referred:

I S : 226 – 1975	Structural Steel [standard quality] with Amendment No. 1 to 5
I S : 2429	Round Steel short link chain [Electric Butt welded, grade – 30]
I S : 2429 – 1970 [Part II]	Calibrated load chain for pulley blocks and other lifting appliances.
I S : 3109	Short link chain grade M.
I S : 3109 – 1982 [Part II]	Calibrated load chain for pulley blocks and other lifting applications.
I S : 6216 – 1982	Short link chain, grade – T, Calibrated for pulley blocks and other lifting appliances.
I S : 6217 – 1982	Short link chain grade S, non-calibrated for lifting purposes.

[3] Production Capacity [per annum]:

It is proposed to produce 8, 10 & 12 mm dia wire link chains.	300 Metric tons

[4] Motive Power Requirement: Approx. 40 KWH.

[5] Pollution Control: The manufacturing of M S Butt welded chains does not pose any problem of pollution, however, proper attention should be paid for installing air and sound pollution control equipments etc.

[6] Energy Conservation: Suitable energy efficient motors are to be used.

FINANCIAL ASPECTS

[1] Fixed Capital:

Land & Building : (Rented) Built up area approximately 1000 sq. mtr. rented @ Rs. 20 per sq. mtr.	20000.00 Per Month

[2] Machinery & Equipment:

Sl. No.	Description	Indigenous/Imported	Qty.	Amount [Rs.]

01	MS Butt Welded link making plant complete set suitable for 5 to 12 mm. wire size comprising one bending and two electro mechanical welding machine for each set complete with electricals etc.	Ind.	2 sets	33,50,000.00
02	Gas welding equipment complete with gun torch and cable etc.	-do-	1	15,000.00
03	Double ended pedestal grinder 10" wheel size complete with one HP electric motor.	-do-	1	10,000.00
04	Tumbling barrel with speed reduction gear box and 5 HP electric motor.	-do-	2	50,000.00
05	Pickling tank locally fabricated.	-do-	2	10,000.00
06	Weighing plant form.	-do-	1	15,000.00
07.	**Testing Equipments :** Link calibrating machine with 3 HP electric motor.	-do-	1	50,000.00
08.	Load testing machine with 5 HP electric motor	-do-	1	1,00,000.00
09.	Electrification and Installation charges @ 10 % of cost of machines and equipments.	-do-	LS	3,75,000.00
10.	Cost of dies tools and other fixtures	-do-	LS	1,50,000.00
11.	Cost of office equipment etc.	-do-	LS	50,000.00
12.	Pre operative expenses			50,000.00
	Total			**42,25,000.00**

WORKING CAPITAL [PER MONTH]

[i] Personnel: Administrative /Supervisory

Sl. No.	Description / Designation	No.	Salary	Total
01.	Supervisor	1	6000.00	6000.00
02.	Accountant	1	4000.00	4000.00
	Technical			
06.	Skilled worker	4	7000.00	28000.00
07.	Semi – skilled worker	4	5000.00	20000.00
08.	Unskilled / Helper	6	4000.00	24000.00
09.	Watchman	1	3500.00	3500.00
	Total Salary			**85500.00**
	Add perquisites			**10,500.00**
	Grand Total			**86,000.00**
	Say			**86,000.00**

[ii] Raw Material [Including Packaging requirement per month]

Sl. No.	Particulars	Ind./Imp.	Qty. MT	Rate Rs.	Value Rs.
01.	Wire rods 8, 10 and 12 mm. dia.	Ind.	25.3	32000.00	809600.00
02	Welding Material/Consumables	Ind	LS		15,000.00
03.	Packaging material wooden cases PP strips etc.	-do-	500	40.00	20000.00
	Total				**844600.00**
	Say				**845000.00**

[iii] Utilities [per month]

Power 8000 Kwh. @ Rs. 5 /- per unit	40000.00
Water	1000.00
Total	**41000.00**

[iv] Other Contingent Expenses [per month]

Rent	20000.00
Postage & Stationery	1000.00
Telephone	3000.00
Consumable stores	2500.00
Repair and Maintenances	2500.00
Transport Charges	5000.00
Advertisement & Publicity	2000.00
Insurance	1000.00
Misc. Expenses	2000.00
Total	**39000.00**

Total recurring expenditure [per month]

Staff & labour	86000.00
Raw materials	845000.00
Utilities	41000.000
Other Contingency expenses	39000.00
Total	**10,11,000.00**

Working capital for 3 months

972000 X 3	30,33,000.00

Total capital investment

Fixed capital	4225000.00
Working capital for 3 months	3033000.00
Total	**7258000.00**

FINANCIAL ANALYSIS

[1] Cost of production [per year]

Total recurring cost	1,21,32,000.00
Depreciation of machinery & equipment @ 10 %	3,75,000.00
Depreciation on tools & fixtures, Dies @ 25 %	37,500.00
Depreciation on office equipment @ 20 %	10,000.00
Interest on total investment @ 14 %	10,16,000.00
Total cost of production **Say**	**1,35,70,500.00** **1,35,71,000.00**

[2] Turn Over [per year]

Depreciation	**Qty. MT**	**Rate Rs.**	**Value Rs.**
Link chain of 8, 10 & 12 mm. wire dia	300	50,000.00	1,50,00,000.00
By sale of scrap	3.6	15,000.00	54,000.00
Total			**1,50,54,000.00**

[3] Net Profit per year [Before Tax]

Total Turnover - Cost of Production

1,50,54,000 – 1,35,71,000 = 14,83,000.00

[4] Profit on Sale

$$\frac{\text{Net Profit per year X 100}}{\text{Total Sale}} = \frac{14,83,000 \text{ X } 100}{1,50,36,000} = \mathbf{9.86\ \%}$$

[5] Rate of Return

$$\frac{\text{Net Profit per year X 100}}{\text{Total Investment}} = \frac{14,83,000 \text{ X } 100}{72,58,000} = \mathbf{21\ \%}$$

[6] Break Even Point

Fixed Cost

Depreciation on machines & equipments, tools, fixtures & office equipments	4,22,500.00
Rent	2,40,000.00
Interest on total investment	10,16,000.00
40 % salary and wages	4,12,800.00
40 % of other contingent expenses and utilities excluding rent & insurance	186,400.00
Rent & insurance	2,52,000.00
Total fixed cost	**25,29,700.00**

B. E. P.

$$\frac{\text{Fixed Cost X 100}}{\text{Fixed Cost + Profit}} = \frac{25,29,700\text{X } 100}{2529700+ 1483000} = \mathbf{63\%}$$

MACHINERY UTILIZATION

For better economical viability, it is suggested to run the plant more than one shift of 8 hrs.

ADDITIONAL INFORMATION, IF ANY

For tools and die repair / maintenance no equipment has been proposed in this profile, it is suggested to install basic general-purpose machine at a latter stage.

ADDRESS OF MACHINERY & EQUIPMENT SUPPLIERS

1. M/s Wadhwani Indl. Rools, Sec. A, Sanwer Road, Indore.
2. M/s Nichon Kikaisetsan Ltd., Osaka, Japan.

ADDRESS OF MATERIAL SUPPLIERS

1. M/s Steel Authority of India Ltd.
2. Local Market.

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