

AUTO LEAF SPRINGS

Product Code(ASICC) : 82508

Quality & Standards : IS:1135/73

Production Capacity : 300 MT per year

Month & Year of : March, 2012

Preparation

Prepared by : MSME DEVELOPMENT INSTITUTE,

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1. INTRODUCTION:

Auto Leaf springs is one of the vital automobile components since full load of the chassis along with its contents rests on spring assembly. There are various sizes of springs depending on the type and nature of vehicles.

2. MARKET POTENTIAL:

Leaf springs are extensively used in all diesel and petrol driven vehicles. Use of leaf springs is increasing in replacement of broken spring on the vehicle for transportation.

3. BASIS AND PRESUMPTIONS:

The project profile is drawn on the basis of following presumptions:

- i. Target has been fixed at production of 300 MT/Annum of Auto leaf Springs of various sizes on the basis of single shift working and on average of 25 working days/month, which comes to 25 MT in a month.
- ii. The efficiency of the plant has been presumed at 70% for the first year of production with a projection of 75% and 80% utilization of capacity for 2nd & 3rd year of production respectively.
- iii. The skilled, semi-skilled & unskilled labor will be engaged @ Rs. 3,000/-, Rs. 2,500/- and Rs. 2,200/- respectively for each type of labor.
- iv. Interest rate for fixed and working capacity being 12% Per Annum.
Margin money will be the 15% of the total cost of project.
- v. Payback period being 9 years with a moratorium period of 1 ½ years.
Costs in respect of machinery and equipment, raw materials are those generally obtained at the time of preparation of project profile and may vary depending upon various factors.

4. IMPLEMENTATION SCHEDULE:

Project implementation will take a period of 8 months from the date of approval of the project. Break-up of activities with time-period for each activity is shown below.

<u>Sl. No.</u>	<u>Nature of activities</u>	<u>Time period in months (Estimated)</u>
1.	Scheme preparation and approval	0-1
2.	SSI provisional registration	1-2
3.	Sanction of loan	2-5
4.	Clearance from Pollution control Board	3-4
5.	Placement of order for delivery of machinery	4-5
6.	Installation of machines	6-7
7.	Power connection	6-7
8.	Trial run	7-8
9.	Commencement of production	9 months onwards

5. TECHNICAL ASPECTS:

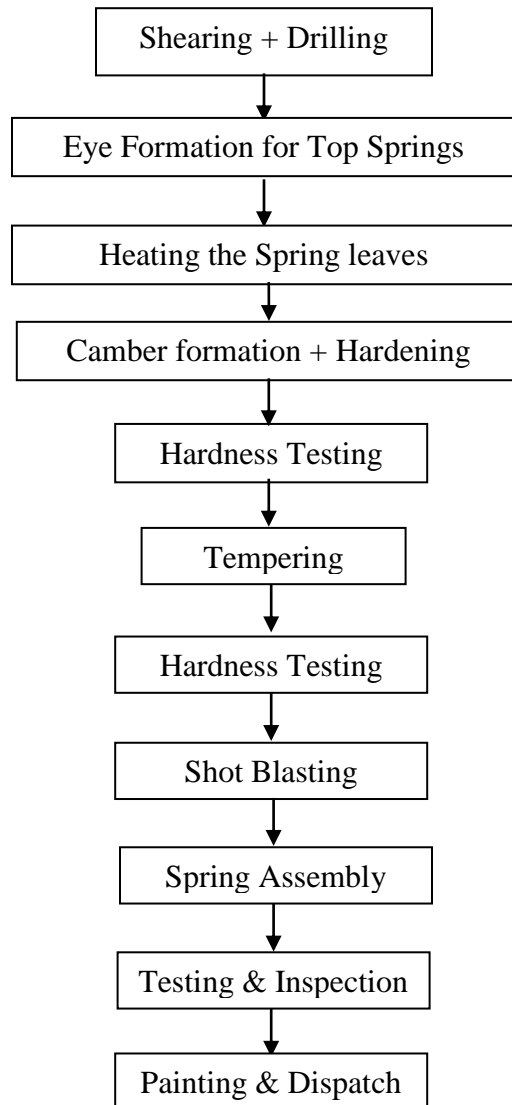
A. Production details and Process of Manufacture :

Shearing and drilling operations are done on spring steel-flats. Flats for top springs are sheared in four corners, both the ends are heated and rolled into formation of eye. Steel flats are heated, given the required camber (in hot condition) for specific shape depending on the position of the flat in the spring and quenched in oil. After hardening, these are again heated for tempering. Shot blasting operation carried out on the hardened & tempered spring flats. Subsequently various tests like Hardness testing, Camber tests are carried out.

B. Quality Specification:

Leaf springs should be manufactured adhering to IS: 1135/73 specification. Quality of raw materials should conform to the composition as prescribed in IS: 3431/65.

6. Process Flow Chart:



7. Production Capacity:

Quantity : 300 tones per annum.
Value : 1,98,00,000/-

8. Motive power: 20 HP.

9. Pollution Control Measures:

While heating, coal should be used in a small open hearth type furnace and provision for smoke emitting equipment be made with chimney to pass through flue gases.

10. Energy Conservation:

Energy audit is an essential part for energy conservation. The following factors should be taken care of with regard to fuel economy in industrial furnace.

- a. Proper heat distribution.
- b. Complete combustion with minimum excess air.
- c. Operating at the desired temperature.
- d. Reducing heat losses from openings.
- e. Minimising wall losses
- f. Waste heat recovery from fuel gases.
- g. Control of chimney draught.

In addition, machines should be individually motorized.

11. Financial Aspects

A. Fixed Capital

i) Land & Building, 200 Sq. Meters (rented) per month

7000

ii) Machinery & Equipments:

S.No.	Description of Machines	Quantity	Price (Rs)
1	Oil fired furnace size 2'x3'x7' with burner, blowers, filter & pipeline etc.	1	250000
2	Double walled M.S. Tank 4'x6'x4' with stirrer & pump	1	50000
3	Double Geared Power Press, cap. 80 Tonnes with 5HP Motor	1	150000
4	Smithy Hearth furnace with 1 HP Motor, blower etc.	1	40000
5	Eye Rolling Machine, semi-automatic	1	50000
6	Power Hacksaw machine, 14" cap. With 1 HP motor	1	40000
7	Screw Press- 6"x2"x 1/2" with die & punch	1	50000
8	Pilar type Drill machine, cap. 1 1/2"	1	12000
9	Platform type Weighing Machine, 150 Kg. cap.	1	8000
10	Eye Grinding Machine, 1"x 15" dia with 2HP motor	1	75000
11	Hardness Testing Machine, 150 Kg. cap.	1	50000
12	Diesel Set Generator, 20 KVA cap.	1	125000
		Total	900000
13	Electrification & installation @ 10% of above cost		90000
14	Office equipments like furniture, fan, Computer etc.	L.S.	50000
15	Pre-operative expenses		75000
		Total	1115000

12. Working capital (Per month):**A: Staff & Labour:**

S.No.	Description	Nos.	Salary	Total
1	Manager	1	6500	6500
2	Supervisor	1	5000	5000
3	Laboratory Assistant	1	4500	4500
4	Accountant/Clerk	1	4000	4000
5	Skilled Worker	3	3000	9000
6	Semi - Skilled Worker	4	2500	10000
7	Unskilled worker	6	2200	13200
8	Peon	1	2000	2000
9	Watchman	1	2000	2000
			Total	56200
Add perquisite @15% of salary				8430
			Total	64630

B. Raw Material (Per month :)

S.No.	Description	Quantity	Rate	Total
1	Spring Steel Flats, MT	26	42000	1092000
2	Paint, Ltrs.	40	60	2400
			Total	1094400

C. Utilities (Per month)

1	Electricity			8000
2	Furnace Oil @Rs.42/- per ltr.		7000	294000
			Total	302000

D. Other Contingent Expenses (Per month)

1	Rent		7000	
2	Insurance		6000	
3	Postage & Stationery		2000	
4	Telephone		1500	
5	Repairs & maintenance		3000	
6	Consumable Stores		3000	
7	Misc. Expenses		4000	
8	Transport allowances		4000	
			Total	30500

13. Total Working Capital (Per month)**1491530****14. Total Capital Investment**

i)	Fixed Capital	1115000
ii)	Working Capital	4474590

Total **5589590**

15. Financial Analysis

a. Cost of Production (Per Year)

i)	Total recurring cost	17898360
ii)	Depn. on machinery & equipment @ 10%	43500
iii)	Depn. on furnaces @ 20%	58000
iv)	Depn. On office equipments @ 20%	10000
v)	Interest on Total capital investment @12%	670751
	Total	<u>18680611</u>

b. Turnover (Per Annum)

By sale of 300 MTs of Auto Leaf Springs of various =	19800000
Sizes @ 66000/- per MT	

c. Net Profit per year

Turnover per year - Cost of production =	1119389
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d. Net Profit Ratio

(Net profit per year/ Turnover per year) X 100 =	5.65 %
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e. Rate of Return

(Net profit per year/ Total investment) X 100 =	20.03 %
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f. Break-even Point

Fixed Cost

i)	Rent	84000
ii)	Depn. on machinery & equipment @ 10%	43500
iii)	Depn. on furnaces @ 20%	58000
iv)	Depn. On office equipments @ 20%	10000
v)	Interest on Total capital investment @12%	670751
vi)	Insurance	72000
vii)	40% of salary & wages	310224
viii)	40% of other contingent expenses excluding rent & insurance	84000
	Total	<u>1332475</u>

Break- Even Point (B.E.P.)

[Fixed Cost/ (Fixed cost + Profit)] X 100 =	54.35 %
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NAMES & ADDRESSES OF MACHINERY AND RAW MATERIAL SUPPLIERS :

1. M/s. Hannu Metallurgical,
B-22,Girikunj Industrial Estate, Chakala, Mahakali Caves Road,
Andheri (East), Mumbai – 93 Ph.no. (022)-26875545.
2. M/s. Mahavir Engineering Corpn.,
1, Ambica Estate, B/h. Agarwal I.E.,
off S.V. Road, Jogeshwari West,
Mumbai – 102. Ph.no. (022)-56992785
3. M/s. Divecha Electricals,
Balaji Indl. Complex,
Gala No. ½, Navaghar , Bhayandar (E), Distt. Thane.
4. M/s. Nisha Engrs. & Consultants
Nisha Enclave, Plot No. 95,
Sector 23, Cidco Indl. Area,Turbhe, Distt. Thane.Ph.no. (022)-27684697
5. M/s. Combustion Equipments & Instruments,
Jer Mahal, Dhobi Talaw, 1st Floor,Mumbai –2. Ph.no. (022)-27690171/27600842.
6. M/s. AIMIL Ltd.,
Malhotra House, Opp. G.P.O.,
Walchand Hirachand Marg,Mumbai – 1. Ph.no. (022)- 22642435
7. M/s. Electroil Super Thermal Engineers,
151, Small Factory Area, Lakadganj,Nagpur – 8. Ph.no. (0712)-2286284
8. M/s. G.R.C.
1, Taratala Road,
Kolkata-700024.
9. M/s. Standard Electricals
282, B.B. Chatterjee Road,
Kolkata-700042. Ph no. (033)- 24422063
10. M/s. Associated Engineers
32, G.C. Avenue,
Kolkata-13. Ph. No. (033)-40066117, 22126477, 24731518
11. M/s. Machine Tools Impex
75, S.C. Avenue,
Kolkata-700013. Ph no. (033)- 22377569, 65481114
12. M/s. Rana Udyog (P) Ltd.
NH-6, Vill.: Sulati, Dhulgarh,
Howrah -711303. Ph.no. (033)- 26617891

NAMES & ADDRESSES OF RAW MATERIAL SUPPLIERS :

SAIL, TISCO or Local Metal Traders or Dealers.

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