

Automobile Silencer

PRODUCT CODE	: 374761000
QUALITY AND STANDARDS	: Customer's Satisfaction
PRODUCTION CAPACITY	: Qty. : 15,000 Nos. (per annum) Value : Rs. 30 Lakhs
MONTH AND YEAR OF PREPARATION	: March, 2003
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INTRODUCTION

Automobile Silencer is a device used to reduce the noise produced by the engine. Silencer is used in automobile vehicles to reduce the noise produced by the exhaust gases of the engine. Silencer is also used in many other engines and generators. The size, shape and construction varies according to the type and size of the engine.

MARKET POTENTIAL

The automobile industry all over the world is growing at a very high rate and different vehicles are always seen on the road. The production of silencer thus has a very good potential as it can be sold as original equipment and also in the replacement market. With the growth of the economy and increase in road transport, the demand of silencer is growing. Since the demand of the

automobile vehicles scooters, motorcycles, autorickshaw, moped etc. is increasing day by day in the country, there is good scope of auto silencer the demand of which is expected to increase by 8 to 10% in near future.

BASIS AND PRESUMPTIONS

1. It is based on 8 working hours a day and 25 days in a month and the break even efficiency has been calculated on 75% capacity utilisation.
2. Labour and wages are mentioned as per prescribed minimum wages and the proprietor is considered as a Manager.
3. Interest is considered @ 16% in the project for recurring and non-recurring investment.
4. The margin money as applicable to general categories of entrepreneurs may be 25% of the project cost.

5. The pay back period may be 5 years after the loan has been disbursed.
6. The cost of the land, construction charges, cost of machinery and equipment, raw materials and consumables, other contingent expenses etc. indicated in the profile are based on the prices prevailing at the time of project preparation and can be changed from time based upon local conditions.

IMPLEMENTATION SCHEDULE

Sl.No. Activity	Period in Days
1. Survey for collection of data in respect of demand, raw material including power and fuel, pollution control, procurement of technical know-how etc.	0-45
2. Arrangement of finance for margin money and other financial assistance	30-60
3. Preparation of project report	60-90
4. Selection of site (Rented Building)	90-120
5. Placement of orders and receipt of machines and of workers/ staff recruitment	90-150
6. Procurement of raw material/ bought out components/tools/ measuring equipment/gauges etc.	150-180
7. Erection of machines/ electrification and commissioning	180-210
8. Trial production	210-240
9. Commercial production	240-270

TECHNICAL ASPECTS

Process of Manufacture

The process of manufacturing auto silencer does not involve any special technology, it is a simple press working

process. The sheets are cut into the required size and shape. These sheets are then given the desired shape with the help of power presses, edge folding machines and bending rollers. The mufflers are also made out of sheet with the help of presses. These mufflers are then gas welded in one half of the silencer, the other half of the silencer with MS tubing's according to the requirement and are gas welded. These are now assembled and spray painted. The silencers are then cleaned and packed for despatch.

Quality Control and Standards

Good workmanship and best quality of raw material must be used to satisfy the consumers.

Pollution Control

The assembled product will be spray painted or nickel plated for which arrangements for exhaust fans will be made in the plating section.

Energy Conservation

The energy conservation of this unit is on the low side since the low power motors are used in the production activity. The workers of the unit should be made aware of the need to conserve energy by switching off the energy sources when not required. Capacitors may be used at suitable points. All presses and machinery should be lubricated properly and regularly.

FINANCIAL ASPECTS

A. Fixed Capital

(i) Land and Building (Rented)	Amt. (In Rs.)
Rented shed covered area 300 Sq. meter @ Rs. 30 per sq. mtrs.	9000

(ii) Machinery and Equipments

Sl. No.	Description	Imp./ Ind	Qty.	Rate (Rs.)	Amount (In Rs.)
1.	Shearing machine 4' Blade, Size, cap 16 SWG 5 HP motor (Treadle operated)	Ind.	1	1,25,000	1,25,000
2.	Power press 30 Ton cap. (3 HP motor)	Ind.	1	90,000	90,000
3.	Power press 5 Ton cap. with 1 HP motor	Ind.	2	30,000	60,000
4.	Fly press No.18	Ind.	2	10,000	20,000
5.	Sheet Bending Roll 16SWG×1200mm cap. with 2HP motor	Ind.	1	50,000	50,000
6.	D/E Bench grinder 8" wheel dia with ½ HP motor	Ind.	1	8,000	8,000
7.	Edge folding machine	Ind.	1	20,000	20,000
8.	Welding set (Gas) with Accessories	Ind.	2	12,500	25,000
9.	Spot welding machine	Ind.	2	25,000	50,000
10.	Work bench, tables and racks	Ind.	L.S.	30,000	30,000
11.	Tools, dies, fixtures, jigs and measuring instruments etc.	Ind.	L.S.	50,000	50,000
			Total		5,28,000
12.	Office furniture, almirah, chairs etc.	L.S.			35,000
13.	Electrification and Installation charges @ 10% of the cost of machinery and equipment				52,000
			Total		87,000
(iii)	Pre-operative Expenses	L.S.			20,000
	Total Fixed Capital (i+ii+iii+)				6,35,000

B. Working Capital (per month)

(i) Staff and Labour

Designation	Nos.	Rate (Rs.)	Amount (In Rs.)
Supervisor/Foreman	1	5,000	5,000
Skilled Workers	3	2,750	8,250
Semi-Skilled Workers	4	2,250	9,000
Storekeeper	1	3,750	3,750
Clerk	1	3,000	3,000
Helper	2	2,000	4,000
Peon	1	2,000	2,000
Chowkidar/watchman	1	2,000	2,000
	Total		37,000
	Add perquisites @ 15% of salary		5,550
	Total		42,550
	Say		42,600

(ii) Raw Materials

Particulars	Qty.	Rate (Rs.)	Amt.(In Rs.)
C.R.C.A. sheet	4000 kg	20/ Kg	80,000
M.S. tube (mts.)	500 mtrs	16/ Mtr.	8,000
	Total		88,000

(iii) Utilities

		Amt. (In Rs.)
Power	2500 kWh @ Rs. 4.00/unit	10,000
Water		300
	Total	10,300

(iv) Other Contingent Expenses

	Amt. (In Rs.)	
Consumable Stores	5,000	
Postage and Stationery	1,500	
Transportation	5,000	
Repairs and Maintenance	2,000	
Advertisement and Publicity	4,000	
Miscellaneous	3,500	
Rent	9,000	
Insurance and Taxes	2,000	
	Total	32,000

(v) Total Recurring Expenditure (per month) (Rs.)

Staff and labour	42,600	
Raw material	88,000	
Utilities	10,300	
Other contingent expenses	32,000	
	Total	1,72,900
	Say	1,73,000

(vi) Total Working Capital (for 3 months) = Rs. 5,19,000

C. Total Capital Investment

(i) Fixed capital	Rs. 6,35,000
(ii) Working Capital for 3 months	Rs. 5,19,000
Total	Rs. 11,54,000

FINANCIAL ANALYSIS

(1) Cost of Production	Amount (In Rs.)
Total Recurring Cost	20,76,000
Dep. on plant and machinery @10%	55,000
Dep. on tools and accessories @ 25%	12,500
Dep. on office equipment @ 20%	7,000
Interest on total capital investment @ 16%	1,84,640
Total	23,35,140
Say	23,35,000

(2) Turn-over (per year)

Particulars	Qty.	Rate (Rs.)	Amount (In Rs.)
By sale of large silencer	10,000	150	15,00,000
By sale of small silencer	5,000	300	15,00,000
Total			30,00,000

(3) Net Profit (per year) = Turnover - Cost of Production
 = Rs. 30,00,000 - 23,35,000
 = Rs. 6,65,000

(4) Profit Ratio = $\frac{\text{Net profit} \times 100}{\text{Total turnover}}$
 = $\frac{6,65,000 \times 100}{30,00,000}$
 = 22%

(5) Rate of Return = $\frac{\text{Net profit} \times 100}{\text{Total Investment}}$
 = $\frac{6,65,000 \times 100}{11,54,000}$
 = 57.6%

(6) Break-even Point

Fixed Cost (per year)	Amount (In Rs.)
i) Depreciations	74,500
ii) Investment on total capital investment @ 16%	1,84,640

Fixed Cost (per year)	Amount (In Rs.)
iii) 40% of the salary and wages	2,04,480
iv) 40% of other contingent expenses	1,00,800
v) Rent and Insurance	1,32,000
Total Fixed Cost	6,96,420

B.E.P. = $\frac{\text{Fixed cost} \times 100}{\text{Fixed cost} + \text{Profit}}$
 = $\frac{696420 \times 100}{696420 + 665000}$
 = $\frac{696420 \times 100}{1361420}$
 = 51%

Addresses of Machinery and Equipment Suppliers

1. M/s. Amteep Machine Tools (P) Ltd.
14/7, Mathura Road, Faridabad (Haryana)
2. M/s. Tools Today (India) D-52, Phase-V, Focal Point, Ludhiana-141101.
3. M/s. Jaymes Engg. Works Birhana Road, Kanpur (U.P.)
4. M/s. Batliboi and Co. Parliament Street, New Delhi.
5. M/s. Ashoka Machine Tools Corpn. A-15, Mayapuri, Indl. Area, New Delhi.

Addresses of Press Suppliers

1. M/s. Amteep Machine Tools P. Ltd. 14/7, Mathura Road, Faridabad (Haryana)
2. M/s. Batliboi and Co. G.T. Road, Miller Ganj, Ludhiana.
3. M/s. Birson Industries 262, Industrial Area "A", Ludhiana.

Addresses of Testing and Measuring Equipment Suppliers

1. M/s. PSI Sales (P) Ltd.
604, Hemkunt House,
6, Rajendra Place,
New Delhi.
2. M/s. Accurate Sales and Service (P) Ltd.
Gange House,
67, Hadarpur Indl. Estate,

P. B. No. 1202,
Pune-410013.

3. M/s. Bombay Tools (P) Ltd.
50, Nagdevi Cross Lane,
Mumbai-400003.

Raw Material Suppliers

Raw material can be purchased by the local suppliers available in the market.