A PROJECT PROFILE
ON

AUTOMOBILE SILENCER

2010 - 2011

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INTRODUCTION

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

MARKET POTENTIAL
The market for silencer has a very good potential as it can be sold in original equipment and also in the replacement market. With increase in transport means on road like buses, cars, scooters, motorcycles, auto rickshaws, etc., the demand of auto silencer is growing.

The scope of auto silencer manufacturing unit as an ancillary unit to automobile manufacturing unit is also very good

**BASIS AND PRESUMPTION**

The basis and presumptions for the project will be as under:
1. The production of the unit has been worked out on the basis of single shift of 08 hours a day and 300 working days in a year.
2. It has been presumed that the capacity utilization of the unit will be 70% in the first year followed by 75% in the second year and 80% in the subsequent years.
3. The quoted salaries and wages have been taken as per the prevailing rate in state at the time of preparation of the project profile
4. The interest rate has been considered as 16% on capital investment on an average weather financed by any bank or financial institutions.
5. The margin money has been raised 25% of the capital investment.
6. The unit has been proposed to function in rented building. The rental value for accommodation of workshop, office and other covered / uncovered area is taken @ Rs. 50/- per sq. mtr.
7. The payback period has been considered as 5 years after loan disbursement.
8. The quoted cost of machinery, equipments and raw materials has been taken as per the rates prevailing in the market at the time of preparation of the project profile and likely to vary from place to place and supplier to supplier. When a tailor made project profile is prepared, necessary changes are to be made.

**IMPLEMENTATION SCHEDULE**

The detail of activities with duration for implementation schedule of project will be as under:
1. Procurement of technical know how / transfer of technology - 15 days
2. Market survey, tie-ups and obtaining quotations - 15 days
3. Selection of site - 07 days
4. Preparation of project report - 07 days
5. Registration and financing - 70 days
6. Procurement of machines - 45 days
7. Recruitment of staff and training - 30 days
8. Addition / alteration in rental premises - 30 days
9. Procurement of raw material / bought out components - 15 days
10. Erection, electrification and commissioning of machines - 30 days
11. Trail production - 30 days
In order to efficient and successful implementation of the project in the shortest period the slack period is curtailed to maximum possible extent and as far as possible simultaneous activities are carried out. According to critical path method, the approximate time required to commence production may be considered as about 08 to 09 months.

TECHNICAL ASPECT

Manufacturing Process

The manufacturing process of automobile silencer involves a simple fabrication process & press working process of sheet metal. 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 and in other half MS tubes are gas welded according to the size and design of the silencer. Finally, these two halves are assembled, gas welded and painted. The silencers are then cleaned and packed for dispatched.

Alternate Technology

No alternative technology is suggestive in small scale sector for this project. The use of proper tools and fixtures will not only increase rate of production but will also ensure quality of product.

Production Targets

The unit will have the capacity to produce 15,000 Nos. of automobile silencers of different sizes for automobile industries per annum.

Quality Control and Standards

Raw material should be inspected to ensure the required specification. The product under process should also be checked at every stage of production to control the specified quality and standards. For the purpose of checking/inspection, proper instruments/gauges must be used and these instruments/gauges must be calibrated periodically.

Energy Conservation

The revolving / reciprocating parts of plant and machinery should be properly lubricated every time to avoid extra energy consumption. Layout of the unit should be
in such manner to avoid back tracking of material. All electric switches may be kept off, when not required. Fluorescent tube with electronic chokes / Compact Fluorescent Tube (CFT) for general lighting may be used for energy saving. As far as possible, motor of correct inductive load should be used with improved power factor. Power factor may be improved by using the capacitors of appropriate rating.

**Pollution Control**

The unit does not come under the category of polluting industries. Although, the minimum height of shed may be maintained with exhaust fans for removing decongestion, fumes, dust, etc. and to provide proper ventilation.

**FINANCIAL ASPECTS**

1. **Land and Building**

   On rent 200 Sq. Mtr. Covered area
   @ Rs. 50/- Sq. Mtr.
   
   **10,000.00**

2. **Machinery and Equipment**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Description</th>
<th>HP/KW</th>
<th>Ind/Imp</th>
<th>Qty.</th>
<th>Value (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>Shearing Machine Blade 4' Cap. 16 SWG</td>
<td>05HP</td>
<td>Ind.</td>
<td>01</td>
<td>1,30,000.00</td>
</tr>
<tr>
<td>ii.</td>
<td>Power Press Cap. 30 Ton</td>
<td>03HP</td>
<td>Ind.</td>
<td>01</td>
<td>95,000.00</td>
</tr>
<tr>
<td>iii.</td>
<td>Power Press Cap. 05 Ton.</td>
<td>01HP</td>
<td>Ind.</td>
<td>02</td>
<td>70,000.00</td>
</tr>
<tr>
<td>iv.</td>
<td>Fly Press Nos. 18</td>
<td></td>
<td>Ind.</td>
<td>02</td>
<td>35,000.00</td>
</tr>
<tr>
<td>v.</td>
<td>Sheet Bending Roll</td>
<td></td>
<td>Ind.</td>
<td>01</td>
<td>60,000.00</td>
</tr>
<tr>
<td>vi.</td>
<td>D/E Bench Grinder 8’ wheel dia.</td>
<td>0.5HP</td>
<td>Ind.</td>
<td>01</td>
<td>8,000.00</td>
</tr>
<tr>
<td>vii.</td>
<td>Edge Folding Machine 16SWGx1200mm</td>
<td></td>
<td>Ind.</td>
<td>01</td>
<td>25,000.00</td>
</tr>
<tr>
<td>viii.</td>
<td>Welding Set (Gas) complete</td>
<td></td>
<td>Ind.</td>
<td>02</td>
<td>30,000.00</td>
</tr>
<tr>
<td>ix.</td>
<td>Spot Welding Machine</td>
<td></td>
<td>Ind.</td>
<td>02</td>
<td>50,000.00</td>
</tr>
</tbody>
</table>

   - Electrification and installation charges 30,000.00
   - Testing and measuring equipments 20,000.00

   **5,53,000.00**

   - Other tools and fixtures 40,000.00
   - Office equipments 20,000.00
3. Pre-Operative Expenses

( Project cost, non-refundable deposits etc.)

\[ \text{Total: } 20,000.00 \]

4. Fixed Capital

i. Land and Building
   Rented

ii. Machinery and Equipments
   \[ 6,13,000.00 \]

iii. Pre-Operative Expenses
   \[ 20,000.00 \]

\[ \text{Total: } 6,33,000.00 \]

5. Staff and Labour (per month)

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Description</th>
<th>No.</th>
<th>Salary@</th>
<th>Value (Rs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>i.</td>
<td>Supervisor / Foreman</td>
<td>01</td>
<td>6,000/-</td>
<td>6,000.00</td>
</tr>
<tr>
<td>ii.</td>
<td>Clerk cum cashier</td>
<td>01</td>
<td>5,000/-</td>
<td>5,000.00</td>
</tr>
<tr>
<td>iii.</td>
<td>Skilled workers</td>
<td>03</td>
<td>4,500/-</td>
<td>13,500.00</td>
</tr>
<tr>
<td>iv.</td>
<td>Semi-skilled workers</td>
<td>04</td>
<td>3,500/-</td>
<td>14,000.00</td>
</tr>
<tr>
<td>v.</td>
<td>Helpers</td>
<td>02</td>
<td>3000/-</td>
<td>6,000.00</td>
</tr>
<tr>
<td>vi.</td>
<td>Peon / Watchman</td>
<td>02</td>
<td>3000/-</td>
<td>6,000.00</td>
</tr>
</tbody>
</table>

\[ \text{Total: } 50,500.00 \]

- Perquisites @ 15% of salary
  \[ 7,500.00 \]

\[ \text{Total: } 58,000.00 \]

6. Raw Material (per month)

CRCA Sheets (4MT Kgs @ Rs. 42000/- )
\[ 1,68,000.00 \]

MS Tube (500 Mtrs. @ Rs. 38/- )
\[ 19,000.00 \]

\[ \text{Total: } 1,87,000.00 \]

7. Utilities

i. Electricity (L.S.)
   \[ 12,000.00 \]

ii. Water (L.S.)
   \[ 500.00 \]

\[ \text{Total: } 12,500.00 \]

8. Other Contingent Expenses (per month)

i. Rent
   \[ 10,000.00 \]
ii. Postage and Stationary 500.00
iii. Advertisement 1,000.00
iv. Repair and Maintenance 2,000.00
v. Telephone 1,500.00
vi. Transportation 3,000.00
vii. Consumables 3,000.00
viii. Insurance 4,000.00
ix. Misc. Expenses 1,000.00

26,000.00

9. Working Capital (per month)
i. Staff and Labour 58,000.00
ii. Raw Material 1,87,000.00
iii. Utilities 12,500.00
iv. Other Contingent Expenses 26,000.00

2,83,500.00

10. Total Capital Investment
i. Fixed Capital 6,33,000.00
ii. Working Capital for 3 months 8,50,500.00

14,83,500.00

MACHINERY UTILIZATION

It is expected that during first year machine utilization will be 70% and during second year 75% and 80% in subsequent years. The suggested Plant & Machinery are sufficient to achieve the target, if utilized as per the recommendations made.

FINANCIAL ANALYSIS

1. Cost of Production (per annum)
i. Total Recurring Cost per annum 34,02,000.00
ii. Depreciation on Machinery & Equipments @ 10% 55,500.00
iii. Depreciation on Tools, Fixtures etc. @ 25% 10,000.00
iv. Depreciation on Office Equipments @ 25% 5,000.00
v. Interest on Total Capital Investment @ 16% 2,37,500.00
2. Turn Over (per annum)

   By sales of 10,000 Nos. large silencers @ Rs. 225/-  22,50,000.00
   By sales of 05,000 Nos. small silencers @ Rs. 375/-  18,75,000.00

   41,25,000.00

3. Net Profit (per annum before Income Tax)

   = Turn Over (per annum) – Cost Of Production (per annum)
   = 41,25,000 – 37,10,000
   = 4,15,000

4. Net Profit Ratio

   \[
   \frac{\text{Net profit} \times 100}{\text{Turn over}}
   \]

   \[
   \frac{4,15,000 \times 100}{41,25,000} = 10 \%
   \]

5. Rate of Return

   \[
   \frac{\text{Net profit} \times 100}{\text{Total investment}}
   \]

   \[
   \frac{4,15,000 \times 100}{14,83,500} = 28 \%
   \]

BREAK EVEN ANALYSIS

1. Fixed Cost (per annum)

   i. Total Depreciation 70,500.00
   ii. Rent 1,20,000.00
   iii. Interest on Total Capital Investment 2,37,500.00
   iv. Insurance 48,000.00
   v. 40% of Staff and Labour 2,78,500.00
   vi. 40% of Other Contingent Expenses 58,000.00
(Excluding rent & insurance) 8,12,500.00

2. Break Even Point

\[
\frac{\text{Fixed Cost} \times 100}{\text{Fixed cost} + \text{profit}} = \frac{8,12,500 \times 100}{8,12,500 + 4,15,000} = 66.20 \%
\]

LIST OF MACHINERY AND RAW MATERIAL SUPPLIERS

1. M/s, Sant Machine Tools,  
G.T. Road, Near Dholewal Chowk, Ludhiana.

2. M/s, Kalsi Machine Tools,  
Gill Road, Ludhiana.

3. M/s, Leading Engineering Corpn.,  
Anand Prabhat Industrial Estate, New Delhi.

4. M/s, Ess Kay Engineering Corpn.,  
21/6 A, Freeganj Chowk, Agra

5. M/s, Jeet Machine Tools Corpn.,  
G. B. Road, Delhi

6. M/s, Batliboi and Co.,  
Parliament Street, New Delhi.

7. M/s, Associated Engg. Projects,  
Opp. Modi Bagh, Delhi Road, Modinagar, Distt. Gaziabad.