**LIGHT ENGINEERING**

**(NUT, BOLT, WASHER, RIVETS, etc.)**

* **Introduction**

The project is envisaged for establishing a machining unit for the manufacture of simple fastening components such as screws, bolts, nuts, washers, car clips, rivets and so on. These items are required by all types of industries including automobiles.

**2. Market:**

The products have a good demand in local market. Transportation industries like bicycles, automobiles, body builders, aircrafts etc, building activities such as construction areas, electrical industries and other heavy and light industries are the common customers. Hence the marking of these products will not be a tough

. **3.** **Manufacturing Process**

An unfinished work piece requiring machining will need to have some material cut away to create a finished product. A finished product would be a work piece that meets the specifications set out for that work piece by [engineering](http://en.wikipedia.org/wiki/Engineering_drawings) [drawingsHYPERLINK "http://en.wikipedia.org/wiki/Engineering\_drawings"](http://en.wikipedia.org/wiki/Engineering_drawings) or [blueprints.](http://en.wikipedia.org/wiki/Blueprints) A lathe is a machine tool that can be used to create that diameter by rotating a metal workpiece, so that a cutting tool can cut metal away, creating a smooth, round surface matching the required diameter and surface finish. A drill can be used to remove metal in the shape of a cylindrical hole. Other tools that may be used for various types of metal removal are milling machines, saws, and [grinding machines.](http://en.wikipedia.org/wiki/Grinding_machine) Many of these same techniques are used in [woodworking](http://en.wikipedia.org/wiki/Woodworking).the "traditional" machining processes, such as [turning, HYPERLINK "http://en.wikipedia.org/wiki/Boring\_(manufacturing)"boring, HYPERLINK "http://en.wikipedia.org/wiki/Drilling"drilling, HYPERLINK "http://en.wikipedia.org/wiki/Milling\_machine"milling, HYPERLINK "http://en.wikipedia.org/wiki/Broach\_(metalwork)"broaching, HYPERLINK "http://en.wikipedia.org/wiki/Sawing"sawingHYPERLINK "http://en.wikipedia.org/wiki/Shaper",HYPERLINK "http://en.wikipedia.org/wiki/Shaper"shapingHYPERLINK "http://en.wikipedia.org/wiki/Shaper", HYPERLINK "http://en.wikipedia.org/wiki/Planer\_(metalworking)"planing, HYPERLINK "http://en.wikipedia.org/wiki/Reamer"reaming,](http://en.wikipedia.org/wiki/Turning) and [tapping,](http://en.wikipedia.org/wiki/Tap_and_die) or sometimes to [grinding.](http://en.wikipedia.org/wiki/Grinding_(abrasive_cutting))

**FINANCIAL ASPECTS**

|  |  |  |
| --- | --- | --- |
| **1.** | **Land** | **Free hold** |
| **2.** | **Building** | **Rented** |

* **Plant & Machinery**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Sl.N | Item | Qt |  |  |
| 1 | Lathe Machine | 1 | Rs. | 125,000.00 |
| 2 | Tread rolling |  |  | Rs. |
| 3 | Stand Drill | 1 | Rs. | 9,500.00 |
| 4 | Hand Grinders | 2 | Rs. | 13,000.00 |
| 5 | Hand Driller | 3 | Rs. | 16,000.00 |
| 6 | Hammer & Tools |  | Rs. | 6,000.00 |
| 7 | Rivette Machine | 1 | Rs. | 8,000.00 |
| 8 | Cutting | 1 | Rs. | 8,000.00 |
| 9 | Sheet Cutters | 2 | Rs. | 3,750.00 |
| 10 | Transportation, Errection,Sales Tax etc. | | Rs. | 3,250.00 |
|  | **Total** |  | **Rs.** | **3,00,000.00** |

* **Raw Material Required per month**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1 | M S | 1675 kg & Rs. 55/= | Rs. | 56,250.00 |
| 2 | Metal Sheet | 1100 kg & Rs. | Rs. | 33,750.00 |
| 3 | Other items | L S | Rs. | 10,000.00 |
|  | **Total** |  | **Rs.** | **1,62,225.00** |

* **Man Power per month**

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | Manager | Rs. | 8,000.00 |
| 2 | Skilled Workers | Rs. | 16,000.00 |
| 3 | Helper | Rs. | 4,500.00 |
|  | **Total** | **Rs.** | **28,500.00** |

* **Other Expenese per month**

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | Power | Rs. | 2,000.00 |
| 2 | Rent | Rs. | 3,000.00 |
| 3 | Postage & Telephone | Rs. | 500.00 |
| 4 | Miscellenious expenses | Rs. | 2,500.00 |
|  | **Total** | **Rs.** | **8,000.00** |

* **Working Capital Requirement**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | Stock | of | Raw | 30 | Day | Rs. |
| 2 | Raw | Materials in | | 2 | Day | Rs. |
| 3 | Stock | of | Finished | 3 | Day | Rs. |
| 4 | Credit Sale | |  | 10 | Day | Rs. |
| 5 | One Month working expenses | | |  |  | Rs. |
|  | Total |  |  |  |  | Rs. |

* **Production per Month**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 2500 Kgs of Nuts , Bolts , Washer etc @ Rs.90 / Kilo | | | Rs. | 2,25,000.00 |
| **9.** |  | **Total Project Cost** |  |  | |
| 1 |  | Land | | Free hold | |
| 2 |  | Building | | Rented | |
| 3 |  | Plant & Machinery | | Rs. | 3,00,000.00 |
| 4 |  | Working Capital | | Rs. | 3,29,200.00 |
| **Total** | | | | **Rs.** | **6,29,200** |

* **MEANCE OF FINANCE**

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | Promoters Contribution | Rs. | 1,88,800.00 |
| 2 | Term Loan | Rs. | 2,21,000.00 |
| 3 | Working Capital Loan | Rs. | 2,30,400.00 |
|  | **TOTAL** | **Rs.** | **6,292,200.00** |

* **Cost of Production and Profitability Statement for a normal year of operation**

|  |  |  |
| --- | --- | --- |
| Year | | 1st |
| Number of Working Days | | 300 |
| Number of Shift | | 1 |
| Installed Capacity | | 4500000.00 |
| Capacity Utilisation | | 60 |
| Production | | 2700000.00 |
| **A. Net Sales** | | 2700000.00 |
| **B. Cost of Production** |  |  |
| Raw materials | | 1951500.00 |
| Salaries | | 96000.00 |
| Wages | | 246000.00 |

|  |  |  |
| --- | --- | --- |
| Power Charges | | 24000.00 |
| Repairs and Maintenance | | 12000.00 |
| Depreciation&insurance | | 39000.00 |
| Total | | 2368500.00 |
| **C.Gross Operating Profit** | | **331500.00** |
| **D. Administrative and Selling Expenses** | |  |
| Administrative Expenses& | | 72000.00 |
| Selling Expenses | |  |
| **E. Financial Expenses** | |  |
| Interest on Term Loan | | 26831.00 |
| Interest on Working Capital Loan | | 32256.00 |
| **F. Total D & E** | | **131087.00** |
| **G. Net Profit** | | **200413.00** |
| **H. Provision for taxes** | | **4041.00** |
| **I. Net profit** | | **196372.00** |
| **J. Withdrawals** | | **0.00** |
| **K. Depreciation** | | **36000.00** |
| **L. Cash Surplus** | | **232372.00** |
| **12.** | **Break- Even Point** | **42.37%** |
| **13.** | **DSCR** | **3.1** |
| **14.Return on Investment** | | **31%** |