

**PROJECT PROFILE ON  
AUTO LOCKS**

- 1.Product : Auto Locks
- 2.NIC Code (1998) : N.A
3. Product Code : N.A
4. Production capacity : Quantity - 1.50 lakhs pcs.  
Value - 22.50 lakhs
- 5.Month & year of preparation: January 2011
6. Prepared by : Metallurgy Division
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- **Introduction**

Zinc Castings of various sizes and shape are used in Auto Locks Assembly. Usually die casting Zinc alloys is used for this purpose due to

1. High Productivity
2. Good as Casting surface finish and appearance
3. Do not require much machining
4. Can be cast within close dimensional tolerance
5. Their section can be cast with ease
6. Very low metal wastage
7. Very low rejection.

- **Market Potential**

Open market and Automobile units are in need of the Auto Locks. Hence there is a good scope for this product. It is better to do the production of zinc die-casting for Auto Locks near the Auto Lock manufacturing units Cluster. There is very good scope in and around Aligarh City which has cluster group of Auto Locks manufacturing units.

- **Basis and Presumption**

1. Number of shifts : Single shift of 8 hrs.
2. Working days per annum : 300
3. Working efficiency : 75%
4. Time period for achieving full : 3 years  
Capacity utilization
5. Labour Wages : As per the minimum Wages Act of State Govt.
6. Marging money : 25% on an average of project cost
7. Interest rate on fixed & Working Capital: 15% on average
8. Estimated life of the project : 10 years
9. Land cost & Construction Cost: It has been assumed that the project is Established in rented shed.
10. Cost of Machinery and Equipments: Prevailing cost of the market
11. Seeing present practice it has been assumed that the Die and raw material will be Supplied by the Lock Assemblers

## IMPLEMENTATION SCHEDULE

Sl. no	Nature of Activities	Period(Months)(Estimated)
1.	Scheme Preparation and Approval	1Month
2.	SSI Provisional Registration	1-2Month
3.	Clearnce from Pollution Control Board if any	2-3Month
4.	Sanction of loan required if any	3-4Month
5.	Placement of order for delivery of machinery	4-7Month
6.	Installation of machinery	7-13Month
7.	Power Connection	13-14 Month
8.	Trial Run	14-15Month
9.	Commence ment of regular production	15 Month onwards

### TECHNICAL ASPECTS

Process of manufacturing:

Melting of Zinc Ingot at 450C-Cleaning-Die casting-Ejection of casting-Rnner breaking-Primary Inspection-Final Inspection-Buffering- Despatch

### QUALITY CONTROL AND STANDARD

As per customer's specification, die cast components should be free from blow holes, pin holes, shrinkage, cold shut etc. They should be free from dimensional in accuracy. Zinc alloy should be as per specification of the customer. Generally Zinc alloy(IS MAC-3) having electrolytic Zinc with 4-6% AI is used for this purpose. Raw material is expected to be supplied by the lock assemblers.

- **Production capacity**
- Quantity : 1.50 lakhs pcs.
- Value : 22.50 lakhs

### POLLUTION CONTROL

There is not much problem of pollution. However, powerful exhaust is required for exhaust of smokes from the shed . No objection Certificate has to be obtained from State Pollution Control Board.

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### ENERGY CONSERVATION

- 1) Maximum utilization of machine has to be done to consume metal from the melting furnace.
- 2) The furnace should be provided with thermocouple and automatic temperature control devices.
- 3) Opening of the furnace should be kept closed while not in use.
- 4) Energy audit of the unit has to be done on a regular basis.
- 5) Preheating of charge should be done by keeping few ingots on holding furnace
- 6) The furnace should be properly insulated to reduce radiation.

- **Utilities :**

Power	:	Rs.10,000
Water and Misc.	:	Rs. 1,000
Total	:	Rs.11,000

- **Financial aspects**

- **Fixed capital**

- i) Land and Building Rs. 3000.00  
Rented area 300 sq. mtrs.  
@Rs.3000 per month
- ii) Machinery and Equipments

Sl.No.	Description	Ind/Imp	Qty.	Amount(in Rs.)
1.	Horizontal Hot Chamber pressure Die Casting M/c Capacity 400 gm/shot with control panel and accessories	Ind.	1 No.	2,50,000
2.	Electrical Resistance Furnace for melting Zinc Alloy	Ind.	1 No.	1,25,000
3.	Arc Welding machine	Ind.	1 No.	20,000
4.	Fitting equipment and Buffing equipments	-	-	20,000
5.	Bench drilling machine 1 H.P.	-	-	12,000
6.	Weighing machine(platform type)200 kg.cap	-	-	12,000
7.	Air Compressor(3 HP)	-	-	30,000
8.	Pedestal Grinder(2 HP)	-	-	12,000

9.	Flexible shaft grinder(2 HP)	-	-	12,000
<b>-4-</b>				
10.	Bench grinder double ended(1/2 HP)	-	-	10,000
11.	Pneumatics Grinder	-	-	6,000
12.	Material handling equipments	-	-	16,000
13.	Testing Equipments	-	-	25,000
14.	Pollution Control Equipment(Exhaust)	-	-	20,000
15.	Connection including Transformer	-	-	1,25,000
16.	Electrification and Installation charges	-	-	50,000
17.	Tools and other fixtures	-	-	25,000
18.	Office equipment/working tables	-	-	50,000
			Total	8,14,000

Pre-operative expenses

Rs. 50,000/-

Total Fixed Capital=2+3(As shed is rented)

= Rs. 8,64,000/-

- Working capital(for 3 months)

- Manpower requirement per annum
- Salary & Wages
- Raw material estimation
- Utilities(pm)
- Other miscellaneous recurring expenses(pm)
- Sales per year or turn over per year

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Financial aspects:

- Total working capital(P.M.)
  - i) Personnel
    - a) Administrative Supervisory

1.	Manager	1 No.	Rs.10,000	Rs.10,000
2.	Supervisor	1 No.	Rs 8,000	Rs. 8,000
3.	Accountant(Part Time)	1 Mp/	Rs. 3,000	Rs. 3,000
4.	Clerk-cum-Typist(Part Time)	1 No.	Rs. 3,000	Rs. 3,000
			Total :	Rs.24,000
<b>b) Technical Skilled and Unskilled</b>				
1.	Skilled Worker	1 No.	Rs.4,500	Rs. 4,500
2.	Semi-Skilled Worker	1 No.	Rs. 3,500	Rs. 3,500
3.	Unskilled worker	2 Nos.	Rs. 3,000	Rs. 3,000
4.	Clerk-cum-Typist(Part Time)	1 No.	Rs. 3,000	Rs. 3,000
			Total:	Rs.41,000
	Perquisites @ 15%			Rs. 6,150
			Total	Rs. 47,150
<b>ii) Raw material(Per month)</b>				
1.	Zinc Alloy Ingots	Ind.(Alloy Ingots will be supplied by the Customer 5% burning loss will also be allowed)		
2.	Various consumables	Ind.	Rs.40,000	
			Total :	Rs.40,000
<b>iii) Utilities(Per month)</b>				
	Power		Rs.10,000	
	Water and Misc.		Rs. 1,000	
<b>iv) Other Contingent expenses (per month)</b>				
	Rent		Rs. 3,000	
	Telephone		Rs. 1,000	
	Consumable stores		Rs. 1,000	
	Transport charges		Rs. 1,000	
	Advertisement and publicity		Rs. 1,000	
	Postage and stationery		Rs. 1,000	
	Insurance taxes, and other misc exp.		Rs. 5,000	
	Repairs and maintenance		Rs. 2,000	
			Total:	Rs 15,000
<b>v) Total recurring expenditure(Per month)</b>				
	<b>i+ii+iii+iv =</b>		Total:	Rs.1, 13, 150

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vi) Working Capital for three months	<b>Rs.3,39450</b>
• Total capital investment	
i) Fixed capital	Rs. 8,14,000
ii) Working Capital for 3 months)	Rs. 3,39,450
Total :	Rs. 11,53,450

**Machinery Utilization**

- Working efficiency- 75%
- Single shift
- 25 working days in a month

• **Financial analysis**

**1. Cost of production(P.A.)**

a	Total Recurring cost	13,57,800
	Depreciation on machinery @10%	61,400
	Depreciation on furnace @ 20%	25,000
	Depreciation on tools and fixture @ 25%	5,000
	Depreciation on office equipment @ 20%	10,000
	Interest on total investment @ 15%	1,73,017
	Total	16,32,217

**2. Turn over per year**

Item	Qty.	Rate(in Rs.)	Value(Rs.)
Zinc die Casting For Auto Locks	1,50,000 Nos.	@Rs.15 per pc.	22,50,000

**3. Net profit (per year) before Income Tax**

**4. Total Sales- Total Cost of Production**

$$= 2250000 - 1632217 = \text{Rs. } 6,17,783$$

**1. Net Profit Ratio**

$$= \frac{\text{Net Profit}}{\text{Turnover}} \times 100 = \frac{617783}{2250000} \times 100 = 27\%$$

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## 2. Rate of return

$$= \frac{\text{Net Profit per year}}{\text{Total Investment} \times 100} = \frac{617783}{1632217} \times 100$$

$$= 37.84\%$$

## 3. Break even analysis(B.E.P.)

Rs.

Fixed Cost (per annum)

a) Depreciation on machines and Equipment tools, Fixtures and office equipments	10.1400
b) Rent (Annual)	36.000
c) Interest on Total Investment	173.017
d) Insurance	60.000
e) 40% of salary and wages	226.320
f) 40% of other contingent expenses	33.600
Excluding rent and insurance	
Total :	630.337

B.E.P

$$.= \frac{\text{Annual Fixed Cost} \times 100}{\text{Annual Fixed cost} + \text{profit}} = \frac{630337 \times 100}{1248120} = 51\%$$

## Additional Information

In this project Die and Raw material will be supplied by the customer as per present practice to the field of the casting.

## Addresses of Machinery and Equipment Suppliers

1. M/s. H.M.T.Ltd.  
Die Casting and Plastic machinery Division, HMT P.O., Bangalore – 31
2. M/s. P.K.Engineering Works,B-1, Industrial Estate, Aligarh,U.P.

## Addresses of Raw Material Suppliers:

1. M/s. Hindustan Zinc.Ltd.
2. M/s. Minerals and Metals Trading Corpn. Of India Ltd.  
1-8-32/15, Bapubagh, Panderghast Rd.Secunderabad -3
3. M/s. Advance Metal Co.,109, N.S.Rd. Kol-1