

PROJECT PROFILE ON
CASTING FOR AUTO LOCKS

PRODUCTCODE	:	NA
QUALITYANDSTANDARDS	:	AS PER BIS
MONTHANDYEAR OFPREPARATION	:	MARCH-2021
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PROJECT PROFILE ON CASTING FOR AUTO LOCKS

INTRODUCTION

Zincs castings of various sizes and shape are used in Auto Locks Assembly. Usually die casting zinc alloy 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 dimension at tolerance
5. Their section can be cast with ease.
6. Very Low metal wastage Very Low rejection

MARKET POTENTIAL

Open market and Automobile units are in need of the Auto Locks. Hence there is 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 as cluster group of Auto locks manufacturing units

BASIS AND PRESUMPTIONS

1. Number of shifts - Single shift of 8 hrs.
2. Working days per Annum - 300
3. Working efficiency - 75%
4. Time period for achieving - 3 years full capacity utilization
5. Labour wages - As per the minimum Wages Act of State Govt.
6. Margin money - 25% on an average of project cost.
7. Interest rate on fixed - 15% on average and working capital
8. Estimated life of the project - 20 years
9. Land cost and - It has been assumed construction cost that the project is established in rented shed.
10. Cost of Machinery and - Prevailing cost of Equipment's the market

IMPLEMENTATION SCHEDULE

Sl. No.	Nature of Activities	Period in month (Estimated)
1.	Scheme preparation and approval	1 month
2.	Udyam Registration	5 days
3.	Sanction of loan required if any	3 months
4.	Clearance from State Pollution Control Board	2 months
5.	Placement of order for Delivery of machinery	3 months
6.	Installation of Machinery	1 months
7.	Power Connection	3 months
8.	Trial Run	5 months
9.	Commencement of regular production	After 5 months

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

Energy Conservation

- i) Maximum utilization of machine has to be done to consume metal from the melting furnace.
- ii) The Furnace should be provided with thermocouple and automatic temperature control devices.
- iii) Opening of the Furnace should be kept closed while not in use.
- iv) Energy audit of the unit has to be done on a regular basis.
- v) Preheating of charge should be done by keeping few in got son holding furnace.
- vi) The Furnace should be properly insulated to reduce radiation.

TECHNICAL ASPECTS

Process of Manufacture

Melting of zinc Ingots (450°C) – Clearing – Die-casting – ejection of casting – runner breaking – Primary inspection – Fitting – Final inspection – Buffing – dispatch.

Quality Control and Standards

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

Production Capacity (per annum)

Quantity: 1,50,000 Lakhs
Value : Rs.60,00,000 Lakhs

FINANCIAL ASPECTS

A. Fixed Capital

- i) **Land and Building** (Rs.) 20,000
Rental area 300 sq.mtrs.
@ Rs.20,000 per month

ii) **Machinery and Equipments**

Sl. No	Description	Ind/ Imp	Qty.	Amount
1.	Horizontal hot chamber Pressure die casting M/c Capacity 400 gm/ shot with control Panel and accessories	Ind.,	1 No.	8,00,000
2.	Electrical Resistance furnace for melting Zinc alloy	Ind.	1 No.	2,00,000
3.	Arc welding machine	Ind.	1 No.	25,000
4.	Fitting equipment and	"	"	25,000
5.	Bench drilling machine	"	"	20,000
6.	Weighing Machine (Plat			30,000
7.	Air Compressor (3 HP)			50,000
8.	Pedestal Grinder (2 HP)			20,000
9.	Flexible shaft grinder			20,000
10.	Bench grinder double			15,000
11.	Pneumatic grinder	Ind.	1No.	10,000
12.	Material Handling	"	"	25,000
13.	Testing Equipments	Ind.		1.00,000
14.	Pollution Control Equipments (Exhaust)	Ind.		20,000
15.	Energy conservation Facilities of the furnace.			Already included in the accessories of the furnace
16.	Cost of power connection Including			3,00,000

	transformer			
17.	Electrification and Installation charges			1,00,000
18.	Tools and Other fixtures			50,000
19.	Office equipment/working tables			1,00,000
			Total	19,10,000
			Pre-operative Expenses	1,00,000
			Total Fixed Capital = 2 + 3 (As shed is rented)	20,10,000

A. Working Capital (per month)

i) Personnel

a)	Administrative Supervisory			(Rs.)
1.	Manager	1 No.	25,000	25,000
2.	Engineer Cum-Supervisor	1 No.	20,000	20,000
3.	Accountant store keeper	1 No.	10,000	10,000
4.	Clerk-cum Typist	1 No.	10,000	10,000
b)	Technical Skilled and Unskilled			(Rs.)
1.	Skilled Worker	1 No.	15,000	15,000
2.	Semi-skilled Worker	1 No.	13,000	13,000
3.	Unskilled Worker	2 No.	10,000	20,000
4.	Peon-cum-Watchman	1 No.	10,000	10,000
	Total			1,23,000
	Prerequisites @ 15%			18,450
	Total			1,41,450
	Say			1,42,000

ii) Raw Material

ii)	Raw Material	(per month)	(Rs.)
1.	Zinc Alloy ingots	Ind.	(Alloy ingots will be Supplied by the customer)5% Burning loss also be allowed
2.	Various consumables	Ind.	1,00,000
		Total	1,00,000

iii)	Utilities	(Rs.)
	Power	20,000
	Water and Misc.	5,000
	Total	25,000

iv)	Other Contingent Expenses (per month)	(Rs.)
1.	Rent	20,000
2.	Telephone	1,000
3.	Consumable stores	5000
4.	Transport charges	20,000
5.	Advertisement and publicity	5000
6.	Postage and stationery	5000
7.	Insurance taxes, and other misc exp.	10,000
8.	Repairs and maintenance	10,000
	Total	76,000
V	Total Recurring Expenditure (per month)	
	(i)+ (ii) + (iii) + (iv) = Rs. 3,43,000/-	
vi)	Total Working Capital (for 3 months) Rs. 10,29,000	

B.	Total Capital Investment	
i)	Fixed capital	20,10,000
ii)	Working capital (3 months)	10,29,000
	Total	30,39,000

Machinery Utilisation

Working efficiency – 75%

Single shift

25 working days in a month.

Financial Analysis

1)	Cost of Production (per year)	(Rs.)
a)	Total Recurring cost	41,16,000
b)	Depreciation on machinery @ 10%	1,46,000
c)	Depreciation on Furnace @ 20%	40,000
d)	Depreciation on tools	10,000
e)	Depreciation on office Equipment @ 20%	20,000
f)	Interest on total investment @12%	3,64,680
	Total	46,96,680
	Say	46,97,000

7) Turnover (per year)

Sl. No.	Item	Qty.	Rate (Rs.)	Value (Rs.)
1.	Zinc die casting for Auto Locks per shot of 400gm shot about 3-4 various castings like Roter, Body casting etc.	1,50,000 shots	@Rs.40 per shot conversion charges	60,00,000

8) Net Profit (per year) Before Income Tax

$$= \text{Total Sales} - \text{Total Cost of Production}$$

$$60,00,000 - 46,97,000$$

$$= \text{Rs.13,03,000}$$

9) Net Profit Ratio

$$= \frac{\text{Net Profit}}{\text{Turnover}} \times 100$$

$$= 21.72\%$$

10) Rate of Return

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

$$= 42.9\%$$

11) Break-even Point

	Fixed Cost (per annum)	
a)	Depreciation on machines and equipment tools, fixtures and office equipments	2,16,000
b)	Rent (Annual)	2,40,000
c)	Interest on Total Investment	3,64,680
d)	Insurance	1,20,000
e)	40% of salary and wages	6,81,600
f)	40% of other contingent expenses excluding rent and insurance	2,20,800
	Total	18,43,080

$$\begin{aligned}
 \text{B.E.P.} &= \frac{\text{Annual fixed cost} \times 100}{\text{Annual fixed cost} + \text{Profit}} \\
 &= \frac{18,43,080 \times 100}{31,46,080} \\
 &= 58.59\%
 \end{aligned}$$

Additional Information

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

Addresses of Machinery and Equipment Suppliers

1. S.S Engineering Works, Ashcharya Kanna, Plot no. 100, sector-6, IMT Manesar, Gurugram, Haryana-122050, Sales@ssnggworks.com Mob. No.8287908726, 9810078209
2. M/s. H.M.T. Limited
Diecasting and Plastic Machinery Division, HMT P.O., Bangalore-31
3. M/s.P.K. Engineering Works B-1, Industrial Estate, Aligarh. U.P.

Addresses of Raw Material Suppliers

1. M/s. Hindustan Zinc Limited
2. M/s. Minerals and Metals Trading Corpn. of India Limited. 1-8-32/15, Bapubagh, Panderghast Road, Secunderabad-3
3. M/s. S.S. Agarwal and Co. Sabzi Mandi, Kanwari Ganj, Aligarh, U.P.

Addresses of Chemical Suppliers

1. M/s. Greaves Foseco Limited Chinchwad, Pune-411019
2. M/s. I.V.P. Limited
Regd. Office, Shashikant Nedij Marg, Ghorupodio, Mumbai-33