

PROJECT PROFILE ON SOFT JAWS FOR CNC LATHE

1 NAME OF THE PRODUCT : **Soft Jaws for CNC lathe**

LATHE CHUCKS & JAW CHUCKS

2 **QUALITY AND STANDARDS**

as per Customer Requirement

3 **PRODUCTION CAPACITY**

(Per annum)

QUANTITY 1800 Sets

Rs. **2790000**

4 **MONTH AND YEAR OF PUBLICATION:**

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5 **Prepared By**

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Soft Jaws for CNC Lathe

1. **Introduction:** - Soft Jaws are used to clamp pre-machined component for further machining to desired accuracy especially on CNC Lathe. These are made of mild steel or En24, En36, & En8 to ensure its long work performance. Soft jaws simplifying the task of jaw placement on three jaw chuck. Most of three jaw chuck used on turning centers have a series of fine serrations on master jaws and top tooling that must be properly aligned when top tooling is mounted to the chuck. These soft jaws are clamped on master jaws through serrations and clamping bolts to turn the desired dia of jobs without damaging the outer dia of the jobs being made of soft material. These jaws are intermittently turned to the desired dia of the job to be clamped and to maintained the accuracy (runout etc.) At present the above items are widely used in Bearing turning Industries, etc., the demand is increasing.

2. **Market Potential :-** Most of the engineering industries (e.g. Bearing Component manufacturers, automotive parts manufacturers, etc.) have installed & using CNC Turning centers of various sizes to increase the production & competitiveness . These industries require several sets of soft jaws for different jobs for each machine. As there are still so many micro & small scale unit are using conventional lathe and they are now shifting to CNC turning centre, the demand of CNC turning centre and concurrently the demand of Soft Jaws are increasing rapidly. Further the soft jaws has to be replaced after a period of time depending on type of jobs turned. Hence soft jaws are also required for replacement market.

Supply :- At present the industries in Rajasthan are purchasing soft jaws from the supplier of CNC turning center. The manufacturers of these machines are importing/ purchasing from their manufacturers situated at Maharastra, Gujrat, Punjab, Haryana States. Though the demand supply gap is around 5000 sets of soft jaws per annum which will go up to 10000 in the next three years. Hence from the demand supply gap a unit can capture 15% of the market supply which will increase with growing demand.

3. BASIS AND PRESUMPTIONS;

- (1) The scheme is based on single shift of 75% efficiency considering 8 working hours/day, 25 days/month and 300 days per annum.
- (ii) Labour wages has been taken as per market rate. It is likely to vary depending upon the location of the project.
- (iii) Rate of interest has been taken 12% on an average on fixed and working capital. It is likely to vary due to financial outlay and the location of the unit.
- (iv) The operative period of the project is estimated to be about 10 years considering technology obsolescence.

- (v) Value of machinery & equipment is estimated on the basis of prevailing cost of the local mkt.

4. IMPLEMENTATION SCHEDULE :

S.No.	Activities	Period (in weeks)
1	Preparation of project report and selection of site	2
2	Registration	2
3	Application for Electricity Connection	1
4	Availability of finance	6
5	Procurement of machinery	1
6	Electrification & installation	2
7	Recruitment of staff	1
8	Trial run	1
	Total	16

5. TECHNICAL ASPECTS:

i) MANUFACTURING PROCESS :

The steel blocks are cut to the required size (including machining margin) of soft jaws by gas cutter. Then machined on Vertical Milling Machines and serrations are cut on Horizontal milling machine using gang milling cutters. Holes are drilled and counter bored on drilling machine to the desired size and specifications of the customer's master jaws. The Jaws are then fine ground, blackened, oiled and packed for marketing.

ii) QUALITY CONTROL & STANDARD

The Products will be made as per Customer Requirement. Care to be taken to maintain the accuracy and equal weight of each soft jaw. Set of three jaws which are identical in weight is considered as one set and each item be marked with some code number/ set number to avoid the chance of mixing. Variation in weight of jaws causes the vibrations tool breakage and reducing the life of machine

iii) PRODUCTION CAPACITY (Annually) : 1800 Set

iv) POWER REQUIREMENT : 15 HP

v) POLLUTION CONTROL REQUIREMENT :
There is no pollution control requirement for the item.

vi) ENERGY CONSERVATION :

The following steps may be taken for the conservation of energy :

Machinery and equipments, parts are revolving and reciprocating should be properly

- lubricated from time to time with suitable lubricant.
- 2 Lay out of unit should be in such a way that there is no back tracking of material. All the electrical switches may be kept off when not in
 - 3 use.
Proper ventilation system should be kept during construction of building for
 - 4 maximum
utilization of solar energy and day light may be used by keeping all other lights off.
Fluorescent tube with electronic chokes should be used for energy saving.
 - 5 Further,
recently development compact fluorescent tubes called (CFT) of 10W, 15W Philips/Glaux
make may be used for energy saving and decoration. These self ballast fluorescent lamps
are high efficiency replacements of ordinary bulbs.

6 FINANCIAL ASPECTS :

a) LAND AND BUILDING:

- i) **Land** : The requirement of land for the proposed unit would be around 4000 Sq. Ft.

The land & Building will be on rent.	5000	
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b) **PLANT & MACHINERY**

<u>S.No.</u>	<u>Description of machine</u>	<u>Qty.</u>	<u>Price</u>	<u>Amount</u>
1	Milling Machine (Vertical)	1	250,000	250,000
2	Milling Machine (Horizontal)	1	250,000	250,000
3	Surface grinder	1	200,000	200,000
6	Bench Drilling M/c.	1	50,000	50,000
7	Gas Cutter	1	6,000	6,000
8	Hand Grinder 4"	1	5,400	5,400
	Total			761,400
	Installation & Electrification @ 10%			76,140
	TOTAL			837,540
12	Office Equipment, Dies & Tools	LS	30,000	30,000
	Total Investment In Plant & machinery			867,540
	Charges required for Getting Electricity Connection			25,000
c	Total Investment In fixed assets			892,540

d **WORKING CAPITAL**

i **Personnel**

<u>S.NO.</u>	<u>DESIGNATION</u>	<u>No.</u>	<u>Salary</u>	<u>Total (Rs.)</u>
1	Manager	Self	15000	15000
2	Sales Supervisor	1	5000	5000
3	Supervisor cum clerk	1	6000	6000
4	Skilled Worker	1	8000	8000
5	Semi skilled worker	2	4500	9000
6	Helper	1	4000	4000
	Total			47000
	Additional Perquisites @ 15%			7050
	Total Expenditure in Salary & Wages			54050

ii **Raw Material**

<u>S.No.</u>	<u>Particular (Indigenous)</u>	<u>Qty</u>	<u>Rate</u>	<u>Value (Rs.)</u>
1	MS Plates kg	1250	48	60000
2	Blackening & Oiling Charges	1250	0.5	625
			TOTAL	60625

<u>iii Utilities</u>			<u>Value (Rs.)</u>
1	Power (90 unit per day)	16875	16875
2	Oxy-Acetylene Gas		5000
3	Water	LS	250
		TOTAL	22125

iv **Other Contingent Expenses**

1	Postage and stationary		1500
2	Office Consumable stores		500
3	Transport charges		6000
4	Telephone charges		2000
5	Traveling expenses		500
6	Advertisement		3000
7	Miscellaneous expenses		500
8	Insurance		1500
	TOTAL		15500

v **Total Recurring Expenditure :**

S.No.	Description			Cost
1	Personnel			54050
2	Raw material			60625
3	Utilities			22125
4	Other Contingent Expenses			15500
5	Rent			5000
	TOTAL			157300

vi **Total working capital for 3 months :** **Rs. 471900**

e **Total Capital Investment :**

i	Fixed Capital		892540
ii	Working Capital for 3 Months		471900
iii	Total Capital Investment :		1364440
	Total Capital Investment	Say	

7 FINANCIAL ANALYSIS

1 **Cost of Production (Per year) :**

i	Total recurring cost :			1887600
ii	Depreciation of machinery and equipment @		10%	83754
iii	Interest on total Capital investment @		12.00%	163733
iv	Depreciation of tools and office equipment @		25%	7500
	Total :			2142587

2 **Total Sales (Per annum)**

	Products	Qty. in Set	Rate per set	Value (Rs.)
	Sale of Soft Jaws	1800	1550	2790000
		TOTAL	: Rs.	2790000

3 **Net Profit (Per yr.) (Before tax)**

Total turnover per yr.) -cost of production per yr.) = **2790000 - 2142587 647413**

4 **Net profit ratio :**

Net profit × 100 = $\frac{647413}{2790000} \times 100 =$ **23%**

Turn Over

5 **Rate of return :**

Net profit × 100 = $\frac{647413}{1364440} \times 100 =$ **48%**

Total Investment

6 BREAK-EVEN POINT;
FIXED COST ;

1	40% salary & wages		40%	259440
2	Depreciation on machinery & Equipments		10%	83754
3	Depreciation of tools and office equipment @ 15%		15%	7500
4	Interest on capital investment @ 12%		12%	163733
5	40% of other contingent expenses		40%	67200
6	Insurance & Rent			78000
	TOTAL			659627

Net Profit (Per yr.) (Before tax)

647413

BEP :

Fixed Cost × 100

=

50%

Fixed Cost + Profit

A Supplier of Machine tools

- 1 M/s. Hindustan machine tools co., bellari Road, Bangalore
- 2 M/s. Vineet engineering works, Capital Building, Krushna Nagar Main Road, Near Gokuldharm Main Gate, Rajkot, Gujarat
- 3 M/s. Yogesh Tolaram Incorporation Plot No - 24, 22, Godam Industrial Area, Road, No - 4, Kartarpura Industrial Area, Jaipur-302006
- 4 M/s. Laxmi Machinery, 47, Mandir madho bihari, Sansar Chandra Road, Jaipur
- 5 New Barma Machine industries , 98, east mohan Nagar, Amritsar.
- 6 M/s. Quality Machine Tools, No.25 J.C. Road, Near VSL Bldg., Bangalore-2
- 7 M/s. K.G. Khosla & Co., Mathuri Road, Badarpur, Delhi.

B Raw Material

- 1 Local Market.
- 2 Aditya Steel Corporation 18,19,20 Arihant Tower, Malhotra Nagar
Road No 1, Vishwakarma la., Jaipur - 302013

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