

PROJECT PROFILE ON SELF TAPPING SCREW

PRODUCT NAME : Screw machine special type
Self Tapping Screw

PRODUCTION CAPACITY : 1,20,000 Packets of 1,000 Pcs. Per Annum

MONTH & YEAR OF PREPARATION : September, 2009

PREPARED BY : Mechanical Division,
Micro, Small & Medium
Enterprises - Development
Institute,
Govt. of India,
Ministry of M.S.M.E.
31- A National High way
TADONG,
GANGTOK – 737102.

Tele Phone : 03592 - 231880

Tele FAX : 03592 - 231262

E-mail : slg-sisigtk@sancharnet.in

Web-site : www.dcdigangtok.com

(1) Introduction of the product:

Self Tapping Screws are known as industrial fasteners having different types & shapes of heads, lengths and diameters. These are mostly manufactured from H.B. Wire. The product is hardened, tempered & electroplated. These are used for fastening of two or more sheet metal parts. Self Tapping Screw is headed and externally threaded, possessing capabilities which permit it to insert into hole and forming its own thread, when being tightened. One end of the screw is enlarged in shape & size and other end is small & taper.

(2) Plant Capacity : 1,20,000 Packets of 1,000 Pcs. Per annum.

(3) Market & demand aspects :

This item is being used for fastening of two or more sheet metal parts in bus body building, rail coach building & steel furniture, etc. This product is having potential both in domestic and international markets. As the demand of this item is increasing many new units are coming up.

(4) Raw material: Local market

(5) Manufacturing Process & source of Technology

(i) Process of Manufacture :

Self tapping Screws are manufactured on automatic machines.

The sequence of operation are :

1. Making of head, on header machine.
2. Slotting of head, on slotting machine.
3. Rolling of thread, on thread rolling machine.
4. Hardening & tempering of screws, in electric furnaces.
5. Electroplating, in Electroplating Plant.

Normally bright zinc plating is done to self-tapping screws. However, nickel plating can also be done, especially when required for resistance against sea weather.

(ii) **Quality Specifications :**

The technology provided is in practice and is according to requirements of Indian Standard specification Nos. IS : 7169, 7170, 7173 – 1974.

<u>QUALITY & STANDARDS</u> :	i.	Slotted Counter Sunk (Flat) Head Tapping Screws IS : 7170 – 1974
	ii.	Slotted Pan Head Tapping Screws IS ; 7173 – 1974
	iii.	Slotted Raised Countersunk (Oval) Head Tapping Screws IS : 7169 – 1974

(6) Basis of Project selection & Presumption

The project profile has been prepared on single shift basis of 8 hours each days 25 days in a month and at 75% efficiency.

It is presumed that in the 1st year, the capacity utilization will be 80% followed by 85% in the next year and 100% in the subsequent years.

The rates quoted in respect of salaries & wages for skilled worker and others are equal to those in other states.

Interest rate for fixed & working capital has been taken @ 16% on an average, whether financed by bankers or financial corporation.

Margin Money required is minimum 30% of the project investment.

Pay back period of the project. After initial gestation period it will require 5 years to pay back the loans.

The rental value of the work shed & other built up / covered area has been taken at the rate of Rs. 30.00 per square meter.

Cost of machinery & equipments: -

The rates quoted in respect of machines & equipments & raw materials are those prevailing at the time of preparation of the project, and are likely to vary from supplier to supplier & place to place. When a tailor made project profile is prepared, the necessary changes are to be made.

IMPLEMENTATION SCHEDULE :

1.	Preparation of Project Report	
(a)	Calling Quotations	1 Month
(b)	Preparation	2 Weeks
2.	Provisional Registration as SSI	1 Week
3.	Financial Arrangement	3 Months
4.	Purchase & Procurement of Machinery	2 Months
5.	Installation of Machinery	1 Month
6.	Electrification	2 Weeks
7.	Recruitment of Staff & Workers	2 Weeks

(8) Production Capacity Per Annum :

a.	Quantity	1,20,000 Packets (One Packet of 1,000 Pcs.)
b.	Value	Rs. 96,00,000-00

(9) Utilities

(i) Appropriate Motive Power Requirements :

1.	Mechanical Section	40 H.P.
2.	Electroplating Section	10 H.P.
3.	Heat Treatment Section	10 H.P.
	Total	60 H.P.

(ii) Pollution Control :

In the electroplating section & heat treatment section cyanide salts are used. These are poisonous & have to be neutralized before disposal of the

effluents. Pollution Control Board of the state has to be consulted in this regard and necessary certificate must be obtained from the Board.

(iii) Energy Conservation :

All the machines are motorized individually; therefore, the power losses on account of line voltage drop & mechanical losses due to pulley & shafts will be minimum.

(10) FINANCIAL ASPECTS :

1. Fixed Capital :

(i) Land & Building

Land & Building – Rented @ Rs. 12,000/- Per Month		
Built-up Area / Covered Area / Open Area		
a.	Office & Stores	50 Sq. Meters
b.	Working Sheds	300 Sq. Meters
c.	Open Space	50 Sq. Meters

(ii) Machinery & Equipments :

S.No.	Description of Machinery	Qty./ Nos.	Price (Rs.)
1.	Header Machines capacity 4x25 mm. with 1 H.P. motor & Starter	3	1,50,000-00
2.	Header Machines capacity 5x35 mm. with 1.5 H.P. motor & Starter	2	1,20,000-00
3.	Header Machines capacity 6x40 mm. with 2 H.P. motor & Starter	3	2,10,000-00
4.	Screw Head Slotting Machines capacity 6.40 mm with 1 HP motors	10	3,00,000-00
5.	Automatic Thread Rolling Machine 6 mm capacity with 3 HP motor & starter	3	2,25,000-00
6.	Automatic Thread Rolling Machine 4 mm capacity with 2 HP motor & starter	2	1,00,000-00
7.	Polishing Barrel with 2 HP motor & Starter	1	18,000-00
8.	Electrically heated furnace for heat treatment (tempering) 450 x 600 mm. capacity	1	1,25,000-00
9.	Electrically heated tilting rotary furnace	1	2,50,000-00

	capacity 410x58 mm. 40 Kg.		
10.	Three zinc plating barrel size 24x12” complete	1 Set	2,30,000-00
11.	One Drier Machine basket type size 14x10” with 1 HP motor	1	8,000-00
12.	One Caustic Barrel Cap. 12” with 1 HP motor	1	22,000-00
13.	Compressor unit medium size with round air tank & stand, with 1 HP motor	1	15,000-00
14.	Rectifier complete cap. 16 volts & 1,000 Amp.	1	1,10,000-00
15.	Round filter unit with 12 plates & with stainless steel pump.	1	8,000-00
16.	Centre lathe machine cap. 6’ with 3 HP motor	1	70,000-00
17.	Drill machine 35 mm cap. with 1.5 HP motor	1	35,000-00
18.	Surface Grinding Machine cap. 500x250 mm with 3 HP motor	1	85,000-00
19.	Double End Grinder 10” capacity with 1 HP motor	1	10,000-00
20.	Dies & Tools, Thread Rolling Dies & Measuring Instruments		1,50,000-00
	Installation & Electrification charges @ 10% on the Total Cost		2,24,100-00
	Cost of Office Equipment & Furniture		1,00,000-00
	Pre-operative Expenses		25,000-00
		Total Rs.	25,90,100-00
		S A Y Rs.	25,90,000-00

12. WORKING CAPITAL (PER MONTH) :

(i) Personnel :

S.No.	Designation	Nos.	Salary (Rs.)	Total (Rs.)
1.	Manager	1	8,000/-	8,000-00
2.	Accountant	1	4,000/-	4,000-00
3.	Supervisor	1	5,000/-	5,000-00

4.	Skilled Workers	12	4,000/-	48,000-00
5.	Semi-skilled Workers	12	3,000/-	36,000-00
6.	Un-skilled Workers	12	2,500/-	30,000-00
7.	Chowkidar	1	2,000/-	2,000-00
8.	Peon	1	2,000/-	2,000-00
	Sub Total Rs.			1,35,000-00
	Add : Perquisites @ 15%			20,250-00
	Total Rs.			1,55,250-00

(ii) Raw Materials (Per Month) :

S.No.	Particulars	Qty.	Rate (Rs.)	Value (Rs.)
1.	H.B. Wire in Coils 8 to 13 Gauges	15 MT	26,000/-	3,90,000-00
2.	Plating Chemicals/Consumables		LS	30,000-00
	Total Rs.			4,20,000-00

(iii) Utilities (Per Month) :

Electric Power	L.S.	8,000-00
Water	L.S.	1,000-00
Total Rs.		9,000-00

(iv) Other Contingent Expenses :

Rent	12,000-00
Postage & Stationery	2,000-00
Consumable Stores	12,000-00
Telephone	1,000-00
Repairs & Maintenance	5,000-00
Transport Charges	5,000-00
Advertisement & Publicity	2,000-00
Insurance	1,500-00
Taxes	1,500-00
Sales Expenses	8,000-00
Oil & Lubricants	8,000-00
Heat Treatment/Misc Salts/Consumables	10,000-00

Misc. Expenses including Packaging Charges	10,000-00
Total Rs.	78,000-00

(v) Total Recurring Expenses (Per Month) :

1.	Raw Material	4,20,000-00
2.	Personnel	1,55,000-00
3.	Utilities	9,000-00
4.	Other Contingent Expenses	78,000-00
	Total Rs.	6,62,000-00

(vi) Total Capital Investment :

Fixed Cost	25,90,000-00
Working Capital for two Month	13,24,000-00
Total Rs.	39,14,000-00

MACHINING UTILISATION :

Since, Self Tapping Screws are manufactured on automatic machines, there is very little manual work. It is simple transporting the product from one machine to another. Therefore, 80% efficiency will be achieved within two months.

FINANCIAL ANALYSIS :

1. Cost of Production (Per Year) :

i)	Total Recurring Cost Per Year – 6,62,000 x 12	79,44,000-00
ii)	Depreciation on Machinery & Equipments @ 10%	2,59,000-00
iii)	Depreciation on Office Equipments & Furniture @ 20%	20,000-00
iv)	Interest on Total Investment @ 15%	5,87,100-00
	Total Rs.	88,10,100-00
	Or say	88,10,000.00

2. Turnover (Per Year) :

Self Tapping Screws 2 to 14	1,20,000 Pkts of	80/-	96,00,000-00
-----------------------------	------------------	------	--------------

Gauge dia. & 3.2 to 50 mm length	1,000 Pcs.		
Total Rs.			96,00,000-00

3. Net Profit / Gross Profit – (Per Year) :

$$\begin{aligned}
 &= \text{Sale} \quad - \quad \text{Cost of Production} \\
 &= 96,00,000 \quad - \quad 88,10,000 \\
 &= \text{Rs. 7,90,000-00}
 \end{aligned}$$

4. Net Profit Ratio – (Per Year) :

$$\frac{\text{Net Profit} \times 100}{\text{Sales}} = \frac{7,90,000 \times 100}{96,00,000} = \text{8.3\%}$$

5. Rate of Return :

$$\frac{\text{Net Profit} \times 100}{\text{Capital Investment}} = \frac{7,90,000 \times 100}{39,14,000} = \text{20.18\%}$$

6. Break – Even Point :

Fixed Cost :

1)	Total Depreciation	27,900-00
2)	Rent	1,44,000-00
3)	Total Interest	5,87,100-00
4)	40% of Salaries	7,44,000-00
5)	Insurance	18,000-00
6)	40% of Other Contingent Expenses	3,74,400-00
	Total Rs.	20,79,720-00

$$\text{B.E.P.} = \frac{\text{Fixed Cost} \times 100}{\text{Fixed Cost} + \text{Net Profit}}$$

$$= \frac{20,79,720}{20,79,720 + 7,90,000} \times 100$$

$$= \mathbf{72.00\%}$$

NAMES & ADDRESSES OF MACHINERY SUPPLIERS :

1)	M/s. AMI Machine Tools, 20, Ambalal Doshi Marg, (Hamam Street), Fort, Mumbai – 23. Tel. : 022 – 22650745 / 33664969 Fax : 022 – 22653459 E-mail : atlasin@bom5.vsnl.net.in Web : www.atlasmachinesindia.com
2)	M/s. HMT Machine Tools Ltd., HMT Bhavan, 59, Bellary Road, Bangalore – 560 032. Tel. : 080 – 23330333 Fax : 080 – 23337800 E-mail : jmm@hmtmtm.com Web : www.hmti.com
3)	M/s. Micromatic Machine Tools Pvt. Ltd., 271/272, Udyog Bhavan, Sonawala Road, Goregaon (E), Mumbai – 63. Tel. : 022 – 28717271 / 28717272 Fax : 022 – 28765699 E-mail : mmtbom@acemicromatic.com
4)	M/s. S & T Engineers, H.O. 22, Vasanth Nagar, Singanallur, Coimbatore – 641 005. Tel. : 0422 – 2590810 / 2593487 Fax : 0422 – 2573629 E-mail : stengine@md3.vsnl.net.in
5)	M/s. Joginder Machine Tools, Bhiwani Road, Near Ramleela Ground, Rohtak – 124 001 (Haryana) Tel. : 01263 – 235310 Fax : 01262 – 235310
6)	M/s. Sagar Machine Tools Pvt. Ltd., 418, Indl. Area – A, Ludhiana. Tel. : 0161 – 2661557 / 2660469
7)	M/s. Machine Tools Traders, Riddhi Apartments, Plot No. 10, Jawahar Nagar, 1 st Floor, S.V. Road, Goregaon (W), Mumbai – 62. Mobile : 9819425747
8)	M/s. Bharat Machine Tools (Jamnagar) Pvt. Ltd., Pandit Nehru Road, Opp. Brooke Bond, Jamnagar – 361 002. Tel. : 0288 – 2757382 / 2757472 Fax : 0288 – 2757382 E-mail : natmatilathe@satyam.net.in
9)	M/s. Modern Precision Tools Pvt. Ltd., Near R.D. Verma & Co., Meerut Road, Ghaziabad – 201 003 (U.P.) Tel. : 0120 – 2722285 / 2780986 Fax : 0120 – 2780986 E-mail : mpfpi@mantraonline.com

NAMES & ADDRESSES OF RAW MATERIAL SUPPLIERS :

1)	M/s. Bharat Enterprises, 276/278, Samuel Street, 2 nd Floor, Vadgadi, Mumbai – 400 003. Tel. : 022 – 23442378 Fax : 022 – 2300248
2)	M/s. Jai Ambe Engineering Works, A/14-25, Nandjyot Indl. Estate, Andheri Kurla Road, Mumbai – 400 072. Tel. : 022 – 28512073 / 28513113 Fax : 022 – 28514379 E-mail : jaew@vsnl.com
3)	M/s. Ancara Tube Industries, E-46 to 49, C.S.T. Road, Behind Kurla Bus Depot, Kurla (W), Mumbai – 400 070. Tel. : 022 – 25957522 / 26500522 Fax : 022 - 26506131
4)	M/s. Yogesh Metal Industries, 6A, Saroj Niwas, Gr. Floor, 149/153, Sant Sena Maharaj Marg, (2 nd Kumbharwada), Mumbai – 400 004, Tel. : 022 – 23891088 / 25636207
5)	M/s. Sovereign, 6, Gopal Niwas, 1 st Floor, 133, S. Gandhi Marg, (Princess Street), Mumbai – 2. Tel. : 022 – 22031079
6)	M/s. M.S. Engg. Co., Meenakshi Chambers, Shop No. 7, Gr. Floor, Ghod dev Road, Bhayander (E), Dist. Thane – 401 105. Tel. : 022 – 28191644 / 28188216 Fax : 022 – 28192604
7)	M/s. Micro Tube Industries, 24, Dhobi Street, 2 nd Floor, Mumbai – 400 003. Tel. : 022 - 23401625

(13) Resource center of Technology: MSME-DI, Gangtok**(14) List of unit set up by using this profile – Nil**
