

PROJECT PROFILE (UP- DATED 2021)

SELF-TAPPING SCREWS

PREPARED BY :

**MSME Development Institute,
Govt. of India,
Ministry of MSME
65/01 GST Road,
Chennai-600 032**

PROJECT PROFILE ON SELF TAPPING SCREWS

PRODUCT NAME : Self Tapping Screws

NIC CODE (2008) : NIC- 25991

PRODUCT ASICC (2004) CODE : ASICC- 71325

ITC HS CODE: 73181400

<u>QUALITY & STANDARDS</u> :	i.	Slotted Counter Sunk (Flat) Head Tapping Screws IS : 7170 – 2018
	ii.	Slotted Pan Head Tapping Screws IS : 7173 – 2018
	iii.	Slotted Raised Countersunk (Oval) Head Tapping Screws IS : 7169 – 2018

PRODUCTION CAPACITY : 120 MT(120000 KGS).
(Per Annum)

YEAR OF PREPARATION : 2021

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PROJECT PROFILE (UP-DATED) ON SELF-TAPPING SCREWS

(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 : 400 kgs per day-1,20,000 kgs 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 is:

By fully automatic processing

1. Making of head by cold up Header machine setting.
2. Slotting of head, in slotting machine for gripping of screw.
3. Rolling of thread on thread rolling machine.
4. Hardening & tempering of screws, in electric furnaces.
5. Electroplating by using Electroplating equipment/ items.

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 : 7170- 2018, 7173-2018, 7169 – 2018. (IS 7170, 7173, 7169- 2018 originally published in 1974 & subsequently revised in 1989 & 2018)

(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 may vary from states to states depends upon various parameters.

Interest rate for fixed & working capital has been taken @ 14% on an average, whether financed by bankers or financial corporation.

Margin Money required is minimum 25% of the project investment.

Payback period of the project after initial gestation period it will require 7 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. 50.00 per square meter.

7. Cost of machinery & equipments: -

The rates quoted in respect of machines & equipment's & 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	400 kgs per day/1,20,000 kgs per annum)/120 MT
b.	Value	Rs. 1,38,00,000.00

(9) Utilities

(i) Appropriate Motive Power Requirements :

1.	Mechanical Section	20 H.P.
2.	Electroplating Section	10 H.P.
3.	Heat Treatment Section	20 H.P.
	Total	50 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. 25,000/- Per Month		
Built-up Area / Covered Area / Open Area		
a.	Office & Stores, Raw Material Storage & Other Utility	100 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.	Automatic Machine- Double stroke cold Header Machine (Cap:6 x 40 mm) with fully automatic force lubrication system with 3hp x 960 rpm with panel board with v belts, pully, with wire stand	1	530000
2.	Thread Rolling Machine (Cap:6 x 40 mm) fully automatic with motor with panel board	1	380000
3.	Head slotting machine (Cap:6 x 40 mm) fully automatic with motor with switch starter	1	215000
4.	Double stroke cold Header Machine (Cap: 5x 35 mm) fully automatic force lubrication system, with 2hp x 960 rpm motor with panel board with pully, v belts with wire stand	1	430000
5.	Double stroke cold Header Machine (Cap: 4 x 25 mm) fully automatic force lubrication system with motor 1.5hp x 960 rpm with panel board	1	390000
6.	Thread Rolling Machine (Cap: 4 x 25 mm) fully automatic with motor & panel Board	1	300000
7.	Polishing drum 4 feet heavy duty with motor with switch starter	1	110000
8.	Electrically heated furnace for heat treatment (tempering) 450 x 600 mm. capacity	1	3,25,000-00
9.	Electrically heated tilting rotary furnace	1	5,00,000-00

	capacity 410x58 mm. 40 Kg		
10.	Four zinc plating barrel size 24x12” Complete (75000/- each)	1 Set	3,00,000-00
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	32,000-00
13.	Rectifier complete cap. 16 volts & 1,000 Amp.	1	1,78,000-00
14.	Round filter unit with 12 plates & with stainless steel pump.	1	15,000-00
15.	Centre lathe machine cap. 6’ with 3 HP motor	1	120,000-00
16.	Drill machine 35 mm cap. with 1.5 HP motor	1	35,000-00
17.	Double End Grinder 10” capacity with 1 HP Motor	1	20,000-00
18.	Dies & Tools, Thread Rolling Dies & Measuring Instruments		2,00,000-00
	Installation & Electrification charges @ 10% on the Total Cost		408800-00
	Cost of Office Equipment & Furniture		1,00,000-00
	Pre-operative Expenses		75,000-00
	Total Rs.		46,71,800-00
	S A Y Rs.		46,72,000-00

12. WORKING CAPITAL (PER MONTH) :

(i) Personnel :

S.No.	Designation	Nos.	Salary (Rs.)	Total (Rs.)
1.	Manager	1	25,000/-	25,000-00
2.	Accountant	1	12500/-	12,500-00
3.	Supervisor	1	15000/-	15,000-00
4.	Skilled Workers	04	12500/-	50,000-00
5.	Semi-skilled Workers	03	10000/-	30,000-00
6.	Un-skilled Workers	03	9000/-	27,000-00
7.	Chowkidar	1	7000/-	7,000-00
8.	Peon	1	7500/-	7,500-00
			Sub Total Rs.	174000-00
			Add : Perquisites @ 15%	26100-00
			Total Rs.	2,00,100-00

(ii) Raw Materials (Per Month) :

S.No.	Particulars	Qty.	Rate (Rs.)	Value (Rs.)
1.	H.B. Wire Coil 2 mm – 6 mm Coil Wire Dia	10 MT	45,000/-	4,50,000-00
2.	Plating Chemicals/Consumables		LS	50,000-00
			Total Rs.	5,00,000-00

(iii) Utilities (Per Month) :

Electric Power	L.S.	15,000-00
Water	L.S.	3,000-00
	Total Rs.	18,000-00

(iv) **Other Contingent Expenses :**

Rent	25,000-00
Postage & Stationery	2,000-00
Consumable Stores	20000-00
Telephone	1,000-00
Repairs & Maintenance	15,000-00
Transport Charges	15,000-00
Advertisement & Publicity	2,000-00
Insurance	2,000-00
Taxes	3,500-00
Sales Expenses	10,000-00
Oil & Lubricants	10,000-00
Heat Treatment/Misc Salts/Consumables	10,000-00
Misc. Expenses including Packaging Charges	15,000-00
Total Rs	130,500-00

(v) **Total Recurring Expenses (Per Month) :**

1.	Raw Material	5,00,000-00
2.	Personnel	2,00,100-00
3.	Utilities	18,000-00
4.	Other Contingent Expenses	1,30,500-00
	Total Rs.	8,48,600-00

(vi) **Total Capital Investment :**

Fixed Cost	46,72,000-00
Working Capital for two Month	16,97,200-00
Total Rs.	63,69,200-00

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 = 8,48,600/- x 12	1,01,83,200.00
ii)	Depreciation on Machinery & Equipments @ 10%	4,67,200.00
iii)	Depreciation on Office Equipments & Furniture @ 20%	20,000-00
iv)	Interest on Total Investment @ 10%	6,36,920-00
	Total Rs.	1,13,07,320.00
	Or say	1,13,07,300.00

2. Turnover (Per Year) :

Self Tapping Screws, Thread Sizes from ST 2.2 to ST 9.5 & Length 4.5 to 50 mm (Range / Scope as per IS Std)	400 kgs x 300 days	115/-	1,38,00,000.00
Total Rs.			1,38,00,000.00

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

=	Sale	–	Cost of Production
=	1,38,00,000	–	1,13,07,300
=	Rs.24,92,700		-00

2. Net Profit Ratio – (Per Year) :

$$\frac{\text{Net Profit} \times 100}{\text{Sales}} = \frac{24,92,700 \times 100}{1,38,00,000} = 18.06 \%$$

3. **Rate of Return :**

$$\frac{\text{Net Profit} \times 100}{\text{Capital Investment}} = \frac{24,92,700 \times 100}{63,69,200} = 39.13\%$$

4. **Break – Even Point :**

Fixed Cost :

1)	Total Depreciation	4,67,200-00
2)	Rent	3,00,000-00
3)	Total Interest	6,36,920-00
4)	40% of Salaries	96,04,80-00
5)	Insurance	24,000-00
6)	40 % of other contingent expenses and utilities excluding rent & insurance	5,83,200-00
	Total Rs.	29,71,800-00

$$\begin{aligned} \text{B.E.P.} &= \frac{\text{Fixed Cost} \times 100}{\text{Fixed Cost} + \text{Net Profit}} \\ &= \frac{29,71,800 \times 100}{29,71,800 + 24,92,700} \\ &= 54.38\% \end{aligned}$$

NAMES & ADDRESSES OF MACHINERY SUPPLIERS :

1.	PRUDENCE MACHINE CO. (INDIA) I/S. Jaura Bhawan, Sultanwind Road, Opposite Allahabad Bank, Amritsar, Punjab
2	Precision Machine Co. (India) 1527-1529, New Golden Avenue, Head Water Works Road, Grand Trunk Rd, Amritsar, Punjab 143001
3	S.S. Mechanical Works Amritsar, Punjab
4	Meta Therm Furnace Pvt. Ltd. B5 / 106 Greenland APTS, Near Hotel Kohinoor, J. B. Nagar, Andheri Kurla Road, Andheri East, Mumbai, Maharashtra, 400059
5.	Accurate Machine Tools 15, Atika Industrial Area, Dhebar Road South, Rajkot - 360 002 (Gujarat) INDIA
6	Anand Engineering Works Malad West, Mumbai, Maharashtra.
7	Saggu Brothers 7-8, New Gokal Ka Bagh, opp. Shri Ram Asharam 100 Feet Road, Amritsar, Punjab 143006
8	M/s. Singhs Industries, Amritsar, Punjab .
9	M/s. Matharoo Brothers, G.T. Road, Putlighar, Amritsar
10	M/s. Canning Maitra Phonex (P) Ltd., 18, Dr. D.N. Road, Mumbai
11	M/s. Vishvakarma Industries, St. No.2, Pratap nagar, Ludhiana

NAMES & ADDRESSES OF RAW MATERIAL SUPPLIERS :

1	M/s. Modi Industries Ltd., Modinagar (U.P.)
2	M/s. Special Steel Ltd., Indl. Area- B, Ludhiana
3	M/s. Aarti Steel Industries, Focal Point, Ludhiana-3

Raw Materials available also at Local Metal Traders or Dealers.

