WROUGHT IRON FURNITURE

1. INTRODUCTION:

Wrought iron is an iron alloy with a very low carbon – less than 0.08% content. Wrought iron is tough, malleable, ductile, corrosion-resistant and easily welded. The term Wrought Iron is specific to the fibrous, hand-refined material that served historically for millennia as the most used and useful form of iron. It is characterized by its composite structure. In the process of refining, iron and iron silicate are fused together. For most purposes, ductility is a more important measure of the quality of wrought iron than tensile strength.

Wrought iron is no longer produced on a commercial scale. At present, most products described as wrought iron, are actually made of hot rolled forgeable steel, viz. Guard rails, garden furniture gates etc. of ornamental designs.

2. PRODUCT & ITS APPLICATION:

The so called “Wrought iron furniture” now made from hot rolled forging grade mild steel having good ductility, is used to make home decor items such as racks, table bases, desks, gates, beds, candle holders, curtain rods, bars and bar stools, fences and railing, with ornate designs.

Furniture is a product of design with several sizes, shapes and décor, to provide appealing aesthetics in addition to convenience and space saving. It serves as a form of decorative art. The “wrought Iron” or hot rolled products are easy to process and get desired shapes and ornate designs and may fulfill the purpose of designer or artists.

3. DESIRED QUALIFICATIONS FOR PROMOTER:

Any ITI, Diploma or graduate preferably with fabrication or marketing experience.

4. MARKET POTENTIAL AND MARKETING ISSUES. IF ANY:

Demand for “Wrought Iron” furniture is generated from high income group in residential, commercial and office building as also from public place construction as it provides excellent aesthetic appeal for landscaping and decoration.

In view of growing income and standard of living and growth of construction industry at a rapid rate in the country, there is scope for these items. It is recommended to develop and produce aesthetic and modular design or art for use in furniture components and outdoor use with good ornate and intricate engraved floral shapes. Railing, fences, poles and furniture legs are the most in demand for wrought iron furniture items.

5. RAW MATERIAL REQUIREMENTS:

The forging grade hot rolled steel in various sections are the main raw materials for the project. The other items are consumables like welding rods, heat treatment and surface treatment chemicals.

6. MANUFACTURING PROCESS:

The process of manufacture involves operations as below.

Cutting of material sheets, tubes, pipes, sections as per required dimensions. Cutting is done by sawing, shearing, or chiseling or torching with hand-held torches. Certain components like cast iron and steel stock may be machined.

Bending of steel rods, pipes etc. of round, and square, rectangular shape is done by hammering, with manual bending tools or via press.

Black smithy has always been involved in wrought iron item fabrication and several process steps are cutting, splitting shaping and hot welding. The material with Artistic floral designs can be open die forged and hot welded to get the products similar to wrought iron quality.

Assembling (joining of the pieces) is done by welding, hot forge welding, riveting, fasteners, or crimping.

After the forging and welding the item is cooled and sand blasted.

It may undergo various surface treatments, primed and painted. Any additional assembly process is then completed. The finished product is then inspected and shipped.

7. MANPOWER REQUIREMENT:

The unit shall require highly skilled service persons. The unit can start from 7 employees initially and increase to 15 or more depending on business volume.

Sr No	Type of Employees	Monthly Salary	No of Employees				
			Year 1	Year 2	Year 3	Year 4	Year 5
1	Skilled Operators	16000	3	4	5	6	6
2	Semi-Skilled/ Helpers	7000	3	4	5	6	6
3	Supervisor/ Manager	20000	0	0	0	1	1
4	Accounts/ Marketing	15000	1	1	1	1	1
5	Other Staff	7000	0	0	0	1	1
	TOTAL		7	9	11	15	15

8. IMPLEMENTATION SCHEDULE:

The unit can be implemented within 6 months from the serious initiation of project work.

Sr No	Activities	Time Required in Months
1	Acquisition of Premises	2
2	Construction (if Applicable)	2
3	Procurement and Installation of Plant and Machinery	2
4	Arrangement of Finance	2
5	Manpower Recruitment and start up	2
	Total Time Required (Activities run concurrently)	6

9. COST OF PROJECT:

The unit will require total project cost of Rs 53.55 lakhs as shown below:

Sr No	Particulars	In Lakhs
1	Land	10.00
2	Building	25.00
3	Plant and Machinery	9.81
4	Fixtures and Electrical Installation	1.00
5	Other Assets/ Preliminary and Preoperative Expenses	1.20
6	Margin for working Capital	6.54
	TOTAL PROJECT COST	53.55

10. MEANS OF FINANCE:

The project will require promoter to invest about Rs 18.29 lakhs and seek bank loans of Rs 35.26 lakhs based on 70% loan on fixed assets.

Sr No	Particulars	In Lakhs
1	Promoters Contribution	18.29
2	Loan Finance	35.26
	TOTAL:	53.55

11. WORKING CAPITAL REQUIREMENTS:

Working capital requirements are calculated as below:

Sr No	Particulars	Gross Amount	Margin %	Margin Amount	Bank Finance
1	Inventories	4.27	40	1.71	2.56
2	Receivables	4.06	40	1.62	2.43
3	Overheads	2.07	100	2.07	0.00
4	Creditors	2.85	40	1.14	1.71
	TOTAL	13.24		6.54	6.70

12. LIST OF MACHINERY REQUIRED:

Sr No	Particulars	UOM	Quantity	Rate	Total Value
	Main Machines/ Equipment				
1	Rod Twisting machine	Nos	1	160000	160000
2	Hand Shear Machines	Nos	3	12000	36000
3	Fly press	Nos	1	20000	20000
4	Manual Press brake	Nos	1	50000	50000
5	Forging Furnace	Nos	1	100000	100000
6	Open Die forging Hammer	Nos	1	230000	230000
7	Hot Forging Tools	LS	1	25000	25000
8	Sand Blasting Facility	Nos	1	80000	80000
9	Pickling and Surface treatment	Nos	1	60000	60000
10	Spray Painting Facility	Nos	1	30000	30000
11	Rod / Flat/ Pipe Bending Bench	Nos	2	20000	40000

12	Pillar Drill	Nos	1	30000	30000
13	Lathe	Nos	1	45000	45000
14	Welding Machine	Nos	2	25000	50000
	Subtotal:				956000
	Tools and Ancillaries				
1	Misc. equipment Dies tools etc.	LS	1	15000	15000
2	Hand Tools and gauges	LS	1	10000	10000
	Subtotal:				25000
	Fixtures and Elect Installation				
	Storage and transport bins	LS	1	10000	10000
	Office Furniture	LS	1	5000	5000
	Telephones/ Computer	LS	1	15000	15000
	Electrical Installation	LS	1	70000	70000
	Subtotal:				100000
	Other Assets/ Preliminary and Preoperative Expenses	LS	1	120000	120000
	TOTAL PLANT MACHINERY COST				1201000

13. PROFITABILITY CALCULATIONS:

Sr No	Particulars	UOM	Year Wise estimates				
			Year 1	Year 2	Year 3	Year 4	Year 5
1	Capacity Utilization	%	40	50	60	70	80
2	Sales	Rs Lakhs	48.67	60.83	73.00	85.16	97.33
3	Raw Materials & Other Direct Inputs	Rs Lakhs	34.14	42.68	51.22	59.75	68.29
4	Gross Margin	Rs. Lakhs	14.52	18.15	21.78	25.41	29.04
5	Overheads Except Interest	Rs. Lakhs	7.49	7.49	7.49	7.49	7.49
6	Interest	Rs. Lakhs	4.94	4.94	4.94	4.94	4.94
7	Depreciation	Rs. Lakhs	3.70	3.70	3.70	3.70	3.70
8	Net Profit Before Tax	Rs. Lakhs	-1.61	2.02	5.65	9.29	12.92

14. BREAK EVEN ANALYSIS

The project is can reach break-even capacity at 44.42 % of the installed capacity as depicted here below:

Sr No	Particulars	UOM	Value
1	Sales at Full Capacity	Rs. Lakhs	121.66
2	Variable Costs	Rs. Lakhs	85.36
3	Fixed Cost incl. Interest	Rs. Lakhs	16.13
4	Break Even Capacity	% of Inst Capacity	44.42