Project Report

on

MANUFACTURING OF HOSPITAL BED
(Year 2020)

Introduction:

There are more beds in a hospital than doctors and nurses. In the future, there will be even fewer doctors and nurses to take care of growing patient numbers. In this scenario it makes sense to try to change the hospital bed into a much more active and efficient piece of equipment to help save time and resources.

Adjustable Hospital Beds that are widely used in hospitals and clinics. In order to meet the functionality of the product in a hospital, these beds are made in a wide range, e.g. Fowler Hospital Bed, Semi Fowler, Plain, Recovery, Pediatric, Fracture, ICU Hospital Bed, General hospital bed with rigid mesh mattress platform. Out of these, Fowler hospital beds and General purpose bedsteads are in large demand.

Fowler Hospital Beds are known for their extra comfort and functionality. These are available in size 1980L x 900W x 600H or 2070L x 910W x 600H mm. The frame work is made of strong rectangular steel tubes, provided with four section perforated top, two separate screws for backrest and knee rest maneuvering, SS tubular head and foot bows with laminated panels, four swivel castors, two with brake, four IV rod locations, pre-treated and epoxy powder coated. If you can make a hospital bed that can reduce a number of time-consuming routine tasks for the nursing staff, you will stand a good chance to keep up with the competition in the future. If at the same time your hospital bed will help make treatment safer and more comfortable for the patient your chances are even better. High quality adjustable hospital beds aren't just for hospitals anymore. Nursing homes, assisted living centers and hospice care facilities all need the best adjustable electric beds at the most affordable prices. Adjustable hospital beds come in a variety of sizes to meet a wide range of client and facility needs. Adjustable bed models fit hospital rooms, multi-patient rooms or even in a hospice patient's living room, hospital beds offer adjustable bed height, lumbar support, head and feet raising and lowering, buttons to call nurses and, in some cases, massage capabilities.

ICU Beds are special hospital beds designed for ICUs to take care of critical patients. ICU Beds combine smart ergonomics with advanced technology and intuitive operation. ICU beds, thus, provide both safety and comfort to the patients and caregivers alike. There are ICU Electrical Beds and Mechanical ICU Beds. The caregivers can tilt the ICU bed and can also adjust the height.

Market Potential:

The demand for adjustable hospital beds is increasing due to increase in the number of hospitals and their expansion and increase in number of private and government nursing homes, A large number of new hospitals and nursing homes are coming up in order to meet the patients' demand. It has led to steady increase in the requirement of hospital furniture. The growth rate is expected to be substantial. As such there is a vast scope for the steel furniture manufacture units to take up this activity for not only

as a diversification but also better capacity utilization by installing a few balancing equipments.

Basis and Presumption:

1. The unit will work for 300 days per annum on single shift basis.
2. The unit can achieve its full capacity utilization during the 3rd year of operation.
3. The wages for workers are taken as per prevailing rates in this type of industry.
4. Interest rate for total capital investment is calculated @ 12% per annum.
5. The entrepreneur is expected to raise 20-25% of the capital as margin money.
6. The unit would construct its own building.
7. Costs of machinery are based on average prices of machinery manufacturers.

Implementation schedule:
Project implementation will take a period of 8 months. Break-up of the activities and relative time for each activity is shown below:

Scheme preparation and approval	01 month
Statutory Registrations	1-2 months
Sanction of financial supports etc	2-5 months
Installation of machinery and power connection	6-8 months
Trial run and production	01 month

Location:
The plant can be located at any suitable place keeping in view the marketing convenience, availability of power and skilled manpower.

Manufacturing Process:

The basic operations involved in the manufacture of adjustable ICU beds are cutting and bending of pipes; cutting of M.S. angles; cutting of strips; welding, riveting; grinding; assembly of elevating mechanism; baking & painting.

Inspection and Quality Control

IS: 7378-1974 specifies dimensional and other requirements of fowlers beds used in hospitals.
IS: 5039 – 1969 specifies material, shape and dimensions for bedstead general purpose for the use in hospitals. The above specifications may be followed for quality control.

Pollution Control

These types of units are is not producing any effluents or any other polluting materials. Therefore pollution control measures are not taken into account.

Production Capacity:

Quantity	600 different types of hospital beds
Installed capacity	850 beds / annum
Optimum capacity utilization	70%
Working days	300
Manpower	15

Financial Aspects:

Fixed Capital
Land & Building Amount (Rs. lakh)

Particulars	Amount
Land 300 m 2	00.20
Building 160 m 2	16.00
Total	16.20

Machinery and Equipment Amount (Rs. lakh)

Description	Amount
Pipe bending machine hand operated with fixtures locally fabricated -5, Arc welding sets-2, Gas cutting set with torch, regulators etc.-2 sets, Bench drilling machine 13 mm capacity-1, Portable drilling machine 13 mm capacity-2, Flexible shaft grinder 150wheel mm-2, Double ended bench grinder 300 mm size-1, Hand shearing machine 3 mm capacity-2, Baking oven 2.5 x 2 m x 2 m size 20 kW-2, Hand Press-3, Cleaning, Pickling, Phosphating tanks 2.5 x 2 x 2 m-10, Compressor with spray gun unit for painting-2, Riveting machine portable type electrical-1, Hand tools, instruments. Fixtures and dies.	10.00
Erection & electrification of machinery @ 10% cost	01.00
Office furniture & fixtures	01.50
Total	12.50

Pre-operative Expenses Amount (Rs. lakh)

Consultancy fee, project report, deposits with electricity department etc	01.50

Total Fixed Capital Amount (Rs. lakh)

	30.20

Recurring expenses per annum
Personnel Amount (Rs. lakh)

Designation	No.	Salary/ month	Amount
Factory Manager	1	20,000	02.40
Supervisory staff	1	15,000	01.80
Office Assistant	1	10,000	01.20
Technician	3	12,000	04.32
Skilled workers	4	10,000	04.80
Unskilled workers	5	08,000	04.80

Perquisites @15 %			02.90
Total	15		22.00

Raw Material including packaging materials Amount (Rs. lakh)

Particulars	Qty (t)	Rate/t	Amount
1. M.S Angle Iron 40 mm x 40 mm x 3 mm and 38 mm x 38 mm x 3 mm	13.50	0.47	06.35
2. M.S Tubes 38.10 mm o.d. x 1.6/1.22 mm thick	36.00	0.42	15.12
3. M.S Tubes 25.40 mm o.d x 1.6/1.22 mm thick	22.00	0.45	09.90
4. M.S Tubes 19.5 mm o.d x 1.22 mm thick	13.50	0.46	06.21
5. M.S Strips 1.25 mm x 25 mm	13.50	0.42	05.67
6. Castor wheels	300 No	LS	02.75
7. Nuts, bolts, screws, washers, flats, rubber items, paint etc.	LS	LS	04.20
Total			50.20

Utilities Amount (Rs. lakh)

Particulars	Amount
Power	03.50
Water	00.10
Total	03.60

Other Contingent Expenses Amount (Rs. lakh)

Particulars	Amount
Repairs and maintenance @10%	01.25
Consumables & spares, others	01.00
Transport & travel	02.00
Publicity, postage, telephone	01.20
Insurance @1%	00.125
Total	05.575

Total Recurring Expenditure Amount (Rs. lakh)

	81.60

Working Capital Amount (Rs. lakh)

Recurring expenses for 3 months	20.40

Total Capital Investment Amount (Rs. lakh)

Fixed capital (Refer 9.1.4)	81.60
Working capital (Refer 9.3)	20.40
Total	101.998

Financial Analysis:

Cost of Production (per annum) Amount (Rs. lakh)

Recurring expenses (Refer 9.2.5)	81.60
Depreciation on building @ 5%	00.80
Depreciation on machinery @10%	01.15
Depreciation on furniture @ 20%	00.30
Interest on Capital Investment @ 12%	12.24
Total	96.09

Sale Proceeds (Turnover) per year Amount (Rs. lakh)

Item	Qty	Rate/t (Rs.)	Amount
Fowlers hospital ICU beds	375	25,000	93.75
General purpose hospital beds	225	10,000	22.50
Sale of scrap		LS	05.00
Total	600	-	121.25

Net Profit per year

=Sales - Cost of production

= 121.25 – 96.09

=Rs. 25.16 lakh

Net Profit Ratio

$$= \frac{\text{Net profit X 100}}{\text{Sales}}$$

$$= \frac{25.16 \text{X } 100}{121.25}$$

=20.75 %

Rate of Return on Investment

$$= \frac{\text{Net profit X 100}}{\text{Capital Investment}}$$

$$= \frac{25.16 \text{ X } 100}{102}$$

= 24.67 %

Annual Fixed Cost Amount (Rs. lakh)

All depreciations	02.25
Interest	12.24
40% of salary, wages, utility, contingency	12.56
Insurance	00.125
Total	27.175

Break even Point

$$= \frac{\text{Annual Fixed Cost X 100}}{\text{Annual Fixed Cost + Profit}}$$

$$= \frac{27.175 \text{ X } 100}{27.175 + 20}$$

= 51.92 %

Addresses of Machinery Suppliers

1. M/s. Quality Machine Tools
   No.25 J.C. Road, Near VSL Bldg., Bangalore-2.
2. M/s. Batliboi Engineers Pvt. Ltd.
   99/2, 99/3 N.R. Road, Bangalore-2
3. M/s. Perfect Machine Tools
   Grant Road, Bangalore – 1
4. M/s. Indian Oxygen Ltd.
   Nagaraj Road, New Delhi

5. M/s. Simplicity Engineers
   B-99 Mayapuri, New Delhi

6. M/s. K.G. Khosla & Co.
   Mathuri Road, Badarpur, Delhi.