

MODEL PROJECT REPORT

FOR

SETTING UP OF

16 SEMI-AUTOMATIC

JACQUARD POWER LOOM UNIT



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CHAPTER -1

INTRODUCTION

Modernisation of the decentralised Power loom shawl weaving sector with Jacquard looms in order to augment the value added product to meet the domestic as well as export market in the free trade era. The Project Reports on Jacquard Power looms will help to the existing Powerloom owners/entrepreneurs/potential investors and they will get a fair idea of various benefits, viability, profitability while implementing the projects.

The Semi-automatic jacquard loom project will be suitable for Amritsar Cluster for manufacturing of woollen shawls because there will be better marketability of the products in the Northern Region especially in Himachal Pradesh, Jammu Kashmir, Haryana, Delhi and Uttaranchal during winter season.

The investors can avail 20 % capital subsidy under TUF Scheme if the Powerloom Unit is under SSI sector where the investment in Plant & Machinery is Rs.1.00 crore or 5% interest subsidy for the units under SSI or NON-SSI.

CHAPTER – 2

PROJECT AT A GLANCE

1	Installed Capacity (Weaving)	16 Semi-automatic jacquard power looms of 182cmsx4/1 with 1200 hooks of M/s. Honest Trading Co. Pvt. Ltd. Billimora.
2	Production of 16 looms /day of 3 shifts at 80 % utilisation and 85% efficiency.	320 Shawls (20 Shawls of 80”x40”/loom/day)
3	Total Project cost	Rs. 100.20 lakh
4	Means of finance a) Promoter’s contribution b) Term Loan	Rs. 20.00 lakh Rs. 80.20 lakh ----- Rs. 100.20 lakh -----
5	a) Sales Realisation b) Cost of production c) Gross profit d) Net profit	Rs. 400.96 lakh Rs. 267.41 lakh Rs. 133.55 lakh Rs. 74.13 lakh
6	Payback period	8 years (one year moratorium)
7	Break even point	28.36 %
8	Profit/Shawl	Rs.64.71
9	Direct Employment	60

CHAPTER -3

MAJOR ASSUMPTIONS

The following major assumptions have been made after taking in to consideration of various factors prevailing in the existing Powerloom Units.

1. Status of the project	:	Sale of Woollen Shawls of Jacquard Design.
2. No. of working days /annum	:	358
3. Loom Capacity utilisation	:	80 %
4. Loom Efficiency	:	85 %
5. Cost of power	:	Rs. 4.32 per unit
6. Interest rate on term loan	:	10 %
7. Interest rate on working capital	:	12 %
8. Cost of warp(2/56 Nm woollen yarn)	:	Rs. 520/- per kg
9. Cost of weft(48 Nm woollen yarn)	:	Rs. 450/- per kg
10. Selling price of shawl(ex-factory)	:	Rs. 350/- per shawl

CHAPTER – 4

PRODUCT DETAILS

The proposed product is woollen shawl having the following quality parameters.

1. Product : Woollen shawl
2. Count of warp : 2 / 56 Nm worsted yarn
3. Count of weft : 48 Nm worsted yarn
4. Reed : 56
5. Pick : 80 (Double Weave Design)
6. Size of the Shawl : 2.00met x 1.00 met. (80'' x 40'').

CHAPTER – 5

PRODUCTION DETAILS

The expected production for a unit of 16 Semi-automatic Jacquard Powerlooms of 1200 hooks for the manufacturing of woollen shawls is calculated as under :--

1. Type of Loom	:	Semi-automatic Jacquard Powerloom of 1200 hooks.
2. Speed	:	140 RPM
3. Working hours/shift	:	8 hours
4. No. of shifts / day	:	3
5. Working days/annum	:	358
6. Efficiency	:	85 %
7. Utilisation	:	80 %
8. No. of Looms	:	8
9. Production/loom/shift (5% shrinkage)	:	$\frac{140}{80} \times 60 \times 8 \times \frac{85}{100} \times \frac{80}{100} \times \frac{1}{80} \times \frac{95}{100} = 6.78$ shawls
10. Production/loom/day	:	20 Shawls
11. Production/16 looms/day	:	320 shawls
12. Production/16 looms/annum: of 358 days	:	1,14,560 shawls

CHAPTER – 6

PROJECT DETAILS

The Project details consists the estimates of the cost of land, building, plant and machinery and are as under.

Project Cost Estimates

1. Land (10,900 Sq. ft)	:	Rs. 10.90 lakh (@ Rs. 100/sq.ft.)
2. Building(6520 Sq. ft)	:	Rs. 22.82 lakh (@ Rs. 350/ sq, ft.)
a. Loom shed (For 16 Power looms)	:	2400 sq. ft.
b. Preparatory	:	3000 sq. ft.
c. Raw material store	:	224 sq. ft.
d. Finishing Dept.	:	224 sq. ft.
e. Finished material store	:	224 sq. ft.
f. Administrative Office	:	224 sq. ft.
g. R&D.and Sample Display room	:	224 sq. ft.
3. Plant & Machinery	:	46.90
4. Electrical Fittings	:	3.50
(Furniture/ Office equipments, Fire fighting equipments)		
5. Misc. fixed office assets	:	3.00
6. Pre-operative expenses.	:	4.87
(5% of project cost) (map, project, insurance,		
7. Working capital margin	:	8.15
(25% of working capital)--		
<hr/>		
Total Project Cost --	:	Rs. 100.20 lakh
<hr/>		

CHAPTER – 7
EXPENDITURE DETAILS

The Expenditure details consist of raw-material requirement, working capital requirement, term loan interest, power cost, cost of consumables/stores/maintenance etc.,

1. Raw-material requirement

a) Wt. of warp of 2/56Nm/day/loom (2 % waste and 5% shrinkage)	: $\frac{(40 \times 56)80'' \times 20 \times 2.54 \text{cm} \times 1.02 \times 1.05}{100 \times 1000 \times 28} = 3.48 \text{ kgs}$
b) Wt. of weft of 48Nm./ day/ loom (2 % waste and 5% shrinkage)	: $\frac{(80 \times 80 \times 40)20 \times 2.54 \text{cm} \times 1.02 \times 1.05}{100 \times 1000 \times 48} = 2.90 \text{ kgs}$
c) Total warp(2/56 Nm woollen yarn) required/annum of 358 days / loom	: 1246.00 kgs
d) Total weft(48 Nm woollen yarn) required/annum of 358 days/ loom	: 1038.00 kgs
e) Cost of total warp @ Rs. 520/- per kg per loom / annum	: Rs. 6.48 lakh
f) Cost of total weft @ Rs. 450/- per kg per loom / annum	: Rs. 4.67 lakh
g) Total cost of raw-material required per annum for 16 looms.	: Rs.178.40 lakh

2. Working capital requirement (for 16 loom)

- a) Cost of warp yarn requirement for 30 days : $3.48 \times 16 \times 30 \times 520 = \text{Rs.}8.69 \text{ lakh}$
- b) Cost of weft yarn requirement for 30 days : $2.90 \times 16 \times 30 \times 450 = \text{Rs.}6.26 \text{ lakh}$
- c) Cost of finished stock for 15 days : $320 \times 15 \times 350 = \text{Rs.}18.80 \text{ lakh}$
- d) Cost of consumables stores/month
for 18 looms : Rs.5000/-
- e) Cost of maintenance and spares/month
for 16 loom : Rs.8000/-
- f) Cost of packing material/month
(@ 1 % on sales value) : Rs.34,000/-
- g) Cost of transport,insurance & misc.expdt./month:
(@ 1 % on sales value) : Rs.34,000/-
- h) Maintenance of Office equipments/month : Rs. 5000/-
- i) Total working capital required/month
(a to h) : Rs. 34.61 lakh
- j) Margin money
(@ 25 % of working capital) : Rs.8.65 lakh
- k) Bank finance required for working capital
(i- j) : Rs. 25.96 lakh
- l) Bank interest on working capital @ 12 % : Rs. 3.12 lakh/annum

3. Means of Finance

a) Promoter's contribution (20.00 %):	Rs.20.00 lakh
b) Term Loan	: Rs.80.20 lakh

Total	Rs.100.20 lakh

4. Power cost (At the rate of Rs. 4.32 per unit of PSEB)

<u>S.No.</u>	<u>Item</u>	<u>Nos.</u>	<u>Total h.p</u>	<u>Units/day</u> (H.P.x 0.75x24)	<u>Total Power cost/year</u>
1.	Jacquard P/loom	16	48(3/m/c)	864	Rs. 13.36 lakh
2.	Pirn winding M/c. (32 spindle)	1	1	18	Rs. 0.28 lakh
3.	Sectional Warping and Beaming m/c	1	15 (40%utl.)	108	Rs. 1.67 lakh
4.	Lighting/ Humidification Plant etc.	--	-----	60units	Rs. 0.93 lakh

Total					Rs. 16.24 lakh

5. Salaries & Wages

<u>S.No.</u>	<u>Description</u>	<u>Nos./day</u>	<u>Salary/Wage/month/person</u>	<u>Total/annum</u>
1.	Production/Factory Manager	1	20,000	2.40
2.	Sales Manager	1	20,000	2.40
3.	Supervisor	4	8,000	3.84
4.	Weaver	27	4,000	12.96
5.	Helper	4	3,000	1.44
6.	Warper/Beamer	5	3,000	1.80
7.	Pirn winder	8	3,000	2.88
8.	Finished Material Checker	1	5,000	0.60
9.	Packer	4	3,000	1.44
10.	Office clerk	1	4,000	0.48
11.	Watchman	4	3,000	1.44
	Total	60		31.68

6. Details of Plant & Machinery

<u>Description</u>	<u>Unit Price</u>	<u>No.of M/C.</u>	<u>Total cost (Rs.Lakh)</u>
a) Semi-auto loom of 182 cm x 4/1	64,000/-	16	10.24
b) Jacquard(1200 hooks)	70,000/-		11.20
c) Standard accessories	40,000/-		6.40
d) Auto-Pirn winding machine of 32 spindles(2 spd/loom)	2,24,000/-	1	2.24
e) Sectional Warping&Beaming M/c.	9,50,000/-	1	9.50
f) Warp Tying M/c.	4,50,000/-	1	4.50
g)D.G. Set of 50 KW.	2,50,000/-	1	2.50
h)Humidification Fan and Pumps etc.	4750/-	8	0.38
		Total	Rs. 46.96

7. Depreciation of Plant & Machinery(15 %)

<u>Year</u>	<u>Opening Balance</u>	<u>Depreciation</u>	<u>Closing Balance</u>
1	46.76	7.01	39.75
2.	39.75	5.96	33.79
3.	33.79	5.07	28.72
4.	28.72	4.31	24.41
5.	24.41	3.66	20.75
6.			

8. Interest and Instalment Schedule of Bank Repayment of Tem Loan

The term loan amount will be Rs.72.29 lakh out of term loan estimate of Rs.80.20 lakh after adjusting Capital Subsidy of Rs.7.91 lakh, @ 20 % of total value of eligible machinery of Rs.39.58 lakh, as per the TUF Scheme of Min.of Textiles, GOI for SSI Powerloom unit.

S.No.	Particulars	Operating years – Rs. in lakh					
		1	2	3	4	5	6
	Ist – Quarter						
1	Opening Balance	72.29	72.29	61.97	51.65		
2	Less : Quarterly Instalment		2.58	2.58	2.58		
3	Quarterly closing balance		69.71	59.39	49.07		
4	Quarterly Interest @ 10 %	1.80	1.80	1.55	1.29		
	IInd – Quarter						
1	Opening Balance	72.29	69.71	59.39	49.07		
2	Less : Quarterly Instalment		2.58	2.58	2.58		
3	Quarterly closing balance		67.13	56.81	46.49		
4	Quarterly Interest @ 10 %	1.80	1.74	1.48	1.23		

	IIIrd – Quarter	1	2	3	4	5	6	8
1	Opening Balance	72.29	67.13	56.81	46.49			
2	Less : Quarterly Instalment		2.58	2.58	2.58			
3	Quarterly closing balance		64.55	54.23	43.91			
4	Quarterly Interest @ 10 %	1.80	1.68	1.42	1.16			
	IVth – Quarter							
1	Opening Balance	72.29	64.55	54.23	43.91			
2	Less : Quarterly Instalment		2.58	2.58	2.58			
3	Quarterly closing balance		61.97	51.65	41.33			
4	Quarterly Interest @ 10 %	1.80	1.61	1.36	1.10			
	Annual Installments	0.00	19.32	10.32	10.32			
	Annual Interest	7.20	6.83	5.81	4.78			

9. Factors of production and costing per annum

1) Sales Realisation

a)Production/annum	:	1,14,560 Shawls on 16 Power looms
b)Selling price per shawl	:	Rs. 350/-
c)Income by sales	:	Rs. 400.96 lakh

2) Variable Cost Factor per Annum :-

a) Cost of packing @ 1% on sales value	:	Rs.4.00 lakh/annum.
b) Cost of consumables for 16 looms (@ Rs. 5000/- per month)	:	Rs.0.60 lakh/annum.
c) Transportation,Insu.& other misc expenditure: (@ 1 % on sales value)	:	Rs.4.00 lakh/annum.
d) Finishing charges @ Rs.20.00 per shawl (checking, clipping,fringing,cutting &finishing etc.)	:	Rs.22.91 lakh/annum.
e) Selling expenses @ 2 % on sales value	:	Rs. 8.02 lakh/annum.

3) Fixed Cost Factor per Annum :-

a) Maintenance and spares for 16 looms (@ Rs. 8000/- per month)	:	Rs. 0.96 lakh/annum.
b) Maintenance of office equipments (@ Rs.5000/- per month)	:	Rs. 0.60 lakh/annum

10. Estimates of cost of production :-

S.No.	Particulars	Operating years – Rs. in lakhs				
		1	2	3	4	5
Factors of Production						
1	Installed Looms	16	16	16		
2	Capacity utilisation	80%	80%	80%		
3	Estimated production of shawls/day	320	320	320		
4	Estimated production of shawls/annum	114560	114560	114560		
5	Sales Realisation/annum @ Rs.350/- per shawl(Rs. in lakh)	400.96	400.96	400.96		
Factors of Costing (Expenditure)						
1	Raw material	178.40	178.40	178.40		
2	Cost of packing	4.00	4.00	4.00		
3	Cost of consumables	0.60	0.60	0.60		
4	Cost of Maintenance and spares	0.96	0.96	0.96		
5	Cost of maintenance of Office equipment	0.60	0.60	0.60		
6	Transportation,Ins. & other misc expenses	4.00	4.00	4.00		
7	Power cost	16.24	16.24	16.24		
8	Salaries&Labour wages(3%growth)	31.68	32.63	33.61		
9	Finishing charges	22.91	22.91	22.91		
10	Selling expenses	8.02	8.02	8.02		
	Total	267.41	268.36	269.31		
1	Gross Profit	133.55	132.60	131.65		
2	Depreciation	7.01	5.96	5.07		
3	Term Loan Payment	10.32	10.32	10.32		
4	Bank Interest on Term loan	7.20	6.83	5.81		
5	Bank Interest on working capital	3.12	3.12	3.12		
6	Operative profit (Profit before tax)	105.90	106.37	107.33		
7	Taxation (30 %)	31.77	31.91	32.20		
	Net Profit	74.13	74.46	75.13		

11. Break-Even Point Analysis

S.No.	Variable cost	Rs. in lakhs
1	Raw material	178.40
2	Wages & salaries (50%)	15.84
3	Interest on working capital	3.12
4	Packing expenses	4.00
5	Cost of consumable	0.60
6	Transportation, Insurance & misc expenses	4.00
7	Finishing charges	22.91
8	Selling expenses	8.02
9	Power cost	16.24
	Total	253.13
	Fixed Cost	
1	Wages & Salaries (50%)	15.84
2	Spares & Maintenance of M/cs and Office	1.56
3	Depreciation	7.01
4	Term loan repayment	10.32
5	Interest on term loan	7.20
	Total	41.93

A. Income by sales : Rs. 400.96 lakh

B. Sales — Variable cost : 400.96 – 253.13 = 147.83

11 (A) Break – Even Point : $\frac{\text{Fixed cost} \times 100}{\text{Sales} - \text{Variable cost}}$
 $\frac{41.93 \times 100}{400.96 - 253.13}$

= **28.36%**

11(B). Cash Break Even Point : $\frac{\text{Fixed Cost} - \text{Depreciation} \times 100}{\text{Sales} - \text{Variables}}$
 $\frac{41.93 - 7.01 \times 100}{400.96 - 253.13}$
 $\frac{34.92 \times 100}{147.83}$

= **23.62%**

12. Profit Statement (Rs. Lakh) :-

Sr. No.	Category / Year	1	2	3
1.	Income	400.96	400.96	400.96
2.	Expenditure	267.41	268.36	269.31
3.	Net Profit	74.13	74.46	75.13
4.	Depreciation	7.01	5.96	5.07
5.	Cash Profit (3+4)	81.14	80.42	80.20

13. Debt Service Coverage Ratio (DSCR) :-

This ratio indicates the capacity of the unit to repay term loan and interest.

Sr. No.	Category / Year	1	2	3
a.	Cash Profit	81.14	80.42	80.00
b.	Interest on Term Loan	7.20	6.83	5.81
c.	Instalment	10.32	10.32	10.32
d.	DSCR	5.04	5.09	5.33

$$\text{DSCR} = \frac{a+b}{c+b} = \frac{\text{Cash Profit} + \text{Interest on Term Loan}}{\text{Instalment} + \text{Interest on Term Loan}}$$

14. Internal Rate of Return (IRR) / Pay Back Period :-

Pay back period is the length of period for total cash inflow to recover the entire cost of project.

The IRR is the rate of return on the investment, which equates the present value of investment (cash outflow), to the present value of benefits (cash inflow) over the period.

$$\text{Project cost} = \frac{\text{Cash profit}}{(1+R)^{n1}} + \frac{\text{Cash profit}}{(1+R)^{n2}} + \frac{\text{Cash Profit}}{(1+R)^{n3}}$$

R=Internal rate of return

n= Number of years

$$\begin{aligned} 100.20 &= \frac{81.14}{(1+39\%)^1} + \frac{80.42}{(1+39\%)^2} \\ &= 58.37 + 41.67 \\ &= 100.04 \end{aligned}$$

I.R.R. = 39% Over two years.

15. Expenditure & Profit per Shawl

a) Turn over/annum	:	Rs. 490.96 lakh
b) Expenditure	:	Rs. 267.41 lakh
c) Gross profit	:	Rs. 133.55 lakh
d) Net profit	:	Rs. 74.13 lakh
e) Profit/Shawl	:	Rs. 64.71

CHAPTER – 8

CONCLUSION

Amritsar is well connected by G.T.Road and Train with all the major cities of the country. Amritsar is also having International Air Port.

Amritsar in the Punjab State is an ideal location for the manufacture of woollen shawls and the product has better marketability in the state of Punjab, Himachal Pradesh, Haryana, Jammu & Kashmir, Delhi and Uttaranchal. It is to mention that major Powerloom Units in Amritsar are having 4 to 8 powerlooms under SSI sector and are manufacturing mainly woollen items. This Project proposal for the manufacture of woollen shawls on 16 semi-auto jacquard powerlooms is viable for small scale sector Powerloom Units. The SSI entrepreneurs can take the benefit of 20 % capital subsidy on the investment of machinery under Technology Upgradation Fund Scheme.