MODEL PROJECT REPORT

FOR

SETTING UP OF

2 SHUTTLELESS RAPIER

JACQUARD LOOM UNIT

INDEX

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)	2 Shuttleless Rapier Jacquard Power Looms of 320cms ,with 2688 hooks of M/s. SULZER TEXTIIL .
2	Production of two looms /day of 3 shifts at 95% utilisation and 95% efficiency.	244 Shawls (122 Shawls of 80”x40”/loom/day)
3	Total Project cost	Rs. 172.20 lakh
4	Means of finance Promoter’s contribution Term Loan	 Rs. 34.50 lakh Rs. 137.70 lakh ---------- Rs. 172.20 lakh ----------
5	Sales Realisation Cost of production Gross profit Net profit	Rs. 349.41 lakh Rs. 213.56 lakh Rs. 135.85 lakh Rs. 62.12 lakh
6	Payback period	8 years (one year moratorium)
7	Break even point	38.63%
8	Profit/Shawl	Rs.71.11
9	Direct Employment	27

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	:	Woollen Shawls of Jacquard Design.
2. No. of working days /annum	:	358
3. Loom Capacity utilisation	:	95 %
4. Loom Efficiency	:	95 %
5. Cost of power	:	Rs. 4.32 per unit
6. Interest rate on term loan	:	10 %, effective 5%, due TUFS.
7. Interest rate on working capital	:	12 %, effective 7%, due to TUFS.
8. Cost of warp(2/56 Nm woollen yarn)	:	Rs. 520.00 per kg
9. Cost of weft(48 Nm woollen yarn)	:	Rs. 450.00 per kg
10. Selling price of shawl(ex-factory)	:	Rs. 400.00 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 Two Shuttleless Rapier Jacquard Powerlooms of 2688 hooks for the manufacturing of woollen shawls. To produce finished shawl of 80"x40" size with56end/inch and 80 picks /inch in double weave, the loom size of the shawl will be 85"x45". The calculation is as under :--

1.	Type of Loom	:	Shuttleless Rapier Electronic Jacquard Powerloom of 2688 hooks and320cms working width.
2.	Speed	:	320 RPM
3.	Working hours/shift	:	8 hours
4.	No. of shifts / day	:	3
5.	Working days/annum	:	358
6.	Efficiency	:	95 %
7.	Utilisation	:	95 %
8.	No. of Looms	:	2
9.	Production/loom/shift	:	$\frac{320}{80\text{picks}} \times 60 \times 8 \times \frac{95}{100} \times \frac{95}{100} \times \frac{1}{85"} \times 2 = 40.77$ shawls
10.	Production/loom/day	:	122 Shawls
11.	Production by two looms/day:		244 Shawls
12.	Production by2 looms/annum: of 358 days		87,352 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 (7,700 Sq. ft)		:	Rs. 7.70 lakh (@ Rs. 100/sq.ft.)
2. Building(4,620 Sq. ft)	:	Rs.16.17 lakh (@ Rs. 350/ sq, ft.)	
Loom shed (For 2 Rapier looms)	:	500 sq. ft.	
Preparatory	:	3000 sq. ft.	
Raw material store	:	224 sq. ft.	
Finishing Dept.	:	224 sq. ft.	
Finished material store	:	224 sq. ft.	
Administrative Office	:	224 sq. ft.	
R&D.and Sample Display room	:	224 sq. ft.	
3. Plant & Machinery	:	127.25	
4. Electrical Fittings (Furniture/ Office equipments, Fire fighting equipments)		:	3.00
5. Misc. fixed office assets		:	2.50
6. Pre-operative expenses. (5% of project cost) (map, project, insurance ,erection & regd. etc.)	:	8.62	
7.Margin Money (25% of working capital)	:	6.96	
Total Project Cost --	**Rs.**	**172.20 lakh**	

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 % wastage) : $\frac{(40 \times 56)85" \times 122 \times 2.54cm \times 1.02}{100 \times 1000 \times 28}$ = 23.03 kgs

b) Wt. of weft of 48Nm./ day/ loom (5 % wastage) : $\frac{(80 \times 80 \times 45)122 \times 2.54cm \times 1.05}{100 \times 1000 \times 48}$ =19.52 kgs

c) Total warp(2/56 Nm woollen yarn) required/annum of 358 days / loom : 8245.00 kgs

d) Total weft(48 Nm woollen yarn) required/annum of 358 days/ loom : 6988.00 kgs

e) Cost of total warp @ Rs. 520/- per kg per loom / annum : Rs. 42.87 lakh

f) Cost of total weft @ Rs. 450/- per kg per loom / annum : Rs. 31.45 lakh

g) Total cost of raw-material required per annum for 2 Rapier looms. : Rs.148.64 lakh

2. <u>Working capital requirement (for 2 Rapier looms)</u>

a) Cost of warp yarn requirement for 30 days : 23.03x2x30x520 = Rs.7.19 lakh

b) Cost of weft yarn requirement for 30 days : 19.52x2x30x450 = Rs.5.27 lakh

c) Cost of finished stock for 15 days : 244x15x 400 = Rs.14.64 lakh

d) Cost of consumables stores/month for 2 looms : Rs.5000.00

e) Cost of maintenance and spares/month for 2 loom : Rs.5000.00

f) Cost of packing material/month (@ 1 % on sales value) : Rs.30,000.00

g) Cost of transport,insurance & misc.expdt./month: (@ 1 % on sales value) Rs.30,000.00

h) Maintenance of Office equipments/month : Rs. 5000.00

i) Total working capital required/month (a to h) : Rs. 27.85 lakh

j) Margin money (@ 25 % of working capital) : Rs. 6.96 lakh

k) Bank finance required for working capital (i- j) : Rs.20.89 lakh

l) Bank interest on working capital @ 7 %(12-5) : Rs. 1.46 lakh/annum

3. Means of Finance

a) Promoter's contribution (20.00 %) : Rs. 34.50 lakh
b) Term Loan : Rs.137.70 lakh

Total Rs.172.20 lakh
---

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

S.No.	Item		Nos.	Total h.p	Units/day (H.P.x 0.75x24)	Total Power cost/year
1.	Rapier Jacquard loom	2	27(13.5x2)		486	Rs. 7.52 lakh
2.	Sectional Warping and Beaming m/c		1	20 (25%utl.)	108	Rs. 1.67 lakh
3.	A. C. of 10 Tonne	1	10 KW		10x24=240	Rs. 3.72 lakh
4.	Lighting/ Warping Humidification Plant etc.	-----			50units	Rs. 0.77 lakh

---
Total Rs. 13.68 lakh
---

5. Salaries & Wages

S.No.	Description		Nos./day	Salary/Wage/month/person	Total/annum
1.	Production/Factory Manager		1	20,000	2.40
2.	Sales Manager		1	20,000	2.40
3.	Supervisor /Designer		4	8,000	3.84
4.	Weaver	4		6,000	2.88
5.	Helper		4	3,000	1.44
6.	Warper/Beamer	4		3,000	1.44
7.	Finished Material Checker		1	5,000	0.60
9	Packer	3		3,000	1.08
10	Office clerk	1		4000	0.48
11.	Watchman		4	3000	1.44
Total		**27**			**18.00**

6. Details of Plant & Machinery

Description	Unit Price	No.of M/C.	Total cost (Rs.Lakh)
a) Shuttleless Rapier Loom 320cms.	26.00 lakh	2	93.00
Jacquard(Electronic2688 hooks)& standard accessories	20.50 lakh		
b) Sectional Warping & Beaming M/c.	23.50 lakh	1	23.50
c) Warp Tying M/c.	4.50 lakh	1	4.50
d) D.G. Set of 60 KW.	3.50 lakh	1	3.50
e) A.C. (10 tonnes)	2.50 lakh	1	2.50
Humidification Fan and Pumps etc.	0.25 lakh	1	0.25
		Total	**Rs. 127.25**

7. Depreciation of Plant & Machinery(15 %)

Year	Opening Balance	Depreciation	Closing Balance
1	127.25	19.09	108.16
2.	108.16	16.22	91.94
3.	91.94	13.79	78.15
4.	78.15	11.72	66.43
5.	64.43	9.96	54.47
6.			

8. <u>Interest and instalment schedule of long tem loan</u>

The interest subsidy on term loan with working capital loan (up to25% of term loan) is 5%,as per the TUF Scheme of Min. of Textiles, GOI for textile industry.

S.No.	Particulars	Operating years – Rs. in lakh						
		1	**2**	**3**	**4**	**5**		
	Ist – Quarter							
1	Opening Balance	137.70	137.70	118.02	98.34			
2	Less : Quarterly Instalment		4.92	4.92	4.92			
3	Quarterly closing balance		132.78	113.10	93.42			
4	Quarterly Interest @ 5%	1.72	1.72	1.48	1.23			
	IInd – Quarter							
1	Opening Balance	137.70	132.78	113.10	93.42			
2	Less : Quarterly Instalment		4.92	4.92	4.92			
3	Quarterly closing balance		127.86	108.18	88.50			
4	Quarterly Interest @ 5%	1.72	1.66	1.41	1.17			

	IIIrd – Quarter	1	2	3	4	5	6	8
1	Opening Balance	137.70	127.86	108.18	88.50			
2	Less : Quarterly Instalment		4.92	4.92	4.92			
3	Quarterly closing balance		122.94	103.26	83.58			
4	Quarterly Interest @5%	1.72	1.60	1.35	1.11			
	IVth – Quarter							
1	Opening Balance	137.70	122.94	203.26	83.58			
2	Less : Quarterly Installment		4.92	4.92	4.92			
3	Quarterly closing balance		118.02	98.34	78.66			
4	Quarterly Interest @ 5 %	1.72	1.54	1.29	1.04			
Annual Installments		0.00	19.32	10.32	10.32			
Annual Interest		6.88	6.52	5.53	4.55			

9. Factors of production and costing per annum

1) Sales Realisation

a)Production/annum	:	87,352 Shawls on 2 Rapier looms
b)Selling price per shawl	:	Rs. 400.00
c)Income by sales	:	Rs. 349.41 lakh

2) Variable Cost Factor per Annum :-

a) Cost of packing @ 1 % on sales value	:	Rs.3.49 lakh/annum.
b) Cost of consumables for 2 looms (@ Rs. 5000/- per month)	:	Rs.0.60 lakh/annum.
c) Transportation,Insu.& other misc expenditure (@ 1 % on sales value)	:	Rs.3.49 lakh/annum.
d) Finishing charges @ Rs.20.00 per shawl (checking, clipping,fringing,cutting &finishing etc.)	:	Rs.17.47 lakh/annum.
e) Selling expenses @ 2 % on sales value	:	Rs. 6.99 lakh/annum.

3) Fixed Cost Factor per Annum :-

a) Maintenance and spares for 2 looms (@ Rs. 5000/- per month)	:	Rs. 0.60 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					
Factors of Production		**1**	**2**	**3**	**4**	**5**	
1	Installed Looms	2	2	2			
2	Capacity utilisation	95%	95%	95%			
3	Estimated production of shawls/day	244	244	244			
4	Estimated production of shawls/annum	87352	87352	87352			
5	Sales Realisation/annum @ Rs.400/- per shawl(Rs. in lakh)	349.41	349.41	349.41			
Factors of Costing (Expenditure)							
1	Raw material	148.64	148.64	148.64			
2	Cost of packing	3.49	3.49	3.49			
3	Cost of consumables	0.60	0.60	0.60			
4	Cost of Maintenance and spares	0.60	0.60	0.60			
5	Cost of maintenance of Office equipment	0.60	0.60	0.60			
6	Transportation,Ins. & other misc expenses	3.49	3.49	3.49			
7	Power cost	13.68	13.68	13.68			
8	Salaries&Labour wages(3%growth)	18.00	18.54	19.10			
9	Finishing charges	17.47	17.47	17.47			
10	Selling expenses	6.99	6.99	6.99			
	Total	213.56	214.10	214.66			
1	Gross Profit	135.85	135.31	134.75			
2	Depreciation	19.09	16.22	13.79			
3	Term Loan Payment	19.68	19.68	19.68			
4	Bank Interest on Term loan	6.88	6.52	5.53			
5	Bank Interest on working capital	1.46	1.46	1.46			
6	Operative profit	88.74	91.43	94.29			
7	Taxation (30 %)	26.62	27.43	28.29			
	Net Profit	**62.12**	**64.00**	**66.00**			

11. Break-Even Point Analysis

S.No.	Variable cost	Rs. in lakhs
1	Raw material	148.64
2	Wages & salaries (50%)	9.00
3	Interest on working capital	1.46
4	Packing expenses	3.49
5	Cost of consumable	0.60
6	Transportation, Insurance & misc expenses	3.49
7	Finishing charges	17.47
8	Selling expenses	6.99
9	Power cost	13.68
	Total	**204.82**
	Fixed Cost	
1	Wages & Salaries (50%)	9.00
2	Spares & Maintenance of M/cs and Office	1.20
3	Depreciation	19.09
4	Term loan repayment	19.68
5	Interest on term loan	6.88
	Total	**55.85**

A. Income by sales : Rs. 349.41 lakh

B. Sales — Variable cost : 349.41 – 204.82 = 144.59

11 (A). Break – Even Point :

$$\frac{\text{Fixed cost}}{\text{Sales — Variable cost}} \times 100$$

$$\frac{55.85 - 19.09}{349.41 - 204.82} \times 100$$

$$= \mathbf{38.63\%}$$

11(B). Cash Break Even Point :

$$= \frac{\text{Fixed Cost – Depreciation}}{\text{Sales - Variables}} \times 100$$

$$= \frac{55.85 - 19.09}{349.41 - 204.82} \times 100$$

$$= \mathbf{25.42\ \%}$$

12. Profit statement (Rs. Lakh)

Sr. No.	Category/Year	1	2	3
1.	Income	349.41	349.41	349.41
2.	Expenditure	213.56	214.10	214.66
3.	Net Profit	62.12	64.00	66.00
4.	Depreciation	19.09	16.00	13.79
5.	Cash Profit(3+4)	81.21	80.22	79.79

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	81.21	80.22	79.79
b.	Interest of term loan	6.88	6.52	5.53
c.	Loan instalment	19.68	19.68	19.68
d.	DSCR	3.32	3.31	3.38

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

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

$$172.20 = \frac{81.21}{(1+19\%)^{1}} + \frac{80.22}{(1+19\%)^{2}} + \frac{79.79}{(1+19\%)^{3}}$$

$$= \frac{81.21}{1.19} + \frac{80.22}{1.42} + \frac{79.79}{1.69}$$

$$= 68.24 + 56.49 + 47.21$$

$$= 171.94$$

I.R.R. = 19% Over three years.

15. Expenditure & Profit per Shawl

a) Turn over/annum	:	Rs. 349.41 lakh
b) Expenditure	:	Rs. 213.56 lakh
c) Gross profit	:	Rs. 135.85 lakh
d) Net profit	:	Rs. 62.12 lakh
e) Profit/Shawl	:	Rs. 71.11

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 8 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 Up gradation Fund Scheme.