PROJECT REPORT

OF

CEILING FAN MANUFACTURING PLANT

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding Ceiling Fan Manufacturing Plant.

The objective of the pre-feasibility report is primarily to facilitate potential entrepreneurs in project identification for investment and in order to serve his objective; the document covers various aspects of the project concept development, start-up, marketing, finance and management.

[We can modify the project capacity and project cost as per your requirement. We can also prepare project report on any subject as per your requirement.]

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PROJECT AT GLANCE

1	**Name of Proprietor/Director**	XXXXXXXX
2	**Firm Name**	XXXXXXXX
3	**Registered Address**	XXXXXXXX
4	**Nature of Activity**	XXXXXXXX
5	**Category of Applicant**	XXXXXXXX
6	**Location of Unit**	XXXXXXXX
7	**Cost of Project**	24.78 Rs. In Lakhs
8	**Means of Finance**	
i)	**Own Contribution**	2.48 Rs. In Lakhs
ii)	**Term Loan**	15.30 Rs. In Lakhs
iii)	**Working Capital**	7.00 Rs. In Lakhs
9	**Debt Service Coverage Ratio**	3.46
10	**Break Even Point**	0.22
11	**Power Requiremnet**	20 KW
12	**Employment**	10 Persons
13	**Major Raw Materials**	Metal, plastic, electric component, Insulation material & other components

14 Details of Cost of Project & Means of Finance

Cost of Project

Particulars	Amount in Lacs
Land	Owned/Leased
Building & Civil Work	Owned/Leased
Plant & Machinery	15.50
Furniture & Fixture	0.50
Other Misc Assets	1.00
Working Capital Requirement	7.78
Total	**24.78**

Means of Finance

Particulars	Amount in Lacs
Own Contribution	2.48
Term Loan	15.30
Working capital Loan	7.00
Total	**24.78**

1. INTRODUCTION

A ceiling fan is a mechanical fan mounted on the ceiling of a room or space, usually electrically powered, that uses hub-mounted rotating blades to circulate air. It's used for conventional cooling. They only introduce movement to the air through their rotating paddles or blades. Most ceiling fan consist of components such as blades, electric motor, switch housing or electrical connections, downrod, canopy etc. Some ceiling fans have curved blades.

In this case, flipping blades upside-down when possible would make fans more effective on updraft, because when the blades are left right side up, they might not blow nearly as much air on updraft, especially on industrial ceiling fans. Ceiling fans are an especially economic choice in warm, humid environments. Ceiling fans can be operate in different ways. Some come with a pull-chain or pull-cord control. Some fans operate on a variable-speed control where a dial, which works like a dimmer switch, is mounted on the fan. Some fans have their controls mounted on the wall, while others come with wireless remote controls that transmit radio frequencies or infrared control signals to the receiver installed in the fan.

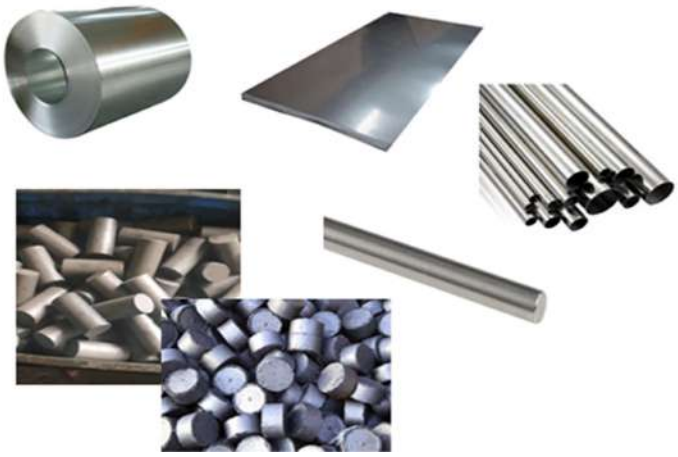
2. PRODUCT DESCRIPTION

2.1 PRODUCT USES

Ceiling fans are a useful, economical and practical solution for reducing cooling needs in the spring or in summer. It can be used in residential and commercial areas.

2.2 RAW MATERIAL REQUIREMENT

1. **Metal:** Steel strips coil, Steel sheets, Steel bars, Iron metal, Steel pipes etc.
   To form stator and rotor core part - cold rolled non grain oriented electrical steel strips can be used, for shaft forming steel bar can be used. Blades will be formed using steel sheet. And to form motor casing/cover iron metal can be used. Downrod will be formed with Steel pipes.



2. **Plastic:** PP, PVC, Plastic granules can be used to form some plastic parts for ceiling fan.

3. **Electric components**: Capacitor, Wires, Winding wire, Terminals etc.

4. **Insulation material**

5. **Other components:** Ball bearings, Nut bolts, washers, cotter pins, springs, Paint etc.

2.3 MANUFACTURING PROCESS

This process can be broken down into following steps:

1. Raw material procurement
2. Design
3. Injection moulding- Plastic moulding
4. Metal parts fabrication- Blades, Stator, Rotor, Shafts, Downrods, Motor cover etc.
5. Stator winding
6. Assembly
7. Testing

Raw material procurement

After importing required raw material; quality checking, sorting will be done. **Chemical Analysis, Physical Testing, Pressure Test & Leak Checking, Electronic Dimensional Checking of metal raw material will be done.** The quantity of raw materials being handled and it will store it in store department or in raw material inventory. Quality control of raw material is the maintaining of all the procedures that are needed to be taken to produce a quality full product. In sorting procedure the different types of materials or parts will be sorted out like plastic, metals, electrical components etc. It will be separated and material will be stored and later on it will dispatch to assembly line.

Design

To effectively develop a product design specification for the fan, need to know customer need, trending designs, demand of the product and the basic function of the fan. The basic function of a fan is to cause effective air flow in a room and this should be accomplished for a long usage of several years at varying rotations per minute. The quality of fans is rated by their performance which is in moving the air effectively and quietly. This is monitored by such factors as the length, pitch, and number of ceiling fan blades, and their revolutions per minute (rpms). The angular edges of the fan blades are also known as the pitches which are especially significant for the effective movement of the air. The shape empowers the blade to apply strain to the air before it and in this manner the air is constrained

downwards. Design of blades is such that blades are sloped in direction of rotation, anticlockwise. Blade lengths for most of the fans are standard 48 inch, 24 inch etc. The most widely used materials for making ceiling fan blades are Wood, Plastic and Metal. Some manufacturers are providing customizable fan designs as per consumer's house interior design to making interior both look and feel cool. Some ceiling fan designs are shown below:

Injection moulding- Plastic moulding

The plastic parts for ceiling fan are be made from plastic granules. Firstly granules are fed via hopper into a heated barrel. Where the plastic will be melted at set temperature. The melted plastic is then injected through a nozzle into a mould cavity where it cools and hardens to the configuration of the cavity and the formed plastic parts will be ejected out. Canopy, Capacitor clamp will be formed using this process. Canopy is used to cover the capacitor wiring and wiring between the ceiling and the fan. Manufacturers can also form fan blades, designs accessories for fan blades or fan body, plastic ring etc. parts using injection moulding.

Metal parts fabrication

i. **Blades-** Blade making process contains process such as sheet cutting, punching, Blade angle setting, and Blade shank riveting, Painting etc. Shearing of a steel sheet

will be done. Then bending or twisting of the blades will be done with respect to a mid-plane of the blank to give the desired amount of twist. Here blade angle setting will be done using bending machine. For blade shank forming metal sheet will be casted using punch press machine. Further blade shank riveting will be done. Blades will dispatch for painting section where blades will be painted in desired shades. Before painting these parts pickling process will be done which is used to remove rust, impurities, and scale from the surface of formed metal parts.





ii. **Stator and Rotor manufacturing**- To form stator core, sheet lamination is used to form a laminated core instead of a solid piece to reduce eddy current losses. A cold rolled non grain oriented electrical steel strips is fed into a reciprocating stamping press with progressive stamping dies to form strips for laminated stator core. The die moves with the press, and when the press moves down the die closes to stamp the metal part. *Stator core is* the steel part consisting of thin steel sheets (laminations) stacked

together; usually with a thickness of about 0.5 millimetre. The laminations are bonded in order to create a stable core. Interlocking, Clamping, Welding, Bonding are some techniques to join the steel lamination stacks. Rotor can be formed using similar process.

- Welding technique- The laminations/lamellas are stacked loosely and subsequently joined with a weld seam using welding machine.

Laminations

Welding process

Formed stator core and rotor

- Interlocking technique- Stamping and interlocking will be performed by a high speed lamination stamping machine with the interlocking die system. The metal will punched and then laminated. The progressive die stamps has several interlocking points on the lamination, just like a stake, which is concave in the upper surface and convex in the lower side. When the convexity of one lamination is pressed to the concavity of the previously stamped lamination in the stamping-out process, the upper and the lower laminations are staked and fastened. When the required number of laminations will fastened, they will be separated with a pierced lamination. In this way, by progressive stamping of the high-speed stamping press, we will get a lamination stack in a determinate thickness, with all laminations closely arranged together and burrs in the same direction.

Metal strip insertion

Lamination Stamping process

Interlocking Stamping die

Formed parts

iii. **Shaft forging process-** Forged steel shafts are created through a manufacturing process that involves the shaping of the forged shaft using localized compressive forces. The forging process begins when a steel bar is struck repeatedly with a hammer or squeezed with a press.

Solid material **Forging process** **Final product after machining/heat process**

iv. **Downrod forming** - Downrod used to suspend the fan down from the ceiling. Steel pipes will be cut off in required length and are also inspected for defects. Further pipes will be drilled using drilling machine.

v. **Motor cover manufacturing- Die casting**

Motor covers of ceiling fan will be formed with die casting process. Iron will be melted in induction furnace with required amounts of iron metal. Contaminants are removed from the melted iron, and the iron, once melted, is then cast. Casting is the process of pouring the iron into a mould thus giving it a shape; shape of fan cover or motor casing. The melted-liquid iron will be filled in mould and will be allowed to set into moulds/slabs for solidification. Later cooling will be done. And formed parts will be ejected out. Further formed metal parts polishing and panting will be done. For painting these formed parts either liquid paint or powder coating will be used. Manufacturers can also form rotor part using die casting process.




Stator winding

Ceiling fan stator winding can be broken down into three steps: paper insertion process, winding process, stator impregnation varnish dripping process. Paper insertion and stator winding are be done 2 times for inner and outer slots respectively. This process machines are automated, only manual loading and unloading the ceiling fan motor stator, which significantly improves production efficiency and saves production costs. Firstly, inserting the insulation paper into the inner ring of the stator will be done, and then the coil winding of the inner ring of the stator will be completed. Further inserting the insulation paper into the outer ring of the stator will be done and the coil winding will be done for the same. After the ceiling fan motor stator winding, the fan stator fan starts the impregnation varnish dripping, help the enamelled wire of the stator can be fixed, so that the coil is not loose and the wire is not twisted, the friction between the wire and the wire is reduced, and the insulation performance of the stator can be increased. Besides, varnishing process of stator; stator buffing can also be done.



Assembly

The rotor will mounted on the fan cover and it will be fixed inside cover grips. Shaft will be pressed within the stator. This stator mechanism will be mounted on the bearing and spring; which is attached to fan cover. Air gap between the stator and the cover will be inspected. Then the stator will be fixed in a housing of fan cover. Ball bearing will be inserted both side of stator shaft. Both top and bottom metal fan cover will be screwed with screws, nut and bolts. Further capacitor will be fixed in capacitor clamp with the down rod and electrical wiring will be done with motor. Canopy will be fixed on electrical wiring. The blades will be placed on a metal plate or fan cover at the bottom and will be screwed by two tightly fixed screws one behind the other. The weight of the blade is supported on the cover plate. Then as per design specification required number of blades fixed symmetrically to the hub. Final product will dispatch for testing.





Testing

1. Quality Control- the finished product are tested for hardness, strength, durability, reliability, and other factors to ensure they meet the required specifications. At the testing station, electric and internal physical parameter testing is performed. To ensure

the reliability of the product, all the electrical and physical parameters will be verified.

2. Voltage testing- Low voltage and high voltage testing
3. Lock rotor test
4. Motor winding inspection will be done.
5. To verify the machine's ability to perform in accordance with its required rating and careful inspection, followed by surge comparison, winding resistance, and high-potential testing.
6. Airflow testing- This testing can be done at air delivery room using anemometer vane probe

3. PROJECT COMPONENTS

3.1 Land /Civil Work

The land require for this manufacturing unit will be approx. around 2500-3500 square feet.

We have not considered the cost of Land purchase & Building Civil work in the project. It is assumed that land & building will be on rent & approx. rental of the same will be Rs.50,000-60,000 per month.

3.2 Plant & Machinery

This is semi-automatic type of plant and production capacity is set to 200-220 pieces of finish product per day.

Machines-

- **Die casting machine**
  This machine is used for die casting process. Die casting is a casting process in which the liquid melt is pressed into a mold under high pressure and at a high filling speed.

- **Shearing machine**

  To shear raw steel metal in required manner shearing machine can be used.

- **Punch press machine**

  To form blades, blade shank punch press machine can be used.

- **Lamination stamping machine and interlock die**

  This machine is used to from stator and rotor part. Interlock die will be interlock the laminations.

- **Bending machine**

  To adjust blade angle or pitch bending machine can be used.

- **Riveting machine**

  To rivet blade and blade shank this machine can be used.

- **Stamping machine**

  Stamping machine is used in motor part forming.

- **Forging Press**

  To forge shaft this machine can be used.

- **Shaft pressing machine**

  To press shaft into stator this hydraulic press machine can be used.

- **Welding machine [Optional]**

  This machine is used to weld the laminations; to form stator core and rotor core/ring.

- **Paper inserting and Coil winding machine**

  These machines are used for stator winding in fan production. Paper inserting machine is used to insert paper in stator core.

- **Polishing/Buffing machine**

  Metal parts polishing can be done using buffing machine.

- **Injection moulding machine**

The plastic parts for ceiling fan are be made from plastic granules. Granules are fed via hopper into a heated barrel. Where the plastic will be melted at set temperature. The melted plastic is then injected through a nozzle into a mould cavity where it cools and hardens to the configuration of the cavity and the formed plastic parts will be ejected out.

- **Drilling machine**

  To drill downrods, shafts, blades, shank etc. drilling machine can be used.


- **Cut off machine**

  This machines can used to cut rods, shaft in required length.

- **Pneumatic Riveting Machine and air compressor**

  For painting formed metal parts riveting and air compressor is used.


- **Pickling Plant**

Pickling process is used to remove impurities, rust, and scale from the surface of a material.

- **Heating Chamber**

After powder coating *heating* is usually *required* to finish curing the coating.

- **Laser printer machine**

To engrave company name or logo on product laser printer can be used.

- **Electronics tools:**

1. Fan stator analyser- Resistance test, Insulation test, HV flash test, Surge test

2. Power supply (0-30V, 3A)

They take any input from 100V up to 220V AC, which is what comes out of your wall socket, and output up to 30V DC.

3. High and low voltage test equipment- To test the operation of fan motor with different voltage.

4. Anemometer- To inspect airflow of fan this tool is used.

5. Multimeter- It is an electronic measuring instrument that combines several measurement functions in one unit.

6. Tools- Screwdriver, Cutter, Wire stripper, Vernier calliper etc.

4 LICENSE & APPROVALS

- Trademark- It's a sign, design which identifies product of a particular source from those of others.
- GST
- NOC from Fire Department.
- NOC From Pollution Department (if applicable)
- Udyam Registration is required.
- Labour Registeration.

PROJECTED BALANCE SHEET **(in Lacs)**

PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
Liabilities					
Capital					
Opening Balance		5.17	8.53	12.59	16.28
Add:- Own Capital	2.48				
Add:- Retained Profit	5.19	7.86	10.55	13.70	16.32
Less:- Drawings	2.50	4.50	6.50	10.00	12.00
Closing Balance	5.17	8.53	12.59	16.28	20.61
Term Loan	13.60	10.20	6.80	3.40	-
Working Capital Limit	7.00	7.00	7.00	7.00	7.00
Sundry Creditors	2.79	4.13	4.86	5.63	6.44
Provisions & Other Liabilities	0.75	1.00	1.20	1.44	1.73
TOTAL :	**29.31**	**30.86**	**32.44**	**33.75**	**35.78**
Assets					
Fixed Assets (Gross)	17.00	17.00	17.00	17.00	17.00
Gross Depriciation	2.53	4.67	6.50	8.06	9.38
Net Fixed Assets	**14.48**	**12.33**	**10.50**	**8.94**	**7.62**
Current Assets					
Sundry Debtors	3.76	4.72	5.57	6.46	7.39
Stock in Hand	7.92	9.78	11.51	13.35	15.28
Cash and Bank	2.15	2.53	2.87	3.51	3.48
Loans and advances/other current assets	1.00	1.50	2.00	1.50	2.00
TOTAL :	**29.31**	**30.86**	**32.44**	**33.75**	**35.78**

PROJECTED PROFITABILITY STATEMENT **(in Lacs)**

PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
Capacity Utilisation %	**30%**	**35%**	**40%**	**45%**	**50%**
SALES					
CEILING FAN	94.05	118.12	139.18	161.41	184.86
Total	**94.05**	**118.12**	**139.18**	**161.41**	**184.86**
COST OF SALES					
Raw material cost	64.35	77.39	91.08	105.58	120.78
Electricity Expenses	1.15	1.34	1.54	1.73	1.92
Depreciation	2.53	2.15	1.83	1.56	1.32
Wages & labour	9.00	9.90	10.89	11.98	13.18
Repair & maintenance	0.94	1.18	1.39	1.61	1.85
Consumables	1.41	1.77	2.09	2.42	2.77
Packaging cost	1.41	1.77	2.09	2.42	2.77
Cost of Production	80.79	95.50	110.90	127.30	144.60
Add: Opening Stock	-	4.70	5.91	6.96	8.07
Less: Closing Stock	4.70	5.91	6.96	8.07	9.24
Cost of Sales	76.09	94.30	109.85	126.19	143.42
GROSS PROFIT	**17.96**	**23.82**	**29.33**	**35.22**	**41.44**
GROSS PROFIT RATIO	**19.10%**	**20.16%**	**21.07%**	**21.82%**	**22.42%**
Salary to Staff	3.12	3.43	3.78	4.15	4.57
Interest on Term Loan	1.50	1.32	0.95	0.58	0.20
Interest on working Capital	0.77	0.77	0.77	0.77	0.77
Rent	6.00	6.60	7.26	7.99	8.78
Selling & Administration Expenses	1.18	2.95	4.18	4.84	6.47
TOTAL	**12.57**	**15.08**	**16.93**	**18.33**	**20.80**
NET PROFIT	5.39	8.74	12.40	16.89	20.64
Taxation	0.20	0.87	1.84	3.19	4.32
PROFIT (After Tax)	5.19	7.86	10.55	13.70	16.32
NET PROFIT RATIO	**5.52%**	**6.66%**	**7.58%**	**8.49%**	**8.83%**

PROJECTED CASH FLOW STATEMENT **(in Lacs)**

PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
SOURCES OF FUND					
Own Margin	2.48				
Net Profit	5.39	8.74	12.40	16.89	20.64
Depriciation & Exp. W/off	2.53	2.15	1.83	1.56	1.32
Increase in Cash Credit	7.00	-	-	-	-
Increase In Term Loan	15.30	-	-	-	-
Increase in Creditors	2.79	1.34	0.73	0.77	0.81
Increase in Provisions & Other liabilities	0.75	0.25	0.20	0.24	0.29
TOTAL :	**36.24**	**12.47**	**15.16**	**19.46**	**23.07**
APPLICATION OF FUND					
Increase in Fixed Assets	17.00				
Increase in Stock	7.92	1.86	1.74	1.84	1.93
Increase in Debtors	3.76	0.96	0.84	0.89	0.94
Increase in loans and advances	1.00	0.50	0.50	- 0.50	0.50
Repayment of Term Loan	1.70	3.40	3.40	3.40	3.40
Drawings	2.50	4.50	6.50	10.00	12.00
Taxation	0.20	0.87	1.84	3.19	4.32
TOTAL :	**34.09**	**12.09**	**14.82**	**18.82**	**23.09**
Opening Cash & Bank Balance	-	2.15	2.53	2.87	3.51
Add : Surplus	2.15	0.38	0.33	0.64	-0.02
Closing Cash & Bank Balance	**2.15**	**2.53**	**2.87**	**3.51**	**3.48**

CALCULATION OF D.S.C.R

PARTICULARS	1st year	2nd year	3rd year	4th year	5th year
CASH ACCRUALS	7.72	10.01	12.38	15.25	17.65
Interest on Term Loan	1.50	1.32	0.95	0.58	0.20
Total	9.22	11.34	13.33	15.83	17.85
REPAYMENT					
Instalment of Term Loan	1.70	3.40	3.40	3.40	3.40
Interest on Term Loan	1.50	1.32	0.95	0.58	0.20
Total	3.20	4.72	4.35	3.98	3.60
DEBT SERVICE COVERAGE RATIO	**2.88**	**2.40**	**3.06**	**3.98**	**4.96**
AVERAGE D.S.C.R.					**3.46**

REPAYMENT SCHEDULE OF TERM LOAN							
					Interest		11.00%
Year	Particulars	Amount	Addition	Total	Interest	Repayment	Closing Balance
ist	Opening Balance	-					
	1st month		15.30	15.30	-	-	15.30
	2nd month	15.30	-	15.30	0.14	-	15.30
	3rd month	15.30	-	15.30	0.14	-	15.30
	4th month	15.30	-	15.30	0.14	-	15.30
	5th month	15.30	-	15.30	0.14	-	15.30
	6th month	15.30	-	15.30	0.14	-	15.30
	7th month	15.30	-	15.30	0.14	0.28	15.02
	8th month	15.02	-	15.02	0.14	0.28	14.73
	9th month	14.73	-	14.73	0.14	0.28	14.45
	10th month	14.45	-	14.45	0.13	0.28	14.17
	11th month	14.17	-	14.17	0.13	0.28	13.88
	12th month	13.88	-	13.88	0.13	0.28	13.60
					1.50	**1.70**	
2nd	Opening Balance						
	1st month	13.60	-	13.60	0.12	0.28	13.32
	2nd month	13.32	-	13.32	0.12	0.28	13.03
	3rd month	13.03	-	13.03	0.12	0.28	12.75
	4th month	12.75	-	12.75	0.12	0.28	12.47
	5th month	12.47	-	12.47	0.11	0.28	12.18
	6th month	12.18	-	12.18	0.11	0.28	11.90
	7th month	11.90	-	11.90	0.11	0.28	11.62
	8th month	11.62	-	11.62	0.11	0.28	11.33
	9th month	11.33	-	11.33	0.10	0.28	11.05
	10th month	11.05	-	11.05	0.10	0.28	10.77
	11th month	10.77	-	10.77	0.10	0.28	10.48
	12th month	10.48	-	10.48	0.10	0.28	10.20
					1.32	**3.40**	
3rd	Opening Balance						
	1st month	10.20	-	10.20	0.09	0.28	9.92
	2nd month	9.92	-	9.92	0.09	0.28	9.63
	3rd month	9.63	-	9.63	0.09	0.28	9.35
	4th month	9.35	-	9.35	0.09	0.28	9.07
	5th month	9.07	-	9.07	0.08	0.28	8.78
	6th month	8.78	-	8.78	0.08	0.28	8.50
	7th month	8.50	-	8.50	0.08	0.28	8.22
	8th month	8.22	-	8.22	0.08	0.28	7.93
	9th month	7.93	-	7.93	0.07	0.28	7.65
	10th month	7.65	-	7.65	0.07	0.28	7.37
	11th month	7.37	-	7.37	0.07	0.28	7.08
	12th month	7.08	-	7.08	0.06	0.28	6.80
					0.95	**3.40**	

4th	Opening Balance						
	1st month	6.80	-	6.80	0.06	0.28	6.52
	2nd month	6.52	-	6.52	0.06	0.28	6.23
	3rd month	6.23	-	6.23	0.06	0.28	5.95
	4th month	5.95	-	5.95	0.05	0.28	5.67
	5th month	5.67	-	5.67	0.05	0.28	5.38
	6th month	5.38	-	5.38	0.05	0.28	5.10
	7th month	5.10	-	5.10	0.05	0.28	4.82
	8th month	4.82	-	4.82	0.04	0.28	4.53
	9th month	4.53	-	4.53	0.04	0.28	4.25
	10th month	4.25	-	4.25	0.04	0.28	3.97
	11th month	3.97	-	3.97	0.04	0.28	3.68
	12th month	3.68	-	3.68	0.03	0.28	3.40
					0.58	**3.40**	
5th	Opening Balance						
	1st month	3.40	-	3.40	0.03	0.28	3.12
	2nd month	3.12	-	3.12	0.03	0.28	2.83
	3rd month	2.83	-	2.83	0.03	0.28	2.55
	4th month	2.55	-	2.55	0.02	0.28	2.27
	5th month	2.27	-	2.27	0.02	0.28	1.98
	6th month	1.98	-	1.98	0.02	0.28	1.70
	7th month	1.70	-	1.70	0.02	0.28	1.42
	8th month	1.42	-	1.42	0.01	0.28	1.13
	9th month	1.13	-	1.13	0.01	0.28	0.85
	10th month	0.85	-	0.85	0.01	0.28	0.57
	11th month	0.57	-	0.57	0.01	0.28	0.28
	12th month	0.28	-	0.28	0.00	0.28	-
					0.20	**3.40**	

DOOR TO DOOR	60	MONTHS
MORATORIUM PERIOD	6	MONTHS
REPAYMENT PERIOD	54	MONTHS

SAMADHAN
Nurturing Dreams - Innovative Solutions

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