PROJECT REPORT

Of

AIR FILTER

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding **Air Filter**.

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 A GLANCE

1	Name of the Entreprenuer		xxxxxxxxxx	
2	Constitution (legal Status)	:	xxxxxxxxxx	
3	Father / Spouse Name		xxxxxxxxxxxx	
4	Unit Address	:	xxxxxxxxxxxxxxxxxxxxxxx	
			District : xxxxxxx	
			Pin: xxxxxxx	State: xxxxxxxxxx
			Mobile xxxxxxx	
5	Product and By Product	:	**AIR FILTER(TWO WHEELER)**	
6	Name of the project / business activity proposed :		**AIR FILTER(TWO WHEELER) UNIT**	
7	Cost of Project	:	Rs.25.8 Lakhs	
8	Means of Finance			
	Term Loan		Rs.18.23 Lakhs	
	Own Capital		Rs.2.58 Lakhs	
9	Debt Service Coverage Ratio	:	1.80	
10	Pay Back Period	:	5	Years
11	Project Implementation Period	:	5-6	Months
12	Break Even Point	:	48%	
13	Employment	:	11	Persons
14	Power Requirement	:	15	KW
15	Major Raw materials	:	Plastic Pellets, Filter Paper and Packing material	
16	Estimated Annual Sales Turnover (Max Utilized Capacity)	:	72.13	Lakhs
17	Detailed Cost of Project & Means of Finance			

COST OF PROJECT

(Rs. In Lakhs)

	Particulars	Amount
	Land	Own/Rented
**	Building /Shed 1500 sq ft	9.00
	Plant & Machinery	10.50
	Furniture & Fixtures	0.75
	Working Capital Margin	5.55
	Total	**25.80**

MEANS OF FINANCE

Particulars	Amount
Own Contribution	2.58
Term Loan	18.23
Working Capital	5.00
Total	**25.80**

**** Building Civil Work is Taken at 600 Sq. feet which can increase or decrease as per individual construction choice and / or prevailing prices.**

TWO-WHEELER AIR FILTER

PRODUCT INTRODUCTION:

Every automobile is fitted with an Air Filter. The function of an Air Filter is to filter air, which is being sucked by the engine during succession stroke. A filter removes dust and other suspended particles of air which may damage the engine of two wheelers. Hence the function of air filter is very vital. The design of air filter is different for different models of two wheelers normally an air filter assembly consists of Aluminium Alloy/Zinc Alloy die casted top & bottom, sheet metal body surrounded by filter material.A particulate air filter is a device composed of fibrous or porous materials which removes solid particulates such as dust, pollenetc from the air. Filters containing an adsorbentor catalyst such as charcoal (carbon) may also remove odors and gaseous pollutants such as volatile organic compounds or ozone.

USES & MARKET POTENTIAL:

Air intake is a kind of open loop system. The only way to avoid contaminants entry into engine is use of filter. Air which is sucked by engine must be clean as much as possible. Contaminated air affects performance of engine, increases fuel consumption, exhaust fumes which are harmful to the environment. A properly performing air filter resulting in to reduced wear and extended life. Air filter is expected to clean all pre-combustion air & supply it free from contaminants.

A well-designed air intake filter is associated with following general objectives:

- ✓ Engine durability
- ✓ Filtration
- ✓ Flow management
- ✓ Pressure or head loss constraints
- ✓ Overall noise, vibration, and harshness standards
- ✓ Service requirements
- ✓ Packaging
- ✓ Styling/appearance
- ✓ Emissions

The demand of the Air Filters is closely linked with production of two wheelers in the country. These are required mainly as original equipment but these components have also replacement demand as a spare part. India automotive filter market is projected to grow at a CAGR of more than 10% during 2017 to 2023. Growth in the market is expected to be fueled by growing automobile sales, expanding vehicle fleet size and increasing purchasing power of consumers in the country.

MACHINERY REQUIREMENT:

Basic machineries requirement are as follows:

1. Single Slide Table Type Vertical Injection Moulding Machine
2. Other machines and equipments

RAW MATERIAL:

Basic raw materials are as follows:

1. Plastic Pellets (Depends on Two-Wheeler model, like Activa 3g uses PP)
2. Filter Paper (3-micron Filtration)
3. Packing Material

MANUFACTURING PROCESS:

The process employed is over moulding process which is one of three fundamental types of Injection moulding process. The raw materials used are procured from the local vendors and kept in the raw material inventory. At first, the mould of desired shape is precisely assembled in the clamping unit of the machine as per production requirement.

The barrel heaters are started and brought to the desired temperature to melt down the thermoplastic pellets to be used for overmolding process. Plastic pellets are then brought from the raw material inventory and fed into the hopper of the machine. From the hopper, these plastic pellets come into the feed section of the barrel. There is a screw inside the barrel which rotates about the vertical axis and moves the pellets into heating section of barrel where these plastic pellets melt to a semi-solid state and are ready to be injected into the mould of the machine.

Filter Paper are placed manually in the mould at the prescribed layout with precision. After this operator initiates the over moulding process thus, clamping unit slides inward and the injection unit moves down.

After this charging of cavity is performed by the application hydraulic force at desired pressure. After the charging completes water cooling of the mould is performed with cooling arrangements. After the cooling, the injection unit moves upward and the clamping unit slides outward. The ejector pins will eject the final product from the cavity.

Thus, air filter is obtained which can then be packed appropriately and be sent for sale.

FINANCIAL ASPECTS:

PROJECTED BALANCE SHEET

PARTICULARS	I	II	III	IV	V
SOURCES OF FUND					
Capital Account					
Opening Balance	-	3.02	4.95	8.06	11.80
Add: Additions	2.58	-	-	-	-
Add: Net Profit	0.94	3.32	5.61	7.74	9.87
Less: Drawings	0.50	1.40	2.50	4.00	6.00
Closing Balance	3.02	4.95	8.06	11.80	15.66
CC Limit	5.00	5.00	5.00	5.00	5.00
Term Loan	16.20	12.15	8.10	4.05	-
Sundry Creditors	0.44	0.51	0.58	0.66	0.74
TOTAL :	**24.67**	**22.61**	**21.75**	**21.51**	**21.41**
APPLICATION OF FUND					
Fixed Assets (Gross)	20.25	20.25	20.25	20.25	20.25
Gross Dep.	2.55	4.77	6.69	8.37	9.83
Net Fixed Assets	17.70	15.48	13.56	11.88	10.42
Current Assets					
Sundry Debtors	4.31	5.04	5.72	6.45	7.21
Stock in Hand	1.71	1.93	2.18	2.45	2.73
Cash and Bank	0.95	0.16	0.29	0.74	1.05
TOTAL :	**24.67**	**22.61**	**21.75**	**21.51**	**21.41**
	-	-	-	-	-

PROJECTED PROFITABILITY STATEMENT

PARTICULARS	I	II	III	IV	V
A) SALES					
Gross Sale	43.07	50.41	57.23	64.47	72.13
Total (A)	**43.07**	**50.41**	**57.23**	**64.47**	**72.13**
B) COST OF SALES					
Raw Mateiral Consumed	18.90	21.84	24.99	28.35	31.92
Electricity Expenses	2.16	2.34	2.52	2.70	2.88
Repair & Maintenance	0.22	0.25	0.29	0.32	0.36
Labour & Wages	8.98	9.87	10.86	11.95	13.14
Depreciation	2.55	2.22	1.93	1.68	1.46
Cost of Production	32.80	36.52	40.58	45.00	49.76
Add: Opening Stock /WIP	-	0.77	0.83	0.93	1.03
Less: Closing Stock /WIP	0.77	0.83	0.93	1.03	1.14
Cost of Sales (B)	32.03	36.45	40.49	44.89	49.65
C) GROSS PROFIT (A-B)	11.04	13.96	16.74	19.58	22.48
	25.62%	**27.70%**	**29.26%**	**30.37%**	**31.17%**
D) Bank Interest (Term Loan)	1.98	1.61	1.17	0.72	0.28
ii) Interest On Working Capital	0.55	0.55	0.55	0.55	0.55
E) Salary to Staff	5.41	5.95	6.55	7.20	7.92
F) Selling & Adm Expenses Exp.	2.15	2.52	2.86	3.22	3.61
TOTAL (D+E)	**10.09**	**10.64**	**11.13**	**11.70**	**12.36**
H) NET PROFIT	0.94	3.32	5.61	7.88	10.12
	2.2%	**6.6%**	**9.8%**	**12.2%**	**14.0%**
I) Taxation	-	-	-	0.14	0.26
J) PROFIT (After Tax)	0.94	3.32	5.61	7.74	9.87

PROJECTED CASH FLOW STATEMENT

PARTICULARS	I	II	III	IV	V
SOURCES OF FUND					
Own Contribution	2.58	-			
Net Profit	0.94	3.32	5.61	7.88	10.12
Depreciation & Exp. W/off	2.55	2.22	1.93	1.68	1.46
Increase In Cash Credit	5.00				
Increase In Term Loan	18.23	-	-	-	-
Increase in Creditors	0.44	0.07	0.07	0.08	0.08
TOTAL :	**29.74**	**5.61**	**7.62**	**9.64**	**11.67**
APPLICATION OF FUND					
Increase in Fixed Assets	20.25	-	-	-	-
Increase in Stock	1.71	0.22	0.25	0.27	0.29
Increase in Debtors	4.31	0.73	0.68	0.72	0.77
Repayment of Term Loan	2.03	4.05	4.05	4.05	4.05
Taxation	-	-	-	0.14	0.26
Drawings	0.50	1.40	2.50	4.00	6.00
TOTAL :	**28.79**	**6.40**	**7.48**	**9.19**	**11.36**
Opening Cash & Bank Balance	-	0.95	0.16	0.29	0.74
Add : Surplus	0.95	- 0.79	0.13	0.45	0.31
Closing Cash & Bank Balance	**0.95**	**0.16**	**0.29**	**0.74**	**1.05**

COMPUTATION OF MAKING OF AIR FILTER(TWO WHEELER)

Item to be Manufactured Air Filter(Two Wheeler)

Manufacturing Capacity per Day		700	pcs
No. of Working Hour		8	
No of Working Days per month		25	
No. of Working Day per annum		300	
Total Production per Annum		210,000	pcs
Year		Capacity	AIR FILTER(TWO WHEELER)
		Utilisation	
I		60%	126,000
II		65%	136,500
III		70%	147,000
IV		75%	157,500
V		80%	168,000

COMPUTATION OF RAW MATERIAL

Item Name		Quantity of Raw Material	Unit	Unit Rate of	Total CostPer Annum (100%)
Plastic Pellets		28,000.00	kg	85.00	2,380,000.00
Filter Paper		4,900.00	kg	130.00	637,000.00
Packing material		Ls			200,000.00
Total					**3,217,000.00**
Total Raw material in Rs lacs	at 100% Capacity				32.17
Cost per pcs				(In Rs)	**15.00**

Raw Material Consumed	Capacity Utilisation	Rate	Amount (Rs.)
I	60%	15.00	18.90
II	65%	16.00	21.84
III	70%	17.00	24.99
IV	75%	18.00	28.35
V	80%	19.00	31.92

COMPUTATION OF SALE

Particulars	I	II	III	IV	V
Op Stock	-	2,940.00	3,185.00	3,430.00	3,675.00
Production	126,000.00	136,500.00	147,000.00	157,500.00	168,000.00
	126,000.00	139,440.00	150,185.00	160,930.00	171,675.00
Less : Closing Stock(7 Days)	2,940.00	3,185.00	3,430.00	3,675.00	3,920.00
Net Sale	123,060.00	136,255.00	146,755.00	157,255.00	167,755.00
Sale Price per pcs	35.00	37.00	39.00	41.00	43.00
Sale (in Lacs)	**43.07**	**50.41**	**57.23**	**64.47**	**72.13**

COMPUTATION OF CLOSING STOCK & WORKING CAPITAL

PARTICULARS	I	II	III	IV	V
Finished Goods					
(7 Days requirement)	0.77	0.83	0.93	1.03	1.14
Raw Material					
(15 Days requirement)	0.95	1.09	1.25	1.42	1.60
Closing Stock	**1.71**	**1.93**	**2.18**	**2.45**	**2.73**

COMPUTATION OF WORKING CAPITAL REQUIREMENT

Particulars	Amount	Margin(10%)	Net Amount
Stock in Hand	1.71		
Less:			
Sundry Creditors	0.44		
Paid Stock	**1.27**	**0.13**	**1.14**
Sundry Debtors	4.31	0.43	3.88
Working Capital Requirement			**5.02**
Margin			0.56
MPBF			**5.02**
Working Capital Demand			**5.00**

BREAK UP OF LABOUR

Particulars		Wages Per Month	No of Employees	Total Salary
Supervisor		15,000.00	1	15,000.00
Plant Operator		12,000.00	1	12,000.00
Skilled Worker		10,000.00	2	20,000.00
Unskilled Worker		8,000.00	2	16,000.00
Helper		5,000.00	1	5,000.00
				68,000.00
Add: 10% Fringe Benefit				6,800.00
Total Labour Cost Per Month				74,800.00
Total Labour Cost for the year (In Rs. Lakhs)			7	8.98

BREAK UP OF SALARY

Particulars		Salary Per Month	No of Employees	Total Salary
Manager		15,000.00	1	15,000.00
Accountant cum store keeper		10,000.00	1	10,000.00
Administrative Staff		8,000.00	2	16,000.00
Total Salary Per Month				41,000.00
Add: 10% Fringe Benefit				4,100.00
Total Salary for the month				45,100.00
Total Salary for the year (In Rs. Lakhs)			4	5.41

COMPUTATION OF DEPRECIATION

Description	Land	Building/shed	Plant & Machinery	Furniture	**TOTAL**
Rate of Depreciation		**10.00%**	**15.00%**	**10.00%**	
Opening Balance	Leased		-	-	-
Addition	-	9.00	10.50	0.75	20.25
	-	9.00	10.50	0.75	20.25
TOTAL		9.00	10.50	0.75	20.25
Less : Depreciation	-	0.90	1.58	0.08	2.55
WDV at end of Ist year	-	8.10	8.93	0.68	17.70
Additions During The Year	-	-	-	-	-
	-	8.10	8.93	0.68	17.70
Less : Depreciation	-	0.81	1.34	0.07	2.22
WDV at end of IInd Year	-	7.29	7.59	0.61	15.48
Additions During The Year	-	-	-	-	-
	-	7.29	7.59	0.61	15.48
Less : Depreciation	-	0.73	1.14	0.06	1.93
WDV at end of IIIrd year	-	6.56	6.45	0.55	13.56
Additions During The Year	-	-	-	-	-
	-	6.56	6.45	0.55	13.56
Less : Depreciation	-	0.66	0.97	0.05	1.68
WDV at end of IV year	-	5.90	5.48	0.49	11.88
Additions During The Year	-	-	-	-	-
	-	5.90	5.48	0.49	11.88
Less : Depreciation	-	0.59	0.82	0.05	1.46
WDV at end of Vth year	-	5.31	4.66	0.44	10.42

REPAYMENT SCHEDULE OF TERM LOAN 11.0%

Year	Particulars	Amount	Addition	Total	Interest	Repayment	Cl Balance
I	Opening Balance						
	Ist Quarter	18.23	-	18.23	0.50	-	18.23
	Iind Quarter	18.23	-	18.23	0.50	-	18.23
	IIIrd Quarter	18.23	-	18.23	0.50	1.01	17.21
	Ivth Quarter	17.21	-	17.21	0.47	1.01	16.20
					1.98	2.03	
II	Opening Balance						
	Ist Quarter	16.20	-	16.20	0.45	1.01	15.19
	Iind Quarter	15.19	-	15.19	0.42	1.01	14.18
	IIIrd Quarter	14.18	-	14.18	0.39	1.01	13.16
	Ivth Quarter	13.16		13.16	0.36	1.01	12.15
					1.61	4.05	
III	Opening Balance						
	Ist Quarter	12.15	-	12.15	0.33	1.01	11.14
	Iind Quarter	11.14	-	11.14	0.31	1.01	10.13
	IIIrd Quarter	10.13	-	10.13	0.28	1.01	9.11
	Ivth Quarter	9.11		9.11	0.25	1.01	8.10
					1.17	4.05	
IV	Opening Balance						
	Ist Quarter	8.10	-	8.10	0.22	1.01	7.09
	Iind Quarter	7.09	-	7.09	0.19	1.01	6.08
	IIIrd Quarter	6.08	-	6.08	0.17	1.01	5.06
	Ivth Quarter	5.06		5.06	0.14	1.01	4.05
					0.72	4.05	
V	Opening Balance						
	Ist Quarter	4.05	-	4.05	0.11	1.01	3.04
	Iind Quarter	3.04	-	3.04	0.08	1.01	2.03
	IIIrd Quarter	2.03	-	2.03	0.06	1.01	1.01
	Ivth Quarter	1.01		1.01	0.03	1.01	0.00
					0.28	4.05	

Door to Door Period	60	Months
Moratorium Period	6	Months
Repayment Period	54	Months

CALCULATION OF D.S.C.R

PARTICULARS	I	II	III	IV	V
CASH ACCRUALS	3.49	5.54	7.54	9.41	11.33
Interest on Term Loan	1.98	1.61	1.17	0.72	0.28
Total	5.47	7.16	8.71	10.14	11.61
REPAYMENT					
Repayment of Term Loan	2.03	4.05	4.05	4.05	4.05
Interest on Term Loan	1.98	1.61	1.17	0.72	0.28
Total	4.00	5.66	5.22	4.77	4.33
DEBT SERVICE COVERAGE RATIO	**1.37**	**1.26**	**1.67**	**2.12**	**2.68**
AVERAGE D.S.C.R.			**1.80**		

COMPUTATION OF ELECTRICITY

(A) POWER CONNECTION				
Total Working Hour per day		Hours	8	
Electric Load Required		KW	15	
Electricity Charges		per unit	7.50	
Total Working Days			300	
Electricity Charges				2.70
Add : Minimim Charges (@ 10%)				
(B) DG set				
No. of Working Days			300	days
No of Working Hours			0.5	Hour per day
Total no of Hour			150	
Diesel Consumption per Hour			8	
Total Consumption of Diesel			1,200	
Cost of Diesel			65.00	Rs. /Ltr
Total cost of Diesel			0.78	
Add : Lube Cost @15%			0.12	
Total			**0.90**	
Total cost of Power & Fuel at 100%				3.60
Year		**Capacity**		**Amount**
				(in Lacs)
I		60%		2.16
II		65%		2.34
III		70%		2.52
IV		75%		2.70
V		80%		2.88

PLANT & MACHINERY

PARTICULARS	QTY.	RATE	AMOUNT IN RS.
Single Slide Table Type Vertical Injection Moulding Machine	1	840000	840,000.00
Other machines and equipments		50000	40,000.00
Total			880,000.00
GST			158,400.00
Net Amount			1,038,400.00
Net Amount(Rounded Off)			**1,050,000.00**

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