PROJECT REPORT

Of

AUTOMOBILE SPOKES

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding **Automobile Spokes**.

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.]

SAMADHAN
Nurturing Dreams - Innovative Solutions

Lucknow Office: Sidhivinayak Building , 27/1/B, Gokhlley Marg, Lucknow-226001

Delhi Office : Multi Disciplinary Training Centre, Gandhi Darshan Rajghat, New Delhi 110002

Email : info@udyami.org.in
Contact : +91 7526000333, 444, 555

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	:	**AUTOMOBILE SPOKES**	
6	Name of the project / business activity proposed :		**AUTOMOBILE SPOKES MAKING UNIT**	
7	Cost of Project	:	Rs.24.67 Lakhs	
8	Means of Finance			
	Term Loan		Rs.16.2 Lakhs	
	Own Capital		Rs.2.47 Lakhs	
	Working capital		Rs.6 Lakhs	
9	Debt Service Coverage Ratio	:	2.98	
10	Pay Back Period	:	5	Years
11	Project Implementation Period	:	5-6	Months
12	Break Even Point	:	29%	
13	Employment	:	8	Persons
14	Power Requirement	:	30.00	HP
15	Major Raw materials	:	MS Wire Rolls, Nipples, Electroplating chemical, Pickling chemical,Packing material	
16	Estimated Annual Sales Turnover (Max Capacity)	:	188.24	Lakhs
17	Detailed Cost of Project & Means of Finance			

COST OF PROJECT

(Rs. In Lakhs)

Particulars	Amount
Land	Own/Rented
Building /Shed 1000 Sq ft	4.00
Plant & Machinery	12.00
Furniture & Fixtures	2.00
Working Capital	6.67
Total	**24.67**

MEANS OF FINANCE

Particulars	Amount
Own Contribution	2.47
Working Capital(Finance)	6.00
Term Loan	16.20
Total	**24.67**

AUTOMOBILE SPOKES

Introduction: Spokes are the connecting rods between the bicycle hub and the rim. Their main purpose is to transfer the loads between the hub and the rim, which are caused by the weight of the rider and the bike. When the wheel is built all the spokes are tightened to a high tension, more tension than the weight of a person adds. This spoke tension preloads the whole rim with compressive stress, enough to stop the rim area below the hub from buckling. Spokes have nut-like devices at the rim called nipples. When viewed from above, nipples are turned clockwise with the spoke wrench to tighten spoke tension and counterclockwise to loosen it. Modern spokes are available in a variety of lengths, shapes, materials, finishes, and attachment types. All spokes provide the basic function of connecting the hub to the rim. This seemingly straight forward static function becomes far more complex when we consider dynamic loading patterns. Bicycle wheels operate under complex repeated loading conditions referred to as "fatigue cycles". Spokes must carry combined loading from the following primary sources.

Uses & Market Potential: The fortunes of the auto sector turned upside down last year. New vehicle sales grew by 14.2 per cent overall in 2017-18

(over 2016-17), more than double the 6.8 per cent growth in 2016-17 (over 2015-16). The good run continued into April-September 2018, with overall auto sales growing by 10.07 per cent in this period. The global automotive wheels aftermarket is projected to grow at a CAGR of 3.53% during the forecast period to reach USD 4.5 billion by 2025 from an estimated USD 3.5 billion in 2018. The automobile industry has witnessed a continuous increase in the average weight of the vehicle owing to the rising demand for safety and comfort features. This has led to huge innovations and R&D efforts from both the OEMs and aftermarket players in increasingly using lightweight materials to reduce the overall weight.

Raw material: Major raw material are as follows:

1. Mild steel wire rolls(2 mm to 4 mm)
2. Nipples
3. Electroplating chemical
4. Pickling chemical
5. Packing material

Machinery Requirement: Major machineries & equipments are as follows:

S No.	Machine	Unit	Price
1	Automatic spoke forming machine	1 set	700000
2	Electroplating Plant	1 set	390000
3	Other equipments & hand tools	Ls	110000
	Total Amount		**1200000**

Manufacturing Process: The main raw material is mild steel wire coil/rod of required diameter. The MS Rod Wire set of desired diameter (2 mm, 2.3 mm, etc.) with some allowable tolerances as per the customer requirement are procured from the local vendor. These wire rods are fed through the acids for cleaning and etching process to remove dust and forming wire set rust-resistant. The acid and etching solutions are formed in a

tank and the wire set of MS Rod has been placed in the tank with hanging and rolling arrangement for sufficient time.
In the next step, these coils are fed into Automatic spoke forming machine. The wire set fed into the machine through rolling arrangement. These rollers first straighten the wire. The combination for reducing wire of die-rolls studs on which they revolve, shafts carrying such studs and eccentric to machine axis.
Then machine cuts the wire along its length and fed into head upsetting arrangement. This forms the head of the spoke by press fitting. In the next step the head is given an angular bend by bending device. Threads are made over bend head by rolling the wire between two threaded dies of size 1.8mm.The critical thing is that the spoke threads far enough into the nipple. If the spoke doesn't thread far enough into the nipple, the head of the nipple is not as strong as it should be and can eventually collapse. After this, nipples are threaded to the spokes.
In the next step, these spokes are fed into electroplating plant for chemical treatment to make them wear and corrosion resistant. After this, they are packed and dispatched as per required quantity.

Area: The industrial setup requires space for Inventory, workshop or manufacturing area, space for power supply utilities and auxiliary like Generator setup. Also some of the area of building is required for office staff facilities, documentation, office furniture, etc. Thus, the approximate total area required for complete industrial setup is 1500 to 2000Sqft. Civil work cost will be Rs 4 Lac (Approx.)

Power Requirement: The power consumption required to run all the machinery could be approximated as 30 Hp

Manpower Requirement: There are requirement of skilled machine operators to run the machine set. Experience quality engineers are required for desired quality control. Some helpers are also required to transfer the material from one work station to other. Office staffs are required to maintain the documentation. The approximate manpower required is 8 including 1

Supervisor, 1 Plant operator, 1 unskilled worker, 1 Helper and 1 Security guard. 3 Skilled worker including Accountant, Manager and Sales person.

Bank Term Loan: Rate of Interest is assumed to be at 11%

Depreciation: Depreciation has been calculated as per the Provisions of Income Tax Act, 1961

Approvals & Registration Requirement:

Basic registration required in this project:

- GST Registration
- Udyog Aadhar Registration (Optional)
- Choice of a Brand Name of the product and secure the name with Trademark if require.
- NOC from State Pollution Control Board

Implementation Schedule:

S No.	Activity	Time required
1.	Acquisition of premises	1-2 Months
2.	Procurement & installation of Plant & Machinery	1-2 Months
3.	Arrangement of Finance	1.5-2 Months
4.	Requirement of required Manpower	1 Month
5.	Commercial Trial Runs	1 Month
	Total time Required (some activities shall run concurrently)	5-6 Months

FINANCIALS

PROJECTED BALANCE SHEET					
PARTICULARS	I	II	III	IV	V
SOURCES OF FUND					
Capital Account					
Opening Balance	-	5.47	9.88	13.83	18.54
Add: Additions	2.47	-	-	-	-
Add: Net Profit	5.50	7.41	9.95	12.71	13.75
Less: Drawings	2.50	3.00	6.00	8.00	10.00
Closing Balance	5.47	9.88	13.83	18.54	22.29
CC Limit	6.00	6.00	6.00	6.00	6.00
Term Loan	14.40	10.80	7.20	3.60	-
Sundry Creditors	2.17	2.48	2.69	2.90	3.10
TOTAL :	**28.04**	**29.16**	**29.72**	**31.04**	**31.40**
APPLICATION OF FUND					
Fixed Assets (Gross)	18.00	18.00	18.00	18.00	18.00
Gross Dep.	2.40	4.47	6.26	7.80	9.13
Net Fixed Assets	15.60	13.53	11.74	10.20	8.87
Current Assets					
Sundry Debtors	2.75	3.22	3.61	3.99	4.39
Stock in Hand	6.56	9.25	10.16	11.07	12.00
Cash and Bank	3.13	3.16	4.21	5.78	6.14
TOTAL :	**28.04**	**29.16**	**29.72**	**31.04**	**31.40**

- - - - -

PROJECTED PROFITABILITY STATEMENT

PARTICULARS	I	II	III	IV	V
A) SALES					
Gross Sale	117.97	138.16	154.72	171.16	188.24
Total (A)	**117.97**	**138.16**	**154.72**	**171.16**	**188.24**
B) COST OF SALES					
Raw Material Consumed	92.93	106.44	115.32	124.19	133.06
Elecricity Expenses	2.51	2.74	2.97	3.20	3.42
Repair & Maintenance	1.18	1.38	3.09	3.42	5.65
Labour & Wages	6.55	6.88	8.26	9.91	11.89
Depreciation	2.40	2.07	1.79	1.54	1.33
Cost of Production	105.57	119.52	131.42	142.25	155.35
Add: Opening Stock /WIP	-	3.46	3.93	4.40	4.86
Less: Closing Stock /WIP	3.46	3.93	4.40	4.86	5.35
Cost of Sales (B)	102.11	119.05	130.95	141.79	154.87
C) GROSS PROFIT (A-B)	15.85	19.11	23.77	29.37	33.38
	13.44%	**13.83%**	**15.37%**	**17.16%**	**17.73%**
D) Bank Interest (Term Loan)	1.76	1.44	1.04	0.64	0.25
ii) Interest On Working Capital	0.66	0.66	0.66	0.66	0.66
E) Salary to Staff	3.78	4.16	4.99	5.99	7.19
F) Selling & Adm Expenses Exp.	3.54	4.14	4.64	5.13	5.65
TOTAL (D+E)	**9.74**	**10.40**	**11.33**	**12.43**	**13.74**
H) NET PROFIT	6.12	8.71	12.44	16.95	19.64
	5.2%	**6.3%**	**8.0%**	**9.9%**	**10.4%**
I) Taxation	0.61	1.31	2.49	4.24	5.89
J) PROFIT (After Tax)	5.50	7.41	9.95	12.71	13.75

PROJECTED CASH FLOW STATEMENT					
PARTICULARS	I	II	III	IV	V
SOURCES OF FUND					
Own Contribution	2.47	-			
Reserve & Surplus	6.12	8.71	12.44	16.95	19.64
Depriciation & Exp. W/off	2.40	2.07	1.79	1.54	1.33
Increase In Cash Credit	6.00				
Increase In Term Loan	16.20	-	-	-	-
Increase in Creditors	2.17	0.32	0.21	0.21	0.21
TOTAL :	**35.35**	**11.10**	**14.44**	**18.70**	**21.18**
APPLICATION OF FUND					
Increase in Fixed Assets	18.00	-	-	-	-
Increase in Stock	6.56	2.69	0.91	0.91	0.93
Increase in Debtors	2.75	0.47	0.39	0.38	0.40
Repayment of Term Loan	1.80	3.60	3.60	3.60	3.60
Taxation	0.61	1.31	2.49	4.24	5.89
Drawings	2.50	3.00	6.00	8.00	10.00
TOTAL :	**32.22**	**11.07**	**13.39**	**17.13**	**20.82**
Opening Cash & Bank Balance	-	3.13	3.16	4.21	5.78
Add : Surplus	3.13	0.03	1.05	1.57	0.36
Closing Cash & Bank Balance	**3.13**	**3.16**	**4.21**	**5.78**	**6.14**

COMPUTATION OF MAKING OF AUTOMOBILE SPOKES			
Item to be Manufactured Automobile Spokes			
Manufacturing Capacity per day		43,000	Pcs
No. of Working Hour		8	
No of Working Days per month		25	
No. of Working Day per annum		300	
Total Production per Annum		1,29,00,000	Pcs
Total Production per Annum		1,29,000	Packet of 100 each
Year		Capacity Utilisation	AUTOMOBILE SPOKES
I		55%	70,950.00
II		60%	77,400.00
III		65%	83,850.00
IV		70%	90,300.00
V		75%	96,750.00

COMPUTATION OF RAW MATERIAL					
Item Name		Quantity of Raw Material	Unit	Unit Rate	Total CostPer Annum (100%)
Mild steel wire roll		65,000.00	Kg	155.00	1,00,75,000.00
Nipples		1,29,60,000.00	Pcs	0.50	64,80,000.00
Electroplating chemical		910.00	Kg	100.00	91,000.00
Pickling chemical		1,500.00	Ltr.	100.00	1,50,000.00
Packing material		Lumsum			1,00,000.00
Total					**1,68,96,000.00**
Total Raw material in Rs lacs					168.96

Raw Material Consumed	Capacity Utilisation		Amount (Rs.)		
I	55%		92.93		
II	60%		106.44	5% Increase in Cost	
III	65%		115.32	5% Increase in Cost	
IV	70%		124.19	5% Increase in Cost	
V	75%		133.06	5% Increase in Cost	

COMPUTATION OF SALE					
Particulars	**I**	**II**	**III**	**IV**	**V**
Op Stock	-	2,365.00	2,580.00	2,795.00	3,010.00
Production	70,950.00	77,400.00	83,850.00	90,300.00	96,750.00
	70,950.00	79,765.00	86,430.00	93,095.00	99,760.00
Less : Closing Stock(10 Days)	2,365.00	2,580.00	2,795.00	3,010.00	3,225.00
Net Sale	68,585.00	77,185.00	83,635.00	90,085.00	96,535.00
Sale Price per Packet	172.00	179.00	185.00	190.00	195.00
Sale (in Lacs)	**117.97**	**138.16**	**154.72**	**171.16**	**188.24**

COMPUTATION OF CLOSING STOCK & WORKING CAPITAL					
PARTICULARS	I	II	III	IV	V
Finished Goods					
(10 Days requirement)	3.46	3.93	4.40	4.86	5.35
Raw Material					
(10 Days requirement)	3.10	5.32	5.77	6.21	6.65
Closing Stock	**6.56**	**9.25**	**10.16**	**11.07**	**12.00**

COMPUTATION OF WORKING CAPITAL REQUIREMENT			
Particulars	**Amount**	**Margin(10%)**	**Net Amount**
Stock in Hand	6.56		
Less:			
Sundry Creditors	2.17		
Paid Stock	**4.39**	**0.44**	**3.95**
Sundry Debtors	2.75	0.28	2.48
Working Capital Requirement			**6.43**
Margin			0.71
MPBF			**6.43**
Working Capital Demand			**6.00**

BREAK UP OF LABOUR				
Particulars		Wages Per Month	No of Employees	Total Salary
Supervisor		16,000.00	1	16,000.00
Plant Operator		12,000.00	1	12,000.00
Unskilled Worker		10,000.00	1	10,000.00
Helper		8,000.00	1	8,000.00
Security Guard		6,000.00	1	6,000.00
				52,000.00
Add: 5% Fringe Benefit				2,600.00
Total Labour Cost Per Month				54,600.00
Total Labour Cost for the year (In Rs. Lakhs)			5	6.55

BREAK UP OF SALARY				
Particulars		Salary Per Month	No of Employees	Total Salary
Manager		12,000.00	1	12,000.00
Accountant cum store keeper		10,000.00	1	10,000.00
Sales		8,000.00	1	8,000.00
Total Salary Per Month				30,000.00
Add: 5% Fringe Benefit				1,500.00
Total Salary for the month				31,500.00
Total Salary for the year (In Rs. Lakhs)			3	3.78

COMPUTATION OF DEPRECIATION					
Description	Land	Building/shed	Plant & Machinery	Furniture	**TOTAL**
Rate of Depreciation		**10.00%**	**15.00%**	**10.00%**	
Opening Balance	Leased		-	-	-
Addition	-	4.00	12.00	2.00	18.00
	-	4.00	12.00	2.00	18.00
		-	-	-	
TOTAL		4.00	12.00	2.00	18.00
Less : Depreciation	-	0.40	1.80	0.20	2.40
WDV at end of Ist year	-	3.60	10.20	1.80	15.60
Additions During The Year	-	-	-	-	-
	-	3.60	10.20	1.80	15.60
Less : Depreciation	-	0.36	1.53	0.18	2.07
WDV at end of IInd Year	-	3.24	8.67	1.62	13.53
Additions During The Year	-	-	-	-	-
	-	3.24	8.67	1.62	13.53
Less : Depreciation	-	0.32	1.30	0.16	1.79
WDV at end of IIIrd year	-	2.92	7.37	1.46	11.74
Additions During The Year	-	-	-	-	-
	-	2.92	7.37	1.46	11.74
Less : Depreciation	-	0.29	1.11	0.15	1.54
WDV at end of IV year	-	2.62	6.26	1.31	10.20
Additions During The Year	-	-	-	-	-
	-	2.62	6.26	1.31	10.20
Less : Depreciation	-	0.26	0.94	0.13	1.33
WDV at end of Vth year	-	2.36	5.32	1.18	8.87

REPAYMENT SCHEDULE OF TERM LOAN						11.0%	
Year	**Particulars**	**Amount**	**Addition**	**Total**	**Interest**	**Repayment**	**Cl Balance**
I	Opening Balance						
	Ist Quarter	-	16.20	16.20	0.45	-	16.20
	Iind Quarter	16.20	-	16.20	0.45	-	16.20
	IIIrd Quarter	16.20	-	16.20	0.45	0.90	15.30
	Ivth Quarter	15.30	-	15.30	0.42	0.90	14.40
					1.76	1.80	
II	Opening Balance						
	Ist Quarter	14.40	-	14.40	0.40	0.90	13.50
	Iind Quarter	13.50	-	13.50	0.37	0.90	12.60
	IIIrd Quarter	12.60	-	12.60	0.35	0.90	11.70
	Ivth Quarter	11.70		11.70	0.32	0.90	10.80
					1.44	3.60	
III	Opening Balance						
	Ist Quarter	10.80	-	10.80	0.30	0.90	9.90
	Iind Quarter	9.90	-	9.90	0.27	0.90	9.00
	IIIrd Quarter	9.00	-	9.00	0.25	0.90	8.10
	Ivth Quarter	8.10		8.10	0.22	0.90	7.20
					1.04	3.60	
IV	Opening Balance						
	Ist Quarter	7.20	-	7.20	0.20	0.90	6.30
	Iind Quarter	6.30	-	6.30	0.17	0.90	5.40
	IIIrd Quarter	5.40	-	5.40	0.15	0.90	4.50
	Ivth Quarter	4.50		4.50	0.12	0.90	3.60
					0.64	3.60	
V	Opening Balance						
	Ist Quarter	3.60	-	3.60	0.10	0.90	2.70
	Iind Quarter	2.70	-	2.70	0.07	0.90	1.80
	IIIrd Quarter	1.80	-	1.80	0.05	0.90	0.90
	Ivth Quarter	0.90		0.90	0.02	0.90	- 0.00
					0.25	3.60	

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	7.90	9.48	11.74	14.25	15.08
Interest on Term Loan	1.76	1.44	1.04	0.64	0.25
Total	9.66	10.91	12.78	14.90	15.33
REPAYMENT					
Repayment of Term Loan	1.80	3.60	3.60	3.60	3.60
Interest on Term Loan	1.76	1.44	1.04	0.64	0.25
Total	3.56	5.04	4.64	4.24	3.85
DEBT SERVICE COVERAGE RATIO	**2.72**	**2.17**	**2.75**	**3.51**	**3.98**
AVERAGE D.S.C.R.			**2.98**		

COMPUTATION OF ELECTRICITY				
(A) POWER CONNECTION				
Total Working Hour per day		Hours	8	
Electric Load Required		HP	30	
Load Factor			0.7460	
Electricity Charges		per unit	7.50	
Total Working Days			300	
Electricity Charges				4,02,840.00
Add : Minimim Charges (@ 10%)				
(B) DG set				
No. of Working Days			300	days
No of Working Hours			0.3	Hour per day
Total no of Hour			90	
Diesel Consumption per Hour			8	
Total Consumption of Diesel			720	
Cost of Diesel			65.00	Rs. /Ltr
Total cost of Diesel			0.47	
Add : Lube Cost @15%			0.07	
Total			**0.54**	
Total cost of Power & Fuel at 100%				4.57
Year		**Capacity**		**Amount**
				(in Lacs)
I		55%		2.51
II		60%		2.74
III		65%		2.97
IV		70%		3.20
V		75%		3.42

SAMADHAN
Nurturing Dreams - Innovative Solutions

DISCLAIMER

The views expressed in this Project Report are advisory in nature. SAMADHAN assume no financial liability to anyone using the content for any purpose. All the materials and content contained in Project report is for educational purpose and reflect the views of the industry which are drawn from various research material sources from internet, experts, suppliers and various other sources. The actual cost of the project or industry will have to be taken on case to case basis considering specific requirement of the project, capacity and type of plant and other specific factors/cost directly related to the implementation of project. It is intended for general guidance only and must not be considered a substitute for a competent legal advice provided by a licensed industry professional. SAMADHAN hereby disclaims any and all liability to any party for any direct, indirect, implied, punitive, special, incidental or other consequential damages arising directly or indirectly from any use of the Project Report Content, which is provided as is, and without warranties.