

PROJECT REPORT

Of

SPARK PLUG

PURPOSE OF THE DOCUMENT

This particular pre-feasibility is regarding Spark Plug Manufacturing unit.

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 Entrepreneur : xxxxxxxxxxxx
- 2 Constitution (legal Status) : xxxxxxxxxxxx
- 3 Father / Spouse Name : xxxxxxxxxxxxxx
- 4 Unit Address : xxxxxxxxxxxxxxxxxxxxxxxxx
- District : xxxxxxxx
- Pin: xxxxxxxx State: xxxxx
- Mobile xxxxxxxx
- 5 Product and By Product : **SPARK PLUG**
- 6 Name of the project / business activity proposed : **SPARK PLUG MANUFACTURING UNIT**
- 7 Cost of Project : Rs.22.82 Lakhs
- 8 Means of Finance
- Term Loan Rs.17.1 Lakhs
- Own Capital Rs.2.28 Lakhs
- Working Capital Rs.3.44 Lakhs
- 9 Debt Service Coverage Ratio : 2.47
- 10 Pay Back Period : 5 Years
- 11 Project Implementation Period : 5-6 Months
- 12 Break Even Point : 25%
- 13 Employment : 11 Persons
- 14 Power Requirement : 50.00 HP
- 15 Major Raw materials : Steel,Aluminum oxide ceramic, Nickle copper alloys,
: Nickle alloy steel
- 16 Estimated Annual Sales Turnover (Max Capacity) : 126.20 Lakhs
- 17 Detailed Cost of Project & Means of Finance

COST OF PROJECT

(Rs. In Lakhs)

Particulars	Amount
Land	Own/Rented
Plant & Machinery	18.50
Furniture & Fixtures	0.50
Working Capital	3.82
Total	22.82

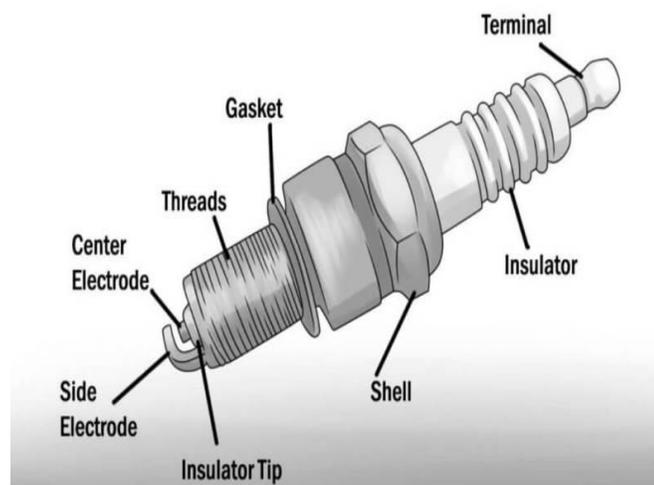
MEANS OF FINANCE

Particulars	Amount
Own Contribution	2.28
Working Capital(Finance)	3.44
Term Loan	17.10
Total	22.82

SPARK PLUG MANUFACTURING UNIT

Introduction:

The ignition system for petrol-driven engines is external i.e. during the compression stroke of the engine, electrical spark is used to trigger the combustion of compressed air-fuel mixture. This electrical spark is produced using spark plug. In simple words, spark plug is the device responsible to initiate combustion process in petrol engine. Typically, the spark plugs are positioned toward the top of the cylinder head. The housing (having multiple components), insulator, and electrodes are the three primary components of a spark plug. Terminal connects with the ignition system with the help of high tension cord and its function is to conduct voltage to the central electrode. Insulator is used for flashover protection and to insulate the central shaft, terminal, and center electrode from high voltage i.e. it is used to prevent escape of high voltage before it gets to the electrode tip. Resistor suppresses the ignition noise that occurs during the sparking process, aids in the prevention of electrical interference with other electrical components in the vehicle, as well as radio reception interruption.



Uses & Market Potential:

According to a recent market research study, the worldwide spark plug market is expected to reach USD 6.5 billion by the end of 2025, growing at a CAGR of 5% over the projected period. The worldwide spark plug market is expected to increase as the automobile sector expands. The growing demand for automobiles all over the world is the primary reason driving the spark plug market's rise. The government's increased rigorous norms in terms of pollution and fuel efficiency regulations is also a key driver in the growth of the spark plug industry. The Covid 19 epidemic has thrown a wrench in the market, causing delays in the supply chain, demand, and device manufacture. The financial businesses and financial markets have suffered as a result of the shutdown. The worldwide spark plug market is divided into two types based on product type: hot and cold spark. The market is divided into platinum, copper, and iridium spark plugs based on the materials used. The market is divided into OME and aftermarket segments based on the sales channel. The market is divided into four categories based on application: maritime, industrial, automotive, and others.

Product:

Spark Plug

Raw Material:

The raw materials are mentioned below:

- Steel
- Aluminum oxide ceramic
- Nickle copper alloys
- Nickle alloy steel

Manufacturing Process:

The steps are:

- ✓ Raw material procurement
- ✓ Extrusion
- ✓ Machining
- ✓ Rolling
- ✓ Partial Blending
- ✓ Pressing
- ✓ Grinding
- ✓ Tamping
- ✓ Machining

Area:

The industrial setup requires space for Inventory, workshop or manufacturing area, space for power supply utilities and polishing area. Also, some of the area of building is required for office staff facilities, office furniture, etc. Thus, the approximate total area required for complete industrial setup is 1500-2000Sqft.

Cost of Machines:

Machine	Quantity	Rate	Amount
Extrusion Press	1	700000	700000
Centre Lathe	1	200000	200000
Threading Machine	1	75000	75000

Wire Rolling Machine	1	100000	100000
Grinding Machine	1	200000	200000
Induction welding machine	1	450000	450000
Pillar drilling machine	1	75000	75000
Other equipment's and tools	-	-	50000
Total Amount			1850000

Power Requirement- The estimated Power requirement is taken at 50 HP.

Manpower Requirement— Following manpower is required:

- Machine operator-2
- Skilled/unskilled worker-3
- Helper-4
- Manager cum Accountant-1
- Sales Personnel-1

FINANCIALS

PROJECTED BALANCE SHEET

PARTICULARS	I	II	III	IV	V
<u>SOURCES OF FUND</u>					
<u>Capital Account</u>					
Opening Balance	-	2.97	4.58	7.42	10.98
Add: Additions	2.28	-	-	-	-
Add: Net Profit	4.48	6.02	7.83	9.56	11.79
Less: Drawings	3.80	4.40	5.00	6.00	7.50
Closing Balance	2.97	4.58	7.42	10.98	15.27
CC Limit	3.44	3.44	3.44	3.44	3.44
Term Loan	15.20	11.40	7.60	3.80	-
Sundry Creditors	1.80	2.14	2.50	2.87	3.25
TOTAL :	23.40	21.56	20.95	21.08	21.95
<u>APPLICATION OF FUND</u>					
Fixed Assets (Gross)	19.00	19.00	19.00	19.00	19.00
Gross Dep.	2.83	5.23	7.27	9.01	10.50
Net Fixed Assets	16.18	13.77	11.73	9.99	8.50
Current Assets					
Sundry Debtors	2.61	3.23	3.80	4.41	5.05
Stock in Hand	3.01	4.28	4.98	5.72	6.47
Cash and Bank	1.61	0.28	0.44	0.97	1.93
TOTAL :	23.40	21.56	20.95	21.08	21.95

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PROJECTED PROFITABILITY STATEMENT

PARTICULARS	I	II	III	IV	V
<u>A) SALES</u>					
Gross Sale	65.25	80.73	95.09	110.23	126.20
Total (A)	65.25	80.73	95.09	110.23	126.20
<u>B) COST OF SALES</u>					
Raw Material Consumed	36.00	42.84	49.94	57.30	64.94
Electricity Expenses	3.36	3.92	4.48	5.04	5.60
Repair & Maintenance	0.98	1.21	1.43	1.65	1.89
Labour & Wages	11.09	13.86	16.63	19.79	22.76
Depreciation	2.83	2.40	2.05	1.74	1.48
Cost of Production	54.25	64.23	74.52	85.52	96.67
Add: Opening Stock /WIP	-	1.81	2.14	2.48	2.85
Less: Closing Stock /WIP	1.81	2.14	2.48	2.85	3.22
Cost of Sales (B)	52.44	63.90	74.17	85.16	96.30
C) GROSS PROFIT (A-B)	12.81	16.83	20.91	25.07	29.90
	19.63%	20.85%	21.99%	22.75%	23.69%
D) Bank Interest i) (Term Loan)	1.85	1.52	1.10	0.68	0.26
ii) Interest On Working Capital	0.38	0.38	0.38	0.38	0.38
E) Salary to Staff	4.79	6.22	7.84	9.57	11.48
F) Selling & Adm Expenses Exp.	1.31	2.26	2.85	3.53	4.04
G) TOTAL (D+E+F)	8.33	10.38	12.17	14.15	16.16
H) NET PROFIT	4.48	6.45	8.74	10.92	13.74
	6.9%	8.0%	9.2%	9.9%	10.9%
I) Taxation	-	0.43	0.91	1.36	1.95
J) PROFIT (After Tax)	4.48	6.02	7.83	9.56	11.79

PROJECTED CASH FLOW STATEMENT

PARTICULARS	I	II	III	IV	V
<u>SOURCES OF FUND</u>					
Own Contribution	2.28	-	-	-	-
Reserve & Surplus	4.48	6.45	8.74	10.92	13.74
Depreciation & Exp. W/off	2.83	2.40	2.05	1.74	1.48
Increase In Cash Credit	3.44	-	-	-	-
Increase In Term Loan	17.10	-	-	-	-
Increase in Creditors	1.80	0.34	0.35	0.37	0.38
TOTAL :	31.93	9.20	11.14	13.03	15.60
<u>APPLICATION OF FUND</u>					
Increase in Fixed Assets	19.00	-	-	-	-
Increase in Stock	3.01	1.27	0.70	0.73	0.75
Increase in Debtors	2.61	0.62	0.57	0.61	0.64
Repayment of Term Loan	1.90	3.80	3.80	3.80	3.80
Taxation	-	0.43	0.91	1.36	1.95
Drawings	3.80	4.40	5.00	6.00	7.50
TOTAL :	30.32	10.53	10.98	12.50	14.64
Opening Cash & Bank Balance	-	1.61	0.28	0.44	0.97
Add : Surplus	1.61	1.33	0.16	0.53	0.96
Closing Cash & Bank Balance	1.61	0.28	0.44	0.97	1.93

COMPUTATION OF CLOSING STOCK & WORKING CAPITAL

PARTICULARS	I	II	III	IV	V
<u>Finished Goods</u>					
(10 Days requirement)	1.81	2.14	2.48	2.85	3.22
<u>Raw Material</u>					
(10 Days requirement)	1.20	2.14	2.50	2.87	3.25
Closing Stock	3.01	4.28	4.98	5.72	6.47

COMPUTATION OF WORKING CAPITAL REQUIREMENT

Particulars	Amount	Margin(10%)	Net Amount
Stock in Hand	3.01		
Less:			
Sundry Creditors	1.80		
Paid Stock	1.21	0.12	1.09
Sundry Debtors	2.61	0.26	2.35
Working Capital Requirement			3.44
Margin			0.38
MPBF			3.44
Working Capital Demand			3.44

REPAYMENT SCHEDULE OF TERM LOAN

11.0%

Year	Particulars	Amount	Addition	Total	Interest	Repayment	CI Balance
I	Opening Balance						
	Ist Quarter	-	17.10	17.10	0.47	-	17.10
	Iind Quarter	17.10	-	17.10	0.47	-	17.10
	IIIrd Quarter	17.10	-	17.10	0.47	0.95	16.15
	Ivth Quarter	16.15	-	16.15	0.44	0.95	15.20
					1.85	1.90	
II	Opening Balance						
	Ist Quarter	15.20	-	15.20	0.42	0.95	14.25
	Iind Quarter	14.25	-	14.25	0.39	0.95	13.30
	IIIrd Quarter	13.30	-	13.30	0.37	0.95	12.35
	Ivth Quarter	12.35		12.35	0.34	0.95	11.40
					1.52	3.80	
III	Opening Balance						
	Ist Quarter	11.40	-	11.40	0.31	0.95	10.45
	Iind Quarter	10.45	-	10.45	0.29	0.95	9.50
	IIIrd Quarter	9.50	-	9.50	0.26	0.95	8.55
	Ivth Quarter	8.55		8.55	0.24	0.95	7.60
					1.10	3.80	
IV	Opening Balance						
	Ist Quarter	7.60	-	7.60	0.21	0.95	6.65
	Iind Quarter	6.65	-	6.65	0.18	0.95	5.70
	IIIrd Quarter	5.70	-	5.70	0.16	0.95	4.75
	Ivth Quarter	4.75		4.75	0.13	0.95	3.80
					0.68	3.80	
V	Opening Balance						
	Ist Quarter	3.80	-	3.80	0.10	0.95	2.85
	Iind Quarter	2.85	-	2.85	0.08	0.95	1.90
	IIIrd Quarter	1.90	-	1.90	0.05	0.95	0.95
	Ivth Quarter	0.95		0.95	0.03	0.95	0.00
					0.26	3.80	

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
<u>CASH ACCRUALS</u>	7.31	8.42	9.88	11.30	13.27
Interest on Term Loan	1.85	1.52	1.10	0.68	0.26
Total	9.16	9.94	10.98	11.98	13.53
<u>REPAYMENT</u>					
Repayment of Term Loan	1.90	3.80	3.80	3.80	3.80
Interest on Term Loan	1.85	1.52	1.10	0.68	0.26
Total	3.75	5.32	4.90	4.48	4.06
DEBT SERVICE COVERAGE RATIO	2.44	1.87	2.24	2.67	3.33
AVERAGE D.S.C.R.			2.47		

Assumptions:

1. Production Capacity of Spark Plug Manufacturing unit is taken at 500 Units per day. First year, Capacity has been taken @ 30%.
2. Working shift of 10 hours per day has been considered.
3. Raw Material stock and Finished goods closing stock has been taken for 10 days.
4. Credit period to Sundry Debtors has been given for 12 days.
5. Credit period by the Sundry Creditors has been provided for 15 days.
6. Depreciation and Income tax has been taken as per the Income tax Act,1961.
7. Interest on working Capital Loan and Term loan has been taken at 11%.
8. Salary and wages rates are taken as per the Current Market Scenario.
9. Power Consumption has been taken at 50 HP.
10. Selling Prices & Raw material costing has been increased by 3% & 2% respectively in the subsequent years.

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