

# **WHEEL BALANCING & ALIGNMENT UNIT**

## **1. INTRODUCTION:**

In automobiles, it is very essential that all the Wheels of a Vehicle are completely balanced for good ride and vehicle control quality for the drivers. Similarly, if the wheels need to be aligned so that wheels are rotating in uniform manner on its axle. If there is imbalance and misalignment the vehicle control is affected and wear and tear of steering linkage bushes and tyres is more in addition to safety implications.

To overcome these problems, computerized Wheel Balancing and Wheel Alignment machines are very popular remedial measures.

## **2. PRODUCT & ITS APPLICATION:**

For automobile wheels, there are wheel balancing machines available that are fully automatic, accurate, quick and precise in their work. To reduce high wear tear of wheel axles and other components and improve the steering control and safety on road, it has become now essential to get the wheels balanced.

Similarly, the wheels once mounted on vehicles have to be properly aligned on its axles so that vehicle tyre is rotating in perfect axial position. If the wheels are not aligned, the wear of tyres will be more and uneven and free movement of wheels will be affected. The alignment machines are also automatic in detection and suggesting corrective measure and very quick.

## **3. DESIRED QUALIFICATIONS FOR PROMOTER:**

Any graduate with some experience can take up these services. It is normally taken up with tyre and wheel repairs and replacement services.

## **4. INDUSTRY OUTLOOK/TREND**

The total number of registered motor vehicles in India was 210 million as on 31.03. 2015. Most of the vehicle population is in 7 states viz. Maharashtra, Tamil Nadu, Uttar Pradesh, Gujarat, Karnataka, Rajasthan and Madhya Pradesh, having more than 10 million registered motor vehicles as on 31.03. 2015.

With growing population of Vehicles the auto servicing business in India is expected to grow exponentially in the near future. In terms of revenue, car servicing industry is estimated to be over 20,000 cr annually and slated to be at 33000 cr. By 2020.

Of the auto service activity, wheel balancing and alignment service has emerged as a prominent segment in view of the importance of ride quality and overall longer life of crucial suspension as well as auto engines.

The car servicing market is mostly served by a vast network of unorganized multi brand (local garages). These units depend on special service units viz Car Battery, wheel balancing, engine emission test, injector cleaning/ engine tuning, glass repair etc in urban areas. The market of authorized workshops and SME independent small garages can be tapped by the new unit, mostly for post warranty vehicle service market.

#### **5. MARKET POTENTIAL AND MARKETING ISSUES. IF ANY:**

There is a very good market potential for the computerized wheel balancing and wheel alignment workshop. Now a day, these workshops are very common in urban areas, and suitable for all passenger cars, light trucks and motorcycles with special flange in case of wheel balancing. With the decline in passenger car prices and availability of easy finance for passenger and commercial vehicles, on road vehicles are increasing by leaps and bounds.

The awareness of the quality of ride that can be improved with wheel alignment and balancing and advantages of lower wear and tear of tyres and suspension link bushings etc. has now made these services almost part of regular service schedule. Therefore, the demand for such computerized workshops is rapidly increasing coinciding with increase in number of vehicles.

#### **6. RAW MATERIAL REQUIREMENTS:**

There is very little raw material need as this is a corrective alignment and fitment service. In balancing small weight placement along wheel rim requires specially cast zinc or lead weights for attachments. These are readily available in market.

## 7. MANUFACTURING PROCESS:

The wheels of vehicle are mounted on machine and it is rotated at various speeds. If wheel is not properly balanced, the dynamic forces are set in motion in both radial and axial directions on the shaft. These forces increase the load on bearings that are sensed with sensors to measure the location at which the imbalance causes vibration and stress. The balancing machines measures these vibrations and forces along the wheel and suggest exact place and the grams of weight addition required.

If such stress is not corrected the forces will damage various members of vehicle, unpleasant and dangerous vibrations will give poor ride in vehicle.

Besides, when the wheels of a vehicle are not properly aligned, the free movement of wheels gets obstructed and tyres start bubbling, which results into lesser life for tyres. The wheel alignment machines display fault on screen automatically and are equipped with automatic self-check, user's friendly calibration and protection in wheel clamping and steering linkage adjustment.

## 8. MANPOWER REQUIREMENT:

The unit shall require highly skilled service persons. The unit can start from 4 employees initially and increase to 11 or more depending on business volume.

Sr. No	Type of Employees	Monthly Salary	No of Employees				
			Year 1	Year 2	Year 3	Year 4	Year 5
1	Skilled Operators	15000	1	1	2	2	2
2	Semi-Skilled/ Helpers	8000	2	4	6	6	6
1	Supervisor/ Manager	20000	0	0	0	1	1
2	Accounts/ Marketing	16000	1	1	1	1	1
3	Other Staff	8000	0	0	0	1	1
	TOTAL		4	6	9	11	11

## 9. IMPLEMENTATION SCHEDULE:

The unit can be implemented within 4 months from the serious initiation of project work.

<b>Sr. No</b>	<b>Activities</b>	<b>Time Required in Months</b>
1	Acquisition of Premises	-
2	Construction (if Applicable)	-
3	Procurement and Installation of Plant and Machinery	2
4	Arrangement of Finance	2
5	Manpower Recruitment and start up	2
	Total Time Required (Some Activities run concurrently)	4

#### **10. COST OF PROJECT:**

The unit will require total project cost of Rs 15.36 lakhs as shown below:

<b>Sr. No</b>	<b>Particulars</b>	<b>In Lakhs</b>
1	Land	0.00
2	Building	0.00
3	Plant and Machinery	11.09
4	Fixtures and Electrical Installation	1.60
5	Other Assets/ Preliminary and Preoperative Expenses	0.75
6	Margin for working Capital	1.92
	<b>TOTAL PROJECT COST</b>	<b>15.36</b>

#### **11. MEANS OF FINANCE:**

The project will require promoter to invest about Rs 5.28 lakhs and seek bank loans of Rs 10.08 lakhs based on 70% loan on fixed assets.

<b>Sr. No</b>	<b>Particulars</b>	<b>In Lakhs</b>
1	Promoters Contribution	5.28

2	Loan Finance	10.08
	TOTAL :	15.36

## 12. WORKING CAPITAL REQUIREMENTS:

Working capital requirements are calculated as below:

Sr. No	Particulars	Gross Amount	Margin %	Margin Amount	Bank Finance
1	Inventories	0.36	40	0.15	0.22
2	Receivables	1.00	50	0.50	0.50
3	Overheads	1.13	100	1.13	0.00
4	Creditors	0.36	40	0.15	0.22
	TOTAL	2.85		1.92	0.94

## 13. LIST OF MACHINERY REQUIRED:

Sr. No	Particulars	UOM	Qty	Rate	Total Value
	Main Machines/ Equipment				
1	3D WHEEL ALIGNMENT MACHINE with 2 camera system Computerized Sensors (with 14" color monitor, key board, disk drive, 4 Sensors, printer, and other standard accessories	Nos	1	35000 0	350000
2	Computerized Wheel Balancing Machine for Wheels up to 65 kg. Weight and maximum 850 mm of external wheel diameter with all standard accessory	Nos	1	20000 0	200000
3	Hydraulic Jacks	Nos	4	16000	64000
4	Tool kit	Nos	4	35000	140000
Sr. No	Particulars	UOM	Qty	Rate	Total Value
5	Automatic Tyre Changer with Tilting Pole, Integrated Pneumatic bead breaker, Mounting Lever, Inflating Gun and Manometer, Plastic Protection of Beed Braking Blade and clamps	Nos	1	17500 0	175000
6	Air Compressor system	Nos	1	40000	40000
7	Pit construction and Installation cost	LS	1	13000 0	130000
	subtotal :				1099000
	Tools and Ancillaries				

1	Tools and gauges	LS	1	5000	5000
2	Misc. tools etc.	LS	1	5000	5000
	subtotal :				10000
	Fixtures and Elect Installation				
	Storage racks and trolleys	LS	1	5000	5000
	Other Furniture	LS	1	50000	50000
	Telephones/ Computer	LS	1	30000	30000
	Electrical Installation	LS	1	75000	75000
	subtotal :				160000
	Other Assets/ Preliminary and Preoperative Expenses	LS	1	75000	75000
	<b>TOTAL PLANT MACHINERY COST</b>				<b>1344000</b>

All the equipments and tooling are available from local manufacturers. The entrepreneur needs to ensure proper selection of equipments. It may be worthwhile to look at reconditioned /used equipments and toolings. Some of the machinery and dies and toolings suppliers are listed here below:

1. M/s. Samvit Garage Equipments  
Plot No. 105, Sector -18, Near State Bank Academy,  
VPO- Sarhaul, Gurgaon, Haryana, 122 001 (India)
  
2. **Auto Service Equipment**  
7-B, Gopala Towers, 25, Rajendra Place, New Delhi-110008
  
3. Sarveshwari Technologies Limited  
No. 355, Deepali, Pitampura,  
New Delhi-110034, Delhi, India
  
- 5 Tech Fanatics Garage Equipment  
Plot No. 487/36, National Market Peeragarhi  
New Delhi- 110087, Delhi, India

The above list of machine supplier is illustrative. There are many machinery, dies and tools suppliers and consultants at several industrial clusters all over India where you may find suppliers of services and machinery for a chosen product mix.

#### 14. PROFITABILITY CALCULATIONS:

Sr. No	Particulars	UOM	Year Wise estimates				
			Year 1	Year 2	Year 3	Year 4	Year 5
1	Capacity Utilization	%	50	60	70	80	80
2	Sales	Rs Lakhs	12.00	14.40	16.80	19.20	19.20
3	Raw Materials & Other Direct Inputs	Rs Lakhs	2.90	3.48	4.06	4.64	4.64
4	Gross Margin	Rs Lakhs	9.10	10.92	12.74	14.56	14.56
5	Overheads Except Interest	Rs Lakhs	7.60	7.60	7.60	7.60	7.60
6	Interest	Rs Lakhs	1.41	1.41	1.41	1.41	1.41
7	Depreciation	Rs Lakhs	1.34	1.34	1.34	1.34	1.34
8	Net Profit Before Tax	Rs Lakhs	-1.25	0.57	2.39	4.21	4.21

The basis of profitability calculation:

The Unit will have capacity of 000 vehicles like Cars/ Vans Jeeps/ SUV etc. The prevailing service charges are ranging from Rs 250 to Rs 1000 per vehicle. The material requirements are mostly utilities. In case of repair/ replacement material costs are charged extra at cost and labor. Consumables costs also considered based on prevailing rate. Energy Costs are considered at Rs 7 per Kwh. The depreciation of plant is taken at 10 % and Interest costs are taken at 14 -15 % depending on type of industry.

#### 15. BREAK EVEN ANALYSIS

The project is can reach break-even capacity at 42.02 % of the installed capacity as depicted here below:

Sr. No	Particulars	UOM	Value
1	Sales at Full Capacity	Rs Lakhs	24.00
2	Variable Costs	Rs Lakhs	5.80

3	Fixed Cost incl. Interest	Rs Lakhs	10.35
4	Break Even Capacity	% of Inst Capacity	56.89

#### **16. STATUTORY/ GOVERNMENT APPROVALS**

The unit will require state industry unit registration with District Industry center. No other procedures are involved. Other registration as per Labor laws are ESI, PF etc. Before starting the unit will also need GST registration for procurement of materials as also for sale of goods. As such there is no pollution control registration requirements, however the unit will have to ensure safe environment through installation of chimney etc as per rules. Solid waste disposal shall have to meet the required norms. Entrepreneur may contact State Pollution Control Board where ever it is applicable.

#### **17. BACKWARD AND FORWARD INTEGRATION**

As such there is not much scope for organic backward or forward integration. The entrepreneur needs to ensure service speed to build up reputation, reliability and quality of services rendered. Also, personal rapport of key persons can generate good business volumes.

#### **18. TRAINING CENTERS/COURSES**

There are no specific training centers. The most important scope of learning is leading Brands / competitors across the world by scanning the Internet and downloading data from websites of Viz. North American, Europe, China etc markets.

Udyamimitra portal (link: [www.udyamimitra.in](http://www.udyamimitra.in) □) can also be accessed for hand-holding services viz. application filling / project report preparation, EDP, financial Training, Skill Development, mentoring etc.

Entrepreneurship program helps to run business successfully is also available from Institutes like Entrepreneurship Development Institute of India (EDII) and its affiliates all over India.

#### **Disclaimer:**

Only few machine manufacturers are mentioned in the profile, although many machine manufacturers are available in the market. The addresses given for machinery manufacturers have been taken from reliable sources, to the best of knowledge and contacts. However, no responsibility is admitted, in case any inadvertent error or incorrectness is noticed therein. Further the same have been given by way of information only and do not carry any recommendation.



Source:- Udyami Mitra/Sidbi