

1.1 AUTOMOBILE

An automobile is a self-propelled vehicle which is used for the transportation over the ground. Here, self-propelled vehicle means the vehicle which runs with its own power. Automobiles can be used for transportation of passengers and cargo.

1.2 COMPONENTS OF AN AUTOMOBILE

An automobile mainly consists of two parts :

1. Body,
2. Chassis.

1. **Body**: *Body is that part of an automobile where the passengers can sit in or where the cargo can be placed. It also protects the passengers and cargo. The materials used for making of a body can be wood, steel, aluminium and glass. The seats for passengers are made of steel, foam and cloth. The body is fixed to the chassis or frame. The shape of the body depends upon the use of the vehicle. Followings are the main types of bodies in use as shown in fig. 1.1 :*

- (i) Bus body
- (ii) Car body
- (iii) Jeep body
- (iv) Truck body (full)
- (v) Truck body (half)
- (vi) Dumper truck
- (vii) Tanker
- (viii) Open platform type truck
- (ix) Tractor
- (x) Tractor with trailer
- (xi) Delivery van
- (xii) Open cars
- (xiii) Articulated vehicles
- (xiv) Fire vehicle
- (xv) Crane Truck

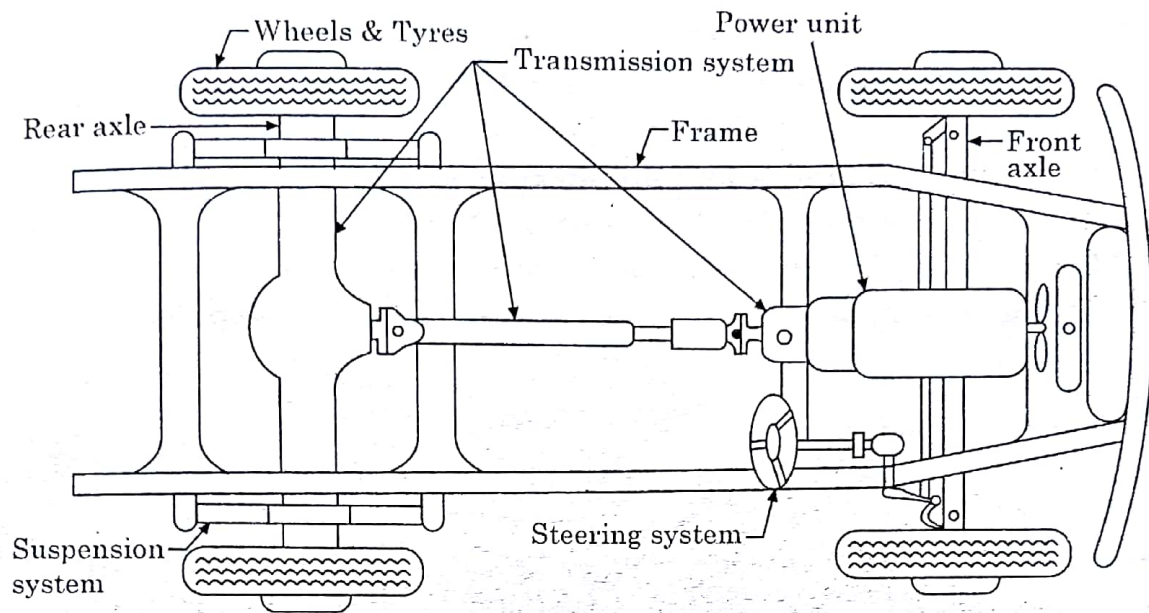


Fig. 1.2 : Automobile Chassis

- (i) Basic structure or frame
- (ii) Power unit
- (iii) Transmission system
- (iv) Axles
- (v) Wheels and tyres
- (vi) Suspension system
- (vii) Electrical system
- (viii) Steering system
- (ix) Braking system

1.3 HISTORY AND DEVELOPMENT OF AUTOMOBILE

The automobile has been around for more than 100 years. The first generation automobiles were powered by gasoline fuelled engines. They were called gas buggies. The engine used at that time had one cylinder which was able to produce only one or two H.P.

In 1880, and Internal combustion engine vehicle was developed by German and French engineers. The present time automobile is the development of this vehicle.

The next automobile was built by Benz Karl in 1885 and it was a tricycle having I.C. Engine. In 1885-86, Diamler, another German, built a Four-wheel buggy and its engine was mounted on a wooden structure. These vehicles were not very much efficient in braking and were prone to accidents. due to which vehicles were not very

much efficient in braking and were not very much efficient in braking and were prone to accidents, due to which people stopped them using.

In 1895 two brothers of USA (Charles and Frank) put a forward step in automobile industry and built a first automobile. By that time Henry Fork and other were also doing the same job. In 1908 Ford put the whole of America on wheels and it was T-FORD and 20,000 cars from Ford factory were sold and First assembly line production of the automobile was achieved by Henry Ford's company.

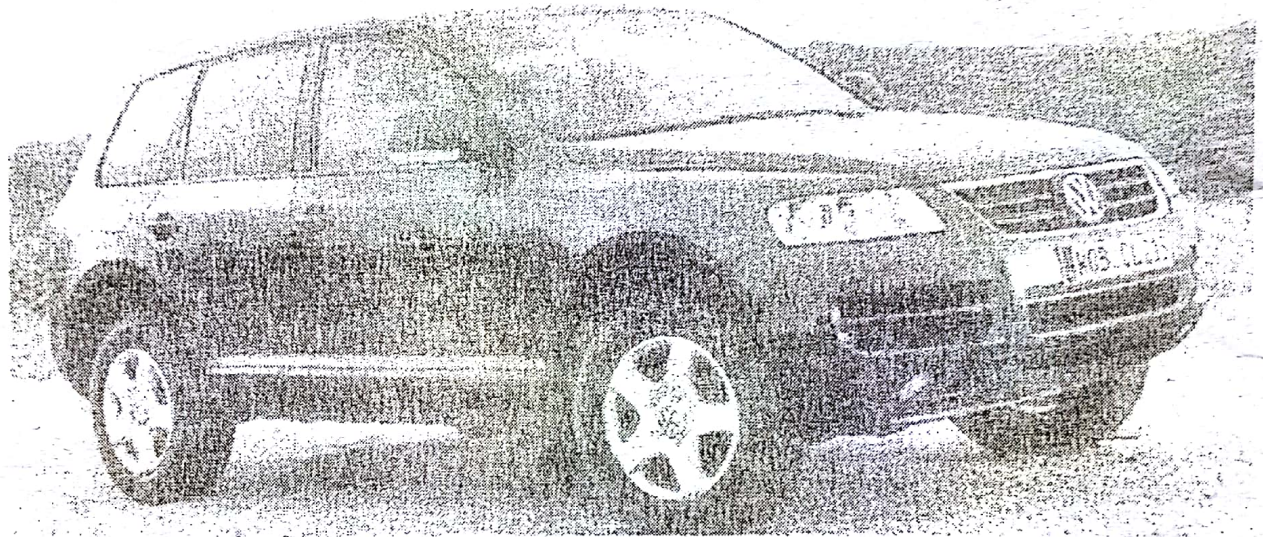


Fig. 1.3

In 1920, gradual changes in the design and construction in automobile started. Designers started to produce such vehicles which will function under all conditions, will have longer life and will work efficiently besides safety to the people. And this process is gonging on at a faster rate even today.

1.4 VARIOUS TYPES OF AUTOMOBILES MANUFACTURES IN INDIA

Type	Manufacturer	Brand Name
1. Car/Jeep	1. Fiat India Auto Ltd., Dhar (M.P.)	Palio, Petra, Siena, Uno
	2. Ford India Ltd. Chengarpathe (T.N.)	Ikon, Fiesta, Endeavour, Fusion.
	3. General Motors India, Ltd, Halol (Guj)	Aveo, Chevrolet, Opel, Corsa
	4. Hindustan Motors, Hoogly (W.B.)	Ambassdor, Contessa, Lancer

Type	Manufacturer	Brand Name
2. Motorcycle / Scooter /Maped	5. Honda SIEL Cars Ltd. Noida	City, Accord
	6. Hyundai Motors Ltd.	Santro, Accent
	7. Mahindra and Mahindra Mumbai	Commander, Marshal, Scorpio,
	8. Maruti Udgoy Ltd, Gurgaon (H.R)	Maruti 800, Alto, Zen, Wagon-R, Esteem, Swift, Baleno, Vitara, Omni, Versa, Gypsyking
	9. Mercedes-Benz India Ltd. (Pune)	MB14D 2.9., MB 100D 2.9 E200, E230, E250
	10. Premier Automobiles	Premier Padmini
	11. Tata Motors Ltd.	Indica, Indigo, Safari, Sumo, Marina
	12. Toyato Kirloskar Motors Ltd. (Bangalura)	Qualis, Innova, Camry, Corolla
	1. Bajaj Auto Ltd. Pune	Discover, Boxer, CT.100
	2. Here Honda Motors India Ltd.	CD Deluxe, CD Dawn, Splender, CBZ Passion, Pleasure
	3. Here Motors Ltd. Gaziabad.	Hero Majestic, Hero puch, Smart, Shakti, EZEE, Turbo, Winner Activa, Unicorn
	4. Honda Motorcycle and Scooter Gurgaon (India)	Activa, Unicorn
	5. Kinetic Motors Pvt. Ltd., Indore	Luna, Zoom, Style, Marvel, Pride
	6. LML India Ltd. Kanpur	CRD 100, Beamer, Freedom, Trendy, Scooty, N.V., Star, Select
	7. Royal Enfield Motors India Ltd., Chennai	Bullet, Explorer, Clipper, Crusader, Interceptor
	8. Suzuki Motors Corporations.	Heat, Zeus, Max 100, Shogun, Samurai, Shaoline

Type	Manufacturer	Brand Name
3. Bus/Truck/ Mini Bus	9. TVSMotorCo/Hosur/Mysore	Victor, Star city, Fiero, spectra, Scooty, Teen Z, TVS 50 XL, champ Gladiator, Crux, G5
	10. Yamaha Motors India Pvt. Ltd. Faridabad/Surajpur (U.P)	Gladiator, Crux, G5 RX 135, RXZ, RBX.
	1. Ashok Leyland, Chennai	Viking, Cheetah, Panther, Lynx. Double Decker, Houlage, Comet
	2. Force Motors Ltd., Pune	Traveller Citiline, Commuter, Excel
4. Tractor	3. Tata Motors Jamshedput/ Pune/Lucknow	Star Bus, Globus, Skool, Standard, LPT 1613, LPT 2515, LPS, SK 1613, LPK. Tata 207 SFC 407
	1. Escorts Ltd. Faridabad	Escorts, powertrac, Farmtrac
	2. Force Motors Ltd., Pune	Balwan
	3. International Tractors Ltd. Hoshiarpur	Sonalika
4. Three Wheelers	4. Mahindra and Mahindra, Mumbai/Nagpur	Yuvraj, Bhoomiputra, Sarpanch, Arjun
	5. Punjab Tractors Ltd. Mohali	Swaraj
	6. Tractor And Farm Equipment Ltd., Chennai	Tafe 3600 4010 DE, Tafe 5000 De
	1. Bajaj Auto Ltd. Pune	RE25, RE45 CNU Re 45 LPG, LC25
	2. Force Motors Ltd. Pune	Minidor, Pickup, Tipper
	3. Paiggio Motors	CNG pickup APE
	4. Sonalika	APE
	Three wheeler, Hoshiarpur	Sonalika, D-450, D750