



Participant Handbook

Sector
Automotive

Sub-Sector
Automotive Vehicle Service

Occupation
Technical Service Repair

Reference ID: **ASC/ Q 1417**
NSQF Level : 3



**Car Washer and Assistant
Service Technician**

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Automotive Skills Development Council (ASDC)
ASDC Contact Details:
Sat Paul Mittal Building, 1/6, Siri Institutional Area, Khel Gaon Road
New Delhi 110049
Email: info@asdc.org.in
Website: www.asdc.org.in
Phone: 011 4186 8090

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Shri Narendra Modi
Prime Minister of India

**“ Skilling is building a better India.
If we have to move India towards
development then Skill Development
should be our mission. ”**



Certificate

COMPLIANCE TO QUALIFICATION PACK – NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

AUTOMOTIVE SKILLS DEVELOPMENT COUNCIL

for

SKILLING CONTENT : PARTICIPANT HANDBOOK

Complying to National Occupational Standards of

Job Role/Qualification Pack: 'Car Washer and Assistant Service Technician'

QP No. 'ASC/Q 1417 Nsqf Level 3,

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*Valid up to' date mentioned above (whichever is earlier)

Sunil K. Chaturvedi
Chief Executive Officer, ASDC

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The content of this handbook is aligned to the curriculum of QP/NOS for Car Washer and Assistant Service Technician.

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About this Book

Indian Auto Industry is one of the largest in the world. The industry is expected to contribute 10% to India's GDP as per Automotive Mission Plan 2016-26 and create 65 million additional jobs. The sector offers big potential for jobs across the length and breadth of the country. In line with the rapid technological advancement in this field, there are exciting prospects for a fulfilling career in this industry.

This book is designed to enable a candidate to acquire skills that are required for employment. The content of this book is completely aligned to the National Occupation Standards QP/NOS and conform to the National Skills Qualification Framework (NSQF).

The Qualification pack of a Car Washer and Assistant Service Technician, Level-3 includes the following NOS's which have all been covered across the units:

- Assist in Service, Maintenance & Repair of the Vehicle (ASC/ N 1401)**
- Perform Vehicle Cleaning and Washing (ASC/ N 1101)**
- Plan & Organize Work to Meet Expected (ASC/ N 0001)**
- Work Effectively as Team (ASC/ N 0002)**
- Maintain a Healthy, Safe and Secure Working (ASC/ N 0003)**

Key Learning Objectives for the specific NOS mark the beginning of the Unit/s for that NOS. The symbols used in this book are described below.

Happy learning !!

Symbols Used



Learning Outcomes



Steps



Time



Tips



Notes



Objectives



Exercise



Activity

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1. Introduction

Unit 1.1 – Introduction to Automobiles

Unit 1.2 – Classification of Automobiles

Unit 1.3 – Invention of Automobiles

Unit 1.4 – Job Role of Auto Service Technician



Key Learning Outcomes

At the end of this module, you will be able to:

1. Acquire knowledge of automobile history
2. Describe different types of automobile
3. Classify automobile industry
4. Explain service process of automobile workshop

Unit 1.1: Introduction to Automobile

Unit Objectives

At the end of this unit, you will be able to:

1. Acquire required knowledge of automobile industry
2. Describe type of automobile

1.1.1 Introduction to Automobile

We all are familiar with the word Automobile. We do also understand the meaning of automobile, it could be a car, two wheeler, bus etc.. having its own engine and move using wheels for goods transport or carry passengers.

The automobile was has been taken from ancient Greek word which combine auto means self and mobilis mean movable thus we can define automobile as a vehicle which can move itself. Car which is also an alternative name of automobile also seems to be taken from Latin word carrum which means wheeled vehicle or from French word cart. Most of these words seem to be taken from Gallic Chariot.

Most of the definition of automobile tells us that it is designed for roads and should have seating capacity ranging from 1 to 8 people, may have minimum 2 wheels and is designed for the purpose of transporting people and goods.

1.1.2: We Know Automobile by Different Names Like

- | | | | |
|---------------|--------------------------|-----------------|----------------|
| • AutoRikshaw | • Horseless carriage | • Automobile | • Quadri Cycle |
| • Auto car | • Moped | • Auto buggy | • Motor Cycle |
| • Car | • Scooter | • Motor | • Bus |
| • Motor car | • Truck | • Motor vehicle | • Tractor |
| • Motor coach | • Earth Moving Equipment | • Motor wagon | • Tumtum |

Unit 1.2: Classification of Automobiles

Unit Objectives

At the end of this unit, you will be able to:

Classify automobiles based on industry and other parameters

1.2.1: Automobiles are Normally Classified into Two Categories

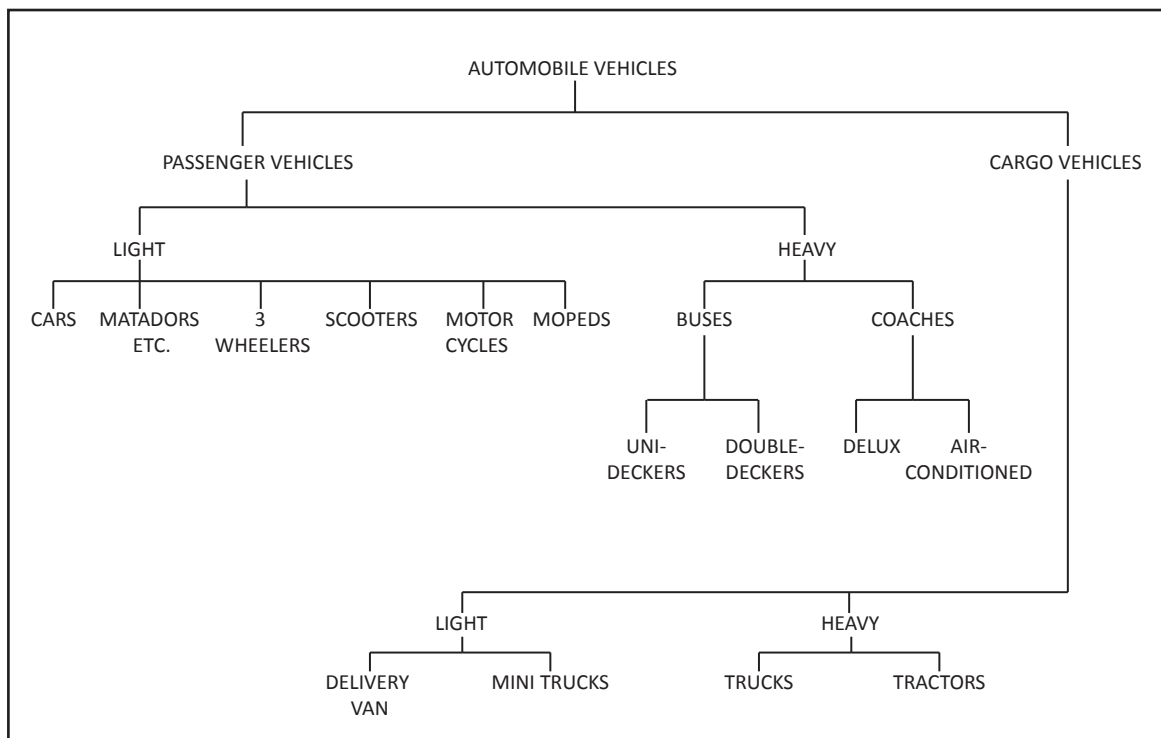


Fig: 1.2.1 Classification of Automobiles

1.2.2: Further the Automobiles Can be Classified Based on Different Parameters

Purpose of Transportation:

- 1) Passenger vehicles — Car, Jeep, Bus
- 2) Goods vehicles — Truck

Capacity:

- 1) Light motor vehicles — Car, Motorcycle, Scooter
- 2) Heavy motor vehicles — Bus, Coach, Tractor

Fuel used:

- 1) Petrol vehicles — Car, Jeep, Motorcycle, Scooter
- 2) Diesel vehicles — Truck, Bus, Tractor, Bulldozer
- 3) Electric cabs — Battery truck, Forklift
- 4) Steam carriages — Steam road rollers

Number of Wheels:

- 1) Two-wheeler
- 2) Three-wheeler
- 3) Four-wheeler
- 4) Six-wheeler

Drive of the Vehicles:

- 1) Single-wheel drive vehicle
- 2) Two-wheel drive vehicle
- 3) Four-wheel drive vehicle
- 4) Six-wheel drive vehicle
- 5) Front wheel drive
- 6) Rear wheel drive
- 7) LHD : Left hand drive
- 8) RHD : Right hand drive

Normally Automobile are Specified as:

- **Type:** Car, truck, scooter, motorcycle, bus
- **Capacity:** 5 ton, 3 ton, 1 ton, 4-seater, 6- seater, 30-seater, 45-seater
- **Manufacturer or Make of the Vehicle:** Tata, Maruti, Suzuki, Ashok Leyland, Mahindra, Honda, Hyundai, Toyota, Ford, Fiat, Chevrolet, Audi, Mercedes, Isuzu, Skoda, Volkswagen
- **Drive:** LHD: Left hand drive, RHD : Right and drive, Single wheel drive, Two wheel drive, Four wheel drive, Six wheel drive
- **Model:** Year of manufacturing or chassis code number

The vehicle identification number is the identification code (VIN) marked on each and every automobile. The VIN number is unique in nature and two vehicles cannot have same VIN as it is used as unique identification mark for the vehicle. Usually VIN have 17 alpha numeric code.



Fig: 1.2.2 Sample VIN Number

Unit 1.3: Invention of Automobiles

Unit Objectives

At the end of this unit, you will be able to:

1. Explain the history of automobile
2. Describe recent development in automobile industry

1.3.1 : Invention of Automobiles

Post World War II, Automobile Industry started on rapid modernization in the 50s and 60s. Many new models of cars were introduced like Edsel, Chevrolet etc.

In USA, road network was built after the second War. This road network was very modern with long highways stretching across the length and breadth of the country. It is good to note that USA has a very big land mass and vast geography. This allows open and wide roads to be built. On these roads models like the Beetle do appear very tiny!

The Big Three of the car industry namely General Motors, Ford & Chrysler set about to design big fast moving cars for the American roads. Edsel, Buick, Pontiac Firebird, Chevrolet Impala etc were some of the big cars that came on American highways in the 50s and 60s. It may also be noted that these models used large amounts of petrol or gasoline as it is called in US. But, petrol consumption was not the main issue in those happy days. So, each car maker was competing with the other in making bigger & bigger designs with more luxuries added for comfort. All this made owning and maintaining a car quite costly. Still, more and more Americans were buying these models. One very popular model from FORD was named 'MUSTANG'.

However, things changed after 1973. This was the year of the first "Oil Crisis". Petrol started becoming costlier as all the Arab nations got together in an alliance. Now, suddenly even Americans started looking for more economical designs.

Meanwhile, quietly but with determination, Japan was developing cars for marketing worldwide, mainly in the USA. Actually, after the devastation of their country during the WW II, several Japanese companies came into existence like Toyota, Mazda, Mitsubishi, Suzuki etc. Some of these like Mazda, were using American Technology. But, these companies were also developing their own Research capabilities. As a result when the 1973 oil crisis occurred, these companies were very well positioned to roll out smaller, compact and economical models in USA.

Since then, companies like Toyota, Honda have been steadily increasing their market presence worldwide. Normally present era is defined as twenty five years before the present year. Presently available cars are differentiated from antiques based on technical and design aspect. Without bearing in mind car future, present approach is to focus more on the standardization, sharing of platform and computer aided design.

In 1983, Government of India started Maruti Udyog in collaboration with Suzuki of Japan. Maruti's first model called Maruti 800 became a big success. Within 5-6 years the company reached an annual production level of nearly 1,00,000 cars per year. They launched various models like 800, Gypsy, Omni van, Esteem, Zen, Baleno etc.

By the end of 90s several other global multinational car makers also started manufacturing their models in India. Among them were, General Motors, Ford, Hyundai etc.

In just a few years the Indian market for cars has become a hot spot of global automotive activity.

As we see, Indian Auto industry started with import of cars in the 20s. Then the first manufacturing started in the 40s. With continued progress many Indian companies like Maruti, Tata, Mahindra have become very big global names. Now, they are not merely manufacturing European/American or Japanese designs, but they are doing so with their own research & development capabilities. As a result, Nano model was developed by TATA Motors. This is one of the most economic car in the world with all convenient and quality features. Now India is now also exporting nearly 12% of manufactured cars to Europe, USA and elsewhere in the world.

In India automotive industry is considered as one of the largest industry and also it is growing globally with a rapid speed. Indian automobile manufacturing industry in passenger car and commercial vehicle segment is on 6th position in the world having annual production more than 3.7 million. As per one of the report in passenger vehicle segment India is expected to surpass Brazil to become sixth largest producer in the world with a growth of 16 to 18 percent covering more than 3 million units. In passenger car segment Indian automobile industry is known as the fourth largest exporter after Japan, Thailand and Korea.

In passenger cars segment, during the year 2010 India became third largest exporter after Japan and Korea beating Thailand. As on year 2010, passenger vehicle population in India was having 40 million. In the year 2010 India produced more than 3.7 million automotive vehicle which reflect an increase of 33.9% and became second fastest growing automobile market in the world. Indian Automobile Manufacturers Society projected sales of vehicle around 5 million by the year 2015 and by 2020 it will go more than 9 million. It is expected that by the year 2050 India became top in car volume with around 611 million cars on Indian road. In India car manufacturing industry is mainly divided into three clusters i.e. south, west and north.

Chennai which is falling in southern cluster is considered as biggest cluster sharing around 40% of the revenue. The western hub near Maharashtra is sharing 33% market. Haryana is considered in the northern cluster sharing 32%. Ford, Hyundai, Renault and Nissan having headquarter and BMW having assembly plant in Chennai and is considered as "Detroit of India". Chennai exporting around 60% automotive and considered as largest exporter in India.

India's largest car manufacturer Maruti Suzuki is having its plant in Gurgaon and Manesar. Both these cities are part of Haryana and fall in northern cluster. Companies like General Motors, Volkswagen, Skoda, Mahindra and Mahindra, Tata Motors, Mercedes Benz, Land Rover, Fiat and Force Motors having assembly plants in Chakan corridor close to Pune falls in western cluster. Audi, Skoda and Volkswagen are based in Aurangabad which also a part of western cluster.

Manufacturing facility of General Motors is based in Halol and Tata Nano at Sanand, Gujarat. Maruti Suzuki and Peugeot-Citroen has also setup their plant in Gujarat. Thus Gujarat is also now becoming a promising cluster for car manufacturing. Other automotive manufacturing regions in India are Hindustan Motors based in Kolkatta, Honda based in Noida and Toyota based in Bangalore.

Unit 1.4: Job Role of Auto Service Technician

Unit Objectives

At the end of this unit, you will be able to:

Explain service process of automobile industry

1.4.1: Role of an Auto Service Technician at Automobile Service Centre

Automotive service technician is responsible for inspecting, maintaining, and repairing vehicles. Automotive service technician attends to the customer and also respond to customer queries, discuss with customer about automotive problem and also give options to resolve the issues. Automotive service industry works on the repeated clients thus it become very essential for the technician to be always polite, be a good listener and should capable of answering customer's queries. The individual must be patient and have good listening ability with customer centric attitude is highly desirable to understand customer problem and also suggest preventive maintenance guidelines to customer like efficient fuel consumption, tyre life etc....

Roles and Responsibility of Technicians:

The role of technician would primarily be to carry out repair jobs as communicated to them through the job cards, and any additional verbal instruction given by the Service Advisor.

Their effort should be that all the jobs are completed properly.

In case they have any problems, they should communicate the same and take the help of senior technician or any of the group supervisors, as required.

It should be ensured that the junior technicians gradually learn to do complex repairs and upgrade their skills.

The senior technicians on their part should help the supervisors with the road tests and diagnosis when needed.

The Technicians Play an Important Role for the Workshop Profitably:

- A productive Workforce of technically sound people will ensure / customer satisfaction and retention.
- A proper workshop has room for different work activities.
- An organization chart defines the reporting structure of the workshop.
- A well-defined service process ensures a smooth running of the workshop.

1.4.2: Role of an Auto Service Technician at Automobile Service Centre

- **Vehicle Booking:** In this process the appointment is taken by the service advisor from the customer for the service job. When the customer calls for an appointment to service his vehicle the SA will allot time and date for him to bring his vehicle to the workshop as per the work schedule.
- **Vehicle Receiving and job card opening:** the SA will receive booked vehicle and open a job order. A job order or a job card is a document which has details of the customers and the vehicle along with the job to be carried out on his vehicle. The customer has to ensure that his and his vehicle details are correctly entered and the jobs and his vehicles problems are correctly recorded on the job card before signing the JC.
- **Job Allotment:** The workshop Supervisor allots the jobs to the technicians as per the schedule and priority and delivery commitments.
- **Work progress:** The technician's carries out the work as prescribed in the job order. He will intimate the supervisor if any additional job has to be done on the vehicle. An estimate of the job if required is given. On completion of the job the vehicle is sent for final inspection.
- **Final Inspection:** The quality tester will perform the final inspection of the vehicle .He ensures that the job requested by the customer is carried out and the reported problems in the vehicle are solved. He sent the vehicle to washing after his inspection.
- **Invoicing and vehicle Delivery:** After washing the vehicle comes to delivery section. The service Adviser will prepare an invoice mean final billing of the vehicle will be done. Service adviser will inform the customer about the vehicle readiness and upon arrival of customer the vehicle will be delivered to the customer after the bill amount is collected.
- **Post service Follow up:** The service adviser or the customer relation Executive (in some workshops) will call the customer after 3-4 days to take customer's feedback on the jobs done.

Notes



Exercise-1: Fill in the Blanks

1. In India Maruti udyog was started in
 - A. 1975
 - B. 1985
 - C. 1983
 - D. 1982

2. The first model of maruti car in India was.....
 - A. 800
 - B. Esteem
 - C. Omni Van
 - D. Gypsy

3. The name of automobile brand that moved the Indian market from scooters to bikes with the promise of fuel economy is
 - A. Escort
 - B. Suzuki
 - C. Bajaj
 - D. Hero Honda

4. Automobile export of India is around
 - A. 12%
 - B. 15%
 - C. 20%
 - D. 18%

5. In the year India became Asia's third largest exporter of passenger cars
 - A. 2014
 - B. 2010
 - C. 2013
 - D. 2012

6. contribute 60% of the country's automotive exports
 - A. Chennai
 - B. Pune
 - C. Gurgaon
 - D. Delhi

7. Unique number marked on each vehicle is called
 - A. Vehicle identification number
 - B. Vehicle serial number
 - C. Vehicle log number
 - D. Automobile serial number

8. The automotive industry in India is one of thein the world
 - A. Smallest
 - B. Largest
 - C. Medium size
 - D. None

9. Audi, Skoda and Volkswagen plants are in
 - A. Aurangabad
 - B. Pune
 - C. Chennai
 - D. Gurgaon

10. One of the important role, after sales in auto industry is
 - A. Ensure strong bond between the organization and the customer
 - B. Make customer happy
 - C. Earn revenues
 - D. Learn good practices

Exercise-2: Mark True or False

1. Auto service technician is responsible for the routine servicing of vehicle
A. True B. False
2. Good communication and interpersonal skills is required for the auto service technician
A. True B. False
3. Auto service technician should have a better understanding of social aspect for repairing the vehicle
A. True B. False
4. After collecting the vehicle customer's personal belongings in the vehicle should be handover to service agency office
A. True B. False
5. Job card can be filled in absence of customer
A. True B. False

Exercise-3: Fill in the Blanks

1. During vehicle booking appointment is taken by the from the customer for the service job.
A. Service advisor B. Workshop supervisor C. Technician
2. Vehicle receiving and job card opening process is done by
A. Service advisor B. Workshop supervisor C. Technician
3. Job allotment in the workshop is done by.....
A. Service advisor B. Workshop supervisor C. Technician
4. During repairing process if additional job has to be done on the vehicle, should be intimated to
A. Service advisor B. Workshop supervisor C. Technician

- 5. Final inspection of the vehicle before delivery is done by
A. Service advisor B. Workshop supervisor C. Quality tester

- 6. Service technician should carry out repair jobs as per
A. Job card B. Customer input C. Advice from quality tester

- 7. The job card has details of.....
A. customer B. vehicle C. Instruction of service advisor

- 8. Junior technician gradually learn to do complex repairs from
A. Service advisor B. Workshop supervisor C. Senior technician

- 9. should help the supervisors with the road tests and diagnosis when needed.
A. Service advisor B. Junior technician C. Senior technician

- 10. Invoicing and vehicle delivery is responsibility of
A. Service advisor B. Workshop supervisor C. Senior technician

Exercise-3: Answer the Following Questions



1. What is the Role and responsibilities of a Technician?

2. What are the stages of service process?
