

JOB ROLE – AUTOMOTIVE SERVICE TECHNICIAN

Sector: Automotive
(Qualification Pack Code : **ASC/Q01402**)



PSS Central Institute of Vocational Education
Shyamla Hills, Bhopal – 462013, Madhya Pradesh, India

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UNIT 5 : Auto Electrical

Session: 5 Applications and Replacement of Fuses

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Session Objectives

1. The student will be able to identify different types of fuses used in electrical system of vehicle.
2. Able to replace the fuse.

Introduction

Fuses are used for protecting the electrical equipment and circuits against the effects of excessive currents. Two different ways can be deployed for protecting electrical circuits and accessories. Firstly, more number of fuses can be used for protecting the circuits. Secondly, only a few fuses can be employed in such a manner that each fuse has to protect a group of electrical items. One fuse may be used to protect the circuits controlled by the ignition switch and it has a value of about 35A. The second fuse of 35-50 A is used to protect all circuits which are operative whether the ignition switch is in the ON or OFF position.

In the case of more number of fuses, the following table gives the value and the equipment for which they are used. This practice is more prevalent in American cars.

• Heater and air conditioner	25 A
• Interior lamps	7.5 A
• Cigar lighter	15 A
• Radio	7.5 A
• Radio antenna	14.0 A
• Reversing lights	7.5 A
• Direction indicator lights	7.5 A
• Over drive	15 A
• Battery-generator circuit	40 A
• Windscreen wiper, clock, interior lights, etc	25 A

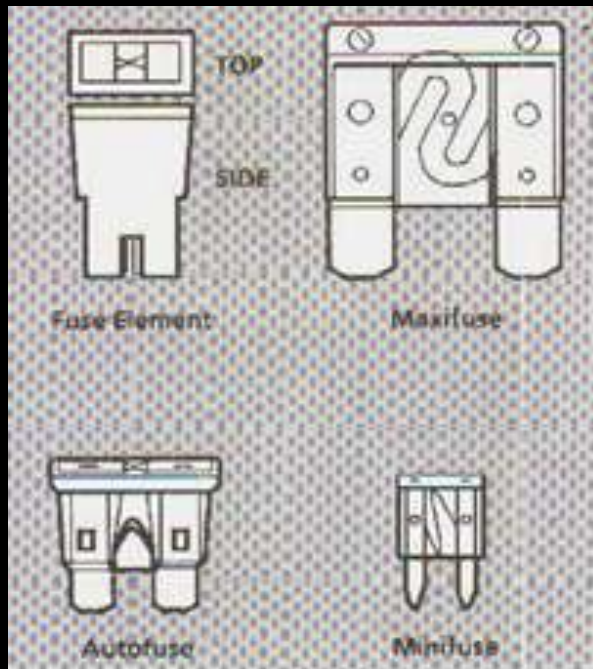
Types of Fuse

There are three basic types of fuses:

- Glass or ceramic fuses
- Blade-type fuses
- Bullet or cartridge fuses

Glass and ceramic fuses are found mostly on older vehicles. Sometimes, however, you can find them in a special holder connected in series with a circuit. Glass fuses are small glass cylinders with metal caps. The metal strip connects the two caps. The rating of the fuse is normally marked on one of the caps.

Blade-type fuses are flat plastic units and are available in three different physical sizes: mini, standard, and maxi. The plastic housing is formed around two male blade-type connectors. The metal strip connects these connectors inside the plastic housing. The plastic is colour coded.



Three types of commonly used fuses

(A) Glass cartridge (B) Ceramic, (C) Blade (or mini-fuse)

CURRENT RATING IN AMPS.	COLOUR
3	VIOLET
5	TAN
7.5	BROWN
10	RED
15	BLUE
20	YELLOW
25	NATURAL
30	GREEN

Three types of commonly used fuses

(A) Glass cartridge (B) Ceramic, (C) Blade (or mini-fuse)

CURRENT RATING IN AMPS.	COLOUR
20	YELLOW
30	GREEN
40	AMBER
50	RED
60	BLUE
70	BROWN
80	NATURAL

Three types of commonly used fuses

(A) Glass cartridge (B) Ceramic, (C) Blade (or mini-fuse)

CURRENT RATING IN AMPS.	COLOUR
5	TAN
7.5	BROWN
10	RED
15	BLUE
20	YELLOW
25	WHITE
30	GREEN

Replacement of Fuses

While replacing a fuse following points to be kept in mind

- First recognize the fuse which is to be replaced for its value and type.
- Identify the system for which the fuse is to replace and the colour of the fuse to be replaced.
- Remove old fuse and ensure that the old fuse is blown off or unserviceable.
- Fit the new fuse in proper position.
- Switch on the system and check the serviceability of the system.

Summary

In this session you have learnt about , Fuses are used for protecting the electrical equipment and circuits against the effects of excessive currents. Two different ways can be deployed for protecting electrical circuits and accessories. Firstly, more number of fuses can be used for protecting the circuits.

- Types of Fuse
- There are three basic types of fuses:
- Glass or ceramic fuses
- Blade-type fuses
- Bullet or cartridge fuses

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