

JOB ROLE – AUTOMOTIVE SERVICE TECHNICIAN

Sector: Automotive
(Qualification Pack Code : ASC/Q1401)



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Unit 2: Automobile Service Tools

Session 1: Hand Tool

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Session Objectives

1. The student will be able to explain importance of hand tools.
2. Able to identify hand tools

Introduction

As you know that that we require tools and equipment for servicing of a vehicle. Tools and equipment are used for repair and maintenance of any vehicle. Tools are made of different material as per strength, work and use. It can be easily handled and operated by any mechanic. Every vehicle has tools for emergency work as spare parts. The important tools used in automobile shops are general, electrical, special type.

Hand Tool

A hand tool is a device for performing work on a material or servicing a two or four wheeler. The hand tools can be manually used employing force, or electrically powered, using electrical current.



Fig: Hand Tools

Identification and handling of general tools

The important hand tools used in automobile repairing shops are spanners, files, pliers, grinders, drilling machine, oil and grease gun, hammer, mallet, screw drivers, wrench, chisel, files, hand hacksaw, Bench vice etc. The hand tools are used for repair, maintenance of automobile wheelers. If you visit to any automobile shops/ two wheeler service station, observe the hand tools used by the technician/mechanics. Details of important hand tools are given here.

Spanners

These are used to tighten and loosen nuts and bolts. These are made according to standard nut and bolt sizes. The Common spanners used are: **Ring Spanners**: These are closed at both ends as they have full circular ring at ends. They do not slip and cause damage.



Fig: Ring Spanner close type



Fig: Open Ended Spanner

Combination Spanners

Box Spanners

These are used to tighten nuts on drums of wheels. Sometimes they are also referred as wheel nut spanners. Figure shows different types of spanners used in motorcycle servicing and repairs.

Open-ended Spanners

These types of spanners are open from both side and used to tighten nut and bolts where low torque is required.

Files

The files are hand tools used to perform wide variety of metal removal, tasks like removing of sharp edges, smoothing of surfaces, shaping of jobs, finishing, producing intricate shapes etc. The file has five parts: tang, heel, face, edge and point or tip. The file has hardened teeth, when rubbed on the metal, perform cutting.



Fig: File

Pliers

Pliers is used to hold small objects and either tighten or loosen parts into place. Pliers have several types which are all used by a mechanic in their work. Some pliers are also used for cutting work. Pliers are available in various shapes and sizes. Different types of pliers are shown here.



Fig: Different type of pliers

Hand Hacksaw

The hand hacksaw is a hand tool to cut the metals, which include steel sections like rod, angle iron, channel sections, sheets, pipes etc. It can also be used to cut the bolt heads and nuts during repair if these are jammed and do not open with wrenches or spanners. It is a simple hand tool and consists of handle, frame, blade and adjusting wing nut.



Fig: Hack saw

Chisel

The chisels are hand tools for cutting, shearing and chipping of metals. The most widely used chisels are flat, cross cut, round nose and diamond point. The flat chisel is used to cut thin sheet metal, remove riveting heads, chip metal, split corroded nuts etc. Cross cut chisel narrow in width is used to cut key ways, narrow grooves, square corners and holes in sheet metal.



Hammers

The hammers are general purpose workshop hand tools used for straightening of sections, riveting, striking of nails, inserting the components by striking, inserting keyways and fitting by striking. The hammer consists of head made from hard and tempered steel and wooden handle.

Handling, Care & Maintenance of General Tools

General tools should be properly handled and a proper procedure should be adopted. Tools should be kept at proper place after use. Worn out tools should be replaced with new tools. Tools should be kept in the toolbox or display board. Tools should be handled properly. Correct procedure should be used for holding any tools, otherwise it may hurt worker or material.

Summary

In this session you have learnt about two wheeler and three wheeler and working. Two wheeler refers to vehicle that run on two wheels. motorcycles, scooters. A three- Wheeler is a vehicle with three wheels, either human or people- powered vehicle or motored vehicle in the form of a tri – motorcycle, or automobile.

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