

JOB ROLE – AUTOMOTIVE SERVICE TECHNICIAN

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



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UNIT 4 : Measuring Equipment's
Session-2: Angular Measuring Instruments

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Session Objectives

1. The student will be able to explain importance angular measurement and measuring instruments
2. Able to identify angular measuring instruments
3. Able to use steel rule and steel tape
4. Able to use angular measuring instruments

Introduction

Instruments used for measuring the angle are called angular measuring instruments. Angle is formed by two intersecting lines at the point of intersection. The instruments used for measurement of the angle.

Protractor

A protractor is a device for measuring the angle between two intersecting lines. The angle is measured in degrees, and a circle is defined as having 360 degrees of identical size.



Blade protractor

This is a highly useful and accurate tool for setting bevels, transferring angles, small squaring tasks, and many other applications. Double graduations from 0 - 180° in opposite directions permitting the direct reading of angles and supplementary angles. The blade protractor is shown in Fig-12.



Blade protractor

Bevel / Combination gauge

A bevel gauge is an adjustable gauge for setting and transferring angles. The handle is usually made of wood or plastic or steel and is connected to a metal blade with a thumb screw or wing nut. The blade pivots and can be locked at any angle by loosening or tightening the thumb screw.



Bevel gauge and its use

Universal Protractor

The meter scale enables us to measure the length to the nearest millimeter only. Automobile technicians need to measure much. Universal Protractor: The universal bevel protractor picks up where the blade protractor leaves off. The universal bevel protractor is designed for precision measuring and layout of angles. The universal bevel protractor is capable of measuring obtuse angles as well as acute angles when accompanied with the correct attachments. Look at Figure below to give you an idea as to the uses of the universal bevel protractor.



Measuring acute angles



Measuring obtuse angles



Using a protractor with a vernier height gauge

The main component of the bevel protractor is the main scale. The main scale is graduated into four 90-degree components. The main scale is numbered to read from 0 to 90 degrees and then back from 90 degrees to 0.

As with other vernier measuring devices, the vernier scale of the bevel protractor allows the tool to divide each degree into smaller increments. The vernier scale is divided into 24 spaces, 12 spaces on either side of the zero.



Summary

In this session you have learnt about, Instruments used for measuring the angle are called angular measuring instruments. Angle is formed by two intersecting lines at the point of intersection .

- A protractor is a device for measuring the angle between two intersecting lines. The angle is measured in degrees, and a circle is defined as having 360 degrees of identical size.
- The universal bevel protractor picks up where the blade protractor leaves off

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