Set 41: Orthogonal Sketching Level 1

Orthogonal Drawing Concepts

Q1 What are Orthogonal Drawings?

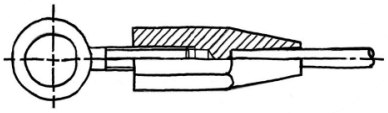
Q2 What is ‘projection’?

Q3 What is the purpose of orthogonal drawing?

Q3 What types of ‘Orthogonal Drawings’ are used in engineering?

3D Pictorial View

2D Sectioned View



Set 41: Orthogonal Drawing Level 1

Orthogonal Drawing Concepts

Q1 What are Orthogonal Drawings?

Orthogonal drawings are specifically used to communicate technical sizes and shapes and manufacturing detail. They are drawn accurately using a drawing scale. They are drawn using 'conventions and standards' in order to be understood with clarity.

Q2 What is 'projection'?

There is one object being drawn. The object is being drawn 'square-on' from above and from the sides. The object does not change size, so distances remain exactly the same in each view. Rather than measure the same drawing size for *each* view, the size is measured once, then projected from that view onto the other views. This is why the view position is not randomly placed on the drawing page. The orthogonal views are in projected positions.

Q3 What is the purpose of orthogonal drawing?

They are two dimensional views of the object. They are drawn accurately with all sizes (dimensions) drawn to scale. They are drawn applying 'AS1100 standards' so that the drawings can be understood with clarity. They are used specifically in engineering to communicate technical sizes, shapes and manufacturing detail.

Q3 What types of 'Orthogonal Drawings' are used in engineering?

There are specific orthogonal styles used for specialised purposes. Typically, a top and side view are shown. In addition, more views can be added to clarify the design and specifications. Hidden details can be shown with hidden detail dashed lines. Sectioned views can also be used to show hidden detail. The object is 'cut' and material is 'removed' from in front of the cut to reveal the hidden detail. When required a 'detailed' drawing can also be drawn. This is when a small portion of the object is zoomed so as to show the detail.
A scale of 2:1 or more can be used.

3D Pictorial View

2D Sectioned View