

The Alphabet of Lines in Technical Drawing

Lines in technical drawings are part of a specialized graphic language that is standardized throughout industry.

Each type of line has a very precise symbolic meaning.


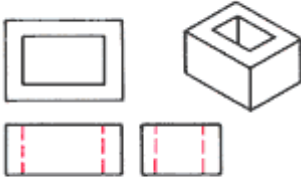

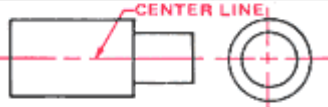

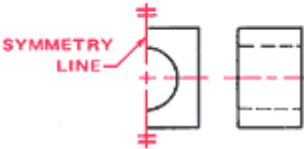

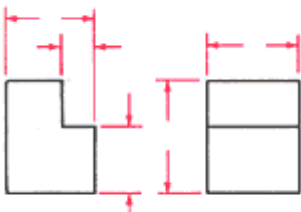

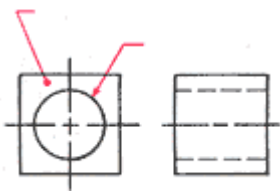
Correct usage of this "alphabet of lines" is essential whether you use traditional drafting methods or CAD.

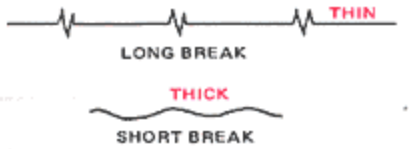
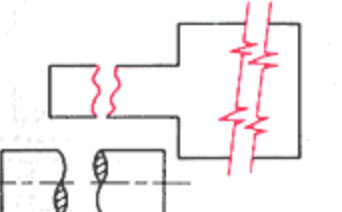

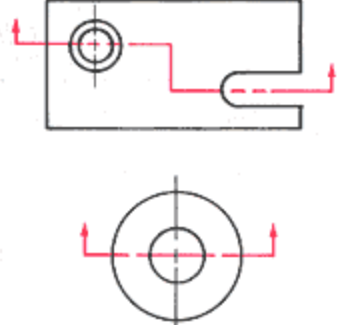

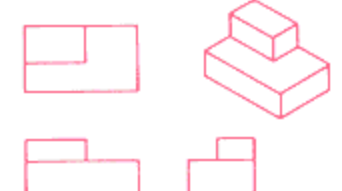

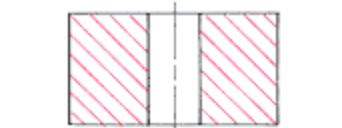

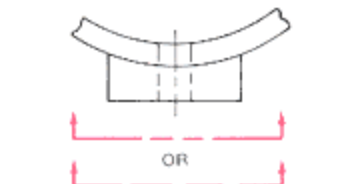

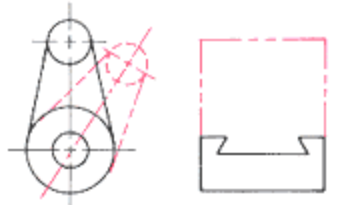
Line weight is the thickness of the line.

Construction lines and **guide lines** are very light, easily erased lines used to block in the main layout.

Visible lines are the edges or "outlines" of an object. They are drawn as solid lines with a thick/heavy weight.

All other lines contrast with the visible lines by having either a thinner weight and/or a combination of dashes.

TYPE OF LINE	APPLICATION	DESCRIPTION
<p>HIDDEN LINE</p>  <p>THIN</p>		<p>THE HIDDEN OBJECT LINE IS USED TO SHOW SURFACES, EDGES, OR CORNERS OF AN OBJECT THAT ARE HIDDEN FROM VIEW.</p>
<p>CENTER LINE</p>  <p>THIN ALTERNATE LINE AND SHORT DASHES</p>	 <p>CENTER LINE</p>	<p>CENTER LINES ARE USED TO SHOW THE CENTER OF HOLES AND SYMMETRICAL FEATURES.</p>
<p>SYMMETRY LINE</p>  <p>CENTER LINE THICK SHORT LINES</p>	 <p>SYMMETRY LINE</p>	<p>SYMMETRY LINES ARE USED WHEN PARTIAL VIEWS OF SYMMETRICAL PARTS ARE DRAWN. IT IS A CENTER LINE WITH TWO THICK SHORT PARALLEL LINES DRAWN AT RIGHT ANGLES TO IT AT BOTH ENDS.</p>
<p>EXTENSION AND DIMENSION LINES</p>  <p>THIN EXTENSION LINE DIMENSION LINE</p>		<p>EXTENSION AND DIMENSION LINES ARE USED WHEN DIMENSIONING AN OBJECT.</p>
<p>LEADERS</p>  <p>ARROW THIN DOT</p>		<p>LEADERS ARE USED TO INDICATE THE PART OF THE DRAWING TO WHICH A NOTE REFERS. ARROWHEADS TOUCH THE OBJECT LINES WHILE THE DOT RESTS ON A SURFACE.</p>

<p>BREAK LINES</p>  <p>LONG BREAK</p> <p>THIN</p> <p>SHORT BREAK</p> <p>THIN</p>		<p>BREAK LINES ARE USED WHEN IT IS DESIRABLE TO SHORTEN THE VIEW OF A LONG PART.</p>
<p>CUTTING-PLANE LINE</p>  <p>THICK</p> <p>OR</p> <p>THICK</p>		<p>THE CUTTING-PLANE LINE IS USED TO DESIGNATE WHERE AN IMAGINARY CUTTING TOOK PLACE.</p>
<p>VISIBLE LINE</p>  <p>THICK</p>		<p>THE VISIBLE LINE IS USED TO INDICATE ALL VISIBLE EDGES OF AN OBJECT. THEY SHOULD STAND OUT CLEARLY IN CONTRAST TO OTHER LINES SO THAT THE SHAPE OF AN OBJECT IS APPARENT TO THE EYE.</p>
<p>SECTION LINES</p>  <p>THIN LINES</p>		<p>SECTION LINING IS USED TO INDICATE THE SURFACE IN THE SECTION VIEW IMAGINED TO HAVE BEEN CUT ALONG THE CUTTING-PLANE LINE.</p>
<p>VIEWING-PLANE LINE</p>  <p>THICK</p> <p>OR</p> <p>THICK</p>		<p>THE VIEWING-PLANE LINE IS USED TO INDICATE DIRECTION OF SIGHT WHEN A PARTIAL VIEW IS USED.</p>
<p>PHANTOM LINE</p>  <p>THIN</p>		<p>PHANTOM LINES ARE USED TO INDICATE ALTERNATE POSITION OF MOVING PARTS, ADJACENT POSITION OF MOVING PARTS, ADJACENT POSITION OF RELATED PARTS, AND REPETITIVE DETAIL.</p>

The following chart shows technical drawing lines that describe a piece of machinery with a swinging arm.

All of the red "bent arrow" lines with notes are the **leaders**.

Make sure you understand the use of the **cutting plane line** to show the **section**.

Make sure you understand the use of the **viewing plane line** to show an additional view.

Note the jagged **break line** to indicate that this is only part of the object.

Note the difference between the **phantom lines** that show where the arm swings, and the **hidden line** that allows you to see through the machine.

