

PHOTOGRAPHS OF CHARTS ON WELDING

<h3>WELDING (W - 1)</h3> <h4>ELECTRIC RESISTANCE WELDING</h4> <p>PRINCIPLE -> It uses a resistance to the current flow in order to generate the heat to fuse the two pieces of metal.</p> <p>The success of a resistance welded joint is dependent upon five variables:</p> <ol style="list-style-type: none"> (1) The magnitude of the current; (2) The time the current is flowing; (3) The pressure of the electrodes; (4) The shape and area of the electrode contact and (5) The surface condition of the metal to be welded. 	<h3>WELDING (W - 2)</h3> <h4>SPOT WELDING</h4> <p>SPOT WELDING</p> <p>PORTABLE SPOT WELDER</p> <p>A ROCKER-ARM TYPE SPOT WELDING MACHINE</p>	<h3>WELDING (W - 3)</h3> <h4>SEAM WELDING</h4> <p>APPLICATIONS OF SEAM WELDING</p> <p>SEAM WELDING MACHINE</p> <p>PROCESS DETAILS</p> <p>TYPICAL JOINT DESIGNS FOR SEAM WELDING</p>	<h3>WELDING (W - 4)</h3> <h4>FLASH WELDING, PROJECTION WELDING, PERCUSSION WELDING</h4> <p>FLASH WELDING</p> <p>PROJECTION WELDING</p> <p>PERCUSSION WELDING</p>	<h3>WELDING (W - 5)</h3> <h4>ELECTROSLAG WELDING</h4> <p>Applications - Electroslag welding is a fusion welding process for joining thick work pieces by a single pass. The main fields of application of this process include welding of structurals, machinery ships, pressure vessels and castings.</p>	<h3>WELDING (W - 6)</h3> <h4>OXY - ACETYLENE TORCH</h4> <p>TORCH TIPS</p> <p>REPLACABLE TIP</p> <p>SOLID TIP</p>
<h3>WELDING (W - 7)</h3> <h4>WELDING TORCHES</h4> <p>GAS FLOW PATTERN IN POSITIVE PRESSURE TYPE OXY - ACETYLENE WELDING TORCH</p> <p>GAS FLOW SYSTEM IN INJECTOR TYPE OXY - ACETYLENE WELDING TORCH</p>	<h3>WELDING (W - 8)</h3> <h4>GAS FLAMES</h4> <p>STRUCTURE OF AN OXY - ACETYLENE FLAME</p> <p>FLAME TYPES</p> <p>A THE CARBURISING OR REDUCING FLAME</p> <p>B THE NEUTRAL FLAME</p> <p>C. OXIDIZING FLAME</p>	<h3>WELDING (W - 9)</h3> <h4>ELECTRIC ARC WELDING</h4> <p>ELECTRIC ARC</p> <p>WELDING IN PROGRESS</p> <p>BLOCK DIAGRAM OF ELECTRIC ARC WELDING SET-UP</p> <p>EQUIPMENT ACCESSORIES</p> <p>OPERATOR ACCESSORIES</p>	<h3>WELDING (W - 10)</h3> <h4>SUBMERGED ARC WELDING</h4> <p>Position of electrode in making circumferential welds by Submerged Arc Welding</p> <p>Flux restrainer for making circumferential welds on small diameter cylindrical vessels</p>	<h3>WELDING (W - 11)</h3> <h4>ATOMIC HYDROGEN WELDING</h4> <p>(1) Hydrogen envelop, (2) Filler rod, (3) Ceramic gas nozzle, (4) Tungsten electrode, (5) Electrode holder, (6) Arc, (7) Electric cables, (8) Hydrogen hose, (9) Hydrogen valve opened automatically, (10) Pressure gauges, (11) Regulator, (12) Electric power source A.C., (13) Hydrogen cylinder.</p> <p>ATOMIC HYDROGEN WELDING</p> <p>When the molecules of hydrogen pass through the electric arc, they are changed into the atomic state and thus absorb a considerable amount of energy. But when the atoms of hydrogen recombine into molecules just outside the arc, a large amount of heat is liberated. The extra heat added to the intense heat of the arc itself, produces a temperature of about 4200°C.</p>	<h3>WELDING (W - 12)</h3> <h4>ELECTRON BEAM WELDING / LASER BEAM WELDING</h4> <p>ELECTRON BEAM WELDING</p> <p>LASER BEAM WELDING</p> <p>DIODE TYPE ELECTRON BEAM GUN</p> <p>COLD FLOWS OVER RUBY, WARM AIR FLOWS OVER FLASH LAMP</p>
<h3>WELDING (W - 13)</h3> <h4>THERMIT WELDING</h4> <p>STANDARD SETUP FOR THERMIT WELDING</p> <p>THERMIT WELDING OF RAILS</p> <p>(A) PREHEATING, (B) POURING IN PROGRESS, (C) AFTER BREAKING MOULD, (D) WELDED RAILS</p>	<h3>WELDING (W - 14)</h3> <h4>TIG WELDING</h4> <p>CERAMIC SHIELDS</p> <p>TIG WELDING TORCH</p> <p>A SETUP FOR TIG WELDING</p>	<h3>WELDING (W - 15)</h3> <h4>MIG WELDING</h4> <p>SCHEMATIC OF CONVENTIONAL MIG WELDING SETUP</p> <p>DIFFERENT ELECTRODE TO WORK POSITIONS FOR MIG WELDING</p> <p>MIG WELDING TORCH</p>	<h3>WELDING (W - 16)</h3> <h4>WELD SYMBOLS - I</h4> <p>PLACING OF WELD SYMBOL</p>	<h3>WELDING (W - 17)</h3> <h4>WELD SYMBOLS - II</h4> <p>DIMENSIONS OF WELDS</p> <p>CONVEX, CONCAVE, BEADING STRIP, SLOPE, PROJECTION</p>	<h3>WELDING (W - 18)</h3> <h4>WELDED JOINTS</h4> <p>BUTT JOINT, PLUG (OR SLOTTED) LAP JOINT, TEE JOINT, EDGE JOINT, CORNER JOINT, STRAPPED JOINT, LAP JOINT, PLUG WELD JOINT</p>