

## Auxiliary Equipment

### Beam Fabrication Auxiliary Equipment

PHI offers a complete "H" Beam Fabrication Line. In addition to the main welder, the line includes the following auxiliary equipment items:

#### Beam Fabrication Auxiliary Equipment -- Seam Welder

The seam welder is used to join separate web sections with a 100% welded seam and to fabricate long webs from short sections or to join sections of different thickness. The two pieces to be joined are aligned against an edge guide and clamped in position by means of air cylinders. The grooved copper back-up plate is brought to seam tightly against the lower side of the joint. The welding head travels along the joint and welds it by single-wire submerged arc.

Clamps are released and web is conveyed to the tacking fixture. Welding equipment consists of welding head with flux hopper, travel carriage, controls and a 1,000 Amp. power source. A flux recovery system is provided to dispense and recover welding flux. The Seam Welder Hydraulic Power Unit and Electric Controls are also used to drive the conveyors at entrance and exit of the Seam Welder. Beam Fabrication Auxiliary Equipment -- Tacking Fixture

The tacking fixture is used to assemble the beam prior to the Main Welder. The web and flanges are brought in from the seam welder and flange storage racks respectively, transported to the tacking fixture and positioned prior to tacking the leading edge of the beam. Loading of the flanges on the conveyors can be done manually by an operator or automatically, using PHI's flange-loading Gantry.

The two flanges are placed on the conveyor section on opposite sides of the web, rotated into the vertical position and held by magnetic guide rollers. The three pieces are advanced into position against a retractable stop and hydraulically clamped in their proper relative position.

The operator manually tack welds them together. Clamps are released, and the tack-welded beam is conveyed to the welder. After initial adjustment of clamp positions for the first beam, the operator controls all material movement from the control panel for all subsequent beams of the same size. Beam Fabrication Auxiliary Equipment -- Conveyor Sections

The Seam Welder, Tacking Fixture and Automatic Welder are interconnected by means of a Conveyor System, to form a complete production line that allows continuous Steel Beam production. Conveyors are located at the entrance and exit of Seam Welder, Tacking Fixture and Automatic Welder, and are hydraulically operated.

The controls at each of these stations determine the movement, direction, and speed of the adjacent conveyors. A typical layout system includes a total of 18 conveyor sections. Six are motorized, driving the rollers by means of sprockets and chains. Ten are driven, connected by chains to adjacent motorized sections. Two are idle.