

Rapid Reconfiguration -- 5 Minutes Instead of 5 Days



Time lost in reconfiguring a fabrication process from one geometrically shaped component to another is one of the most costly aspects of fabrication of unique geometrically shaped components. For complex curved shapes produced to precise dimensions, the reconfiguration time can be as long as a week.

Securing cost reduction in fabrication of a series of uniquely dimensioned components demands flexible and agile fabrication processes. Achievement of these criteria is part of a totally integrated process being developed as part of MAGLEV, Inc.'s precision fabrication process for large steel structures sponsored by the DoD. Illustrated above is one arm of a series of arms that are independently positioned by a computer. Operating all arms together positions the top of the arms to develop a flexible fabrication table to allow production of any variation of complex curved shapes (see inset illustration).

Integral with the ability to make rapid fabrication table changes is the requirement for exact mathematical descriptions of the product to be fabricated. Mathematical criteria describing design needs establish a computer data base. Digitized data are utilized to position multiple arms of a total fabrication table.

Incorporation of a computer driven fabrication table into a total precision fabrication process allows table changes to be accomplished in a few minutes rather than days as required in conventional processes. This will greatly reduce the cost of fabrication of large steel structures while simultaneously assuring highest quality of dimensional control.