

## Gripping and Positioning Your Company for Increased Profits

**MCAA Members Use Workstation Technology to Increase Productivity**

Positioners and grippers from **Team Industries** are helping companies increase productivity and meet tighter deadlines, increasing profits. A positioner-gripper clamps a pipe joint or valve and rotates it so the joint can be welded continuously in the flat position. As a result, typical welding deposition rates and welding travel speeds increase, while rejection rates decrease.

“The positioners are a must-have to facilitate heavy production in a fab shop,” says Tim Current of MCAA member company **Current Mechanical** in Fort Wayne, IN. “We purchased two, and I can’t say enough on how they have improved our production.”



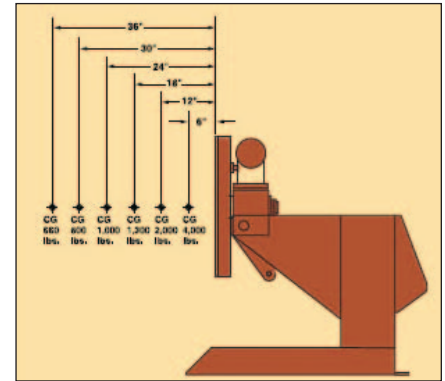
“The portability and 120 volts make this Team Industries positioner the best value on the market today,” says Earl Achenbach of ACCO Engineering Systems in Glendale, CA.

### Technology Facilitates High-Deposition Welding

Welding at the highest deposition rate possible requires using the highest voltage and amperage the electrode allows while staying within customer specifications. To do so requires welding in a position in which gravity assists the molten weld puddle. When welding out of position, such as vertical-up or overhead, operators must weld at lower heat levels to keep the weld puddle from sagging and rolling out of the joint. Operators can increase deposition rates by more than 300 percent by welding at the maximum allowable heat level.

### Eliminate Manual Work

A welding positioner-gripper can help operators weld at faster travel speeds than they could in a purely manual or semiautomatic welding operation. Operators can concentrate on keeping the weld puddle in the joint rather than thinking about moving around while manipulating a torch or electrode holder. By eliminating the manual part of welding, a positioner-gripper can help decrease operator fatigue, which can lead to fewer rejected welds and less rework. For companies making the transition from shielded metal arc welding (SMAW) to gas metal arc welding (GMAW) or flux cored arc weld-



Load rating is measured as the weight of an overhanging load at a specified distance from the face of the gripper table.

ing (FCAW), adding a positioner-gripper can improve the ability of new operators to make a good weld in the flat or downhill position.

### Speed Requirements Vary

Fabricators, manufacturers, and contractors who weld strictly with one process or repeat a limited number of jobs have a relatively easy time selecting a positioner-gripper with the appropriate speed. The fabricator’s dilemma comes because some weldments require low speed (measured in revolutions per minute, or RPM), such as gas tungsten arc welding (GTAW) and submerged arc welding (SAW); others require extremely low RPM and high torque (e.g., SAW on heavy-wall pipe); while others demand very high RPM (e.g., GMAW or FCAW on small-diameter pipe).

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## J.C. Higgins

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detailing at incredible savings and fast turnaround without sacrificing quality. For example, Mechanical Detailing Inc. assists its customers in a variety of 3D requirements.

Derrick Venzor, owner of Mechanical Detailing, cites **EastCoast CAD/CAM**’s EC-CAD 2007 software package as his favorite, most often

used 3D mechanical drawing package. EastCoast supports the complete set of industry standards such as AutoCAD, Windows, and most importantly, 3D compatibility. “There is nothing in the market today that matches the speed of EC-CAD 2007,” says Venzor. “It remains the fastest mechanical drawing program in the market, by at least 30 percent.”

### Industry is 3D-Ready

Clearly, the building industry is

ready to make 3D a standard technology for construction project coordination. Software tools that are fully compatible with AutoCAD, 3D, and Navis Works are not a vision for the future: they’re here today, and they’re making an impression on the people who use them.

For more information about EastCoast CAD/CAM go to [www.eccadcam.com](http://www.eccadcam.com).

## Increased Profits

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With the exception of automated SAW, the actual RPM required by a manual (SMAW, GTAW) or semiautomatic (GMAW, FCAW) process depends mostly on operator skill. Using the same equipment, a skilled operator can weld at speeds two or three times faster than a novice.

To handle this variety of speeds and torques, some positioners offer speeds from about 0.4 to 3.5 RPM. For especially slow speeds, from 0.070 to 0.4 RPM, some positioners also offer



When selecting a positioner for a load with a center of gravity that is not on the center of rotation, such as a large elbow joint, choose one with an eccentricity rating that can handle the expected rotational torque.

optional gear multipliers that lower the speed and increase rotational torque of standard products.

Still other positioners offer infinitely adjustable RPM, typically by means of an alternating current (AC) motor and an AC variable-speed drive. A simple potentiometer for speed adjustment and digital speed readout with a 1-to-10 speed scale makes selecting speeds easy. Today's AC drives can be factory-programmed to meet end-user requirements.

### Thru-Hole Purging Saves Money

A thru-hole purge system pipes inert gas through the center of the rotating positioner and gripper, dispersing the gas to the center of a pipe spool. As a result, the system reduces use of costly inert gas. The shorter inert gas lines eliminate gas line pinhole problems, helping to reduce x-ray failures. For companies monitoring the costs of expendable gas usage, thru-hole purge systems can recoup the cost of the investment in the system in less than 12 months.

### Gear Drive Improves Quality

Controlling eccentric loads with gear-driven positioners improves x-ray quality, thus reducing rework. Gear-rotating



Most grippers used for pipe fabrication feature three-jaw mechanical chucks that operate like those on a lathe. Gripper faces come in various sizes and include a number of options to suit specific needs.

positioners lower maintenance costs and improve safety.

Mark Habermann of **NewMech Companies**, an MCAA member company in St. Paul, MN, says NewMech has purchased 12 positioners and grippers from Team Industries because they are “reliab[le], maintenance-free, and very user friendly.”

*For more information about Team Industries' positioners and grippers, visit the company website at [www.weldpositioner.com](http://www.weldpositioner.com).*

*MCAA welcomes Team Industries as a new member. ☺*

## John J. Kirlin

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issue—or expensive stainless steel—which is susceptible to damage and corrosion from chlorides. Both materials can suffer from leak problems.

The TriArmor™ corrosion protection system has a durable base structure of G-235 galvanized steel—the heaviest commercially available galvanized steel. In addition, a thermosetting hybrid polymer electrostatically applied to both sides of the galvanized steel provides a second layer of protection from corrosion. Finally, a factory-applied, corrosion-resistant polyurethane barrier creates an impermeable armor to guard

against water chemistries and system upsets. The hybrid polymer serves as a mechanical and chemical bonding agent between the polyurethane barrier and the galvanized steel.

John J. Kirlin recently installed a cooling tower with the TriArmor protection system for a major hotel chain in the suburban Washington, DC, area. “I think we will see increasing cycles of concentration and more use of gray water in cooling systems,” says Kirlin Division President Brad Bolino. “This will mean the quality of water in cooling systems will get worse, and the cooling towers will have to be designed to operate reliably in this harsher environment. A coating that

can work in this environment without the expense of stainless steel is definitely a plus.”

In accelerated life-cycle testing to simulate years of operation in the harshest environments as well as field testing on actual installations, the TriArmor system has shown unsurpassed corrosion resistance and resistance to chloride attack and ultraviolet rays. The system also carries a 5-year leak and corrosion warranty and is environmentally friendly, containing no solvents, volatile organic compounds, or chlorofluorocarbons.

*MCAA thanks BAC for being a major sponsor of MCAA '07. ☺*