

The firing force is consistent regardless of the operator, but the rapid, hard actuation by Operator 1 results in a cooler weld due to the resulting higher welding force. The proper actuation by Operator 2 results in a hotter, more consistent weld, since the welding force is very close to the firing force.

The same problem can occur with air actuated weld heads. If the air pressure regulator is set too high, the welding force will be much greater than the firing force.

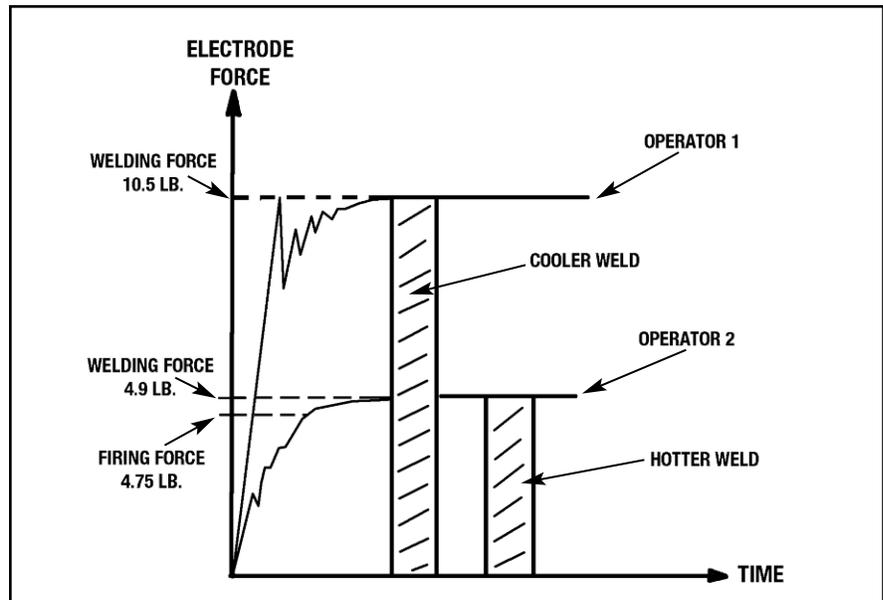


Figure 2: Electrode Force vs. Time for two different operators.

SUMMARY:

Force control is equally as important as current control for consistent generation of weld heat. An equivalent amount of attention should be given to each in the development, optimization and control of the welding process. For foot actuated weld heads, the operators should be trained to apply just enough force to trigger the welding power supply. This will result in more consistent, reliable welds. For air actuated weld heads, the

regulators should be set to provide just enough air pressure to trigger the power supply.

For simplified set-up and operation of air actuated heads, EZ Air™ versions of Amada Miyachi weld heads are recommended. EZ Air technology eliminates the over force problem associated with improperly adjusted air regulators by closing off the input air when the firing force is reached. EZ Air heads have just two adjustments: down speed and firing force.

The use of a force gauge is highly recommended when setting up any weld head. Detailed set-up and operating instructions can be found in the User's Manuals for all foot and air actuated Amada Miyachi weld heads. For more information about weld heads, visit our website or contact Amada Miyachi Applications Engineering.



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