Building a Better Burner Improving Forge Efficiency

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PURPOSE: Identify the best gas burner as measured by the following qualities: 1) Speed of heating 2) Evenness of heating 3) Amount of scale produced on the steel 4) Functionality of each burner. PROCEDURE: The first step was to construct a test forge that would accommodate the different types of burners. Five types of burners were constructed consisting of three well known commercially available designs and two were original design modifications. Utilizing a thermocouple and infrared thermometer the desired measurements were obtained with each burner attached to the forge. DATA: Comparative analysis of commercially available burners verses original design modifications and performance of the burners were conducted by graphing heat measurements for each test and assessing quality parameters. CONCLUSION: One of the original burner designs was found to be superior to all the other designs in the comparative tests.

Awards Won: