PLC-Based Automating Bracket Crimper and Resistance Tester for Gas Ignitors

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Abstract

An operator-friendly machine for crimping brackets on the gas ignitor and performing resistance measurement is designed and tested. Major components include PLC, solenoids, pneumatic cylinders, FC-P3 (potentiometer input, analog output conditioner), and PLC software for automated sensing and sequence control functions.

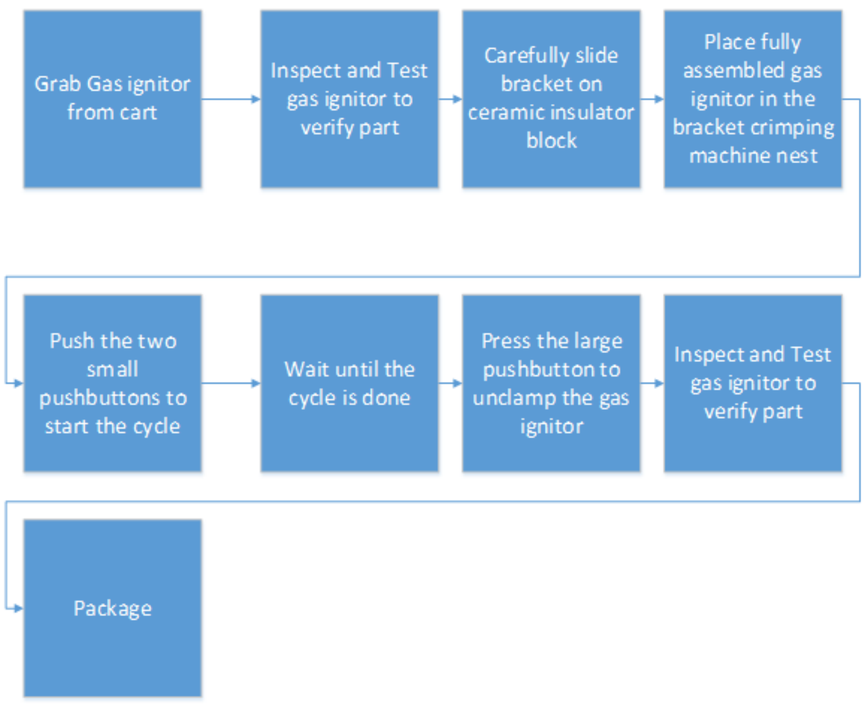
Problem Statement

SCP Limited Inc. needed a relatively inexpensive way to increase the productivity and performance of their gas ignitors in the final assembly/packaging department at its manufacturing facility.

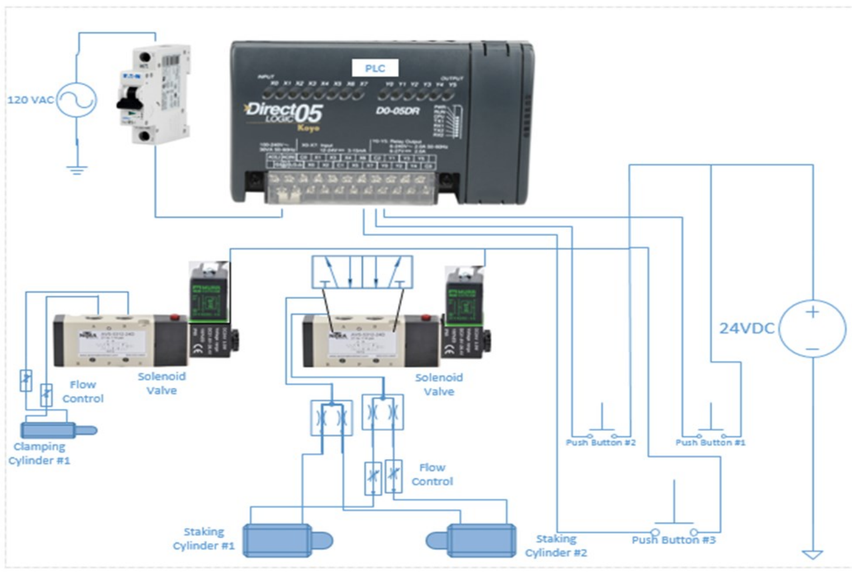
Solution

Design and implementation of Automated Bracket Machines with a PLC-based Ohmmeters can increase productivity and improve throughout of the gas ignitor testing. This new machine is expected to minimize risk of handling issues with the fragile gas ignitors.

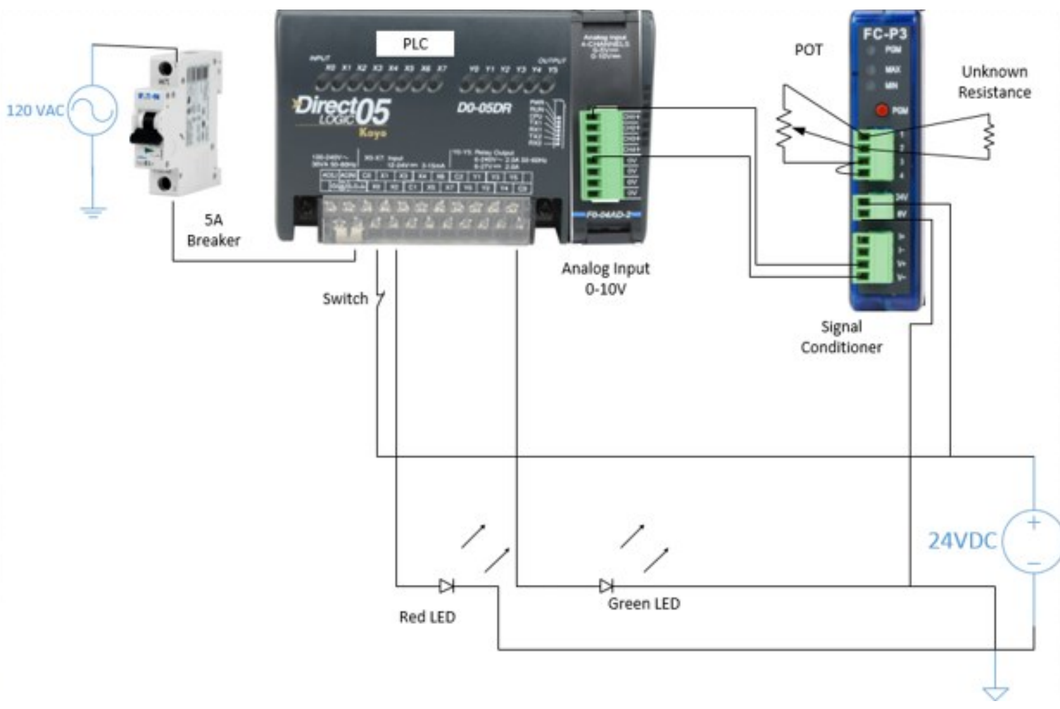
Ignitor Testing Process



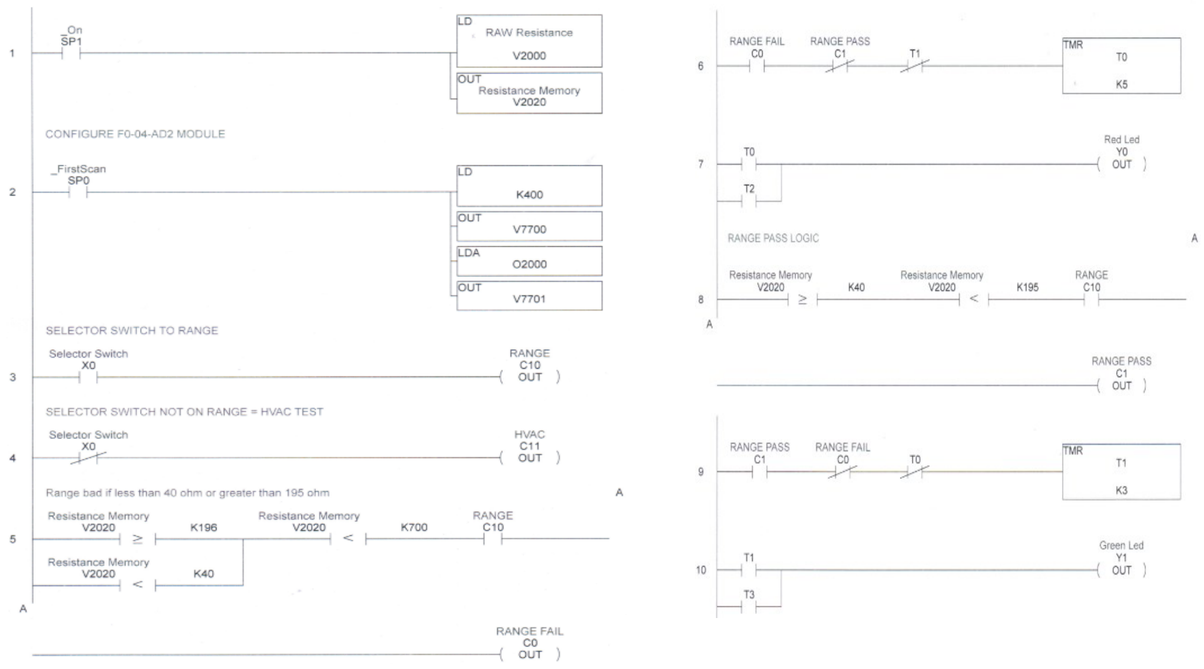
Bracket Crimper System Design



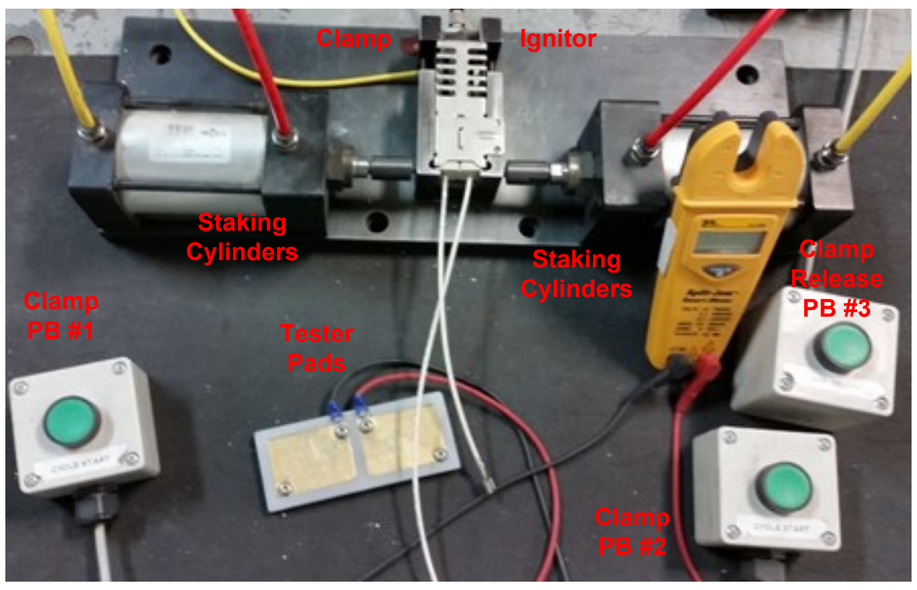
PLC-Based Ohmmeter



PLC Ladder Diagram



Bracket Crimper Assembly



Conclusion

The PLC-based Ohmmeter as built doesn't meet the accuracy requirements. The Automated Bracket Crimper is currently used on the assembly line.