Innovations and Obsolescence in the Simpson Multi-Cooler®

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Simpson first introduced the concept of sand cooling in the 1960s. Since, Simpson has improved mechanical design, revolutionized the affiliated controls technology, and continues to provide the best sand cooler in the foundry industry.

Opportunities for Improvement

For years, Simpson partnered with Michenfelder to provide moisture controls for the Multi-Cooler®. Repairs for the Series LM 81 TK 10-D and LM 91 TK 11-D Moisture Controllers were no longer available, and customers began to express concern with reliability and absence of configurable parameters. In 2002, Simpson went to the drawing board and created controls that were robust, reliable, and provided access to data. The first Simpson Moisture Control System was released to the market in 2009. In 2018, Simpson addressed improvements on the discharge door—mimicking the 2016 design for the Simpson Multi-Mull®. Simpson also studied the original steel discharge door and provided a new design: a stainless-steel door with chrome plating and a linear servo actuator. To help reduce confusion, here's a quick guide to the upgrades available for units constructed before 2018:

- **Moisture Control System**
  Improve moisture control and data analytics with the Simpson Moisture Control Upgrade for the Simpson Multi-Cooler®. The new moisture control system is designed to accurately control discharge sand moisture, to leverage the usage of existing electronic components, (therefore reducing the number and complexity of total electronic components within the system), to provide an ability to exchange process data with internal network and process management systems, to reduce cost, to enhance ease of operation and to improve after sales customer service with quick and reliable technical support. Reduce scrap, improves process control, and integrate Industry 4.0 technologies into your foundry.
- **Discharge Door**
  Reduce sand adhering to the discharge door and improve electrical control of door opening with the new linear actuator with integral servo drive and stainless-steel chrome plated door. In the Americas, the Allen Bradley PLC5, SLC5/04, and SLC5/05 will need to be replaced to communicate to the Exlar linear servo actuator. In the rest of the world, the Siemens S7-300 series will need to be replaced for communication with the actuator. The new actuator is more ergonomic for maintenance personnel. The change improves longevity and eliminates the need for manually adjusted limit switches that were utilized in earlier models. The adjustments are done through PLC. This upgraded door assembly allows any foundry to easily enhance performance of their Simpson Multi-Cooler®.

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List of Obsolete Components

Due to lack of manufacturing or inconsistent quality/availability, Simpson must consider the following items obsolete:

- **Mechanical Components**
  - Mechanical Actuator
- **Electrical Components**
  - Allen Bradley PLC 5 Controllers
  - CTC Screen: P1, P3, PS 10, PA 10
  - Allen Bradley SLC 500
  - Michenfelder Series LM 81 TK 10-D I LM 91 TK 11-D I MCCOMP UNI Typ G91
- **The Simpson Solution**

  With completion of the Multi-Cooler Data Sheet and providing a serial number, Simpson can engineer an upgrade and replacement of obsolete items to support foundry operations.