A Programmable Logic Controller (PLC) is an industrial computer control system that uses the PLC hardware, PLC program, input devices, and output devices to control the operations of a machine. Gruber Systems uses PLCs in the Batchmaster batch metering system and Autocaster casting machines. As with any electronic component, the PLCs have evolved over time leading to changes in the features and capabilities of the PLCs. One of the PLC features deals with how the machine stores / maintains key information such as recipes, setup, calibration factors, and totals. For Autocasters built after 2006 and Batchmasters built after 2017, a memory card is used to store this information. In Autocasters built prior to 2006 and Batchmasters build prior to 2017, a battery is used to retain this information in memory when the machine is turned off. These batteries will fail over time and need to be replaced.

The typical time to see a battery failure is after an extended shutdown of several days (for example around holidays). When you try to start up the machine, the recipes, setup, calibration factors and totals will be missing and prevent proper operation of the machine. In the short term, the recipes, setup, and calibration factors can be reentered so that the machine can operate and be used until it is turned off and the memory is lost again. The long term solution is to replace the battery.

**Recommended Replacement Interval**
Replace the PLC Battery every year to protect the system from data loss.

**Replacement Batteries**
- 161084 for S7-314IFM PLC used typically on the Autocaster RC
- 180384 for S7-22X PLC used on the Autocaster Economizer and Batchmasters
- 180385 for S7-21x PLC used on Autocaster Basic and old Batchmasters

**Procedure For Changing Battery**
1. Locate battery on PLC(See Pictures Below For Battery Location)
2. Some, but not all of the PLCs have a small capacitor to retain data in memory for a few minutes. These capacitors also fail, so it is best to replace the battery when the power is on. With Power On, remove the old battery and replace with a new battery.
S7-314IFM Battery Location

S7-22X Battery Location / S7-212X Battery Location

S7-21x CPU’s are similar but have a larger battery.