**0.0 Revision Log**

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| Revision Log | | | | | |
| Revision Level | Revision Date | Section | Description | | Revised By |
| REL | 06242016 | ---- | Initial Release | | PZ |
| A | 5/17/19 |  | Mass update, complete re-write to standard | | NT |
| B | 10/27/21 | 5.1.2 | Added HSC device recommendations and Fig. 1 picture | | NT |
| C | 12/1/23 | Header | Replaced GHSP logo with newer version | | BB |
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| Approval: | | CN: RS | | MX: DM | |
| US: JA | | Other (as req’d): DRW | |

1. **Purpose:** 
   1. To define the global standard for the use of Load Cells in GHSP manufacturing facilities.
2. **Scope:** 
   1. This global standard applies to all mass production processes at all GHSP manufacturing facilities.
3. **Definitions:**
   1. Load Cell
      1. A transducer that is used to create an electrical signal whose magnitude is directly proportional to the force being measured.
   2. PM – Preventive Maintenance
      1. A schedule of planned maintenance actions aimed at the prevention of breakdowns and failures.
4. **References:**
   1. CP-WI-MFG-X301 Global Standard Production Equipment Safety, Ergonomic, and Delivery Checklist
5. **Method:**
   1. **Load Cell Selection**
      1. Preferred Brands

*Selection outside the preferred brand requires approval by the Advanced Process Engineer and Global Standards Team*

* Kistler Instruments Load Cells
* Futek Instruments Load Cells
* RST Sensor Load Cells
  + 1. Load Cell Measurement Requirements
* Determined by Manufacturing based on Customer Specifications
* To gain measurement time during short install distances when needing to know force vs distance, recommended preferred method is to add a Hydraulic Speed Controller (HSC).
  + Preferred Brand
    - Mindman
  + HSC to be installed in line with cylinder (Fig. 1)
  + This device eliminates the need for a servo or the need for a data collection device (i.e. SigPOD or Kistler)

Fig. 1

A picture containing graphical user interface

Description automatically generated

* + 1. Communication
* EtherNet/IP
  + 1. Cables
* Proper cables (i.e. shielded) are to be used to eliminate noise issues
* Cables shall not be routed next to High Voltage electrical wires
* Cables shall not be wired directly to the electrical panel. Rather a “pigtail” (i.e. quick disconnect) should be used, with the connection location placed somewhere easily accessible, to reduce change out downtime.
  1. **Calibration**
     1. An annual calibration PM needs to be entered in the PM database.

1. **Records:** N/A