1. **Revision Log**

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| Revision Log | | | | | |
| Revision Level | Revision Date | Section | Description | | Revised By |
| REL | 062916 | ---- | Initial Release | | BC |
| B | 1/11/18 |  | Many updates | | NT |
| C | 4/23/20 |  | Mass update, complete re-write to standard | | NT |
| D | 12/1/23 | Header | Replaced GHSP logo with newer version | | B. Balok |
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| Approval: | | CN: RS,FS | | MX: JH | |
| US: JA | | Other (as req’d): DRW | |

1. **Purpose:**
   1. To define the global standard for Equipment Functionality of custom-built equipment within GHSP manufacturing facilities.
2. **Scope:** 
   1. This global standard applies to all GHSP manufacturing facilities.
3. **Definitions:** 
   1. HMI – Human Machine Interface
      1. A device where interactions between humans and machines occur.
   2. PLC – Programmable Logic Controller
      1. An industrial digital computer which has been ruggedized and adapted for the control of manufacturing processes.
   3. Auto Function
      1. Machine process is fully automatic; PLC, HMI, tooling, etc. all works in conjunction to produce a good part. The operator loads parts, machine cycles, error/mistake proofing automatically interrupts machine cycle to prevent passing a bad part.
4. **References:**
   1. CP-WI-MFG-X301-Global Standard Production Equipment Safety, Ergonomic, and Delivery Checklist
   2. CP-WI-MFG-X319-Global Standard Electrical Schematics, HMI, and PLC
   3. CP-WI-MFG-X326-Global Standard Stack Lights and Opto Touch Buttons
   4. CP-WI-MFG-X272-Assembly Start Up
   5. OP-WI-MFG-8.5.1.4-Verification After Planned or Unplanned Shutdown
   6. PD-WI-MFG-213-PFMEA
   7. CP-WI-QUA-214-Control Plan Dev and Maintenance
5. **Method:**
   1. **Start-up**
      1. Start-up process is required at the beginning of each shift and after each change over.
         * Reference CP-WI-MFG-X272 Assembly Start Up
      2. Start-up routine ***MUST*** use PLC code/sequence(s) that is used for normal production. It cannot be its own separate code.
      3. Start-up will use Poke Yoke parts (Red and/or Green Rabbits) to verify the machines are working properly.
      4. Each Poke Yoke check should have an indicator on the HMI that turns green if the Poke Yoke check passed. A red indicator signifies that the Poke Yoke check failed, and the operator needs to call a tech.
      5. It is recommended to display a “Start-up Completed” date/time stamp on the HMI.
   2. **Planned and Unplanned Shutdown**
      1. Equipment start up, with verification, is required after each planned or unplanned shutdown.
         * Reference OP-WI-MFG-8.5.1.4-Verification After Planned or Unplanned Shutdown
   3. **Auto Function**
      1. Automatic function of the station is required to run any production parts.

* Refer to PD-WI-MFG-X319 Global Standard for screen layout and functionality.
  + 1. Cycle Start
* Opto Touch Button
  + Reference CP-WI-MFG-X326 Global Standard Stack Lights and Opto Touch Buttons
  + Opto Touch Buttons cannot be used to show the step progression of the Standardized Work.
* HMI Screen(s)
  + HMI will display ready to cycle message once all parts are loaded correctly.
    1. During Cycle
* Equipment will function in a safe manner meeting all OSHA/MX/China safety standards.
* Reference CP-WI-MFG-X319 Global Standard Electrical Schematics, HMI, and PLC
* Reference CP-WI-MFG-X301 Global Standard Production Equipment Safety, Ergonomic, and Delivery Checklist for safety standards.
  + 1. Cycle Complete
       - Opto Touch Button
         * Reference CP-WI-MFG-X326 Global Standard Stack Lights and Opto Touch Buttons
       - HMI Screen(s)
         * HMI will display cycle complete or unload parts message.
         * PLC removes all latch conditions upon unloading of parts.
    2. Cycle Reset
* When required, must be done with key activation or badge scan and with HMI button or cycle start button activation.
* Reset will send machine movements to home position, in safe manner.
  + If more than one reset is needed to accomplish this task, message screen(s) will be displayed on the HMI to present information of what needs to be done.
  1. **Manual Function**
     1. Key activation will display the “Manual” button on the HMI, which will then allow you to activate the manual screen on the HMI.
     2. All machine functions and settings must be accessible on the manual screen.
     3. There will be a manual function for all machine movements
* Refer to PD-WI-MFG-X319 Global Standard for screen layout and button color coding.

1. **Records**: N/A