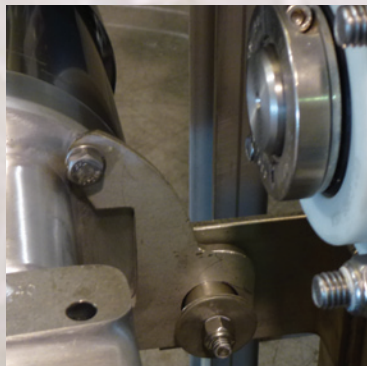
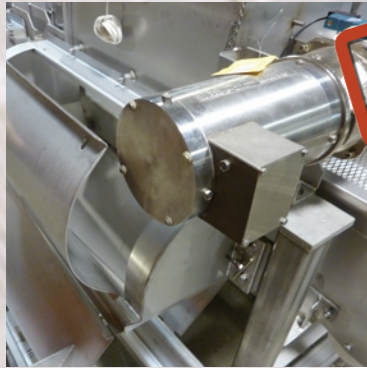
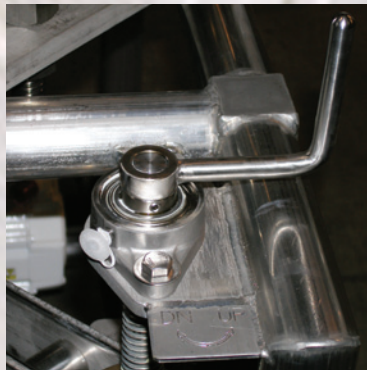




10602 Olive Street • LaVista, NE 68128  
www.millardmfg.com • (402)331-8010

# Safety & Sanitary Design Standards

*Revision: B*  
*Date: 10/2013*



**Confidential Customer Use Only**



## *Safety & Sanitary Design Team Members*

Shop Supervision .....	Darrell Mass, Mark Jefferson
Engineering Manager .....	Joe Wrobleski
Sales Engineer(s).....	Mike Dytrych, Mike Dallan, Dave Vance, Brian Popp
Management .....	Harold Ellis, Mike Price

## **TABLE OF CONTENTS**

<b>1.0 GENERAL .....</b>	<b>3</b>
1.1 PURPOSE AND EXCEPTIONS .....	3
1.2 DEFINITIONS .....	4
<b>2.0 SAFETY &amp; SANITARY DESIGN PRINCIPLES .....</b>	<b>5</b>
2.1 STANDARD #1 CLEANABLE .....	5
2.2 STANDARD #2 COMPATIBLE MATERIALS .....	6
2.3 STANDARD #3 ACCESSIBLE FOR INSPECTION, MAINTENANCE & CLEANING / SANITATION .....	9
2.4 STANDARD #4 NO LIQUID COLLECTION .....	10
2.5 STANDARD #5 HOLLOW AREAS HERMETICALLY SEALED .....	11
2.6 STANDARD #6 NICHE REDUCTION .....	12
2.7 STANDARD #7 SANITARY OPERATIONAL PERFORMANCE .....	13
2.8 STANDARD #8 HYGIENIC DESIGN OF EQUIPMENT & ENCLOSURES .....	14
2.9 STANDARD #9 HYGIENIC COMPATIBILITY WITH OTHER SYSTEMS .....	15
2.10 STANDARD #10 CLEANING / SANITIZING (Passivation) .....	17
2.11 STANDARD #11 PHYSICAL SAFETY .....	18
2.12 STANDARD #12 GLASS .....	19

## 1.0 GENERAL

### 1.1 PURPOSE & EXCEPTIONS

- 1.1.1 This document serves to convey design standards that Millard Manufacturing Corporation (MMC) uses in the fabrication of their equipment where applicable, required and/or specified by the customer and expressly accepted by MMC.
- 1.1.2 The requirements outlined below are considered our MINIMUM necessary standards. Before contracting, the customer may require or request standards that exceed the MMC standards below with written notification. Such exceptions will be clearly labeled in a dedicated section of the quote document.
- 1.1.3 Due to the variety of applications within MMC, exceptions to customer requirements may have to be made to ensure compatibility with the customer's product. Exceptions submitted by MMC to this document for a specific piece of equipment will be reviewed and agreed upon by the customer. The application of specific equipment specifications will supersede this document.
- 1.1.4 While often discussed separately, sanitary construction and sanitary design are inter-related terminology. The objectives of designing and constructing a sanitary piece of equipment are to minimize harborages, eliminate the entrance of cleaning materials and other sources of contamination while maintaining ease of cleaning to the best of the design parameters.
- 1.1.5 All references in this document to customer specifications or approvals mean only such specifications or approvals as are expressly accepted by MMC.

## 1.2 DEFINITIONS

- 1.2.1 **Clean-in-Place** – Cleaning of equipment without dismantling by impingement or circulation of flowing chemical solutions and water rinses into, onto and over surfaces in equipment or systems designed for this specific purpose.
- 1.2.2 **Corrosion-Resistant** – Capable of maintaining original surface characteristics under prolonged contact with the intended end use environment and the normal use of cleaning compounds and sanitizing solutions.
- 1.2.3 **Crevice** – Surface characteristic (e.g. defect, crack, or fissure) which adversely affects clean ability.
- 1.2.4 **Dead Space** – Space where cleaning agents or soils can be trapped, retained or not completely removed during the operation of cleaning.
- 1.2.5 **Joint** – Junction of two or more pieces of material.
- 1.2.6 **Manual Cleaning** – Cleaning by manual means when the machinery is open or partially or totally disassembled.
- 1.2.7 **Product Contact Surface** – The machinery surfaces that are exposed to the customer's product.
- 1.2.8 **Non-Product Contact Surface** – All other exposed machinery surfaces.
- 1.2.9 **Passivation** –
  - 1.2.9.1 The process of immersing stainless steel components in a solution of nitric or citric acid without oxidizing salts. This process aids chemical removal and dissolution of foreign deposits such as imbedded iron, heat scale and weld heat tint and restoration of the original corrosion-resistant surface by forming a thin, transparent oxide film.
  - 1.2.9.2 Passivation treatment is intended to improve the surface condition of stainless steel by dissolving iron that has been imbedded in the surface during forming or machining. If allowed to remain, the iron can corrode and give the appearance of rust spots on the stainless steel.



**2.0 SAFETY & SANITARY DESIGN STANDARDS**

**2.1 STANDARD #1 – CLEANABLE**

***To learn more about Millard Manufacturing Corporation's  
“Safety and Sanitary Design Standards”  
please contact us:***

***Email: [sales@millardmfg.com](mailto:sales@millardmfg.com)  
or  
Call: (800) OMAHA NE or (402) 331-8010***