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3-A Sanitary Standard for Spray Cleaning Devices Intended to Remain in Place,

Number 78-02

Standards Developing Organizations
3-A Sanitary Standards, Inc. (3-A SSI)
In collaboration with
United States Public Health Service (USPHS)/
United States Food and Drug Administration (USFDA)
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European Hygienic Engineering & Design Group (EHEDG)

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Disclaimers

3-A Sanitary Standards and 3-A Accepted Practices are developed through the efforts of experts, working on a volunteer basis, using science-based information and their professional experiences to reach consensus decisions on the sanitary (hygienic) criteria in these 3-A documents.

3-A Sanitary Standards Inc. (SSI), its employees and its volunteer committees/working groups shall not incur any obligation or liability for damages, including consequential damages, arising from or in connection with the development, use, interpretation, or reliance upon this 3-A Sanitary Standard.

3-A Sanitary Standards and 3-A Accepted Practices do not include provisions for mechanical, electrical, or personnel safety. Such safety criteria are established by government regulations and other standards development organizations (SDOs). Other SDO standards may be referenced.

Drawings and illustrations contained herein are examples to assist in understanding the criteria in this 3-A Sanitary Standard. Appendix illustrations are not intended to show all variations of the equipment or system nor are they exclusive of alternate approved methods. Appendix illustrations are non-normative.

Metric conversions are provided for convenience and are not intended to be mandatory.

The Appendix is an advisory or informative section unless specifically cited in the Materials or Fabrication Section as requiring conformance.

Foreword

This 3-A Sanitary Standard establishes minimum sanitary (hygienic) requirements for design, materials, fabrication, and/or installation of Spray Cleaning Devices Intended to Remain in Place.

This 3-A Sanitary Standard is for use on a voluntary basis by directly and materially affected organizations such as equipment and machinery fabricators, processors, and regulatory agencies, and by other SDOs to assure that adequate public health protections exist for the equipment or systems and covered products. 3-A SSI uses these documents as its source of sanitary criteria for 3-A Symbol authorization.

This 3-A Sanitary Standard was developed jointly by 3-A SSI, the United States Public Health Service (USPHS), United States Food and Drug Administration (USFDA), the United States Department of Agriculture – Dairy Programs (USDA), and the European Hygienic Engineering & Design Group (EHEDG).

It is our intent to encourage inventive genius and provide a forum to discuss new developments. Suggestions for improvement and new technology are welcome at any time for consideration by 3-A SSI. Please forward comments to: 3-A SSI, 6888 Elm Street, Suite 2D, McLean, VA 22101-3829, USA or by fax: 703-761-6284, or by e-mail to: 3-ainfo@3-a.org.

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A SCOPE

A1 This 3-A Sanitary Standard applies to the sanitary aspects of spray cleaning devices, including supply tubes, intended to remain in place during processing operations and used on product storage and processing equipment. This Standard does not apply to spray cleaning devices which are removed prior to processing operations. Solution enters the inlet of the spray device or the supply tube fitting and exits at the spray orifice(s).

A2 To conform to this 3-A Sanitary Standard, spray cleaning devices shall meet the following criteria for design, materials of construction, fabrication techniques and installation, as applicable**,** and the current revisions or editions of all referenced documents cited herein.

B NORMATIVE REFERENCES

B1 The following listed 3-A Sanitary Standards, 3-A Accepted Practices and other documents shall be considered as Normative References and the provisions of the referenced documents shall apply to this Standard without further reference in this document unless necessary to describe special considerations.

B2 3-A Sanitary Standards

Doc. No.	Title (3-A Sanitary Standard for:)
00-	General Requirements
33-	Metal Tubing
63-	Sanitary Fittings

B3 3-A Accepted Practices

Doc. No.	Title (3-A Accepted Practice for:)
604-	Supplying Air Under Pressure in Contact with Product, and Product Contact Surfaces

C DEFINITIONS

The most current approved version of the *3-A Sanitary Standard for General Requirements, 00-* shall apply, unless otherwise noted herein with additions, clarifications, exceptions, modifications, or exclusions.

C1 *Bearing Surfaces*: Those components of a spray device that are in close juxtaposition and that move relative to each other, either by rolling or sliding.

C2 *Inspectable*: Designed, fabricated and installed to make product contact surfaces available for close visual observation with or without the use of visual aids.

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C3 *Mating Surfaces*: Those components of a spray device that are in close juxtaposition, and that do not move relative to each other except by disassembly. Examples of mating surfaces are the fitment between a supply tube and the spray device inlet.

C4 *Retractable Spray Device*: A spray assembly that moves the spray component out of direct product contact after the cleaning operation is complete.

D **MATERIALS**

The most current approved version of the *3-A Sanitary Standard for General Requirements, 00-* shall apply, unless otherwise noted herein with additions, clarifications, exceptions, modifications, or exclusions.

D1 **Product Contact Surfaces** (Refer to *3-A Sanitary Standard for General Requirements, 00-*)

D1.1 **Metals** (Refer to *3-A Sanitary Standard for General Requirements, 00-*)

D1.2 **Non-Metals** (Refer to *3-A Sanitary Standard for General Requirements, 00-*)

D1.2.1 Plastic materials may be used for any component of a spray cleaning device, and when used, shall conform to *3-A Sanitary Standard for General Requirements, 00-*.

D1.2.2 Rubber and rubber-like materials may be used for seals, O-rings, gaskets and parts having the same functional purpose, and when used, shall conform to *3-A Sanitary Standard for General Requirements, 00-*.

D1.3 Rubber and rubber-like materials may be used for coatings, and when used for the specified application(s), shall conform to *3-A Sanitary Standard for General Requirements, 00-*.

D1.4 Adhesives may be used for bonding materials (Refer to *3-A Sanitary Standard for General Requirements, 00-*).

D2 **Non-Product Contact Surfaces** (Refer to *3-A Sanitary Standard for General Requirements, 00-*)

D3 **Sterilizability**

D3.1 In a processing system to be sterilized by heat and operated at a temperature of 250ºF (121ºC) or higher, all materials having product contact surface(s) used in the construction of spray cleaning devices and non-metallic component parts shall be such that they can be (1) sterilized by saturated steam or water under pressure (at least 15.3 psig or 106 kPa) at a temperature of at least 250ºF (121ºC) and (2) operated at the temperature required for processing.

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E FABRICATION OF PRODUCT AND SOLUTION CONTACT SURFACES

The most current approved version of the *3-A Sanitary Standard for General Requirements, 00-* shall apply, unless otherwise noted herein with additions, clarifications, exceptions, modifications, or exclusions.

E1 **Surface Texture** (Refer to *3-A Sanitary Standard for General Requirements, 00-*), except that:

E1.1 Carbon, ceramic, and plastic material, shall be at least as smooth as a 32 µin (0.8 µm) Ra finish and shall be free of chips, pits, cracks, feathering, gouges, and tooling marks in the final fabricated form.

E2 **Joints**

E2.1 **Permanent Joints** (Refer to *3-A Sanitary Standard for General Requirements, 00-*), except that:

E2.1.1 All welds shall be made by the TIG method or an equally satisfactory method. The following precautions shall be taken:

E2.1.1.1 Inert back-up gas shall be used to protect and control the interior of the weld.

E2.1.1.2 The welding surface (interior, face, and exterior) shall be cleaned and freed of all foreign matter and surface oxide before welding. Iron-free abrasive shall be used when cleaning surfaces.

E2.1.1.3 All tube and fitting ends shall be square cut and deburred.

E2.1.1.4 Welding procedures shall assure uniform and complete penetration of the weld at all times.

E2.1.1.5 All welds having pits, craters, ridges, or imbedded foreign materials shall be removed and the joints shall be properly re-welded.

E2.1.1.6 Internal and external grinding and/or polishing of pipeline or device assembly welds are not required. However, welds performed from the outside of a pipeline or device cannot create imperfections such as pits, folds, and crevices on the interior of the pipeline or device.

E2.2 **Non-Permanent Joints**

E2.2.1 Self-cleaning slip-joints and retaining clips are an acceptable method of assembling spray cleaning devices. (See Appendix, 4, 5, 6, 7, and 10.)

E2.2.1.1 When self-cleaning slip-joints and retaining clips are used for assembly, cleanability shall be demonstrated by passing EHEDG Guideline 2 testing, A Method for Assessing the In-place Cleanability of Food Processing Equipment (Refer to Section B1, *3-A Sanitary Standard for General Requirements, 00-*), or other suitable documented test method.

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