SECTION TABLE OF CONTENTS

DIVISION 11 - EQUIPMENT

SECTION 11 71 00

STERILIZERS AND ASSOCIATED EQUIPMENT

05/20

PART 1 GENERAL

1.1 RELATED REQUIREMENTS
1.2 REFERENCES
1.3 SUBMITTALS
1.4 WARRANTY

PART 2 PRODUCTS

2.1 MATERIALS
2.1.1 Carbon Steel
2.1.2 Nickel
2.1.3 Nickel and Nickel-Alloy Clad Steel
2.1.4 Nickel-Copper Alloy (Monel Metal)
2.1.5 Stainless Steel
2.1.6 Stainless Steel Bars and Rods
2.1.7 Stainless Steel for Pressure Vessels
2.1.8 Stainless Steel Clad
2.1.9 Tin
2.1.10 Titanium
2.2 PIPING AND TUBING
2.2.1 Steam Supply and Return Condensate Lines
2.2.2 Gaseous Sterilant Lines
2.2.3 Water and Waste Lines
2.2.4 Pipe Fittings
2.2.5 Pressure Vessels
2.2.6 Welding Materials
2.2.7 Connections to Equipment
2.3 ELECTRICAL WORK
2.4 EQUIPMENT
2.4.1 Item S0105, Sterilizer, STM, GV, 1DO, CAB, 16x16x26 Chamber
2.4.2 Item S0107, Sterilizer, Elec, GV, 1DO, CAB, Small Chamber
2.4.3 Item S0125, Sterilizer, Stm, VAC, 1DO, CAB, 16x16x26 Chamber
2.4.4 Item S0127, Sterilizer, Elec, VAC, 1DO, CAB, 16x16x26 Chamber
2.4.5 Item S0137, Sterilizer,Stm,VAC,2DO,RCSD,1WLL,16x16x26 Chamber
2.4.6 Item S0145, Sterilizer, Stm, LAB, 1DO, CAB, 16x16x26 Chamber

2.4.7 Item S0190, Rack, 2SH, 16x16x26 Chamber
2.4.8 Item S0210, Sterilizer, Stm, GV, 1DO, RCSD, 1WLL, 20x20x38 Chamber
2.4.9 Item S0215, Sterilizer, Stm, GV, 2DO, RCSD, 1WLL, 20x20x38 Chamber
2.4.10 Item S0220, Sterilizer, Stm GV, 2DO, RCSD 2WLL, 20x20x38 Chamber
2.4.11 Item S0225, Sterilizer, Stm, VAC, 1DO, CAB, 20x 20x38 Chamber
2.4.12 Item S0235, Sterilizer, Stm, VAC, 2DO, RCSD 1WLL, Medium Chamber
2.4.13 Item S0237, Sterilizer, ELEC, VAC,2DO,RCSD 1WLL, 20x20x38 Cham
2.4.14 Item S0290, Rack, 2SH, 20x20x38 CHMBR
2.4.15 Item S0295, Loading Car & Transfer Carriage, 20x20x38 Chamber
2.4.16 Item S0332, Sterilizer, Stm, VAC,1DO,RCSD 1WLL,24x36x36 Chamber
2.4.17 Item S0395, Loading Car & Transfer Carriage, Large Chamber
2.4.18 Item S0405, Sterilizer, STM, GV, 1DO, CAB, 24x36x48 Chamber
2.4.19 Item S0432, Sterilizer, Stm,VAC,1DO,RCSD 1WLL,24x36x48 Chamber
2.4.20 Item S0442, Sterilizer, Stm,VAC,2DO,RCSD 2WLL,24x36x48 Chamber
2.4.21 Item S0450, Sterilizer, Stm,LAB,1DO,RCSD 1WLL, 24x36x48 Chamber
2.4.22 Item S0495, Loading Car & Transfer Carriage, 24x36x48 Chamber
2.4.23 Item S0505, Sterilizer, STM, GV, 1DO, CAB, 24x36x60 Chamber
2.4.24 Item S0530, Sterilizer, Stm,VAC,1DO,RCSD 1WLL,24x36x60 Chamber
2.4.25 Item S0535, Sterilizer,Stm,VAC,2DO,RCSD 1WLL, 24x36x60 Chamber
2.4.26 Item S0595, Loading Car & Transfer Carriage, 24x36x60 Chamber
2.4.27 Item S0905 Washer, Multi-Chamber (5), Automated
2.4.28 Item S0910, Washer, Multi-Chamber (4), Automated
2.4.29 Item S0915, Washer/Disinfector, STM,2DO,RCSD1WLL,23X19X24 Chamber
2.4.30 Item S0920, Washer/Disinfector, STM, 1DO, CAB, 26X24X24 Cham
2.4.31 Item S0925, Washer/Disinfector, STM, 1DO, CAB, 23X19X24 Cham
2.4.32 Item S0930, Washer/Disinfector, STM, 1DO, RCSD 1WLL, 23X19X24 Cham
2.4.33 Item S0940, Washer/Disinfector,STM,1DO,RSCD 1WLL,26X24X24 Cham
2.4.34 Item S0955, Washer/Disinfector, STM, 2DO, RCSD 1 WLL, LDG/UNLDG STA
2.4.35 Item S0960, Washer/Disinfector,STM,2DO,RCSD1WLL,26X24X24 Chamber
2.4.36 Item S0965, Washer/Disinfector, Dental
2.4.37 Item S1815, Generator, Steam, Electric, 30 kW
2.4.38 Item S1830, Generator, Steam, Electric, 75 KW
2.4.39 Item S1900, Rack, Pass-Through, Window & Door Assembly
2.4.40 Item S1905, Window, Sliding Service
2.4.41 Item S2635 Cleaner, Ultrasonic, SNGL Chamber, CAB, F/S
2.4.42 Item S2640, Cleaner, Ultrasonic, Console, DBL CHMBR, CAB, F/S
2.4.43 Item S3185, Washer, Cart & Utensil, 2 DO, PIT MNTD, RCSD 2 WLL
2.4.44 Item S4300, Gun, Steam
2.4.45 Item S9765, Flusher/Disinfector, Disposal, Human Waste
2.4.46 Item S9800, Sterilizer,Stm,VAC,1DO,RCSD1WLL,F/M, Large Chamber
2.4.47 Item S9810, Sterilizer,Stm,VAC,1DO,RCSD1WLL,PIT,26x62x42 Chamber
2.4.48 Item S9815, Sterilizer,Stm,VAC,2DO,RCSD2WLL,F/M,26x62x42 Chamber

PART 3 EXECUTION

3.1 EXAMINATION
3.2 INSTALLATION

3.3 ADJUSTING
3.4 UTILITIES
3.4.1 Service Runs
3.4.2 Dissimilar Metal Connectors
3.5 MANUFACTURER'S FIELD SERVICES
3.6 FIELD TESTS AND INSPECTIONS
3.6.1 Before Testing
3.6.2 Testing
3.6.3 Inspection
3.7 CLEANING
3.7.1 For Final Acceptance
3.7.2 Marred Surfaces Exposed-to-View
3.7.3 Concealed Marred Surfaces
3.8 TRAINING
3.8.1 Training Course
3.8.1.1 Government's Biomedical Equipment Technician Training

-- End of Section Table of Contents --

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USACE / NAVFAC / AFCEC / NASA | **UFGS-11 71 00 (May 2020)**

Preparing Activity: USACE | **Superseding UFGS-11 71 00 (February 2009)**

References are in agreement with UMRL dated January 2021

UNIFIED FACILITIES GUIDE SPECIFICATIONS

****

SECTION 11 71 00

STERILIZERS AND ASSOCIATED EQUIPMENT
05/20

****

NOTE: This guide specification covers the requirements for warming cabinets, sterilizers, and associated equipment.

This Section refers to Section 11 70 00 GENERAL REQUIREMENTS FOR MEDICAL AND DENTAL EQUIPMENT for general requirements; always include Section 11 70 00 when this Section is used.

Adhere to UFC 1-300-02 Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable items(s) or insert appropriate information.

Remove information and requirements not required in respective project, whether or not brackets are present.

Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a Criteria Change Request (CCR).

****

PART 1 GENERAL

****

NOTE: Schedule equipment on the drawings and list required salient features on the schedule. These features include size of sterilizer, capacity of stills and storage tanks, manual, automatic or automatic microprocessor controls, sterilizer material handling accessories, and any optional exceptions to standards specified. Also include operating power requirements for each unit. Identify equipment on the schedule and in the drawings by Joint Schedule Numbers (JSN) from

MIL-STD-1691, Construction and Material Schedule for Military Medical and Dental Facilities.

On the project drawings show exhaust ventilation (to keep gas away from person opening sterilizer door).

****

1.1 RELATED REQUIREMENTS

The requirements of Section 11 70 00 GENERAL REQUIREMENTS FOR MEDICAL AND DENTAL EQUIPMENT apply to this Section.

1.2 REFERENCES

****

NOTE: This paragraph is used to list the publications cited in the text of the guide specification. The publications are referred to in the text by basic designation only and listed in this paragraph by organization, designation, date, and title.

Use the Reference Wizard's Check Reference feature when you add a RID outside of the Section's Reference Article to automatically place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature to update the issue dates.

References not used in the text will automatically be deleted from this section of the project specification when you choose to reconcile references in the publish print process.

****

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B16.18	(2018) Cast Copper Alloy Solder Joint Pressure Fittings
ASME B16.22	(2018) Standard for Wrought Copper and Copper Alloy Solder Joint Pressure Fittings
ASME BPVC SEC II-C	(2017) BPVC Section II-Materials Part C-Specifications for Welding Rods Electrodes and Filler Metals
ASME BPVC SEC VIII D1	(2019) BPVC Section VIII-Rules for Construction of Pressure Vessels Division 1

ASTM INTERNATIONAL (ASTM)

ASTM A36/A36M	(2019) Standard Specification for Carbon Structural Steel

ASTM A167	(2011) Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip
ASTM A240/A240M	(2020) Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
ASTM A264	(2012; R 2019) Standard Specification for Stainless Chromium-Nickel Steel-Clad Plate
ASTM A265	(2012) Standard Specification for Nickel and Nickel-Base Alloy-Clad Steel Plate
ASTM A269/A269M	(2015; R 2019) Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service
ASTM A285/A285M	(2017) Standard Specification for Pressure Vessel Plates, Carbon Steel, Low- and Intermediate-Tensile Strength
ASTM A312/A312M	(2019) Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes
ASTM A515/A515M	(2017) Standard Specification for Pressure Vessel Plates, Carbon Steel, for Intermediate- and Higher-Temperature Service
ASTM A568/A568M	(2019a) Standard Specification for Steel, Sheet, Carbon, Structural, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements for
ASTM B32	(2020) Standard Specification for Solder Metal
ASTM B39	(1979; R 2008) Standard Specification for Nickel
ASTM B42	(2020) Standard Specification for Seamless Copper Pipe, Standard Sizes
ASTM B43	(2020) Standard Specification for Seamless Red Brass Pipe, Standard Sizes
ASTM B88	(2020) Standard Specification for Seamless Copper Water Tube
ASTM B88M	(2020) Standard Specification for Seamless Copper Water Tube (Metric)
ASTM B127	(2019) Standard Specification for Nickel-Copper Alloy (UNS N04400) Plate, Sheet, and Strip

ASTM B135/B135M	(2017) Standard Specification for Seamless Brass Tube
ASTM B163	(2019) Standard Specification for Seamless Nickel and Nickel Alloy Condenser and Heat-Exchanger Tubes
ASTM B164	(2003; R 2014) Standard Specification for Nickel-Copper Alloy Rod, Bar, and Wire
ASTM B165	(2019) Standard Specification for Nickel-Copper Alloy (UNS N04400)* Seamless Pipe and Tube
ASTM B166	WARNING: Text in tags exceeds the maximum length of 300 characters
ASTM B167	WARNING: Text in tags exceeds the maximum length of 300 characters
ASTM B339	(2019) Standard Specification for Pig Tin
ASTM B348/B348M	(2019) Standard Specification for Titanium and Titanium Alloy Bars and Billets

INTERNATIONAL CODE COUNCIL (ICC)

ICC IPC	(2018) International Plumbing Code

1.3 SUBMITTALS

****

NOTE: Review submittal description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list, and corresponding submittal items in the text, to reflect only the submittals required for the project. The Guide Specification technical editors have classified those items that require Government approval, due to their complexity or criticality, with a "G." Generally, other submittal items can be reviewed by the Contractor's Quality Control System. Only add a “G” to an item, if the submittal is sufficiently important or complex in context of the project.

For Army projects, fill in the empty brackets following the "G" classification, with a code of up to three characters to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy, Air Force, and NASA projects.

The "S" classification indicates submittals required

as proof of compliance for sustainability Guiding Principles Validation or Third Party Certification and as described in Section 01 33 00 SUBMITTAL PROCEDURES.

Choose the first bracketed item for Navy, Air Force and NASA projects, or choose the second bracketed item for Army projects.

****

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are [for Contractor Quality Control approval.][for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government.] Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

[Item S0105, Sterilizer, STM, GV, 1DO, CAB, 16x16x26 Chamber; G[, [_____]]

][Item S0107, Sterilizer, Elec, GV, 1DO, CAB, Small Chamber; G[, [_____]]

][Item S0125, Sterilizer, Stm, VAC, 1DO, CAB, 16x16x26 Chamber; G[, [_____]]

][Item S0127, Sterilizer, Elec, VAC, 1DO, CAB, 16x16x26 Chamber; G[, [_____]]

][Item S0137, Sterilizer,Stm,VAC,2DO,RCSD,1WLL,16x16x26 Chamber; G[, [_____]]

][Item S0145, Sterilizer, Stm, LAB, 1DO, CAB, 16x16x26 Chamber; G[, [_____]]

][Item S0190, Rack, 2SH, 16x16x26 Chamber; G[, [_____]]

][Item S0210, Sterilizer,Stm,GV,1DO,RCSD, 1WLL, 20x20x38 Chamber; G [, [_____]]

][Item S0215, Sterilizer,Stm,GV,2DO,RCSD,1WLL, 20x20x38 Chamber; G[, [_____]]

][Item S0220, Sterilizer, Stm,GV, 2DO, RCSD 2WLL, 20x20x38 Chamber; G [, [_____]]

][Item S0225, Sterilizer, Stm, VAC, 1DO, CAB, 20x20x38 Chamber; G[, [_____]]

][Item S0235, Sterilizer,Stm,VAC,2DO,RCSD 1WLL, Medium Chamber; G[, [_____]]

][Item S0237, Sterilizer,ELEC,VAC,2DO,RCSD 1WLL, 20x20x38 Chamber; G [, [_____]]

][Item S0290, Rack, 2SH, 20x20x38 CHMBR; G[, [_____]]

][Item S0295, Loading Car & Transfer Carriage, 20x20x38 Chamber; G[, [_____]]

][Item S0332, Sterilizer,Stm,VAC,1DO,RCSD 1WLL,24x36x36 Chamber; G[, [_____]]

][Item S0395, Loading Car & Transfer Carriage, Large Chamber; G[, [_____]]

][Item S0405, Sterilizer; G[, [_____]]

][Item S0432, Sterilizer; G[, [_____]]

][Item S0442, Sterilizer; G[, [_____]]

][Item S0450, Sterilizer; G[, [_____]]

][Item S0495, Loading Car & Transfer Carriage; G[, [_____]]

][Item S0505, Sterilizer; G[, [_____]]

][Item S0530, Sterilizer; G[, [_____]]

][Item S0535, Sterilizer; G[, [_____]]

][Item S0595, Loading Car & Transfer Carriage; G[, [_____]]

][Item S0905, Washer; G[, [_____]]

][Item S0910, Washer, Multi-Chamber (4), Automated; G[, [_____]]

][Item S0915, Washer/Disinfector; G[, [_____]]

][Item S0920, Washer/Disinfector, STM, 1DO, CAB, 26X24X24 Cham; G[, [_____]]

][Item S0925, Washer/Disinfector, STM, 1DO, CAB, 23X19X24 Cham; G[, [_____]]

][Item S0930, Washer/Disinfector,STM,1DO,RCSD1WLL,23X19X24 Cham; G[, [_____]]

][Item S0940, Washer/Disinfector,STM,1DO,RSCD 1WLL,26X24X24 Cham; G [, [_____]]

][Item S0955, Washer/Disinfector,STM,2DO,RCSD1WLL,LDG/UNLDG STA; G[, [_____]]

][Item S0960, Washer/Disinfector; G[, [_____]]

][Item S0965, Washer/Disinfector, Dental; G[, [_____]]

][Item S1815, Generator; G[, [_____]]

][Item S1830, Generator; G[, [_____]]

][Item S1900, Rack, Pass-Through, Window & Door Assembly; G[, [_____]]

][Item S1905, Window, Sliding Service; G[, [_____]]

][Item S2635, Cleaner, Ultrasonic; G[, [_____]]

][Item S2640, Cleaner, Ultrasonic, Console; G[, [_____]]

][Item S3185, Washer, Cart & Utensil; G[, [_____]]

][Item S4300, Gun, Steam; G[, [_____]]

][Item S9765, Flusher/Disinfector, Disposal, Human Waste; G[, [_____]]

][Item S9800, Sterilizer; G[, [_____]]

][Item S9810, Sterilizer; G[, [_____]]

][Item S9815, Sterilizer; G[, [_____]]
]

Submit approved detail drawings for each item of equipment listed above that interfaces with other items of equipment or construction.

SD-03 Product Data

[Item S0105, Sterilizer, STM, GV, 1DO, CAB, 16x16x26 Chamber; G[, [_____]]

][Item S0107, Sterilizer, Elec, GV, 1DO, CAB, Small Chamber; G[, [_____]]

][Item S0125, Sterilizer, Stm, VAC, 1DO, CAB, 16x16x26 Chamber; G[, [_____]]

][Item S0127, Sterilizer, Elec, VAC, 1DO, CAB, 16x16x26 Chamber; G[, [_____]]

][Item S0137, Sterilizer,Stm,VAC,2DO,RCSD,1WLL,16x16x26 Chamber; G[, [_____]]

][Item S0145, Sterilizer, Stm, LAB, 1DO, CAB, 16x16x26 Chamber; G[, [_____]]

][Item S0190, Rack, 2SH, 16x16x26 Chamber; G[, [_____]]

][Item S0210, Sterilizer,Stm,GV,1DO,RCSD, 1WLL, 20x20x38 Chamber; G [, [_____]]

][Item S0215, Sterilizer,Stm,GV,2DO,RCSD,1WLL, 20x20x38 Chamber; G[, [_____]]

][Item S0220, Sterilizer, Stm, GV, 2DO, RCSD 2WLL, 20x20x38 Chamber; G[, [_____]]

][Item S0225, Sterilizer, Stm, VAC, 1DO, CAB, 20x20x38 Chamber; G[, [_____]]

][Item S0235, Sterilizer, Stm, VAC, 2DO,RCSD 1WLL, Medium Chamber; G [, [_____]]

][Item S0237, Sterilizer,ELEC,VAC,2DO,RCSD 1WLL, 20x20x38 Cham; G[, [_____]]

][Item S0290, Rack, 2SH, 20x20x38 CHMBR; G[, [_____]]

][Item S0295, Loading Car & Transfer Carriage, 20x20x38 Chamber; G[, [_____]]

][Item S0332, Sterilizer,Stm,VAC,1DO,RCSD 1WLL,24x36x36 Chamber; G[, [_____]]

][Item S0395, Loading Car & Transfer Carriage, Large Chamber; G[, [_____]]

][Item S0405, Sterilizer; G[, [_____]]

][Item S0432, Sterilizer; G[, [_____]]

][Item S0442, Sterilizer; G[, [_____]]

][Item S0450, Sterilizer; G[, [_____]]

][Item S0495 Loading Car & Transfer Carriage; G[, [_____]]

][Item S0505, Sterilizer; G[, [_____]]

][Item S0530, Sterilizer; G[, [_____]]

][Item S0535, Sterilizer; G[, [_____]]

][Item S0595, Loading Car & Transfer Carriage; G[, [_____]]

][Item S0905, Washer; G[, [_____]]

][Item S0910, Washer, Multi-Chamber (4), Automated; G[, [_____]]

][Item S0915, Washer/Disinfector; G[, [_____]]

][Item S0920, Washer/Disinfector, STM, 1DO, CAB, 26X24X24 Cham; G[, [_____]]

][Item S0925, Washer/Disinfector, STM, 1DO, CAB, 23X19X24 Cham; G[, [_____]]

][Item S0930, Washer/Disinfector,STM,1DO,RCSD1WLL,23X19X24 Cham; G[, [_____]]

][Item S0940, Washer/Disinfector,STM,1DO,RSCD 1WLL,26X24X24 Cham; G [, [_____]]

][Item S0955, Washer/Disinfector,STM,2DO,RCSD1WLL,LDG/UNLDG STA; G[, [_____]]

][Item S0960, Washer/Disinfector; G[, [_____]]

][Item S0965, Washer/Disinfector, Dental; G[, [_____]]

][Item S1815, Generator; G[, [_____]]

][Item S1830, Generator; G[, [_____]]

][Item S1900, Rack, Pass-Through, Window & Door Assembly; G[, [_____]]

][Item S1905, Window, Sliding Service; G[, [_____]]

][Item S2635, Cleaner, Ultrasonic; G[, [_____]]

][Item S2640, Cleaner, Ultrasonic, Console; G[, [_____]]

][Item S3185, Washer, Cart & Utensil; G[, [_____]]

][Item S4300, Gun, Steam; G[, [_____]]

][Item S9765, Flusher/Disinfector, Disposal, Human Waste; G[, [_____]]

][Item S9800, Sterilizer; G[, [_____]]

][Item S9810, Sterilizer; G[, [_____]]

][Item S9815, Sterilizer; G[, [_____]]
]

Submit catalog numbers, trade names, literature, data sheets, diagrams and other pertinent data for each item of equipment listed above to evaluate performance, function, materials, dimensions and appearance.

****
NOTE: Add "SD-04 Samples" only when color selections or color verifications are required for project-specific equipment items.
****

[SD-04 Samples

[Item [_____]; G[, [_____]]]

Submit manufacturer's [standard color charts for color selection] [color samples for color verification] for each item of equipment listed above.

] SD-06 Test Reports

[Item S0105, Sterilizer, STM, GV, 1DO, CAB, 16x16x26 Chamber; G[, [_____]]

][Item S0107, Sterilizer, Elec, GV, 1DO, CAB, Small Chamber; G[, [_____]]

][Item S0125, Sterilizer, Stm, VAC, 1DO, CAB, 16x16x26 Chamber; G[, [_____]]

][Item S0127, Sterilizer, Elec, VAC, 1DO, CAB, 16x16x26 Chamber; G[, [_____]]

][Item S0137, Sterilizer,Stm,VAC,2DO,RCSD,1WLL,16x16x26 Chamber; G[,

[_____]]

][Item S0145, Sterilizer, Stm, LAB, 1DO, CAB, 16x16x26 Chamber; G[, [_____]]

][Item S0190, Rack, 2SH, 16x16x26 Chamber; G[, [_____]]

][Item S0210, Sterilizer,Stm,GV,1DO,RCSD, 1WLL, 20x20x38 Chamber; G[, [_____]]

][Item S0215, Sterilizer,Stm,GV,2DO,RCSD,1WLL, 20x20x38 Chamber; G[, [_____]]

][Item S0220, Sterilizer, Stm, GV, 2DO, RCSD 2WLL, 20x20x38 Chamber; G[, [_____]]

][Item S0225, Sterilizer, Stm, VAC, 1DO, CAB, 20x20x38 Chamber; G[, [_____]]

][Item S0235, Sterilizer,Stm,VAC,2DO,RCSD 1WLL, Medium Chamber; G[, [_____]]

][Item S0237, Sterilizer,ELEC,VAC,2DO,RCSD 1WLL, 20x20x38 Cham; G[, [_____]]

][Item S0290, Rack, 2SH, 20x20x38 CHMBR; G[, [_____]]

][Item S0295, Loading Car & Transfer Carriage, 20x20x38 Chamber; G[, [_____]]

][Item S0332, Sterilizer,Stm,VAC,1DO,RCSD 1WLL,24x36x36 Chamber; G[, [_____]]

][Item S0395, Loading Car & Transfer Carriage, Large Chamber; G[, [_____]]

][Item S0405, Sterilizer; G[, [_____]]

][Item S0432, Sterilizer; G[, [_____]]

][Item S0442, Sterilizer; G[, [_____]]

][Item S0450, Sterilizer; G[, [_____]]

][Item S0495, Loading Car & Transfer Carriage; G[, [_____]]

][Item S0505, Sterilizer; G[, [_____]]

][Item S0530, Sterilizer; G[, [_____]]

][Item S0535, Sterilizer; G[, [_____]]

][Item S0595, Loading Car & Transfer Carriage; G[, [_____]]

][Item S0905, Washer; G[, [_____]]

][Item S0910, Washer, Multi-Chamber (4), Automated; G[, [_____]]

][Item S0915, Washer/Disinfector; G[, [_____]]

][Item S0920,, Washer/Disinfector, STM, 1DO, CAB, 26X24X24 Cham; G[, [_____]]

][Item S0925, Washer/Disinfector, STM, 1DO, CAB, 23X19X24 Cham; G[, [_____]]

][Item S0930, Washer/Disinfector,STM,1DO,RCSD1WLL,23X19X24 Cham; G[, [_____]]

][Item S0940, Washer/Disinfector,STM,1DO,RSCD 1WLL,26X24X24 Cham; G [, [_____]]

][Item S0955, Washer/Disinfector,STM,2DO,RCSD1WLL,LDG/UNLDG STA; G[, [_____]]

][Item S0960, Washer/Disinfector; G[, [_____]]

][Item S0965, Washer/Disinfector, Dental; G[, [_____]]

][Item S1815, Generator; G[, [_____]]

][Item S1830, Generator; G[, [_____]]

][Item S1900, Rack, Pass-Through, Window & Door Assembly; G[, [_____]]

][Item S1905, Window, Sliding Service; G[, [_____]]

][Item S2635, Cleaner, Ultrasonic; G[, [_____]]

][Item S2640, Cleaner, Ultrasonic, Console; G[, [_____]]

][Item S3185, Washer, Cart & Utensil; G[, [_____]]

][Item S4300, Gun, Steam; G[, [_____]]

][Item S9765, Flusher/Disinfector, Disposal, Human Waste; G[, [_____]]

][Item S9800, Sterilizer; G[, [_____]]

][Item S9810, Sterilizer; G[, [_____]]

][Item S9815 Sterilizer; G[, [_____]]
]

Submit field tests and inspection reports for each item of equipment listed above signed by authorized official responsible for field tests and inspections.

SD-10 Operation and Maintenance Data

[Item S0105, Sterilizer, STM, GV, 1DO, CAB, 16x16x26 Chamber; G[, [_____]]

][Item S0107, Sterilizer, Elec, GV, 1DO, CAB, Small Chamber; G[, [_____]]

][Item S0125, Sterilizer, Stm, VAC, 1DO, CAB, 16x16x26 Chamber; G[,

[_____]]

][Item S0127, Sterilizer, Elec, VAC, 1DO, CAB, 16x16x26 Chamber; G[, [_____]]

][Item S0137, Sterilizer,Stm,VAC,2DO,RCSD,1WLL,16x16x26 Chamber; G[, [_____]]

][Item S0145, Sterilizer, Stm, LAB, 1DO, CAB, 16x16x26 Chamber; G[, [_____]]

][Item S0190, Rack, 2SH, 16x16x26 Chamber; G[, [_____]]

][Item S0210, Sterilizer,Stm,GV,1DO,RCSD, 1WLL, 20x20x38 Chamber; G [, [_____]]

][Item S0215, Sterilizer,Stm,GV,2DO,RCSD,1WLL, 20x20x38 Chamber; G[, [_____]]

][Item S0220, Sterilizer, Stm, GV, 2DO, RCSD 2WLL, 20x20x38 Chamber; G[, [_____]]

][Item S0225, Sterilizer, Stm, VAC, 1DO, CAB, 20x20x38 Chamber; G[, [_____]]

][Item S0235, Sterilizer,Stm,VAC,2DO,RCSD 1WLL, Medium Chamber; G[, [_____]]

][Item S0237, Sterilizer,ELEC,VAC,2DO,RCSD 1WLL, 20x20x38 Cham; G[, [_____]]

][Item S0290, Rack, 2SH, 20x20x38 CHMBR; G[, [_____]]

][Item S0295, Loading Car & Transfer Carriage, 20x20x38 Chamber; G[, [_____]]

][Item S0332, Sterilizer,Stm,VAC,1DO,RCSD 1WLL,24x36x36 Chamber; G[, [_____]]

][Item S0395, Loading Car & Transfer Carriage, Large Chamber; G[, [_____]]

][Item S0405, Sterilizer; G[, [_____]]

][Item S0432, Sterilizer; G[, [_____]]

][Item S0442, Sterilizer; G[, [_____]]

][Item S0450, Sterilizer; G[, [_____]]

][Item S0495, Loading Car & Transfer Carriage; G[, [_____]]

][Item S0505, Sterilizer; G[, [_____]]

][Item S0530, Sterilizer; G[, [_____]]

][Item S0535, Sterilizer; G[, [_____]]

][Item S0595, Loading Car & Transfer Carriage; G[, [_____]]

][Item S0905, Washer; G[, [_____]]

][Item S0910, Washer, Multi-Chamber (4), Automated; G[, [_____]]

][Item S0915, Washer/Disinfector; G[, [_____]]

][Item S0920, Washer/Disinfector, STM, 1DO, CAB, 26X24X24 Cham; G[, [_____]]

][Item S0925, Washer/Disinfector, STM, 1DO, CAB, 23X19X24 Cham; G[, [_____]]

][Item S0930, Washer/Disinfector,STM,1DO,RCSD1WLL,23X19X24 Cham; G[, [_____]]

][Item S0940, Washer/Disinfector,STM,1DO,RSCD 1WLL,26X24X24 Cham; G [, [_____]]

][Item S0955, Washer/Disinfector,STM,2DO,RCSD1WLL,LDG/UNLDG STA; G[, [_____]]

][Item S0960, Washer/Disinfector; G[, [_____]]

][Item S0965, Washer/Disinfector, Dental; G[, [_____]]

][Item S1815, Generator; G[, [_____]]

][Item S1830, Generator; G[, [_____]]

][Item S1900, Rack, Pass-Through, Window & Door Assembly; G[, [_____]]

][Item S1905, Window, Sliding Service; G[, [_____]]

][Item S2635, Cleaner, Ultrasonic; G[, [_____]]

][Item S2640, Cleaner, Ultrasonic, Console; G[, [_____]]

][Item S3185, Washer, Cart & Utensil; G[, [_____]]

][Item S4300, Gun, Steam; G[, [_____]]

][Item S9765, Flusher/Disinfector, Disposal, Human Waste; G[, [_____]]

][Item S9800, Sterilizer; G[, [_____]]

][Item S9815, Sterilizer; G[, [_____]]
]

Submit Data Package 3, including training requirements, for each item of equipment listed above in accordance with requirements of Section 01 78 23 OPERATION AND MAINTENANCE DATA. [In addition, provide hard copies consisting of two Operator's Manuals and two Service Manuals.]

1.4 WARRANTY

[Provide warranties as specified in this Section.] Refer to Article

WARRANTY in Section 11 70 00 GENERAL REQUIREMENTS FOR MEDICAL AND DENTAL EQUIPMENT for [additional] requirements.

PART 2 PRODUCTS

2.1 MATERIALS

2.1.1 Carbon Steel

ASTM A36/A36M, ASTM A285/A285M, ASTM A515/A515M, or ASTM A568/A568M, cold rolled sheets, commercial bright finish.

2.1.2 Nickel

ASTM B39. Nickel-copper alloy or stainless steel or white metal.

2.1.3 Nickel and Nickel-Alloy Clad Steel

ASTM A265. Nickel or nickel-copper alloy and steel for pressure vessels, mill-rolled under heat and pressure until integrally bonded over entire interface.

2.1.4 Nickel-Copper Alloy (Monel Metal)

ASTM B127, ASTM B163, ASTM B164, or ASTM B165 plate sheet and strip.

2.1.5 Stainless Steel

ASTM A167, Type 301 or 316L; Class 304L for welded construction and Class 302 or 304 for construction formed without welding. Exposed surfaces of stainless steel to have satin finish.

2.1.6 Stainless Steel Bars and Rods

ASTM B166.

2.1.7 Stainless Steel for Pressure Vessels

ASTM A240/A240M.

2.1.8 Stainless Steel Clad

ASTM A264 for pressure vessels.

2.1.9 Tin

ASTM B339.

2.1.10 Titanium

For construction of products used in contact with distilled water, ASTM B348/B348M, Grade 2.

2.2 PIPING AND TUBING

Seamless, annealed, and ground smooth. Welded tubing to be thoroughly heat treated and properly quenched to eliminate carbide precipitation, drawn true to size and roundness. Provide piping and tubing conforming to

the following:

2.2.1 Steam Supply and Return Condensate Lines

Copper pipe must conform to ASTM B42; brass pipe must conform to ASTM B43; brass tube must conform to ASTM B135/B135M, Alloy 230. Include strainer, shut-off valve and pressure gage suitable for steam pressure up to 552 kPa 80 psig. In return line include steam trap, check valve, and hand shut-off valves.

2.2.2 Gaseous Sterilant Lines

Brass pipe must conform to ASTM B43, Alloy 230; stainless steel tube must conform to ASTM A269/A269M, ASTM A312/A312M, or ASTM B167 as applicable.

2.2.3 Water and Waste Lines

Copper tube must conform to ASTM B88M, ASTM B88 Type K, hard-drawn or annealed for bending; brass tube must conform to ASTM B135/B135M, Alloy 230 or C23000.

2.2.4 Pipe Fittings

Wrought copper or wrought bronze, brazing or solder joint type in accordance with ASME B16.18 and ASME B16.22. Use ASTM B32,Alloy Sb5 tin-antimony solder to make joints for copper tubing.

2.2.5 Pressure Vessels

Design, construction, materials, and testing of each pressure vessel, including doors, must comply with applicable provisions of ASME BPVC SEC VIII D1. Submit a signed copy of ASME Form U-1 or U-1A, as shown in ASME BPVC SEC VIII D1 Appendix W, with each sterilizer, as applicable.

2.2.6 Welding Materials

Welding Materials must comply with ASME BPVC SEC II-C. Welding equipment, electrodes, welding wire, and fluxes must be capable of producing satisfactory welds when used by a qualified welder or welding operator using qualified welding procedures.

2.2.7 Connections to Equipment

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NOTE: Specifications, covering supply to units specified herein, must provide cutoff of supply in vicinity of equipment so that unit may be removed for servicing. Make provisions for allowing steam lines to be blown down, prior to equipment connection, to prevent preservations and cleansers in piping and boiler from being blown into chamber.

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Prewire and prepipe each unit of equipment complete with trim and fittings. Equipment includes fittings to prevent backflow of polluted water or waste into water supply system or equipment in accordance with ICC IPC. Provide reduced pressure or atmospheric type backflow preventer.

2.3 ELECTRICAL WORK

Provide electric motor-driven equipment complete with motors, motor starters, and controls. Provide electrical equipment and wiring in accordance with Section 26 20 00 INTERIOR DISTRIBUTION SYSTEM. Electrical characteristics are as specified herein or as indicated. Provide motor starters complete with thermal overload protection and other components necessary for the motor control specified. Provide each motor of sufficient size to drive the equipment at the specified capacity without exceeding the nameplate rating of the motor. Provide manual or automatic control, protective or signal devices required for the operation specified, and any control wiring required for controls and devices specified.

****

NOTE: Select project-specific equipment items from the list below and delete equipment items not used. Additional equipment items may be added as required to suit project-specific conditions.

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2.4 EQUIPMENT

[2.4.1 Item S0105, Sterilizer, STM, GV, 1DO, CAB, 16x16x26 Chamber

Provide gravity steam sterilizer with freestanding enclosed cabinet, single power vertical sliding door, and a minimum chamber size of 406 mm by 406 mm by 660 mm16 inches by 16 inches by 26 inches. Construct unit of heavy-duty stainless steel, Type 316L, meeting Underwriters Laboratory (UL) standards.
Provide unit controlled by microcomputer technology, with vacuum pump, utilizing facility steam, temperature control and display panel showing temperature and pressure, and thermal printer. Provide unit with exposure temperature range of 121 degrees C to 135 degrees C250 degrees F to 275 degrees F.

Approximate Size: 686 mm by 965 mm by 1905 mm 27 inches wide by 38 inches deep by 75 inches high.

Electrical Characteristics: 110V 50/60 Hz.

Steam Supply: 25 mm1 inch NPT, 276 - 552 kPa40 - 80 PSI.

Drain: 50 mm2 inch ODT drain terminal.

][2.4.2 Item S0107, Sterilizer, Elec, GV, 1DO, CAB, Small Chamber

Provide gravity electric sterilizer with freestanding enclosed cabinet, single power vertical sliding door, and a minimum chamber size of 406 mm 406 mm16 inches by 16 inches 660 mm26 inches. Construct unit of heavy-duty stainless steel, Type 316L, meeting Underwriters Laboratory (UL) standards.
Provide unit controlled by microcomputer technology, with vacuum pump, integral steam generator, temperature control and display panel showing temperature and pressure, and thermal printer. Provide unit with exposure temperature range of 121 to 135 degrees C250 to 275 degrees F.

Approximate Size: 686 mm27 inches wide by 965 mm38 inches deep by 190575 inches high.

Electrical Characteristics: 110V 50/60 Hz.

Drain: 51 mm2 inch ODT drain terminal.

][2.4.3 Item S0125, Sterilizer, Stm, VAC, 1DO, CAB, 16x16x26 Chamber

Provide vacuum steam sterilizer with chamber size of 406 mm16 inches by 406 mm 16 inches by 660 mm26 inches, single power vertical door, and freestanding cabinet. Construct unit of heavy-duty stainless steel, Type 316L, meeting Underwriters Laboratory (UL) standards.

Provide unit controlled by microcomputer technology, with vacuum pump, utilizing facility steam, temperature control and display panel showing temperature and pressure, and thermal printer. Provide unit with exposure temperature range of 121 to 135 degrees C250 to 275 degrees F. [See drawings for door swing direction.]

Approximate Size: 1016 mm40 inches wide by 1499 mm59 inches deep by 1905 mm75 inches high.

Electrical Characteristics: 110V 50/60 Hz.

Steam Supply: 25 mm1 inch NPT, 207 - 552 kPa30 - 80 PSI.

Drain: 51 mm2 inch ODT drain terminal.

][2.4.4 Item S0127, Sterilizer, Elec, VAC, 1DO, CAB, 16x16x26 Chamber

Provide vacuum electric sterilizer with chamber size of 406 mm16 inches by 406 mm 16 inches by 660 mm26 inches, single power vertical door, and freestanding cabinet. Construct unit of heavy-duty stainless steel, Type 316L, meeting Underwriters Laboratory (UL) standards.

Provide unit controlled by microcomputer technology, with vacuum pump, integral steam generator, temperature control and display panel showing temperature and pressure, and thermal printer. Provide unit with exposure temperature range of 121 to 135 degrees C250 to 275 degrees F. [See drawings for door swing direction.]

Approximate Size: 711 mm28 inches wide by 965 mm38 inches deep by 1905 mm 75 inches high.

Electrical Characteristics: 110V 50/60 Hz.

Drain: 51 mm2 inch ODT drain terminal.

][2.4.5 Item S0137, Sterilizer,Stm,VAC,2DO,RCSD,1WLL,16x16x26 Chamber

Provide vacuum steam sterilizer with chamber size of 406 mm16 inches by 406 mm16 inches by 660 mm26 inches and double power vertical sliding doors, utilizing a remote electric steam generator. Construct unit of heavy-duty stainless steel, Type 316L, meeting Underwriters Laboratory (UL) standards.

Provide unit controlled by microcomputer technology, with vacuum pump, integrated steam generator (boiler), temperature control and display panel showing temperature and pressure, and thermal printer. Provide unit with exposure temperature range of 121 to 135 degrees C250 to 275 degrees F.

Approximate Size: 711 mm28 inches wide by 991 mm39 inches deep by 1905 mm 75 inches high.

Electrical Characteristics: 110V 50/60 Hz.

Steam Supply: 25 mm1 inch NPT, 207 - 552 kPa30 - 80 PSI.

Drain: 51 mm2 inch ODT drain terminal.

][2.4.6 Item S0145, Sterilizer, Stm, LAB, 1DO, CAB, 16x16x26 Chamber

Provide steam sterilizer with chamber size of 406 mm16 inches by 406 mm16 inches by 660 mm26 inches, single power vertical door, and freestanding cabinet. Construct unit of heavy-duty stainless steel, Type 316L, meeting Underwriters Laboratory (UL) standards.

Provide unit controlled by microcomputer technology, with vacuum pump, utilizing facility steam, temperature control and display panel showing temperature and pressure, and thermal printer. Provide unit with exposure temperature range of 110 to 135 degrees C230 to 275 degrees F. Recessed through one wall.

Approximate Size: 1016 mm40 inches wide by 1499 mm 59 inches deep by 1905 mm75 inches high.

Electrical Characteristics: 110V 50/60 Hz.

Steam Supply: 25 mm1 inch NPT, 207 - 552 kPa30 - 80 PSI.

Drain: 51 mm2 inch ODT drain terminal.

][2.4.7 Item S0190, Rack, 2SH, 16x16x26 Chamber

Provide rack with two removable shelves for use with sterilizer having minimum chamber size of 406 mm16 inches by 406 mm16 inches by 660 mm26 inches. Construct rack of Type 304 stainless steel.

][2.4.8 Item S0210, Sterilizer, Stm, GV, 1DO, RCSD, 1WLL, 20x20x38 Chamber

Provide gravity steam sterilizer with single power vertical sliding door, and a minimum chamber size of 508 mm20 inches by 508 mm 20 inches by 965 mm 38 inches. Construct unit of heavy-duty stainless steel, Type 316L, meeting Underwriters Laboratory (UL) standards.

Provide unit controlled by microcomputer technology, with vacuum pump, utilizing facility steam, temperature control and display panel showing temperature and pressure, and thermal printer. Provide unit with exposure temperature range of 121 to 135 degrees C250 to 275 degrees F. Recessed through one wall.

Approximate Size: 863 mm34 incheswide by 1168 mm46 inches deep by 1905 mm 75 inches high.

Electrical Characteristics: 110V 50/60 Hz.

Steam Supply: 25 mm276 - 552 kPa1 inch NPT, 40 - 80 PSI.

Drain: 51 mm 2 inch ODT drain terminal.

][2.4.9 Item S0215, Sterilizer, Stm, GV, 2DO, RCSD, 1WLL, 20x20x38 Chamber

Provide gravity steam sterilizer with chamber size of 508 mm20 inches by 508 mm20 inches by 965 mm38 inches, and double power vertical sliding doors, utilizing facility steam. Construct unit of heavy-duty stainless steel, Type 316L, meeting Underwriters Laboratory (UL) standards.

Unit shall be controlled by microcomputer technology, with vacuum pump, utilizing facility steam, temperature control and display panel showing temperature and pressure, and thermal printer. Provide unit with exposure temperature range of 100 to 121 degrees C212 to 250 degrees F. Recessed through one wall.

Approximate Size: 864 mm 34 inches wide by 1245 mm 49 inches deep by 1905 mm75 inches high.

Electrical Characteristics: 110V 50/60 Hz.

Steam Supply: 25 mm1 inch NPT, 207 - 552 kPa30 - 80 PSI.

Drain: 50 mm2 inch ODT drain terminal.

][2.4.10 Item S0220, Sterilizer, Stm GV, 2DO, RCSD 2WLL, 20x20x38 Chamber

Provide gravity steam sterilizer with chamber size of 508 mm20 inches by 508 mm20 inches by 965 mm38 inches, and double power vertical sliding doors, utilizing facility steam. Construct unit of heavy-duty stainless steel, Type 316L, meeting Underwriters Laboratory (UL) standards.

Provide unit controlled by microcomputer technology, with vacuum pump, utilizing facility steam, temperature control and display panel showing temperature and pressure, and thermal printer. Provide unit with exposure temperature range of 100 to 121 degrees C212 to 250 degrees F. Recessed through one wall.

Approximate Size: 762 mm30 incheswide by 1219 mm48 inches deep by 1905 mm 75 inches high.

Electrical Characteristics: 110V 50/60 Hz.

Steam Supply: 25 mm1 inch NPT, 207 - 552 kPa30 - 80 PSI.

Drain: 51 mm2 inch ODT drain terminal.

][2.4.11 Item S0225, Sterilizer, Stm, VAC, 1DO, CAB, 20x 20x38 Chamber

Provide vacuum steam sterilizer with chamber size of 508 mm20 inches by 508 mm20 inches by 965 mm38 inches, and double power vertical sliding doors, utilizing facility steam. Construct unit of heavy-duty stainless steel Type 316L, meeting Underwriters Laboratory (UL) standards.

Provide unit controlled by microcomputer technology, with vacuum pump, utilizing facility steam, temperature control and display panel showing temperature and pressure, and thermal printer. Provide unit with exposure temperature range of 100 to 121 degrees C212 to 250 degrees F. Recessed through one wall.

Approximate Size: 762 mm30 inches wide by 1270 mm50 inches deep by 1930 mm

76 inches high.

Electrical Characteristics: 110V 50/60 Hz.

Steam Supply: 25 mm1 inch NPT, 207 - 552 kPa30 - 80 PSI.

Drain: 51 mm2 inch ODT drain terminal.

][2.4.12 Item S0235, Sterilizer, Stm, VAC, 2DO, RCSD 1WLL, Medium Chamber

Provide vacuum steam sterilizer with chamber size of 508 mm20 inches by 508 mm20 inches by 965 mm38 inches, and double power vertical sliding doors, utilizing facility steam. Construct unit of heavy-duty stainless steel, Type 316L, meeting Underwriters Laboratory (UL) standards.

Provide unit controlled by microcomputer technology, with vacuum pump, utilizing facility steam, temperature control and display panel showing temperature and pressure, and thermal printer. Provide unit with exposure temperature range of 100 to 121 degrees C212 to 250 degrees F. Recessed through two wall.

Approximate Size: 762 mm30 inches wide by 1219 mm48 inches deep by 1905 mm 75 inches high.

Electrical Characteristics: 110V 50/60 Hz.

Steam Supply: 25 mm1 inch NPT, 207 - 552 kPa30 - 80 PSI.

Drain: 51 mm2 inch ODT drain terminal.

][2.4.13 Item S0237, Sterilizer, ELEC, VAC,2DO,RCSD 1WLL, 20x20x38 Cham

Provide vacuum electric sterilizer with chamber size of 508 mm20 inchesby 508 mm20 inches by 965 mm38 inches, and double power vertical sliding doors. Construct unit of heavy-duty stainless steel, Type 316L, meeting Underwriters Laboratory (UL) standards.

Provide unit controlled by microcomputer technology, with vacuum pump, integral steam generator, temperature control and display panel showing temperature and pressure, and thermal printer. Provide unit with exposure temperature range of 100 to 121 degrees C212 to 250 degrees F. Recessed through one wall.

Approximate Size: 864 mm34 inches wide by 1168 mm46 inches deep by 1930 mm 76 inches high.

Electrical Characteristics: 110V 50/60 Hz.

Steam Supply: 25 mm1 inch NPT, 207 - 552 kPa30 - 80 PSI.

Drain: 51 mm2 inch ODT drain terminal.

][2.4.14 Item S0290, Rack, 2SH, 20x20x38 CHMBR

Provide rack with two removable shelves for use with sterilizer having minimum chamber size of 508 mm20 inches by 508 mm20 inches by 965 mm38 inches. Construct rack of stainless steel.

][2.4.15 Item S0295, Loading Car & Transfer Carriage, 20x20x38 Chamber

Provide loading car and transfer carriage unit that is compatible with sterilizer having minimum chamber size of 508 mm20 inches by 508 mm20 inchesby 965 mm38 inches inches.

Construct loading car frame of Type 304 stainless steel. Provide loading car with one fixed and two adjustable shelves to allow maximum flexibility of load sizes, and with full length removable side rails.

Approximate Size: 1092 to 1219 mm43 to 48 inches long by 508 mm20 inches wide by 1092 mm43 inches high.

Shelf Load Capacity: 45.4 kg100 lbs.

Construct transfer carriage of stainless steel, height-adjustable, with four swivel casters. Provide transfer carriage with locking mechanism to secure loading car, and a hand operated latching mechanism to secure the carriage to the sterilizer.

Approximate Size: 508 mm20 inches wide by 381 mm15 inches high.

][2.4.16 Item S0332, Sterilizer, Stm, VAC,1DO,RCSD 1WLL,24x36x36 Chamber

Provide vacuum steam sterilizer with chamber size of 610 mm23 inches by 914 mm36 inches by 914 mm36 inches, and single automatic hinged door, utilizing facility steam. Construct unit of heavy-duty stainless steel, Type 316L, meeting Underwriters Laboratory (UL) standards.

Provide unit controlled by microcomputer technology, with vacuum pump, utilizing remote electric steam generator, temperature control and display panel showing temperature and pressure, and thermal printer. Provide unit with exposure temperature range of 100 to 121 degrees C212 to 250 degrees F. [See drawings for door swing direction.] Recessed through one wall.

Approximate Size: 1499 mm59 inches wide by 1854 mm73 inches deep by 1930 mm76 inches high.

Electrical Characteristics: 110V 50/60 Hz.

Steam Supply: 25 mm1 inch NPT, 207 - 552 kPa30 - 80 PSI.

Drain: 51 mm2 inch ODT drain terminal.

][2.4.17 Item S0395, Loading Car & Transfer Carriage, Large Chamber

Provide loading car and transfer carriage unit that is compatible with sterilizer having minimum chamber size of 610 mm24 inches by 914 mm36 inchesby 914 mm36 inches.

Construct loading car frame of Type 304 stainless steel. Provide loading car with one fixed and two adjustable shelves to allow maximum flexibility of load sizes, and with full length removable side rails.

Approximate Size: 1168 mm46 inches long by 559 mm22 inches wide by 965 mm 38 inches high.

Shelf Load Capacity: 45.4 kg100 lbs.

Construct transfer carriage of stainless steel, height-adjustable, with four swivel casters. Provide transfer carriage with locking mechanism to secure loading car, and with a hand operated latching mechanism to secure the carriage to the sterilizer.

Approximate Size: 559 mm22 inches wide by 457 mm18 inches high.

][2.4.18 Item S0405, Sterilizer, STM, GV, 1DO, CAB, 24x36x48 Chamber

Provide gravity steam sterilizer with freestanding enclosed cabinet, single automatic hinged door, and a minimum chamber size of 610 mm24 inches by 914 mm36 inches by 1219 mm48 inches, used for steam sterilization of hospital instruments and supplies. Construct unit of heavy-duty stainless steel, Type 316L, meeting Underwriters Laboratory (UL) standards.

Provide unit controlled by microcomputer technology, with vacuum pump, temperature control and display panel showing temperature and pressure, and thermal printer. Provide unit with exposure temperature range of 100 to 121 degrees C250 to 275 degrees F. [See drawings for door swing direction.]

Electrical Characteristics: 110V 50/60 Hz.

Steam Supply: 25 mm1 inch NPT, 275 - 552 kPa40 - 80 PSI.

Drain: 51 mm2 inch ODT drain terminal.

][2.4.19 Item S0432, Sterilizer, Stm,VAC,1DO,RCSD 1WLL,24x36x48 Chamber

Provide gravity steam sterilizer with chamber size of 610 mm24 inches by 914 mm36 inches by 1219 mm48 inches, single automatic hinged door, recessed; used for steam sterilization of hospital instruments and supplies. Provide unit that accommodates 12 standard sterilization trays. Construct unit of heavy-duty stainless steel, Type 316L, meeting Underwriters Laboratory (UL)standards.

Provide unit controlled by microcomputer technology, with vacuum pump, integrated steam generator (boiler), temperature control and display panel showing temperature and pressure, and thermal printer. Provide unit with exposure temperature range of 100 to 121 degrees C250 to 275 degrees F. [See drawings for door swing direction.]

Electrical Characteristics: 110V 50/60 Hz.

Steam Supply: 25 mm1 inch NPT, 207 - 552 kPa30 - 80 PSI.

Drain: 2 inch ODT drain terminal.

][2.4.20 Item S0442, Sterilizer, Stm,VAC,2DO,RCSD 2WLL,24x36x48 Chamber

Provide large load capacity vacuum steam sterilizer with chamber size of 610 mm24 inches by 914 mm36 inches by 1219 mm48 inches, and automatic hinged double doors; used for steam sterilization of hospital instruments and supplies. Construct unit of heavy-duty stainless steel, Type 316L, meeting Underwriters Laboratory (UL) standards.

Provide unit controlled by microcomputer technology, with vacuum pump, integrated steam generator (boiler), temperature control and display panel showing temperature and pressure, and thermal printer. Provide unit with

exposure temperature range of 110 to 135 degrees C230 to 275 degrees F. Recessed through two walls. [See drawings for door swing direction.]

Electrical Characteristics: 110V 50/60 Hz.

Steam Supply: 25 mm1 inch NPT, 30 - 80 PS.

Drain: 51 mm2 inch ODT drain terminal.

][2.4.21 Item S0450, Sterilizer, Stm,LAB,1DO,RCSD 1WLL, 24x36x48 Chamber

Provide steam sterilizer unit with single door, recessed mounted and with minimum chamber size of 610 mm24 inches by 914 mm36 inches by 1219 mm48 inches. Provide unit that accommodates 12 standard sterilization trays. Construct unit of heavy-duty stainless steel, Type 316L, meeting Underwriters Laboratory (UL) standards.

Provide unit controlled by microcomputer technology, with vacuum pump, temperature control and display panel showing temperature and pressure, and thermal printer. Provide unit with exposure temperature range of 104 to 135 degrees C219 to 275 degrees F. [See drawings for door swing direction.] Recessed through one wall.

Electrical Characteristics: 120V, 50/60 Hz.

Steam Supply: 25 mm1 inch NPT, 207 - 552 kPa30 - 80 PSI.

Drain: 51 mm2 inch ODT drain terminal.

][2.4.22 Item S0495, Loading Car & Transfer Carriage, 24x36x48 Chamber

Provide loading car and transfer carriage unit that is compatible with sterilizer having minimum chamber size of 610 mm24 inches by 914 mm36 inches by 1219 mm48 inches.

Construct loading car frame of Type 304 stainless steel. Provide loading car with one fixed and two adjustable shelves to allow maximum flexibility of load sizes, and with full length removable side rails.

Approximate Size: 1219 mm48 inches long by 610 mm24 inches wide by 826 mm 32.5 inches high.

Shelf Load Capacity: 54.4 kg120 lbs.

Car Load Capacity: 163.3 kg360 lbs.

Construct transfer carriage of stainless steel, height-adjustable, with two swivel and two fixed casters. Provide transfer carriage with locking mechanism to secure loading car, and with a hand operated latching mechanism to secure the carriage to the sterilizer.

Approximate Size: 610 mm24 inches wide by 508 mm20 inches high.

][2.4.23 Item S0505, Sterilizer, STM, GV, 1DO, CAB, 24x36x60 Chamber

Provide steam sterilizer unit with freestanding cabinet, a minimum chamber size of 610 mm24 inches by 914 mm36 inches by 1524 mm60 inches, and one single horizontal sliding door; utilize facility steam. Construct of heavy-duty stainless steel, Type 316L, meeting Underwriters Laboratory

(UL) Standards.

Provide unit controlled by microcomputer technology, temperature control and display panel showing temperature and pressure, and thermal printer. Provide unit with exposure temperature range of 104 to 135 degrees C219 to 275 degrees F.

Electrical Characteristics: 120V, 50/60 Hz.

Steam Supply: 25 mm1 inch NPT, 207 - 552 kPa30 - 80 PSI.

Drain: 51 mm2 inch ODT drain terminal.

][2.4.24 Item S0530, Sterilizer, Stm,VAC,1DO,RCSD 1WLL,24x36x60 Chamber

Provide vacuum steam sterilizer with chamber size of 610 mm24 inches by 914 mm36 inches by 1524 mm60 inches. Provide recessed unit with one single horizontal sliding door; utilize facility steam. Provide unit that accommodates 20 standard sterilization trays. Construct unit of heavy-duty stainless steel, Type 316L, meeting Underwriters Laboratory (UL) Standards.

Provide unit controlled by microcomputer technology, vacuum pump, temperature control and display panel showing temperature and pressure, thermal printer. Provide unit with exposure temperature range of 219 to 275 degrees F. Recessed through one wall.

Electrical Characteristics: 120V, 50/60 Hz.

Steam Supply: 25 mm1 inch NPT, 207 - 552 kPa30 - 80 PSI.

Drain: 51 mm2 inch ODT drain terminal.

][2.4.25 Item S0535, Sterilizer,Stm,VAC,2DO,RCSD 1WLL, 24x36x60 Chamber

Provide vacuum steam sterilizer with chamber size of 610 mm 24 inches by 914 mm36 inches by 1524 mm60 inches. Provide recessed unit with two horizontal sliding doors; utilize facility steam. Provide unit that accommodates 20 standard sterilization trays. Construct unit of heavy-duty stainless steel, Type 316L, meeting Underwriters Laboratory (UL) standards.

Provide unit controlled by microcomputer technology, vacuum pump, temperature control and display panel showing temperature and pressure, and thermal printer. Provide unit with exposure temperature range of 104 to 135 degrees C219 to 275 degrees F. Recessed through two walls.

Electrical Characteristics: 120V, 50/60 Hz.

Steam Supply: 25 mm1 inch NPT, 207 - 552 kPa30 - 80 PSI.

Drain: 51 mm2 inch ODT drain terminal.

][2.4.26 Item S0595, Loading Car & Transfer Carriage, 24x36x60 Chamber

Provide loading car and transfer carriage unit for use with sterilizer having a minimum chamber size of 610 mm24 inches by 914 mm36 inches by 1524 mm60 inches.

Construct loading car frame of stainless steel. Provide loading car with one fixed and two adjustable shelves to allow maximum flexibility of load sizes, and with full length removable side rails.

Approximate Size: 1524 mm60 inches long by 610 mm24 inches wide by 813 mm 32 inches high.

Shelf Load Capacity: 68 kg150 lbs.

Car Load Capacity: 204 kg450 lbs.

Construct transfer carriage of stainless steel, height-adjustable, with two swivel and two fixed casters. Provide transfer carriage with locking mechanism to secure loading car, and a hand operated latching mechanism to secure the carriage to the sterilizer.

Approximate Size: 1524 mm60 inches long by 610 mm24 inches wide by 508 mm 20 inches high.

][2.4.27 Item S0905 Washer, Multi-Chamber (5), Automated

Provide automated multi-chamber washer with sloped horizontal fixed surfaces and equipped with five preprogrammed cycles (pre-wash, sonic wash, rinse, drying) controlled by computer based system with a remote printer to record cycle information. Construct chambers of 1.59 mm16-gauge stainless steel. Provide unit with automatic basket/rack accessory index tables on the load and unload end of unit. Unit must meet Underwriters Laboratory (UL) 61010-1.

Approximate Size: 4064 mm160 inches long by 1067 mm42 inches wide by 2134 mm84 inches high.

Minimum Ceiling Height Requirement: 2210 mm87 inches.

Electrical Characteristics: 200 V, Three-phase, 60 Hz.

][2.4.28 Item S0910, Washer, Multi-Chamber (4), Automated

Provide automated multi-chamber washer with sloped horizontal fixed surfaces and equipped with four preprogrammed cycles (pre-wash, wash, rinse, drying) controlled by computer based system with a remote printer to record cycle information. Construct chambers of 1.59 mm16-gauge stainless steel. Provide unit with automatic basket/rack accessory index tables on the load and unloads end of unit. Unit must meet Underwriters Laboratory (UL) standards.

Approximate Size: 4064 mm160 inches long by 1067 mm42 inches wide by 2134 mm84 inches high.

Minimum Ceiling Height Requirement: 2210 mm87 inches.

Electrical Characteristics: 200 V, Three-phase, 60 Hz.

][2.4.29 Item S0915, Washer/Disinfector, STM,2DO,RCSD1WLL,23X19X24 Chamber

Provide steam washer disinfector with a chamber size of 584 mm23 inches by 483 mm19 inches by 610 mm24 inches and controlled by microprocessor, with printer to record cycle phase performance. Provide unit with steam and electric heating with cycles pre-programmed to pre-wash, clean, rinse,

disinfect and dry. Provide unit with two powered vertical sliding doors with tempered glass windows; utilize facility steam. Construct unit of stainless steel. Recessed through one wall. Unit must meet Underwriters Laboratory (UL) standards.

Electrical Characteristics: 208 V, 3-phase, 60 Hz.

Steam Supply: 207 - 621 kPa30 to 90 PSIG.

Drain: 51 mm 2 inch diameter.

Hot Water Temperature Range: 43 to 90 degrees C110 degrees to 194 degrees.

Minimum Ceiling Height Requirement: 2388 mm94 inches.

Approximate Size: 1067 mm42 inches wide by 813 mm32 inches long by 2032 mm 80 inches high.

][2.4.30 Item S0920, Washer/Disinfector, STM, 1DO, CAB, 26X24X24 Cham

Provide steam washer disinfector with a chamber size of 584 mm26 inches by 610 mm24 inches by 610 mm24 inches and controlled by microprocessor with printer to record cycle phase performance. Provide unit with steam and electric heating with cycles pre-programmed to pre-wash, clean, rinse, disinfect and dry. Provide unit with one vertical sliding door with a tempered glass window; utilize facility steam. Construct unit of stainless steel. Unit must meet Underwriters Laboratory (UL) standards.

Electrical Characteristics: 208 V, 3-phase, 60 Hz.

Steam Supply: 207 - 621 kPa30 to 90 PSIG.

Drain: 51 mm2 inch diameter.

Hot Water Temperature Range: 43 to 90 degrees C110 degrees to 194 degrees F.

Minimum Ceiling Height Requirement: 2388 mm94 inches.

Approximate Size: 16077 mm42 inches wide by 813 mm32 inches deep by 2032 mm80 inches high.

][2.4.31 Item S0925, Washer/Disinfector, STM, 1DO, CAB, 23X19X24 Cham

Provide steam washer disinfector with approximate chamber size of 584 mm23 inches by 483 mm19 inches by 610 mm24 inches and controlled by microprocessor with printer to record cycle phase performance. Provide unit with steam and electric heating with cycles pre-programmed to pre-wash, clean, rinse, disinfect and dry. Provide unit with one vertical sliding door with a tempered glass window; utilize facility steam. Construct unit of stainless steel. Unit must meet Underwriters Laboratory (UL) standards.

Electrical Characteristics: 208 V, 3-phase, 60 Hz.

Steam Supply: 207 - 621 kPa30 to 90 PSIG.

Drain: 51 mm2 inch diameter.

Hot Water Temperature Range: 43 to 90 degrees C110 degrees to 194 degrees.

Minimum Ceiling Height Requirement: 2388 mm94 inches.

Approximate Size: 1067 mm42 inches wide by 813 mm32 inches deep by 2032 mm 80 inches high.

][2.4.32 Item S0930, Washer/Disinfector, STM, 1DO, RCSD 1WLL, 23X19X24 Cham

Provide steam washer disinfector with approximate chamber size of 584 mm23 inches by 483 mm19 inches by 610 mm24 inches and controlled by microprocessor with printer to record cycle phase performance. Provide unit with steam and electric heating with cycles pre-programmed to pre-wash, clean, rinse, disinfect and dry. Provide unit with one vertical sliding door with a tempered glass window; utilize facility steam. Recessed through one wall. Construct unit of stainless steel. Unit must meet Underwriters Laboratory (UL) standards.

Electrical Characteristics: 208 V, 3-phase, 60 Hz.

Steam Supply: 207 - 621 kPa30 to 90 PSIG.

Drain: 51 mm2 inch diameter.

Hot Water Temperature Range: 43 to 90 degrees C110 degrees to 194 degrees.

Minimum Ceiling Height Requirement: 2388 mm94 inches.

Approximate Size: 813 mm32 inches wide by 711 mm28 inches deep by 1930 mm 76 inches high.

][2.4.33 Item S0940, Washer/Disinfector,STM,1DO,RSCD 1WLL,26X24X24 Cham

Provide steam washer disinfector with approximate chamber size of 660 mm26 inches by 610 mm24 inches by 610 mm24 inches and controlled by microprocessor, with printer to record cycle phase performance. Provide unit withsteam and electric heating with cycles pre-programmed to pre-wash, clean, rinse, disinfect and dry. Provide unit with one vertical sliding door with a tempered glass window; utilize facility steam. Recessed through one wall. Construct unit of stainless steel. Unit must meet Underwriters Laboratory (UL) standards.

Electrical Characteristics: 208 V, 3-phase, 60 Hz.

Steam Supply: 207 - 621 kPa30 to 90 PSIG.

Drain: 51 mm2 inch diameter.

Hot Water Temperature Range: 43 to 90 degrees C110 degrees to 194 degrees.

Minimum Ceiling Height Requirement: 2388 mm94 inches.

Approximate Size: 1143 mm45 inches wide by 940 mm37 inches deep by 2057 mm 81 inches high.

][2.4.34 Item S0955, Washer/Disinfector, STM, 2DO, RCSD 1 WLL, LDG/UNLDG STA

Provide steam washer disinfector with approximate chamber size of 660 mm26

inches by 610 mm24 inches 610 mm24 inches and controlled by microprocessor with printer to record cycle phase performance. Provide unit with steam and electric heating with cycles pre-programmed to pre-wash, clean, rinse, disinfect and dry. Provide unit with two vertical sliding doors with a tempered glass windows; utilize facility steam. Recessed through one wall. Construct unit of stainless steel. Unit shall must Underwriters Laboratory (UL) standards.

Electrical Characteristics: 208 V, 3-phase, 60 Hz.

Steam Supply: 207 - 621 kPa30 to 90 PSIG.

Drain: 51 mm2 inch diameter.

Hot Water Ttemperature Range: 43 to 90 degrees C110 degrees to 194 degrees.

Minimum Ceiling Height Requirement: 2388 mm94 inches.

Approximate Size: 1067 mm42 inches wide by 813 mm32 inches deep by 2032 mm 80 inches high.

][2.4.35 Item S0960, Washer/Disinfector,STM,2DO,RCSD1WLL,26X24X24 Chamber

Provide steam washer disinfector with chamber size of 660 mm26 inches by 610 mm24 inches by 610 mm24 inches and controlled by microprocessor with printer to record cycle phase performance. Provide unit with steam and electric heating with cycles pre-programmed to pre-wash, clean, rinse, disinfect and dry. Provide Unit with two powered vertical sliding doors with tempered glass windows; utilize facility steam. Recessed through one wall. Construct unit of stainless steel. Unit must meet Underwriters Laboratory (UL) standards.

Electrical Characteristics: 208 V, 3-phase, 60 Hz.

Steam Supply: 207 - 621 kPa30 to 90 PSIG.

Drain: 51 mm2 inch diameter.

Hot Water Temperature Range: 43 to 90 degrees C110 degrees to 140 degrees.

Minimum Ceiling Height Requirement: 2388 mm94 inches.

Approximate Size: 1067 mm42 inches wide by 813 mm32 inches long by 2032 mm 80 inches high.

][2.4.36 Item S0965, Washer/Disinfector, Dental

Provide dental washer/disinfector unit to wash, disinfect and rinse. Provide unit with one door hinged at the bottom and with LED display and printer for documenting washing phases. Water temperature must be between 10 to 93 degrees C50 degrees and 200 degrees.

Electrical Characteristics: 208 V, 60 Hz.

Approximate Size: 610 mm24 inches wide by 610 mm24 inches deep by 914 mm 36 inches high.

][2.4.37 Item S1815, Generator, Steam, Electric, 30 kW

Provide 30 kW electric steam generator/boiler with low water cut-off/level control, water feed system, automatic balance control, water level sight glass, main on/off switch, pilot light, blowdown valve, steam pressure gauge, and safety valve. The unit must provide high pressure steam up to 100 PSIG. Construct unit of stainless steel. Unit must meet Underwriters Laboratory (UL) standards.

Electrical Characteristics: 208 V, 3 phase.

Approximate Size: 584 mm23 inches wide by 838 mm33 inches deep by 1118 mm 44 inches high.

][2.4.38 Item S1830, Generator, Steam, Electric, 75 KW

Provide 72 kW electric steam generator/boiler with low water cut-off/level control, water feed system, automatic balance control, water level sight glass, main on/off switch, pilot light, blowdown/drain valve, steam pressure gauge, and safety valve. The unit must provide high pressure steam up to 689 kPa100 PSIG. Construct unit of stainless steel. Unit must meet Underwriters Laboratory (UL) standards.

Electrical Characteristics: 208 V, 3 phase, 60 Hz.

Approximate Size: 584 mm23 inches wide by 838 mm33 inches deep by 1118 mm 44 inches high.

][2.4.39 Item S1900, Rack, Pass-Through, Window & Door Assembly

Provide pass-through window and door assembly with vertical sliding window and tempered safety glass. Construct unit of 1.59 mm16 gauge Type 304 stainless steel with fixed top panel. Provide with clear opening of approximately 813 mm32 inches wide by 406 mm16 inches high.

Construct rack return doors of 1.59 mm16 gauge Type 304 stainless steel mounted with self-closing spring loaded hinges. Approximately 864 mm34 inches wide by 940 mm37 inches high.

Provide cantilevered counter with wall supports;. approximately 965 mm38 inches wide by 800 mm31-1/2 inches deep. Construct of 1.59 mm16 gauge Type 304 stainless steel.

Approximate Overall Size: 2134 mm84 inches high by 914 mm36 inches wide by 914 mm36 inches deep.

][2.4.40 Item S1905, Window, Sliding Service

Provide pass-through window assembly with vertical sliding window and tempered safety glass. Construct unit of 1.59 mm16 gauge Type 304 stainless steel with fixed top panel. Provide with clear opening is approximately 711 mm28 inches wide by 584 mm23 inches high.

Cantilever counter with wall supports on both sides of window. Approximately 914 mm36 inches wide by 864 mm34 inchesdeep. Provide unit with clean side of approximately 457 mm18 inches deep and decon side of be approximately 305 mm12 inches deep. Construct of 1.59 mm16 gauge Type 304 stainless steel.

Approximate Overall Size: 1321 mm52 inches high by 813 mm32 inches wide by 102 mm4 inches deep.

][2.4.41 Item S2635 Cleaner, Ultrasonic, SNGL Chamber, CAB, F/S

Provide floor mounted single tank ultrasonic cleaner. Construct unit of stainless steel with automatic lid, powered load tray elevator, automated hands-free controls, automatic fill, automatic detergent dosing, automatic timer and cycle start/stop, and locking castor wheels. Unit must meet Underwriters Laboratory (UL) standards.

Electrical Characteristics: 208 V, 3 Phase, 60 Hz.

Drain: 40 mm1-1/2 inch.

Approximate Chamber Size: 457 mm18 inches wide by 368 mm14-1/2 inches deep by 635 mm25 inches high.

Approximate Overall Size: 686 mm27 inches wide by 826 mm33 inches deep by 1041 mm41 inches high.

][2.4.42 Item S2640, Cleaner, Ultrasonic, Console, DBL CHMBR, CAB, F/S

Provide free-standing self-contained ultrasonic cleaner. Construct unit of stainless steel with two chambers, one for rinse, and one for drying. Provide unit with automatic lid, powered load tray elevator, automated hands-free controls, automatic fill, automatic detergent dosing, automatic timer and cycle start/stop, automatic drying timer and temperature control, and locking castor wheels. Unit must meet Underwriters Laboratory (UL) standards.

Electrical Characteristics: 208 V, 3 Phase, 60 Hz.

Drain: 40 mm1-1/2 inch.

Approximate Wash Chamber Size: 610 mm24 inches wide by 381 mm15 inches long by 330 mm13 inches deep.

Approximate Overall Size: 1524 mm60 inches long by 1016 mm40 inches deep by 1067 mm42 inches high.

][2.4.43 Item S3185, Washer, Cart & Utensil, 2 DO, PIT MNTD, RCSD 2 WLL

Provide pit mounted cart and utensil washer unit controlled by microcomputer, electrically heated, with digital control panel, and cycles to pre-wash, wash, rinse, and dry. Provide pit mounted unit with two doors for pass-through. Unit must meet Underwriters Laboratory (UL) standards.

Electrical Characteristics: 208 V, 3 Phase, 60 Hz.

Approximate Chamber Size: 991 mm39 inches wide by 1346 mm53 inches deep by 2007 mm79 inches high.

Approximate Unit Size: 2946 mm116 inches wide 2489 mm98 inches deep by 2718 mm107 inches high.

][2.4.44 Item S4300, Gun, Steam

Provide wall mounted steam gun with 3048 mm10 foot hose rated for high pressure steam, 3048 mm10 foot detergent hose, two nylon brushes, and one stainless steel brush; utilize facility steam. Provide unit with cool touch operator protection.

Approximate Overall Length: 1397 mm55 inches.

Approximate Weight of Steam Gun with Hoses: 4.5 kg10 lbs.

Detergent Contained Capacity: 9.46 liters2-1/2 gallons.

][2.4.45 Item S9765, Flusher/Disinfector, Disposal, Human Waste

Provide self contained [wall mounted], [floor mounted] flusher/disinfector. Provide unit with nine fixed and two rotating nozzles, stainless steel chamber without welded joints, and the following: read out display with three programmable options, auto lock during processing, and lockable space incorporated for detergent containers and integral steam generator. Unit must meet Under Writers Laboratory (UL) standards.

Cold Water: 15 mm1/2 inch, pressure 10 - 116 psi70-800 kPa, flow minimum 0.3 l/second.

Hot Water: 15 mm1/2 inch, pressure 10 - 116 psi70-800 kPa, flow minimum 0.3 l/second.

Freestanding and Wall Hung Approximate Sizes: 457 mm18 inches wide by 533 mm21 inches deep by 1422 mm56 inches high.

Electrical Characteristics: 208 V, 3-phase, 60 Hz

][2.4.46 Item S9800, Sterilizer,Stm,VAC,1DO,RCSD1WLL,F/M, Large Chamber

Provide large chamber gravity steam sterilizer recessed unit with one door and hydraulic cart lift located at the door. Provide unit that is microcomputer controlled with printer to record cycle phase performance. Construct unit of stainless steel. Unit must meet Underwriters Laboratory (UL) standards. Provide unit with temperature range of 110 to 135 degrees C230 degrees to 275 degrees and from 104 to 135 degrees C219 degrees to 275 degrees for liquid cycles. Utilize facility steam.

Electrical Characteristics: 208 V, 3 Phase, 60 Hz.

Drain: 51 mm 2 inch diameter.

Approximate Chamber Size: 660 mm26 inches wide, 1397 mm55 inches deep 1219 mm48 inches high.

Approximate Overall Size: 1905 mm75 inches wide by 1905 mm75 inches deep by 2007 mm79 inches high.

][2.4.47 Item S9810, Sterilizer,Stm,VAC,1DO,RCSD1WLL,PIT,26x62x42 Chamber

Provide vacuum steam sterilizer unit that is pit mounted, recessed, with single door; utilize facility steam. Provide unit that is microcomputer controlled with printer and capable of recording cycle phase performance.

Construct unit of stainless steel. Unit must meet Underwriters Laboratory (UL) standards. Provide unit with temperature range of 110 to 135 degrees C230 degrees to 275 degrees and from 104 to 135 degrees C219 degrees to 275 degrees for liquid cycles.

Electrical Characteristics: 208 V, 3 Phase, 60 Hz.

Drain: 51 mm2 inch diameter.

Approximate Chamber Size: 660 mm26 inches wide by 1676 mm66 inches deep by 1575 mm62 inches high.

Approximate Overall Size: 1880 mm74 inches wide by 2184 mm86 inches deep by 1981 mm78 inches high.

][2.4.48 Item S9815, Sterilizer,Stm,VAC,2DO,RCSD2WLL,F/M,26x62x42 Chamber

Provide vacuum steam sterilizer unit that is pit mounted, recessed, with two doors; utilize facility steam. Provide unit that is microcomputer controlled with printer, and capable of recording cycle phase performance. Construct unit of stainless steel. Unit must meet Underwriters Laboratory (UL) 61010-1, ASME (Section VIII, Division 1) Code for Pressure Vessels. Provide unit with temperature range of 110 to 135 degrees C230 degrees to 275 degrees and from 104 to 135 degrees C219 degrees to 275 degrees for liquid cycles. Provide unit with chamber capacity of 15 trays, maximum 7.7 kg17 lbs each.

Electrical Characteristics: 208 V, 3 Phase, 60 Hz.

Drain: 51 mm 2 inch diameter.

Approximate Chamber Size: 660 mm26 inches wide by 1702 mm67 inches deep by 1219 mm48 inches high.

Approximate Overall Size: 1905 mm75 inches wide by 2210 mm87 inches deep by 2007 mm79 inches high.

]PART 3 EXECUTION

3.1 EXAMINATION

After becoming familiar with all details of the work, verify all dimensions in the field, and advise the Contracting Officer of any discrepancy before performing the work.

3.2 INSTALLATION

Install equipment at locations indicated in accordance with manufacturer's printed installation instructions, Section 11 70 00 GENERAL REQUIREMENTS FOR MEDICAL AND DENTAL EQUIPMENT, and approved detail drawings. Submit detail drawings specifically prepared to illustrate required work for each item of equipment that interfaces with other items of equipment or construction, including, but not limited to, installation layout, coordination of equipment services, [drain piping connections,] [complete electrical wiring and control diagrams,] and details of construction and rough-in requirements. Furnish and install necessary items such as framing, mounting hardware and trim as required for the type of equipment furnished.

3.3 ADJUSTING

Following installation, adjust flows, timers, levelers, and similar components and operation devices as appropriate. After testing, and before acceptance, examine equipment to ensure that adjustments are correct and that any additional adjustments deemed necessary during product testing have been incorporated.

3.4 UTILITIES

3.4.1 Service Runs

Connect service runs from equipment to building services as indicated.

3.4.2 Dissimilar Metal Connectors

Provide connections between ferrous and nonferrous metallic pipe with dielectric waterways and flanges. Provide dielectric waterways with temperature and pressure rating equal to or greater than that specified for the connecting piping. Provide waterways with metal connections on both ends suited to match connecting piping. Internally line dielectric waterways with an insulator specifically designed to prevent current flow between dissimilar metals. Dielectric flanges must meet the performance requirements described herein for dielectric waterways.

3.5 MANUFACTURER'S FIELD SERVICES

Provide the services of a manufacturer's representative[, in conjunction with] [, in addition to] [the Contractor's Equipment Planner,] [and] [the Contractor's Biomedical Equipment Technician,] [the Government's Biomedical Equipment Technician,] who is experienced in the installation, adjustment, and operation of the equipment specified, and responsible for supervising the installation, adjustment, and testing of the equipment.

3.6 FIELD TESTS AND INSPECTIONS

3.6.1 Before Testing

Clean pipes, equipment and components of grease, dirt, stains, and other foreign materials.

3.6.2 Testing

Perform testing in accordance with manufacturer's written instructions. Unless otherwise approved by the Contracting Officer, test all items of equipment to ensure that they are operational and installation conforms to specification requirements. Hydrostatically test piping system at pressure of 1.5 times system operating pressure with water at temperature not exceeding 38 degrees C100 degrees F. Before test, remove or isolate gage traps and apparatus that may be damaged by that pressure. Install calibrated test gage in system to observe any loss of pressure. Close off system and maintain test pressure for not less than one hour. Inspect joints and equipment connections for leaks. Retest and make repair until no further leaks are observed. Each test report must indicate compliance with specified performance criteria and the final position of controls.

3.6.3 Inspection

Examine each item for visual defects and conformance to specifications.

3.7 CLEANING

3.7.1 For Final Acceptance

Remove labels, fingerprints, and clean all surfaces both inside and out. Tightly cover and protect fixtures and equipment against rust, dirt, water, and chemical or mechanical injury.

3.7.2 Marred Surfaces Exposed-to-View

Refinish marred exposed surfaces that affect appearance, such as both interior and exterior cabinet finishes, to match the adjacent finishes, like new; replace components that cannot be refinished in this manner.

3.7.3 Concealed Marred Surfaces

Refinish marred surfaces exposed to atmosphere, where such surfaces do not affect product's appearance but do affect resistance to elements, such as galvanized pipes and insulation, to equal resistance performance as the unmarred surfaces.

3.8 TRAINING

3.8.1 Training Course

Conduct training course for operation staff as designated by the Contracting Officer. Start the training period, for a total of [_____] hours of normal working time, after systems are functionally complete but prior to final acceptance. The field instructions must include all of the items contained in the approved operations and maintenance data, as well as demonstrations of routine maintenance operations. Notify Contracting Officer at least 14 days prior to date of the training course.

[3.8.1.1 Government's Biomedical Equipment Technician Training

Include operator's training for one Biomedical Equipment Technician (BMET) for each procured equipment item.

] -- End of Section --