
Overview

This standard identifies the competences you need to carry out maintenance activities on medical device and surgical instrument decontamination equipment, in accordance with approved procedures. You will be required to maintain a range of decontamination equipment, such as surgical instrument washers, human waste washers, endoscope washers, laboratory equipment washers, ultrasonic washers, bench top sterilisers, large porous load sterilisers, fluid sterilisers, ethylene oxide sterilisers and gas plasma sterilisers. This will involve dismantling, removing and replacing faulty items, at component or unit level, on a variety of different types of sterilisation and washer disinfecting equipment, and will involve depressurising the system and removing, replacing and repairing components, as applicable.

Your responsibilities will require you to comply with organisational policy and procedures for the maintenance activities undertaken, and to report any problems with the activities that you cannot personally resolve, or that are outside your permitted authority, to the relevant people. You must ensure that all tools, equipment and materials used in the maintenance activities are removed from the work area on completion of the activities, and that all necessary job/task documentation is completed accurately and legibly. You will be expected to work with a minimum of supervision, taking personal responsibility for your own actions, and for the quality and accuracy of the work that you carry out.

Your underpinning knowledge will provide a good understanding of your work, and will provide an informed approach to applying the correct maintenance procedures. You will understand the dismantling and reassembly methods and procedures used, and their application. You will know about the decontamination equipment being worked on, its component properties, functions and associated defects, in adequate depth to provide a sound basis for carrying out the maintenance activities, correcting faults and ensuring that the maintained equipment functions to the required specification and remains compliant with all standards and regulations.

You will understand the safety precautions required when carrying out the maintenance activities, especially those for isolating the equipment. You will also understand your responsibilities for safety and the importance of taking the necessary safeguards to protect yourself and others in the workplace.

Performance criteria

You must be able to:

1. work safely at all times, complying with health and safety legislation and other relevant regulations, directives and guidelines
2. follow the relevant maintenance schedules to carry out the required work
3. carry out the maintenance activities within the limits of your personal authority
4. carry out the maintenance activities in the specified sequence and in an agreed timescale
5. report any instances where the maintenance activities cannot be fully met or where there are identified defects outside the planned schedule
6. complete and store all relevant maintenance documentation in accordance with organisational requirements
7. dispose of waste materials in accordance with safe working practices and approved procedures and leave the work area in a safe condition

Knowledge and understanding

You need to know and understand:

1. the health and safety, infection control and de-contamination requirements of the work area and equipment being maintained, and the responsibility these requirements place on you
2. the statutory and advisory documentation relating to decontamination, sterilisation and washer disinfecting equipment (such as warnings and guidance from the regulatory authority, relevant standards, Pressure Systems Safety Regulations and Health Technical Memorandum (HTM) documentation)
3. the importance of reporting any equipment adverse incidents to the regulatory authority
4. the isolation and lock-off procedures or permit-to-work procedure that applies to the decontamination equipment being maintained
5. how to recognise and deal with victims of electric shock (to include methods of safely removing the victim from the power source, isolating the power source, methods of first aid resuscitation)
6. how to reduce the risks of a phase to earth shock (such as insulated tools, rubber matting, isolating transformers)
7. the importance of wearing protective clothing and other appropriate safety equipment (PPE)
8. hazards associated with carrying out maintenance activities on decontamination equipment, and how to minimise them and reduce any risks
9. the importance of working safely with steam supply systems
10. how to obtain and interpret documents needed in the maintenance activities (such as drawings, circuit and physical layouts, charts, specifications, manufacturers' manuals, history/maintenance reports, graphical electronic/electrical symbols, current wiring regulations)
11. the working practices of, and the need to respect, the department where the maintenance is being carried out
12. the basic principles of operation of the decontamination equipment being maintained, and the function of individual components
13. the basic principles of the different types of decontamination process, and how this affects the selection of decontamination equipment
14. the basic understanding of Reverse Osmosis (RO) water systems, and its

importance for the decontamination process

15. how to use and interpret equipment performance against steam tables

16. the sequence to be adopted for the dismantling/reassembly of various types of decontamination equipment

17. the care, handling and application of appropriate measuring instruments and test equipment

18. the organisational policy on the repair/replacement of components, and the procedure for obtaining replacement parts, materials and other consumables necessary for the maintenance activities

19. how to check that replacement components meet the required specification/operating conditions

20. the techniques used to dismantle/reassemble decontamination equipment

21. methods of removing and replacing components without causing damage to the equipment or other components

22. methods of attaching identification markers/labels to removed components or cables to assist with re-assembly

23. the tools and equipment used in the maintenance activities

24. methods of checking that components are fit for purpose, and the need to replace 'lived' items

25. how to make adjustments to components/assemblies to ensure that they function correctly

26. how to check that tools and equipment are free from damage or defects, are in a safe and usable condition, and are configured correctly for the intended purpose

27. the importance of making visual checks before proving the equipment

28. the generation of documentation and/or reports following the maintenance activity

29. the equipment operating and control procedures to be applied during the maintenance activity

30. the problems that can occur during the maintenance activity, and how they can be overcome

31. the organisational procedure(s) to be adopted for the safe disposal of waste of all types of material

32. the extent of your own authority and to whom you should report if you have a problem that you cannot resolve

Scope/range

1.

Carry out all of the following during the maintenance activities:

- 1.1 plan and communicate the maintenance activities so as to minimise disruption to normal working
- 1.2 obtain and use the correct issue of organisational and/or manufacturers' drawings and maintenance documentation
- 1.3 adhere to procedures or systems in place for risk assessment, COSHH, relevant health technical memorandums (HTM) personal protective equipment and other relevant safety regulations and procedures to realise a safe system of work
- 1.4 ensure that the correct equipment decontamination procedure has been adhered to before and after carrying out the maintenance activities (where appropriate)
- 1.5 ensure the safe isolation of equipment and services (such as electricity, mechanical, gas, air or fluids)
- 1.6 provide and maintain safe access and working arrangements for the maintenance area
- 1.7 carry out the maintenance activities, using appropriate techniques and procedures
- 1.8 hand over the equipment to the appropriate person on completion of the maintenance activities
- 1.9 record the results of the maintenance activity and report any defects found
- 1.10 dispose of waste materials in accordance with safe working practices and approved procedures, and leave the work area in a safe condition

2.

Carry out maintenance on three of the following types of washer disinfecting equipment:

- 2.1 surgical instrument washers (including hollow-ware and anaesthetic accessories)
- 2.2 human waste washers
- 2.3 endoscope washers
- 2.4 laboratory equipment washers
- 2.5 ultrasonic washers

plus two more of the following types of sterilisation equipment:

6. bench top sterilisers
7. large porous load sterilisers
8. fluid sterilisers
9. ethylene oxide sterilisers
10. gas plasma sterilisers

11. other specific sterilisers (such as low temperature steam)

1.

Carry out all of the following activities, as applicable to the equipment being maintained:

- 1.1 releasing stored pressure
- 1.2 replacing damaged/defective components
- 1.3 dismantling equipment to the appropriate level
- 1.4 soldering and de-soldering
- 1.5 removing and replacing units/components (such as pumps, cylinders, valves, actuators)
- 1.6 disconnecting/removing hoses and pipes
- 1.7 checking components for serviceability
- 1.8 proof marking/labelling of removed components
- 1.9 tightening fastenings to the required torque
- 1.10 replacing all 'lifer' items (such as seals, filters, gaskets)
- 1.11 making 'off-load' checks before running the equipment
- 1.12 removing and replacing electrical units/components
- 1.13 functional testing of the maintained system
- 1.14 disconnecting and re-connecting cables and wires
- 1.15 identifying and reporting any potential equipment problems that may require action in the future
- 1.16 setting, aligning and adjusting replaced components

2.

Remove and replace/refit a range of components, to include fifteen of the following:

- 2.1 pumps
- 2.2 motors
- 2.3 pneumatic rams
- 2.4 manifolds/flanges
- 2.5 protection devices
- 2.6 pressure transducers
- 2.7 steam separators
- 2.8 steam traps
- 2.9 condenser units
- 2.10 couplings
- 2.11 locking and retaining devices
- 2.12 seals and gaskets
- 2.13 switches
- 2.14 gauges
- 2.15 cables and wires
- 2.16 fans
- 2.17 electrical connectors
- 2.18 valves
- 2.19 printed circuit boards
- 2.20 calorifiers
- 2.21 sensors

- 2.22 drive belts and/or chains
- 2.23 power supplies
- 2.24 receivers
- 2.25 batteries
- 2.26 pipework
- 2.27 heater elements
- 2.28 filter
- 2.29 drain flasks
- 2.30 indicator lamps/LEDs
- 2.31 other specific components

3.

Maintain medical decontamination equipment, in compliance with all of the following:

- 3.1 organisational guidelines and codes of practice
- 3.2 equipment manufacturer's operation range
- 3.3 relevant and current HTM documentation
- 3.4 pressure systems safety regulations (PSSR)
- 3.5 equipment and associated BSEN standards, CE marking and current wiring regulations (where appropriate)
- 3.6 the equipment functions to specification
- 3.7 the equipment remains compliant with all standards and regulations
- 3.8 all potential defects are identified and reported for future action

4.

Complete and store all relevant maintenance documentation in accordance with organisational requirements, using one of the following:

- 4.1 job cards
- 4.2 servicing logs or reports
- 4.3 permit to work
- 4.4 organisational-specific documentation
- 4.5 electronic records

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