
Overview

This standard identifies the competencies you need to assist with the disconnection and removal of yacht and boat mechanical equipment in preparation for activities such as repair or refit in accordance with approved procedures. The activities will involve disconnecting and removing equipment at component or unit level on a variety of different types of yacht or boat mechanical assemblies and sub-assemblies, such as outboard engines, direct current electric motors or steam engines; gear boxes; stabilisers; pumps (such as sea water, fresh water and jet); propeller shafts; steering and rudder arrangements; lifting equipment (such as anchor windlass, winches and hoists); domestic equipment and other specific yacht or boat mechanical/ancillary equipment.

Your responsibilities will require you to comply with organisational policy and procedures for the disconnecting and removal of the yacht or boat mechanical equipment and to report any problems with the disconnection/removal activities that you cannot personally resolve, or are outside your permitted authority, to the relevant people. You will be expected to work with either a high level of supervision or as a member of a team. You will take personal responsibility for your own actions and for the quality and accuracy of the work that you carry out. Where team working is involved you must demonstrate a significant personal contribution during the team activities in order to satisfy the requirements of the standard, and competency in all the areas required by the standard must be demonstrated.

Your underpinning knowledge will be sufficient to provide a sound basis for your work and provide an informed approach to applying disconnection and removal techniques on yacht and boat mechanical equipment. You will have an understanding of the disconnection and removal methods and procedures used and their application. You will know about the mechanical equipment being removed, in adequate depth to provide a sound basis for carrying out the disconnection and removal activities to the required specification.

You will understand the safety precautions required when carrying out the disconnection and removal of the yacht or boat mechanical equipment, especially those for isolating and/or depressurising the equipment and taking the necessary safeguards to protect yourself and others in the workplace. You will be required to demonstrate safe working practices throughout and will understand the responsibility you owe to yourself and others, both ashore and afloat.

Performance criteria

You must be able to:

1. work safely at all times, complying with health and safety and other relevant regulations, directives and guidelines
2. establish and where appropriate mark component for re-assembly
3. ensure that any stored energy or substances are released safely and correctly
4. make all isolations and disconnections to the equipment in line with approved procedures
5. assist in the disconnection and removal of equipment to the agreed level using correct tools and techniques
6. store equipment for re-use in approved locations
7. dispose of unwanted components and substances in accordance with approved procedures
8. deal promptly and effectively with problems within your control and report those that cannot be solved

Knowledge and understanding

You need to know and understand:

1. the specific safety practices and procedures that you need to observe when assisting with the disconnection and removal of yacht or boat mechanical and ancillary equipment, including any specific legislation, regulations/codes of practice for the activities, equipment or materials
2. the procedures to be carried out before starting work on the disconnection and removal (such as obtaining permits to work, obtaining and complying with risk assessments and other health and safety requirements)
3. the hazards associated with disconnecting and removing yacht or boat mechanical equipment and with the tools and equipment used and how these can be minimised
4. how to recognise and deal with emergencies and the procedures to be followed (such as methods of safely evacuating and closing down compartments in the case of fire or other major incident)
5. the protective equipment that you need to use for both personal protection (PPE) and protection of the equipment or system
6. how to obtain the necessary job instructions required for the work being carried out
7. the basic operating principles of the marine mechanical equipment being removed
8. the components/units to be removed and their function within the particular marine mechanical equipment
9. the extent to which the equipment is to be dismantled for removal
10. the various mechanical fasteners that will be removed and their method of release, including threaded fasteners, special securing and locking devices
11. the importance of using the specified release devices for the particular items being removed
12. why securing devices need to be correctly unlocked and labelled and the different unlocking methods that are used
13. what methods may be used to assist in the release of equipment and components where difficulty in releasing items is experienced
14. procedures for ensuring you have the correct type of tools and equipment for the activities
15. the techniques used to secure loose items without damage, once equipment has been removed
16. methods of lifting, handling and supporting the components/equipment during the removal activities
17. the removal of seals, sealant and adhesives and the precautions that need to be taken
18. why electrical bonding is critical and must be removed correctly
19. the procedure for the safe disposal of waste materials
20. the importance of ensuring that the removal site is free from foreign

-
- object debris and that any exposed components or pipe ends are correctly covered/protected
21. the tools and equipment used in the removal activities and their care and control procedures
 22. why tool/equipment control is critical and what to do if a tool or piece of equipment is unaccounted for on completion of the activities
 23. the problems that can occur with the removal operations and how these can be overcome
 24. what recording documentation needs to be completed for the activities undertaken
 25. the extent of your own responsibility and who you should report to if you have problems that you cannot resolve

Scope/range related to performance criteria

1. Carry out all of the following during the disconnection and removal of the yacht or boat mechanical equipment:
 1. ensure you have the necessary information to carry out the disconnection and removal activities (such as job instructions or disconnection documentation)
 2. adhere to procedures or systems in place for risk assessment, COSHH, personal protective equipment and other relevant safety regulations
 3. obtain clearance to work on the system and observe the appropriate power isolation and safety procedures
 4. maintain safe access and working arrangements for the work area
 5. in conjunction with others, carry out the disconnection and removal activities using appropriate techniques and procedures
 6. return all tools, and equipment to the correct location on completion of the activities
 7. leave the work area in a safe and tidy condition
2. Assist in the disconnection and removal of three of the following types of marine mechanical equipment:
 1. engines (such as outboard engines, direct current electric motors or steam engines)
 2. propulsion gear box (either single reduction, double reduction, V' or Z' drive)
 3. propeller mechanisms (such as shafts, p-brackets/a-brackets, either Fixed Blade or Controllable Pitch Propeller (CPP systems)
 4. trim tabs
 5. thrusters (either bow or stern, jet pumps)
 6. stabiliser (either fixed or retractable)
 7. pump (either salt water, fresh water, deck wash)
 8. steering gear and rudder arrangements
 9. pantry and galley equipment (such as food preparation equipment)
 10. power generation equipment (such as wind generator, solar panels)
 11. lifting and handling equipment (such as anchor windlass, winches/hoists/lifting equipment, davits)
 12. tanks and pipework (such as water tanks, holding tanks)
 13. deck fittings (such as bollards, hand rails, rope lashings)
 14. domestic equipment (such as wash basins, showers, air conditioning and heating)

3. Assist in carrying out eight of the following disconnection and removal methods and techniques:
 1. isolating and locking off equipment
 2. dismantling equipment to unit/sub-assembly level
 3. bringing system to atmospheric pressure
 4. making safe all disconnected service supplies
 5. draining off fluids
 6. supporting equipment to be removed
 7. disconnecting wires and cables
 8. removing mechanical fastening devices
 9. attaching suitable cables/parts identification markers
 10. proof marking/labelling of components for re-assembly
 11. securing or safely storing all peripheral units which are not part of the repair or refit process
 12. protecting and preparing removed components for transportation for repair/overhaul
 13. fitting blanks to open systems to prevent entry of contaminating debris
4. Release four of the following types of fasteners and securing devices:
 1. studs with nuts
 2. bolts
 3. swing bolts
 4. dowels
 5. wing nuts
 6. flexible bellows
 7. screws
 8. quick release fasteners
 9. locking devices (such as split, parallel, clevis or taper pin)
 10. keys/keyways (such as slotted, semi circular, woodruff, taper)
5. Assist in the disconnection and removal of yacht or boat mechanical and ancillary equipment in accordance one of the following:
 1. BS, EN or ISO standards and procedures
 2. customer (contractual) standards and requirements
 3. company standards and procedures
 4. specific equipment requirements/manufacture's data
 5. recognised compliance agency/body's standards (such as Lloyd's, Boat Safety Scheme, BMEA Code)
 6. other accepted international standards
6. Complete the relevant paperwork, to include one of the following, and pass it to the appropriate people:

-
1. installation record
 2. job cards
 3. time sheets
 4. system log
 5. other specific recording method

Behaviours

You will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as:

- strong work ethic
- positive attitude
- team player
- dependability
- responsibility
- honesty
- integrity
- motivation
- commitment

SEMME2132

Assisting in the disconnection and removal of yacht and boat mechanical and ancillary equipment



Developed by	Enginuity
Version Number	2
Date Approved	28 Feb 2018
Indicative Review Date	01 Feb 2021
Validity	Current
Status	Original
Originating Organisation	Semta
Original URN	SEMME2132
Relevant Occupations	Engineering, Engineering and Manufacturing Technologies
Suite	Marine Engineering Suite 2
Keywords	Yacht; boat; mechanical; ancillary; equipment; disconnecting; removing; servicing; maintaining; repairing