

1. Title	Inspect and test high power diesel engines
2. Code	EMSRLT404A
3. Range	Inspect and test high power (3000 kW/4000 BHP or above) diesel engines in daily tasks related to ship repairs and marine engineering; use the test results to analyze the performance of diesel engines and assess whether there are faults or defects.
4. Level	4
5. Credit	3
6. Competency	<p style="text-align: center;"><u>Performance Requirements</u></p> <p>6.1 Knowledge of testing high power diesel engines</p> <ul style="list-style-type: none"> ◆ Master the test indicators and cycles, regular testing procedures and performance criteria of large diesel engines, such as: <ul style="list-style-type: none"> • Preparations for restarting engine after overhaul • Adjustments before starting • Starting engine • Running in full speed • Normal operation • Cruising mode • Stopping operation ◆ Understand the system monitor and alarm modes of large diesel engines, such as signal detection and transmission ◆ Master unusual working conditions and alerting signals ◆ Master the operation parameters of diesel engines and compare them with manufacturer values ◆ Master the conditions and data of empty running and running with different loadings and conduct situation analysis and assessment <p>6.2 Methods and procedures of testing high power diesel engines</p> <ul style="list-style-type: none"> ◆ Perform general tasks of inspecting and testing large diesel engines systematically, such as analyzing and setting crank-arm deflection, regular checking and adjustment of fuel injection, adjustment of speed functions, setting the parameters for the working temperature and pressure, and setting the parameters for the power and gas control ◆ Use block diagrams to illustrate the system operation of large diesel engines at different phases ◆ Interpret the system monitor and alarm signals of large diesel engines and understand and integrate the messages

	<ul style="list-style-type: none"> ◆ Master tuning techniques and handle and integrate the data of tuning according to the relationship of the input and output items ◆ Fault diagnosis and troubleshooting of large diesel engines ◆ Have proper coordination of the functions of large diesel engines and the performance of their related systems after inspection <p>6.3 Professionalism in testing large diesel engines</p> <ul style="list-style-type: none"> ◆ Perform relevant testing procedures, analyze test results and assess the performance of diesel engines and see whether there are faults or defects according to the repair manuals of large diesel engines, in addition to the worker's knowledge and experience of the test indicators of diesel engines ◆ Record the set points of every test item and maintain effective monitoring and alarm after adjustment ◆ Plan the details for inspection and performing tests
7. Assessment Criteria	<p>The integrated outcome requirements of this unit of competency are:</p> <p>(i) Capable to implement general procedures of inspecting large diesel engines, apply testing tools and equipment, record and compile data and use the data to illustrate the test results; and</p> <p>(ii) Capable to organize inspection work and coordinate the normal operation parameters of different systems so as to facilitate effective power transmission of large diesel engines.</p>
8. Remarks	<p>The credit value of this unit of competency is set on the presumption that the person already possesses knowledge of testing marine engineering equipment.</p>