

(Draft)

Amended Rules for the Classification of Steel Ships

(Part 1 Classification and Surveys)

(For external opinion inquiry)



Jan. 2023

- Main Amendments -

(1) Effective date : 1 Mar 2023 (Date of which the application for survey is submitted)

- ⦿ Clarification of items covered by the CMS system and machinery permissible for the chief engineers inspection (CRR3100-1537-2022)

(1) Effective date : 1 Mar 2023

(Date of which application for survey is submitted)

| Present | | Reason |
|---|---|--|
| Annex 1-7 Continuous Machinery Survey Procedure(CMS) | | Clarification of items covered by the CMS system |
| Table 1 Items Covered by the CMS System | | |
| Items | Details | |
| 1. <u>Main diesel engines</u> | (a) Cylinder covers, cylinder liners, pistons (including piston pins and piston rods), crossheads (including pins, bearings and guides), connecting rods, crank shafts and bearings, camshafts and their driving gears, turbo chargers, scavenge air pumps or blowers, air intercoolers, attached essential pumps (bilge, lubricating oil, fuel oil and cooling water) | |
| 2. <u>Main steam turbines</u> | (a) Turbine rotors, blades, bearings, casings, nozzles, nozzle valves and maneuvering valves | |
| 5. <u>Auxiliary machinery</u> | <p style="text-align: center;">⟨Omitted⟩</p> (c) Windlass and mooring winches (d) Cargo refrigerating installations (excluding those for provision storage): compressors, pumps, evaporators and condensers (e) Fresh water generators for main boilers (f) <u>Fuel oil heaters (excluding those for purifiers) and tank cleaning heaters</u> (g) <u>Condensers and feed water heaters</u> (h) <u>Coolers (excluding those for air compressors)</u> (i) Inert gas systems (j) Exhaust gas Emission Abatement system(SCR, EGR & EGCS) - Pump, exhaust fan, blower, reductant or chemical storage tank and residue tank and inside of SCR chamber & scrubber. (k) Air reservoirs (excluding those for emergency use) and other pressure vessels for essential uses (l) <u>Fuel oil tanks not form a part of the ship's structure</u> (m) <u>Other items considered to be applicable under the CMS by the Society</u> | |

Amendments

Reason

Annex 1-7 Continuous Machinery Survey Procedure(CMS)

Table 1 Items Covered by the CMS System

| Items | Details |
|--|--|
| 1. <u>Internal combustion engines for main engines</u> | (a) Cylinder covers, cylinder liners, pistons (including piston pins and piston rods), crossheads (including pins, bearings and guides), connecting rods, crank shafts and bearings, camshafts and their driving gears, turbochargers, scavenge air pumps or blowers, air intercoolers, attached essential pumps (bilge, lubricating oil, fuel oil and cooling water) |
| 2. <u>Steam turbines for main engines</u> | (a) Turbine rotors, blades, bearings, casings, nozzles, nozzle valves and maneuvering valves |
| 5. Auxiliary machinery | <p style="text-align: center;">⟨Same as present⟩</p> <p>(c) Windlass and mooring winches</p> <p>(d) Cargo refrigerating installations (excluding those for provision storage): compressors, pumps, evaporators and condensers</p> <p>(e) Fresh water generators for main boilers</p> <p>(f) <u>Heaters, coolers and condensers for essential services (2023)</u></p> <ul style="list-style-type: none"> - <u>Fuel oil heaters (excluding those for purifiers) and tank cleaning heaters</u> - <u>Condensers and feed water heaters</u> - <u>Coolers (excluding those for air compressors)</u> - <u>Cargo heat exchangers</u> <p>(g) Inert gas systems</p> <p>(h) Exhaust gas Emission Abatement system(SCR, EGR & EGCS)</p> <ul style="list-style-type: none"> - Pump, exhaust fan, blower, reductant or chemical storage tank and residue tank and inside of SCR chamber & scrubber. <p>(i) Air reservoirs (excluding those for emergency use) and other pressure vessels for essential uses</p> <p>(j) Fuel oil tanks not form a part of the ship's structure</p> <p>(k) Other items considered to be applicable under the CMS by the Society</p> |

| Present | | | Reason |
|--|--|---|---|
| Table 2 Machinery Permissible for the Chief Engineers Inspection, etc. (2022) | | | Clarification of Machinery Permissible for the Chief Engineers Inspection |
| Machinery permissible for the Chief Engineers inspection | <ol style="list-style-type: none"> 1. <u>Main diesel engine</u> 2. Auxiliary diesel engine(Refer to remarks) 3. Forced draft fans & burning pumps for main boiler 4. Auxiliary machinery <ol style="list-style-type: none"> (1) Air compressor (2) Auxiliary blower (3) Pump (4) Heat exchanger (5) Portable fuel oil tank (6) Fresh water generator (7) Deck machinery (8) Hydraulic pumps of steering gears (9) Exhaust gas emission abatement system (SCR, EGR & EGCS) <p>⟨Newly added⟩</p> <p>※ However, for ships subject to Korean Ship Safety Act, each part of the main internal combustion engine and internal combustion engine to drive main generator among machinery permissible for the Chief Engineer's inspection, open-up survey by the Surveyor for at least one of two CMS cycles is to be carried.</p> | <ul style="list-style-type: none"> ● The Chief Engineer's inspection for auxiliary diesel engines ● The engine is completely opened up and a careful examination is made on all cylinder units, cylinder liners, cylinder covers, cylinder cover valves, pistons, piston rings, connecting rods and top and lower bearings, piston pins, camshaft driving gears, turbo-chargers, air-intercoolers, crankcase and crankcase doors, engine foundation bolts, and crank case safety valves. ● The top halves of all main bearings are removed and two bottom halves are taken out for examination. ● An examination is made on all crankpins and journals to detect cracks, especially at fillet and areas in the vicinity of oil holes and crank shaft oil grooves. ● Crank web deflections are measured and recorded. ● Wear downs of the cylinder liners are measured and recorded. ● The L.O. cooler attached to the engine, L.O. pumps, cooling water pumps, etc. of direct driven-type are opened up and examined. ● Verify through performance tests that safety devices are in good operating condition. ● The service hours of crank pin bolts are checked and recorded. | |

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Table 2 Machinery Permissible for the Chief Engineers Inspection, etc. (2022)

| | Items | Remarks |
|--|---|---|
| Machinery permissible for the Chief Engineers inspection | <p>1. <u>Internal combustion engines for main engines</u></p> <p>2. Auxiliary diesel engine(Refer to remarks)</p> <p>3. Forced draft fans & burning pumps for main boiler</p> <p>4. Auxiliary machinery</p> <p style="margin-left: 20px;">(1) Air compressor</p> <p style="margin-left: 20px;">(2) Auxiliary blower</p> <p style="margin-left: 20px;">(3) Pump</p> <p style="margin-left: 20px;">(4) Heat exchanger</p> <p style="margin-left: 20px;">(5) Portable fuel oil tank</p> <p style="margin-left: 20px;">(6) Fresh water generator</p> <p style="margin-left: 20px;">(7) Deck machinery</p> <p style="margin-left: 20px;">(8) Hydraulic pumps of steering gears</p> <p style="margin-left: 20px;">(9) Exhaust gas emission abatement system (SCR, EGR & EGCS)</p> <p>5. <u>Among items Covered by the CMS System in Table 1, items not designated machinery impermissible for the Chief Engineers inspection (2023)</u></p> <p>※ However, for ships subject to Korean Ship Safety Act, each part of the main internal combustion engine and internal combustion engine to drive main generator among machinery permissible for the Chief Engineer's inspection, open-up survey by the Surveyor for at least one of two CMS cycles is to be carried.</p> | <ul style="list-style-type: none"> ● The Chief Engineer's inspection for auxiliary diesel engines ● The engine is completely opened up and a careful examination is made on all cylinder units, cylinder liners, cylinder covers, cylinder cover valves, pistons, piston rings, connecting rods and top and lower bearings, piston pins, camshaft driving gears, turbo-chargers, air-intercoolers, crankcase and crankcase doors, engine foundation bolts, and crank case safety valves. ● The top halves of all main bearings are removed and two bottom halves are taken out for examination. ● An examination is made on all crankpins and journals to detect cracks, especially at fillet and areas in the vicinity of oil holes and crank shaft oil grooves. ● Crank web deflections are measured and recorded. ● Wear downs of the cylinder liners are measured and recorded. ● The L.O. cooler attached to the engine, L.O. pumps, cooling water pumps, etc. of direct driven-type are opened up and examined. ● Verify through performance tests that safety devices are in good operating condition. ● The service hours of crank pin bolts are checked and recorded. |

| Present | | Reason |
|--|---|--|
| Table 2 Machinery Permissible for the Chief Engineers Inspection, etc. (2022) | | |
| | Items | Remarks |
| Machinery impermissible for the Chief Engineers inspection | <ol style="list-style-type: none"> 1. Crank shaft, crank pin bearing and journal bearing of main engine, crank pin bolts and camshaft driven equipment(Refer to remarks) 2. Steam turbine (main, auxiliary, etc.) 3. Power transmission gear 4. Shafting arrangements 5. Air reservoir 6. <u>Other items not applied to CMS by the Society</u> <ol style="list-style-type: none"> (1) Refrigeration installations for provision storage (2) Electrical installations (3) Boiler (4) Cargo handling gears(cargo winch) (5) Spare parts (6) Emergency compressors, emergency air tank, emergency generators, emergency fire pumps, etc. (7) Steering gears (8) Bilge pumps for oily water separators (9) Heaters for purifiers (10) Coolers for air compressors (11) Other items not considered subject to CMS by the Society | <ul style="list-style-type: none"> ● Measurement of crank web deflection for main diesel engine and check of foundation bolts |
| | | Clarification of Machinery impermissible for the Chief Engineers Inspection |

Amendments

Reason

Table 2 Machinery Permissible for the Chief Engineers Inspection, etc. (2022)

| | Items | Remarks |
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| Machinery impermissible for the Chief Engineers inspection | <ol style="list-style-type: none"> 1. Crank shaft, crank pin bearing and journal bearing of main engine, crank pin bolts and camshaft driven equipment(Refer to remarks) 2. Steam turbine (main, auxiliary, etc.) 3. Power transmission gear 4. Shafting arrangements 5. Air reservoir 6. Other items not applied to CMS by the Society <ol style="list-style-type: none"> (1) Refrigeration installations for provision storage (2) Electrical installations (3) Boiler (4) Cargo handling gears(cargo winch) (5) Spare parts (6) Emergency compressors, emergency air tank, emergency generators, emergency fire pumps, etc. (7) Steering gears (8) Bilge pumps for oily water separators (9) Heaters for purifiers (10) Coolers for air compressors (11) Other items not considered — subject to CMS by the Society | <ul style="list-style-type: none"> ● Measurement of crank web deflection for main diesel engine and check of foundation bolts |