




Service for LNG FGSS

MAN PrimeServ

Quality and Operability
Inspection for LNG Fuel Gas
Supply Systems (FGSS)



Moving big things to zero

FGSS diagnosis before you dock

MAN PrimeServ now offers a Quality and Operability Inspection service for FGSS. This inspection enables better planning of in-depth servicing and avoids unforeseen discoveries during dry docking.

Our expertise in FGSS comes from MAN Cryo – pioneers of LNG FGSS designs and engineering solutions – and covers a wide variety of set-ups for all types of vessels running on gas.

By performing a Quality and Operability Inspection, MAN PrimeServ can provide recommendations for an upcoming scheduled service or dry-docking based on the actual condition of the FGSS.

Knowing the actual system condition means we can determine the real scope of work required. It also allows comprehensive planning, which ensures that the right parts are available on time, thereby reducing downtime and costs.

In short: a Quality and Operability Inspection gives valuable input to maintain your FGSS in the best possible condition.

A short check-up

Giving you a long-term perspective

Carrying out a Quality and Operability Inspection at sea means you are better prepared for what needs to be done in dock. Saving time in dock reduces lost earnings. The inspection also provides insights for the long-term future of your vessel.

Inspection and diagnosis of the FGSS

A Quality and Operability Inspection is performed by one or two experienced superintendent engineers, depending on the complexity of the FGSS, in a time frame of up to 48 hours. They board the vessel at the location of your choice and thoroughly inspect the FGSS. You receive a system check in the form of an objective written report giving you a true picture of the system condition. With the report, you will also receive relevant recommendations for spare parts, service, and possible retrofits.

Condition-based maintenance

Based on the Quality and Operability Inspection, MAN PrimeServ will provide you with spare parts recommendations based on the actual system configuration, condition and classification rules and regulations. The recommendations ensure that you do not replace parts that are still in good condition. Furthermore, you will not be ordering unnecessary parts or be missing parts during your planned service stops or dry-docking. You will have exactly what your system needs – when you need it.

Knowing the actual work scope and cost also gives you the opportunity to plan the budget and allocate the resources needed for your service well in advance.

Upgrades and cost optimization

The Quality and Operability Inspection package includes recommendations on possible retrofits and upgrades for your specific system. The suggestions will enable you to make changes according to the latest technology findings and to meet new rules and regulations. Upgrading the fuel system can save fuel, increase reliability, and reduce emissions. Retrofit and upgrade recommendations allow you to cost-optimize your system and save money in the long run.



What's included in the package

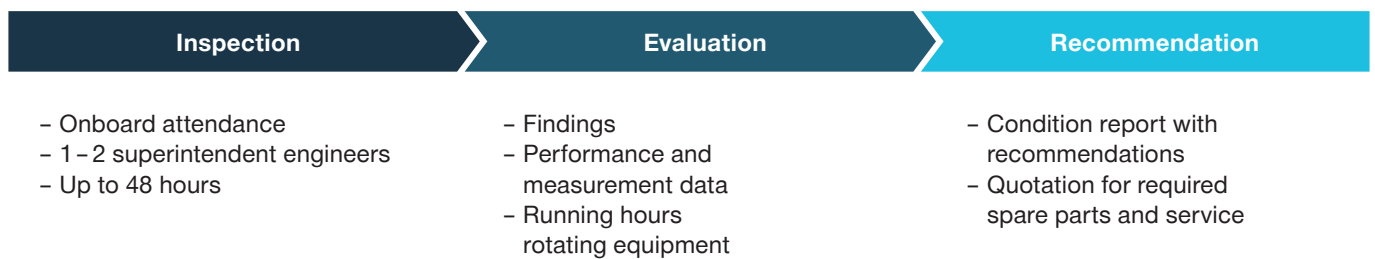


Fig. 1
Quality and Operability
Inspection at a glance

Long-lasting benefits

Reduce surprises and costs

Letting MAN PrimeServ give your FGSS a Quality and Operability Inspection ensures servicing and dry-docking are smooth and effective. You get a clear idea what parts are needed, you save personnel resources, and finish faster thus reducing lost earnings.

Save time and staff resources

By letting MAN PrimeServ perform the inspection prior to your planned service or dry-docking, you save a significant on-board workload. MAN Energy Solutions also takes on responsibility for delivering the right spare parts to the right place at the right time.

Prevent surprises during servicing and dry-docking

The Quality and Operability Inspection assesses the complete FGSS to make sure that no stone is left unturned. This means that every item recommended for replacement will be delivered to the shipyard.

Reduce costs

Condition-based maintenance saves costs. After all, the recommended time intervals for replacing spare parts in the service manuals do not tell you about the actual condition of your specific FGSS. A Quality and Operability Inspection from MAN PrimeServ may show that you can postpone investment in wear parts based on their condition.



Expert know-how

The superintendent engineers serving you have full access to the vast repertoire of know-how and service experience gathered by MAN PrimeServ over many years in all corners of the world. In addition, our superintendent engineers possess detailed knowledge of the latest FGSS designs and service information.

Effective servicing and docking

With a Quality and Operability Inspection, you get a complete work scope, enabling you to plan all maintenance activities before and during dry-docking or maintenance. And with the required parts at hand, your service and dry-docking or maintenance will go more smoothly and effectively.

Performance and cost optimization

While the inspection will reveal what needs to be done now, MAN PrimeServ will also check what can be done to optimize your vessel's performance and help your vessel to meet new rules and regulations through a retrofit solution.

Detailed inspection

In-depth assessment of complete system and parts

The MAN PrimeServ Quality and Operability Inspection checks the general operation of the FGSS. Special attention is given to valves, instruments, and the safety and control systems.

System operation

- Check vessel maintenance system for FGSS jobs registered and its history
- Review the system's general state, reveal any known issues during normal operation, together with the crew
- Check HMI alarms/trends if applicable
- Check available spares onboard and define required spares

Valve checks

- Function test of actuated valves – open/close test or positioner function test (check for oddities during operation), check for instrument air leakage on complete supply line, check of feedback signals, check of auxiliary equipment (solenoid valves, position sensors), general visual inspection
- Test of instrument air humidity
- Check of manual valves
- Check of locking devices
- Internal leak test of pipe sections valves, leak check bonnet gasket and gland packing on adjacent valves
- Check for leaking safety valves by ice formation on the outlet (liquid or cold gas needed)

Instruments, controls, and safety system

- Function check of instruments (pressure, temperature, level, gas detectors) with reference source. Calibration if found necessary
- Inspection of various control cabinets
- C&E live function test

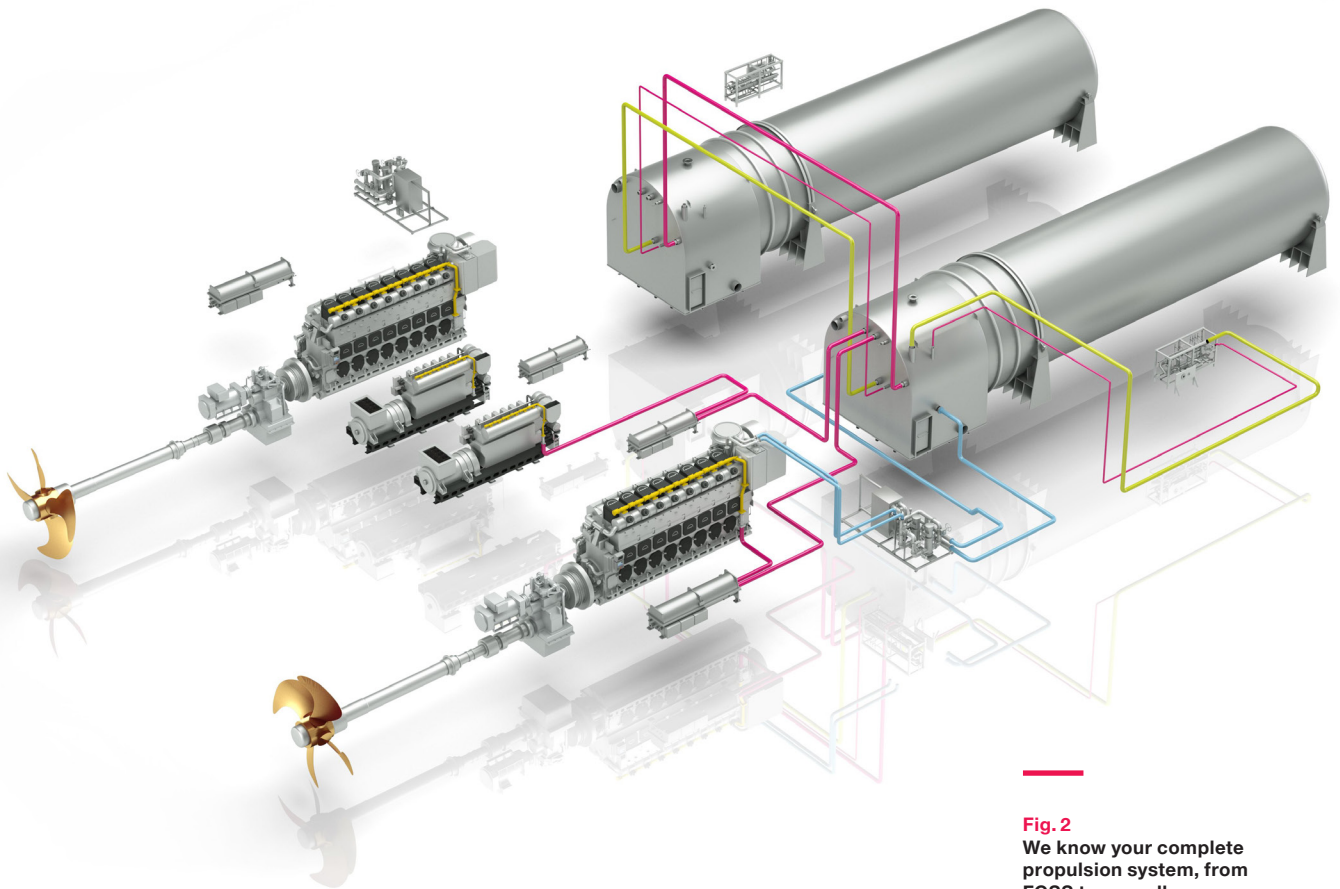


Fig. 2
We know your complete
propulsion system, from
FGSS to propellers

Tank and TCS general inspection

- General visual inspection
- “Unnatural” condensation or ice formation (vacuum pipes, etc. during system operation)
- Gas leaks – measurement with sniffer
- Rust
- Water leakage
- Tank outer shell cold spots or unnatural tank pressure build-up (VI-tank)
- Holding time test measurement
- Inspection of air lock with sensors/alarms
- Check insulation of PU- tank

Pumps, BOG-compressors, VAP/PBU, HEU-skid, other

- Review the general state of the equipment, with input from the crew, and reveal any known issues during normal operation
- Check that recommendations in supplier’s IOM manual has been followed over time
- Confirm if consumables and required parts are available for upcoming periodic service in accordance with the service matrix

Other service

- 5-year maintenance/surveys
- Gas-freeing
- System cool-down for bunkering
- Bunkering support

Worldwide service



Represented in all key markets and major ports, with a network of more than 100 service centers, and with skilled field service managers at the ready to provide first-class technical support, MAN PrimeServ is fully primed to provide 24/7 service, wherever you are.

As the dedicated service brand of MAN Energy Solutions, our goal is to keep your vessels compliant, competitive, and future proof. We approach service with an innovative spirit and always try to find high-quality solutions that are both convenient and complete.

For more information, please visit www.man-es.com/services

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100

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