

SERVICE LETTER
920283-00

Slow- and Super Slow Steaming Precautions
For Vessels with HJ Mechanical SIP

Introduction:

Slow steaming has become a more central parameter in the shipping industry, and consequently an imperative subject to know and care about. It is extremely important to know about the risks and dangers of slow steaming in terms of cylinder condition.

Some of the dangers of slow steaming can be for instance over lubrication, cold corrosion or cracked liners.



Over lubrication



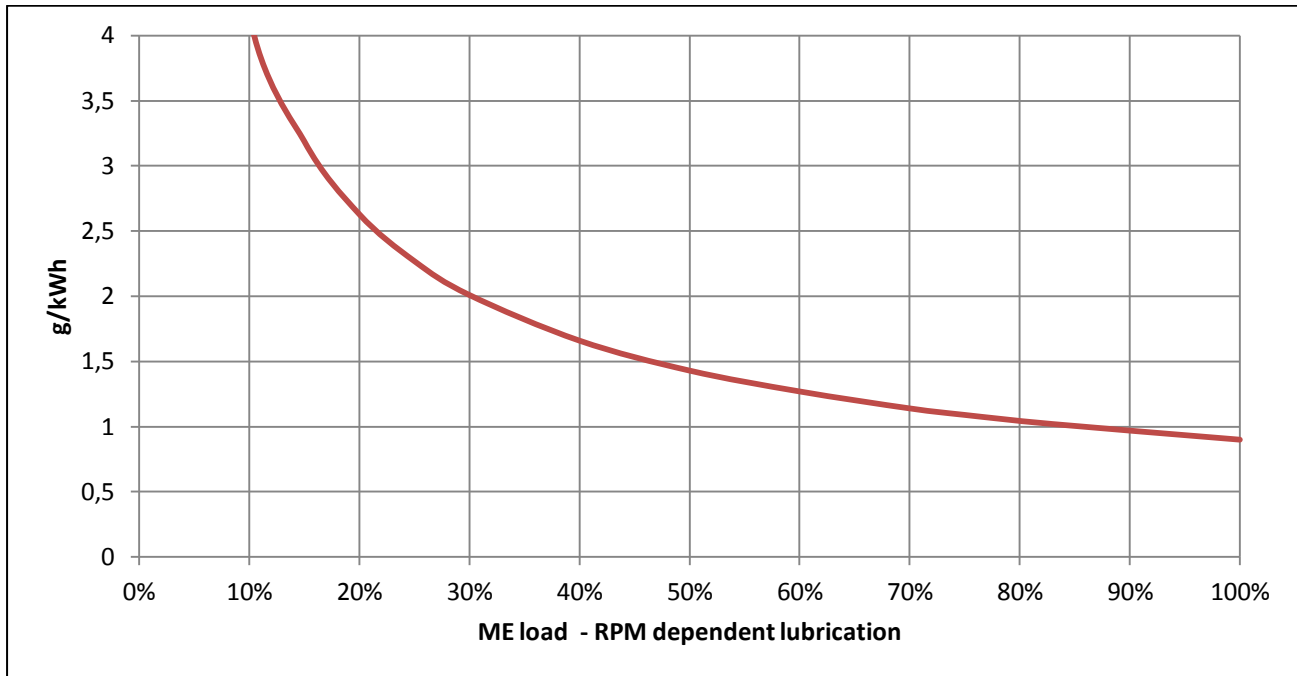
Cracked cylinder liner

All of which are very harmful to the cylinder condition and the engine, and very costly.

This service letter gives our recommendations about how to optimise operation of your vessels with mechanical lubricators for low load operation.

Consequences:

To maintain optimal cylinder condition, you want to make sure that you apply the correct feed rate, and with RPM dependent lubrication systems, such as HJ Mechanical SIP, this requires manual adjustment of lubricators and constant vigilance from the crew.



The RPM regulation algorithm clearly shows the drastic increase in consumption if you do not regulate manually and thus the potential dangers of slow steaming.

Because the adjustment of consumption is to be done manually when operating an RPM dependent cylinder lubrication system, there is a risk of this not being done or being done faulty.

Precautions:

The manual adjustment of cylinder oil feed rate should be based on regular cylinder inspection through scavenge ports, and via photos of cylinder liners, piston top, piston top land, piston ring lands, piston rings, piston skirts and piston under space area.

It is recommendable to carry out a scrape down analysis of drain oil from piston under space, to determine exact condition before adjusting feed rate. This is to determine iron content, TBN residues and water in the oil.

Note that many parameters will influence the results shown in an SDA analysis, such as engine type, liner temperature in combustion area, sulphur content in fuel oil and principle of oil injection (intermittent versus injection at each piston stroke). Just to name a few.

Recommendations:

Hans Jensen Lubricators A/S recommends that you upgrade your mechanical SIP lubrication to one of below two options, if you are to engage in slow- or super slow steaming. The main purpose and advantage of this is to avoid manual adjustment of feed rate when engine load is changed. This will take place automatically, and thus above consequences are minimised:

- HJ Mechtronic <http://hjlubri.dk/en/product/hj-mechtronic>
An electronic regulation of oil quantity by means of magnetic valves, in order to ensure optimum cylinder oil / load proportion
- HJ Lubtronic <http://hjlubri.dk/en/product/hj-lubtronic>
Electronically controlled lubricator, which regulates oil consumption automatically according to load, and which injects fresh cylinder oil with each piston stroke

HJ Mechtronic is an add-on to existing mechanical Hans Jensen lubricators, whereas HJ Lubtronic is a replacement of mechanical lubricators to electronically controlled lubricators.

Advantages of upgrading to load dependent lubrication:

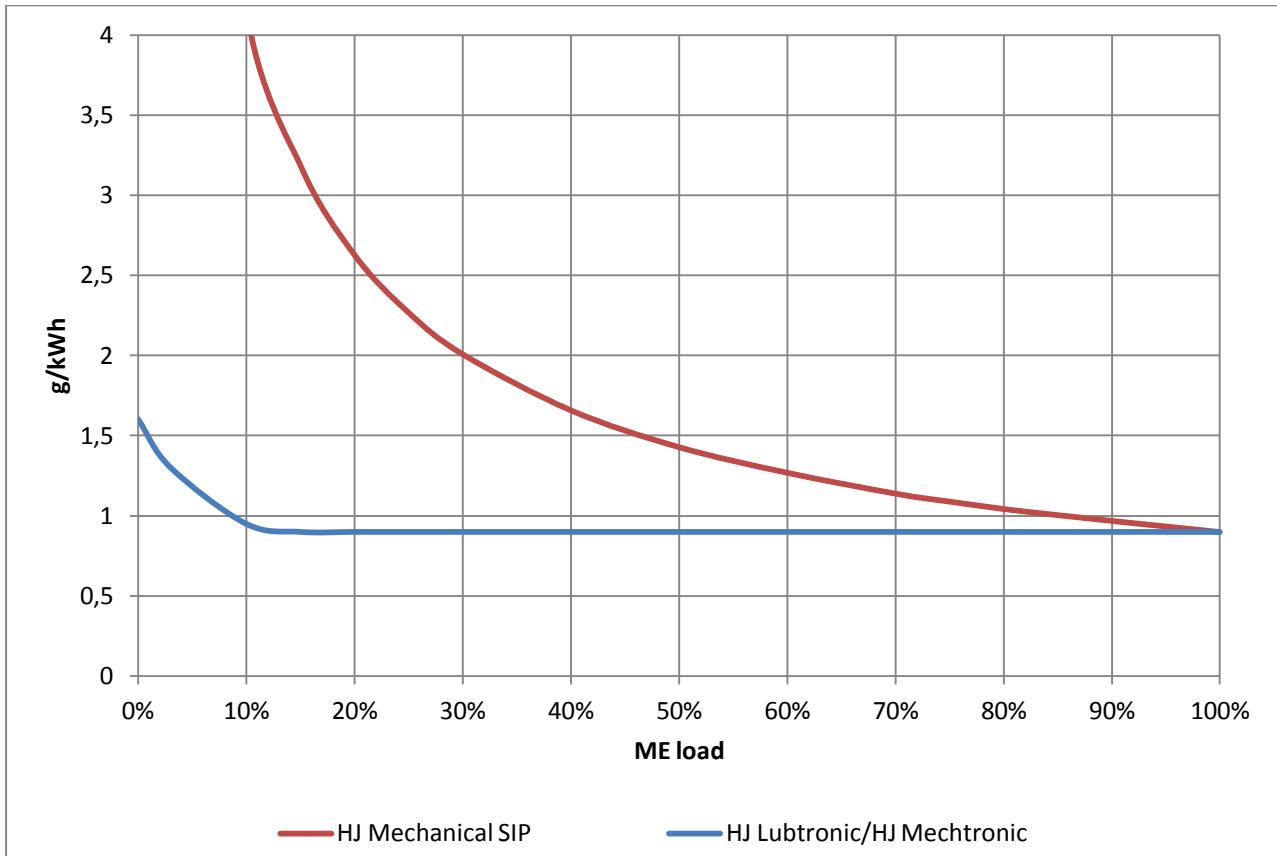
Above mentioned upgrades will result in the following advantages:

1. Improved cylinder condition, due to well adjusted feed rate
2. Reductions in cylinder oil consumption
3. Reduced consumption, leads to reduced pollution
4. Easier life for ship staff
5. Regulation for entire engine at once
6. Regulation depending on sulphur content in fuel



Well lubricated pistons

Below graph is a typical example of the difference between load dependent and RPM dependent system. From the graph you can see that with the reduced load the feed rate is increasing but with an HJ Mechtronic or HJ Lubtronic installation it is constant - resulting in no over lubrication.



Conclusion:

Slow steaming is becoming order of the day in shipping, and it requires thoughtfulness to operate your vessels properly under these circumstances. It is important to assess your cylinder condition before adjusting feed rate, to make sure that it is also well adjusted - particularly if you do it manually on RPM dependent lubricators.

The solution you have with HJ SIP valves has a massive potential, as can be seen from the graph, but with the inclusion of one of above products - for load regulation - this massive potential is realised automatically - also when slow steaming or frequently changing engine load.