

## Lubricating Oil

Lube oil sampling must be taken at frequent intervals and recorded as best recommended practice.

Lube oil purifiers should be operated adequately and continuously. The gravity disc must be selected to obtain the optimum oil-water interface at a maximum temperature close to 90 deg C depending on specifications.

The lube oil feed system to the purifiers should be evaluated in order to ensure the optimum flow rate between the purifier's capacity and feed pump. Older lube oil feed system designs use a direct drive pump that has too high capacity with respect to the recommended flow through the purifiers.

If heavy contamination of water is present in the system: The lube oil in the sump tank must be transferred to a settling tank, the sump tank should be cleaned, and fresh oil filled to the minimum level recommended by the engine manufacturer.

The contaminated lube oil can be drained and circulated through the purifiers and the future use of the oil can only be assessed after analysis.

If it has been determined that solid particles are present, cleaning of the piping system and flushing the entire engine should be considered.

## Crankshaft Safety

As soon as overheating is detected or the oil mist detector alarm is heard, the engine should be stopped.

The cause of the engine overheating should be identified and corrected before the engine is restarted to avoid further damage.

The lube oil should be kept clean as much as possible using continuously the lubricating oils purifier at the maximum best recommended temperature above 90 deg. C. The lube oil filters should be well maintained and kept in a clean and suitable by frequent daily routines.

Regular crankshaft deflections should be taken to ensure that engine operates within the limit allowed by the manufacturer.

## Bunkers

Bunkering procedures, including fuel-testing procedures, should be reviewed to ensure correct procedures when dealing with off-spec bunkers.

Every precaution should be taken to ensure that adequate bunker supplies are available to allow for the proper testing before use of any new bunkers taken on.

Attention should be drawn to high ash, water and total sediment potential (TSP) content as well as to high sodium to water content which indicates the presence of seawater in the bunkers.