

## **IB005. CLEANLINESS OF HYDRAULIC OILS**

### **Key functions of hydraulic oils**

Hydraulic oils are seen in nearly every parts of a ship, both on deck and in the engine rooms. As most of the machines do the “lifting” jobs, hydraulic oils provides power and transport them to other objects. Besides transporting power, hydraulic oils’ other function is to provide lubrication.

As a power transporting agent, the hydraulic oil also function as a “blood” of the system. There are several key functions which are critical to the hydraulic oil. The first one is acting as a seal between machinery parts, to transport “power” from one point to another. Other functions include friction reduction, oxidation inhibition as well as rust prevention.

### **Oil cleanliness**

As mentioned above, the key role of the hydraulic oil is to “transport power”, hence any debris or impurity would hinder the transportation process. Service experiences has proven that the cleanliness of the hydraulic oils will affect the service life of the oil and stability of the system. Water contamination will cause serious emulsion problems and seriously affect the regular functions of hydraulic oil. As a result the transportation of power will be in-efficient or it may even cause catastrophic break down of the machinery.

### **Monitoring hydraulic oil cleanliness**

All hydraulic system filters should be checked on a regular basis following the OEM’s instructions. In addition the hydraulic oil should be checked and tested on a regular basis. For testing of the hydraulic oils, there are two standards namely, the NAS 1638 or ISO 16232. These standards are commonly used for different hydraulic systems as they have different requirements. Users should refer to the OEM’s guidelines with regards to the standards to be used.