



Power Units in Modular Design with Condition Monitoring

Operating pressure 30 ... 500 bar, flow rate 0.9 ... 12 l/min

Application

Power units with condition monitoring are used in hydraulic systems to increase the availability of machines and systems and to reduce maintenance and repair costs.

Description

Continuous condition monitoring assumes that many machine failures due to component wear are announced in advance.

Since it is not possible to measure the wear of all hydraulic components, the hydraulic oil is a good indicator.

An oil condition sensor collects the following fluid data:

- **Electrical conductivity**

changes when metal particles are introduced due to wear on pumps, valves and cylinders.

- **Relative dielectric constant**

is a measure of the permeability of electric fields. It is used to monitor the oil ageing process to determine whether oil has been refilled or whether other liquids and foreign particles have penetrated.

- **Degree of saturation**

is a measure of the amount of water in the oil.

- **Oil temperature**

especially their modification over a longer period of time. Indicates the load on the system and possible wear of the components.

Also integrated:

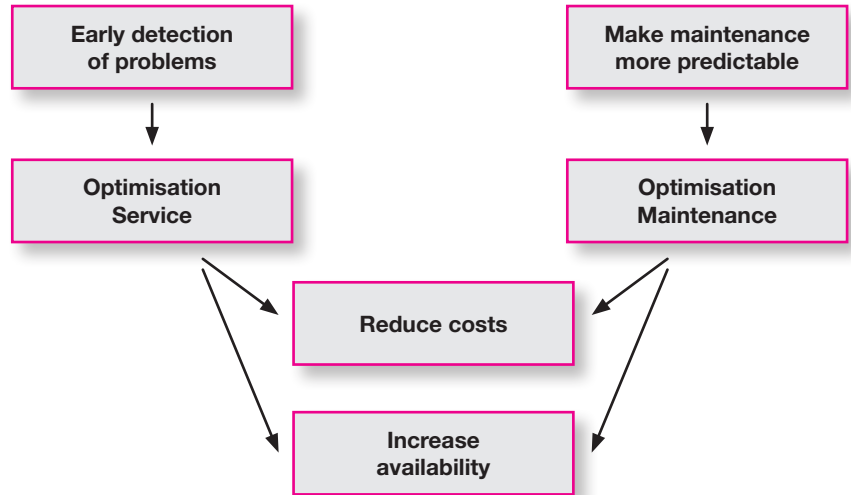
- **Level sensor**

for the exact measurement of the oil level. Changes e.g. in case of leakages.

- **Oil filter control**

with electrical contamination indicator.

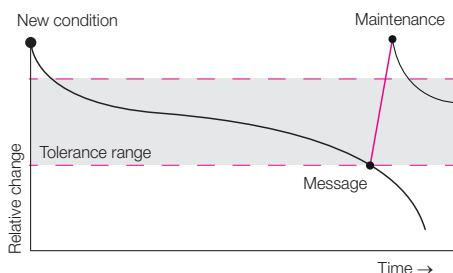
Condition monitoring



Power unit with oil condition sensor and level sensor



Typical course of condition changes



Maintenance light

The maintenance light on the touch panel indicates necessary maintenance works:

Red → maintenance urgently required

Yellow → prepare maintenance

Green → condition data within tolerance range

Touch panel for the simulation of all condition variables