

World and Exhibition debut

Integrated Fluid Concept

for cost and energy saving machines without oil change with the control centre for the cleanliness and monitoring of the oil

Can a machine be „without oil change“? In order to answer this question it needs to be noted that this concerns mainly hydraulic and motor oils.

For the first time KLEENOIL ICC will be installed directly into the filter unit as an ON-BOARD oil analysis system. For especially sensible or important (for operation) systems the same filter unit can also be combined with an additional particle counter. Thus the **KLEENOIL By-pass filter becomes a control centre for the cleanliness and monitoring of the oil.**

The compact integration directly to the by-pass filter unit simplifies application and maintenance.

This completed / new development basically ends the era of speculating about the actual oil quality in the machine as well as empirically fixed measures such as e.g. oil changes or oil analyses. All necessary measures will happen solely based on the condition of the oil. Machine wear, malfunctions and break-downs are minimised. At the same time there is a considerable saving of energy (fuel) costs, as the machine will not lose up to 20% of its performance during a longer period of use, as would be usual otherwise.

On the other hand with an oil change it is not possible (especially with hydraulic oil) to achieve a change of the complete oil content, the result: the oil is drained and a large amount of contamination remains in the machine! The oil contamination (particles and water) automatically results in increased operating costs, as system malfunctions, wear and break-downs increase.

It is generally accepted that the oil quality overall and the cleanliness especially influence the life-time of a machine. So far the fact has been neglected that energy cost and/or energy demand also depend on this. Simplified it can be said that higher friction resistance causes a higher energy demand. Therefore an important function of oils, apart from power transmission (hydraulic) and cooling, is reducing friction resistance by lubricating. Depending on the oil quality and (especially) the cleanliness this job is done more or less well. The inevitable result is a different energy demand.

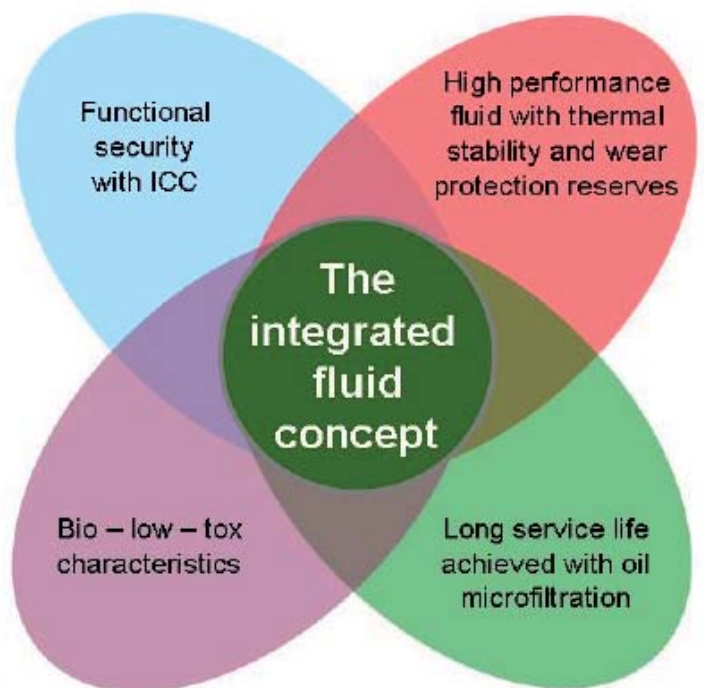
The integrated fluid concept as developed by the KLEENOIL PANOLIN AG is concerned with the application areas of the hydraulic and motor oils, with the aim to reduce cost and energy demand and achieve a machine without oil change as far as possible. The concept consists of three parts:

1. Long-term oils, with environmentally considerate low-tox characteristics as far as possible

To reduce the environmental risks as well, here the rapidly biodegradable hydraulic oil PANOLIN HLP SYNTH is taken into account. This product has been proven suitable for long-term applications in practical use in more than 1 billion operating hours and up to >100,000 operating hours without oil change.

Numerous environmental labels (e.g. « Blauer Engel » - Blue Angel) attest the high environmental compatibility. The requirements for the environmental label "Euro-Margerite" are fulfilled with the sister product HLP SYNTH E. Aside from the excellent ageing and temperature stability both products, which are produced on the basis of saturated synthetic esters, possess additional favourable characteristics, such as e.g. excellent cold start properties, very low pour point and good wear protection.

When selecting the motor oils the long-term suitability has priority.



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2. Oil microfiltration in the by-pass

The KLEENOIL By-pass filters function on the system of depth filtration. To be emphasized is the low filter fineness of 1µm nom. (without the danger of filtering out components from the oil) as well as the high dirt and water retention capacity. Therefore most abrasive and catalytic contamination is filtered from the oil. This results in the protection of the components. At the same time the chemical ageing process of the oil is slowed down. The oil retains its chemical and tribological properties and therefore oil change intervals can be extended.

3. ON-BOARD oil analysis system KLEENOIL ICC – Identification Contamination Control

This concerns a new development. An oil analysis sensor that has been designed for the ON-BOARD oil analysis. In order to achieve the highest possible precision the data of the oil in use is programmed into the sensor. The state of the oil is shown to the user via a display. Alternatively this data can be sent to the on-board monitoring system of the machine or be sent via GSM.

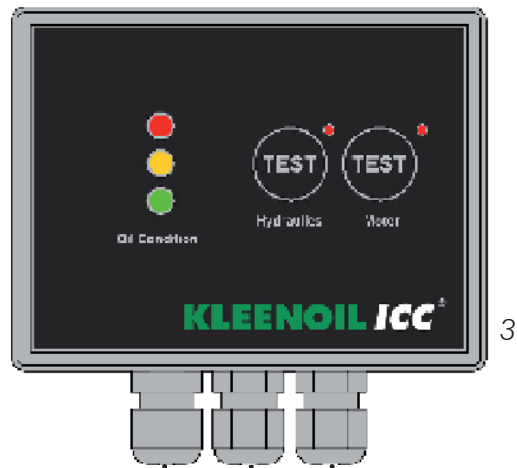
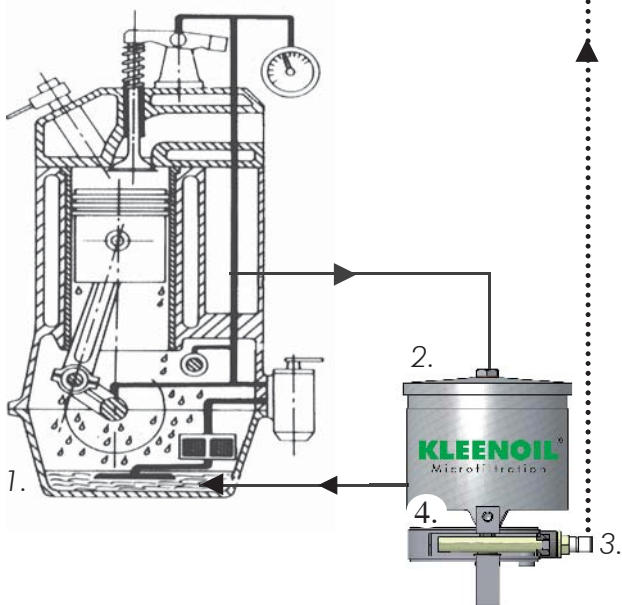
The necessary total costs for this enhancement measure are low. The advantages and savings, however, are very large.

Integrated Fluid Concept for machines without oil change

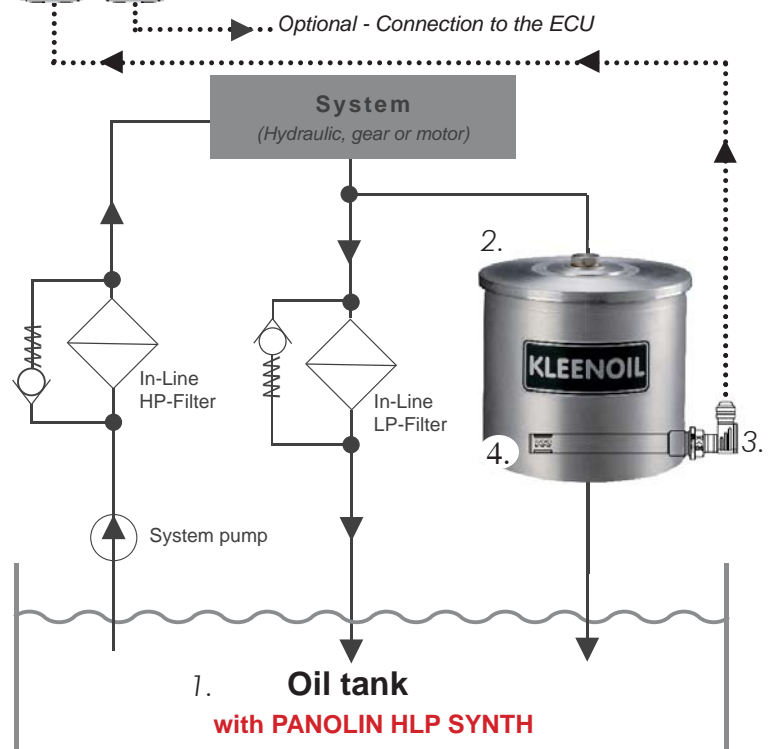
System design:

1. Long-term suitable hydraulic oil
2. Microfiltration in the KLEENOIL by-pass filter
3. KLEENOIL ICC
4. KLEENOIL by-pass filter with in-built ICC

Motor:



Hydraulic:



For further information please see: www.kleenoilpanolin.com/news/presseinfo