LIEBHERR

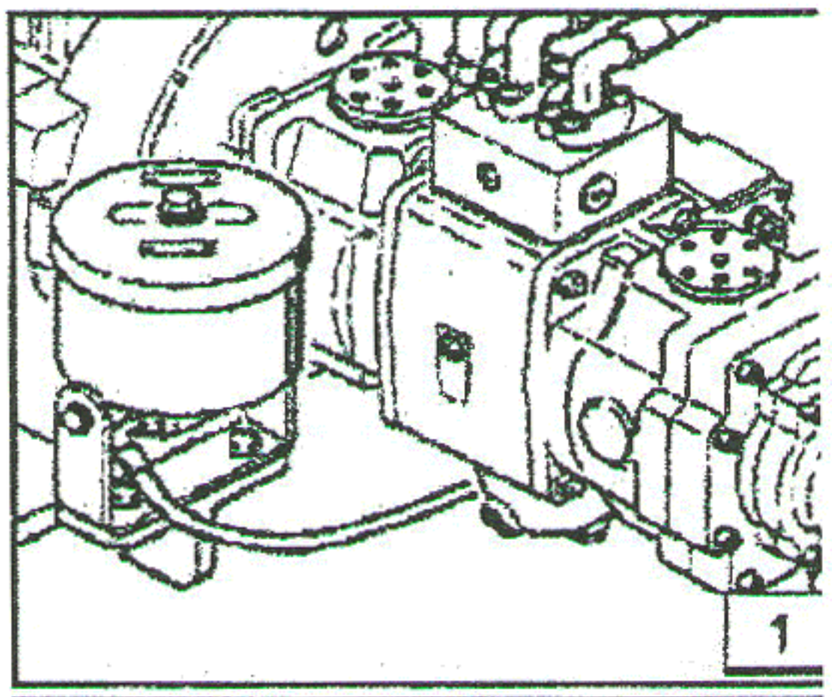
HYDRAULIC CIRCUIT

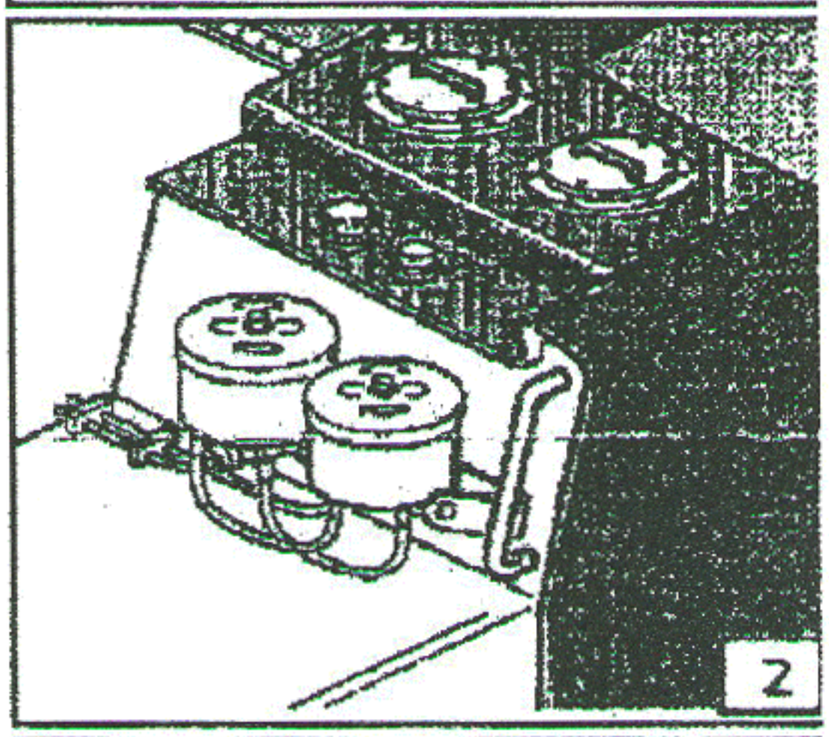
Your Liebherr hydraulic excavator can be equipped with additional oil filters mounted in the bypass of the hydraulic circuit between control valve block – return and the suction line of the working pumps. During operation a small amount of oil always flows via these filters in the bypass to the main return filters.

Predominantly, these filters are designed to drain water by absorbing the water contained in the oil. This guarantees the oil all positive qualities and/or characteristics between oil changes. See next page "appendix 1" as well.

Mounting bypass oil filters is especially recommended when using environmentally safe oils ("bio oils") because these kinds of oil feature a greater capacity to absorb water.

Note: Using these kinds of filters does not relieve the operator of the responsibility of regularly draining the water condensation from the hydraulic tank, see page 5.17.


1


2

FILTER LOCATION

Depending on the size of the machine model, filters with one or two filters elements are mounted:

-In machines models R 904 to R 944:
a filter is mounted next to the hydraulic pump (fig. 1)
-In machine models R 954 to R 974:
there are two filters in line either
- on the back of the control spool board (R 954);
- on the front of the hydraulic tank (R 964, R 974,...,
fig.2).

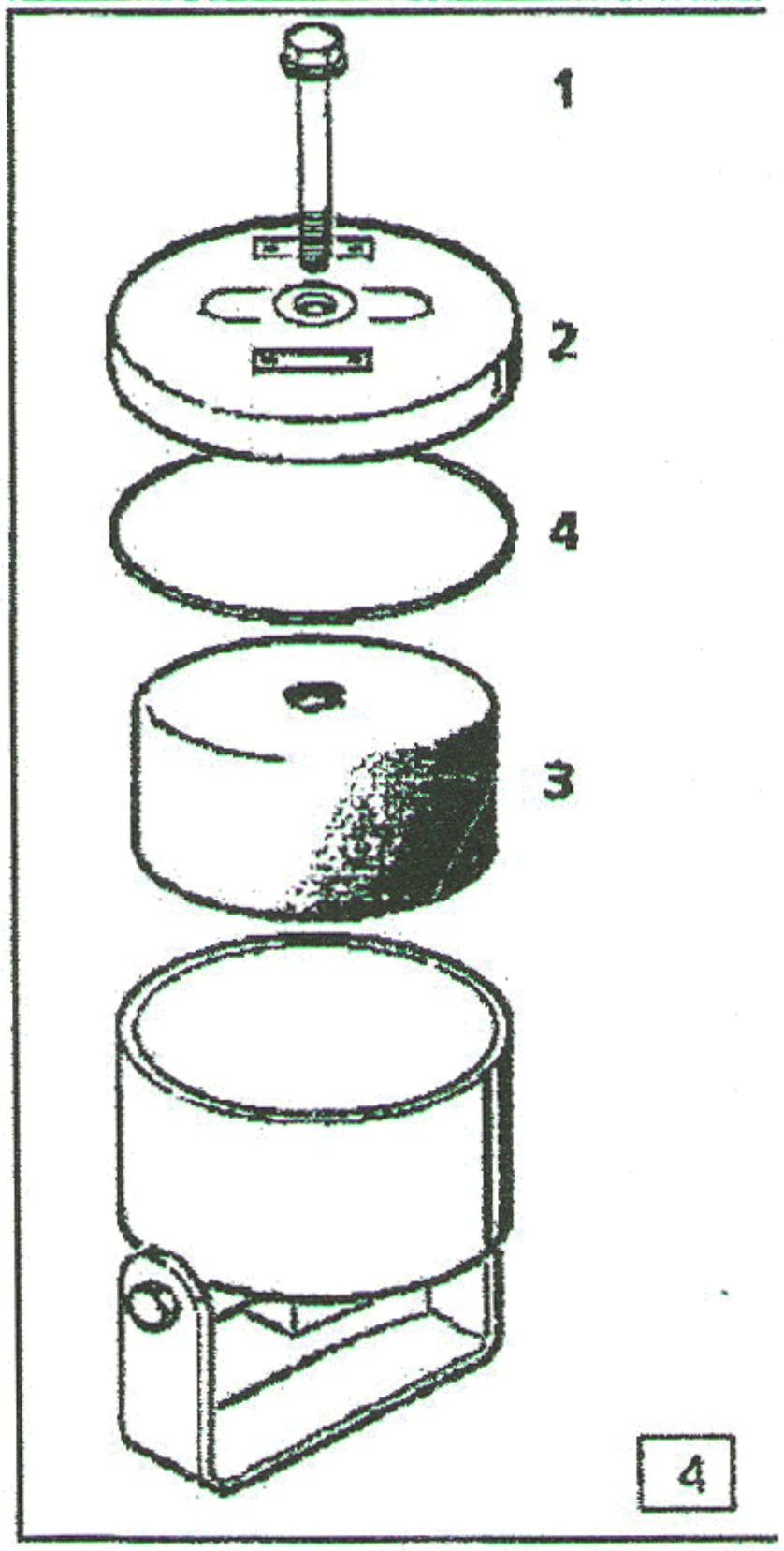
CHANGING FILTER ELEMENTS

The filter elements must be replaced every time return filter elements are changed (see 6.10 and Maintenance Schedule), but at least every six months.

DANGER

Never disconnect lines or hoses before the attachment is lowered to the ground, the engine is turned off, both joysticks are moved with the ignition key in contact position, and the hydraulic pressure in the tank is relieved by turning the breather filter.

Loosen screw 1, remove cover 2 and pull out the old filter element 3.
Insert new filter element into filter, clean cover 2 and put in a new O-ring 4.
Put on filter cover 2 and retighten screw 1.



4

Appendix 1 – THE KLEENOIL FILTER – CARTRIDGE

Description

The Kleenoil Filter Cartridge is made of densely wound long fibre cellulose.
It is covered with a material casing and comes in specified sizes for use in the appropriate filter housings.

The variety of applications to which the cartridge is applicable is explained in greater detail in the appropriate data sheets.

Action of Cartridge.

The filter cartridge acts both by absorption and adsorption in a continuous recycling process. The long cellulose fibres attract the water formed either through the combustion process or by condensation and absorb it like a sponge, at the same time rejecting the larger oil molecules which are forced to pass between the tight windings of the cartridge. As the oil passes through the cartridge minute particles of carbon, wear metals, and silicon are extracted from the oil by adhering to the many surfaces of the filter – a process known as adsorption. Thus, the cartridge by removing water inhibits the production of acids which both degrade the oil and cause excessive wear. The simultaneous removal of minute contaminants as they occur enables the oil life to be extended whilst remaining within its original operating specification, as laid down by its manufacturer.

Important note

While the filter is extracting the water and contaminants it is continuously safeguarding the desirable elements compounded within the actual oil in use. These typically include, dependant on use, dispersants, detergents, oxidation and rust inhibitors, metal de-activators, pour-point depressants, VI improvers, lubricity agents, fungicidal, anti-foaming and gelling additives. These additives are held in suspension and their levels can be critical if the oil is to maintain its beneficial effect. The Kleenoil filter will not remove these additives.

Specification

Identification:	SDFC 1888, Super Duty Filter Cartridge for use with SDU 9788 Super Duty Unit
Application:	1. As an engine oil filter for sumps up to 80 ltrs. 2. As a hydraulic oil filter 3. As a Diesel oil filter
Water retension level:	0.26 gall./1.2 ltr. (to less than 0.05%)
Weights and Dimensions:	Height: 110 mm Diameter: 195 mm Weight: 900 g. +/- 5%

Oil flow rate: Output levels are dependant on viscosity, temperature, degree of contamination, and oil pressure. Pressure difference – begin: σp= 3 bar.

Filtration Level: Particulate contaminants in accordance with BS 5540 part 4:1981 and ISO/DIS 4406. ISO 14/9 equivalent to NAS 1638 class 6 (hydraulic oil specification).