



FILLING INSTRUCTIONS



BIONA BIODEGRADABLE HYDRAULIC FLUIDS

BIO Hydraulic Oil PREMIUM

BIO Hydraulic Oil PLUS, PLUS FR HFDU

HEES ISO:15380 SYNTHETIC ESTERS BASIS

FILLING / CONVERSION INSTRUCTIONS

Thank you for choosing Environmentally Considerate Hydraulic Fluids based on synthetic esters to protect your valuable assets and the nature. These are general guidelines to consider for conversion to **BIONA HEES BIO HYDRAULIC FLUIDS**.

Change-over recommendations according to **ISO:15380** Standard should be observed. Follow machine manufacturer's instructions at all times.

CONVERSION OPTIONS

- **Where technically feasible**, it is always recommended to perform a full conversion to biodegradable hydraulic fluids.
- For conversions from mineral hydraulic oils to **BIONA HEES BIO HYDRAULIC FLUIDS**, the recommended portion of remaining mineral oil must not exceed 5% of the total filling capacity (acc. to ISO 15380 the limit is set at 2%).
- **However, at certain times**, a complete change over to biodegradable hydraulic fluid may not be technically practicable or feasible.
- In that case **general compatibility rules may be followed**. Always consult with your technical support and verify against specifications and guarantees applied by machine and component manufacturers.

PLANNING & PREPARATION

- Always use viscosity grade as specified by the Machine manufacturer.
- Avoid particle contamination of the new fluid. Use a microfilter system when necessary. Minimise water content (e.g., condensation). The generally permitted value should not exceed 1000 ppm.
- For conversions from mineral oil consider the characteristics of synthetic ester fluids, particularly their high detergency. Its cleaning properties remove unwanted deposits and contaminants out of the system. Use quality filters according to the Machine manufacturer's recommendations.
- During the initial period a closer system monitoring and additional replacements of filter cartridges may be required as deposits of impurities collect.
- To ensure the operational safety, reliability and durability of the hydraulic system perform a periodical oil analysis. Contact **BIONA technical support** for ongoing assistance.



FILLING INSTRUCTIONS

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1. **DRAIN** the hydraulic oil.
Thoroughly empty the entire hydraulic system (oil tank, cylinder, radiator, major oil lines, etc).
Inspect the oil tank and clean if necessary.

Note: A warm fluid will be easier to drain. Prior the drain procedure, operate the equipment for at least 30 minutes to bring the oil up to its normal operating temperature. Thorough draining and cleaning of the hydraulic system will help eliminate potential fluid contamination.

2. **FLUSH** the hydraulic system using selected type of BIONA HEES BIO HYDRAULIC FLUID.
We recommend that oil of the same viscosity grade as the one intended for operation is used. Fill the system to 30-50% of system content depending on type of machinery. Start up the hydraulic system and actuate into light operation. Perform all its working operations several times. This will help loosen deposit build up by the previous lubricants.

Note: It is not essential to change the filter cartridges prior to the system flush – high cleaning function of synthetic ester fluids will loosen unwanted sediments, residues and deposits.

3. **DRAIN** the hydraulic system (repeat step 1).
4. **FILTER CHANGE.**
Replace the filter cartridges.
5. **FILL** the hydraulic system with the recommended BIONA HEES BIO HYDRAULIC FLUID.
Avoid air entering the hydraulic system – bleed the system if necessary.
6. **START** the machine and enjoy ultimate performance of the hydraulic system.
7. **MONITOR** the hydraulic system and operating hydraulic fluid in regular intervals and according to the service schedule. When changing to BIONA HEES BIO HYDRAULIC FLUIDS an extra control of filter cartridges in early hours of operation is recommended. You may notice filters require changing earlier than with the previous mineral oil. As the contaminants are removed, filter changes will return to normal levels.

Recommended test intervals (work hours): 0 / 50 / 250 / 500 / 1000 / 1000 or at least once a year.

8. **TECHNICAL SERVICE BIONA Technical Team** is at your disposal for any further assistance.

BIONA disclaims all responsibility and liability if the conditions and instruction are not met. These guidelines correspond to the current status of technical knowledge and compiled of numerous practical conversions. In the unlikely event of technical conflict Machine manufacturer's instructions take precedence. If in doubt, please consult with our Technical Department.

