

Voith Turbo

VOITH

Taking Oil Samples from DIWA Transmissions

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1 General notes

1.1 Safety notes

Operation, maintenance and repair of the transmission are always subject to the relevant local safety regulations and accident prevention regulations.

These regulations can for example concern handling of hazardous materials, provision and wearing of personal protective gear or motor vehicle regulations.

Anyone operating the transmission or any persons involved in installation, repair or maintenance have to familiarize themselves with the warning notes and precautions described in this document.

Any person involved in operation, installation, repair or maintenance of the transmission must exercise utmost diligence in making sure that his or her own personal safety or the safety of other persons is not in danger.

Staff qualification

Work on the transmission may only be carried out by staff that is properly trained, instructed and authorized by the operator. The legally prescribed minimum age must be observed.

Maintenance and repair require special knowledge and training (e.g. a Voith diagnostics and repair training) and may only be carried out by accordingly qualified personnel.

Personnel that is currently being trained, instructed, broken in or undergoes a general training, may work on the transmission only under the permanent supervision of a person assigned to this purpose.

Responsibilities

The responsibilities of the personnel working on the transmission must be clearly defined and complied with.

Only such personnel as is explicitly ordered, authorised and trained to do so is allowed to work on the transmission.

Work on the chassis, brakes or steering systems may only be conducted by accordingly qualified personnel.

Unsafe instructions

The personnel working on the transmission must refuse unsafe instructions of third parties.

Work on the transmission

Prior to maintenance or inspection at the installed transmission and during installation and removal of the transmission the engine of the bus must be secured against starting.

Prior to performing maintenance or inspection operations on the installed transmission and during installation and removal of the transmission, the bus must be secured such that it cannot be put in motion, neither deliberately nor accidentally (slope!).

The prescribed service work must be carried out regularly, on time and with the intended fuels and fluids.

The work must be performed in accordance with Voith provisions, e.g. the customer service information that describes improvements and modifications to the transmission so that no parts and tools take damage.

Performing work on the transmission requires a suitable workshop equipment.

After having worked on the transmission, all transmission oil lines must be checked for leaks, loose connections, chafing and damage. Any defects must be eliminated immediately.

After having worked on the transmission, all joints must be checked for leakage.

All screwed connections loosened during work on the transmission must be tightened to the tightening torques indicated in the technical documents on the transmission.

Risk of burning

The oil can become very hot during driving - in extreme cases up to 130 °C.

Improper handling may cause burns of the skin.

Therefore, let the transmission cool down to approx. 90°C to 60 °C before taking an oil sample.

Dangers posed by transmission oil

Handling transmission oil can be harmful.

The material safety datasheets of the oil type used must be observed.

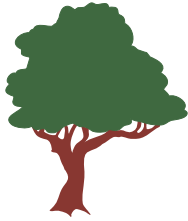
Disposal

Fluids and auxiliary substances (e.g. used oil) and disassembled parts must be disposed of in a safe and environmentally sound manner.

The local regulations and laws on environmental protection and disposal of hazardous materials must be observed.

1.2 Symbols

	DANGER DANGER indicates imminent danger for life and health of people. The non-compliance with this note results in serious damage to your health as well as life-threatening injuries.
	WARNING WARNING indicates possible danger for life and health of people. The non-compliance with this note might result in serious damage to your health as well as life-threatening injuries.
	CAUTION CAUTION indicates a potentially dangerous situation. The non-compliance with this note might result in minor injuries or property damage.
	NOTE Note points out information on the proper handling of the transmission. It does not indicate dangerous situations.



ENVIRONMENT

Environment

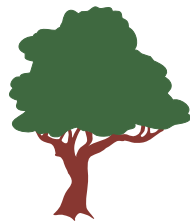
indicates a potentially harmful situation for the environment owing to operation, maintenance or repair of the transmission.

- ➔ Meaning: an activity to be performed.
- ↩ Meaning: the result of an activity.
- Meaning: please note especially.

2 Taking an oil sample

2.1 Conditions

- The engine of the vehicle must be running.
- The transmission must be in "neutral" mode.
- The vehicle must be secured such that it cannot be put in motion, neither deliberately nor accidentally.
- The vehicle must be secured such that it cannot autonomously move (slope!).
- The temperature in the oil sump must be between 60 and 90°C.



ENVIRONMENT

Environmental hazard due to oil

The transmission oil must not enter the environment.

- ➔ Collect the transmission oil in appropriate containers.
- ➔ Transmission oil must be disposed of in accordance with the local and national regulations.

2.2 Procedure



WARNING

Risk of scalding through hot oil

An oil sample has to be taken at oil temperatures between 60°C and 90°C.

The transmission oil can become very hot during driving, up to 130°C.

Allow the oil to cool down to 90°C before taking an oil sample.

If hot transmission oil comes into contact with your eyes, your vision can be impaired severely or you could even go blind.

Direct contact of the hot transmission oil with the skin can cause severe scalding injuries.

→ You must always wear protective gear like gloves, goggles etc. when handling hot oil.

Taking an oil sample



Fig. 1 Sampling syringe with tube

- ☐ Use a special sampling syringe with tube to take an oil sample.
- ☐ Observe the operating instructions for the sampling syringe.
- ➔ Taking an oil sample from the oil sump

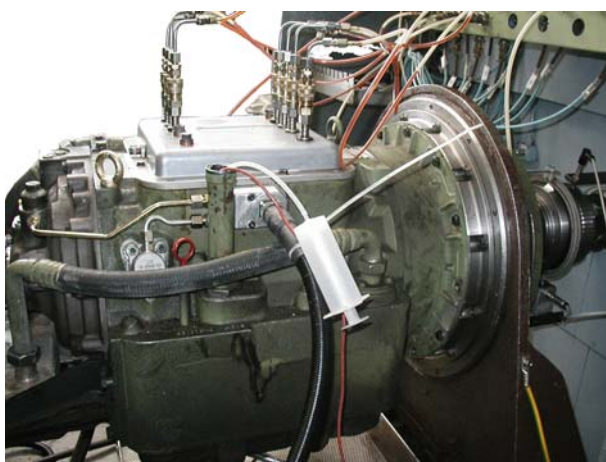


Fig. 2 Taking an oil sample

- ☐ The oil sump is best accessible through the opening for the oil dipstick on the side of the transmission or through the oil filling orifice.

Labelling the oil sample

- ❑ The oil sample must be clearly identifiable for a later analysis.
- ➔ The oil sample should be labelled with the following information:
 - Name of the oil
 - Date the oil sample was taken
 - Serial number of the transmission according to type label
 - Bus number
 - Registration number
 - Mileage on speedometer
 - Has oil been replenished since the last oil fill?
 - If yes:
 - How much oil was replenished?
 - Which oil was replenished?

Additional information

- ➔ If agreed with Voith, read out the operating data of the vehicle, too.

Analysing the oil sample

- ➔ Send the oil sample and the operating data to the agreed contact person with Voith.



NOTE

Deviations from the procedure

Any deviations from the procedure described here must be arranged with Voith.

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