

REPAIR MANUAL

4 HP-20



ZF GETRIEBE GMBH SAARBRÜCKEN

Version 99/04/01
CD

subject to alterations

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Preliminary information

This manual covers the procedure for repairing the complete transmission.

The repairing of this transmission is only allowed to persons with specific training from ZF Getriebe GmbH.

The entire disassembly and assembly procedure is described in chronological order.

The photographs were kept general in nature so that they can be used with various applications; they are not binding in every case.

We use *Service Bulletins* and training to announce important information and application-specific changes that must be taken into consideration in maintenance work. If this repair manual is given to a third party, there will be no modification service.

The *Service Bulletins* regulations and specifications must be followed when making repairs.

Depending on the type of damage that has occurred, the repair work can be limited to that which is necessary to repair the damage.

In this case you must observe the following:

- Seals (such as O-rings, shaft seals, gaskets, and filters) must always be renewed.
- All O-rings, rectangular-section rings, and other sealing rings must always be lubricated with petroleum jelly before installation.
- All bearings must always be oiled lightly when installed.
- For transmissions that have covered a large number of kilometers (> 80,000 km), all lined clutch discs and steel clutch discs must be replaced.
- After clutches/brakes have been damaged, the converter, oil tubes, and oil cooler, must be cleaned thoroughly with a suitable cleaning agent.
- If brakes C or D has been damaged, or if a considerable distance has been covered (> 80,000 km), pistons C and D must be replaced.

The following requirements should be met before the repair work is started:

- The required special tools should be available.
(The complete set of special tools is listed in Chapter 1.7)
- A suitable transmission testing rig should be available.
The required testing values can be found in the *Service Bulletins*.

Note:

This manual treats the automatic control unit as a complete unit, which should not be disassembled without special knowledge; it should be exchanged as a complete unit.

A separate repair manual is planned for the automatic control unit.

Important:

The transmission is filled with long-life oil.

The oil does not have to be changed until it has been in use for ten years.

The transmission must only be delivered with the oil type and oil amount specified in the corresponding parts list documentation (see Part List).

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Technical Documentation

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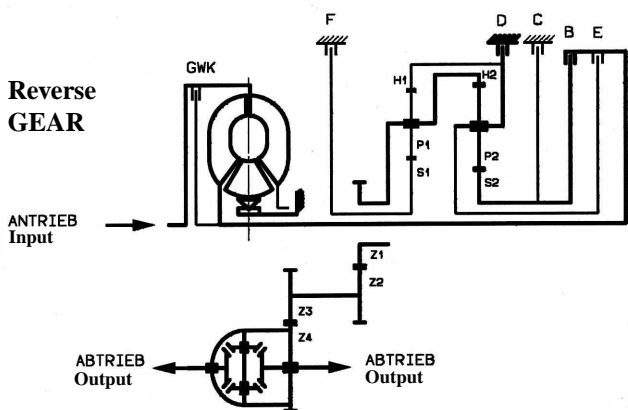
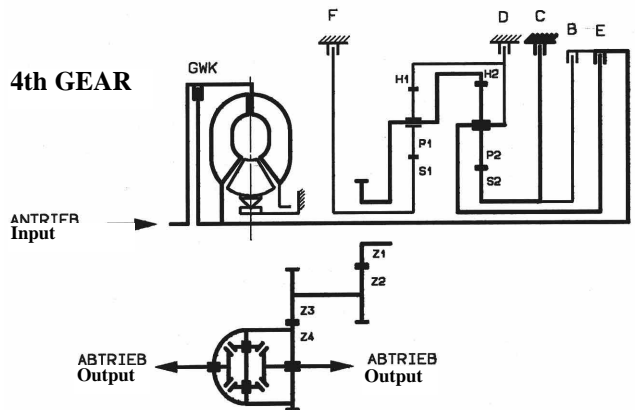
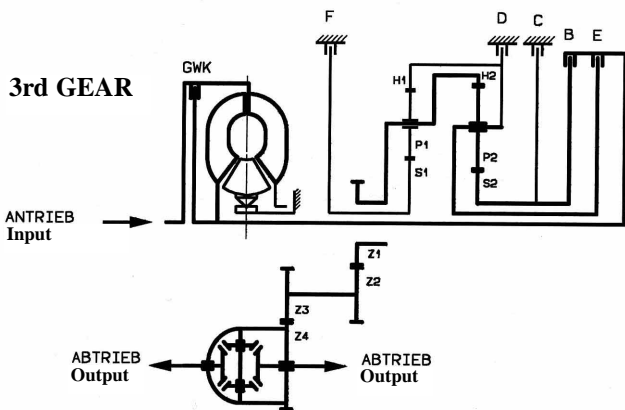
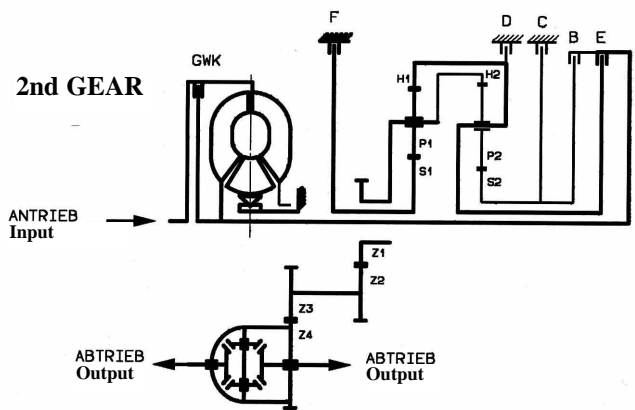
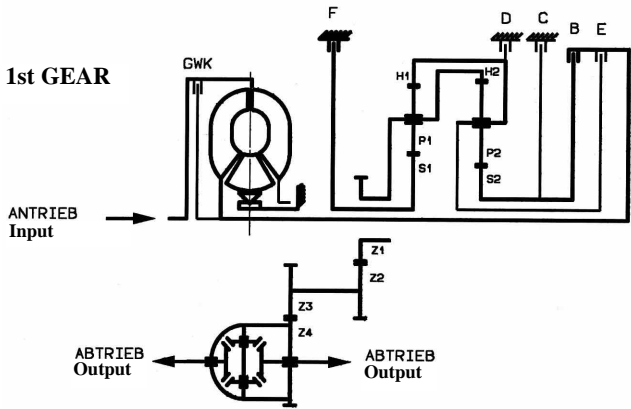
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1. General information
1.1 Picture of the transmission



1.2 Power flow diagram



Zf 4hp 20e Repair Manual 2

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