BMW, AUDI, PORSCHE
Technicians Guide

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INTRODUCTION
BMW, AUDI, PORSCHE

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This booklet contains information that has not normally been available in most OEM repair manuals and can be used by the technician to diagnose electrical concerns, identify the location and direction of the valves, springs, retainers and bore plugs in the valve body. This information has been prepared from actual valve bodies and in some cases may vary from one model to another, but is invalueable when the need arises to diagnose and repair electrical and valve body concerns.

This Manual covers the following models:

- ***ZF-4HP-18FLE/FLA Transaxle, found in Audi and Porsche.***
- ***ZF-4HP-22/24 Series, Model "E7", "5 Solenoid" Valve Body found in various vehicles.***
- ***ZF-4HP-22/24 Series, Model "E9", "4 Solenoid" Valve Body found in various vehicles.***
- ***ZF-5HP-18 Series, found in various BMW models.***
- ***ZF-5HP-19FL Transaxle, found in various BMW models.***
- ***ZF-5HP-24 Series, found in various BMW models.***
- ***ZF-5HP-30 Series, found in various BMW models and Rolls Royce.***

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The information and part numbers contained in this booklet have been carefully compiled from industry sources known for their reliability, but ATSG does not guarantee its accuracy.

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ZF-4HP-18FLE AND ZF-4HP-18FLA
DIAGNOSTIC INFORMATION

The ZF-4HP-18FLE is mounted longitudinal in the front of the vehicle, and was produced in 2 Wheel Drive models (FLE) and All Wheel Drive (FLA) models, as shown in Figure 1. This unit is totally electronic controlled and is totally different than any 4-HP-18 unit that you are currently familiar with.

ZF-4HP-18FLE And ZF-4HP-18FLA Is Found In The Following Vehicles;

Audi - - - 100 Quatro, A6 1991-1997
Audi - - - A8 1994-1996
Porsche - - - 944 1991-1994

There has been very little pertinent information published on these units. The information in this bulletin has been prepared from an actual transaxle and valve body and has been formulated to provide you with the preliminary information needed to diagnose and repair electrical and valve body concerns.

Refer to Figure 1 for illustrations of both the 4-HP-18FLE (2WD) and 4-HP-18FLA (AWD) models.

Refer to Figure 2 for internal component resistance charts and connector pin identification.

Refer to Figure 3 for complete wiring schematic with computer terminal identification and transaxle terminal identification, which makes it easier for electrical diagnosis.

Refer to Figure 4 for the solenoid application chart and component application chart.

Refer to Figure 5 for illustration of the complete valve body assembly.

Refer to Figure 6 for exploded view of oil filter and oil filter transfer plate.

Refer to Figure 7 for exploded view of the manual valve body.

Refer to Figure 8 for exploded view of the solenoid body, and notice that it provides you with the factory setting for the adjustment on the pressure regulator valve for EDS-1 solenoid. The Legend for Figure 8 which identifies the solenoid body components and solenoids is found on Page 13.

Refer to Figure 9 for exploded view of the valve body assembly components.

Refer to Figure 10 for exploded detail view of the "Rear Side" of the main valve body. The Legend for Figure 10 which identifies the main valve body components is found on Page 16.

Continued on Page 5

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All nomenclatures in this booklet are ATSG interpretations, not Audi's nor ZF.

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Continued from Page 4.

Refer to Figure 11 for exploded detail view of the "Front Side" of the main valve body.

Refer to Figure 12 for valve body spring specifications. The spring dimensions listed in Figure 12 were "Observations" from only one valve body, and may vary from one model to another.

Refer to Figure 13 for Solenoid Body screen and retainer locations, and to Figure 14 for the Manual Valve Body retainer locations.

Refer to Figure 15 for the Main Valve Body "Top Side" retainer locations, check valve and checkball locations, and the locations of the small flat disc orifices.

Refer to Figure 16 for the Main Valve Body "Bottom Side" check valve location, and the location of the small flat disc orifices.

Refer to Figure 17 for location of the small flat disc orifice in the channel plate.

Refer to Figure 18 for the two pressure tap locations on the back of case.

Refer to Page 22 for explanation of Safety Mode Valve operation.

Refer to Page 23 for complete color hydraulic schematic.

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