



**DTB**

Date: February 4, 2008  
Order No.: P-B-28.00/07a  
Supersedes: P-B-28.00/07 dated January 16, 2007  
Group: 28

**Revision History**

Revision	Date	Purpose
a	2/4/08	Transfer Case Repair Assembly Revised and Parts Information Updated
-	1/16/07	Initial issue

**SUBJECT: Model 221.186, Equipped with Transmission 722.96 4-Matic  
All Model Years  
Introduction of 4-Matic Drive**

During the launch phase of new 4-Matic all-wheel drive system with transmission NAG2 722.96 (with integrated transfer case) used in Model 221 S550 4-Matic, the workshop must clarify before-hand whether the customer reported drive performance involving the main transmission NAG2 or the below 4-Matic specific components.

- Integrated transmission / transfer case assembly
- Front drive-shaft
- Front axle differential
- Front axle shaft

Possible reported conditions include shuddering/vibrations, howling transfer case and/ or leaks at the front axle differential or transfer case.



**Note:** To enable you to recognize and forward problems regarding transmission 722.96 with 4-Matic quickly, the 4-Matic diagnosis sheet (refer to page 3) must be filled out completely and accurately. It must be returned with the related part and a copy of the form saved in the customer file.

**Repair Concept**

Until notified, no repair work should be performed on the following 4-Matic specific components (replacement only).

This bulletin has been created and maintained in accordance with MBUSA-SLP S423QH001, Document and Data Control, and MBUSA-SLP S424HH001, Control of Quality Records.

- Transercase assembly - Leaks in the sealing flanges must be resealed.
- Front propeller shaft
- Front axle differential
- Front axle shaft

**i** **Note:** In cases of the above mentioned parts, the completed 4-Matic diagnostic form (refer to page 3) must be included with the incoming parts and a copy retained in the customer file. Failure to comply may result in a charge back.

**i** **Note:** All repair procedures which are authorized for the NAG2 are authorized for the NAG2 4-Matic as well.

Diagnostics can be performed, as outlined in the EDAC diagnostic tree and all standard repairs for the NAG2 may be performed. The axial play between the park pawl gear and grooved ball bearing, described in WIS AR27.50-P-0600-06SYZ, must be measured and recorded before the main transmission NAG2 is disassembled or repaired. During assembly, the axial play must be set again using shims. **If the axial play is not set correctly, transmission noises or further transmission damage will occur.**

If diagnostic procedures lead the technician to the replacement of a valve body or transmission, a WSG pre-authorization form must be completed as described in DTB P-B 27.00/38d dated November 7, 2006.

#### Software Update - Flashing

If the transmission control module needs to be programmed, only STAR DIAGNOSIS versions 09/2006 or later should be used in conjunction with all of the related add-ons.

**i** **Note:** It is important to ensure that only "SDflash Release" CDs as of 9/2006 be used with all of the related add-ons.

#### Parts Information

Qty.	Part Name	Part Number
1	Transmission 722.961	Refer to EPCnet, Group GA27, Subgroup 015, by VIN to determine correct part number
1	Front differential	A221 330 04 02
1	Propeller shaft, transfer case to front axle	A221 410 17 01
1	Axle shaft Front Left	A221 330 08 01
1	Axle shaft Front Right	A221 330 09 01

**4MATIC Diagnosis Form - MODEL 221 with Transmission 722.96 4MATIC**

Branch/Agency Company No.

Customer

Vehicle ID No.

Tester: Name

Variant Code	Software Object Number	Model	Initial Registration	Main odometer reading (km/miles):
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**Gearing noises/howling noise at transfer case**

Overrun                       Acceleration

Description of noises  
(howling, whistling, singing, grinding, etc.)

Vehicle speed range

Gear stage

Other information

**Vibration and roughness**

Idling vibration in gear range **P** or **N**  
 Idling vibrations when stationary with gear range **D** engaged  
 Vibration/roughness in driving mode

Vehicle speed range

Other information

**Vibrations/shuddering in turning circle**

Shuddering/vibrations in turning circle                       Shuddering/vibrations when cornering

**Throttle lift-off noises, click-clack**

Acceleration – Overrun vehicle speed range  
 Overrun – Acceleration vehicle speed range  
 Clacking noise at throttle lift-off  
 Clacking noise when driving off

**Oil leakage at transfer case**

Radial shaft sealing ring to front axle leaking                       Radial shaft sealing ring to rear axle leaking  
 Sealing surface between aut. trans. and transfer case leaking                       Sealing surface at transfer case cover leaking

**Other complaints**