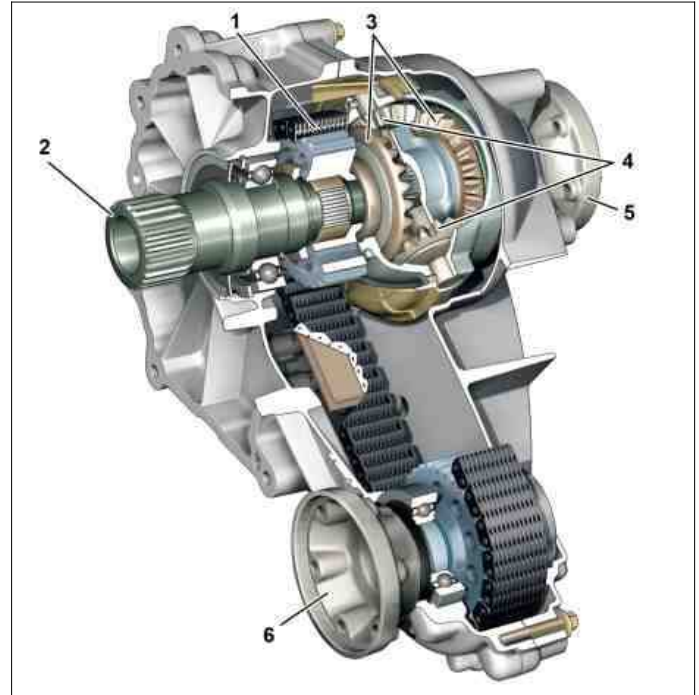


MODEL 164.1 with ENGINE 156, 272, 273, 629, 642 with TRANSMISSION 722.9 as of Model Year 2009 /YoM 08 model refinement package

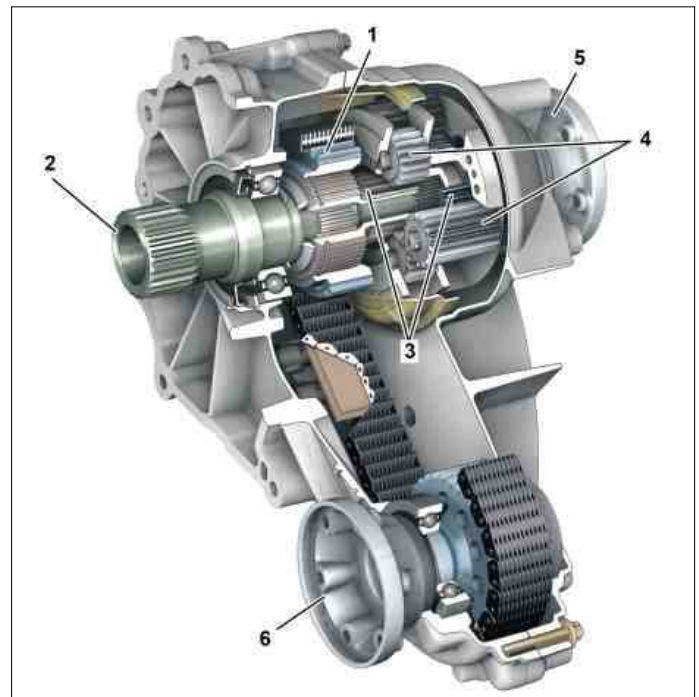
MODEL 164.8 with ENGINE 273, 629, 642 with TRANSMISSION 722.9 as of Model Year 2009 /YoM 08

#### Sectional view of transfer case



P28.00-2050-82

#### Sectional view of transfer case (AMG version)



P28.10-2270-82

#### Transfer case (VG), general

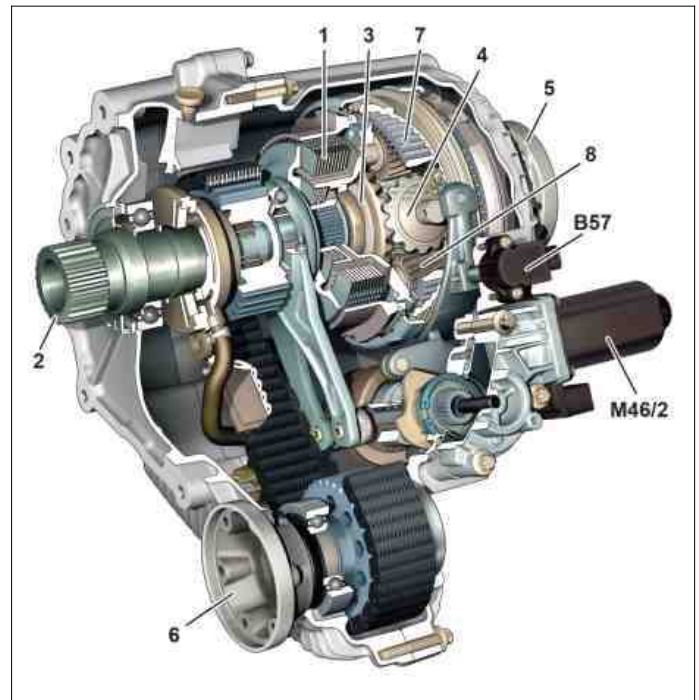
Permanent all-wheel drive has advantages not only offroad but also on roads which provide good grip. The permanent all-wheel drive increases the number of driven wheels, thus improving tire-to-road adhesion. As a result, slip is reduced and the driving power is distributed to all of the wheels. The distributed driving power results in higher traction and higher lateral stability at the driven wheels.

The standard version (model 164.1, 164.8) of permanent all-wheel drive is equipped with three open differentials (transfer case, rear and front axle). The torque split of 50:50 % between the front axle and rear axle is specified as a fixed value in the transfer case. The transfer case gear ratio is 1:1.

Using the offroad program switch (N72/1s25) (except code (430) Offroad package, AMG version) which is located in the upper control panel control unit (N72/1) the driver can activate the offroad function (modified shift characteristic) in the automatic transmission (NAG2). In addition a changed accelerator pedal curve is activated in the CDI control unit (N3/9) or ME-SFI [ME] control unit (N3/10) and the offroad ABS function in the ESP control unit (N47-5).

The driver can switch the Downhill Speed Regulation function on or off via the Downhill Speed Regulation switch (N72/1s24) (except code (430) Offroad package, AMG version) or (N72s30) (with code (430) Offroad package).

## Sectional view of transfer case with code (430) Offroad package



P28.10-2269-82

### With code (430) Offroad package

A permanent all-wheel drive with two lockable differentials (transfer case and rear axle) and an open differential (front axle) is used in the offroad package equipment. The torque split of 50:50 % between the front axle and rear axle is specified as a fixed value in the transfer case.

The "Low/High" function in the transfer case can be used to select two gear ratios. The on-road ratio "High" is 1:1, the offroad gear ratio "Low" is 2.93:1.

The transfer case control unit (N15/7) and the rear axle differential lock control unit (N15/9) control the two ratios. Via the Low Range switch (N72s31) which is located in the lower control panel control unit (N72), the driver can switch over between the "High" on-road ratio and the "Low" offroad ratio.

The differential locks in the transfer case and in the rear axle can be operated or adjusted by the driver via the differential lock selector wheel (N72s34).

The differential lock selector wheel is located in the lower control panel control unit.

The following control units are involved in controlling the transfer case and the rear axle:

- Transfer case control unit
- Rear axle differential lock control unit
- Lower control panel control unit
- ME-SFI [ME] control unit (with gasoline engine)
- CDI control unit (with diesel engine)
- ESP control unit
- Fully integrated transmission control (VGS) control unit (Y3/8n4)

Further partial functions are described in separate documents:

- **Transfer case/rear axle differential lock control, function (with code (430) Offroad package)**
- **Downhill Speed Regulation, function**
- **Offroad transmission mode, function (except code (430) Offroad package)**
- **Transfer case oil supply, function**
- **"Low/High" shift, function (with code (430) Offroad package)**
- **Interaxle differential lock, function (with code (430) Offroad package)**
- **Interwheel differential lock, function (with code (430) Offroad package)**

	Transfer case (VG), power flow	With code (430) Off-road package Except code (430) Offroad package	<a href="#">GF28.10-P-0002-05VG</a> <a href="#">GF28.10-P-0002-05VGA</a>
	Transfer case (VG), location of components		<a href="#">GF28.10-P-0002-06VG</a>
	Transfer case (VG), block diagram		<a href="#">GF28.10-P-0002-08VG</a>
	Control of transfer case/rear axle differential lock, function	With code (430) Off-road package	<a href="#">GF28.19-P-3050VG</a>
	Downhill Speed Regulation, function		<a href="#">GF28.19-P-3600VG</a>
	Offroad transmission mode, function	Except code (430) Offroad package	<a href="#">GF28.19-P-3601VG</a>

	"Low/High" shift mechanism, function	With code (430) Off-road package	GF28.60-P-1000VG
	Interaxle differential lock, function	With code (430) Off-road package	GF28.60-P-3100VG
	Interwheel differential lock, function	With code (430) Off-road package	GF28.60-P-3200VG
	Transfer case oil supply, function		GF28.55-P-3000VG