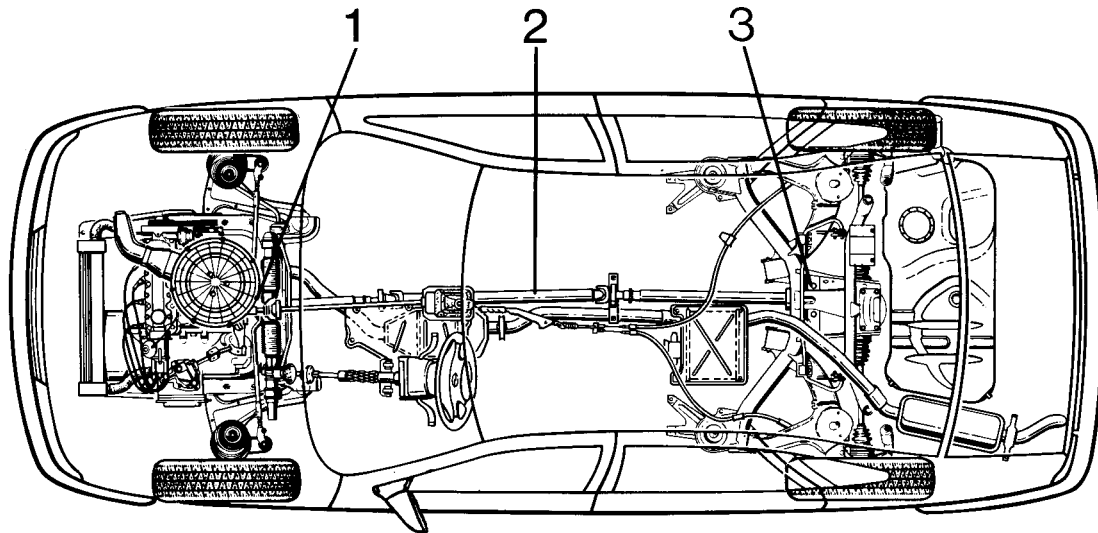


Function of the all-wheel drive



Engine, clutch and transmission form a unit and propel the front wheels, as with the front wheel driven version. The drive of the rear wheels is done fully automatic by the transferbox (1) flanged on the right side of the gear box with it's integrated visco clutch and AWD disconnection (when braking), a three-part drive shaft (2) and the final drive (3).

The AWD is working permanently and fully automatic without intervention of the driver. Primary the front axle is propelled. The amount of driving power transmitted to the rear axle is changed by the visco clutch depending upon the actual requirements up to 100% (stare connection, so-called "hump").

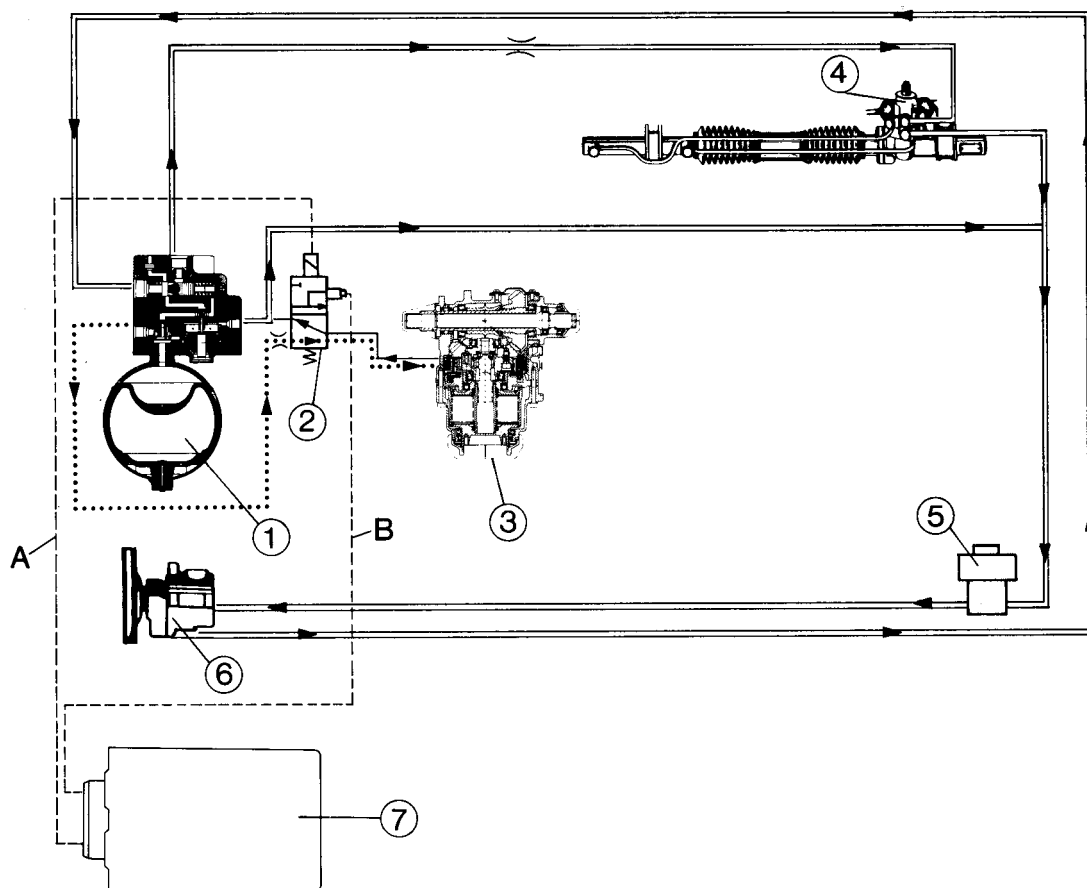
- always working
- works compensatory with minimum differences in rpm between the axles
- distributes according do torque friction conditions on the roadway

With this AWD a new safety system was integrated.

With blocking brakes on roadways with different friction values between the left and right side of the car, e.g. dry bitumen on the one and snow and ice on the other AWD cars of that size can break out since they indicate system-dependently a mutual influence through e.g. rigid AWD and no ABS. The car turns during braking around its own axle.

With the Vectra 4x4 a hydraulically controlled multiple disk clutch integrated in the transferbox protects before these driving conditions. Front axle and rear axle are separated in situations where AWD is from disadvantage.

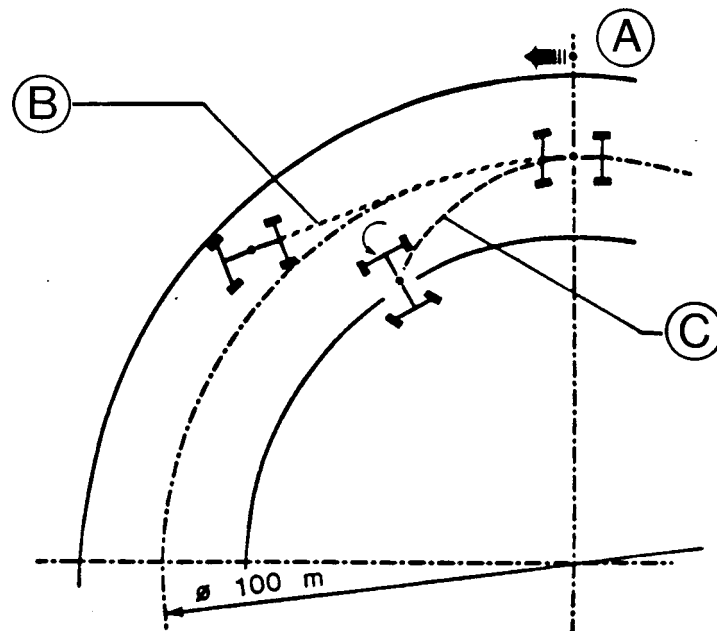
Block diagram hydraulics



- | | |
|-------------------------------|---|
| 1 hydro pneumatic accumulator | 5 oil reservoir |
| 2 control valve | 6 oil pump |
| 3 transferbox | 7 controller |
| 4 power steering | A electrical connection controller to control valve |
| | B electrical connection controller at pressure switch |

With driving speeds above 25Km/h during operating the brake pedal in fractions of a second, even at lowest temperatures, the drive train to the rear axle is separated and the AWD is switched off.

- vehicle remains direction-stable
- ABS resembling ness ensured without intervention into other systems



- **A** beginning of the braking
- **B** vehicle WITH AWD and rear axle separation (by multiple disk clutch)
- **C** vehicle WITH AWD without rear axle separation

In the upper picture is shown brake applications with (B) and without (C) rear axle separation and different carriageway surfacing.

With driving speeds below 25 Km/H the AWD can remain enabled.

The AWD is fully effective also when idling.

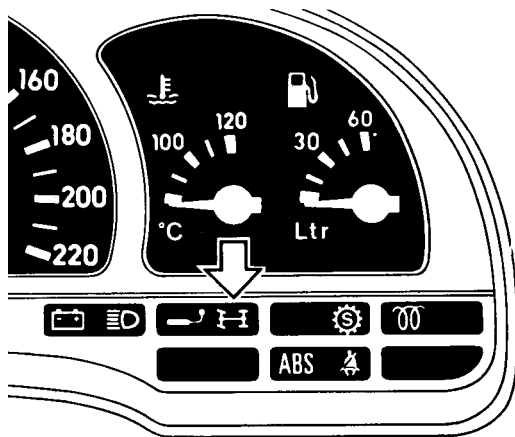
With engine switched off the AWD is switched off. So the vehicle can be raised, ranked or towed at an axle.

Due to the new safety system used with the transferbox an ECU provides the necessary control mechanisms.

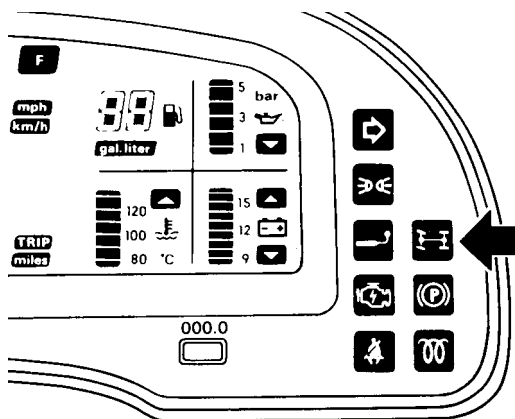
● **Service**

This system is also provided with a self-check function. Lighting up or flashing the AWD symbol in the instrument panel displays a disturbance at the AWD.

Analogue instrument



LCD instrument



Notes for the customer when lighting up or flashing of the AWD control light are to be inferred from the manual.