



INTERNATIONAL

HYDAC International GmbH
Industriegebiet, W-66280 Sulzbach
Telefon (06897) 509-01, Telefax 509-577
www.hydac.com

Presse
News

Compact Hydraulics HYDAC Gearbox- and Power train concepts

The gear technology in mobile working machines is more and more changing. Simple mechanical gears were exchanged by automatized, stepless gears. The trend in mobile equipment is towards more use of technology and higher speeds.

This trend towards automation requires appropriate hydraulic components. HYDAC hydraulic valves and customized manifolds are guaranteeing reliable, standardized procedures to relieve the driver of the machine.

The different types of gears are varying from automated, mechanical, continuously variable transmission to power shift versions. They are generally based on similar principles, and often differ only in design variants. They are equipped with clutches that switch different gear ratios. These valves are controlled by means of hydraulic oil. The requirements for filling volume, filling time and leakage are decisive for the performance in the design of the valves

Depending on the conception of the gear, stepless, power-branched, power shift, etc. the corresponding hydraulic components have to be implemented in the manifold.

Certain basic circuits could be realized by HYDAC solenoid spool valves, which on top of that have a high switching safety e.g.:

- switching on/off the 4WD
- switching on/off the differential pawl
- change of driving direction (forward/backwards)

For the realisation of a power shift transmission these valves are not sufficient. Here HYDAC proportional valves are used which enable a smooth shifting of gears under load. Proportional pressure reducing valves are the choice here.

Whereas the momentarily working valve is lowering the pressure on the clutch of the corresponding gear-wheel the valve for the following gear is increasing the pressure more and more. So the main gear switching is done without traction interrupt and nearly without notice of the operator. These proportional valves are especially designed for the use in clutch control and have a fast reaction and high draining and filling volume potential and an extremely low Δp .

Furthermore these high-specialised manifolds could fulfil additional functions, such as

monitoring of the supply pressure at the gear by electronic pressure switches and brake switching of gear brake by solenoid valves.

HYDAC Fluidtechnik has intensified research and development in the field of proportional gear controls and is now the most competent partner for demands of the gear branch.