Secondary control with A10VS - axial piston units

Size 28 to 140  Nom. pressure 250 bar  Max. pressure 315 bar

RE 92 715/09.95  Replaces: 07.87

Secondary unit type A10VSO ... DSE with proportional valve fitted

Characteristics
- Highly dynamic rotary drive
- Reversing operation in open or closed circuit (four quadrant operation)
- With energy recovery and energy storage
- With closed loop control of speed, position or torque of high control quality and dynamics
- Throttle-free coupling and power transmission for as many independently operating machines (motor or generator mode) as required, which are connected to a common supply line with quasi-constant operating pressure
- Low losses
- Compact closed loop control electronics in Euro-card format

Functional description
Secondary controlled hydrostatic machines connected to a supply network with quasi-constant operating pressure provide an energy-saving drive concept with high dynamics for establishing closed loop controls of speed, position or torque with energy recovery.

The take-up or feedback of energy into the supply network takes place without throttling and in line with demand by adjusting the displacement of the unit to the actual load, with any number of units, operating as motors or pumps, being connected in parallel. Four quadrant operation is even possible in the open circuit, with the units being swivelled “over center” for speed or torque reversal. This also reverses the direction of flow.

If required, an energy accumulator may be fitted between the primary and the secondary units. The accumulator covers peak flow requirements. Moreover, it is used for storing energy which is fed back by the secondary unit into the hydraulic mains during pump operation, if there is no further consumer requirement. The pre-load pressure and loading condition of the accumulator, together with the pressure-compensated primary unit and the operating condition of the secondary unit, determine the quasi-constant high pressure of the system.

The specific characteristics of secondary controls such as reducing the amount of equipment required on the primary side, combined with the possibility of energy recovery, storage of braking energy and the virtually load-independent speed and positioning accuracy open up a wide range of applications.

For further information, see “The Hydraulic Trainer Volume 6” (RE 00 293).

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Diagram:
- Drive
- Pressure controller
- Closed loop control electronics
- Secondary unit
- Accumulator
- Output