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HV Control Option – Principles of Operation

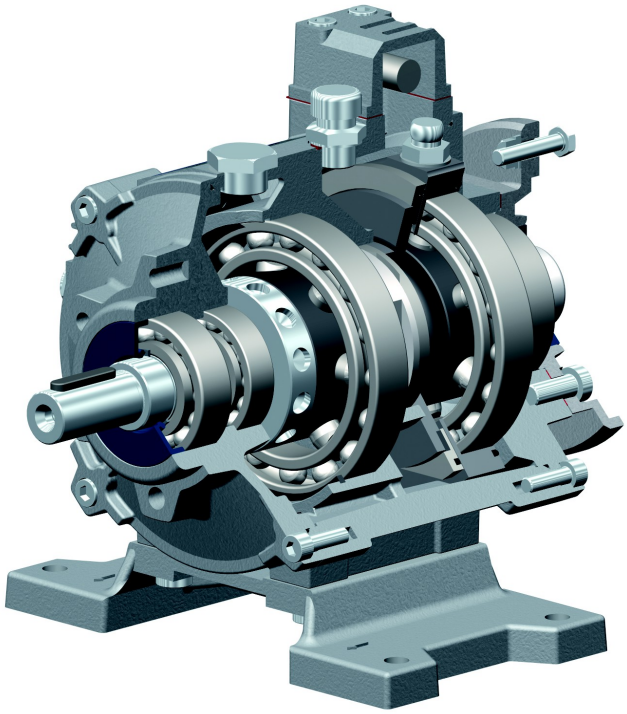
Var-Spe infinitely variable hydraulic gears work according to the principle of hydrostatic transmission. They essentially consist of a hydraulic, radial piston variable displacement pump (primary pump) and a constant displacement pump (secondary pump.

Both units, primary & secondary, are housed in the same case and they are mounted on a fixed shaft. The latter serves as a distributor of the fluid with pressure & return lines for flows between primary & secondary units, forming a closed circuit.

An auxiliary pump is connected to the primary pump and supplies oil, from an internal reservoir, via valves to the hydraulic circuit.

The Variator transmits mechanical power from the driving motor, allowing it to rotate at a constant speed, whilst the output shaft can be adjusted between zero and maximum motor input speed.

Speed regulation is accomplished by adjusting the eccentricity of the primary unit and, therefore, the oil flow sent to the secondary unit. The latter, connected to the output shaft, will operate at a speed directly proportional to the received oil flow. The maximum eccentricity of the primary unit will correspond to the output shaft maximum speed and a lesser eccentricity will correspond to a lower speed. When the primary unit eccentricity is zero, the output shaft will be stationary. The Variator is fitted with two adjustable safety valves that interrupt drive between motor & output shaft, should an overload condition exist at the output shaft. This prevents any possible damage to the Variator itself if the output shaft is subjected to an accidental sudden stop.



HV Type Variators have an overall reduction of 1:1 with a control ratio of 1:30. Speed adjustment can be made whilst running or stopped.