Title (en)

ROTARY ACTUATOR DEVICE FOR CONTROLLING THE STROKE OF A GAS-SHUTTLE POPPET VALVE IN THE CYLINDER HEAD OF AN INTERNAL COMBUSTION ENGINE

Title (de)

DREHAKTOR-VORRICHTUNG ZUR HUBSTEUERUNG EINES GASWECHSEL-TELLERVENTILS IM ZYLINDERKOPF EINER BRENNKRAFTMASCHINE

Title (fr)

DISPOSITIF D'ACTIONNEUR ROTATIF PERMETTANT DE COMMANDER LA LEVEE D'UNE SOUPAPE A DISQUE DE CHANGEMENT DES GAZ DANS LA CULASSE D'UN MOTEUR A COMBUSTION INTERNE

Publication

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Application

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Abstract (en)

[origin: WO03016683A1] The invention relates to a rotary actuator device for controlling the stroke of a gas shuttle valve in the cylinder head of an internal combustion engine comprising a rotary oscillating motor (8) for driving a disk cam (6) with a cam profile (6') that controls a gas shuttle valve (2), said rotary oscillating motor (8) being controlled according to the co-operation between a closing spring (4) of the poppet valve (2) and a pre-stressed helical torsion spring (21) that acts in opposition to the former as an opening spring. The aim of the invention is to obtain stable end positions for the disk cam (6). To achieve this, the disk cam (6) is fixed in both a closing and opening position of the poppet valve (2) by means of a separate first and second rotational stop and is held and secured against rotation in the respective initial position by means of the opening spring (21), which pretensions a lever (12) located separately on a shaft (7) that supports the disk cam (6). According to the invention, each time the respective initial position is crossed using a relatively small current supply to the rotary oscillating motor (8) or by means of a recoil motion of the corresponding stops, the additional current supply remains at a substantially reduced level, by means of a rotor of the rotary oscillating motor (8), the flywheel effect of said rotor being selected to correspond with the energy exchange between the closing spring (4) and the helical torsion spring (21).

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