Title (en)

DEVICE FOR MODIFYING THE TIMING OF GAS EXCHANGE VALVES OF AN INTERNAL COMBUSTION ENGINE, IN PARTICULAR A DEVICE FOR HYDRAULICALLY ADJUSTING THE ROTATIONAL ANGLE OF A CAMSHAFT IN RELATION TO A CRANKSHAFT

Title (de)

VORRICHTUNG ZUM VERÄNDERN DER STEUERZEITEN VON GASWECHSELVENTILEN EINER BRENNKRAFTMASCHINE, INSBESONDERE EINRICHTUNG ZUR HYDRAULISCHEN DREHWINKELVERSTELLUNG EINER NOCKENWELLE GEGENÜBER EINER KURBELWELLE

Title (fr)

DISPOSITIF POUR MODIFIER LA DISTRIBUTION DES SOUPAPES D'ECHANGE GAZEUX D'UN MOTEUR A COMBUSTION INTERNE, NOTAMMENT DISPOSITIF DE REGLAGE HYDRAULIQUE D'ANGLE DE ROTATION D'UN ARBRE A CAMES RELATIVEMENT A UN VILEBREQUIN

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Application

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Abstract (en)

[origin: WO03085238A1] The invention relates to a device (1) for hydraulically adjusting the rotational angle of a camshaft in relation to a crankshaft of an internal combustion engine. Said device consists of a drive unit (4) that forms a driving connection to the crankshaft and an output unit (5) that is connected to the camshaft in a fixed manner. The drive unit (4) has a force transmission connection to the output unit (5) by means of at least two pressure chambers (6, 7) that are configured in the device (1), which, when subjected to pressure, cause a relative torsional stress or a hydraulic loading force on the output unit (5) in relation to the drive unit (4), whilst continually compensating external hydraulic fluid leakages. The device (1) also comprises a spiral spring (8), which is located outside the device (1) and is designed to equalize the adjusting speeds in both adjusting directions. According to the invention, the spiral spring (8) is positioned in an annular chamber, encapsulated by an additional housing (11). The annular chamber can be filled completely with the external hydraulic fluid leakages of the device (1), whereby said hydraulic fluid acts simultaneously as a damping medium for the resonant oscillations of the spring windings (13) of the spiral spring (8), resulting from vibrations of the internal combustion engine.

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IPC 8 full level

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