

Title (en)  
DEVICE FOR CHANGING THE FORCE ACTING ON AN ACTUATOR

Publication  
**EP 0110024 B1 19870603 (DE)**

Application  
**EP 83108660 A 19830902**

Priority  
DE 3244920 A 19821204

Abstract (en)  
[origin: ES8501852A1] A force transmitting fluid actuator for use with a control device wherein an actuator member, movable within an actuator housing, actuates the control device due to the urging force of a plurality of pistons which can be selectively pressurized in unitary increments. The plurality of pistons are disposed within pressure chambers formed in the actuator housing in a symmetrical ring-shaped arrangement concentric to a single pressure chamber disposed on the vertical axis of the housing. A number of passageways interconnect the plurality of pressure chambers to form groupings of pressure chambers which act simultaneously in response to operation of a solenoid valve associated with each passageway. In addition to the symmetrical arrangement of the pressure chambers, the valve and passageway arrangement provide for a symmetric pressurization of the pressure chambers thereby resulting in a balanced force being exerted on the actuator. The amount of force each piston can exert on the actuator is limited by a piston stop designed to contact a portion of the housing while the actual piston force is transmitted by a spring disposed between each piston and the actuator. In this manner, fluctuations in the pressurizing force are not transmitted from the piston to the actuator.

IPC 1-7  
**F15B 11/02**; **F15B 15/02**

IPC 8 full level  
**F16K 31/40** (2006.01); **F15B 11/02** (2006.01); **F15B 15/02** (2006.01); **F16K 31/42** (2006.01)

CPC (source: EP US)  
**F15B 11/02** (2013.01 - EP US); **F15B 2211/50554** (2013.01 - EP US); **F15B 2211/526** (2013.01 - EP US); **F15B 2211/55** (2013.01 - EP US); **F15B 2211/7053** (2013.01 - EP US); **F15B 2211/76** (2013.01 - EP US); **Y10T 137/86919** (2015.04 - EP US)

Citation (examination)  
DE 2531904 A1 19770120 - ELMEG

Cited by  
EP0182975A3; EP0236742A1; WO9111339A3

Designated contracting state (EPC)  
AT CH DE FR GB IT LI

DOCDB simple family (publication)  
**EP 0110024 A1 19840613**; **EP 0110024 B1 19870603**; AT E27639 T1 19870615; DE 3244920 A1 19840607; DE 3371931 D1 19870709; ES 526471 A0 19841201; ES 8501852 A1 19841201; JP H0429912 B2 19920520; JP S59110905 A 19840627; US 4531548 A 19850730

DOCDB simple family (application)  
**EP 83108660 A 19830902**; AT 83108660 T 19830902; DE 3244920 A 19821204; DE 3371931 T 19830902; ES 526471 A 19831014; JP 22709283 A 19831202; US 55757283 A 19831202