CLAIMS

1. Actuator position control device comprising:

- an electrically controlled servo-valve (10) comprising a hydraulic distributor (20) having at least one high pressure (HP) supply hole, at least one low pressure (LP) outlet and at least two use holes (U1, U2), each use hole being connectable to high pressure or low pressure, depending on the controlled position of a slide of the hydraulic distributor and

- an actuator (50) comprising a slide (52) carrying at least two stages (54, 56) and being capable of sliding in a cylinder (60), the actuator having two control chambers (62, 64) connected to respective use holes (U1, U2) of the servo-valve distributor and each situated on one side of a respective stage and an intermediate chamber (66) connected to high or low pressure and situated between the other sides of the stages,

- the hydraulic distributor slide (22) being taken, in the event of electrical control failure, to a safety position in which it causes the immobilization of the actuator slide substantially in its position at the moment of the failure,

characterized in that:

- in the safety position of the hydraulic distributor slide (22), the actuator control chambers (62, 64) are taken, via their connection with the distributor use holes (U1, U2), to the same low or high pressure opposed to that applying in the intermediate chamber (66) so that each actuator slide stage (54, 56) is then subjected to high pressure on one side and to low pressure on the other side, and

- sealing between each of the said stages (54, 56) of the actuator slide and the actuator cylinder (60) is carried out by a dynamic seal (70) producing a frictional force between stage and cylinder, depending on the difference between the pressures exerted on the two sides of the stage.

2. Device according to claim 1, characterized in that the actuator intermediate chamber (66) is connected to high pressure (HP) and, in its safety position, the distributor (20) slide connects the distributor use holes (U1, U2) to low pressure (LP).

3. Fuel flow control device in an aeronautical engine, comprising a position control device according to claim 1 or 2, in which the actuator (50) forms a fuel metering unit, the intermediate chamber (66) being connected to a high pressure fuel source and having an outlet hole, of which the cross section of flow is a function of the actuator slide position.

4. Aeronautical engine comprising a control device according to any of claims 1 to 3.

CLAIMS

1. An actuator position control device comprising:

an electrically controlled servo-valve including a hydraulic distributor having at least one high pressure (HP) supply hole, at least one low pressure (LP) outlet and at least two use holes, each use hole being connectable to high pressure or low pressure, depending on the controlled position of a slide of the hydraulic distributor; and

an actuator including a slide carrying at least two stages and being slidable in a cylinder, the actuator having two control chambers connected to respective use holes of the servo-valve distributor and each situated on one side of a respective stage and an intermediate chamber connected to high or low pressure and situated between another side of each of the said stages,

the hydraulic distributor slide being taken, in the event of electrical control failure, to a safety position in which it causes the immobilization of the actuator slide substantially in its position at the moment of the failure, wherein

in the safety position of the hydraulic distributor slide, the actuator control chambers are taken, via their connection with the distributor use holes, to a same low or high pressure opposed to a pressure applied in the intermediate chamber so that each actuator slide stage is then subjected to high pressure on one of the sides and to low pressure on the other side, and

sealing between each of the said stages of the actuator slide and the actuator cylinder is carried out by a dynamic seal which is elastically deformable under an effect of a pressure difference between the sides of each of the said stages to produce a frictional force between each of the said stages and the cylinder, which increases as a function of the difference between the pressures exerted on the two sides of the stage.

2. The actuator position control device according to claim 1, wherein the actuator intermediate chamber is connected to high pressure and, in its safety position, the distributor slide connects the distributor use holes to low pressure.

3. The actuator position control device according to claim 1, wherein the dynamic seal further comprises:

a first O-ring and a second ring both housed in a groove, the second ring being supported by the first O-ring and contacting the slide stage, the first O-ring being made of an elastically deformable material allowing it to be deformed under the effect of the pressure

difference between the sides of each slide stage and to exert a pressure on the second ring producing said frictional force between each stage and the cylinder.

4. An aeronautical engine comprising an actuator position control device according to any of claims 1, 2, or 3.

5. A fuel flow control device in an aeronautical engine, comprising an actuator position control device according to claim 1, 2, or 3, in which the actuator forms a fuel metering unit, the intermediate chamber being connected to a high pressure fuel source and having an outlet hole, of which the cross section of flow is a function of the actuator slide valve position.