

Chapter 17

SELECTOR UNIT, FLAP POSITION, EVERSHED & VIGNOLES, TYPE PV.60B

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LEADING PARTICULARS

Selector unit, Type PV. 60B	Ref. No. 5CZ/5519
<i>Control arc</i>	0 deg. to 40 deg.
<i>Voltage</i>	28V d.c.
<i>Operational temperature (max.)</i>	50 deg. C.
<i>Overall dimensions</i>	
<i>Length</i>	7.375 in.
<i>Width</i>	5.25 in.
<i>Height</i>	2.875 in.

Introduction

1. The position selector, Type PV.60B, controls the positioning of the electro-hydraulically operated high lift flaps, in systems embodying a synchronising arrangement to ensure equal setting of both flaps irrespective of unequal loading, or similar conditions.

2. The position selector is controlled by an "M" type transmitter, Type PV.66A, which is mechanically coupled to the flap actuator.

DESCRIPTION

3. The position selector unit consists of an "M" type motor which, through a gear train, drives a rotary switch containing two "live" and one "dead" segments.

4. This switch forms part of the circuit which controls the flap actuator mechanism and its "off" position, i.e. the "dead" position corresponding to the desired angle, is manually adjustable through the position selector lever (*fig. 1*).

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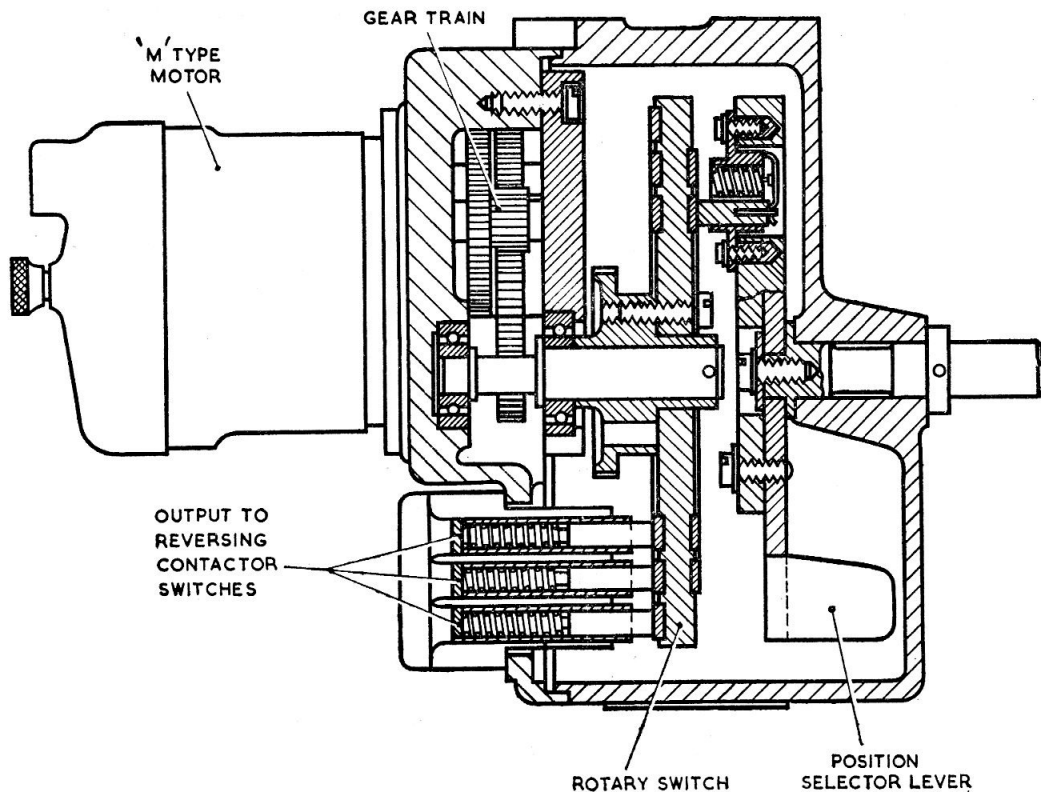


Fig. 1. Sectional view of selector unit.

5. If the position of the flap position selector is manually changed, the appropriate carbon brush will move off the "dead" segment and establish a circuit for the reversing contact which controls the flap actuators.

6. The transmitter, being mechanically coupled to the flap actuator follows the flap movement, thus changing the supply to the stator coils of the position selector drive motor. As a result, the motor rotates the switch until the "dead" segment establishes contact with a carbon brush attached to the selector lever, thereby breaking the circuit to the flap actuators and bringing the system to rest in the position determined by the selector lever.

7. The selector unit, Type PV.60B, controls a flap movement of zero to 40 degrees.

INSTALLATION

8. When the position selector units leave the manufacturers the external stops (fig. 2) are set to permit a total travel of the

position selector lever of 80 degrees. Upon installation of the unit the stops on the pilot's lever pedestal must be adjusted to coincide with the PV.60B unit stops, and upon completion of installation the PV.60B unit stops must be withdrawn, i.e. the stop bolts turned one complete revolution in a clockwise direction and secured with the locknuts provided.

9. Four 0.25 in. clearance securing holes are provided for mounting purposes, the bolt holes forming a rectangle 4.25 in. by 1.375 in.

SERVICING

Rotary switch

10. Access to the three monel metal contact rings, for inspection and cleaning, may be obtained by removing the brush holder unit. If necessary, the rings should be cleaned first with a cloth moistened with lead-free gasoline and then with a clean dry cloth.

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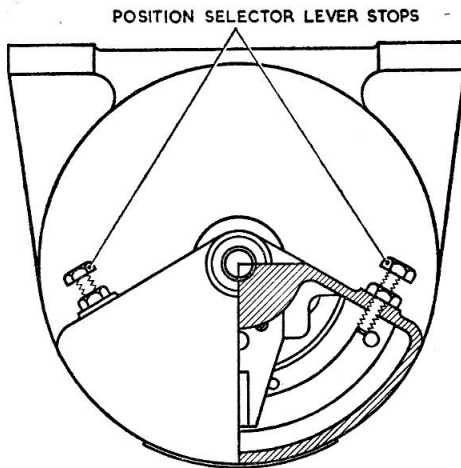


Fig. 2. End view of selector unit.

11. The segments on the reverse face of the switch should be examined for burn marks, particularly at the edges adjacent to the "dead" island. Any such marks should be removed with crocus paper and then the segments cleaned as described in para. 10. A badly pitted rotor should be renewed.

12. The surface of the "dead" island is approximately 0.008 in. below the surfaces of the two "live" islands, and it is most important, after the removal of any burn marks and subsequent cleaning, that all dirt and dust should be removed from the slots between the segments.

Brush holder unit

13. With the brush holder unit detached from the main unit, apply a suitable spring balance in turn and depress them into the working position, i.e. protruding approximately 0.188 in. from their housing. A pressure of 11-12 oz. should be necessary to do this, but if this pressure is exceeded, a spare brush unit should be fitted.

Gear train and motor

14. The gear train should not be interfered with in any way, and under no circumstances should the motor be removed from the motor section.

Brush carrier

15. The brush carrier, which is mounted on the stop arm, may be removed by withdrawing the four 2B.A. fixing screws. Apply a suitable spring balance to each of the two carbon brushes in turn and depress them into a working position i.e. protruding 0.094 in. above their housing. A pressure of 6-7 oz. should be required to do this, and if this limit is exceeded a new brush unit should be fitted.

Stop arm

16. Under no circumstances should the stop arm be removed from the shaft.

Resistance test

17. The resistance of the motor windings should be tested between terminals 1 and 2, 2 and 3, and 3 and 1. Each winding should have a resistance of approximately 90 ohms.

Insulation resistance test

18. Using a 500V d.c. insulation resistance tester, measure the insulation resistance between the following points:—

- (1) Terminals 1-6 and the casing.
- (2) Between the "dead" and each "live" island.
- (3) Between each segment and the casing.

In each case a reading of not less than 50,000 ohms should be obtained.

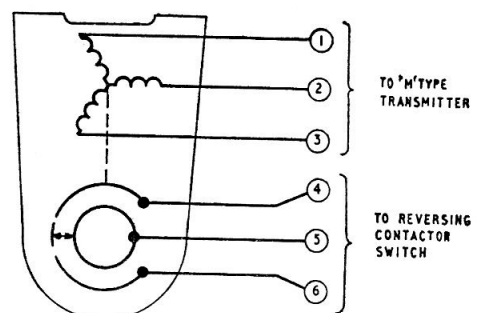


Fig 3. Circuit diagram.

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