

Chapter 65

MANUALLY OPERATED SWITCH, ROTAX, TYPE D3507

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LEADING PARTICULARS

Voltage	28-V, d.c.
Current rating	15 amperes
Rating	Continuous
Operational temperature range	65 deg. C. to + 70 deg. C.
Operational ceiling	60,000 ft.
Mounting	Two 2 B.A. holes spaced 1.8 in. at centres
Weight	3 oz.

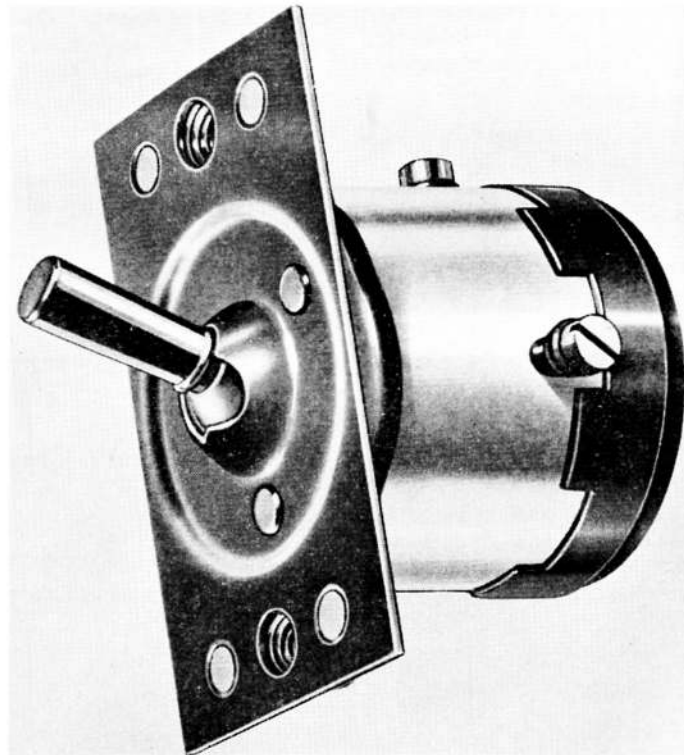


Fig. 1. Type D3507 switch

Introduction

1. The type D3507 manually operated switch (fig. 1) has three separate lock-on positions and a central off position. Two positions have single pairs of contacts while the third position has two pairs in parallel with two terminals.

DESCRIPTION

2. The switch consists of a casing and mounting plate assembly, a Bakelite moulding carrying the four fixed contacts and five terminals, a contact plate locating insert, a contact plate with two single and one pair of silver contacts on three equispaced arms which fit in slots in the locating insert, and the switch lever, containing a spring-loaded insulated plunger. A cover is fitted over the terminals at the base of the switch.

Operation

3. When the switch lever is moved from the central "off" position to any one of the three "on" positions, the spring-loaded insulated plunger travels from the centre of the contact plate along the arm selected. This arm of the contact plate then pivots on the bottom edge of the slot in the contact plate locating insert, so that the contact(s), on the arm mates with the corresponding fixed contact(s). In this way the centre terminal can be connected to either of the two single outer terminals or to the one pair of outer terminals, as required.

INSTALLATION

4. The switch should be screwed to its panel by means of the two 2 B.A. holes, spaced 1.8 in. at centres, in the mounting plate. The terminal cover should be removed in order to connect the external leads to the 3 B.A. terminals and afterwards replaced.

SERVICING

5. The switch should be examined for wear and damage without removal from the aircraft and should be cleaned if necessary. The external leads should then be disconnected from the terminals and the following tests conducted.

6. The switch should be operated ten times in each position; the action must be positive and the lever should show no tendency to

jump off. Pass a current of 15 amperes through each pair of contacts in turn and test the potential drop across the appropriate pairs of terminals (fig. 2). This should not exceed 50 millivolt.

7. The three outer terminals should be connected together and then, in series with a lamp and battery, to the centre terminal. Move the switch lever around the centre within the limits of free movement and ensure that the lamp does not light.

Insulation resistance tests

8. The insulation resistance between the central terminal and the body should not be less than 50,000 ohm, when measured with a 250 volt insulation resistance tester. This test must be performed with the lever in each of the three "on" positions in turn. Using a similar instrument measure the insulation resistance between the centre terminal and each of the three outer terminals with the switch lever in the central "off" position. A reading of not less than 50,000 ohm should also be obtained in each test.

Note . . .

The values of insulation resistance quoted above apply to units being tested under normal workshop conditions. Due allowance should be made for climatic conditions of the locality and of the aircraft servicing area or dispersal point where the tests are being conducted. In particularly damp or humid climates, the readings may be low enough to give apparently sufficient cause for rejection and, in these instances, discretion should be exercised.

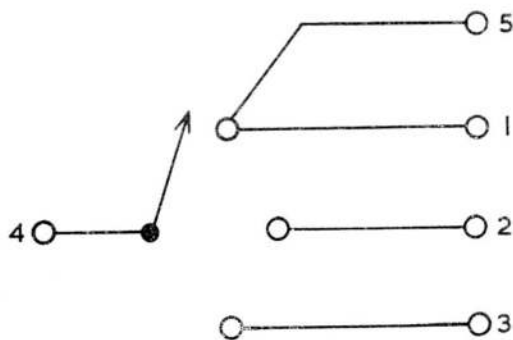


Fig. 2. Diagram of internal connections

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