Chapter 66

AUTO-PILOT CUT-OUT SWITCHES, DUNLOP SERIES

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Introduction

1. These cut-out switches are single-pole snap-action switches of the "press-to-break" and "release-to-make" type. They are intended for use as "instinctive" auto-pilot cut-out switches on the control handles of certain high speed aircraft. A typical switch is described and illustrated in this Chapter and details of individual types are given in Appendix 1 to this Chapter.

DESCRIPTION

General

2. The switch (*fig.* 1) is of moulded construction and comprises a contact body, cover plate and an operating thumb plate. The moulded cover plate is riveted to the contact body by two rivets, one of which also secures the leafed return spring. The thumb plate fits over the front of the switch and is pivoted on an axis-pin which passes through the contact body.

Switch mechanism

3. The fixed contacts are moulded into the contact body and extend externally behind the switch to form crimping connections for the cables. A suffix number after the switch type number denotes the length of the connecting cables in feet.

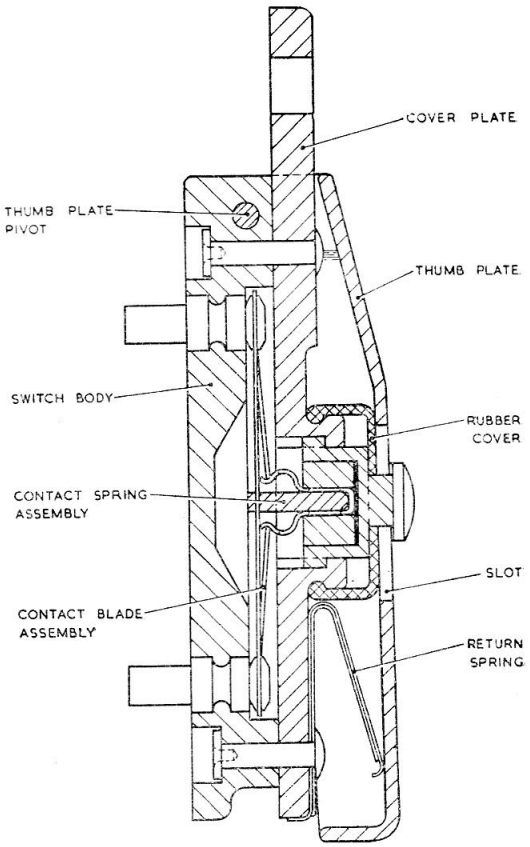

Fig. 1. Typical auto-pilot cut-out switch

4. The contact-blade assembly consists of two moving contacts carried on a contact blade which has two central spring arms providing the downward thrust when the switch is in its normal position.

5. The knob of the contact-spring assembly protrudes through a slot in the thumb-plate moulding and has a rubber cover which fits around the knob and over a central moulding on the cover plate; this prevents the entry of dust and dirt into the switch mechanism.

OPERATION

6. When the thumb plate is pressed, the actuating knob moves downwards causing the two central spring arms of the contact blade assembly to pass through the dead-centre position and so apply an upward thrust to the contact blade. This causes the contacts to "break" with a rapid snap-action.

7. On releasing the thumb, the leafed return spring causes the contact spring assembly to return to its original position thereby causing the two central spring arms to pass once more through the centre line and close the contacts.

INSTALLATION

8. The switch is fitted into a vertical slot in the control handle and the contact body moulding registers over the lower edge of the slot. One 4 B.A. screw, which passes through the hole in the cover plate, secures the switch to the control handle.

SERVICING

9. These switches are not repairable and should a switch become unserviceable it should be removed and replaced by a serviceable item.

Millivolt drop test

10. With the rated current of 2 amp. flowing through the contacts ensure that the millivolt drop does not exceed 50mV.

Insulation resistance test

11. Using a 250-volt insulation resistance tester measure the insulation resistance between the contacts. A reading of not less than 5 megohms should be obtained.

Appendix 1

LEADING PARTICULARS

Rating ... ... 2 *amp. at* 29*V d.c.*

Overall dimensions (in.) ... ... 2·17 × 0·566 × 0·775

Type ACM	Ref. No. 5CW/	Cable
18230	5844	Equip. wire, Type 2, 14/0·0076
18230/2	8490	2 ft. Equip. wire, Type 2, 14/0·0076
19082/6	6925	6 ft. Uniflexipren 6
19082/9	8492	9 ft. Uniflexpren 6
19082/15	6619	15 ft. Uniflex-pren 6
19680/8	6928	8 ft. Uniflexpren 6

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