Chapter 74

HOIST SWITCHES, DUNLOP SERIES

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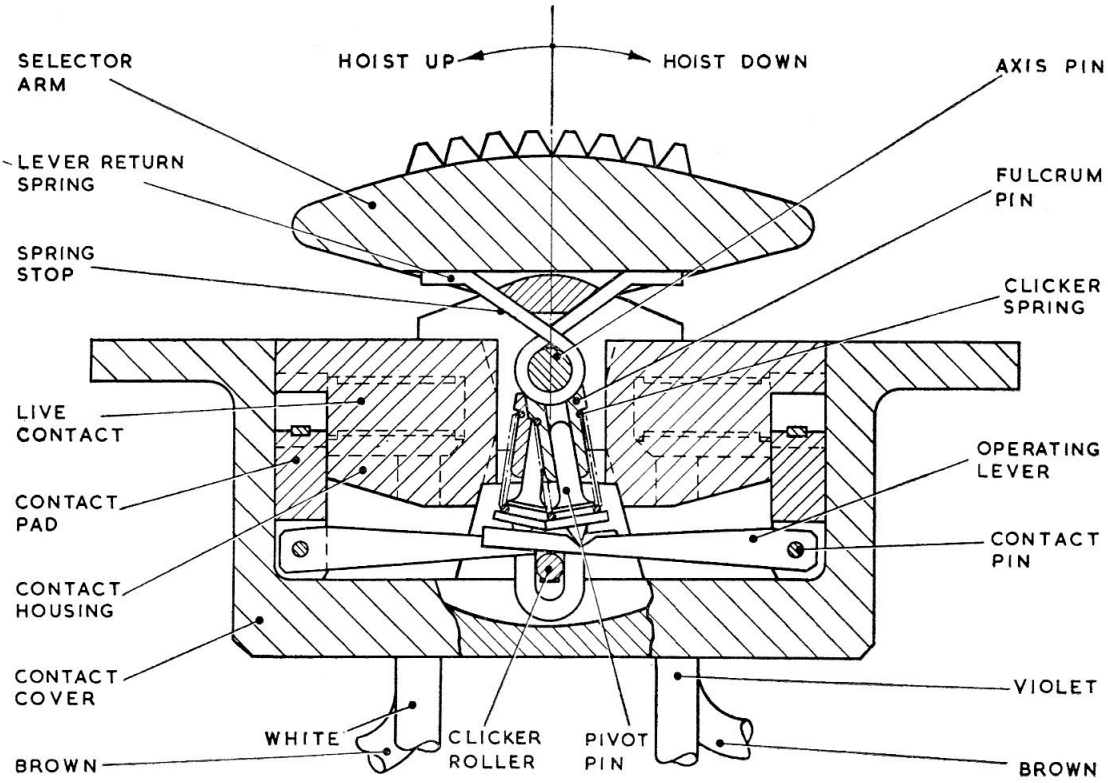

Fig. 1. Sectional view of typical switch

Introduction

1. These switches are normally used on helicopters for hoist operation. A typical switch, Type ACM 16240, is described and illustrated in this chapter and details of individual types are given in Appendix 1 to this chapter.

DESCRIPTION

2. A sectional view of the switch is shown in fig. 1, and a wiring diagram in fig. 2. A grooved selector arm, with spring-return to centre off, has two operating positions, HOIST UP and HOIST DOWN. As one particular position is selected, the selector arm turns around the axis pin, the base of the arm at the same time carrying the clicker roller past the line of action of the spring-loaded pivot pin on that side.

3. As top dead centre is passed, the pivot pin exerts pressure on the operating lever, which pivots on the clicker roller so that its end moves upwards against the contact pad, causing the contact pad to bridge the two live contacts on that side. The other pivot pin bears on the operating lever on the other side in a direction tending to prevent contact being made on that side.

4. As shown in fig. 2, selection of HOIST UP makes contact between brown and violet, selection of HOIST DOWN between brown and white. As the operating pressure is released, the selector arm is returned by spring pressure to a central position, and the mechanism takes up again the position shown in fig. 1.

5. The switch mechanism is contained within a moulded housing. Connecting cables are crimped to the switch during assembly.

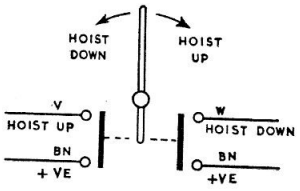

Fig. 2. Circuit diagram

SERVICING

6. Little servicing is possible with these switches, beyond an inspection for freedom from damage and a check for positive operation. A faulty switch must be renewed complete.

7. When HOIST UP is selected, a circuit should be made between brown and violet; when HOIST DOWN is selected, a circuit should be made between brown and white. On releasing the operating pressure, the circuit should be broken and the arm move back to the central position.

Millivolt drop test

8. Measure the millivolt drop at the end of each pair of connecting cables with 1 amp. flowing. Measure the millivolt drop over the same length of a similar pair of cables at 1 amp. The difference between the two readings should not exceed 100 mV.

Insulation resistance test

9. Using a 250-volt insulation resistance tester measure the insulation resistance between each contact and each other contact with the switch in the centre off position. A reading of not less than 5 megohms should be obtained for each test.

Appendix 1

LEADING PARTICULARS

Rating ... ... 1 *amp. at 29V d.c.*

Type	Ref. No.	Cable	Overall dimensions (in.)	Remarks
ACM 16240	5CW/4894	11½ in. sleeved copper braid (16/3/0·0032)	2·175 × 0·7 × 1·12	Flanged housing
ACM 16400			1·65 × 0·7 × 1·2	Retaining catch