Chapter 74

SWITCH, ROTARY MAGNETIC, DE HAVILLAND, TYPE 6N663A

LIST OF CONTENTS

LIST OF ILLUSTRATIONS

LEADING PARTICULARS

Switch, rotary magnetic	*Stores Ref. 26DL/1537*
Rated voltage	*20–28 V, d.c.*
Current consumption (hold-in coil)	*0·26–0·27 amp.*
Weight	*4¼ oz.*

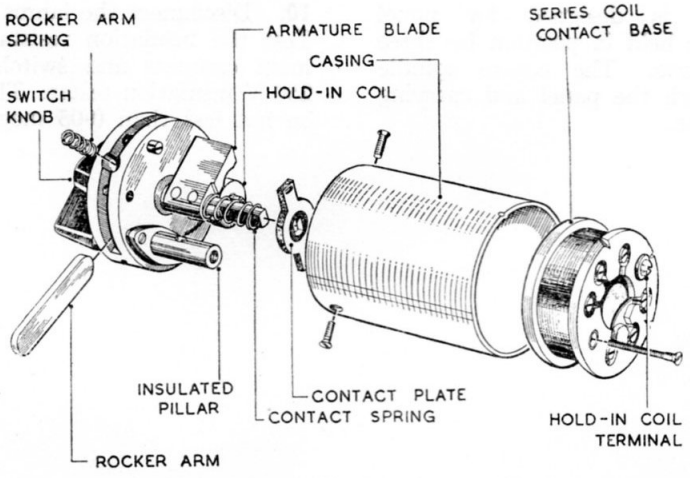

Fig. 1. Switch, de Havilland, Type 6N663A

Introduction

1. This rotary three-position switch was designed primarily as a refuel off load switch, in a 24 V, d.c. (nominal) circuit. It incorporates spring loading to return the switch to the centre 'off' position, and a hold-in coil is fitted which when energized retains the switch in the anti-clockwise (refuel) position.

DESCRIPTION

2. A switch unit (*fig. 1*) comprises a cylindrical metal casing to which a terminal base is fitted at one end and a spindle assembly at the other end. The terminal base contains six terminals recessed into the the outer face, and connected to brass flush-fitted contact studs on the inner face.

(A.L.92, Jan. 57)

Two additional terminals are connected to the ends of a current limiting resistance coil which is wound round the base.

3. The switch operating spindle is mounted on a metal bearing plate to which the hold-in coil bobbin is fitted. An armature blade fitted to the spindle is shaped to fit the bobbin periphery which it contacts when the switch toggle is operated to the anti-clockwise position. The hold-in coil is connected, one end to the metal frame and the other end to an insulated brass pillar through which the coil is series connected to the current limiting (series) coil. A spring loaded contact arm at the end of the spindle interconnects opposite contact studs on the base according to the switch position selected. Spring loading of the switch toggle is effected by a rocker arm, fitted into slots in the bearing plate and the spindle, and operating against a spring which bears against the inner wall of the metal casing.

4. The hold-in coil circuit being connected to the metal frame, it is essential that a good contact exists between the switch and the panel.

INSTALLATION

5. The switch is designed for panel mounting, and is held in position by three countersunk screws. The centre spindle protruding through the panel and carrying the operating knob.

SERVICING

6. Without fully dismantling the switch little servicing can be done except to see that the connections are tight, the spindle movement is free in both directions, and that the switch returns positively to the centre position under the action of the spring.

TESTING

7. Connect a 24 V, d.c. supply between the hold-in terminal and the outer casing, operate the switch in an anti-clockwise direction and check the coil for holding. Break the magnetic contact manually and again check for holding. Measure the current consumption of the hold-in coil and ensure that the reading obtained is between 0·26 amp and 0·27 amp.

8. With the hold-in coil energized and the switch in the anti-clockwise position check that the magnetic lock is sustained against a torque of at least 7 in. oz. in addition to the spring action.

9. Connect battery and lamp circuits to the three main contacts and ensure that the lamps operate together with their respective switch positions, allowing the switch to return to the centre position under the action of the spring.

10. Disconnect the lamps and the battery. Test the insulation resistance between the main contacts and switch casing using a 250 V insulation tester. The reading should be not less than 0·05 megohms.

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