Chapter 51

TUMBLER SWITCHES, BRITISH N.S.F.

LIST OF CONTENTS

LIST OF TABLES

LIST OF ILLUSTRATIONS

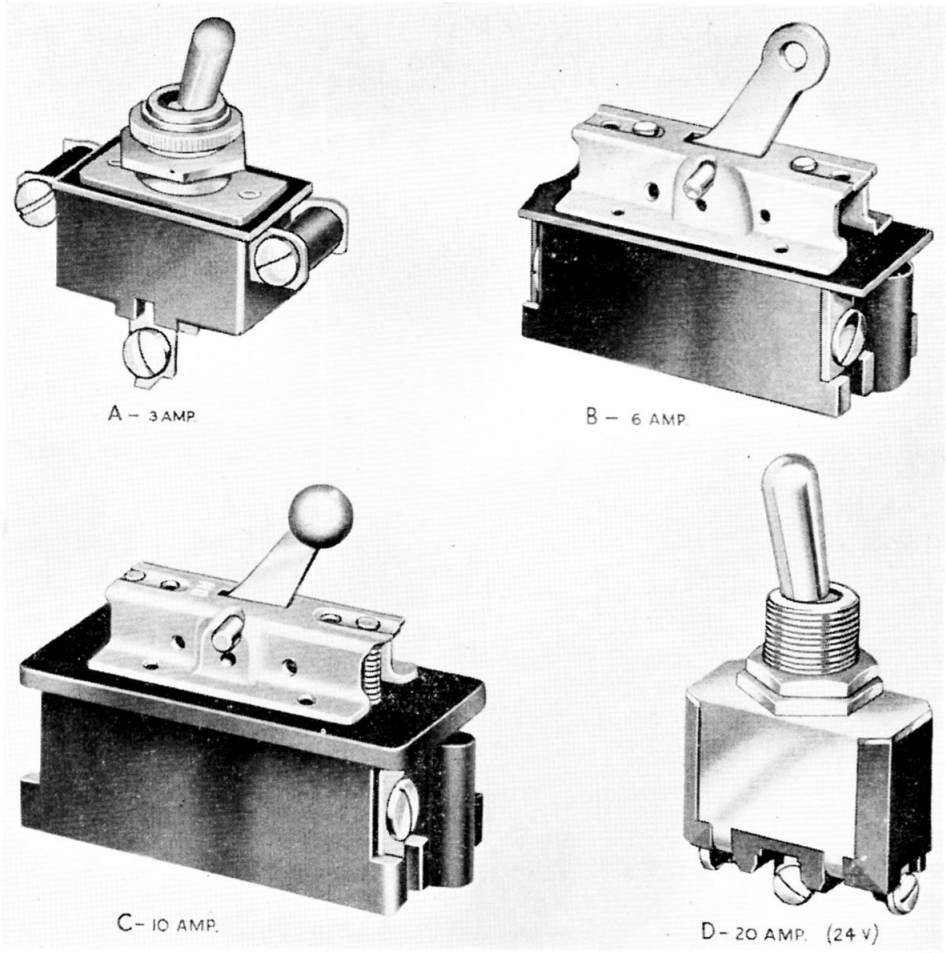

Fig. 1. Typical British N.S.F. switches

Introduction

1. This chapter covers the range of British N.S.F. switches which are used on aircraft for various applications.

DESCRIPTION

2. These switches, of which representative types are illustrated in fig. 1, may be either two-position or three-position, as listed in Tables 1 and 2. All those with a plain operating lever are designed for single-hole mounting, being secured to the panel by a hexagon lock-nut and knurled locking ring (3-amp. switches), or hexagon lock-nut and hexagon face nut (6, 10 and 20-amp. switches) Others which have a flat or ball ended lever are secured to the panel by two screws.

3. The mechanism of these switches is fully enclosed. The body of the switch is of moulded plastic material, and the exposed parts, visible when the switch is mounted, i.e., the central bush, operating lever, and securing nuts or ring, are nickel plated unless otherwise stated.

4. Where the same information is shown in Table 1 or Table 2 for more than one switch, the variation involved will be of a minor nature, such as in the finish applied to the switches, or slight variations in the length of the bush or the operating lever.

TABLE 1

Two-position switches (250-volt a.c./d.c.)

Code	Stores Ref. (5CW/-)	Rating (amp.)	Type	Operating lever	Terminals	Remarks
8280–K14	5532	3	S.P.S.T.	Plain	Solder lugs	—
8290–K14	—	3	S.P.S.T.	Plain	Wire leads	—
8295–B3	4787	3	S.P.S.T.	Plain	Screws	—
26874/2	5250	3	S.P.S.T.	Plain	Screws	Fully protected terminals
8295–B4	4788	3	S.P.S.T.	Plain	Screws	Spring-return to OFF
8295–B5	4789	3	S.P.S.T.	Plain	Screws	Spring-return to ON
8295–K6	5533	3	S.P.S.T.	Plain	Screws	—
8295–K7	5710	3	S.P.S.T.	Plain	Screws	—
8295–B109	5270	3	S.P.S.T.	Plain	Screws	—
8295–B110	5271	3	S.P.S.T.	Plain	Screws	Spring-return to OFF
8295–B111	5272	3	S.P.S.T.	Plain	Screws	—
8295–B120	5774	3	S.P.S.T.	Plain	Screws	Spring-return to ON
8372–B106	5043	3	D.P.S.T.	Plain	Screws	—
8375–B3	4790	3	D.P.D.T.	Plain	Screws	—
8375–B104	5251	3	D.P.D.T.	Plain	Screws	Black anodised lever, bush and nuts
8375–B111	—	3	D.P.D.T.	Plain	Screws	—
8396–B3	5044	3 (cont.)	S.P.S.T.	Plain	Screws	—
8396–B4	5010	3 (cont.)	S.P.S.T.	Plain	Screws	Spring-return to OFF
8396–B5	5011	3 (cont.)	S.P.S.T.	Plain	Screws	Spring-return to ON
7321–K2	4845	6	S.P.S.T.	Plain	Screws	—
7321–B4	5493	6	S.P.S.T.	Flat with hole	Screws	—
7321–B104	—	6	S.P.S.T.	Plain	Screws	Black anodised lever, bush and nuts
7321–B111	—	6	S.P.S.T.	Plain	Screws	Natural anodised lever
7360–B114	—	10	D.P.S.T.	Plain	Screws	Natural anodised lever
8658–B1	4791	10	D.P.S.T.	Ball-ended	Screws	—
8658–B101	5274	10	D.P.S.T.	Ball-ended	Screws	—

Two-position switches

5. The two-position switches, all of which are rated for use on 250 volts a.c. or d.c., are listed in Table 1. They may be either on/off switches, single-pole or double-pole (S.P.S.T., D.P.S.T.), in which the keyway on the bush faces the OFF position in each instance, or double-pole change-over (D.P.D.T.). The majority have a plain operating lever, as shown in (a) of fig. 1, and are therefore for single-hole mounting; those with a flat operating lever with a hole (b), or ball-ended lever (c), will be secured by two screws to the panel.

6. Some of the switches are spring-biased, either to the ON or OFF position as indicated. These are designed for momentarily making or breaking contact. Others, shown as for continuous rating, are for applications where they will be used at their full capacity over long periods.

7. The majority of the switches listed have screw terminals; some may, however, be provided with solder lugs or wire leads for making the electrical connections.

Three-position switches

8. A further range of three-position switches rated for use on 24 volts d.c., are listed in Table 2; their rating on 250 volts a.c. only is 10 amp. A typical switch is shown in (d) of fig. 1. They are of the slow make-and-break type, embodying a rocker type contact mechanism, as illustrated in fig. 2. Positive action of the rocker-type moveable contact is provided by a compression spring which assures contact pressure in the closed position, and firmly positions the contactor in the open position, even under conditions of vibration.

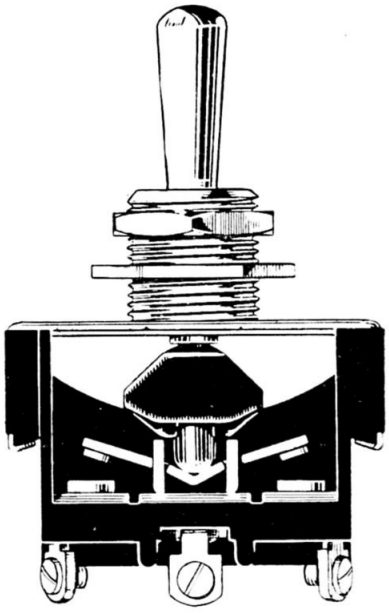

Fig. 2. Mechanism of three-position switch

TABLE 2

Three-position switches (24-volt d.c.)

Code	Stores Ref. (5CW/-)	Rating (amp.)	Type	Operating lever	Terminals	Remarks
8804–K8	—	20	S.P.	Plain	Screws	—
8810–K6	—	20	S.P.	Plain	Screws	—
8810–B104	—	20	S.P.	Plain	Screws	Natural anodised lever
8812–K7	—	20	S.P.	Plain	Screws	—
8812–B101	5771	20	S.P.	Plain	Screws	Natural anodised lever
8824–K2	—	20	D.P.	Plain	Screws	—
8824–K5	—	20	D.P.	Plain	Screws	—
8824–B100	5639	20	D.P.	Plain	Screws	Black anodised lever, bush and nuts
8824–B101	5772	20	D.P.	Plain	Screws	Natural anodised lever

9. Table 3 lists the various operating positions of the switches. They are either single-pole or double-pole switches, and the keyway is at No. 3 position in each instance.

TABLE 3

Contact arrangements of three-position switches

Code	Positions		
	1	2	3
8804–K8	On	None	*On
8810–K6	On	None	On
8810–B104	On	None	On
8812–K7	*On	Off	*On
8812–B101	*On	Off	*On
8824–K2	On	None	On
8824–K5	On	None	On
8824–B100	On	None	On
8824–B101	On	None	On

*Momentary contact

SERVICING

10. No servicing is possible with these switches, apart from testing for security of connections and positive action. A faulty switch must be renewed.