Chapter 18

ROTARY SWITCHES, PAINTON

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Introduction

1. This chapter describes a range of Painton rotary switches used on aircraft. A general description is given in this chapter and details of individual types will be found in Appendix 1 to this chapter.

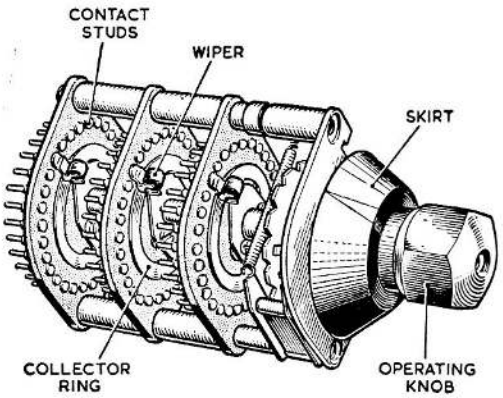

Fig. 1. Typical rotary switch

DESCRIPTION

2. A general view of a typical switch is shown in fig. 1, and the contact arrangements in figs. 2 and 3. The switch consists of a number of banks operated from a common spindle.

3. Three types of spindle are available. Spindle A is designed for use with a hexagonal knob (*fig.* 1) and has a 6 B.A. tapped hole in it. The B type of spindle is suitable for the fixing of extension spindles. Spindle C has an $\frac{1}{8}$ in. dia. hole drilled diametrically through it.

4. The hexagonal knob has a skirt which carries a white pointer. The pointer registers with dial markings and on installation it can be aligned as required by slackening off two screws at the back of the knob, thus allowing the skirt to rotate.

5. Each bank has thirty contact studs moulded into the panel; only the alternate studs are used on break-before-make models.

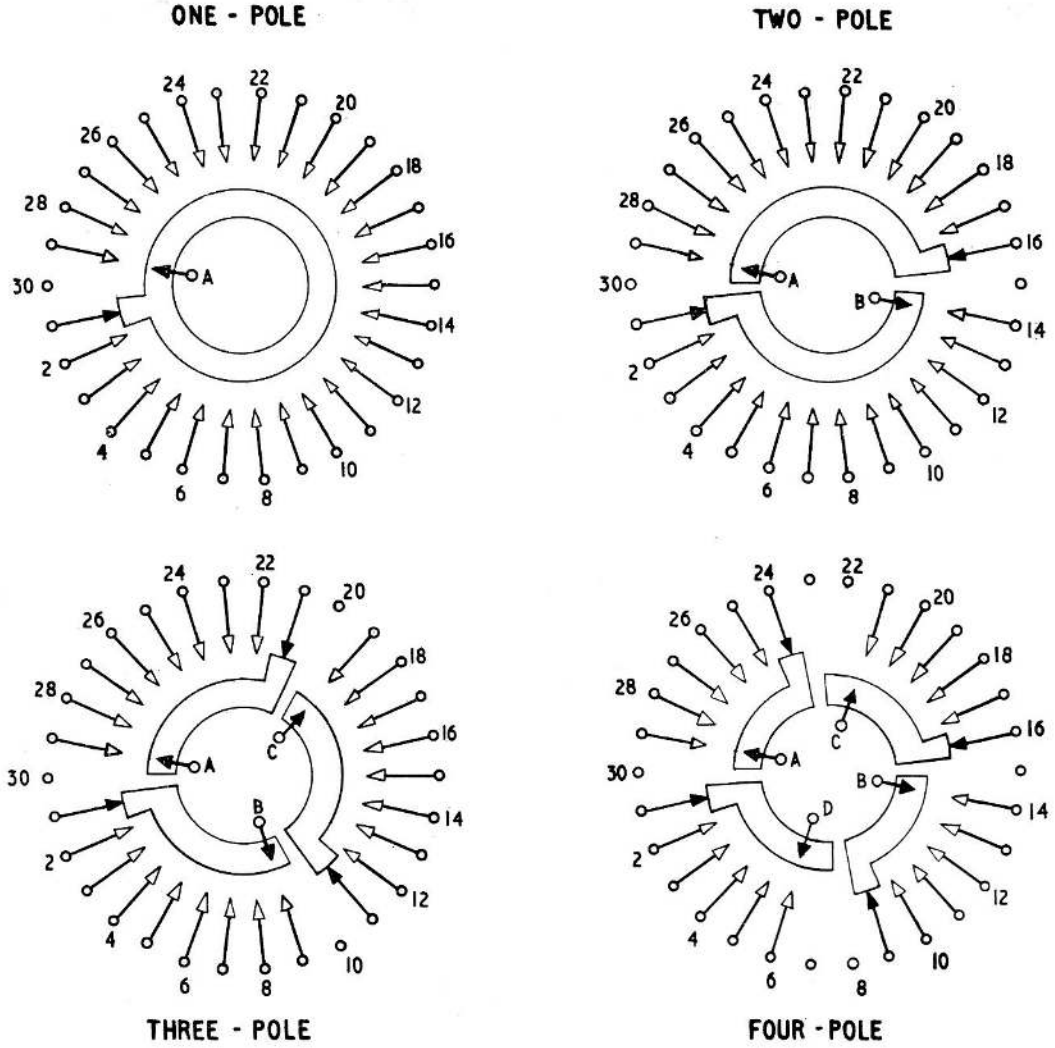

Fig. 2. Contact arrangements (make-before-break)

As the knob is rotated to select the various positions, a wiper makes contact between the appropriate stud and the collector ring.

6. The switch is secured to the mounting panel by two 4 B.A. screws. Electrical connections are made to solder stems behind the contact studs.

Significance of coding

7. An indication of the characteristics of each switch can be derived from the coding as follows:—

(1) The first letter is either A, B or C and denotes the type of spindle.

(2) The second letter is either S or N, depending on whether the switching action is shorting, i.e. make-before-break, or non-shorting, i.e. break-before-make.

(3) The number preceding the letter P denotes the number of poles per bank.

(4) The next number gives the number of positions. The majority of switches have silver-plated contacts; if, however, gold-plated contacts are fitted, they are identified by the symbol Au following the number of positions.

(5) The number preceding the letter B denotes the number of banks.

SERVICING

8. Little servicing can be done on these switches apart from a general inspection for cleanliness, freedom from damage and security of connections.

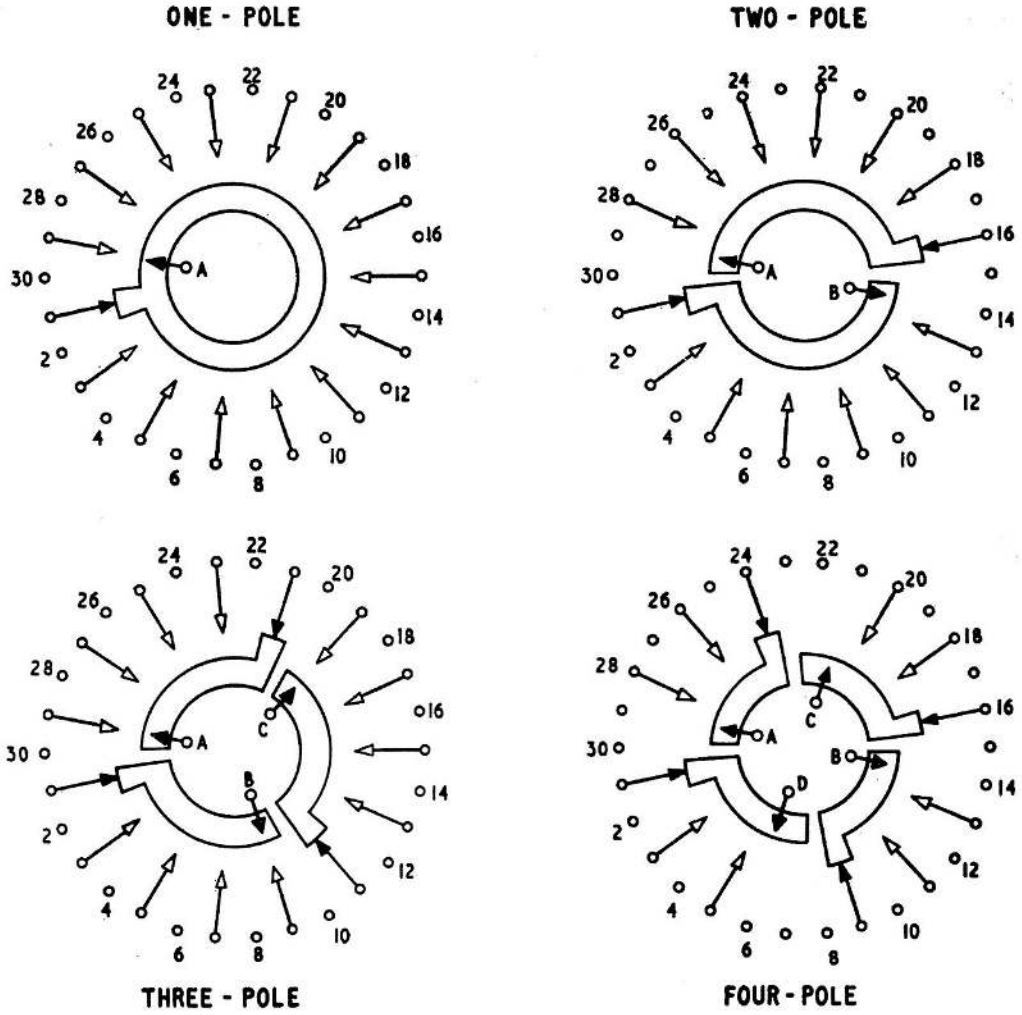

Fig. 3. Contact arrangements (break-before-make)

Appendix 1

LEADING PARTICULARS

Maximum working voltage ... ... 250*V a.c./d.c.*
Contact rating ... ... 0·5 *amp. (max)*
Contact resistance ... ... 0·004 *ohm.*
Overall dimensions (in.)
Width ... ... $1\frac{5}{8}$
Depth ... ... $2\frac{1}{8}$
Length behind mounting panel
One bank ... ... $1\frac{9}{64}$
Each additional bank ... ... *plus* $\frac{3}{4}$

Type	Code	Ref. No.	Switching action	No. of poles	No. of positions	No. of Banks
311319	AN/1P/9/2B		Break-before-make	1	9	2
311318	AN/1P/12/1B	5CW/7136	Break-before-make	1	12	1
312520	AN/1P/15 Au/3B		Break-before-make	1	15	3
311390	AN/3P/3/1B	5CW/6757	Break-before-make	3	3	1
311427	AN/4P/2/2B	5CW/6840	Break-before-make	4	2	2

P31142 141388/3056 8/61 2000 C & P Gp 375