Chapter 90

ROTARY SWITCHES, N.S.F. OAK SERIES

LIST OF CONTENTS

LIST OF ILLUSTRATIONS

LIST OF APPENDICES

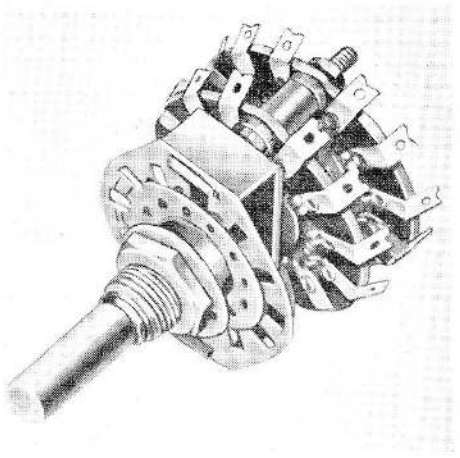

Fig. 1. Typical N.S.F. oak switch

INTRODUCTION

1. This chapter covers the range of N.S.F. Oak switches which are used on aircraft. Details of individual types are given in appendices to this Chapter.

DESCRIPTION

DM series

2. A general view of a typical switch is shown in fig. 1. These switches are available in any number of sections with provision for 12 positions per section.

3. The switch sections are held in place with a positive relationship to the index mechanism assembly by side strut screws, and the stators are spaced by means of tubular metal spacers, with a synthetic resin bonded paper spacer adjacent to the contact face of the stator.

4. Each stator consists of silver-plated brass contact clips riveted to a synthetic resin bonded paper punching. The nylon rotor carries silver-plated brass blades. The standard index mechanism consists of a steel ball and a spring but for heavy duty models a cam and roller method is used.

5. Some switches are of the "shorting" type in which connection is maintained with one contact until after the next is made. "Non-shorting" switches which break connection with one contact before the next contact is made are available.

6. The normal method of mounting is by means of a fixing nut and locking washer.

Other series

7. A typical switch of the DM series is described in the preceding paragraphs, other models are similar in construction and the main differences are given in the relevant appendix.

SERVICING

8. Little servicing is possible with these switches, beyond inspection for damage and security of electrical connections. The switch should operate in a positive manner; a faulty switch must be renewed.

Appendix 1

ROTARY SWITCH, N.S.F. OAK, TYPE 36989/DL8

LEADING PARTICULARS

Type 36989/DL8	*...Ref. No. 5CW/7246*
Number of sections	8
Number of positions	7
Connection	*Shorting*
Overall dimensions (in.)	$6\frac{1}{4} \times 2\frac{9}{32} \times 2\frac{5}{16}$

1. Switches of the DL series have provision for 18 positions and incorporate a roller type index mechanism.

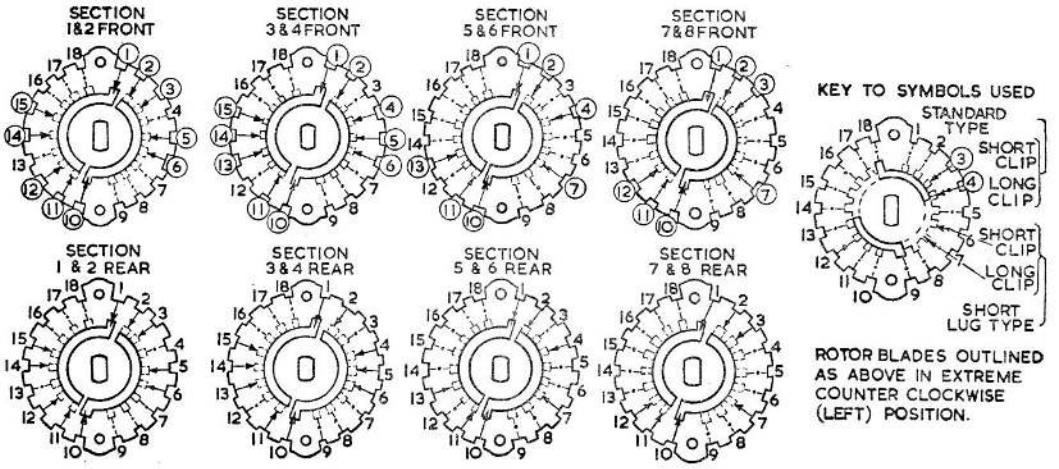

Fig. 1. Switch section contact arrangements

Appendix 2

ROTARY SWITCH, N.S.F. OAK, TYPE 32530/DM1

LEADING PARTICULARS

Type 32530/DM1	*Ref. No. 5CW/6596*
Number of sections	1
Number of positions	3
Connection	*... Non-shorting*
Overall dimensions (in.)	$2\frac{3}{32} \times 1\frac{7}{16} \times 1\frac{15}{32}$

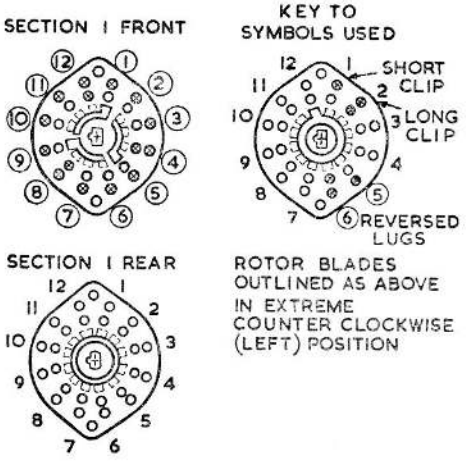

Fig. 1. Switch section contact arrangements

Appendix 3

ROTARY SWITCH, N.S.F. OAK, TYPE 35872/DM1

LEADING PARTICULARS

Type 35872/DM1	*Ref. No. 5CW*
Number of sections	1
Number of positions	7
Connection	*Non-shorting*
Overall dimensions (in.)	$2 \times 1\frac{7}{16} \times 1\frac{15}{32}$

1. The rotary switch, Type 35872/DM1, is fitted with bush and spindle seals and a stop plate.

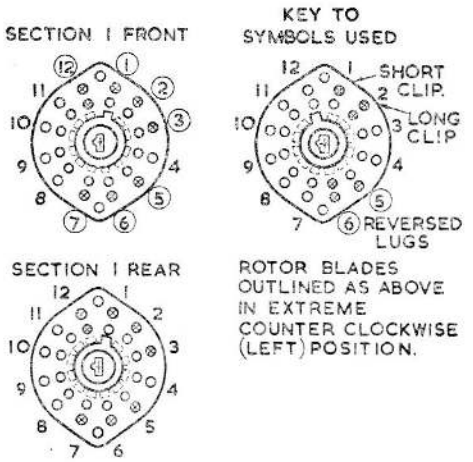

Fig. 1. Switch section contact arrangements

Appendix 4

ROTARY SWITCH, N.S.F. OAK, TYPE 37864/DM4

LEADING PARTICULARS

Type 37864/DM4	*Ref. No. 5CW/7241*
Number of sections	4
Number of positions	12
Connection	*Shorting*
Overall dimensions (in.)	$4\frac{5}{32} \times 1\frac{7}{16} \times 1\frac{15}{32}$

1. The rotary switch, Type 37864/DM4, incorporates silver alloy contact clips and a stop plate between positions 1 and 12. A dust cover is fitted over the switch mechanism of this model.

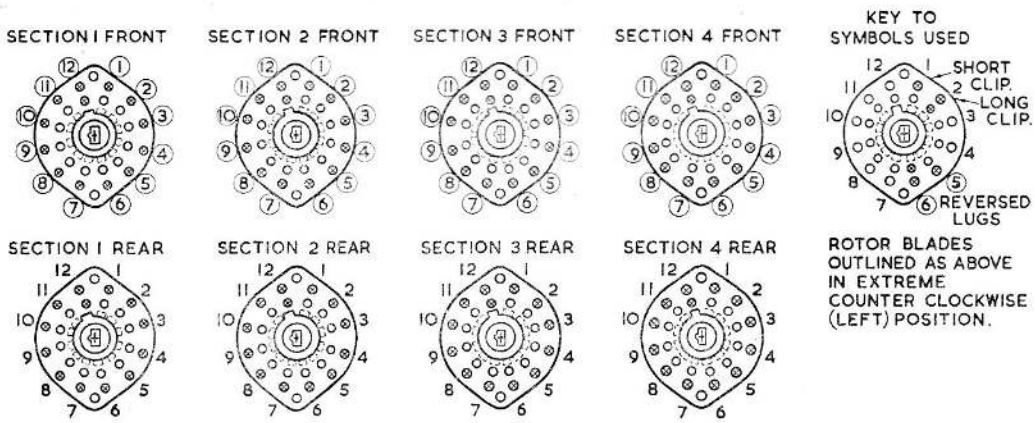

Fig. 1. Switch section contact arrangements

Appendix 5

ROTARY SWITCH, N.S.F. OAK, TYPE 62558/PL1

LEADING PARTICULARS

Type 62558/PL1	*Ref. No. 5CW/7240*
Number of sections	1
Number of positions	3
Connection	*Non-shorting*
Overall dimensions (in.)	$3\frac{3}{32} \times 1\frac{7}{8} \times 2\frac{1}{32}$

1. Each section of PL series switches is comprised of two stators. A second section is fitted to the rotary switch, Type 62558/PL1, which consists of two blank wafers. This switch also has bush and spindle seals and a stop plate.

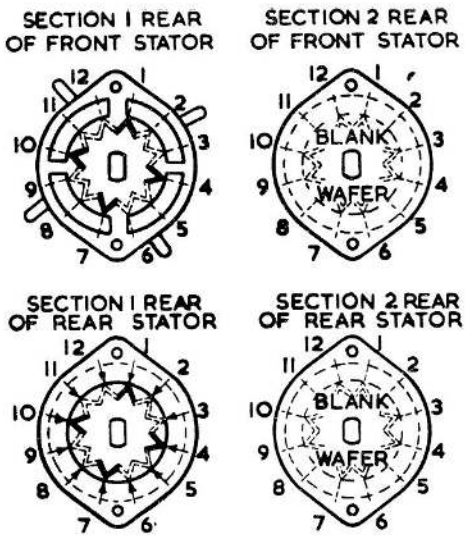

Fig. 1. Switch section contact arrangements

Appendix 6

ROTARY SWITCH, N.S.F. OAK, TYPE 34580/H1

LEADING PARTICULARS

Type 34580/H1	*Ref. No. 5CW/8019*
Number of sections	1
Number of positions	10
Connection	*Shorting*
Overall dimensions (in.)	
Length	2·125 *in.*
Diameter	1·875 *in.*

1. The switch, Type 34580/H1 (*fig.* 2), has ten positions each of 30 deg. throw. The index mechanism has double ball-bearing location, with a full circle pressure spring of best quality blued spring steel.

2. The contact clips are manufactured from spring quality brass which is heavily silver plated, and the rotor blades are made from hard brass similarly silver plated. Contact resistance is less than 3 milliohms.

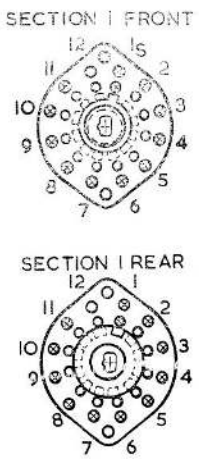

Fig. 1. Switch section contact arrangements

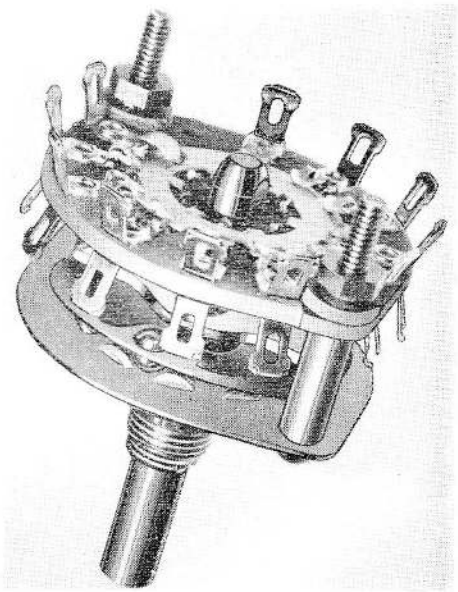

Fig. 2. Switch mechanism

Appendix 7

ROTARY SWITCH, N.S.F. OAK, TYPE 36823/MHLC2

LEADING PARTICULARS

Type 36823/MHLC2	*Ref. No.* 5CW/7239
Number of sections	2
Number of positions	3
Connection	*Non-shorting*
Overall dimensions (in.)	
Length	3·50 *in.*
Diameter	1·875 *in.*

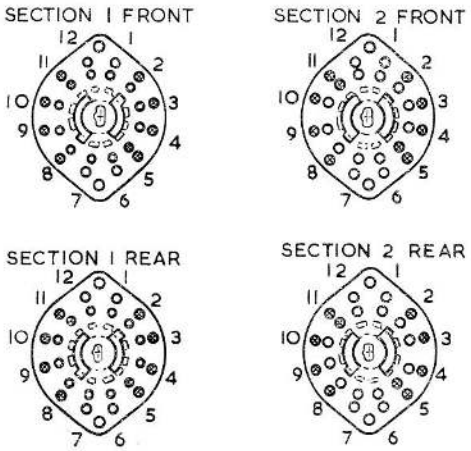

Fig. 1. Switch section contact arrangements

1. The rotary switch, Type 36823/MHLC2, is a non-shorting three-position switch designed primarily for band switching and general tap switch applications.

2. The index mechanism consists of a roller held firmly against an indexing sprocket by means of a heavy spring. Contact clips, which are mounted on ceramic insulation discs, are manufactured from silver alloy, and the rotor blades are made from hard brass heavily silver plated (*fig.* 2). Contact resistance is less than 3 milliohms.

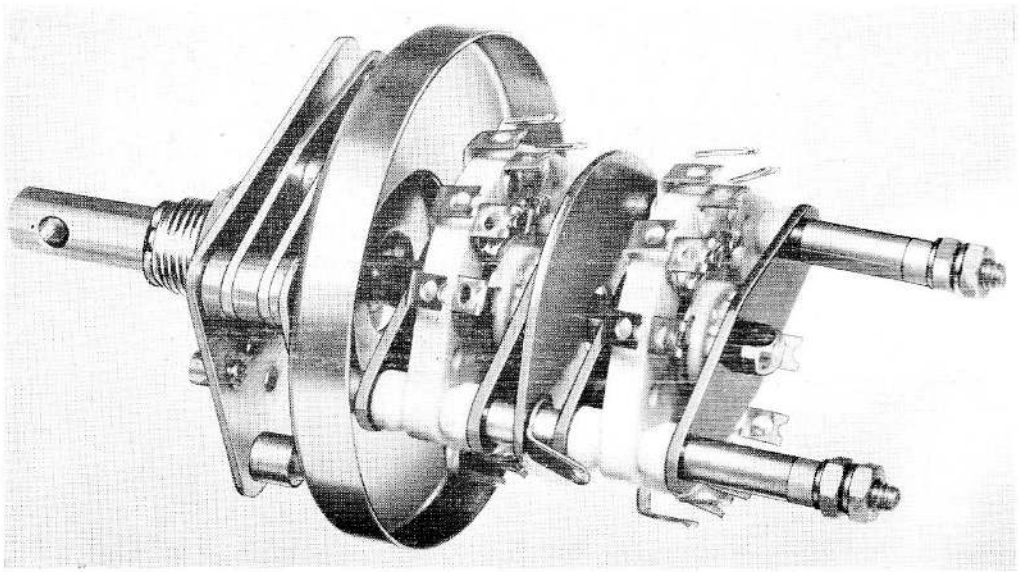

Fig. 2. Switch mechanism (cover removed)

P31563 166501/4728 3/62 2000 C & P Gp 375