



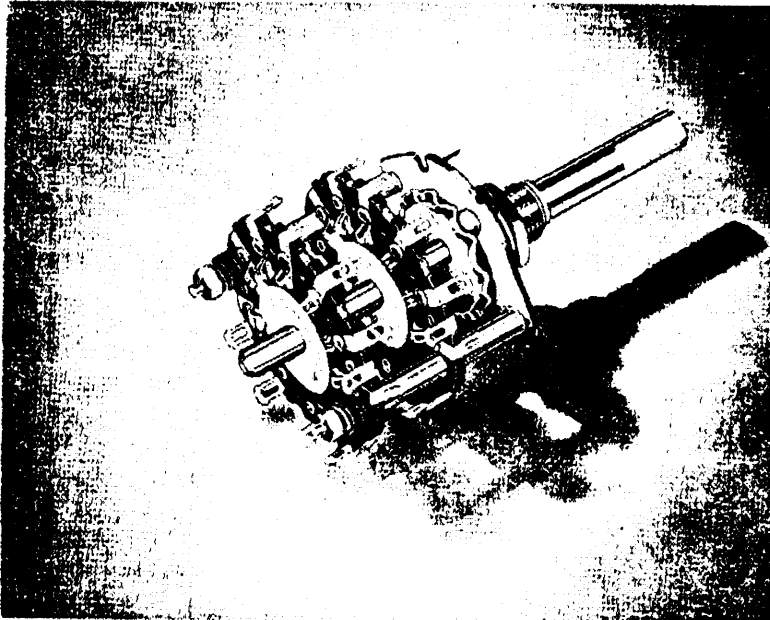
# ENGINEERING BULLETIN

June 1971

Bulletin No. 6

## NSF ROTARY WAFER SWITCHES

Models JKM and JKB



These switches provide up to 22 contact positions on a single section without need for Insulated back contacts. Used in multi-bank form they will meet the most complicated circuit requirements in present day radio, television, instrument and electronic designs. They are suitable for inclusion in Tape Recorder Decks and sections only can be supplied if required.

### ELECTRICAL CHARACTERISTICS

Maximum Working Voltage :		300v. A.C./D.C.
Proof Voltage :		1000v R.M.S.
Contact Rating :	150 m.a. at	250v. R.M.S. Non-Reactive Load
	50 m.a. at	250v. D.C.
Current carrying capacity :	500 m.a. at	30v. D.C or A.C.   Resistive Load
(not breaking)		5 amps.
Contact Resistance :		Less than 3 milliohms.

### MAXIMUM SWITCHING.

1 pole	2 to 12 positions.
2 poles	2 to 9 positions.
3 poles	2 to 5 positions.
4 poles	2 to 4 positions.
5 poles	2 to 3 positions.
6 poles	2 positions.

### ADJUSTABLE STOPS

Normally the anti-clockwise stop is supplied fixed and an adjustable stop, to act in any clockwise position, has been available to order. Both stops are now available to order in adjustable form, thus rotation can be restricted between any selected positions.

### CONTACTS

Clips : Spring brass silver plated. Spring quality silver alloy clips are available at additional cost.  
Rotor Blades : Hard brass heavily silver plated.

### INDEX MECHANISMS.

Single ball bearing location with index spring of special quality spring steel. Available with 30° or 60° indexing. Approximate torque, mechanism only, with standard spring, 15 to 25ozs. Springs to meet other torque requirements are available to order. If heavy duty indexing is required, the N.S.F. type "HDI" cam and roller mechanism, as described in Bulletin No. 11, can be supplied.

### DUAL CONCENTRIC SHAFTS

Now available to order. Possible uses, two switches in one frame or similar applications. Switches can also be supplied with hollow shafts to allow of driving another device by a  $\frac{1}{8}$ " shaft concentric with the switch shaft.

*Continued overleaf*

**NSF ENGINEERING BULLETIN** *Continued from overleaf***INSULATION.**

Stators and Rotors: Highest grades of punching quality S.R.B.P. materials to B.S. 2076 Grade L. Tropical grade material to B.S. 2076 grade H is available at extra cost, if desired.

**FINISH.**

Standard: All ferrous parts plated; non-ferrous parts clean.

Special: Special finishes to withstand tropical conditions are available when specified.

**MOUNTING DETAILS.**

Unless otherwise specified, each switch is supplied with one fixing nut  $\frac{1}{8}$ " thick, .525" across flats, threaded  $\frac{3}{8}$ " x 32 T.P.I. Whitworth form and one  $\frac{5}{8}$ " internal tooth steel lock-washer. Various methods of mounting may be provided to meet customers' special requirements. Panel and spindle sealing is available if required.

**CONSTRUCTION.**

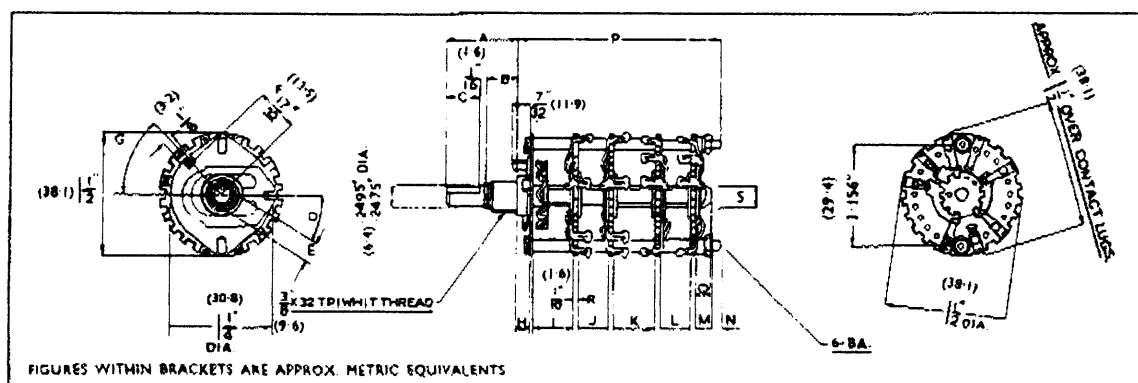
The switch sections are spaced by tubular metal spacers and held in place with a positive relationship to the index mechanism assembly by side strut screws.

**STANDARD CONTACT ARRANGEMENTS.**

Please refer to Engineering Bulletin No. 7 for details of standard contact arrangements and use these whenever possible.

**MAIN SWITCHES**

JKM only. Switches, rated at 1 amp., 250 volt, A.C. or D.C., are available in SPST, DPST, SPDT, or 3-way (making 3 contacts when thrown). A.C. switches are attached to end of shaft and may be arranged to operate at any given position through the rotation of the switch.

**KEY TO DIMENSIONAL DIAGRAM.**

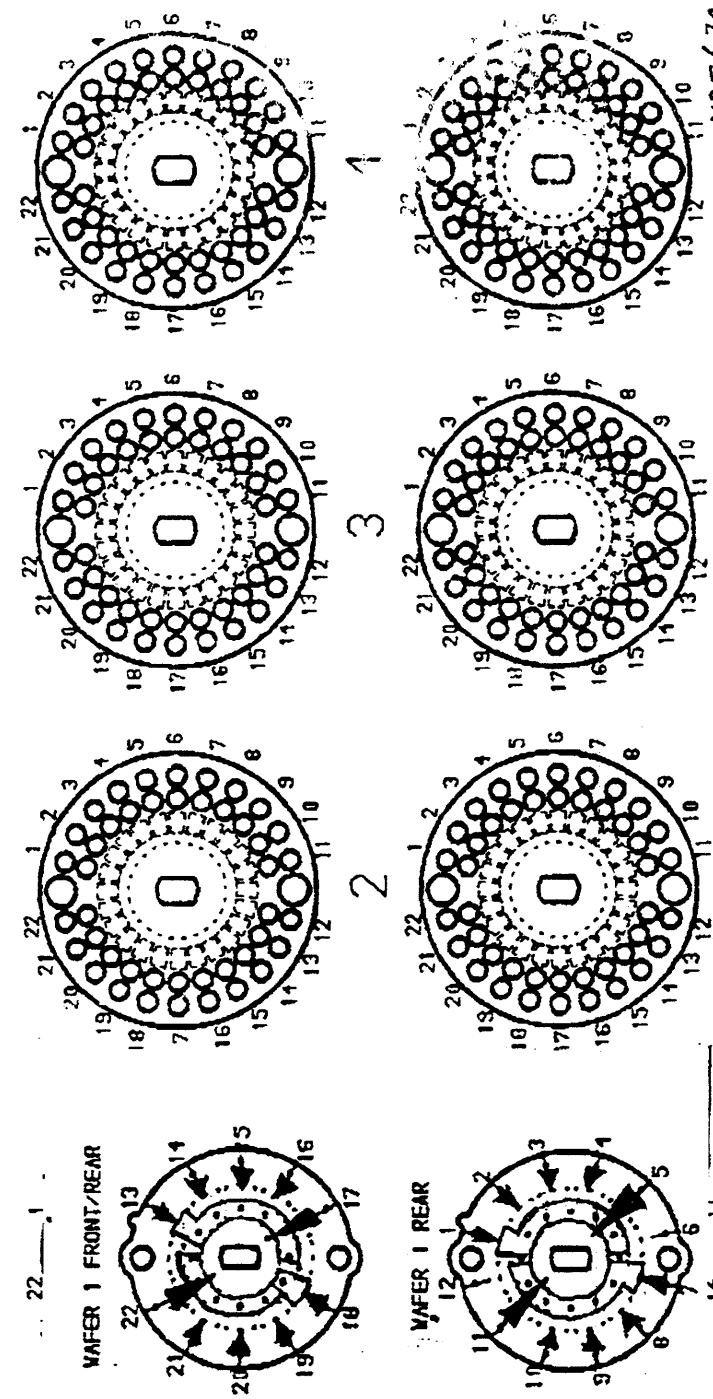
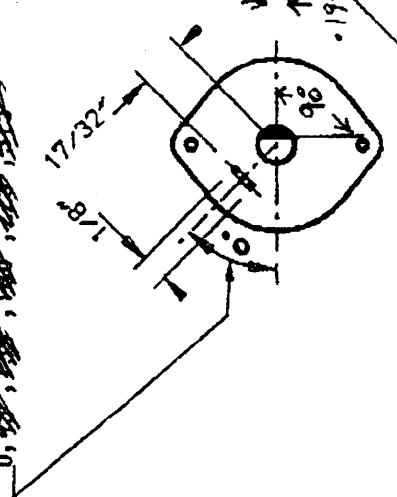
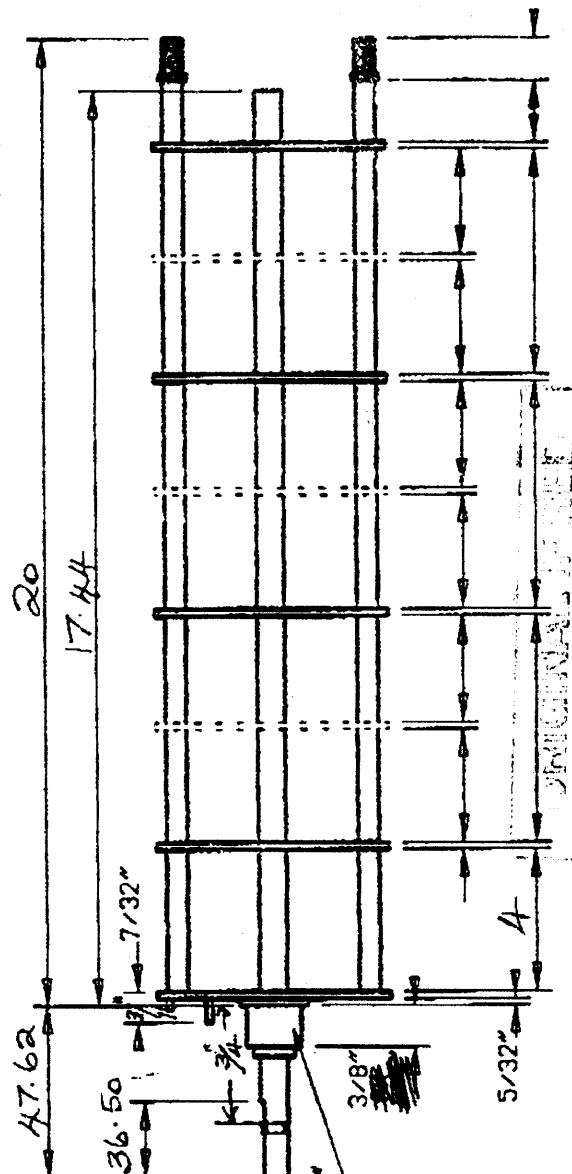
- A. Shaft length: Optional  $\pm \frac{1}{16}$ ". Diameter: .2475" —.2495" (after plating).
- B. Bushing Thread length: Standard  $\frac{1}{2}$ " or  $\frac{3}{4}$ ". Special lengths if necessary. Threads  $\frac{3}{8}$ " x 32 T.P.I. Whitworth form.
- C. Flat length: Standard not more than  $\frac{3}{8}$ ", in no case closer than  $\frac{1}{16}$ " to end of bushing. Tolerance  $\pm \frac{1}{32}$ ". Special shaft terminations may be provided to meet customers' particular requirements.
- D. Angle of flat: as desired  $\pm 2^\circ$ . Specify position of switch in which flat is shown—fully counter clockwise is preferred.
- E. Flat thickness: Standard .195"  $\pm .005$ " for grub screws. .195"  $\pm .002$ " for push-on knobs.
- F. Distance of locating lug from centre of shaft (centre line to centre line)  $17/32$ ". Alternative,  $\frac{3}{8}$ ".
- G. Angles available,  $17/32$ " lug:  $0^\circ$ ,  $45^\circ$ ,  $135^\circ$ ,  $180^\circ$ ,  $225^\circ$ ,  $315^\circ$ . With  $\frac{3}{8}$ " lug, angles as above plus  $15^\circ$  or  $195^\circ$ .
- H. Bushing shoulder: Standard  $\frac{3}{16}$ " ( $\frac{1}{2}$ " if sealed bush specified). Special lengths provided above this dimension where required.
- I. First Spacer:  $\frac{1}{8}$ " min. with lugs facing front\* of first section.  $\frac{7}{16}$ " min. with lugs facing rear of first section. May be any length (within switch limitations) over these min. dimensions.
- J-K-L. Spacers:  $\frac{1}{8}$ " min. with lugs facing each other;  $\frac{1}{4}$ " min. with lugs facing same direction as adjoining sections;  $\frac{3}{16}$ " min. with lugs facing away from each other. No max. limit (within switch limitations).
- M. If no spacer,  $\frac{1}{8}$ " min. any length spacer desired may be inserted at this point:  $\frac{1}{8}$ " Standard.
- N. Thread extension:  $\frac{1}{4}$ "—6BA., any length desired.
- P. Specify maximum overall length, if important.
- Q. Shaft extension at rear: nominal  $\frac{1}{8}$ " to  $\frac{1}{2}$ " Dimensions (after plating); dia. .2475"/.2495"; across flats .187"/.188" (4-8)
- R. Standard  $\frac{1}{8}$ " bakelite sections.
- S. Rear Shaft Dimensions, JKM: Dia. 0.250" (6.4); across flats, 0.181" (4.0); JKB: Dia. 0.187" (4.0); across flats, 0.125" (3.2).
- ROTOR BLADES: Standard switches are made before break "shorting" type in which connection is maintained with one contact until after the next contact is made. Break before make "non-shorting" switches, which break connection with one contact before the next contact is made, are available to order.
- \*"Front" is when switch viewed from the knob end.

**N. S. F. LIMITED**

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N.S.F. MODEL JK/JKM SWITCH  
SPEC No. 4-59104 JMK1  
1 OF 3

# N.S.F. MODEL JK/JKM SWITCH



NOTES	
No OF SECTIONS	1
No OF POSITIONS 2 TO 4	4
STAMP PART No	TROPICAL 101500/COMMERCIAL
TORQUE	
SPRING	
GROVE IN SHAFT END TO BE 1/32" WIDE x 1/16" DEEP	
ISSUE	DATE
CHANGE	CHANGE
CHANGES	
RAISED BY	CHECKED: DATE: 24/5/00
CUSTOMER WAS 40645 JKMI	
PART No.	
N.S.F. SPEC No. 4-59104 JMK1	

NSF 674