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IN REPLY  
REFER TO

DSCC-VAT

24 September 2004

MEMORANDUM FOR MILITARY/INDUSTRY DISTRIBUTION

SUBJECT: Initial Draft of MIL-DTL-3786 /1F, /2F, /3G, /5G, /9E, /10E, /28E, /32C, and /40B.  
Project numbers 5930-1866 through -1874.

The drafts of the above subject documents are being sent to you for review and comments. These drafts consist of the following changes:

Updating of referenced documents.  
Incorporation of amendments.

If these documents are of interest to you, please provide your comments electronically. This can be in the form of a return e-mail, with or without an attached text file. A 45-day coordination cycle from the date of this letter has been allotted. Please provide your comments within that time period. If no comments are received in the allotted 45 day coordination cycle, concurrence is assumed and all comments received after will be held to the first amendment. If an electronic response is not possible we will still accept comments via letter, facsimile or phone call but only after you have contacted the project officer listed below. The draft documents can be found at the following DSCC-VA web page:

[www.dsc.dla.mil/Programs/MilSpec/initialdrafts.asp](http://www.dsc.dla.mil/Programs/MilSpec/initialdrafts.asp)

This process still requires military departments to identify their comments as "Essential" or "Suggested". Essential comments must be justified with supporting data. Military review activities should forward comments to their custodians or this office, as applicable, in sufficient time to allow for consolidating the department reply.

If there are any questions, please contact Mark Rush by the preferred method of E-Mail at [Mark.Rush@dla.mil](mailto:Mark.Rush@dla.mil) or by telephone at commercial 614-692-0550, DSN 850-0550; or by facsimile at 614-693-1644. Our mailing address as a last resort is Defense Supply Center, Columbus, DSCC-VAT, P.O. Box 3990, Columbus, OH 43216-5000. If you have further questions or concerns you may contact me at [Kendall.Cottongim@dla.mil](mailto:Kendall.Cottongim@dla.mil), by telephone at 614-692-0676 or by facsimile at 614-692-6939.

/ SIGNED /  
KENDALL A. COTTONGIM  
Chief  
Electronics Components Team

NOTE: This draft, dated Sept 24, 2004 prepared by DLA-CC, has not been approved and is subject to modification. DO NOT USE PRIOR TO APPROVAL. (Project 5930-1870)

INCH-POUND  
 MIL-DTL-3786/32C  
 Proposed  
 SUPERSEDING  
 MIL-S-3786/32B(USAF)  
 5 March 1976

DETAIL SPECIFICATION SHEET

SWITCH, ROTARY, OPEN CONSTRUCTION, 1/5 AMPERE, STYLE SR32

Inactive for new design after 8 March 1999

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The complete requirements for acquiring the switch described herein shall consist of this specification and the latest issue of MIL-DTL-3786.

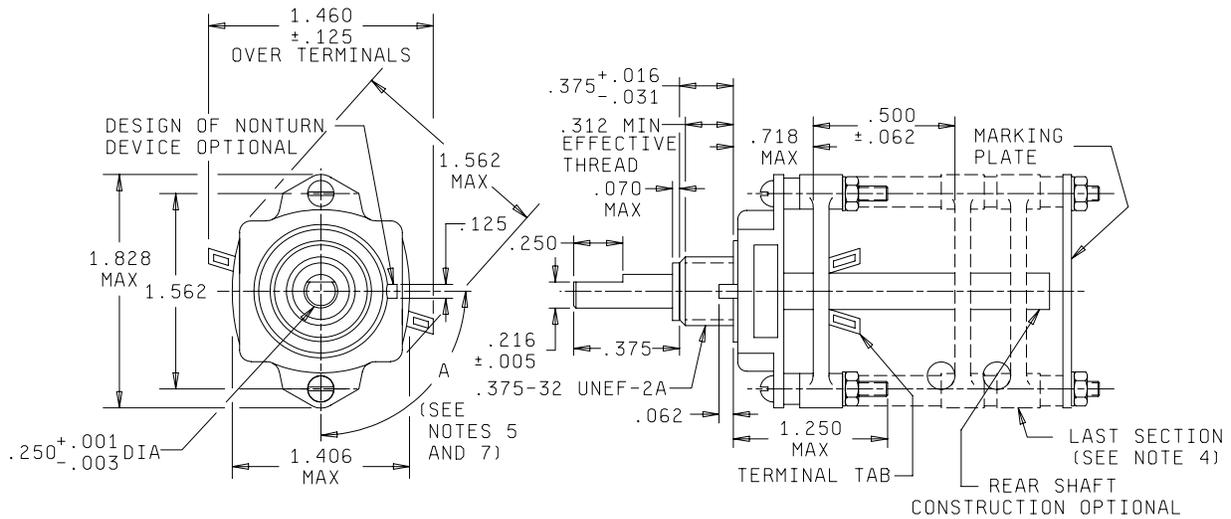
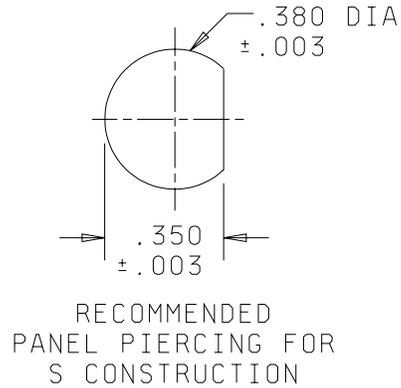
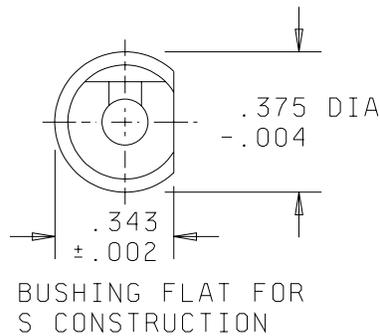
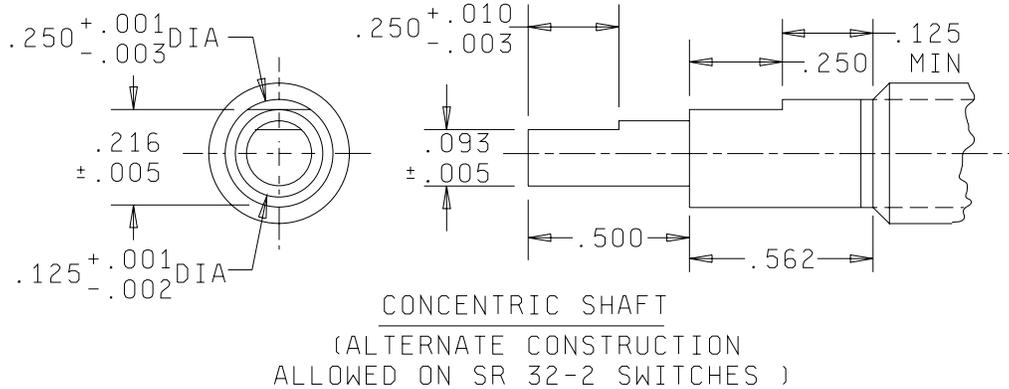


FIGURE 1. Styles SR32-1 and SR32-2 switches.

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NOTES:

1. Dimensions are in inches.
2. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.
3. Unless otherwise specified, tolerance is  $\pm .015$  (.38 mm).
4. The number of sections is indicated in table II.
5. Nonturn device as shown is not applicable to S construction switches.
6. Shaft shown in maximum counterclockwise position for switches with stop and with switch in position No. 1 for switches without stop.
7. Angle "A" is formed by two lines radiating from the shaft center, and in the mounting plane of the switch. One line is parallel to a radial line perpendicular to the shaft flat with the switch in position 1. The other line passes through the center of the nonturn device. Angle "A" is  $90^\circ$ .
8. Unless otherwise specified, tolerance on angles is  $\pm 3^\circ$ .

FIGURE 1. Styles SR32-1 and SR32-2 switches - Continued.

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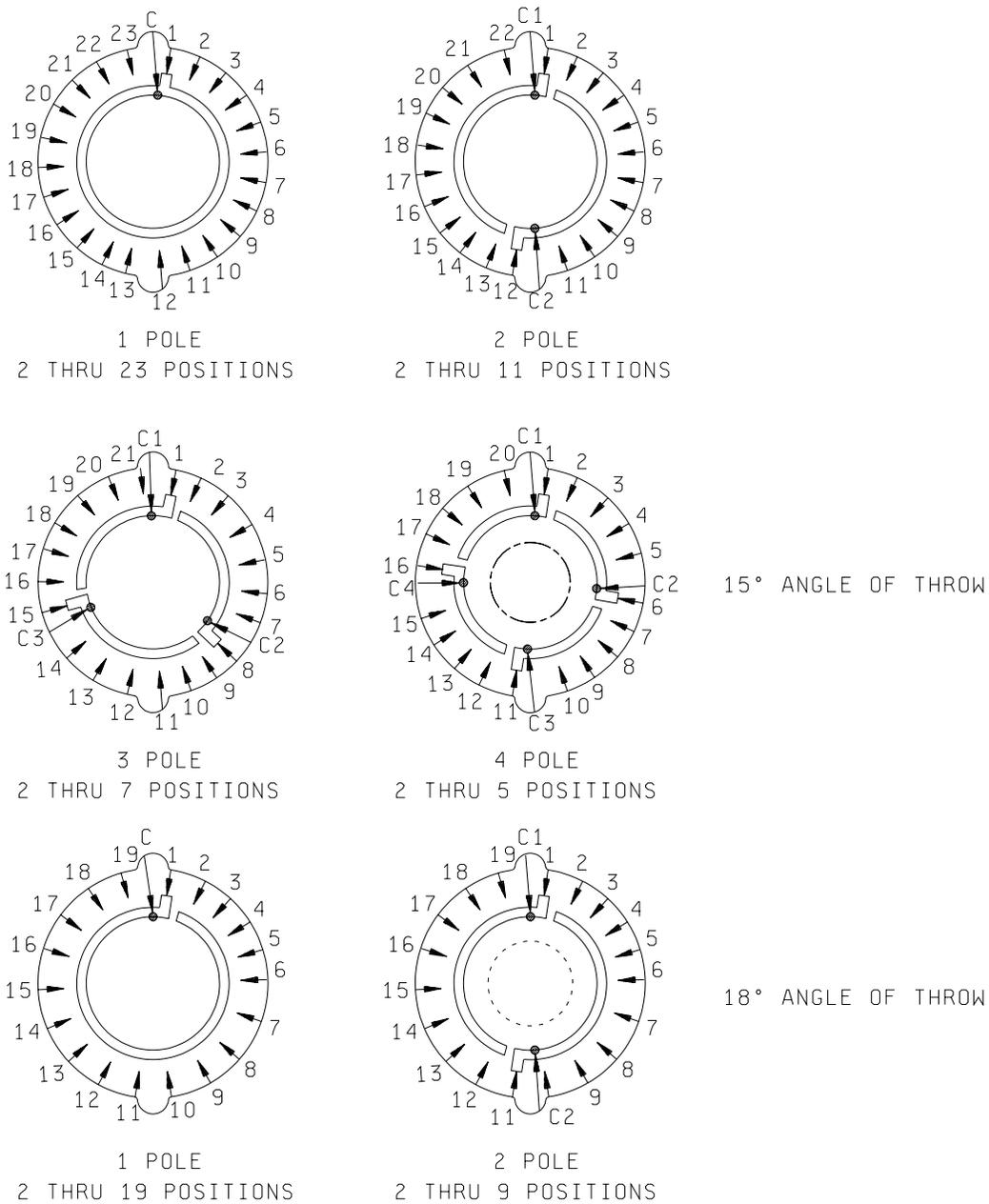


FIGURE 2. Circuit diagrams - viewed from front or knob end with switch in extreme counterclockwise position.

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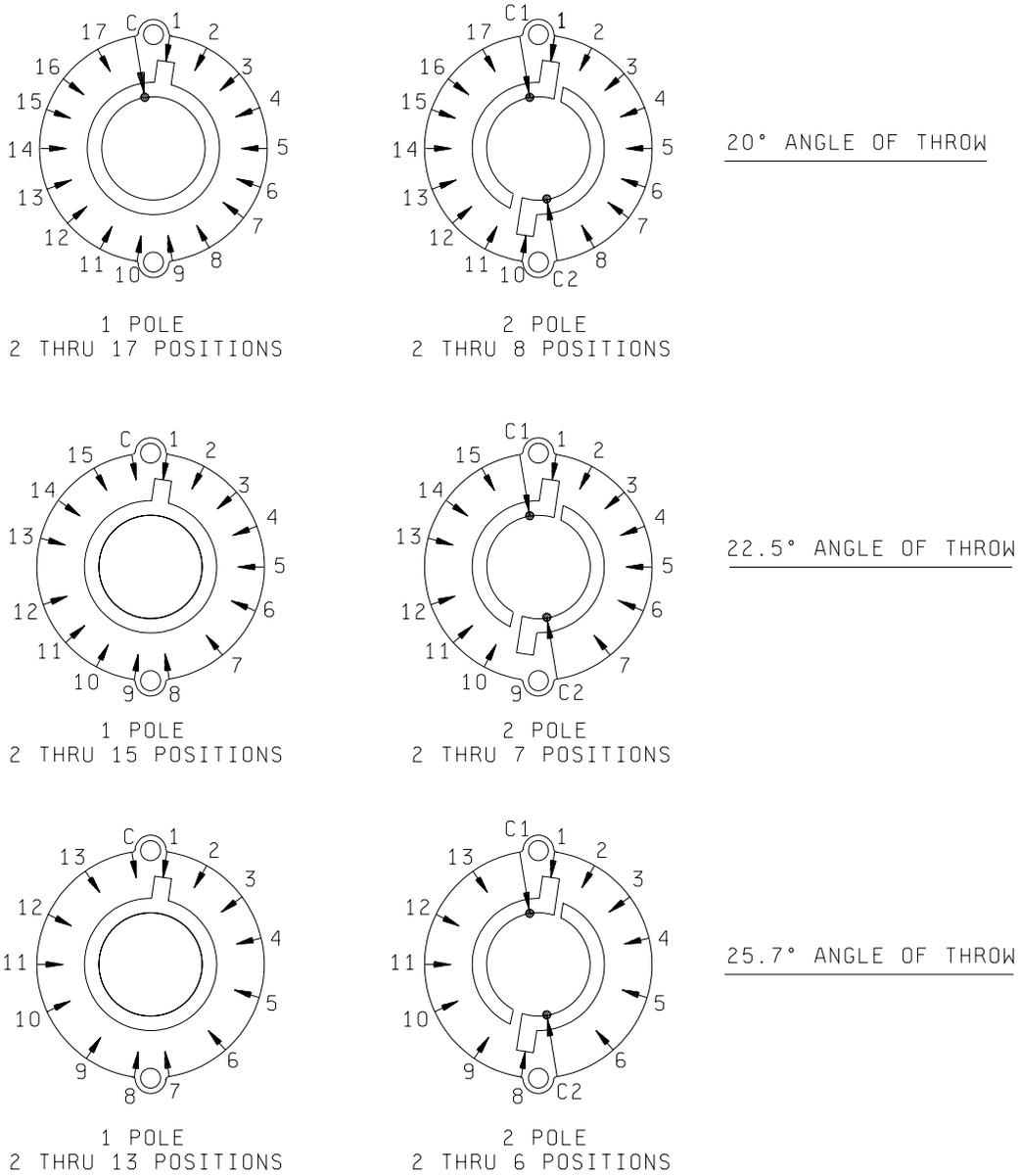


FIGURE 2. Circuit diagrams - viewed from front or knob end with switch in extreme counterclockwise position - Continued.

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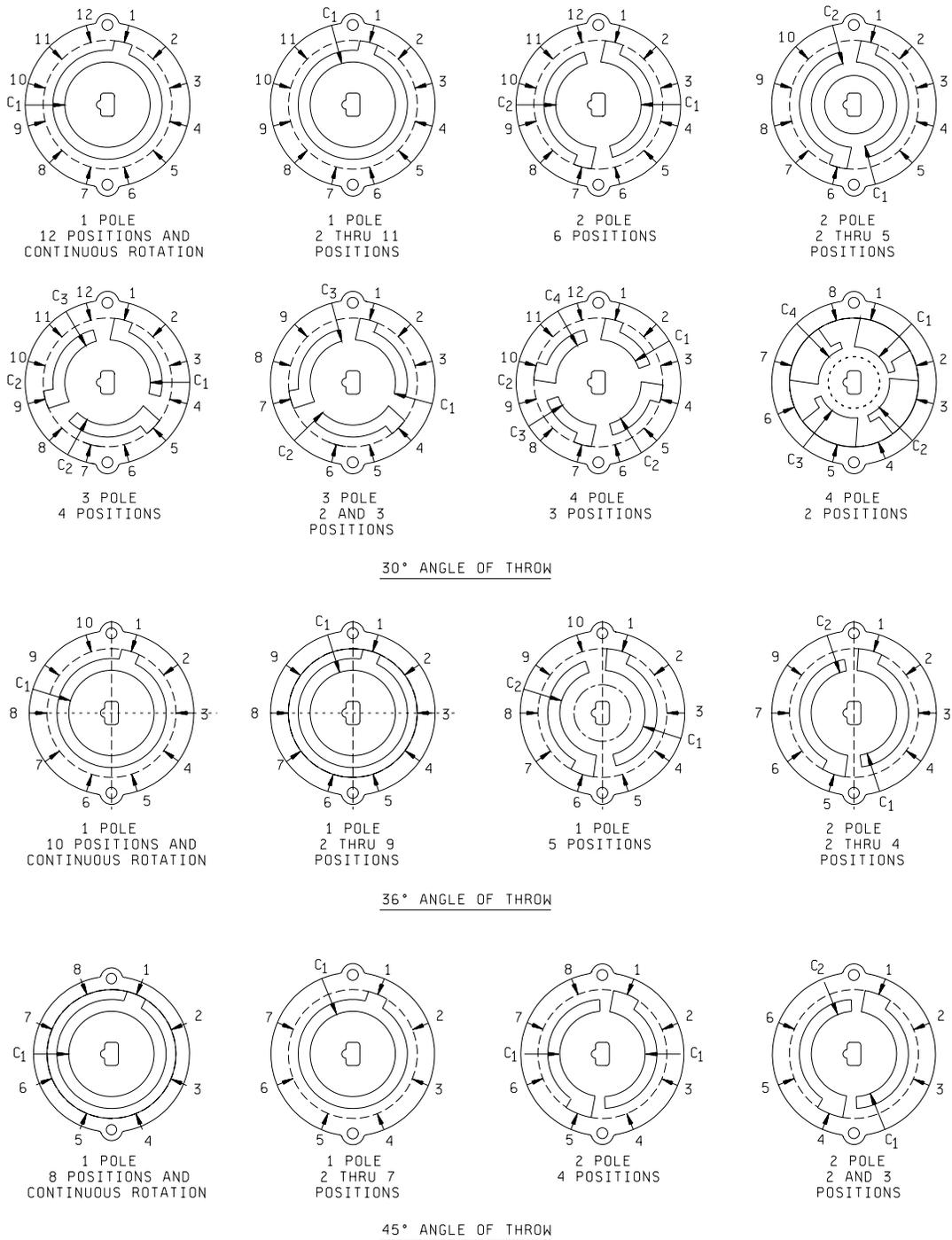


FIGURE 2. Circuit diagrams - viewed from front or knob end with switch in extreme counterclockwise position - Continued.

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REQUIREMENTS

Dimensions and configuration: See figures 1 and 2.

Construction style: N or S, see table II.

Angle of throw: 15°, 18°, 20°, 22.5°, 25.7°, 30°, 36°, and 45°, (see table III).

Terminals: The terminal tabs shall be bent at an angle of 60 +30, -15 degrees.

Temperature-life characteristic: Symbol B (25,000 cycles, -65°C and 85°C).

Vibration grade: Symbol 3 (10 to 2,000 Hz).

Shock type: Symbol H (high impact).

Insulation material: Symbol P (plastic).

Altitude: Symbol C (70,000 feet).

Rotational torque limits:

1.0 lb-in. minimum, 6 lb-in. maximum at room temperature.

1.0 lb-in. minimum, 8 lb-in. maximum at minimum temperature.

Terminal strength (pull): A force of 2-1/2 pounds shall be applied to the terminals.

Life (rotational): The test loads for the applicable circuit conditions shall be as specified in table I. Each of the loads, specified for the applicable environmental condition, shall be switched by at least one rotor contact of the switch.

TABLE I. Electrical loads.

Environmental condition	Inductive load (2.8 henries)		Resistive load	
	Milliamperes	Volts, dc	Milliamperes	Volts
At atmospheric pressure	20	28	200	28 dc
			50	115 Vrms
At reduced barometric pressure	---	---	100	28 dc
			25	115 Vrms

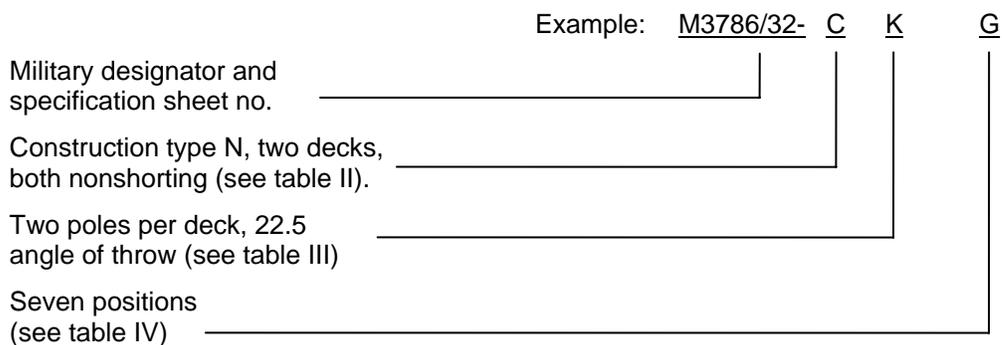
Dielectric withstanding voltage: 750 volts rms at atmospheric pressure; 375 volts rms at reduced barometric pressure.

Mounting brackets: A switch with more than five section or with more than 3-1/2 inches in length from the mounting surface may use mounting brackets.

Mounting hardware: Each switch shall be supplied with one hexagon nut in accordance with MS25082, and one internal-tooth lockwasher in accordance with NASM35333.

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Part number <sup>1/</sup>: The military part number shall consist of the prefix "M3786/32-" followed by one character each from tables II, III, and IV, as applicable. An example is shown below:



<sup>1/</sup> Part numbers shall be used to identify only switches shown in figure 2. Switches not identified by part numbers shall be procured in accordance with the ordering data of MIL-S-3786.

APPLICATION NOTE: To conserve material, space, and weight, the following is suggested:

- (a) Two-, three-, four-, five-, six-, seven-, eight-, nine-, ten-, eleven-, and twelve-position switches with 15° angle of throw should be two poles per deck.
- (b) Two-, three-, four-, five-, and six-position switches with 15° angle of throw should be four poles per deck.
- (c) Two-, three-, four-, five-, six-, seven-, eight-, nine-, and ten-position switches with 18° angle of throw should be two poles per deck.
- (d) Two-, three-, four-, and five-position switches with 18° angle of throw should be four poles per deck.
- (e) Two-, three-, four-, five-, six-, seven-, eight-, and nine-position switches with 20° angle of throw should be two poles per deck.
- (f) Two-, three-, four-, five-, six-, seven-, and eight-position switches with 22.5° angle of throw should be two poles per deck.
- (g) Two-, three-, and four-position switches with 22.5° angle of throw should be four poles per deck.
- (h) Two-position and three-position switches with 30° angle of throw should be four poles per deck.
- (i) Four-position switches with 30° angle of throw should be three poles per deck.
- (j) Five- and six-position switches with 30° angle of throw should be two poles per deck.
- (k) Two-, three-, four-, and five-position switches with 36° angle of throw should be two poles per deck.
- (l) Two-, three-, and four-position switches with 45° angle of throw should be two poles per deck.

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TABLE II. Code letters for combinations of construction type, number of decks, and switching characteristics.

Code character	Construction type	Number of decks	Switching characteristics				
			First deck	Second deck	Third deck	Fourth deck	Fifth deck
A	N	1	NS				
B	N	1	S				
C	N	2	NS	NS			
D	N	2	S	S			
E	N	2	NS	S			
F	N	3	NS	NS	NS		
G	N	3	S	S	S		
H	N	3	NS	NS	S		
J	N	3	NS	S	S		
K	N	4	NS	NS	NS	NS	
L	N	4	S	S	S	S	
M	N	4	NS	NS	NS	S	
N	N	4	NS	S	S	S	
P	N	5	NS	NS	NS	NS	NS
Q	N	5	S	S	S	S	S
R	N	5	NS	NS	NS	NS	S
S	N	5	NS	S	S	S	S
T	S	1	NS				
U	S	1	S				
V	S	2	NS	NS			
W	S	2	S	S			
X	S	2	NS	S			
Y	S	3	NS	NS	NS		
Z	S	3	S	S	S		
1	S	3	NS	NS	S		
2	S	3	NS	S	S		
3	S	4	NS	NS	NS	NS	
4	S	4	S	S	S	S	
5	S	4	NS	NS	NS	S	
6	S	4	NS	S	S	S	
7	S	5	NS	NS	NS	NS	NS
8	S	5	S	S	S	S	S
9	S	5	NS	NS	NS	NS	S
0	S	5	NS	S	S	S	S

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TABLE III. Code letters for combinations of poles per deck and angle of throw.

Code letter	Poles per deck	Angle of throw	Code letter	Poles per deck	Angle of throw
A	1	15°	M	2	25.7°
B	2	15°	N	1	30°
C	3	15°	P	2	30°
D	4	15°	Q	3	30°
E	1	15°	R	4	30°
F	2	18°	S	1	36°
G	1	20°	T	2	36°
H	2	20°	U	1	45°
J	1	22.5°	V	2	45°
K	2	22.5°			
L	1	25.7°			

TABLE IV. Code letters for number of positions.

Code letter	Number of positions	Code letter	Number of positions
A	<u>1/</u>	N	13 with stops
B	2 with stops	P	14 with stops
C	3 with stops	Q	15 with stops
D	4 with stops	R	16 with stops
E	5 with stops	S	17 with stops
F	6 with stops	T	18 with stops
G	7 with stops	U	19 with stops
H	8 with stops	V	20 with stops
J	9 with stops	W	21 with stops
K	10 with stops	X	22 with stops
L	11 with stops	Y	23 with stops
M	12 with stops	Z	24 with stops

1/ Switch is continuous rotation type (no stops), and number of positions is dependent on angle of throw as follows:

<u>Angle of throw</u>	<u>Positions</u>
15°	24
18°	20
20°	18
22.5°	16
25.7°	14
30°	12
36°	10
45°	8

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Referenced Documents:

MIL-DTL-3786  
MS25082  
NASM35333

Custodian:

Army - CR  
Navy - EC  
Air Force - 11  
DLA - CC

Preparing activity:  
DLA - CC

(Project 5930-1870)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at [www.dodssp.daps.mil](http://www.dodssp.daps.mil).