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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 o 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.dscc.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 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, 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 September 20, 2004 prepared by DLA-CC, has not been approved and is subject to modification.
DO NOT USE PRIOR TO APPROVAL.
(Project 5930-1874)

INCH-POUND
MIL-DTL-3786/9E
DRAFT
SUPERSEDING
MIL-S-3786/9D
14 August 1984

DETAIL SPECIFICATION SHEET

SWITCH, ROTARY, OPEN CONSTRUCTION, ½ AMPERE, STYLE SR09

Inactive for new design after 8 March 1999

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

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

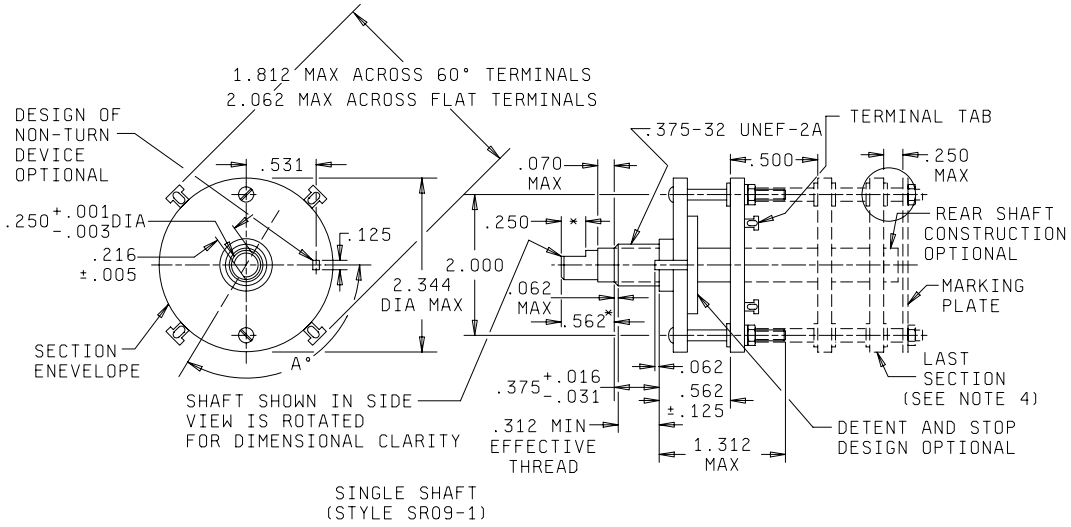
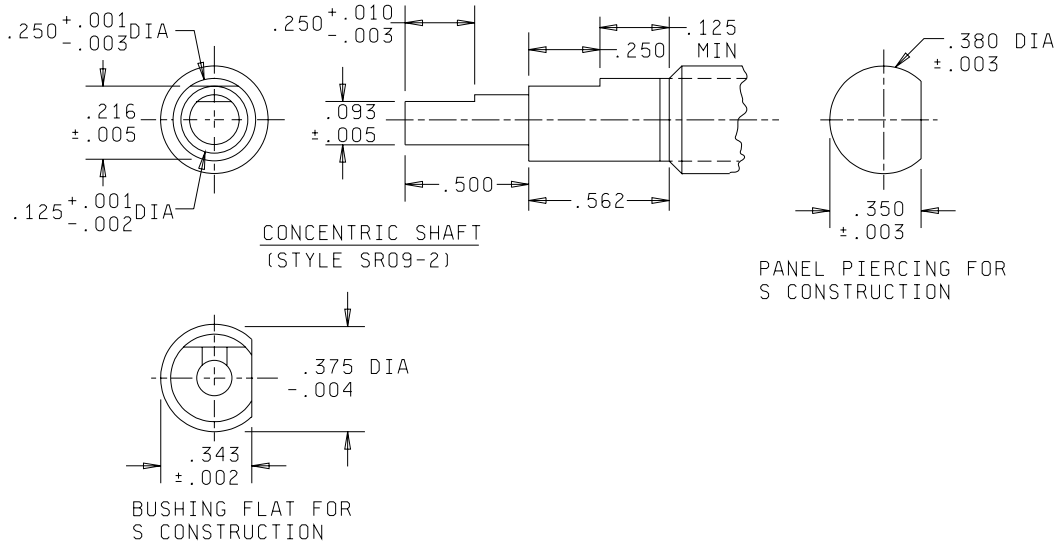
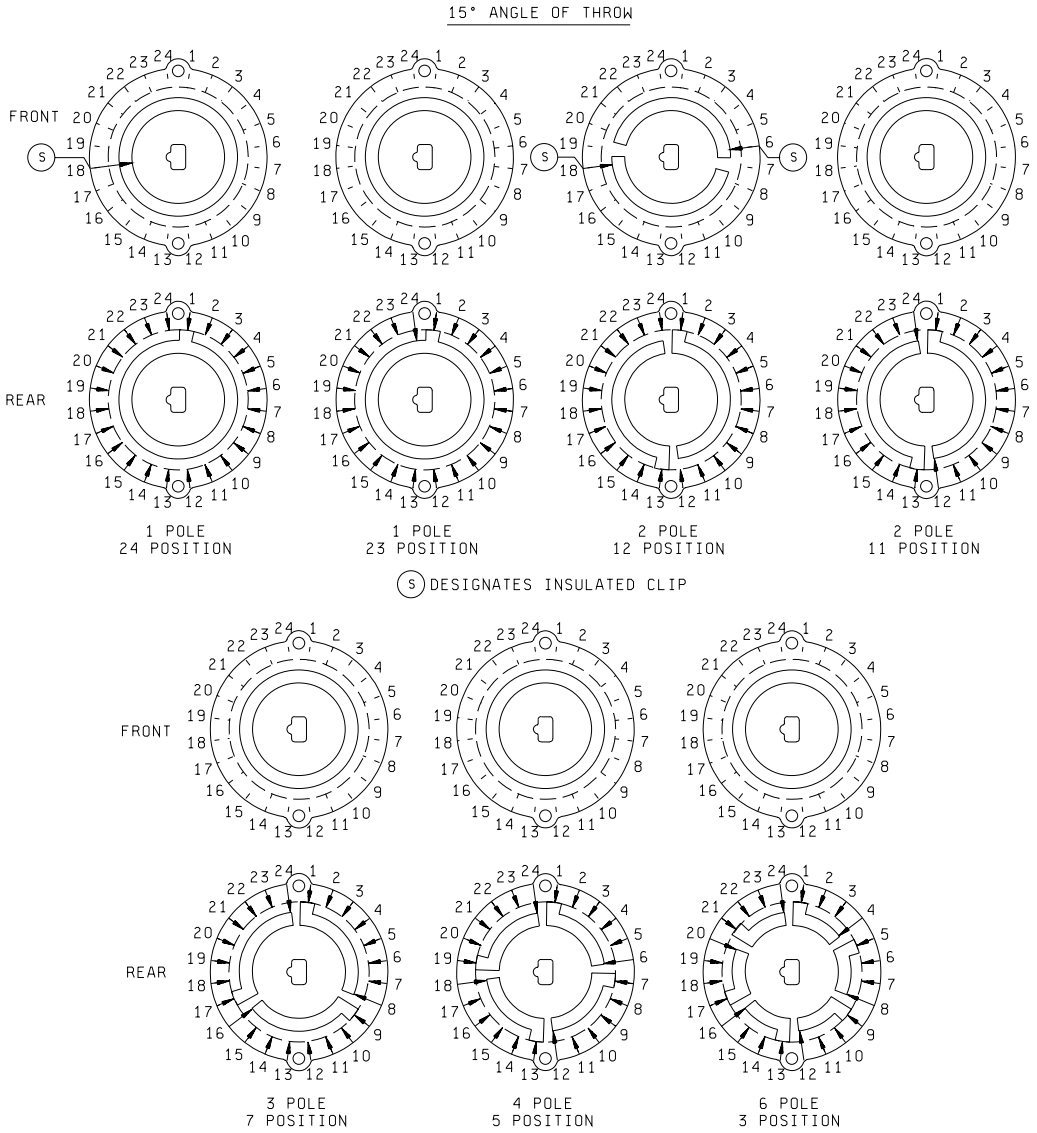


FIGURE 1. Style SR09 switch.



NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only and are based upon 1.00 inch=25.4 mm.
3. Unless otherwise specified, tolerance is ±.015 (0.38 mm).
4. The number of sections is optional.
5. Nonturn device as shown is not applicable to S construction switches.
6. Shaft-flat angle A° is the angle between a line through the center of the shaft and center of the nonturn device, and another line through the center of the shaft and perpendicular to the shaft flat.
7. Shaft shown in maximum counterclockwise position for switches with stop and with switch in position No. 1 for switches without stop.
*8. For allowable variations, see MIL-DTL-3786 for ordering data.
9. Front plate design optional provided it falls within the maximum O.D. of the section dimension referenced.

FIGURE 1. Style SR09 switch - Continued.



NOTE: On circuits with fewer positions, short clips will be omitted from clockwise end of rotation.
Example: 1 pole 22 position would have clip 23 omitted.

FIGURE 2. Circuit diagrams viewed with switch in extreme counterclockwise position.

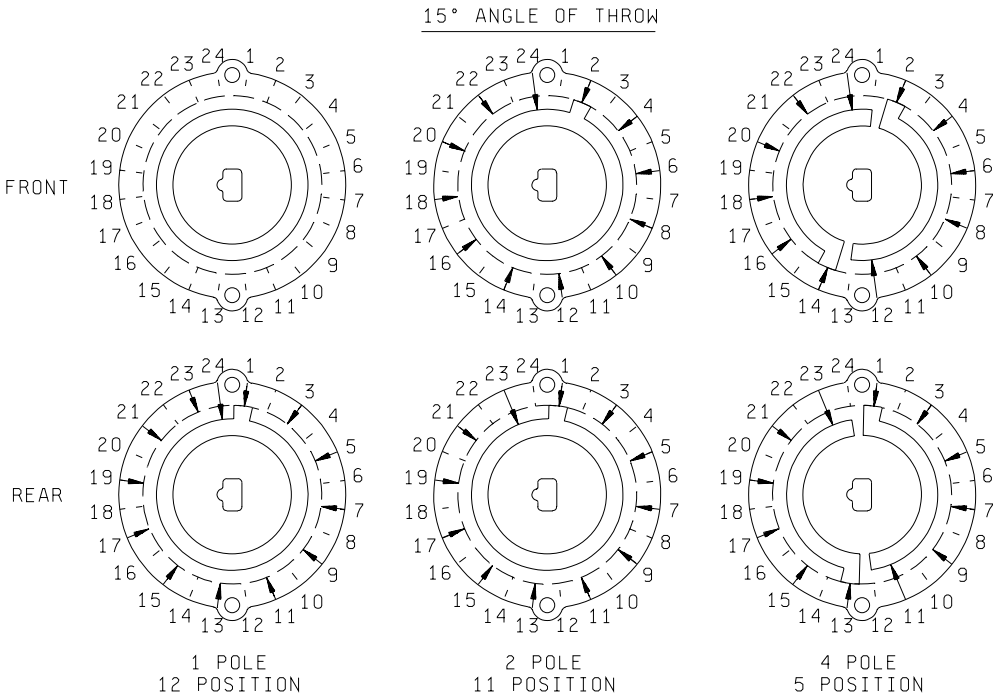


FIGURE 2. Circuit diagrams viewed with switch in extreme counterclockwise position= – Continued

REQUIREMENTS:

Dimensions and configuration: See figures 1 and 2.

Angle of throw: 15° and 30° (see table V).

Terminals: The terminals tabs shall be bent at an angle of 60° ±15° from the plane of the section. When flat terminals are required, the dimensions shall be as shown on figure 1.

Rotational torque: The minimum and maximum values of torque determined for shaft rotation shall be within the limits specified in table I.

TABLE I. Rotational-torque limits.

Temperature	Torque (lb-in)	
	Minimum	Maximum
Room	2	6
Minimum	2	8

Construction: N or S.

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

TABLE II. Electrical loads.

Environmental condition	Loads			
	Inductive (2.8 henries)		Resistive	
	Milliamperes	Volts, dc	Milliamperes	Volts, dc
At atmospheric pressure	50	28	500 250 50	28 115 V rms 300 V rms
At reduced barometric pressure	---	---	350 100	28 115 V rms

Dielectric withstanding voltage: The applicable test voltage specified in table III shall be applied between the general switch elements.

TABLE III. Dielectric-test voltages.

Altitude	Volts, rms
At atmospheric pressure	1,000
At reduced barometric pressure	400

Mounting hardware: Each switch shall be supplied with one hexagon nut in accordance with MS25082-20 or equivalent, and one internal-tooth lockwasher in accordance with MS35333-42 or equivalent.

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

Vibration grade: Symbol 1 (10 to 55 Hz).

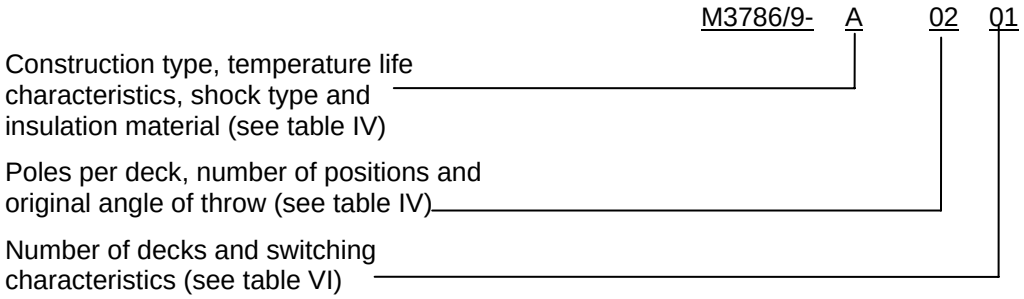
Shock type: Symbol H (high impact), Symbol M (medium impact).

Insulation material: Symbol P.

Altitude: Symbol C (70,000 feet).

Shock type: See table IV.

Part number: The military part number shall consist of M3786/9- (selected from tables IV through VI) as shown in the follow example (see note):



NOTE: Part numbers listed are for style SR09-1 switches. M3786/9-A0201 identifies a rotary switch of construction type N, temperature-life characteristic B, shock type H, and plastic insulation material; one pole per deck, two positions per pole, 15° angle of throw; one deck with nonshorting switching characteristic.

TABLE IV. Code letters for combinations of construction type, temperature-life characteristic, shock type, and insulation material.

Code letter	Construction type	Temperature-life characteristics	Shock type	Insulation material
A	N	B	H	P
B	S	"	H	"
C	N	"	M	"
D	S	"	M	"

TABLE V. Code numbers for combinations of poles per deck, number of positions per pole, and angle of throw.

Code number	Poles per deck	Number of positions	Angle of throw
01	1	2	15°
02	"	3	"
03	"	4	"
04	"	5	"
05	"	6	"
06	"	7	"
07	"	8	"
08	"	9	"
09	"	10	"
10	"	11	"
11	"	12	"
12	"	13	"
13	"	14	"
14	"	15	"
15	"	16	"
16	"	17	"
17	"	18	"
18	"	19	"
19	"	20	"
20	"	21	"
21	"	22	"
22	"	23	"
23	"	24	"
24	2	2	"
25	"	3	"
26	"	4	"
27	"	5	"
28	"	6	"
29	"	7	"
30	"	8	"
31	"	9	"
32	"	10	"
33	"	11	"
34	"	12	"
35	3	2	"
36	"	3	"
37	"	4	"
38	"	5	"
39	"	6	"
40	"	7	"
41	4	2	"
42	"	3	"

See footnote at end of table.

TABLE V. Code numbers for combinations of poles per deck, number of positions per pole, and angle of throw. - Continued.

Code number	Poles per deck	Number of positions	Angle of throw
43	"	4	"
44	"	5	"
45	6	2	"
46	6	3	"
47	1	2	30°
48	"	3	"
49	"	4	"
50	"	5	"
51	"	6	"
52	"	7	"
53	"	8	"
54	"	9	"
55	1	10	30°
56	"	11	"
57	"	12	"
58	2	2	"
59	"	3	"
60	"	4	"
61	"	5	"
62	"	6	"
63	"	7	"
64	"	8	"
65	"	9	"
66	"	10	"
67	"	11	"
68	4	2	"
69	"	3	"
70	"	4	"
71	"	5	"

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

Angle of throw	Positions
15°	24
30°	12

TABLE VI. Code numbers for combinations of number of decks and switching characteristics.

Code letter	Number of decks	First deck	Second deck	Third deck	Fourth deck	Fifth deck	Sixth deck	Seventh deck	Eighth
01	1	NS							
02	1	S							
03	2	NS	NS						
04	2	S	S						
05	2	NS	S						
06	3	NS	NS	NS					
07	3	S	S	S					
08	3	NS	NS	S					
09	3	NS	S	S					
10	4	NS	NS	NS	NS				
11	4	S	S	S	S				
12	4	NS	NS	NS	S				
13	4	NS	S	S	S				
14	5	NS	NS	S	S				
15	5	NS	NS	NS	NS	NS			
16	5	S	S	S	S	S			
17	5	NS	NS	NS	NS	S			
18	5	NS	S	S	S	S			
19	5	NS	NS	NS	S	S			
20	5	NS	NS	S	S	S			
21	6	NS	NS	NS	NS	NS	NS		
22	6	S	S	S	S	S	S		
23	6	NS	NS	NS	NS	NS	S		
24	6	NS	NS	NS	NS	S	S		
25	6	NS	NS	NS	S	S	S		
26	6	NS	NS	S	S	S	S		
27	6	NS	S	S	S	S	S		
28	7	NS	NS	NS	NS	NS	NS	NS	
29	7	S	S	S	S	S	S	S	
30	7	NS	NS	NS	NS	NS	NS	S	
31	7	NS	NS	NS	NS	NS	S	S	
32	7	NS	NS	NS	NS	S	S	S	
33	7	NS	NS	NS	S	S	S	S	
34	7	NS	NS	S	S	S	S	S	
35	7	NS	S	S	S	S	S	S	
36	8	NS	NS	NS	NS	NS	NS	NS	NS
37	8	S	S	S	S	S	S	S	S
38	8	NS	NS	NS	NS	NS	NS	NS	S
39	8	NS	NS	NS	NS	NS	NS	S	S
40	8	NS	NS	NS	NS	NS	S	S	S
41	8	NS	NS	NS	NS	S	S	S	S
42	8	NS	NS	NS	S	S	S	S	S
43	8	NS	NS	S	S	S	S	S	S
44	8	NS	S	S	S	S	S	S	S

Referenced Documents:
MIL-DTL-3786
MS25082
NASM35333

Custodians:
Army - CR
Navy - EC
Air Force - 11
DLA – CC

Preparing activity:
DLA - CC

(Project 5930-1874)

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.