

INCH-POUND

MS21027R

5 October 2011

SUPERSEDING

MS21027P

4 September 1991

## DETAIL SPECIFICATION SHEET

SWITCH, TOGGLE, POSITIVE BREAK, LEVER LOCK, MINIATURE TOGGLE  
SEALED, SOLDER LUG, DOUBLE POLE, .469 MOUNTING BUSHING

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

The requirements for acquiring the products described herein shall consist of this specification sheet and MIL-DTL-8834.

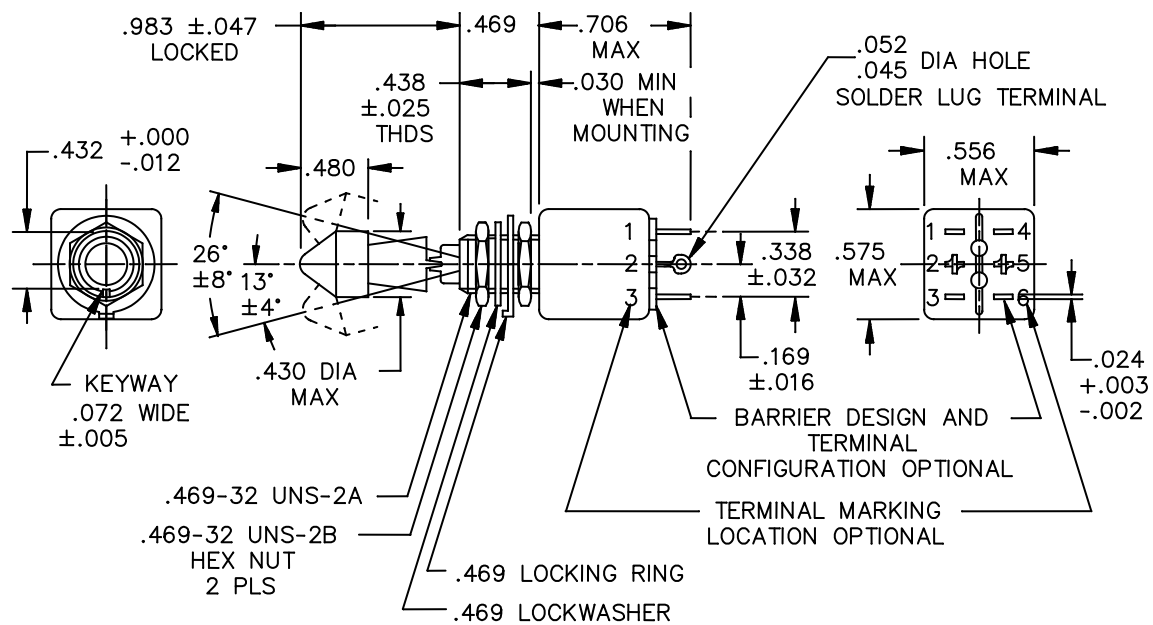
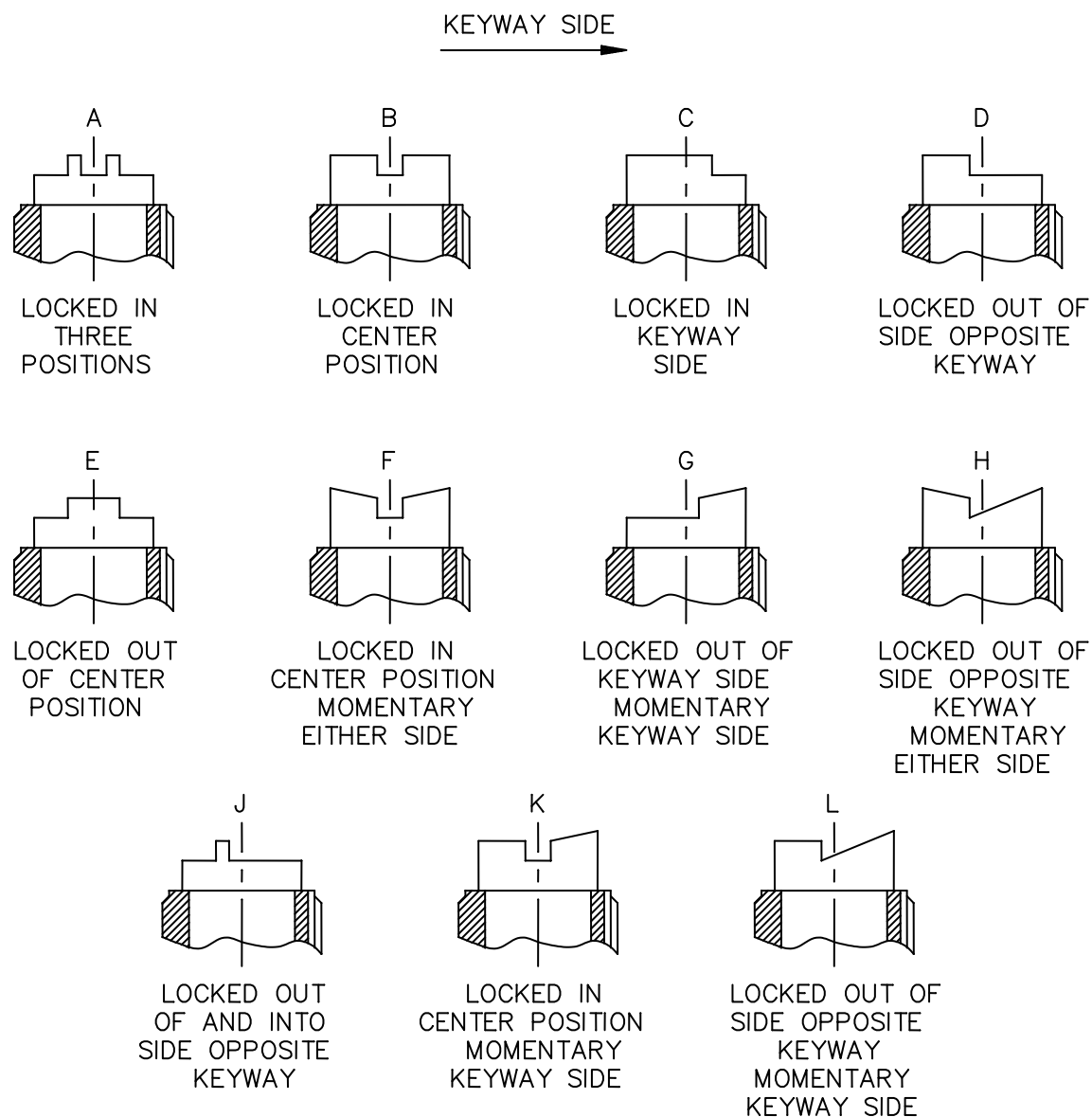


FIGURE 1. Dimensions and configuration.

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FIGURES A THROUGH L ILLUSTRATE THE LOCKING AND MOMENTARY CONFIGURATION AND NOT THE DETAIL CONSTRUCTION OF THE LOCKING DESIGN

FIGURE 1. Dimensions and configuration - Continued.

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Inches	mm	Inches	mm	Inches	mm
.002	0.05	.032	0.81	.432	10.97
.003	0.08	.045	1.14	.438	11.13
.005	0.13	.047	1.19	.469	11.91
.012	0.30	.052	1.32	.480	12.19
.016	0.41	.072	1.83	.556	14.12
.024	0.61	.169	4.29	.572	14.53
.025	0.64	.338	8.59	.706	17.93
.030	0.76	.430	10.97	.983	24.97

## NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerances are  $\pm 0.010$  (0.25 mm) on decimals and  $\pm 5^\circ$  on angles.

FIGURE 1. Dimensions and configuration - Continued.

## REQUIREMENTS:

For hardware detail specifications, see appendix of MIL-DTL-8834.

In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

Shock: Method I and method II (high impact). The switch shall be electrically and mechanically operative at the conclusion of the shock test except there can be mechanical transfer of the contact mechanism at all levels when tested in accordance with method II (high impact).

Toggle seal test: Method I for 700 and 800 series, method II for 200 and 300 series.

Part or Identifying Number (PIN) shall consist of MS number, locking combination letter and dash number.

Example PIN:

MS21027-B211: Toggle sealed, on-off-on, locked in center position.

MS21027-K281: Toggle sealed, none-off-momentary on, locked in center position.

Strength of terminals: 5 pounds normal to the mounting plane and 2 pounds in the other planes.

Altitude: 50,000 feet.

115 V ac, 60 hertz electrical endurance tests are to performed at room temperature and pressure.

Maximum weight: .0640 pound (29.0 grams).

Unlocking force:  $4 \pm 1$  pound.

Configuration of switch case housing, terminals, and barriers: Design optional providing maximum dimensions specified are not exceeded.

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TABLE I. Detail requirements.

MS dash number 1/		Locking combination	Circuit made between terminals as indicated with the toggle lever in these positions: 5/			Current capacity in amperes						Low current level switching 5 mV
						Resistive load			Inductive load			
						28 volts	115 volts		28 volts	115 volts		
							60 Hertz ac	400 Hertz ac		60 Hertz ac	400 Hertz ac	
-711	-211	A, B, D	on 2-3, 5-6	off	on 1-2, 4-5	5	2	3	1 6/	1	2	25 μA 7/
-721	-221	C, E		none	off							
-731	-231				on 1-2, 4-5							
-741	-241	J, B			off							
-771 4/	-271 4/	F, H	mom-on 2-3, 5-6	off	mom-on 1-2, 4-5							
-781 4/	-281 4/	K	none									
-811	-311	G, K, L	on 2-3, 5-6									
-821 2/ 3/	-321	K	none	on 2-3, 5-6	mom-on 1-2, 4-5							
-831 2/ 3/	-331	A, B, C, and D	on 2-3, 5-6	on 2-3, 4-5	on 1-2, 4-5							
-841 2/ 3/	-341	F, H	mom-on 2-3, 5-6	on 2-3, 4-5	mom-on 1-2, 4-5							
-851 2/ 3/	-351	G, K, L	on 2-3, 5-6	on 2-3, 4-5	mom-on 1-2, 4-5							
-871	-371	F, H	mom-on 2-3, 5-6	off	mom-on 1-2, 4-5							
-881	-381	K	none	off	mom-on 1-2, 4-5							

1/ 700 and 800 series toggle seal (water) 15 foot head; 200 and 300 series toggle seal (water) .500 inch head.

2/ Delayed action of the switch toggle lever may cause circuit to close or open before snap action mechanism trips.

3/ Dielectric withstanding voltage: 1,200 V rms at sea level (center on circuits).

4/ PIN -771, -781, -271, and -281 are inactive for new design, use -871, -881, -371, and -381.

5/ Direction of movement of internal mechanism is opposite to the direction of the toggle movement.

6/ With time constant of .020  $\pm$  .002 second.

7/ Contact resistance not to exceed 50 $\Omega$  during life, low current level switching.

8/ Nonfunctional terminals shall not be supplied.

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Referenced documents:

MIL-DTL-8834

Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Custodians:

Army - CR  
Navy - AS  
Air Force - 85  
DLA - CC

Preparing activity:

DLA - CC

(Project 5930-2011-074)

Review activities:

Army - MI  
Navy - EC  
Air Force - 99

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 <https://assist.daps.dla.mil/> .