INCH-POUND
MIL-DTL-15291/1B
6 February 2006
SUPERSEDING
MIL-S-15291/1A(SH)
22 July 1991

DETAIL SPECIFICATION SHEET

SWITCHES, ROTARY, SNAP ACTION CLASS 1SR FRONT MOUNTED, BACK CONNECTED

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-15291.

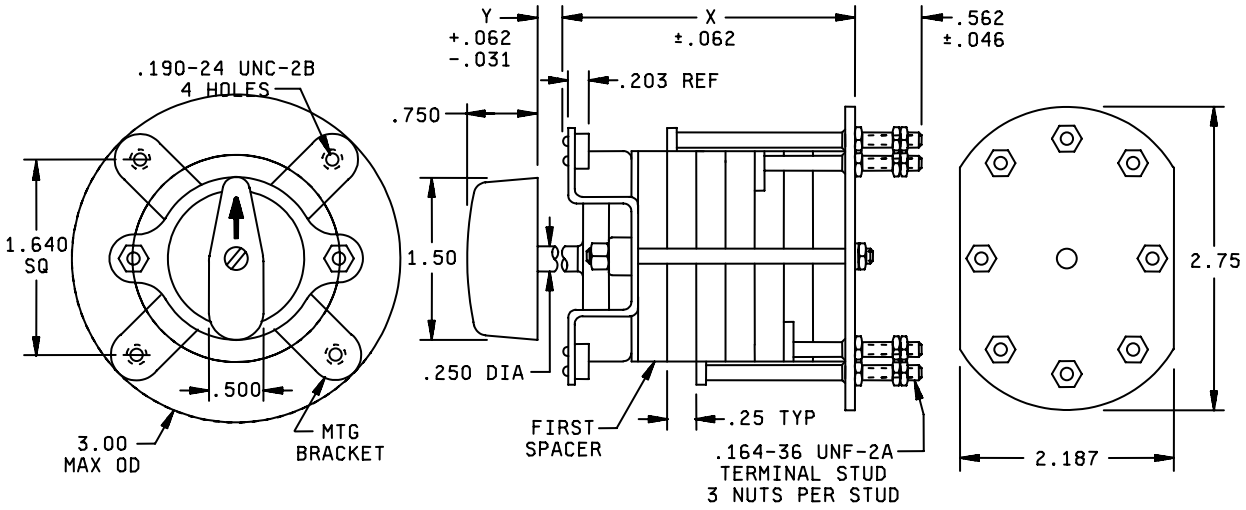


FIGURE 1. Class 1SR switch (up to 6 studs).

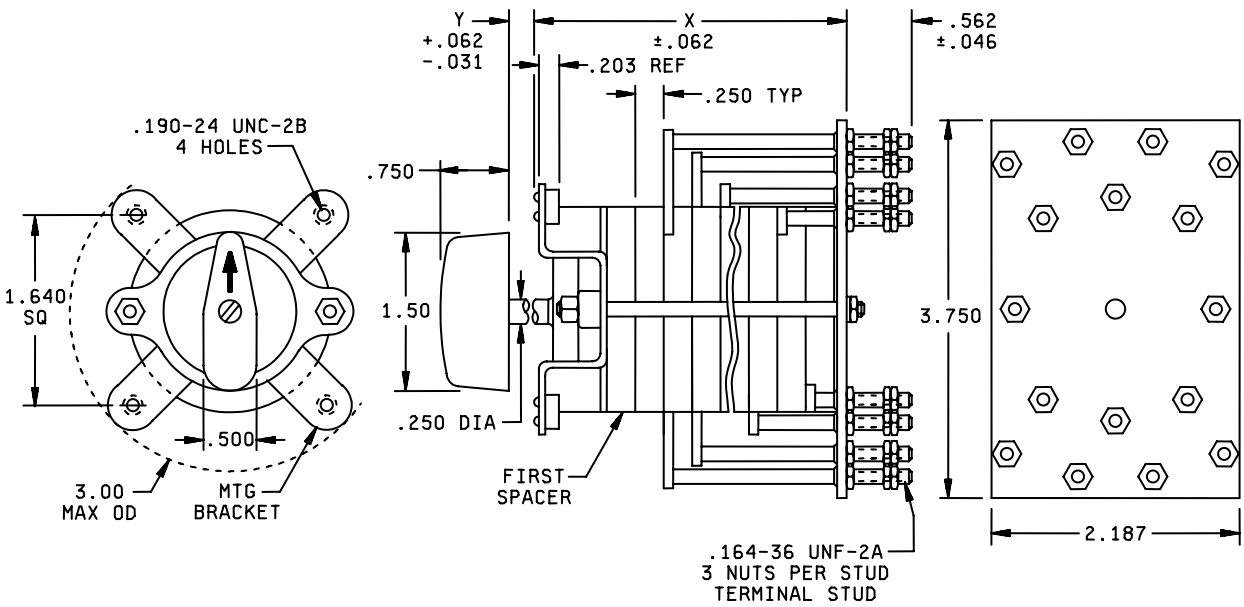


FIGURE 2. Class 1SR switch (up to 14 studs).

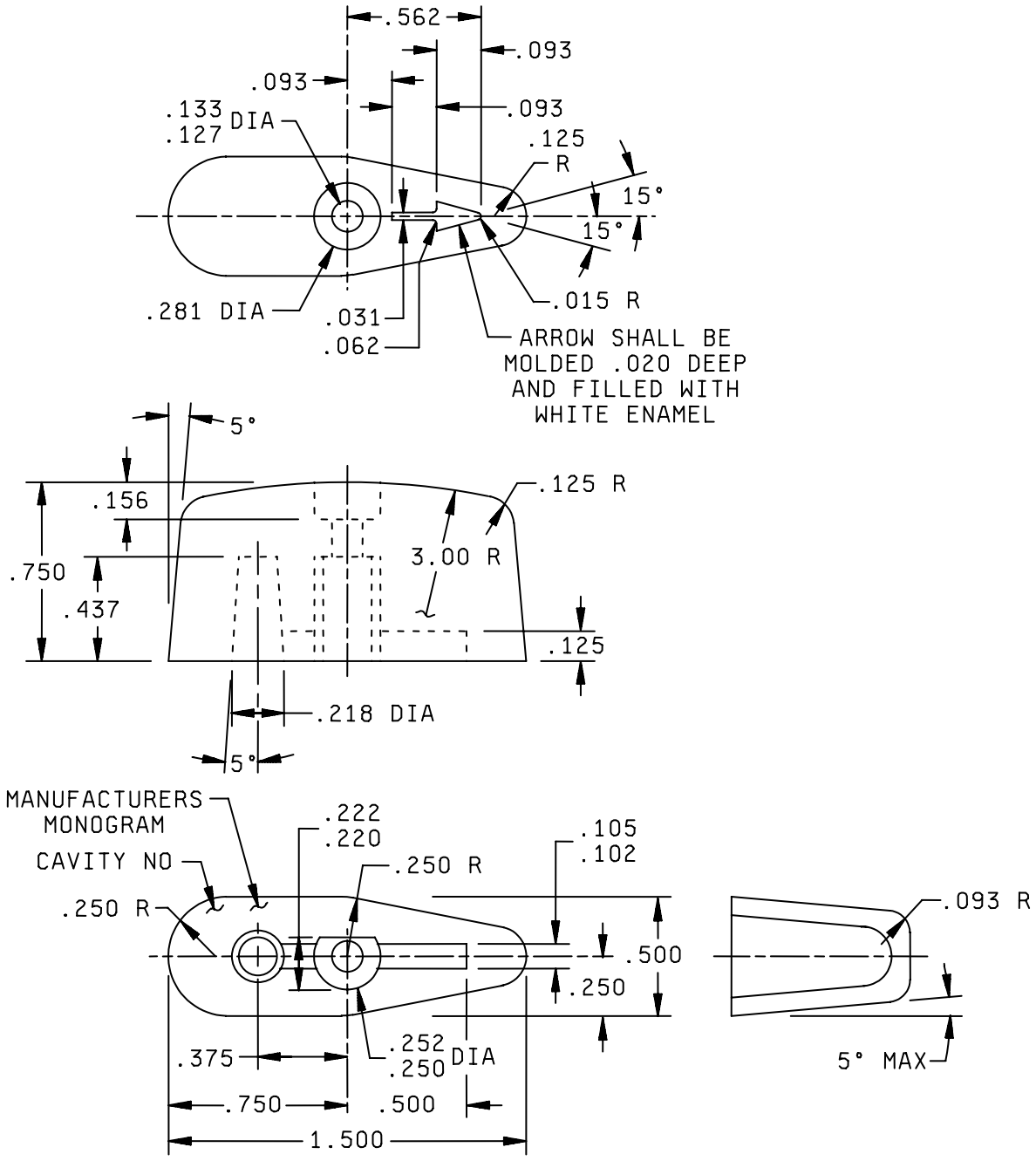
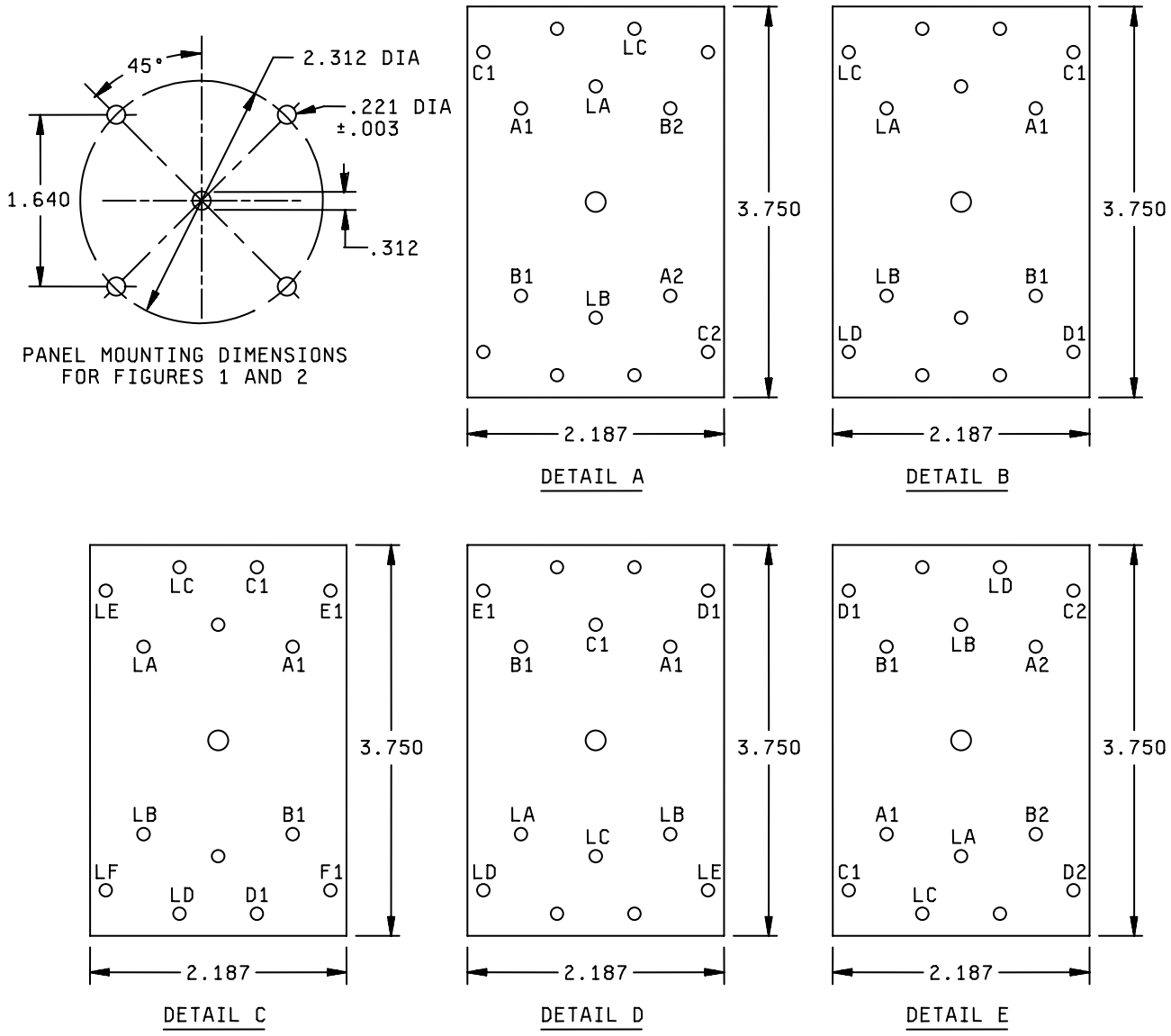


FIGURE 3. Handle.

TABLE I. Type and switching characteristics.

M15291/1 DASH NO. TYPE DESIGNATION	DETAIL REF / TORQUE IN-LBS	DIM "X" / DIM "Y"	HANDLE OR SHAFT POSITION	CIRCUIT AND SPACER CONFIGURATIONS ROTOR POSITION, SPACER LOCATIONS, TERMINAL MARKING AND LOCATIONS NO 1	NO 2	NO 3	NO 4	NO 5	NO 6	NO 7	NO 8	NO 9	NOTES
-001	FIG 1	1.687	OFF ON		B1 LB	A1 LA							
1SR2A1	4	.437	OFF ON										
-002	FIG 1	1.937	OFF ON		C1 LC	B1 LB	A1 LA						
1SR3A1	4	.437	OFF ON										
-003	FIG 2 DETAIL D	2.187	OFF ON		D1 LD	C1 LC	B1 LB	A1 LA					
1SR4A1	4	.437	OFF ON										
-004	FIG 2 DETAIL D	2.437	OFF ON		E1 LE	D1 LD	C1 LC	B1 LB	A1 LA				
1SR5A1	4	.437	OFF ON										
-005	FIG 2 DETAIL A	2.687	OFF ON 1 2		LC C2	C1 LD	B2 B1	LB	LA A2	A1			
1SR3B1	4	.437	OFF ON 1 2										
-006	FIG 2 DETAIL E	3.187	OFF ON 1 2		LD D2	D1 LC	C2 C1	LC	LB B2	B1	A2 A1	LA	
1SR4B1	4	.437	OFF ON 1 2										
-007	FIG 2 DETAIL B	2.187	OFF ON 1 2		D1 LD	C1 LC	B1 LB	A1 LA					
1SR4F1	4	.437	OFF ON 1&2										
-008	FIG 2 DETAIL C	2.687	OFF ON 1 2		F1 LF	E1 LE	D1 LD	C1 LC	B1 LB	A1 LA			
1SR6F1	4	.437	OFF ON 1&2										



NOTE: Viewed from the rear of the switch.

FIGURE 4. Mounting dimensions and terminal stud locations.

REQUIREMENTS:

Applicable specification: MIL-DTL-15291.

Dimensions and mounting: See figures 1 through 4.

Electrical circuits: See table I.

Angle of throw: 90 degrees.

Switching action: Snap action, reciprocating.

Electrical and endurance ratings: See table II.

Stop strength (applicable to switches with stops): 30 inch-pounds.

Vibration: 50 Hz, MIL-STD-167-1

Shock: High impact, MIL-S-901

Overload: 600 percent of ac rating, 50 make and break operations.

Contact resistance: 0.02 ohms maximum.

Dielectric withstanding voltage: 1,250 V rms.

Insulation resistance: 200 megohms minimum.

Temperature rise: 50°C maximum.

Mounting screws: .190-24UNC-2A (4) length and headstyle to suit application. Screws not furnished.

TABLE II. Electrical and endurance ratings.

Tests	Current (amperes)	Voltage (volts)	Electrical operations (number of operations)	Test rate (operations per minute)	De-energized operations (number of operations)
Alternating current (rms)	10	125	30,000	30	20,000
Direct current	10	120	20,000	15	---

Terminal marking: Terminal markings shown in table I locate terminals as viewed from the front of the switches.

Switches not covered by specification sheets: Switches which are fabricated from standard parts, as used in qualified switches, but which do not comply with switches detailed herein with respect to circuit characteristics, switching action, mounting arrangement, and handle details may be acquired under this specification from contractors having qualification approval under this specification.

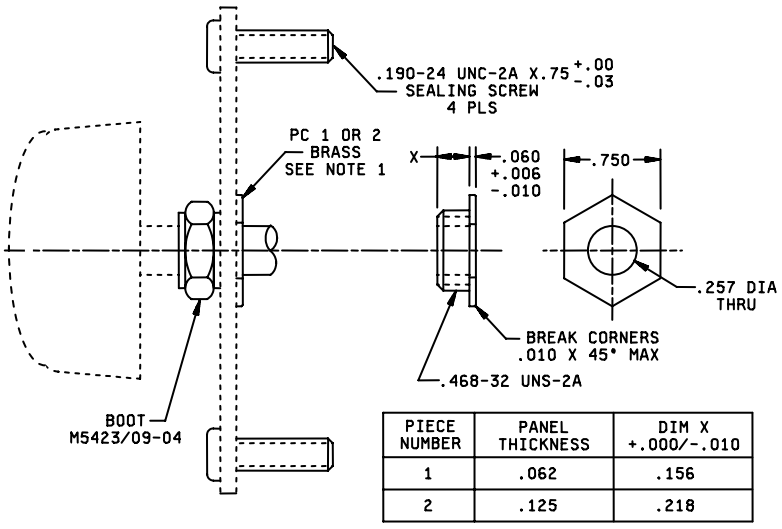
Extended ratings: Switches detailed herein have been tested and found satisfactory at the extended rating listed in table III. Reduced life expectancy must be anticipated for switches used at these increased voltage or current levels. Tests under the conditions of table III are not required for qualification acceptance and they are not repeated routinely as for maintenance of qualification. Supplemental evaluations and tests applicable to particular circuit requirements are recommended.

TABLE III. Extended ratings.

Switching characteristics	AC - 60 or 400 Hertz											
	125 volts				250 volts				500 volts			
	Resistive or lamp load		Inductive load 0.75 pF		Resistive or lamp load		Inductive load 0.75 pF		Resistive or lamp load		Inductive load 0.75 pF	
	Amp	Operations	Amp	Operations	Amp	Operations	Amp	Operations	Amp	Operations	Amp	Operations
All	10	30,000	10	30,000	---	---	---	---	---	---	---	---
F 1/	15	10,000	15	10,000	10	10.000	10	10,000	---	---	---	---
A, B 2/	15	10,000	15	10,000	10	10,000	10	10,000	5	10,000	5	10,000
A, B	15	10,000	15	10,000	10	10,000	15	10,000	10	10,000	10	10,000
Switching characteristics	DC											
	120 volts				250 volts				350 volts			
	Resistive or lamp load		Inductive, load 3/		Resistive or lamp load		Inductive, load 3/		Resistive or lamp load		Inductive, load 3/	
	Amp	Operations	Amp	Operations	Amp	Operations	Amp	Operations	Amp	Operations	Amp	Operations
F	10	10,000	10	10,000	5	10,000	5	10,000	2	10,000	2	10,000
F 2/	---	---	---	---	---	---	---	---	1	10,000	1	10,000
A, B 2/	10	10,000	10	10,000	5	10,000	5	10,000	2	10,000	2	10,000
A, B	10	20,000	15	10,000	---	---	---	---	---	---	---	---

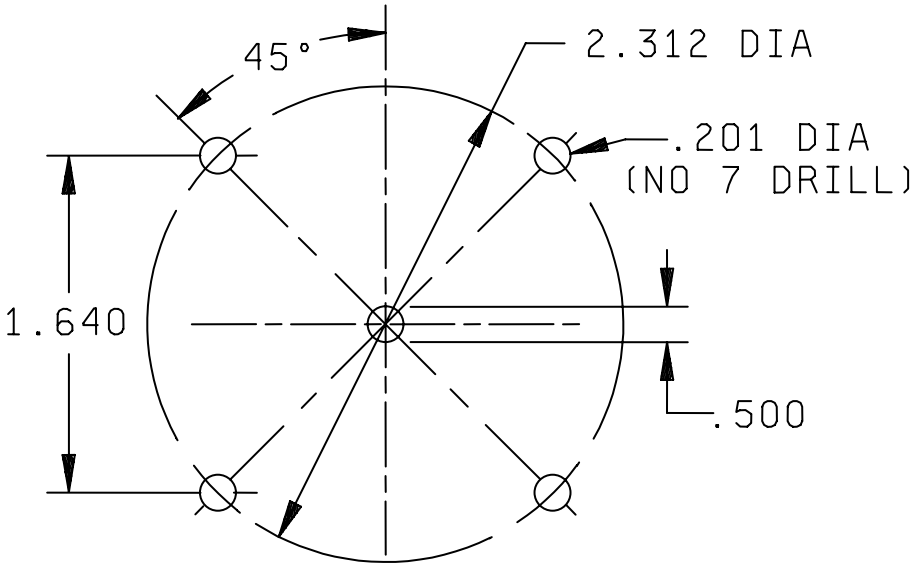
1/ Switching characteristic F is not rated for 500 volts in class 1SR.
2/ Single pole break - all other ratings are based on breaking both sides of the line in accordance with figures 1 and 2 of MIL-DTL-15291.
3/ 0.24 henry for inductive current.

Dripproof mounting: Switches listed in table I as having four-polar mounting and "Y" dimensions not less than 7/16 inch can be mounted with a kit (see figure 5), to affect a dripproof seal between switch and mounting panel. Panel drilling must comply with figure 6. Kits not supplied unless specified (see 6.2 of MIL-DTL-15291.)



PIECE NUMBER	PANEL THICKNESS	DIM X +.000/-.010
1	.062	.156
2	.125	.218

FIGURE 5. Kit for panel seal mounting.



NOTE: Do not chamfer mounting holes. Breaking 1/64 maximum permissible.

FIGURE 6. Panel drilling for mounting kit.

Application and Acquisition Guide: PIN and type designation cross reference shall be as shown on table IV.

TABLE IV. Application and acquisition guide.

M15291/1 dash no.	Type designation	For new or existing design	For replacement	Circuit configuration
-001	1SR2A1	X		A (off-on-off-on)
-002	1SR3A1	X		A (off-on-off-on)
-003	1SR4A1	X		A (off-on-off-on)
-004	1SR5A1	---		A (off-on-off-on)
-005	1SR3B1	---		B (off-on-off-on 2)
-006	1SR4B1	---		B (off-on 1-off-on 2)
-007	1SR4F1	---		F (off-on 1-on 1 and 2-on 2)
-008	1SR6F1	---		F (off-on 1-on 1 and 2-on 2)

Referenced Documents:
MIL-DTL-15291
MIL-S-901
MIL-STD-167-1

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:
Navy - SH
DLA - CC

Preparing activity:
DLA - CC

(Project 5930-1897)

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 http://assist.daps.dla.mil/ .