

INCH-POUND

MIL-S-15291/12B(SH)

22 July 1991

SUPERCEDING

MIL-S-15291/12A(SH)

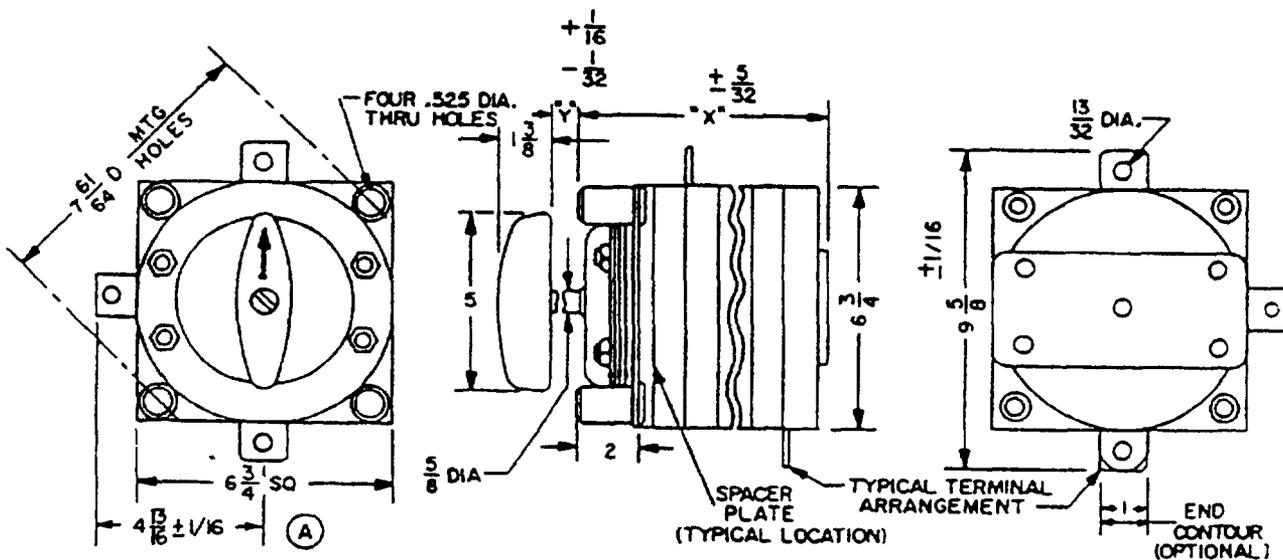
16 June 1986

MILITARY SPECIFICATION SHEET

SWITCHES, ROTARY, SNAP ACTION CLASS 20SR FRONT MOUNTED, SIDE CONNECTED

*This specification is approved for use by the Naval Sea Systems Command, Department of the Navy, and is available for use by all Departments and Agencies of the Department of Defense.*

The requirements for acquiring the product described herein shall consist of this specification sheet and the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-S-15291.



NOTES

- 1 Dimensions are in inches
- 2 Unless otherwise specified, tolerance is plus or minus 0.015

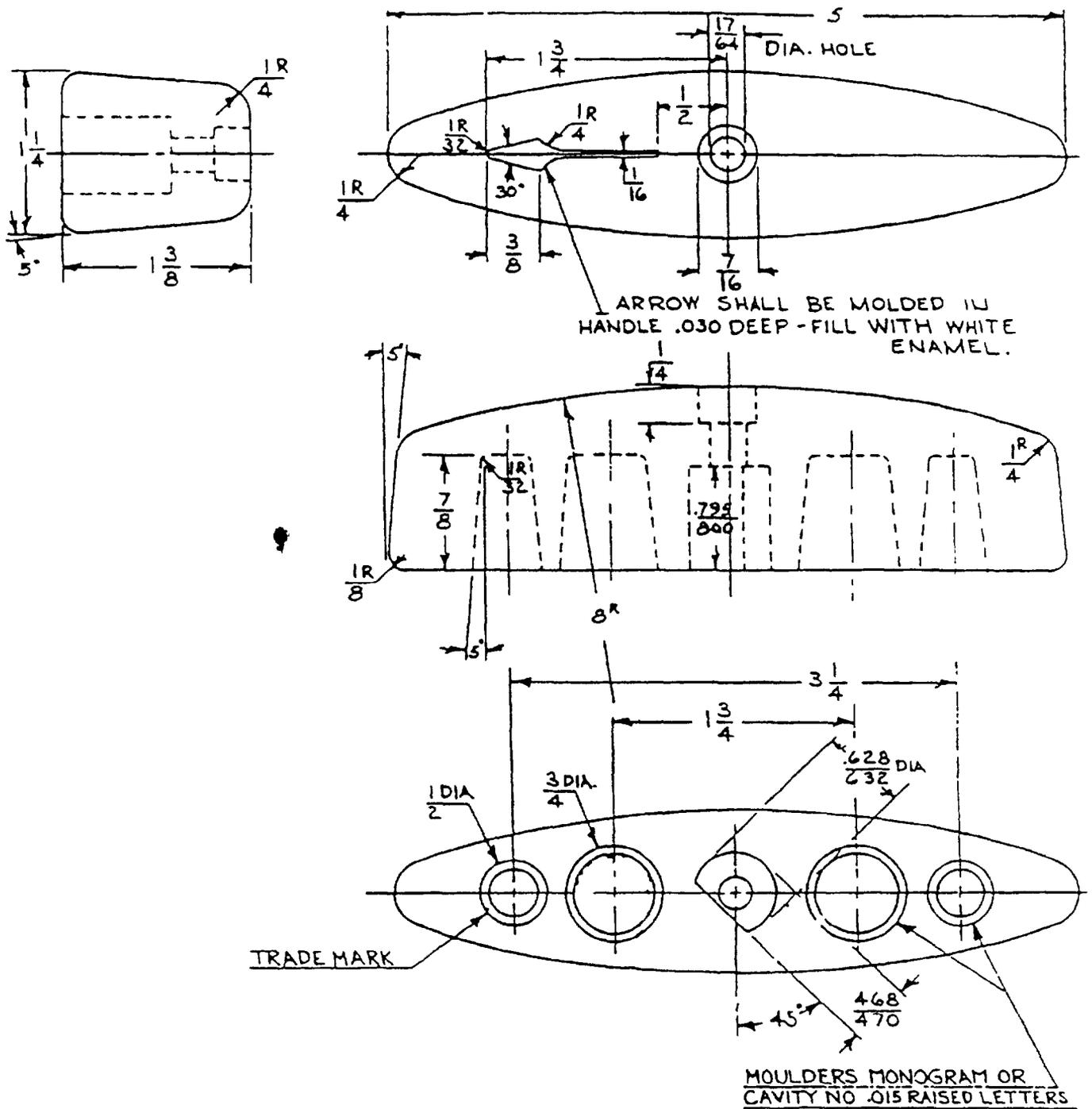
FIGURE 1 Class 20SR switch

AMSC N/A

FSC 5930

DISTRIBUTION STATEMENT A. Approved for public release, distribution is unlimited.

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PIN M15291/12-100

FIGURE 2 Handle.

TABLE I. Type and switching characteristics

MIL-STD-12 Dash No Type design	Determ inal Torque in. lbs	Dim "x" Dim "y"	Handle or shaft	Circuit and spacer configuration rotor position, spacer locations, terminal marking and locations									Notes
				No 1	No 2	No 3	No 4	No 5	No 5	No 7	No 8	No 9	
-001	Fig 1 4 13 7 16	4 13 7 16	OFF ON OFF										
20SR2A2	Fig 1 72	5 11 7 16	OFF ON OFF										
-002	Fig 1 72	5 11 7 16	OFF ON OFF										
20SR3A2	Fig 1 72	5 11 7 16	OFF ON OFF										
-003	Fig 1 72	5 11 7 16	OFF ON OFF										
20SR2B2	Fig 1 72	5 11 7 16	OFF ON OFF										
-004	Fig 1 72	5 11 7 16	OFF ON OFF										
20SR3B2	Fig 1 72	5 11 7 16	OFF ON OFF										
-005	Fig 1 72	5 11 7 16	OFF ON OFF										
20SR2E2	Fig 1 72	5 11 7 16	OFF ON OFF										
-006	Fig 1 72	5 11 7 16	OFF ON OFF										
20SR3E2	Fig 1 72	5 11 7 16	OFF ON OFF										
-007	Fig 1 72	5 11 7 16	OFF ON OFF										
20SR4F2	Fig 1 72	5 11 7 16	OFF ON OFF										
-008	Fig 1 72	5 11 7 16	OFF ON OFF										
20SR6F2	Fig 1 72	5 11 7 16	OFF ON OFF										
-009	Fig 1 72	5 11 7 16	OFF ON OFF										
20SR2S2	Fig 1 72	5 11 7 16	OFF ON OFF										
-010	Fig 1 72	5 11 7 16	OFF ON OFF										
20SR3S2	Fig 1 72	5 11 7 16	OFF ON OFF										

TABLE I Type and switching characteristics

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**REQUIREMENTS:**

Applicable specification:	MIL-S-15291
Dimensions and mounting:	See figure 1
Switching characteristics:	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):	100 inch-pounds
Vibration:	50 Hz, MIL-STD-167-1
Shock (high impact):	High impact, MIL-S-901
Insulation (spacers and decks):	Glass alkyd, MAI-60 (or MAI-30) in accordance with MIL-M-14
Spacer plate:	MAI-60, MAI-30, or CFI-10 in accordance with MIL-M-14
Contact resistance:	1.5 milliohms maximum
Dielectric withstanding voltage:	2,000 Vrms
Insulation resistance:	200 megohms minimum
Contact material:	Rotor, phosphor bronze — Stationary contact, copper
Mounting bolts	(4) 1/2 diameter, length, and headstyle to suit application. Bolts 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)	200	500	6,000	8	4,000
Direct current	200	250	4,000	3	-

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Terminal marking:

Terminal markings shown in table I locate terminals as viewed from the front of the switch (handle end) Markings shall be stamped in rear surfaces of terminals.

**GENERAL INFORMATION:**

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 ratings 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 character-istics		AC 60 or 400 Hz													
		125 volts		250 volts		500 volts		250 volts		350 volts					
		Resistive or lamp load	Inductive load 0.75 p.f.	Resistive or lamp load	Inductive load 0.75 p.f.	Resistive or lamp load	Inductive load 0.75 p.f.	Resistive or lamp load	Inductive load 0.75 p.f.	Resistive or lamp load	Inductive load 0.75 p.f.				
All	Amp. Operations	200	6,000	200	6,000	200	6,000	200	6,000	200	6,000	200	6,000	200	6,000
	Amp. Operations	200	6,000	200	6,000	200	6,000	200	6,000	200	6,000	200	6,000	200	6,000
All		DC													
		120 volts		250 volts		250 volts		350 volts		350 volts					
All	Resistive or lamp load	200	4,000	200	4,000	200	4,000	200	4,000	200	4,000	200	4,000	200	4,000
	Amp. Operations	200	4,000	200	4,000	200	4,000	200	4,000	200	4,000	200	4,000	200	4,000

<sup>1</sup>0.025 henry for inductive circuit

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**APPLICATION AND  
ACQUISITION GUIDE:**

PIN and type designation cross reference shall be as shown in table IV

TABLE IV. *Application and acquisition guide.*

M15291/12 dash No.	Type designation	For new or existing design	For re- placement	Circuit configuration
-001	20SR2A2	X		A (off-on-off-on)
-002	20SR3A2	X		A (off-on-off-on)
-003	20SR2B2	X		B (off-on-1-off-on 2)
-004	20SR3B2	X		B (off-on-1-off-on 2)
-005	20SR2E2	X		E (off-on-1-on 2-on 3)
-006	20SR3E2	X		E (off-on-1-on 2-on 3)
-007	20SR4F2	X		F (off-on 1-on 1 & 2-on 2)
-008	20SR6F2	X		F (off-on 1-on 1 & 2-on 2)
-009	20SR2S2	X		S (on 1-on 2-off-off)
-010	20SR3S2	X		S (on 1-on 2-off-off)

Revision letters are not used to denote changes due to the extensiveness of the changes.

Preparing activity:  
Navy - SH  
(Project 5930-N663-13)