

## SERIES 5000 MINIATURE ROTARY TAP SWITCHES (FIGS. A AND B)

Light commercial detent switch. Available with 1 to 10 decks, one pole per deck. Enclosed rotary design with two to ten positions per deck, 36° indexing. Stops standard on positions two to nine; ten positions continuous rotation unless otherwise specified. Available in shorting or non-shorting wiring contacts. Base is molded melamine per MIL-M-14, Type CMG. Detent housing, deck separators, and end plate are molded phenolic per MIL-M-14, Type CFG. Rotor contact silver-plated phosphor bronze; lead-tin plated brass terminals; silver-plated brass stator contacts and common plate. Single deck cover, bushings and nuts are cadmium-plated brass. Other metal parts are stainless steel, including passivated shaft. Rotor mounting plate is nylon fabric based, laminated phenolic per MIL-P-15047, Type NPG. Switches of five decks or more have studs extending 1/4" at rear to permit double end mounting to eliminate twisting. Single hole mounting with 3/32 NEF-2 thread with keyway and hex nut. Flatted type shaft. **Rating:** Breaks 1 amp at 115 v. AC resistive; carries 5 amps. **Contact Resistance:** .003 typical for a new switch. **Insulation Resistance:** In excess of 30,000 megohms. **Life Expectancy:** 100,000 operations normally. **Size:** 1/2" max. dia. Threaded to fit panels up to 1/8" thick. Shaft, .310" long. **When Ordering:** Specify number of decks, number of positions and shorting or non-shorting type. See ordering information below.

No. of Decks	Positions Per Deck									
	2	3	4	5	6	7	8	9	10	
1*	\$1.60	\$1.65	\$1.70	\$1.75	\$1.80	\$1.85	\$1.90	\$1.95	\$2.00	
2†	3.60	3.70	3.80	3.90	4.00	4.10	4.20	4.30	4.40	
3‡	4.40	4.55	4.70	4.85	5.00	5.15	5.30	5.45	5.60	
4§	5.15	5.35	5.55	5.75	5.95	6.15	6.35	6.55	6.75	
5¶	5.95	6.20	6.45	6.70	6.95	7.20	7.45	7.70	7.95	
6*	6.85	7.25	7.65	8.05	8.45	8.85	9.25	9.65	10.05	
7*	7.75	8.20	8.65	9.10	9.55	10.00	10.45	10.90	11.35	
8*	8.65	9.15	9.65	10.15	10.65	11.15	11.65	12.15	12.65	
9*	9.60	10.15	10.70	11.25	11.80	12.35	12.90	13.45	14.00	
10†	10.55	11.15	11.75	12.35	12.95	13.55	14.15	14.75	15.35	

Depth back of panel: \*.047", †.125", ‡.166", §.206", ¶.247", \*.287", †.328", ‡.369", §.410", ¶.450".

## SERIES 24 MINIATURE TAP SWITCHES (FIGS. C, D)

Fully enclosed for high reliability in military and commercial uses. Accurate indexing with precision detent. One pole per deck, 1 to 10 decks; 2 to 9 positions with stop, or 10 positions continuous rotation; shorting or non-shorting; 36° indexing. Rated to break 1 amp, 115 v. AC resistive; carry 5 amps. Keyed bushing threaded 3/32", 1/2" O.D., solder terminals; 1/8" lg. flatted shaft. Studs, of units 5 decks or more, extend 1/4" at rear for double-ended mounting. Molded melamine and phenolic housing; studs, shaft and end plates are 303 stainless steel. Deck cover, bushings and brass nuts, .0003"-.0005" cadmium plated. Heavy silver-plated contacts. Meets many MIL tests. With mounting nut.

No. of Decks	Positions Per Deck									
	2	3	4	5	6	7	8	9	10	
1*	\$2.90	\$3.00	\$3.10	\$3.25	\$3.35	\$3.45	\$3.55	\$3.65	\$3.80	
2†	4.30	4.40	4.50	4.60	4.75	4.85	4.95	5.05	5.15	
3‡	5.00	5.15	5.30	5.45	5.65	5.80	5.95	6.15	6.30	
4§	5.70	5.90	6.10	6.30	6.55	6.80	7.05	7.30	7.55	
5¶	6.40	6.65	6.90	7.15	7.45	7.75	8.05	8.35	8.65	
6*	7.15	7.45	7.75	8.05	8.40	8.75	9.10	9.45	9.80	
7*	7.95	8.30	8.65	9.00	9.40	9.80	10.20	10.60	11.00	
8*	8.75	9.15	9.55	9.95	10.40	10.85	11.30	11.75	12.20	
9*	9.65	10.10	10.55	11.00	11.50	12.00	12.50	13.00	13.50	
10†	10.55	11.05	11.55	12.05	12.60	13.15	13.70	14.25	14.80	

Depth back of panel: \*.058", †.139", ‡.177", §.214", ¶.252", \*.289", †.327", ‡.364", §.406", ¶.443", \*.481".

## SERIES 24-778

### PRINTED CIRCUIT SWITCH (FIG. D)

Identical to single deck Series 24 switch, except has bayonet type terminals for printed circuit use. Supplied with 10 mounting terminals. Number of positions determined by stops. Specify number of positions when ordering. Net Each..... \$4.30

## SERIES 24

### SPRING RETURN TAP SWITCHES (FIG. E)

Spring return rotary, same as Series 24, except gives momentary contact on one or two positions. When on momentary contact position, rotor returns to the adjacent detent position on releasing knob. For shorting contacts, add suffix S to number when ordering.

Contact Terminal No.*	1 Deck				2 Decks		3 Decks		
	9	10	1	2	Number	Net Each	Number	Net Each	
M	D	M	D	24101	\$4.75	24102	\$5.25	24103	\$6.10
M	D	D	D	24501-5	5.25	24502-5	5.75	24503-5	6.60
M	D	D	D	24501-4	5.00	24502-4	5.50	24503-4	6.35
M	D	D	D	24501-3	4.75	24502-3	5.25	24503-3	6.10
M	D	D	D	24501-2	4.50	24502-2	5.00	24503-2	5.85
M	D	D	D	24401-5	5.25	24402-5	5.75	24403-5	6.60
M	D	D	D	24401-4	5.00	24402-4	5.50	24403-4	6.35
M	D	D	D	24401-3	4.75	24402-3	5.25	24403-3	6.10
M	D	D	D	24401-2	4.50	24402-2	5.00	24403-2	5.85

\*D indicates detent position with maintained contact; M indicates momentary position which returns to the adjacent detent position when knob is released.

## SERIES 24800 MIL SWITCHES (FIG. C)

Identical to Series 24 in construction, ratings and finishes except nickel-plated bushing and Teflon\* or equivalent insulation on through bolts. Single deck switches made per multi-deck construction. Specifically engineered to meet MIL-S-3786A-SR04 and MS-16109D specifications. Switches ordered to MIL-S-3786A are furnished with integral non-turn device, one mounting nut and internal toothed lockwasher. Switches ordered to MS-16109D are supplied to that specification. **When Ordering:** Be sure to state which specification is applicable since marking differs. Specify number of decks, number of positions and shorting or non-shorting type. See ordering information below.

No. of Decks	Positions Per Deck									
	2	3	4	5	6	7	8	9	10	
1*	\$5.20	\$5.35	\$5.45	\$5.60	\$5.70	\$5.85	\$5.95	\$6.05	\$6.20	
2†	6.05	6.15	6.25	6.35	6.50	6.65	6.75	6.85	7.00	
3‡	6.85	7.00	7.15	7.35	7.55	7.70	7.85	8.10	8.25	
4§	7.60	7.85	8.05	8.30	8.55	8.85	9.10	9.40	9.65	
5¶	8.40	8.70	8.95	9.25	9.55	9.90	10.25	10.55	10.90	
6*	9.25	9.60	9.90	10.25	10.65	11.00	11.40	11.80	12.20	
7*	10.15	10.55	10.95	11.30	11.75	12.20	12.65	13.10	13.50	
8*	11.05	11.50	11.95	12.40	12.90	13.35	13.85	14.35	14.85	
9*	12.10	12.55	13.05	13.55	14.10	14.65	15.20	15.75	16.30	
10†	13.10	13.65	14.20	14.75	15.35	15.95	16.55	17.15	17.75	

Depth back of panel: \*.969", †.1.39", ‡.1.77", §.2.14", ¶.2.52", \*.2.89", †.3.27", ‡.3.64", §.4.06", ¶.4.43", \*.4.81".

## SERIES 45 MIDGET SWITCHES (FIG. F)

Single deck, single pole enclosed switch offers 2-6 positions (stops standard on two to five positions; continuous rotation, six positions unless otherwise specified), 60° indexing. Cadmium plated brass housing and bushing. Stainless steel shaft with flat opposite contact point. Lead-tin plated brass, solder-type terminals; silver-plated phosphor bronze rotor contact; silver-plated brass stator contacts. Common terminal and plate gold flash over silver-plated brass. Base molded melamine per MIL-M-14, Type CMG. **Rated:** To break 1 amp at 115 v. AC resistive; carries 5 amps. **Contact Resistance:** .004 ohm approx. **Initial Life Expectancy:** 100,000 cycles. **When Ordering:** Add suffix S to number for shorting type. **Size:** 1.41" l, overall x 0.64" O.D.; 0.76" d. behind panel. Threaded 3/32 N x .25" long.

No.	No. Positions	Net Ea.	No.	No. Positions	Net Ea.
45001-2	2	\$6.00	45001-5	5	\$6.30
45001-3	3	6.10	45001-6	6	6.40
45001-4	4	6.20			

## SERIES 19 U/L POWER TAP SWITCHES (FIG. H)

U/L Listed. Single pole, single deck; 2-11 positions plus common; 30° indexing, non-shorting only; built-in stops. Faston or solder terminals standard. Silver alloy rotor and stator contacts. Silver-plated brass detent and terminals. Mineral-filled phenolic, per MIL-M-14E, Type MFH, insulating material. **Rating:** 15 amps, 125 v. AC resistive. **Contact Resistance:** .010 ohm, new switch. **Insul. Resist.:** 100,000 megs between mutually insulated parts. **Breakdown:** 3500 v. AC, between insulated parts. **Torque:** 22 in.-oz. **Contact Force:** 12 oz. **Life:** Over 50,000 cycles. **To Order:** For Faston terminals use prefix 19101- and specify number of positions; for solder terminals use prefix 19001- and specify number of positions. Add suffix UL to indicate U/L Listed type is desired.

No. Pos.	2	3	4	5	6	7	8	9*
Net Each	\$2.80	\$2.90	\$3.00	\$3.10	\$3.20	\$3.30	\$3.40	\$3.50

\*Add 10c for 10-position. \*Add 20c for 11-position.

## CONCENTRIC SHAFT SWITCHES (FIG. G)

Series 6: Similar to Series 5000 but cuts panel space in half, placing two switches in space normally occupied by one. Available with from one to three decks per shaft (total of six decks) with two to ten positions per deck. Shorting or non-shorting contacts. **Series 36:** Similar to Series 6 except that construction, materials and detent action are the same as Series 24 Tap Switch. Available with one to three decks per shaft (total of six decks) and two to ten positions per deck. **Write for prices.**

## ORDERING INFORMATION ON ROTARY TAP SWITCHES

When ordering Series 5000, Series 24800 and Series 24 assemblies proceed as follows: **Series 5000:** Prefix is 500 for all units; add the number of decks and positions per deck desired to the prefix (i. e. 5002-3 denotes a Series 5000 switch assembly with two decks and three positions per deck). **Series 24800:** Prefix is 2480 for all units; add number of decks and positions (24801-2 for Series 24800 assembly with one deck and two positions per deck). **Series 24:** Prefix is 2400 for all units; add the number of decks and positions (i. e., 24002-3 denotes a Series 24 assembly with two decks and three positions per deck. To designate shorting type, add suffix S on all types. **NOTE:** All prices are Net Each for 1-49. In lots of 50-99, deduct 25%; for lots of 100 or more, write for OEM quantity pricing.





# Rotary Tap Switches

## MINIATURE ROTARY TAP SWITCHES (RUGGED PRECISION DETENT)

### SERIES 42—36° INDEXING (FIG. A)

High performance enclosed rotary tap switch designed to meet electrical, mechanical and environmental requirements of MIL-S-3786A/SR04 and MS16109D. Rated to make or break 1 amp at 115 v. AC resistive or carry 10 amps. Available with one to 12 decks, one or two poles per deck, 2 to 10 positions per deck, with shorting or non-shorting contacts. Insulating materials are molded thermosetting plastic per MIL-M-14. Terminals are lead-tin plated, fused brass. Silver alloy rotor contacts, silver-plated brass base contacts. Mounting bushing and nuts cadmium plated brass with yellow chromate per QQ-P-416, Class 2, Type II. Switches with six decks or more include 3/8" through-bolt extension for double end mounting to eliminate twisting. **Contact Resistance:** .010 ohms or less initially, .020 ohms or less after 25,000 cycles at rated load. **Insulation Resistance:** 50,000 megohms, minimum. **Stop Strength:** 15 pound-inches. **Life Expectancy:** 100,000 cycles. **Size:** 1.01" dia. **To Order:** Use prefix 42A36 followed by number of decks (01-12); number of poles per deck, -1 or -2; number of positions per deck (2-10); final suffix S indicates shorting type, N non-shorting. (Example: 42A36-01-1-2-S is Series 42 Style A, 36° indexing, one deck, single pole per deck, 2-position, shorting; 42A36-12-1-10-N is Series 42 Style A, 36° indexing, 12 deck, single pole per deck, 10-position, non-shorting.)

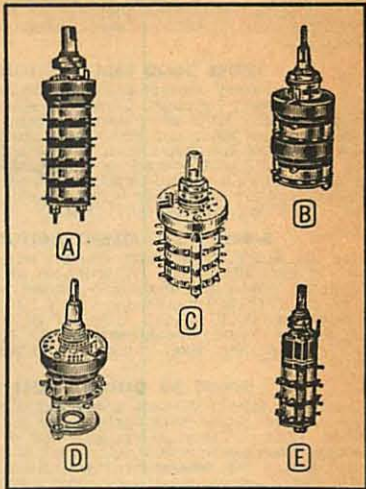
### SERIES 44—30° INDEXING—FIXED STOP (FIG. A)

Same as Series 42, but 1.162" diameter, with up to 12 positions per deck. Available with 1 to 12 decks, and up to six poles per deck, 2 to 12 positions per pole. Shorting or non-shorting contacts for all models. **Life expectancy:** 100,000 cycles. **To Order:** Use prefix 44A30 followed by number of decks (01-12); number of poles per deck -1 to -6; number of positions per deck (2-12); final suffix S indicates shorting type, N non-shorting. (Example: 44A30-10-1-12-N is Series 44 Style A, 30° indexing, 10 deck, single pole per deck, 12-position, non-shorting.)

### PRICES FOR SERIES 42 AND 44

Prices are for single pole types. Multiple-pole types available on request.

No. of Decks	Positions Per Deck; Net Each, 1-49*											
	2	3	4	5	6	7	8	9	10	11*	12*	
1	\$ 5.50	\$ 5.60	\$ 5.70	\$ 5.80	\$ 5.90	\$ 6.00	\$ 6.10	\$ 6.20	\$ 6.30	\$ 6.40	\$ 6.50	
2	6.35	6.50	6.65	6.80	6.95	7.10	7.25	7.40	7.55	7.70	7.85	
3	7.20	7.40	7.60	7.80	8.00	8.20	8.40	8.60	8.80	9.00	9.20	
4	8.05	8.35	8.65	8.95	9.25	9.55	9.85	10.15	10.45	10.75	11.05	
5	8.95	9.30	9.65	10.00	10.35	10.70	11.05	11.40	11.75	12.10	12.45	
6	10.10	10.50	10.90	11.30	11.70	12.10	12.50	12.90	13.30	13.70	14.10	
7	11.15	11.60	12.05	12.50	12.95	13.40	13.85	14.30	14.75	15.20	15.65	
8	12.10	12.65	13.20	13.75	14.30	14.85	15.40	15.95	16.50	17.05	17.60	
9	13.10	13.75	14.40	15.05	15.70	16.35	17.00	17.65	18.30	18.95	19.60	
10	14.10	14.85	15.60	16.35	17.10	17.85	18.60	19.35	20.10	20.85	21.60	
11	15.15	16.00	16.85	17.70	18.55	19.40	20.25	21.10	21.95	22.80	23.65	
12	16.25	17.20	18.15	19.10	20.05	21.00	21.95	22.90	23.85	24.80	25.75	



### SERIES 43 AND 54 CONCENTRIC SHAFT SWITCHES (FIG. B)

Concentric shaft versions of the Series 42 (10-position, 36° indexing) and Series 44 (12-position, 30° indexing). Materials, finishes and electrical ratings identical to standard models. Available with 1 to 3 decks per shaft for a total of 6 decks. Front section is controlled by 3/8" dia. shaft, rear section by 1/2" dia. shaft. **Write for full information and prices.**

### SERIES 43D AND 54D "ADD-A-POT" ADJUSTABLE STOP SWITCHES (FIG. D)

Adjustable stop versions of Series 43 and 54. Mounting plate at rear permits add-on potentiometer (plates provided for either 3/8" or 5/8" bushing). **Series 43D:** Available with 1 pole per deck, 1 to 4 decks, 2-10 positions per pole, shorting or non-shorting. **Series 54D:** Choice of 1 (2-12 positions) or 2 poles (2-6 positions) per deck, 1 to 4 decks, shorting or non-shorting.

### NEW SERIES 42D (36°, 10-POSITION) AND 44D (30°, 12-POSITION) ADJUSTABLE STOP SWITCHES (FIG. C)

Directly interchangeable with Series 42 and 44 (respectively) fixed-stop types, but with adjustable stop. Same electrical and mechanical specifications. **Life expectancy:** 100,000 cycles. **Series 42D:** Choice of 1 or 2 poles, 1-12 decks; 36° indexing with 10 positions. **Series 44D:** Choice of 1 to 4 poles, 1-12 decks; 30° indexing with 12 positions. **Write for prices on units with more decks (up to 12) and 4-poles-per-deck 44D types.**

Grayhill Suffix	No. of Decks	Poles Per Deck	Net Ea., 1-49*		Grayhill Suffix	No. of Decks	Poles Per Deck	Net Ea., 1-49*	
			36° Ind. 42D36-	30° Ind. 44D30-				36° Ind. 42D36-	30° Ind. 44D30-
01-1-ADJ	1	1	\$ 6.30	\$ 6.50	01-2-ADJ	1	2	\$ 7.10	\$ 7.30
02-1-ADJ	2	1	7.55	7.85	02-2-ADJ	2	2	9.15	9.45
03-1-ADJ	3	1	8.80	9.20	03-2-ADJ	3	2	11.20	11.60
04-1-ADJ	4	1	10.45	11.05	01-3-ADJ	1	3	.....	7.70
05-1-ADJ	5	1	11.75	12.45	02-3-ADJ	2	3	.....	10.25
06-1-ADJ	6	1	13.30	14.10	03-3-ADJ	3	3	.....	12.80

\*Net Each, 50-99: Net less 25%; 100 and up, write for OEM prices. \*Series 44 only. †Show full number when ordering: 42D36-01-1-ADJ-N, 44D30-01-1-ADJ-S, etc. with final letter S or N to indicate shorting or non-shorting.

Grayhill Suffix	No. of Decks	Poles Per Deck	Net Ea., 1-49*	
			36° Ind. 43D36-	30° Ind. 54D30-
01-1-ADJ	1	1	\$16.10	\$16.50
02-1-ADJ	2	1	18.45	19.25
03-1-ADJ	3	1	20.80	22.00
01-2-ADJ	1	2	.....	17.30
02-2-ADJ	2	2	.....	20.85
03-2-ADJ	3	2	.....	24.40

## ULTRAMINIATURE ROTARY TAP SWITCHES (RUGGED PRECISION DETENT)

### SERIES 8 ULTRAMINIATURES—36° INDEXING (FIG. E)

Enclosed tap switch designed for long, reliable operation is only 1/2" diameter, with 36° angle of throw. Rated to make or break 1/4 amp at 115 v. AC resistive or carry 4 amps. Insulating materials are molded thermosetting plastic per MIL-M-14. Terminals and base contacts are silver-plated brass with gold flash, rotor contacts are silver-plated phosphor-bronze with gold flash. Mounting bushing and nuts cadmium plated brass with yellow chromate per QQ-P-416, Class 2, Type II. Includes integral locking device, two mounting nuts and internal tooth lockwasher; studs completely insulated. Available with one to twelve decks, one pole per deck, two to ten positions per deck, with shorting or non-shorting contacts. Switches with six decks or more have .250" minimum through-bolt extension for double end mounting to eliminate twisting. **Contact Resistance:** .010 ohm or less initially, .020 ohm or less after 25,000 operation cycles at rated load. **Insulation Resistance:** 10,000 megohms, minimum. **Stop Strength:** 12 pound-inches. **Life Expectancy:** 100,000 cycles. **To Order:** Use prefix 8A36 followed by number of decks (01-06), number of poles per deck 1, number of positions (2-10); final suffix S indicates shorting type, N non-shorting. (Example: 8A36-01-1-2-N is Series 8 Style A, 36° indexing, one deck, one pole, two-position, non-shorting; 8A36-06-1-7-S is Series 8 Style A, 36° indexing, six deck, one pole, seven-position, shorting.)

### NEW SERIES 9 ULTRAMINIATURES—30° INDEXING

Same as Series 8, but .562" diameter, with up to 12 positions per deck. Similar to Fig. C. Available with one to twelve decks, one pole per deck, two to twelve positions per deck, with shorting or non-shorting contacts. **To Order:** Use prefix 9A30 followed by number of decks (01-06), number of poles (one only) 1, number of positions (2-12); final suffix S indicates shorting type, N non-shorting. (Example: 9A30-02-1-6-N is Series 9 Style A, 30° indexing, two deck, one pole, six-position, non-shorting.)

### PRICES FOR SERIES 8 AND 9

Series 8 and 9 switches with 7 to 12 decks available only on special order; write for prices. Multiple poles per deck on request.

No. of Decks	Positions Per Deck; Net Each, 1-49*									
	2	3	4	5	6	7	8	9	10	11
1	\$7.10	\$7.20	\$7.30	\$7.40	\$7.50	\$7.60	\$7.70	\$7.80	\$7.90	\$8.00
2	8.25	8.45	8.65	8.85	9.05	9.25	9.45	9.65	9.85	10.05
3	9.45	9.75	10.05	10.35	10.65	10.95	11.25	11.55	11.85	12.15
4	10.60	11.00	11.40	11.80	12.20	12.60	13.00	13.40	13.80	14.20
5	11.75	12.25	12.75	13.25	13.75	14.25	14.75	15.25	15.75	16.25
6	12.90	13.50	14.10	14.70	15.30	15.90	16.50	17.10	17.70	18.30

\*Net Each, 50-99: Net less 25%; 100 and up, write for OEM quantity pricing.

### NEW SERIES 44 DIAL PLATES

For use with Series 9, 44 or 54 switches with 30° indexing. Numerals and letters centered at 30° intervals, dividing dial plate into twelve equal angular spaces. Elongated hole permits use of standard integral non-turn device or separate non-turn washer. Choice of straight numerical marking or Off, 1, 2, 3, etc. Of half-hard brass with black japanned finish on one side only; letters and numerals printed in white on japanned side. Order from table for number of positions required.

No.	Marking	No.	Marking	No.	Marking
44-91-2	1 and 2	44-91-10	1-10	44-92-6	Off, 1-6
44-91-3	1-3	44-91-11	1-11	44-92-7	Off, 1-7
44-91-4	1-4	44-91-12	1-12	44-92-8	Off, 1-8
44-91-5	1-5	44-92-1	Off and 1	44-92-9	Off, 1-9
44-91-6	1-6	44-92-2	Off, 1, 2	44-92-10	Off, 1-10
44-91-7	1-7	44-92-3	Off, 1-3	44-92-11	Off, 1-11
44-91-8	1-8	44-92-4	Off, 1-4	.....	.....
44-91-9	1-9	44-92-5	Off, 1-5	.....	.....

Net Each.....\$1.00





# Pushbutton Switches

Quality line of precision-made pushbutton switches meets most requirements for versatility in switching. Housing, button and internal bridge of molded phenolic per MIL-M-14, Type CFG. Mounting nuts, bushing, washers, screws and nuts are cadmium plated brass.

## SERIES 2000 SNAP ACTION (FIG. A)

SPST momentary contact design available in normally open or normally closed contacts. Choice of standard solder terminals (Nos. 2201 and 2202) or "Faston" terminals (Nos. 7-21 or 7-22). Extremely fast make and break; low contact resistance. Audible click produced by snap-action mechanism. **Rated:** 10 amps at 115 v. AC for 50,000 operations. **Voltage Breakdown:** 2000 v. AC, terminal to terminal, and terminal to bushing. **Mounting:**  $\frac{1}{4}$ -32 NS-2 thread .44" long. Fits  $\frac{1}{4}$ " dia. hole. **Size:** 1.2" long behind panel; 1.92" long overall; 0.87" O.D.

## SERIES 4000 SILENT ACTION (FIG. B)

Long life SPST, momentary contact switch available normally open or normally closed. Silver-plated phosphor bronze contact terminals. Solder terminals only. **Rated:**  $\frac{1}{2}$  amp at 115 v. AC resistive for 800,000 operations; 1 amp, 100,000 operations. **Voltage Breakdown:** 3000 v. AC, terminal to terminal; 2500 v. AC, terminal to cover. **Mounting:**  $\frac{1}{4}$ -32 NS-2 thread .37" long. Fits  $\frac{1}{4}$ " dia. hole. **Size:** 1" long behind panel;  $1\frac{1}{4}$ " long overall; 0.80" O.D.

## SERIES 35 DOUBLE POLE (FIG. C)

Momentary DPST-NO switch with red button mounts in  $\frac{1}{4}$ " dia. hole. Tinned music wire spring; fine silver contact terminals. **Rated:**  $\frac{1}{2}$  amp, 115 v. AC, resistive for over 100,000 operations. **Voltage Breakdown:** 2000 v. AC, terminal to terminal; 6000 v. AC, terminal to cover. **Mounting:**  $\frac{1}{4}$ -32 NS-2 thread .37" long. **Size:** 0.74" length behind panel; 1.26" long, overall; 0.79" O.D.

## SERIES 23 SILENT ACTION MINIATURE (FIG. D)

Small SPST-NO switch with red button gives silent action. Solder terminals; tinned music wire spring; silver-plated phosphor bronze contact terminals. **Rated:**  $\frac{1}{4}$  amp, 115 v. AC resistive, for over 500,000 operations. **Voltage Breakdown:** 2500 v. AC, terminal to terminal; 2000 v. AC, terminals to bushing. **Mounting:**  $\frac{1}{4}$ -32 NS-2 thread .25" long. Fits  $\frac{1}{4}$ " dia. hole. **Size:** 0.67" length behind panel;  $1\frac{1}{4}$ " long, overall; 0.50" O.D.

## SERIES 30 SUBMINIATURE (FIG. E)

Silent action, SPST switch available in normally open, normally closed and overtravel (NO) types. Fine silver contacts and shorting bar. **Rated:** 1 amp at 115 v. AC resistive for 1 million operations. **Voltage Breakdown:** 3000 v. AC terminal to terminal; 3500 v. AC, terminal to bushing. **Mounting:**  $\frac{1}{4}$ -32 NEF-2 thread .25" long. Fits  $\frac{1}{4}$ " dia. hole. **Size:** .60" d. behind panel, .98" long overall, .37" O.D. for 30-1 and 30-2; .68" d. behind panel, 1.01" long overall, .38" O.D. for No. 30-15 with .056" overtravel.

## SERIES 30-16 MINIATURE PUSH-PULL (FIG. F)

SPST-NO butt contact switch has push-pull operation. Fine silver contacts and shorting bar. **Rated:** 1 amp, 115 v. AC resistive for 100,000 operations. **Voltage Breakdown:** 1500 v. AC, terminal to terminal, and terminal to housing. **Mounting:**  $\frac{1}{4}$ -32 NS-2 thread .42" long. Fits  $\frac{1}{4}$ " dia. hole. **Size:** .66" d. behind panel, min.;  $1\frac{1}{4}$ " long, overall;  $\frac{1}{2}$ " O.D.

## SERIES 30-17 MINIATURE (FIG. G)

Positive feel, SPST-NO momentary switch available with red or black cap. Fine silver shorting bar and terminals; stainless steel detent balls; rigid polyethylene button cap. Audible click operation. **Rated:** 1 amp, 115 v. AC resistive for 200,000 operations. **Voltage Breakdown:** 1500 v. AC, terminal to terminal, and terminals to bushing. **Mounting:**  $\frac{1}{4}$ -32 NS-2 thread .42" long. Fits  $\frac{1}{4}$ " dia. hole. **Size:** .66" d. behind panel, min.; 1.289" long, overall; 0.47" O.D.

## SERIES 39 ULTRAMINIATURE (FIG. H)

Tiny SPST-NO switch, available in overtravel version. Red button. Fine silver contacts and shorting bar. **Rated:**  $\frac{1}{2}$  amp, 115 v. AC resistive for 1 million operations;  $\frac{1}{4}$  million operations for overtravel version. **Voltage Breakdown:** 1500 v. AC terminal to terminal, and terminal to bushing; 1200 v. AC, overtravel version. **Mounting:** 8-40 NS-2 thread .12" long. Fits  $\frac{1}{4}$ " dia. hole. **Size:** No. 39-1, .31" d. behind panel,  $\frac{1}{2}$ " long overall, .25" O.D.; No. 39-12, .45" d. behind panel, .75" long overall, .25" O.D., with .040" overtravel.

## SERIES 40 LIGHTED PUSHBUTTON (FIG. I)

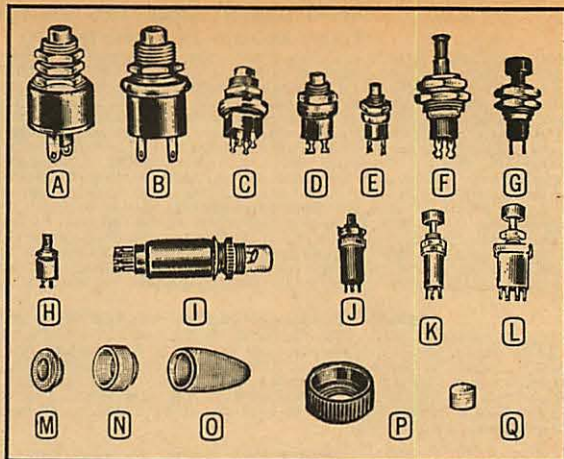
Space saving, SPST-NO momentary contact switch with independent lam. circuit (not connected to switching action). Solder terminals; black anodized aluminum housing. **Rated:** 1 amp, 115 v. AC resistive for 500,000 operations. **Voltage Breakdown:** 1000 v. AC between mutually insulated parts. **Lamp:** No. 40-1 uses NE-2E neon (or equivalent) with life of 25,000 hours, max.; No. 40-100 uses GE 1764 (or equivalent) with 1,000 hours life. **Mounting:**  $\frac{1}{4}$ -32 NEF-2 thread .25" long. Fits  $\frac{1}{4}$ " dia. hole. **Size:** 1.15" d. behind panel; 1.84" long, button extended; .44" O.D.

## SERIES 46-101 SPDT MINIATURE (FIG. J)

SPDT switch with silver-plated phosphor-bronze wiping contacts and terminals. **Rated:** Make and break  $\frac{1}{4}$  amp, 115 v. AC resistive. **Contact Resistance:** .01 ohm max. initial, .01 ohm typical after 250,000 operations. **Insulation Resistance:** 100,000 megohms. **Mounting:**  $\frac{1}{4}$ -32NEF/2A threaded bushing. **Size:** .89" approx. behind panel; 1.33" approx. overall length. Button travel, approx. .187"; overtravel, .062". Actuating force, 16 oz. to bottom button. **Series 46-102 (Fig. K)** same as 46-101 except button is .08" longer to accommodate button cap.

## SERIES 46-200 DPDT MINIATURE (FIG. L)

Same ratings, construction, materials, finishes, and applications as Series 46-101 and 46-102 except DPDT type, wiping contacts. **Mounting:**  $\frac{1}{4}$ -32NEF/2A threaded bushing. **Size:** .92" approx. behind panel; 1.56" approx. overall length. Button travel, approx. .187"; overtravel, .062". Actuating force, 32 oz. to bottom button.



## PUSHBUTTON SWITCH PRICING

Number	Description	Net Each, Lots	
		1-49	50-99
23-1	Miniature; NO; red button	\$1.05	\$0.788
30-1	Subminiature; NO; red button	.95	.713
30-2	Subminiature; NC; black button	.95	.713
30-3	Subminiature; NO; black button	.95	.713
30-6	Subminiature; NC; red button	.95	.713
30-15	Push-pull; NO; red shaft button	1.50	1.125
30-16R	Push-pull; NO; black shaft button	1.50	1.125
30-17R	Pos. feel; NO; red button cap	1.40	1.05
30-17B	Pos. feel; NO; black button cap	1.40	1.05
35-1	DPST-NO; red button	1.20	.90
39-1	Ultra-min.; NO; red button	1.00	.75
39-12	Overtravel; NO; red button	1.15	.863
40-1	Neon lighted; NO;*†	2.00	1.50
40-100	Incandescent lighted; NO;†	2.30	1.725
46-101R	Min. SPDT; red button	1.40	1.05
46-101B	Min. SPDT; black button	1.40	1.05
46-102R	Min. SPDT; red button cap	1.85	1.388
46-102B	Min. SPDT; black button cap	1.85	1.388
46-200R	Min. DPDT; red button cap	3.10	2.325
46-200B	Min. DPDT; black button cap	3.10	2.325
2201	Snap NO; solder terminals; red	2.05	1.538
2202	Snap NC; solder terminals; black	2.05	1.538
7-21	Snap NO; "Faston" terminals; red	2.30	1.725
7-22	Snap NO; "Faston" terminals; black	2.30	1.725
7-7	Snap NO; solder terminals; black	2.05	1.538
7-8	Snap NC; solder terminals; red	2.05	1.538
10-9	Silent; NO; black button	.90	.675
10-10	Silent; NC; red button	.90	.675
4001	Silent; NO; red button	.90	.675
4002	Silent; NC; black button	.90	.675

\*Specify color: Clear, frosted white, transparent red or amber. †Specify color: Clear, frosted white, translucent red, green or yellow, or transparent red or amber.

## PENDANT-HOUSINGS AND CAPS

For use with all pushbutton switches with  $\frac{1}{4}$ -32 bushings, 2201, 2202, 7-21, 7-7, 7-8, 4001, 10-9, 4002, 10-10, 35-1 and 30-17. Polypropylene housing 1" I.D.,  $2\frac{1}{2}$ " long. Set consists of one housing and either flat or recessed cap.

Number	Figures	Description	Color
7Z4950-R	M and O	Flat cap and housing	Red
7Z4950-B	M and O	Flat cap and housing	Black
7Z5150-R	N and O	Recessed cap and housing	Red
7Z5150-B	N and O	Recessed cap and housing	Black

Net Per Set.....\$0.90

## PUSHBUTTON AND ROTARY SWITCH ACCESSORIES

Number	Description	For Switch Series	Net Each
7C1040	Decorative mounting nut	{ 7, 2000, 4000, 35,	\$0.15
10C1015	Button guard (Fig. P)	30-16 and 30-17	.25
7Z1047R	Red button cap	2000 and 7	.35
7Z1047B	Black button cap	2000 and 7	.35
12C1087	Non-turn washer	5000 and 24	.05
12C1318	1-10 dial plate*	5000 and 24	1.00
12C1319	Off, 1-9 dial plate*	5000 and 24	1.00
12Q1272	Lock washer	Rotary switches	.05
23C1274	Decorative mounting nut	23	.15
30C1023	Decorative mounting nut	30 and 30-15	.15
30B1012	Button cap† (Fig. Q)	30 and 39	.10
33-11R	Large shaft red knob	6 and 36	1.10
33-11B	Large shaft black knob	6 and 36	1.10
33-12R	Small shaft red knob	6 and 36	.85
33-12B	Small shaft black knob	6 and 36	.85

\*Specify marking; any numbers within range listed. †Specify color: Black, dark blue, light blue, dark green, light green, pink, gray, white, yellow, red or dark red.