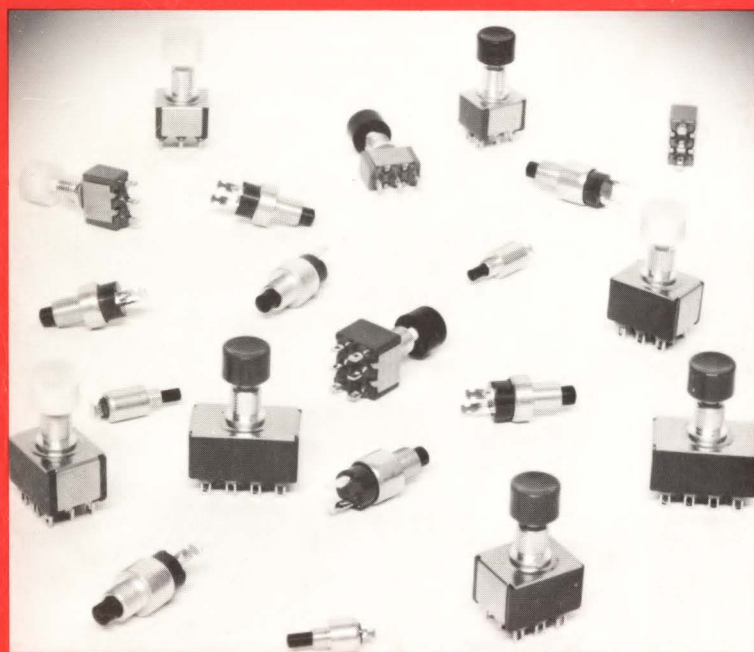




COMPONENTS, INC.

Subminiature - Toggle, Rocker and Paddle Handle Switches
Subminiature and Microminiature Momentary Pushbutton Switches
Rotary Switches



**UNDERWRITERS'
LABORATORIES,
INC.®**
TESTING FOR PUBLIC SAFETY

See pages 9, 12, 13 and 14 for UL listed switches.

Toggle Switches

GENERAL SPECIFICATIONS

Contact Ratings: (see page 10 for complete specifications)

Coin Silver Contacts — 5 amps resistive load @ 120 VAC or 28 VDC, or 2 amps @ 250 VAC.

Brass contacts with gold over nickel plate — 0.4 volt-amps @ 20V Max. (AC or DC).

Coin Silver Contacts with gold over nickel plate — 5 amps resistive load @ 120 VAC or 28 VDC, or 2 amps @ 250 VAC — and 0.4 volt-amps Max. @ 20V Max. (AC or DC).

Electric Life: 100,000 make-and-break cycles minimum on all models ending in 01 only; all other models 40,000 cycles.

Initial Contact Resistance For Silver: 10 milliohms max. @ 2-4 VDC, 1 amp.

Insulation Resistance: 1,000 megohms minimum.

Dielectric Strength: 1,000 volts rms @ sea level.

MATERIALS AND FINISHES

Case Material: General purpose phenolic or melamine.

Operating Lever: Bright chrome-plated brass.

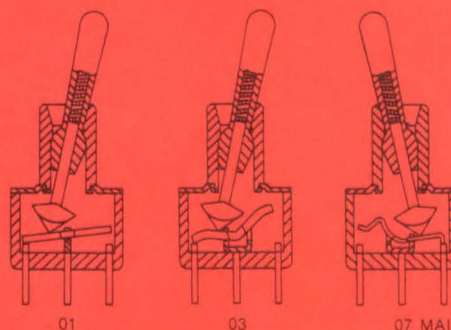
Mounting Bushing: Cadmium w/clear chromate over brass.

Housing: Stainless Steel.

Standard Hardware Supplied: 2 hex mounting nuts; 1 internal tooth lockwasher; 1 locking ring.

See page 15 for hardware, panel layouts and mounting information.

TOGGLE ACTION



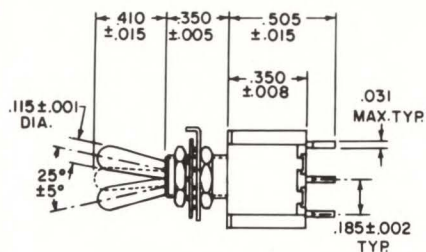
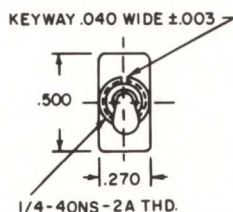
05, 08, and 09 action similar to 07 except shorting contact configuration different.

C&K SWITCHES — MADE IN AMERICA

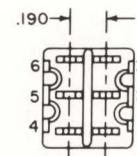
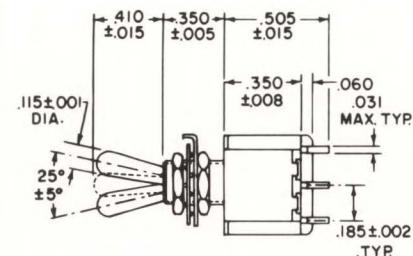
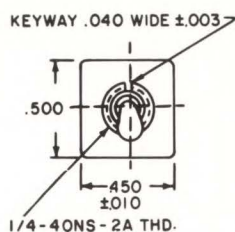
C & K Components Inc. / 103 Morse Street / Watertown, Mass. 02172 / (617) 926-0800 TWX 710 327 0460

Standard Configurations

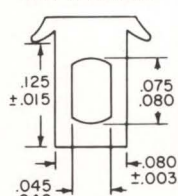
SPDT



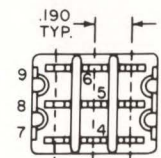
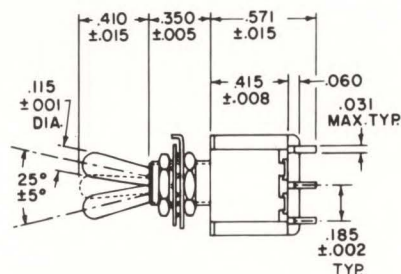
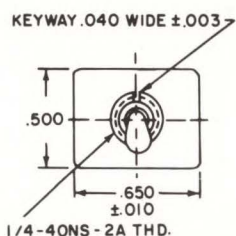
DPDT



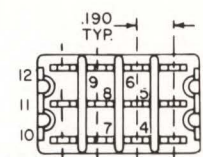
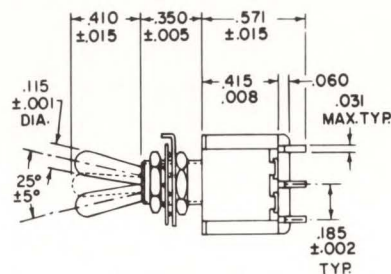
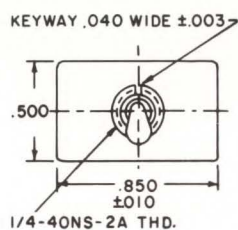
Std. Terminal



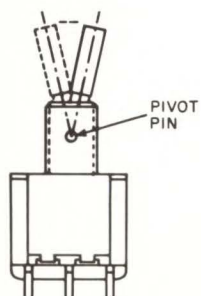
3 PDT



4 PDT

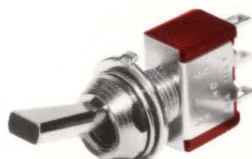


P PINNING



Pinning option for anti-rotation of toggle is available for all toggle-bushing combinations by adding suffix P. Specify toggle option, even if standard.

P FLATTED



.450" long, modern, flat and good-handling with solid throw feature.

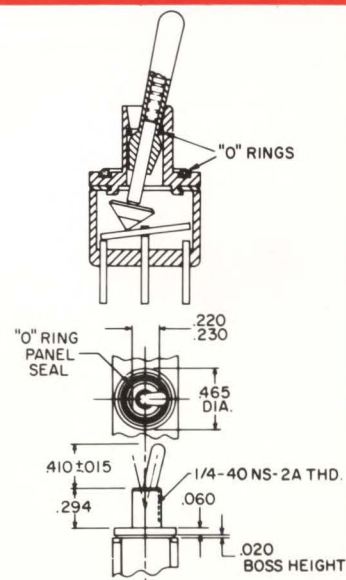
P1 FLATTED

.840" long, is also available on all models.

CKW SPLASHPROOF

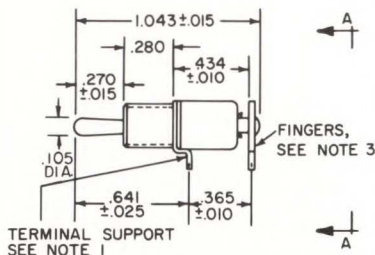
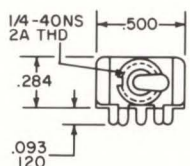


Special 'O' ring sealing around toggle and bushing. Gives splashproof model tight panel seal. To order, add prefix CKW.

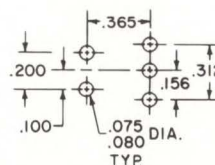


Special Configurations

R RIGHT ANGLE MOUNTING, P.C. SPDT



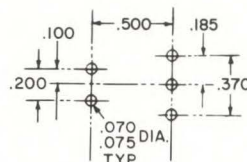
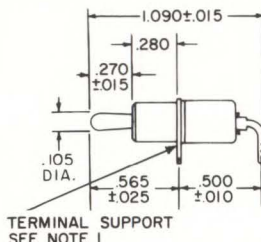
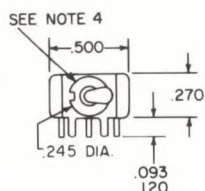
PRINTED CIRCUIT
PANEL LAYOUT



R P.C. BOARD
SEE NOTE 3
CONTACTS
MAKE ON
SAME SIDE
TOGGLE
THROWN
VIEW A-A

R-2 P.C. BOARD
SEE NOTE 3
CONTACTS
MAKE ON
OPPOSITE
SIDE
TOGGLE
THROWN
VIEW A-A

A RIGHT ANGLE MOUNTING SPDT

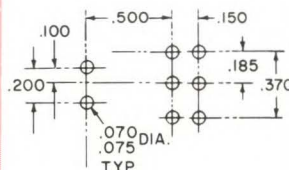
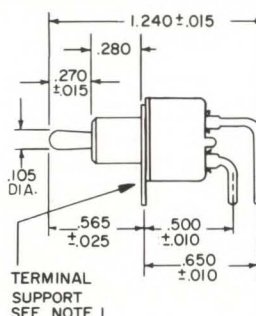
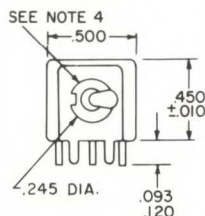


NOTES: For R and A options

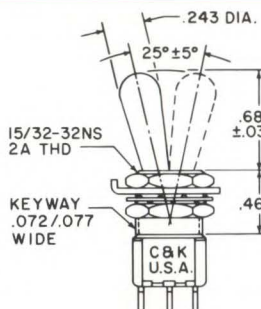
1. Terminal support is 1/2 hd. brass Electroplated.
2. Contacts and terminals normally supplied are brass w/50 millionths gold plate.
3. For **R** only — P.C. Board is G10 epoxy with 1 oz. Electroplated copper. Projecting fingers only have copper both sides. Circuit on P.C. Board has copper outside only.
4. For **A** only — non-threaded bushing is standard.
5. All terminals are .031" thick by .050" wide. (Terminal width is shown in side view.)

**3 pole A option
also available,
contact factory.**

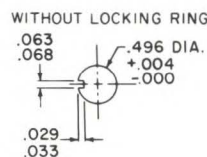
A RIGHT ANGLE MOUNTING DPDT



T 15/32 BUSHING W/LARGE TOGGLE



PANEL LAYOUTS



K LOCKING LEVER

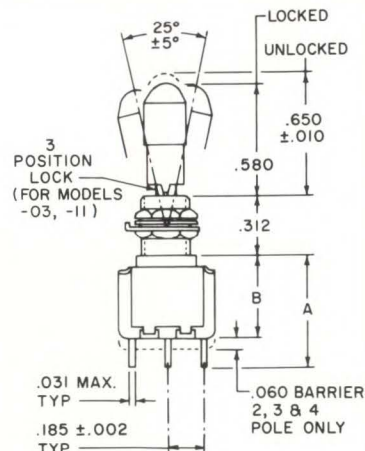
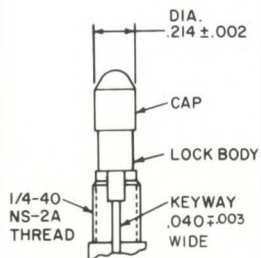


FIG. 1
2 POS. LOCK
FOR MODEL
-01



FIG. 2
2 POS. LOCK
FOR MODELS
-07, -13



FIG. 3
1 POS. LOCK
FOR MODELS
-05, -09, -15



FIG. 4
1 POS. LOCK
FOR MODEL
-08

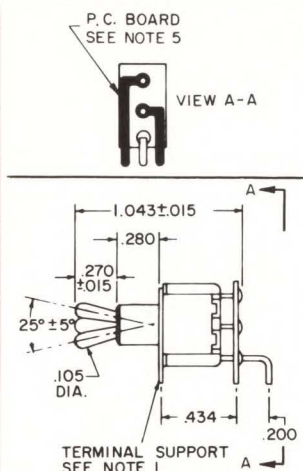
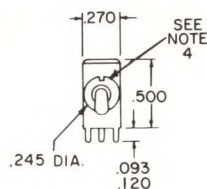
NOTE:

1. 3 position lock detail shown. See fig's 1 thru 4 for other lock details.
2. Other dimensions, hardware & mounting — same as std'd (See P. 3 and 15).
3. See page 8 & 9 (Special Configurations) for available options.
4. Caps are normally supplied natural aluminum. Anodized red, blue, or black caps are available on request — specify color if desired.
5. Lock body is nickel plated brass.

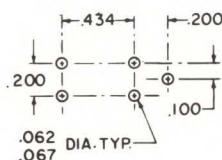
	A ± .015	B ± .015
SPDT	.580	.425
DPDT	.580	.425
3PDT	.645	.490
4PDT	.645	.490

Special Configurations

VW RIGHT ANGLE MOUNTING P.C. SPDT



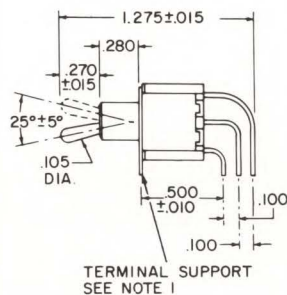
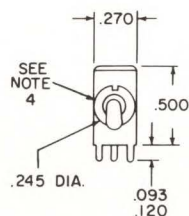
PRINTED CIRCUIT PANEL LAYOUTS



NOTES: For VW and AV options

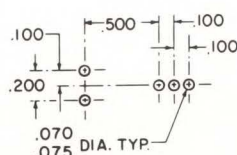
1. terminal support is 1/2 hd. brass, electrotin plated.
2. Contacts and terminals normally supplied are brass w/50 millionths gold plate.
3. Contacts make on side opposite toggle thrown.
4. Non-threaded bushing is standard.
5. P.C. board is G10 epoxy with 1 oz. electrotin plated copper.
6. All terminals are .031" thick by .050" wide. (Terminal thickness is shown in side view.)

AV VERTICAL MOUNTING SPDT

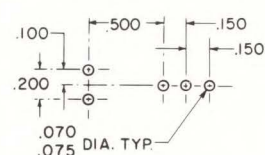


PANEL LAYOUTS

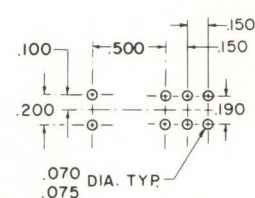
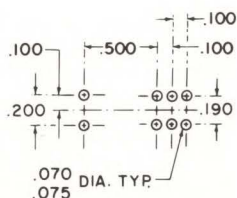
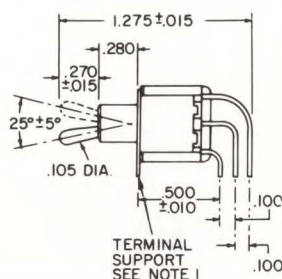
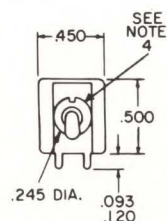
AV STD. .100 PITCH



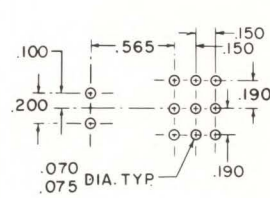
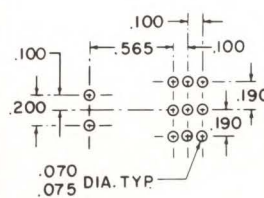
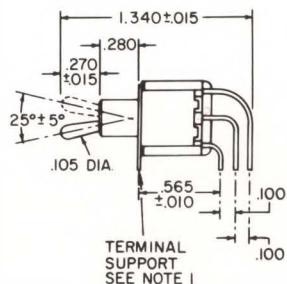
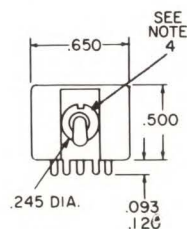
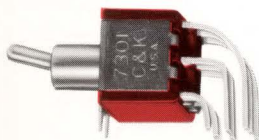
AV - 2 .150 PITCH



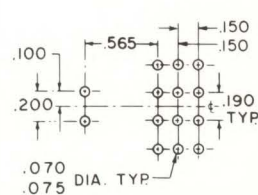
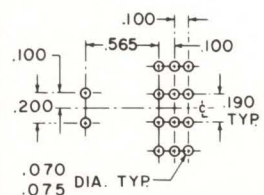
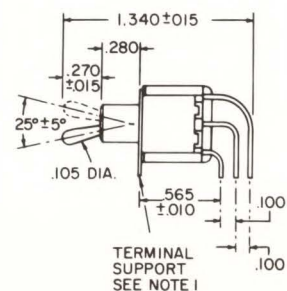
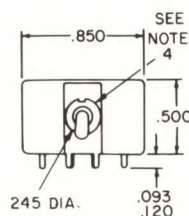
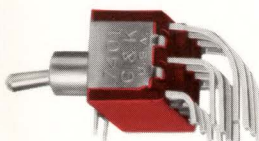
AV VERTICAL MOUNTING DPDT



AV VERTICAL MOUNTING 3PDT

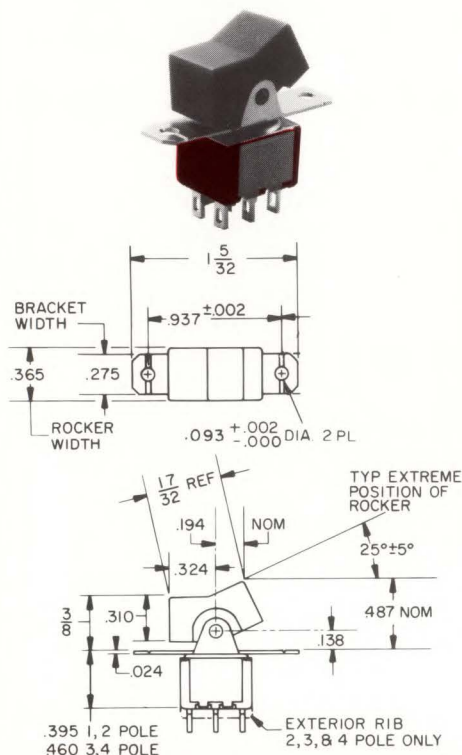


AV VERTICAL MOUNTING 4PDT

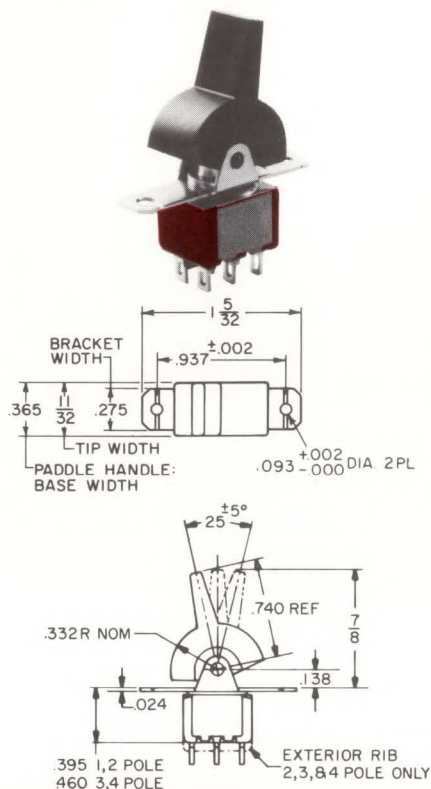


Rocker and Paddle Handle Switches

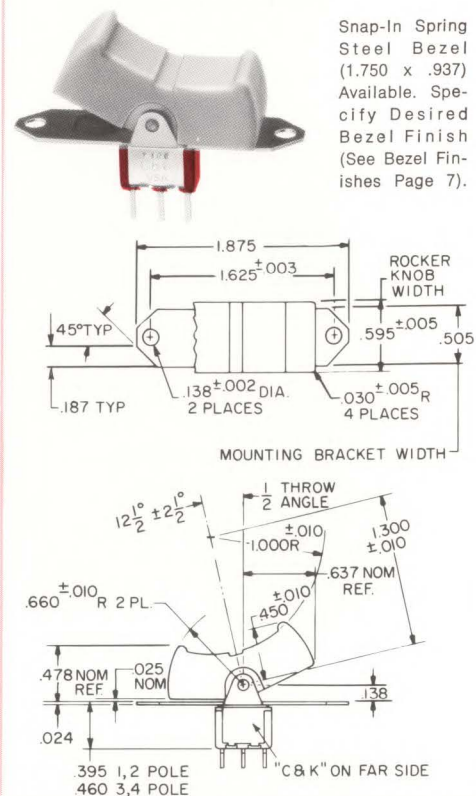
J-1 ROCKER



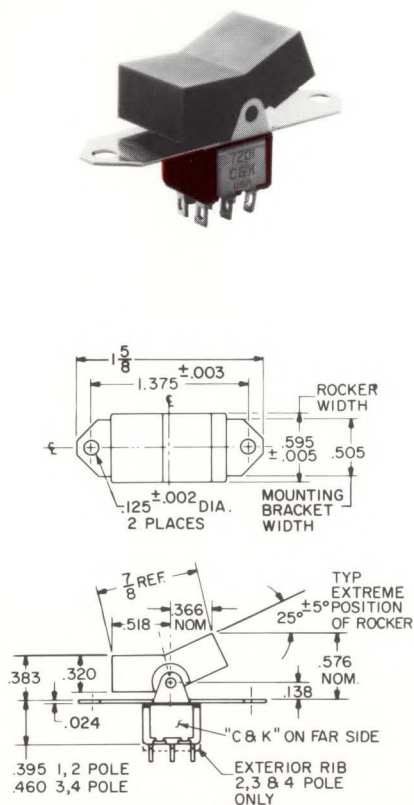
J-2 PADDLE HANDLE



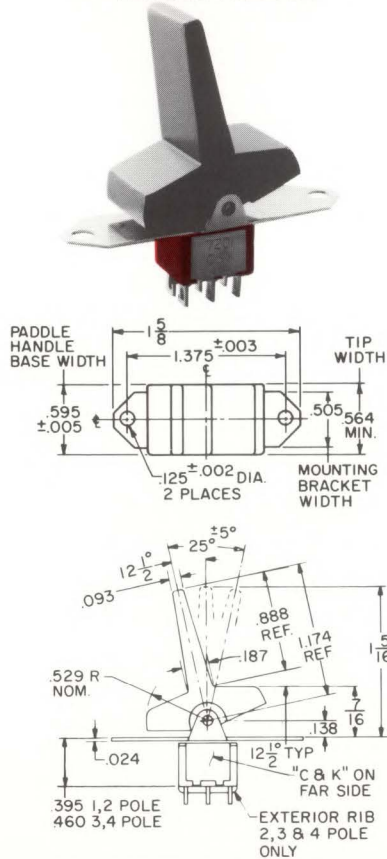
J-10 ROCKER



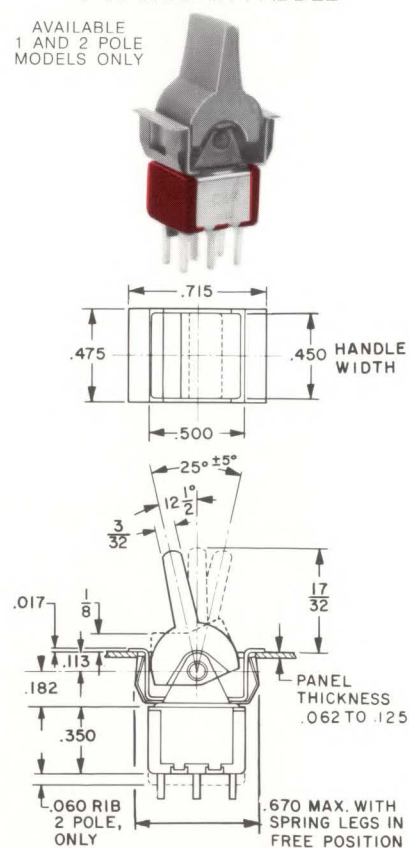
J-3 ROCKER



J-4 PADDLE HANDLE

J-50 SNAP-IN-ROCKER
J-60 SNAP-IN-PADDLE

AVAILABLE
1 AND 2 POLE
MODELS ONLY

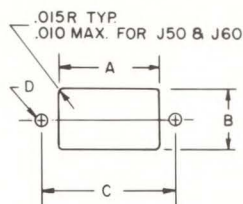


NOTES: For all Rocker and Paddle Handle Switches

1. All Rocker and paddle handle Configurations are available in all model numbers (see chart on pages 8 & 9). To specify, add the appropriate suffix to the model number.
2. Rocker and paddle handle: black nylon supplied unless otherwise specified. See pushbutton press fit caps for color options (page 11).
3. Mounting bracket: stainless steel.
4. Contacts make on opposite side from depressed position of rocker or thrown position of paddle handle.

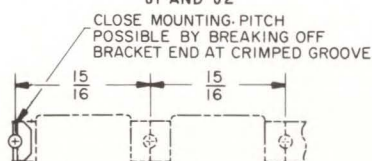
Mounting Information

RECOMMENDED
PANEL LAYOUT

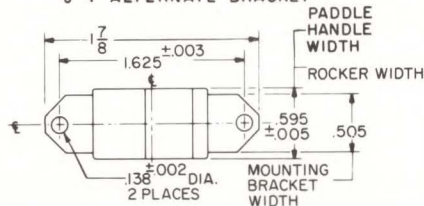


SWITCH TYPE	'A'	'B'	'C'	'D'
J1 & J2	.705 .710	.416 .421	.932 .942	.093 .096
J3 & J4	1.093 1.098	.646 .651	1.370 1.380	.120 .123
J3 & J4 ALT.	1.093 1.098	.646 .651	1.620 1.630	.147 .150
J10	1.375 1.380	.646 .651	1.620 1.630	.147 .150
J50 & J60	.595 .605	.495 .505	NONE	NONE

ADDITIONAL MOUNTING SUGGESTIONS
J1 AND J2



J-3 ALTERNATE BRACKET
J-4 ALTERNATE BRACKET

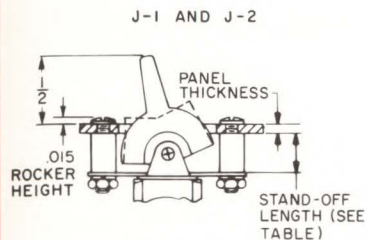


STAND-OFF CHART

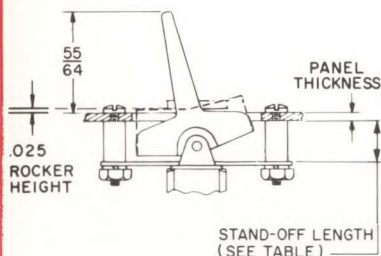
PANEL THICKNESS	SWITCH STYLE	STAND-OFF P/N	STAND-OFF LENGTH	STAND-OFF DIA.	BINDER HEAD SIZE	SCREW LENGTH
1/16"	J1 & J2	7611-1	.295	3/16	2	1/2
	J3	7706-1	.295	7/32	4	9/16
	J4	7750-1	.375	7/32	4	5/8
	J3 ALT., J10	7707-1	.295	1/4	6	9/16
	J4 ALT.	7751-1	.375	1/4	6	5/8
3/32"	J1 & J2	7611-2	.264	3/16	2	1/2
	J3	7706-2	.264	7/32	4	9/16
	J4	7750-2	.344	7/32	4	5/8
	J3 ALT., J10	7707-2	.264	1/4	6	9/16
	J4 ALT.	7751-2	.344	1/4	6	5/8
1/8" STD	J1 & J2	7611-3	.233	3/16	2	1/2
	J3	7706-3	.233	7/32	4	9/16
	J4	7750-3	.312	7/32	4	5/8
	J3 ALT., J10	7707-3	.233	1/4	6	9/16
	J4 ALT.	7751-3	.312	1/4	6	5/8

SPECIFY DESIRED STAND-OFF BY PLACING THE STAND-OFF P/N AFTER THE ORDER NUMBER (SEE PAGES 8 & 9). UNLESS OTHERWISE SPECIFIED STAND-OFFS FOR 1/8 INCH THICK PANEL WILL BE SUPPLIED.

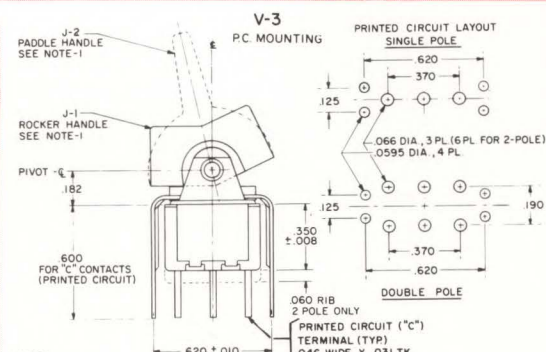
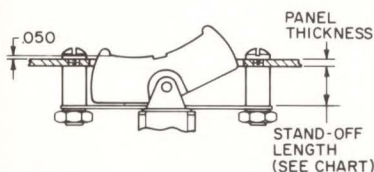
STANDARD HARDWARE (EXCEPT FOR BEZEL MOUNTING) 2 AL. ALLOY STAND-OFFS, 2 STAINLESS STEEL BINDER HEAD SCREWS, 2 STAINLESS STEEL SPLIT LOCK WASHERS, AND 2 STAINLESS STEEL HEX NUTS.



J-3 AND J-4



J10



NOTES:

1. ROCKERS/PADDLES J-1, J-2, J-50, J-60 SERIES FIT ON THIS MODEL. HANDLES SWAPPED ON EITHER BEFORE OR AFTER SWITCH INSTALLATION.
2. STANDARD TERMINALS ARE BRASS W/50 MILLIONTHS GOLD PLATE
3. MOUNTING BRACKET IS C.R. ST., ELECTROPLATED.
4. REQUEST PRICE FROM FACTORY

Bezel Mounting



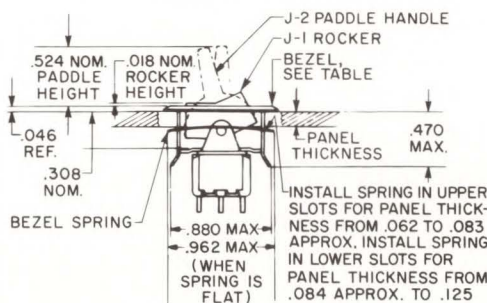
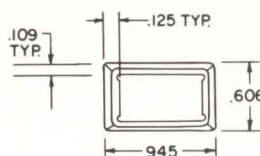
J-1

J-2



J-60

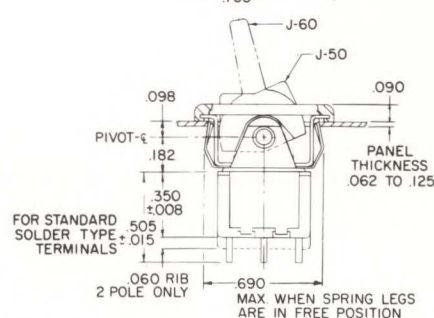
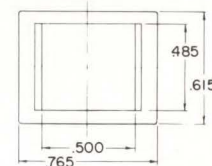
J-1 & J-2



INSTALLATION SEQUENCE

1. INSERT BEZEL INTO PANEL OPENING FROM FRONT OF PANEL.
2. ASSEMBLE SPRING ON BEZEL FROM BEHIND PANEL.
3. SNAP SWITCH IN PLACE FROM BEHIND PANEL.
4. BEZEL SPRING ASSEMBLY WILL ACCOMMODATE ALL PANEL THICKNESSES FROM .062" TO .125"

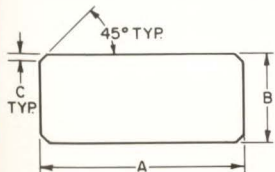
J-50 & J-60



NOTE:

SPECIFY BEZEL P/N 7890 AND COLOR. USE COLOR CHART ON PAGE 11 FOR COLOR NUMBER. EXAMPLE A RED BEZEL IS P/N 7890-3.

RECOMMENDED BEZEL PANEL LAYOUT



SWITCH TYPE	'A'	'B'	'C'
J1 & J2	.746 .751	.408 .413	.033
J10	1.522 1.528	.645 .651	.037
J50 & J60	.595 .605	.495 .505	NONE

BEZEL FINISHES
(J1, J2, & J10)

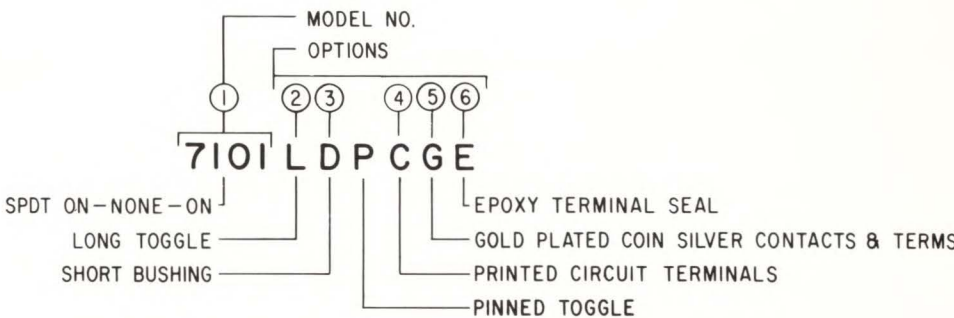
SPECIFY DESIRED BEZEL FINISH BY PLACING THE BEZEL P/N AFTER THE ORDER NUMBER (SEE PAGES 8 & 9). UNLESS OTHERWISE SPECIFIED A BLACK FINISH BEZEL (P/N 7645 OR P/N 7810-2) WILL BE SUPPLIED.

J-1 AND J-2 BEZEL P/N	FINISH	J-10 BEZEL P/N
7645-1	BRIGHT CHROME PLATE	7810-1
7645-2	BLACK	7810-2
7645-3	SATIN CHROME PLATE	7810-3

MATERIALS: BEZEL----- SPRING STEEL
BEZEL SPRING- BERYLLIUM COPPER, BRIGHT DIPPED

[illegible]

the following example illustrates how to specify complete part number



Specify option suffix in sequence indicated in Table.
If option is not desired — omit suffix (blank space not req'd).

Special Notes

Additional prices shown on chart under basic options are per switch.

If possible, special contact arrangement can be made to meet the needs of our customers.
For further information, contact factory.

*Add .070 if used in conjunction with D bushing.

() Parenthesis indicates momentary position.

☐ Blank space indicates option is available.

■ Red space indicates option not applicable.

‡ Pinning is available by adding suffix P at .50 additional charge.

N/C indicates No Charge

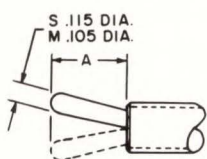
All prices F.O.B., Watertown, Mass.

Terms: Net 30 days.

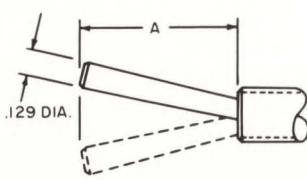
Production quantity prices available on request.

Toggle Switch Options

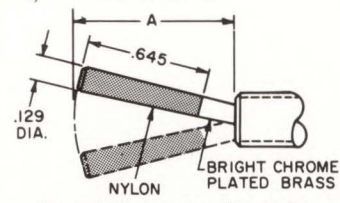
TOGGLES **S** STANDARD
M SHORT



L, L1, L2 LONG

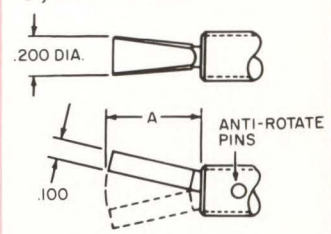


L3, LONG PLASTIC



See push button press fit caps for color options (page 11).

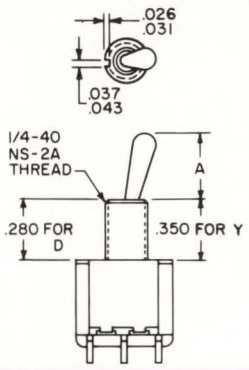
P, P1 FLATTED



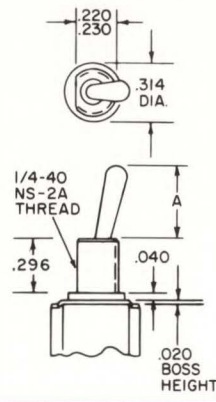
Toggle pinning is available for all toggle/bushing combinations (except **CKW, J** and is designated a **P**). (Toggle pinning is standard on flattened toggles, **Y1** and **K** options.)

BUSHINGS ***D** SHORT

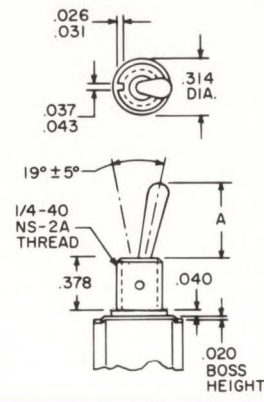
***Y** STANDARD



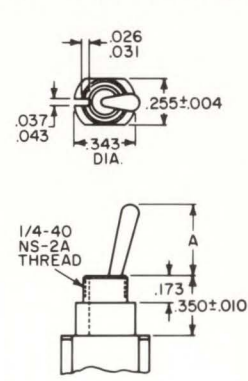
****H** HIGH TORQUE



*****Y1** LONG



U SPECIAL BUSHING



For Toggle Lengths used with Specific Bushings

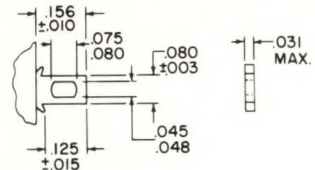
"A" DIM.	*Y (.350)	***Y1 (.378)	*D (.280)	**H (.296)	U (.350)
S	.410	.410	.480	.410	.410
M	.200	.200	.270	.200	.200
L	.840	.840	.910	.840	.840
L1	.642	.642	.712	.642	.642
L2	.550	.550	.620	.550	.550
L3	.840	.840	.910	.840	.840
P	.450	.450	.520	.450	.450
P1	.840	.840	.920	.840	.840

*A tolerance of .010 is required on standard Y and D bushing.
**All high torque bushings will withstand torque of 12 in/lb. with no distortion.
*** Offered only with pinning option.

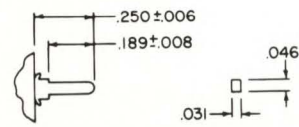
TERMINALS

Listed in appropriate sections below are available with all models.

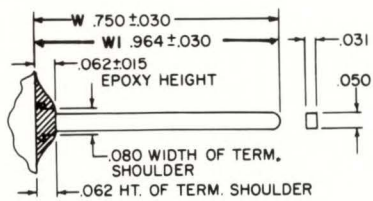
Z STANDARD



C PRINTED CIRCUIT



W, W1 WIREWRAP



MATERIALS

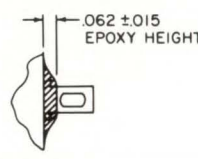
- B** 1/2 hd. brass with 50 millionths min. gold plate over 200 millionths nominal nickel. Rating: 0.4 VA max. @ 20 V max. (AC or DC).
- G** Coin Silver (90%Ag-10%Cu) with 50 millionths min. gold plate over 50 millionths min. nickel. Rating: 5 amps resistive load @ 120 VAC or 28 VDC or 2 amps @ 250 VAC — and 0.4 VA max. @ 20V max. (AC or DC).
- Q** Coin Silver (90%Ag-10%Cu). Rating: 5 amps resistive load @ 120 VAC or 28 VDC or 2 amps @ 250 VAC.

* Note: the only advantage of coin silver with gold plating is that it may be used for either of preceding ratings. However, when dry circuit rating is exceeded, gold plating is effectively removed from contact interfaces and switch cannot then be used for dry circuit.

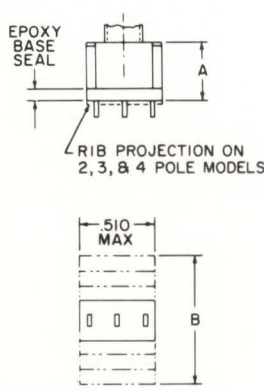
SEALING

Two options for sealing terminals are offered.

E TERMINAL SEAL



I POTTED BASE

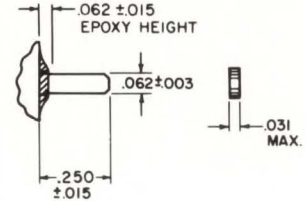


Notes:

1. Min. length of surface path between exposed terminal and metal housing equals .118 inch (3mm). REF. International Electrotechnical Commission (I.E.C.) Specification 131-1.

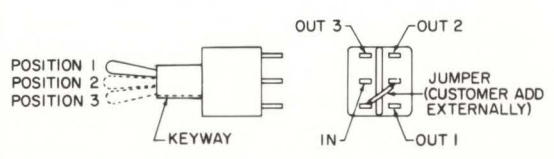
	A MAX.	B MAX.
SPDT	.395	.290
DPDT	.395	.470
3PDT	.460	.670
4PDT	.460	.870

NEW Z3 QUICK CONNECT TERMINAL

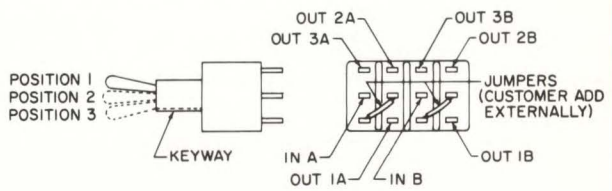


MATING "FASTON" RECEPTACLE AVAILABLE FROM AMP INC. HARRISBURG, PA., AMP P/N SINGLE PIECES 61454 SERIES STRIP FORM 60900 SERIES

WIRING FOR SINGLE POLE 3 POSITION SWITCH models 7211, 7213 & 7215



WIRING FOR 2 POLE 3 POSITION SWITCH models 7411, 7413 & 7415

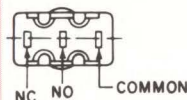
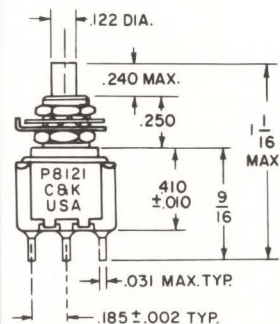
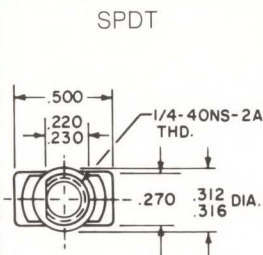


PANEL SEALS

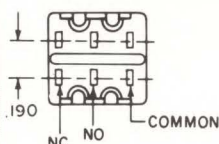
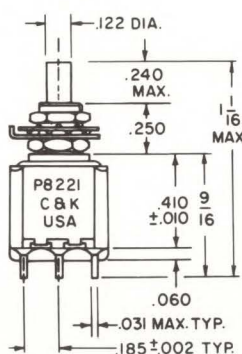
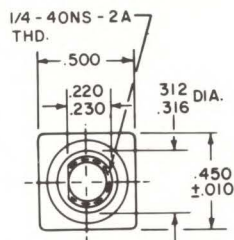
Flexible Rubber Seal Boots are available from APM-Hexseal Corp. 41 Honeck St., Englewood, New Jersey, and Multi-Flex Seals, Inc., 16 E. Lafayette St., Hackensack, N.J. 07610. These boots come in various styles and meet a number of MIL Specs for front panel switch seals.

Momentary Pushbutton Switches... Standard Configurations

SPDT
8121



DPDT



DPDT
8221



GENERAL SPECIFICATIONS

Contact Ratings: Gold contact surfaces on copper alloy terminals (epoxy sealed terminals are standard). 1 ampere resistive load @ 120 VAC — 28 VDC. Designed for use in dry (very low energy) circuits.

Insulation Resistance: 1000 megohms minimum.

Dielectric Strength: 1000 volts rms at sea level.

Electric Life: 60,000 cycles minimum at full load.

Mechanical Life: 100,000 make-and-break cycles minimum.

Max. Allowable Force on Plunger: 10 lb.

MATERIALS AND FINISHES

Plunger: Nylon plunger and cap.

Mounting Bushing: Cadmium w/clear chromate over brass.

High torque to withstand 12 in.-lbs. with no distortion or loosening of parts.

Housing: Stainless Steel.

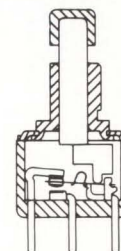
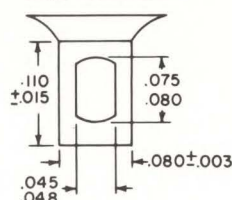
Case Material: General purpose phenolic or melamine.

Standard Hardware Supplied: 2 Hex mounting nuts 1 Internal lockwasher 1 Locking ring. On request 1 hex nut, and 1 special nut may be substituted at no charge.

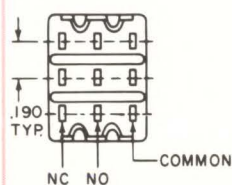
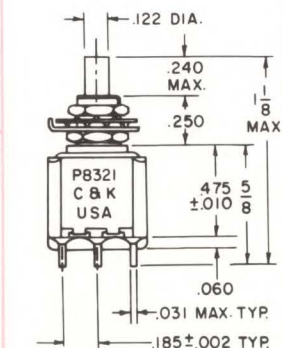
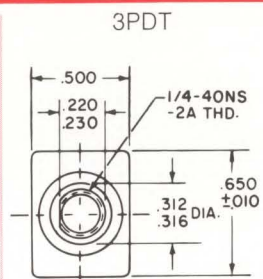
Standard locking ring is normally supplied — on request small locking ring may be substituted at no charge.

CROSS SECTION MOMENTARY PB ACTION

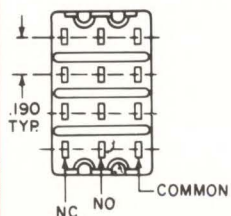
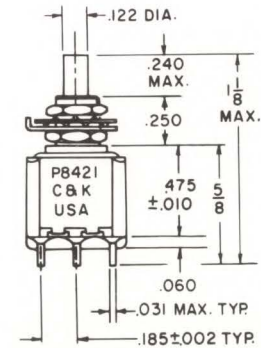
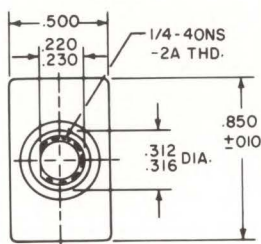
Std. Terminal



3 PDT
8321



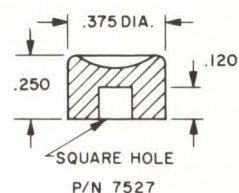
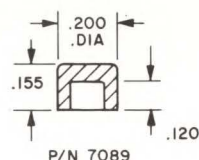
4 PDT



4 PDT
8421



CAPS FOR 8121, 8221, 8321 and 8421.
Cap supplied unassembled



Color Chart*

7089 OR 7527	COLOR	7089 OR 7527	COLOR
-1	WHITE	-6	GREEN
-2	BLACK	-7	BLUE
-3	RED	-8	BROWN
-4	ORANGE	-9	GRAY
-5	YELLOW		

*Also color chart for L-3 Toggle, J Rockers and Paddle Handles.

NOTE:

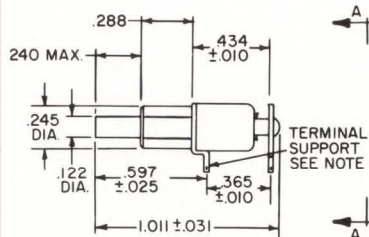
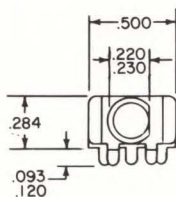
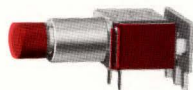
Unless otherwise specified — .200 dia. white cap is supplied.

Special Configurations

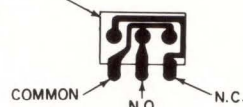
8121R or 8121R-2

R

Right Angle Mounting, P.C. Configuration



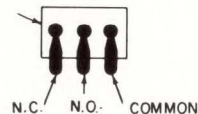
P.C. BOARD
SEE NOTE 2



R

VIEW A-A

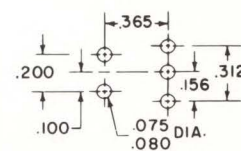
P.C. BOARD
SEE NOTE 2



R-2

VIEW A-A

PRINTED CIRCUIT
PANEL LAYOUT



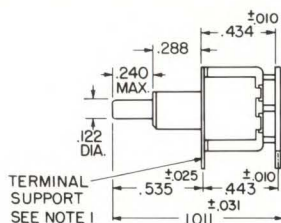
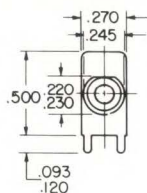
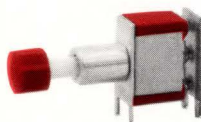
NOTES:

1. Terminal Support is 1/2 hd. brass, electroplated.
2. P.C. Board is G10 epoxy with 1 oz. electroplated copper. Projecting Fingers, only have copper both sides. Circuit on P.C. Board has copper outside only.

8121V

V

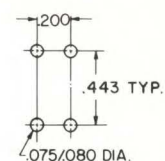
Right Angle Mounting



P.C. BOARD
SEE NOTE 2

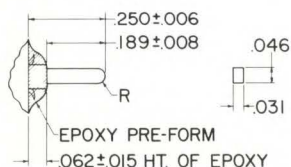


PRINTED CIRCUIT
PANEL LAYOUT

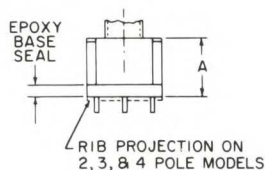


Options

C PRINTED CIRCUIT TERMINALS



I POTTED BASE



	A MAX.	B MAX.
SPDT	.395	.290
DPDT	.395	.470
3PDT	.460	.670
4PDT	.460	.870

NOTE:

1. Min. length of surface path between exposed terminal and metal housing equals .118 inch (3mm). REF. International Electrotechnical Commission (I.E.C.) Specification 131-1.

PRICES

Switches

			INDUSTRIAL NET PRICE SCHEDULE		
MODEL NO.	UL* NO.	POLES & THROW	1-24 EACH	25-99 EACH	100-499 EACH
8121	U811	SPDT	\$2.55	\$1.70	\$1.52
8221	U821	DPDT	3.45	2.30	2.06
8321	U831	3PDT	4.80	3.20	2.87
8421	U841	4PDT	6.05	4.10	3.61
8121R	NONE	SPDT	3.05	2.20	2.15
8121R-2	NONE	SPDT	3.05	2.20	2.15
8121V	NONE	SPST(NO.)	3.05	2.20	2.15

* MODELS AVAILABLE WITH UL LISTING

How to Order: Use switch model numbers followed by option suffix letter. (EXAMPLE: 8121C)

All prices F.O.B. Watertown, Massachusetts. Terms: net 30 days. Production quantity prices available on request.

Add Price Indicated (To Model Price)

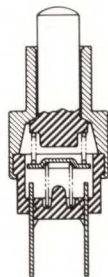
Options

	INDUSTRIAL NET PRICE SCHEDULE	
SUFFIX	1-999 EACH PER POLE	1000 OR MORE EACH PER POLE
C	\$.10	\$.10
I	.25	.20

ALL MODELS EXCEPT 8121R, 8121R-2 AND 8121V AVAILABLE WITH UL LISTING

Subminiature Butt Contact SPST Momentary Pushbutton Switches

8531



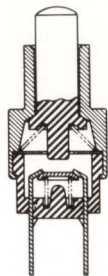
N.O. with Overtravel
Total Travel: .110
Overtravel: .020 Min.
Actuation Force: 8 oz. $\pm$ 4

8532



N.O.
Total Travel: .060
Actuation Force: 10 oz. $\pm$ 4

8533



N.C. with Pretravel
Total Travel: .055
Pretravel: .020 min.
Actuation Force: 8 oz. $\pm$ 4

8534



N.C.
Total Travel: .040
Actuation Force: 8.5 oz. $\pm$ 4

GENERAL SPECIFICATIONS

Contact Ratings: Coin Silver Contacts — 1 amp resistive load @ 120 VAC or 28 VDC or 0.5 amps @ 250 VAC, or Brass Contacts with gold over nickel plate — 0.4 volt-amps max. @ 20 V max. (AC or DC).

Insulation Resistance: 10,000 Megohms, min.

Dielectric Strength: 1,000 VOLTS rms at sea level.

Electric Life: 1,000,000 make-and-break cycles.

Initial Contact Resistance: 10 Milliohms, max.

Terminal Type: Solder.

Mounting Hole: 1/4" Dia.

MATERIALS AND FINISHES

Bushing: Brass, Cadmium Plated with Clear Chromate Finish.

Mounting Nut: Brass, Bright Nickel Plated. Hex nut is standard. On request, panel dress nut may be substituted at no extra charge.

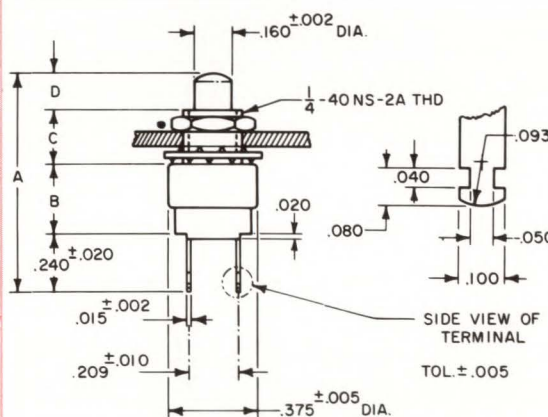
Lockwasher, Internal Tooth: Bright Nickel Plated CRS.

Base: Diallyl Phthalate (DAP). Color, Green.

Plunger: General Purpose Phenolic. Black supplied unless otherwise specified.

Contacts and Terminals:

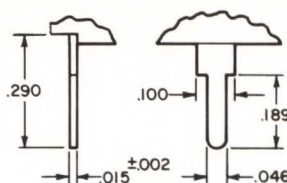
Coin Silver Standard.



MODEL NO.	A (REF. ONLY)	B $\pm$ 0.015	C $\pm$ 0.010	D $\pm$ 0.015
8531	1.047	0.407	0.227	0.173
8532	0.935	0.295	0.250	0.150
8533	1.047	0.407	0.250	0.150
8534	0.935	0.295	0.250	0.150

OPTIONS

C P.C. TERMINATION

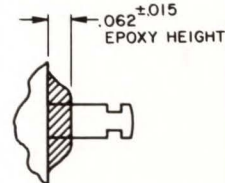


MATERIALS (TERMINALS)

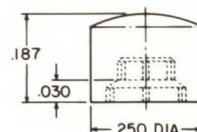
B For 1/2 hd. brass with 50 millionths min. Gold over 50 millionths min. Nickel, add "B" suffix.

G For coin silver (90%Ag 10%Cu) with 50 millionths min. Gold over 50 millionths min. nickel, add "G" suffix.

E TERMINAL SEAL



CAP FOR 8500 SERIES
Supplied on request.



A 7795	COLOR
-1	WHITE
-2	BLACK
-3	RED
-5	YELLOW
-6	GREEN

CAP CEMENTED TO PLUNGER BY CUSTOMER

PRICES

Switches

MODEL NO.	INDUSTRIAL NET PRICE SCHEDULE		
	1-24 EACH	25-99 EACH	100-499 EACH
8531	\$.90	\$.60	\$.53
8532	\$.90	\$.60	\$.53
8533	\$.90	\$.60	\$.53
8534	\$.90	\$.60	\$.53

ALL MODELS ARE UL LISTED
EXCEPT OPTION B

Options

SUFFIX	INDUSTRIAL NET PRICE SCHEDULE	
	1-999 EACH	1000 OR MORE EACH
*B	NO CHARGE	NO CHARGE
G	\$.25	\$.20
C	\$.10	\$.10
E	\$.10	\$.10

RED PLUNGERS ARE AVAILABLE ON REQUEST

*OPTION B NOT UL LISTED

How to Order: Use switch model numbers followed by option suffix letter. (EXAMPLE: 8531BE)

All prices F.O.B. Watertown, Massachusetts. Terms: net 30 days.
Production quantity prices available on request.

Microminiature Butt Contact SPST Momentary Pushbutton Switches

GENERAL SPECIFICATIONS

Contact Ratings:

Insulation Resistance: 10,000 Megohms Min.

Dielectric Strength: 500 VOLTS Min. at sea level

Electric Life: 1,000,000 make-and-break cycles (8631)

250,000 make-and-break cycles (8633)

100,000 make-and-break cycles (8632)

Initial Contact Resistance: 10 Milliohms Max.

Terminal Type: Solder

Mounting Hole: 11/64" Dia.

MATERIALS AND FINISHES

Bushing: Brass, Cadmium Plated with Clear Chromate finish.

Mounting Nut: Brass, Bright Nickel Finish

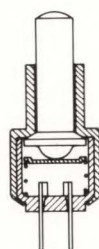
Base: General Purpose Phenolic (Red)

Plunger: General Purpose Phenolic Black supplied unless otherwise specified.

Contacts and Terminals:

Coin Silver Standard.

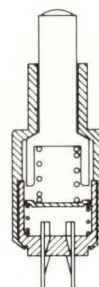
8631



N.O.
Total Travel: .040 ± .015
Actuation Force: 5 oz. ± 3

Contact Ratings: Coin Silver Contacts 1/2 amp resistive load @ 120 VAC or 28 VDC; or 1/4 amp @ 250 VAC.

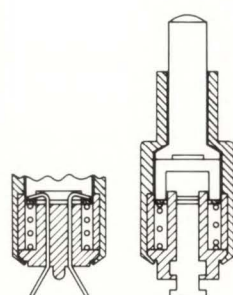
8632



N.O. With Overtravel
(.015 Min. O.T.)
Total Travel: .080 ± .025
Actuation Force: 5 oz. ± 3

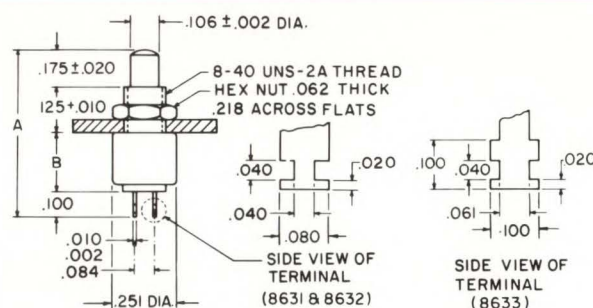
Contact Ratings: Coin Silver Contacts 1/2 amp resistive load @ 120 VAC or 28 VDC; or 1/4 amp @ 250 VAC.

8633



N.C.
Total Travel: .040 ± .015
Actuation Force: 5 oz. ± 3

Contact Ratings: Coin Silver Contacts 1/4 amp resistive load @ 120 VAC or 28 VDC; or 1/8 amp @ 250 VAC.



MODEL NO.	A (REF. ONLY)	B ±0.015
8631	0.635	0.235
8632	0.755	0.355
8633	0.745	0.345

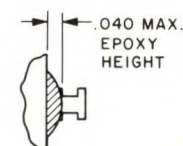
OPTIONS

MATERIALS (TERMINALS)

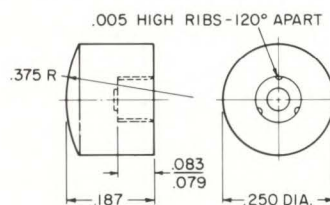
B For 1/2 hd. brass with 50 millionths min. Gold over 50 millionths min. Nickel, add "B" suffix.

G For coin silver (90% Ag 10% Cu) with 50 millionths min. Gold over 50 millionths min. nickel, add "G" suffix.

E TERMINAL SEAL



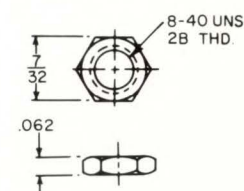
CAP FOR 8600 SERIES
Supplied on request.



Color Chart*

A 7851	COLOR
-1	WHITE
-2	BLACK
-3	RED
-5	YELLOW
-6	GREEN

Hex Nut (std)



P/N A7752

CAP CEMENTED TO PLUNGER BY CUSTOMER

PRICES

Switches

MODEL NO.	INDUSTRIAL NET PRICE SCHEDULE		
	1-24 EACH	25-99 EACH	100-499 EACH
*8631	\$1.15	\$.77	\$.67
*8632	\$1.30	\$.86	\$.77
8633	\$1.60	\$1.06	\$.94

* MODELS 8631 AND 8632 ARE UL LISTED, EXCEPT OPTION B

Options

SUFFIX	INDUSTRIAL NET PRICE SCHEDULE	
	1-999 EACH	1000 OR MORE EACH
**B	NO CHARGE	NO CHARGE
G	\$.25	\$.20
E	\$.10	\$.10

RED PLUNGERS ARE AVAILABLE ON REQUEST.

** OPTION B NOT UL LISTED

How to Order: Use switch model numbers followed by option suffix letter. (EXAMPLE: 8631BE)

Hardware, Panel Layouts and Mounting for Toggle and Double Throw (DT) Pushbutton

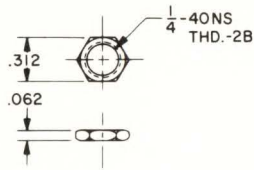
MATERIALS

1. NUTS — Bright nickel plated brass — 2 hex nuts supplied — on request, 1 hex nut and 1 special nut may be substituted.
2. LOCKING RINGS — Bright nickel plated brass. Standard locking ring normally supplied — on request small locking ring may be substituted.
3. LOCKWASHER — Bright nickel plated CRS. 1 normally supplied.

STANDARD HARDWARE SUPPLIED

NUTS

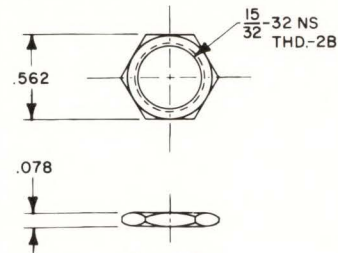
Hex Nut (std)



P/N A7002

Hex Nut (15/32 thd)

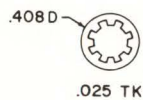
(SUPPLIED WITH T OPTION ONLY)



P/N A7071

LOCKWASHERS

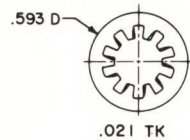
Lockwasher (Std)



P/N A7003-1

15/32 THD

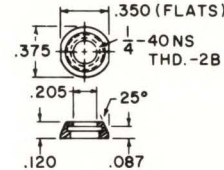
(SUPPLIED WITH T OPTION ONLY)



P/N A7003-2

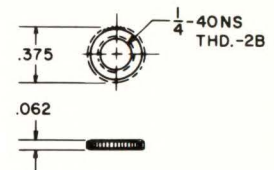
OPTIONAL HARDWARE

Panel Dress Nut (Blind Thd.)



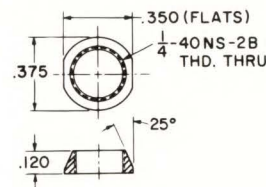
P/N A7099

Knurled Face Nut



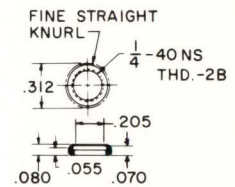
P/N A7028

Panel Dress Nut (Thru Thd.)



P/N A7807

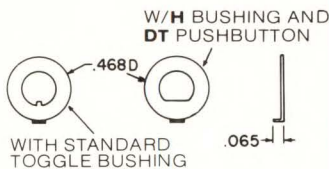
Decorative Knurled Nut (Blind Thd.)



P/N A7780

LOCKING RINGS

Locking Ring — Standard

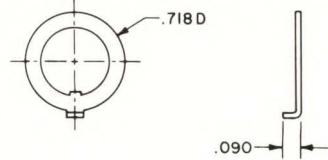


P/N A7007

P/N A7572

15/32 THD

(SUPPLIED WITH T OPTION ONLY)



P/N A7072

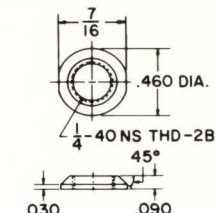
Locking Ring — Small



P/N A7537

P/N A7573

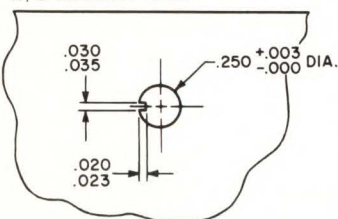
Decorative Dress Nut



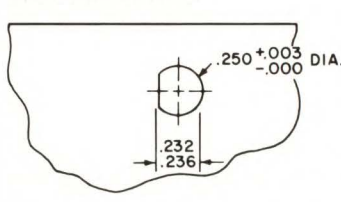
P/N A7760

PANEL LAYOUTS

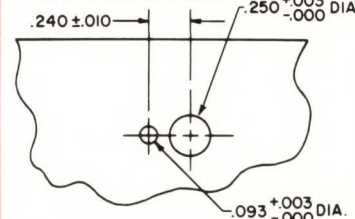
TOGGLE W/O LOCKING RING



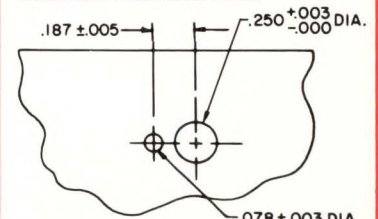
W/H BUSHING AND DT PUSHBUTTON W/O LOCKING RING



TOGGLE AND DT PUSHBUTTON W/STD. LOCKING RING

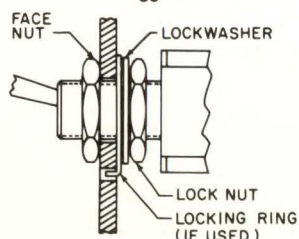


TOGGLE AND DT PUSHBUTTON W/SMALL LOCKING RING



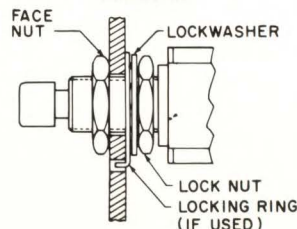
MOUNTING INFORMATION

Toggle



Normal panel assembly when using locking ring

Pushbutton



Normal panel assembly when using locking ring, and lock nut.

WARNING:

Do not torque face nut when lock nut is not in place. (Except for high-torque bushing.)

Bushing will withstand torque of 12 IN-Lbs with no distortion or loosening of parts.

CAP OPTIONS (Toggle)

Color Caps

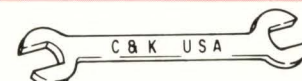
P/N A7062

P/N A7637

STANDARD LONG

Color-Caps (Vinyl Plastisol) available for standard and long toggles.

A7062 OR A7637	COLOR	A7062 OR A7637	COLOR
-1	BLACK	-6	GREEN
-2	BROWN	-7	BLUE
-3	RED	-9	GRAY
-4	ORANGE	-10	WHITE
-5	YELLOW		



HARDWARE END WRENCH (Available on request.)

Switches are held in place by two mounting nuts — one front-of-panel, one back-of-panel. Tighten the back-of-panel nut to avoid scratching or damaging the panel's front. This thin, C&K wrench is designed to facilitate back-of-panel tightening. The wrench fits a standard 1/4-40 hex nut and the panel dress nuts.

HARDWARE, PANEL LAYOUTS
AND MOUNTING

U.S. Switch Distributors

ALABAMA Huntsville, Cramer/Huntsville.
ALASKA Anchorage, Yukon Radio Supply.
ALASKA Fairbanks, Yukon Radio Supply.
ARIZONA Phoenix, Cramer/Hyer.
ARIZONA Phoenix, Kierulff Electronics, Inc.
CALIFORNIA Gardena, Santa Monica Bell Electronics.
CALIFORNIA Glendale, R&C/Cramer.
CALIFORNIA Los Angeles, Fisher Switches, Inc.
CALIFORNIA Los Angeles, Kierulff Electronics, Inc.
CALIFORNIA Menlo Park, Bell Industries Inc.
CALIFORNIA Palo Alto, Kierulff Electronics, Inc.
CALIFORNIA Redwood City, Cramer Electronics, Inc.
CALIFORNIA San Diego, Kierulff Electronics, Inc.
CALIFORNIA San Diego, R&C/Cramer.
CALIFORNIA Santa Clara, Fisher Switches, Inc.
COLORADO Denver, Hyer/Cramer.
COLORADO Denver, Kierulff Electronics, Inc.
COLORADO Denver, Newark Electronics.
CONNECTICUT Fairfield, Ultronic.
CONNECTICUT No. Haven, Cramer Electronics, Inc.
FLORIDA Ft. Lauderdale, Cramer, Florida Electronics, Inc.
FLORIDA Miami, Electronics Equipment Co.
FLORIDA Miami, Lykes Electronics.
FLORIDA Orlando, Hallmark Electronics Corp.
FLORIDA Orlando, Hammond Electronics, Inc.
FLORIDA Palm Beach Gardens, Controlled Distributors.
GEORGIA Atlanta, Cramer/Atlanta.
ILLINOIS Chicago, Electronics Distributors, Inc.
ILLINOIS Elk Grove Village, Lakeland Electronics, Inc.
ILLINOIS Palatine, Cramer/Chicago.
ILLINOIS Peoria, Klaus Radio & Electric Company.
ILLINOIS Rosemont, Advent Electronics.
ILLINOIS Rosemont, F.J.R./Kierulff-Chicago.
ILLINOIS Westchester, L-Comp, Inc.
INDIANA Ft. Wayne, Ft. Wayne Electronics Supply.
INDIANA Indianapolis, Graham Electronics Supply Inc.
INDIANA Indianapolis, Ra-Dis Co.
IOWA Cedar Rapids, Deeco, Inc.
KANSAS Wichita, Radio Supply Electronics, Inc.
KENTUCKY Owensburg, Ohio Valley Sound.
MARYLAND Baltimore, Arrow Electronics.
MARYLAND Baltimore, Cramer/E.W. Inc.
MARYLAND Baltimore, Hallmark Electronics Corp.
MARYLAND Baltimore, Pyttronics, Industries, Inc.
MARYLAND Baltimore, Radio Electronics Service Co., of Baltimore, Inc.
MARYLAND Beltsville, Angus, Inc.
MARYLAND Cheverly, Pyttronics Industries, Inc.
MARYLAND Gaithersburg, Cramer
MARYLAND Gaithersburg, Schley/Kierulff-Baltimore.
MARYLAND Rockville, Cramer/E.W., Inc.
MASSACHUSETTS Burlington, Arrow Electronics.
MASSACHUSETTS Dedham, Gerber Electronics.
MASSACHUSETTS Needham, Schley/Kierulff.
MASSACHUSETTS Newton, Cramer Electronics, Inc.
MASSACHUSETTS No. Billerica, Dowiak Associates, Inc.
MASSACHUSETTS Watertown, D.R.W. Electronics Corp.
MICHIGAN Royal Oak, Robert H. Jackson.
MINNESOTA St. Louis Park, Beta Eng.
MINNESOTA St. Paul, F.J.R./Kierulff-Minneapolis.
MISSOURI N. Kansas City, L-Comp., Inc.
MISSOURI St. Louis, L-Comp., Inc.
NEBRASKA Lincoln, Scott Electronic Supply Corp.
NEW JERSEY Hanover, State Electronics Parts Corp.

NEW JERSEY Moorestown, Arrow-Angus.
NEW JERSEY Pennsauken, Cramer/Penn.
NEW JERSEY Rutherford, Kierulff/Schley.
NEW JERSEY Springfield, Federated Purchaser, Inc.
NEW JERSEY Springfield, Route Electronics.
NEW MEXICO Albuquerque, Cramer/Hyer.
NEW MEXICO Albuquerque, Kierulff Electronics, Inc.
NEW YORK Bohemia, Car Lac Electronics, Inc.
NEW YORK Hempstead, Electronic Equipment.
NEW YORK Albany, E. E. Taylor.
NEW YORK Buffalo, Summit Distributors, Inc.
NEW YORK Farmingdale, Arrow Electronics, Inc.
NEW YORK Farmingdale, D.R.W. Electronics Corp.
NEW YORK Farmingdale, Hallmark Electronics, Corp.
NEW YORK Hauppauge, Cramer Electronics, Inc.
NEW YORK Hicksville, Kierulff/F.J.R.
NEW YORK Lynbrook, Peerless Radio Corp.
NEW YORK New York, Terminal Hudson Elect.
NEW YORK Rochester, Simcona Electronics.
NEW YORK Syracuse, Cramer/Eastern, Inc.
NORTH CAROLINA Charlotte, Dixie Radio Supply Co., Inc.
NORTH CAROLINA Greensboro, Hammond Radio.
NORTH CAROLINA Raleigh, Cramer/Raleigh.
NORTH CAROLINA Raleigh, Pyttronics Industries, Inc.
OHIO Akron, Akron Electronics.
OHIO Akron, Sun Radio.
OHIO Canton, Walker Radio.
OHIO Cincinnati, Cramer/Tri States.
OHIO Columbus, Thompson Elec.
OHIO Dayton, Esco, Inc.
OHIO Dayton, F.J.R./Kierulff-Dayton.
OHIO Toledo, Lifetime Electronics.
OHIO Warren, R.E.M. Electronics.
OKLAHOMA Oklahoma City, Electro Enterprises, Inc.
OKLAHOMA Oklahoma City, Hallmark Electronics Corp.
OKLAHOMA Tulsa, Hallmark Electronics Corp.
PENNSYLVANIA Harrisburg, Pyttronics Industries, Inc.
PENNSYLVANIA Montgomeryville, Pyttronics Industries, Inc.
PENNSYLVANIA Paoli, F.J.R./Kierulff-Philadelphia.
PENNSYLVANIA Pennsauken, Cramer Electronics, Inc.
PENNSYLVANIA Pittsburgh, Pyttronics Industries, Inc.
PENNSYLVANIA Huntingdon Valley, Hallmark Electronics Corp.
PENNSYLVANIA York, Rosen Electronics, Inc.
TEXAS Dallas, Cramer Electronics Inc.
TEXAS Dallas, Hallmark Electronics Corp.
TEXAS Garland, Kierulff Electronics, Inc.
TEXAS Houston, The Altair Company.
TEXAS Houston, Hallmark Electronics Corp.
TEXAS Richardson, The Altair Company.
UTAH Salt Lake City, Cramer/Hyer.
UTAH Salt Lake City, Kimball Electronics, Inc.
VIRGINIA Richmond, Meridian Electronics, Inc.
WASHINGTON Bellevue, Bell Industries, Inc.
WASHINGTON Seattle, Kierulff Electronics, Inc.
WISCONSIN Madison, Satterfield Electronics, Inc.
WISCONSIN Mequon, Taylor Electric Co.
WISCONSIN Milwaukee, Cramer Electronics, Inc.
WISCONSIN Milwaukee, Radio Parts Company.
WYOMING Cheyenne, Houge Radio.

CANADA DISTRIBUTORS

BRITISH COLUMBIA Vancouver, Bowtak Electric Co., Ltd.
ONTARIO Scarborough, Carsten Electronics, Ltd.
QUEBEC Montreal, Prelco Electronics, Ltd.